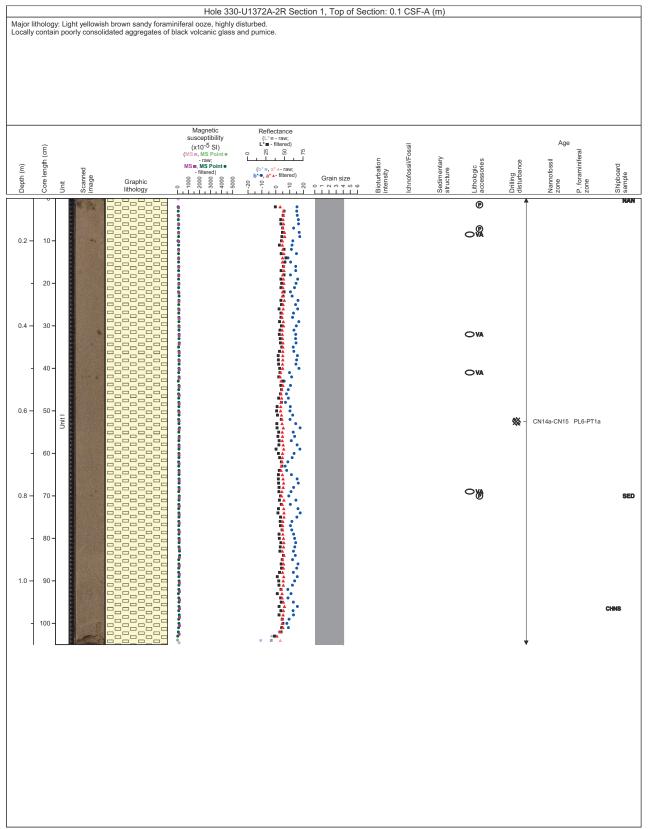
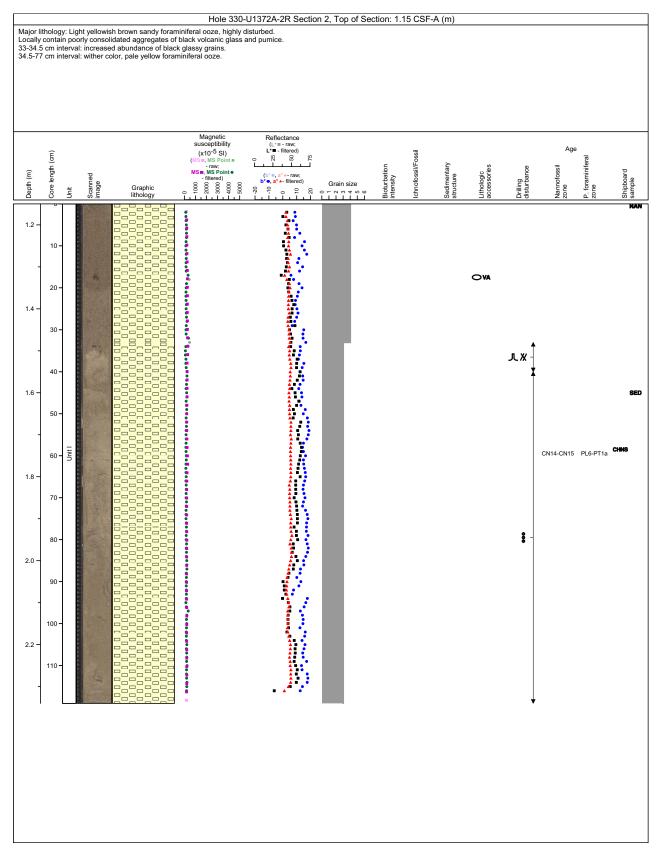
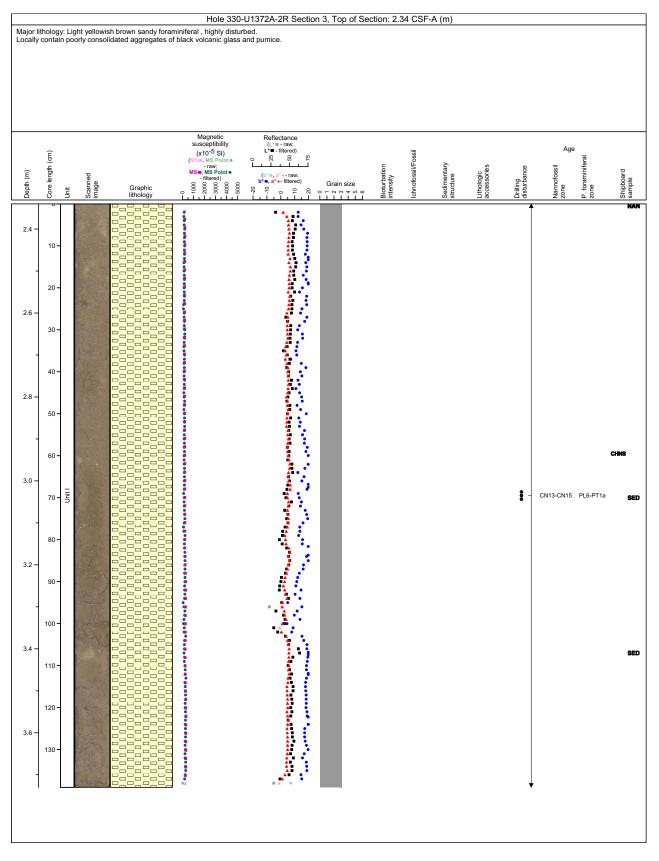
330-U1372A-1R NO DESCRIPTION



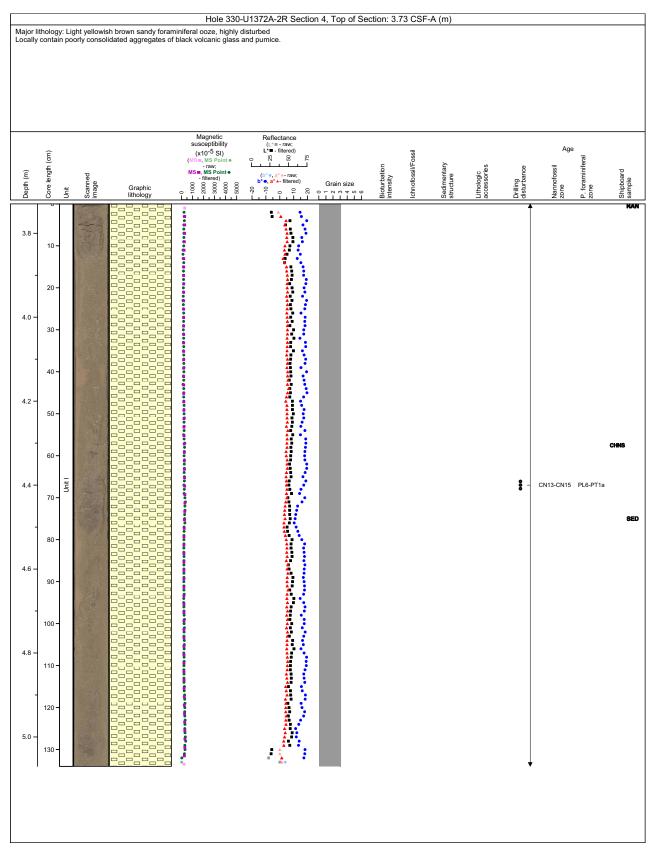




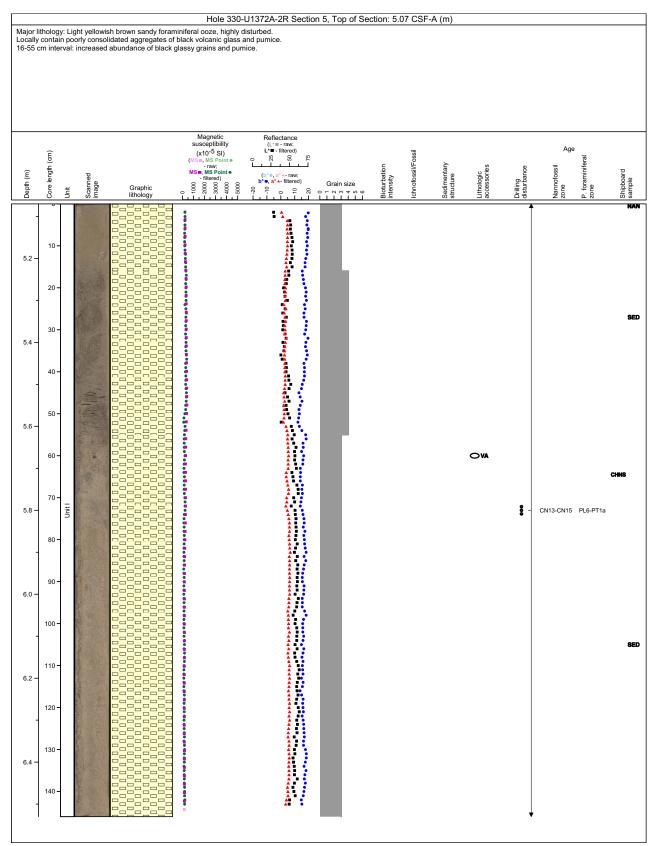




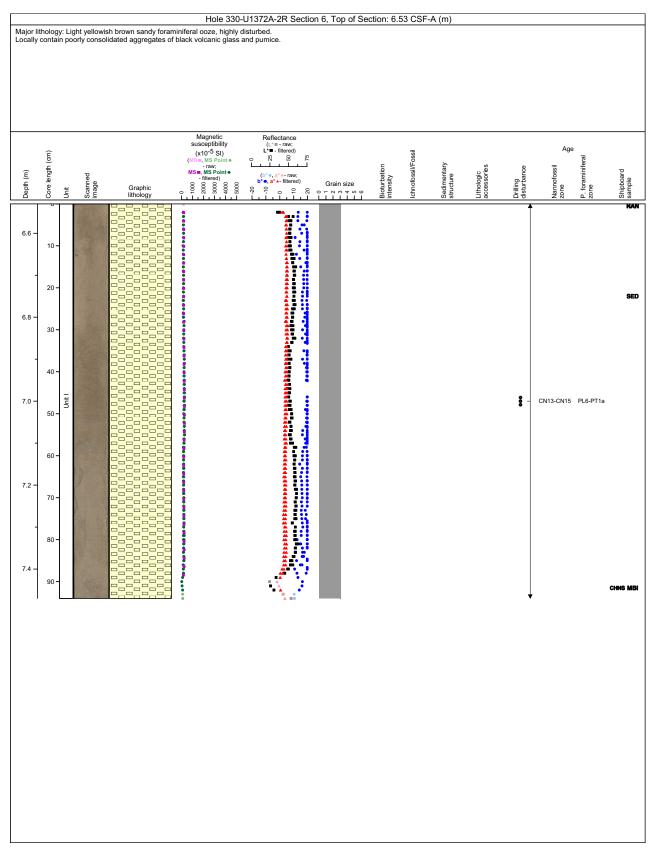




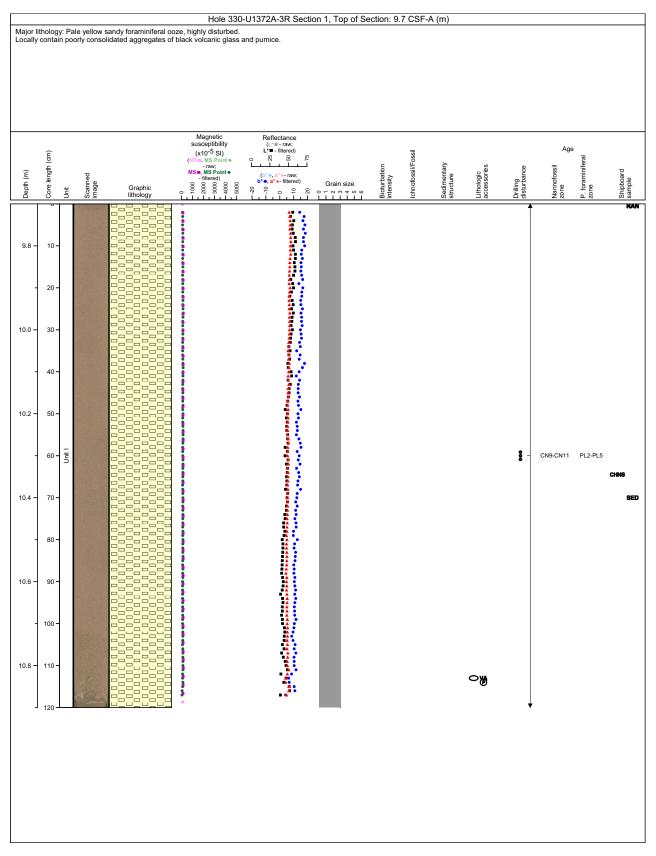




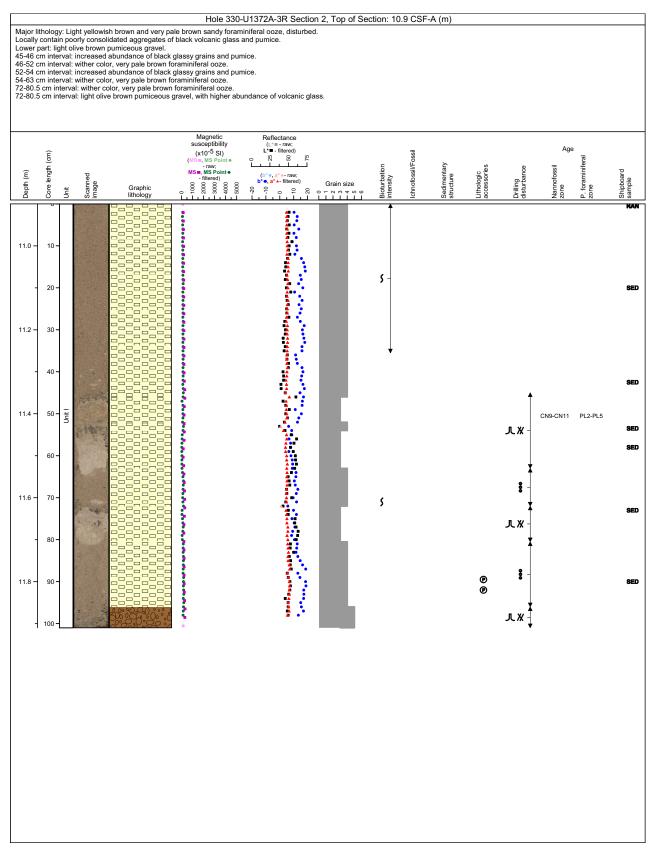












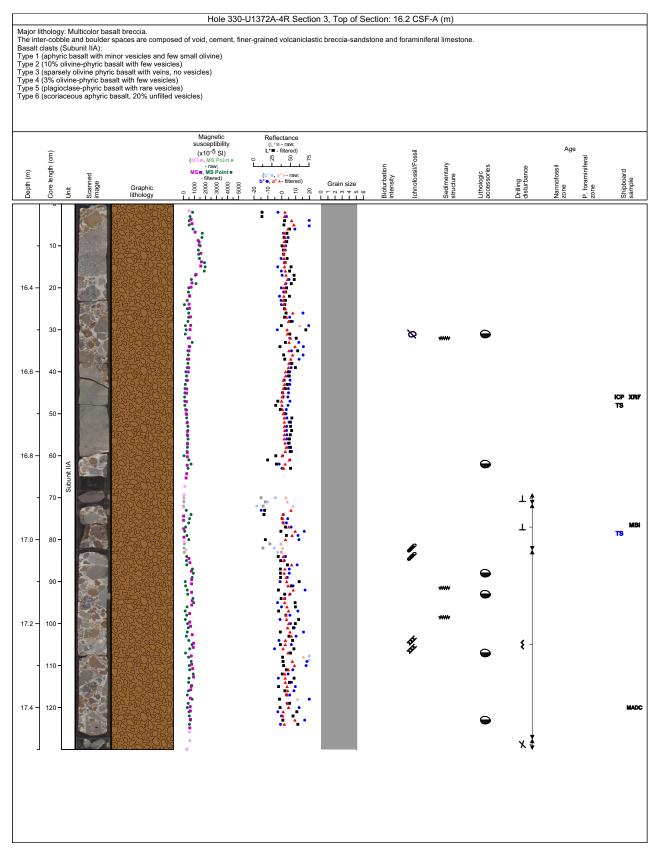


	Ê			Magnetic susceptibility (x10 ⁻⁵ SI)	Reflectance (L*≡ - raw; L*■ - filtered)							Age	•	
Depth (m)	Core length (cm)	Unit Scanned image	Graphic lithology	(MS=, MS Point e -raw; MS=, MS Point e -raw; -filtered) 000 000 000 000 000 000 000 000 000 000 000 000 000 000 000 000 000 000 000	22 22 22 22 22 22 22 22 22 22	Grain size ວ – ດ ອ ອ ທ ຜ IIIIIII	Bioturbation intensity	Ichnofossil/Fossil	Sedimentary structure	Lithologic accessories	Drilling disturbance	Nannofossil zone	P. foraminiferal zone	Shipboard sample
3.6 –	10 -			and a second second				P			£ -			
3.8 -	20 - 30 -										X - X			ICP TS
-	40 -												Px-P2	TS F
.0 -	50 -								 ₩		\$ -			
-	60 -	Subunit IIA							****					
.2 -	70 - 80 -	ans									¥ - - X			TS ICP) M
.4 –	90 -								=					M
-	100 -				4 4 4 5 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4				···· ‡		٢			
.6 -	110 - 120 -						\$\$	æ	****	0	£ -			
.8 -	130 -			···				Ø		9				



ype 3 ype 4 ype 5	(sparsely (3% olivin (plagiocla	olivine phyric b e-phyric basal se-phyric basa	alt with few vesicl basalt with veins, t with few vesicle alt with rare vesicl salt, 20% unfilled	no vesicles) s) es)										
Depth (m)	Core length (cm) Unit	Scanned image	Graphic lithology	Magnetic susceptibility (x10 ⁻⁵ SI) (MSP, MS Pointe - ray; MSP, MS Pointe - filtered) 000 000 000 000 0000 000 000 000 000 0	Reflectance (L*■-raw; L*■-filtered) SC (b*•, a*-raw; b*•, a*+-filtered) 02 01 0 01 0 02 0	Grain size ວ –	Bioturbation intensity	Ichnofossil/Fossil	Sedimentary structure	Lithologic accessories	Drilling disturbance	Vannofossii zone	P. foraminiferal zone	Shipboard sample
- 15.0 - - 15.2 -	10 - 20 - 30 - 40 -						s ‡			•	£ -			
15.4 –	50 - 60 -						\$ ₹	P		•	×			
-	200 Subunit IIA			1				\$ 7 222	••••	•	ξ -			
15.8 —	90 – 100 –								₩.					
16.0 -	110 - 120 -			a je dat stran je ma je ma				,		Ð				тв
6.2	130 -							St.						

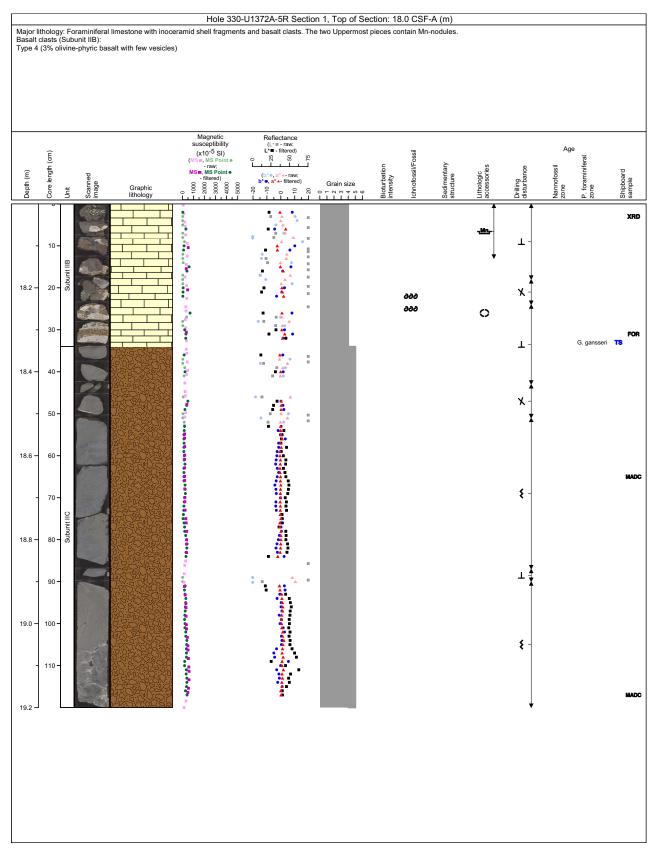




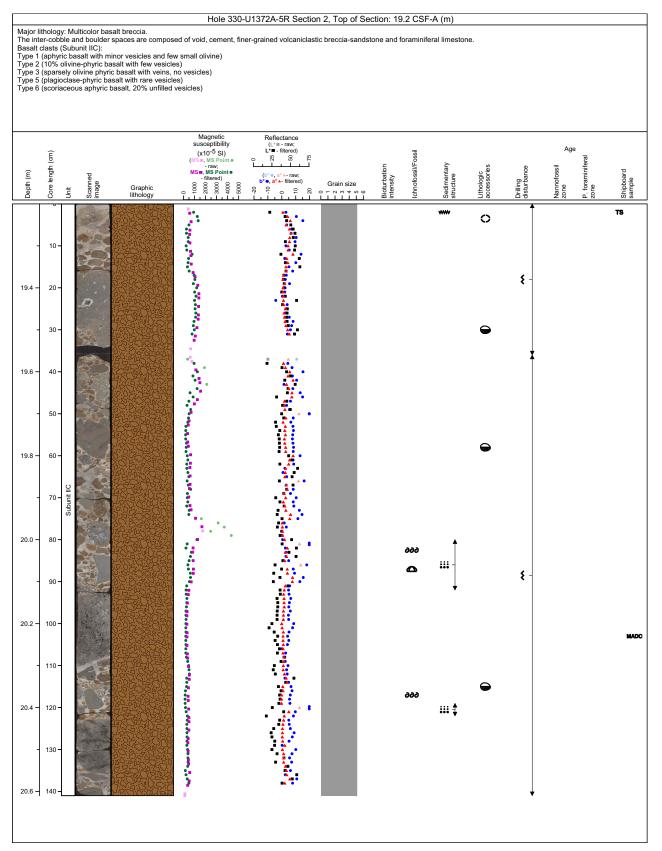


Basalt Type 1 Type 2 Type 3 Type 4	clasts ((aphyr (10%) (spars (3% ol	y: Multicolor basa ble and boulder sj (Subunit IIA): ric basalt with min olivine-phyric bas ely olivine phyric basa oclase-phyric basa aceous aphyric bas	or vesicles and fe alt with few vesicle basalt with veins, it with few vesicles	eed of void, cement, fin w small olivine) es) no vesicles) s)	U1372A-4R Section				ne.				
Depth (m)	Core length (cm)	Unit Scanned image	Graphic lithology	Magnetic susceptibility (x10-5 SI) (MSa, MS Pointe "MSB, MS Pointe - filtered) 0000,000,000,000 0 0 0 0 0 0 0	Reflectance (L*■-raw; L*■-filtered) £2 0 5 5 (b*●, a* A- filtered) 0 0 0 - - - 0 - - - 0 - - - - 0 - - - - 0 - - - - 0 - - - - 0 - - - - 0 - - - -	Grain size ວຼ_ ຎ ຑ ຈະຜ ຜ	Bioturbation intensity Ichnofossil/Fossil	Sedimentary structure	Lithologic accessories	Drilling disturbance	Nannofossil Zone	P. foraminiferal zone	Shipboard sample
17.6 -	10 - 20 - 30 - 50 -	Suburit IA					2 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0			\$ -			MBI

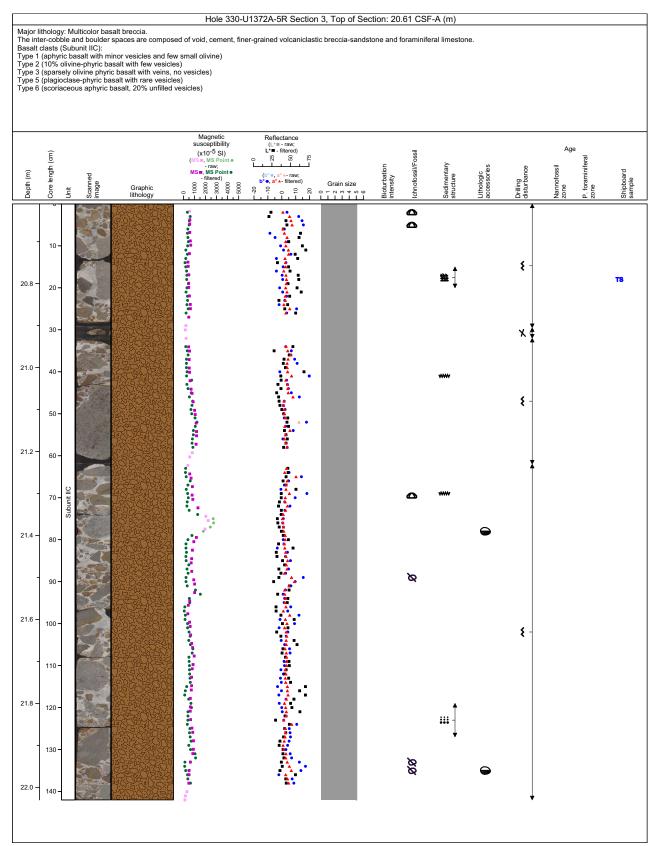












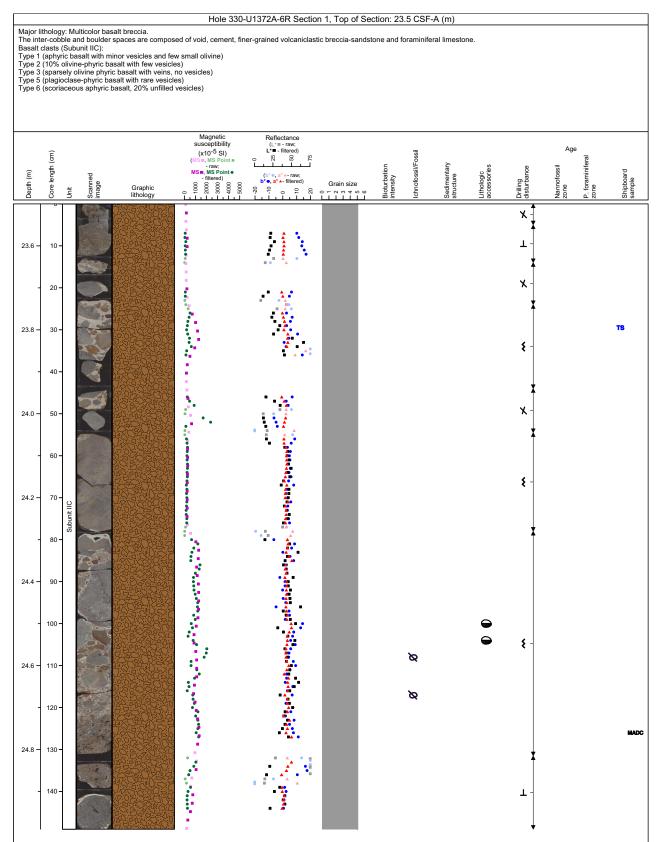


Hole 330-U1372A-5R Section 4, Top of Section: 22.03 CSF-A (m) Major lithology: Multicolor basalt breccia. The inter-cobble and boulder spaces are composed of void, cement, finer-grained volcaniclastic breccia-sandstone and foraminiferal limestone. The inter-cooble and boulder spaces are composed of void, cene Basalt clasts (Suburit IIC): Type 1 (aphyric basalt with minor vesicles and few small olivine) Type 2 (10% olivine-phyric basalt with vesicles) Type 3 (sparsely olivine phyric basalt with vesicles) Type 5 (plagicoclase-phyric basalt with rare vesicles) Type 6 (scoriaceous aphyric basalt, 20% unfilled vesicles) Reflectance (L*≡ - raw; Magnetic susceptibility (x10⁻⁵ SI) MS , MS Point - 25 at Age (cm Sc. chnofossil/Fossil - 75 foraminiferal
 zone () Bioturbation ntensity Sedimentary structure Lithologic accessories Core length - raw; MS . MS Point • Drilling disturbance Nannofossil zone Shipboard sample Ē - raw; filtered) Grain size 1000 Depth cann nage 2000 3000 4000 5000 Graphic lithology -20 -10 9 Ъit 0 20 -0040 c ٠ • • .. 1 **000** 10 ٤ 22.2 ØØ 20 c Ĩ 8 ٠. 30 ····· : 9 222 22.4 40 • ٤ & ∀ <u>†</u> 50 TS FOR 22.6 60 â T 70 ല Subunit and the second sec • XRD 22.8 . 80 ۷ ٤ G 90 23.0 100 **î.**. MBI T . 110 ۰. Ø 9 23.2 • 120 MADC ž 1 ۷ ٤ TS 130 23.4 8 140 MADC



Depth (m)	Core length (cm)	Unit Scanned image	Graphic lithology	Magnetic susceptibility (x10 ⁻⁵ SI) (MS=, MS Pointe - raw; MS=, MS Pointe - filtered) 0 01 02 00 00 00 00 00	Reflectance (L ⁺ ≡ - raw; L ⁺ ≡ - filtered) 0 (2 ⁺ • 0, a ⁺ - raw; b ⁺ • 0, a ⁺ - raw; b ⁺ • 0, a ⁺ - filtered) 0; 0; 0; 0; 0; 0; 0; 0; 0; 0; 0; 0; 0; 0	Grain size ວ ⊢ ໙ ຕ ຈ ທ ຜ	Bioturbation intensity	lchnofossil/Fossil	Sedimentary structure	Lithologic accessories	Drilling disturbance	Age zone	P. foraminiferal zone	Shipboard sample
23.6 -	10-						<u> </u>		<u>0 0</u>	<u> </u>		<u> </u>		<u></u>
-	20 -										£ -			
23.8 -	30 -													
- 24.0 -	40 -							\$			x			
-	50 - 60 -				1			8			⊥ - ▼			
4.2 -		Subunit IIC			: - * * ·									
-	80 -										⊥ - X - X			
4.4 -	90 -										⊥ - X -			
-	100 -				· .						⊥ - ¥			
4.6 -	110 -			- 							×-			
4.8 -	120 - 130 -							8			X - X - X			







Hole 330-U1372A-6R Section 2, Top of Section: 24.99 CSF-A (m)

Major lithology (down to 127 cm): Multicolor basalt breccia.

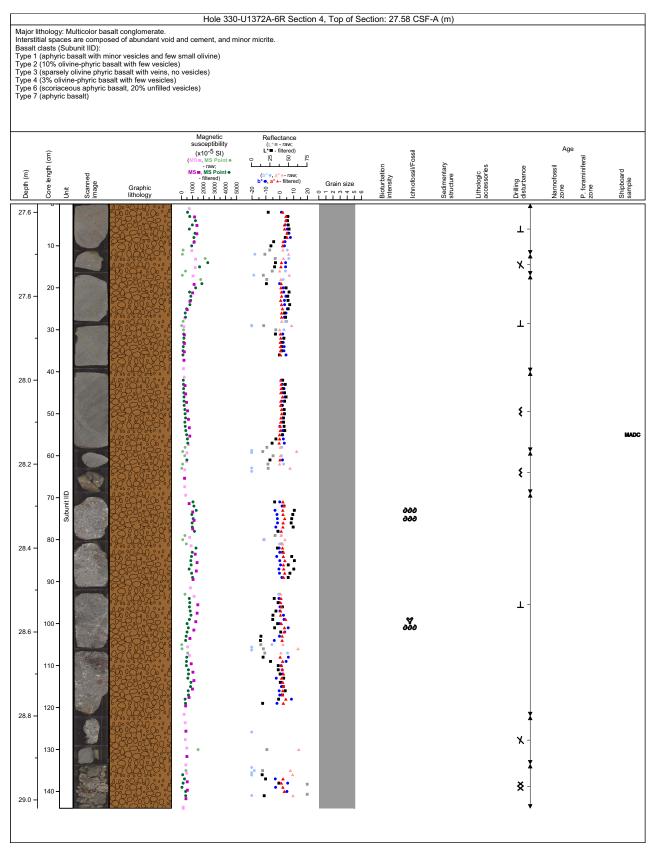
Multicolor basalt breccia. The inter-cooble and boulder spaces are composed of void, cement, finer-grained volcaniclastic breccia-sandstone and foraminiferal limestone. Basalt clasts (Subunit IIC): Type 1 (aphyric basalt with minor vesicles and few small olivine) Type 2 (10% olivine-phyric basalt with few vesicles) Type 3 (sparsely olivine phyric basalt with veins, no vesicles) Type 5 (plagioclase-phyric basalt with rare vesicles) Type 5 (plagioclase-phyric basalt with rare vesicles) Type 5 (plagioclase-phyric basalt with rare vesicles) From 127 cm: Multicolor basalt conglomerate. Interstitial spaces are composed of abundant void and cement, and minor micrite.

Reflectance (L*≡ - raw; filtered) Magnetic susceptibility (x10⁻⁵ SI) (MS=, MS Point 4 - ra filtere S Age (cm) chnofossil/Fossil 25 - 75 . foraminiferal one Bioturbation intensity Sedimentary structure - raw; MS =, MS Point • Lithologic accessories Core length Drilling disturbance Nannofossil zone Shipboard sample Ē o* ●, a* ▲- raw; ●, a* ▲- filtered) Grain size 1000 Depth cann nage 2000 3000 5000 Graphic lithology -20 -10 9 Ъit 0 20 -0040 0 0 25.0 1 . • ٤ 10 Þ • Ъ **TS** Ø 20 ; 25.2 . Т 30 Т 40 25.4 0 ¢ T. 50 TS 0 60 25.6 g ٤ 70 ę, . Т 80 25.8 0 Т 999 90 •• X 100 26.0 . ÷ į Т 110 A 999 120 26.2 · . X ŝ . 130 bunit

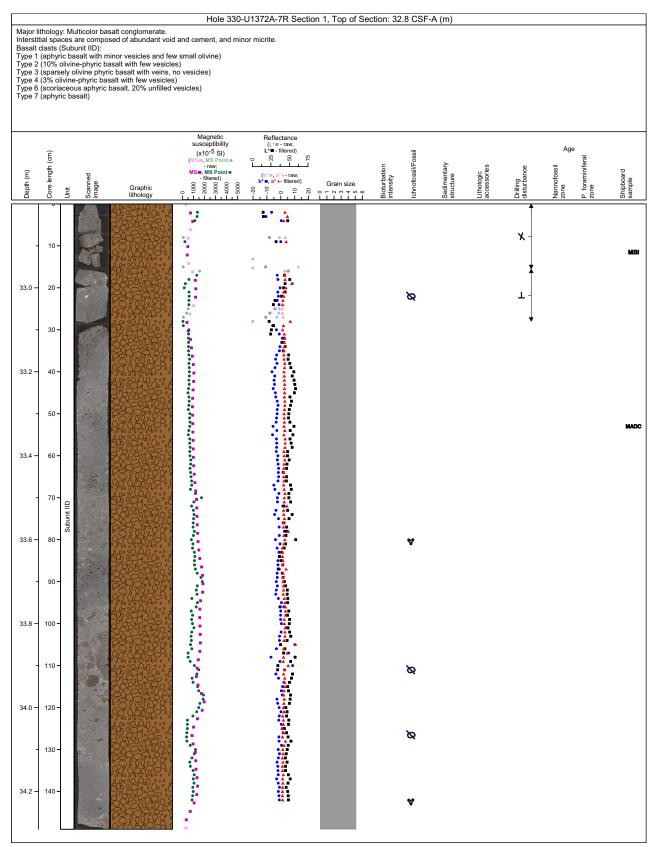


Depth (m)	Core length (cm)	Unit Scanned image	Grantin	Magnetic susceptibility (x10 ⁻⁵ SI) (MS=, MS Point • - raw; MS=, MS Point • - filtered) 8 8 8 8 8 8	Reflectance (L [*] ≡ - raw; L [*] ≡ - filtered) 0 (D [*] ⊕, a [*] ▲ - raw; b [*] ⊕, a [*] ▲ - filtered)	Grain size	Bioturbation intensity Ichnofossil/Fossil	Sedimentary structure	Lithologic accessories	Drilling disturbance	Age zone zone	P. foraminiferal zone	Shipboard sample
Ъе́	Cor	Unit Scar imag	Graphic lithology	0 3000 5000 5000		0 - 0 0 4 0 0	Bioth	Sedi	Litho	distr	Nan zone	P. fc zone	Ship sam
6.4 -	10 -								-				
-										٤ -			
	20 -			, j									
6.6 -	30 -									¥			
-	40 -									ξ -			
.8 -	50 -												
	50-				Ĩ					Ť			
	60 -	Subunit IID			· - *		202						
7.0 -	70 -	ν.								⊥ -			
-	80 -												
7.2 -				1.1			999			X			
	90 -				•		866			⊥ -			
-	100 -									¥			
7.4 -	110 -						~			X -			
-					•					¥			
	120 -									× -			









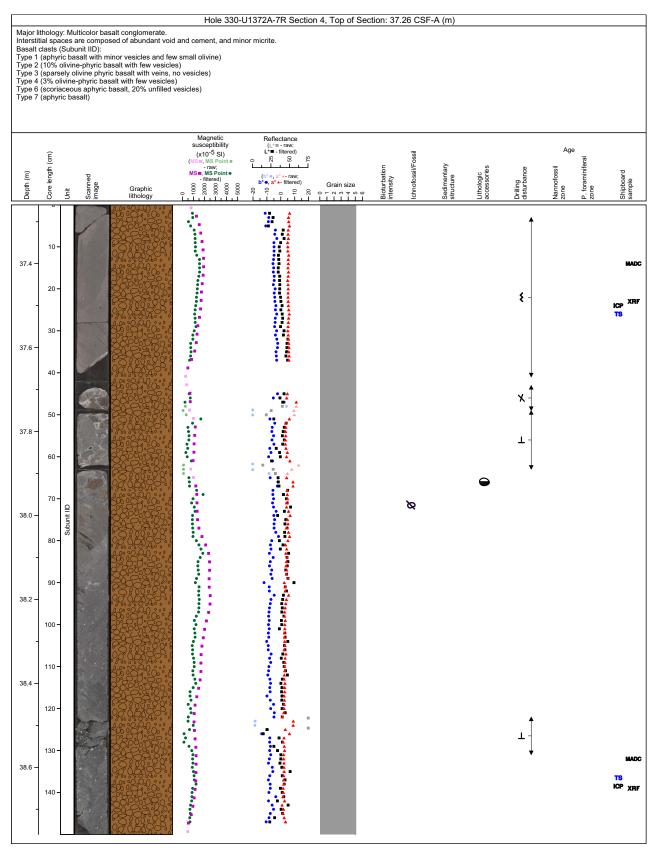


Interstit Basalt o Type 1 Type 2 Type 3 Type 4 Type 6	ial spac clasts (\$ (aphyrid (10% o (sparse (3% oliv (scoriad	ces are compos Subunit IID): c basalt with min livine-phyric bas ely olivine phyric vine-phyric base	alt conglomerate. ed of abundant voi nor vesicles and fe salt with few vesicle basalt with few vesicler asalt, 20% unfilled	d and cement, and mir w small olivine) es) no vesicles) s)	U1372A-7R Section	2, Top of Sec	stion: 34.29	9 CSF-A (r	n)			
Depth (m)	Core length (cm)	Unit Scanned image	Graphic lithology	Magnetic susceptibility (x10 ⁻⁵ SI) (Mos., MS Pointe -raw; MS=, MS Pointe - filtered) 00 00 00 00 00 00 0 00 00 00 00 00 00 0	Reflectance (L*= -raw; L*= - filtered) SC (S* 9, 9* - raw; b* 9, 9* - filtered) 02 0 0 0 0 0 0 0	Grain size ວຼ_ດາດຈະແຜ 	Bioturbation intensity	Ichnofossil/Fossil Sedimentarv	structure Lithologic accessories	Drilling disturbance	Nannofossil zone ő P. foraminiferal zone	Shipboard sample
- 34.4 –	10 -											
34.6 –	30 - 40 -									٤ -		T8 ICP XRF
34.8 –	50 - 60 -				and states and states			3 0 5 4				
35.0 –	70 - 80 -	Subunit IID					1	8				
35.2 -	90 - 100 -						•	9				
35.4 –	110 -							əə əə				T8
- 35.6 –	130 -							<i>х</i> 4				
-	140 -						1	8 8				



uepm (m)	Core length (cm)	Unit Scanned image	Graphic	Magnetic susceptibility (x10-5 SI) (MS=, MS Pointe - raw; MS=, MS Pointe - filtered) 00 00 000 000 00000000000000000000000	Reflectance (L*■-raw; L*■-filtered) 0 40 40 40 40 (b* ●, a* ▲-raw; b* ●, a* ▲- filtered)	Grain size	Bioturbation intensity	chnofossil/Fossil	Sedimentary structure	Lithologic accessories	Drilling disturbance	Nannofossii zone	P. foraminiferal zone	Shipboard sample
5.8 -	Š	Unit Scar imag		0000 100 1000 1		1 1 1 1 1 1 0 1 1 1 1 1 1 1 1 1 1 1 1 1		S	Sec	Lith aco	Drill	Nar zon	P. f	Shi
_	10 -							~						
	20 -						ð	99						
5.0 -	20													
-	30 -						ð	ðð		0				
.2 -	40 -													
_	50 -						ð 4	00 \$						
i.4 -	60 -						1	8						
				المريدية. مريدية							٤			
-	70 -	Subunit IID						_						
6.6 -	80 -							99 Ø						
_	90 -													
5.8 -	100 -						1	8						
	110 -	- Spin -			,			•						
.0 -	120 -													
	130 -													

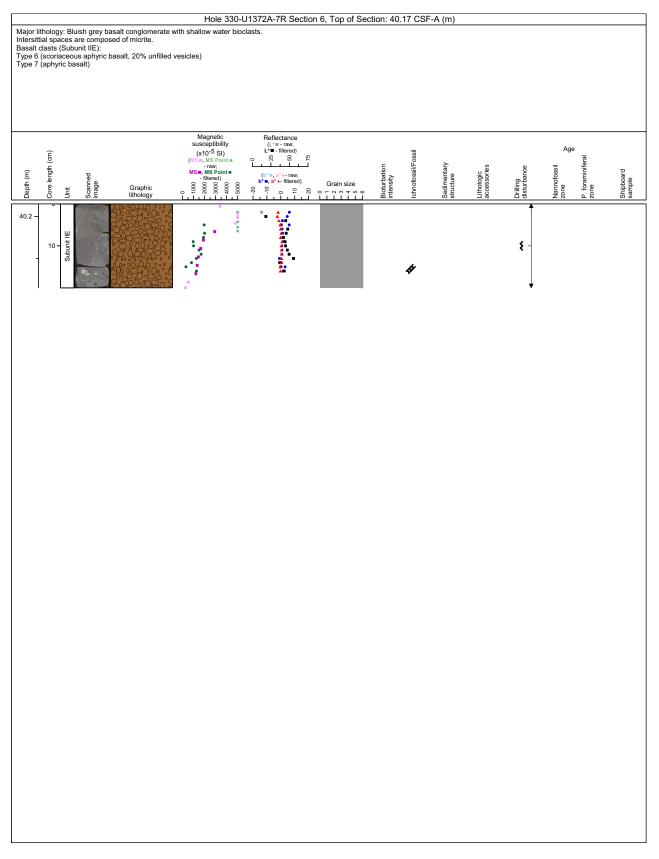




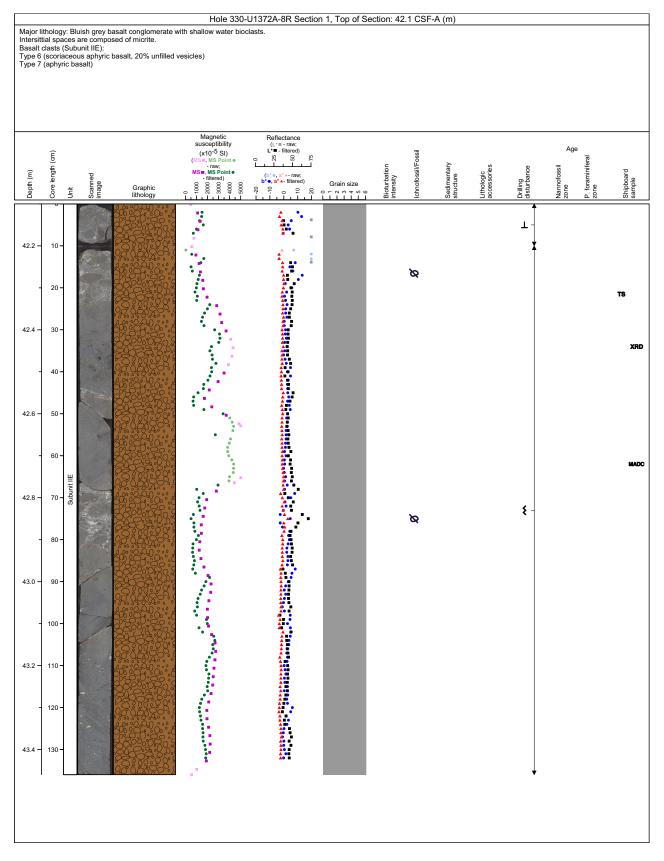


Interstit Basalt o Type 1 Type 2 Type 3 Type 4 Type 6	ial spac clasts (\$ (aphyrid (10% o (sparse (3% oliti (scoriad	ces are compos Subunit IID): c basalt with mi blivine-phyric bas ely olivine phyric vine-phyric bas	n): Multicolor basalt ed of abundant voic inor vesicles and fev salt with few vesicle to basalt with veins, i alt with few vesicles pasalt, 20% unfilled	conglomerate. d and cement, and mir w small olivine) es) no vesicles) s)	U1372A-7R Section	From 77 Bluish gru Intersittia Basalt cla Type 6 (s	cm: ey basalt o I spaces a asts (Subu	conglome are compo init IIE): is aphyric	erate with shosed of mic	nallow wate rite. % unfilled v			
Depth (m)	Core length (cm)	Unit Scanned image	Graphic lithology	Magnetic susceptibility (x10 ⁻⁵ SI) (MS =, MS Point e - raw; MS =, MS Point e - filtered) 000 00 00 00 00 00 00 00 00 00 00 00 00	Reflectance (L ⁺ ≡ - raw; L ⁺ ■ - filtered) 0 (b ⁺ ♥, a ⁺ → filtered) (b ⁺ ♥, a ⁺ → filtered) 02 02 04 04 05 04 04 05 04 04 04 04 04 04 04 04 04 04 04 04 04	Grain size ວ – ດ ຕ ຈ	Bioturbation intensity	Ichnofossil/Fossil	Sedimentary structure	Lithologic accessories	Drilling disturbance	Nannofossil Zone B B P. foraminiferal Zone	Shipboard sample
38.8 -	10 -	a. An											
39.0 -	20 - 30 -												
- 39.2 –		Subunit IID			1 21 224244444								
- 39.4 –	50 - 60 - 70 -										ŧ		
- 39.6 –	- 80 90 -					Ľ							
- 39.8 –	100 -	I									Î		
- 40.0	110 - 120 -	Subunit IIE						4 4			{ -		
-	130 - 140 -	and a start and									Ļ		

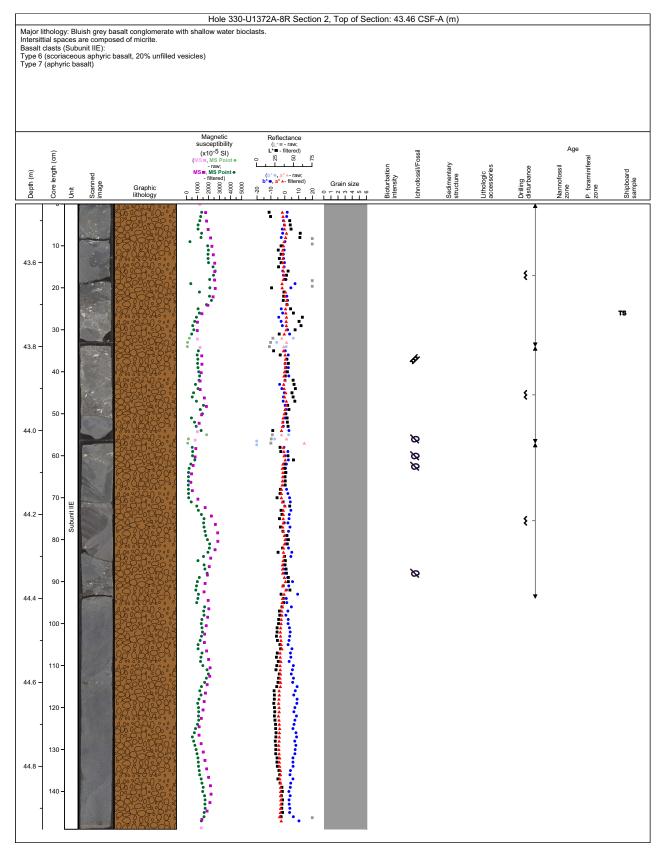




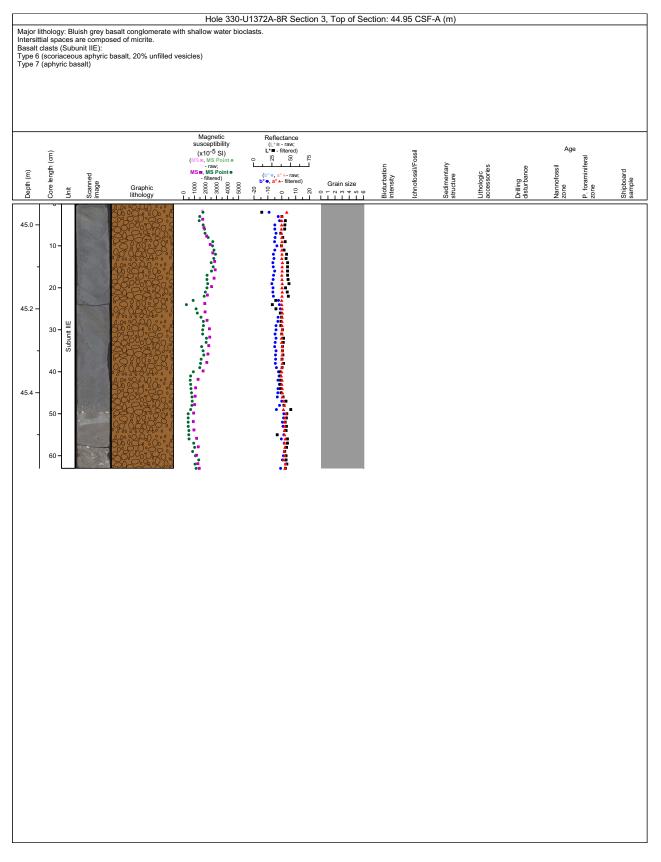




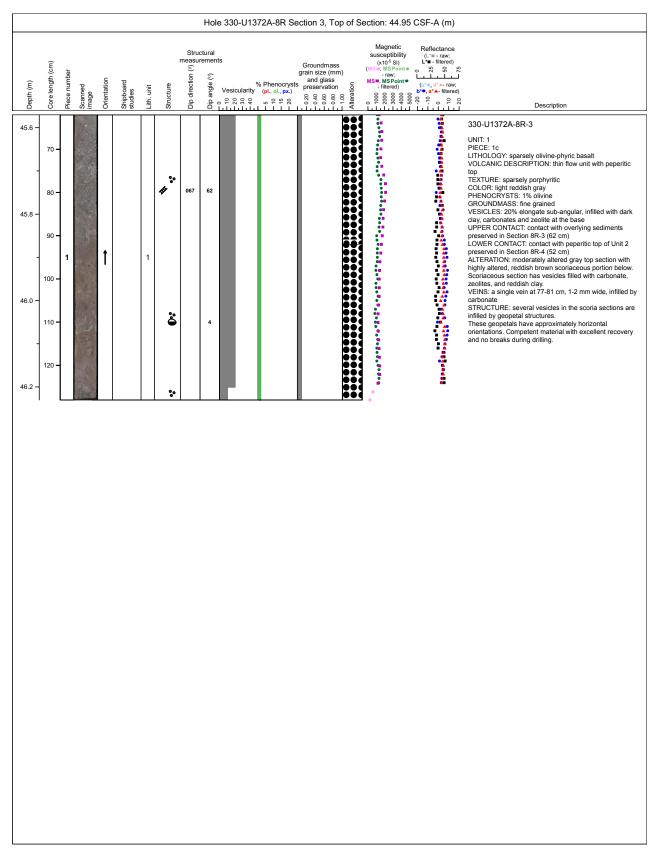














									Hole	e 330-U137	'2A-8R Se	ection 4, Top of Se	ection: 46.23	CSF-A (m)	
Depth (m)	Core length (cm)	Piece number	Scanned image	Orientation	Shipboard studies	Lith. unit	Structure	Dip direction (°) Dip direction	rement (₀) auĝle		Phenocrysts	Groundmass grain size (mm) and glass preservation 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Magnetic susceptibility (x10 ⁵ SI) (MS=, MSPointe - raw; MS=, MSPointe - filtered) 0000 000 000 - filtered)	Reflectance (⊥*= - raw; ⊥*= - filtered) 0; 0; 0; 0; 0; 0; 0; 0; 0; 0; 0; 0; 0; 0	Description
46.4 -	10 - 20 - 30 -				MADC PMG	1	°°						and successive the transmission of the second s		330-U1372A-8R-4 UNIT: 1 PIECE: 1a LITHOLOGY: sparsely olivine-phyric basalt (moderately olivine-phyric basalt based on thin section at 46.63-46.66 mbsf) VOLCANIC DESCRIPTION: thin flow unit with peperitic top TEXTURE: sparsely porphyritic COLOR: light reddish gray PHENOCRYSTS: 1% olivine GROUNDMASS: fine grained VESICLES: 20% elongate sub-angular, infillings are carbonate, zeolite UPERC CONTACT: contact with overlying sediments preserved in Section 3 (62 cm) LOWER CONTACT: contact with peperitic top of Unit 2 preserved (52 cm) ALTERATION: highly to completely altered with abundant zeolite, carbonate and white clay filling vesicles. VEINS: None. STRUCTURE: base of unit has an orientation 36/234. Competent material with excellent recovery, and no
46.8 -	50 - 60 - 70 -		A CALL					234	- 36						UNIT: 2 PIECE: 1a-g, 2 LITHOLOGY: sparsely olivine-phyric basalt VOLCANIC DESCRIPTION: thin flow unit with peperitic top TEXTURE: aphyric to sparsely porphyritic COLOR: light reddish gray PHENOCRYSTS: 0.5-1% olivine GROUNDMASS: fine grained VESICLES: 5-10%, low sphericity, subangular to very angular, infillings are carbonate, zeolite, patches of soil located at the scoriaceous top of this unit
47.0 -	80 - 90 -	1		1			% •							,	UPPER CONTACT: contact with base of Unit 1 preserved (52 cm) LOWER CONTACT: contact with base of Unit 1 preserved (52 cm) LOWER CONTACT: contact with peperitic top of Unit 3 in Section 5 (not preserved) ALTERATION: high to complete alteration of scoriaceous top with clays and carbonate in vesicles. VEINS: between 102-114 cm is an irregular interconnected vein and vesicle network, mainly filled with carbonate and yellowish white clay, while from 133-144 cm are three minor veins. STRUCTURE: competent material with excellent recovery and few breaks during drilling.
47.4 -	100 - 110 - 120 -					2	\$\$* 00 ₹ *							• 44 • 4 • 4 • 4 • 4 • 4 • 4 • 4 • 4	
47.6 -	130 - 140 -	2					₩ ₩ ₩°°	026	22						

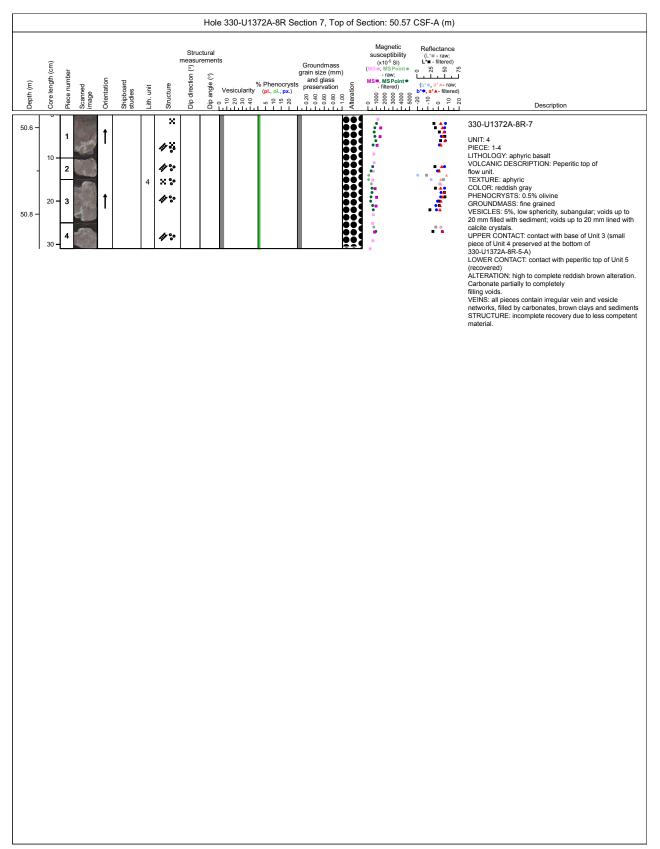


									Hole	e 330-U1372	2A-8R Se	ection 5, Top	of Se	ection: 47.73	CSF-A (m)	
Depth (m)	Core length (cm)	Piece number	Scanned image	Orientation	Shipboard studies	Lith. unit	Structure	Dip direction (°) Dip direction	angle (°)	% Vesicularity	Phenocrysts (pl., ol., px.)	Groundmass grain size (mm) and glass preservation	Alteration	Magnetic susceptibility (x10 ⁻⁵ SI) (MS =, MS Point = - raw; MS = MS Point = - filtered) 00 00 00 00 00 00 00 00 00 00 00 00	Reflectance (L*= - raw; L*= - filtered) (b*=, a*A - raw; b*, a*A - filtered)	
Dep	Č	- Liec	Sca	ŌŢ	Ship	Ē	Stru	Dip	Dip	49 30 50 10 10 10 10 10 10 10 10 10 10 10 10 10 1	- 10 - 15 - 20 - 20		Alte	-		Description
47.8 -	10 -	1		† †		2	&¥ *	090	90							330-U1372A-8R-5 UNIT: 2 PIECE: 14 LITHOLOGY: sparsely olivine-phyric basalt VOLCANIC DESCRIPTION: thin flow unit with peperitic top TEXTURE: aphyric to porphyritic COLOR: light reddish gray
48.0 –	20 - 30 -	3	MBIO	1	MBI		f	037	72							PHENOCRVSTS: 0.5-1% olivine GROUNDMASS: fine grained VESICLES: 5-10%, low sphericity, subangular to very angular, infillings are carbonate, zeolite and brown clay UPPER CONTACT: contact with base of Unit 1 preserved (52 cm) LOWER CONTACT: not recovered ALTERATION: highly altered, reddish gray basalt with completely altered olivine. Vesicles filled with carbonate,
- 48.2 –	40 - 50 -	5		1			*		~0							zeolite and brown clay. VEINS: thin veins and vein networks, infilled by carbonate and brown clay STRUCTURE: competent material, but with at least five breaks in recovery during drilling. UNIT: 3 PIECE: 5-9 LITHOLOGY: sparsely olivine-phyric basalt VOLCANIC DESCRIPTION: thin flow unit with peperitic top TEYTURE: solwing to percharging
- 48.4 –	60 - 70 -	6			MADC		°°°									TEXTURE: aphyric to porphyritic COLOR: light reddish gray PHENOCRYSTS: 0.5-1% olivine GROUNDMASS: fine grained VESICLES: up to 20%, low sphericity, subrounded to elongated, subangular, infillings are carbonate, zeolite and brown clay UPPER CONTACT: not recovered LOWER CONTACT: not recovered ALTERATION: highly altered, reddish gray and reddish brown basalt with abundant open, partially filled, and
- 48.6 –	80 - 90 -	7		1		3	T									completely filled vesicles with carbonate, zeolite and brown clay. VEINS: a single vein between 83-89 cm, 0.5 to 3 mm thick, filled by carbonate and brown clay STRUCTURE: several vesicles in the scoria sections are filled by geopetal structures, which are orientated in a horizontal direction.
- 48.8 –	100 - 110 -	8		1			°,0									
- 49.0	120 - 130 -	9		1	PMG MADC		•		~0							

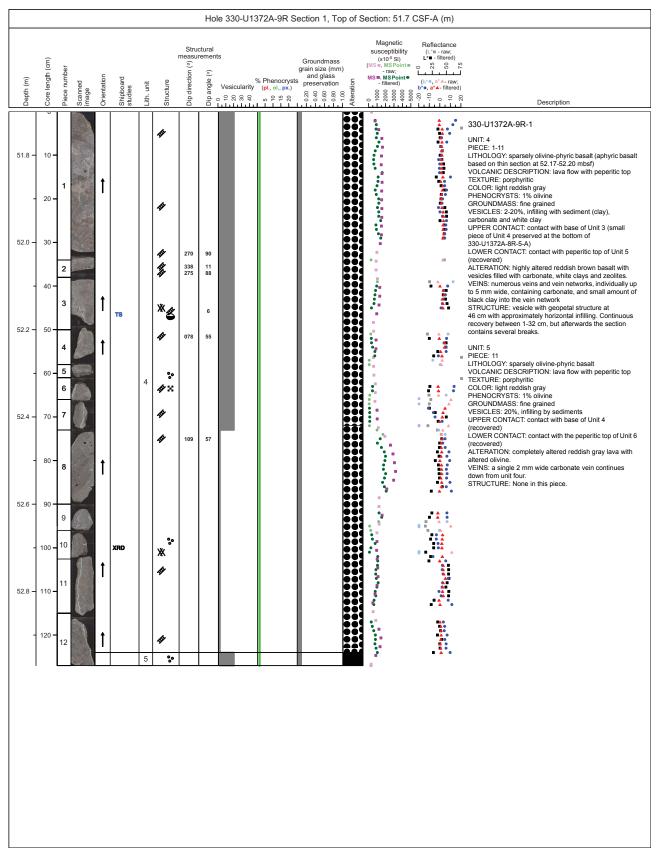


									Hole	e 330-U137	72A-8R Se	ection 6, Top of	of Se	ection: 49.07	CSF-A (m)	
Depth (m)	Core length (cm)	Piece number	Scanned image	Orientation	Shipboard studies	Lith. unit	Structure	Dip direction (°) Bip direction		Vesicularity	6 Phenocrysts (pl., ol., px.) ہے 1 1 1	Groundmass grain size (mm) and glass preservation 2 0 0 0 0	Atteration	Magnetic susceptibility (x10 ⁵ SI) (MS=, MSPointe - raw; MS=, MSPoint= - filtered) 000000000000000000000000000000000000	Reflectance (L [*] ≡ - raw; L [*] ≡ - filtered) 0 10 ⁵ °, a [*] - raw; b [*] °, a [*] - filtered) 0 0 0 0 0 0 0 0 0 0 0 0 0	Description
49.2 -	10 - 20 -		and the second		MADC		°.°							······································		330-U1372A-8R-6 UNIT: 4 PIECE: 1a-d, 2, 3a-d LITHOLOGY: aphyric basalt breccia (aphyric basalt breccia based on thin section at 50.21-50.25 mbsf) VOLCANIC DESCRIPTION: peperitic top of flow unit TEXTURE: aphyric COLOR: reddish gray PHENOCRYSTS: 0.5% olivine GROUNDMASS: fine grained VESICLES: 5%, low sphericity, subangular; voids up to
49.4 -	30 - 40 -				NAUC											60 mm filled with sediment; voids up to 20 mm lined with calcite crystals. UPPER CONTACT: contact with base of Unit 3 (small piece of Unit 4 preserved at the bottom of 330-U1372A-98F-A) LOWER CONTACT: contact with peperitic top of Unit 5 (recovered) ALTERATION: high to complete alteration with olivine completely replaced by iddingsite. Void spaces filled with
- 49.6	50 -	1	The second	T			TH	233	71							completely replaced by iddingsite. Void spaces filled with carbonate. VEINS: several veins and vein networks up to 5 mm wide, filled by carbonates, and a small amount of green and brown clays STRUCTURE: several vesicles are infilled by geopetal structures, which are orientated in an approximately horizontal direction. Generally competent material with excellent recovery.
- 49.8 -	60 - 70 -		Jan .				•		7 0							
49.0	80 –	2				4	** •		~0							
50.0 -	90 - 100 -						*									
50.2 -	110 - 120 -	3		t	TS											
- 50.4 -	130 -			1			1		~0							
-	140 -		X				TH TH									









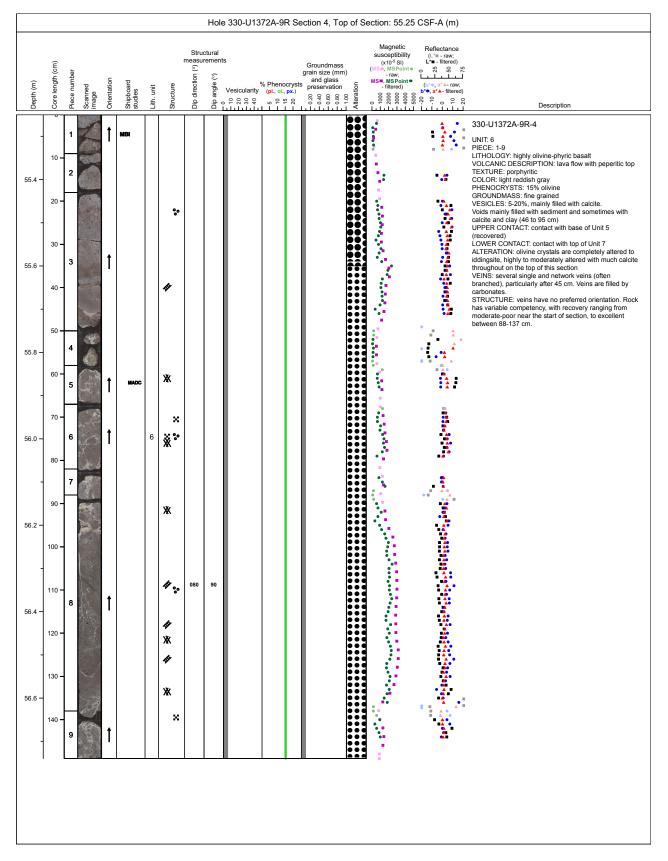


									Hole	e 330-U13	72A-9R Se	ection 2, Top	of Se	ection: 52.97	CSF-A (m)	
Depth (m)	Core length (cm)	Piece number	Scanned image	Orientation	Shipboard studies	Lith. unit	Structure	Dip direction (°) Dip direction	Dip angle (°)	Vesicularity	6 Phenocrysts	Groundmass grain size (mm) and glass preservation	ion	Magnetic susceptibility (x10 ⁻⁵ SI) (MS=, MSPointe - raw; MS=, MSPointe - filtered) 000 00 00 00 00 01 11 11 11	Reflectance (L*■ - raw; L*■ - filtered) 0 92 (b*•, a*▲ - raw; b*•, a*▲ - raw; b*•, a*▲ - filtered) 0? 0 0? 0	Description
53.0 - 53.2 - 53.4 - 53.6 - 53.8 -	^a <u>e</u> <u>s</u> <u>s</u> <u>s</u> <u>s</u> <u>s</u> <u>s</u> <u>s</u> <u>s</u> <u>s</u> <u>s</u>			Orienta	PMG MADC	۲۵ (Lift.un	Structu Structu	1117 241	9 9 46			- 20				Jaburging Jaburg



									Hole	e 330-U13	72A-9R Se	ction 3, Top of Se	ection: 53.83	CSF-A (m)	
Depth (m)	Core length (cm)	Piece number	Scanned image	Orientation	Shipboard studies	Lith. unit	Structure	Dip direction (°) Dip direction	Dip angle (°)	Vesicularity	6 Phenocrysts	grain size (mm)	Magnetic susceptibility (x10 ⁵ SI) (MS=, MSPointe - raw; MS=, MSPointe - filtered) 000000000000000000000000000000000000	Reflectance (⊥*= - raw; ⊥*= - filtered) (p*•, a* ▲- raw; b*•, a* ▲- raw; b*•, a* ▲- raw; b*•, a* ▲- raw; b*•, a* ▲- raw;	Description
- 54.0 –	10 - 20 -					5	22.55							1	330-U1372A-9R-3 UNIT: 5 PIECE: 1 LITHOLOGY: sparsely olivine-phyric basalt (moderately olivine-phyric basalt based on thin section at 54.84-54.90 mbs1 VOLCANIC DESSCRIPTION: lava flow with peperitic top TEXTURE: porphyritic COLOR: light reddish gray PHENOCRYSTS: 1% olivine GROUNDMASS: fine grained VESICLES: 20%, partially to completely infilled
- 54.2 –	30 - 40 -	1		1			1 1 4							8687955989998989899898	by carbonate and sediment UPPER CONTACT: contact with base of Unit 4 (recovered) LOWER CONTACT: contact with the peperitic top of Unit 6 (recovered) ALTERATION: olivine crystals completely altered to iddingsite, slightly altered base of flow Unit 5, brown alteration VEINS: none in this section STRUCTURE: competent material with excellent recovery and no breaks during drilling.
54.4 -	50 - 60 - 70 -						411	177	21						UNIT: 6 PIECE: 1, 2a, b, 3 LITHOLOGY: highly olivine-phyric basalt VOLCANIC DESCRIPTION: lava flow with peperitic top TEXTURE: porphyritic COLOR: light reddish gray PHENOCRYSTS: 15% olivine GROUNDMASS: fine grained VESICLES: 5-20%, voids that are partially to completely filled with calcite and clay mixtures UPPER CONTACT: contact with base of Unit 5 (recovered) LOWER CONTACT: contact with top of Unit 7
54.6 -	80 - 90 -					6	**	117	24						LUPPER CONTACT Is contact with rolp of offmit ALTERATION: Olivine crystals completely altered to iddingsite, reddish brown moderate to high alteration, peperitic top is highly altered VEINS: few single veins, 1-2 mm wide, filled by carbonate STRUCTURE: rock is competent, with excellent recovery and few breaks during drilling.
54.8 -	100 - 110 -	2		T	TS		**								
55.0 - - 55.2 -	120 - 130 -	3		1			Ţ.								
	140 -				[;		







									Hole	330-U13	72A-9R S	ection 5, Top of	f Se	ction: 56.74 (CSF-A (m)	
Depth (m)	Core length (cm)	Piece number	Scanned image	Orientation	Shipboard studies	Lith. unit	Structure	Dip direction (°)	ements () alde		6 Phenocry: (pl., ol., px.) 요 은 또 있 니 니 니	Groundmass grain size (mm) and glass preservation 200 00 00 00 00 00 00 00 00 00 00 00 00 0	Alteration	Magnetic susceptibility (x10 ⁻⁵ SI) (MS=, MSPoint • - raw; MS=, MSPoint • - filtered) 000000 000000000000000000000000000000	Reflectance (L [™] - raw; L [™] - filtered) 25 (b [∞] , a [*] A - raw; b [∞] , a [*] A - filtered) (b [∞] , a [*] A - filtered)	Description
56.8 -	10 -	1		1												330-U1372A-9R-5 UNIT: 6 PIECE: 1-8 LITHOLOGY: highly olivine-phyric basalt VOLCANIC DESCRIPTION: Iava flow with peperitic top TEXTURE: porphyritic COLOR: light reddish gray in pieces 1-5; dark greenish
57.0 -	20 - 30 -	2	1. A. I.	1			* X									gray in Pieces 6-8 PHENOCRYSTS: 15% olivine GROUNDMASS: fine grained VESICLES: 0-20%, filled with calcite and clay mixtures, at the bottom fairly abundant vesicles (~15%) with a light green clay UPPER CONTACT: contact with base of Unit 5 (recovered) LOWER CONTACT: contact with top of Unit 7 ALTERATION: 0-36 cm olivine crystals completely altered
- 57.2 –	40 - 50 -	4	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	1			1			•						to iddingsite, moderately altered with abundant voids; 63-150 cm fresh basalt and olivine crystals VEINS; straight, branched, and network veins up to 3 mm wide STRUCTURE: veins have no predominant structural direction. Rock varies from competent to friable depending on alteration.
- 57.4 –	60 - 70 -				XRD											
- 57.6 -	80 - 90 -	5	Strange -	1		6	× *						· · · · · · · · · · · · · · · · · · ·			
- 57.8 –	100 -	6		1			•••									
-	110 - 120 -	7	- Maria	t	PMG MADC								· · · · · · · · · · · · · · · · · · ·			
-	130 - 140 -													*		
58.2 -		8														

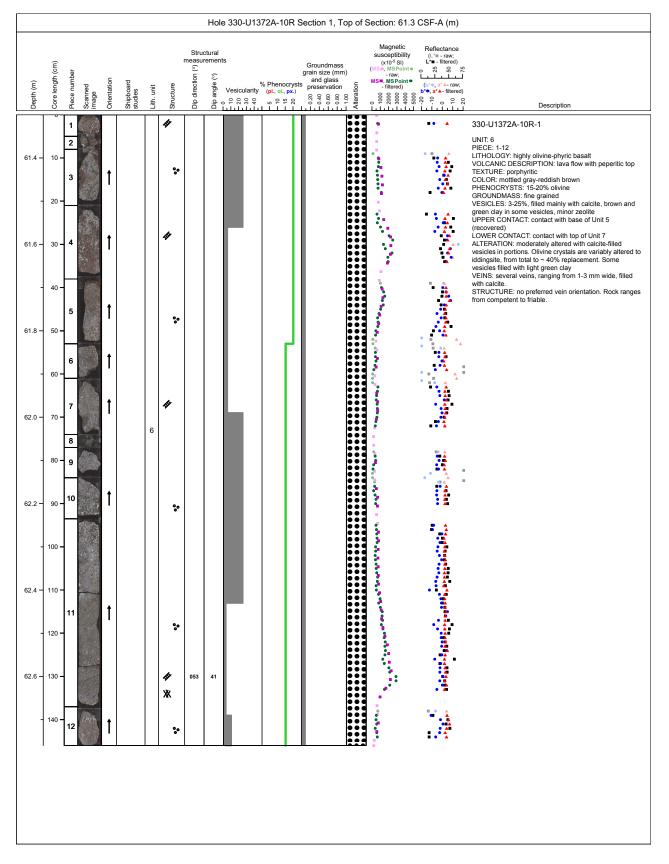


									Hole	e 330-U137	72A-9F	R Se	ction 6, Top	of Se	ection: 58.24	CSF-A (m)	
Depth (m)	Core length (cm)	Piece number	Scanned image	Orientation	Shipboard studies	Lith. unit	Structure	Struc measure (₀) Dip direction	ement:	Vesicularity	6 Pheno (pl., ol., ు, 은 ళ I I I	crysts px.)	Groundmass grain size (mm) and glass preservation	tion	Magnetic susceptibility (x10 ⁵ SI) (MS=, MSPointe - raw; MS=, MSPoint= - filtered) 00 00 00 00 00 00 00 00 00 00 00 00 00	Reflectance (⊥ ⁺ = - raw; ⊥ ⁺ = - filtered) (b ⁺ •, a ⁺ → - raw; b ⁺ \to - raw	Description
- 59.4 —	10 - 20 - 30 - 30 - 40 - 50 - 60 - 70 - 80 - 90 - 110 - 120 - 130 -	4 5 6 7 8		† † † † †	XRF	6	↓										330-U1372A-9R-6 UNIT: 6 PIECE: 19 UITHOLOSY: highly olivine-phyric basalt (highly olivine- phyric basalt based on thin section at 58.64-58.66 mbsf) VOLCANIC DESCRIPTION: laval flow with peperitic top TEXTURE: pophyritic COLOR: dark greenish gray PIENOCRYSTS: 15-20% olivine GROUNDMASS: fine grained VESICLES: 01%, filled with sediment and green clay UPPER CONTACT: contact with base of Unit 5 (recovered) UIVER CONTACT: contact with top of Unit 7 ALTERATION: fresh basalt and olivine, some iddingsite at the end of this section VEINS: occasional veins less than 3 mm wide, filled by carbonate and green clay STRUCTURE: rock varies from competent to friable depending on alteration.



									Hol	e 330-U13	372A-9R S	ection 7, To	p of S	ection: 59.6 (CSF-A (m)	
Depth (m)	Core length (cm)	Piece number	Scanned image	Orientation	Shipboard studies	Lith. unit	Structure	Dip direction (°) Dip direction	ngle (°)		% Phenocrysts (pl., ol., px.) ట్రైల్లో ని	Groundmass grain size (mm) and glass preservation	tion	Magnetic susceptibility (x10 ⁵ SI) (MS=, MSPointe - raw; MS=, MSPointe - filtered) 000000000000000000000000000000000000	Reflectance (⊥*m - raw; 28 (1)**•• filtered) 22 (1)*•• a*▲- raw; 24 25 25 24 24 25 26 24 25 26 25 24 25 26 26 27 26 26 27 26 26 27 26 26 27 26 26 27 26 26 27 26 26 27 27 26 27 27 26 27 27 27 27 27 27 27 27 27 27 27 27 27	Description
59.8 - 59.8 - 60.0 - 60.2 - 60.4 - 60.6 - - 60.8 -	10 - 20 - 30 - 40 - 50 - 60 - 70 - 80 - 90 - 100 - 110 -			1 1 1 1	PMG	6	***********									330-U1372A-9R-7 UNIT: 6 PIECE: 1-9 LITHOLOGY: highly olivine-phyric basalt VOLCANIC DESCRIPTION: lava flow with peperitic top TEXTURE: porphyritic COLOR: light reddish gray PHENOCRYSTS: 20% olivine GROUNDMASS: fine grained VESICLES: 1-20%, filled with sediment and calcite, vugs (1-2 cm wide) lined with calcite crystals UPPER CONTACT: contact with top of Unit 7 (recovered) LOWER CONTACT: contact with top of Unit 7 ALTERATION: olivine crystals are completely altered to iddingsite, moderately altered, reddish brown in color VEINS: straight or irregular veins up to 2 mm wide, containing carbonate STRUCTURE: rock ranges from competent to friable. Veins have no preferred orientation.







									Hole	330-U137	'2A-10F	R Se	ection 2, Top of S	Section: 62.76	CSF-A (m)	
Depth (m)	Core length (cm)	Piece number	Scanned image	Orientation	Shipboard studies	Lith. unit	Structure	Dip direction (°) aug	ctural rement (₀) angle (₀)	Vesicularity	5 15 15	rysts x.)	Groundmass grain size (mm) and glass preservation 60 00 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Magnetic susceptibility (x10 ⁻⁵ SI) (MS =, MS Pointe - raw; MS =, MS Pointe - filtered) 0 0 0 0 0 00 00 00 00 00 00 00 00 00 00	Reflectance (L*■ - raw; L*■ - filtered) 0 1 0 1 0 1 0 1 0 1 0 1 0 1 0 1 <tr tr=""> <tr tr=""></tr></tr>	Description
62.8 - - - - - - - - - - - - - - - - - - -	10 - 20 - 30 - 40 - 50 - 60 - 70 - 80 - 90 -			1 1 1		6	500 1 1	045	14					لى ^{لى} ئەمەمەر مەمەرىلىدە، ئەمەرى _{تىر} مەمەرىيەن ، ئەرىكىكىكىكىكىكىكىكىكىكىكىكىكىكىكىكىكىكىك		330-U1372A-10R-2 UNIT: 6 PIECE: 1-3 LITHOLOGY: highly olivine-phyric basalt VOLCANIC DESCRIPTION: lava flow with peperitic top TEXTURE: pother services and the provided of the provided of the provided and the provided of the provided
63.8 -	100 · 110 · 120 · 130 ·	6		t		7	*									



									Hole	330-U137	2A-10R Se	ection 3, To	p of S	ection: 64.07	CSF-A (m)	
	÷							measu	ctural rement:	5		Crown I		Magnetic susceptibility (x10 ⁻⁵ SI)	Reflectance (L*≡ - raw; L*■ - filtered)	
Depth (m)	Core length (cm)	i	Piece number Scanned image	Orientation	Shipboard studies	Lith. unit	Structure	Dip direction (°)	Dip angle (°)	Vesicularity	Phonocryste	procertation	Alteration	(MS■, MSPoint● - raw; MS■, MSPoint● - filtered) 000000000000000000000000000000000000	0 2 2 2 2 2 2 2 3 2 2 3 2 3 2 3 2 3 2 3	Description
64.2 - 64.4 - 64.6 - 64.8 - 65.0 - 65.2 - 65.4 -	10 20 30 40 50 60 70 80 90 100 110 110 110		2 0) - = 2 0) - = 3 0 4 0 5 0 6 0 7 0 8 0 9 0 1 0		PMG	8	* * * * * * *									330-U1372A-10R-3 UNIT: 7 PIECE: 1-13 LITHOLOGY: aphyric basalt VOLCANIC DESCRIPTION: lava flow with scoriaceous top and base with massive core TEXTURE: aphyric, amygdaloidal COLOR: medium gray PHENOCRYSTS: 0.5% olivine GROUNDMASS: fine grained VESICLES: 3-10%, large vesicles with prismatic calcite in interiors UPPER CONTACT: contact with base of Unit 6 (recovered) LOWER CONTACT: not recovered in Section 10R-3A, inferred from change of olivine phenocryst abundance and size ALTERATION: moderate alteration. Olivine crystals 100% altered to iddingsite VEINS: veins and vein networks up to 10 mm wide, filled with calcite STRUCTURE: veins are generally irregular, although some are steeply diping. Rock competency and recovery ranges from poor to good. UNIT: 8 PIECE: 14-15 LITHOLOGY: sparsely olivine-phyric basalt VOLCANIC DESCRIPTION: Iava flow with scoriaceous top and base with massive core TEXTURE: porphyritic COLOR: medium gray PHENOCRYSTS: 1% olivine (completely altered) GROUNDMASS: fine grained VESICLES: 10%, filled with calcite LIPPER CONTACT: not recovered in Section 10R-3A, inferred from change of olivine phenocryst abundance and size, inferred from change of olivine crystals 100% altered LOWER CONTACT: recovered in Section 10R-3A, inferred from change of olivine crystals 100% altered LOWER CONTACT: recovered in Section 10R-3A, inferred from change of olivine crystals 100% altered VEINS: calcite veins and vein networks, interconnected with the vesicles. STRUCTURE: vein networks have no preferred orientation. Rock competency is good.

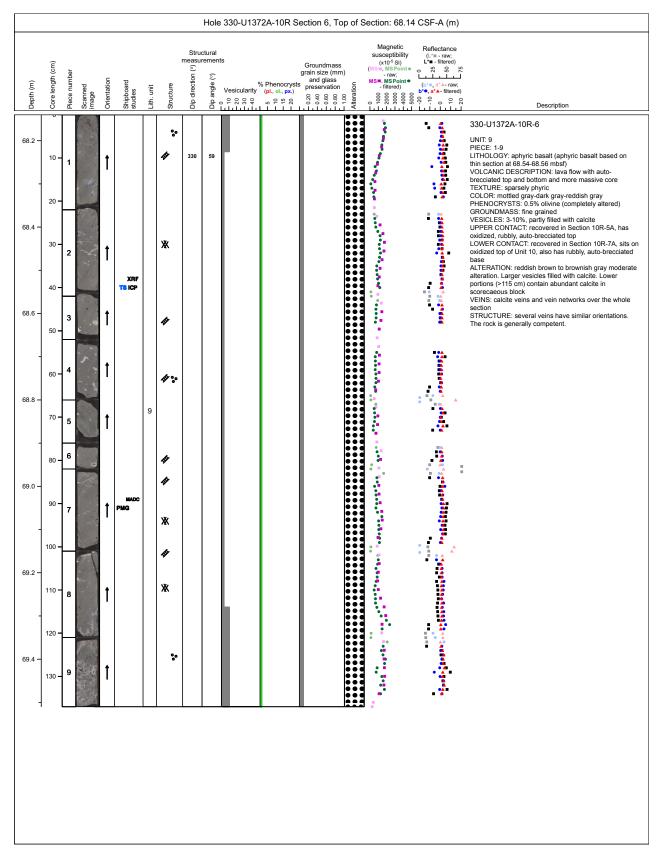


									Hole	330-U137	2A-10R Se	ection 4, Top of S	Section: 65.47	CSF-A (m)	
Depth (m)	Core length (cm)	Piece number	Scanned image	Orientation	Shipboard studies	Lith. unit	Structure	Dip direction (°) Bruck	ement:	Vesicularity	Phenocrysts	Groundmass grain size (mm) and glass preservation 5 8 0 0 0 0 0 0 0 0 8 0 0 0 0 0 0 0 0 9 0 0 0 0 0 0 0 0 0 9 0 0 0 0	Magnetic susceptibility (x10 ⁵ SI) (MS m, MS Point • - raw; MS =MS Point • - filtered) 00 00 00 00 00 00 00 00 00 00 00 00 00	Reflectance (L ⁺ m - raw; L ⁺ m - filtered) 0 S2 (b ⁺ e, a ⁺ A - raw; b ⁺ e, a ⁺ A - filtered) 00 0 0 0 0 0 0 0	Description
- 65.6 -	10 - 20 -						TE								330-U1372A-10R-4 UNIT: 8 PIECE: 1a-1b LITHOLOGY: sparsely olivine-phyric basalt VOLCANIC DESCRIPTION: lava flow with auto- brecciated top and bottom and more massive core TEXTURE: sparsely porphyritic COLOR: medium gray PHENOCRYSTS: 1% olivine (completely altered) GROUNDMASS: fine grained
65.8 -	30 - 40 -														VESICLES: 3-10% (patches of the higher vesicularity, i.e, 10%), filled by calcite UPPER CONTACT: not recovered in Section 10R-3A, inferred from change of olivine phenocryst abundance and size, inferred from rubbly and auto-brecciated texture LOWER CONTACT: recovered in Section 10R-5A, sits on oxidized top of Unit 9, also has rubbly, auto-brecciated base ALTERATION: moderate reddish brown to gray alteration in upper 55 cm soriaceous portion. Vesicles filled with calcite. Olivine altered to iddingsite throughout section
- 66.0 –	50 - 60 -						° °						۰ ^۰ ۰۰, ۱۰۰, ۱۰۰, ۱۰۰, ۱ ^{۰۰}	• • • • • • • • • • • • • • • • • • • •	VEINS: calcite veins up to 5 mm wide, also a carbonate filled vein network from 111-132 cm. STRUCTURE: veins and networks are irregular and not oriented. Rock is competent, with excellent recovery.
- 66.2 -	70 - 80 -	1		t		8									
- 66.4 -	90 - 100 -						I								
- 66.6	110 - 120 -				PMG Madc		°,•								
- 66.8 –	130 -						*							- 22-22 - 22 - 22 - 22 - 22 - 22 - 22	

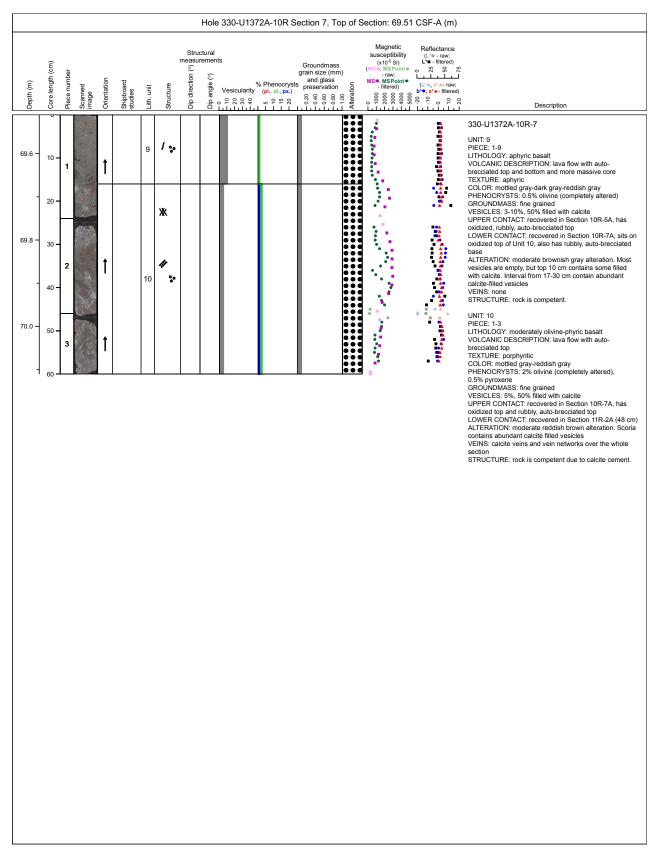


									Hole	330-U137	2A-10R S	ection 5, To	p of S	ection: 66.85	CSF-A (m)	
	(mc	L						Struc measur ©		3		Groundmass		Magnetic susceptibility (x10 ⁻⁵ SI) (MS=, MSPoint●	Reflectance (L*≡ - raw; L*■ - filtered) 0 \$2 \$2 \$2	
Depth (m)	Core length (cm)	Piece number	Scanned image	Orientation	Shipboard studies	Lith. unit	Structure	Dip direction (Dip angle (°)	Vesicularity	6 Phenocrysts	preservation	aration (- raw; MS=, MS Point • - filtered) 000 000 000 000 000 000 000 000 000 000 000	(b*●, a*▲- raw;	Description
- 67.0 –	10 -	1	TRON	† †			*									330-U1372A-10R-5 UNIT: 8 PIECE: 1a-5 LITHOLOGY: sparsely olivine-phyric basalt VOLCANIC DESCRIPTION: lava flow with auto- brecciated top and bottom and more massive core TEXTURE: sparsely porphyritic COLOR: medium gray PHENDCRYSTS: 1% olivine (completely altered)
- 67.2 –	20 - 30 -	3		1		8	*									GROUNDMASS: fine grained VESICLES: 10%, partly filled with calcite UPPER CONTACT: not recovered in Section 10R-3A, inferred from change of olivine phenocryst abundance and size, inferred from rubbly and auto-brecciated texture LOWER CONTACT: recovered in Section 10R-5A, sits on oxidized top of Unit 9, also has rubbly, auto-brecciated base ALTERATION: moderate reddish brown to gray alteration.
_	40 - 50 -	4		1			°.•									Olivine totally altered to iddingsite VEINS: irregular calcite vein network from 7-37 cm, up to 0.5 cm calcite crystals STRUCTURE: between 44-46 cm, vesicles are aligned along an azimuth of ~ 180°. Rock is competent with good recovery. UNIT: 9 PIECE: 5-8b LITHOLOGY: aphyric basalt
67.4 -	60 - 70 -	5		† †			*.									VOLCANIC DESCRIPTION: lava flow with auto- brecciated top and bottom and more massive core TEXTURE: sparsely phyric COLOR: mottled gray-dark gray-reddish gray PHENOCRYSTS: 0.5% olivine (completely altered) GROUNDMASS: fine grained VESICLES: 10%, partly filled with calcite UPPER CONTACT: recovered in Section 10R-5A, has
67.6 -	80 -	7		1			*									oxidized, rubbly, auto-brecciated top LOWER CONTACT: recovered in Section 10R-7A, sits on oxidized top d unit 10, also has rubbly, auto-brecciated base ALTERATION: moderately altered, gray color. Olivine altered to iddingsite VEINS: from 65-103 cm have calcite vein network infilling and cementing former voids in the auto-breciated lava. Also have vein network between 117-122 cm STRUCTURE: between 61-63 cm, vesicles are aligned
67.8 -	90 - 100 -					9	ж									along an azmiuth of 122°. Rock is competent with good recovery.
68.0 -	110 - 120 -	8		1			* *									
1					<u> </u>		<u> </u>					<u> </u>		i.		





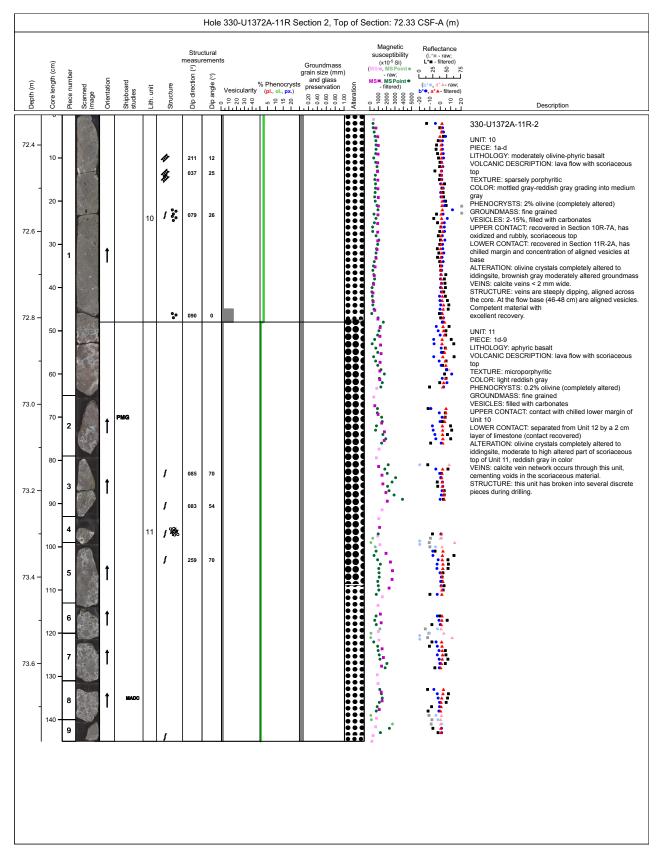




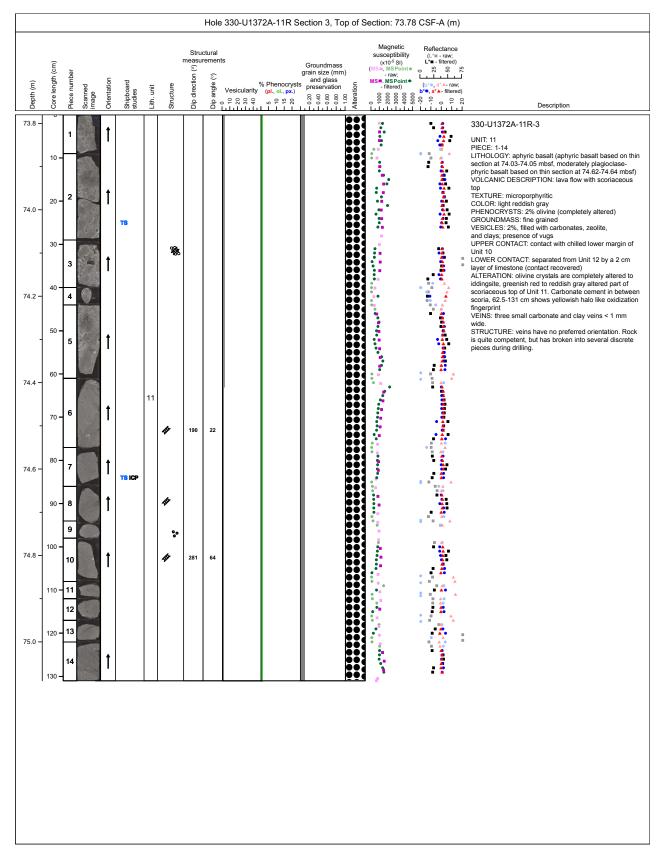


									Hole	e 330-U137	2A-11R S	ection 1, Top of	Section: 70.9	CSF-A (m)	
Depth (m)	Core length (cm)	Piece number	Scanned image	Orientation	Shipboard studies	Lith. unit	Structure	Dip direction (°) Dip direction	ement (₀) außle	Wesicularity %	Phenocrysts	Groundmass grain size (mm) and glass preservation 000 000 000 000 000 000 000000	Magnetic susceptibility (x10 ⁵ SI) (MS =, MS Point = - raw; MS =, MS Point = - filtered) 000000000000000000000000000000000000	Reflectance (^{[,2} "= - raw; L*≡ - filtered) 0 50 9 52 (b*0, a*4 - raw; b*0, a*4 - filtered) 0, 0, 0, 0 0 0, 0 0, 0 0 0, 0 0, 0 0 0, 0 0 0, 0 0 0, 0 0 0, 0 0 0, 0 0 0 0, 0 0 0 0, 0 0 0 0	Description
71.0 - - 71.2 - - 71.4 - - 71.6 - - 71.8 - - 71.8 - - 72.0 - - 72.2 -	10 - 20 - 30 - 50 - 60 - 70 - 80 - 90 - 110 - 120 - 130 - 140 -			t t	PMCI Temado	10		284 067 247 270	8 62 20				•-		 330-U1372A-11R-1 UNIT: 10 PIECE: 2a-10 (piece 1 is drilling rubble) LITHOLOGY: moderately olivine-phyric basalt (aphyric basalt based on thin section at 71.52-71.54 mbsf, sparsely lagolcase-phyric basalt based on thin section at 71.75-71.77 mbsf) VOLCANC DESCRIPTION: lava flow with scoriaceous top COLOR: motiled gray-reddish gray grading into medium gray PHENCCRYSTS: 2% olivine (completely altered) GROUNDMASS: fine grained VESICLES: 2-5% up to 50% filed with carbonate and zeolite UPPER CONTACT: recovered in Section 10R-7A, has oxidized and rubbly, scoriaceous top LOWER CONTACT: recovered in Section 11R-2A, has chilled margin and concentration of aligned vesicles at base LATERATION: reddish brown to light brownish gray, highly altered part of scoriaceous top and massive part of funit 0, olivine crystals are completely altered to iddingsite. VEINES: calcite and brown clay vein network between 4-35 cm, cementing scoriaceous blocks. Lower in the section are isolated calcite veins up to 3 nm wide. STRUCTURE: no preferred vein orientation. Rock competency is high early in the section. Dut after 118 cm, there are four rounded and non-oriented pieces.











									Hole	330-U137	'2A-11R S	ection 4, Top	o of Se	ection: 75.09	CSF-A (m)	
	Ê							measur	ctural rement	s		Groundmass		Magnetic susceptibility (x10 ⁻⁵ SI)	Reflectance (L*≡ - raw; L*■ - filtered)	
Depth (m)	Core length (cm)	Piece number	Scanned image	Orientation	Shipboard studies	Lith. unit	Structure	Dip direction (°)	Dip angle (°)	Vesicularity	% Phenocrysts (pl., ol., px.) ゅ 은 약 입	grain size (mm)	tion	MS=, MSPointe - raw; MS=, MSPointe - filtered)		Description
- 75.2	10 - 20 -	1		t			₩°°°	270	12						2,9933238938989895666688333389	330-U1372A-11R-4 UNIT: 11 PIECE: 1-3 LITHOLOGY: aphyric basalt VOLCANIC DESCRIPTION: lava flow with scoriaceous top TEXTURE: aphyric COLOR: mid gray PHENOCRYSTS: 0.1% olivine microphenocrysts (completely altered) GROUNDMASS: fine grained
75.4 -	30 -															VESICLES: 1-2%, partially to completely filled with carbonate, zeolite, dark clay, iron oxides, and presence of a blue coating in some unfilled vesicles UPPER CONTACT: contact with chilled lower margin of Unit 10 LOWER CONTACT: separated from Unit 12 by a 2 cm layer of limestone (contact recovered)
-	40 -	2		 †										******		ALTERATION: 0-20 cm moderately altered, brownish color, olivine crystals completely altered to iddingsite, 20 cm to end of section slightly altered part of Unit 11 VEINS: five carbonate veins <1 mm wide STRUCTURE: four of the five veins have a similar orientation. Competent material with excellent recovery.
75.6 -	50 - 60 -			•		11	B	215	70					*		
75.8 -	70 -						** **	264	20							
-	80 -						¥	204	20							
76.0 -	90 - 100 -	3		1												
76.2 -	110 -				PMG		F	243	11							
	120 -				MADC		T	195	16					÷.	21	



									Hole	e 330-U13	72A-11R S	Section 5, Top of	Section: 76.3	CSF-A (m)	
Depth (m)	Core length (cm)	Piece number	Scanned image	Orientation	Shipboard studies	Lith. unit	Structure	Dip direction (°) Dip direction	(°) algn		% Phenocrysts (pl., ol., px.) ₀ ♀ ♀ 윊	Groundmass grain size (mm) and glass preservation 00 00 0 0 0 00 00 0 0 0 0 0 00 0 0 0 0	Magnetic susceptibility (x10 ⁵ SI) (MS=, MSPointe - raw; MS=, MSPointe - filtered) 000000000000000000000000000000000000	Reflectance (L [*] ≡ - raw; L [*] ≡ - filtered) 92 (b [*] •, a [*] ▲ - filtered) (b [*] •, a [*] ▲ - filtered) 02, -0, -0, -0, 02 -0, -0, -0, -0, 02 -0, -0, -0, -0, -0, 02 -0, -0, -0, -0, -0, -0, -0, -0, -0, -0,	Description
76.4 -	10 - 20 - 30 - 40 - 50 - 60 - 70 - 80 - 90 -		A ANNA A	t t			\$ \$	104 259 090 315 249 000	45 10 14 23 10						330-U1372A-11R-5 UNIT: 11 PIECE: 1-3 LITHOLOGY: aphyric basalt VOLCANIC DESCRIPTION: lava flow with scoriaceous top TEXTURE: aphyric COLOR: mid gray PHENOCRYSTS: 0.1% olivine microphenocrysts (completely altered) GROUNDMASS: fine grained VESICLES: 0.5%, filled with carbonate, zeolite, and black minerals (clay?) UPPER CONTACT: separated from Unit 12 by a 2 cm layer of limestone (contact recovered) ALTERATION: olivine crystals are completely altered to iddingsite medium gray slightly altered part of Unit 11, carbonate cement in between each scorias (30%) VEINS: five veins, < 2 mm wide, filled by carbonate, and small amount of zeolite and green clay

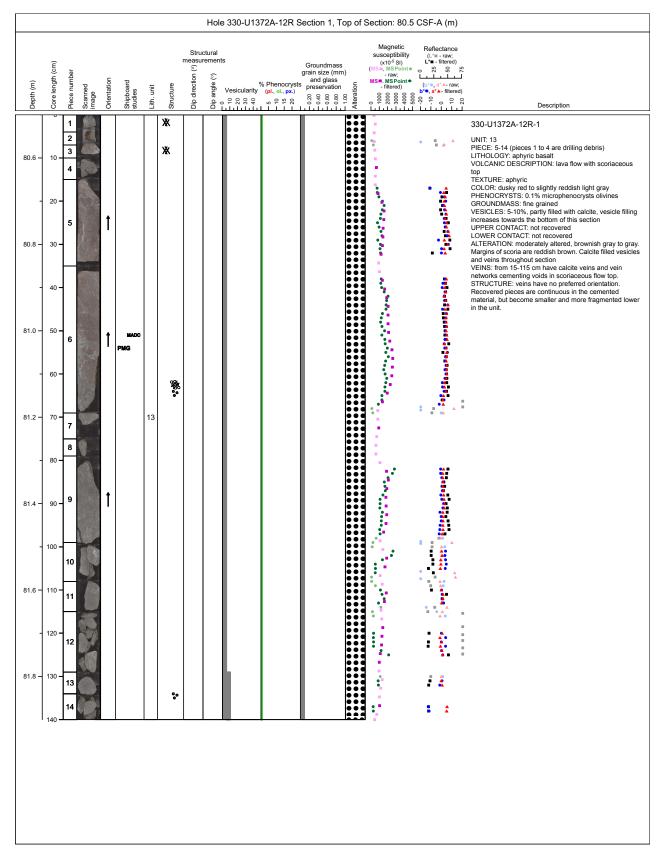


Image: Structural measurements Structural measurements Magnetic susceptibility Reflectance susceptibility Image: Structural measurements Groundmass (L10 - 110 -	1
1 1	yric basalt based on flow with scoriaceous enocrysts olivine onates, and presence of 48 cm) billed lower margin of om Unit 12 by a 2 cm ared) tered gray groundmass, rt obably fluid penetration n and completely altered filled by carbonates, moderate to strong RR differs from fa vein oriented ie groundmass



									Hole	330-U137	2A-11R S	ection 7, Top	of S	ection: 78.74	CSF-A (m)	
Depth (m)	Core length (cm)	Piece number	Scanned image	Orientation	Sh ipboard studies	Lith. unit	Structure	Dip direction (°) Dip direction	(°) angle			Groundmass grain size (mm) and glass preservation	uo	Magnetic susceptibility (x10 ⁻⁵ SI) (MS =, MS Pointe - raw; MS =, MS Point • - filtered) 00 00 00 00 00 00 00 00 00 00 00 00 00	Reflectance (L*■ - raw; L*■ - filtered) 0 (b*•, a* - raw; b*•, a* - raw; b* - ra	Description
78.8 -	10 -	1		t		11	***••									330-U1372A-11R-7 UNIT: 11 PIECE: 1-2b LITHOLOGY: aphyric basalt (aphyric basalt based on thin section at 78.93-78.93 mbsf) VOLCANIC DESCRIPTION: lava flow with scoriaceous top
79.0 –	20 - 30 -	2		Î	- 18											TEXTURE: aphyric COLOR: mid gray to reddish brown PHENOCRYSTS: 0.1% microphenocrysts olivine (completely altered) GROUNDMASS: fine grained VESICLES: 1-15%, filled with carbonates and limestone, presence of carbonate vugs UPPER CONTACT: contact with chilled lower margin of Unit 10 LOWER CONTACT: separated from Unit 12 by a 2 cm
- 79.2 –	40 - 50 -	3		t	MADC PMG		°.									layer of limestone (contact recovered in Piece 2b) ALTERATION: brownish moderately altered part of Unit 11, many fractures surrounded by oxidization haloes, olivine crystals are completely altered to iddingsite VEINS: none in this piece. STRUCTURE: groundmass has moderate to strong preferred orientation. UNIT: 12 PIECE: 2b-11
- 79.4 –	60 - 70 -	4	3	Ť		12	°.									PIECE: 20-11 LITHOLOGY: aphyric basalt (aphyric basalt based on thin section at 78.93-78.93 mbsf) VOLCANIC DESCRIPTION: lava flow with scoriaceous top TEXTURE: aphyric COLOR: medium red to light reddish gray; red oxidized material at the flow top, grading down through reddish- brown to reddish grey towards the base PHENOCRYSTS: none GROUNDMASS: fine grained VESICLES: 3-15%, filled with carbonates and limestone, and presence of a yellow coating in unfilled vesicles
- 79.6	80 - 90 -	6 7 8		† †												UPPER CONTACT: separated from Unit 11 by a 2 cm layer of limestone (contact recovered in Piece 2b) LOWER CONTACT: not recovered ALTERATION: reddish highly altered part of scoriaceous top and bottom of Unit 12, carbonate cement in between each scorias (30%) VEINS: carbonate vein network cementing voids in scoriaceous flow top. STRUCTURE: no preferred vein orientation. Recovered rock pieces become smaller towards the unit base.
79.8 -	100 - 110 -	9		•			*								•	
-	120 -	10														







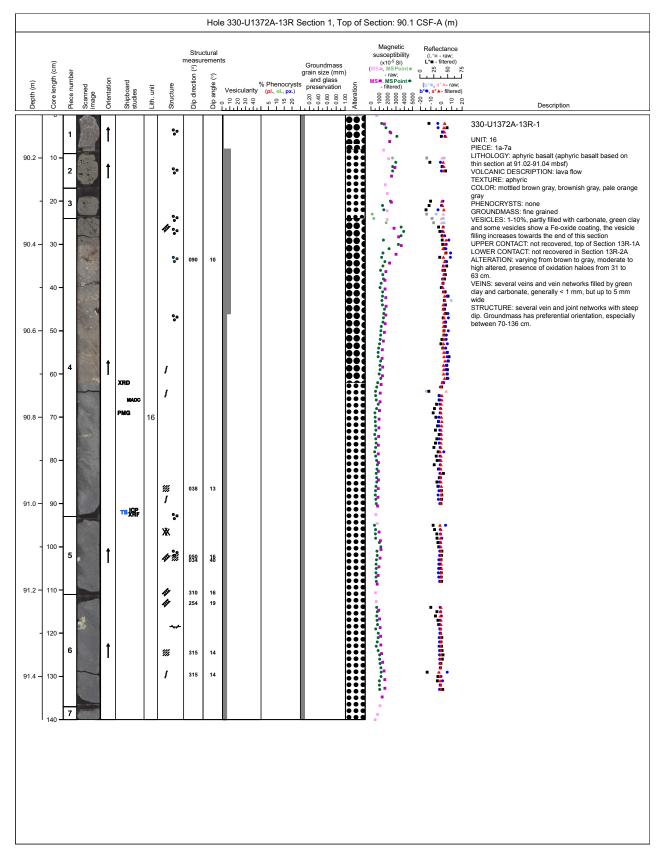


									Hole	330-U137	2A-12R S	ection 3, Top	o of S	ection: 83.08	CSF-A (m)
Depth (m)	Core length (cm)	Piece number	Scanned image	Orientation	Shipboard studies	Lith. unit	Structure	Dip direction (°) Dip direction	angle (°)			Groundmass grain size (mm) and glass preservation 02 06 08 08 00 0 0 0 0 08 08 00 0 0 0 0 0 0 0	tion	Magnetic susceptibility (x10 ⁵ SI) (MS=, MSPointe - raw; MS=, MSPointe - filtered) 000000000000000000000000000000000000	Reflectance (L*≡ - raw; L*■ - filtered 0 (b*●, a*▲- raw b*●, a*▲- filtere	2 2 2
84.2 - - 84.4 -	10 - 20 - 30 - 30 - 50 - 70 - 90 - 100 - 110 - 120 - 140 -	1 2 3 4 5 6 7		1 1 1 1		14	** * * * * * * * * * * * * * * * * * *	079 338 211 303 258 303 141 299 064 043 085	70 11 12 50 59 40 46 51 28 75							330-U1372A-12R-3 UNIT: 14 PIECE: 1-7 UTHOLOGY: aphyric basalt VOLCANIC DESCRIPTION: lava flow TEXTURE: aphyric COLOR: light reddish gray PHENOCRYSTS: 0.1% microphenocrysts olivines GROUNDMASS: fine grained VESICLES: 0.5-3%, filled with calcite UPPER CONTACT: not recovered LOWER CONTACT: not recovered LOWER CONTACT: not recovered INTERS: several veins and veloce and brown clay, with some Mn-oxide. STRUCTURE: steeply dipping veins and fractures. Rock is competent with excellent or good recovery.

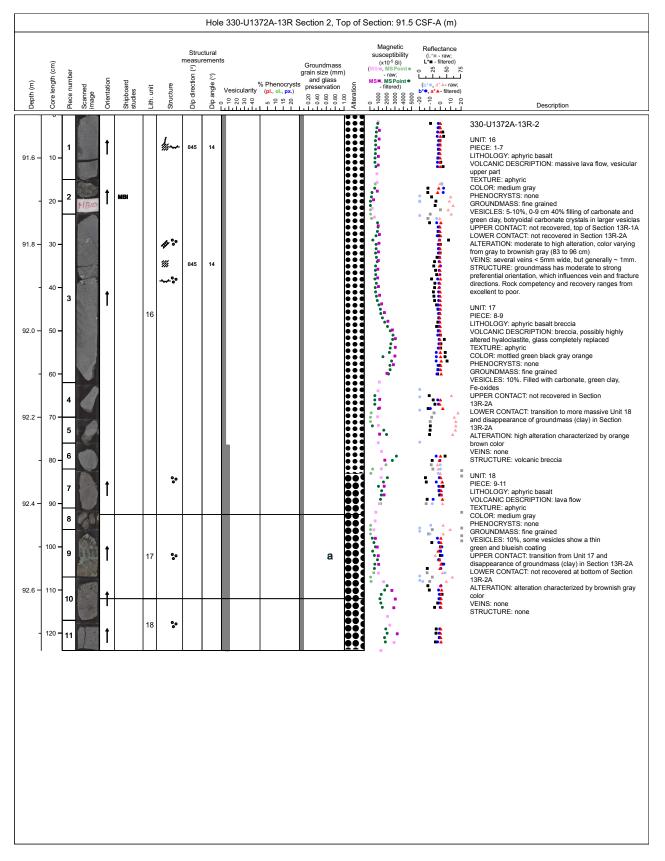


									Hole	330-U137	2A-12R Se	ection 4, Top of S	ection: 84.53	CSF-A (m)	
Depth (m)	Core length (cm)	Piece number	Scanned image	Orientation	Shipboard studies	Lith. unit	Structure	Dip direction (°) Dip direction	ctural rement (°) angle (°)	Vesicularity	% Phenocrysts (pl., ol., px.) ہے 9 12 8	Groundmass grain size (mm) and glass preservation 07 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Magnetic susceptibility (x10 ⁵ SI) (MS=, MS Pointe - raw; MS= MS Pointe - filtered) 00000 0000000000000000000000000000000	Reflectance (L [*] ≡ - raw; L [*] ≡ - filtered) (b [*] •, a [*] A - filtered) (b [*] •, a [*] A - filtered) (b [*] •, a [*] A - filtered)	Description
84.6 -	10 -	1 2 3			XRD									• • • •	330-U1372A-12R-4 UNIT: 15 PIECE: 1-10 LITHOLOGY: aphyric basalt (aphyric basalt based on thin section at 84.74-84.77 mbsf) VOLCANIC DESCRIPTION: lava flow TEXTURE: aphyric
- 84.8 –	20 - 30 -	4		1	TS		8.0 9								COLOR: dusky öxidized red at the flow top, grading to light reddish gray towards the unit base. PHENOCRYSTS: none GROUNDMASS: fine grained VESICLES: 10-25%. Unit 15 is much more vesicular than Unit 14. Vesicles are filled with calcite, green clay and in Pieces 2, 3 and 4 Mn-oxide UPPER CONTACT: not recovered, although vesicles in
- 85.0 –	40 - 50 -				MADC PMG										Piece 1 are filled with soil. Mn-oxides filling vesicles in Pieces 2, 3 and 4 may indicate subaerial weathering. LOWER CONTACT: not recovered ALTERATION: highly altered, from brown color at top, grading to reddish brown to light brown to gray at bottom of section. Vesicles filled with brown clay in Piece 1 with Mn-oxides in piece 4. Vesicles lower in section contain calcite and green clay VEINS: rare veins, < 2 mm wide, filled with calcite and brown clay
- 85.2 –	60 -	5		1						[STRUCTURE: veins and fractures randomly oriented. Rock is competent with excellent to moderate recovery.
_	70 - 80 -	6	and the second			15	°°	270	72						
85.4 -	90 - 100 -	7					1			[¥.	
85.6 -	110 - 120 -	8		T 1			°,•						1		
85.8 -	130 -	10		1			T	255	43						
	140 -												A.	. • ? *	

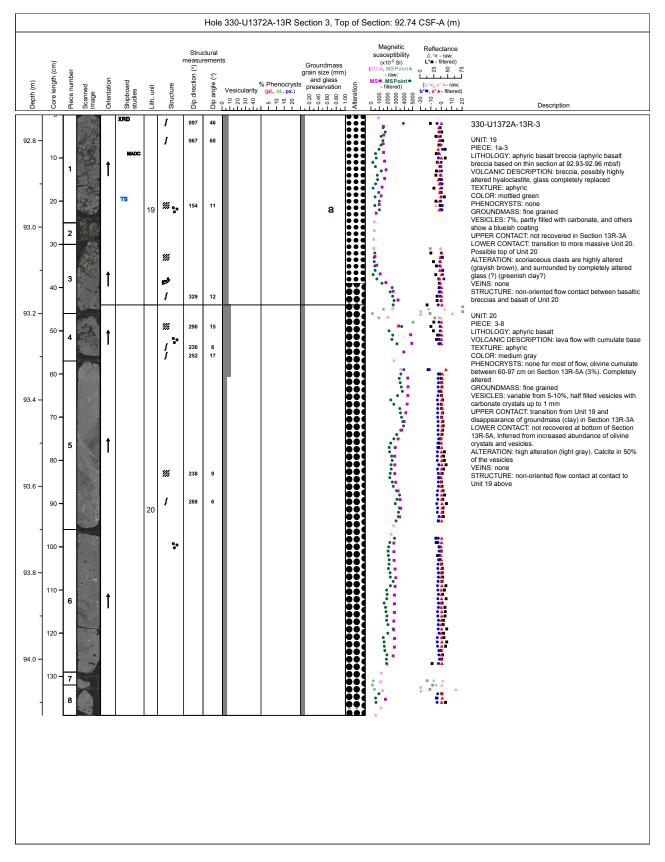












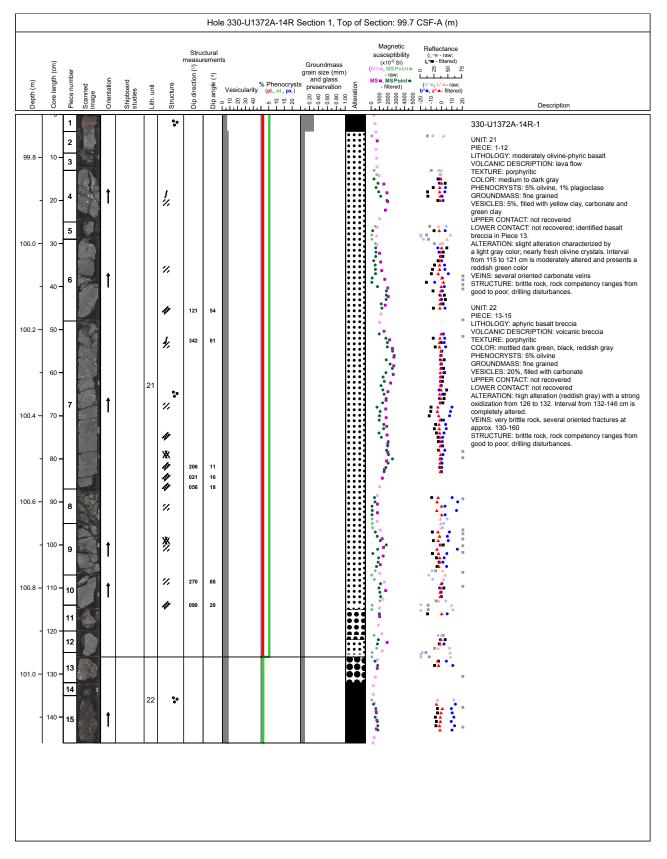


									Hole	330-U1372A-13F	Section 4, Top of	Section: 94.13	3 CSF-A (m)	
(m) (Core length (cm)	Piece number	Ped	Orientation	oard ss	ınit		direction (°) direction		s % Phenoci Vesicularity (pl., ol., p		Magnetic susceptibility (x10 ⁻⁵ SI) (MS=, MSPoint• - raw; MS=, MSPoint• - filtered)	Reflectance (L [*] ≡ - raw; L [*] ≡ - filtered) 0 ℃ ♀ ♀ ♀ (b [*] ●, a [*] A- raw;	
Depth (m)	Core	Piece	Scanned image	Orien	Shipboard studies	Lith. unit	Structure	Dip d	Dip a					Description
94.2 -	10 -	1		1			/ / _%	097 067	46 60					330-U1372A-13R-4 UNIT: 20 PIECE: 1-10 LITHOLOGY: aphyric basalt (aphyric basalt based on thin section at 95.37-95.39 mbsf) VOLCANIC DESCRIPTION: lava flow with cumulate base TEXTURE: aphyric COLOR: medium gray
94.4 –	20 - 30 -	2 3 4		† †			**	154	11					PHENOCRYSTS: none for most of flow, olivine cumulate between 60-97 cm on Section 13R-5A (3%). Completely altered GROUNDMASS: fine grained VESICLES: variable from 5-10%, filled with carbonate and yellow clay, vesicles concentration zone at 67 cm, botryoidal zoned vug with carbonate, and white yellowish clay at 71.5-73.5 cm, bottom part of section show less % in vesicle filling (yellow mineral and carbonate)
94.6 –	40 - 50 -	5	01				1 ‴	329 290	12 15					UPPER CONTACT: transition from Unit 19 and disappearance of groundmass (clay) in Section 13R-3A LOWER CONTACT: not recovered at bottom of Section 13R-5A, Inferred from increased abundance of olivine crystals and vesicles. ALTERATION: light gray color and high alteration for most of section. VEINS: thin veins filled with carbonate and black clay. STRUCTURE: groundmass has moderate to strong preferential orientation, which exerts a strong control on
- 94.8 -	60 -	-	1. 1				{	230 252	8 17					preterential orientation, which exerts a strong control on veins and fractures. Vesicles are also aligned and elongated in the same direction.
-	70 - 80 -	6		1		20	***	238	9					
95.0 -	90 -						1	288	6					
95.2 -	100 - 110 -	7		1			T							
95.4 -	120 - 130 -	8	100	I	MADC PMG TB XBF		1							
-	130 - 140 -	10		1			°.°							



								I	Hole	330-U137	2A-13R Se	ection 5, Top o	f Se	ction: 95.54	CSF-A (m)	
Depth (m)	Core length (cm)	Piece number	Scanned image	Orientation	Shipboard studies	Lith. unit	Structure	Struct measure (₀)	ip angle (°)		% Phenocrysts (pl., ol., px.) ہے 9 9 8	Groundmass grain size (mm) and glass preservation 000 00 00 00 00 00 00 000 00 00 00 00 0		- raw; MS=, MSPoint• - filtered)	Reflectance (L*≡ - raw; L*≡ - filtered) 0 (b*•, a* - raw; b*•, a* - raw; b*•, a* - raw; b*•, a* - raw; b*•, a* - filtered) 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Description
95.6 -	10 -	1		t			1									330-U1372A-13R-5 UNIT: 20 PIECE: 1-5 LITHOLOGY: aphyric basalt VOLCANIC DESCRIPTION: lava flow TEXTURE: aphyric COLOR: medium gray
95.8 -	20 - 30 -	2		t		20	<i>‴</i> ••									PHENOCRYSTS: none GROUNDMASS: fine grained VESICLES: variable from 1-10% UPPER CONTACT: transition from Unit 19 and disappearance of groundmass (clay) in Section 13R-3A LOWER CONTACT: not recovered at bottom of Section 13R-5A, Inferred from increased abundance of olivine crystals and vesicles. ALTERATION: high (light gray) VEINS: none.
- 96.0 —	40 - 50 -	3														STRUCTURE: groundmass has preferential orientation. UNIT: 21 PIECE: 6-8 LITHOLOGY: sparsely olivine-phyric basalt VOLCANIC DESCRIPTION: lava flow TEXTURE: porphyritic COLOR: medium to dark gray PHENOCRYSTS: 5% olivine GROUNDMASS: fine grained VESICLES: 5%
- 96.2 –	60 - 70 -	5 6 7		1 1	MADC											UPPER CONTACT: not recovered LOWER CONTACT: not recovered; identified basalt breccia in Piceo 13. ALTERATION: moderate (gray) alteration; olivines are abundant and moderately preserved VEINS: none STRUCTURE: no preferred groundmass orientation, rock competency and recovery poor.
- 96.4 –	80 - 90 -	8				21	°.								··· **	
									[•		

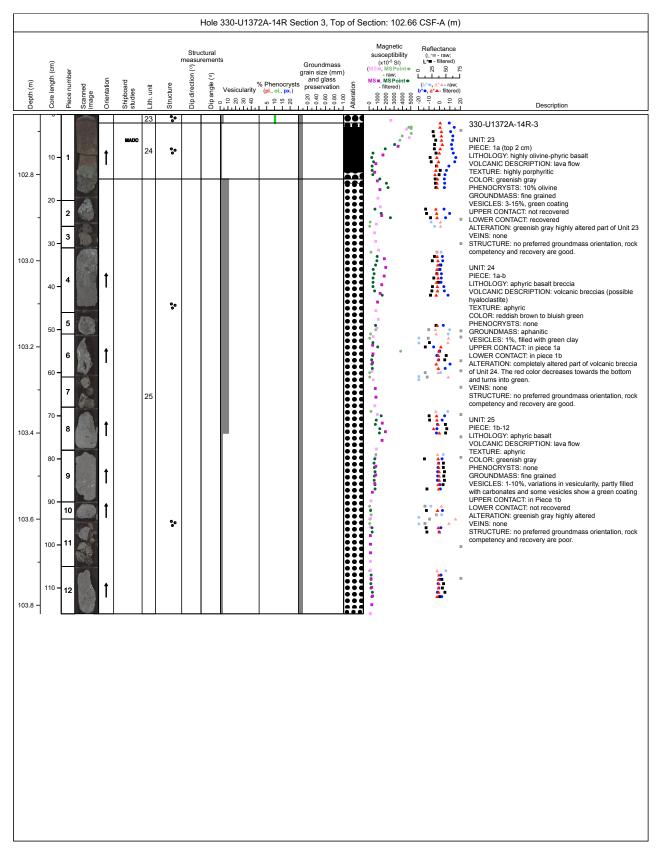






								I	Hole	330-U1372	2A-14R Se	ection 2, Top	of Se	ection: 101.1	6 CSF-A (m)	
Depth (m)	Core length (cm)	Piece number	Scanned image	Orientation	Shipboard studies	Lith. unit	Structure	Dip direction (°) au Dip direction (°)	ement: (₀) algue			Groundmass grain size (mm) and glass preservation	Alteration	Magnetic susceptibility (x10 ⁵ SI) (MS=, MSPointe - raw; MS=, MSPointe - filtered) 0000 00000000000000000000000000000000	(b*●, a*▲- raw;	Description
101.2 -	10 -	1 2 3	a ar C	t	MADC	22	8.0 8								* ** •	330-U1372A-14R-2 UNIT: 22 PIECE: 1-3 LITHOLOGY: aphyric basalt breccia VOLCANIC DESCRIPTION: volcanic breccia TEXTURE: porphyritic COLOR: mottled dark green, black, reddish gray
101.4 –	20 - 30 -	4														PHENOCRYSTS: 5% olivine GROUNDMASS: fine grained VESICLES: 20%, infilled by carbonates UPPER CONTACT: not recovered LOWER CONTACT: not recovered ALTERATION: highly altered basaltic breccias are highly altered (reddish gray); completely altered cement (greenish gray, clay after glass) VEINS: none STRUCTURE: rock competency and recovery is poor,
101.6 -	40 - 50 -	6	and the second	t			1	283	23							breccias. UNIT: 23 PIECE: 4-14 LITHOLOGY: highly olivine-phyric basalt VOLCANIC DESCRIPTION: lava flow TEXTURE: highly porphyritic COLOR: greenish gray PHENOCRYSTS: 10% olivine
- 101.8 -	60 - 70 -	7		•			1	344	71							GROUNDMASS: fine grained VESICLES: a15%, infilled by carbonates, green and white clay; green coating of clay minerals UPPER CONTACT: not recovered LOWER CONTACT: in Section 3, Piece 1 ALTERATION: moderately altered interval with a greenish gray color VEINS: few oriented veins STRUCTURE; tew fractures, no preferred groundmass orientation, rock competency and recovery is poor to
- 102.0 –	80 - 90 -	9		t		23	8 . 0									good.
- 102.2 –	100 - 110 -	10		t			TE TE	297 293	22 44						· · · · · · · · · · · · · · · · · · ·	
- 102.4 –	120 - 130 -	11														
- 102.6 –	140 - 150 -	12 13 14		1	MADC		°.									







									Hole	330-U1372	2A-15R Se	ection 1, Top of S	Section: 109.3	SCSF-A (m)	
	-							Struc	ctural rement	s			Magnetic susceptibility	Reflectance (L*≡ - raw; L*≡ - filtered)	
Depth (m)	Core length (cm)		riece number Scanned image	Orientation	Shipboard studies	Lith. unit		Dip direction (0)	(0)	Vesicularity (and glass preservation	- raw; MS . MSPoint • - filtered)	0 2 2 2 2 2 2 2 2 3 2 4 2 3 2 3 2 3 2 3 2	
Dept	Core	_		Orier	Shipl studi	ĽĘ.	Structure	Dipo	Dipa	4 2 2 9	- 10 - 15 - 20		1000 5000 5000 5000		Description
109.4 -	- 10			t	MADC		/	315	14						330-U1372A-15R-1 UNIT: 25 PIECE: 1-3e LITHOLOGY: aphyric basalt VOLCANIC DESCRIPTION: lava flow TEXTURE: aphyric COLOR: medium gray PHENOCRYSTS: none GROUNDMASS: fine grained
109.6 -	- 30		- Janet		Find		10 °°°	026 234 240	22 36 16						VESICLES: 0-10%, filled with Fe-oxyhydroxide and calcite, some vesicles show a thin black halo UPPER CONTACT: recovered, 330-U1372A-14R-3-A, Piece 1b LOWER CONTACT: not recovered ALTERATION: slightly altered throughout section, but with more moderate alteration in Piece 1 at top. Calcite and Fe-oxyhydroxide filled vesicles. VEINS: several oriented thin veins, sparce calcite/
109.8 -	- 40 50		A										,		Fe-oxyhydroxide veins STRUCTURE: both non-oriented and oriented fractures, groundmass does not show preferred orientation, rock competency and recovery are excellent.
	- 60		T			25	1 <u>1</u> 1	084	86						
110.0 -	- 70 - 80	- : -	B	Ĩ											
110.2 -	- 90	-	2				T	273	40						
110.4 -	100		m				15t	236	7						
	120						1								



								I	Hole	330-U1372	2A-15R Se	ection 2, Top of S	ection: 110.56	6 CSF-A (m)	
	ē							Struc measur	ctural rement	s		Croundmass	Magnetic susceptibility (x10 ⁻⁵ SI)	Reflectance (L⁺≡ - raw; L*≡ - filtered)	
(E	Core length (cm)	Piece number	pe	ation	oard s	nit	ure	Dip direction (°)	angle (°)	Vesicularity	6 Phenocrysts (pl., ol., px.)	Groundmass grain size (mm) and glass preservation	- raw; MS . MS Point • - filtered)	02 22 (b*●, a*▲- raw;	
Depth (m)	Core	Piece	Scanned image	Orientation	Shipboard studies	Lith. unit	Structure	Dip di	Dip ar	111111 6 8 8 9 6 8 9	5 1 1 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	Preservation 0, 50, 50, 50, 50, 50, 50, 50, 50, 50,	5000 5000 5000 5000 5000 5000	2 9	Description
110.6 -	10 -		1				B	078	59						330-U1372A-15R-2 UNIT: 25 PIECE: 1a-11 LITHOLOGY: aphyric basalt (aphyric basalt based on thin section at 111.47-111.49 mbsf) VOLCANIC DESCRIPTION: lava flow TEXTURE: aphyric
110.8 –	20 - 30 -	1		t			1								TEXTURE: aphyric COLOR: medium gray PHENOCRYSTS: none GROUNDMASS: fine grained VESICLES: 0.5-15% UPPER CONTACT: recovered, 330-U1372A-14R-3-A, Piece 1b LOWER CONTACT: not recovered ALTERATION: slightly altered throughout section with
- 111.0 -	40 -	-					°° III III	042 292	72 66						one 10 cm portion between 29-39 cm with abundant Fe-oxyhydroxide and carbonate filled vesicles. VEINS: several oriented veins, sparse calcite/ Fe-oxyhydroxide veins STRUCTURE: groundmass has no preferred orientation. Many pieces have fractures, rock competency ranges from excellent to poor.
-	50 - 60 -	2		1			B								
111.2 -	70 -	3	7	1		25	EL EL	297 079	11 62						
111.4 -	80 -	4		1			// 194 °°								
- 111.6 –	90 - 100 -	6 7 8		1	TS ICP									•••**	
-	110 -	9 10		1 1			TT.	112 260	68 80						
111.8 -	120 -	11		1			I	282	61						



									Hole	330-U1372	2A-15R Se	ection 3, To	o of S	ection: 111.83	3 CSF-A (m)	
Depth (m)	Core length (cm)	Piece number	Scanned image	Orientation	Shipboard studies	Lith. unit		Dip direction (°) eac	()) algu		6 Phenocrysts (pl., ol., px.)	Groundmass grain size (mm and glass preservation 8 6 6 8 8 5 7 8 8 8 7 8	tion	Magnetic susceptibility (x10 ⁻⁵ SI) (MS#, MSPointe - raw; MSPointe - filtered) 0000 00 000 0000 0000000 000000000000	Reflectance (L ^m - raw; L ^m - filtered) 0 52 0;0;0;0;2;4-raw; 0;0;0;0;2;4-raw; 0;0;0;0;2;4-filtered) 0;0;0;0;0;2;4-filtered) 0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;0;	Description
112.0 -	10 -						te te	310	16							330-U1372A-15R-3 UNIT: 25 PIECE: 1a-8 LITHOLOGY: aphyric basalt VOLCANIC DESCRIPTION: lava flow TEXTURE: aphyric COLOR: medium gray PHENOCRYSTS: none GROUNDMASS: fine grained VESICLES: 05-55% UPPER CONTACT: recovered, 330-U1372A-14R-3-A, Piece 1b LOWER CONTACT: not recovered
112.2 -	30 - 40 - 50 -	1		Ť			sst °.• ∫	129 079	37							ALTERATION: slight alteration throughout section with a few vesicle-rich zones filled with Fe-oxyhydroxide and calcite VEINS: several oriented veins, sparse calcite/ Fe-oxyhydroxide veins STRUCTURE: several fractures, rock competency ranges from excellent to poor, some pieces are brittle and fractured.
112.4 -	60 - 70 -	2		1		25	1 11	059	80							
112.6 -	80 - 90 -	3		Î Î												
112.8 –	100 - 110 -	4		t			/ •• /	216 055	71 61							
113.0 -	120 - 130 -	6 7 8		↑ ↑			/* %。									



								Struc		330-U137:	2A-16R S	ection 1, To	p of S	Magnetic	Reflectance	
Depth (m)	Core length (cm)	Piece number	Scanned image	Orientation	Shipboard studies	Lith. unit	Structure	Dip direction (°) Dip	ements (0)		Phenocrysts (pl., ol., px.)	Groundmass grain size (mm and glass preservation	tion	- raw; MS=, MSPointe - filtered) 8 8 8 8 8	(L*= - raw; - filtered) - 2 - 2 - 2 - 2 - 2 - 2 - 2 - 2	
119.0	ů U	Ĕ	in Sci	õ	stu	Ē	Str	ă	Dip	n – o o 4 IIIIIIIII I	-5 -10 -20					Description
- 119.2 -	10 - 20 - 30 -	1 2 3 4 5 6		ţ ţ		25	100 °°							0 0		330-U1372A-16R-1 UNIT: 25 PIECE: 1-7 LITHOLOGY: aphyric basalt VOLCANIC DESCRIPTION: lava flow TEXTURE: aphyric COLOR: medium gray PHENOCRYSTS: none GROUNDMASS: fine grained VESICLES: 0.5% UPPER CONTACT: net recovered; inferred from presence of breccia at top of Piece 8 ALTERATION: slightly altered down bottom portion of section. Vesicles filled with Fe-oxyhydroxide, green clay or carbonate. Lower section of breccia has a completely altered matrix with moderately altered basaltic fragments
119.4 -	40 -	7		1												in matrix. VEINS: few isolated straight veins STRUCTURE: rock competency is good although recovery is poor.
-	50 -	8		1			1									UNIT: 26 PIECE: 8-14 LITHOLOGY: aphyric basalt VOLCANIC DESCRIPTION: lava flow (pillows?) TEXTURE: aphyric COLOR: medium gray PHENOCRYSTS: none
119.6 -	60 - 70 -	9		1	MADC PMG		114 °°									GROUNDMASS: fine grained VESICLES: 1% UPPER CONTACT: not recovered; inferred from presence of breccia at top of Piece 8 LOWER CONTACT: not recovered ALTERATION: moderately altered with Fe-oxyhydroxide and carbonate filled vesicles. Top of Piece 6 Contains a margin of completely altered breccias. VEINS: occasionally, single non-oriented veins STRUCTURE: no preferred groundmass orientation. Rock competency and recovery are good.
- 119.8	80 - 90 -	10	1	1	XRD	26	/ %									UNIT: 27 PIECE: 15-16 LITHOLOGY: aphyric basalt breccia VOLCANIC DESCRIPTION: volcanic breccia (hyaloclastite?) TEXTURE: aphyric COLOR: light to medium gray fragments in dark green matrix PIENOCRYSTS: none
	100 -	12		1			B							بر المراجع محمد المراجع		GROUNDMASS: fine grained VESICLES: 1% (in clasts) UPPER CONTACT: not recovered LOWER CONTACT: not recovered ALTERATION: breccia matrix is completely altered, basaltic fragments are moderately altered with more
	110 - 120 -	13		1			••									intense alteration at the margins. VEINS: none STRUCTURE: no preferred groundmass orientation, very brittle rock, rock competency and recovery poor.
-	130 -	15					a _									
120.4 -	140 - 150 -	16		1		27	•									

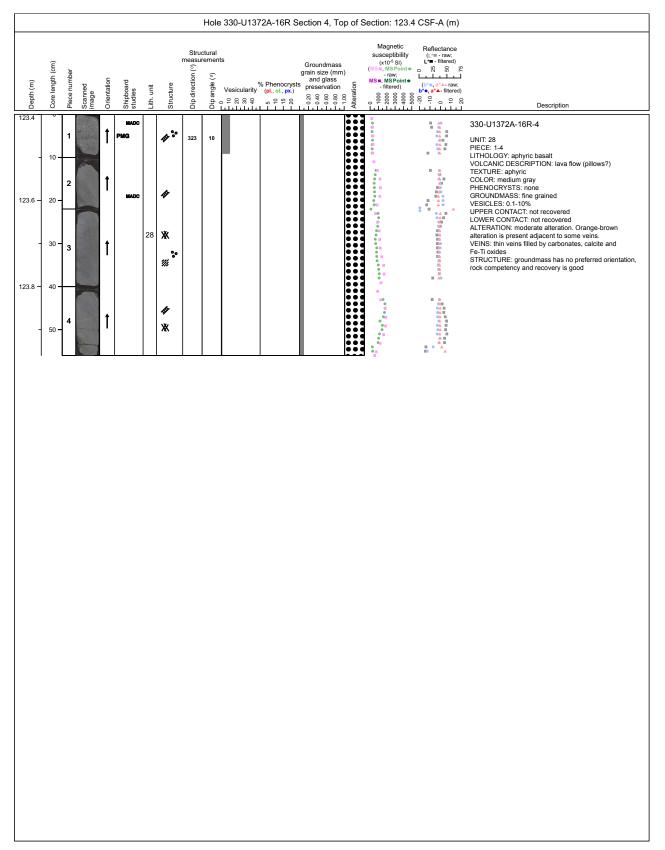


$\begin{array}{c c} (\underline{u}, \underline{u}, $	
$\begin{array}{c c c c c c c c c c c c c c c c c c c $	N:
$\begin{bmatrix} 120.6 \\ 10 \\ 20 \\ 4 \\ 120.8 \\ 30 \\ 5 \\ 40 \\ 6 \\ 60 \\ 7 \\ 121.2 \\ 70 \\ 121.2 \\ 70 \\ 121.2 \\ 70 \\ 121.2 \\ 70 \\ 121.2 \\ 70 \\ 121.2 \\ 70 \\ 10 \\ 10 \\ 10 \\ 10 \\ 10 \\ 10 \\ 10$	3 ⁶²
120.6 - 10 - 2 $3 - 20 - 4$ $120.8 - 30 - 5$ $4 - 40 - 6$ $1 - 40 - 6$ $121.0 - 50 - 7$ $121.2 - 70 - 7$ $f = 7$ $f = 7$ $f = 7$ $f = 7$	ered) 은 있 Description
120.8 - 30 - 5 - 40 - 6 + 1 + 1 + 1 + 1 + 1 + 1 + 1 + 1 + 1 +	330-U1372A-16R-2 UNIT: 27 PIECE: 1-10 LITHOLOGY: abased on thin section at 121.09-121.11 mbsf) VOLCANIC DESCRIPTION: volcanic breccia (hyaloclastite?) TEXTURE: aphyric
$\begin{vmatrix} 121.0 - 50 - \hline \\ - 60 - 7 \\ 121.2 - 70 \\ \end{vmatrix} $	COLOR: light to medium gray fragments in dark green matrix PHENOCRYSTS: none GROUNDMASS: fine grained VESICLES: 1% (in clasts) UPPER CONTACT: not recovered LOWER CONTACT: not recovered LOWER CONTACT: not recovered MATERATION: brecoi matrix is completely altered, basalt fragments range from strongly altered at margins to
	UNIT: 28 PIECE: 11-14
	VOLCANIC DESCRIPTION: lava flow (pillows?) TEXTURE: aphyric COLOR: medium gray PHENOCRYSTS: none GROUNDMASS: fine grained VESICLES: 1% UPPER CONTACT: not recovered LOWER CONTACT: not recovered ALTERATION: moderately altered with Fe-oxyhydroxides
	Action indextant
	•
	•

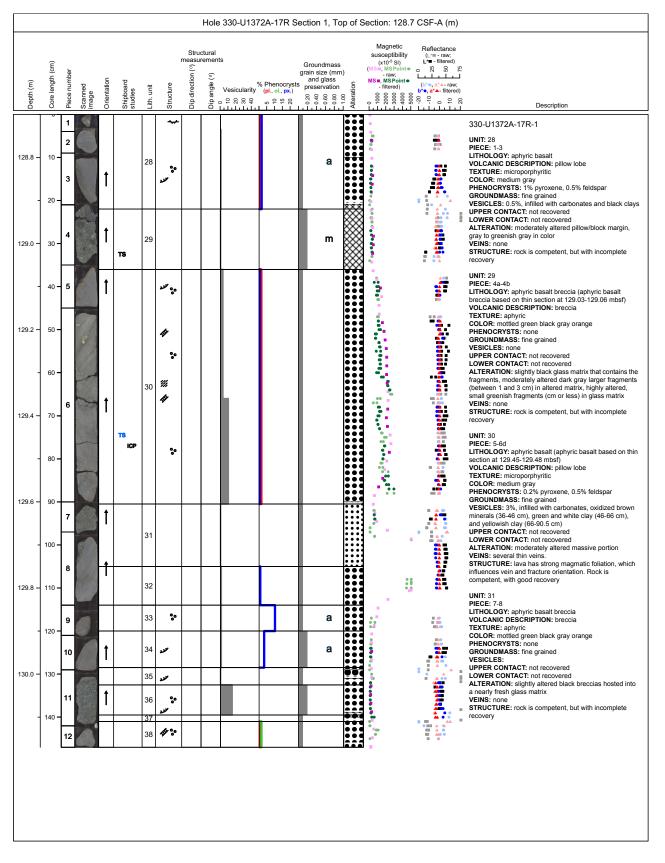


									Hole	330-U137	2A-16R S	ection 3, Top of Se	ection: 121.9	CSF-A (m)	
Depth (m)	Core length (cm)	Piece number	Scanned image	Orientation	Shipboard studies	Lith. unit	Structure	Dip direction (°) each	(°) algu		/ Phonocructo	and glass preservation	Magnetic susceptibility (x10 ⁻⁵ SI) (MSw, MS Point - - raw; MSw, MSPoint - - filtered) 0000, 00000000000000000000000000000000	Reflectance (L [™] - raw; L [™] - filtered) 6 9 9 9 (L [™] - raw; 1 (D [™] - raw; 1 (D [™] - raw; 1 (D [™] - raw; 0 0 0 0 0 0 0 0 0 0 0 0	Description
122.0 -	10 - 20 -	1		1			•								330-U1372A-16R-3 UNIT: 28 PIECE: 1-9 LITHOLOGY: aphyric basalt VOLCANIC DESCRIPTION: lava flow (pillows?) TEXTURE: aphyric COLOR: medium gray PHENOCRYSTS: none GROUNDMASS: fine grained VESICLES: 2-15%
122.2 -	30 -	2		1	XRD		** **							2	UPPER CONTACT: not recovered LOWER CONTACT: not recovered ALTERATION: moderately altered throughout the section. Vesicle infilling varies from carbonate, mixed carbonate and Fe-oxyhydroxide, to Fe-oxyhydroxide. Veins dominated by Fe-oxyhydroxide VEINS: several thin veins and joints, generally non-oriented STRUCTURE: no preferred groundmass orientation.
- 122.4 –	40 - 50 -	3	1-1	T			1								Rock competency and recovery good.
- 122.6 –	60 - 70 -	4	and the	1			**	113	63						
- 122.8 -	80 - 90 -	5		1		28	*								
-	100 -	6		1			1 ¹								
123.0 -	110 - 120 -	7		1			1 ¹								
123.2 -	130 - 140 -	8		1			1 ¹	071	25				1		
	150 -	9	24										• • • •	. #•.	

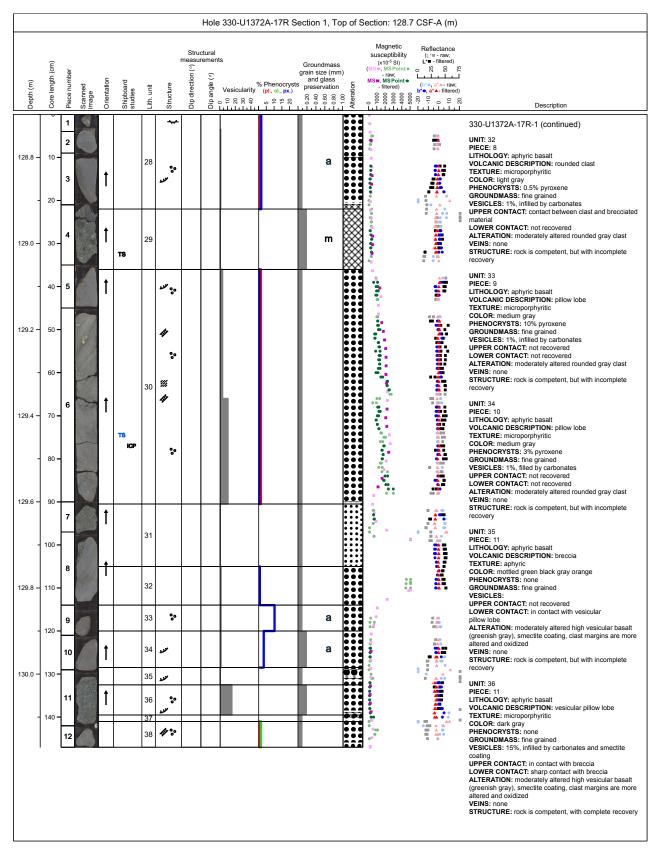




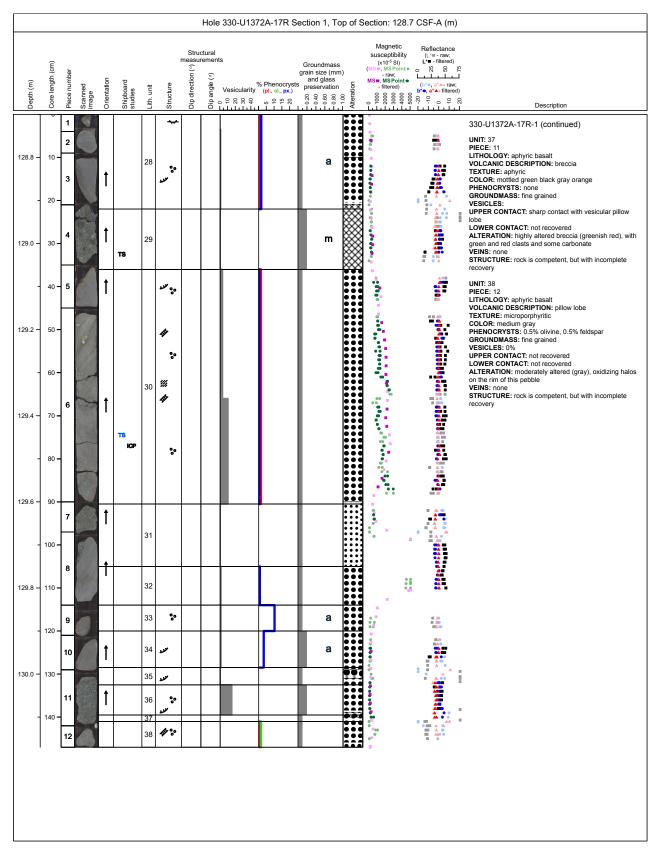




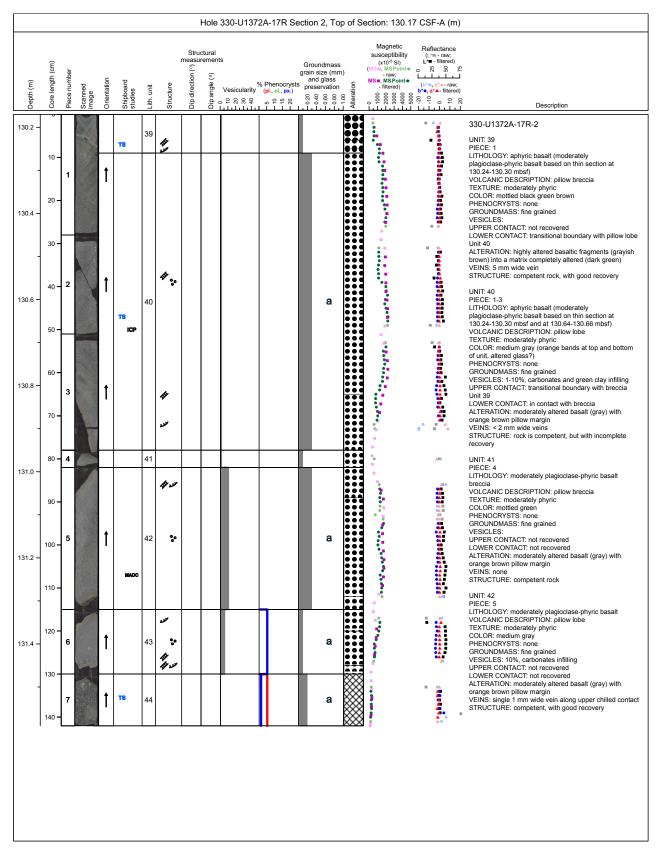




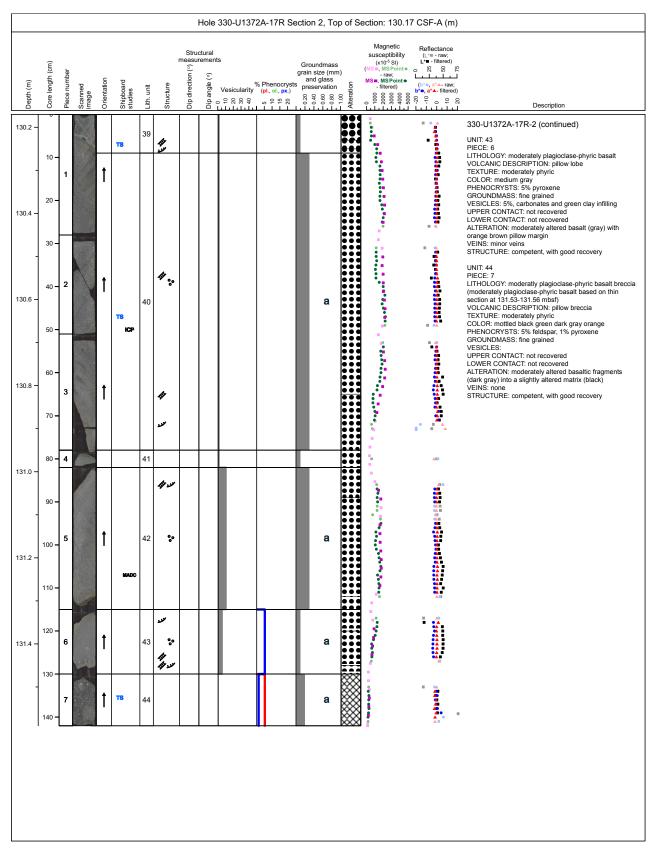














								ł	Hole 3	330-U1372	2A-17R Se	ction 3, Top of	Se	ction: 131.59	CSF-A (m)	
Depth (m)	Core length (cm)	Piece number	Scanned image	Orientation	Shipboard studies	Lith. unit	Structure	Dip direction (⁰) Dip direction	ements () albur		Phonocryste	Groundmass grain size (mm) and glass preservation 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0		000000	Reflectance (L [™] - raw; L [™] - filtered) 2 L [™] - filtered) 2 L [™] - filtered) 4 (b [*] •, a [*] - raw; 5 b [*] •, a [*] - filtered) 0 0 [*] - 0 0	Description
131.6 -	10 -			1	0.0	45	••					a				330-U1372A-17R-3 UNIT: 45 PIECE: 1 LITHOLOGY: aphyric basalt VOLCANIC DESCRIPTION: pillow lobe TEXTURE: microporphyritic COLOR: medium gray PHENOCRYSTS: 1% pyroxene GROUNDMASS: fine grained
131.8 –	20 - 30 -	2		t	MADC											VESICLES: 10%, infilied with black clays UPPER CONTACT: not recovered LOWER CONTACT: not recovered ALTERATION: moderate altered (gray), oxidizing halos on the rim of this pebble VEINS: none STRUCTURE: competent rock with good recovery UNIT: 46
132.0 -	40 - 50 -	3		t												PIECE: 2-13 LITHOLOGY: highly plagioclase-pyroxene-phyric basalt breccia (aphyric basalt hyaloclastite based on thin section at 132.53-132.55 mbsf, highly plagioclase-phyric basalt breccia based on thin section at 132.76-132.78 mbsf) VOLCANIC DESCRIPTION: pillow breccia TEXTURE: microporphyritic COLOR: mottled black green gray blue PHENOCRYSTS: 10% feldspar, 0.5% olivine, 10% pyroxene
132.2 -	60 - 70 -	4		t												GROÜNDMASS: fine grained VESICLES: 0% UPPER CONTACT: not recovered LOWER CONTACT: in contact with breccia ALTERATION: high altered clasts (gray) in a moderately altered glassy matrix of hyaloclastite (greenish gray); highly altered pebble with carbonate filled vesicles (124-133 cm) VEINS: none
132.4 -	80 - 90 -	5 6 7				46						p				STRUCTURE: competent rock with good recovery
- 132.6 -	100 -	8 9		t	T8											
- 132.8 –	110 - 120 -	10		t	TS											
- 133.0 –	130 - 140 -	12		t												
	150 -												×			



Seanned image Orientation	PMG	Lith. unit	Structure Dip direction (0)	uctural urement Dib audie (°)		% Phenocrysts (pl., ol., px.)	Groundmass grain size (mm) and glass preservation 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Magnetic susceptibility (MS=iSSPOinte -filtered 00000000000000000000000000000000000	Reflectance (1) raw; 	Description 330-U1372A-18R-1 UNIT: 46 PIECE: 1-19 LITHOLOGY: highly plagioclase-phyric basalt breccia based on thin section at 134-57134.59 mbsf)
Î	MADC		Dip direction (°)		Vesicularity	(pl., ol., px.)	grain size (mm) and glass	(MS■, MSPoint● - raw; MS■, MSPoint● - filtered)	² ² ² ² ² ² ² ²	330-U1372A-18R-1 UNIT: 46 PIECE: 1-19 LITHOLOGY: highly plagioclase-pyroxene-phyric basalt breccia (moderately plagioclase-phyric basalt breccia based on this section at 134.57-134.59 mbsf)
Î	MADC			Dip ang	Vesicularity	(pl., ol., px.)	> preservation 0 9 0 0 0 0 0 0 0 9 0 0 0 0 0 0 9 0 0 0 0 0 9 0 0 0 0 0 9 0 9		b*•, a*▲- filtered) ♀ ♀ ₀ ♀ ♀ ↓↓↓↓↓↓↓	330-U1372A-18R-1 UNIT: 46 PIECE: 1-19 LITHOLOGY: highly plagioclase-pyroxene-phyric basalt breccia (moderately plagioclase-phyric basalt breccia based on this section at 134.57-134.59 mbsf)
	MADC	*								UNIT: 46 PIECE: 1-19 LITHOLOGY: highly plagioclase-pyroxene-phyric basalt breccia (moderately plagioclase-phyric basalt breccia based on thin section at 134.57-134.59 mbsf)
î		*								VOLCANIC DESCRIPTION: pillow breccia TEXTURE: microporphyntic COLOR: mottled black green gray blue PHENOCRYSTS: 10% feldspar; 0.5% olivine;
			158	69						10% pyroxene GROUNDMASS: fine grained VESICLES: 10%, blue coating (smectite) UPPER CONTACT: not recovered LOWER CONTACT: in contact with breccia ALTERATION: high altered basatic clasts in a slightly to moderately altered glassy matrix VEINS: occasional thin calcite veins STRUCTURE: variable competency from good to poor, with excellent to poor recovery
Î										
- T		46					P			
		"								
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		1								
		"								
			+46 ↑ ↑ ↑ ↑ ↑ ↑ ↑ ↑ ↑ ↑	Т Т Т т	46 × ↑ ↑ ↑ 1 1 1 1 1 1 1 1 1 1 1 1 1	46 × ↑ ↑ ↑ 1 1 1 1 1 1 1 1 1 1 1 1 1	↑ 46 × ↑ / ↑ /	↑ 46 × ↑ % ↑ % ↑ % ↓ %	$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	1



									Hole	330-U137	2A-1	I8R Se	ction 2, Top	of Se	ction: 134.89	9 CSF-A (m)	
Depth (m)	Core length (cm)	Piece number	Scanned image	Orientation	Shipboard studies	Lith. unit	Structure	Dip direction (⁰) eau instruction	ement (0) angle		(pl .,	noonete	Groundmass grain size (mm) and glass preservation	Alteration	Magnetic susceptibility (x10 ⁻⁵ SI) (MS=, MSPointe - raw; MS=, MSPointe - filtered) 00 00 00 00 00 00 00 00 00 00 00 00 00	Reflectance (L*≡ - raw; L*≡ - filtered) (b*●, a*▲ - raw; b*●, a*▲ - raw; b*●, a*▲ - raw;	Description
135.0 -	10 - 20 -	1 2 3 4 5		t			%										330-U1372A-18R-2 UNIT: 46 PIECE: 1-22 LITHOLOGY: highly plagioclase-phyric basalt breccia VOLCANIC DESCRIPTION: pillow breccia TEXTURE: microporphyritic COLOR: motiled black green gray blue PHENOCRYSTS: 10% feldspar, 0.5% olivine; 10% pyroxene GROUNDMASS: fine grained
135.2 -	30 - 40 -	6		1			,										VESICLES: 0%, voids have blue coating (smectite) UPPER CONTACT: not recovered LOWER CONTACT: no contact with breccia ALTERATION: high altered basaltic clasts in a slightly to moderately altered glassy matrix VEINS: occasional thin calcite veins STRUCTURE: variable competency from good to poor, with excellent to poor recovery
135.4 -	50 - 60 -	8 9 10	P\6\0	† †	MBI												
135.6 -	70 - 80 -	11 12 13 14 15	2 3 1	† †		46							р				
135.8 -	90 - 100 -	16		t	XRD										•		
136.0 -	110 - 120 -	19		t	MADC												
136.2 -	130 - 140 -	20		1													
	150 -	21		1										*			



									Hole	330-U137	72A-	-18R Se	ection 3, To	op of S	ection: 136.4	CSF-A (m)	
Depth (m)	Core length (cm)	Piece number	Scanned image	Orientation	Shipboard studies	Lith. unit	Structure	Dip direction (⁰) Dip	(°) algne	vesicularity 우 유 유 우			Groundmass grain size (mr and glass preservation	m) 1. u	Magnetic susceptibility (x10 ⁵ SI) (MS#, MSPointe - raw; MS#, MSPointe - filtered) 000 00 00 00 00 000 00 00 00 00 000 00	Reflectance (1°=0 - raw; ⊥*■ - filtered) 0 1 (1°=0, a*A - raw; b*0, a*A - filtered) 02 03 04 05 07 07 07 07 08 09 01 02 03 04 05 07	
136.4 - - - - - - - - - - - - 136.6 - - 137.0 - 137.0 - 137.0 - 137.2 - 137.2 - 137.3 - 137.4 - 11 137.4 - 11 137.6 - 12 -	10 - 20 - 30 - 30 - 50 - 60 - 70 - 80 - 90 - 10 - 20 - 40 - 10 - 10 - 40 - 10 - 10 - 10 -	1 2 3 4 5 6 7 7 8 9 10 11 11 12			75 XRD	46	2 <u>0</u>						P				Junit 2007 330-U1372A-18R-3 UNIT: 46 PIECE: 1-18 LTHYOLOCY: highly plagioclase-pyroxene-phyric basalt based on thin section at 137.01-137.03 mbsf) VOLCANIC DESCRIPTION: pillow breccia TEXTURE: micropophyritic COLOR: motified black green gray blue PHENOCRYSTS: 10% feldspar; 0.5% olivine; 10% pyroxene GROUNDMASS: fine grained VESICLES: 0%, voids have blue coating (smectite) UPPER CONTACT: no contact with breccia ALTERATION: high altered basaltic clasts in a slightly to moderately altered glassy matrix VEINS: occasional thin calcite veins STRUCTURE: variable competency from good to poor, with excellent to poor recovery



									Hole	330-U1372A-19F	Section 1,	Гор of S	ection: 138.2	CSF-A (m)	
	Ê							measu	ctural rement	s	Groundma	ss	Magnetic susceptibility (x10 ⁻⁵ SI)	Reflectance (L*≡ - raw; L*■ - filtered)	
Depth (m)	Core length (cm)	Piece number	Scanned image	Orientation	Shipboard studies	Lith. unit	Structure	Dip direction (°)	Dip angle (º)	% Phenoc Vesicularity (pl., ol., p و د د د د د د د د د د د د د د د د د د د	.) 0000	i n	- raw; MS =, MS Point • - filtered)	(b*●, a*▲- raw; b*●, a*▲- raw; b*●, a*▲- filtered) 07, -7, 0, -1, 0, 0, -1, 0, 0, -1, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0,	Description
138.2	0-	1		t		46									330-U1372A-19R-1
-	10 -	2					=	077	51						UNIT: 46 PIECE: 1 LITHOLOGY: aphyric basalt breccia VOLCANIC DESCRIPTION: volcanic breccia TEXTURE: aphyric COLOR: dark greenish gray PHENOCRYSTS: none GROUNDWASS: aphanitic
38.4 -	20 - 30 -	4	N C												VESICLES: 0%, voids have blue coating UPPER CONTACT: not recovered LOWER CONTACT: variation in size of volcanic particles ALTERATION: slightly to moderately greenish altered glassy matrix and high altered clasts VEINS: none STRUCTURE: rock competency is good.
38.6 -	40 -	5		t	ts ICP		=	243	11						UNIT: 47 PIECE: 1-19 LITHOLOGY: aphyric basalt volcaniclastic sandstone (moderately plagioclase-phyric basalt volcaniclastic sandstone based on thin section at 138.87-138.93 mbsf) VOLCANIC DESCRIPTION: vitri-lithic volcanic sand and gravel (hydrovolcanic deposit)
-	50 -														TEXTURE: aphanitic COLOR: dark greenish gray PHENOCRYSTS: none GROUNDMASS: aphanitic VESICLES: voids have blue coating
138.8 –	60 -	6		1			×				р				VESIGLO: Votaling UPPER CONTACT: reduction in size of volcanic particles LOWER CONTACT: not recovered ALTERATION: slightly to moderately greenish altered glassy matrix and high altered clasts VEINS: none STRUCTURE: rock competency ranges from excellent to
- 39.0 –	70 - 80 -	8		1		47	n				P				poor.
-	90 -	9 10		1	MADC										
39.2 -	100 -	11 12													
-	110 -	13 14 15													
39.4 -	120 -	16 17													
-	130 -	18 19												1.	



								I	Hole	330-U1372	2A-19R Se	ection 2, Top	of Se	ection: 139.55	5 CSF-A (m)	
Depth (m)	Core length (cm)	Piece number	Scanned image	Orientation	Shipboard studies	Lith. unit	Structure	Dip direction (°) eau not	ement (0) JBu		Phonocryste	Groundmass grain size (mm and glass preservation) (tion	Magnetic susceptibility (x10 ⁻⁶ SI) (MS=, MSPointe - raw; MS=, MSPointe - filtered) 00 00 00 00 00 00 00 00 00 00 00 00 00 00	Reflectance (L ^{-m} - raw; L ^{-m} - filtered) 0 2 2 (D ⁻ 0, a ⁺ A - filtered) 0 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	Description
139.6 -	10 -	1		1												330-U1372A-19R-2 UNIT: 47 PIECE: 1-14 LITHOLOGY: aphyric basalt volcanic sand VOLCANIC DESCRIPTION: vitric-lithic volcanic sand and gravel (hydrovolcanic deposit) TEXTURE: aphanitic
139.8 -	20 - 30 -	2 3 4 5														COLOR: dark greenish gray PHENOCRYSTS: none GROUNDMASS: aphanitic VESICLES: voids have blue coating (smectite) UPPER CONTACT: reduction in size of volcanic particles LOWER CONTACT: not recovered ALTERATION: slightly to moderately greenish altered glassy matrix and high altered clasts VEINS: none STRUCTURE: rock competency and recovery ranges
- 140.0	40 - 50 -	6 7 8					×								: 4 : 	from moderate to excellent.
- 140.2 –	60 - 70 -	9 10 11	and the second party	1		47						р				
- 140.4 –	80 - 90 -	12		1		47						Р				
- 140.6	100 - 110 -	13		1											·	
140.8 -	120 - 130 -		And a second													
141.0 –	140 -	14		1	MADC PMG											



									ctural				Magnetic susceptibility	Reflectance	
Depth (m)	Core length (cm)	Piece number	Scanned image	Orientation	Shipboard studies	Lith. unit	Structure	Dip direction (°) sem	angle (°)	% Phenocrysts (pl., ol., px.) 広 은 약	Groundmass grain size (mm and glass preservation	tion	- raw; MS=, MSPoint• - filtered)	L*■ - filtered) 0 25 05 22 (b*●, a*▲- raw; b*●, a*▲- filtered) 0 1 0 0 02 0 0 02 0 0 02 0 0 02 0 0 02 0 0 02 0 0 02 	Description
-	10 -	1		1 1											330-U1372A-19R-3 UNIT: 47 PIECE: 1-5 LITHOLOGY: aphyric basalt volcanic sand (aphyric basalt vitric-lithic volcanic sand and gravel based on thin section at 141.94-141.97 mbf) VOLCANIC DESCRIPTION: vitric-lithic volcanic sand and
-	20 - 30 -	3		† +	MADC	47	B	225	14		р				gravel (hydrovolcanic deposit) TEXTURE: aphanitic COLOR: dark greenish gray PHENOCRYSTS: none GROUNDMASS: aphanitic VESICLES: 0% UPPER CONTACT: reduction in size of volcanic particles LOWER CONTACT: not recovered ALTERATION: slightly to moderately altered glassy matrix
41.4 -	40 -	5		1	T8		1	071	31						high altered clasts in a glassy matrix, with carbonate vein VEINS: two thin calcite veins with 1 cm wide halos. STRUCTURE: rock competency and recovery is good. UNIT: 48 PIECE: 6-10 LITHOLOGY: aphyric basalt breccia (aphyric basalt breccia based on thin section at 143.24-143.27 mbsf) VOLCANIC DESCRIPTION: pillow fragments in
41.6 –	50 - 60 -	6													hyaloclastite matrix TEXTURE: aphanitic COLOR: dark greenish gray with medium gray clasts PHENOCRYSTS: 1% of olivine and plagioclase glomerocrysts (in clasts)
- 41.8 —	70 - 80 -	7		1											LOWER CONTACT: not recovered ALTERATION: clasts of breccia in glassy matrix, high vesicular filled with carbonate and green clay, slightly altered glassy matrix in volcanic breccia VEINS: none STRUCTURE: rock competency and recovery is good.
- 42.0 –	90 - 100 -	8	and the second s	1	MADC PMG	48	90 9				р				
- 12.2 -	110 -	9 10		1	TS										
	120 -	L											1		



									Hole	330-U137	2A-20R S	ection 1, To	p of S	ection: 143.0	CSF-A (m)	
Depth (m)	Core length (cm)	Piece number	Scanned image	Orientation	Shipboard studies	Lith. unit	Structure	Dip direction (°) eau Insea	ement (0) algue			Groundmass grain size (mm) and glass preservation	tion	Magnetic susceptibility (x10 ⁵ SI) (MS=, MS Pointe - raw; MS=, MS Pointe - filtered) 000 000 000 0000 000 0000000000000000	Reflectance (L ^{im} - raw; L ^{im} - filtered) 92 (b ¹ •, a ² - raw; b ¹ •, a ² - raw; 0; 0; 0; 0; 0; 0; 0; 0; 0; 0; 0; 0; 0; 0	Description
143.0	10 -	1 2 3		Î		49	% 0									330-U1372A-20R-1 UNIT: 49 PIECE: 1-4 LITHOLOGY: aphyric basalt VOLCANIC DESCRIPTION: probably pillow fragments
143.2 –	20 -	4		t		49	•									TEXTURE: aphyric COLOR: medium gray (yellowish gray at margins) PHENCCRYSTS: none GROUNDMASS: fine grained VESICLES: 1% (20% in patch in center of Piece 4), filled with carbonate in the centre of Piece 4, zeolite UPPER CONTACT: not recovered LOWER CONTACT: not recovered
-	30 -	5 6 7		1		50										ALTERATION: moderate alteration, alteration halos towards the margins of these fragments, in the middle of Piece 4 cluster of vesicles VEINS: none STRUCTURE: rock is competent, but with incomplete recovery
143.4 -	40 - 50 -	8		t	MADC PNIG		 	096 202	60 11							UNIT: 50 PIECE: 5 LITHOLOGY: aphyric basalt breccia VOLCANIC DESCRIPTION: pillow fragments in hyaloclastite matrix TEXTURE: aphanitic matrix COLOR: dark greenish gray with medium gray clasts
143.6 –	60 -	9					*									PHENOCRYSTS: none GROUNDMASS: fine grained (in clasts) VESICLES: 0% UPPER CONTACT: not recovered LOWER CONTACT: not recovered ALTERATION: moderately to highly altered glassy matrix, moderately altered clasts show increasing alteration toward the rim
- 143.8 -	70 - 80 -	10	X	t		51	1 ¹	047 265	34 80							UVEINS: none STRUCTURE: rock is moderately competent, but with incomplete recovery UNIT: 51 PIECE: 6-16 LITHOLOGY: aphyric basalt
_	90 -	11					Sr c	203	00							VOLCANIC DESCRIPTION: probably pillow fragments TEXTURE: aphyric COLOR: medium gray PHENOCRYSTS: none GROUNDMASS: fine grained VESICLES: 0.5%, partly filled with carbonate, zeolite UPPER CONTACT: not recovered
144.0 –	100 -	13 14		t			-ste -ste	069 311	71 59					2		LOWER CONTACT: not recovered ALTERATION: slightly altered basalt, pillow fragments VEINS: up to 5 mm wide, filled by carbonate and green clay STRUCTURE: rock is competent, but with incomplete recovery
- 144.2 -	110 -	15	1	1			TE	180	4							
		16		† 			fr fr	275 078	80 59							



									Hole	330-U137	2A-21R S	ection 1, Top o	f Se	Magnetic	Reflectance	
Depth (m)	Core length (cm)	Piece number	Scanned image	Orientation	Shipboard studies	Lith. unit	Structure	Dip direction (°) same	remeni (0) algue		Dhonocryste	Groundmass grain size (mm) and glass preservation 200 00 00 00 00 00 00 00 00 00 00 00 00 00		susceptibility (x10 ⁻⁵ SI) (MS =, MS Pointe - raw; MS =, MS Pointe - filtered) 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	(L ⁺ = - raw; L ⁺ = - filtered) 0 2 0 2 0 2 0 2 2 2 2 2 2 2 2 2 2 2 2 2	Description
45.0	10 –	1 2 3 4					THE STATE									330-U1372A-21R-1 UNIT: 51 PIECE: 1-10 LITHOLOGY: aphyric basalt VOLCANIC DESCRIPTION: probably pillow fragments TEXTURE: aphyric COLOR: medium gray
45.2 -	20 - 30 -	5 6 7 8				51	°°									PHENOCRYSTS: none GROUNDMASS: fine grained VESICLES: 0.1%, partly filled with calcite UPPER CONTACT: not recovered LOWER CONTACT: not recovered ALTERATION: gray colored, moderately altered. Few vesicles present are calcite filled, olivine crystals in groundmass are completely altered to iddingsite VEINS: two non-oriented veins in rotated pieces, filled
45.4 -	40 -	9 10		t			1 1	176	65							with zeolite STRUCTURE: two oriented fractures, rock competency and recovery is good. UNIT: 52 PIECE: 11 LITHOLOGY: aphyric basalt breccia VOLCANIC DESCRIPTION: basalt fragments in hyaloclastite matrix
- 15.6 -	50 -	11				52	/ °	000	30			m		2		TEXTURE: aphyric COLOR: dark greenish gray with medium gray clasts PHENOCRYSTS: none GROUNDMASS: fine grained (in clasts) VESICLES: 2% UPPER CONTACT: not recovered LOWER CONTACT: not recovered ALTERATION: matrix is highly altered to dark green color fragments are gray, moderately altered.
-	70 - 80 - 90 -	12 13	70	† †			 ***	275	70							VEINS: none STRUCTURE: breccia UNIT: 53 PIECE: 12-19 LITHOLOGY: aphyric basalt (aphyric basalt based on thin section at 147.15-147.17 mbsf) VOLCANIC DESCRIPTION: probably pillow fragments TEXTURE: microporphyritic COLOR: medium gray PHENOCRYSTS: 2% plagioclase, 1% augite as glomercorysts (2 mm) GROUNDMASS: fine grained
	100 - 110 -	14		1	TS ICP	53	æ.	212	6 31 9					- - - - - - - - - - - - - - - - - - -		VESICLES: 0.1% (except Piece 15) partly filled with dacite UPPER CONTACT: not recovered LOWER CONTACT: not recovered ALTERATION: gray, moderately altered throughout section except some vein halos at 84 cm and 109 to 116 cm. The halos are brownish gray. Small vesicles are calcite filled. Three large vesicles (3-4 cm) in Piece 15 are 50 to 80% filled with calcite and some chalcedony(?) VEINS: several filled veins in Pieces 13 and
	120 - 130 -	16 17	XX	t t			THE THE	274 278 054 263 016	28 28 58 50 53							16-19, several orientations, composite veins filled with carbonate, green clay and minor amounts of Fe-oxyhydroxides, presence of 3 veins with a brownish 10-20 mm thick halo (84-115 cm) STRUCTURE: two fractures in Pieces 12 and 13, two geopetals.
	130 -	18 19		t			* * *									



Depth (m)	Core length (cm)	Piece number	Scanned image	Orientation	Shipboard studies	Lith. unit	Structure		ctural rement (0) apone	s	Groundmass grain size (mm and glass preservation	ection: 146.45 Magnetic susceptibility (x10 ⁵ SI) (MS=, MS Pointe - raw; MS=, MS Pointe - filtered) 00 00 00 00 00 - filtered)	Reflectance (L*= - raw; L*= - filtered) 0 \$2 \$2 (b*=, a*= - filtered) (b*=, a*= - filtered)	Description
-	10 -	1	CHO C			53	TEL °°						B 0 4	330-U1372A-21R-2 UNIT: 53 PIECE: 1-2 LITHOLOGY: aphyric basalt VOLCANIC DESCRIPTION: probably pillow fragments
146.6 –	20 –	3		1	тз	54	**				m	1		TEXTURE: microporphyritic COLOR: medium gray PHENOCRYSTS: 2% plagioclase, 1% augite as glomerocrysts (2 mm) GROUNDMASS: fine grained VESICLES: 0.1%, filled with calcite UPPER CONTACT: not recovered
146.8 -	30 -	5 6 7		1			*	049	40					LOWER CONTACT: not recovered ALTERATION: gray, moderate alteration VEINS: two 1-4 mm sized isolated veins, filled with carbonate, green and black clay STRUCTURE: rotated pieces, rock competency is good UNIT: 54
-	40 - 50 -	8		1			1					-	0 R 0 R 0 A 0 R 0 R 0 R 0 R 0 A 0 A 0 A 0 A 0 A 0 R 0 A 0 R 0 A 0 R	PIECE: 35 LITHOLOGY: aphyric basalt breccia (aphyric basalt hyaloclastite breccia based on thin section at 146.87- 146.80 mbst) VOLCANIC DESCRIPTION: basalt fragments in hyaloclastite matrix TEXTURE: microporphyritic in clasts COLOR: dark greenish gray with medium gray clasts
147.0 -	60 -	9	N	t	MADC		/ ** 1*	253	31				. H .	CULDR: dark greenish gray with medium gray clasts PHENOCRYSTS: 2% plagicalase, 1% augite as glomerocrysts (2 mm) in clasts GROUNDMASS: fine grained (in clasts) VESICLES: 0.5% UPPER CONTACT: not recovered LOWER CONTACT: not recovered ALTERATION: black glass as matrix to
147.2 –	70 - 80 -	10		1			Th.	089	56 10					moderately altered gray fragments VEINS: two vein networks in individual clasts, filled with breccia matrix (green and black clay), carbonate and paragonite STRUCTURE: breccias UNIT: 55
- 147.4 –	90 –	11		1		55	**	257	78 17			5 - 10 - 10 - 10 - 10 - 10 - 10 - 10 - 1		PIECE: 6-17 LITHOLOGY: aphyric basalt VOLCANIC DESCRIPTION: probably pillow fragments TEXTURE: microporphyritic COLOR: medium gray PHENOCRYSTS: 2% plagioclase, 1% augite as glomerocrysts (2 mm) GROUNDMASS: fine grained VESICLES: 0.1% except in Piece 13 (15% large vesicles)
-	100 - 110 -	12		1			194 °°					1000 au an		filled with calcite UPPER CONTACT: not recovered LOWER CONTACT: not recovered ALTERATION: gray, moderately altered throughout section. Pieces 13a and 13b contain large (3-4 cm) vesicles 80% filled with calcite and minor chalcedony(?)
147.6 -	120 -	14	MBIO		MBI		1							VEINS: several oriented single veins and vein networks, filled with carbonate, black and green clay STRUCTURE: several oriented, steeply dipping fractures, rock competency and recovery is very good
147.8 -	130 –	15 16		1			fr.							
-	140 - 150 -	17		1			*							



									Hole	330-U1372	2A-21R Se	ection 3, Top	o of Se	ection: 147.98	5 CSF-A (m)	
Depth (m)	Core length (cm)	Piece number	Scanned image	Orientation	Shipboard studies	Lith. unit	Structure	Dip direction (°) eau Instan	ip angle (°)		6 Phenocrysts (pl., ol., px.) ග ද ද බ	Groundmass grain size (mm and glass preservation R & & & & R & & & C & C & & & C & C & C & C & C & C	, tion	Magnetic susceptibility (x10 ⁻⁵ SI) (MS=, MS Pointe - raw; MS=, MS Pointe - filtered) 0000, 0000, 0000 - 1 - 1 - 1 - 1 - 1 - 1	Reflectance (L*≡ - raw; L*≡ - filtered) 0 (b*•, a*▲- raw; b*•, a*▲- raw; 0 <t< th=""><th></th></t<>	
148.0 -	10 -	1	00	1		55	ж.	033	66							VOLCANIC DESCRIPTION: probably pillow fragments TEXTURE: microporphyritic
- 148.2 -	20 - 30 -	3 4 5 6		† †		56	* * * *					m				giomerocrysts (2 mm) GROUNDMASS: fine grained VESICLES: 0.5%, filled with calcite UPPER CONTACT: not recovered LOWER CONTACT: not recovered ALTERATION: gray, moderate alteration with two
148.4 -	40 - 50 -	8		t	MADC		*. *									very good UNIT: 56 PIECE: 3-8 UTHOLOGY: aphyric basalt breccia VOLCANIC DESCRIPTION: basalt fragments in bytechedite motify
148.6 -	60 - 70 -	9 10 11		† †		57	*									PHENOCRY 51: 27% plagloctase, 1% august as glomerocrysts (2 mm) in clasts GROUNDMASS: fine grained (in clasts) VESICLES: 0.5% in clasts UPPER CONTACT: not recovered LOWER CONTACT: not recovered ALTERATION: black glass as matrix hosting gray, moderately altered clasts. Some calcite veins in this interval VEINS: several veins and vein networks, mostly steeply dipping, filled with green and black clay and smaller
																amounts of carbonate STRUCTURE: rock competency and recovery poor, rotated pieces UNIT: 57 PIECE: 9-11 LITHOLOGY: aphyric basalt VOLCANIC DESCRIPTION: probably pillow fragments TEXTURE: microporphyritic COLOR: medium gray PHENOCRYSTS: 2% plagioclase, 1% augite as glomerocrysts (2 mm) GROUNDMASS: fine grained VESICLES: 0.2%, filled with calcite UPPER CONTACT: not recovered LUWER CONTACT: not recovered ALTERATION: gray, moderately altered to end of section VESINS: Piece 13 contains steeply dipping vein network, filled with green and black clay and smaller amounts of carbonate STRUCTURE: rock competency and recovery is good

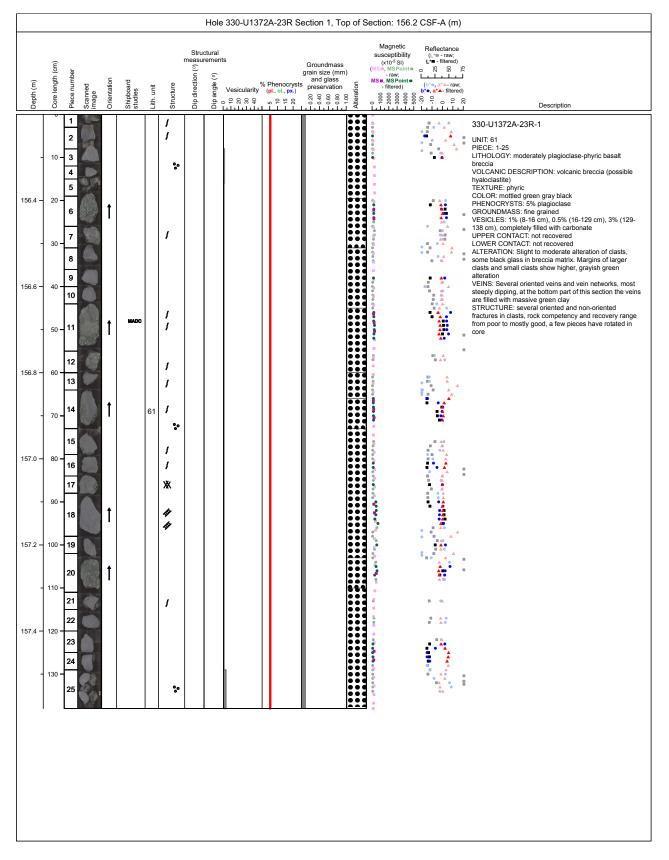


(H	Core length (cm)	umber	p	ion	pu	Ŧ		ip direction (º) eau Instant	(0)	%	Phenocrysts	Groundmass grain size (mm) and glass preservation .5	Magnetic susceptibility (x10 ⁻⁵ SI) (MS=, MSPointe - raw; MS=, MSPointe - filtered)	Reflectance (L*≡ - raw; L*≡ - filtered) 0 \$2 \$2 \$5 \$5 (b*●, a*▲- raw;	
Depth (m)	Core ler	Piece number	Scanned image	Orientation	Shipboard studies	Lith. unit	Structure	Dip dire		Vesicularity	(pl., ol., px.) ∽ ♀ ♀ ♀ ↓ ↓ ↓ ↓ ↓	Viteration 000000000000000000000000000000000000	00000	b*●, a*▲- filtered) ♀ ♀ ♀ ♀ └ ↓ ↓ ↓ ↓ ↓ ↓	Description
49.2	0-	1				57								• • •	330-U1372A-22R-1 UNIT: 57
-	10 -	3	D			58	%								PIECE: 1-2 LITHOLOGY: aphyric basalt VOLCANIC DESCRIPTION: lava flow (possible pillow
				•	PMG		°°				1				fragments, drilling rubble?) TEXTURE: phyric COLOR: medium gray PHENOCRYSTS: 6% plagioclase
19.4 -	20 -	4		I	MADC										GROUNDMASS: fine grained VESICLES: none UPPER CONTACT: not recovered
-	30 -	5		1			1								LOWER CONTACT: not recovered ALTERATION: moderately altered VEINS: none STRUCTURE: rock competency and recovery
													{		Very good UNIT: 58
19.6 -	40 -	6		Ĩ			LLV						1		PIECE: 3 LITHOLOGY: aphyric basalt VOLCANIC DESCRIPTION: lava flow (possible pillow fragments, drilling rubble?)
4	50 -	7		1	TS	59	1								TEXTURE: aphyric COLOR: light gray PHENOCRYSTS: none
		8					ľ							•	GROUNDMASS: fine grained VESICLES: 1%, completely filled with calcite UPPER CONTACT: not recovered LOWER CONTACT: not recovered
19.8 -	60 -	9 10	and a second sec												ALTERATION: moderately altered VEINS: none STRUCTURE: none, rock competency good
-	70 -	11	R	t			*								UNIT: 59 PIECE: 4-12 LITHOLOGY: moderately plagioclase-phyric basalt
				•											breccia (moderately plagioclase-phyric basalt vitric-lithic volcanic sand based on thin section at 150.20-150.24 mbsf)
50.0 -	80 -	12		1			TIL :.								VOLCANIC DESCRIPTION: volcanic breccia (possible hyaloclastite) TEXTURE: microporphyritic COLOR: mottled black green gray brown
	90 -		1.2				f							• • •	PHENOCRYSTS: 5% plagioclase GROUNDMASS: fine grained VESICLES: 5%, filled with calcite, unfilled vesicle band
		13 14	K												at 15-18 cm UPPER CONTACT: not recovered LOWER CONTACT: not recovered ALTERATION: slightly altered black glass as matrix that
i0.2 -	100 -	15											;	• • • • • •	contains moderately altered basaltic fragments VEINS: several veins in potentially rotated pieces, non-oriented, filled with glass (66-88 cm)
	110 -	16 17					15t								STRUCTURE: two oriented contacts, most pieces are rotated, rock competency ranges from poor to good UNIT: 60
]	110-			•			Ŷ								PIECE: 13-21 LITHOLOGY: moderately plagioclase-phyric basalt (moderately plagioclase-phyric basalt based on thin
0.4 -	120 -	18		I		60	T	089	47					- A -	section at 151.76-151.79 mbsf) VOLCANIC DESCRIPTION: lava flow (possible pillow fragments) TEXTURE: microporphyritic
		19		1	TS		ж								COLOR: medium gray PHENOCRYSTS: 3% plagioclase GROUNDMASS: fine grained
1	130 -			+	ICP									•	VESICLES: none UPPER CONTACT: not recovered LOWER CONTACT: not recovered ALTERATION: moderately altered massive to base of
50.6 -	140 -	20		↓ ↓			1								section VEINS: several veins with different orientations, filled with carbonate
		21		Ι			Ŷ					•••	ł.	.	STRUCTURE: rock competency and recovery are good, few pieces may have rotated in core, no preferred orientation

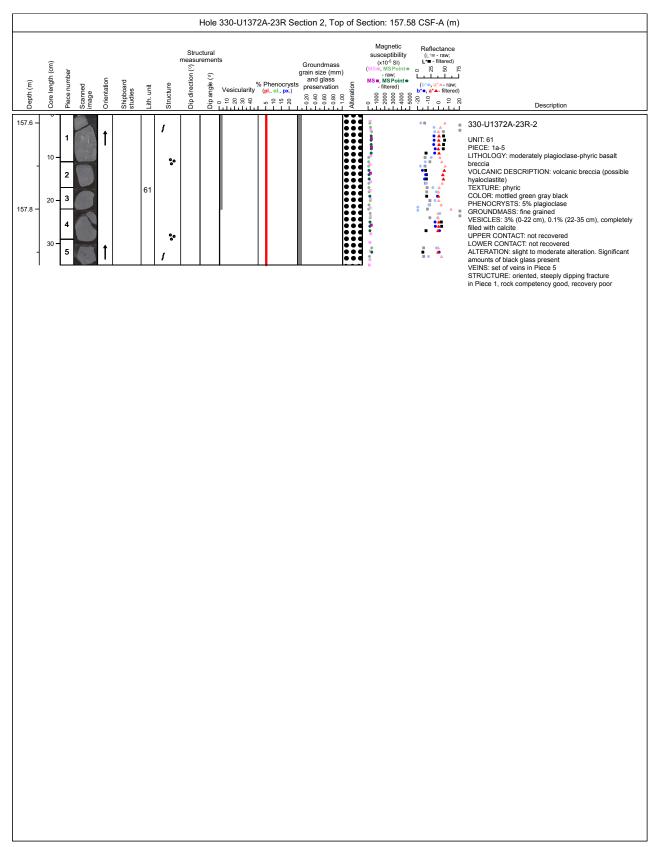


								l	Hole	330-U137	2A-22	2R Se	ection 2, Top	of Se	ction: 150.66	6 CSF-A (m)	
	(Struc	ctural rement	s			Groundmass		Magnetic susceptibility (x10 ⁻⁵ SI)	Reflectance (L⁺≡ - raw; L⁺■ - filtered)	
Depth (m)	Core length (cm)		Plece number Scanned image	Orientation	Shipboard studies	Lith. unit	Structure	Dip direction (⁰)	Dip angle (º)	Vesicularity	(<mark>pl.</mark> , ol. ω 은	ocrysts ., px.)	grain size (mm)	tion		25 26 27 27 26 27 27 27 27 27 27 27 27 27 27	Description
- 150.8 -	10	Γ	1	1			49 **										330-U1372A-22R-2 UNIT: 60 PIECE: 1-12 LITHOLOGY: moderately plagioclase-phyric basalt VOLCANIC DESCRIPTION: lava flow (possible pillow fragments) TEXTURE: microporphyritic COLOR: medium gray PHENOCRYSTS: 3% plagioclase GROUNDMASS: fine grained VESICLES: none
- 151.0 –	30 40	Ę	3 4 5	↑ ↑			1										UPPER CONTACT: not recovered LOWER CONTACT: not recovered ALTERATION: continuation of same moderately altered gray massive aphyric basalt of Section 1 VEINS: several oriented veins and vein networks, mostly irregular, mainly filled with carbonate, minor amounts of green day STRUCTURE: few oriented fractures, rock competency and recovery are good to poor, a few pieces may have rotated in core
- 151.2 –	50	-	5	t		60	FF.	257									
- 151.4 –	70	- 7 - 7 - 8 - 9		t			11 11 11 11	257	24						· · · · · · · · · · · · · · · · · · ·		
- 151.6 –	90 100	_ 1 _ 1	0	1 1													
-	110		2	Î	PMG MADC		f										

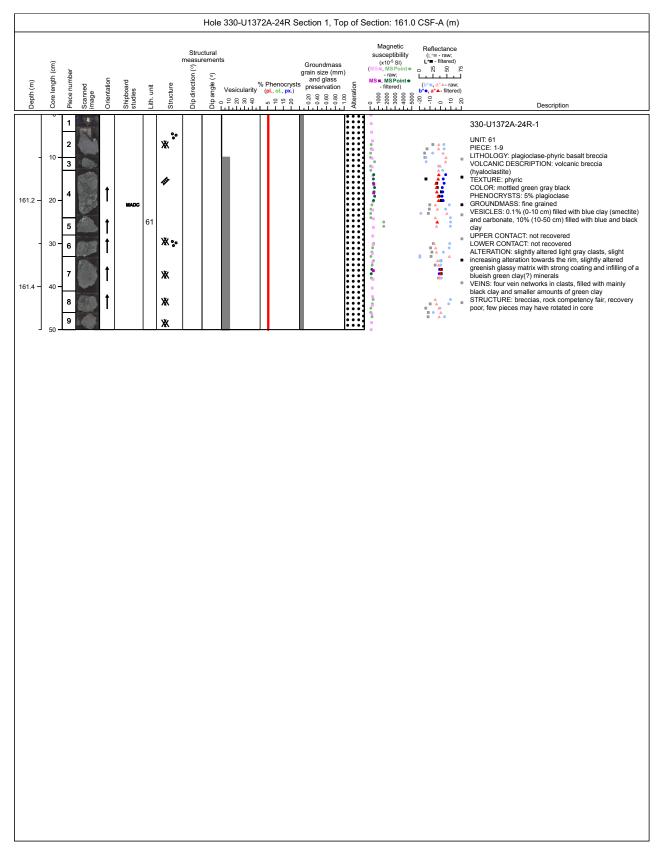




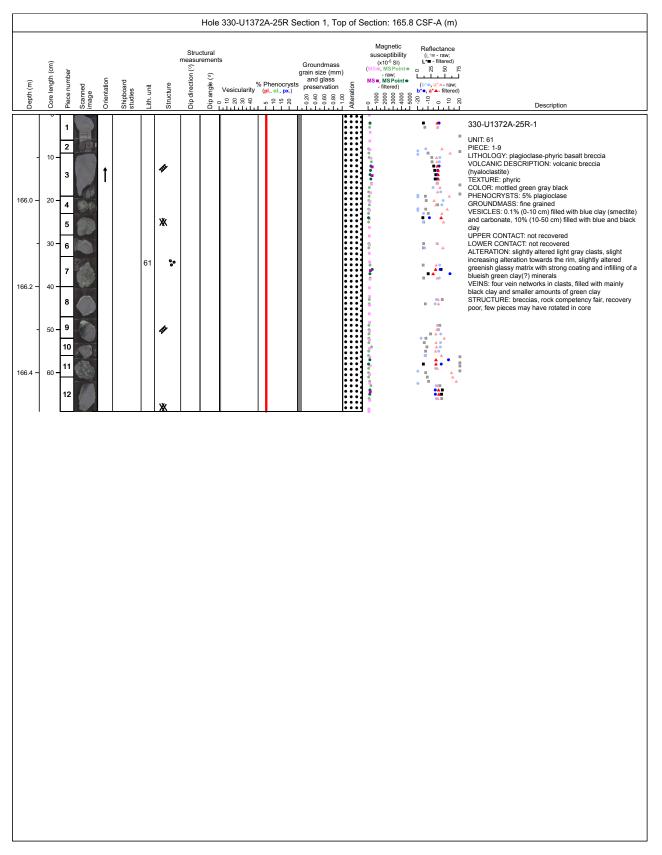








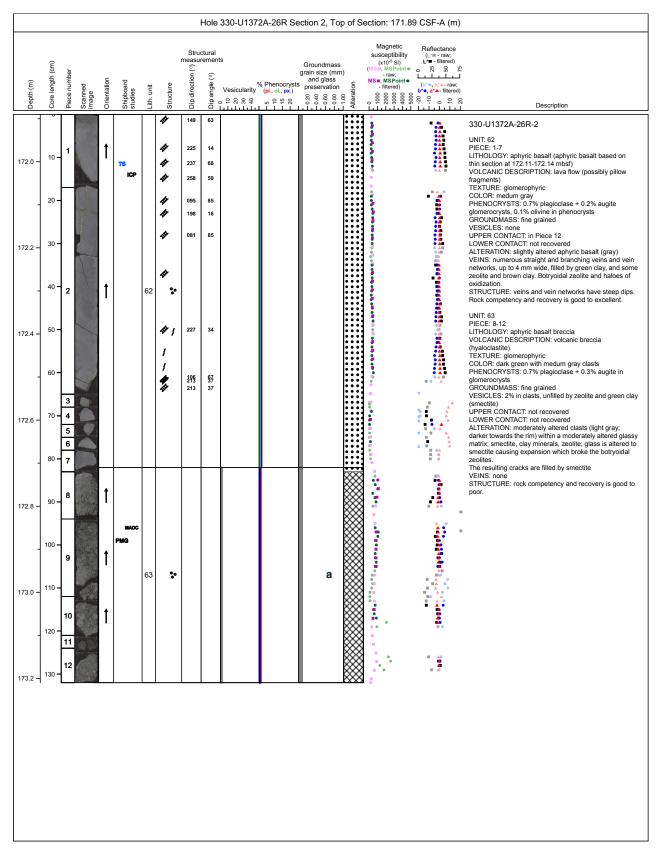




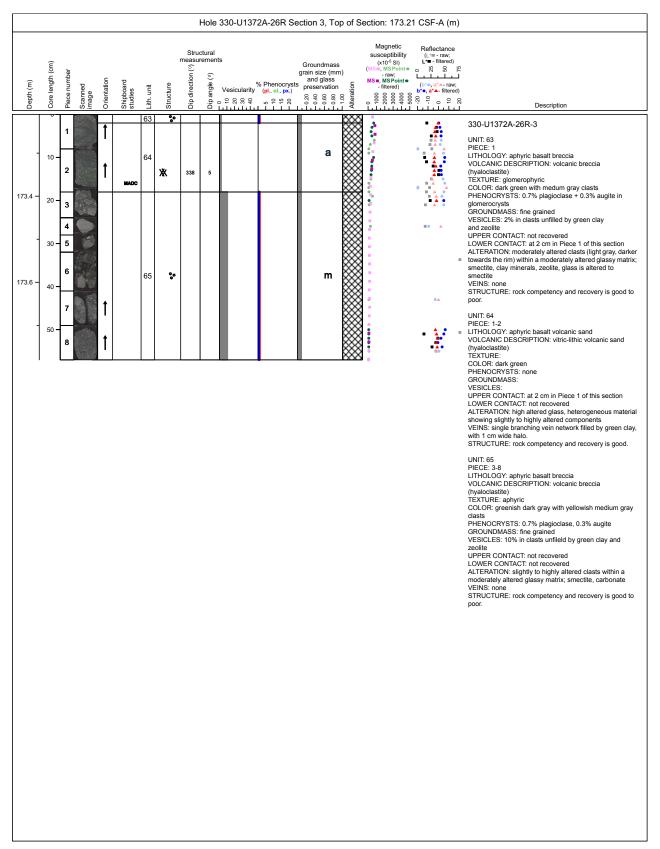


									Hole	330-U137	2A-26R S	ection 1, To	p of S	ection: 170.6	CSF-A (m)	
Ē	Core length (cm)	umber	p	tion	ard	,te		Dip direction (⁰) mage	ctural rement () aßure	0,		Groundmass grain size (mm and glass preservation	-	Magnetic susceptibility (x10 ⁻⁵ SI) (MS=, MSPointe - raw; MS=, MSPointe - filtered)	Reflectance (L*= - raw; L*= - filtered) 0 \$2 \$5 \$2 (b*e, a*A- raw;	
Depth (m)	Core lei	Piece number	Scanned image	Orientation	Shipboard studies	Lith. unit	Structure	Dip dire	Dip ang	Vesicularity	(<mark>, xq</mark> , lo , lq) 5 2 2 3 1 1 1 1	procorration	Alteration	5000 5000 5000 5000 5000 5000 5000 500		Description
- 170.8 - - 171.0 -	10 - 20 - 30 - 40 - 50 -	1 2 3 4 5 6 7 8		t	TS	61	₩ ₩ *					р				0.1% olivine in glomerocrysts GROUNDMASS: fine grained VESICLES: 0.5% in clasts unfilled by zeolite and green clay (smectile) UPPER CONTACT: not recovered LOWER CONTACT: not recovered ALTERATION: slighty altered clasts (light gray) with increasing alteration towards the rim turning into a green alteration within a glassy matrix; blue mineral within the matrix (smecitle) VEINS: green clay, zeolite veins 0.5 to 4 mm wide (botryoidal zeolite) STRUCTURE: competency and recovery ranges from good to poor. UNIT: 62 PIECE: 12-14
171.2 -	60 - 70 -	8 9 10 11														LITHOLOGY: aphyric basalt VOLCANIC DESCRIPTION: lava flow (possibly pillow fragments) TEXTURE: glomerophyric COLOR: medum gray PHENOCRYSTS: 0.7% plagioclase + 0.2% augite glomerocrysts, 0.1% olivine in phenocrysts GROUNDMASS: fine grained VESICLES: 0.5% UPPER CONTACT: in Piece 12 LOWER CONTACT: in Piece 12 LOWER CONTACT: not recovered
171.4 -	80 - 90 -	12		1			**	210	23							ALTERATION: slightly altered aphyric basalt (gray) VEINS: numerous straight and branching veins and vein networks, up to 4 mm wide, filled by green clay, and some zeolite. Strong oxidization of the veins between 104.5 and 126 cm STRUCTURE: veins and vein networks have steep dips. Rock competency and recovery is good to excellent.
171.6 -	100 - 110 -	- 14		1	MADC	62	***	156 297 281 317 292	72 4 70 76					2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2		
171.8 -	120 -		Y		XRD		₩¥ ₩ ₩	106 245 060 120	66 53 44 81							





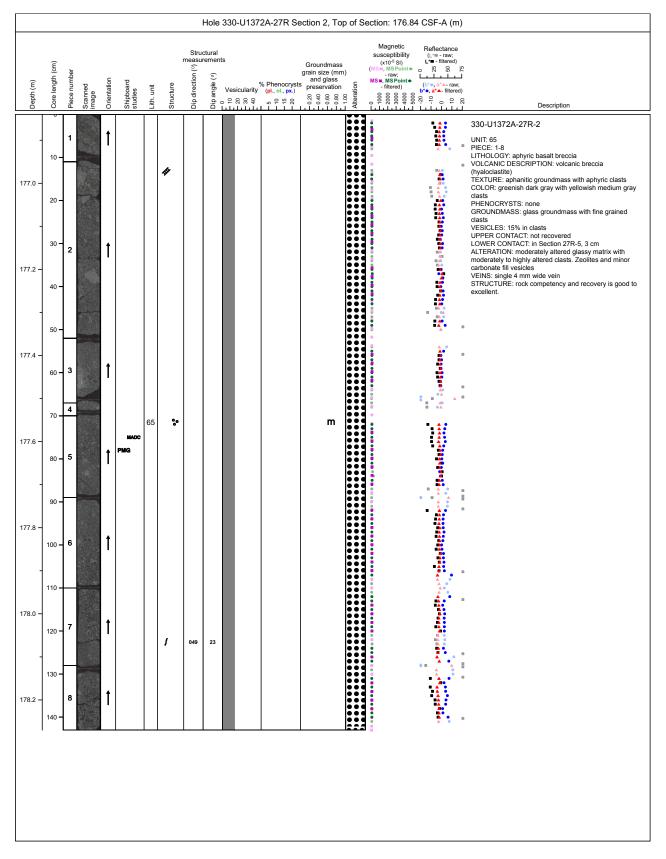






									Hole	330-U137	2A-27R S	ection 1, Top of	Secti	on: 175.4	4 CSF-A (m)	
	(r						I	measu	ctural rement	s		Groundmass	su	lagnetic sceptibility x10 ⁻⁵ SI)	Reflectance (L*≡ - raw; L*■ - filtered)	
Depth (m)	Core length (cm)	 Plece number	Scanned image	Orientation	Shipboard studies	Lith. unit	Structure	Dip direction (°)	Dip angle (°)	Vesicularity	5 15 20	grain size (mm) and glass preservation 5	(MSI	, MSPointe - raw; , MSPointe filtered)	0 ² 5 ² 5 ² (b*●, a*▲- raw;	Description
175.6 - - 175.8 - - 176.0 - - 176.2 - - 176.4 - - 176.6 - - - 176.8 -	 10 - 20 - 30 - 40 - 50 - 60 - 60 - 60 - 90 - 	1	Same and Sa		Shippo Etrades	65	Structu .	Dip dir	Dip and		5 15 20	f 1000000000000000000000000000000000000				330-U1372A-27R-1





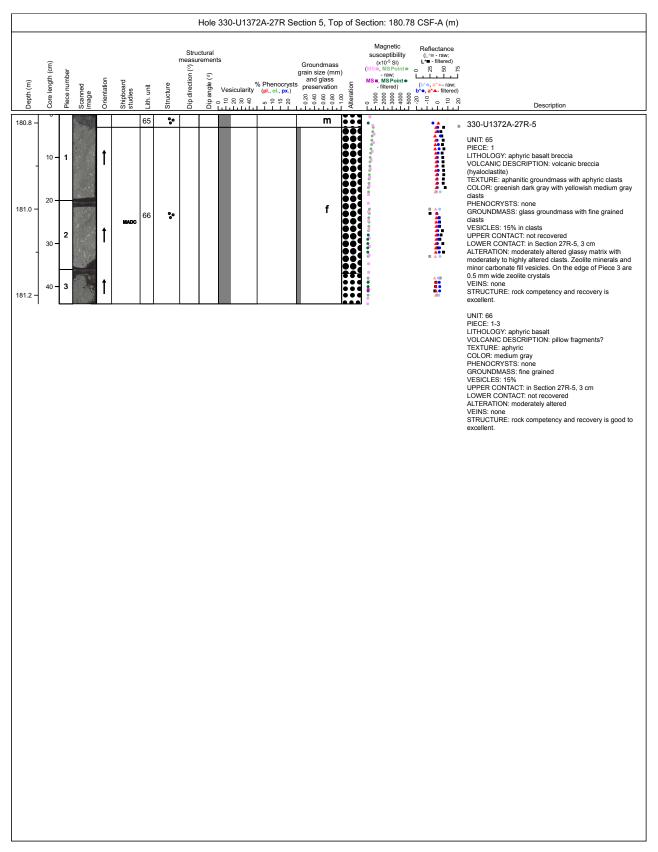


								I	Hole 3	30-U137	2A-27R Se	ection 3, Top	of Se	ction: 178.27	7 CSF-A (m)	
Depth (m)	Core length (cm)	Piece number	Scanned image	Orientation	Shipboard studies	Lith. unit	Structure	Dip direction (°) eau not	rements () ugle	esicularity/	% Phenocrysts (pl., ol., px.) ග ද පු හු	Groundmass grain size (mm) and glass preservation 2 0 0 0 0 0 0 0 0 0 0 0 0	eration	- raw; MS∎, MSPoint● - filtered)	Reflectance (⊥ ^{im} - raw; ⊥ ^{im} - filtered) 22 (b ^{im} •, a [*] A - raw; b ^{im} •, a [*] A - filtered) 02 (b ^{im} •, a [*] A - filtered)	Description
- 178.4 -	10 - 20 -	1			MADC											330-U1372A-27R-3 UNIT: 65 PIECE: 1-4 LITHOLOGY: aphyric basalt breccia (aphyric basalt breccia based on thin section at 179.35-179.37 mbsf) VOLCANIC DESCRIPTION: volcanic breccia (hyaloclastite) TEXTURE: aphanitic groundmass with aphyric clasts COLOR: greenish dark gray with yellowish medium gray clasts PHENOCRYSTS: none
178.6 -	30 - 40 -	2		Î												GROUNDMASS: glass groundmass with fine grained dasts VESICLES: 15% in clasts UPPER CONTACT: not recovered LOWER CONTACT: in Section 27R-5, 3 cm ALTERATION: moderately altered glassy matrix with moderately to highly altered clasts. Zeolite minerals fill vesicles VEINS: none STRUCTURE: rock competency and recovery is good to excellent.
178.8 -	50 - 60 -	3				65	•••									excellent.
- 179.0 –	70 - 80 -			and the second												
- 179.2 -	90 - 100 -	4		Î												
- 179.4 –	110 -				T 8											



Build a second a seco										Hole	330-U137	2A-27R Se	ection 4, Top	of Se	ction: 179.43	3 CSF-A (m)	
$100.4 = \begin{bmatrix} 0 & 1 \\ 10 & 1 \\ 10 & 1 \\ 100.4 \\ $	Depth (m)	Core length (cm)	Core length (cm)	Piece number	Scanned image	Orientation	Shipboard studies	Lith. unit	measu	rements (0) au Ble	Vesicularity	(pl., ol., px.)	grain size (mm and glass ⁵ preservation		susceptibility (x10 ⁻⁵ SI) (MS=, MS Pointe - raw; MS=, MS Pointe - filtered)	(L*≡ - raw; L*≡ - filtered) 0 \$2 \$2 \$2 (b*●, a*▲- raw;	Description
	179.6 - 179.8 - 180.0 - 180.2 -	- 11 - 21 - 30 - 44 - 56 - 71 - 88 - 90 - 100 - 110		1 2 3 4 5 6 7	Samed State	1 1 1 1	Shipbar		Dip direo	Dipangk	우 있 응 우	(pl., ol., px.)	m				330-U1372A-27R-4 UNIT: 65 PIECE: 1-8 LITHOLOGY: aphyric basalt breccia VOLCANIC DESCRIPTION: volcanic breccia (hyaloclastite) TEXTURE: aphanitic groundmass with aphyric clasts COLOR: greenish dark gray with yellowish medium gray clasts PHENCORYSTS: none GROUNDMASS: glass groundmass with fine grained clasts VESICLES: 15% in clasts UPPER CONTACT: not recovered LOWER CONTACT: not recovered LOWER CONTACT: not section 27R-5, 3 cm ALTERATION: moderately altered glassy matrix with moderately to highly altered clasts. Zeolite and minor carbonate fill vesicles VEINS: none STRUCTURE: rock competency and recovery is good to







									Hole	330-U137	'2A-28R S	ection 1, To	p of Se	ection: 180.2	CSF-A (m)	
								Strue	ctural rement:	5				Magnetic susceptibility	Reflectance (L*≡ - raw; L*■ - filtered)	
Ê	gth (cm)	mber	_	ы	ġ						% Phenocrysts	Groundmass grain size (mm and glass)	(x10 ⁻⁵ SI) (MS■, MSPoint● - raw; MS■, MSPoint●	L*■ - hitered) 0 % % % % L	
Depth (m)	Core length (cm)	Piece number	Scanned image	Orientation	Shipboard studies	Lith. unit	Structure	Dip direction (°)		Vesicularity 우 있 있 우	% Phenocrysts (pl., ol., px.) ده ۹ ۴ ۵	preservation	Alteration	- filtered) 2000 00 00 00 2000 00 00 00 2000 00 00 2000 00 00 2000 00000000		Description
	0-	1												•	A 0	330-U1372A-28R-1
- 180.4 –	10 - 20 -	2		† †		67	194 °°°					f				PIECE: 14 PIECE: 14 LITHOLOGY: aphyric basalt breccia VOLCANIC DESCRIPTION: basalt breccia (hyaloclastite) with aphyric basalt clasts (which have glassy margins). TEXTURE: aphyric COLOR: motiled green black brown gray PHENOCRYSTS: none GROUNDMASS: fine grained
-	30 -			_			80			Ľ						VESICLES: 15% in clasts UPPER CONTACT: not recovered LOWER CONTACT: fluidal contact with diapirs from underlying unit intruding into glassy matrix, hot emplacement of lower unit while this unit still unconsolidated ALTERATION: moderate alteration of larger clasts (7-12,
180.6 –	40 -	4	11-1			68	۵۵ مند					f				26-43 cm in Section 1). Remainder of section breccia of black, glass-rich matrix (moderately altered) and moderately altered, brownish gray small clasts (~ 1-2 cm). Voids lined with grayish blue chalcedony(?) VEINS: few irregular veins in clasts STRUCTURE: pipe vesicles, rock competency and
-	50 -		1													UNIT: 68 PIECE: 4 LITHOLOGY: aphyric basalt VOLCANIC DESCRIPTION: in situ hot clast, small lava
180.8 –	60 -									L						lobe, pillow or intrusion TEXTURE: aphyric COLOR: medium gray PHENOCRYSTS: none GROUNDMASS: fine grained VESICLES: 15%
- 181.0 –	70 - 80 -						₽ ₽₽								······································	UPPER CONTACT: glassy margin on lower surface of unit LOWER CONTACT: not recovered but there is a glassy margin on the lower surface of the piece ALTEFATION: gray, moderately altered clast. Vesicles filled with calcite and zeolite VEINS: none STRUCTURE: aligned vesicles and pipe vesicles and a chilled, glassy contact on bottom, rock competency and recovery very good
-	90 -	5		1		69	°,°					f				UNIT: 69 PIECE: 5-6 LITHOLOGY: aphyric basalt breccia VOLCANIC DESCRIPTION: basalt breccia (hyaloclastite) with aphyric basalt clasts (which have glassy margins). TEXTURE: aphanitic groundmass with aphyric clasts COLOR: mottled black green brown blue
181.2 -	100 - 110 -															PHENOCRYSTS: none ⁻ GROUNDMASS: glass groundmass with fine grained dasts VESICLES: 15% in clasts UPPER CONTACT: not recovered LOWER CONTACT: not recovered ALTERATION: black, glass-rich matrix (moderately
181.4 –	120 -	-	* * *											5 5 5 5		Altered) and moderately altered, brownish gray small clasts (~ 1-2 cm). Vesicles lined with grayish blue chalcedony(?) VEINS: single vein STRUCTURE: one oriented vesicle, rock competency and recovery excellent
	130 -															



<pre>with apprice basel class (which have glassy margins). TEXTURE: public block COLOR models block COLOR MODELS COLOR M</pre>										Hole	330-U137	2A-28R Se	ection 2, Top of	Section: 18	81.51	1 CSF-A (m)	
Image: Section of the section of th		÷							measu		s		Crounder	susceptib	ility	Reflectance (L*≡ - raw; L*■ - filtered)	
181.6 10 1 <th>Depth (m)</th> <th>Core length (cm</th> <th>Piece number</th> <th>Scanned image</th> <th>Orientation</th> <th>Shipboard studies</th> <th>Lith. unit</th> <th>Structure</th> <th>Dip direction (°)</th> <th>Dip angle (º)</th> <th>Vesicularity , 은 윿 응 육</th> <th>(pl., ol., px.) β 2² 2 α</th> <th>grain size (mm) and glass preservation</th> <th>(MS=, MSPo - raw; MS=, MSPo - filtered</th> <th>int● int●)</th> <th>0 ¹₂ ¹₂ ¹₂ ¹₄ (b[*]•, a[*]▲- raw;</th> <th></th>	Depth (m)	Core length (cm	Piece number	Scanned image	Orientation	Shipboard studies	Lith. unit	Structure	Dip direction (°)	Dip angle (º)	Vesicularity , 은 윿 응 육	(pl. , ol., px .) β 2 ² 2 α	grain size (mm) and glass preservation	(MS=, MSPo - raw; MS=, MSPo - filtered	int● int●)	0 ¹ ₂ ¹ ₂ ¹ ₂ ¹ ₄ (b [*] •, a [*] ▲- raw;	
VESICLES: 15% in class UPER CONTACT: not recovered UPER contact, not competency and class (-1.2 cm). Voids lined with grays mail class (-1.2 cm). Voids (-1.2	181.6 -		1		1											A 0 E A	UNIT: 69 PIECE: 1-6 LITHOLOGY: aphyric basalt breccia VOLCANIC DESCRIPTION: basalt breccia (hyaloclastite) with aphyric basalt clasts (which have glassy margins). TEXTURE: aphanitic groundmass with aphyric clasts COLOR: motiled black green brown blue PHENOCRYSTS: none
1822 - 50 - 3 - 4 + 1 + 1 + 1 + 1 + 1 + 1 + 1 + 1 + 1 +	181.8 -		2		t												clasts VESICLES: 15% in clasts UPPER CONTACT: not recovered LOWER CONTACT: not recovered ALTERATION: black, glass-rich matrix (moderately altered) and moderately altered, brownish gray small clasts (~ 1-2 cm). Voids lined with grayish blue chalcedony(?). Some green clay in vesicles
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	- 182.0 –		3		1			N.	230	16						*	VEINS: one non-oriented vein network in clast STRUCTURE: chilled contact, rock competency and recovery excellent
182.4 = 90 = 1 $100 = 100 = 1$ $182.6 = 110 = 5$ $110 = 5$ $110 = 5$	- 182.2 –						69										
	- 182.4 –		4		Ţ			8 0					f				
	- 182.6 —		5		t			*								= 🔺 😐	
	- 182.8 –																
	-		6		1												



									Hole	330-U137	2A-28R Se	ection 3, Top of S	ection: 182.9	5 CSF-A (m)	
-	Ē						I	measu	ctural rement	ts		Groundmass	Magnetic susceptibility (x10 ⁻⁵ SI)	Reflectance (L⁺≡ - raw; L*≡ - filtered)	
Depth (m) Core lenoth (cm	Core length (cm)	Piece number	Scanned image	Orientation	Shipboard studies	Lith. unit	Structure	Dip direction (°)	Dip angle (º)	Vesicularity ⊃ ₽ ጺ 였 ᡇ	2 5 12 2 2 2 2 2 3	grain size (mm) and glass	(MS=, MSPointe - raw; MS=, MSPointe	25 26 27 27 27 27 26 27 25 25 25 25 25 25 25 25 25 25	Description
183.0 -	10 -												a. a. a. a. a. a. a.		330-U1372A-28R-3 UNIT: 69 PIECE: 1-5 LITHOLOGY: aphyric basalt breccia VOLCANIC DESCRIPTION: basalt breccia (hyaloclastite) with aphyric basalt clasts (which have glassy margins).
183.2 -	20 - 30 -	1		t											TEXTURE: aphanitic groundmass with aphyric clasts COLOR: motiled black green brown blue PHENOCRYSTS: none GROUNDMASS: glass groundmass with fine grained clasts VESICLES: 15% in clasts UPPER CONTACT: not recovered LOWER CONTACT: not recovered ALTERATION: black, glass-rich matrix (moderately altered) and moderately altered, brownish gray small clasts (~ 1.2 cm). Voids lined with grayish blue chalcedony(?). Small band of calcite-bearing vesicles in
44 183.4 - 50 -		2		t											VEINS: none STRUCTURE: rock competency and recovery excellent
60 183.6 - 70	50 - 70 -					69									
- 80 183.8 - 90	30 -	3		t			••					f			
- 100	- 00	4		t											
110 - 120 184.2 -		5		t											
13(- 14(6		1											
144		6		1											



								l	Hole	330-U137	2A-28R Se	ection 4, Top of S	ection: 184.38	3 CSF-A (m)	
	ē						1	Strue	ctural rement:	3		Groundmass	Magnetic susceptibility (x10 ⁻⁵ SI)	Reflectance (L*≡ - raw; L*≡ - filtered)	
Depth (m)	Core length (cm)	Piece number	Scanned image	Orientation	Shipboard studies	Lith. unit	Structure	Dip direction (°)	Dip angle (°)	Vesicularity	% Phenocryst: (pl., ol., px.) ゅ 은 또 입	Groundmass grain size (mm) and glass preservation 2, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0,	(MS■, MSPoint● - raw; MS■, MSPoint● - filtered)	0 22 32 (b*●, a*▲- raw;	Description
184.4 –	10 -	1		t										1 A • 1	330-U1372A-28R-4 UNIT: 69 PIECE: 1-11 LITHOLOGY: aphyric basalt breccia VOLCANIC DESCRIPTION: basalt breccia (hyaloclastite) with aphyric basalt clasts (which have glassy margins). TEXTURE: aphantic groundmass with aphyric clasts
184.6 –	20 - 30 -	2		t											COLOR: motified black green brown blue PHENOCRYSTS: none GROUNDMASS: glass groundmass with fine grained clasts VESICLES: 15% in clasts UPPER CONTACT: not recovered LOWER CONTACT: not recovered ALTERATION: black, glass-rich matrix (moderately
- 184.8 –	40 -	3		t											altered) and moderately altered, brownish gray small clasts (~ 1-2 cm). Voids lined with grayish blue chalcedony(?) VEINS: none STRUCTURE: single band of vesicles at 150, rock competency and recovery excellent
- 185.0 –	50 - 60 -	4		t			80								
-	70 -	5		1		69	••					f			
185.2 -	80 - 90 -	7		1											
185.4 -	100 - 110 -	8		t											
- 185.6 –	120 -	9		t											
- 185.8 –	130 - 140 -	10		t t											
				•										<u> </u>	

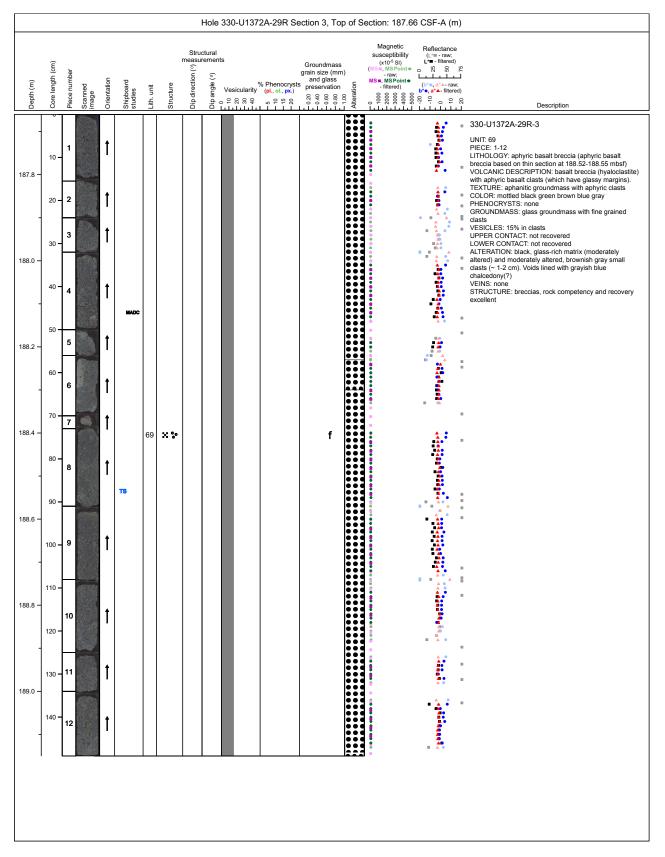


									Hole	330-U137	'2A-29R S	ection 1, Top of Se	ection: 185.0	CSF-A (m)	
(gth (cm)	mber		Б	g			measur			/ Dhamaa 4	grain size (mm) and glass	Magnetic susceptibility (x10 ⁻⁵ SI) MS=, MSPoint● - raw; MS=, MSPoint●	Reflectance (L*= - raw; L*= - filtered) 0 \$\begin{tabular}{lllllllllllllllllllllllllllllllllll	
Depth (m)	Core length (cm)	Piece number	Scanned image	Orientation	Shipboard studies	Lith. unit	Structure	Dip direction (°)		Vesicularity ♀♀≈≈≈	% Phenocrysts (pl., ol., px.) ら 은 은	eratic 100000000	- filtered)	(b*●, a*▲- raw; b*●, a*▲- filtered) ♀ ♀ ₀ ₽ ♀	Description
- 185.2 -	10 - 20 -	1 2 3		1	MADC										UNIT: 69 PIECE: 1-7 LITHOLOGY: aphyric basalt breccia VOLCANIC DESCRIPTION: basalt breccia (hyaloclastite) with aphyric basalt clasts (which have glassy margins). TEXTURE: aphanitic groundmass with aphyric clasts COLOR: mottled black green brown blue gray PHENOCRYSTS: none GROUNDMASS: glass groundmass with fine grained clasts VESICLES: 15% in clasts UPPER CONTACT: not recovered LOWER CONTACT: not recovered
185.4 -	30 - 40 - 50 -	4		1											ALTERATION: black, glass-rich matrix (moderately altered) and moderately altered, brownish gray small clasts (~ 1-2 cm). Voids lined with grayish blue chalcedony(?) VEINS: none STRUCTURE: breccias, rock competency and recovery excellent
185.6 –	60 -					69	× %					f			
- 185.8	70 - 80 - 90 -	5		1											
186.0 -	100 - 110 -	6		1											
186.2 -	120 - 130 -	7	and the second s	1	MBI										

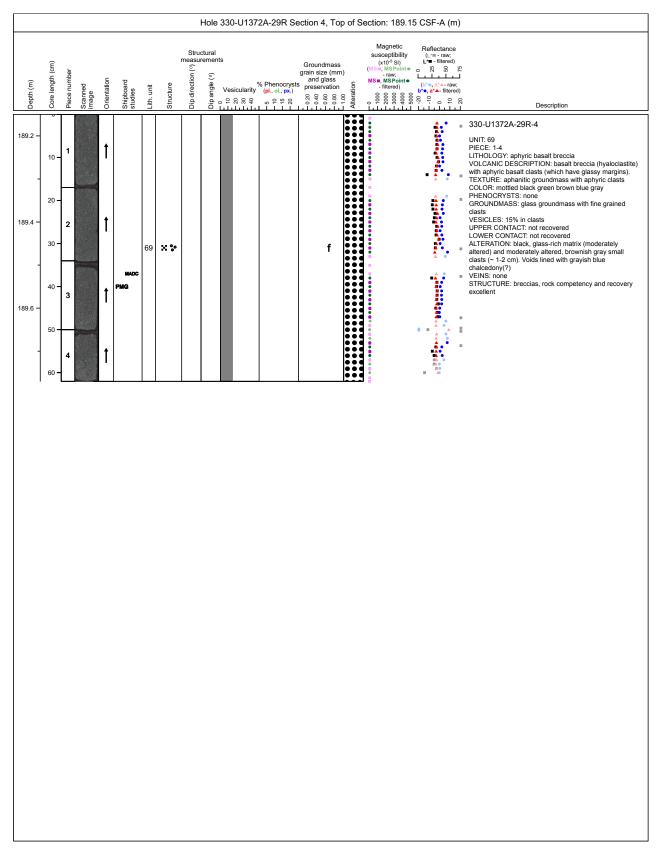


									Hole	330-U137	2A-29R Se	ection 2, Top of Se	ection: 186.31	1 CSF-A (m)	
	~							Strue	ctural rements	5			Magnetic susceptibility (x10 ⁻⁵ SI)	Reflectance (L⁵≡ - raw; L*■ - filtered)	
Depth (m)	Core length (cm)	Piece number	Scanned image	Orientation	Shipboard studies	Lith. unit	Structure	Dip direction (°)	(°) algne		6 Phenocrysts (pl., ol., px.) い	eration 00 80 00 00	(MS=, MSPointe - raw; MS=, MSPointe - filtered)	5 5 5 5 5 6 5 6 5 6 5 6 5 6 5 6 5 6 5 6 5 6 6 7 6 7 6 7 7 6 7 7 7 6 7 7 7 7 7 8 7 7 7 7 7 7 7 7 7 7 7 7 7	
186.4 -	10 -	1		1											330-U1372A-29R-2 UNIT: 69 PIECE: 1-8 LITHOLOGY: aphyric basalt breccia VOLCANIC DESCRIPTION: basalt breccia (hyaloclastite) with aphyric basalt clasts (which have glassy margins). TEXTURE: aphantic groundmass with aphyric clasts COLOR: motifed black green brown blue gray PHENOCRYSTS: none
186.6 -	30 -	_								L					GROUNDMASS: glass groundmass with fine grained clasts VESICLES: 15% in clasts UPPER CONTACT: not recovered LOWER CONTACT: not recovered ALTERATION: Black, glass-rich matrix (moderately altered) and moderately altered, brownish gray small clasts (~ 1-2 cm). Voids lined with grayish blue chalcedony(?)
- 186.8 –	40 - 50 -	2		1											VEINS: none STRUCTURE: breccias, rock competency and recovery excellent
- 187.0 –	60 - 70 -	- 4		1		69	×*					f			
-	80 -														
187.2 -	90 - 100 -	5		1						L					
187.4 -	110 - 120 -	7		1						L					
187.6 -	130 -	8		1											

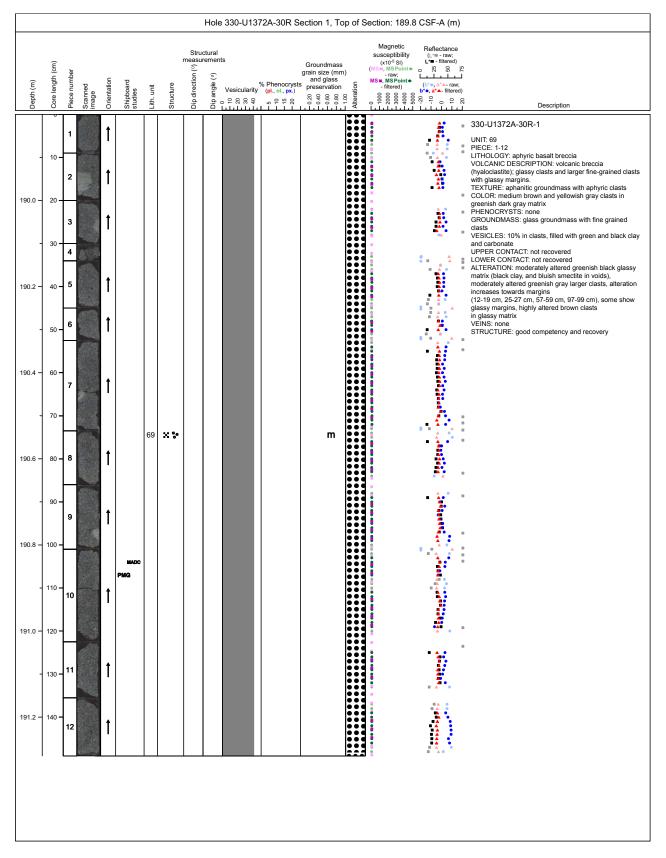








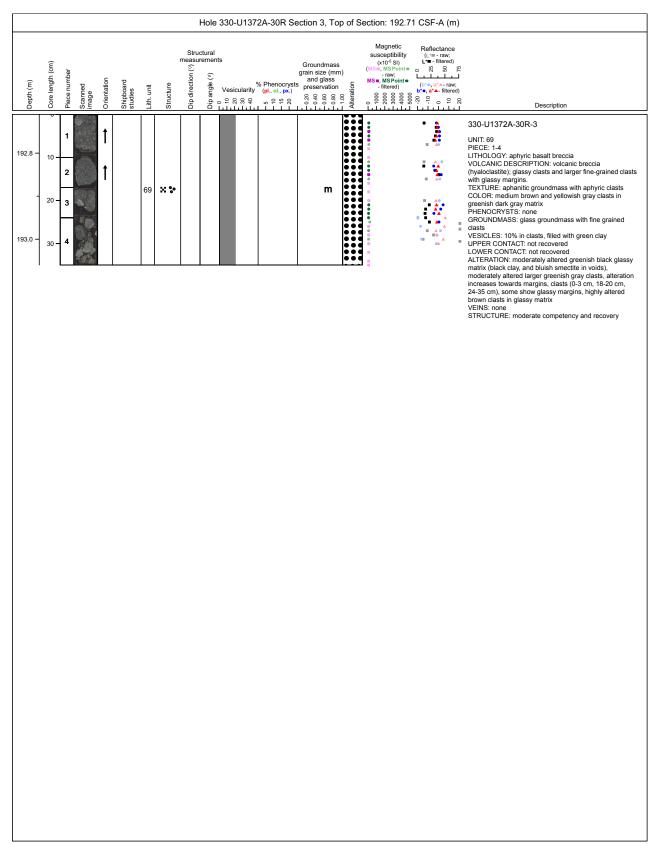






									Hole	330-U137	2A-30R S	ection 2, Top of Se	ection: 191.29	9 CSF-A (m)	
	(r						I	measu	ctural rement	s		Groundmass	Magnetic susceptibility (x10 ⁻⁵ SI)	Reflectance (L*≡ - raw; L*■ - filtered)	
Depth (m)	Core length (cm)	Piece number	Scanned image	Orientation	Shipboard studies	Lith. unit	Structure	Dip direction (°)	Dip angle (º)	Vesicularity 우 윿 응 용 용	% Phenocryst (pl., ol., px.) い	grain size (mm) and glass	(MS=, MSPoint - raw; MS=, MSPoint - filtered)	0 5 5 5 5 5 6 5 6 5 6 5 6 5 6 5 6 5 6 5 6 6 7 6 7 7 7 7 7 7 7 7 7 7 7 7 7	
- 191.4 –	10 -	1	Ben	1											COLOR: medium brown and yellowish gray clasts in
- 191.6 –	30 -	2		1											PHEINCRYSTS: none GROUNDMASS: glass groundmass with fine grained clasts VESICLES: 10% in clasts, filled with green clay and minor well crystalized orange zeolite (>1 mm at 6 cm and at 46 cm) UPPER CONTACT: not recovered
-	40 · 50 ·	3		1											margins, highly altered brown clasts
191.8 -	60 ·	4 5 6		1											in glassy matrix VEINS: none STRUCTURE: moderate to good competency and recovery
192.0 –	70 •	7		1	MADC	69	× %					m			
- 192.2 –	80 · 90 ·	8		t										- 21	
-	100 · 110 ·	11		1											
192.4 -	120 -	12	2	1											
192.6 –	130 ·			1											
 	140 •	- <u>1</u> -		[1]			<u> </u>				<u> </u>		•		

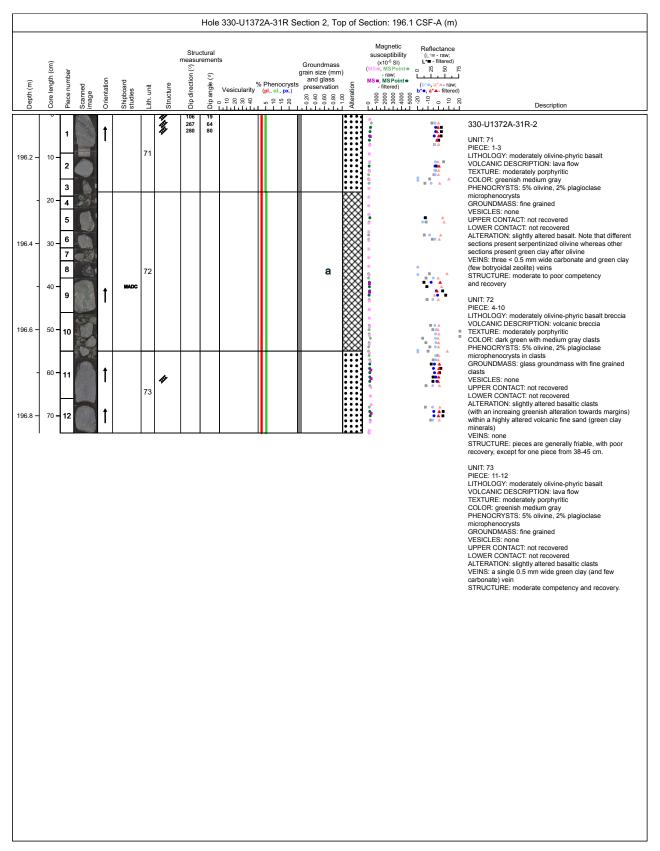






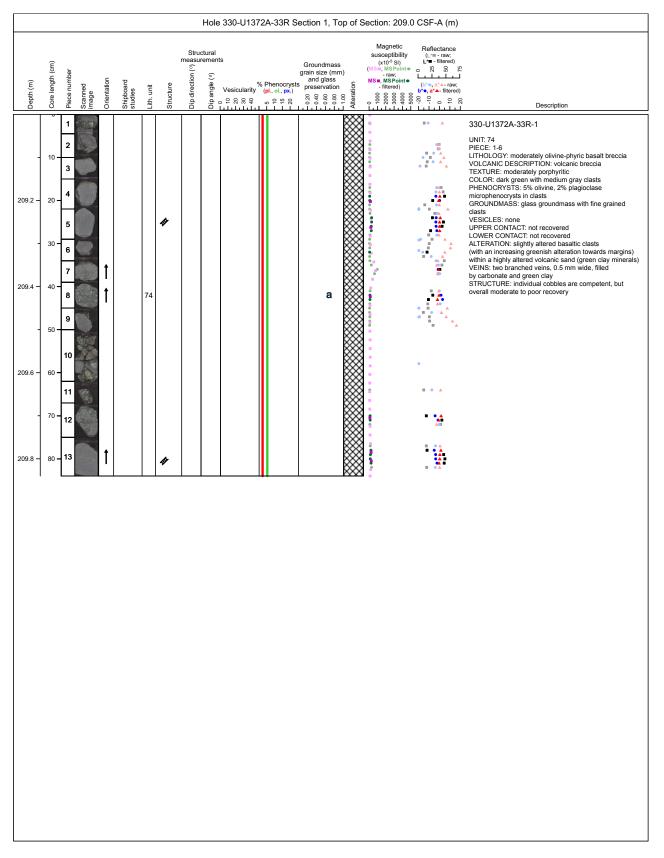
									Hole	330-U137	'2A-31R S	ection 1, To	p of S	ection: 194.6	CSF-A (m)	
	~							measu	ctural rement	s		0		Magnetic susceptibility (x10 ⁻⁵ SI)	Reflectance (L*≡ - raw; L*■ - filtered)	
Ê	Core length (cm)	umber	a	ion	p	÷	e	Dip direction (°)	angle (°)	a	% Phenocryst	Groundmass grain size (mm and glass preservation	,		0 ¹ [°] [°] [°] , a [*] [▲] - raw;	
Depth (m)	Core lei	Piece number	Scanned image	Orientation	Shipboard studies	Lith. unit	Structure	Dip dire	Dip ang	Vesicularity 우 은 있 응 육	(pl. , ol., px.) 9 9 9 9 9 1 1 1	9 8 8 9 9 9 9 9 8 9 9 9 9	Alteration	0000 0000 0000 0000 000000		Description
	10 -	1			MADC		=	169	10							330-U1372A-31R-1 UNIT: 70 PIECE: 1-5 LITHOLOGY: aphyric basalt volcanic sand (aphyric basalt
	10	2		1	TS	70						а				volcanic sand based on thin section at 194.86 mbsf) VOLCANIC DESCRIPTION: vitric-lithic volcanic sand and gravel TEXTURE: aphanitic groundmass with aphyric clasts
194.8 –	20 -	3 4													8 = _ A	COLOR: greenish dark gray with light yellowish gray clasts PHENOCRYSTS: none GROUNDMASS: glass groundmass with fine grained
-	30 -	5 6													• • • •	clasts VESICLES: none UPPER CONTACT: not recovered LOWER CONTACT: not recovered
195.0 -	40 -	7 8													• • •	ALTERATION: Highly altered vitric lithic sand. Glass is highly altered with a green color; clasts are heteregenous in term of alteration VEINS: none STRUCTURE: pieces have preferential splitting direction, most likely representing bedding. Moderate competency
-	50 -	9													•	and recovery. UNIT: 71 PIECE: 6-17 LITHOLOGY: moderately olivine-phyric basalt (moderately olivine-plagioclase-phyric basalt based on
195.2 –	60 -	10		1	TS		TE TE	096	52							thin section at 195.82 and 196.68 mbsf) VOLCANIC DESCRIPTION: lava flow TEXTURE: moderately porphyritic COLOR: greenish medium gray PHENOCRYSTS: 5% olivine, 2% plagioclase microphenocrysts
-	70 -	11		1	MADC PMG		TEL TEL	097	48					2		GROUNDMASS: fine grained VESICLES: none UPPER CONTACT:not recovered LOWER CONTACT: not recovered ALTERATION: slightly altered basalt. Note that different
195.4 –	80 -	12 13		1												sections present serpentinized olivine whereas other sections present green clay after olivine VEINS: several carbonate and green clay veins and vein networks, up to 2 mm wide STRUCTURE: veins generally have steep dips. Competency and recovery is good to poor.
-	90 -	14	Ň	t		71	*							2		
195.6 –	100 -			•	^{TS} ICP		TE TE	069 287	52 55				••••			
-	110 -	15		1	iur		TE									
195.8 -	120 -	16		1			T	309	37					2		
-	130 -						TEL TEL	029 316	30 17					10 C		
196.0 –	140 -	17		1			TH TH	289	57							
	150 -						19 19	107	37				::::	•	_	



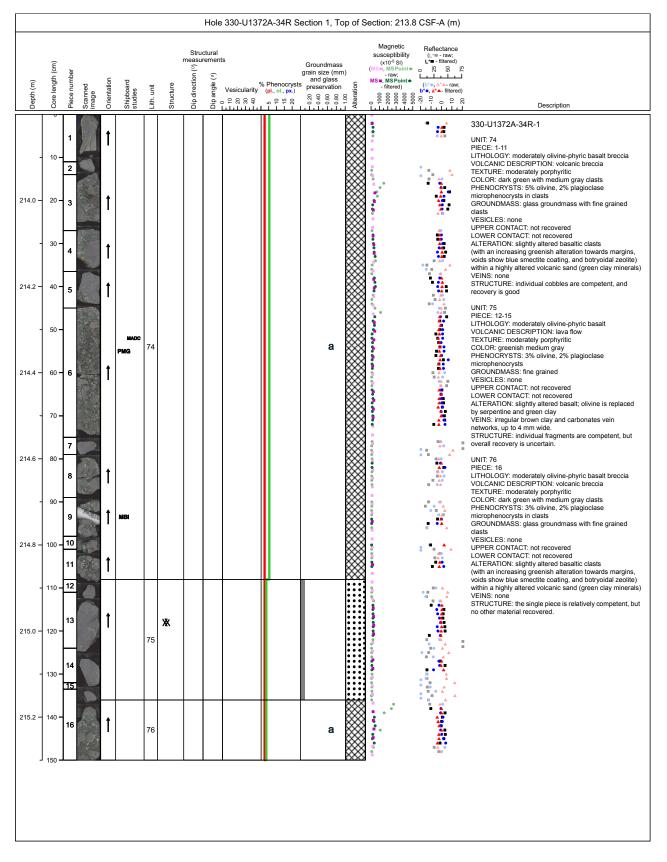




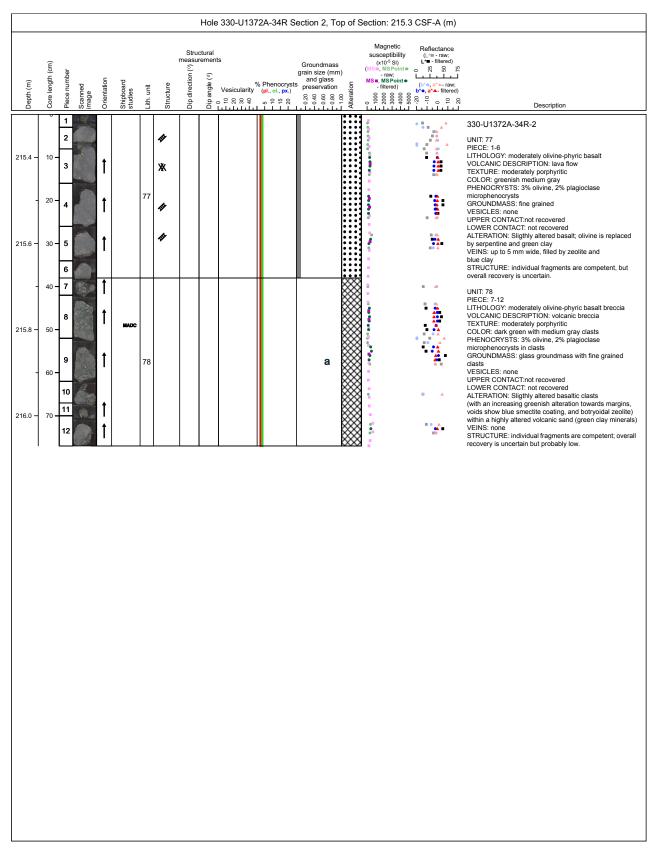




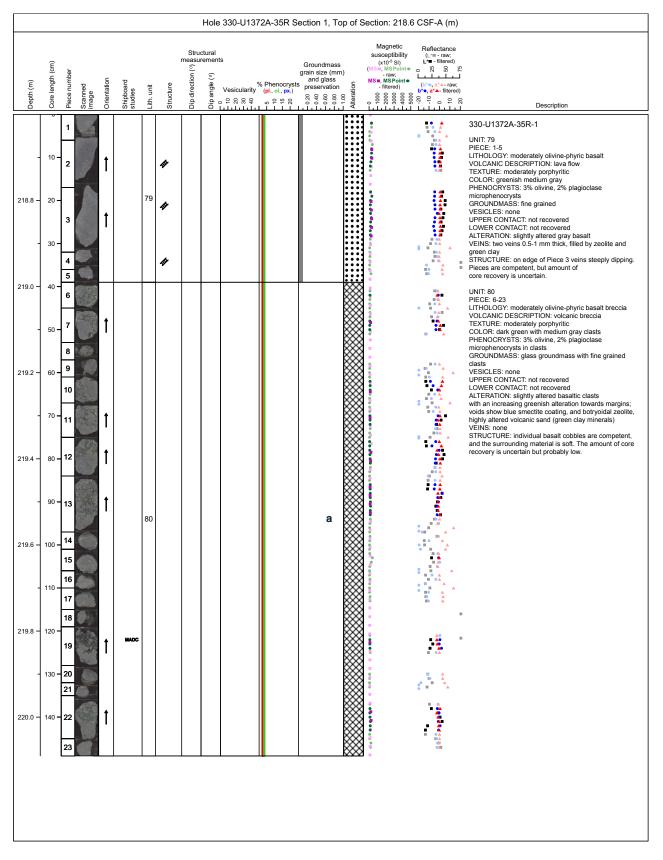














									Hole	330-U1372	2A-35R Se	ection 2, Top	o of Se	ection: 220.0	9 CSF-A (m)	
Depth (m)	Core length (cm)	Piece number	Scanned image	Orientation	Shipboard studies	Lith. unit	Structure	Dip direction (°) each Instruction	ip angle (°)	Vesicularity	20 20 20 20 20	Groundmass grain size (mm and glass preservation	u ij	Magnetic susceptibility (x10 ⁵ SI) (MS=, MS Pointe - raw; MS=, MS Pointe - filtered) 000 00 00 00000 000 00 00000000000000	(b*●, a*▲- raw;	
(iii) transformed a second sec	10 - 20 -			Orientation	Shipboard Shipboard Studies and Shipboard Shipb	08 Teh unit	Structure	Dip direction (Dip angle (°)		20 20 20 20 20	and glass preservation	u ij	- raw; MS∎. MSPoint●	(b*•, a*4- raw; b*•, a*4- risk; b*•, a*4- filtered) 07, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0,	

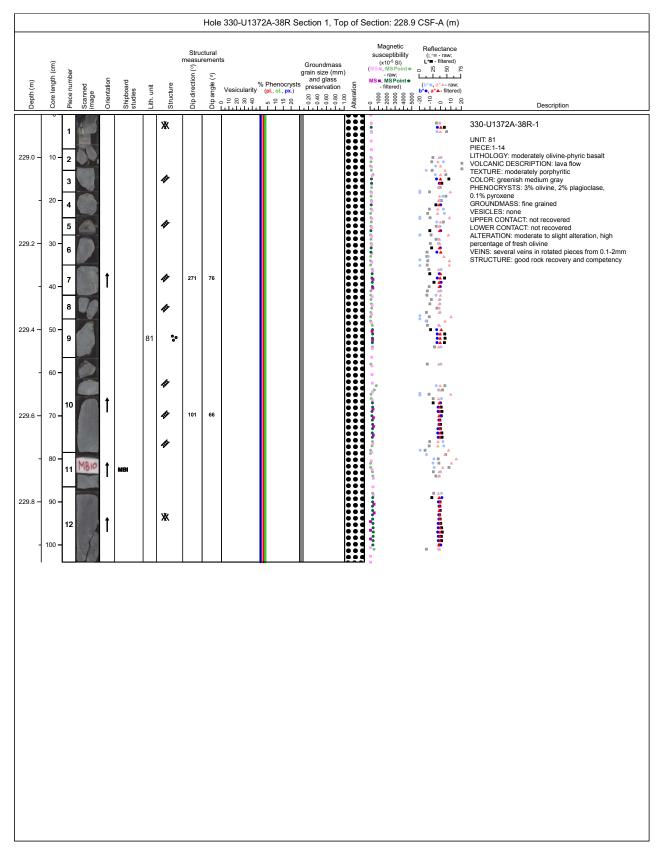


										Hole	330-U137	2A-36R S	ection 1, To	op of S	ection: 223.4	CSF	⁻ -A (m)	
Depth (m)		Core length (cm)	Piece number	Scanned image	Orientation	Shipboard studies	Lith. unit	Structure	Dip direction (^o) mean nerection	angle (º)	Vesicularity	6 Phenocrysts (pl., ol., px.) 또 은 또 입	Groundmass grain size (mm and glass s preservation	1)	Magnetic susceptibility (x10 ⁵ SI) (MS#, MSPointe - raw; MS #, MSPointe - filtered)	") ■*L 	lectance ■ - raw; - filtered) 2 05 52 a*▲- raw; *▲- filtered) 0 0 0 0	Description
223.6 -	- 1			Sca Ima		Shit	008 FtH						a					Jecription 330-U1372A-3GR-1 UNT: 80 PIECE: 15 LITHOLOGY: moderately jourine-phyric basalt breccia VOLCAINC DESCRIPTION: volcanic breccia COLOR: dark green with medium gray clasts PHENOCRYSTS: 3% olivine, 2% plagioctase microphenocrysts in class WESICLES: nome UPER CONTACT: not recovered LOWER CONTACT: not recovered LOWER CONTACT: not recovered the nincreasing greenish alteration towards with an increasing greenish soft, yielding very low recovery.



									Hole	330-U137	2A-37R S	ection 1, To	p of S	ection: 228.2	CSF-A (m)	
								Struc	tural					Magnetic susceptibility	Reflectance (L⁺≡ - raw; L*■ - filtered)	
Ê	Core length (cm)	mber	_	uo	P			tion (°)	angle (°)		Phenocrysts	Groundmass grain size (mm and glass		- raw; MS∎, MSPoint●	0 ¹ / ₂ ²	
Depth (m)	Core ler	Piece number	Scanned image	Orientation	Shipboard studies	Lith. unit	Structure	Dip direction (°)	Dip angl	Vesicularity ^ 우 윿 응 용 나나나나나	5 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	preservation	- 1.00 Alteration	- filtered) 000 000000000000000000000000000000000		Description
	0	1					T						*			330-U1372A-37R-1
	10 -	2				80						а	*			UNIT: 80 PIECE: 1-3 LITHOLOGY: moderately olivine-phyric basalt breccia
		3					*						⋙			VOLCANIC DESCRIPTION: volcanic breccia TEXTURE: moderately porphyritic COLOR: dark green with medium gray clasts
228.4 -	20 -	4		1			ж									PHENOCRYSTS: 3% olivine, 2% plagioclase microphenocrysts in clasts GROUNDMASS: glass groundmass with fine grained
		5														clasts VESICLES: none UPPER CONTACT: not recovered LOWER CONTACT: not recovered
-	30 -															ALTERATION: slightly altered basaltic clasts with an increasing greenish alteration towards margins; voids show blue smectite coating, and botryoidal zeolite,
		6	V	1			T							į		highly altered volcanic sand (green clay minerals) VEINS: single vein 6 mm wide, filled by zeolite, green clay and carbonate
228.6 -	40 -		Y											Ì		STRUCTURE: individual basalt cobbles are competent, but the surrounding material is soft, yielding low recovery.
-	50 -	7	-	t	MADC		靜							2		UNIT: 81 PIECE: 4-14 LITHOLOGY: moderately olivine-phyric basalt
		-	and the second	1	PMG											VOLCANIC DESCRIPTION: lava flow TEXTURE: moderately porphyritic COLOR: greenish medium gray
228.8 -	60 -	8	0			81	TH	243	35					1		PHENOCRYSTS: 3% olivine, 2% plagioclase microphenocrysts GROUNDMASS: fine grained
		9		t			*							1	• <u>A</u>	VESICLES: none UPPER CONTACT: not recovered LOWER CONTACT: not recovered
-	70 -						4	005	20					ţ.		ALTERATION: slightly gray altered basalt VEINS: several veins 0.5 to 4 mm wide, filled by zeolite, green clay and carbonate
229.0 -	80 -	10		1			THE THE	092 008	82 38					2		STRUCTURE: veins typically have steep dips. Individual pieces are competent, but overall recovery is probably moderate.
220.0		11					TE									
-	90 -	12												ţ		
		13												i.		
229.2 -	100 -	13												i.		
	I	L												8		







								I	Hole	330-U1372	2A-38R Se	ection 2, Top of S	ection: 229.94	4 CSF-A (m)	
	(u							measur	ctural rement	s		Groundmass	Magnetic susceptibility (x10 ⁻⁵ SI)	Reflectance (L*≡ - raw; L*■ - filtered)	
Depth (m)	Core length (cm)	Piece number	Scanned image	Orientation	Shipboard studies	Lith. unit	Structure	Dip direction (°)	Dip angle (º)	Vesicularity SPRR LIIIIIIIII	6 Phenocrysts (pl., ol., px.) ه ۲ ۲ ۵	grain size (mm) and glass preservation B H H H H H H H H H H H H H H H H H H	(MS#, MSPointe -raw; MS#, MSPointe - filtered) 00 00 00 00 00 00 0 00 00 00 00 00 0 00 0	25	Description
230.0 -	10 -						11								330-U1372A-38R-2 UNIT: 81 PIECE:1-2c LITHOLOGY: moderately olivine-phyric basalt VOLCANIC DESCRIPTION: lava flow TEXTURE: moderately porphyritic
- 230.2 –	20 - 30 -	-	Jan 1				*	047	15				****		COLOR: greenish medium gray PHENOCRYSTS: 3% olivine, 2% plagioclase, 0.1% pyroxene GROUNDMASS: fine grained VESICLES: none UPPER CONTACT: not recovered LOWER CONTACT: not recovered ALTERATION: slight alteration with high percentage of fresh olivine VEINS: several oriented veins, mostly crosscutting, different dip angles but mostly steeply dipping STRUCTURE: several oriented fractures, rock
230.4 -	40 • 50 •	- 1		t			***	060 209 358 032	90 47 22 37						competency and recovery very good
- 230.6 –	60 · 70 ·		Y			81	₩ ₩ ₩	211 281 032	50 89 49						
- 230.8 –	80 • 90 •		The				<i>″</i> ,	228	31						
- 231.0 –	100 • 110 •	2	1 M	t			& ₩ 1	250	21						
- 231.2 –	120 -						194 (194	343 343	32 40					0 4 0 4 0 4 0 4 0 4 0 4 0 4 0 4 0 4 0 4	



