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# Data report: coring disturbances in IODP Expedition 340, a detailed list of intervals with fall-in and flow-in<sup>1</sup>

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## Abstract

We report an exhaustive list of coring disturbances from the entire collection of piston cores collected during Integrated Ocean Drilling Program (IODP) Expedition 340. Expedition 340 cores contain numerous coring disturbances resulting from the particularly thick and coarse granular material cored. Overall, 23%–32% of the recovered core length is disturbed. Here, coring disturbances are grouped into fall-in and flow-in classes, and uncertain intervals are distinguished from those with clear evidence of coring disturbances. Fall-in corresponds to fallen material atop the core, chiefly from hole collapse. Flow-in includes basal flow-in, which occurs at the bottom of a core, and midcore flow-in, which corresponds to injection of sand into the in situ core stratigraphy. Basal flow-in is likely to occur in conditions of partial stroke, whereas midcore flow-in seems to occur where the core material was stretched during recovery.

## Introduction

In specific types of sediments, Integrated Ocean Drilling Program (IODP) advanced piston corer (APC) technology can produce substantial coring disturbances. These disturbances are mostly present where thick intervals of loose, granular, unconsolidated sediment occur. Volcaniclastic deposits are the sediment type most prone to being affected because they are commonly very thick and well-sorted deposits with particles of low density and low cohesion. Coring disturbances can affect large parts of the core, up to total disruption of the original stratigraphy. More details of about specific types of coring disturbances are found in Jutzeler et al. (2014).

We consider here only two types of coring disturbances, the ones most likely to destroy the original stratigraphy: fall-in and flow-in. Fall-in refers to material that has fallen into the hole or did not get washed during drilling and hole cleaning and was then collected at the top of the next core. These disturbances are commonly easy to identify because of their position at the uppermost part of the core and their common coarse-grained textures. In contrast, flow-in disturbances can affect a few centimeters to the entire length of the core, and the resulting facies may be extremely similar to some natural normally graded facies. Basal flow-in is restricted to the lower part of the core, whereas midcore

<sup>1</sup>Jutzeler, M., Talling, P.J., White, J.D.L., and the Expedition 340 Scientists, 2016. Data report: coring disturbances in IODP Expedition 340, a detailed list of intervals with fall-in and flow-in. *In* Le Friant, A., Ishizuka, O., Stroncik, N.A., and the Expedition 340 Scientists, *Proceedings of the Integrated Ocean Drilling Program, 340*: Tokyo (Integrated Ocean Drilling Program Management International, Inc.).

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flow-in can occur at any position. Cores disturbed by flow-in may have been subsequently disturbed when put horizontally on deck (Jutzeler et al., 2014). We do not consider disturbance by core extension (Jutzeler et al., 2014) because it generally does not mix several intervals together.

Because of the intrinsic difficulties in determining where core disturbances are most likely to occur, we analyzed every high-resolution image of core sections from Expedition 340: 277 cores and 1818 core sections. This list of disturbed intervals does not include reconstruction of the stratigraphy between holes, which would in many cases require an extensive study including componentry, dating, and chemical analyses. The present exhaustive list will allow researchers to study and interpret Expedition 340 cores with much more confidence. Importantly, it will help researchers involved in future studies to avoid parts of the cores that are not representative of the original stratigraphy.

## Results

Of the 1818 core sections recovered during Expedition 340 (Expedition 340 Scientists, 2013), 36% contain fall-in or flow-in coring disturbances and 23%–32% of the total recovered core length is made of disturbed sediment (Tables T1, T2). The present data set shows that a large number of coring disturbances occur because of partial stroke (Jutzeler et al., 2014). Without considering failed holes (U1393A and U1396B), the cores from Montserrat (minimum 11.4% and maximum 13.2% of core length) are much less disturbed than those from Martinique (minimum 25.3% and maximum 30.6% of core length). This high percentage is probably due to the high abundance of volcanoclastic intervals offshore Martinique. Moreover, the relatively high shear stress of the hemipelagic mud at Martinique sites (Expedition 340 Scientists, 2013) likely increased friction of the host formation on the core barrel. High friction rates on the core barrel (1) reduce the overall velocity of the APC during penetration, favoring partial strokes, and (2) increase the tension on the core barrel when pulled out from the host formation, favoring flow-in.

### Fall-in

Fall-in is commonly identified with coarse, ungraded to normally graded intervals at the uppermost part of a core section (Jutzeler et al., 2014). Where cores are entirely disturbed (e.g., Core 340-U1400B-5H), it

is more difficult to assess whether and where there is a contact between fall-in and flow-in disturbances, but given such complete disturbance the distinction becomes irrelevant.

### Flow-in

Basal flow-in is commonly easily identified from the presence of loose, soupy, commonly normally graded sand at the base of the core (Jutzeler et al., 2014). In some places, preserved halos of alteration with gradients of intensity (e.g., glaucony or dark alteration) coronae around clasts allow identification of nondisturbed domains.

Midcore flow-in, which can occur with or without basal flow-in, is identified where floating disaggregated pieces of hemipelagic mud occur in a loose volcanoclastic sand (Jutzeler et al., 2014) but should not be misidentified with primary textures of floating mud intraclasts in volcanoclastic sand. In other places, midcore flow-in is identified where sand of the same apparent componentry was injected into cracks in intervals of more cohesive material (commonly hemipelagic mud) or as the occurrence of a thin rim along the core liner (Jutzeler et al., 2014). Cracks in the mud are likely to be formed during initial recovery (pull) of the core from the formation when the core may be stretched along its entire length. In some cores, it becomes very difficult to distinguish midcore flow-in from local core extension (affecting a single interval) or from genuine mixing by creep or slump (e.g., Sections 340-U1398B-18H-4, 20–145 cm, and 340-U1399A-23H-3, 62 cm, to 23H-5, 140 cm).

### Analyses on disturbed cores

Depending on the intensity and type of coring disturbances, some parts of the disturbed intervals may still be available for specific analyses. We give three examples:

1. The stratigraphy within an interval of flowed-in volcanoclastic sand may be destroyed, but bulk componentry and dating are still possible if the sample is considered as matching the entire length of the disturbance.
2. Similarly, if fall-in clasts are dated to the rough age of the preceding core, they may be available for analyses.
3. A piece of hemipelagic mud floating within volcanoclastic sand may still be used for oxygen isotope dating; however, its exact position in the stratigraphy of the core includes a large error, as loose sand may have been injected above it.

## Summary

All piston cores from Expedition 340 were analyzed for fall-in and flow-in coring disturbances. Volcanic material favors formation of coring disturbances in APC coring operations, and a large number of Expedition 340 cores are affected (23%–32% of total recovered core length). The analysis presented here allows careful sample selection within the pristine intervals to avoid unrepresentative samples. Depending on the intensity of the coring disturbance, some types of analyses can still be carried out on part of the interval; however, we recommend extreme caution.

## Acknowledgments

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**Table T1.** Detailed identification of coring disturbances in Expedition 340 cores. (Continued on next ten pages.)

Core, section	Recovered length (m)	Depth CSF-A (m)		Depth CSF-B (m)		Partial stroke	Fall-in* or flow-in† depth in section (m)		Possible fall-in* or flow-in† depth in section (m)		Fall-in* or flow-in† depth in hole CSF-A (m)		Possible fall-in* or flow-in† depth in hole CSF-A (m)		
		Top	Bottom	Top	Bottom		Top	Bottom	Top	Bottom	Top	Bottom	Top	Bottom	Top
<b>340-U1393A-</b>															
1H-1	1.5	0	1.5	0	1.48	No			0*	1.5*			0*	1.5*	
1H-2	1.5	1.5	3	1.48	2.96	No			0*	1.5*			1.5*	3*	
1H-3	0.53	3	3.53	2.96	3.48	No	0*	0.53*			3*	3.53*			
1H-4	0.71	3.53	4.24	3.48	4.18	No	0*	0.71*			3.53*	4.24*			
1H-CC	0.12	4.24	4.36	4.18	4.3	No	0*	0.12*			4.24*	4.36*			
2H-CC	0.01	4.3	4.31	4.3	4.31	Yes	0†	0.01†			4.3†	4.31†			
<b>340-U1394A-</b>															
2H-7	0.87	13.57	14.44	13.3	14.14	No	0*	0.87*			13.57*	14.44*			
2H-CC	0.16	14.44	14.6	14.14	14.3	No	0*	0.16*			14.44*	14.6*			
3H-1	1.5	14.3	15.8	14.3	15.8	No	0.55*	1.5*			14.85*	15.8*			
3H-2	1.5	15.8	17.3	15.8	17.3	No	0*	1.5*			15.8*	17.3*			
3H-3	1.5	17.3	18.8	17.3	18.8	No	0*	1.5*			17.3*	18.8*			
3H-4	1.5	18.8	20.3	18.8	20.3	No	0*	1.5*			18.8*	20.3*			
3H-5	1.5	20.3	21.8	20.3	21.8	No	0*	1.5*			20.3*	21.8*			
3H-6	1.11	21.8	22.91	21.8	22.91	No	0*	1.11*			21.8*	22.91*			
3H-7	0.64	22.91	23.55	22.91	23.55	No	0*	0.64*			22.91*	23.55*			
3H-CC	0.17	23.55	23.72	23.55	23.72	No	0*	0.17*			23.55*	23.72*			
4H-CC	0.1	23.8	23.9	23.8	23.9	Yes	0*	0.1*			23.8*	23.9*			
<b>340-U1394B-</b>															
8H-1	1.5	59.8	61.3	59.8	61.29	Yes	0†	0.56†			59.8†	60.36†			
8H-2	1.17	61.3	62.47	61.29	62.46	Yes	0.78*	1.17*			62.08*	62.47*			
8H-3	1.22	62.47	63.69	62.46	63.67	Yes	0*	1.22*			62.47*	63.69*			
8H-4	1.21	63.69	64.9	63.67	64.88	Yes	0*	1.21*			63.69*	64.9*			
8H-5	1.27	64.9	66.17	64.88	66.14	Yes	0*	1.27*			64.9*	66.17*			
8H-CC	0.16	66.17	66.33	66.14	66.3	Yes	0*	0.16*			66.17*	66.33*			
9H-1	1.5	66.3	67.8	66.3	67.8	Yes	0†	0.18†			66.3†	66.48†			
9H-4	1.2	69.51	70.71	69.51	70.71	Yes	0*	1.2*			69.51*	70.71*			
9H-5	0.74	70.71	71.45	70.71	71.45	Yes	0*	0.74*			70.71*	71.45*			
9H-CC	0.21	71.45	71.66	71.45	71.66	Yes	0*	0.21*			71.45*	71.66*			
10H-1	1.5	72.5	74	72.5	73.99	Yes	0†	0.2†			72.5†	72.7†			
10H-3	1.5	75.5	77	75.48	76.97	Yes	1.15*	1.5*			76.65*	77*			
10H-4	1.5	77	78.5	76.97	78.46	Yes	0*	1.5*			77*	78.5*			
10H-5	1.5	78.5	80	78.46	79.95	Yes	0*	1.5*			78.5*	80*			
10H-6	1.2	80	81.2	79.95	81.14	Yes	0*	1.2*			80*	81.2*			
10H-7	0.7	81.2	81.9	81.14	81.84	Yes	0*	0.7*			81.2*	81.9*			
10H-CC	0.16	81.9	82.06	81.84	82	Yes	0*	0.16*			81.9*	82.06*			
12H-1	1.5	91.5	93	91.5	92.94	Yes	0†	0.28†			91.5†	91.78†			
12H-4	1.5	96	97.5	95.83	97.27	Yes	0.67*	1.5*			96.67*	97.5*			
12H-5	1.5	97.5	99	97.27	98.71	Yes	0*	1.5*			97.5*	99*			
12H-6	1.5	99	100.5	98.71	100.15	Yes	0*	1.5*			99*	100.5*			
12H-7	0.68	100.5	101.18	100.15	100.81	Yes	0*	0.68*			100.5*	101.18*			
12H-CC	0.2	101.18	101.38	100.81	101	Yes	0*	0.2*			101.18*	101.38*			
13H-1	1.5	101	102.5	101	102.49	Yes	0†	0.15†			101†	101.15†			
13H-1	1.5	101	102.5	101	102.49	Yes	0.15*	1.5*			101.15*	102.5*			
13H-2	1.5	102.5	104	102.49	103.98	Yes	0*	1.5*			102.5*	104*			
13H-3	1.5	104	105.5	103.98	105.48	Yes	0*	1.5*			104*	105.5*			
13H-4	1.5	105.5	107	105.48	106.97	Yes	0*	1.5*			105.5*	107*			
13H-5	1.5	107	108.5	106.97	108.46	Yes	0*	1.5*			107*	108.5*			
13H-6	1.38	108.5	109.88	108.46	109.83	Yes	0*	1.38*			108.5*	109.88*			
13H-CC	0.17	109.88	110.05	109.83	110	Yes	0*	0.17*			109.88*	110.05*			
14H-1	1.5	110	111.5	110	111.5	No	0†	0.14†			110†	110.14†			
19H-1	1.25	153.7	154.95	153.7	154.95	Yes	1.02*	1.25*			154.72*	154.95*			
19H-2	1.5	154.95	156.45	154.95	156.45	Yes	0*	1.5*			154.95*	156.45*			
19H-3	1.5	156.45	157.95	156.45	157.95	Yes	0*	1.5*			156.45*	157.95*			
19H-4	1.5	157.95	159.45	157.95	159.45	Yes	0*	1.5*			157.95*	159.45*			
19H-5	1.5	159.45	160.95	159.45	160.95	Yes	0*	1.5*			159.45*	160.95*			
19H-6	1.5	160.95	162.45	160.95	162.45	Yes	0*	1.5*			160.95*	162.45*			
19H-7	0.63	162.45	163.08	162.45	163.08	Yes	0*	0.63*			162.45*	163.08*			
19H-CC	0.1	163.08	163.18	163.08	163.18	Yes	0*	0.1*			163.08*	163.18*			
20H-1	1.5	163.2	164.7	163.2	164.69	Yes			0†	0.07†			163.2†	163.27†	
21H-1	1.5	172.7	174.2	172.7	174.2	Yes			0†	0.05†			172.7†	172.75†	
21H-4	1.15	177.03	178.18	177.03	178.18	Yes	0*	1.15*			177.03*	178.18*			
21H-5	1.12	178.18	179.3	178.18	179.3	Yes	0*	1.12*			178.18*	179.3*			



Table T1 (continued). (Continued on next page.)

Core, section	Recovered length (m)	Depth CSF-A (m)		Depth CSF-B (m)		Partial stroke	Fall-in* or flow-in† depth in section (m)		Possible fall-in* or flow-in† depth in section (m)		Fall-in* or flow-in† depth in hole CSF-A (m)		Possible fall-in* or flow-in† depth in hole CSF-A (m)			
		Top	Bottom	Top	Bottom		Top	Bottom	Top	Bottom	Top	Bottom	Top	Bottom	Top	Bottom
21H-6	1.34	179.3	180.64	179.3	180.64	Yes	0*	1.34*			179.3*	180.64*				
21H-7	0.66	180.64	181.3	180.64	181.3	Yes	0*	0.66*			180.64*	181.3*				
21H-CC	0.1	181.3	181.4	181.3	181.4	Yes	0*	0.1*			181.3*	181.4*				
340-U1395A-																
3H-4	1.5	16.83	18.33	16.82	18.32	Yes			0.3*	1.5*			17.13*	18.33*		
3H-5	1.42	18.33	19.75	18.32	19.74	Yes			0*	1.42*			18.33*	19.75*		
3H-CC	0.16	19.75	19.91	19.74	19.9	Yes			0*	0.16*			19.75*	19.91*		
6H-1	1.51	38.9	40.41	38.9	40.32	No			0†	0.09†			38.9†	38.99†		
7H-3	1.5	51.4	52.9	51.39	52.88	Yes			0.63*	1.5*			52.03*	52.9*		
7H-4	1.5	52.9	54.4	52.88	54.37	Yes			0*	1.5*			52.9*	54.4*		
7H-5	1.08	54.4	55.48	54.37	55.45	Yes			0*	1.08*			54.4*	55.48*		
7H-6	1.5	55.48	56.98	55.45	56.94	Yes			0*	1.5*			55.48*	56.98*		
7H-CC	0.16	56.98	57.14	56.94	57.1	Yes			0*	0.16*			56.98*	57.14*		
14H-3	1.31	111.9	113.21	111.89	113.2	Yes	0.52*	1.31*			112.42*	113.21*				
14H-4	0.74	113.21	113.95	113.2	113.94	Yes	0*	0.74*			113.21*	113.95*				
14H-5	1.5	113.95	115.45	113.94	115.43	Yes	0*	1.5*			113.95*	115.45*				
14H-6	1.38	115.45	116.83	115.43	116.81	Yes	0*	1.38*			115.45*	116.83*				
14H-CC	0.09	116.83	116.92	116.81	116.9	Yes	0*	0.09*			116.83*	116.92*				
15H-1	1.5	116.9	118.4	116.9	118.37	Yes	0†	0.3†			116.9†	117.2†				
15H-1	1.5	116.9	118.4	116.9	118.37	Yes	0.35*	1.5*			117.25*	118.4*				
15H-2	1.5	118.4	119.9	118.37	119.85	Yes	0*	1.5*			118.4*	119.9*				
15H-3	0.79	119.9	120.69	119.85	120.62	Yes	0*	0.79*			119.9*	120.69*				
15H-CC	0.18	120.69	120.87	120.62	120.8	Yes	0*	0.18*			120.69*	120.87*				
340-U1395B-																
2H-5	1.5	11.9	13.4	11.82	13.3	No	0*	1.5*			11.9*	13.4*				
2H-6	1.3	13.4	14.7	13.3	14.58	No	0*	1.3*			13.4*	14.7*				
2H-7	0.65	14.7	15.35	14.58	15.22	No	0*	0.65*			14.7*	15.35*				
2H-CC	0.18	15.35	15.53	15.22	15.4	No	0*	0.18*			15.35*	15.53*				
3H-1	1.5	15.4	16.9	15.4	16.84	No			0†	1.5†			15.4†	16.9†		
3H-2	1.5	16.9	18.4	16.84	18.29	No			0†	1.46†			16.9†	18.36†		
8H-6	1.3	69.08	70.38	69.06	70.36	Yes	0*	1.3*			69.08*	70.38*				
8H-7	0.72	70.38	71.1	70.36	71.08	Yes	0*	0.72*			70.38*	71.1*				
8H-CC	0.12	71.1	71.22	71.08	71.2	Yes	0*	0.12*			71.1*	71.22*				
9H-2	1.34	72.7	74.04	72.69	74.02	Yes	1*	1.34*			73.7*	74.04*				
9H-3	1.36	74.04	75.4	74.02	75.37	Yes	0*	1.36*			74.04*	75.4*				
9H-4	1.15	75.4	76.55	75.37	76.51	Yes	0*	1.15*			75.4*	76.55*				
9H-5	0.72	76.55	77.27	76.51	77.23	Yes	0*	0.72*			76.55*	77.27*				
9H-6	1.42	77.27	78.69	77.23	78.64	Yes	0*	1.42*			77.27*	78.69*				
9H-7	0.65	78.69	79.34	78.64	79.28	Yes	0*	0.65*			78.69*	79.34*				
9H-CC	0.12	79.34	79.46	79.28	79.4	Yes	0*	0.12*			79.34*	79.46*				
10H-1	1.5	79.4	80.9	79.4	80.9	Yes			0†	0.02†			79.4†	79.42†		
11H-6	1.42	95.2	96.62	95.14	96.55	Yes	0.44*	1.42*			95.64*	96.62*				
11H-CC	0.15	96.62	96.77	96.55	96.7	Yes	0*	0.15*			96.62*	96.77*				
14H-5	1	118.43	119.43	118.42	119.41	Yes	0.53*	1*			118.96*	119.43*				
14H-6	0.74	119.43	120.17	119.41	120.15	Yes	0*	0.74*			119.43*	120.17*				
14H-CC	0.15	120.17	120.32	120.15	120.3	Yes	0*	0.15*			120.17*	120.32*				
15H-1	1.52	120.3	121.82	120.3	121.63	Yes			0.5*	1.52*			120.8*	121.82*		
15H-2	1.28	121.82	123.1	121.63	122.75	Yes	0.66*	1.28*	0*	0.66*	122.48*	123.1*	121.82*	122.48*		
15H-3	1.5	123.1	124.6	122.75	124.06	Yes	0*	1.5*			123.1*	124.6*				
15H-CC	0.04	124.6	124.64	124.06	124.1	Yes	0*	0.04*			124.6*	124.64*				
340-U1396A-																
8H-1	1.51	62.6	64.11	62.6	64.02	No			0†	0.03†			62.6†	62.63†		
12H-5	0.88	106.36	107.24	106.29	107.16	Yes	0.46*	0.88*			106.82*	107.24*				
12H-CC	0.14	107.24	107.38	107.16	107.3	Yes	0*	0.14*			107.24*	107.38*				
13H-1	1.5	107.3	108.8	107.3	108.79	No			0†	0.05†			107.3†	107.35†		
13H-6	1.01	114.8	115.81	114.76	115.76	No	0.79*	1.01*			115.59*	115.81*				
13H-CC	0.14	115.81	115.95	115.76	115.9	No	0*	0.14*			115.81*	115.95*				
14H-1	1.5	115.9	117.4	115.9	117.33	No			0†	0.06†			115.9†	115.96†		
340-U1396B-																
2H-1	1.5	5	6.5	5	5	No			0†	0.03†			5†	5.03†		
340-U1396C-																
6H-1	1.5	46.4	47.9	46.4	47.82	No			0†	0.06†			46.4†	46.46†		
13H-3	0.58	115.91	116.49	115.87	116.45	Yes	0.25*	1.51*			116.16*	117.42*				
13H-4	0.56	116.49	117.05	116.45	117	Yes	0*	0.58*			116.49*	117.07*				
13H-5	1.14	117.05	118.19	117	118.13	Yes	0*	0.56*			117.05*	117.61*				

Table T1 (continued). (Continued on next page.)

Core, section	Recovered length (m)	Depth CSF-A (m)		Depth CSF-B (m)		Partial stroke	Fall-in* or flow-in† depth in section (m)		Possible fall-in* or flow-in† depth in section (m)		Fall-in* or flow-in† depth in hole CSF-A (m)		Possible fall-in* or flow-in† depth in hole CSF-A (m)			
		Top	Bottom	Top	Bottom		Top	Bottom	Top	Bottom	Top	Bottom	Top	Bottom	Top	Bottom
13H-6	1.5	118.19	119.69	118.13	119.61	Yes	0*	1.14*			118.19*	119.33*				
13H-7	0.67	119.69	120.36	119.61	120.27	Yes	0*	0.67*			119.69*	120.36*				
13H-CC	0.13	120.36	120.49	120.27	120.4	Yes	0*	0.13*			120.36*	120.49*				
14H-1	1.49	120.4	121.89	120.4	121.86	No	0†	0.02†								
340-U1397A-																
2H-CC	0.15	9.24	9.39	9.24	9.39	No			0*	0.15*			9.24*	9.39*		
4H-1	1.5	19.3	20.8	19.3	20.76	No			0†	0.17†			19.3†	19.47†		
4H-7	0.59	28.3	28.89	28.06	28.64	No			0.08*	0.59*			28.38*	28.89*		
4H-CC	0.17	28.89	29.06	28.64	28.8	No	0*	0.17*			28.89*	29.06*				
5H-1	1.5	28.8	30.3	28.8	30.28	Yes			0†	1.24†			28.8†	30.04†		
5H-5	1.1	34.8	35.9	34.74	35.83	Yes			0.41*	1.1*			35.21*	35.9*		
5H-6	0.6	35.9	36.5	35.83	36.42	Yes			0*	0.6*			35.9*	36.5*		
5H-CC	0.08	36.5	36.58	36.42	36.5	Yes			0*	0.08*			36.5*	36.58*		
6H-1	1.5	36.5	38	36.5	37.98	No			0†	0.25†			36.5†	36.75†		
7H-1	1.5	46	47.5	46	47.5	Yes			0†	0.02†			46†	46.02†		
7H-6	1.5	52.61	54.11	52.6	54.09	Yes	0*	1.5*			52.61*	54.11*				
7H-7	0.75	54.11	54.86	54.09	54.84	Yes	0*	0.75*			54.11*	54.86*				
8H-1	0.93	55	55.93	55	55.92	Yes	0*	0.93*			55*	55.93*				
8H-2	0.93	55.93	56.86	55.92	56.84	Yes	0*	0.93*			55.93*	56.86*				
8H-3	1.09	56.86	57.95	56.84	57.92	Yes	0*	1.09*			56.86*	57.95*				
8H-4	0.98	57.95	58.93	57.92	58.9	Yes	0*	0.98*			57.95*	58.93*				
8H-5	1.21	58.93	60.14	58.9	60.09	Yes	0*	1.21*			58.93*	60.14*				
8H-6	1.36	60.14	61.5	60.09	61.44	Yes	0*	1.36*			60.14*	61.5*				
8H-CC	0.16	61.5	61.66	61.44	61.6	Yes	0*	0.16*			61.5*	61.66*				
9H-1	1.07	61.6	62.67	61.6	62.66	Yes	0*	1.07*			61.6*	62.67*				
9H-2	1.25	62.67	63.92	62.66	63.91	Yes	0*	1.25*			62.67*	63.92*				
9H-3	1.5	63.92	65.42	63.91	65.4	Yes	0*	1.5*			63.92*	65.42*				
9H-4	1.02	65.42	66.44	65.4	66.41	Yes	0*	1.02*			65.42*	66.44*				
9H-CC	0.19	66.44	66.63	66.41	66.6	Yes	0*	0.19*			66.44*	66.63*				
10H-1	1.5	66.6	68.1	66.6	68.1	Yes	0†	0.1†	0.1†	1.5†	66.6†	66.7†	66.7†	68.1†		
10H-2	1.5	68.1	69.6	68.1	69.59	Yes			0†	0.49†			68.1†	68.59†		
10H-4	1.5	71.1	72.6	71.09	72.58	Yes			0.9*	1.5*			72*	72.6*		
10H-5	0.67	72.6	73.27	72.58	73.25	Yes			0*	0.67*			72.6*	73.27*		
10H-CC	0.25	73.27	73.52	73.25	73.5	Yes			0*	0.25*			73.27*	73.52*		
11H-1	1.51	73.5	75.01	73.5	75.01	Yes	0†	0.3†			73.5†	73.8†				
11H-5	1.49	78.89	80.38	78.88	80.37	Yes	1.29*	1.49*			80.18*	80.38*				
11H-CC	0.13	80.38	80.51	80.37	80.5	Yes	0*	0.13*			80.38*	80.51*				
12H-2	1.5	82.05	83.55	82.05	83.54	Yes	0*	1.5*			82.05*	83.55*				
12H-3	1.5	83.55	85.05	83.54	85.04	Yes	0*	1.5*			83.55*	85.05*				
12H-4	1.3	85.05	86.35	85.04	86.34	Yes	0*	1.3*			85.05*	86.35*				
12H-5	0.6	86.35	86.95	86.34	86.94	Yes	0*	0.6*			86.35*	86.95*				
12H-CC	0.16	86.95	87.11	86.94	87.1	Yes	0*	0.16*			86.95*	87.11*				
13H-1	1.36	87.1	88.46	87.1	88.46	Yes	0†	0.07†			87.1†	87.17†				
13H-CC	0.13	94.87	95	94.87	95	Yes	0*	0.13*			94.87*	95*				
14H-1	0.43	95	95.43	95	95.43	Yes	0†	0.18†			95†	95.18†				
14H-CC	0.11	101.84	101.95	101.79	101.9	Yes	0*	0.11*			101.84*	101.95*				
15H-CC	0.16	101.9	102.06	101.9	102.06	Yes	0*	0.16*			101.9*	102.06*				
17H-1	0.59	106.5	107.09	106.5	107.09	Yes	0†	0.59†			106.5†	107.09†				
17H-2	1.5	107.09	108.59	107.09	108.59	Yes	0*	1.5*			107.09*	108.59*				
17H-3	1.23	108.59	109.82	108.59	109.82	Yes	0*	1.23*			108.59*	109.82*				
17H-CC	0.17	109.82	109.99	109.82	109.99	Yes	0*	0.17*			109.82*	109.99*				
18H-1	1.5	110	111.5	110	111.5	Yes	0†	0.57†			110†	110.57†				
18H-5	1.25	114.92	116.17	114.92	116.17	Yes			0.8*	1.25*			115.72*	116.17*		
18H-CC	0.13	116.17	116.3	116.17	116.3	Yes			0*	0.13*			116.17*	116.3*		
19H-1	1.5	116.3	117.8	116.3	117.79	Yes			0†	0.16†			116.3†	116.46†		
19H-2	1.5	117.8	119.3	117.79	119.27	Yes			0.24*	1.5*			118.04*	119.3*		
19H-3	1.5	119.3	120.8	119.27	120.76	Yes			0*	1.5*			119.3*	120.8*		
19H-4	0.55	120.8	121.35	120.76	121.3	Yes			0*	0.55*			120.8*	121.35*		
19H-CC	0.2	121.35	121.55	121.3	121.5	Yes			0*	0.07*			121.35*	121.42*		
20H-CC	0.25	121.5	121.75	121.5	121.7	Yes	0.07*	0.15*			121.57*	121.65*				
340-U1397B-																
4H-5	1.5	31.6	33.1	31.54	33.03	Yes	1.04*	1.5*			32.64*	33.1*				
4H-6	0.94	33.1	34.04	33.03	33.96	Yes	0*	0.94*			33.1*	34.04*				
4H-CC	0.14	34.04	34.18	33.96	34.1	Yes	0*	0.14*			34.04*	34.18*				
5H-7	0.59	42.65	43.24	42.65	43.24	No	0.45*	0.59*			43.1*	43.24*				
5H-CC	0.11	43.24	43.35	43.24	43.35	No	0*	0.11*			43.24*	43.35*				

Table T1 (continued). (Continued on next page.)

Core, section	Recovered length (m)	Depth CSF-A (m)		Depth CSF-B (m)		Partial stroke	Fall-in* or flow-in† depth in section (m)		Possible fall-in* or flow-in† depth in section (m)		Fall-in* or flow-in† depth in hole CSF-A (m)		Possible fall-in* or flow-in† depth in hole CSF-A (m)			
		Top	Bottom	Top	Bottom		Top	Bottom	Top	Bottom	Top	Bottom	Top	Bottom	Top	Bottom
6H-7	0.4	52.6	53	52.6	53	No	0.25*	0.4*			52.85*	53*				
6H-CC	0.1	53	53.1	53	53.1	No	0*	0.1*			53*	53.1*				
7H-1	1.5	53.1	54.6	53.1	54.58	Yes	0.42*	1.5*			53.52*	54.6*				
7H-2	1.33	54.6	55.93	54.58	55.9	Yes	0*	1.33*			54.6*	55.93*				
7H-3	1.07	55.93	57	55.9	56.96	Yes	0*	1.07*			55.93*	57*				
7H-4	1.05	57	58.05	56.96	58	Yes	0*	1.05*			57*	58.05*				
7H-5	1.37	58.05	59.42	58	59.36	Yes	0*	1.37*			58.05*	59.42*				
7H-6	1.21	59.42	60.63	59.36	60.56	Yes	0*	1.21*			59.42*	60.63*				
7H-7	0.6	60.63	61.23	60.56	61.15	Yes	0*	0.6*			60.63*	61.23*				
7H-CC	0.15	61.23	61.38	61.15	61.3	Yes	0*	0.15*			61.23*	61.38*				
8H-1	1.5	61.3	62.8	61.3	62.79	Yes	0†	1.5†			61.3†	62.8†				
8H-2	1.5	62.8	64.3	62.79	64.28	Yes	0†	1.25†			62.8†	64.05†				
8H-3	1.12	64.3	65.42	64.28	65.38	Yes	0.88*	1.12*			65.18*	65.42*				
8H-4	0.99	65.42	66.41	65.38	66.37	Yes	0*	0.99*			65.42*	66.41*				
8H-5	1.3	66.41	67.71	66.37	67.66	Yes	0*	1.3*			66.41*	67.71*				
8H-6	1	67.71	68.71	67.66	68.65	Yes	0*	1*			67.71*	68.71*				
8H-7	0.69	68.71	69.4	68.65	69.33	Yes	0*	0.69*			68.71*	69.4*				
8H-CC	0.27	69.4	69.67	69.33	69.6	Yes	0*	0.27*			69.4*	69.67*				
10H-4	1.15	83.1	84.25	83.08	84.23	Yes	0.43*	1.15*			83.53*	84.25*				
10H-5	1.5	84.25	85.75	84.23	85.72	Yes	0*	1.5*			84.25*	85.75*				
10H-6	1.31	85.75	87.06	85.72	87.02	Yes	0*	1.31*			85.75*	87.06*				
10H-7	0.64	87.06	87.7	87.02	87.66	Yes	0*	0.64*			87.06*	87.7*				
10H-CC	0.24	87.7	87.94	87.66	87.9	Yes	0*	0.24*			87.7*	87.94*				
11H-1	1.23	87.9	89.13	87.9	89.11	Yes	0*	1.23*			87.9*	89.13*				
11H-2	1.5	89.13	90.63	89.11	90.59	Yes	0*	1.5*			89.13*	90.63*				
11H-3	0.89	90.63	91.52	90.59	91.46	Yes	0*	0.89*			90.63*	91.52*				
11H-CC	0.24	91.52	91.76	91.46	91.7	Yes	0*	0.24*			91.52*	91.76*				
12H-1	1.5	91.7	93.2	91.7	93.2	Yes	0†	0.15†			91.7†	91.85†				
12H-3	1.5	94.7	96.2	94.7	96.2	Yes	0.14*	1.5*			94.84*	96.2*				
12H-4	1.21	96.2	97.41	96.2	97.41	Yes	0*	1.21*			96.2*	97.41*				
12H-5	0.67	97.41	98.08	97.41	98.08	Yes	0*	0.67*			97.41*	98.08*				
12H-CC	0.1	98.08	98.18	98.08	98.18	Yes	0*	0.1*			98.08*	98.18*				
13H-1	1.5	99.3	100.8	99.3	100.77	Yes	0*	1.5*			99.3*	100.8*				
13H-2	1.5	100.8	102.3	100.77	102.24	Yes	0*	1.5*			100.8*	102.3*				
13H-3	0.9	102.3	103.2	102.24	103.12	Yes	0*	0.9*			102.3*	103.2*				
13H-CC	0.18	103.2	103.38	103.12	103.3	Yes	0*	0.18*			103.2*	103.38*				
14H-CC	0.2	103.3	103.5	103.3	103.5	Yes	0†	0.2†			103.3†	103.5†				
16H-1	1.5	108.3	109.8	108.3	109.78	Yes	0*	1.5*			108.3*	109.8*				
16H-2	1.53	109.8	111.33	109.78	111.28	Yes	0*	1.53*			109.8*	111.33*				
16H-3	1.54	111.33	112.87	111.28	112.8	Yes	0*	1.54*			111.33*	112.87*				
16H-CC	0.2	112.87	113.07	112.8	113	Yes	0*	0.2*			112.87*	113.07*				
17H-1	0.26	113	113.26	113	113.2	Yes	0†	0.26†			113†	113.26†				
340-U1398A-																
1H-1	1.5	0	1.5	0	1.47	No	1*	1.5*			1*	1.5*				
1H-2	1.08	1.5	2.58	1.47	2.52	No	0*	1.08*			1.5*	2.58*				
1H-CC	0.18	2.58	2.76	2.52	2.7	No	0*	0.18*			2.58*	2.76*				
2H-1	1.5	2.7	4.2	2.7	4.2	No	0*	1.5*			2.7*	4.2*				
2H-2	1.5	4.2	5.7	4.2	5.7	No	0*	1.5*			4.2*	5.7*				
2H-3	1.5	5.7	7.2	5.7	7.2	No	0*	1.5*			5.7*	7.2*				
2H-4	1.5	7.2	8.7	7.2	8.7	No	0*	1.5*			7.2*	8.7*				
2H-5	1.09	8.7	9.79	8.7	9.79	No	0*	1.09*			8.7*	9.79*				
2H-6	1.54	9.79	11.33	9.79	11.33	No	0*	1.54*			9.79*	11.33*				
2H-CC	0.18	11.33	11.51	11.33	11.51	No	0*	0.18*			11.33*	11.51*				
5H-1	1.5	31.5	33	31.5	32.99	Yes	0†	1.29†			31.5†	32.79†				
5H-6	0.8	37.87	38.67	37.82	38.61	Yes	0.65*	0.8*			38.52*	38.67*				
5H-CC	0.09	38.67	38.76	38.61	38.7	Yes	0*	0.09*			38.67*	38.76*				
6H-1	1.52	38.7	40.22	38.7	40.19	Yes	0†	0.6†			38.7†	39.3†				
7H-4	0.85	50.1	50.95	50.04	50.88	Yes			0.42*	0.85*			50.52*	50.95*		
7H-CC	0.02	50.95	50.97	50.88	50.9	Yes			0*	0.02*			50.95*	50.97*		
8H-1	1.5	50.9	52.4	50.9	52.34	No			0†	1.5†			50.9†	52.4†		
8H-2	1.5	52.4	53.9	52.34	53.78	No			0†	1.5†			52.4†	53.9†		
8H-3	1.5	53.9	55.4	53.78	55.21	No			0†	1.5†			53.9†	55.4†		
8H-4	1.5	55.4	56.9	55.21	56.65	No			0†	1.5†			55.4†	56.5†		
9H-6	1.31	67.84	69.15	67.84	69.15	No			1.2*	1.31*			69.04*	69.15*		
9H-CC	0.03	69.15	69.18	69.15	69.18	No			0*	0.03*			69.15*	69.18*		
11H-1	1.5	79.4	80.9	79.4	80.83	No			0†	0.25†			79.4†	79.65†		
12H-4	0.79	93.33	94.12	93.28	94.06	Yes	0.75*	0.79*			94.08*	94.12*				



Table T1 (continued). (Continued on next page.)

Core, section	Recovered length (m)	Depth CSF-A (m)		Depth CSF-B (m)		Partial stroke	Fall-in* or flow-in† depth in section (m)		Possible fall-in* or flow-in† depth in section (m)		Fall-in* or flow-in† depth in hole CSF-A (m)		Possible fall-in* or flow-in† depth in hole CSF-A (m)			
		Top	Bottom	Top	Bottom		Top	Bottom	Top	Bottom	Top	Bottom	Top	Bottom	Top	Bottom
12H-5	0.58	94.12	94.7	94.06	94.63	Yes	0*	0.58*			94.12*	94.7*				
12H-6	1.36	94.7	96.06	94.63	95.97	Yes	0*	1.36*			94.7*	96.06*				
12H-CC	0.13	96.06	96.19	95.97	96.1	Yes	0*	0.13*			96.06*	96.19*				
13H-1	1.5	96.1	97.6	96.1	97.57	No			0†	1.5†			96.1†	97.6†		
13H-2	1.5	97.6	99.1	97.57	99.04	No			0†	0.28†			97.6†	97.88†		
340-U1398B-																
1H-1	1.5	0	1.5	0	1.48	No	0.69*	1.5*			0.69*	1.5*				
1H-2	1.5	1.5	3	1.48	2.97	No	0*	1.5*			1.5*	3*				
1H-3	1.5	3	4.5	2.97	4.45	No	0*	1.5*			3*	4.5*				
1H-4	1.5	4.5	6	4.45	5.93	No	0*	1.5*			4.5*	6*				
1H-5	1.21	6	7.21	5.93	7.13	No	0*	1.21*			6*	7.21				
1H-6	0.58	7.21	7.79	7.13	7.7	No	0*	0.58*			7.21*	7.79*				
1H-CC	0.2	7.79	7.99	7.7	7.9	No	0*	0.2*			7.79*	7.99*				
2H-1	1.39	7.9	9.29	7.9	9.27	Yes	0†	0.44†	0†	1.39†	7.9†	8.34†	8.34†	9.29†		
2H-2	1.4	9.29	10.69	9.27	10.66	Yes			0†	1.4†			9.29†	10.69†		
2H-3	1.23	10.69	11.92	10.66	11.87	Yes	1.17*	1.23*	0†	0.76†	11.86*	11.92*	10.69†	11.45†		
2H-4	0.82	11.92	12.74	11.87	12.68	Yes	0*	0.82*			11.92*	12.74*				
2H-5	1.29	12.74	14.03	12.68	13.96	Yes	0*	1.29*			12.74*	14.03*				
2H-6	1.01	14.03	15.04	13.96	14.96	Yes	0*	1.01*			14.03*	15.04*				
2H-7	0.64	15.04	15.68	14.96	15.59	Yes	0*	0.64*			15.04*	15.68*				
2H-CC	0.11	15.68	15.79	15.59	15.7	Yes	0*	0.11*			15.68*	15.79*				
3H-1	1.46	15.7	17.16	15.7	17.13	Yes	0†	0.66†	0.66†	1.16†	15.7†	16.36†	16.36†	16.86†		
3H-1	1.46	15.7	17.16	15.7	17.13	Yes	1.35*	1.46*			17.05*	17.16*				
3H-2	1.23	17.16	18.39	17.13	18.34	Yes	0*	1.23*			17.16*	18.39*				
3H-3	0.49	18.39	18.88	18.34	18.82	Yes	0*	0.49*			18.39*	18.88*				
3H-CC	0.29	18.88	19.17	18.82	19.1	Yes	0*	0.29*			18.88*	19.17*				
4H-1	1.44	19.1	20.54	19.1	20.53	Yes	0†	0.33†	1.08*	1.44*	19.1†	19.43†	20.18*	20.54*		
4H-2	1.38	20.54	21.92	20.53	21.91	Yes	1.12*	1.44*	0*	1.12*	21.66*	21.98*	20.54*	21.66*		
4H-3	1.11	21.92	23.03	21.91	23.01	Yes	0*	1.11*			21.92*	23.03*				
4H-4	0.92	23.03	23.95	23.01	23.93	Yes	0*	0.92*			23.03*	23.95*				
4H-5	0.93	23.95	24.88	23.93	24.86	Yes	0*	0.93*			23.95*	24.88*				
4H-6	1.5	24.88	26.38	24.86	26.35	Yes	0*	1.5*			24.88*	26.38*				
4H-CC	0.15	26.38	26.53	26.35	26.5	Yes	0*	0.15*			26.38*	26.53*				
5H-1	1.26	26.5	27.76	26.5	27.76	Yes	0†	0.2†			26.5†	26.7†				
5H-1	1.26	26.5	27.76	26.5	27.76	Yes	0.25*	1.26*			26.75*	27.76*				
5H-2	1.29	27.76	29.05	27.76	29.05	Yes	0*	1.29*			27.76*	29.05*				
5H-3	1.32	29.05	30.37	29.05	30.37	Yes	0*	1.32*			29.05*	30.37*				
5H-4	1.27	30.37	31.64	30.37	31.64	Yes	0*	1.27*			30.37*	31.64*				
5H-5	1.35	31.64	32.99	31.64	32.99	Yes	0*	1.35*			31.64*	32.99*				
5H-6	1.51	32.99	34.5	32.99	34.5	Yes	0*	1.51*			32.99*	34.5*				
5H-7	0.53	34.5	35.03	34.5	35.03	Yes	0*	0.53*			34.5*	35.03*				
5H-CC	0.2	35.03	35.23	35.03	35.23	Yes	0*	0.2*			35.03*	35.23*				
6H-1	1.05	35.4	36.45	35.4	36.44	Yes	0†	0.53†			35.4†	35.93†				
6H-1	1.05	35.4	36.45	35.4	36.44	Yes	0.58*	1.05*			35.98*	36.45*				
6H-2	1.29	36.45	37.74	36.44	37.73	Yes	0*	1.29*			36.45*	37.74*				
6H-3	1.37	37.74	39.11	37.73	39.09	Yes	0*	1.37*			37.74*	39.11*				
6H-4	1.15	39.11	40.26	39.09	40.23	Yes	0*	1.15*			39.11*	40.26*				
6H-5	1.51	40.26	41.77	40.23	41.74	Yes	0*	1.51*			40.26*	41.77*				
6H-6	0.67	41.77	42.44	41.74	42.4	Yes	0*	0.67*			41.77*	42.44*				
6H-CC	0.2	42.44	42.64	42.4	42.6	Yes	0*	0.2*			42.44*	42.64*				
7H-2	1.5	44.1	45.6	44.08	45.57	Yes	0.68*	1.5*			44.78*	45.6*				
7H-3	1.5	45.6	47.1	45.57	47.05	Yes	0*	1*			45.6*	46.6*				
7H-4	1.5	47.1	48.6	47.05	48.54	Yes	0*	5*			47.1*	52.1*				
7H-5	0.62	48.6	49.22	48.54	49.15	Yes	0*	0.62*			48.6*	49.22*				
7H-CC	0.15	49.22	49.37	49.15	49.3	Yes	0*	0.15*			49.22*	49.37*				
8H-1	1.5	49.3	50.8	49.3	50.79	Yes	0†	0.45†			49.3†	49.75†				
8H-1	1.5	49.3	50.8	49.3	50.79	Yes	0.72*	1.5*			50.02*	50.8*				
8H-2	1.5	50.8	52.3	50.79	52.28	Yes	0*	1.5*			50.8*	52.3*				
8H-3	1.28	52.3	53.58	52.28	53.56	Yes	0*	1.28*			52.3*	53.58*				
8H-4	1.23	53.58	54.81	53.56	54.78	Yes	0*	1.23*			53.58*	54.81*				
8H-5	1.38	54.81	56.19	54.78	56.15	Yes	0*	1.38*			54.81*	56.19*				
8H-6	1.11	56.19	57.3	56.15	57.26	Yes	0*	1.11*			56.19*	57.3*				
8H-7	0.67	57.3	57.97	57.26	57.92	Yes	0*	0.67*			57.3*	57.97*				
8H-CC	0.18	57.97	58.15	57.92	58.1	Yes	0*	0.18*			57.97*	58.15*				
9H-1	1.5	58.1	59.6	58.1	59.6	No	0†	0.23†			58.1†	58.33†				
10H-2	1.07	69	70.07	68.99	70.05	Yes	0.22*	1.07*			69.22*	70.07*				
10H-3	0.99	70.07	71.06	70.05	71.03	Yes	0*	0.99*			70.07*	71.06*				



Table T1 (continued). (Continued on next page.)

Core, section	Recovered length (m)	Depth CSF-A (m)		Depth CSF-B (m)		Partial stroke	Fall-in* or flow-in† depth in section (m)		Possible fall-in* or flow-in† depth in section (m)		Fall-in* or flow-in† depth in hole CSF-A (m)		Possible fall-in* or flow-in† depth in hole CSF-A (m)			
		Top	Bottom	Top	Bottom		Top	Bottom	Top	Bottom	Top	Bottom	Top	Bottom	Top	Bottom
10H-4	0.85	71.06	71.91	71.03	71.88	Yes	0*	0.85*			71.06*	71.91*				
10H-5	1.5	71.91	73.41	71.88	73.36	Yes	0*	1.5*			71.91*	73.41*				
10H-6	0.28	73.41	73.69	73.36	73.64	Yes	0*	0.28*			73.41*	73.69*				
10H-CC	0.16	73.69	73.85	73.64	73.8	Yes	0*	0.16*			73.69*	73.85*				
11H-3	1.5	76.8	78.3	76.8	78.3	Yes	0.84*	1.5*			77.64*	78.3*				
11H-4	1.5	78.3	79.8	78.3	79.8	Yes	0*	1.5*			78.3*	79.8*				
11H-5	1.36	79.8	81.16	79.8	81.16	Yes	0*	1.36*			79.8*	81.16*				
11H-6	1.05	81.16	82.21	81.16	82.21	Yes	0*	1.05*			81.16*	82.21*				
11H-7	0.49	82.21	82.7	82.21	82.7	Yes	0*	0.49*			82.21*	82.7*				
11H-CC	0.2	82.7	82.9	82.7	82.9	Yes	0*	0.2*			82.7*	82.9*				
12H-1	1.5	82.9	84.4	82.9	84.4	Yes			0†	0.03†			82.9†	82.93†		
12H-4	1.5	87.4	88.9	87.38	88.88	Yes	0.47*	1.5*			87.87*	88.9*				
12H-5	1.17	88.9	90.07	88.88	90.05	Yes	0*	1.17*			88.9*	90.07*				
12H-6	1.5	90.07	91.57	90.05	91.54	Yes	0*	1.5*			90.07*	91.57*				
12H-CC	0.16	91.57	91.73	91.54	91.7	Yes	0*	0.16*			91.57*	91.73*				
13H-1	1.26	91.7	92.96	91.7	92.94	Yes	0†	0.28†			91.7†	91.98†				
13H-2	1.41	92.96	94.37	92.94	94.32	Yes	0*	1.41*			92.96*	94.37*				
13H-3	1.51	94.37	95.88	94.32	95.8	Yes	0*	1.51*			94.37*	95.88*				
13H-CC	0.1	95.88	95.98	95.8	95.9	Yes	0*	0.1*			95.88*	95.98*				
14H-1	1.5	95.9	97.4	95.9	97.34	No	0†	0.1†	0.1†	1.14†	95.9†	96†	96†	97.04†		
16H-4	1.5	119.4	120.9	119.34	120.83	Yes	1.15*	1.5*	0.76*	1.15*	120.55*	120.9*	120.16*	120.55*		
16H-5	1.22	120.9	122.12	120.83	122.03	Yes	0*	1.22*			120.9*	122.12*				
16H-CC	0.17	122.12	122.29	122.03	122.2	Yes	0*	0.17*			122.12*	122.29*				
17H-1	1.5	122.2	123.7	122.2	123.69	Yes	0.09*	1.5*			122.29*	123.7*				
17H-2	0.94	123.7	124.64	123.69	124.63	Yes	0*	0.94*			123.7*	124.64*				
17H-3	0.25	124.64	124.89	124.63	124.88	Yes	0*	0.25*			124.64*	124.89*				
17H-4	1.5	124.89	126.39	124.88	126.37	Yes	0*	1.5*			124.89*	126.39*				
17H-CC	0.13	126.39	126.52	126.37	126.5	Yes	0*	0.13*			126.39*	126.52*				
18H-4	1.5	131	132.5	130.89	132.35	No			0.2*	1.45*			131.2*	132.45*		
19H-1	1.5	136	137.5	136	137.5	No			0†	0.05†			136†	136.05†		
19H-4	1.46	140.5	141.96	140.5	141.96	No			0.98*	1.46*			141.48*	141.96*		
19H-5	1.45	141.96	143.41	141.96	143.41	No	0.97*	1.45*	0*	0.97*	142.93*	143.41*	141.96*	142.93*		
19H-6	1.49	143.41	144.9	143.41	144.9	No	0*	1.49*			143.41*	144.9*				
19H-CC	0.12	144.9	145.02	144.9	145.02	No	0*	0.12*			144.9*	145.02*				
20H-CC	0.28	154.85	155.13	154.72	155	No	0*	0.28*			154.85*	155.13*				
21H-1	1.45	155	156.45	155	156.45	Yes	0.22*	1.45*			155.22*	156.45*				
21H-2	1.45	156.45	157.9	156.45	157.89	Yes	0*	1.45*			156.45*	157.9*				
21H-3	0.68	157.9	158.58	157.89	158.57	Yes	0*	0.68*			157.9*	158.58*				
21H-CC	0.13	158.58	158.71	158.57	158.7	Yes	0*	0.13*			158.58*	158.71*				
22H-1	1.52	158.7	160.22	158.7	160.21	Yes	0†	0.27†			158.7†	158.97†				
23H-CC	0.08	166.82	166.9	166.82	166.9	Yes	0*	0.08*			166.82*	166.9*				
24H-1	0.95	166.9	167.85	166.9	167.83	Yes	0.06*	0.95*			166.96*	167.85*				
24H-2	0.76	167.85	168.61	167.83	168.58	Yes	0*	0.76*			167.85*	168.61*				
24H-3	0.99	168.61	169.6	168.58	169.55	Yes	0*	0.99*			168.61*	169.6*				
24H-4	1.01	169.6	170.61	169.55	170.54	Yes	0*	1.01*			169.6*	170.61*				
24H-CC	0.16	170.61	170.77	170.54	170.7	Yes	0*	0.16*			170.61*	170.77*				
340-U1399A-																
3H-1	1.5	14.6	16.1	14.6	16.07	No	0†	0.3†	0.3†	1.5†	14.6†	14.9†	14.9†	16.1†		
3H-2	1.5	16.1	17.6	16.07	17.53	No			0†	0.97†			16.1†	17.07†		
7H-7	0.48	61.6	62.08	61.49	61.96	No	0.04*	0.48*			61.64*	62.08*				
7H-CC	0.14	62.08	62.22	61.96	62.1	No	0*	0.14*			62.08*	62.22*				
8H-1	1.3	62.1	63.4	62.1	63.39	Yes	1.1*	1.3*			63.2*	63.4*				
8H-2	1.23	63.4	64.63	63.39	64.61	Yes	0*	1.23*			63.4*	64.63*				
8H-3	1.34	64.63	65.97	64.61	65.94	Yes	0*	0.34*			64.63*	64.97*				
8H-4	1.31	65.97	67.28	65.94	67.24	Yes	0*	1.31*			65.97*	67.28*				
8H-5	1.2	67.28	68.48	67.24	68.44	Yes	0*	1.2*			67.28*	68.48*				
8H-6	1.5	68.48	69.98	68.44	69.93	Yes	0*	1.5*			68.48*	69.98*				
8H-7	0.69	69.98	70.67	69.93	70.61	Yes	0*	0.69*			69.98*	70.67*				
8H-CC	0.19	70.67	70.86	70.61	70.8	Yes	0*	0.19*			70.67*	70.86*				
9H-1	1.5	70.8	72.3	70.8	72.23	No	0†	0.12†			70.8†	70.92†				
10H-7	0.81	89.18	89.99	88.78	89.55	No			0*	0.81*			89.18*	89.99*		
10H-CC	0.26	89.99	90.25	89.55	89.8	No			0*	0.26*			89.99*	90.25*		
11H-1	0.91	89.8	90.71	89.8	90.68	Yes			0*	0.92*			89.8*	90.72*		
11H-2	1.19	90.71	91.9	90.68	91.84	Yes	0*	1.19*			90.71*	91.9*				
11H-CC	0.27	91.9	92.17	91.84	92.1	Yes	0*	0.27*			91.9*	92.17*				
12H-1	0.33	92.1	92.43	92.1	92.43	Yes	0†	0.12†			92.1†	92.22†				
12H-1	0.33	92.1	92.43	92.1	92.43	Yes	0.12*	0.33*			92.22*	92.43*				



Table T1 (continued). (Continued on next page.)

Core, section	Recovered length (m)	Depth CSF-A (m)		Depth CSF-B (m)		Partial stroke	Fall-in* or flow-in† depth in section (m)		Possible fall-in* or flow-in† depth in section (m)		Fall-in* or flow-in† depth in hole CSF-A (m)		Possible fall-in* or flow-in† depth in hole CSF-A (m)			
		Top	Bottom	Top	Bottom		Top	Bottom	Top	Bottom	Top	Bottom	Top	Bottom	Top	Bottom
12H-2	1.5	92.43	93.93	92.43	93.91	Yes	0*	1.5*			92.43*	93.93*				
12H-3	1.04	93.93	94.97	93.91	94.93	Yes	0*	1.04*			93.93*	94.97*				
12H-CC	0.17	94.97	95.14	94.93	95.1	Yes	0*	0.17*			94.97*	95.14*				
13H-2	1.32	96.6	97.92	96.58	97.89	Yes	0.99*	1.32*			97.59*	97.92*				
13H-3	1.29	97.92	99.21	97.89	99.16	Yes	0*	1.29*			97.92*	99.21*				
13H-4	1.13	99.21	100.34	99.16	100.28	Yes	0*	1.13*			99.21*	100.34*				
13H-5	1.0	100.34	101.34	100.28	101.27	Yes	0*	1*			100.34*	101.34*				
13H-6	1.48	101.34	102.82	101.27	102.73	Yes	0*	1.48*			101.34*	102.82*				
13H-CC	0.17	102.82	102.99	102.73	102.9	Yes	0*	0.17*			102.82*	102.99*				
14H-1	1.5	102.9	104.4	102.9	104.38	Yes	0†	0.19†			102.9†	103.09†				
14H-1	1.5	102.9	104.4	102.9	104.38	Yes	1.28*	1.5*			104.18*	104.4*				
14H-2	1.5	104.4	105.9	104.38	105.87	Yes	0*	1.5*			104.4*	105.9*				
14H-3	1.5	105.9	107.4	105.87	107.36	Yes	0*	1.5*			105.9*	107.4*				
14H-4	1.5	107.4	108.9	107.36	108.84	Yes	0*	1.5*			107.4*	108.9*				
14H-5	1.5	108.9	110.4	108.84	110.33	Yes	0*	1.5*			108.9*	110.4*				
14H-6	1.53	110.4	111.93	110.33	111.84	Yes	0*	1.53*			110.4*	111.93*				
14H-CC	0.16	111.93	112.09	111.84	112	Yes	0*	0.16*			111.93*	112.09*				
15H-1	1.5	112	113.5	112	113.43	No			0†	0.03†			112†	112.03†		
15H-6	1.52	119.52	121.04	119.17	120.62	No	0.22*	1.52*			119.74*	121.04*				
15H-7	0.69	121.04	121.73	120.62	121.28	No	0*	0.69*			121.04*	121.73*				
15H-CC	0.23	121.73	121.96	121.28	121.5	No	0*	0.23*			121.73*	121.96*				
16H-1	1.5	121.5	123	121.5	122.92	No	0†	0.32†			121.5†	121.82†				
18H-2	1.5	142	143.5	141.94	143.39	Yes	0.57*	1.5*			142.57*	143.5*				
18H-3	1.5	143.5	145	143.39	144.84	Yes	0*	1.5*			143.5*	145*				
18H-4	1.5	145	146.5	144.84	146.28	Yes	0*	1.5*			145*	146.5*				
18H-5	1.5	146.5	148	146.28	147.73	Yes	0*	1.5*			146.5*	148*				
18H-6	1.5	148	149.5	147.73	149.17	Yes	0*	1.5*			148*	149.5*				
18H-7	0.7	149.5	150.2	149.17	149.85	Yes	0*	0.7*			149.5*	150.2*				
18H-CC	0.16	150.2	150.36	149.85	150	Yes	0*	0.16*			150.2*	150.36*				
19H-1	0.26	150	150.26	150	150.26	Yes	0†	0.26†			150†	150.26†				
19H-CC	0.05	150.26	150.31	150.26	150.31	Yes	0†	0.05†			150.26†	150.31†				
20H-1	1.5	153.4	154.9	153.4	154.89	Yes	0†	0.38†			153.4†	153.78†				
21H-1	0.79	160.6	161.39	160.6	161.38	Yes	0*	0.79*			160.6*	161.39*				
21H-2	1.17	161.39	162.56	161.38	162.53	Yes	0*	1.17*			161.39*	162.56*				
21H-3	1.56	162.56	164.12	162.53	164.06	Yes	0*	1.56*			162.56*	164.12*				
21H-CC	0.14	164.12	164.26	164.06	164.2	Yes	0*	0.14*			164.12*	164.26*				
22H-1	1.5	164.2	165.7	164.2	165.67	Yes	0*	1.5*			164.2*	165.7*				
22H-2	1.49	165.7	167.19	165.67	167.12	Yes	0*	1.49*			165.7*	167.19*				
22H-CC	0.08	167.19	167.27	167.12	167.2	Yes	0*	0.08*			167.19*	167.27*				
23H-1	1.55	167.2	168.75	167.2	168.74	Yes	0†	0.22†			167.2†	167.42†				
23H-3	1.47	170.22	171.69	170.19	171.65	Yes			0.62*	1.47*			170.84*	171.69*		
23H-4	1.47	171.69	173.16	171.65	173.11	Yes			0*	1.47*			171.69*	173.16*		
23H-5	1.46	173.16	174.62	173.11	174.56	Yes			0*	1.46*			173.16*	174.62*		
23H-6	0.76	174.62	175.38	174.56	175.31	Yes	0*	0.76*			174.62*	175.38*				
23H-CC	0.09	175.38	175.47	175.31	175.4	Yes	0*	0.09*			175.38*	175.47*				
24H-1	1.5	175.4	176.9	175.4	176.9	Yes	0†	0.03†			175.4†	175.43†				
24H-3	1.41	178.4	179.81	178.4	179.81	Yes	0.13*	1.41*			178.53*	179.81*				
24H-4	1.13	179.81	180.94	179.81	180.94	Yes	0*	1.13*			179.81*	180.94*				
24H-5	1.21	180.94	182.15	180.94	182.15	Yes	0*	1.21*			180.94*	182.15*				
24H-6	1.5	182.15	183.65	182.15	183.65	Yes	0*	1.5*			182.15*	183.65*				
24H-7	0.64	183.65	184.29	183.65	184.29	Yes	0*	0.64*			183.65*	184.29*				
24H-CC	0.21	184.29	184.5	184.29	184.5	Yes	0*	0.21*			184.29*	184.5*				
25H-2	1.5	186	187.5	185.98	187.47	Yes	0.95*	1.5*			186.95*	187.5*				
25H-3	0.58	187.5	188.08	187.47	188.04	Yes	0*	0.58*			187.5*	188.08*				
25H-4	0.8	188.08	188.88	188.04	188.83	Yes	0*	0.8*			188.08*	188.88*				
25H-5	1.14	188.88	190.02	188.83	189.96	Yes	0*	1.14*			188.88*	190.02*				
25H-6	1.01	190.02	191.03	189.96	190.96	Yes	0*	1.01*			190.02*	191.03*				
25H-7	0.62	191.03	191.65	190.96	191.57	Yes	0*	0.62*			191.03*	191.65*				
25H-CC	0.13	191.65	191.78	191.57	191.7	Yes	0*	0.13*			191.65*	191.78*				
26H-3	1.5	194.74	196.24	194.72	196.21	Yes	1.42*	1.5*			196.16*	196.24*				
26H-4	1.16	196.24	197.4	196.21	197.36	Yes	0*	1.16*			196.24*	197.4*				
26H-5	0.28	197.4	197.68	197.36	197.64	Yes	0*	0.28*			197.4*	197.68*				
26H-CC	0.06	197.68	197.74	197.64	197.7	Yes	0*	0.06*			197.68*	197.74*				
27H-4	1.5	202.24	203.74	202.24	203.74	Yes	1.3*	1.5*			203.54*	203.74*				
27H-CC	0.16	203.74	203.9	203.74	203.9	Yes	0*	0.16*			203.74*	203.9*				
29H-1	1.22	205.5	206.72	205.5	206.7	Yes	0.93*	1.22*			206.43*	206.72*				
29H-2	0.66	206.72	207.38	206.7	207.34	Yes	0*	0.66*			206.72*	207.38*				
29H-CC	0.16	207.38	207.54	207.34	207.5	Yes	0*	0.16*			207.38*	207.54*				

Table T1 (continued). (Continued on next page.)

Core, section	Recovered length (m)	Depth CSF-A (m)		Depth CSF-B (m)		Partial stroke	Fall-in* or flow-in† depth in section (m)		Possible fall-in* or flow-in† depth in section (m)		Fall-in* or flow-in† depth in hole CSF-A (m)		Possible fall-in* or flow-in† depth in hole CSF-A (m)		
		Top	Bottom	Top	Bottom		Top	Bottom	Top	Bottom	Top	Bottom	Top	Bottom	Top
340-U1399B-															
1H-4	1.12	4.5	5.62	4.44	5.54	No	1.08*	1.12*			5.58*	5.62*			
1H-CC	0.16	5.62	5.78	5.54	5.7	No	0*	0.16*			5.62*	5.78*			
2H-5	1.5	11.7	13.2	11.49	12.93	No			1.15*	1.5*			12.85*	13.2*	
2H-6	1.5	13.2	14.7	12.93	14.38	No			0*	1.5*			13.2*	14.7*	
2H-7	0.66	14.7	15.36	14.38	15.02	No			0*	0.66*			14.7*	15.36*	
2H-CC	0.19	15.36	15.55	15.02	15.2	No			0*	0.19*			15.36*	15.55*	
7H-6	0.71	60.45	61.16	60.45	61.16	No	0*	0.71*			60.45*	61.16*			
7H-CC	0.2	61.16	61.36	61.16	61.36	No	0*	0.2*			61.16*	61.36*			
8H-1	1.5	62.7	64.2	62.7	64.19	Yes	0†	0.04†			62.7†	62.74†			
8H-4	1.5	67.15	68.65	67.12	68.61	Yes	1.3*	1.5*			68.45*	68.65*			
8H-5	1.5	68.65	70.15	68.61	70.1	Yes	0*	1.5*			68.65*	70.15*			
8H-6	1.01	70.15	71.16	70.1	71.1	Yes	0*	1.01*			70.15*	71.16*			
8H-7	0.63	71.16	71.79	71.1	71.73	Yes	0*	0.63*			71.16*	71.79*			
8H-CC	0.17	71.79	71.96	71.73	71.9	Yes	0*	0.17*			71.79*	71.96*			
9H-6	1.5	78.92	80.42	78.9	80.4	Yes	1.25*	1.5*			80.17*	80.42*			
9H-7	0.64	80.42	81.06	80.4	81.04	Yes	0*	0.64*			80.42*	81.06*			
9H-CC	0.16	81.06	81.22	81.04	81.2	Yes	0*	0.16*			81.06*	81.22*			
10H-1	1.5	81.2	82.7	81.2	82.69	Yes	0.87*	1.5*			82.07*	82.7*			
10H-2	1.41	82.7	84.11	82.69	84.09	Yes	0*	1.41*			82.7*	84.11*			
10H-3	1.29	84.11	85.4	84.09	85.37	Yes	0*	1.29*			84.11*	85.4*			
10H-4	1.25	85.4	86.65	85.37	86.61	Yes	0*	1.25*			85.4*	86.65*			
10H-5	1.5	86.65	88.15	86.61	88.09	Yes	0*	1.5*			86.65*	88.15*			
10H-6	1.52	88.15	89.67	88.09	89.6	Yes	0*	1.52*			88.15*	89.67*			
10H-CC	0.2	89.67	89.87	89.6	89.8	Yes	0*	0.2*			89.67*	89.87*			
11H-3	1.52	92.7	94.22	92.65	94.14	Yes	0*	1.52*			92.7*	94.22*			
11H-CC	0.16	94.22	94.38	94.14	94.3	Yes	0*	0.16*			94.22*	94.38*			
12H-1	1.52	94.3	95.82	94.3	95.81	Yes	0†	1.42†			94.3†	95.72†			
12H-2	1.43	95.82	97.25	95.81	97.24	Yes	0.77*	1.43*			96.59*	97.25*			
12H-3	1.4	97.25	98.65	97.24	98.63	Yes	0*	1.4*			97.25*	98.65*			
12H-4	1.42	98.65	100.07	98.63	100.04	Yes	0*	1.42*			98.65*	100.07*			
12H-5	1.5	100.07	101.57	100.04	101.54	Yes	0*	1.5*			100.07*	101.57*			
12H-6	1	101.57	102.57	101.54	102.53	Yes	0*	1*			101.57*	102.57*			
12H-CC	0.17	102.57	102.74	102.53	102.7	Yes	0*	0.17*			102.57*	102.74*			
13H-3	1.5	105.7	107.2	105.6	107.04	No			0.7*	1.5*			106.4*	107.2*	
13H-4	1.53	107.2	108.73	107.04	108.52	No			0*	1.53*			107.2*	108.73*	
13H-5	1.46	108.73	110.19	108.52	109.93	No			0*	1.46*			108.73*	110.19*	
13H-6	1.53	110.19	111.72	109.93	111.41	No			0*	1.53*			110.19*	111.72*	
13H-7	0.54	111.72	112.26	111.41	111.93	No			0*	0.54*			111.72*	112.26*	
13H-CC	0.28	112.26	112.54	111.93	112.2	No	0*	0.28*			112.26*	112.54*			
14H-1	0.26	112.2	112.46	112.2	112.46	Yes	0*	0.26*			112.2*	112.46*			
14H-2	0.84	112.46	113.3	112.46	113.3	Yes	0*	0.84*			112.46*	113.3*			
14H-3	0.43	113.3	113.73	113.3	113.73	Yes	0*	0.43*			113.3*	113.73*			
14H-4	0.76	113.73	114.49	113.73	114.49	Yes	0*	0.76*			113.73*	114.49*			
14H-CC	0.21	114.49	114.7	114.49	114.7	Yes	0*	0.21*			114.49*	114.7*			
18H-1	1.5	128.9	130.4	128.9	130.39	Yes	0†	0.22†			128.9†	129.12†			
21H-3	1.05	148.36	149.41	148.35	149.39	Yes			0.88*	1.05*			149.24*	149.41*	
21H-CC	0.11	149.41	149.52	149.39	149.5	Yes			0*	0.11*			149.41*	149.52*	
22H-3	0.97	152.27	153.24	152.25	153.21	Yes	0*	0.97*			152.27*	153.24*			
22H-4	1.22	153.24	154.46	153.21	154.42	Yes	0*	1.22*			153.24*	154.46*			
22H-5	1.24	154.46	155.7	154.42	155.65	Yes	0*	1.24*			154.46*	155.7*			
22H-6	1.4	155.7	157.1	155.65	157.04	Yes	0*	1.4*			155.7*	157.1*			
22H-7	0.61	157.1	157.71	157.04	157.64	Yes	0*	0.61*			157.1*	157.71*			
22H-CC	0.16	157.71	157.87	157.64	157.8	Yes	0*	0.16*			157.71*	157.87*			
23H-1	1.31	157.8	159.11	157.8	158.04	Yes	0†	0.14†			157.8†	157.94†			
23H-1	1.31	157.8	159.11	157.8	158.04	Yes	1.03	1.31*			158.83*	159.11*			
23H-CC	0.2	159.11	159.31	158.04	158.07	Yes	0*	0.2*			159.11*	159.31*			
24H-1	1.5	159.3	160.8	159.3	160.78	Yes	0†	0.13†			159.3†	159.43†			
24H-3	1.22	162.32	163.54	162.28	163.49	Yes	0*	1.22*			162.32*	163.54*			
24H-4	1.49	163.54	165.03	163.49	164.96	Yes	0*	1.49*			163.54*	165.03*			
24H-5	1.28	165.03	166.31	164.96	166.22	Yes	0*	1.28*			165.03*	166.31*			
24H-CC	0.18	166.31	166.49	166.22	166.4	Yes	0*	0.18*			166.31*	166.49*			
26H-1	0.5	173.3	173.8	173.3	173.34	Yes	0*	0.5*			173.3*	173.8*			
26H-CC	0.05	173.8	173.85	173.76	173.8	Yes	0*	0.05*			173.8*	173.85*			
27H-1	1.5	173.8	175.3	173.8	175.3	Yes	0†	0.25†	0†	1.5†	173.8†	174.05†	174.05†	175.3†	
27H-2	1.44	175.3	176.74	175.3	176.74	Yes	0.94*	1.44*	0†	0.22†	176.24*	176.74*	175.3†	175.52†	
27H-3	1.45	176.74	178.19	175.77	176.74	Yes	0*	1.45*			176.74*	178.19*			

Table T1 (continued). (Continued on next page.)

Core, section	Recovered length (m)	Depth CSF-A (m)		Depth CSF-B (m)		Partial stroke	Fall-in* or flow-in† depth in section (m)		Possible fall-in* or flow-in† depth in section (m)		Fall-in* or flow-in† depth in hole CSF-A (m)		Possible fall-in* or flow-in† depth in hole CSF-A (m)			
		Top	Bottom	Top	Bottom		Top	Bottom	Top	Bottom	Top	Bottom	Top	Bottom	Top	Bottom
27H-4	1.4	178.19	179.59	177.13	178.19	Yes	0*	1.4*			178.19*	179.59*				
27H-5	1.51	179.59	181.1	178.39	179.59	Yes	0*	1.51*			179.59*	181.1*				
27H-6	1.22	181.1	182.32	180.06	181.1	Yes	0*	1.22*			181.1*	182.32*				
27H-7	0.65	182.32	182.97	181.72	182.32	Yes	0*	0.65*			182.32*	182.97*				
27H-CC	0.09	182.97	183.06	182.88	182.97	Yes	0*	0.09*			182.97*	183.06*				
340-U1400A-																
2H-1	1.28	3.5	4.78	3.5	4.78	Yes	0†	0.35†	0.35†	1.28†	3.5†	3.85†	3.85†	4.78†		
2H-2	1.27	4.78	6.05	4.78	6.05	Yes			0†	0.07†				4.78†		
2H-2	1.27	4.78	6.05	4.78	6.05	Yes			0.54	1.27				4.85		
2H-3	0.86	6.05	6.91	5.41	6.05	Yes	0.55*	0.86*	0	0.55	6.6*	6.91*	6.05*	6.05*		
2H-4	0.98	6.91	7.89	6.15	6.91	Yes	0*	0.98*			6.91*	7.89*				
2H-5	1.32	7.89	9.21	6.88	7.89	Yes	0*	1.32*			7.89*	9.21*				
2H-6	1.45	9.21	10.66	8.05	9.21	Yes	0*	1.45*			9.21*	10.66*				
2H-CC	0.09	10.66	10.75	10.57	10.66	Yes	0*	0.09*			10.66*	10.75*				
3H-6	1.16	17.34	18.5	16.35	17.34	Yes	0.86*	1.16*			18.2*	18.5*				
3H-7	0.61	18.5	19.11	17.93	18.5	Yes	0*	0.61*			18.5*	19.11*				
3H-CC	0.13	19.11	19.24	18.98	19.11	Yes	0*	0.13*			19.11*	19.24*				
4H-1	1.42	19.2	20.62	19.2	20.35	Yes	0†	0.19†			19.2†	19.39†				
4H-5	1.07	23.6	24.67	22.74	23.6	Yes	0.28*	1.07*			23.88*	24.67*				
4H-6	1.36	24.67	26.03	23.58	24.67	Yes	0*	1.36*			24.67*	26.03*				
4H-CC	0.14	26.03	26.17	25.89	26.03	Yes	0*	0.14*			26.03*	26.17*				
5H-1	0.98	26.1	27.08	26.1	27.07	Yes	0†	0.08†			26.1†	26.18†				
5H-2	1.28	27.08	28.36	27.08	28.36	Yes	0.09*	1.28*			27.17*	28.36*				
5H-3	1.12	28.36	29.48	27.61	28.36	Yes	0*	1.12*			28.36*	29.48*				
5H-4	1.52	29.48	31	28.43	29.48	Yes	0*	1.52*			29.48*	31*				
5H-5	0.55	31	31.55	30.51	31	Yes	0*	0.55*			31*	31.55*				
5H-CC	0.32	31.55	31.87	31.25	31.55	Yes	0*	0.32*			31.55*	31.87*				
6H-1	0.81	31.8	32.61	31.8	32.61	Yes	0†	0.03†			31.8†	31.83†				
6H-1	0.81	31.8	32.61	31.8	32.61	Yes	0.22*	0.81*			32.02*	32.61*				
6H-2	0.67	32.61	33.28	32.6	33.26	Yes	0*	0.67*			32.61*	33.28*				
6H-3	1.18	33.28	34.46	33.26	34.42	Yes	0*	1.18*			33.28*	34.46*				
6H-4	0.8	34.46	35.26	34.42	35.21	Yes	0*	0.8*			34.46*	35.26*				
6H-5	0.99	35.26	36.25	35.26	36.25	Yes	0*	0.99*			35.26*	36.25*				
6H-6	0.74	36.25	36.99	36.25	36.99	Yes	0*	0.74*			36.25*	36.99*				
6H-7	1.24	36.99	38.23	36.99	38.23	Yes	0*	1.24*			36.99*	38.23*				
6H-CC	0.07	38.23	38.3	38.23	38.3	Yes	0*	0.07*			38.23*	38.3*				
7H-1	1.31	38.3	39.61	38.3	38.92	Yes	0*	1.31*			38.3*	39.61*				
7H-2	1.01	39.61	40.62	39.61	40.62	Yes	0*	1.01*			39.61*	40.62*				
7H-3	0.65	40.62	41.27	40.11	40.62	Yes	0*	0.65*			40.62*	41.27*				
7H-CC	0.17	41.27	41.44	41.11	41.27	Yes	0*	0.17*			41.27*	41.44*				
8H-1	1.4	41.4	42.8	41.4	42.61	Yes	0†	0.25†			41.4†	41.65†				
8H-1	1.4	41.4	42.8	41.4	42.61	Yes	0.25*	1.4*			41.65*	42.8*				
8H-2	0.3	42.8	43.1	42.8	43.1	Yes	0*	0.3*			42.8*	43.1*				
8H-3	0.21	43.1	43.31	42.91	43.1	Yes	0*	0.21*			43.1*	43.31*				
8H-4	1.26	43.31	44.57	42.55	43.31	Yes	0*	1.26*			43.31*	44.57*				
8H-5	1.5	44.57	46.07	43.55	44.57	Yes	0*	1.5*			44.57*	46.07*				
8H-6	0.77	46.07	46.84	45.41	46.07	Yes	0*	0.77*			46.07*	46.84*				
8H-CC	0.21	46.84	47.05	46.64	46.84	Yes	0*	0.21*			46.84*	47.05*				
9H-1	1.4	47	48.4	47	48.07	Yes	0*	1.4*			47*	48.4*				
9H-2	1.22	48.4	49.62	48.4	49.62	Yes	0*	1.22*			48.4*	49.62*				
9H-3	0.98	49.62	50.6	48.91	49.62	Yes	0*	0.98*			49.2*	50.6*				
9H-4	0.64	50.6	51.24	50.06	50.6	Yes	0*	0.64*			50.6*	51.24*				
9H-CC	0.15	51.24	51.39	51.1	51.24	Yes	0*	0.15*			51.24*	51.39*				
340-U1400B-																
1H-2	1.5	1.5	3	1.5	2.99	No	1.45*	1.5*			2.95*	3*				
1H-3	1.5	3	4.5	2.99	4.49	No	0*	1.5*			3*	4.5*				
1H-4	1.5	4.5	6	4.49	5.98	No	0*	1.5*			4.5*	6*				
1H-5	0.65	6	6.65	5.98	6.63	No	0*	0.65*			6*	6.65*				
1H-CC	0.17	6.65	6.82	6.63	6.8	No	0*	0.17*			6.65*	6.82*				
2H-1	1.02	6.8	7.82	6.8	7.8	Yes	0*	1.02*			6.8*	7.82*				
2H-2	0.61	7.82	8.43	7.8	8.4	Yes	0*	0.61*			7.82*	8.43*				
2H-CC	0.2	8.43	8.63	8.4	8.6	Yes	0*	0.2*			8.43*	8.63*				
3H-1	0.81	8.6	9.41	8.6	9.41	Yes	0*	0.81*			8.6*	9.41*				
3H-2	1	9.41	10.41	9.41	10.41	Yes	0*	1*			9.41*	10.41*				
3H-3	0.58	10.41	10.99	10.41	10.99	Yes	0*	0.58*			10.41*	10.99*				
3H-CC	0.21	10.99	11.2	10.99	11.2	Yes	0*	0.21*			10.99*	11.2*				

Table T1 (continued). (Continued on next page.)

Core, section	Recovered length (m)	Depth CSF-A (m)		Depth CSF-B (m)		Partial stroke	Fall-in* or flow-in† depth in section (m)		Possible fall-in* or flow-in† depth in section (m)		Fall-in* or flow-in† depth in hole CSF-A (m)		Possible fall-in* or flow-in† depth in hole CSF-A (m)			
		Top	Bottom	Top	Bottom		Top	Bottom	Top	Bottom	Top	Bottom	Top	Bottom	Top	Bottom
4H-1	0.91	11.2	12.11	11.2	12.1	Yes	0†	0.07†			11.2†	11.27†				
4H-1	0.91	11.2	12.11	11.2	12.1	Yes	0.07*	0.91*			11.27*	12.11*				
4H-2	0.9	12.11	13.01	12.1	12.98	Yes	0*	0.9*			12.11*	13.01*				
4H-3	0.91	13.01	13.92	12.98	13.88	Yes	0*	0.91*			13.01*	13.92*				
4H-4	1.5	13.92	15.42	13.88	15.36	Yes	0*	1.5*			13.92*	15.42*				
4H-5	1.3	15.42	16.72	15.36	16.64	Yes	0*	1.3*			15.42*	16.72*				
4H-6	0.57	16.72	17.29	16.64	17.2	Yes	0*	0.57*			16.72*	17.29*				
4H-CC	0.2	17.29	17.49	17.2	17.4	Yes	0*	0.2*			17.29*	17.49*				
5H-1	0.81	17.4	18.21	17.4	18.18	Yes	0*	0.81*			17.4*	18.21*				
5H-2	1.39	18.21	19.6	18.18	19.53	Yes	0*	1.39*			18.21*	19.6*				
5H-CC	0.07	19.6	19.67	19.53	19.6	Yes	0*	0.07*			19.6*	19.67*				
6H-1	1.24	19.6	20.84	19.6	20.84	Yes	0†	0.55†			19.6†	20.15†				
6H-1	1.24	19.6	20.84	19.6	20.84	Yes	0.55*	1.24*			20.15*	20.84*				
6H-2	1.5	20.84	22.34	20.84	22.33	Yes	0*	1.5*			20.84*	22.34*				
6H-3	1.5	22.34	23.84	22.33	23.83	Yes	0*	1.5*			22.34*	23.84*				
6H-4	1.48	23.84	25.32	23.83	25.3	Yes	0*	1.48*			23.84*	25.32*				
6H-CC	0.2	25.32	25.52	25.3	25.5	Yes	0*	0.2*			25.32*	25.52*				
9H-3	0.9	47.45	48.35	47.44	48.34	Yes	0.53*	0.9*			47.98*	48.35*				
9H-CC	0.16	48.35	48.51	48.34	48.5	Yes	0*	0.16*			48.35*	48.51*				
12H-2	1.21	68.97	70.18	68.97	70.18	Yes	0.94*	1.21*			69.91*	70.18*				
12H-3	0.28	70.18	70.46	70.18	70.46	Yes	0*	0.28*			70.18*	70.46*				
12H-4	1.17	70.46	71.63	70.46	71.63	Yes	0*	1.17*			70.46*	71.63*				
12H-5	1.5	71.63	73.13	71.63	73.13	Yes	0*	1.5*			71.63*	73.13*				
12H-6	0.69	73.13	73.82	73.13	73.82	Yes	0*	0.69*			73.13*	73.82*				
12H-CC	0.18	73.82	74	73.82	74	Yes	0*	0.18*			73.82*	74*				
15H-6	0.96	100.38	101.34	100.38	101.34	No			0.04*	0.96*			100.42*	101.34*		
15H-7	0.65	101.34	101.99	101.34	101.99	No	0.12	0.65*	0*	0.12*	101.46*	101.99*	101.34*	101.46*		
15H-CC	0.17	101.99	102.16	101.99	102.16	No	0*	0.17*			101.99*	102.16*				
16H-1	1.34	102.5	103.84	102.5	103.83	Yes	0*	1.34*			102.5*	103.84*				
16H-2	1.01	103.84	104.85	103.83	104.83	Yes	0*	1.01*			103.84*	104.85*				
16H-3	0.72	104.85	105.57	104.83	105.54	Yes	0*	0.72*			104.85*	105.57*				
16H-CC	0.16	105.57	105.73	105.54	105.7	Yes	0*	0.16*			105.57*	105.73*				
20H-1	1.5	128.8	130.3	128.8	130.29	No			0†	1.5†			128.8†	130.3†		
20H-2	1.51	130.3	131.81	130.29	131.78	No			0†	0.67†			130.3†	130.97†		
24H-1	1.47	165.1	166.57	165.1	166.57	No			0*	1.25*			165.1*	166.35*		
340-U1400C-																
2H-1	1.5	15	16.5	15	16.48	Yes	0†	1.5†			15†	16.5†				
2H-2	1.5	16.5	18	16.48	17.96	Yes	0†	1.5†			16.5†	18†				
2H-3	0.93	18	18.93	17.96	18.88	Yes	0†	0.15†			18†	18.15†				
2H-3	0.93	18	18.93	17.96	18.88	Yes	0.15*	0.93*			18.15*	18.93*				
2H-4	1.19	18.93	20.12	18.88	20.05	Yes	0*	1.19*			18.93*	20.12*				
2H-5	1.5	20.12	21.62	20.05	21.53	Yes	0*	1.5*			20.12*	21.62*				
2H-CC	0.07	21.62	21.69	21.53	21.6	Yes	0*	0.07*			21.62*	21.69*				
3H-1	1.5	21.6	23.1	21.6	23.08	Yes	0†	0.47†			21.6†	22.07†				
3H-3	1.51	24.6	26.11	24.56	26.06	Yes	0.25	1.51*			24.85*	26.11*				
3H-4	1.5	26.11	27.61	26.06	27.54	Yes	0*	0.9*			26.11*	27.01*				
3H-6	1.04	28.19	29.23	28.11	29.14	Yes	0*	1.04*			28.19*	29.23*				
3H-CC	0.16	29.23	29.39	29.14	29.3	Yes	0*	0.16*			29.23*	29.39*				
4H-1	1.5	29.3	30.8	29.3	30.76	No	0†	0.15†			29.3†	29.45†				
5H-1	1.45	38.8	40.25	38.8	40.25	No	0†	0.84†			38.8†	39.64†				
7H-1	1.5	57.8	59.3	57.8	59.3	Yes	0†	1.23†			57.8†	59.03†				
8H-1	1.41	66.6	68.01	66.6	67.93	No			0†	0.97†			66.6†	67.57†		
8H-2	1.5	68.01	69.51	67.93	69.35	No			0.63*	1.5*			68.64*	69.51*		
8H-3	1.52	69.51	71.03	69.35	70.78	No			0*	1.52*			69.51*	71.03*		
8H-4	1.51	71.03	72.54	70.78	72.21	No			0*	1.51*			71.03*	72.54*		
8H-5	1.51	72.54	74.05	72.21	73.64	No			0*	1.51*			72.54*	74.05*		
8H-6	1.51	74.05	75.56	73.64	75.06	No			0*	1.51*			74.05*	75.56*		
8H-7	0.7	75.56	76.26	75.06	75.72	No			0*	0.7*			75.56*	76.26*		
8H-CC	0.4	76.26	76.66	75.72	76.1	No			0*	0.4*			76.26*	76.66*		
9H-1	1.5	76.1	77.6	76.1	77.58	Yes	0†	0.16†			76.1†	76.26†				
10H-CC	0.26	84.63	84.89	84.54	84.8	Yes	0*	0.26*			84.63*	84.89*				
13H-6	0.48	110.83	111.31	110.79	111.27	Yes			0.23*	0.48*			111.06*	111.31*		
13H-CC	0.23	111.31	111.54	111.27	111.5	Yes			0*	0.23*			111.31*	111.54*		
18H-1	1.5	143.6	145.1	143.6	145.1	No			0†	1.38†			143.6†	144.98†		
340-U1401A-																
1H-6	0.75	6.81	7.56	6.77	7.51	Yes			0.69*	0.75*			7.5*	7.56*		
1H-CC	0.19	7.56	7.75	7.51	7.7	Yes			0*	0.19*			7.56*	7.75*		

Table T1 (continued).

Core, section	Recovered length (m)	Depth CSF-A (m)		Depth CSF-B (m)		Partial stroke	Fall-in* or flow-in† depth in section (m)		Possible fall-in* or flow-in† depth in section (m)		Fall-in* or flow-in† depth in hole CSF-A (m)		Possible fall-in* or flow-in† depth in hole CSF-A (m)			
		Top	Bottom	Top	Bottom		Top	Bottom	Top	Bottom	Top	Bottom	Top	Bottom	Top	Bottom
2H-1	1.5	7.7	9.2	7.7	9.19	Yes			0†	0.2†			7.7†	7.9†		
2H-2	1.5	9.2	10.7	9.19	10.68	Yes			0.66*	1.5*			9.86*	10.7*		
2H-3	1.2	10.7	11.9	10.68	11.87	Yes			0*	1.2*			10.7*	11.9*		
2H-4	0.49	11.9	12.39	11.87	12.36	Yes			0*	0.49*			11.9*	12.39*		
2H-CC	0.14	12.39	12.53	12.36	12.5	Yes			0*	0.14*			12.39*	12.53*		
3H-1	1.03	12.5	13.53	12.5	13.51	Yes	0*	1.03*			12.5*	13.53*				
3H-CC	0.19	13.53	13.72	13.51	13.7	Yes	0*	0.19*			13.53*	13.72*				
4H-1	0.45	13.7	14.15	13.7	14.12	Yes	0*	0.45*			13.7*	14.15*				
4H-CC	0.2	14.15	14.35	14.12	14.3	Yes	0*	0.2*			14.15*	14.35*				
340-U1401B-																
1H-5	1.44	6	7.44	5.93	7.35	Yes			1.05*	1.44*			7.05*	7.44*		
1H-CC	0.25	7.44	7.69	7.35	7.6	Yes			0*	0.25*			7.44*	7.69*		
2H-1	1.5	7.6	9.1	7.6	9.1	Yes			0†	1.5†			7.6†	9.1†		
2H-2	0.88	9.1	9.98	9.1	9.98	Yes			0†	0.5†			9.1†	9.6†		
2H-4	0.58	10.99	11.57	10.99	11.57	Yes	0*	0.58*			10.99*	11.57*				
2H-5	0.5	11.57	12.07	11.57	12.07	Yes	0*	0.5*			11.57*	12.07*				
2H-CC	0.13	12.07	12.2	12.07	12.2	Yes	0*	0.13*			12.07*	12.2*				
3H-CC	0.13	12.8	12.93	12.8	12.9	Yes	0†	0.13†			12.8†	12.93†				
340-U1401C-																
1H-4	1.5	4.44	5.94	4.42	5.92	Yes			1.25*	1.5*			5.69*	5.94*		
1H-5	1.2	5.94	7.14	5.92	7.11	Yes			0*	1.2*			5.94*	7.14*		
1H-6	0.61	7.14	7.75	7.11	7.72	Yes			0*	0.61*			7.14*	7.75*		
1H-CC	0.28	7.75	8.03	7.72	8	Yes			0*	0.28*			7.75*	8.03*		
2H-1	0.65	8	8.65	8	8.64	Yes	0†	0.65†			8†	8.65†				
2H-2	0.68	8.65	9.33	8.64	9.3	Yes	0†	0.68†			8.65†	9.33†				
2H-CC	0.1	9.33	9.43	9.3	9.4	Yes	0†	0.1†			9.33†	9.43†				
3H-1	0.87	9.4	10.27	9.4	10.2	Yes	0†	0.87†			9.4†	10.27†				
3H-CC	0.11	10.27	10.38	10.2	10.3	Yes	0†	0.11†			10.27†	10.38†				

\* = fall-in, † = flow-in, basal and midcore.

Table T2. Summary of coring disturbances, Expedition 340.

Hole	Core sections in hole	Disturbed core sections	APC recovered (m)	Disturbed (fall-in) (m)	Possibly disturbed (fall-in) (m)	Disturbed (flow-in) (m)	Possibly disturbed (flow-in) (m)	Disturbed minimum (%)	Disturbed maximum (%)
340-									
U1393A	6	6	4.37	0.01	0	1.36	3	31.4	100.0
U1394A	22	11	24.17	0	0	10	0	41.4	41.4
U1394B	117	46	137.42	1.51	0.12	38.25	0	28.9	29.0
U1395A	102	18	124.29	0.3	0.09	8.12	7.89	6.8	13.2
U1395B	106	26	127.51	0	2.98	16.18	1.68	12.7	16.3
U1396A	114	7	140.51	0	0.14	0.92	0	0.7	0.8
U1396B	8	1	10	0.02	0.06	4.34	0	43.6	44.2
U1396C	119	8	145.92	0.02	0.06	4.34	0	3.0	3.0
U1397A	110	55	118.1	1.81	3.73	22.88	7.51	20.9	30.4
U1397B	96	47	108.07	3.36	0	34.85	0	35.4	35.4
U1398A	74	29	86.98	1.89	7.63	12.92	0.59	17.0	26.5
U1398B	156	103	172.11	3.49	4.73	81.63	4.57	49.5	54.9
U1399A	185	86	210.45	1.99	2.2	56.37	5.77	27.7	31.5
U1399B	162	70	184.16	2.2	1.47	41.7	8.84	23.8	29.4
U1400A	56	44	51.8	0.9	1	31.39	1.28	62.3	66.7
U1400B	187	45	215.19	0.62	2.17	30.71	2.29	14.6	16.6
U1400C	150	27	180.35	6	2.35	7.16	8.5	7.3	13.3
U1401A	16	11	14.45	0	0.2	1.87	2.92	12.9	34.5
U1401B	13	8	12.42	0.13	2	1.21	0.64	10.8	32.0
U1401C	12	9	10.44	2.41	0	0	2.34	23.1	45.5
U1401D	7	0	9.12	0	0	0	0	0.0	0.0
Total (%):	1818	657 (36.1)	2087.83	26.66 (1.3)	30.93 (1.5)	406.2 (19.5)	57.82 (2.8)		
Average:								22.6	31.7