Core ID: LIWA/40B

Table DR1

Data Repository item 2005194

Depth (m)	Munsell Colour	Texture	Induration/ sorting	Bedding structures	HCl reaction*	Inferred depositional environment	Additional comments
0-102	5YR7/6 yellowish red	fine sand, medium in places	very well sorted	bimodal laminations	o	eolian	core not properly formed in places
103-104	5YR5/6 and 6/3	fine and medium sand	well sorted	laminated	x	interdune?	1st place core formed properly
104-107	10YR8/1-10YR6/2	cemented fine sand		none obvious	xx	interdune complex	
107-112	7.5YR5/6 to 7/2	very fine sand, cemented near base	conglomeratic (I.e., very poorly sorted) texture at base		variabe*		107 o, rest x highly calcareous
112-114	CORE MISSING						
114-117	10YR8/1-7/1 white - light grey	ca;careous cemented sand				sandy interdune, Poss some fluvial input	114-115 large scale gypsum crystals up to 5cm
117-118	2.5Y8/1 white	highly cemented silt - siltstone		veins of ?gypsum in places	xx rapid	standing water body (interdune/lacust)	
118-120	10YR8/1-10YR7/2 white - light grey	highly cemented fine sand and silts sand		none	xx but delayed - dolomite?	playa/sabkha deposit	(dolomite)
120-121	CORE MISSING						
121-130	2.5YR7/2 pale red	fine sand, highly cemented in places	well sorted		126-7 (cm) x elsewhere o	eolian	strong overprinting with vadose zone processes - area > water table (saturated zone)
131-132	CORE MISSING						
132-134	2.5YR8/1 mixed with 2.5YR5/4 reddish brown	primarily cemented fine sand with in places cemented sandy silt	fine sand	cross bed structures preserved	varied	highly modified dune, Poss fluvial influence	
135-135.5	3.5YR7/1 and 2.5YR8/1	matrix supported by sandy conglomerate	rounded clasts, range of sizes			wadi/flood deposit	classic 'risotto' texture probably related to bioturbation in standing water/fluvial environment
135.5-136	2.5YR5/4 mixed with 2.5YR8/1	cemented fine sand		laminations defined by colours	weak	eolian	
136-147	2.5YR6/3	cemented fine sand	well sorted		variable x-xx	dune/interdune complex	very thin marl (30cm) at 144/7-145m
147.9				ripple cross beds black laminations (heavy minerals).			?? At wet phase initiation overlies siltstone
148-149	10YR8/1 white	cemented silt		none		interdune/lacust capped by thin fluvial	capped by 2.5YR8/2 - 2.5YR2.5/1 current bedded (ripples) heavy mineral laminations uncemented fine sand.
149-151.5	2.5YR6/4	moderately cemented fine sand	very well sorted	scarcely laminated		eolian	
151.5-153	10YR7/3-10YR7/1	silty sand	highly cemented		very xx in places	interdune/lacustrine	very extensive in situ precipitation of carbonates (calcrete nodules) downwards change in colour towards next unit
153-155.5	2.5YR5/4 base 2.5YR7/2 top	highly cemented fine sand	very well sorted	none visible	xx	eolian	mottles 2.5YR8/1 calcrete nodules throughout
155.5-157	5YR8/1 mixed with 5YR7/2	fine sand with small medium content	highly cemented		rigorous	interdune deposit	highly calcareous
157-158	mix of 5YR8/1, 7/2, 5/6	fine sand, extensive in situ chemical cementation	highly cemented		in places xx	inland sabkha?	important sabkha deposit, salty, clasts in a fine matrix
158-159	2.5YR7/2	silt, no sand fraction	highly cemented	none obvious, some mottling features	very delayed	standing water/lacustrine/interdune/sabkha	high dolmite concentration (delayed HCl reaction)
159-160	2.5YR5/8 red	fine sand	very well sorted	none	o-x	eolian	carbonate nodules - mottling pattern
160-164	10YR8/1 ad 10YR7/2	sand	extensive cementn incl discrete lenses of gypsum, zones of conc salt		delayed - dolomite?	extensive playa/sabkha basin	large gypsum crystals
164-166	2.5YR5/4-5/6	fine sand	very well sorted			eolian	carbonate nodules and other mottles throughout

166-168	2.5Y7.2 light grey	silt	highly cemented			slackwater playa/sabkha deposit	extensive veins of gypsum (up to 5cm thick) vertical stretch>30cm (tee pee structures?)
168-169	10R5/6 red	sand	very well sorted, cemented	presvn ripple lamins + xbeds (planar +trough) enhanced by post-dep iron ppn		eolian	
Section continues into sequence of highly cemented calcareous and non-calcareous siltstone of considerable antiquity (?miocene or older?)							
Core ID:	LIWA/47						
Depth (m)	**Munsell Colour**	**Texture**	**Induration/ sorting**	**Bedding structures**	**HCl reaction***	**Inferred depositional environment**	**Additional comments**
0-30	7.5YR7/6 reddish yellow	fine sand (70-90 um)	well sorted	obliterated	scarce carb x	eolian	
31-48	7.5YR6/6 reddish yellow	partially cemented fine sand	well sorted	obliterated	xx	eolian	carbonate nodules up to 5mm diameter (concentration increases with depth), same sand being overmapped with carbonate
49-54	mottling 7.5YR5/6 and 7.5YR6/3 and 7.5YR8/2 and 8/1	fine sand	well sorted	obliterated	instant xx, high cementation	eolian with post-dep carbonate	similar features. Incr carbonate content and cementation progressively
55	CORE MISSING						
55-56	7.5YR8/1	bleached fine sand	very very wel sorted	some fine laminations and small scale cross-bedding	o	eolian-fluvial interface	Big change, uniform sand
56-57	7.5YR8/1	claystone/siltstone, marl.	massive		o-x	slack water lake deposit	uniform but scarce iron staining, pure clay
57-58							sandy clay
58-61	10R7/4 pale red and 10R8/1 white	cemented sand and silt (silty sand), silt content decreases with depth				fluvio-lacustrine, and inferred wadi deposits	extensively mottled and bioturbated. Scarece iron staining.
62-77	5YR7/2	sandy silt grading down to silty sand	very well sorted fine sand	none obvious. Fining upwards sequence of rip up clasts	weak (x)	fluvio-lacust	silt domination in upper 2-3m. Sand dominant rest. Scarce carbonate nodules
66-67		conglomerate ('risotto' texture indicative of carbonate rip up clasts)				fluvio-lacust	
nr 77	back to 10R7/3						
77-78	CORE MISSING						
78-88	10R7/3 w varying concs of 10R8/1	very fine sand	very well sorted	low angle fine (heavy minerals in places)	xx-x	eolian	iron staining at base (88m), red colour - very fine well sorted texture with laminations, iron mottles 5-10% in olaces
88-90	5YR5/6 yellowish red	fine to medium sand	well sorted	laminated (1-5mm), sub-horizontally bedded	o	eolian-fluvial	lamination clearly indicated by iron staining
90-98.5	10YR8/1 dominant						extensive mottles of 10YR7/1 and 10YR7/3. Some discrete carbonate nodules
98.5-101.5		fine sand especially towards base	well sorted, with worm burrowings		x	base eolian, grading up to water-saturated fluvio-lacustrine facies	iron stained mottling, downwards gradation from 10R8/1 to 7/1 sand to 10R5/8 sand, concommitant decrease in carbonate and mottling, base - contact boundary on 2.5YR5/6 possible liquefaction structures
101.5-116	10R8/1 in places 10R7/11	marl, fines dominated (silt, clay)	massive and well sorted	weak horizontal laminations in places	weak in places	fluvio-lacustrine	concentration of gypsum bands at 105, 106, 109.7, thru 115-116, first sign of massive gypsum in core
116-117.5	CORE MISSING						
117.5-131	notably different from above - grades down from	marl, clayey silt and silty clay		scarce secondary bioturbation structures, chaotic gypsum bedding	o	subaerially exposed evaporative lake	incr conc and thickness of gypsum banding (some bands >10cm and cont thru core), potentially important layer for correlation between cores
	10R8/1, 7/1 to 10R5/6						
131-	from 7.5YR5/1 to 7.5YR 5/4	consolidated (cemented) mudstones			variable xx to x to o		widespread mottling, gypsum in variable concentrations throughout, very fine laminations (1-2mm) in places

Core ID: LIWA/48

Depth (m)	Munsell Colour	Texture	Induration/ sorting	Bedding structures	HCl reaction*	Inferred depositional environment	Additional comments
8-9	7.5YR6/6	consolidated silty fine sand	very well sorted	not visible	xx	eolian	possible overprint of pluvial activity
9-12	5YR5/6	finse sand consolidated	very well sorted		not much reaction	dry conds. Landscape stability (roses on surface).	must post-dep modification and cementation, abundant precipitated(?) gypsum (sand roses), desert roses of gypsum present
12-17	downwards gradation 7.5YR6/2 to 5YR4/6	fine sand		well bedded (fine laminations steeply dipping up to 15 deg)	upper xx lower o	eolian	downwards gradation light to dark and carbonate to non-carbonate
17-20.5	7.5YR6/6	consolidated fine sand and silt		no obvious primary structures	xx	interdune?	
20.5-21	5YR4/6	aeolian sand slightly coarser grain size than above + below		well bedded finely laminated	o-x		
21-23	5YR6/6-5/6			very finely horizontaly laminated	x	interdune - sand and silt laminated	some mottling/bioturbation
23-37.7		very consolidated fine sand	very well sorted	no primary sedimentary structures	xx	eolian	
37.7-46.5	10YR8/1-10YR8/2	mixed sands and fines, cemented		none obvious	xx	fluvio-lacust (wadi?)	very continuous coring stops sharply (due to less carbonate?) @ 46m, less consolidated
46.5-51	10R8/3-10R7/2	light pink sands, clean sands - no fines content	very well sorted	none	x	eolian	
51-53	10R8/2-8/1	risotto 'conglomerate'		carbonate granules	xx	inferred wadi deposits	
53-54	10R7/2	consolidated sand	well sorted	structureless		eolian possibly fluvio-lacustrine	
54-58	10R6/1 to 10R6/4 w depth	sand	well sorted	weakly bedded in places	xx	fluvio-lacustrine	maybe subaerial due to red colour
58-63	5YR8/1	highly cemented sand, high carbonate content		structureless	xx	fluvio-lacustrine	scarce mottling <5%
63-66	10R8/1-10R6/3	less consolidated than above sands	well sorted. Better cemented pebble concs at base	laminated (defined by heavy minerals*)			* some dip by up to 12 deg in cross-bedding pattern, pebble-like rip up clasts present
66-67	CORE MISSING						
67-70	10R5/4 to 2.5 YR 5/6	semi- to consolidated fine sand	very well sorted			eolian	iron staining in central metre, mottling <10% throughout.
70-74	CORE MISSING						
74-85	10R8/1	highly cemented marl, pure claystone, 77-9 marl			x-xx	lacustrine/fluvial deposit (primarily lacustrine)	gypsum traces <5% bottom zone
85-87	All as above wirh greater concentration of gypsum present						
87-95	10R8/1 to 10R7/8 and scarce 10R5/6	gypsum-rich v. fine grained (marl) with red staining				lacust (?evaporite lake)	concentrated anhydrite band 94m
95-104	10R8/1 to 10R7/3	evaporite v. fine grained vv cemented		none obvious. Obliterated by evaporite ppn (predom anhydrite)			

Core ID: LIWA/66

Depth (m)	Munsell Colour	Texture	Induration/ sorting	Bedding structures	HCl reaction*	Inferred depositional environment	Additional comments
50	5 YR 5/6 yellowish red	loose medium sand	weak/loose		delayed x	eolian	

52	5 YR 5/6 yellowish red	medium silty sand	loose	very fine laminae of fine sand pale sand with medium sand-sized red sand	x	eolian	
55	5 YR 5/6 yellowish red	medium silty sand	quite loose	laminae	x	eolian	
60	5 YR 5/6 yellowish red	medium silty sand	loose	laminae	xx	eolian	
65	5 YR 5/4 reddish brown	medium sand	loose	none visible	x	eolian	
70	5 YR 5/4 reddish brown	medium sand	loose	none visible	xx	eolian	
73.5	10 YR 7/2 light grey	fine silt	quite hard	none visible	instant xx	fluvio-lacustrine (wadi?)	boundary between red sand and pale silty deposition at 73.5m, possible horizontal bioturbation - red tracks on core surface
75	10 YR 7/2 light grey	fine silt	quite hard	none visible	instant xx	fluvio-lacustrine (wadi?)	
80	7.5 YR 6/4 light brown	medium sand to fine silt	loose	none visible	instant xx	fluvio-lacustrine (wadi?)	
85	5 YR 5/8 yellowish red	medium sand to fine silt	very loose	fine pale/red laminae	x	eolian	
90	5 YR 5/8 yellowish red	medium sand to fine silt	loose	none visible	xx	eolian	
92	10 YR 8/3 very pale brown	fine silt	quite hard	none visible	x	eolian	looks like other silt samples which gave xx HCl reaction.
95	10 YR 8/3 very pale brown	fine silt	quite hard	none visible	xx	eolian	
100	7.5 YR 7/3 pink	medium sand	loose	none visible	xx	fluvio-lacustrine (wadi?)	
105	7.5 YR 6/4 light brown	medium sand	very loose and crumbly	fine pale/red laminae	o	eolian	
108	2.5 Y 8/1 white	silty	hard	none visible	instant xx	fluvio-lacustrine (wadi?)	very rapid transition from crumbly red to silty pale 107-108m
110	2.5 Y 8/1 white	silty	hard	none visible	instant xx	fluvio-lacustrine (wadi?)	
115	10 YR 7/2 light grey	fine silty sand	hard, brittle to fairly soft	none visible	xx	fluvio-lacustrine (wadi?)	
120	10 YR 7/2 light grey	fine sand	quite soft	none visible	x	fluvio-lacustrine (wadi?)	
125	10 YR 7/2 light grey	fine sand and clay	brittle and soft	none	xx	fluvio-lacustrine (wadi?)	
137	10 YR 7/2 light grey with 2.5 YR 5/8 red	fine sand and clay	hard	grey mottled with pale and dark red patches	o	fluvio-lacustrine (wadi?)	
151	10 YR 8/1 white	medium and fine sand, and clay	brittle	conglomerate, none visible	xx	fluvio-lacustrine (wadi?)	risotto rock, mottled with some red
157.5	2.5 YR 5/8 red	fine sand and clay	soft and brittle	few randomly spaced very fine laminae <1mm	x	fluvio-lacustrine (wadi?)	very sudden change to this mich darker red at 157, from pale silty sediment.

Core ID:	LIWA/70

Depth (m)	Munsell Colour	Texture	Induration/ sorting	Bedding structures	HCl reaction*	Inferred depositional environment	Additional comments
43	10 YR 7/2 light grey	fine to medium sand	weak-medium bound, well sorted	none visible	instant xx	eolian	dense - no macropores
55	reddish brown	fine to medium sand	loose		delayed xx	eolian	
60	light grey	fine sand	loose		xx	eolian	
62	reddish brown	medium sand	very loose	none	o	eolian	
70	reddish brown	fine to medium sand	loose		xx	eolian	
75	reddish brown	fine to medium sand, some silt	loose		xx	eolian	
80	reddish brown	fine to medium sand, some silt	loose		xx	eolian	
85	10 YR 7/2 light grey	fine silty sand	hard, well sorted	none visible	xx	eolian	
95	reddish brown	fine to medium sand	loose		xx	eolian	
100	reddish brown	fine to medium sand	loose		xx	eolian	
105	greenish grey	fine silty sand	loose		xx	eolian	
110	reddish brown	fine to medium sand, some silt	loose		xx	eolian	
111	10 YR 7/2 light grey	fine silty sand	strong, well sorted	none	xx	eolian	

119	10 YR 7/3 very pale brown	fine silty sand	hard, well sorted	none	xx	eolian	
125	7.5 Y 8/2 pale yellow	fine silty sand	hard	none visible	o	eolian	
140	2.5 Y 7/3 pale yellow	fine silty sand	very hard	none visible	xx	eolian	evidence of very small (<1mm) vertical burrows
152	7.5 R 8/1	conglomerate risotto rock, fine silty sand	very hard	none visible	xx	eolian	lumpy, possible worm burrow vertically and horizontally (red stripes).
Core ID:	LIWA/166						

Depth (m)	Munsell Colour	Texture	Induration/ sorting	Bedding structures	HCl reaction*	Inferred depositional environment	Additional comments
0-44	5YR5/8 yellowish red	fine sand	very well sorted	no preservation of primary sedimentary structures	weak	eolian	
44-45	5YR5/8 yellowish red	fine sand	very well sorted	zone of preservation of steeply dipping trough stratified laminations	weak	eolian	
45-61	change from 5YR5/8 to 5YR6/6	fine sand	very well sorted	no preservation	none to 59m, x 60-61m	eolian	core extremely disturbed
61-62	10YR7/2 light grey	fine silty sand	very well sorted	none obvious	very xx	interdune	key interdune (#1)
62-67	7.5YR6/4 light brown	sand	well sorted		o	eolian	extensive development of fine 1-2mm laminations generally continuous and ? Bimodal (coarse/fine)
67-77	10YR6/4 light yellowish brown	sandy silt		none	x-xx	interdune-like	interdune #2 start
74-80 (nb overlap above)	top 10YR8/1 grades @ 79m to 10YR6/3 pale brown to 80m 10YR6/4 light yellowish brown	silty? Slightly sandy silt. Grades downwards and incr in carbonate content		wavy non-parallel laminations contorted bedding - poss disturbed by salt crystallisation heave - mass movement		inland sabkha	marl with abundant carbonate up to 100% in places. Distinct upper contact at 74/5m
80-82 distinct contact	5YR5/6 yellowish red	sand	bimodal (well sorted lamination by lamination)	laminated	o-x very slight	eolian	distinct contact with above
82-93	10YR7/4-10YR7/2 yellow to light grey	fine silty sand and fine sand	very well sorted	none	x-xx	wadi/aeolian sand infl by post-dep carbonate precipitation	
94-100	10YR6/2 light brownish grey	fine sand	very well sorted	none	x-xx	post-depositionally modified eolian sand	core reformed - didn't stay in barrel
100-120.5	incl 10YR6/2 light brownish grey, 7/2 light grey, 8//1 white	carbonate rich sands, silts and scarce conglomerates (intraformational pebbles)		interbedded sands/silts/conglom	x-xx	fluvio-lacustrine complex poss wadi	Lacustrine with intraformational pebbles.
120.5-128	10YR6/3-6/4 pale brown - light yellowish brown	calcareous fine sand, limited silt content	well sorted	none obvious. Iron stained trough cross beds @ 122m		eolian sand modified by postdep processes	core did not stay in barrel
128-131.3	10YR8/1	silt. Scarce iron staining		massive	very xx	lacustrine, slack water deposit	marl. Distinct fine silt
131.3-137	10R6/4 pale red	fine sand	well sorted	none	x-xx		dull red. Mottled - extensive - past bioturbation. Calcareous.
137-138	10YR7/3	highly calcareous sandy silt			very xx	interdune	core complete (continuous metre - much cabonate)
138-142.5	5YR5/8 yellowish red	fine sand	very well sorted	clear laminations	x	eolian	
142-155.5	10R6/4 pale red mixed w 10R8/2 pinkish white, 10R8/1 white	sandy silt and silt			o-x very slight	interdune/lacustrine deposit	bioturbated
155.5-159	2.5YR5/8 red	sand	very well sorted	extensive preservation of trough cross-bedding esp at base	o	eolian	highly cemented, esp towards base. Anhydrite and contact - base dessication - pan evaporatoin surface at dune base
160-163	7.5YR5/4	sand				eolian sand with extensive post-dep modification	varying anhydrite conditions

Core ID:	LIWA/172						
				Table DR1			Data Repository item 2005194
Depth (m)	**Munsell Colour**	**Texture**	**Induration/ sorting**	**Bedding structures**	**HCl reaction***	**Inferred depositional environment**	**Additional comments**
0-54	5YR5/8	fine sand	very well sorted		o	eolian	mostly disturbed by drilling, but blocks poss 50-54m, indic steeply dipping x-bedding w. bimodal well sorted grain size between laminations
54-55	5YR8/1 white	fine sand	well sorted		xx	interdune	carbonate content. Distinct contacts top and bottom
55-56	5YR5/8	fine sand	very well sorted		o	eolian	
57-58	5YR7/1	fine sand	very well sorted		v xx rapid	interdune	
58-59.5	5YR5/8	sand	well sorted	laminated		eolian	
59.5-60	10YR7/3	fine sand	very well sorted		x-xx	interdune	scarce iron staining
60-72.5	5YR5/8 and 4/6	fine sand	well sorted, slightly cemented	well expressed laminations	slight	eolian	
72.5-76	10YR6/3	sandy silt	very well sorted	no obvious primary sedimentary structures	v xx rapid	?loess dune/interdune with large fines content	really high silt content
76-76.7	5YR4/6 yellowish red	sand	very well sorted	laminated bimodally. Distributed grain size between laminations		eolian	
76.7-86	10YR5/3	sandy silt	very well sorted	no obvious (scarce laminations?)	xx	loess? Aeolian/interdune with post-dep mod	carbonate near surface (post-depositional modification)
87-89.7	2.5Y7/2-6/3	sandy silt to silty sand (very fine)	friable. Very well sorted		xx	interdune	
89.7-91.8	5YR5/4	very fine sand, sone silt content in places	very well sorted	none obvious. Scarce mottling	x-xx	eolian	
91.8-97	10YR8/1 to 7/2 white to light grey	silt (v limited sand content). Vv fine		none obvious.	high xx	standing water/playa/interdune	polygonal cracking - very fine
97-102.5	10YR8/1 to 7/2 white to light grey	fine sand, minor medium sand	well sorted		limited - strange!	inferred wadi deposits	sandy compared to 91.8-97, which is silty.
102.5-113	10YR7/3, 7/1, 8/1	mixed sandy conglomerate and sand, pebbles geneerally react with acis, sandy matrix less reactive	sand very well sorted and bleached	none obvious, except scarce bedding assoc with pabble layers		wadi/fluviodeltaic complex	
113-116	2.5YR5/8 red	fine sand	very well sorted	some mottling	x	eolian	
116-119	7.5YR6/4 down core to 2.5YR7/3	sand	poorly sorted	coarse and fine cross beds. Dominant fine sad grain size	x-xx	inferred wadi deposits	distinct upper contact. Lower contact more gradational. The 2.5YR7/3 sed is better sorted (like a dune with no coarse grain laminations)
119-119.5	10YR7/2	silt. No sand content		none	limited to x (?delayed)	distinctive slack water deposit	grades downwards to next unit
119.5-120.5	2.5YR6/3	silty sand	v friable	none obvious	xx	?interdune sand grading upwards into playa	
120.5-121.5	10YR8/1-2.5YR7/3	silt	highly cemented		very xx some dleayed	standing water passively sedimented unit	
212.5-122.2	2.5YR5/8	fine sand	very well sorted	laminated small-medium scale trough cross bedding	o-slight	poss eolian unit with lacustrine/ fluvial complex	
122.2-123	10YR8/1	silt	massive. Very consolidated		xx	slack water playa deposit	highly calcareous. Continuous core
Core ID:	LIWA/322						
Depth (m)	**Munsell Colour**	**Texture**	**Induration/ sorting**	**Bedding structures**	**HCl reaction***	**Inferred depositional environment**	**Additional comments**
0-51	7.5YR6/8 yellowish red	fine sand some medium fraction	well sorted			eolian	

52-53	grades into 7.5R8/1-8/1 piinkish white downwards	cemented sand		Table DR1	xx	interdune/fluvio-lacustrine facies	Data Repository item 2005194
54-79	5YR5/6 yellowish red	moist unconsolidated fine sand	very well sorted			eolian	contrast to dry core descriptions, especially with respect to colour
80-84	7.5YR7/1 light grey grades down to 5YR5/8 ysh red	cemented silty sand with aeolian sand fraction		none obvious	grades into xx high	eolian	carbonates decrease systematically down section. Distinct contact at top.
85-100	5YR5/6 yellowish red	sand	very well sorted	prim strs based on core break lines. low-med dip lamtd. Some steep dip		eolian	
100-108	10YR5/4 ysh brown grades down to 5YR 5/6	fine sand with slight silt content			xx decr to o at 108	packet of interdune down to eolian dune	
110-112		fine silt dominated marl			top xx	fluvio-lacustrine complex	grades from below
113-114	2.5Y5/3 light olive brown	calcareous sand				eolian	
114-123		variably calcareous sand	very well sorted			inferred wadi deposits	
124-133.5		marl	well cemented		xx	lacustrine	well preserved in drill core sections
within - 129-130	10R5/3-4/3 weak red	brief interval of non-calcareous red sand	very well sorted			eolian	
134-143	10R5/6-8/1	variably cemented to calcareous sands with silt dom lenses, some up to 3m thick				eoilan	sand dominated
143-146.5		distinct marl, no sand content, entirely siltstone		uniform - no primary sed structures	xx	lacustrine	distinct contact at 146.5m with underlying red laminated sand
146.5-161	10R5/6-8/1	fine fluffy sand, no coarse component or pebbles	very well sorted	laminations distinctly seen through colour changes		eolian	uniformity of facies over c.10m mottles of 2.5YR5/8 near base and lower 7m - big pile of aeolian sand with a few intercalated interdune deposits
Positions of key marl deposits from bottom - 146-143.5, 137-128, 133.5-13 0, 128-110 (lacustrine with odd intercalated sandy layers), 102 (weak interdune), 76-78 (interdune grading downwards), 58 (v. weak interdune) ,51 (v weak interdune).							
Core ID:	LIWA/305						
Depth (m)	**Munsell Colour**	**Texture**	**Induration/ sorting**	**Bedding structures**	**HCl reaction***	**Inferred depositional environment**	**Additional comments**
BOXES MISSING	59-64, 69-71, 75, 77, 79, 83-85, 88, 92-93, 95, 97, 99, 103, 105-110, 113-115, 120-122						
EMPTY BOXES	161-168, 155, 150, 146, 137, 112						
46-67	10YR7/4-7/6 very pale brown-yellow	fine to medium sand	well sorted	obliterated, small laminations visible in places	variable o-xx	eolian	not properly cored
68-104	7.5YR6/6-6/8 reddish yellow	fine sand	well sorted	small pale/dark 1mm laminations, dark & coarser grained.	x	eolian	variable degree of lamination, dipping steeply.
111	7.5YR8/4-8/6 pink-reddish yellow	silty sand	well sorted	none visible	xx	inferred start of interdune	
115-119	7.5YR6/6-6/8 reddish yellow	fine sand coarsening at base, and increasingly calcareous	well sorted	same laminations at 117m, otherwise none.	o-xx thru dune section downwds	eolian	
123-136	2.5Y8/1-8/2 white - pale yellow	silty sand, becoming sandy silt at 129m, increasingncr grain size through core	well sorted	none	xx-o down core	thick white interdune (lacust?) marl to reowrked dune sand	
136	2.5Y8/1 white	fine sand 'risotto' texture, rip up clasts	medium to well sorted	none	xx	inferred wadi deposits	mottled slightly darker pink in chunks, carbonate nodules.
138-140	5Y8/1 white	sil, possibly with some clay (cracking)	well sorted	none	o/x to xx down core	fluvio/lacustustrine	looks identical but v weak HCl reaction 138-9 and strong 139-40
140-141.5	mottling*	risotto texture', pebble size decreases down core	well sorted	none	x	inferred wadi deposits	

141.5-149	as above down to 10YR8/2-7/2 very pale brown - light grey	fine sand	well sorted	none (obliterated?)	x throughout	eolian	decreasingly mottled, increasingly sandy pinkish deposits - start of wadi/interdune/lacustrine phase
151-159	5YR/81 white mottled w 5YR8/4 pint to 5YR8/1 white to 7.5YR8/2 pinkish white	clay to silty sand to fine sand downwards changing white deposit	well sorted	none	variable x-xx top v xx	start of interdune phase?	white/orange mottled clay/silt changes to pinkish sandy silt (aeolian) and paler grey fine sand (aeolian) down core.
160-171	5YR7/3 pink to 5YR6/8 reddish yellow at base	fine sand	well sorted	some visible at top of section	o-xx variable downwards	eolian	
166 (within above)	5YR8/1 white and 5YR8/3 pink	risotto layer'. Thickness unsure due to core loss	poorly sorted	none	x		

Core ID: LIWA/40B

Table DR2

Depth (m)	Munsell Colour	Texture	Induration/ sorting	Bedding structures	HCl reaction*	Inferred depositional environment	Additional comments
0-102	5YR7/6 yellowish red	fine sand, medium in places	very well sorted	bimodal laminations	o	eolian	core not properly formed in places
103-104	5YR5/6 and 6/3	fine and medium sand	well sorted	laminated	x	interdune?	1st place core formed properly
104-107	10YR8/1-10YR6/2	cemented fine sand		none obvious	xx	interdune complex	
107-112	7.5YR5/6 to 7/2	very fine sand, cemented near base	conglomeratic (I.e., very poorly sorted) texture at base		variable*		107 o, rest x highly calcareous
112-114	CORE MISSING						
114-117	10YR8/1-7/1 white - light grey	calcareous cemented sand				sandy interdune, Poss some fluvial input	114-115 large scale gypsum crystals up to 5cm
117-118	2.5Y8/1 white	highly cemented silt - siltstone		veins of ?gypsum in places	xx rapid	standing water body (interdune/lacust)	
118-120	10YR8/1-10YR7/2 white - light grey	highly cemented fine sand and silts sand		none	xx but delayed - dolomite?	playa/sabkha deposit	(dolomite)
120-121	CORE MISSING						
121-130	2.5YR7/2 pale red	fine sand, highly cemented in places	well sorted		126-7 (cm) x elsewhere o	eolian	strong overprinting with vadose zone processes - area > water table (saturated zone)
131-132	CORE MISSING						
132-134	2.5YR8/1 mixed with 2.5YR5/4 reddish brown	primarily cemented fine sand with in places cemented sandy silt	fine sand	cross bed structures preserved	varied	highly modified dune, Poss fluvial influence	
135-135.5	3.5YR7/1 and 2.5YR8/1	matrix supported by sandy conglomerate	rounded clasts, range of sizes			wadi/flood deposit	classic 'risotto' texture probably related to bioturbation in standing water/fluvial environment
135.5-136	2.5YR5/4 mixed with 2.5YR8/1	cemented fine sand		laminations defined by colours	weak	eolian	
136-147	2.5YR6/3	cemented fine sand	well sorted		variable x-xx	dune/interdune complex	very thin marl (30cm) at 144/7-145m
147.9				ripple cross beds black laminations (heavy minerals).			?? At wet phase initiation overlies siltstone
148-149	10YR8/1 white	cemented silt		none		interdune/lacust capped by thin fluvial	capped by 2.5YR8/2 - 2.5YR2.5/1 current bedded (ripples) heavy mineral laminations uncemented fine sand.
149-151.5	2.5YR6/4	moderately cemented fine sand	very well sorted	scarcely laminated		eolian	
151.5-153	10YR7/3-10YR7/1	silty sand	highly cemented		very xx in places	interdune/lacustrine	very extensive in situ precipitation of carbonates (calcrete nodules) downwards change in colour towards next unit
153-155.5	2.5YR5/4 base 2.5YR7/2 top	highly cemented fine sand	very well sorted	none visible	xx	eolian	mottles 2.5YR8/1 calcrete nodules throughout
155.5-157	5YR8/1 mixed with 5YR7/2	fine sand with small medium content	highly cemented		rigorous	interdune deposit	highly calcareous
157-158	mix of 5YR8/1, 7/2, 5/6	fine sand, extensive in situ chemical cementation	highly cemented		in places xx	inland sabkha?	important sabkha deposit, salty, clasts in a fine matrix
158-159	2.5YR7/2	silt, no sand fraction	highly cemented	none obvious, some mottling features	very delayed	standing water/lacustrine/interdune/sabkha	high dolmite concentration (delayed HCl reaction)
159-160	2.5YR5/8 red	fine sand	very well sorted	none	o-x	eolian	carbonate nodules - mottling pattern

160-164	10YR8/1 ad 10YR7/2	sand	extensive cementn incl discrete lenses of gypsum, zones of conc salt	Table DR2	delayed - dolomite?	extensive playa/sabkha basin	large gypsum crystals
164-166	2.5YR5/4-5/6	fine sand	very well sorted			eolian	carbonate nodules and other mottles throughout
166-168	2.5Y7.2 light grey	silt	highly cemented			slackwater playa/sabkha deposit	extensive veins of gypsum (up to 5cm thick) vertical stretch>30cm (tee pee structures?)
168-169	10R5/6 red	sand	very well sorted, cemented	presvn ripple lamins + xbeds (planar +trough) enhanced by post-dep iron ppn		eolian	
Section continues into sequence of highly cemented calcareous and non-calcareous siltstone of considerable antiquity (?miocene or older?)							
Core ID:	LIWA/47						
Depth (m)	**Munsell Colour**	**Texture**	**Induration/ sorting**	**Bedding structures**	**HCl reaction***	**Inferred depositional environment**	**Additional comments**
0-30	7.5YR7/6 reddish yellow	fine sand (70-90 um)	well sorted	obliterated	scarce carb x	eolian	
31-48	7.5YR6/6 reddish yellow	partially cemented fine sand	well sorted	obliterated	xx	eolian	carbonate nodules up to 5mm diameter (concentration increases with depth), same sand being overmapped with carbonate
49-54	mottling 7.5YR5/6 and 7.5YR6/3 and 7.5YR8/2 and 8/1	fine sand	well sorted	obliterated	instant xx, high cementation	eolian with post-dep carbonate	similar features. Incr carbonate content and cementation progressively
55	CORE MISSING						
55-56	7.5YR8/1	bleached fine sand	very very wel sorted	some fine laminations and small scale cross-bedding	o	eolian-fluvial interface	Big change, uniform sand
56-57	7.5YR8/1	claystone/siltstone, marl.	massive		o-x	slack water lake deposit	uniform but scarce iron staining, pure clay
57-58							sandy clay
58-61	10R7/4 pale red and 10R8/1 white	cemented sand and silt (silty sand), silt content decreases with depth				fluvio-lacustrine, and inferred wadi deposits	extensively mottled and bioturbated. Scarece iron staining.
62-77	5YR7/2	sandy silt grading down to silty sand	very well sorted fine sand	none obvious. Fining upwards sequence of rip up clasts	weak (x)	fluvio-lacust	silt domination in upper 2-3m. Sand dominant rest. Scarce carbonate nodules
66-67		conglomerate ('risotto' texture indicative of carbonate rip up clasts)				fluvio-lacust	
nr 77	back to 10R7/3						
77-78	CORE MISSING						
78-88	10R7/3 w varying concs of 10R8/1	very fine sand	very well sorted	low angle fine (heavy minerals in places)	xx-x	eolian	iron staining at base (88m), red colour - very fine well sorted texture with laminations, iron mottles 5-10% in olaces
88-90	5YR5/6 yellowish red	fine to medium sand	well sorted	laminated (1-5mm), sub-horizontally bedded	o	eolian-fluvial	lamination clearly indicated by iron staining
90-98.5	10YR8/1 dominant						extensive mottles of 10YR7/1 and 10YR7/3. Some discrete carbonate nodules
98.5-101.5		fine sand especially towards base	well sorted, with worm burrowings		x	base eolian, grading up to water-saturated fluvio-lacustrine facies	iron stained mottling, downwards gradation from 10R8/1 to 7/1 sand to 10R5/8 sand, concommitant decrease in carbonate and mottling, base - contact boundary on 2.5YR5/6 possible liquefaction structures

101.5-116	10R8/1 in places 10R7/11	marl, fines dominated (silt, clay)	massive and well sorted	weak horizontal laminations in places	weak in places	fluvio-lacustrine	concentration of gypsum bands at 105, 106, 109.7, thru 115-116, first sign of massive gypsum in core
116-117.5	CORE MISSING						
117.5-131	notably different from above - grades down from	marl, clayey silt and silty clay		scarce secondary bioturbation structures, chaotic gypsum bedding	o	subaerially exposed evaporative lake	incr conc and thickness of gypsum banding (some bands >10cm and cont thru core), potentially important layer for correlation between cores
	10R8/1, 7/1 to 10R5/6						
131-	from 7.5YR5/1 to 7.5YR 5/4	consolidated (cemented) mudstones			variable xx to x to o		widespread mottling, gypsum in variable concentrations throughout, very fine laminations (1-2mm) in places

Core ID:	LIWA/48

Depth (m)	Munsell Colour	Texture	Induration/ sorting	Bedding structures	HCl reaction*	Inferred depositional environment	Additional comments
8-9	7.5YR6/6	consolidated silty fine sand	very well sorted	not visible	xx	eolian	possible overprint of pluvial activity
9-12	5YR5/6	finse sand consolidated	very well sorted		not much reaction	dry conds. Landscape stability (roses on surface).	must post-dep modification and cementation, abundant precipitated(?) gypsum (sand roses), desert roses of gypsum present
12-17	downwards gradation 7.5YR6/2 to 5YR4/6	fine sand		well bedded (fine laminations steeply dipping up to 15 deg)	upper xx lower o	eolian	downwards gradation light to dark and carbonate to non-carbonate
17-20.5	7.5YR6/6	consolidated fine sand and silt		no obvious primary structures	xx	interdune?	
20.5-21	5YR4/6	aeolian sand slightly coarser grain size than above + below		well bedded finely laminated	o-x		
21-23	5YR6/6-5/6			very finely horizontaly laminated	x	interdune - sand and silt laminated	some mottling/bioturbation
23-37.7		very consolidated fine sand	very well sorted	no primary sedimentary structures	xx	eolian	
37.7-46.5	10YR8/1-10YR8/2	mixed sands and fines, cemented		none obvious	xx	fluvio-lacust (wadi?)	very continuous coring stops sharply (due to less carbonate?) @ 46m, less consolidated
46.5-51	10R8/3-10R7/2	light pink sands, clean sands - no fines content	very well sorted	none	x	eolian	
51-53	10R8/2-8/1	risotto 'conglomerate'		carbonate granules	xx	inferred wadi deposits	
53-54	10R7/2	consolidated sand	well sorted	structureless		eolian possibly fluvio-lacustrine	
54-58	10R6/1 to 10R6/4 w depth	sand	well sorted	weakly bedded in places	xx	fluvio-lacustrine	maybe subaerial due to red colour
58-63	5YR8/1	highly cemented sand, high carbonate content		structureless	xx	fluvio-lacustrine	scarce mottling <5%
63-66	10R8/1-10R6/3	less consolidated than above sands	well sorted. Better cemented pebble concs at base	laminated (defined by heavy minerals*)			* some dip by up to 12 deg in cross-bedding pattern, pebble-like rip up clasts present
66-67	CORE MISSING						
67-70	10R5/4 to 2.5 YR 5/6	semi- to consolidated fine sand	very well sorted			eolian	iron staining in central metre, mottling <10% throughout.
70-74	CORE MISSING						

74-85	10R8/1	highly cemented marl, pure claystone, 77-9 marl		Table DR2	x-xx	lacustrine/fluvial deposit (primarily lacustrine)	gypsum traces <5% bottom zone
85-87	All as above wirh greater concentration of gypsum present						
87-95	10R8/1 to 10R7/8 and scarce 10R5/6	gypsum-rich v. fine grained (marl) with red staining				lacust (?evaporite lake)	concentrated anhydrite band 94m
95-104	10R8/1 to 10R7/3	evaporite v. fine grained vv cemented		none obvious. Obliterated by evaporite ppn (predom anhydrite)			
Core ID:	LIWA/66						

Depth (m)	Munsell Colour	Texture	Induration/ sorting	Bedding structures	HCl reaction*	Inferred depositional environment	Additional comments
50	5 YR 5/6 yellowish red	loose medium sand	weak/loose		delayed x	eolian	
52	5 YR 5/6 yellowish red	medium silty sand	loose	very fine laminae of fine sand pale sand with medium sand-sized red sand	x	eolian	
55	5 YR 5/6 yellowish red	medium silty sand	quite loose	laminae	x	eolian	
60	5 YR 5/6 yellowish red	medium silty sand	loose	laminae	xx	eolian	
65	5 YR 5/4 reddish brown	medium sand	loose	none visible	x	eolian	
70	5 YR 5/4 reddish brown	medium sand	loose	none visible	xx	eolian	
73.5	10 YR 7/2 light grey	fine silt	quite hard	none visible	instant xx	fluvio-lacustrine (wadi?)	boundary between red sand and pale silty deposition at 73.5m, possible horizontal bioturbation - red tracks on core surface
75	10 YR 7/2 light grey	fine silt	quite hard	none visible	instant xx	fluvio-lacustrine (wadi?)	
80	7.5 YR 6/4 light brown	medium sand to fine silt	loose	none visible	instant xx	fluvio-lacustrine (wadi?)	
85	5 YR 5/8 yellowish red	medium sand to fine silt	very loose	fine pale/red laminae	x	eolian	
90	5 YR 5/8 yellowish red	medium sand to fine silt	loose	none visible	xx	eolian	
92	10 YR 8/3 very pale brown	fine silt	quite hard	none visible	x	eolian	looks like other silt samples which gave xx HCl reaction.
95	10 YR 8/3 very pale brown	fine silt	quite hard	none visible	xx	eolian	
100	7.5 YR 7/3 pink	medium sand	loose	none visible	xx	fluvio-lacustrine (wadi?)	
105	7.5 YR 6/4 light brown	medium sand	very loose and crumbly	fine pale/red laminae	o	eolian	
108	2.5 Y 8/1 white	silty	hard	none visible	instant xx	fluvio-lacustrine (wadi?)	very rapid transition from crumbly red to silty pale 107-108m
110	2.5 Y 8/1 white	silty	hard	none visible	instant xx	fluvio-lacustrine (wadi?)	
115	10 YR 7/2 light grey	fine silty sand	hard, brittle to fairly soft	none visible	xx	fluvio-lacustrine (wadi?)	
120	10 YR 7/2 light grey	fine sand	quite soft	none visible	x	fluvio-lacustrine (wadi?)	
125	10 YR 7/2 light grey	fine sand and clay	brittle and soft	none	xx	fluvio-lacustrine (wadi?)	
137	10 YR 7/2 light grey with 2.5 YR 5/8 red	fine sand and clay	hard	grey mottled with pale and dark red patches	o	fluvio-lacustrine (wadi?)	

151	10 YR 8/1 white	medium and fine sand, and clay	brittle	conglomerate, none visible	xx	fluvio-lacustrine (wadi?)	risotto rock, mottled with some red
157.5	2.5 YR 5/8 red	fine sand and clay	soft and brittle	few randomly spaced very fine laminae <1mm	x	fluvio-lacustrine (wadi?)	very sudden change to this mich darker red at 157, from pale silty sediment.
Core ID:	LIWA/70						

Depth (m)	Munsell Colour	Texture	Induration/ sorting	Bedding structures	HCl reaction*	Inferred depositional environment	Additional comments
43	10 YR 7/2 light grey	fine to medium sand	weak-medium bound, well sorted	none visible	instant xx	eolian	dense - no macropores
55	reddish brown	fine to medium sand	loose		delayed xx	eolian	
60	light grey	fine sand	loose		xx	eolian	
62	reddish brown	medium sand	very loose	none	o	eolian	
70	reddish brown	fine to medium sand	loose		xx	eolian	
75	reddish brown	fine to medium sand, some silt	loose		xx	eolian	
80	reddish brown	fine to medium sand, some silt	loose		xx	eolian	
85	10 YR 7/2 light grey	fine silty sand	hard, well sorted	none visible	xx	eolian	
95	reddish brown	fine to medium sand	loose		xx	eolian	
100	reddish brown	fine to medium sand	loose		xx	eolian	
105	greenish grey	fine silty sand	loose		xx	eolian	
110	reddish brown	fine to medium sand, some silt	loose		xx	eolian	
111	10 YR 7/2 light grey	fine silty sand	strong, well sorted	none	xx	eolian	
119	10 YR 7/3 very pale brown	fine silty sand	hard, well sorted	none	xx	eolian	
125	7.5 Y 8/2 pale yellow	fine silty sand	hard	none visible	o	eolian	
140	2.5 Y 7/3 pale yellow	fine silty sand	very hard	none visible	xx	eolian	evidence of very small (<1mm) vertical burrows
152	7.5 R 8/1	conglomerate risotto rock, fine silty sand	very hard	none visible	xx	eolian	lumpy, possible worm burrow vertically and horizontally (red stripes).
Core ID:	LIWA/166						

Depth (m)	Munsell Colour	Texture	Induration/ sorting	Bedding structures	HCl reaction*	Inferred depositional environment	Additional comments
0-44	5YR5/8 yellowish red	fine sand	very well sorted	no preservation of primary sedimentary structures	weak	eolian	
44-45	5YR5/8 yellowish red	fine sand	very well sorted	zone of preservation of steeply dipping trough stratified laminations	weak	eolian	
45-61	change from 5YR5/8 to 5YR6/6	fine sand	very well sorted	no preservation	none to 59m, x 60-61m	eolian	core extremely disturbed
61-62	10YR7/2 light grey	fine silty sand	very well sorted	none obvious	very xx	interdune	key interdune (#1)

62-67	7.5YR6/4 light brown	sand	well sorted	Table DR2	o	eolian	extensive development of fine 1-2mm laminations generally continuous and ? Bimodal (coarse/fine)
67-77	10YR6/4 light yellowish brown	sandy silt		none	x-xx	interdune-like	interdune #2 start
74-80 (nb overlap above)	top 10YR8/1 grades @ 79m to 10YR6/3 pale brown to 80m 10YR6/4 light yellowish brown	silty? Slightly sandy silt. Grades downwards and incr in carbonate content		wavy non-parallel laminations contorted bedding - poss disturbed by salt crystallisation - heave - mass movement		inland sabkha	marl with abundant carbonate up to 100% in places. Distinct upper contact at 74/5m
80-82 distinct contact	5YR5/6 yellowish red	sand	bimodal (well sorted lamination by lamination)	laminated	o-x very slight	eolian	distinct contact with above
82-93	10YR7/4-10YR7/2 yellow to light grey	fine silty sand and fine sand	very well sorted	none	x-xx	wadi/aeolian sand infl by post-dep carbonate precipitation	
94-100	10YR6/2 light brownish grey	fine sand	very well sorted	none	x-xx	post-depositionally modified eolian sand	core reformed - didn't stay in barrel
100-120.5	incl 10YR6/2 light brownish grey, 7/2 light grey, 8//1 white	carbonate rich sands, silts and scarce conglomerates (intraformational pebbles)		interbedded sands/silts/conglom	x-xx	fluvio-lacustrine complex poss wadi	Lacustrine with intraformational pebbles.
120.5-128	10YR6/3-6/4 pale brown - light yellowish brown	calcareous fine sand, limited silt content	well sorted	none obvious. Iron stained trough cross beds @ 122m		eolian sand modified by postdep processes	core did not stay in barrel
128-131.3	10YR8/1	silt. Scarce iron staining		massive	very xx	lacustrine, slack water deposit	marl. Distinct fine silt
131.3-137	10R6/4 pale red	fine sand	well sorted	none	x-xx		dull red. Mottled - extensive - past bioturbation. Calcareous.
137-138	10YR7/3	highly calcareous sandy silt			very xx	interdune	core complete (continuous metre - much cabonate)
138-142.5	5YR5/8 yellowish red	fine sand	very well sorted	clear laminations	x	eolian	
142-155.5	10R6/4 pale red mixed w 10R8/2 pinkish white, 10R8/1 white	sandy silt and silt			o-x very slight	interdune/lacustrine deposit	bioturbated
155.5-159	2.5YR5/8 red	sand	very well sorted	extensive preservation of trough cross-bedding esp at base	o	eolian	highly cemented, esp towards base. Anhydrite and contact - base dessication - pan evaporatoin surface at dune base
160-163	7.5YR5/4	sand				eolian sand with extensive post-dep modification	varying anhydrite conditions
Core ID:	LIWA/172						

Depth (m)	Munsell Colour	Texture	Induration/ sorting	Bedding structures	HCl reaction*	Inferred depositional environment	Additional comments
0-54	5YR5/8	fine sand	very well sorted		o	eolian	mostly disturbed by drilling, but blocks poss 50-54m, indic steeply dipping x-bedding w. bimodal well sorted grain size between laminations
54-55	5YR8/1 white	fine sand	well sorted		xx	interdune	carbonate content. Distinct contacts top and bottom
55-56	5YR5/8	fine sand	very well sorted		o	eolian	
57-58	5YR7/1	fine sand	very well sorted		v xx rapid	interdune	
58-59.5	5YR5/8	sand	well sorted	laminated		eolian	
59.5-60	10YR7/3	fine sand	very well sorted		x-xx	interdune	scarce iron staining

60-72.5	5YR5/8 and 4/6	fine sand	well sorted, slightly cemented	well expressed laminations Table DR2	slight	eolian	
72.5-76	10YR6/3	sandy silt	very well sorted	no obvious primary sedimentary structures	v xx rapid	?loess dune/interdune with large fines content	really high silt content
76-76.7	5YR4/6 yellowish red	sand	very well sorted	laminated bimodally. Distributed grain size between laminations		eolian	
76.7-86	10YR5/3	sandy silt	very well sorted	no obvious (scarce laminations?)	xx	loess? Aeolian/interdune with post-dep mod	carbonate near surface (post-depositional modification)
87-89.7	2.5Y7/2-6/3	sandy silt to silty sand (very fine)	friable. Very well sorted		xx	interdune	
89.7-91.8	5YR5/4	very fine sand, sone silt content in places	very well sorted	none obvious. Scarce mottling	x-xx	eolian	
91.8-97	10YR8/1 to 7/2 white to light grey	silt (v limited sand content). Vv fine		none obvious.	high xx	standing water/playa/interdune	polygonal cracking - very fine
97-102.5	10YR8/1 to 7/2 white to light grey	fine sand, minor medium sand	well sorted		limited - strange!	inferred wadi deposits	sandy compared to 91.8-97, which is silty.
102.5-113	10YR7/3, 7/1, 8/1	mixed sandy conglomerate and sand, pebbles geneerally react with acis, sandy matrix less reactive	sand very well sorted and bleached	none obvious, except scarce bedding assoc with pabble layers		wadi/fluviodeltaic complex	
113-116	2.5YR5/8 red	fine sand	very well sorted	some mottling	x	eolian	
116-119	7.5YR6/4 down core to 2.5YR7/3	sand	poorly sorted	coarse and fine cross beds. Dominant fine sad grain size	x-xx	inferred wadi deposits	distinct upper contact. Lower contact more gradational. The 2.5YR7/3 sed is better sorted (like a dune with no coarse grain laminations)
119-119.5	10YR7/2	silt. No sand content		none	limited to x (?delayed)	distinctive slack water deposit	grades downwards to next unit
119.5-120.5	2.5YR6/3	silty sand	v friable	none obvious	xx	?interdune sand grading upwards into playa	
120.5-121.5	10YR8/1-2.5YR7/3	silt	highly cemented		very xx some dleayed	standing water passively sedimented unit	
212.5-122.2	2.5YR5/8	fine sand	very well sorted	laminated small-medium scale trough cross bedding	o-slight	poss eolian unit with lacustrine/ fluvial complex	
122.2-123	10YR8/1	silt	massive. Very consolidated		xx	slack water playa deposit	highly calcareous. Continuous core
Core ID:	LIWA/322						

Depth (m)	Munsell Colour	Texture	Induration/ sorting	Bedding structures	HCl reaction*	Inferred depositional environment	Additional comments
0-51	7.5YR6/8 yellowish red	fine sand some medium fraction	well sorted			eolian	
52-53	grades into 7.5R8/1-8/1 piinkish white downwards	cemented sand			xx	interdune/fluvio-lacustrine facies	
54-79	5YR5/6 yellowish red	moist unconsolidated fine sand	very well sorted			eolian	contrast to dry core descriptions, especially with respect to colour
80-84	7.5YR7/1 light grey grades down to 5YR5/8 ysh red	cemented silty sand with aeolian sand fraction		none obvious	grades into xx high	eolian	carbonates decrease systematically down section. Distinct contact at top.
85-100	5YR5/6 yellowish red	sand	very well sorted	prim strs based on core break lines. low-med dip lamtd. Some steep dip		eolian	

100-108	10YR5/4 ysh brown grades down to 5YR 5/6	fine sand with slight silt content		Table DR2	xx decr to o at 108	packet of interdune down to eolian dune	
110-112		fine silt dominated marl			top xx	fluvio-lacustrine complex	grades from below
113-114	2.5Y5/3 light olive brown	calcareous sand				eolian	
114-123		variably calcareous sand	very well sorted			inferred wadi deposits	
124-133.5		marl	well cemented		xx	lacustrine	well preserved in drill core sections
within - 129-130	10R5/3-4/3 weak red	brief interval of non-calcareous red sand	very well sorted			eolian	
134-143	10R5/6-8/1	variably cemented to calcareous sands with silt dom lenses, some up to 3m thick				eoilan	sand dominated
143-146.5		distinct marl, no sand content, entirely siltstone		uniform - no primary sed structures	xx	lacustrine	distinct contact at 146.5m with underlying red laminated sand
146.5-161	10R5/6-8/1	fine fluffy sand, no coarse component or pebbles	very well sorted	laminations distinctly seen through colour changes		eolian	uniformity of facies over c.10m mottles of 2.5YR5/8 near base and lower 7m - big pile of aeolian sand with a few intercalated interdune deposits
Positions of key marl deposits from bottom - 146-143.5, 137-128, 133.5-13 0, 128-110 (lacustrine with odd intercalated sandy layers), 102 (weak interdune), 76-78 (interdune grading downwards), 58 (v. weak interdune) ,51							
Core ID:	LIWA/305						
Depth (m)	**Munsell Colour**	**Texture**	**Induration/ sorting**	**Bedding structures**	**HCl reaction***	**Inferred depositional environment**	**Additional comments**
OXES MISSIN	59-64, 69-71, 75, 77, 79, 83-85, 88, 92-93, 95, 97, 99, 103, 105-110, 113-115, 120-122						
EMPTY BOXES	161-168, 155, 150, 146, 137, 112						
46-67	10YR7/4-7/6 very pale brown-yellow	fine to medium sand	well sorted	obliterated, small laminations visible in places	variable o-xx	eolian	not properly cored
68-104	7.5YR6/6-6/8 reddish yellow	fine sand	well sorted	small pale/dark 1mm laminations, dark & coarser grained.	x	eolian	variable degree of lamination, dipping steeply.
111	7.5YR8/4-8/6 pink-reddish yellow	silty sand	well sorted	none visible	xx	inferred start of interdune	
115-119	7.5YR6/6-6/8 reddish yellow	fine sand coarsening at base, and increasingly calcareous	well sorted	same laminations at 117m, otherwise none.	o-xx thru dune section downwds	eolian	
123-136	2.5Y8/1-8/2 white - pale yellow	silty sand, becoming sandy silt at 129m, increasingncr grain size through core	well sorted	none	xx-o down core	thick white interdune (lacust?) marl to reowrked dune sand	
136	2.5Y8/1 white	fine sand 'risotto' texture, rip up clasts	medium to well sorted	none	xx	inferred wadi deposits	mottled slightly darker pink in chunks, carbonate nodules.
138-140	5Y8/1 white	sil, possibly with some clay (cracking)	well sorted	none	o/x to xx down core	fluvio/lacustustrine	looks identical but v weak HCl reaction 138-9 and strong 139-40
140-141.5	mottling*	risotto texture', pebble size decreases down core	well sorted	none	x	inferred wadi deposits	
141.5-149	as above down to 10YR8/2-7/2 very pale brown - light grey	fine sand	well sorted	none (obliterated?)	x throughout	eolian	decreasingly mottled, increasingly sandy pinkish deposits - start of wadi/interdune/lacustrine phase

Table DR2

151-159	5YR/81 white mottled w 5YR8/4 pint to 5YR8/1 white to 7.5YR8/2 pinkish white	clay to silty sand to fine sand downwards changing white deposit	well sorted	none	variable x-xx top v xx	start of interdune phase?	white/orange mottled clay/silt changes to pinkish sandy silt (aeolian) and paler grey fine sand (aeolian) down core.
160-171	5YR7/3 pink to 5YR6/8 reddish yellow at base	fine sand	well sorted	some visible at top of section	o-xx variable downwards	eolian	
66 (within above	5YR8/1 white and 5YR8/3 pink	risotto layer'. Thickness unsure due to core loss	poorly sorted	none	x		

Data Repository Table 3

Sample	D_e *(Gy)*	Error (random) (Gy)	Recycling ratio	Error (combined) (Gy)
liwa/40b/15	3.53	±0.24	0.98	±0.27
liwa/40b/15	4.23	±0.25	0.93	±0.28
liwa/40b/15	4.94	±0.33	0.99	±0.36
liwa/40b/15	4.41	±0.43	1.02	±0.45
liwa/40b/15	3.80	±0.26	1.07	±0.28
liwa/40b/15	5.46	±0.27	0.94	±0.31
liwa/40b/15	4.97	±0.11	0.94	±0.18
liwa/40b/15	3.96	±0.17	0.97	±0.20
liwa/40b/15	3.75	±0.09	0.98	±0.14
liwa/40b/15	3.99	±0.12	1.06	±0.17

Sample	D_e *(Gy)*	Error (random) (Gy)	Recycling ratio	Error (combined) (Gy)
liwa/40/20	3.92	±0.14	0.90	±0.18
liwa/40/20	4.46	±0.15	0.93	±0.20
liwa/40/20	3.48	±0.10	1.05	±0.15
liwa/40/20	4.64	±0.17	1.00	±0.22
liwa/40/20	4.00	±0.15	1.02	±0.19
liwa/40/20	4.35	±0.13	1.10	±0.18

Sample	D_e *(Gy)*	Error (random) (Gy)	Recycling ratio	Error (combined) (Gy)
Liwa/40b/22	3.02	±0.08	0.98	±0.28
Liwa/40b/22	3.25	±0.11	0.97	±0.30
Liwa/40b/22	3.41	±0.16	1.01	±0.34
Liwa/40b/22	3.53	±0.12	1.08	±0.33
Liwa/40b/22	3.54	±0.09	1.05	±0.32
Liwa/40b/22	3.64	±0.15	0.94	±0.35
Liwa/40b/22	3.67	±0.12	1.03	±0.34
Liwa/40b/22	3.72	±0.13	0.92	±0.35
Liwa/40b/22	3.76	±0.14	0.99	±0.36
Liwa/40b/22	3.76	±0.16	0.98	±0.36
Liwa/40b/22	3.77	±0.06	1.09	±0.33
Liwa/40b/22	3.78	±0.12	1.00	±0.35
Liwa/40b/22	3.79	±0.15	0.92	±0.36
Liwa/40b/22	3.79	±0.16	1.00	±0.37
Liwa/40b/22	3.80	±0.11	1.13	±0.35
Liwa/40b/22	3.80	±0.17	1.04	±0.37
Liwa/40b/22	3.84	±0.15	1.06	±0.37
Liwa/40b/22	3.85	±0.09	0.95	±0.35
Liwa/40b/22	3.88	±0.15	0.92	±0.37
Liwa/40b/22	3.89	±0.10	0.99	±0.35
Liwa/40b/22	3.91	±0.15	1.01	±0.37
Liwa/40b/22	3.93	±0.16	0.93	±0.38
Liwa/40b/22	3.93	±0.06	0.94	±0.35

Liwa/40b/22	3.94	±0.17	1.04 ±0.38
Liwa/40b/22	3.95	±0.18	1.07 ±0.39
Liwa/40b/22	3.96	±0.15	0.87 ±0.38
Liwa/40b/22	3.97	±0.17	1.08 ±0.38
Liwa/40b/22	3.97	±0.18	0.97 ±0.39
Liwa/40b/22	3.98	±0.14	1.05 ±0.37
Liwa/40b/22	3.99	±0.11	1.05 ±0.36
Liwa/40b/22	4.03	±0.15	0.95 ±0.38
Liwa/40b/22	4.04	±0.16	1.03 ±0.39
Liwa/40b/22	4.05	±0.15	0.98 ±0.38
Liwa/40b/22	4.06	±0.13	1.02 ±0.38
Liwa/40b/22	4.06	±0.20	0.99 ±0.41
Liwa/40b/22	4.06	±0.21	0.97 ±0.41
Liwa/40b/22	4.07	±0.14	0.98 ±0.38
Liwa/40b/22	4.07	±0.17	1.12 ±0.39
Liwa/40b/22	4.09	±0.13	1.02 ±0.38
Liwa/40b/22	4.09	±0.11	1.01 ±0.37
Liwa/40b/22	4.10	±0.15	1.14 ±0.39
Liwa/40b/22	4.11	±0.14	0.97 ±0.38
Liwa/40b/22	4.12	±0.14	1.13 ±0.38
Liwa/40b/22	4.14	±0.11	1.15 ±0.38
Liwa/40b/22	4.15	±0.12	0.92 ±0.38
Liwa/40b/22	4.15	±0.14	0.91 ±0.39
Liwa/40b/22	4.16	±0.16	1.11 ±0.40
Liwa/40b/22	4.16	±0.17	1.10 ±0.40
Liwa/40b/22	4.17	±0.17	0.91 ±0.40
Liwa/40b/22	4.17	±0.18	0.98 ±0.40
Liwa/40b/22	4.18	±0.15	1.05 ±0.39
Liwa/40b/22	4.18	±0.11	0.87 ±0.38
Liwa/40b/22	4.19	±0.14	1.04 ±0.39
Liwa/40b/22	4.19	±0.12	0.86 ±0.38
Liwa/40b/22	4.19	±0.18	1.00 ±0.41
Liwa/40b/22	4.20	±0.13	0.87 ±0.39
Liwa/40b/22	4.20	±0.16	1.07 ±0.40
Liwa/40b/22	4.20	±0.13	0.99 ±0.39
Liwa/40b/22	4.21	±0.19	1.00 ±0.41
Liwa/40b/22	4.21	±0.18	1.07 ±0.41
Liwa/40b/22	4.21	±0.13	1.05 ±0.39
Liwa/40b/22	4.22	±0.18	0.96 ±0.41
Liwa/40b/22	4.22	±0.17	1.01 ±0.41
Liwa/40b/22	4.22	±0.10	1.07 ±0.38
Liwa/40b/22	4.23	±0.18	0.97 ±0.41
Liwa/40b/22	4.23	±0.17	1.07 ±0.41
Liwa/40b/22	4.24	±0.19	0.96 ±0.41
Liwa/40b/22	4.24	±0.11	0.99 ±0.39
Liwa/40b/22	4.25	±0.15	0.98 ±0.40
Liwa/40b/22	4.25	±0.18	0.96 ±0.41
Liwa/40b/22	4.25	±0.13	0.99 ±0.39
Liwa/40b/22	4.25	±0.16	0.99 ±0.40
Liwa/40b/22	4.25	±0.12	1.06 ±0.39
Liwa/40b/22	4.25	±0.08	0.99 ±0.38

Liwa/40b/22	4.26	±0.16	0.97 ±0.40
Liwa/40b/22	4.27	±0.10	1.02 ±0.38
Liwa/40b/22	4.27	±0.15	1.00 ±0.40
Liwa/40b/22	4.27	±0.13	1.02 ±0.39
Liwa/40b/22	4.28	±0.17	1.02 ±0.41
Liwa/40b/22	4.28	±0.22	0.91 ±0.43
Liwa/40b/22	4.28	±0.14	0.92 ±0.40
Liwa/40b/22	4.29	±0.16	1.05 ±0.41
Liwa/40b/22	4.29	±0.16	0.94 ±0.41
Liwa/40b/22	4.29	±0.16	0.92 ±0.41
Liwa/40b/22	4.30	±0.16	1.04 ±0.41
Liwa/40b/22	4.30	±0.11	1.06 ±0.39
Liwa/40b/22	4.30	±0.16	1.01 ±0.41
Liwa/40b/22	4.31	±0.15	1.05 ±0.40
Liwa/40b/22	4.31	±0.14	1.03 ±0.40
Liwa/40b/22	4.32	±0.18	1.09 ±0.42
Liwa/40b/22	4.32	±0.13	1.05 ±0.40
Liwa/40b/22	4.33	±0.16	1.01 ±0.41
Liwa/40b/22	4.33	±0.14	0.97 ±0.40
Liwa/40b/22	4.33	±0.12	1.04 ±0.39
Liwa/40b/22	4.33	±0.17	1.06 ±0.41
Liwa/40b/22	4.34	±0.20	1.02 ±0.43
Liwa/40b/22	4.34	±0.13	0.95 ±0.40
Liwa/40b/22	4.34	±0.15	1.09 ±0.41
Liwa/40b/22	4.34	±0.15	1.00 ±0.41
Liwa/40b/22	4.35	±0.14	0.92 ±0.40
Liwa/40b/22	4.35	±0.14	1.00 ±0.40
Liwa/40b/22	4.35	±0.15	1.13 ±0.41
Liwa/40b/22	4.36	±0.19	1.04 ±0.42
Liwa/40b/22	4.37	±0.18	1.06 ±0.42
Liwa/40b/22	4.38	±0.15	0.95 ±0.41
Liwa/40b/22	4.38	±0.14	0.92 ±0.41
Liwa/40b/22	4.38	±0.13	0.99 ±0.40
Liwa/40b/22	4.39	±0.20	1.01 ±0.43
Liwa/40b/22	4.40	±0.17	0.93 ±0.42
Liwa/40b/22	4.40	±0.14	0.94 ±0.41
Liwa/40b/22	4.40	±0.11	1.04 ±0.40
Liwa/40b/22	4.40	±0.15	1.07 ±0.41
Liwa/40b/22	4.41	±0.18	0.87 ±0.43
Liwa/40b/22	4.42	±0.12	1.08 ±0.40
Liwa/40b/22	4.44	±0.17	0.97 ±0.42
Liwa/40b/22	4.45	±0.11	1.05 ±0.40
Liwa/40b/22	4.45	±0.13	1.05 ±0.41
Liwa/40b/22	4.46	±0.14	0.95 ±0.41
Liwa/40b/22	4.47	±0.15	1.03 ±0.42
Liwa/40b/22	4.47	±0.15	0.98 ±0.42
Liwa/40b/22	4.47	±0.19	1.02 ±0.44
Liwa/40b/22	4.49	±0.19	0.99 ±0.43
Liwa/40b/22	4.50	±0.15	0.97 ±0.42
Liwa/40b/22	4.50	±0.11	0.98 ±0.41
Liwa/40b/22	4.50	±0.11	1.12 ±0.41

Liwa/40b/22	4.50	±0.16	1.02	±0.42
Liwa/40b/22	4.50	±0.15	1.01	±0.42
Liwa/40b/22	4.50	±0.13	1.14	±0.41
Liwa/40b/22	4.50	±0.16	0.97	±0.42
Liwa/40b/22	4.52	±0.14	1.13	±0.42
Liwa/40b/22	4.52	±0.19	1.15	±0.44
Liwa/40b/22	4.53	±0.18	0.92	±0.43
Liwa/40b/22	4.54	±0.14	0.91	±0.42
Liwa/40b/22	4.54	±0.15	1.11	±0.42
Liwa/40b/22	4.55	±0.13	1.10	±0.42
Liwa/40b/22	4.55	±0.14	0.91	±0.42
Liwa/40b/22	4.55	±0.15	0.98	±0.42
Liwa/40b/22	4.56	±0.20	1.05	±0.44
Liwa/40b/22	4.56	±0.16	0.87	±0.43
Liwa/40b/22	4.56	±0.20	1.04	±0.44
Liwa/40b/22	4.57	±0.15	0.86	±0.43
Liwa/40b/22	4.58	±0.18	1.00	±0.44
Liwa/40b/22	4.59	±0.21	0.87	±0.45
Liwa/40b/22	4.59	±0.13	1.07	±0.42
Liwa/40b/22	4.60	±0.17	0.99	±0.43
Liwa/40b/22	4.61	±0.16	1.00	±0.43
Liwa/40b/22	4.61	±0.24	1.07	±0.47
Liwa/40b/22	4.61	±0.23	1.05	±0.46
Liwa/40b/22	4.62	±0.20	0.96	±0.45
Liwa/40b/22	4.62	±0.16	1.01	±0.43
Liwa/40b/22	4.63	±0.18	1.07	±0.44
Liwa/40b/22	4.64	±0.15	0.97	±0.43
Liwa/40b/22	4.65	±0.19	1.07	±0.45
Liwa/40b/22	4.66	±0.12	0.96	±0.42
Liwa/40b/22	4.67	±0.20	0.99	±0.45
Liwa/40b/22	4.67	±0.13	0.98	±0.43
Liwa/40b/22	4.69	±0.16	0.96	±0.44
Liwa/40b/22	4.69	±0.18	0.99	±0.45
Liwa/40b/22	4.70	±0.15	0.99	±0.44
Liwa/40b/22	4.72	±0.19	1.06	±0.45
Liwa/40b/22	4.74	±0.18	0.99	±0.45
Liwa/40b/22	4.75	±0.20	0.97	±0.46
Liwa/40b/22	4.76	±0.23	1.02	±0.47
Liwa/40b/22	4.76	±0.16	1.00	±0.44
Liwa/40b/22	4.77	±0.23	1.02	±0.47
Liwa/40b/22	4.77	±0.20	1.02	±0.46
Liwa/40b/22	4.79	±0.20	0.91	±0.46
Liwa/40b/22	4.82	±0.23	0.92	±0.48
Liwa/40b/22	4.86	±0.23	1.05	±0.48
Liwa/40b/22	4.89	±0.15	0.94	±0.45
Liwa/40b/22	4.90	±0.17	0.92	±0.46
Liwa/40b/22	4.92	±0.16	1.04	±0.46
Liwa/40b/22	4.92	±0.13	1.06	±0.45
Liwa/40b/22	4.99	±0.13	1.01	±0.45
Liwa/40b/22	5.01	±0.17	1.05	±0.47
Liwa/40b/22	5.04	±0.14	1.03	±0.46

Liwa/40b/22	5.05	±0.13	1.09	±0.46
Liwa/40b/22	5.05	±0.22	1.05	±0.49
Liwa/40b/22	5.09	±0.12	1.01	±0.46
Liwa/40b/22	5.10	±0.17	0.97	±0.47
Liwa/40b/22	5.15	±0.20	1.04	±0.49
Liwa/40b/22	5.19	±0.16	1.06	±0.48
Liwa/40b/22	5.24	±0.19	1.02	±0.49
Liwa/40b/22	5.26	±0.17	0.99	±0.49
Liwa/40b/22	5.28	±0.20	0.97	±0.50
Liwa/40b/22	5.28	±0.28	1.02	±0.54
Liwa/40b/22	5.47	±0.17	1.00	±0.51
Liwa/40b/22	5.51	±0.14	1.02	±0.50
Liwa/40b/22	5.61	±0.25	1.02	±0.55
Liwa/40b/22	5.97	±0.31	0.91	±0.60

Sample	D_e *(Gy)*	Error (random) (Gy)	Recycling ratio	Error (combined) (Gy)
liwa/40/24	3.47	±0.09	1.04	±0.14
liwa/40/24	4.96	±0.11	0.97	±0.19
liwa/40/24	3.66	±0.13	0.94	±0.17
liwa/40/24	3.60	±0.12	0.92	±0.16
liwa/40/24	4.31	±0.12	0.98	±0.17
liwa/40/24	4.46	±0.12	0.91	±0.18
liwa/40/24	5.16	±0.15	0.99	±0.22

Sample	D_e *(Gy)*	Error (random) (Gy)	Recycling ratio	Error (combined) (Gy)
liwa/40b/26	4.69	±0.36	0.92	±0.39
liwa/40b/26	4.65	±0.30	1.05	±0.33
liwa/40b/26	4.15	±0.22	1.01	±0.25
liwa/40b/26	4.95	±0.26	0.94	±0.30
liwa/40b/26	4.81	±0.34	0.97	±0.37
liwa/40b/26	3.69	±0.16	0.98	±0.20
liwa/40b/26	4.37	±0.14	1.06	±0.19
liwa/40b/26	4.37	±0.12	1.04	±0.18
liwa/40b/26	5.79	±0.14	0.89	±0.22
liwa/40b/26	4.85	±0.12	0.94	±0.19

Sample	D_e *(Gy)*	Error (random) (Gy)	Recycling ratio	Error (combined) (Gy)
liwa/40/28	4.37	±0.14	1.09	±0.19
liwa/40/28	4.33	±0.16	0.96	±0.21
liwa/40/28	4.20	±0.16	0.91	±0.20
liwa/40/28	3.65	±0.09	1.04	±0.14
liwa/40/28	3.51	±0.10	0.96	±0.15
liwa/40/28	4.26	±0.13	0.97	±0.18
liwa/40/28	4.73	±0.19	1.06	±0.24

Sample	D_e *(Gy)*	Error (random) (Gy)	Recycling ratio	Error (combined) (Gy)
liwa/40b/30	4.93	±0.25	1.06	±0.29

liwa/40b/30	4.31	±0.33	1.04	±0.36
liwa/40b/30	3.68	±0.30	0.89	±0.32
liwa/40b/30	4.33	±0.31	0.89	±0.33
liwa/40b/30	3.77	±0.23	1.07	±0.26
liwa/40b/30	3.65	±0.20	1.01	±0.23
liwa/40b/30	4.37	±0.17	0.94	±0.21
liwa/40b/30	4.17	±0.15	0.97	±0.20
liwa/40b/30	5.02	±0.14	0.98	±0.20
liwa/40b/30	4.53	±0.18	1.06	±0.23

Sample	D_e *(Gy)*	Error (random) (Gy)	Recycling ratio	Error (combined) (Gy)
liwa/40/32	4.36	±0.11	1.00	±0.17
liwa/40/32	5.15	±0.17	1.02	±0.23
liwa/40/32	4.76	±0.17	1.08	±0.22
liwa/40/32	5.37	±0.16	0.97	±0.22
liwa/40/32	4.84	±0.21	1.03	±0.26
liwa/40/32	4.57	±0.13	0.95	±0.19

Sample	D_e *(Gy)*	Error (random) (Gy)	Recycling ratio	Error (combined) (Gy)
liwa/40/36	3.31	±0.08	1.94	±0.13
liwa/40/36	3.72	±0.09	1.70	±0.15
liwa/40/36	2.72	±0.08	2.10	±0.11
liwa/40/36	4.87	±0.14	1.97	±0.20
liwa/40/36	3.59	±0.11	1.90	±0.15
liwa/40/36	3.67	±0.11	1.73	±0.16
liwa/40/36	3.18	±0.10	1.89	±0.14
liwa/40/36	4.24	±0.14	1.75	±0.19
liwa/40/36	4.44	±0.12	1.91	±0.18

Sample	D_e *(Gy)*	Error (random) (Gy)	Recycling ratio	Error (combined) (Gy)
liwa/40b/38	5.42	±0.31	1.06	±0.35
liwa/40b/38	4.36	±0.26	0.96	±0.29
liwa/40b/38	4.57	±0.29	1.08	±0.32
liwa/40b/38	4.40	±0.28	0.96	±0.31
liwa/40b/38	4.60	±0.23	1.00	±0.27
liwa/40b/38	5.14	±0.30	0.91	±0.34
liwa/40b/38	5.01	±0.14	0.91	±0.20
liwa/40b/38	4.69	±0.15	0.93	±0.21
liwa/40b/38	4.64	±0.18	1.01	±0.23
liwa/40b/38	2.86	±0.11	1.04	±0.14

Sample	D_e *(Gy)*	Error (random) (Gy)	Recycling ratio	Error (combined) (Gy)
liwa/40/40	4.12	±0.15	1.67	±0.19
liwa/40/40	3.33	±0.15	1.87	±0.18
liwa/40/40	3.43	±0.12	2.27	±0.16
liwa/40/40	3.74	±0.12	1.93	±0.17
liwa/40/40	3.01	±0.09	1.83	±0.13

liwa/40/40	4.00	±0.12	1.87	±0.17
liwa/40/40	3.46	±0.10	1.88	±0.15
liwa/40/40	3.51	±0.11	1.81	±0.15
liwa/40/40	3.45	±0.11	2.03	±0.15

Sample	D_e *(Gy)*	Error (random) (Gy)	Recycling ratio	Error (combined) (Gy)
liwa/40b/42	4.37	±0.51	1.14	±0.53
liwa/40b/42	4.27	±0.28	0.99	±0.30
liwa/40b/42	4.48	±0.30	1.00	±0.32
liwa/40b/42	3.28	±0.20	0.98	±0.22
liwa/40b/42	3.34	±0.20	0.99	±0.22
liwa/40b/42	2.35	±0.11	0.99	±0.13
liwa/40b/42	4.32	±0.17	0.91	±0.21
liwa/40b/42	5.83	±0.15	0.93	±0.23
liwa/40b/42	3.67	±0.11	1.01	±0.15
liwa/40b/42	3.96	±0.11	1.04	±0.16

Sample	D_e *(Gy)*	Error (random) (Gy)	Recycling ratio	Error (combined) (Gy)
liwa/40/44	3.78	±0.10	1.92	±0.15
liwa/40/44	3.25	±0.11	1.82	±0.15
liwa/40/44	3.80	±0.12	1.73	±0.17
liwa/40/44	3.43	±0.12	1.85	±0.16
liwa/40/44	4.15	±0.15	2.11	±0.19
liwa/40/44	3.16	±0.12	1.94	±0.15
liwa/40/44	2.99	±0.15	1.84	±0.17
liwa/40/44	4.07	±0.14	1.67	±0.19
liwa/40/44	3.43	±0.09	1.81	±0.14

Sample	D_e *(Gy)*	Error (random) (Gy)	Recycling ratio	Error (combined) (Gy)
liwa/40b/48	4.51	±0.31	1.11	±0.34
liwa/40b/48	4.92	±0.31	0.99	±0.34
liwa/40b/48	4.42	±0.32	1.03	±0.35
liwa/40b/48	5.66	±0.32	0.98	±0.36
liwa/40b/48	5.38	±0.32	1.16	±0.35
liwa/40b/48	4.86	±0.24	0.90	±0.28
liwa/40b/48	4.85	±0.12	1.01	±0.19
liwa/40b/48	4.46	±0.12	0.94	±0.18
liwa/40b/48	5.60	±0.14	1.02	±0.22
liwa/40b/48	4.79	±0.12	0.98	±0.19

Sample	D_e *(Gy)*	Error (random) (Gy)	Recycling ratio	Error (combined) (Gy)
liwa/40/52	6.88	±0.23	1.05	±0.31
liwa/40/52	13.92	±0.32	1.00	±0.52
liwa/40/52	7.66	±0.25	0.90	±0.34
liwa/40/52	5.61	±0.23	1.01	±0.28
liwa/40/52	9.85	±0.32	0.97	±0.44
liwa/40/52	9.29	±0.31	0.92	±0.42

liwa/40/52	3.82	±0.11	1.00	±0.16
liwa/40/52	3.32	±0.09	0.98	±0.13
liwa/40/52	5.54	±0.20	0.97	±0.26
liwa/40/52	4.33	±0.16	0.98	±0.20
liwa/40/52	5.74	±0.25	0.93	±0.30
liwa/40/52	5.86	±0.27	0.99	±0.32
liwa/40/52	6.54	±0.27	0.89	±0.33
liwa/40/52	7.24	±0.23	1.05	±0.32
liwa/40/52	7.36	±0.37	1.07	±0.43
liwa/40/52	7.78	±0.35	0.93	±0.42
liwa/40/52	15.33	±0.58	1.04	±0.74
liwa/40/52	34.28	±1.24	0.97	±1.61
liwa/40/52	4.25	±0.14	0.93	±0.19
liwa/40/52	3.97	±0.09	0.98	±0.15
liwa/40/52	4.25	±0.19	1.05	±0.23
liwa/40/52	5.67	±0.17	0.94	±0.24
liwa/40/52	8.64	±0.15	1.05	±0.30
liwa/40/52	5.86	±0.07	1.00	±0.19
liwa/40/52	4.39	±0.09	1.17	±0.16

Sample	D_e *(Gy)*	Error (random) (Gy)	Recycling ratio	Error (combined) (Gy)
liwa/40b/54	4.97	±0.32	0.98	±0.36
liwa/40b/54	5.80	±0.32	0.91	±0.36
liwa/40b/54	4.38	±0.26	1.05	±0.29
liwa/40b/54	4.49	±0.30	1.01	±0.33
liwa/40b/54	4.24	±0.27	0.94	±0.30
liwa/40b/54	4.56	±0.26	1.02	±0.29
liwa/40b/54	4.40	±0.18	0.98	±0.23
liwa/40b/54	4.04	±0.26	0.99	±0.29
liwa/40b/54	4.94	±0.27	0.99	±0.30
liwa/40b/54	5.49	±0.25	0.91	±0.30

Sample	D_e *(Gy)*	Error (random) (Gy)	Recycling ratio	Error (combined) (Gy)
liwa/40/56	5.27	±0.18	1.67	±0.24
liwa/40/56	3.26	±0.13	1.94	±0.16
liwa/40/56	4.50	±0.15	2.07	±0.20
liwa/40/56	4.59	±0.16	1.81	±0.21
liwa/40/56	2.66	±0.12	2.03	±0.14
liwa/40/56	6.33	±0.19	1.76	±0.27
liwa/40/56	4.42	±0.15	2.11	±0.20
liwa/40/56	5.71	±0.15	1.81	±0.23
liwa/40/56	3.70	±0.14	1.75	±0.18
liwa/40/56	4.66	±0.17	1.07	±0.22
liwa/40/56	5.91	±0.31	1.08	±0.36
liwa/40/56	6.03	±0.22	0.87	±0.28
liwa/40/56	6.68	±0.31	0.94	±0.37
liwa/40/56	6.71	±0.32	0.97	±0.38
liwa/40/56	6.73	±0.28	0.98	±0.35
liwa/40/56	6.77	±0.26	0.94	±0.33

liwa/40/56	7.18	±0.33	0.97	±0.39
liwa/40/56	7.66	±0.30	0.98	±0.38
liwa/40/56	7.73	±0.27	1.01	±0.36
liwa/40/56	6.89	±0.06	1.04	±0.22
liwa/40/56	6.10	±0.14	1.10	±0.23
liwa/40/56	6.42	±0.40	0.98	±0.44
liwa/40/56	5.68	±0.12	1.01	±0.21
liwa/40/56	5.21	±0.16	1.09	±0.22
liwa/40/56	6.42	±0.11	1.02	±0.22
liwa/40/56	6.67	±0.06	1.04	±0.21

Sample	D_e *(Gy)*	Error (random) (Gy)	Recycling ratio	Error (combined) (Gy)
liwa/40b/59	5.38	±0.37	1.06	±0.41
liwa/40b/59	6.61	±0.42	1.06	±0.47
liwa/40b/59	6.56	±0.32	0.94	±0.37
liwa/40b/59	6.71	±0.38	0.89	±0.43
liwa/40b/59	6.09	±0.54	1.01	±0.57
liwa/40b/59	5.13	±0.34	1.01	±0.37
liwa/40b/59	6.03	±0.17	1.06	±0.25
liwa/40b/59	5.18	±0.25	1.04	±0.29
liwa/40b/59	5.74	±0.34	0.89	±0.39
liwa/40b/59	5.44	±0.30	0.94	±0.34

Sample	D_e *(Gy)*	Error (random) (Gy)	Recycling ratio	Error (combined) (Gy)
liwa/40/60	6.95	±0.22	1.03	±0.30
liwa/40/60	4.55	±0.17	1.00	±0.22
liwa/40/60	6.46	±0.20	1.03	±0.28
liwa/40/60	4.84	±0.15	1.06	±0.21
liwa/40/60	4.46	±0.17	1.04	±0.21
liwa/40/60	5.08	±0.17	0.95	±0.23
liwa/40/60	5.88	±0.22	1.07	±0.28
liwa/40/60	6.36	±0.25	1.08	±0.31
liwa/40/60	6.45	±0.30	0.87	±0.36
liwa/40/60	6.72	±0.24	0.94	±0.31
liwa/40/60	5.98	±0.39	0.97	±0.43
liwa/40/60	7.21	±0.44	0.98	±0.49
liwa/40/60	6.31	±0.04	1.03	±0.19
liwa/40/60	5.07	±0.04	1.07	±0.16
liwa/40/60	7.34	±0.27	1.10	±0.35
liwa/40/60	7.12	±0.30	1.07	±0.37
liwa/40/60	6.55	±0.50	0.96	±0.53
liwa/40/60	5.82	±0.08	1.00	±0.19
liwa/40/60	6.21	±0.15	0.99	±0.24

Sample	D_e *(Gy)*	Error (random) (Gy)	Recycling ratio	Error (combined) (Gy)
liwa/40b/64	7.36	±0.46	0.89	±0.51
liwa/40b/64	7.30	±0.41	0.93	±0.47
liwa/40b/64	7.01	±0.64	0.82	±0.67

liwa/40b/64	6.30	±0.52	1.07	±0.55
liwa/40b/64	6.44	±0.56	1.08	±0.60
liwa/40b/64	6.16	±0.44	0.87	±0.48
liwa/40b/64	7.64	±0.33	0.94	±0.40
liwa/40b/64	7.45	±0.28	0.97	±0.36
liwa/40b/64	7.17	±0.33	0.98	±0.40
liwa/40b/64	8.38	±0.37	1.06	±0.45

Sample	D_e *(Gy)*	Error (random) (Gy)	Recycling ratio	Error (combined) (Gy)
liwa/40b/67	7.14	±0.41	1.01	±0.46
liwa/40b/67	6.91	±0.34	0.92	±0.40
liwa/40b/67	6.86	±0.52	1.06	±0.56
liwa/40b/67	6.86	±0.36	1.03	±0.41
liwa/40b/67	8.91	±0.49	1.06	±0.56
liwa/40b/67	8.71	±0.46	1.00	±0.53
liwa/40b/67	6.68	±0.37	0.93	±0.42
liwa/40b/67	6.72	±0.43	0.82	±0.48
liwa/40b/67	7.30	±0.50	1.07	±0.55
liwa/40b/67	7.57	±0.53	1.07	±0.58

Sample	D_e *(Gy)*	Error (random) (Gy)	Recycling ratio	Error (combined) (Gy)
liwa/40b/72	9.31	±0.57	1.05	±0.64
liwa/40b/72	7.23	±0.45	1.08	±0.50
liwa/40b/72	8.18	±0.32	0.91	±0.40
liwa/40b/72	8.77	±0.55	0.93	±0.61
liwa/40b/72	11.37	±0.77	1.01	±0.84
liwa/40b/72	8.39	±0.74	1.04	±0.78
liwa/40b/72	6.17	±0.24	1.08	±0.30
liwa/40b/72	6.40	±0.58	0.91	±0.62
liwa/40b/72	6.76	±0.46	0.93	±0.51
liwa/40b/72	8.11	±0.69	1.03	±0.73

Sample	D_e *(Gy)*	Error (random) (Gy)	Recycling ratio	Error (combined) (Gy)
liwa/40/80	54.48	±1.44	1.03	±2.18
liwa/40/80	91.62	±2.44	0.95	±3.67
liwa/40/80	64.15	±1.70	0.98	±2.57
liwa/40/80	78.44	±2.37	0.95	±3.34
liwa/40/80	22.14	±0.76	1.02	±1.01
liwa/40/80	58.04	±1.60	0.91	±2.36
liwa/40/80	17.73	±0.59	1.05	±0.79
liwa/40/80	41.98	±1.17	0.97	±1.72
liwa/40/80	25.36	±0.65	0.93	±1.00
liwa/40/80	19.84	±0.28	0.95	±0.66
liwa/40/80	20.24	±0.42	0.98	±0.74
liwa/40/80	22.06	±0.38	0.95	±0.76
liwa/40/80	24.70	±0.46	1.02	±0.87
liwa/40/80	48.48	±0.77	0.91	±1.65
liwa/40/80	58.99	±1.16	0.95	±2.12

liwa/40/80	60.84	±1.15	0.98	±2.16
liwa/40/80	68.51	±1.05	0.95	±2.31
liwa/40/80	118.68	±1.55	1.02	±3.88
liwa/40/80	16.50	±0.28	0.91	±0.57
liwa/40/80	31.12	±0.38	1.03	±1.01
liwa/40/80	32.52	±1.47	1.05	±1.77
liwa/40/80	23.94	±1.27	1.05	±1.46
liwa/40/80	42.90	±1.56	1.08	±2.02
liwa/40/80	60.14	±1.35	1.05	±2.25

Sample	D_e *(Gy)*	Error (random) (Gy)	Recycling ratio	Error (combined) (Gy)
liwa/40/87.5	296.53	±7.33	1.03	±11.53
liwa/40/87.5	619.43	±15.81	0.95	±24.40
liwa/40/87.5	321.83	±6.11	1.01	±11.43
liwa/40/87.5	236.22	±5.36	0.92	±8.89
liwa/40/87.5	421.51	±7.53	1.02	±14.72
liwa/40/87.5	500.88	±13.11	0.92	±19.94
liwa/40/87.5	778.12	±15.97	1.06	±28.29
liwa/40/87.5	161.87	±3.52	0.97	±6.00
liwa/40/87.5	172.03	±3.75	0.95	±6.38
liwa/40/87.5	178.42	±2.73	0.98	±6.01
liwa/40/87.5	185.43	±4.40	0.95	±7.09
liwa/40/87.5	191.79	±4.46	1.02	±7.28
liwa/40/87.5	249.94	±5.15	0.91	±9.10
liwa/40/87.5	276.89	±5.86	1.11	±10.17
liwa/40/87.5	285.30	±6.27	1.03	±10.61
liwa/40/87.5	487.88	±12.50	0.97	±19.25
liwa/40/87.5	214.27	±3.65	1.01	±7.39
liwa/40/87.5	317.74	±32.61	1.01	±33.97
liwa/40/87.5	320.14	±7.14	1.04	±11.97
liwa/40/87.5	597.16	±41.41	1.03	±45.12
liwa/40/87.5	232.42	±13.56	1.05	±15.25
liwa/40/87.5	231.04	±9.31	1.02	±11.61
liwa/40/87.5	224.09	±9.14	0.99	±11.35
liwa/40/87.5	251.62	±6.66	1.06	±10.07
liwa/40/87.5	263.53	±20.04	1.01	±21.55
liwa/40/87.5	279.77	±137.97	1.03	±138.23
liwa/40/87.5	200.93	±11.04	1.03	±12.58
liwa/40/87.5	245.01	±5.80	1.03	±9.37
liwa/40/87.5	418.65	±24.43	1.02	±27.47
liwa/40/87.5	474.38	±245.73	0.98	±246.14
liwa/40/87.5	338.63	±3.84	1.00	±10.86
liwa/40/87.5	210.54	±3.69	1.04	±7.32
liwa/40/87.5	252.42	±4.25	1.00	±8.68
liwa/40/87.5	313.42	±3.85	1.00	±10.16
liwa/40/87.5	553.27	±6.51	1.03	±17.83
liwa/40/87.5	189.03	±1.96	1.02	±6.00
liwa/40/87.5	195.13	±3.19	0.96	±6.66
liwa/40/87.5	198.88	±3.42	1.03	±6.88

Sample	D_e *(Gy)*	Error (random) (Gy)	Recycling ratio	Error (combined) (Gy)
liwa/40/90	261.43	±5.59	0.97	±9.63
liwa/40/90	559.73	±13.81	1.04	±21.74
liwa/40/90	354.22	±7.37	0.97	±12.93
liwa/40/90	312.60	±5.71	1.02	±10.98
liwa/40/90	247.44	±5.37	1.03	±9.16
liwa/40/90	500.67	±9.95	0.98	±18.01
liwa/40/90	200.70	±4.85	0.99	±7.73
liwa/40/90	233.62	±5.17	1.00	±8.71
liwa/40/90	213.18	±5.09	0.97	±8.17
liwa/40/90	176.32	±5.17	1.10	±7.40
liwa/40/90	187.42	±5.39	1.01	±7.79
liwa/40/90	208.50	±4.45	1.05	±7.68
liwa/40/90	213.30	±5.28	1.08	±8.30
liwa/40/90	217.88	±5.96	1.09	±8.85
liwa/40/90	232.63	±5.09	0.95	±8.64
liwa/40/90	314.23	±8.35	1.00	±12.59
liwa/40/90	326.07	±7.56	0.98	±12.36
liwa/40/90	388.74	±8.77	0.97	±14.59
liwa/40/90	263.53	±52.48	0.96	±53.07
liwa/40/90	180.73	±9.11	0.94	±10.60
liwa/40/90	236.24	±13.38	1.03	±15.14
liwa/40/90	201.85	±7.59	1.10	±9.71
liwa/40/90	163.00	±6.24	1.01	±7.93
liwa/40/90	186.98	±18.78	1.05	±19.60
liwa/40/90	237.56	±6.91	1.08	±9.93
liwa/40/90	300.59	±31.26	1.09	±32.54
liwa/40/90	170.09	±3.33	0.95	±6.10
liwa/40/90	131.00	±2.88	0.96	±4.87
liwa/40/90	176.98	±3.60	0.93	±6.42
liwa/40/90	160.31	±3.91	0.97	±6.20
liwa/40/90	132.11	±4.73	0.96	±6.17
liwa/40/90	122.89	±3.52	0.99	±5.10
liwa/40/90	176.19	±1.58	0.89	±5.52
liwa/40/90	243.39	±6.85	0.97	±10.01

Sample	D_e *(Gy)*	Error (random) (Gy)	Recycling ratio	Error (combined) (Gy)
liwa/24/121	231.96	±3.07	1.05	±7.61
liwa/24/121	295.74	±3.66	1.04	±9.60
liwa/24/121	385.99	±5.22	1.03	±12.70
liwa/24/121	239.77	±3.40	0.95	±7.96
liwa/24/121	269.84	±4.31	0.95	±9.17
liwa/24/121	360.58	±5.52	1.03	±12.15
liwa/24/121	351.72	±4.06	1.01	±11.31
liwa/24/121	435.41	±5.37	1.02	±14.12
liwa/24/121	190.54	±2.74	0.99	±6.34
liwa/24/121	153.90	±2.75	1.03	±5.37
liwa/24/121	158.86	±2.48	1.05	±5.37

liwa/24/121	200.45	±2.91	1.03	±6.68
liwa/24/121	222.29	±3.42	1.01	±7.49
liwa/24/121	250.15	±3.21	1.01	±8.16
liwa/24/121	252.56	±3.33	0.95	±8.28
liwa/24/121	360.93	±4.61	1.03	±11.77
liwa/24/121	417.99	±4.92	1.05	±13.47
liwa/24/121	259.77	±6.97	1.03	±10.46
liwa/24/121	235.81	±9.62	1.01	±11.94
liwa/24/121	283.95	±17.32	1.01	±19.31
liwa/24/121	193.42	±8.76	0.95	±10.50
liwa/24/121	159.69	±2.67	1.05	±5.49
liwa/24/121	150.65	±4.54	1.03	±6.41
liwa/24/121	307.12	±22.76	1.01	±24.55
liwa/24/121	196.67	±5.12	1.01	±7.81
liwa/24/121	295.61	±2.71	0.95	±9.27
liwa/24/121	210.79	±1.84	0.95	±6.59
liwa/24/121	174.09	±1.36	0.94	±5.40
liwa/24/121	142.43	±1.18	0.94	±4.43
liwa/24/121	123.49	±1.01	0.94	±3.84
liwa/24/121	116.10	±1.31	0.95	±3.72
liwa/24/121	238.30	±1.72	0.93	±7.35
liwa/24/121	151.48	±1.42	0.94	±4.76

Sample	D_e *(Gy)*	Error (random) (Gy)	Recycling ratio	Error (combined) (Gy)
liwa/47/2	0.45	±0.03	1.07	±0.03
liwa/47/2	0.51	±0.06	0.99	±0.06
liwa/47/2	0.87	±0.09	1.03	±0.09
liwa/47/2	0.90	±0.06	0.98	±0.07
liwa/47/2	0.96	±0.09	0.85	±0.09
liwa/47/2	1.79	±0.12	0.95	±0.13
liwa/47/2	2.24	±0.08	1.04	±0.10
liwa/47/2	0.60	±0.04	0.91	±0.04
liwa/47/2	1.29	±0.04	1.14	±0.05
liwa/47/2	2.72	±0.10	1.29	±0.13
liwa/47/2	0.92	±0.05	1.10	±0.05
liwa/47/2	0.37	±0.03	0.97	±0.03
liwa/47/2	1.00	±0.04	1.03	±0.05
liwa/47/2	0.92	±0.03	1.05	±0.04
liwa/47/2	0.42	±0.02	1.22	±0.02

Sample	D_e *(Gy)*	Error (random) (Gy)	Recycling ratio	Error (combined) (Gy)
liwa/47/13	12.69	±0.25	1.17	±0.46
liwa/47/13	13.11	±0.18	1.15	±0.43
liwa/47/13	16.97	±0.27	1.14	±0.58
liwa/47/13	27.93	±0.84	1.16	±1.19
liwa/47/13	29.13	±0.86	1.06	±1.22
liwa/47/13	33.69	±0.36	1.10	±1.07
liwa/47/13	32.13	±2.51	0.91	±2.69
liwa/47/13	8.38	±0.29	0.93	±0.38

liwa/47/13	21.92	±1.01	0.96	±1.21
liwa/47/13	19.64	±0.89	0.98	±1.07
liwa/47/13	20.16	±0.84	0.89	±1.04
liwa/47/13	11.09	±0.20	0.93	±0.39
liwa/47/13	32.80	±1.91	0.93	±2.15
liwa/47/13	13.48	±0.44	0.91	±0.60

Sample	D_e *(Gy)*	Error (random) (Gy)	Recycling ratio	Error (combined) (Gy)
liwa/47/33	232.50	±7.93	1.11	±10.56
liwa/47/33	88.42	±0.49	1.06	±2.70
liwa/47/33	205.74	±7.21	1.07	±9.49
liwa/47/33	177.26	±3.34	1.06	±6.28
liwa/47/33	114.31	±0.68	1.06	±3.50
liwa/47/33	152.94	±4.98	1.07	±6.77
liwa/47/33	206.49	±2.93	1.00	±6.85
liwa/47/33	157.92	±34.00	1.00	±34.33

Sample	D_e *(Gy)*	Error (random) (Gy)	Recycling ratio	Error (combined) (Gy)
liwa/47/56	224.40	±3.73	1.03	±7.70
liwa/47/56	211.73	±2.10	1.03	±6.69
liwa/47/56	171.46	±0.55	1.08	±5.17
liwa/47/56	248.86	±8.01	1.08	±10.95
liwa/47/56	239.71	±3.42	1.05	±7.97
liwa/47/56	112.73	±1.81	1.04	±3.84
liwa/47/56	276.64	±3.49	0.95	±9.00
liwa/47/56	200.09	±1.16	1.07	±6.11

Sample	D_e *(Gy)*	Error (random) (Gy)	Recycling ratio	Error (combined) (Gy)
liwa/47/61	245.13	±5.95	1.00	±9.46
liwa/47/61	205.12	±1.03	1.02	±6.24
liwa/47/61	252.64	±10.30	1.05	±12.79
liwa/47/61	253.56	±1.79	1.00	±7.81
liwa/47/61	239.74	±4.62	1.02	±8.55
liwa/47/61	222.93	±6.55	1.04	±9.36
liwa/47/61	235.19	±6.32	1.04	±9.47
liwa/47/61	240.59	±0.44	1.00	±7.23

Sample	D_e *(Gy)*	Error (random) (Gy)	Recycling ratio	Error (combined) (Gy)
liwa/47/64	309.85	±8.50	1.08	±12.60
liwa/47/64	287.04	±3.98	1.06	±9.48
liwa/47/64	264.65	±7.52	1.08	±10.94
liwa/47/64	313.09	±2.72	1.05	±9.78
liwa/47/64	374.22	±8.85	1.06	±14.29
liwa/47/64	254.85	±5.45	1.11	±9.39
liwa/47/64	306.70	±4.47	1.07	±10.23
liwa/47/64	364.59	±9.34	1.07	±14.38

Sample	D_e *(Gy)*	Error (random) (Gy)	Recycling ratio	Error (combined) (Gy)
liwa/47/69	204.63	±1.65	1.04	±6.36
liwa/47/69	286.15	±3.35	1.05	±9.22
liwa/47/69	297.32	±1.86	1.05	±9.11
liwa/47/69	162.62	±1.34	1.03	±5.06
liwa/47/69	187.08	±1.64	1.08	±5.85
liwa/47/69	393.42	±3.86	1.10	±12.42
liwa/47/69	274.44	±2.63	1.06	±8.64

Sample	D_e *(Gy)*	Error (random) (Gy)	Recycling ratio	Error (combined) (Gy)
liwa/47/75	248.45	±2.59	1.04	±7.89
liwa/47/75	258.90	±2.23	1.06	±8.08
liwa/47/75	419.38	±12.93	1.03	±18.04
liwa/47/75	274.11	±2.07	1.08	±8.48
liwa/47/75	232.77	±1.87	1.10	±7.23
liwa/47/75	295.45	±4.16	1.05	±9.79
liwa/47/75	344.74	±9.08	1.06	±13.76
liwa/47/75	358.64	±2.42	1.07	±11.03

Sample	D_e *(Gy)*	Error (random) (Gy)	Recycling ratio	Error (combined) (Gy)
liwa/47/83	377.45	±3.39	1.04	±11.82
liwa/47/83	333.37	±3.93	1.08	±10.75
liwa/47/83	298.08	±2.70	1.13	±9.34
liwa/47/83	300.86	±0.00	1.06	±9.03
liwa/47/83	343.36	±5.21	1.09	±11.54
liwa/47/83	270.54	±4.81	1.06	±9.44
liwa/47/83	925.77	±47.13	1.15	±54.70
liwa/47/83	458.49	±6.71	1.06	±15.30

Sample	D_e *(Gy)*	Error (random) (Gy)	Recycling ratio	Error (combined) (Gy)
liwa/47/88	262.98	±6.74	1.08	±10.37
liwa/47/88	172.06	±1.78	1.06	±5.46
liwa/47/88	343.81	±5.92	1.10	±11.89
liwa/47/88	209.64	±3.28	1.06	±7.09
liwa/47/88	376.51	±6.53	1.06	±13.05
liwa/47/88	248.24	±4.57	1.04	±8.74
liwa/47/88	199.66	±2.30	1.08	±6.41
liwa/47/88	222.43	±1.89	1.07	±6.94

Sample	D_e *(Gy)*	Error (random) (Gy)	Recycling ratio	Error (combined) (Gy)
liwa/47/89	236.31	±2.34	1.03	±7.46
liwa/47/89	273.67	±5.01	1.12	±9.62
liwa/47/89	319.68	±8.52	1.07	±12.83
liwa/47/89	201.18	±1.56	1.08	±6.23

liwa/47/89	296.31	±10.16	1.05	±13.50
liwa/47/89	257.94	±3.10	1.05	±8.34
liwa/47/89	230.99	±4.33	1.07	±8.17
liwa/47/89	264.88	±9.02	0.98	±12.02

Sample	D_e *(Gy)*	Error (random) (Gy)	Recycling ratio	Error (combined) (Gy)
liwa/47/98	217.99	±2.30	0.98	±6.93
liwa/47/98	200.35	±2.97	1.07	±6.71
liwa/47/98	247.95	±5.64	1.06	±9.34
liwa/47/98	229.90	±4.01	1.02	±7.98
liwa/47/98	176.21	±2.91	1.00	±6.03
liwa/47/98	253.45	±1.39	1.04	±7.73
liwa/47/98	236.97	±12.60	0.99	±14.46

Sample	D_e *(Gy)*	Error (random) (Gy)	Recycling ratio	Error (combined) (Gy)
liwa/47/100	382.58	±2.12	1.11	±11.67
liwa/47/100	287.48	±5.28	1.05	±10.11
liwa/47/100	352.76	±6.12	1.05	±12.22
liwa/47/100	333.51	±1.48	1.04	±10.11
liwa/47/100	230.87	±6.02	1.10	±9.18
liwa/47/100	286.01	±4.36	1.12	±9.62
liwa/47/100	213.21	±6.17	1.16	±8.88
liwa/47/100	328.75	±4.16	1.08	±10.70

Sample	D_e *(Gy)*	Error (random) (Gy)	Recycling ratio	Error (combined) (Gy)
liwa/166/45	188.71	±10.35	1.04	±11.80
liwa/166/45	211.22	±14.64	1.06	±15.96
liwa/166/45	228.18	±20.06	0.95	±21.20
liwa/166/45	262.85	±24.44	0.92	±25.68
liwa/166/45	269.86	±24.10	1.03	±25.42
liwa/166/45	345.19	±53.51	0.96	±54.51
liwa/166/45	465.78	±82.45	0.94	±83.62

Sample	D_e *(Gy)*	Error (random) (Gy)	Recycling ratio	Error (combined) (Gy)
liwa/166/66	188.45	±7.81	0.91	±9.65
liwa/166/66	206.21	±17.50	0.96	±18.56
liwa/166/66	208.05	±14.92	1.04	±16.17
liwa/166/66	208.39	±2.50	1.08	±6.73
liwa/166/66	284.29	±18.69	0.99	±20.55
liwa/166/66	465.85	±68.76	1.08	±70.17
liwa/166/66	502.04	±44.18	0.95	±46.68

Sample	D_e *(Gy)*	Error (random) (Gy)	Recycling ratio	Error (combined) (Gy)
liwa/305/49	81.50	±2.40	0.98	±3.43
liwa/305/49	84.18	±1.79	1.01	±3.10

liwa/305/49	87.96	±1.47	1.01	±3.02
liwa/305/49	89.16	±2.32	0.98	±3.54
liwa/305/49	91.99	±3.05	0.93	±4.11
liwa/305/49	92.53	±1.65	0.99	±3.23
liwa/305/49	93.35	±8.38	0.89	±8.83
liwa/305/49	96.75	±4.69	1.05	±5.51
liwa/305/49	101.09	±2.42	1.07	±3.88
liwa/305/49	101.24	±7.43	0.95	±8.03
liwa/305/49	101.91	±3.68	1.05	±4.78
liwa/305/49	103.34	±2.68	0.98	±4.10
liwa/305/49	104.53	±4.37	1.01	±5.38
liwa/305/49	106.92	±1.60	1.01	±3.58
liwa/305/49	111.11	±3.84	0.98	±5.08
liwa/305/49	111.33	±4.12	0.93	±5.30
liwa/305/49	113.93	±2.23	0.99	±4.08
liwa/305/49	115.64	±6.67	0.89	±7.52
liwa/305/49	116.44	±6.08	1.05	±7.01
liwa/305/49	118.94	±5.15	1.07	±6.27
liwa/305/49	119.96	±7.90	0.95	±8.68
liwa/305/49	124.92	±1.00	1.05	±3.88
liwa/305/49	129.79	±6.70	0.99	±7.75
liwa/305/49	192.56	±6.25	0.89	±8.51

Sample	D_e *(Gy)*	Error (random) (Gy)	Recycling ratio	Error (combined) (Gy)
liwa/305/52	113.05	±9.85	0.92	±10.41
liwa/305/52	113.66	±4.03	1.00	±5.28
liwa/305/52	122.77	±9.07	1.13	±9.79
liwa/305/52	124.02	±17.75	1.04	±18.14
liwa/305/52	127.08	±5.16	1.06	±6.42
liwa/305/52	151.13	±16.71	0.95	±17.31
liwa/305/52	171.08	±18.43	0.92	±19.13
liwa/305/52	178.26	±4.94	1.03	±7.28
liwa/305/52	180.97	±16.37	0.96	±17.25
liwa/305/52	190.93	±7.47	0.87	±9.41

Sample	D_e *(Gy)*	Error (random) (Gy)	Recycling ratio	Error (combined) (Gy)
liwa/305/56	105.27	±10.02	1.01	±10.51
liwa/305/56	145.72	±10.94	0.98	±11.78
liwa/305/56	193.05	±5.37	0.93	±7.90
liwa/305/56	209.25	±15.57	0.99	±16.78
liwa/305/56	214.54	±8.22	0.89	±10.44
liwa/305/56	215.64	±19.29	1.05	±20.35
liwa/305/56	220.18	±11.53	1.07	±13.29
liwa/305/56	227.24	±2.36	0.92	±7.21
liwa/305/56	272.27	±23.04	1.02	±24.45
liwa/305/56	288.05	±23.51	1.09	±25.05
liwa/305/56	380.28	±192.23	0.94	±192.57

Sample	D_e *(Gy)*	Error (random) (Gy)	Recycling ratio	Error (combined) (Gy)
Liwa/pit/6	139.63	±11.46	1.04	±12.20
Liwa/pit/6	152.89	±8.67	1.06	±9.81
Liwa/pit/6	156.87	±3.73	0.95	±6.00
Liwa/pit/6	161.15	±5.91	0.92	±7.64
Liwa/pit/6	164.22	±4.16	0.99	±6.45
Liwa/pit/6	189.99	±13.06	1.01	±14.25
Liwa/pit/6	195.16	±6.58	0.93	±8.81
Liwa/pit/6	312.56	±13.66	0.94	±16.57

Sample	D_e *(Gy)*	Error (random) (Gy)	Recycling ratio	Error (combined) (Gy)
Liwa/pit/7	120.92	±5.80	1.01	±6.84
Liwa/pit/7	154.76	±7.04	1.14	±8.43
Liwa/pit/7	156.28	±10.61	0.97	±11.60
Liwa/pit/7	156.64	±6.95	1.13	±8.39
Liwa/pit/7	159.10	±10.13	1.15	±11.20
Liwa/pit/7	163.86	±6.50	0.92	±8.15
Liwa/pit/7	165.53	±12.71	0.91	±13.64
Liwa/pit/7	169.54	±6.14	1.11	±7.97
Liwa/pit/7	179.27	±11.51	1.10	±12.71
Liwa/pit/7	183.55	±11.80	0.91	±13.02
Liwa/pit/7	189.20	±5.03	0.98	±7.58
Liwa/pit/7	190.33	±13.30	1.05	±14.47
Liwa/pit/7	192.75	±4.73	0.87	±7.47
Liwa/pit/7	210.44	±13.32	1.04	±14.74
Liwa/pit/7	235.17	±8.24	0.86	±10.85

Sample	D_e *(Gy)*	Error (random) (Gy)	Recycling ratio	Error (combined) (Gy)
Liwa/pit/8	119.31	±3.87	1.03	±5.27
Liwa/pit/8	121.41	±7.94	1.12	±8.74
Liwa/pit/8	123.78	±1.98	1.07	±4.21
Liwa/pit/8	140.05	±3.15	1.08	±5.25
Liwa/pit/8	149.43	±7.70	0.92	±8.91
Liwa/pit/8	164.19	±8.07	1.05	±9.46
Liwa/pit/8	171.01	±3.37	1.07	±6.14
Liwa/pit/8	184.44	±5.24	0.95	±7.62
Liwa/pit/8	201.53	±7.70	1.12	±9.79
Liwa/pit/8	203.62	±3.53	1.06	±7.05
Liwa/pit/8	211.86	±5.80	0.92	±8.61
Liwa/pit/8	237.61	±12.23	1.05	±14.16
Liwa/pit/8	265.15	±13.89	0.98	±16.00
Liwa/pit/8	292.33	±23.52	1.05	±25.10

Sample	D_e *(Gy)*	Error (random) (Gy)	Recycling ratio	Error (combined) (Gy)
liwa/pit/9	242.04	±17.65	1.00	±19.09
liwa/pit/9	147.15	±2.88	1.02	±5.27

liwa/pit/9	131.64	±5.12	1.02	±6.46
liwa/pit/9	298.71	±17.01	0.91	±19.23
liwa/pit/9	249.44	±15.60	0.92	±17.31
liwa/pit/9	189.40	±19.79	1.05	±20.59
liwa/pit/9	157.00	±8.02	0.94	±9.30

Sample	D_e *(Gy)*	Error (random) (Gy)	Recycling ratio	Error (combined) (Gy)
liwa/pit/10	104.74	±6.08	1.04	±6.84
liwa/pit/10	107.36	±4.69	1.06	±5.69
liwa/pit/10	129.22	±9.86	1.01	±10.59
liwa/pit/10	167.81	±13.06	1.05	±14.00
liwa/pit/10	180.05	±26.98	1.03	±27.51
liwa/pit/10	190.45	±5.06	1.09	±7.63
liwa/pit/10	194.10	±8.99	1.05	±10.71

Sample	D_e *(Gy)*	Error (random) (Gy)	Recycling ratio	Error (combined) (Gy)
liwa/pit/11	116.61	±3.22	0.92	±4.76
liwa/pit/11	125.05	±3.21	1.00	±4.94
liwa/pit/11	179.72	±11.59	1.13	±12.78
liwa/pit/11	194.72	±5.85	1.04	±8.27
liwa/pit/11	130.76	±11.33	1.06	±11.99
liwa/pit/11	168.84	±5.91	0.95	±7.78
liwa/pit/11	138.54	±7.17	0.92	±8.29

Sample	D_e *(Gy)*	Error (random) (Gy)	Recycling ratio	Error (combined) (Gy)
liwa/pit/12	205.77	±8.42	1.01	±10.44
liwa/pit/12	148.85	±3.62	0.97	±5.75
liwa/pit/12	199.48	±15.31	1.04	±16.44
liwa/pit/12	178.71	±19.08	1.06	±19.82
liwa/pit/12	175.34	±6.41	1.02	±8.29
liwa/pit/12	132.79	±4.91	0.99	±6.33
liwa/pit/12	291.94	±8.87	0.97	±12.47
liwa/pit/12	192.84	±21.77	1.08	±22.53

Sample	D_e *(Gy)*	Error (random) (Gy)	Recycling ratio	Error (combined) (Gy)
liwa/pit/13	164.91	±7.00	1.01	±8.57
liwa/pit/13	145.76	±13.92	0.96	±14.59
liwa/pit/13	479.63	±102.31	1.07	±103.32
liwa/pit/13	161.81	±7.10	1.00	±8.60
liwa/pit/13	134.57	±4.00	1.04	±5.69
liwa/pit/13	258.83	±12.83	0.93	±15.00
liwa/pit/13	143.54	±4.40	0.98	±6.16

Sample	D_e *(Gy)*	Error (random) (Gy)	Recycling ratio	Error (combined) (Gy)
liwa/pit/14	169.09	±7.44	0.95	±9.01

liwa/pit/14	186.49	±38.44	0.92	±38.84
liwa/pit/14	139.26	±17.58	1.02	±18.07
liwa/pit/14	149.32	±12.16	1.01	±12.96

Sample	D_e *(Gy)*	Error (random) (Gy)	Recycling ratio	Error (combined) (Gy)
liwa/pit/15	123.99	±3.87	1.08	±5.37
liwa/pit/15	198.97	±2.88	1.13	±6.63
liwa/pit/15	217.36	±5.40	1.06	±8.47
liwa/pit/15	212.86	±9.09	1.09	±11.11
liwa/pit/15	210.56	±4.03	1.06	±7.50
liwa/pit/15	178.48	±10.06	1.15	±11.40
liwa/pit/15	201.98	±3.95	1.06	±7.23
liwa/pit/15	192.97	±9.20	1.09	±10.87

Sample	D_e *(Gy)*	Error (random) (Gy)	Recycling ratio	Error (combined) (Gy)
liwa/pit/16	175.80	±6.38	0.86	±8.27
liwa/pit/16	173.15	±4.07	1.00	±6.60
liwa/pit/16	199.70	±2.21	0.87	±6.39
liwa/pit/16	169.89	±5.77	1.07	±7.70
liwa/pit/16	193.62	±6.61	0.99	±8.80
liwa/pit/16	180.67	±7.64	1.00	±9.37
liwa/pit/16	308.67	±10.12	1.06	±13.72

Sample	D_e *(Gy)*	Error (random) (Gy)	Recycling ratio	Error (combined) (Gy)
liwa/pit/17	280.65	±13.97	0.98	±16.31
liwa/pit/17	123.93	±2.63	1.07	±4.55
liwa/pit/17	244.80	±16.01	1.06	±17.61
liwa/pit/17	231.52	±7.94	1.02	±10.55
liwa/pit/17	191.26	±5.05	1.00	±7.65
liwa/pit/17	160.02	±9.63	1.04	±10.76
liwa/pit/17	216.41	±41.85	0.99	±42.35
liwa/pit/17	181.89	±10.73	1.02	±12.04