

Fig. 6. Map showing location of stratigraphic columns within NZMS 260 Sheet U20

*Stratigraphic Column No:* 28      *Grid Reference:* Top      Bottom  
*GPS Waypoint No(s):* Wp 84      *E:* 2809407  
*Region:* Makahu      *N:* 6216474  
*Location:* Mangatutu Hot Springs access road, Kaweka Forest Park.      *Altitude:* 628m      -  
*NZMS 260 Sheet:* U20 Napier      *Page 1 of 1*      **Author:** K. Bland

NZMS 260 U20

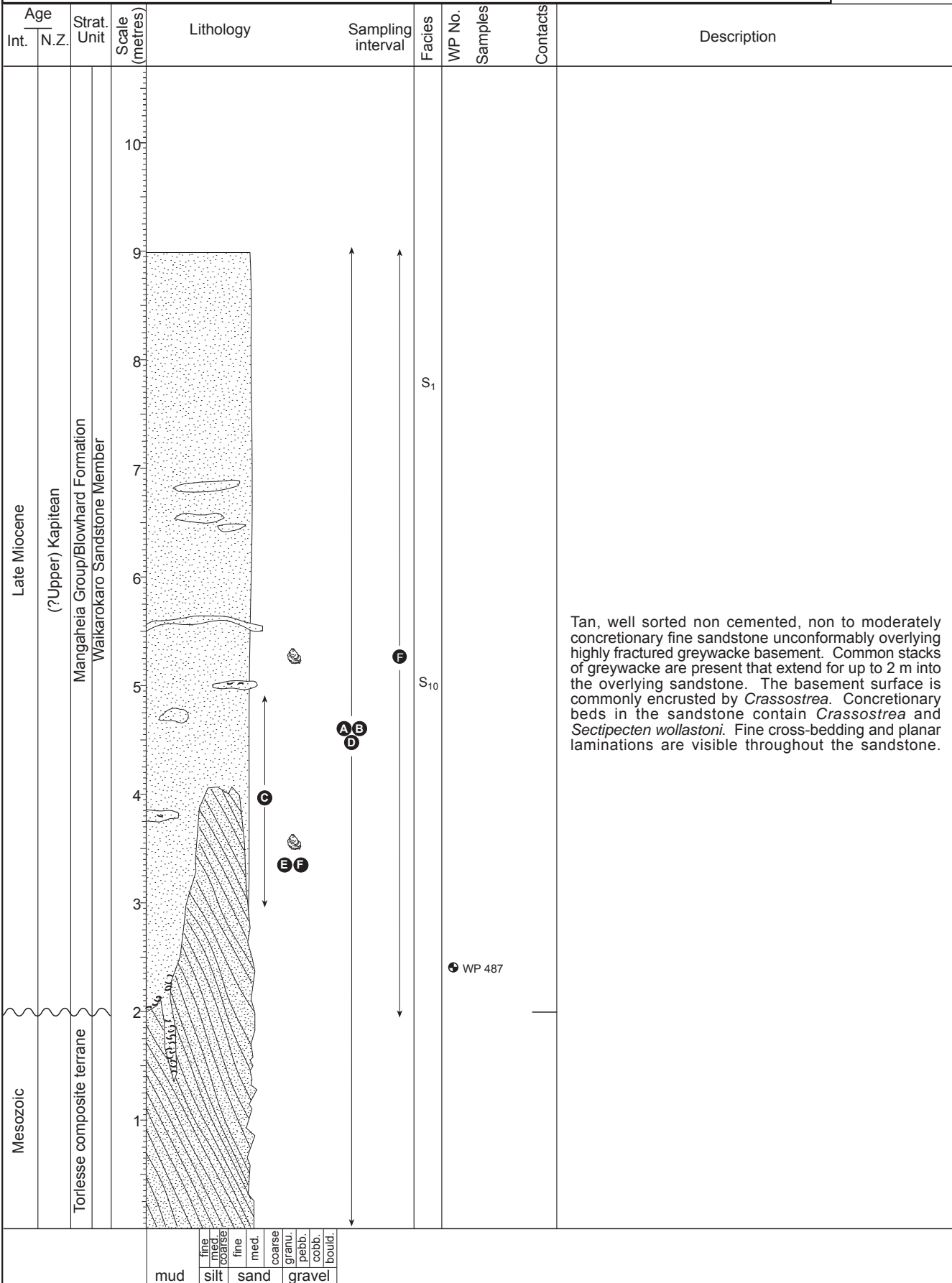
**28**

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Age	Strat. Unit	Lithology	Sampling interval	Facies	WP No.	Samples	Contacts	Description
Early Pliocene	Upper Opoitian	Mangaheia Group Pakaututu Formation						
Mesozoic	Torlesse composite terrane			S <sub>2</sub>				<p>Moderately weathered, ripple to parallel-laminated fine to medium sandstone. Unit appears to overlie greywacke, although the contact is obscured. Unconfident age and stratigraphic correlation.</p> <p>Very indurated, moderately to strongly deformed, moderately to strongly weathered greywacke basement. The unit at this locality is also moderately fractured.</p>
		mud    fine med coarse    fine med. coarse    granu. pebb. cobb. bould. silt    sand    gravel						



<b>Stratigraphic Column No:</b> 30	<b>Grid Reference:</b> <b>Top</b>	<b>Bottom</b>	NZMS 260 U20  <span style="font-size: 2em; color: red;">30</span>  1 of 2
<b>GPS Waypoint No(s):</b> Wp 487	<b>E:</b> 2799440	-	
<b>Region:</b> Kuripapango	<b>N:</b> 6198184	-	
<b>Location:</b> Quarry off Kuripapango Road towards Kuripapango lakes	<b>Altitude:</b> 641m	-	
<b>NZMS 260 Sheet:</b> U20 Esk	<b>Page 1 of 1</b>	<b>Author:</b> K. Bland	











<b>Stratigraphic Column No:</b> 32	<b>Grid Reference:</b> <b>Top</b>	<b>Bottom</b>
<b>GPS Waypoint No(s):</b> Wp 916	<b>E:</b> 2804786	-
<b>Region:</b> Glenross	<b>N:</b> 6192787	-
<b>Location:</b> Western side of Sandy Ridge, Kaweka Forest	<b>Altitude:</b> 819 m	-
<b>NZMS 260 Sheet:</b> U20 Kaweka	Page 1 of 1	<b>Author:</b> K. Bland

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Age	Strat. Unit	Scale (metres)	Lithology	Sampling interval	Facies	WP No.	Samples	Contacts	Description																		
Int.	N.Z.																										
Late Pliocene	Mangapanian	Mangaheia Group Te Waka Formation			BC <sub>6</sub>				<p>Moderately to well cemented slightly pebbly flaggy shellhash limestone. Clasts are typically of fine to medium pebble size. Unit comprises stacked mixed bioclastic-siliciclastic bodies (bioclastic-dominated) arranged in laminated to weakly cross-bedded form. Rare fragments of <i>Phialopecten thomsoni</i> are present, with abundant barnacles (as intact specimens, plates and fragments). Also present are <i>Tucetona laticostata</i> and <i>Panopea</i>.</p> <p>Slightly cemented, coarse-grained conglomerate to breccia with greywacke clasts 7-60 cm across set in a sandy shellhash matrix. Clasts are angular to well rounded and interbedded with common to abundant macrofossils. Large <i>Crassostrea ingens</i> are abundant, and are often present attached to other oyster valves. Fines upwards into overlying limestone.</p> <p>Highly deformed and fractured, moderately to strongly weathered greywacke.</p>																		
Mesozoic		Torlesse composite terraane			CG <sub>6</sub>	WP 916																					
			<table border="1" style="font-size: 8px;"> <tr> <td>mud</td> <td>fine silt</td> <td>fine sand</td> <td>med. sand</td> <td>coarse sand</td> <td>granu. pebb.</td> <td>cobb.</td> <td>bould.</td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> </table>	mud	fine silt	fine sand	med. sand	coarse sand	granu. pebb.	cobb.	bould.																
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Late Pliocene	Mangapanian		Mangaheia Group Te Waka Formation																						
		41	Page 3																						
		40																							
		39																							
		38																							
		37			S <sub>10</sub>																				
		36		F G I A B C					Bioturbated yellow-brown, non to slightly cemented muddy fine sandstone. Occasional concretionary bodies and horizons are present, as are common mudstone stringers.																
		35																							
		34																							
		33																							
		32			BC <sub>1</sub>				Sandy shellhash-dominated limestone with common bryozoan fragments.																
		31																							
		30			MX <sub>4</sub>				Stacked bioclastic-dominated - siliciclastic-dominated grainstone and rudstone beds 0.3-0.6 m thick. Bioclastic content rich in barnacle and encrusting bryozoan fragments. Contains rare <i>Phialopecten thomsoni</i> .																
		29																							
		28		F																					
		27			BC <sub>1</sub>																				
		26				WP 149																			
		25																							
		24																							
		23							Yellow-brown, non cemented, non to slightly fossiliferous fine sandstone. Small clusters of shells are present dominated by <i>Ostrea</i> and <i>Talochlamys</i> with some <i>Eumarcia</i> sp. and gastropods. Shell clusters are more common towards the top of the bed. This unit contains a prominent shellhash component and is intensely bioturbated. Burrows underneath the overlying shellbed are commonly filled with shellhash.																
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		21			MX <sub>4</sub>																				
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