TABLE DR1. RIVER CHARACTERISTICS

	Crooked Ridge River	Animas River	San Juan River
Sinuosity*	1.15	1.17	1.22
Meander amplitude (m)	110-380	105-240	65-440
Floodplain width (m)	410-1000	150-241	145-230
Valley width (km)	5-10 on Kaibito Plat. 3.4 at The Gap	1.7-2.4	0.5-0.7
Average gradient (m/km)	5.8	5.47	8.25
Channel character		Braided	Meandering-braided
Mean maximum daily discharge (m^3/s)		85	45
Maximum daily flood (m^3/s)		303†	130.7

Note: Animas River: 6.4 km reach upstream from Durango, CO. San Juan River: 13.1 km reach upstream from Pagosa Springs, CO.
* Ratio of the channel length to the down-valley distance.
† 99 year record.

TABLE DR2. COMPOSITION OF GRAVEL SAMPLES

Statistical Samples			Grab Samples	
Lithology	Percent		Lithology	Percent
	CR2-2	CR2-3		
Mesozoic sedimentary*	53	61	Quartzite	48.5
Quartzite	13	19	Chert	11.5
Chert	12	5	Mesozoic sandstone[††]	7.3
Felsic volcanic[†]	5	7	Metaconglomerate[§§]	5.2
Minette	9	2	Quartz	5.2
Granite	5	1	Granite	4.6
Intermediate volcanic[§]	1	2	Metawacke	4.0
Quartz	1	1	Microcline	3.4
Metaconglomerate[#]	0	1	Intermediate porphyry[##]	2.9
Gneiss**	0	1	Felsic volcanic***	2.9
Earthy hematite	1	0	Minette	2.3
			Intermediate volcanic[†††]	1.1
			Earthy hematite[§§§]	1.1

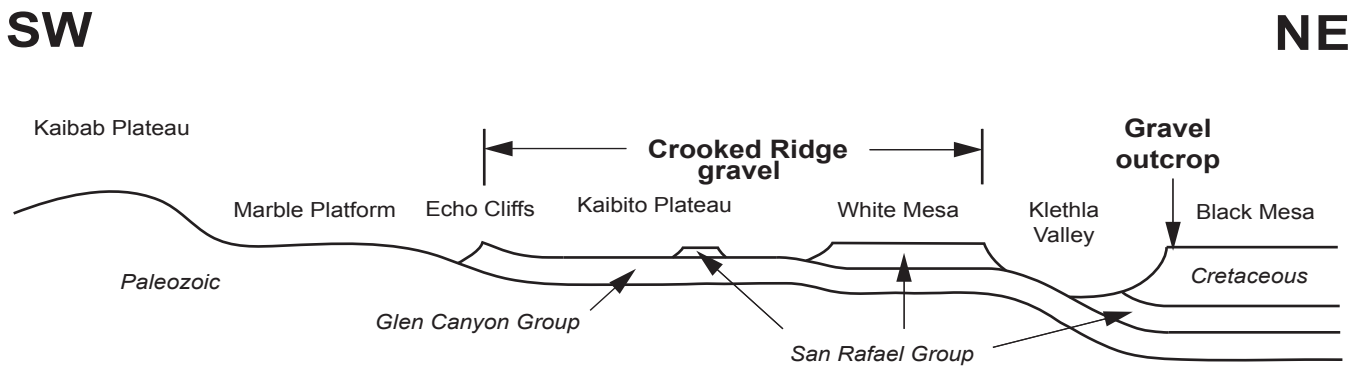
Note: CR2-2: 100 contiguous clasts from top surface of the deposit at big quarry on Kaibito road, White Mesa. c-axes = 15-72 mm.
CR2-3: 100 contiguous clasts from bottom of vertical face in big quarry on Kaibito road, White Mesa. c-axes = 15-83 mm.
Grab Samples: Percent of 175 clasts picked up randomly (cherry picked) at seven sites; includes 68 clasts from Black Mesa. The Black Mesa clasts include quartzite, quartz, chert, granite, pegmatite, rhyolite, rhyolitic vitrophyre, and quartz metaconglomerate; the last two are Distinctive Lithologies in Table 3. c-axes = 10-200 mm.

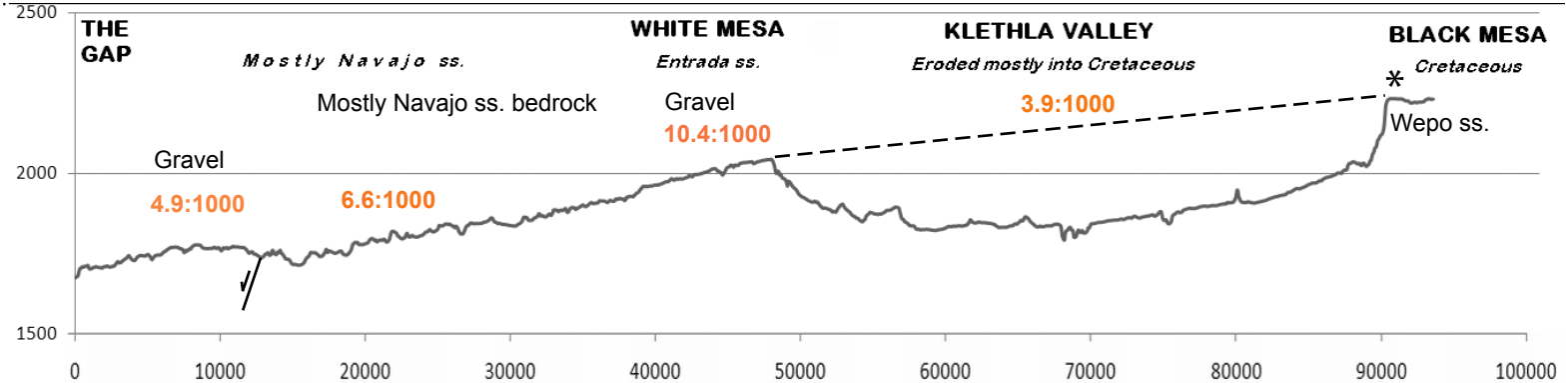
* Sandstone, conglomerate, siltstone, claystone
[†] Rhyolite, argillic-altered rhyolite, vitrophyre, welded tuff, compacted tuff.
[§] Andesite, latite.
[#] Pebbles are quartz and quartzite.
** Fine grained, linear, quartzofeldspathic.
[††] Only fossiliferous, and iron-manganese cemented pebbles.
[§§] Pebbles are quartz and quartzite.
[##] Hornblende and plagioclase phenocrysts crowded in light gray to tan aphanitic matrices; andesitic to dacitic (dioritic to granodioritic).
*** Rhyolite, vitrophyre.
[†††] Andesite; propylitic-altered andesite.
[§§§] With calcite veins.

TABLE DR3. INFERRED SOURCES OF PEBBLES AND COBBLES*

Distinctive Lithologies	NM	SJV	LAC	NAV	CH	MO	J-K
Compacted rhyolitic crystal tuff (1)		●					
Argillic-altered rhyolite (3)		●					
Rhyolitic vitrophyre (2)		●					
Latite (2)		●					
Andesite (2)		●					
Propylitic-altered andesite (1)		●					
Earthy hematite with calcite veins (3)		●					
Quartz metaconglomerate (10)	●				P	P	
Metawacke (7)	●						
Fine quartzofeldspathic gneiss (1)	●			P			
Hornblende-plagioclase porphyry (5)			●				
Minette (15)				●			
Sandstone (gray, tan, brown) (108)							●
Conglomerate, siltstone, claystone (7)							●
Tan sandstone with shells (12)							●
Petrified wood						●	L
Nondistinctive Lithologies							
Quartz (11)	L	L		L	P	L	
Quartzite (tan, gray, red, yellow) (117)	●				P	L	
Chert (37)	P				P	L	P
Rhyolite (8)		●			P	L	
Felsic welded tuff (3)		●			P	L	
Granite and pegmatite (red, tan) (13)	L			L		L	
Fine hypidiomorphic-granular granite (gray) (1)	P	P	L			P	
Microcline (red, perthitic) (6)	L			L		L	

Note: NM: Needle Mountains; SJV: San Juan volcanic field; LAC: Colorado Plateau laccoliths; NAV: Navajo volcanic field; CH: Chinle Formation; MO: Morrison Formation; J-K: Jurassic and Cretaceous strata.
* Symbols: ● = Very likely; L = Likely; P = Possibly. (375) = Number of specimens collected.


SW
NE
Kaibab Plateau
Crooked Ridge gravel
Gravel outcrop
Marble Platform
Echo Cliffs
Kaibito Plateau
White Mesa
Klethla Valley
Black Mesa
Paleozoic
Cretaceous
Glen Canyon Group
San Rafael Group


THE GAP
Mostly Navajo ss.
Mostly Navajo ss. bedrock
Gravel
4.9:1000
6.6:1000
WHITE MESA
Entrada ss.
Gravel
10.4:1000
KLETHLA VALLEY
Eroded mostly into Cretaceous
3.9:1000
BLACK MESA
Cretaceous
Wepo ss.
2500
2000
1500
0
10000
20000
30000
40000
50000
60000
70000
80000
90000
100000