

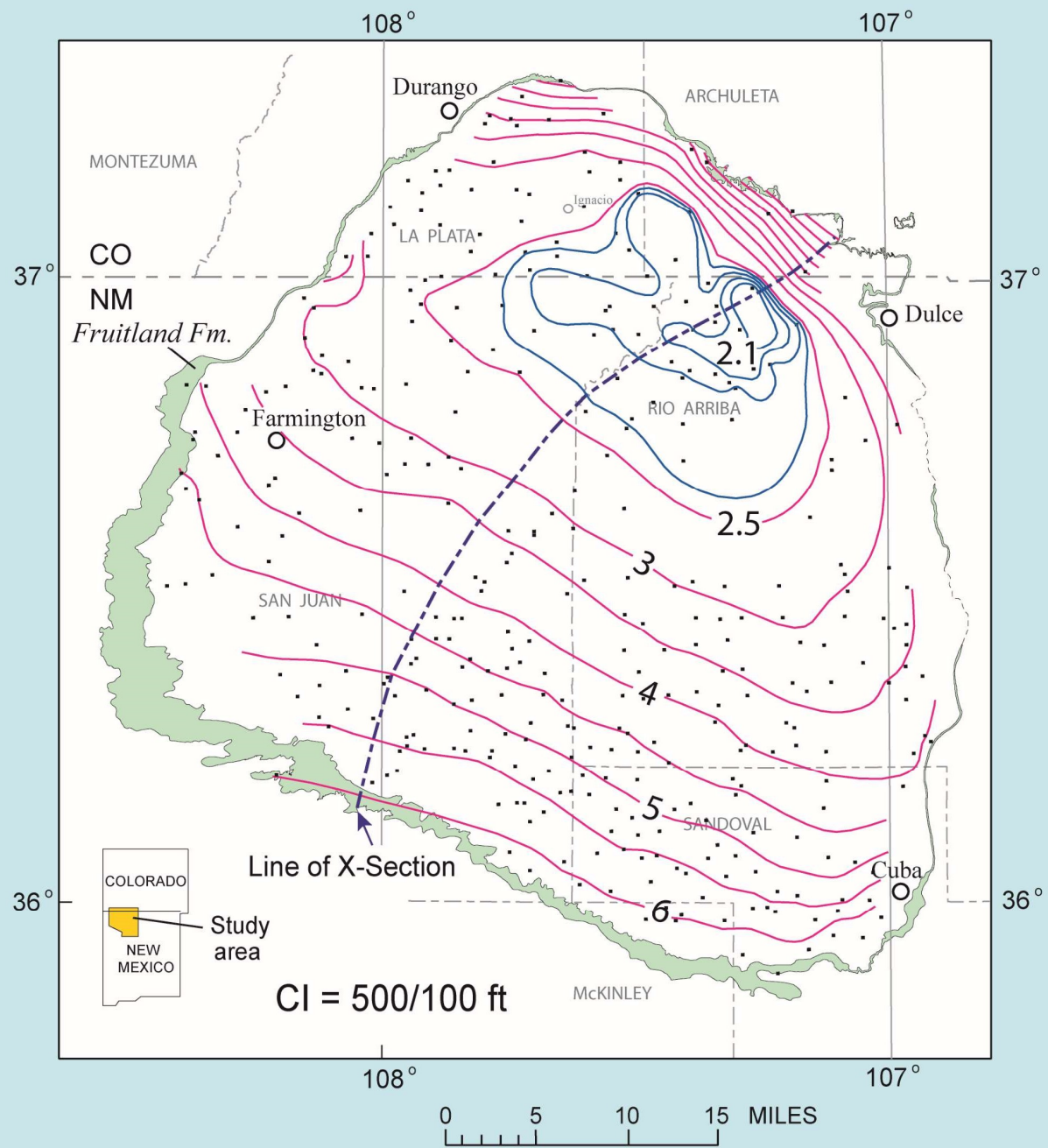
**PALEOCENE DINOSAURS
OF THE SAN JUAN BASIN
(Revisited)**

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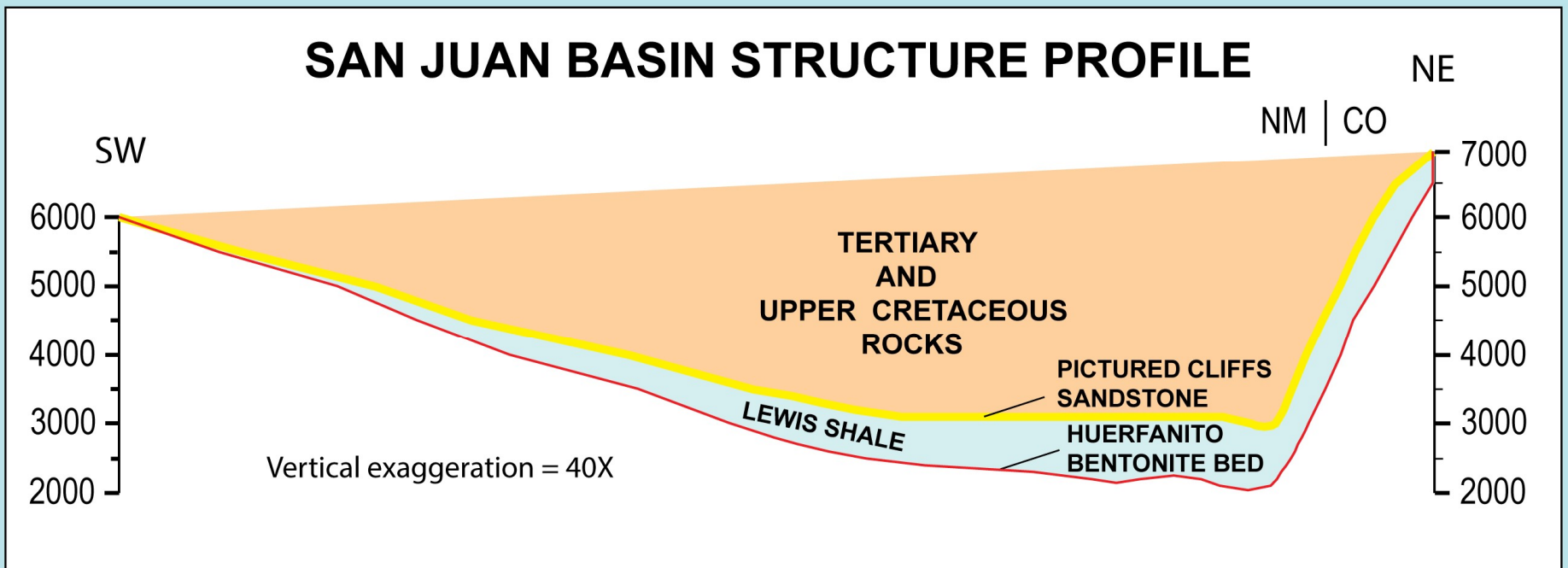
**THE MOST DEFINITIVE PUBLICATION
DEALING WITH THE AGE AND
STRATIGRAPHY OF THE K-P_g
BOUNDARY ROCKS IN THE SAN JUAN
BASIN IS:**

Fassett, J.E., 2009, New geochronologic and stratigraphic evidence confirms the Paleocene age of the dinosaur-bearing Ojo Alamo Sandstone and Animas Formation in the San Juan Basin, New Mexico and Colorado: Palaeontologia Electronica, v. 12, no. 1, 146 p. on-line at:

http://palaeo-Electronica.org/splash/index12_1.html

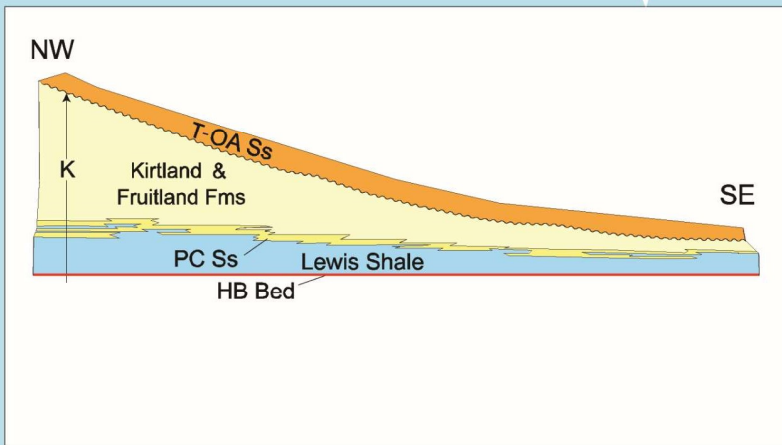
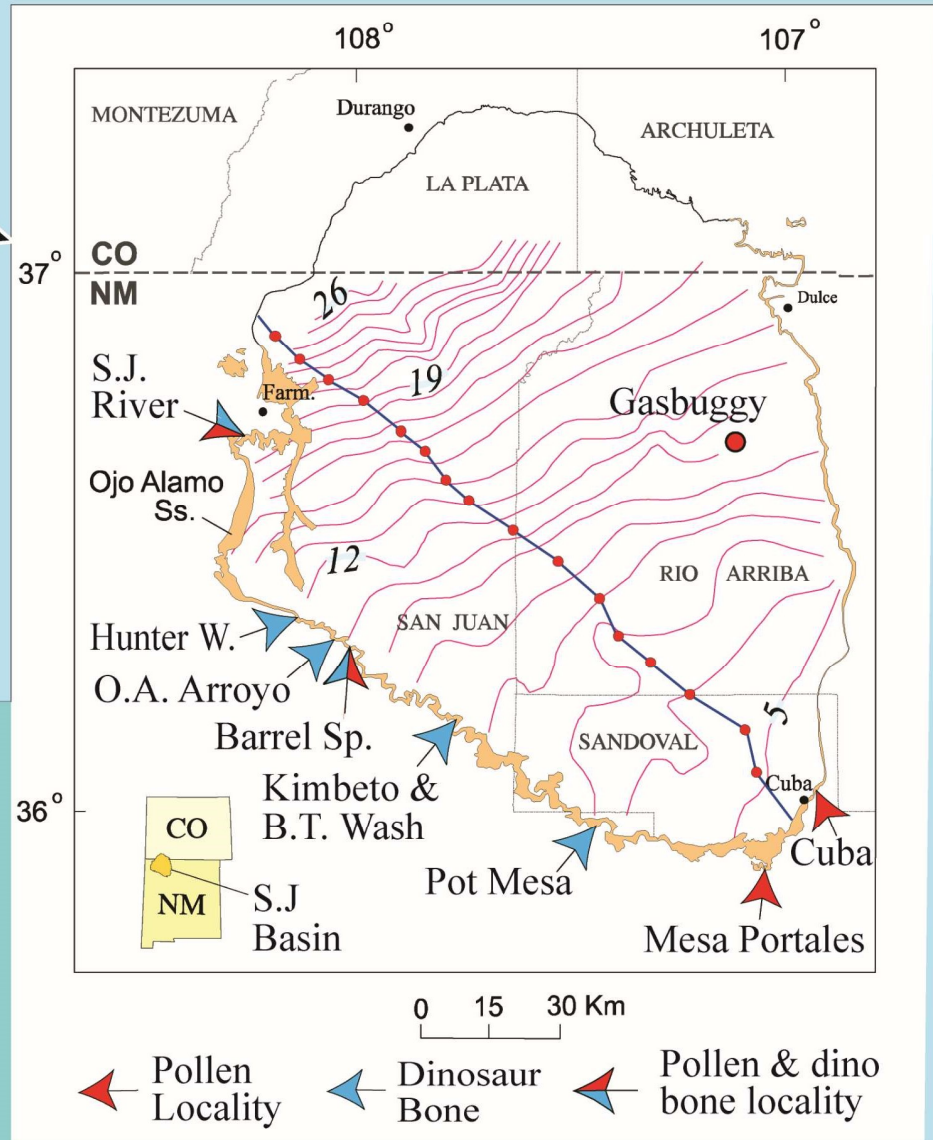


SAN JUAN BASIN STRUCTURE PROFILE



SAN JUAN BASIN INDEX MAP SHOWING POLLEN & DINOSAUR BONE LOCALITIES

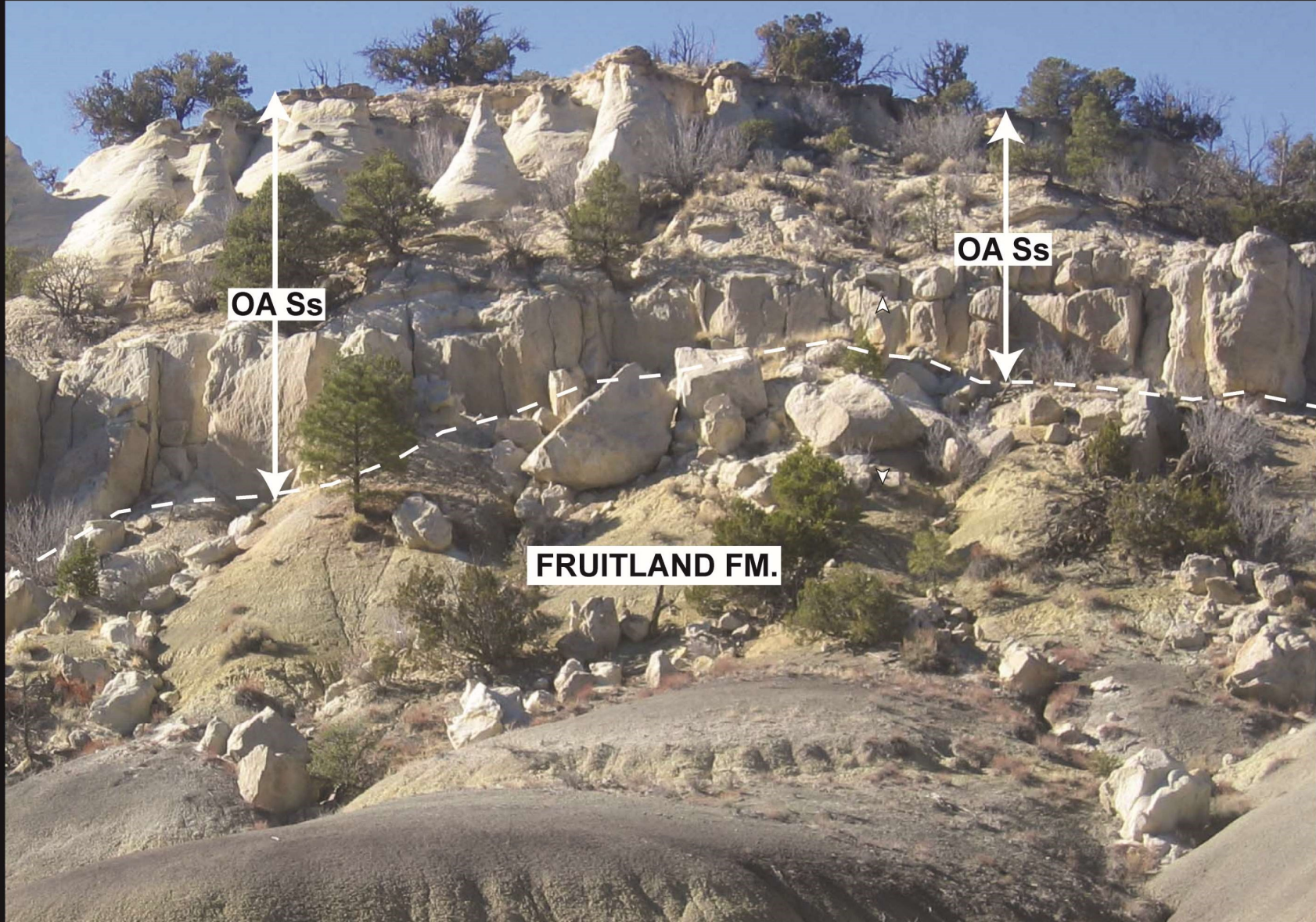
STRATIGRAPHIC CROSS SECTION SHOWING THE ANGULAR UNCONFORMITY AT THE BASE OF THE OJO ALAMO SANDSTONE



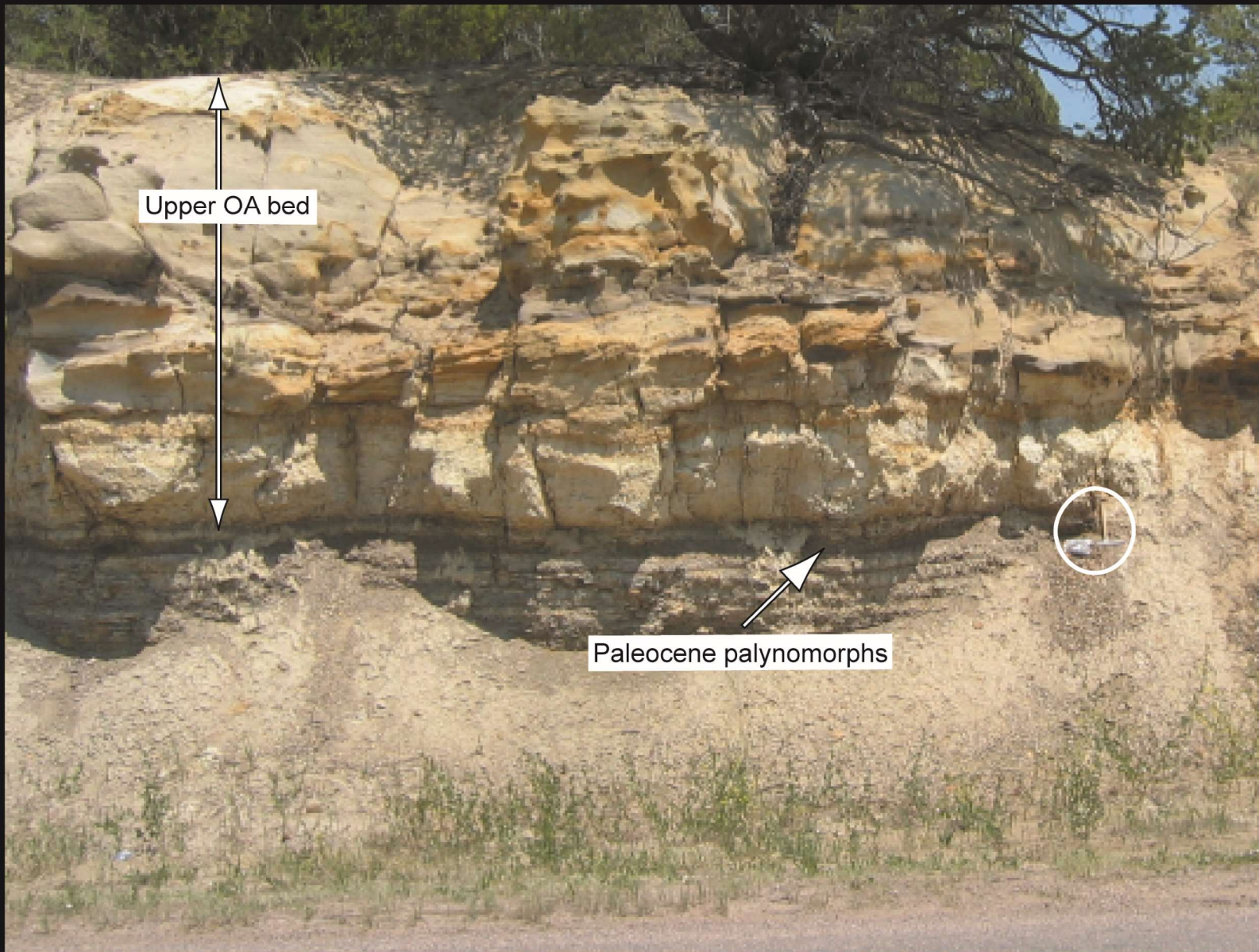
Vertebrate-paleontologist-naysayers claim that the Ojo Alamo Sandstone consists of two imaginary members: A lower "Cretaceous" member containing dinosaurs and an upper Paleocene member containing no dinosaur fossils. They further claim that an imaginary unconformity separates these two members.

OJO ALAMO SANDSTONE GEOMETRY

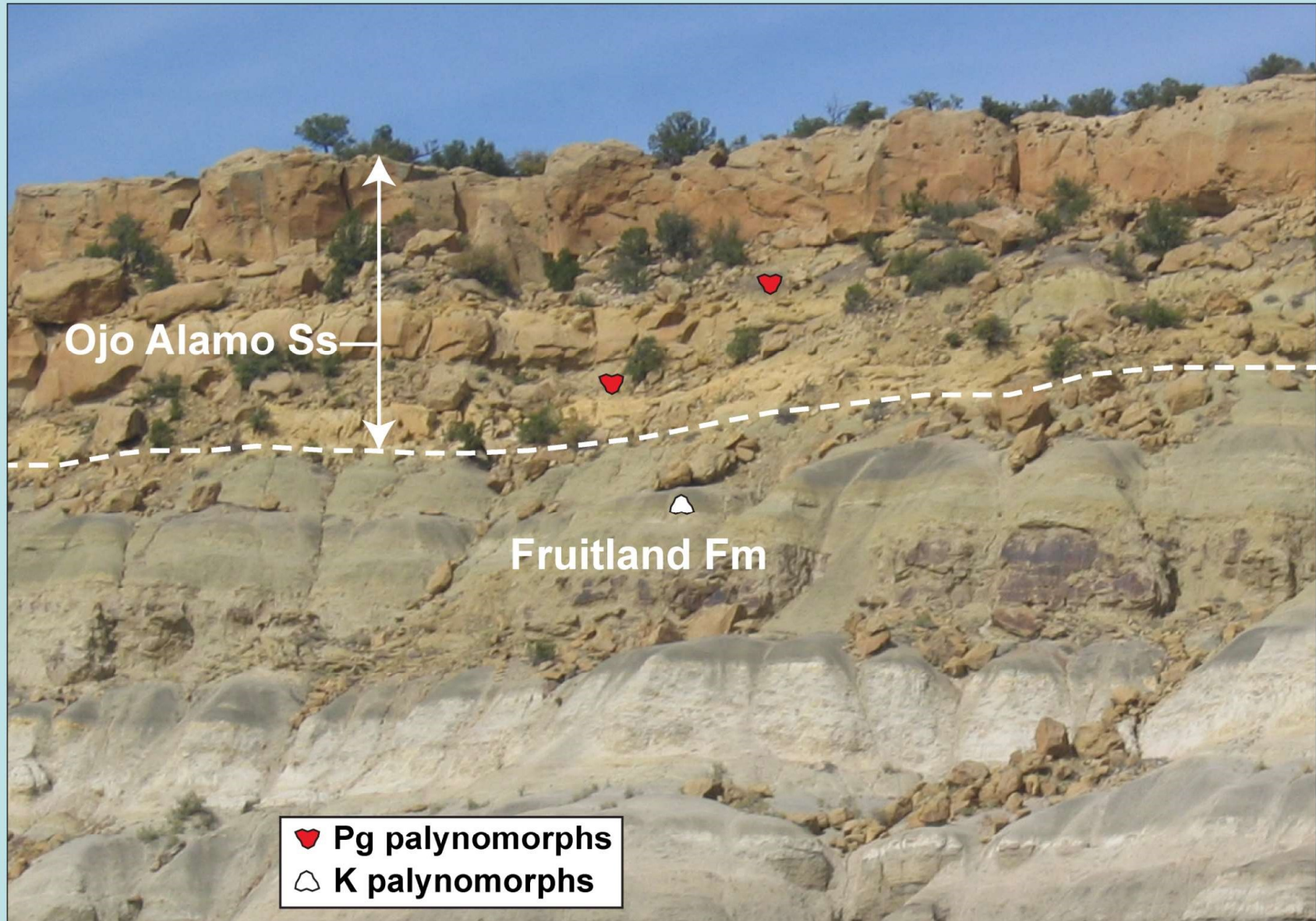
CUBA LOCALITY



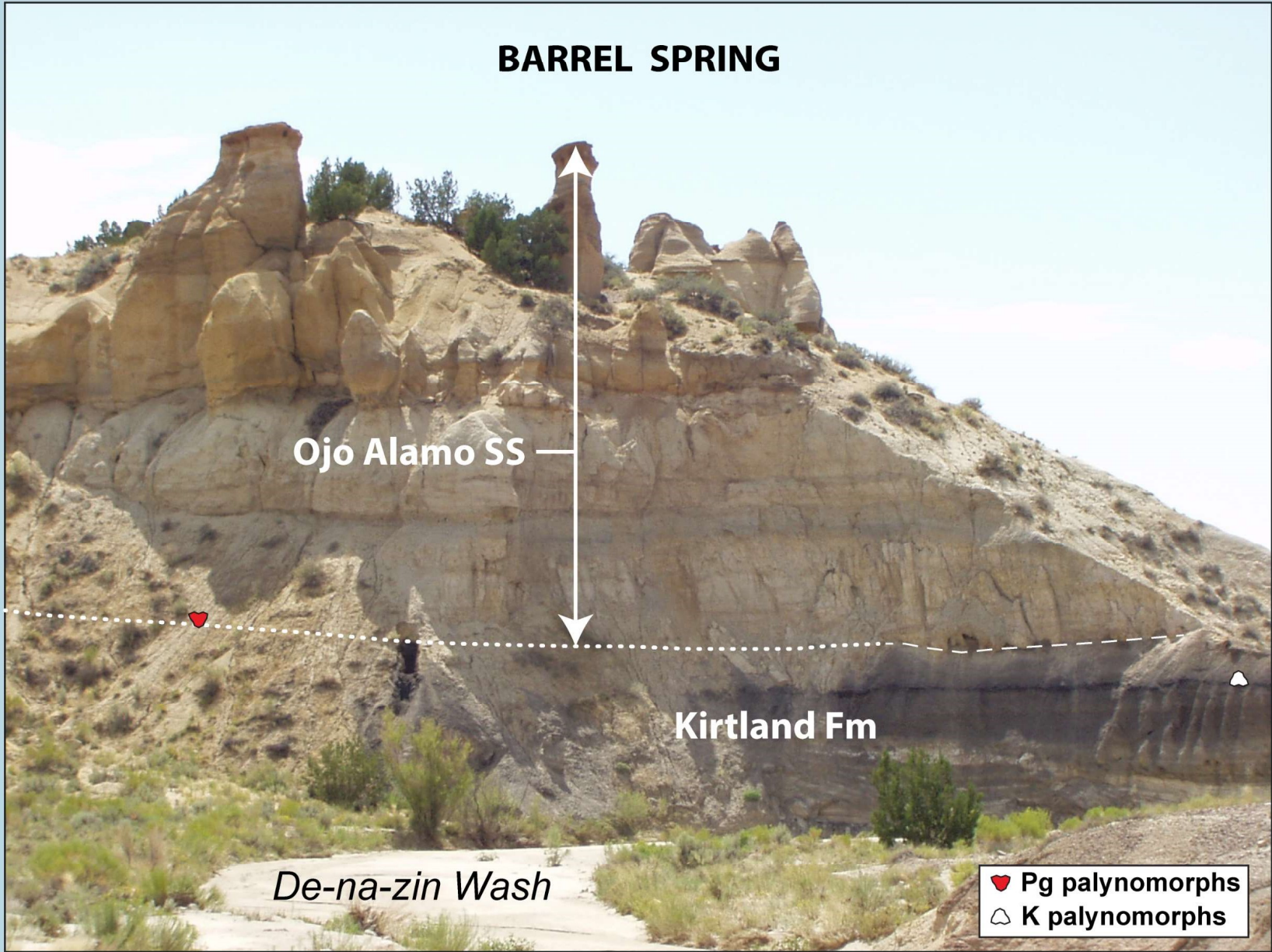
CUBA LOCALITY



MESA PORTALES



BARREL SPRING



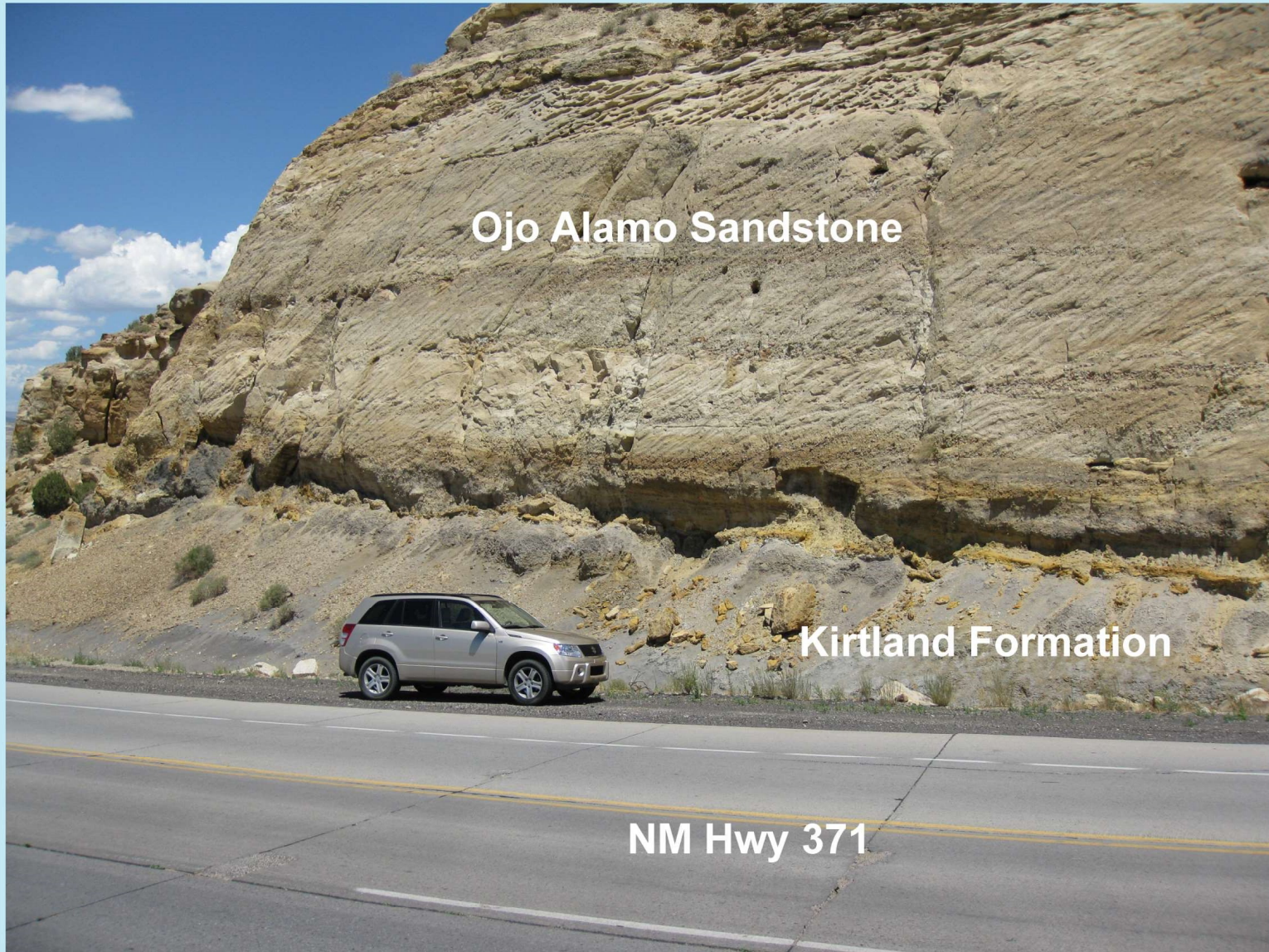
Ojo Alamo SS

Kirtland Fm

De-na-zin Wash

♥ Pg palynomorphs
△ K palynomorphs

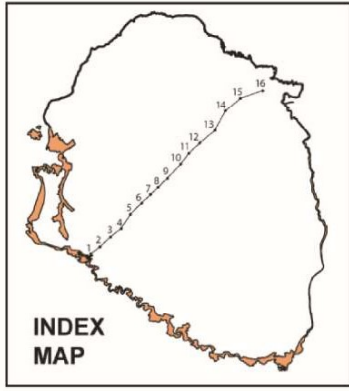
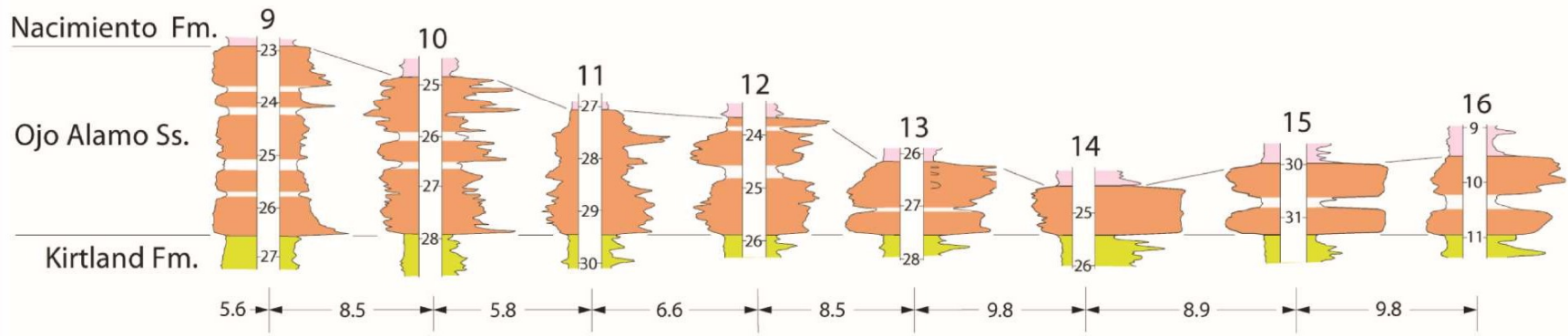
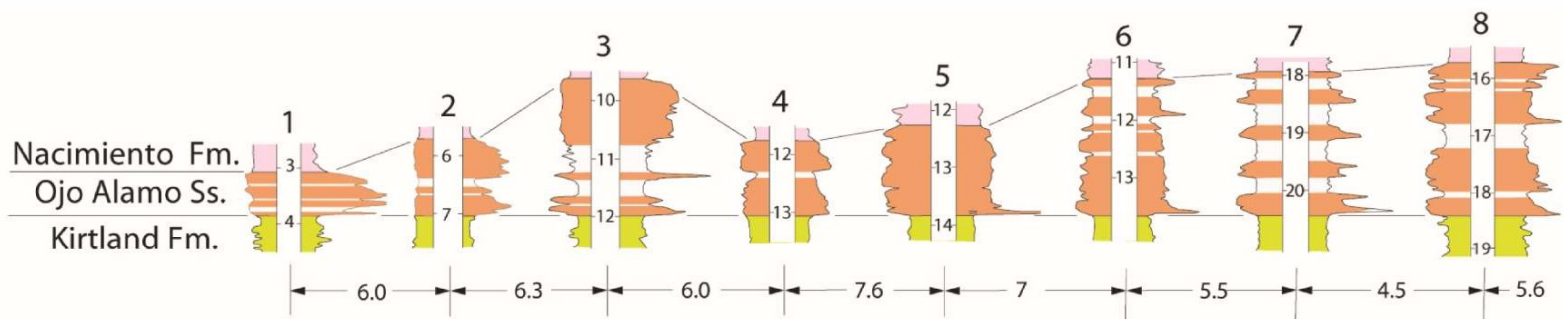
FARMINGTON BLUFFS



Ojo Alamo Sandstone

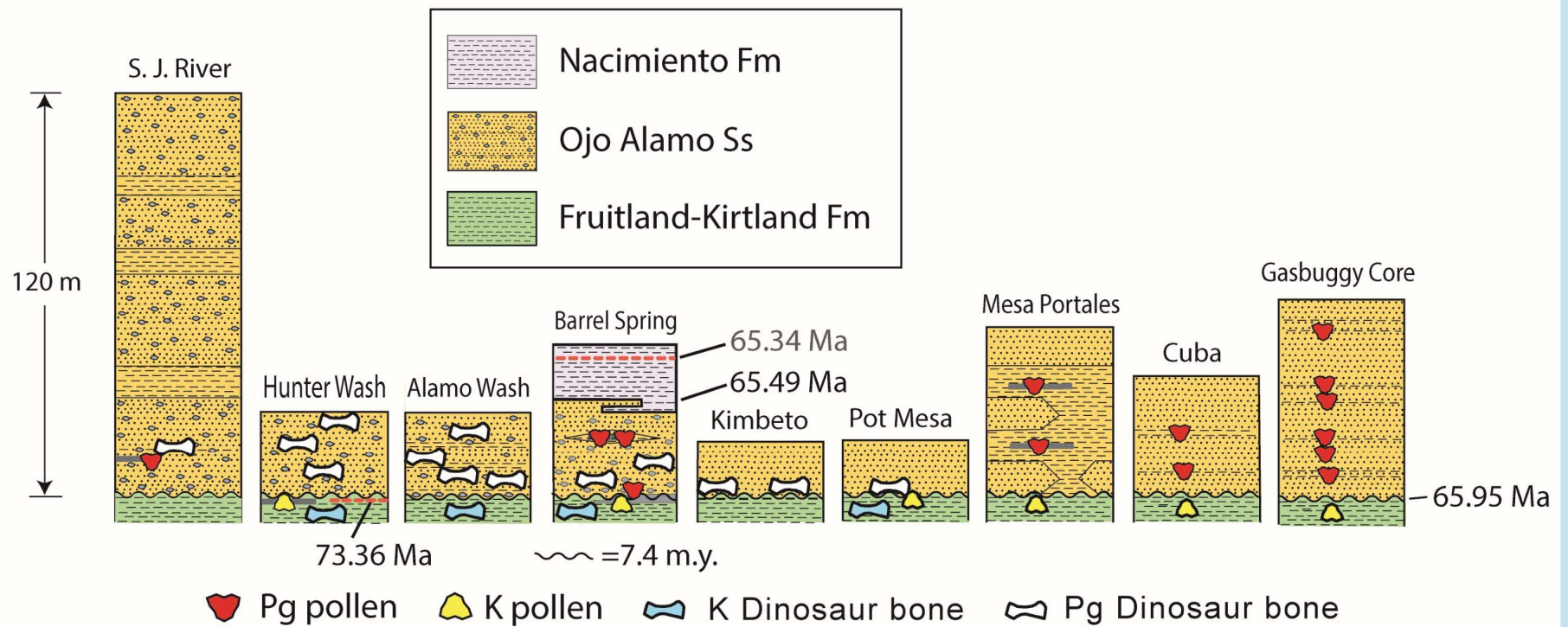
Kirtland Formation

NM Hwy 371



PALEOCENE AGE OF OJO ALAMO SANDSTONE - PALYNOLOGICAL

DINOSAUR BONE AND PALYNOMORPH LOCALITIES



SUMMARY OF POLLEN & SPORE TAXA FOR K-Pg BOUNDARY-STRATA, SAN JUAN BASIN, NM

(From Fassett, 2009)

- 25 tables listing palynomorphs from K-Pg strata, SJ Basin
- 244 total species identified
- 100 palynomorphs from Ojo Alamo Sandstone
 - 49 Pg taxa from just Ojo Alamo Sandstone
 - 51 taxa common to OA Ss & underlying K strata

OJO ALAMO SANDSTONE PALYNOMORPHS

Abietinaepollenites sp. (*Podocarpus northrupi*)
Abietinaepollenites sp. (*Podocarpus sellowiformis*)
Acer striata
Alisporites bilateralis
Araucariacites australis
Azolla cf. *A. schopfi*
Biretisporites sp.
Bombacacipites nacimientoensis
Brevicolporites colpella *
Cercidiphyllites sp.
Classopollis sp.
Cupanieidites aff. *C. major*
Cupanieidites sp.
Cyrilla minima
Deltoidospora spp.
Equisetosporites lajwantis
Ericaceoipollenites sp.
Gleicheniidites senonicus
Laevigatosporites haardtii
Momipites tenuipolus *
Nyssapollenites explanatus
Nyssa puercoensis
Osmundacidites wellmannii
Ovoidites ligneolus
Ovoidites sp.

"Palaeoisoetes" sp.
Pandaniidites
Pandaniidites radicus
Podocarpus sellowiformis
Podocarpus sp.
Polypodiisporonites sp.
Psilastephanocolpites sp.
Quadrupollenites sp.
Quercus
Rectosulcites latus
Salix sp.
Syncolporites minimus
Taxodiaceaeipollenites vacuipites
Tricolpites foveolate
Tricolpites scabrata
Tricolpites vulgaris
Tricolporites rhomboides
Tricolporites sp.
Triporoletes simplex
Triporopollenites plektosus
 cf. *Triporopollenites ruatius*
 Unclassified bisaccates
 Unclassified triletes
 Unclassified triorates

* Paleocene index fossils in Western Interior of North America

Brevicolporites colpella
Momipites tenuipolus

PUBLICATIONS SUGGESTING PALEOCENE AGE FOR DINOSAUR-BEARING OJO ALAMO SANDSTONE

Reeside (1924), USGS Prof. Paper 134

“the Ojo Alamo Sandstone and Animas formation are herein classified as Tertiary(?).”

Anderson (1960), NM Bur. Mines & Min. Res. Mem. 6

“Alternatively, pre-Lance-type dinosaurs [in the Ojo Alamo Ss] persisted into a Tertiary environment.”

Fassett (1966), USGS Geologic Quadrangle Map GQ 590

Ojo Alamo Sandstone shown as Paleocene in Explanation

Hinds (1966), USGS Geologic Quadrangle Map GQ 591

Ojo Alamo Sandstone shown as Paleocene in Explanation

Fassett and Hinds (1971), USGS Prof. Paper 676

The Ojo Alamo Sandstone “is a conglomeratic sandstone of Paleocene age”

Fassett (1973), Four Corners Geo. Society Memoir

“more work is needed to resolve the question of the age of the Ojo Alamo Sandstone”

Tschudy (1973), Four Corners Geo. Society Memoir

Palynology of Gasbuggy core shows the Ojo Alamo Ss is Paleocene

Powell (1973) Four Corners Geo. Society Memoir

Lower part of Ojo Alamo sandstone is Cretaceous, upper part is Paleocene

PALEOCENE OJO ALAMO SANDSTONE PUBLICATIONS (CONT.)

FASSETT (1982), GSA Special Paper 190
K-Pg boundary is at base of Ojo Alamo Sandstone

FASSETT (1985), RMAG Paleogeography Symposium 3
"The Ojo Alamo is late early Paleocene"

Fassett, Lucas, & O'neill (1987), GSA Special Paper 209
"Ojo Alamo dinosaurs, if not reworked, are Paleocene in age"

Fassett & Steiner (1997), NMGS 48th Field Trip Guidebook
An 8 m.y. hiatus . . . is located at the base of the early Paleocene Ojo Alamo Sandstone"

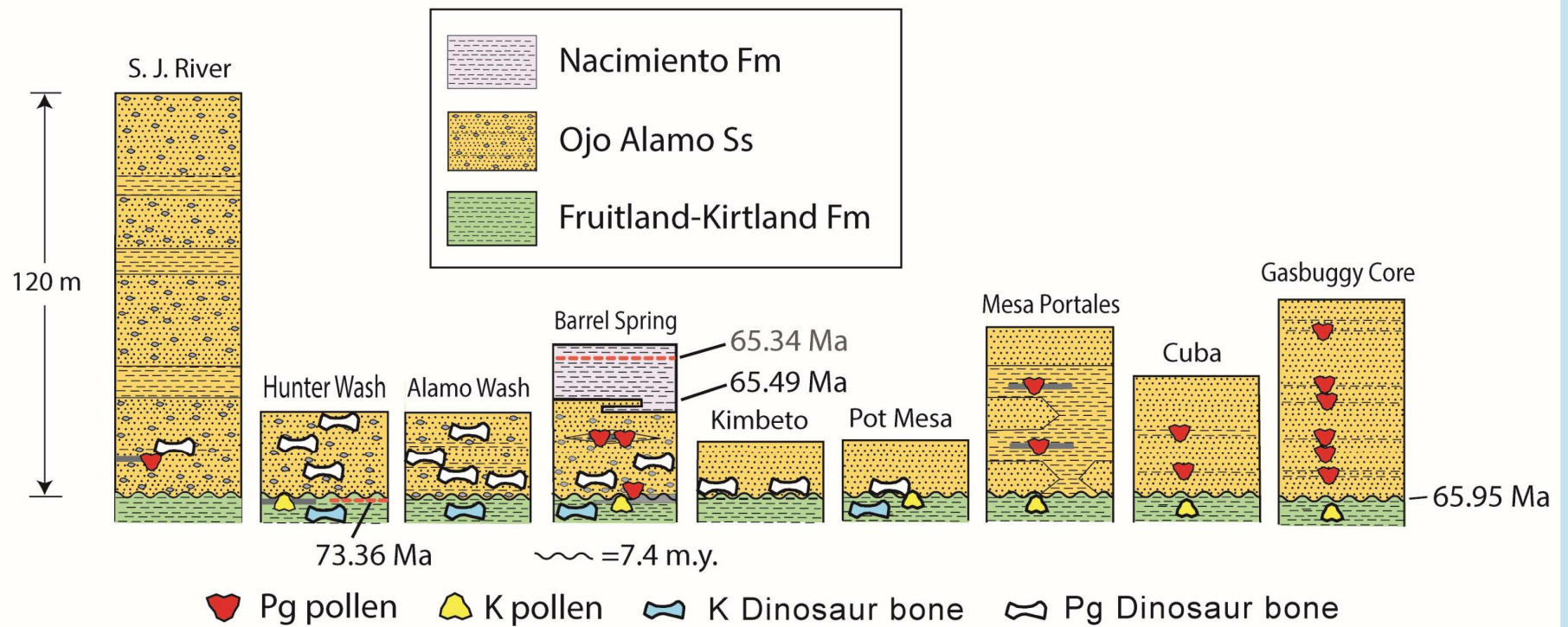
Fassett & Lucas (2000), NM Museum of Nat. Hist. & Science Bulletin 17
"Evidence for Paleocene dinosaurs in the Ojo Alamo Sandstone"

Fassett (2000), USGS Professional Paper 1625- Q
"The Tertiary Ojo Alamo Sandstone and upper part of the Animas Formation unconformably overlie Cretaceous strata across the [San Juan] basin"

Fassett, Zielinski, & Budahn (2002), GSA Special Paper 356
"Dinosaurs that did not die: Evidence for Paleocene dinosaurs in the Ojo Alamo Sandstone"

Fassett, Heizler, & McIntosh (2010), NMGS 48th Field Trip Guidebook
"Palynologic and paleomagnetic data . . . clearly demonstrates that the Ojo Alamo Sandstone is entirely Paleocene " in the San Juan Basin

DINOSAUR BONE AND PALYNOMORPH LOCALITIES



CONCLUSIONS

- 1. The Ojo Alamo Sandstone has no members; it is one multi-storied fluvial sandstone unit.**
- 2. Palynologic data prove the Ojo Alamo Sandstone is Paleocene in its entirety throughout the San Juan Basin.**
- 3. Vertebrate paleontologists say nay, but have presented no DATA to falsify data in Fassett (2009).**
- 4. Like it or not, there are Pg Dinos. in the San Juan Basin.**



**SAN JUAN RIVER SITE HADROSAUR FEMUR
(UNM Geology Department Museum)**