

Dave H et al:

Attached are an air photo, station map, and field notes for the area of the Ice Cut and the section at the mouth of the Lupine River. Dave H, you'll be particularly interested in reading my notes for 93Mu15 for that section at the mouth of the Lupine River that we were talking about last week. At the time we were talking, I had forgotten, but my comment in my notes was that I didn't think the section looked like Nanushuk---largely because of the abundance of bentonite in the section. I wondered if it might be coeval with the lower Sagashak Creek section, except that the sands are considerably thicker. The thickness of the sand packages, grain size, and carbonaceous material is to me still something that is reminiscent of the Nanushuk. So, in spite of the fact that our old map called it Nanushuk, I'm still open to alternative interpretations from you sedimentologist types.

Unfortunately, I don't have any micropaleo data recorded, and apparently didn't take any samples myself. I think that may have been because my memory is that Mark was going to do a detailed description of the section. And I seem to remember that LePain has been on the section also. Anyhow, if there's no micropaleo available, that clearly is a section that should be sampled in great detail this summer.

Again, Dave, you might check with Mark and see if his notes are around anywhere. Or, drag him out to the section at the time of the sponsors tour.

Regarding the position of the Nanushuk shelf margin that we were talking about last week with your seismic data, look at my notes 93 Mu 30 for the big bluff on the east side of the Sag River, across from the Ice Cut. Whereas the Lupine River section is ambiguous, this section really does look a lot like Nanushuk to me, as do the outcrops on the west side of the river on the hilltops and bluffs just south of the Ice Cut (99Mu 41). Also the conglomerates at 93 Mu 31 on the east side of the river, north of 93 Mu30. I've forgotten where all everyone has been in the past, particularly Dave L, but if you've not been on these sections, they would also be good ones for detailed study this summer for the shelf margin location.

Cheers----Gil

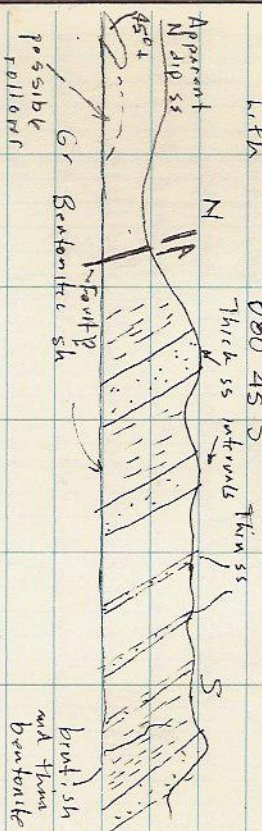
> Back to your comment in one of the emails from yesterday regarding the exposure on the east side of the Sagavanirktok River across from the Ice Cut - it may look like Nanushuk lithologically but it is clearly (at least in the opinion of Schenk and me) an amalgamated turbidites - actually two amalgamated turbidite deposits with a mostly mudstone interval between them. This, combined with all the seismic evidence I showed you 2 weeks ago, indicates this location is basinward of the ultimate Nanushuk shelf margin. Perhaps we can continue this discussion in the field.

-Dave

Yeah, I have no problem with that being a more basinal lateral equivalent of the Nanushuk---will leave the environmental interpretation to you guys. But the section that definitely mystifies me is the section at the mouth of the Lupine River--- I'm ambivalent on it. Is it an even more basinal equivalent of Nanushuk, but could it perhaps be a lateral equivalent of part of the Schrader Bluff? It'll be fun to work this over in the field.

Cheers----Gil

93 Mu 15 Mouth of Lupine River 69°05.5'N
148°46.43'W



thick, dk gr-gr, f-med grad, micac in part, some good lons v flutes, abund carb matl on some bnts. Utters red-yl-br. Oxidize, poorly exposed bentonitic sh, and has \pm 30 m sh interval in bld, poorly exposed.

My suspicion is that this section is not Nemushuk but rather up in the Upper Cretaceous. In general appearance similar to sands at base of section 93 Mu 14 - Turonian, except considerably thicker. The major characteristics, however, is the presence of the thick bentonitic shale intervals interbedded, which seem contrary to the Nemushuk & Torok.

S dips suggest major fault to N, faulting over flank of Lupine syncline

93 Mu 16 Toolik River section of Malenqar 69°15.45'N
148°10.54'W Quick examination

Dip south

Base red br wthy ss, med-cr's sandy and cal, ckt, buff, qtz pbls to 2cm, poorly consolidated to unconsolidated xbedded, dip \pm 40°S, mostly rubble

Overlain by thick bentonite or bentonitic shale

Upstream rubble ridges of med grad ss, ckt, qtz, luffaceous

Upstream end of outcrop all weakly consolidated ltgr ss, cross bedded, abundant pelcy pods, looks more like Prince Creek of Sngwen Bluffs.

Section does not resemble the published section

93 Mu 29 E side Sag River
Lith 60° 55, 35 N
148° 49.48 W

ss, f. grnd, platy - slabby
parallel laminae - large slabs,
apparently interbedded in brecciated
gr. with sh. Several
mud ridges. Shallow marine
Dip prob 20° N

93 Mu 30 Sag River, east bank across from
Lith the Ice Cut, S flank of
micro anticline. 69° 00, 73 N, 148° 48.64 W

Well exposed section of sandst,
gr, f. - med grad, massive units
to 10 m, w. intertonguing 10-20 m
thick sh. interbeds. Interbeds
consist of beds 10-30 cm thick
abundant br orange withy in
places, abundant brnd undulating
capping in places, good large
scale g. roots and smaller scale
flow lofts, abundant shale rip-ups
in some beds, carb debris
in some. Examined upstream

end of bluff unit stopped by river bluff,
93 Mu 30-1 Ice Cut - 070° 65-0° N, compressed northward at
micro 000° 35° S N S
top of cut



Upper end of bluff - sands more msy, thick
beds to 1-2 m, gr - lt gr, qtz cement,
with red br gr, has fewer shale rip-ups
and few sole marks. Overlies 20 m
sh. bedded w. abundant Fe stain on fractures
The thickness of the sand section
makes me suspect Mamshuk Group.
5 resistant msy ss beds in upper half.

93 Mu 31 E of Ice Cut 69° 01, 87 N
Lith 148° 45.99 W

040° 30° S
Conglomerate, blk chert, wh qtz, firm
with interbedded mud to red grnd sand
lenses, approx 8 m, forms resistant
ridge, withy br red orange splatsh.
Lower ridge to N all f. grnd platy
ss, looks like typical Mamshuk Cal
but way out of place, probably
separated from ridges to S by fault
along axis of anticline. Pebbles dominant
blk chert, qtz, rare g. trace.



