Amoco Production Company

Surface Log

Name WIND RIVER SECTION

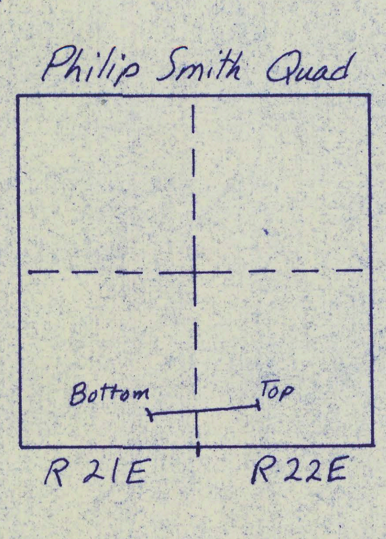
COUNTY SE BROOKS RANGE **STATE** ALASKA

LOCATION ____ °N ____ °W **Sec.** S½ **TWN** 14S **RNG** 21-22E

MEASURED BY Fehlmann, Self, Lane, Hankinson **DATE** 6/19/71

INTERVAL Kanayut Hunt Fork

REMARKS Usual coarse conglomerate of the Kanayut is absent. The entire section may be Hunt Fork. Philip Smith Quad.



Age	Sample	Description
	6001L	Qtzite, md gy, f-md gr, well sort, well rd, 70% qtz, 30% dk cht, thinly bdd, abdnt normal qtz veins, minor Fe zones, grades down into SS,AAexcept w/calc.cmt.
	6002LC	Covered
	6003L	SS, AA & sh, blk, micaceous,w/abdnt plant frags.also minor cgl lenses.Dominantly rubble slope semi-in-situ.v.minor maroon silst.micaceous, meta.
	6004P	Covered
Fam.	6005L, 6006P	Interbedded shale, black, AA, w/cgl, calc, x-lamed,w/brachs,and SS, f-m.gr.
Fras?	6007P, 6008C	Calc, brachs, wx limonite brn. Poss. channel fillings.
	6009P, 6010P	Sh, blk, micaceous, abdnt plant frags, becomes siltier downward and browner in color, upper part fissile, lower part has much jointing perpendicular to bdding. Minor interbds of silst dk gy, Fe stained, wx brn & splintery.
		SS, & shale, AA
Late Dev.	6011LP	Cgl stringer, AA, clasts are dk cht & qtz, no brachs.
Fam. / Fam. / Fras? / Fras? / Fras?	6012LP, 6013P, 6014P, 6015P, 6016L, 6017P	SS, gy & brn, f. gr., well sort., well rd, qtz w/minor cht gr, occ calc Abdnt foss, incl: brachs, pelecypods, gastropods, crin, plant frags. Interbdd w/blk sh, AA. Some SS layers contain glauconite, qtz filled fracts common. Porosity of some SS (@10%) is very good. Basal SS unit has a purplish gy cmt.
	6018P	Shale and siltstone, black, fissile to platy, with abundant plant frags.
Fras?	6019PSr	
Late Dev.	6020L, 6021P	Qtzite, purplish gy (due to cmt) f-md. gr well sorted, well rd, qtz & minor dk cht, abdnt limonite gr., wx brn, w/sh stringers incr. in abundance toward units base.
Fras?	6022P	Shale, black, fissile, AA
Fam.	6023P	Quartzite, AA
Fras? Dk?-Dhf? Dhf	6024P	Shale and siltstone AA w/minor fine grained sandstone lenses. Grades down into interbedded shale, siltstone and sandstone as above.
	6025P	
Fras?	6026P, 6027P	Shale, black, fissile, as above.
Late Dev.	6029P (float)	
Fras?	6028PSr	SS&cgl,AA,in lenses within Sh, grains possibly "stretched", sl. meta.
	6030PSr	Shale, as above
Fras?	6031PSr	
	6032P	Qtzite to SS, tan, f-v.f.gr. poorly sorted w/occ pebbles of blk, sh, qtz, & dk cht. Also minor calc foss. gr.
		Shale, as above
Fras. / M. Fras. / Fras?	6033PC, 6035-36P, 6034P, 6039P, 6037PSr, 6038L	Ls,blk,med-finely xln,fetid odor w/colonial corals forming boundstns,also brachs,crin,stroms,Interbdd w/blk sh stringers.Unit appears to be a series of discontinuous lime biostromes. Foss. incl Amphipora.
Fras?	6040LPSr	Sh, blk, sl meta?, w/lenses of qtzite & SS, gy grn, f. gr, well sorted, multidir x-lamed.
	6041LCP	Limestone, as above.
		~~Covered, rubble indicates siltstone, as above~~
Fras?	6042PSr	Siltstone black, micaceous, sl. meta?
	6043L	SS, AA, w/multidir.x-lams, intbdd w/sh & silst stringers, dk gy-blk, fissile & platy, SS becomes v.f. gr. and lensy at base of unit.
		Covered, rubble indicates siltstone, as above
	6044LC	Meta rx, grn, dense. Prob. carbs & shale baked by intr.
		Ig intrusive discontinuous laterally green porphyritic (Acidic?)
	6045L	Meta rx AA
		Covered
Fras?	6046P	Shale, black, sl. meta
		Covered
	6047L	Qtzite black, v.f. gr. sl meta.
		Covered
Fras?	6048P	Shale, black, fissile sl. meta.
	6049L	Ig intrusive, green, porphyritic AA.
		Covered
	6050PSr	Shale, black & green, fissile, wx green-brn, sl meta.
	6051P	Covered
Dhf / Dsk	6052C	Ls, lt.-md gy, massive rextalized, no foss discernable.

Wind River - 1971 (Kanayut-Hunt Fork)

Amoco measured 2880' of Devonian sediments on the Wind River. The lower 1965' are assigned to the Hunt Fork (Frasnian) Formation. They conformably overlie massive, recrystallized, unfossiliferous Skajit limestones and grade upward into fine to medium grained quartzites tentatively assigned to the Kanayut (Noatak). The Hunt Fork is divisible into three units. The basal unit is 975' thick. It consists of a series of covered intervals spacing interbedded shales, siltstones, and quartzites. Two green, porphyritic, igneous intrusives which have metamorphosed their surrounding sediments occur near the middle of the unit. The unmetamorphosed shales are black and fissile; and the quartzites are very fine grained and cross laminated. The middle unit is 105' thick and consists of interbedded carbonates, shales, and sandstone lenses. The carbonates are discontinuous, brachiopod-rich, coral and stromatoporoid boundstones separated by black shale stringers. These biostromes are believed to be lateral equivalents of the large "patch reef" biohermal buildups seen along the Wind River to the north and east. The sandstone lenses are fine grained, well sorted and multidirectionally cross laminated, as are the ones below. The Upper Hunt Fork unit is 885' of black fissile shale with scattered interbeds of fine-grained quartzites and pebble conglomerates. Gradationally overlying the Hunt Fork is 900' of section tentatively assigned to the Kanayut (Famennian). It consists of interbedded black fissile shales and purplish, fine-grained, cherty quartzites. The shales contain abundant plant fragments and the quartzites contain, in addition to plant fragments, brachiopods, gastropods, pelecypods? and crinoid stems. Minor, thin, cherty, channeled and cross laminated conglomerate stringers are also found near the top of the Kanayut. Some of the coarse layers are true sandstones with about 10% visible porosity.

The depositional environment of the Skajit was probably that of a marine biohermal carbonate buildup. The overlying Hunt Fork and Kanayut were deposited in a shallow, alternately above and below wave base, marine deltaic environment. This is indicated by the interbedded fine and coarse clastics and mixture of plant and marine fossils. The biostromal buildups were formed in very shallow, agitated water, possibly during a period of low detrital clastic influx. The coarse sandstones and thin conglomerates, as well as the depositional textures near the top of the Kanayut, indicate a nearshore, possibly non-marine environment. Megafossils, conodonts, and palynology have dated the upper 900' (Noatak) of the section as Fammenian. The Hunt Fork and upper Skajit is all Late to Middle Frasnian in age.