

Amoco Production Company  
Surface Log

Name PAVLOF BAY

AREA OR QUAD PORT MOLLER QUAD STATE ALASKA

LOCATION Sec. TWN RNS

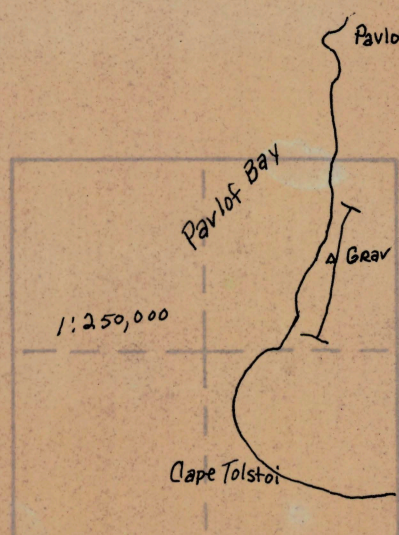
MEASURED BY WILLIAMS, SMIRNOFF DATE 6/77

INTERVAL TOLSTOI - STEPOVAK? (Beaver Bay Gp.)

REMARKS SECTION MEASURED ALONG PAULOU BAY FROM CREST OF ANTICLINE SOUTH TO INTRUSIONS FORMING TOLSTOI BAY.  
SECTION REPEATEDLY CUT BY ANDESITE DIKES AND SILLS, OFTEN ALONG FAULTS, CAUSING DISRUPTIONS OF UNKNOWN MAGNITUDE WITHIN THE MEASURED SECTION. THERE ARE SEVERAL LONG STRETCHES OF SECTION WHICH PARALLEL STRIKE, AND NUMEROUS AREAS WITH POOR COVERED SECTIONS.

LOCATION 55° 11' 161° 29'

PLOTTED BY WILLIAMS DATE 6/77



| PERIODS                                     | EPOCHS | GROUP or FM. | MEMBER | AGES (Bogert) | FOSSILS | CORES | SHOWS | DEPTH | LITHOLOGY                                                                                                                                                                                                         | POSSIBILITY | SAMPLES | DESCRIPTION                                                                          |
|---------------------------------------------|--------|--------------|--------|---------------|---------|-------|-------|-------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------|---------|--------------------------------------------------------------------------------------|
| TERTIARY                                    |        |              |        |               |         |       |       | 100   | TOP OF SECTION - sea cliffs off NORTH SIDE of Tolstoi Peak                                                                                                                                                        |             |         | EXTENSIVE INTRUSIVE complex of hornblende andesite with ASSOCIATED CONTACT BRECCIAS. |
|                                             |        |              |        |               |         |       |       | 200   | Covered - probably thin mudstones & siltstones w/ interbeds of fg. ss.                                                                                                                                            |             |         |                                                                                      |
|                                             |        |              |        |               |         |       |       | 300   | Intertidal outcrop: SS, gry, f-mg, rip up clay clasts, hard & tite                                                                                                                                                |             |         |                                                                                      |
|                                             |        |              |        |               |         |       |       | 400   | Covered as above.                                                                                                                                                                                                 |             |         |                                                                                      |
|                                             |        |              |        |               |         |       |       | 500   | Poor exposures: Thin mudstones & siltstones w/ 2-3' SS, gry, f-mg, rip up clasts of clay.                                                                                                                         |             |         |                                                                                      |
|                                             |        |              |        |               |         |       |       | 600   | SS, tan-gr, m-cg, SR, Ps, silt, lim, very arg, well indurated tite, massive, highly jointed, many shales, occ. congl. lenses.                                                                                     |             |         |                                                                                      |
|                                             |        |              |        |               |         |       |       | 700   | Siltstone, gry, very hard, jointed                                                                                                                                                                                |             |         |                                                                                      |
|                                             |        |              |        |               |         |       |       | 800   | Mudstone, dk. gry, many glendonites, highly jointed                                                                                                                                                               |             |         |                                                                                      |
|                                             |        |              |        |               |         |       |       | 900   | Andesite intrusive complex & assoc. dikes. Forms point and extends 1/4 mile along beach. ~ 100' thick in cliff exposures.                                                                                         |             |         |                                                                                      |
|                                             |        |              |        |               |         |       |       | 1000  | Conformable contact                                                                                                                                                                                               |             |         |                                                                                      |
| Eocene - Oligocene                          |        |              |        |               |         |       |       | 1100  | Mudstone, brown-gr, w/ thin interbeds of ss-fg & siltstone. occ. glendonites. Upper 3' of shale contact metamorphosed.                                                                                            |             |         |                                                                                      |
|                                             |        |              |        |               |         |       |       | 1200  | SS, gry, m, ps, sa-sr, tuff, arg, lith. vlc. debris, pebble interbeds mod. bedded.                                                                                                                                |             |         |                                                                                      |
|                                             |        |              |        |               |         |       |       | 1300  | Mudstone, brown-gr, hackly, hard, sli. concretionary, scat. glendonites, occ silt stringers, mod well-bedded.                                                                                                     |             |         |                                                                                      |
|                                             |        |              |        |               |         |       |       | 1400  | Covered - with grass or mudstone slope wash. Probably mudstones & siltstones as above.                                                                                                                            |             |         |                                                                                      |
|                                             |        |              |        |               |         |       |       | 1500  | SS, gry, fg, mg, ps, sa-sr, mod bedded, chl, lithic seldapatite, arg, silt/interbeds.                                                                                                                             |             |         |                                                                                      |
|                                             |        |              |        |               |         |       |       | 1600  | Covered - probably siltstone & fg. ss.?                                                                                                                                                                           |             |         |                                                                                      |
|                                             |        |              |        |               |         |       |       | 1700  | Siltstone, gry, hackly, w/ interbedded ss vfg.                                                                                                                                                                    |             |         |                                                                                      |
|                                             |        |              |        |               |         |       |       | 1800  | Andesite Dike - vertical, weathered, deformed. Fault zone. Shale, black, hackly, deformed.                                                                                                                        |             |         |                                                                                      |
|                                             |        |              |        |               |         |       |       | 1900  | SS, gry-gr, fg, mg, p-ms, sa-sr, highly jointed, hard, tite, interbedded thin gry siltstones & mudstones.                                                                                                         |             |         |                                                                                      |
|                                             |        |              |        |               |         |       |       | 2000  | SS, gry-gr, m-cg, ps, sa-sr, lithic, seld., massive to well bedded, thin 2-3" siltstones, dk. gry.                                                                                                                |             |         |                                                                                      |
| Beaver Bay Group - Tolstoi & Stepovak? Fms. |        |              |        |               |         |       |       | 2100  | Covered - isolated intertidal exp. of ss-fg, very hard & tite.                                                                                                                                                    |             |         |                                                                                      |
|                                             |        |              |        |               |         |       |       | 2200  | SS, gry-gr, pink, c-ucg, ps, pebbly, arg-sr, very arg, lim, lithic, seld., tite & hard. X-bedded - sets to 30" seld. marks, ripple. Ave paleocurrent direction S70W. Outcrops assoc. w/ resistant Andesite dikes. |             |         |                                                                                      |
|                                             |        |              |        |               |         |       |       | 2300  | Covered -                                                                                                                                                                                                         |             |         |                                                                                      |
|                                             |        |              |        |               |         |       |       | 2400  | Andesite dikes - fault zone. Mudstone, dk. gry, deformed, highly fractured. Siltstone & ss vfg-gr, poor exposure.                                                                                                 |             |         |                                                                                      |
|                                             |        |              |        |               |         |       |       | 2500  | Andesite dike - near vertical.                                                                                                                                                                                    |             |         |                                                                                      |
|                                             |        |              |        |               |         |       |       | 2600  | SS, gry-gr, f-mg, arg, avg. 20%, seld. 60%, lithic & biotite 20%, p-ms, thickly bedded 4-6", well bedded, X-bedded, several porphyritic Andesite dikes (2 wide).                                                  |             |         |                                                                                      |
|                                             |        |              |        |               |         |       |       | 2700  | Andesite dike - near vertical, definite fault. Interbedded siltstone, dk. gry, ss, gry, vfg, and shale blk, thin, & very thin bedded. ~ 80% siltstone.                                                            |             |         |                                                                                      |
|                                             |        |              |        |               |         |       |       | 2800  | Andesite dike, vertical, parallel to section, faulted, reversal of dip. SS, gry-vg, sa, ms, sa, seld., sli. blk, thin bedded, poor & shale - blk, siltic.                                                         |             |         |                                                                                      |
|                                             |        |              |        |               |         |       |       | 2900  | Mudstone - gry, hackly, poor exposure.                                                                                                                                                                            |             |         |                                                                                      |
|                                             |        |              |        |               |         |       |       | 3000  | SS, tan-gr, mg, sa, ps, arg, x-bedded, slump, thin pebble interbeds.                                                                                                                                              |             |         |                                                                                      |
| Base of Section                             |        |              |        |               |         |       |       | 3100  | Interbedded - ss, gry, vfg, sa, siltstone & silt mudstone, dk. gry, thin bedded.                                                                                                                                  |             |         |                                                                                      |
|                                             |        |              |        |               |         |       |       | 3200  | SS, gry, vfg, sa, ms, tite, thin bedded, interbedded w/ thin dk. gry, siltstone & mudstone, plant debris.                                                                                                         |             |         |                                                                                      |
|                                             |        |              |        |               |         |       |       | 3300  | Andesite intrusive complex - thickness?                                                                                                                                                                           |             |         |                                                                                      |
|                                             |        |              |        |               |         |       |       | 3400  | SS, arg-gr, fg, sa-a, ps, pellant, hdt tite, lithic, seld, well bedded & x-bedded.                                                                                                                                |             |         |                                                                                      |
|                                             |        |              |        |               |         |       |       | 3500  | Covered - intertidal exposures of SS, gry, vfg, numerous tracks & trails on bedding surf.                                                                                                                         |             |         |                                                                                      |
|                                             |        |              |        |               |         |       |       | 3600  | SS, gry, fg, sa, ms, tite, fract. jointed.                                                                                                                                                                        |             |         |                                                                                      |
|                                             |        |              |        |               |         |       |       | 3700  | SS, gry, vfg, fg, ms, sa, sli. arg, thin, seld, carb, occ. burrows, highly fractured.                                                                                                                             |             |         |                                                                                      |
|                                             |        |              |        |               |         |       |       | 3800  | Tuffs, siltstone, mudstone - tan-gr. Covered - probably SS as above.                                                                                                                                              |             |         |                                                                                      |
|                                             |        |              |        |               |         |       |       | 3900  | SS as above.                                                                                                                                                                                                      |             |         |                                                                                      |
|                                             |        |              |        |               |         |       |       | 4000  | Covered probably SS as above.                                                                                                                                                                                     |             |         |                                                                                      |
| Base of Section                             |        |              |        |               |         |       |       | 4100  | SS as above.                                                                                                                                                                                                      |             |         |                                                                                      |
|                                             |        |              |        |               |         |       |       | 4200  | SS, fg, sli. friable, silt - scat. glendonites, mudstone & siltstone, gry, hard, hackly, some burrowing.                                                                                                          |             |         |                                                                                      |
|                                             |        |              |        |               |         |       |       | 4300  | Mudstone & siltstone - gry, hackly, hard.                                                                                                                                                                         |             |         |                                                                                      |
|                                             |        |              |        |               |         |       |       | 4400  | SS, gry-gr, m-cg, ps, sa, arg, seld., mass, highly jointed, scat. vert. walled burrows 1/2" dia.                                                                                                                  |             |         |                                                                                      |
|                                             |        |              |        |               |         |       |       | 4500  | SS, tan-gr, f-mg, sa, p-ms, poor & some bedding, highly jointed, poor weathered exposure.                                                                                                                         |             |         |                                                                                      |
|                                             |        |              |        |               |         |       |       | 4600  | Covered - ss as above.                                                                                                                                                                                            |             |         |                                                                                      |
|                                             |        |              |        |               |         |       |       | 4700  | SS as above.                                                                                                                                                                                                      |             |         |                                                                                      |
|                                             |        |              |        |               |         |       |       | 4800  | Mudstone, gry, hackly, 5' thick.                                                                                                                                                                                  |             |         |                                                                                      |
|                                             |        |              |        |               |         |       |       | 4900  | SS, gry-gr, vfg-fg, sa, ms, fg, s, highly fractured, piteous, many burrows, some cross bedding.                                                                                                                   |             |         |                                                                                      |
|                                             |        |              |        |               |         |       |       | 5000  | SS, tan-gr, f-mg, sa, p-ms, poor & x-bedded & massive.                                                                                                                                                            |             |         |                                                                                      |
| Base of Section                             |        |              |        |               |         |       |       | 5100  | pelagic, gastropods, lepta, bioturbated from massive ss.                                                                                                                                                          |             |         |                                                                                      |
|                                             |        |              |        |               |         |       |       | 5200  | SS as below w/ thin layers of siltstone numerous pelegods, gastropod shells, highly fract. & jointed.                                                                                                             |             |         |                                                                                      |
|                                             |        |              |        |               |         |       |       | 5300  | SS, gry-gr, vfg, silt, sa, ms, sli. calc. thinly bedded w/ siltstone, lots of plant debris.                                                                                                                       |             |         |                                                                                      |
|                                             |        |              |        |               |         |       |       | 5400  | Base of Section                                                                                                                                                                                                   |             |         |                                                                                      |
|                                             |        |              |        |               |         |       |       | 5500  | lowest most beds exposed at crest of anticline.                                                                                                                                                                   |             |         |                                                                                      |
|                                             |        |              |        |               |         |       |       | 5600  | Section measured from this point up.                                                                                                                                                                              |             |         |                                                                                      |
|                                             |        |              |        |               |         |       |       | 5700  |                                                                                                                                                                                                                   |             |         |                                                                                      |
|                                             |        |              |        |               |         |       |       | 5800  |                                                                                                                                                                                                                   |             |         |                                                                                      |
|                                             |        |              |        |               |         |       |       | 5900  |                                                                                                                                                                                                                   |             |         |                                                                                      |
|                                             |        |              |        |               |         |       |       | 6000  |                                                                                                                                                                                                                   |             |         |                                                                                      |