Amoco Production Company

Surface Log

Name: Coal Bay

Area or Quad: Port Moller   State: Alaska

Location: Sec 32-35 Twn T55S Rng R78W

Measured by: Brown, Pierce, Williams, Smirnov   Date: 25 JUNE 77

Interval: Stepovak

Remarks: Measured down section along exposed beach outcrops W-E. There has been significant faulting of the units in this area. The section begins with the apparent uppermost and ended with the lowest exposed Stepovak

Location: 55° 22′ N 161° 22′ W

Plotted by: LGBrown   Date: 25 JUNE 77

TREND of Paleocurrent: x-beds, groovecasts, lineations, ripples

DESCRIPTION

Beach Section; begins with uppermost exposed unit of the Stepovak.

UNIT 1

Siltstone, muddy, red-black, fissile, iron rich, few concretions, 1" thick interbeds of ss:
Sandstone, gray, silt-fine grain, poor sorting, ang. minor carbonaceous inclusions, 4" calcareous concretions, subspherical, no iron in ss. Fault.

Silty shale, black, fissile, isolated calcareous concretions
N35W 18SW @ 20'
N25W 6SW @ 25'

UNIT 2

Sandstone, green-gray, coarse-medium (occasional granules) grades downward to very fine, poorly sorted, SR-SA, argillaceous, gray lithic frags, occasional red chert, qtz ≈20%, feldspar ≈20%, lith ≈50%, x-bedding, climbing ripples?, festoon x-beds,
Siltstone, 5' thick, includes petrified logs.

ss as above, parallel beds 1'-3' thick, subspherical calcareous concretions, numerous calcite veins

Scattered burrows, highly weathered/clayey, capped by recent dunes, sparse mollusk shells

Covered Interval: estimated dip 12° ∴ sin12 × 490′ ≈ 100′ it is assumed that the above sequence of siltstone, ss & sh has continued.

UNIT 3

Mudstone/Claystone, gray, fissile to hackley fracture, highly jointed, concretions (slightly calcareous), some interbedded sandstone: gray, med, poorly sorted, subangular. 1-2" to 10' thick.

Partly covered interval, outcrops every 10'-20'

Mudstone as above
E-W strike
45°S

Shale & siltstone, gray, fissile, as above

Partly covered interval as above

shale, gray, fissile

Possible fault in this vicinity, partially covered interval, beach intersected by a stream.

UNIT 4

Sandstone, gray, medium-coarse, poorly sorted, angular, bedded ≈3' thick, interbedded with shale, primarily lithic frags, some biotite. N70W 46°SW

Shale, gray-black, in part iron rich, fissile-hackley, beds 10'-15' thick with 18"-3' thick interbeds of ss as above.
Sandstone interbeds: gray-green, med grain, poor sorting, angular, otherwise massive.

Calcite veins throughout this unit, no concretions.

Shale as above

Partly covered interval, ss, siltstone, & sh outcrops 10'-40' as above.

Shale, silty, otherwise as above

Sandstone, gray-green, medium, poor sorting, angular, ≈3' thick beds, some biotite.

Shale as above, thinly bedded, with thin interbeds (1"-3") of ss as above.
Pebble Cong.: green, bedded, matrix-green volcanic med. ss, andesite clasts, pebble size, sub rounded. At bottom of Unit 4.
Faulted zone, highly disturbed, convoluted, brecciate with gouge. Plastic deformation, numerous calcite veins. Slump features & soft sediment deformation. Unable to determine direction of fault.

UNIT 5

Shale, dark black, fissile, thinly bedded
Strike E-W, 40°S

Silty mudstone, gray, hackly fracture
Sandstone, gray-green, med, p sorting, ang, 3' thick, low porosity
Shale as above
" Sandstone, green, medium, p. sorting, ang, laminated, x-beds, "flagstone" like cleavage, in part massive, x-beds strike N80E, 50°S, bedding lineations strike N60W. ripples? - faint oscillation ripples, porosity poor.
Rythmic sequence of sh, siltstone, & ss.: green med ss as above, resembles an air fall tuff?

Rythmic deposition as above, here ss contains numerous carbonized wood. Some sand has ang, v. crse volcanic clasts, laminated otherwise as above.
lineation N63E - ripples? - ½" amplitude symmetrical
Structural strike E-W, 45°S
ss + sh as above, some ss 1/16"-1/4" thick "sandpaper" sand, possible airfall interbedded in sh.

UNIT 6

Mudstone, green, very highly indurated with some calcite veins.

UNIT 7

Sandstone, gray-green, very crse-med, very poorly sorted, ang-sub ang. Alternating well/poorly cemented beds, poorly developed iron concretions, some chloritized clasts & carbonized wood. Ripples - E-W lineation. Soft sed deformation 3-4' diapiric structures lineated N75W
Rythmic sequence of gray shale and ss as above; ss gray-green, med-fine, poorly sorted, ang, massive, thin beds, highly volcanic

Very black shale, otherwise as above

Shale is predominant over ss, which is thinly interbed in sh. 1"-4" thick

Some calcite veins conformable to bedding.

Shale as above
Highly altered rythmic ss & sh as above - baked/bleached by andesite intrusion.

Diorite intrusion, green, very mafic, med. grain xlls, numerous calcite veins

Shale, gray, laminated, slightly fissile, baked near contact

Diorite intrusion, similar/same as above

UNIT 9

Mudstone, dark gray ; N85E, 37°SE
SS, yellow-gray, fine-med, p-mod sort, ang, laminated carb. plant frags.
Shale, coaly, very thin laminations, numerous plant impressions
ss, gray med-crse, mod sort, ang, largest inclusion gravel/pebble, bedded & x-bedded at the bottom, 1" thick, (N70W) ripples/lineation of. Trend of x-beds S16W, S25W. Strike N78E, 35SE
sh/siltstone, gray, vf

ss, green, fine at top, med-crse at bottom, poor-v poorly sorted, ang, well bedded in the upper (lower flow regime), laminated to massive otherwise. Included sh clasts ≈2' dia - rip up clasts?, channel deposit volcanic sand, chloritized, soft sediment deformation, diapir structures 3-4'. N80E, 24SE
sh. thinly laminated as above
ss, gray-green, vf-f, mod sorting, subang, thinly bedded 1-2"
coaly seam ≈8" thick. N88E 26SE
Rythmic sequence of fine-v. fine ss gray, mod sorting, SA with gray to black shale interbedded 3'-15' thick
E-W, 31°S
ss, gray, f-m, p-mod sort, SA, argillaceous, groove casts orientated S10°W, 1" thick interbed of green friable tuff
shale as above with 3"-4" dia concentric Liesegang banding

50' Covered Interval, assumed to be a logical lithologic continuum
Rythmic sequence as above
ss dike, vertical with carbonaceous clasts
Andesite dike, vertical, calcite veins, baked & altered sh nearby

UNIT 10

Siltstone/shale, as above, faint iron conc. 2-4" dia, numerous carbonized wood & plant frags. More siltstone & vf ss than shale ≈4:1.
Sandstone, lt. green, very fine-silty, ang, mod sorted, volcanic/tuffaceous, weathered ash (clayey) matrix. Soft sediment deformation structures
N80E, 33S, E-W lineation of deformation structures ≈2' amp.
Ang breccia at the bottom

UNIT 11

Rythmic sequence of sh, ss, & siltstone, black sh, friable green ash, siltstone, ss, green, vf, subang, p-mod sort, 1"-10" thick max. every 15-20' N80W, 28°SW
Andesite sill, strike of sill N80W 35°SW
graded beds; 1" thick x-beds trend of dip S25E
Coaly seams ≈ sub bituminous
N86E, 38SE
Andesite sill
Covered interval, appear to be as above ie rythmic sequence

Breccia, vc-granular, purple, tuffaceous, highly weathered
Large fault here, direction not known, Unit 12 ss are similar to Unit 5 ss ie "sandpaper" ss. N56E, 66°SE

UNIT 12

Rythmic sequence of sh, mudstone, siltstone, vf ss & some crse ss. Very similar to Unit 5.
Sandstone tan-green, vf-crse, ang, poor-mod sorting, low porosity, thinly laminated beds 6"-3', ~~discontinuous~~ discordant calcite veins, hackly fracture, non equal interbedding, primarily mudstone & siltstone. Numerous carbonaceous-woody inclusions on bedding planes, some iron concretions ≈1" dia

Bottom of the Section

Last visible outcrop, going downsection in the Stepovak. After the covered interval the next outcrop is where the bay curves around & the outcrops are upsection.