PATTERN: D

TRAP COASTLINE

FACET NO. : D_1 NAME : Rocky Foreshore

LOCATION : West of Sikka

GEOREF : 41 F/15 COMPILER : Geology Department M.S. University Baroda.

DATE : March, 1977

Morphology

The facet occupies the lowest position in the surrounding area. It is mostly rocky with highly jointed, surface gently sloping seaward with irregular micro-undulations. Small ditches of few cm to a metre wide and upto 10-15 cm depth are common and these are filled with coarse sand. Some bigger joints are also filled with sedimentary material like sands and pebbles and also by precipitated calcium carbonate. Remains exposed during low tides.

Surfacial deposits

No surfacial deposits, except in small depressions, consisting of sand, gravels and pebbles brought by tides and waves.

Water regime

Surface gets inundated during high tides only. When tide recedes, some water is retained in depressions, joints and cracks. Good surface drainage.

Associated Features

Position in landscape : Lowest in the surrounding landscape.

Soil : No soil cover on the surface

Vegetation: Barren

Land use : Wasteland

Genesis : The surface formed mainly because of weathering and erosion of the basalt along the coastline by waves and tidal currents.

Airphoto Interpretation Aids

Medium gray tone with small spots of light tone indicating mounds. Occures as a strip extending NE-SW along the Sikka coast. It's landward limit is marked by a change to sharp very light gray tone but seaward, it gradually turns to deep gray.

Comments and Reference

The facet is present in the Toposheet Nos. 41 F/11, F/15. It comprises the ground between the land and the lower foreshore mudflat. The surface is good for walking but difficult for vehicles.

FACET NO. : D_2 NAME : Broken Ground

LOCATION : Southeast of Shekhpat

GEOREF : 41 F/15 COMPILER : Geology Department M.S. University Baroda

DATE : March, 1977

Morphology

This facet comprises a badland topography of highly irregular undulations. Areal extension varies from few sq.m. to some hundreds of sq.m. Heights range between 1 m to 15 m. Located at the foot hills and along the river banks, its relief goes upto 4 m height and the slopes grade between 25^{o} to almost vertical. The ruggedness is of two types 1) Natural 2) Man-made. Natural badlands are due to weathering and erosion, while the man-made is due to quarrying activities of the local population.

Surfacial deposits

The surfacial deposits consists of loose soil, sand and broken fragments of rock; frequently covered by an 'in situ' layered soil cover.

Water regime

The facet offers surface drainage for the rain water from the higher levels to lower plains; there is very little percolation; remains dry for most of the year.

Associated Features

Position in landscape : Forms a part of the general landscape.

Soil : A thin cover of light gray to medium gray residual soil.

Vegetation: Scattered shrubs of Acacia arabica and grass in patches.

Land use : The facet is a wasteland.

Genesis : Differential erosion due to rain and other weathering agencies. Also quarrying activity of man.

Airphoto Interpretation Aids

The facet marks an irregularly sloping terrain, dissected by channels and collapsed rocks. The surface shows medium to light gray tone. Occurs mainly along river banks, hill and valley slopes and along high tide water line. Barren rock shows medium gray tone while soil shows light gray tone.

Comments and Reference

Facet is present in the Toposheet Nos. 41 J/2, J/3, J/4, 41 F/11, F/12, F/15, F/16, F/3, F/4, F/7 and F/8. Surface is very irregular and sloping hence difficult for walking as well as for vehicles.

FACET NO. : D_3 NAME : Small Mounds

LOCATION : Southwest of Jambuda

GEOREF : 41 J/2 COMPILER : Geology Department M.S. University Baroda.

DATE : March, 1977

Morphology

The facet is a small domal feature with steep walls or a small ridge with highly inclined slopes. Maximum heights of these mounds are 1-2 m with total areal extent of a few sq.m. only. Top is covered with soil and grass. Convexity of top depends upon its areal extent; if wide, top is flat but when narrow, it is convex. Supports little vegetation.

Surfacial deposit

The surface is covered with residual soil derived from the underlying rock. Depth is about 10 cm below which is 'Murum' (partly weathered basalt), which has a depth of a metre or so.

Water regime

Areal extent of these hillocks being limited, soil holds water only during rainy season; for the rest of the year, it remains dry.

Associated Features

Position in landscape : Higher than the surrounding landscape.

Soil : Residual, homogeneous, black cotton, medium to fine grained.

Vegetation: Top supports grass. Verticle cliffs bear no vegetation, while occasional shrubs or small thorny bushes grow along the gentler slopes

Land use : Nil.

Genesis : Erosional feature due to differential weathering.

Airphoto Interpretation Aids

Facet being very small can be identified on airphotos only with the help of magnifying lens. It shows medium dark gray toned spots surrounded by light gray toned plain ground. No surface drainage.

Comments and Reference

Facet is present in the Toposheet Nos. 41 J/2, J/3, 41 F/15, F/11. It has highly inclined or vertical slopes hence difficult to be negotiated by vehicles; but can be easily crossed on foot. In the field, easily recognised.

FACET NO.: D_4 NAME : Coastal Cliffs

LOCATION : North West of Bedi Bandar

GEOREF : 41 J/2 COMPILER : Geology Department M.S. University Baroda.

DATE : March,, 1977

Morphology

These are vertical features along the coast above the high water line formed due to wave action on rocky coast, heights varying from 1 to 10 m. At places, the cliff tops are dissected by stream channels. Some of the cliffs show wave-cut caves.

Surfacial deposit

Due to the collapse of unsupported rock, debris accumulates near the foot of the cliffs and comprises unsorted material varying in size from boulder to fine sand. Cliff surface is devoid of deposits.

Water regime

Being vertical, no water is retained.

Associated Features

Position in landscape: Higher than surrounding landscape.

Soil : Nil

Vegetation: Nil

Land use : Nil

Genesis : Undercutting along rocky coast due to the action of sea waves followed by collapse of unsupported top portion.

Airphoto Interpretation Aids

Comprising almost verticle slopes, the cliff portion shows darker gray tone than surrounding area. The top surface is irregular due to dessection by drainage channels; good external and internal drainage. The facet is flanked by low coastal plains of light gray tone on seaward side, and medium to dark gray toned barren or agricultural land on the landward side.

Comments and Reference

Facet is present in the Toposheet Nos. 41 J/2, J/3, J/4, F/15, F/16, F/11, F/12, F/7, F/8, F/14, F/15, B/16. The cliffs being vertical and high, are inaccessible.

FACET NO. : D_5 NAME : Water Estuary

LOCATION : West of Sikka

GEOREF : 41 F/15 COMPILER : Geology Department M.S. University Baroda.

DATE : March, 1977

Morphology

The facet being at the lowest portion along the coast, it is fed through creeks during high tide and is drained during low tide. Shape is irregular. Dimensions vary from ½ km to more than 4 km. Filled with mud and rock boulders and pebbles. Growth of mangroves and some water plants are seen on the muddy surface. Maximum depth of water is 2 to 3 m when filled during high tide. Borders are gently rising to merge in general ground level.

Surfacial deposits

Fine grained mud mixed with sand and rock fragments. Mud is transported from the surrounding higher landscape.

Water regime

Water is filled by tidal currents and drained back completely. However, the facet remains wet throughout the year.

Associated Features

Position in landscape : Lowest in relation to the surrounding landscape.

Soil : Transported, light gray coloured fine grained mixed with sand particles.

Vegetation: Mangroves and water plants grow on muddy surface.

Land use : Nil. Water depth being very low even during high tides, navigation and fishing by small boats is not possible.

Genesis : Mouth of a submerged river.

Airphoto Interpretation Aids

The facet shows dark gray tone on airphotos. Shape is irregular and elongated, surrounded by light gray toned barren land. It has a narrow neck which connects the estuary with open sea.

Comments and Reference

Facet is present in the Toposheet Nos. 41 F/3, B/15, B/16. Depth being very shallow not navigable even during high tide time.