SEDIMENT ANALYSIS REPORT

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Laboratory Statement:
The sieve analysis was carried out in the Civil Engineering Laboratory of Sairam Engineering College. The procedure was conducted under the guidance of the supervising faculty, and the recorded data is accurate and verified in the laboratory environment.

1. Sample Information

Location: Porbandar Coast, Gujarat
Sample ID: PBR-SED-01
Collection Method: Surface Grab
Total Sample Mass: 1015 g
Analysis Mode: Standard Dry Sieve

2. Raw Sieve Data

The following distribution was calculated from the input sample mass.

Sieve Size (mm)	Weight Retained (g)	% Retained	Cumulative % Retained	% Passing
1.18 mm	7.0 g	0.7%	0.7%	99.3%
0.600 mm	526.0 g	51.8%	52.5%	47.5%
0.425 mm	310.0 g	30.5%	83.1%	16.9%
0.300 mm	83.0 g	8.2%	91.2%	8.8%
0.075 mm	89.0 g	8.8%	100.0%	0.0%

3. Granulometric Parameters

Derived using log-linear interpolation of the particle size distribution curve.

A. Representative Grain Sizes

D10 (Effective Size): 0.32 mm
Interpretation: 10 percent of the sample is finer than this diameter. This value is used to estimate

hydraulic conductivity.

D30: 0.49 mm

D50 (Median Grain Size): 0.62 mm
Interpretation: This represents the average grain size and indicates that the sediment is medium-to-coarse sand.

D60: 0.71 mm

B. Soil Mechanics Indicators

Fineness Modulus (FM): 2.40
Classification: Fine sand, suitable for plastering and concrete work.

Coefficient of Uniformity (Cu): 2.23
Formula: Cu = D60 / D10
Status: Uniformly graded or poorly graded soil, indicating that most grains are of similar size.

Coefficient of Curvature (Cc): 1.09
Formula: Cc = (D30 × D30) / (D60 × D10)
Status: Lies within the well-graded range of 1 to 3, but the soil is still dominated by low uniformity due to low Cu value.

C. Sedimentological Indicators (Coastal Dynamics)

Trask Sorting Coefficient (So): 1.36
Formula: Square root of (D75 / D25)
Status: Well sorted sediment

Environmental Implication:
The low variation in grain size indicates a high-energy coastal environment with continuous wave action. Fine silt and clay particles are removed by wave and current activity, leaving behind heavier and more uniform silica sand.

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