

**Round: 4A**

There is a relationship between wave energy striking the shoreline and sand grain sizes that may accumulate on a beach.

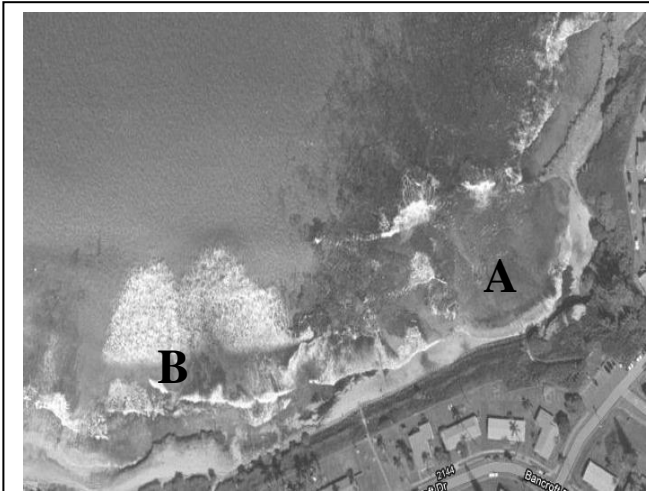
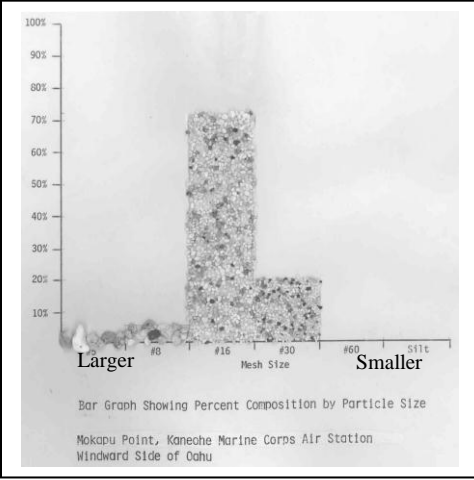
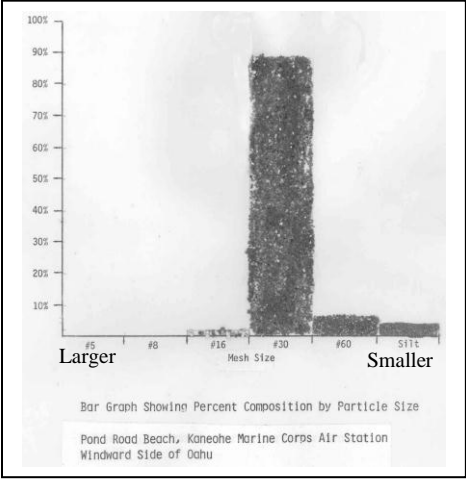


Image 1: Mōkapu Point, O'ahu, 2011

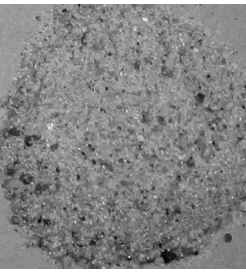
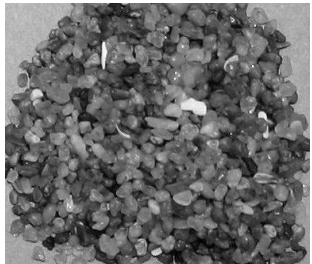
- 1. Image 1 shows two beaches, labeled A & B, located near one another on the island of O'ahu. Which beach appears to receive more less wave energy? (2 pts)
- 2. Provide two (2) likely reasons for the amount of wave energy each beaches receives. (4 pts)

3. The bar graphs below document sand size frequency distributions from these two beaches. Consider if the sand size profiles of these two beaches support the evaluation you made in Question 1.



- a) Which beach experiences greater wave energy? Why? (3 pts)
- b) Which beach experiences less wave energy? Why? (3 pts)
- 4. In one sentence, describe how wave energy hitting a beach relates to sand grain size. (4 pts)

5. Using the relationship you developed in Question 4, rank the following beach materials according to the wave energy associated with them. (1 = lowest wave energy, 4 = highest wave energy) (4 pts)



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