

Investigation of Primary Bottom-Strata of San Pablo Bay

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Abstract: A bottom sample was taken from the central San Pablo Bay in California and then prepared and investigated to determine its contents and characteristics.

Introduction: The known literature does not include data or research on bottom samples taken from the San Pablo Bay near San Francisco, California. The authors took a small sample of highly dense bottom-matter from the Las Gallinas Creek outlet to that bay. The sample was then suspended in a water solution and observed under magnification. The sample was found to include organic and inorganic contents of a foul-smelling nature.

Method: The authors collected a 100 cm² sample of bottom matter from the San Pablo Bay near the outlet of Las Gallinas Creek. The sample was taken from the first 50 centimeters of the bottom-strata. This matter is commonly referred to by local residents as “silt.” The sample was cleared of observable plant matter and then dissolved in water, creating a dark colloidal solution. The solution was taken to 220 degrees Fahrenheit over a natural gas burner in order to kill any resident bacteria. During heating, the solution was odor tested. After cooling, the solution was allowed to evaporate to reduce water content. A portion of the remaining solution was then observed under 10X, 40X, and 100X magnification. An author used a 9 year-old human tongue to make a measurement of the solution’s gustatory attributes.

Findings: Upon extraction, the bottom sample was of a clay-like constitution, both heavy and slimy. The sample was dark in color with large amounts of organic plants material within a heavier black and green fine particulate. The sample smelled of decomposing vegetation, similar to the surrounding wetland environment from which the sample was taken. After suspending the sample in water, and heating the resulting solution, the mixture was examined under a microscope. Within the solution the authors observed what are believed to be clay dust particles of approximately 1 micron in

diameter. Interspersed with these particles the authors found what is believed to be organic material, including pollen spores and leaf fragments in sizes from approximately 5 to 100 microns. The clay particles appeared gray in color and the organic material was black and green under the microscope’s artificial lighting.

These findings as to size contradict the descriptions by local residents of bay bottom-water being comprised of “silt.” The scientific literature defines silt particles as having a larger diameter, in the range of 2 to 50 microns.¹ See Fig. 1.

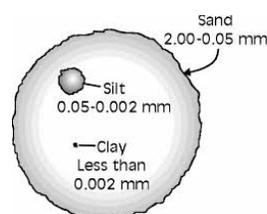


Fig. 1

The solution was found to have the taste of wet socks.

Weaknesses: Limitations at the laboratory used by the authors prevented examination of the subject particulate solution at magnification greater than 100X. Thus, the specific contours of the examined particles were not observed. The number of samples evaluated by gustatory measurement was limited by the only momentary availability of the measurement device found in the researchers’ laboratory. Independent validation of the findings is needed.

Conclusion: The primary bottom-strata of the San Francisco Bay at Gallinas Creek outlet was found to contain a mixture of foul smelling and tasting clay particles and organic plant matter.

References:

1. Plant and Soil Sciences eLibrary, (<http://passel.unl.edu/pages/informationmodule.php?idinformationmodule=1130447039&topicorder=2&maxto=10>)