

Geology 334, Sedimentology and Stratigraphy

Guidelines for Field Trip Report

Due Date: Thursday May 23, 2019

The purpose of the field trip was to introduce you to some Tertiary sedimentary rocks and geomorphology of the Oregon coast. The main purpose of this report is to help you reinforce what you learned, and to develop/refine skills of describing and interpreting sedimentary rocks and geomorphology. In writing about sedimentology and stratigraphy, it is very important to keep observations separate from interpretations. You should first describe your observations and descriptions of the rocks, and then you use your knowledge and deductive reasoning to interpret the depositional processes and environments in which the deposits formed. For this field trip report, please focus on your observations and interpretations for the sedimentary sequence that we walked through at Sunset Bay following the guidelines below.

Your report should be about 3-4 pages long, double spaced. Start with a brief Introduction, and then write a summary of just the stop at Sunset Bay. *Be sure to write all descriptions and interpretations in complete, grammatically correct sentences (not lists or bulleted lists).*

Introduction: what we did and where we went, and why. Very brief overview of the trip.

Sunset Bay: Sedimentology and stratigraphy of the Eocene Coleado Formation. Here we are interested in the stratigraphic section that we observed and discussed as a group. Please create subheadings for your report, and identify the units (lithofacies) using the unit numbers we assigned in the field. For each unit:

- (i) First write rock descriptions, including rock name, grain size, sorting, bed thickness, sedimentary structures, sandstone:mudstone ratio, and any other measurements you made. Be sure to also note the nature of *contacts* between each of the units (gradational or sharp).
- (ii) Then interpret depositional processes (such as suspension settling, storm wave deposition, turbidity currents, etc.) that formed each facies; and then
- (iii) Interpret depositional environment (e.g. beach, river, lake, marine shelf - shallow or deep - etc.) and relative water depths of the units.
- (iv) Finally, summarize the regional processes (sea level, tectonics, or etc.) that *could have* produced the inferred changes in water depth and paleo-environments through time, and explain how these processes could plausibly explain the vertical sequence that we saw.

Notes:

Be careful how you use past tense in geology writing. You may want to say “the sandstone was coarse-grained and the beds were very thick”, but don’t write it that way. Always use the present tense for rock descriptions: e.g. “the sandstone *is* thin-bedded”. The only time to use past tense is when you’re discussing events or processes that you infer occurred in the past.

Be sure to keep interpretations separate from rock descriptions and measurements (your data).

Feel free to ask me or Kevin if you have questions about this assignment.