

DOT Case 3. An Aggregate Testing Case

Consider the following case and three possible decisions that could be made. (Note that there are problems with all three: of these choices, which raises the most serious red flag?)

A vendor who customarily provides pre-qualified aggregate for the DOT ships a significant load of the aggregate for an upcoming project. When such loads arrive, typically project staff inspect and test the aggregate. Any load may be chosen, and four samples from different areas of the load are pulled and analyzed. This particular large shipment is tested, and all of the samples from the load show moisture levels that test well above the required technical specifications. But the project is already behind schedule due to a variety of other factors, and this aggregate is needed for a bridge abutment project that must get done today. Everyone at the job site knows that any more delays will mean that several schedules built around this project stand to be negatively impacted. The project staff who has tested the load is a young engineer with only one year of experience in the field.

Consider three different possible choices that young engineer could make:

1. She looks back at a test for the same kind of aggregate completed a few weeks ago, copies that data, and patches it in to look like the data taken today.
2. She emails a screenshot of the failed tests to both the vendor and her immediate supervisor, a P.E. While she is waiting to hear from his supervisor, the vendor has called a non-PE (non-technical) manager at the DOT about the problem. This manager has many years of experience in managing the budgets of projects and interacting with vendors; to ensure that he has a strong working relationship with the various vendors, he socializes with them frequently. When problems or cost issues with a vendor come up, he has often tried to step in and pressure his co-workers and engineers at the DOT. This manager calls the young engineer and chews her out for the delay, then in no uncertain terms instructs her to throw the test away and start work with the aggregate immediately. The young engineer reluctantly complies.
3. She contacts his immediate supervisor, a P.E. with thirty years of experience, who tells her to delay the start of work until he can arrive on the scene and assess the situation. He arrives, walks over, picks up a handful of the aggregate, looks at it, and decides that the aggregate will probably be good enough. He instructs the young engineer to throw away this test and test the next load that arrives instead. The young engineer complies.

Does the NSPE or ASCE Code of Ethics prohibit any of these choices?

What cognitive biases may be motivating some of these choices?

Does any decision here seem more problematic than the others?

What are the potential consequences you can imagine for these choices?

What would be a better, more ethical approach?