

## 4.0 | The POT Method

When working with other professionals, students, and the lay public in the field conducting on-site soil assessments, the primary questions in the field that are asked are not so much about the assessment process or observations, but the conclusion. In the beginning of my career, I got the impression that the goal of the field assessment was to come to a conclusion and not so much to collect the data. In many cases a number of my mentors did not review historical information or available environmental (soil or geological mapping) before coming to the site.

For me, this caused me to be continuously changing my conclusions about the site throughout the day and, to be honest, to be making very poor initial conclusions that later turned out to be very wrong. I was so worried about:

Where was the Limiting Zone or condition?

Where is the Water Table?

What type of Septic System should be used?

Where are the Master Horizons?

that I did not always collect the data and document the existing conditions and in some ways my field interpretation has biased my observations.

While working at Wilkes University, I discussed this with my mentors in geology and water quality and they indicated this was one reason they encourage students to take a field or applied environmental course to get them to apply the scientific method to their field assessments.

At that time I was developing a field soils course for students, engineers, and sewage enforcement officers and California had just passed legislation

related to the sale of cannabis. The Continuing Education Department of the university was looking for a name for the class and the title “Applying the Scientific Method to Soil Assessments (ASMSA)” had come up which did not sound very interesting. So I recommended the title of “Soil Classification and Profile Descriptions – The POT Approach (Prepare, Observe, Translate)” because I thought it was cool, interesting, and easy to remember (POT). For the record, I am not a POT (cannabis) user, although I think we should be growing and using more hemp products.

As I previously mentioned, I found that when I and others were doing field assessments, we spent more time and energy getting to the “Interpretations” and not enough time on getting the information and learning what the soil was telling us about the site and subsurface condition.

Since I am a classically trained scientist, I took the scientific method and divided the procedure into three distinct activities: Prepare, Observe, and Translate:

### Prepare (P)

The preparation phase is the time to collect all available background or historic data which might include: topography, soils maps, geological data, wetland or hydric soils maps, local zoning and land-use ordinances, and project base maps. It is also important to understand the purpose, nature, and extent of the proposed activity or reason for the assessment.

During this phase, it would not be atypical to walk a portion of the site to determine if there were any critical areas such as: rock outcrops, steep slopes, historic or disturbed areas, or unreported infra-

structure; it would be a time to get some idea about how the “Project Site” fits into the regional landscape.

### Observe (O)

Initially, the Preparation phase of the project was used to help me develop an approach to conducting an evaluation of the site to collect the necessary data to meet the objectives of the assessment. This approach worked very well, but when I was asked to reinterpret my observations for a different purpose or approach, I discovered I did not collect all the information I needed.

Therefore, I changed the observation phase and assessment so I could collect enough information to not only tell a story about the site, but could reinterpret this information if the nature of the project or questions about the project changed. The main focus of the observation phase of the project is to collect information and not interpret that information in the field.

For example, I was teaching a soil morphology class and one professional described a soil as follows:

**O horizon** – 4 to 0 inches, decomposing organic material

**A horizon** – 0 to 8 inches, 7.5YR3/3, extremely gravelly silt loam, wk coarse platy, firm, non-sticky

**Bw horizon** – 8 to 25 inches, 7.5YR3/4, gravelly silt loam, wk fine subangular blocky, friable, slightly sticky

**Bt horizon** – 25 to 40 inches, 7.5YR4/4, gravelly loam, wk medium subangular blocky, friable, slightly sticky

**Btx horizon** – 40 to 60 inches, 5YR4/3, channery sandy loam, massive.

Do you notice any problems or have any concerns?