



When we build a pipeline, safety is our top priority. Highly skilled engineers, geologists, environmental scientists, archaeologists and wildlife biologists conduct detailed field surveys to design our pipelines to follow the safest route with the smallest environmental footprint possible.

These civil, cultural, subsurface, environmental and geotechnical surveys also ensure that all permitting requirements, state historic preservations regulations and any other appropriate regulatory requirements are met.

## **CIVIL**

Civil surveys are conducted using a range of tools including GPS receivers, drones and soil testing kits to perform topographic and boundary surveys. It is important to identify any existing pipelines or property corners along the proposed pipeline right-of-way.

## **CULTURAL**

Cultural resource surveys are completed to identify and evaluate cultural and historic sites as required by federal and state regulations. This helps ensure that significant archaeological and historical sites are not damaged during project development. Performing these surveys most often includes using hand tools to excavate holes for observation that are immediately backfilled and the area preserved.

## **SUBSURFACE UTILITY**

Subsurface utility surveys are conducted to determine the presence of underground utilities within the project area. Small test holes are critical to locating underground utilities using pressurized air. After the holes are surveyed, they are backfilled to the existing surface.

## **ENVIRONMENTAL**

Environmental surveys include the identification and mapping of wetlands, streams, and natural habitats in the project vicinity. The surveys are a detailed assessment of the features so project impacts can be minimized and areas restored when construction is complete. Habitat assessments determine if sensitive species may be in the vicinity of the project which may lead to additional species-specific surveys. These surveys include using hand tools to excavate holes to observe the soils and then the areas are immediately backfilled to the existing surface.

## **GEOTECHNICAL**

Geotechnical surveys involve boring holes to collect samples of the soil and rock at specific locations to be analyzed for details of their physical characteristics. This information is used during the engineering design for the project. Bore holes are filled with grout to the existing surface once the sample has been collected.

Field surveys help ensure our pipelines will operate safely for decades.

