

GEOPHYSICAL MAPPING OF SHALLOW BOULDERS – YOSEMITE NATIONAL PARK

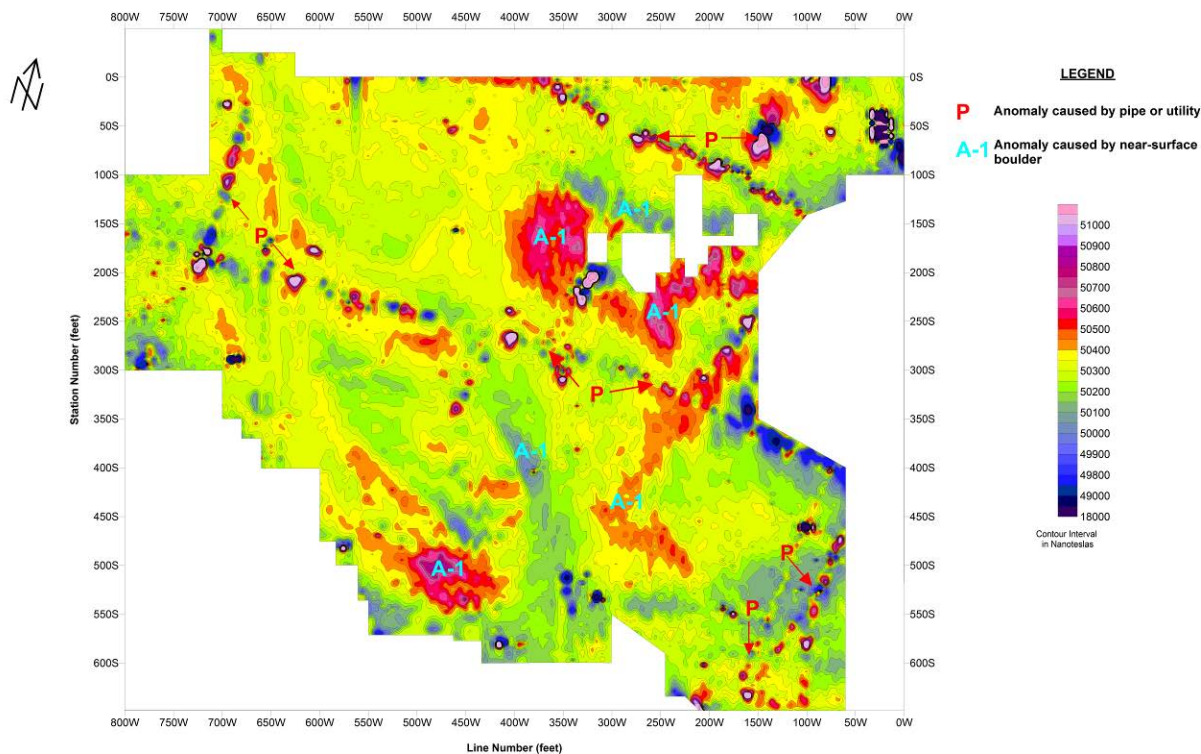
A geophysical investigation was conducted within a 7-acre wooded area at Yosemite National Park in support of proposed employee housing expansion. The purpose of the investigation was to provide a map of shallow boulders (6 feet or larger in diameter) that could interfere with trenching activities associated with the installation of utilities for the housing expansion.



Technician acquiring ground conductivity data using a Geonics EM-31 terrain conductivity meter

Spectrum collected EM-31 and magnetics data at 2.5-foot spacing along lines spaced 5 feet apart within the entire 7 acres. Detailed utility locating was conducted in order to distinguish EM-31 and magnetics anomalies caused by utilities from those caused by shallow boulders. In addition, a detailed map was made of both

surface cultural features and boulder outcrops within the entire investigation area so that anomalies from these sources could be identified in the data. Conductivity, in phase and total magnetic field data were contoured and color enhanced using Surfer 7.0[®] for Windows, and high amplitude anomalies were then investigated further using our SIR-10A+ ground penetrating radar system coupled to a 400-MHz antenna. Based on known signatures from boulder outcrops, a detailed AutoCAD map was made of the locations and probable depths of subsurface boulders at the Site.



This color contour map shows the variation in total magnetic field readings at the Site. Linear magnetic anomalies were associated with buried utilities. Large magnetic highs (red) and magnetic lows (blue) were interpreted to be associated with subsurface boulders.