



## PROJECT DESCRIPTION & CHALLENGES



2018 - 2019



Sukut  
Republic Services

The Sunshine Canyon Landfill is a large landfill located in the Los Angeles neighborhood of Sylmar. It receives one-third of the daily waste produced by the city, and is owned by Republic Services. Sixense was tasked with monitoring excavation deformation during the construction of the CC 4-Stability Buttress project at the Sunshine Canyon Landfill (located within the south-central portion of the site straddling the city line).

The purpose of the construction works was to create a stabilization buttress in an area on site that was susceptible to landslides and geologic instability prior to the development of the Sunshine Canyon Landfill. The buttress construction involved excavation into the geologically sensitive terrain composed of interbedded siltstone, sandstone, and claystone that had been fractured by now-inactive faults. Therefore, it was very important to all involved parties that the site was monitored appropriately and safely. In addition, municipal solid waste landfills can introduce contaminants to the surrounding soil and groundwater if proper engineering controls and containment infrastructure are not in place. If these contaminants were not successfully contained, they could potentially impact groundwater quality and its use as a source of domestic water supply. Other challenges included the solution being deployed in a difficult-to-access, changing construction site.

## MONITORING SOLUTION

To monitor for potential deformation of the stability buttress subgrade excavation, Sixense Northern America deployed a wireless, real-time monitoring solution created specifically for this job. The system that was supplied and installed featured the following: cyclops (AMTS) to monitor a total of 27 monitoring prisms, wireless data loggers connected to existing, piezometers to monitor groundwater pressure, inclinometers to monitor subsurface deflections, wireless tiltmeters to monitor foundation movement at discrete locations across the construction area, and an automatic weather station (combining wind, rain, temperature, and barometric measurements).

During this time, Sixense worked closely with the recommended geotechnical firm, Brierly Associates, at every stage of the monitoring program, including the installation phase, baseline period, and monitoring phase until the completion of the construction works. Sixense also

<p><b>1</b></p> <p>AMTS Cyclops System</p>	<p><b>1</b></p> <p>Automatic Weather Station</p>
<p><b>6</b></p> <p>Shape Array</p>	<p><b>2</b></p> <p>Tiltmeters</p>





# Sunshine Canyon Landfill

Geotechnical instrumentation and monitoring solutions to control the construction of a stability buttress for a landfill

Los Angeles - UNITED STATES

coordinated with the project driller during the execution of each installation to ensure the work was completed smoothly.

## BENEFIT'S OF SIXENSE'S MONITORING SOLUTIONS

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Benefits of the company's monitoring solutions were an enhanced environmental risk mitigation via real-time, long-range monitoring. Also, there were low installation and maintenance costs for most parts of the project and a decrease in failure risk from not having cabling that is typically prone to damage. Sixense was thrilled to assist with this project and allow the design and construction teams to progress confidently through each critical phase of the Sunshine Canyon Landfill. Throughout the duration, they remained committed to operating with beneficial policies for the customers, local businesses, residents, and the environment.

