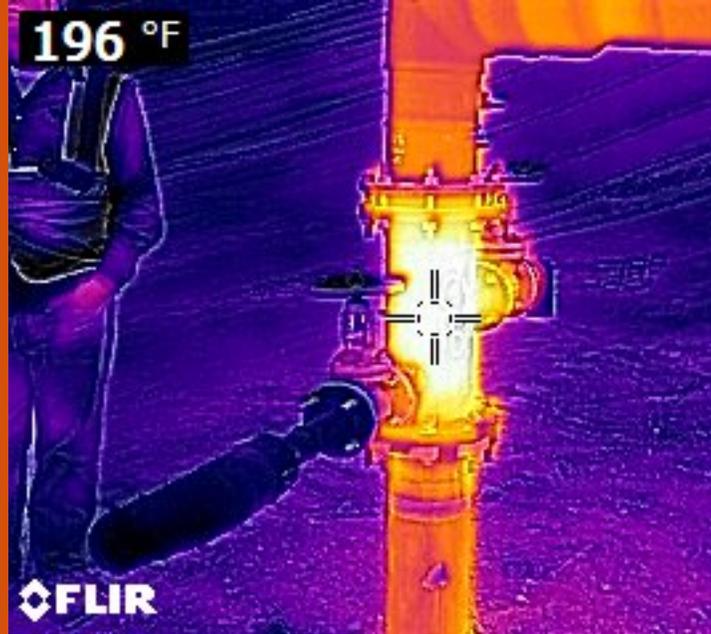


Subsurface Elevated Temperature (SET) Event



Chiquita Canyon
Landfill June 4, 2025

Causes of SET Events

Factors leading to the triggering of a SET Event include:

- (1) Air intrusion/spontaneous combustion by overdrawing the gas extraction system and/or drawing air into the MSW through poorly compacted or thin intermediate soil cover, erosion rills, animal holes, gaps around penetrations, or other openings/holes such as drainage or stormwater pipes.
- (2) Holes or defects in the geosynthetic cover system.
- (3) Damage to air pressure lines within the waste mass used to pressurize gas well liquid pumps that remove condensate and leachate collected inside the gas extraction pipe.¹
- (4) Partially extinguished surface fires or smolders.
- (5) Waste placed at an elevated temperature (incinerator ash, solidified sludge wastes).
- (6) Recirculation of leachate in an area with reactive wastes.
- (7) Exothermic chemical reactions (aluminum wastes, lime/cement kiln dust, lithium, magnesium).
- (8) Coal bottom ash and fly ash reacting with leachate or biogas.
- (9) Steel slag used as an alternative daily cover.²

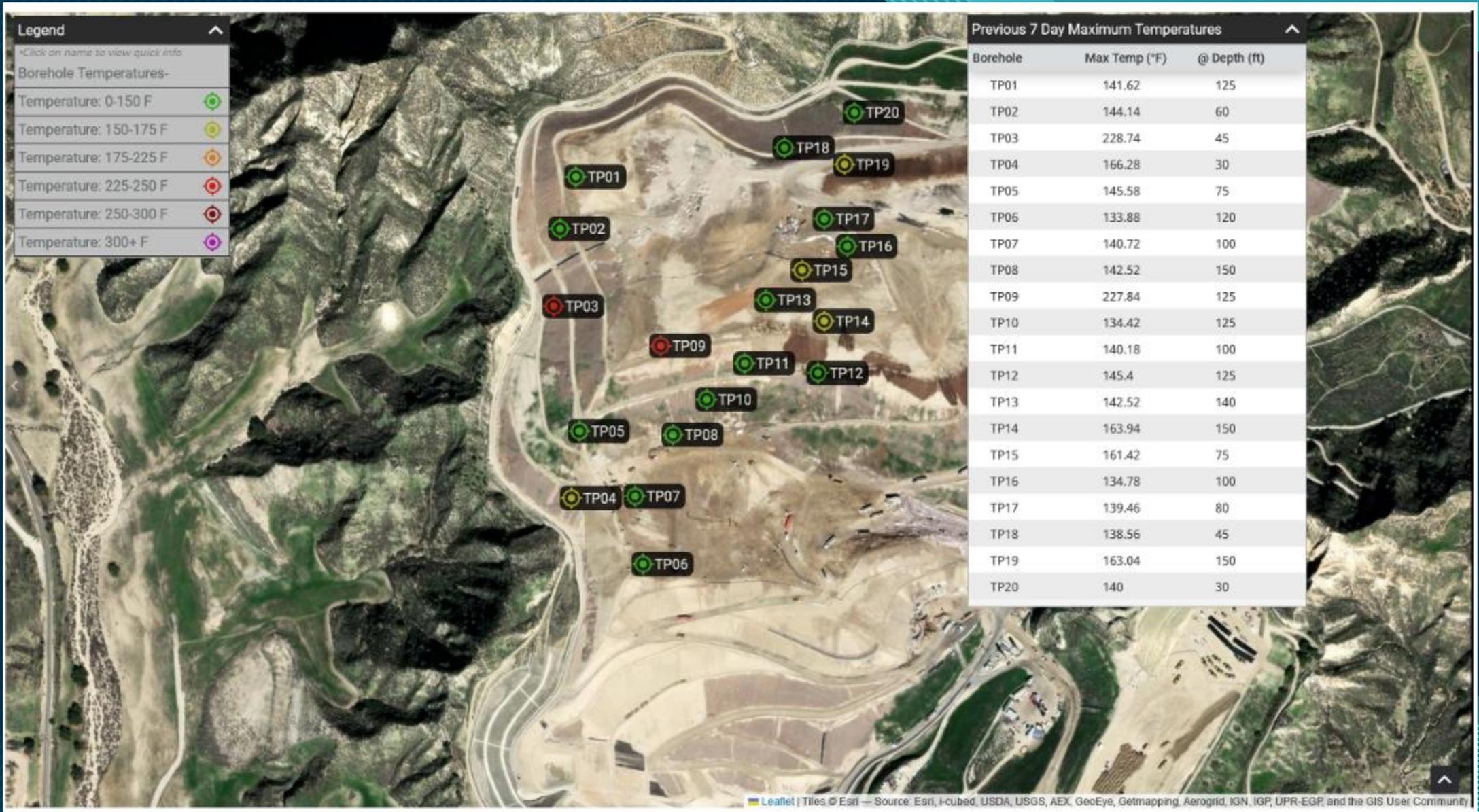
¹ Fathinezhad et al., Numerical Investigation of Air Intrusion and Aerobic Reactions in Municipal Solid Waste Landfills, 175 Waste Management 60-72 (2022).

² Krause et al., Understanding Landfill Gas Behavior at Elevated Temperature Landfills, 165 Waste Management 83-93 (2023).

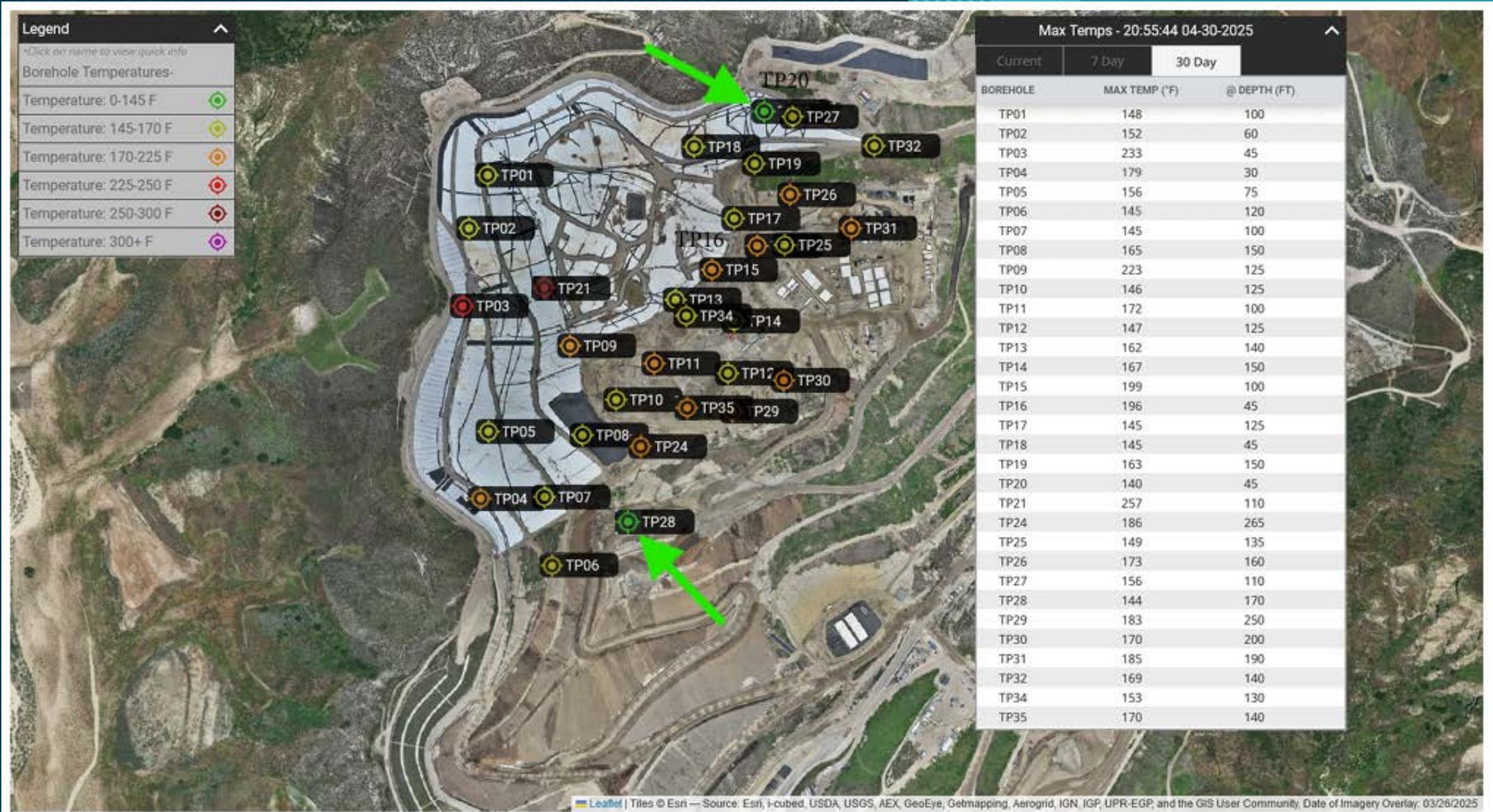
Monitoring SET Events

- Initial through wellhead monitoring and data trends for
 - Temperature increase
 - Pressure increases
 - Methane decrease
 - Oxygen exceedances based on Site Operational Plans or >5% (Prior NSPS regulation)
- Progressive through Temp Monitoring Probes (TMPs) and Downwell and
 - Data Trends above
 - Carbon Monoxide, hydrogen gas, volatile organic compounds (VOCs)
 - Settlement, fissures, sinkholes
 - Field observations
 - Infrared imagery (FLIR)

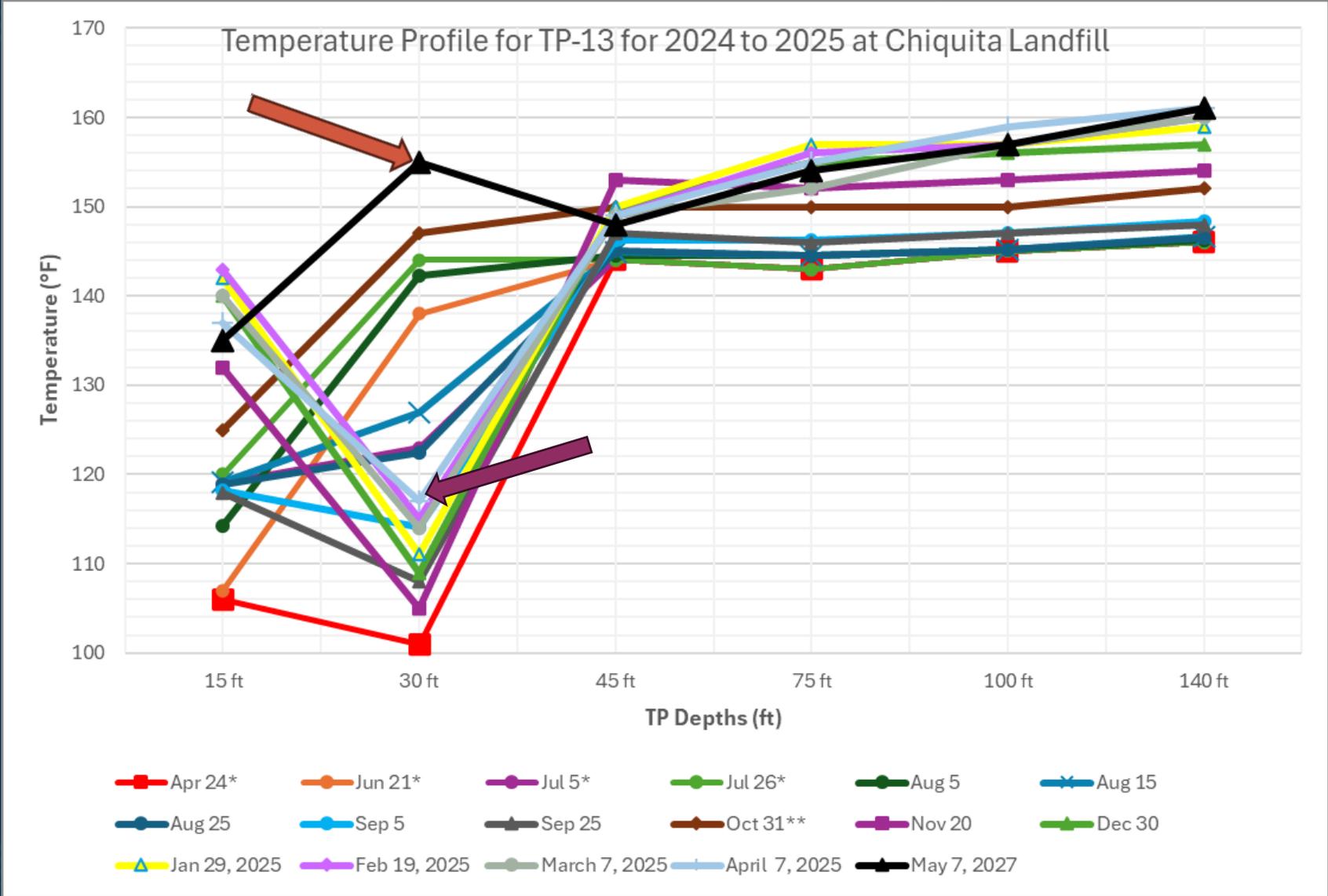
TMP History Max Temps April 2024



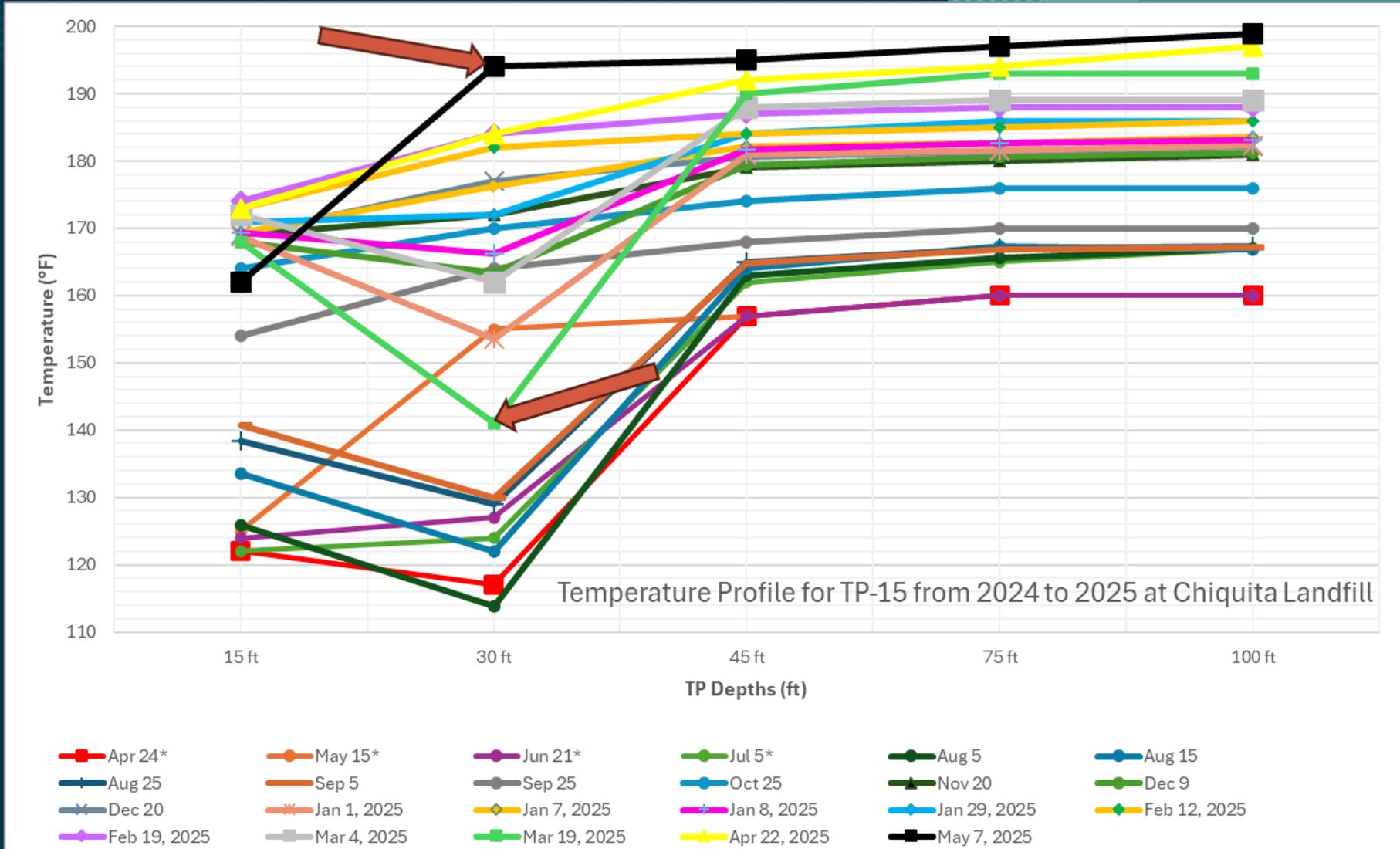
TMP History Max Temps April 2025



TP 13 History



TP 15 History



Settlement, Fissures and Repairs -May 2025



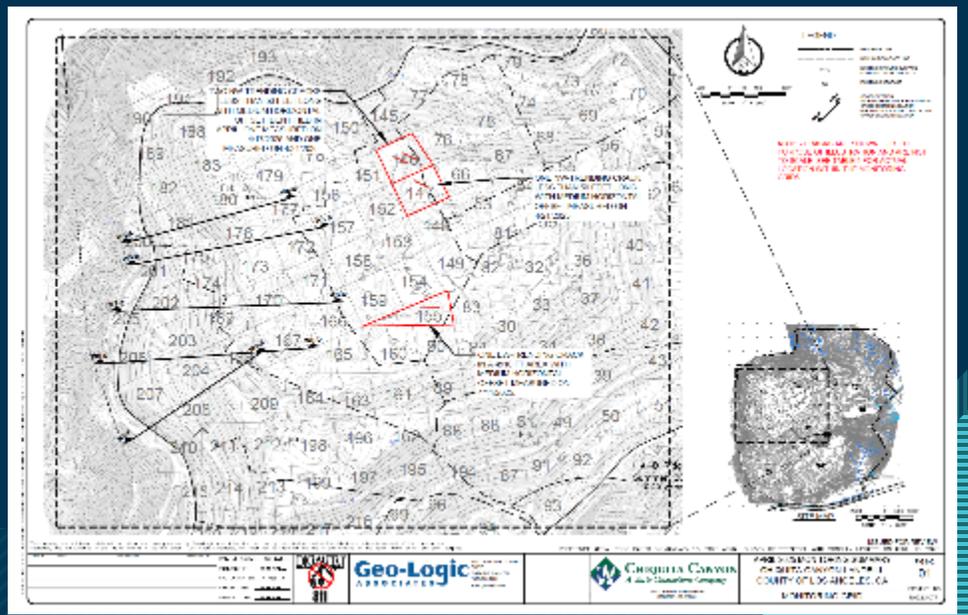
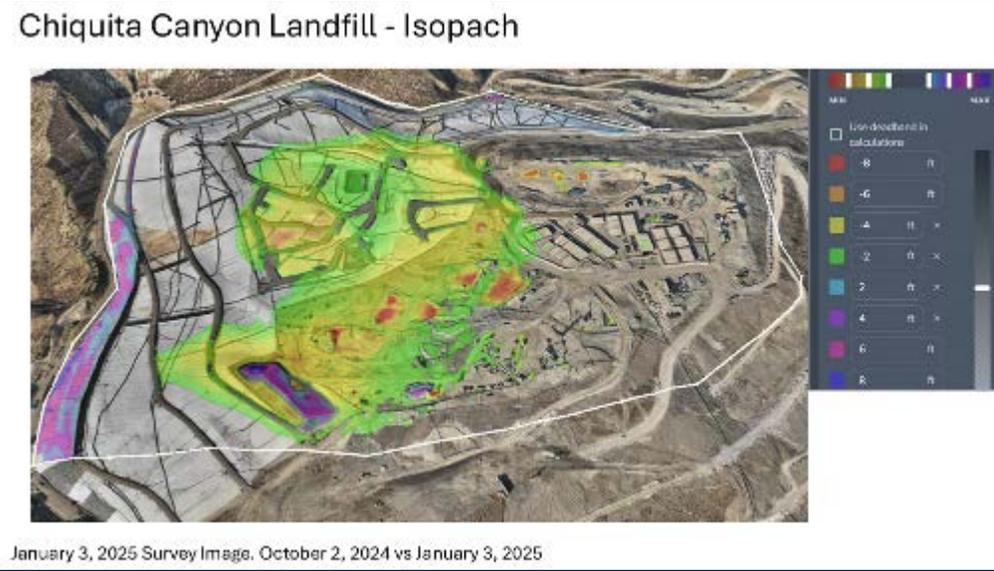
May 5, Grid 146

Photo 4

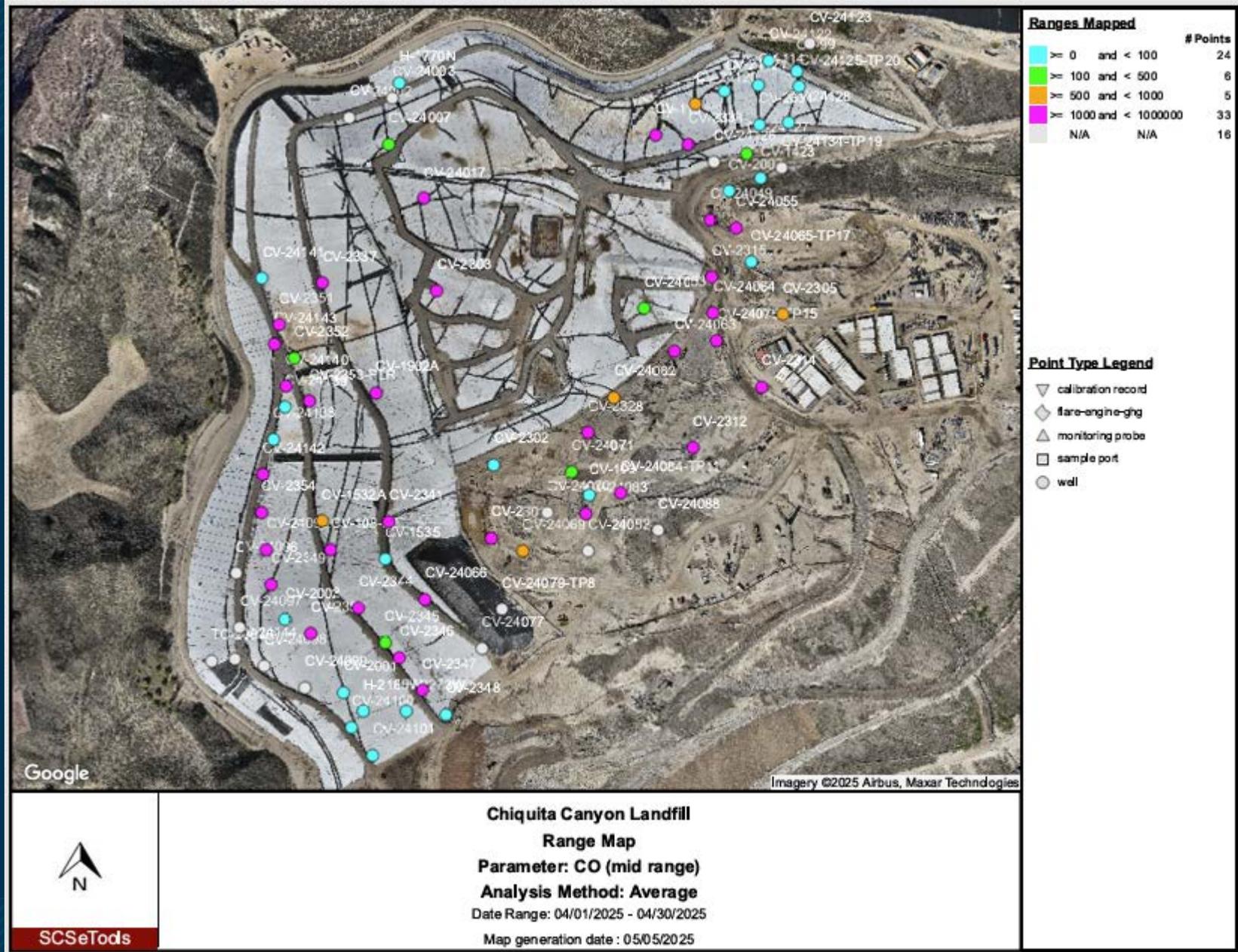
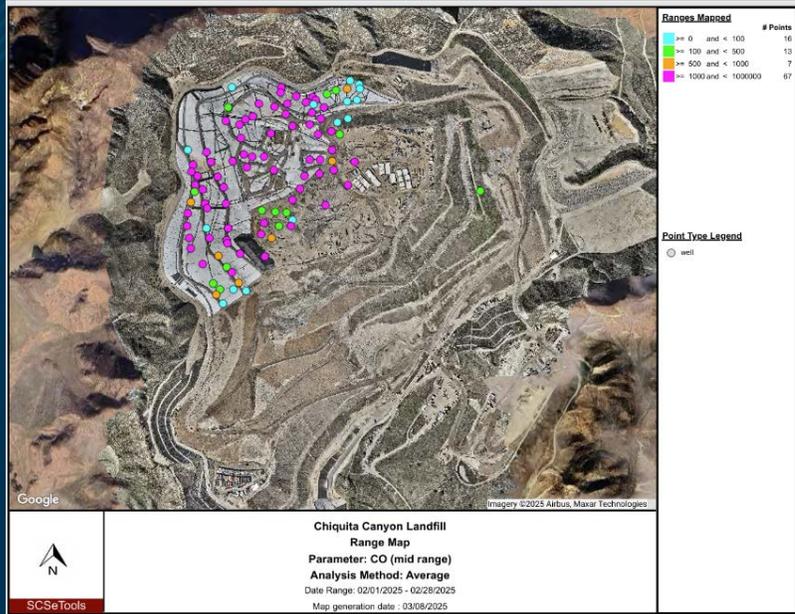


May 7, Grid 147

Photo 2



CO Trend Mapping



End