DEPARTMENT OF ECOLOGY
State of Washington

TECHNICAL MEMORANDUM

TO: James Rivard, Regional Manager, Solid Waste Management Program, Department of Ecology, Central Regional Office

FROM: Luke LeMond, LHG, Solid Waste Management Program, Department of Ecology, Central Region Office

SUBJECT: Site visit report

SITE: DTG-Anderson Landfill

DATE: January 20, 2023

On January 19, 2023, I mobilized to the DTG-Anderson Landfill so observe the area of the landfill that has been previously documented to contain high levels of volatile organic compounds (VOCs) in gas emanating from the waste. This visit was prompted by a number of odor complaints submitted to Ecology's Environmental Report Tracking System (ERTS) in recent weeks. After checking-in at the DTG office at 7:45am, I proceded to the top of the draw where monitoring well MW-4 is located. The weather was cold and clear, with air temperature of approximately 30F. The road had been muddy, but low temperatures overnight had frozen the mud as well as the soil off the road. The northwest flank of the landfill was still in the shade and had not received any direct sunlight.

From the top of the draw, I proceeded on foot along the quarry haul-road to the west of the existing landfill until I was east of MW-4. From that vantage point I took a series of photos with my phone and a FLIR C-5 thermal camera of the landfill to the east (Figures 1, 2, and 3) . The thermal images indicate warm zones on the landfill slope directly above the lower road.

I then proceeded to walk the length of the draw from the top to MW-4 and back. Significant odor was noted along the draw, particularly in the lower half.

After walking the draw, I walked the lower road on the northwest flank of the landfill. The soil in this area was not frozen, in contrast to all the soil along the quarry haul road and in the draw. Numerous cracks were observed in and adjacent to the road (Figures 4 and 5) . Cracks in the road have been observed in this area before, but they are now significantly larger than in the past. Areas of green vegetation and warm thermal signatures were observed adjacent to the road as well (Figures 5 and 6).

Temperature of the soil in the area of green vegetation was approximately 25F warmer than the road adjacent to it (Figure 7). Odors were noticeable in this area.

After following the cracks for a few hundred feet past the previously documented hot-spot, the cracks ended and I walked up the slope to the upper road. Numerous large cracks were observed in the flank of the landfill between the two roads running roughly parallel to the contours of the slope (Figure 8). Odors were strong in this area. Roughly directly upslope from the green vegetation noted earlier was a series of fine cracks with black residue around them producing smoke/vapor and very strong odor (Figures 9 and 10). Thermal images of these cracks indicate temperature of roughly 90F, approximately 73F warmer than the surrounding soil (Figure 11).

We have previously suspected a subsurface fire in this area, but indications at the time were somewhat ambiguous. Observations from January 19, 2023, collectively indicate ongoing combustion beneath the surface.

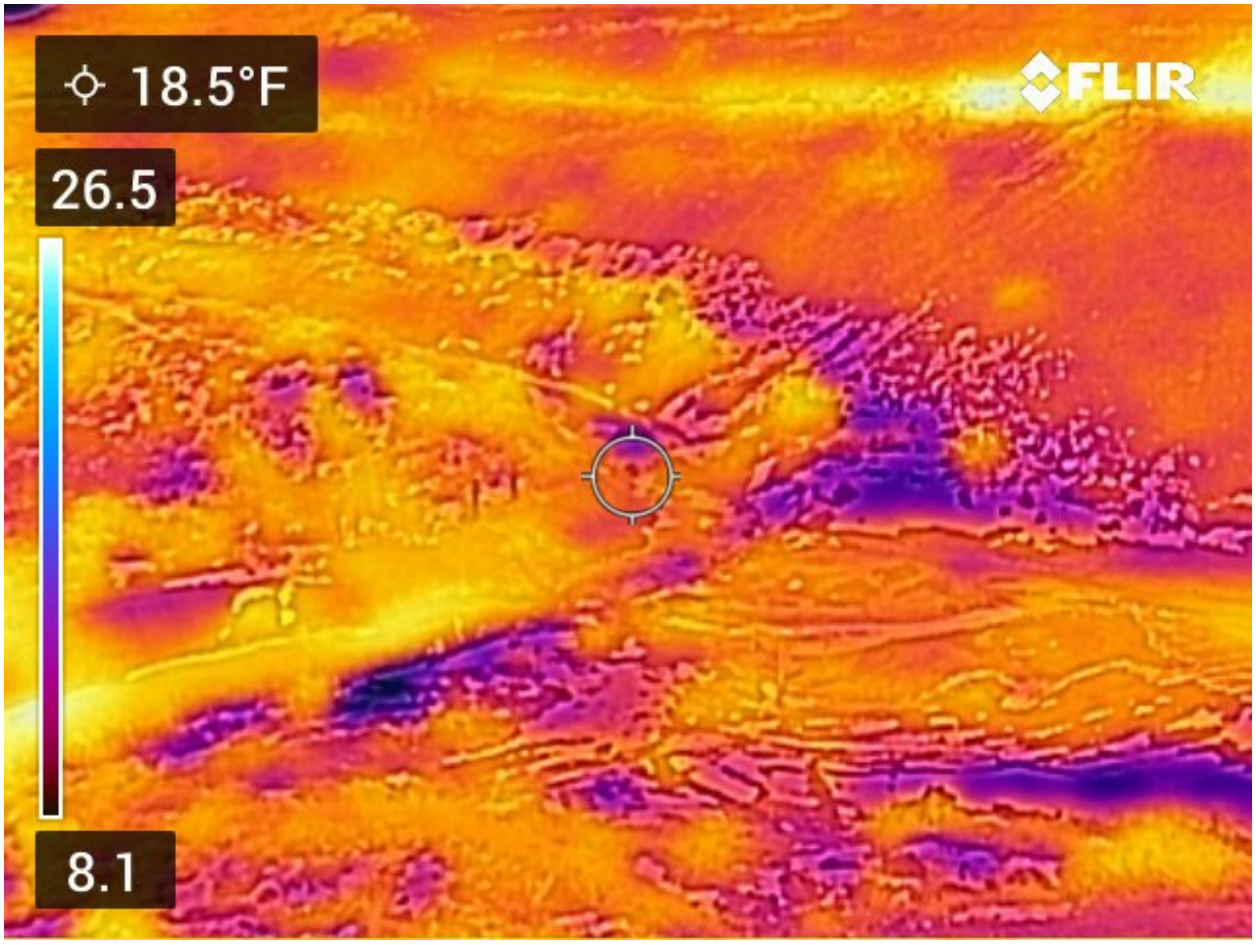

Figure 1: Thermal image of landfill from quarry haul road facing east. Note warm colors along lower landfill perimeter road starting from upper right corner and extending to the left.

Figure 2: Photograph from same vantage point as Figure 1. Note green vegetation above perimeter landfill road.

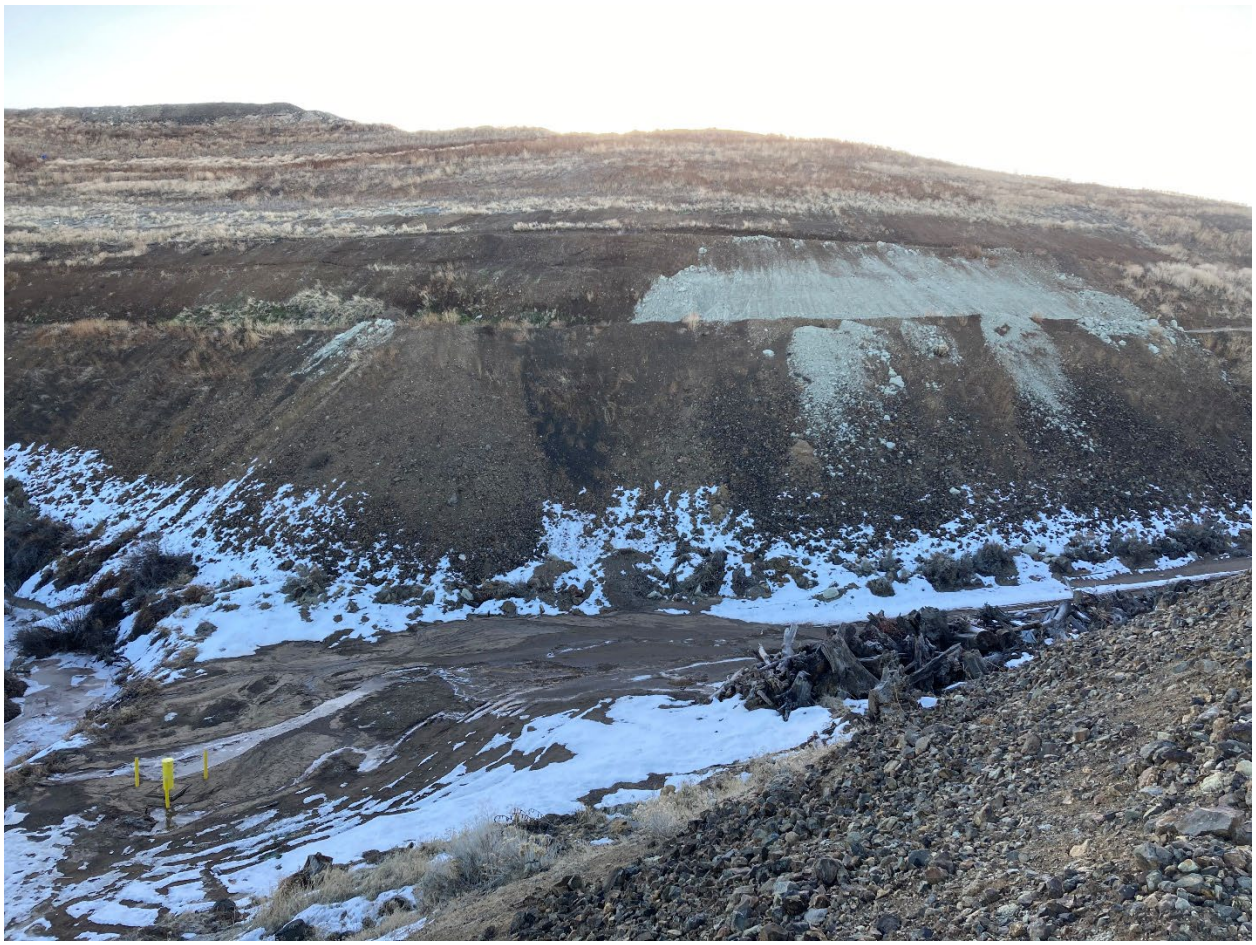

Figure 3: Photograph from same vantage point as Figures 1 and 2 facing southeast. Note light gray soil that has been placed over previously documented hot-spot above perimeter landfill road and green vegetation to the left.

Figure 4: Cracks on perimeter landfill road.

Figure 5: Cracks on perimeter landfill road. Note green vegetation on the opposite side of the road.

Figure 6: Close-up view of green vegetation along perimeter road.

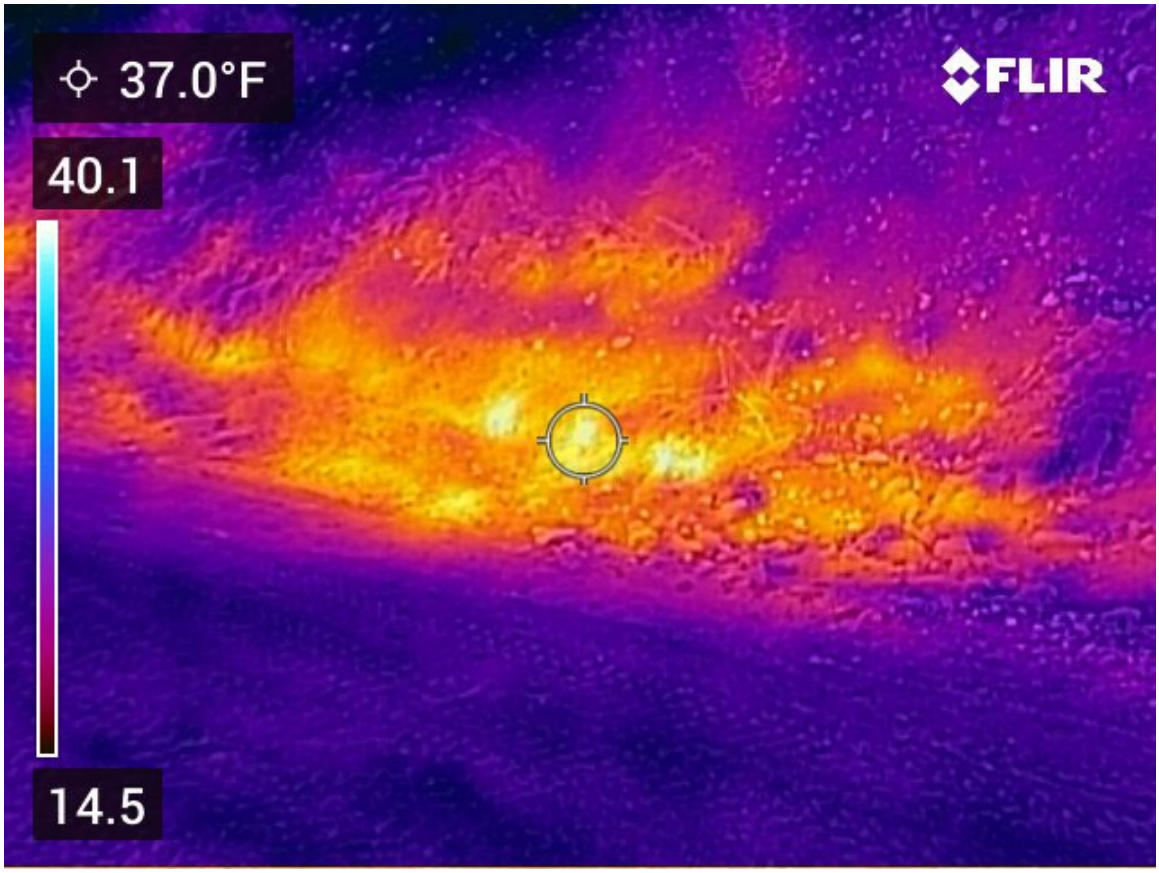

Figure 7: Thermal scan of green area from Figure 4.

Figure 8: Cracks in slope above perimeter access road. Green vegetation directly below.

Figure 9: Facing south. Fine cracks in upper road above repaired slope with black residue around cracks and smoke/vapor emanating from cracks.

Figure 10: Facing north. Fine cracks in upper road above repaired slope with black residue around cracks and smoke/vapor emanating from cracks.

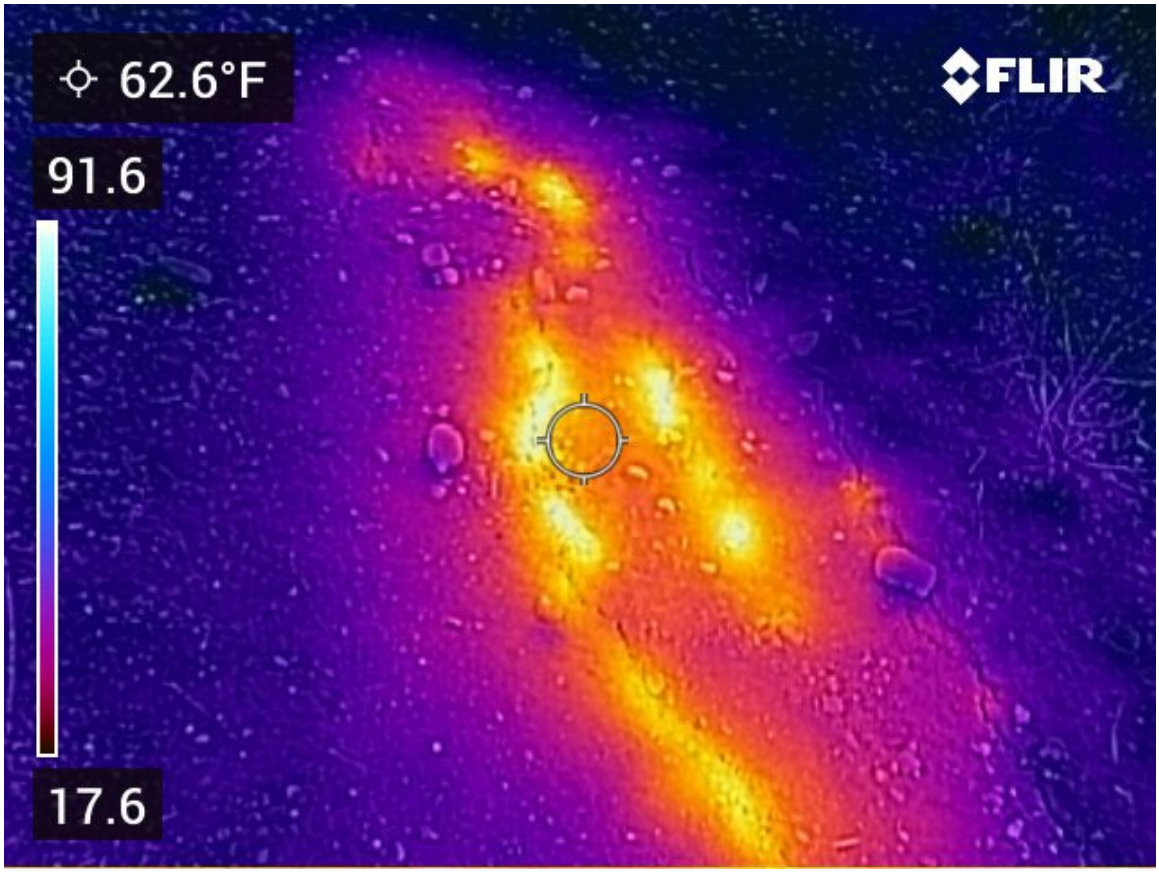

Figure 11: Thermal scan of cracks on upper road.