

Frontier Analysis, Ltd.

TECHNICAL SERVICE RESPONSE NO.: UT013

Subject: Analysis of Residue from an Excised Cow Found 10-2-2000 (Boulder, Colorado)

Date: July 9, 2001

Requested By: W. C. Levensood
Pinelandia Biophysical Lab.
Grass Lake, MI

Reported By: P. A. Budinger
Analytical Scientist

Objective/Background:

The background on this mutilation event can be found in a letter dated October 6, 2000 by Louise Ashby who investigated the case. This is included in the appendix along with a site drawing. The object of this analysis is to identify dark substances observed on bovine feces found under a mutilated cow and nearby grass. Of particular interest is whether the dark substance is pure bovine hemoglobin, which has been found in two other animal mutilation events¹.

Conclusions:

The residues found on the feces and grass are definitely blood derived. However, it does not appear to be whole blood. Some components seem to be missing, e.g. lipids and other unidentified components. It is highly likely that the material is primarily the hemoglobin component of blood, but this could not be positively confirmed by infrared analysis. The residue could not be isolated adequately enough from the feces, grass, and dirt minerals for a more definitive examination. These materials produce additional subtle absorption in a pertinent spectral region which differentiates whole blood from hemoglobin. The lack of some whole blood components would indicate a processing of blood has occurred.

¹ See Frontier Analysis T.S.R. Nos.: 005 & 012.

Procedure:

Samples: Two samples were submitted with the following identification.

- KS-05-46 Bovine feces with dark red residue found under the mutilated cow, Site #1, sampled 10-4-2000 by L. Ashby, Eldorado Canyon Colorado.
- KS-05-46 Vial of residue on grass from site #1, sample A2.

References:

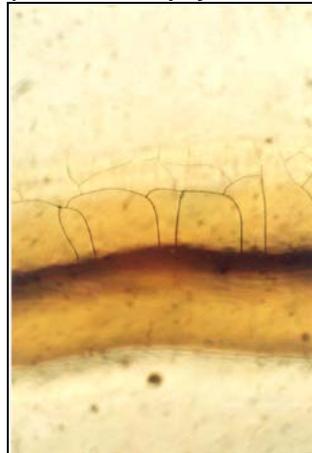
- Hemoglobin (Hb) Bovine Lyophilized Powder Sigma Cat, No. H-2500
- Whole Bovine Blood, exposed to weathering for nine days on chamois. (June 12 through June 23, 2001)
- Whole Bovine Blood, exposed to weathering for nine days in a small aluminum pan. (June 12 through June 23, 2001)

Numerous infrared spectra were obtained from the dark residues on the feces and the grass, as well as references of hemoglobin and whole bloods, using the Harrick SplitPea™ cell attached to a Nicolet Avatar 360 spectrometer. The ATR crystal used was silicon. Microscope photographs reproduced in this report were obtained by Dr. Levengood's Biophysical Pinelandia Laboratory and this laboratory. The photographs at this laboratory were taken using the Leika GZ6 stereomicroscope interfaced to a Kodak digital Science MDS 120 camera.

Results:

Two microphotographs obtained by Dr. Levengood follow. They were obtained at 450X. The first shows tension cracks after 24 hours hydration then dehydration. The second shows non-mixing of the material with feces.

**Residue Related to Colorado Mutilation
Shows Tension Cracks
(Pinlandia Biophysical Lab.)**

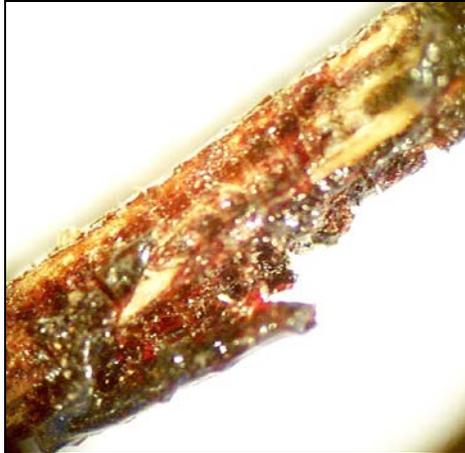


**Same Sample as Above Photo
Shows Non-mixing of Residue with Feces**
(Pinlandia Biophysical Lab.)



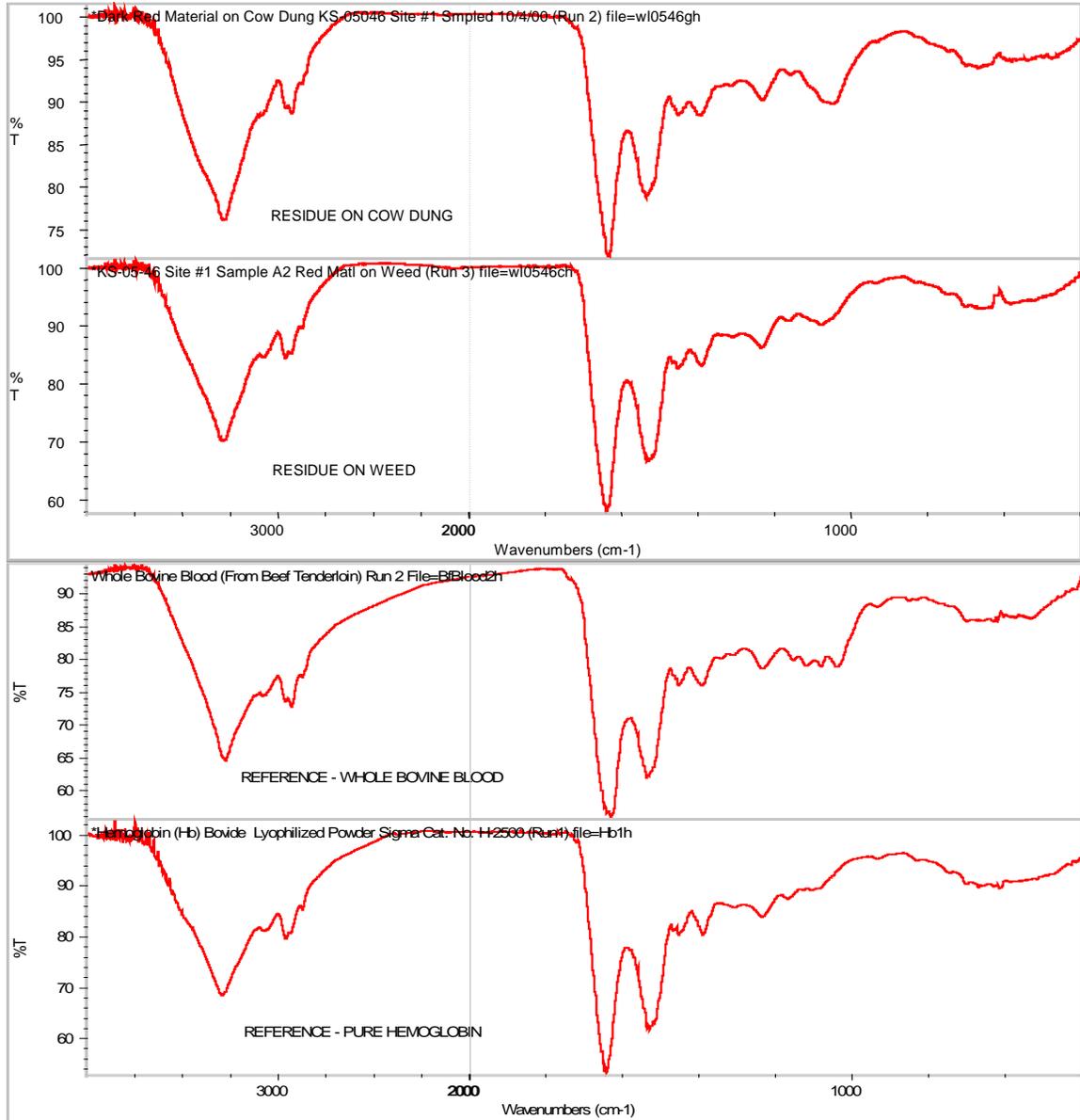
The last photograph was taken by this laboratory at 60X. It shows the coating of the substance as found on grass.

Photo of Dark Substance on Grass
(Frontier Analysis, Ltd.)



Infrared spectroscopy of both dark residues shows major absorption patterns typical of protein amide materials. The spectra indicate they are composed of bovine blood derived component(s), however they do not confirm whether it is the pure hemoglobin constituent of blood which has been found in at least two other mutilation events. This is because there is additional subtle absorption between $1200 - 1000 \text{ cm}^{-1}$, a region which differentiates whole blood from hemoglobin. The additional absorption, which masks this pertinent information, is from feces, grass impurities, and dirt minerals. Following are the best

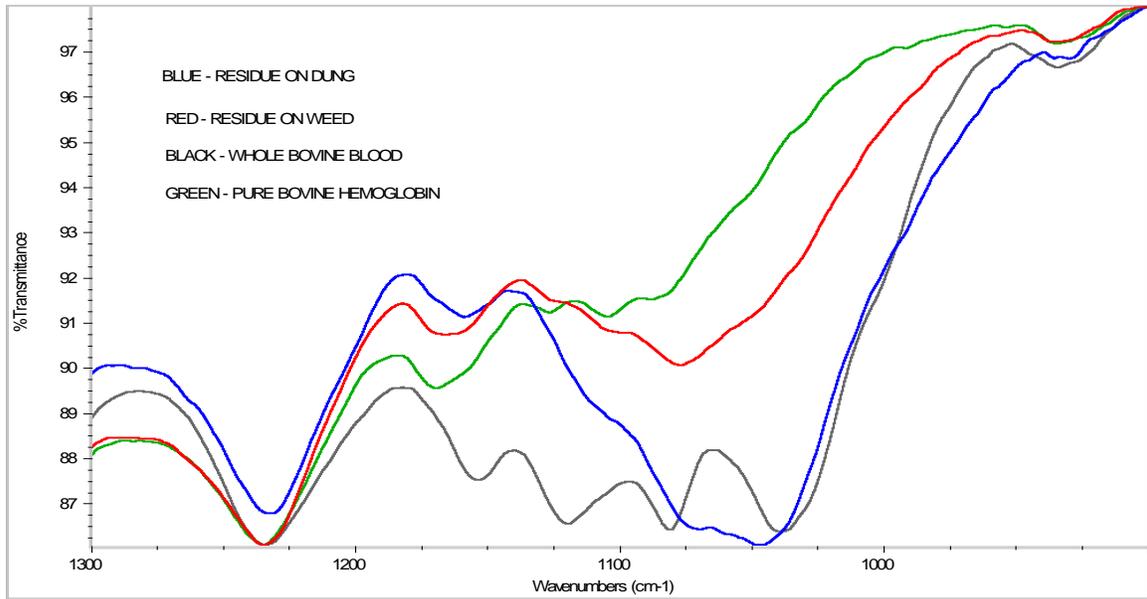
representative spectra of the dark substances found on the feces and grass², and references of whole bovine blood and hemoglobin for comparison. Note the differences in the 1200 - 1000 cm^{-1} region for all four samples.



Following are partial, expanded spectra between 1300 - 900 cm^{-1} of the residues and whole blood and hemoglobin, which more clearly shows the differences. Looking closely at these data, it is noted that the interference of feces, grass, and dirt minerals in the residue display additional absorption between 1100 - 1000 cm^{-1} . However, it is also obvious that when the residue spectra are compared to whole blood absorption, there are both missing bands and less absorption noted

² Several runs were done on the dark substances from each sample.

between 1180 - 1100 cm^{-1} . This indicates some whole blood constituents, other than hemoglobin, are not present, e.g. lipids and unidentified others. This suggests separation of the blood components has occurred. The data do indicate a high probability that this residue is primarily hemoglobin.



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Phyllis A. Budinger

APPENDIX

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October 6, 2000

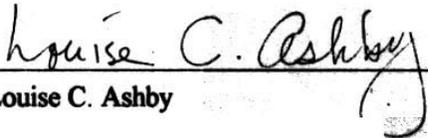
To Whom It May Concern:

I have been a certified Field Investigator Trainee with Colorado MUFON since 1996. On October 2, 2000 I was hiking with my daughter, Gina C. Crago, who is a licensed psychotherapist, on City of Boulder Open Space, along the Doudy Draw and Community Ditch Trail, just off Eldorado Springs Road , 9 miles south of Boulder, CO. We discovered a dead full-grown, tan colored heifer with mutilations to the snout and jaw which consisted of hard-edged, cookie-cutter type excisions of the hide and flesh down to the bone. The tongue was missing entirely. There was no damage to the rear end and no signs of predator attacks, with the single exception that the visible eye (the right) had been pecked apparently by birds. The cow was in full rigor mortis with its legs sticking out straight. There was no odor.

We hailed a man on a bicycle leading a dog, and he came across the Ditch to look at the body. He agreed that the tongue was entirely missing. We didn't get his name, but the dog's name was Sam Adams!

On October 4, 2000 I returned to the site with a MUFON team consisting of James F. Nelson, Fred Sorenson, Tygh Simpson, and myself, and we found the animal had been removed. Where it had lain was a very distinct 12-ft. diameter circle of swirled and flattened grass. We took soil samples and samples of anomalies consisting of dark stains on grass and seed pods, and flattened cow pats that had apparently been under the animal. We checked for compass perturbations throughout the area, but there were none. The site and the sampling process was photographed by James Nelson and videotaped by Tygh Simpson.

On October 6th, I talked on the phone to a Boulder Open Space Ranger named Bryon Tommy, who said the owner of the cattle that graze on that land is named Hank Hogan. I relayed the name and the address and phone number shown in the phone book to James Nelson, who said he would contact the owner.


Louise C. Ashby