
ANALYTICAL RESEARCH DIVISION
RESEARCH DIRECTORATE

21 August 1984

Analysis/Evaluation of Black Liquid

A shipment designated 10027 C(4), also identified with TH830513-40DL, was received by the Analytical Research Division from FSTC 3 June 1983. The shipment consisted of a slightly viscous black liquid containerized in a 4 ounce wide mouth screw top glass jar, (fig. 1). No information was available concerning the sample.


A vapor sample withdrawn from within the glass jar was subjected to analysis by gas chromatography/mass spectrometry (GC/MS). One portion of the liquid was extracted with chloroform, another portion was extracted with 1:1 methanol:water. The solvent soluble materials were analyzed by GC/MS, ion chromatography (IC) and thin layer chromatography (TLC). The liquid was subjected to wet chemical analysis and pH determination.

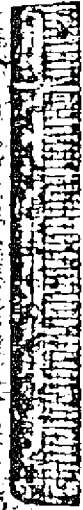
The GC/MS analysis of the vapor associated with the liquid identified the presence of aliphatic hydrocarbons, heptane, toluene, butyl acetate and possibly methyl silicone. The GC/MS analysis of the chloroform extract was not definitive. IC separations indicated heavy concentrations of a salt, possibly sulfate. No separation of components was obtained by TLC. Derivatization with negative ion chemical ionization detection for trichothecenes was negative. The pH of the neat liquid was determined to be less than 1, indicating a strong acid. Wet chemical methods quantitated the sulfate present as 1.28 g/ml of the neat liquid.

Conclusion

No evidence of any known CW agent, agent degradation product or trichothecene was detected. The high concentration of sulfates, evidence of strong acid and the carbonaceous appearance of the liquid suggest concentrated sulfuric acid was used to destroy an organic substance. Only solvent and lubricant structures were identifiable from the original substance.

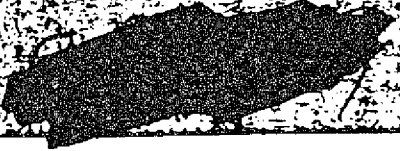
Classified by: CIA



Declassify: OADR



100270000

Figure 1



ANALYTICAL REQUEST AND RESULTS			
TO: (Requester, please fill in name and address)  <i>bx 3</i>			DATE
			PHONE NO.
FROM: Analytical Branch, Research Division, Chemical Systems Laboratory (DRDAR-CLB-R)			
ANALYSIS OF (Structure or further description IF UNCLASSIFIED on reverse side): <i>Indefinite Sample</i>			
SAMPLE NO. <i>10027C(4) (NEST)</i>			
TOXIC	NON TOXIC	MOL. WT.	EMP. FORM.
DETERMINE: <i>sulphate</i>			
RESULTS AS FOLLOWS BY: <i>SO₄, grams/ml = 1.28 g/ml of sample</i> <i>Method - diluted 1ml of sample to 100, filtered and determined as sulfate on filtrate as BaSO₄.</i>			
CHIEF, ANALYTICAL BRANCH			DATE

DRDAR-CL FORM 819, 1 Apr 79 replaces SAREA FORM 52 1 Mar 75 which is obsolete