

PROJECT 10073 RECORD CARD

1. DATE 1 Jun 64		2. LOCATION Paducah, Kentucky		12. CONCLUSIONS ☐ Was Balloon ☐ Probably Balloon ☐ Possibly Balloon ☐ Was Aircraft ☐ Probably Aircraft ☐ Possibly Aircraft ☐ Was Astronomical ☐ Probably Astronomical ☐ Possibly Astronomical ☒ Other Plastic Container ☐ Insufficient Data for Evaluation ☐ Unknown	
3. DATE-TIME GROUP Local _____ GMT n/a		4. TYPE OF OBSERVATION ☒ Ground-Visual ☐ Ground-Radar ☐ Air-Visual ☐ Air-Intercept Radar			
5. PHOTOS ☐ Yes Phys Spec ☒ No		6. SOURCE civilian			
7. LENGTH OF OBSERVATION n/a		8. NUMBER OF OBJECTS one		9. COURSE found on ground	
10. BRIEF SUMMARY OF SIGHTING Object found in yard.				11. COMMENTS Object sent to PWS for analysis. Obj was melted bottle or container composed of plastic which had collapsed upon itself due to heat. Had contained deisel fuel and was wrapped in burlap cloth at one time. No indication as to how obj arrived in yard. Impossible for specimen o have had space residence due to its composition. Slight radioactivity considered normal	

microscopic examination. This preparation when viewed by transmitted illumination was found to consist of sand-grains covered with a carbonized coating.

The greenish object was sawed in half and the cross section appeared to be made up entirely of green polystyrene except for a few black carbonized streaks which appeared to be the same as the carbonized material on the outer portion. No cloth was apparent within the cross section.

Infrared Analyses

A chloroform extract was obtained from the dirt for infrared absorption analysis. The black extract was found to contain a long-chain aliphatic hydrocarbon plus some aromatics. More aromatic absorption was found in this extract than normally occurs in most motor fuels. The spectrum appeared more likely to be that of a fuel oil.

The greenish-appearing material, which made up most of the object, was analyzed by infrared absorption techniques and found to be polystyrene.

Black material scraped from the surface of the object was found to be sand plus clay plus hydrocarbon (probably the same as found in the surrounding earth) by infrared analysis.

Analyses of fibers from the object by infrared absorption methods gave mainly absorption bands for SiO_2 (probably from the sand) plus traces of polystyrene and traces of hydrocarbon. The woven fibers gave other bands which appear in the right wavelength region to be caused probably by cellulose.

Emission Spectrographic Analyses

The data for qualitative emission spectrographic analyses of various portions of the unidentified object and surrounding earth are given in Table I. The portions analyzed are identified as follows:

- (1) Earth from jar
- (2) Chloroform extract of earth from jar
- (3) Sandy material from object
- (4) Chain-link cloth from object
- (5) Straight fiber from object
- (6) Green plastic from outside surface of object
- (7) Green plastic material from inside surface of object (sectioned surface)
- (8) Sample from black streak on sectioned surface.

An indication of the relative amount of each element present in the samples is given by H, M, L, T, or -- standing for high, medium, low, trace, or none found, respectively. The results must be tempered from sample to sample because of differences in sample weights. The samples of earth and plastic were large being of the order of 1 to 10 milligrams whereas the other samples were small being of the order of fractions of a milligram. No unusual amounts nor contents of elements were found for the samples analyzed -- i.e., the findings were in accord with that of a sand-encrusted plastic object and sandy earth saturated with oil. No indication of the cause of the green color in the plastic

TABLE I

EMISSION SPECTROGRAPHIC DATA FOR UNIDENTIFIED OBJECTS
AND SURROUNDING EARTH

Location	Elements Detected															
	Ba	Si	Fe	Mn	Mg	Pb	Al	Ni	Cu	V	Na	Ti	Zn	Zr	Ca	Cr
1. Earth from jar	T	H	L	L	L+	L	M	T	L	T	L	M	L	L	M	T
2. Chloroform extract of earth from jar	--	T	T	--	T	T	T	--	L	--	--	--	--	--	L	--
3. Sandy material from object	T	H	L	L	L	T	M	T	L	T	L	M	L	L	M	T
4. Chain-link cloth from object	T	L	T	T	L	--	L	--	--	--	--	T	--	--	M	--
5. Straight fiber from object	--	L	T	T	L	--	L	--	T	--	--	T	--	--	L	--
6. Green plastic from outside surface of object	--	L	T	T	L	--	L	--	--	--	--	L	--	--	L	--
7. Green plastic from inside surface of object (sectioned surface)	--	--	--	--	T	--	--	--	--	--	--	T	--	--	T	--
8. Sample from black streak on sectioned surface	--	T	T	--	L	--	--	--	--	--	--	--	--	--	T	--

was found either by emission spectrographic or by infrared absorption analyses. Small amounts of green dye are commonly added to plastics for coloring and would not be detected ordinarily by infrared techniques at these low concentrations.

Radioactivity Check

A check for radioactivity of the sample, measured with a survey meter, showed little if any radiation above the normal background level.

CONCLUSIONS

Based on the above described examinations and data our conclusions are that the sample is a piece of green-colored polystyrene plastic of the inexpensive type commonly used for toys, tile, etc. Since (1) polystyrene objects are not commonly reinforced with cloth, (2) the charred cloth was apparent only on one side of the object, (3) the odor and infrared data on the surrounding earth indicate that it was probably saturated with fuel oil, and (4) the plastic was apparently hot enough to have been molten, it is believed likely that this is merely a plastic object which has been covered with a cotton cloth saturated with fuel oil and burned at a high enough temperature to cause the plastic to become molten. It is not likely that the object entered from outside the atmosphere since the melting point of polystyrene is low and the object would very likely have burned completely upon entering the earth's atmosphere.

This case contains 3, 4"x3"
photos, 3, 5"x7" photos and
4 ~~photos~~, 3"x3½" negatives.

FOREIGN TECHNOLOGY DIVISION, AFSC

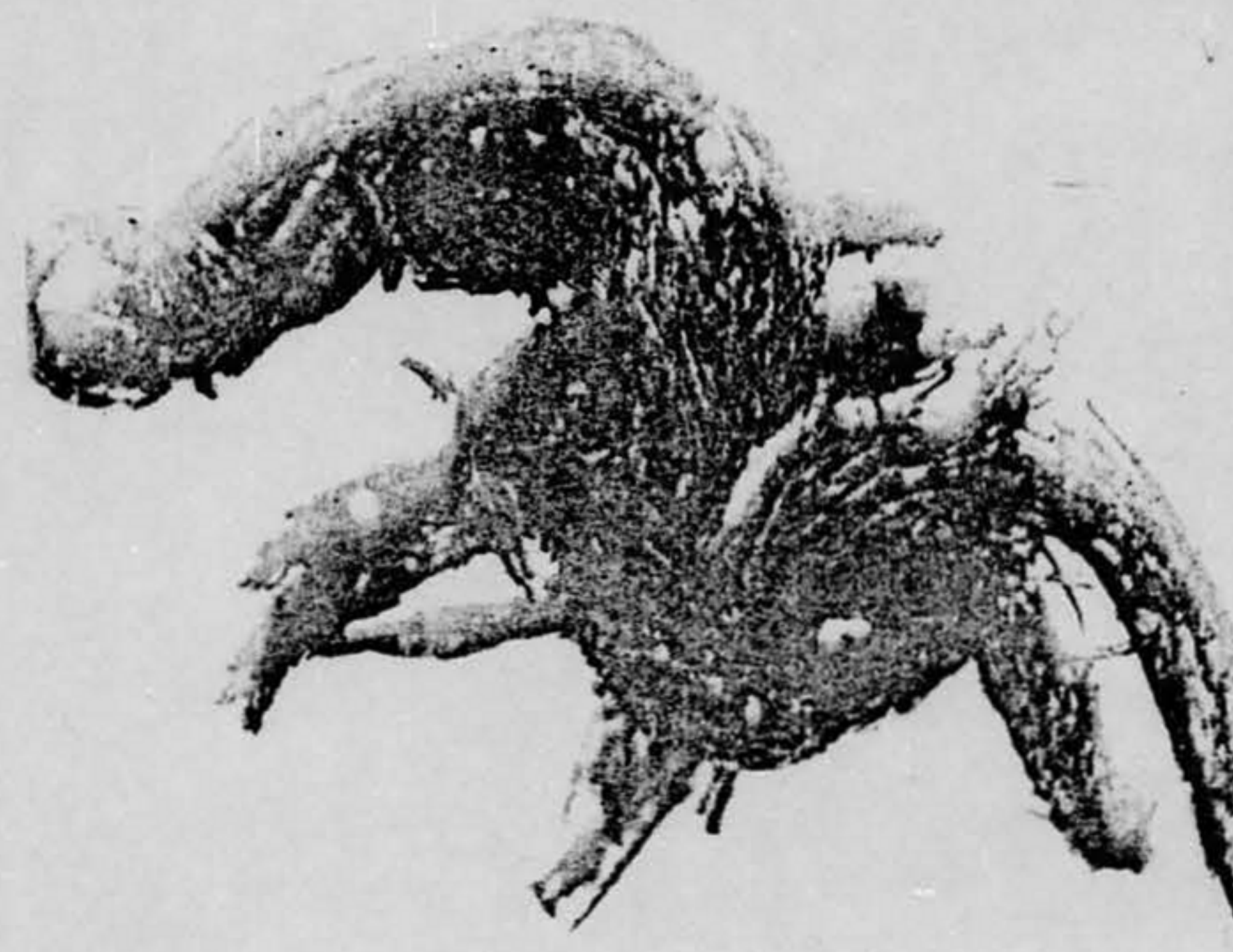
UNCLASSIFIED



Magnification 184X

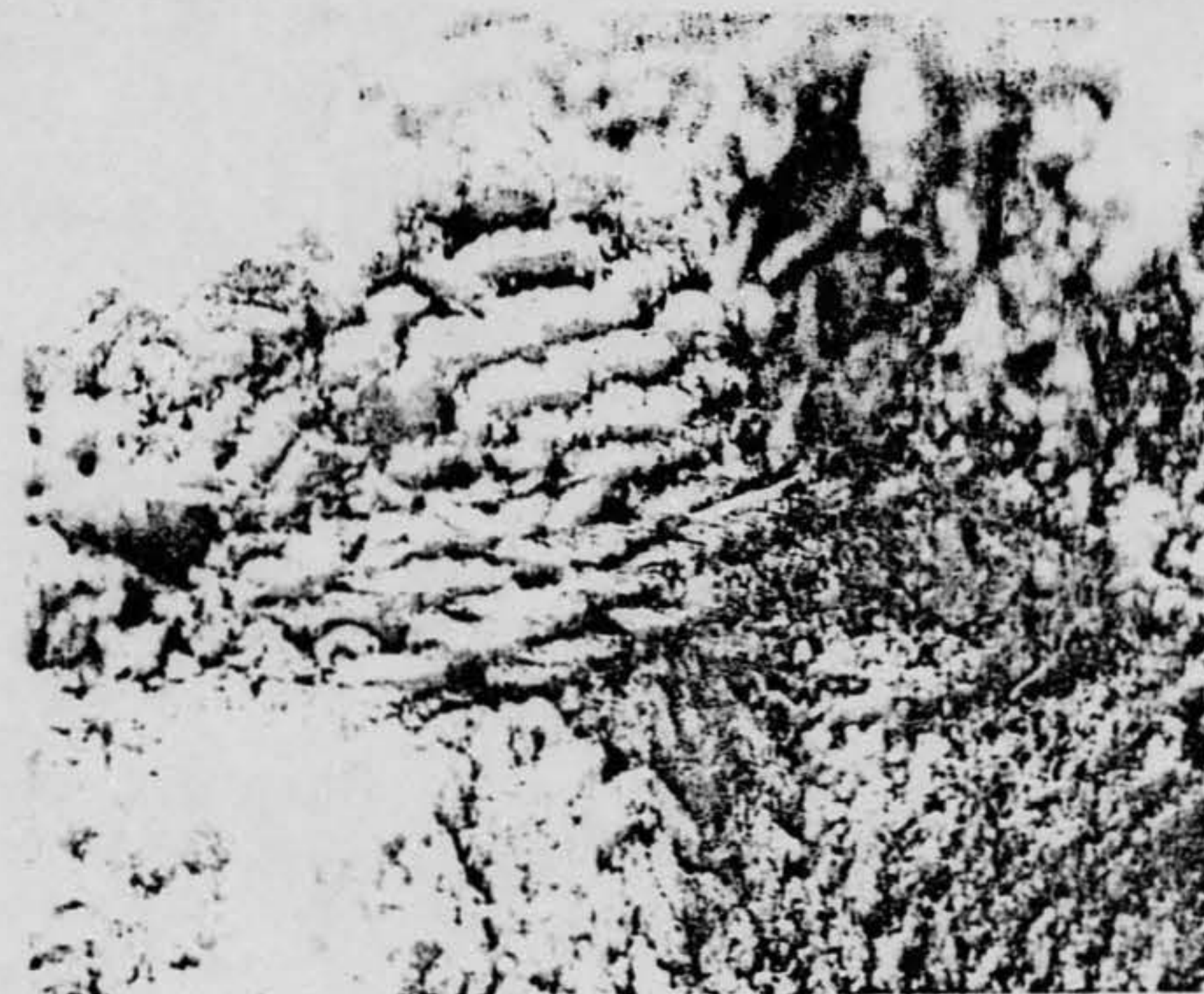
Fig. 3 Cotton Fibers From a Thread of the Cloth

UNCLASSIFIED



Magnification 65X

Fig. 2 A Photomicrograph of Three Links Removed
From the Fragile Cloth.



Magnification 10X

Fig. 1 A Photomicrograph of the Cloth
in the Plastic.

1 JUN 64

IDEW

Analysis of Physical Specimen

6 August 1964

SSgt Richard A. Maner
Paducah Air Force Recruiting Office 214-11
Room M-12
Post Office Building
Paducah, Kentucky

OFFICIAL FILE COPY

1. The object which Mrs. [REDACTED] turned over to you on Monday, 1 June, has been analyzed by our office. A copy of this report is attached. You may inform Mrs. [REDACTED] of the results of our findings and also notify the news media at Paducah, which expressed interest in this object. No portion of the sample is being returned since the object itself was consumed in the analysis. Essentially the results of the analysis are carried on page 8 of the Attachment 1. The object was a plastic container of some sort which had been covered with a cotton cloth saturated with fuel oil and burned at a temperature sufficient to cause the plastic to become molten. While we are able to identify the object, we offer no explanation as to why the object was in her backyard.

2. While this particular object did not have a space residue, you are to be commended for your action in insuring that the Air Force did obtain an object of potential scientific value.

FOR THE COMMANDER

ERIC T. de JONCKHEERE
Colonel, USAF
Deputy for Technology and Subsystems

1 Atch
Analysis Report (2 Cys)

Paducah Air Force Recruiting
Office 214-11, Room M-12, Post
Office Building, Phone 442-2426
Paducah, Kentucky

Mrs. [REDACTED], Route #2 West Paducah, Kentucky, found this object in her back yard Monday 1 June 1964. She said she heard something fall in the yard about 5PM Saturday. She never thought anything about it until she found this object Monday.

I looked at the area and also took some of the dirt. It burned an area about 4" in diameter.

SSgt Richard A. Mauer

Memo for Record:

8 June 1964. Object turned over to Mr F.G. Jacobs for analysis. Will take to FWS and ..

Preliminary Report on Plastic Sample - "Moon Dust"

Specimen is of polystyrene. Green color is ordinary and normal.
Is of a low-melting point type.

Appears to be a shaped object (container for liquids) which, on
being burned, has collapsed on itself.

Has burned by, or contained when burned, heavy fuel oil,
heavier than kerosene.

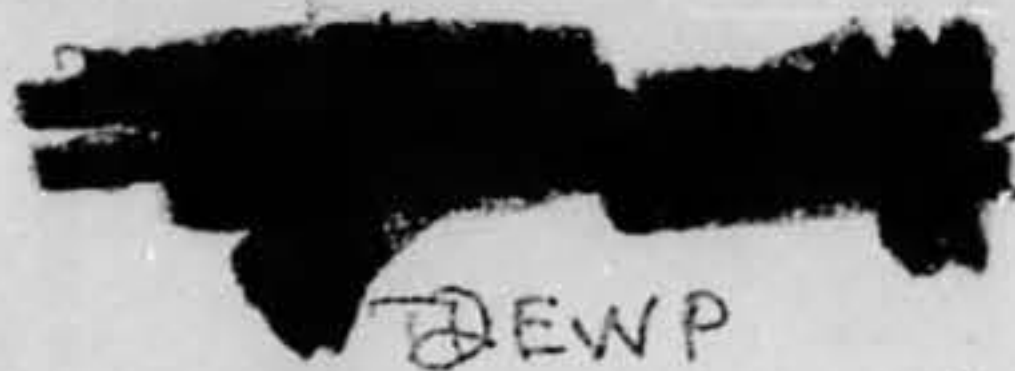
There are some adhering fibers, probably from grass or weeds
present in fire location.

Soil inclusions are mostly sand (siliceous). This would be the
case if the fire was hot enough to burn out the organic
matter present in ordinary earth and/or top soil.

Radiation level is quite ordinary.

Suggested: Specimen was a bottle shaped plastic container that
was used to contain a heavy oil, and was, for some reason,
subjected to burning.

Written report will follow.



DEWP

67310

6 July

HEADQUARTERS
FOREIGN TECHNOLOGY DIVISION
AIR FORCE SYSTEMS COMMAND
UNITED STATES AIR FORCE
WRIGHT-PATTERSON AIR FORCE BASE, OHIO



REPLY TO
ATTN OF: TDEWP/F. Jacocks

SUBJECT: Transmittal of Report

24 July 1964

TO: TDEW (Capt Quintanilla)

1. Reference is made to the plastic sample supplied by TDEW to TDEWP with request for examination and analysis on or about 20 June 1964.
2. PWS has completed the requested examination and has submitted a report of the complete findings.
3. Subject report is herewith transmitted for retention by your office.

Mark I. Knapp
MARK I. KNAPP *mgw*
Chief,
Producibility Division

EXAMINATION OF SAMPLES

The greenish object and the samples of earth and grass which surrounded it were examined microscopically and analyzed by emission spectrographic and infrared absorption methods. The data for these analyses and observations are given in this report. The objects and the results have been discussed with plastic and petroleum specialists and our observations and conclusions are included in the latter part of this report.

EXPERIMENTAL

Microscopic and Visual Examinations

Examinations of the greenish object visually and microscopically revealed that probably it had been charred and distorted by having been heated to a molten state. One side was covered with sand and plant debris; the latter appeared to be mostly grass roots. This side also displayed some partly exposed embedded cloth. The other side was primarily greenish-plastic in appearance. Emphasis, in the microscopical examination, was placed on the identification of the charred cloth, since this appeared to be an unusual finding. It was found to be a cotton cloth having a chain-link type knit. Photomicrographs were taken of: (1) the cloth in the plastic; (2) three links of the knit removed from the cloth embedded in the plastic; and (3) fibers from a thread of the cloth. These are included as Figures 1, 2, and 3, respectively.

A specimen of the dirt, collected from the reported 8-inch diameter area encompassing the greenish-object, was embedded in epoxy and a thin-section was prepared by mineralogical polishing techniques for



Magnification 10X

Fig. 1 A Photomicrograph of the Cloth
in the Plastic.



Magnification 65X

Fig. 2 A Photomicrograph of Three Links Removed
From the Fragile Cloth.



Magnification 184X

Fig. 3 Cotton Fibers From a Thread of the Cloth