

**FMPC ENVIRONMENTAL MONITORING ANNUAL  
REPORT 1959**

**05/01/60**

**NLO/AEC  
7  
REPORT**

**REPORT LIBRARY**

G-000-0010

G-000-106.1

**PROPERTY OF  
U.S. DEPT. OF ENERGY  
REFERENCE MATERIAL**

**DO NOT REMOVE**

**FMPC ENVIRONMENTAL MONITORING**

**ANNUAL REPORT**

**1959**

**May 1, 1960**

**By**

**Health & Safety Division  
NATIONAL LEAD COMPANY OF OHIO  
Feed Materials Production Center  
P. O. Box 158  
Cincinnati 39, Ohio**

**Contract No. AT(30-1)-1156**

10

The Atomic Energy Commission (AEC) has recently released figures compiled for the year 1959 at their Feed Materials Production Center (FMPC) which indicate that the control of environmental levels of radioactivity at this site are well within the maximum permissible concentrations (MPC's) as listed by the National Committee on Radiation Protection and the State of Ohio. This site, located in the northwestern part of Hamilton County, near Fernald, Ohio, is operated under prime contract to the AEC by the National Lead Company of Ohio (NLO).

Table I shows the results of samples taken to determine the effect of the site's liquid wastes upon the Great Miami River into which all of the plant's liquid effluents pass. The location of the sampling points are shown on Map A. This table indicates that the liquid wastes as discharged by this plant were at all times well within the maximum permissible concentrations for uranium, total radioactivity, chlorides, fluorides and nitrates. Two methods of measuring the FMPC contribution to the Great Miami River are employed and the results obtained from the two methods compare with each other quite favorably. This is shown by the figures in lines B and C-A in Table I. The results of the monitoring of liquid effluents which are carried out at this site have been reported to the Ohio Department of Health monthly since 1954. Routine samples from the Great Miami River are taken jointly

by a State engineer and an NLO Industrial Hygienist. As an additional cooperative effort between the NLO and the Ohio Department of Health, samples are exchanged in order that each group can evaluate each other's analytical procedures.

Table I shows the high, low, and average concentrations of the various contaminants as well as the percentage of the maximum permissible concentration of each at the individual sample locations. It can be noted that at no time did the quantity of any contaminant in the Great Miami River exceed the maximum permissible concentration.

Air monitoring by the NLO Health and Safety personnel indicates that materials released to the air from the operations at this site are negligible. Air samples and gumpapers from fallout stations are collected around the 1000-acre plant site and at points as far away as 10 miles. Table II summarizes the air dust samples taken at the perimeter of the production area, from 1200 feet to 3400 feet within the confines of the AEC-owned property. The sample locations are shown on Map B along with a general layout of the FMPC. The results indicate that even well within the area owned and controlled by the AEC that the concentrations average only 5% of the maximum permissible concentration for uranium and less than 1% of the maximum permissible concentration for total radioactivity.

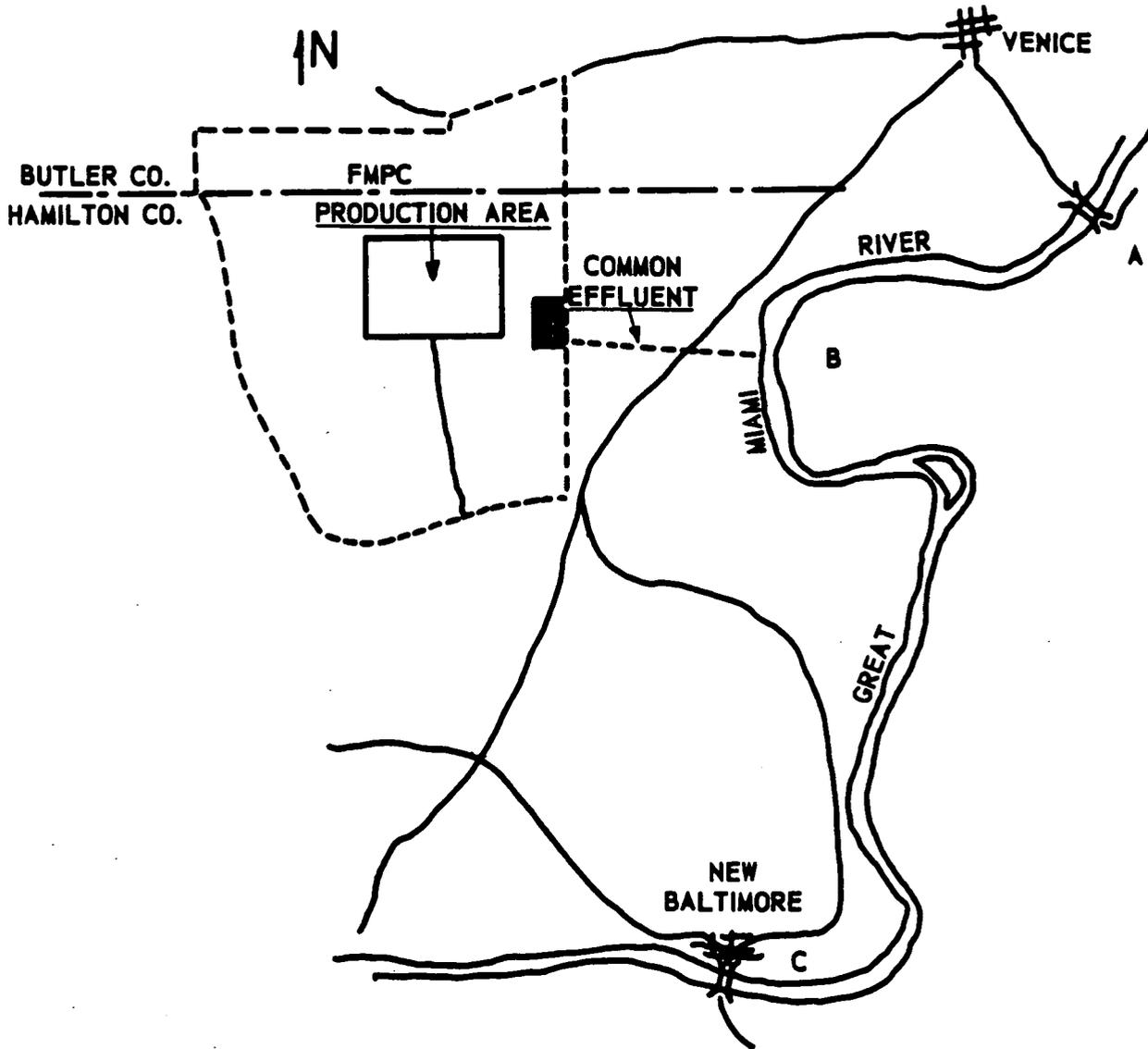


TABLE II

<u>Location</u> (See Map B)	<u>No. of</u> <u>Samples</u>	<u>Uranium (X10<sup>-12</sup> μc/cc)</u>			<u>Total Activity (X10<sup>-10</sup> μc/cc)</u>		
		<u>HIGH</u>	<u>Low</u>	<u>Ave</u>	<u>HIGH</u>	<u>Low</u>	<u>Ave</u>
SW	13	.385	.024	.131	.021	.002	.0087
NW	8	.205	.043	.108	.016	.001	.0084
NE	19	.265	.028	.115	.022	.001	.0078
SE	18	.134	.007	.060	.015	.0005	.0060
Plant Average	NA*	NA	NA	.104	NA	NA	.0077
MPC		2 X 10 <sup>-12</sup> μc/cc			10 <sup>-10</sup> μc/cc		

\*NA - Not Applicable  
μc/cc - Microcuries per cubic centimeter

FERNALD FMPC AND SURROUNDINGS  
MAP A



# FERNALD FMPC AND SURROUNDINGS

## MAP B

