PRELIMINARY SURVEY OF SYLVANIA-CORNING NUCLEAR CORPORATION METALLURGICAL LABORATORY BAYSIDE, NEW YORK

Work performed
by the
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Oak Ridge National Laboratory
Oak Ridge, Tennessee 37830

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Formerly Utilized Sites--
Remedial Action Program

B-148

SYLVANIA-CORNING NUCLEAR CORPORATION
METALLURGICAL LABORATORY
BAYSIDE, NEW YORK

At the request of the Department of Energy (DOE), a preliminary survey was performed at the former Sylvania-Corning Nuclear Corporation in Bayside, New York (see Fig. 1), on November 29, 1977, to assess the radiological status of those facilities utilized under Atomic Energy Commission (AEC) contract during the 1950s. This property is currently utilized by the National Bank of North America. Sidney Klotz, Assistant Vice President, National Bank of North America, provided information about the site and arranged for approval of the preliminary survey of the site. From information currently available, contract work was performed by Sylvania-Corning Nuclear Corporation at the Bayside Metallurgical Laboratory located at this site. Work apparently involved uranium pipe cutting using an abrasive cutoff technique and the production of UO_2 wafers using a pulverization and pressing technique. There are also indications that a later project involved work with thorium.

Present Use of Facilities

The site on which the laboratory was located was estimated to be about 28 acres and is currently owned by the National Bank of North America. All facilities, except for a garage and boiler house (see Figs. 2, 3, and 4), have been demolished. Presently, the site is not being used. No information is currently available as to the radiological status of the facilities when the project terminated or to the present location of structural materials or equipment associated with the project.

Results of Preliminary Survey

The preliminary survey was conducted by H. W. Dickson of the Oak Ridge National Laboratory and W. T. Thornton of the DOE/Oak Ridge Operations Office. A survey of the area was performed which consisted of gamma-ray exposure rate measurements made at a height of 1 m above the surface and beta-gamma dose-rate measurements 1 cm above the surface. Additionally, two soil samples were obtained from the site (see Fig. 5).

External gamma exposure rate ranged from 6 to 8 μR/hr (1-m height) at all locations surveyed on site. Open-window Geiger-Mueller survey meter readings at 1 cm above the ground were approximately 0.03 to 0.05 mrad/hr. Two surface soil samples were obtained at this site. The locations of these two samples are shown in Fig. 5, and radionuclide concentrations are listed in Table 1.

All radiation measurements taken during this survey were within typical background levels for this region in New York. Some effort should be made to determine the present location of equipment and building rubble. Also, operational records should be sought to determine whether any waste material was disposed on the site.

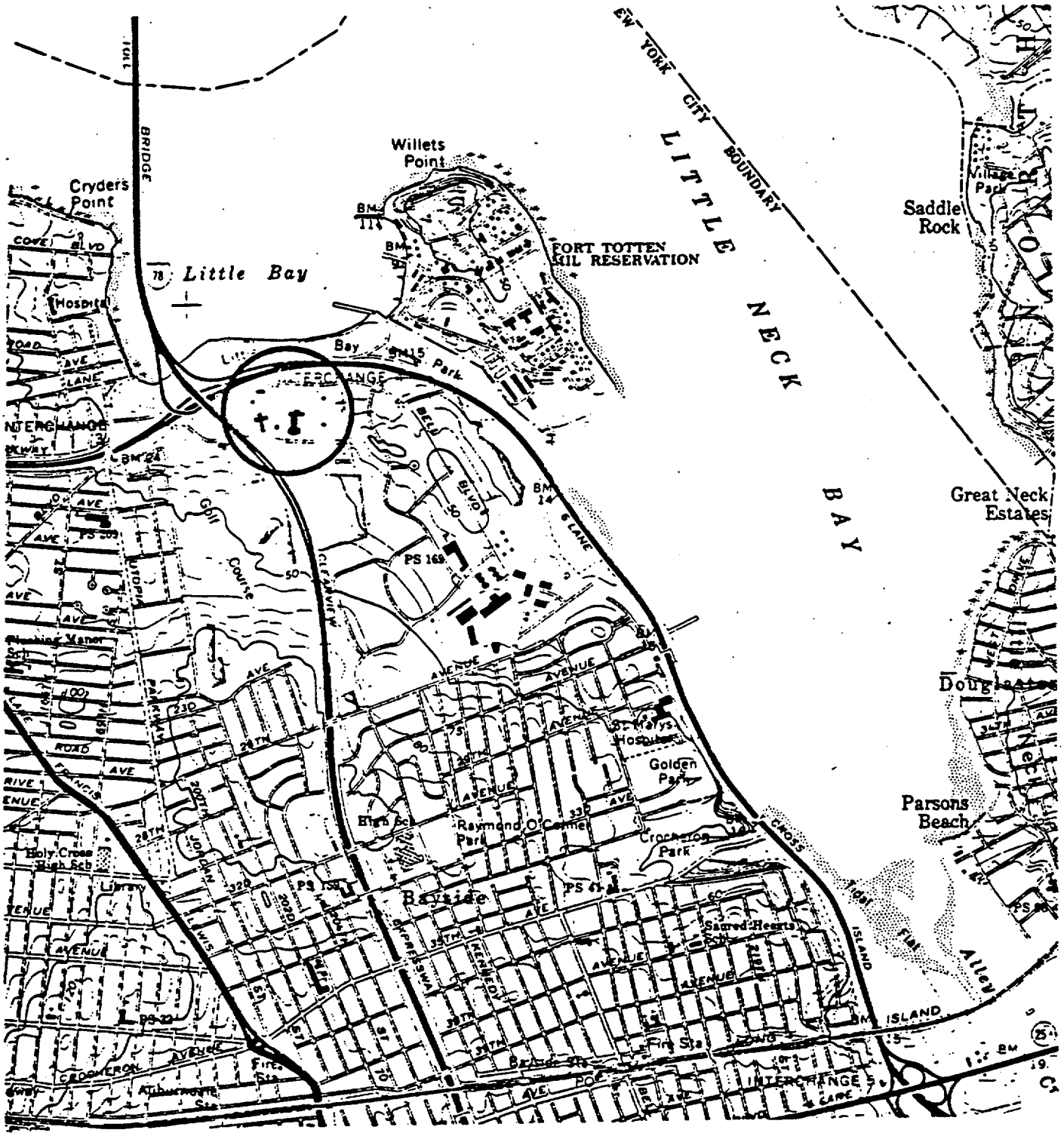
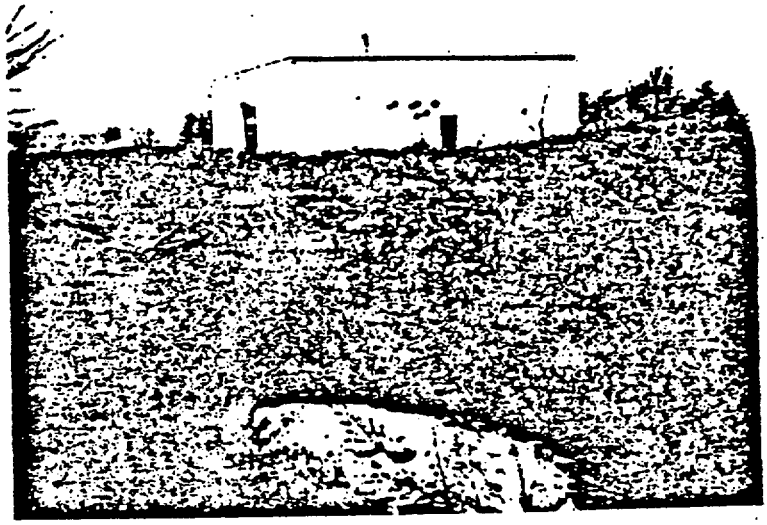


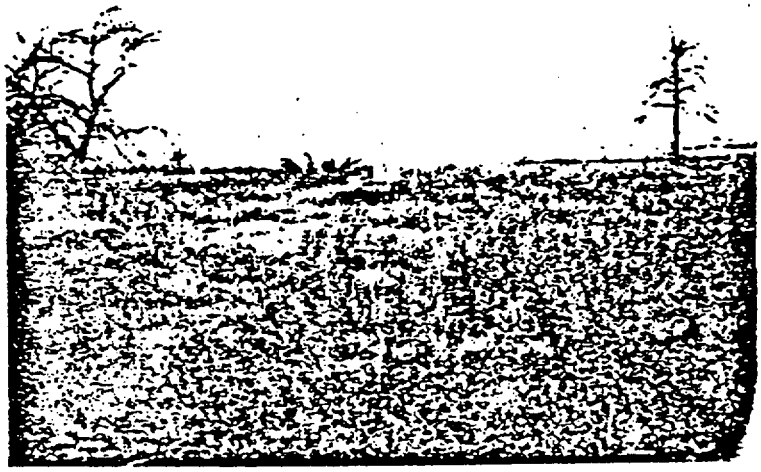
Fig. 1. Location of the former Sylvania-Corning Nuclear Corporation Metallurgical Laboratory in Bayside, New York.



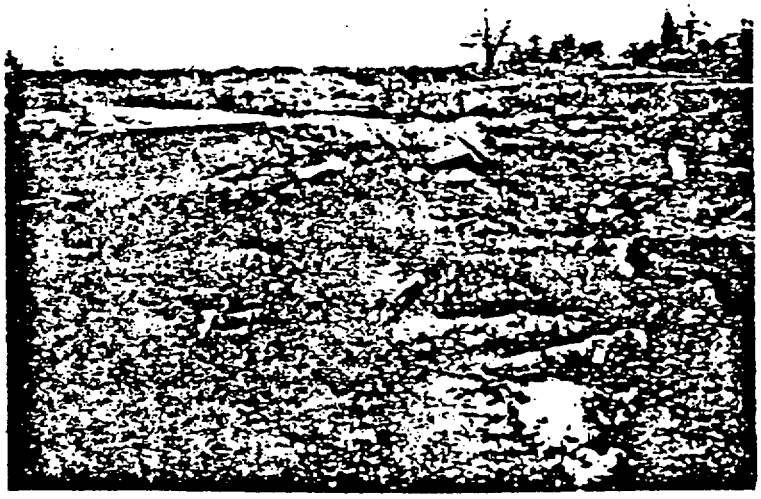
Boiler house

Garage

Fig. 2. Photographs showing boiler house and garage viewed from center of property.



North end



Possible site of process building

Fig. 4. Photographs showing north end of property and probable site of process building near center of property.

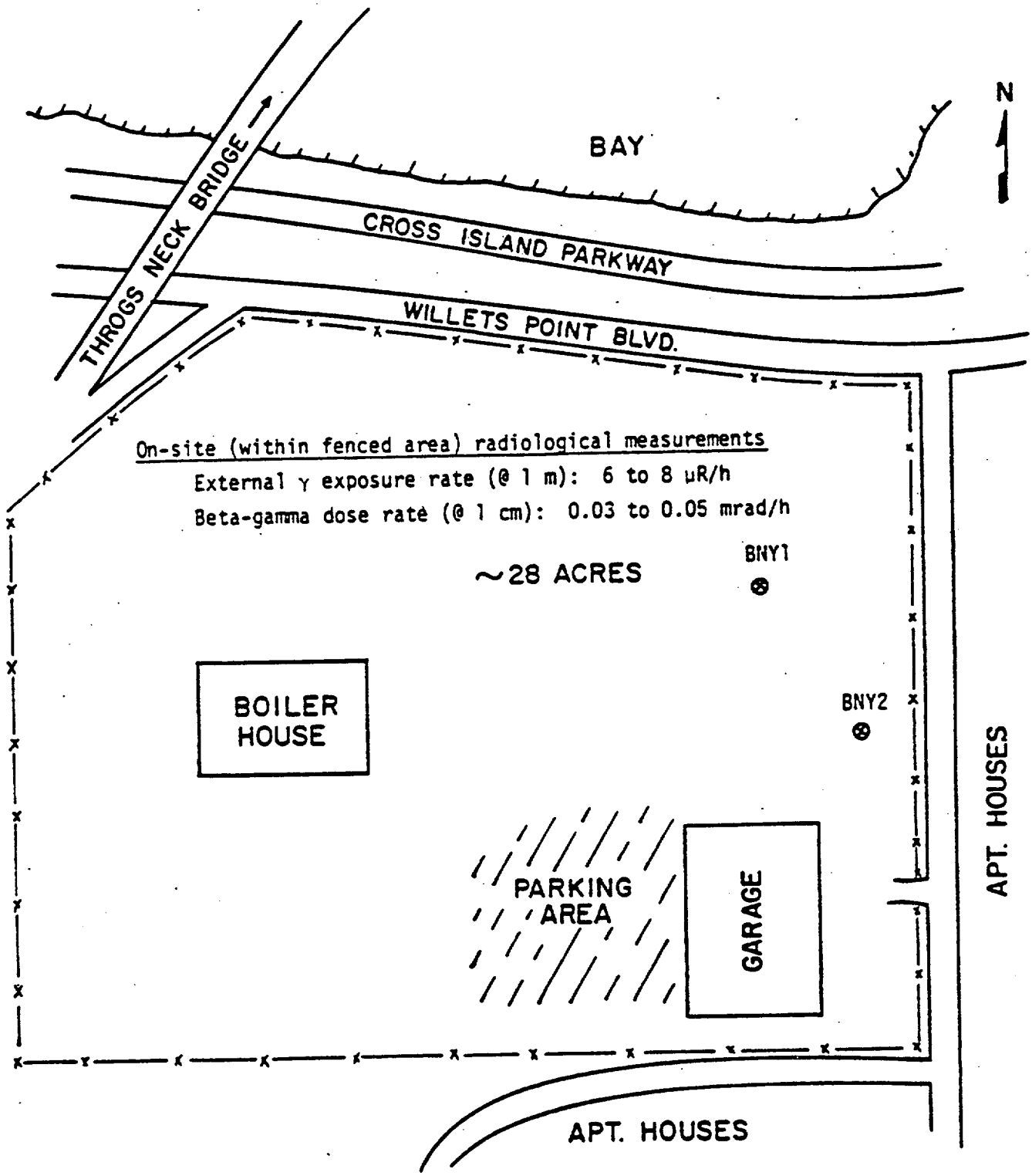


Fig. 5. Facilities surveyed at the former Sylvania-Corning Nuclear Corporation Metallurgical Laboratory in Bayside, New York. Location of soil samples are identified on diagram.

Table 1. Concentrations of ^{238}U, ^{226}Ra, and ^{232}Th in soil samples obtained from the former Sylvania-Corning Nuclear Corporation site, New York

Sample[a]	Radionuclide concentrations (pCi/g)[b]		
	^{238}U	^{226}Ra	^{232}Th
BNY1	0.99	0.84 (0.07)	0.92 (0.08)
BNY2	1.1	1.1 (0.05)	1.1 (0.06)

[a]Locations of samples are shown in Fig. 5.

[b]Indicated errors associated with these concentrations are two sigma (95% confidence).