



HEALTH PHYSICS inc.

2986 Industrial Blvd. • Box 197 • Bethel Park, Pa. 15102 • Phone 412 • 563-2242

17 Park Avenue • East Greenbush, N.Y. 12061 • Phone 518 • 477-7974

*AAAR*

*Lawrence Beuzel*

May 3, 1979

Mr. Nathan Bassin  
License Management Branch  
Division of Fuel Cycle and Material Safety  
U.S. Nuclear Regulatory Commission  
Washington D.C. 20555

Dear Mr. Bassin,

Your letter of April 11, 1979, to Mr. Alfred J. Zabrowski, Vice President, KBI, has been referred to me for reply.

This letter states: "There is a reference to a sludge dump area." We are at a loss to identify any mention of "sludge" containing source materials disposed of at the facility discussed in my letter and survey report to you dated March 27, 1979. The disposal site was licensed (see References 1 & 2) and used exclusively for disposal of slag containing source materials. Any reference to "sludge" containing source materials disposed of at this site is totally incorrect.

Attached are maps and drawings (see Figures 1 & 2) indicating the specific locations of the plant formerly occupied by KBI and the slag dump which is now closed. From April 1967 through May 1969, KBI occupied this site and operated an electric arc furnace to extract tantalum from eastern tin slags. This process produced waste slag that was dumped over a steep embankment that had been used for many years as a slag dump when American Chain and Cable Company operated a foundry at this location. Attached is a copy of the authorization KBI received from the owners of the property permitting disposal of this material (Reference 3).

KBI waste slag was often dumped while still molten or in the form of "skulls" that were about two feet thick and four feet in diameter, and weighing several tons. This waste is a black glass-like material closely resembling obsidian. It contains approximately 0.16% natural thorium plus about 0.04% natural uranium. About 600 tons of waste slag were dumped over the embankment during the two years of operations, containing approximately 1.8 tons of source materials.

When these operations were terminated in 1969, the unused tin slags (containing about 0.3% thorium and uranium) were either transferred to KBI's Boyertown, PA. plant or shipped to West Germany under NRC Export License XM08437. During the next few years, the entire plant site was monitored, decontaminated to levels that complied with current US-NRC guidelines ("Guidelines for Decontamination of Facilities and Equipment Prior to Release for Unrestricted Use or Termination of License for Byproduct, Source, or Special Nuclear Material"), and resurveyed by me.

Decontamination operations that were carried on during 1977 and 1978 resulted in the production of over 580 tons of soil and other debris that contained an average of 0.51 pCi/gm thorium (natural) and 0.35 pCi/gm uranium (natural) based upon analyses of 293 representative samples. The radioactivity in these materials consisted mostly of the eastern tin slag, which is also an inert black glass-like material similar to the waste slag. The waste materials from the decontamination operations were deposited on top of the other waste slags. During 1979, approximately 500 tons of crushed rock and soil were used to cover the previously deposited materials and the entire area seeded to control erosion.

The total amount of source materials buried on the site is approximately two tons along with at least 2200 tons of non-radioactive solids (rock, soil, debris, etc.) covering. The usual practice of core sampling the dump is impractical if not impossible. The dump site is actually an embankment with a treacherous 70° slope that precludes core drilling which would be meaningless anyway since most of the source materials consist of large skulls and fragments having high density and extreme hardness. Furthermore, the distribution of source materials is by no means homogeneous. However, the waste slags were sampled prior to disposal and our analyses showed average concentrations of 0.16% thorium (natural) and 0.04% (uranium (natural)). Leaching studies were performed which showed from  $0.0 \pm 0.24$  to  $5.0 \pm 0.54$  picocuries per liter of source material in the leachate. I collected a sample of water emanating from beneath the pile during my last survey on April 25, 1979. Results of our analyses of this sample will be forwarded to you.

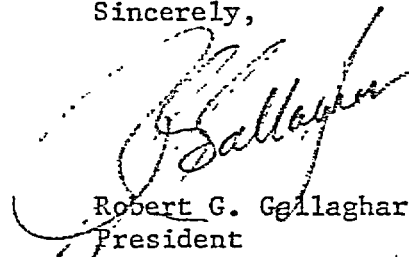
The areas of the plant that were formerly occupied by KBI have been thoroughly monitored using the following instrumentation:

| <u>Radiation Measured</u> | <u>Manufacturer</u>        | <u>Model</u> | <u>Detector</u>               |
|---------------------------|----------------------------|--------------|-------------------------------|
| Alpha                     | Eberline                   | PAC-3G       | gas proportional ion chamber  |
| Beta-Gamma                | Baird-Atomic               | 420          | end-window G-M                |
| Beta-Gamma                | Victoreen                  | 492          | end-window G-M                |
| Gamma                     | Eberline                   | MS-2         | Na-I                          |
| Gamma                     | Health Physics Instruments | 1010         | tissue equivalent ion chamber |

All measurements were made at contact with surfaces. All instruments were calibrated with standards traceable to US-NBS. I have either conducted these surveys myself or personally supervised our health physics technicians as they were performing the surveys. We have monitored every accessible sewer line, exhaust duct, and exterior and interior area of the plant site. There are no areas that we could find that exceeded those indicated in the draft of the guidelines previously referred to above. Therefore, we again request confirmation of this by NRC and state radiological surveys, and authorization for release to unrestricted use.

It is highly unlikely that any future use will be made of the dump site because of its location and topography. The City of Reading plans to construct a bike path along the railroad right-of-way at the base of the embankment at least 100 feet from the site boundary. Attached is a letter from Reading's Bureau of Planning (Reference 4). These and other plans concerning the site must await NRC resolution of our request to delicense this facility. Please let me know if there is anything I can do to help expedite this matter.

Sincerely,



Robert G. Gallagher  
President

Enclosures:  
References 1,2,3, & 4  
Figures 1 & 2

cc: Frank Coyle, KBI  
cc: PA Bureau of Radiological Health

## References

1. US-AEC Amendment No. 1 to License No. SMB-920 dated December 1, 1968.
2. Permit for Burial of Radioactive Materials, Issued by PA Department of Health, March 18, 1968
3. Authorization by First Reading Corp. to KBI for Disposal of Radioactive Slag, October 27, 1967
4. Letter to KBI from City of Reading, Bureau of Planning, April 10, 1979

## Figures

1. Map of Reading PA
2. Site Plan of KBI Slag Dump

DEC 17 1968

COPY TO: JAC



UNITED STATES  
ATOMIC ENERGY COMMISSION  
WASHINGTON, D.C. 20545

F. Coyle

RLE

AZ

J. M. M. M.

DML:DFH

40-6940

SMB-920, Amendment No. 1

DEC 1 1968

Kawecki Berylco Industries, Inc.  
Boyertown, Pennsylvania 19512

Attention: Mr. Robert A. Gustison  
Manager, Chemical Processing

Gentlemen:

Pursuant to applications dated September 25 and October 31, 1968, filed on your behalf by your consultant Mr. Robert G. Gallagher of Applied Health Physics, Incorporated, Items 1 and 10 of AEC Source Material License No. SMB-920 are hereby amended as follows:

"1. Kawecki Berylco Industries, Inc.

"10. Pursuant to the provisions of Section 20.302 of Title 10, Code of Federal Regulations, Part 20, the licensee is hereby authorized to dispose of tin slag residues containing uranium and thorium in accordance with the procedures described in applications, including enclosures thereto, dated March 10, 1967, September 25, 1968 and October 31, 1968, submitted by the licensee's consultant, Applied Health Physics, Incorporated."

All other conditions of this license shall remain the same.

FOR THE ATOMIC ENERGY COMMISSION

*Don F. Harmon*

Don F. Harmon  
Source & Special Nuclear Material  
Branch  
Division of Materials Licensing

# COMMONWEALTH OF PENNSYLVANIA



## DEPARTMENT OF HEALTH

THOMAS W. GEORGES, JR., M.D.  
SECRETARY OF HEALTH

P. O. BOX 90

HARRISBURG 17120

### PERMIT FOR BURIAL OF RADIOACTIVE MATERIALS

Pursuant to the Act of September 8, 1959, P.L. 807, the Department of Health hereby issues a permit to the Kawecki Chemical Company for the disposal by burial in the soil of approximately 105 tons of natural thorium and uranium contained in the slag residue at a site in the Sixth Ward of City of Reading, Berks County, as shown on plans and described in reports accompanying a letter of application dated September 29, 1967 and amended on December 4, 1967, signed by John A. Cenerazzo, Vice President, Operations, Kawecki Chemical Company.

The premises are described as approximately 0.8 acres situated in the City of Reading, Berks County, presently owned by the First Reading Corporation and bounded as follows: On the Northeast by a right-of-way of the Metropolitan Edison Company; on the Southwest by River Road.


This permit is subject to the following special conditions:

- A. The radioactive material transfer and burial operation shall be conducted in accordance with the requirements of Department of Health Rules and Regulations, Chapter 4, Article 433, Regulation for Radiation Protection.
- B. The permittee shall conduct an environmental surveillance program of sufficient scope to insure that the radioactive waste material is adequately confined on the disposal site. Sampling of nearby watercourse for thorium and/or its daughter products shall be included in the surveillance program. Reports on the results of the surveillance program shall be submitted to the Department of Health.
- C. The permittee shall notify the Department of Health in writing at least 60 days prior to any proposed change in occupancy or ownership of the land for which this permit has been issued.
- D. The radioactive material may not be removed from the disposal site without the written consent of the Department of Health.

- E. Future use of the burial area for which this permit is issued shall be dependent upon the effectiveness of cover material in reducing external radiation to acceptable levels.
- F. At the conclusion of the disposal operation, the Kawecki Chemical Company shall apply to the Department of Health for the transfer of this permit to the owner of the disposal site.
- G. This permit shall not be effective until it or a copy thereof is recorded in the Office of the Recorder of Deeds of Berks County, Pennsylvania.

IN WITNESS WHEREOF, I hereunto set my hand and seal of the Department of Health, this 15 day of March, 1968.

PENNSYLVANIA DEPARTMENT OF HEALTH

  
Thomas W. Georges, Jr., M.D.  
Secretary of Health

(SEAL)

FIRST READING CORPORATION

Reference 5

Tulpehocken St. & Lebanon Valley R. R.

Reading, Pa. 19601

OCTOBER 27, 1967

Kawecki Chemical Company  
Tulpehocken St. & Lebanon Valley R.R.  
Reading, Pennsylvania 19601

GENTLEMEN:

THE FIRST READING CORPORATION HEREBY GRANTS  
THE KAWECKI CHEMICAL COMPANY PERMISSION TO  
DUMP SLIGHTLY RADIO-ACTIVE FURNACE SLAG  
CONTAINING APPROXIMATELY 0.3% THORIUM ON THE  
EXISTING SLAG DUMP LOCATED AT KAWECKI'S  
LEASED PLANT, TULPEHOCKEN ROAD & RIVER ROAD,  
READING, PA.

YOURS VERY TRULY,

FIRST READING CORPORATION

  
FRED COHEN

FC/MW



CITY OF READING *Joseph P. Kuzmowski, Mayor*

DEPARTMENT OF PUBLIC AFFAIRS - BUREAU OF PLANNING

**RECEIVED**  
APR 13 1979

APPLIED HEALTH PHYSICS, INC.

April 10, 1979

*copy to:  
GJN  
AIG  
WRG  
R. R. GALLAGHER  
4/11/79*

Mr. Francis T. Coyle  
Corporate Chief Analytical Chemist  
Kawecky Berylco Industries, Inc.  
P.O. Box 567  
Boyertown, PA 19512

Dear Mr. Coyle:

This letter is to acknowledge receipt of the copies of your letters to the N.R.C. and PennDER regarding the decommissioning of the slag dump at Tulpehocken Street and Lebanon Valley Railroad.

When the slag dump is released for unrestricted use by the N.R.C. and PennDER, I would appreciate copies of the letters.

Thank you for your time and cooperation in this matter. If I can be of any help to you, don't hesitate to contact me.

Sincerely,

R. SCOTT EBERLY  
Planning Consultant

cc/Frank X. McGough

APR 11 1979

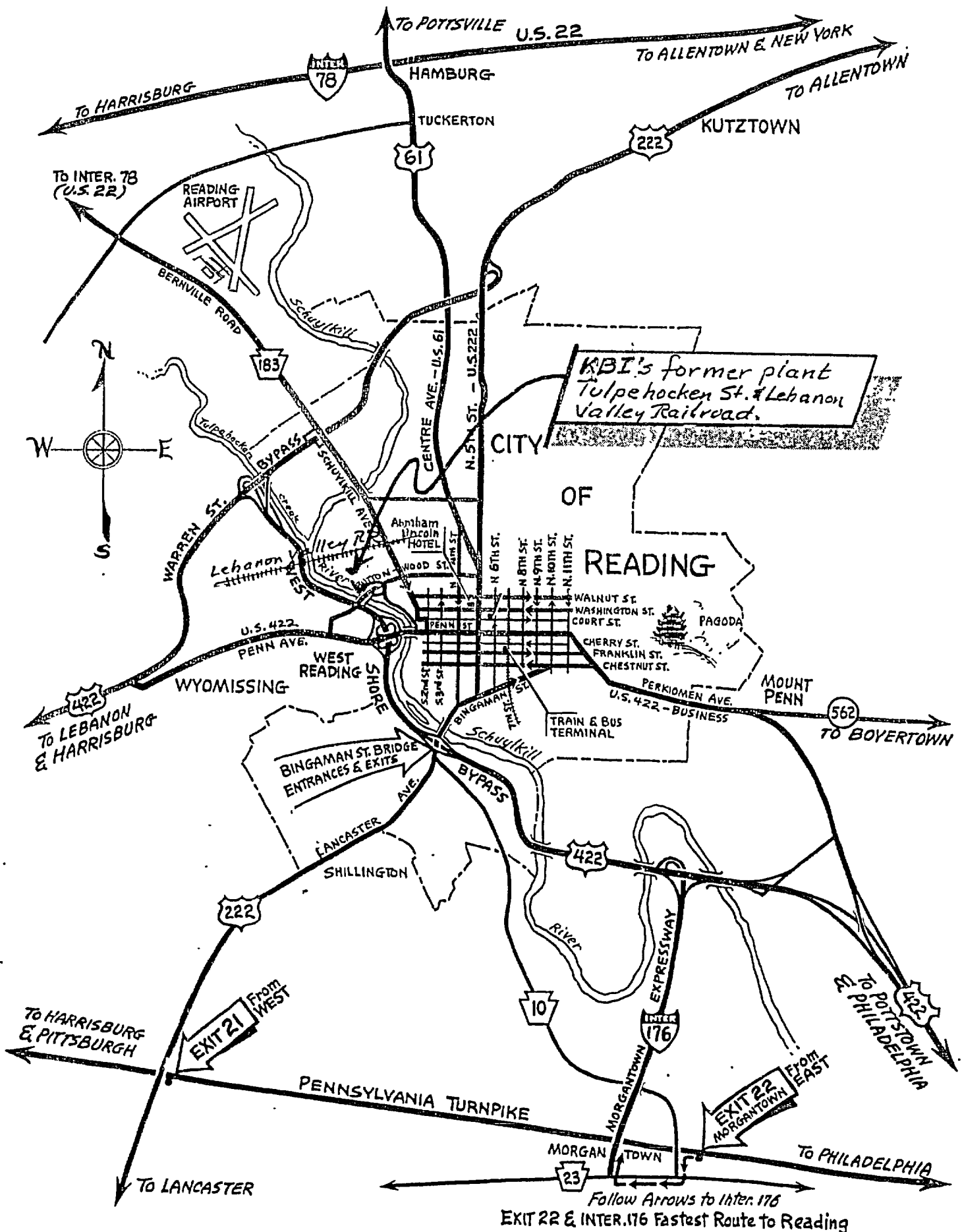
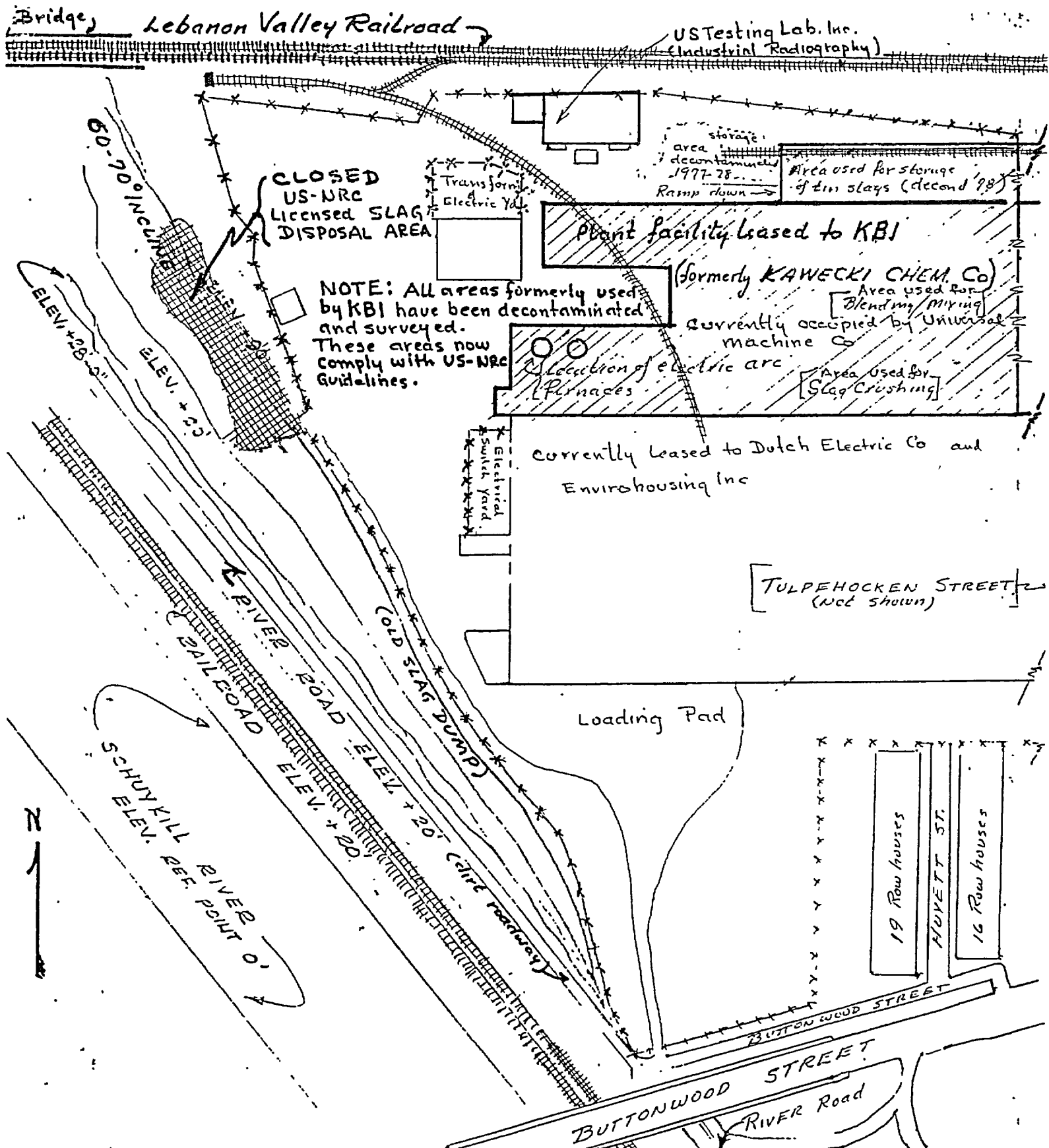


FIGURE 1 MAP OF READING PA Showing Location of KRI's ex. Plant Site



NOTE: All areas formerly used by KBI have been decontaminated and surveyed. These areas now comply with US-NRC Guidelines.

**KAWECKI CHEMICAL CO.**  
BOYERTOWN, PENNSYLVANIA

LIMITS UNLESS OTHERWISE NOTED:  
FRACTIONAL ± 1/64" DECIMAL ± .010" ANGULAR ± 1/2°

THIS DRAWING IS OUR PROPERTY AND MUST BE USED ONLY IN CONNECTION WITH OUR WORK. ALL RIGHTS RESERVED.

|                          |                 |
|--------------------------|-----------------|
| SCALE<br>1" = 40'        | DATE<br>1-13-77 |
| DRAWN<br>E. Correll, Jr. | APPROVED        |
| CHECKED                  |                 |

**FIGURE 2 SITE PLAN of KBI's former Plant site and slag Dump.**

|                |         |
|----------------|---------|
| SHEET NO. 9 OF | REV.    |
| DRAWING NUMBER | 4/24/75 |
| <b>A-1797</b>  |         |