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**CLOSURE PLAN FOR THE FEED MATERIALS  
PRODUCTION CENTER STORAGE PAD NORTH  
OF PLANT 6 JULY 1989 REF: 5465, 5466**

**07/31/89**

**DOE-FMPC/EPA  
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REPORT  
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**CLOSURE PLAN FOR THE  
FEED MATERIALS PRODUCTION CENTER  
STORAGE PAD NORTH OF PLANT 6**

**JULY 1989**

**U. S. Department of Energy  
Feed Materials Production Center  
P. O. Box 398704  
Cincinnati, Ohio 45239-8704**

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## INTRODUCTION

The Feed Materials Production Center (FMPC) is a U. S. Department of Energy (DOE) owned facility operated for the purpose of producing metallic uranium fuel elements, target cores, and other uranium compounds. These materials are used at other DOE facilities in support of the U. S. defense program.

During production operation at the FMPC, hazardous wastes are generated which may contain concentrations of uranium. Therefore, all references to hazardous waste in this closure plan will be assumed to mean hazardous/radioactive (mixed) waste. Only the Resource Conservation and Recovery Act (RCRA) hazardous waste components of mixed waste are covered by this closure plan. The FMPC has identified a hazardous waste storage unit that was operated for the purpose of storing hazardous waste. This unit has been identified in the March 23, 1989, FMPC RCRA Part A permit application as the Storage Pad North of Plant 6.

Since approximately 1950 the FMPC has been responsible for processing enriched residues and metal into billets for other DOE facilities. Plant 6 was built to process uranium and started operation in 1952. Plant 6 currently receives flat ingots from Plant 5 and pickles, inspects, crops, samples, and stages them for inspection. Plant 6 produces waste oils during these operations. The oils are deemed hazardous because of the presence of 1,1,1-trichloroethane and lead. The Storage Pad North of Plant 6 is a flat concrete pad 8 ft. wide by 40 ft. long. Drums (55-gallon) were stored four drums on a pallet, two pallets high, until a lot of forty drums was accumulated for shipment to an onsite RCRA storage location.

The Storage Pad North of Plant 6 is no longer used for waste storage, and in accordance with OAC 3745-55-10 through OAC 3745-55-15, the unit must be closed following the guidelines of a written and approved closure plan. This closure plan is being submitted to the U. S. EPA Region V Administrator and the Ohio EPA to establish the guidelines that will be followed once EPA approval has been granted.

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**I-1 CLOSURE PLAN**

This closure plan for the Storage Pad North of Plant 6 is submitted in accordance with RCRA closure requirements and will be provided as part of the FMPC RCRA Part B Permit Application. RCRA Closure Requirements found in Management of Hazardous Waste, Closure and Post-Closure section of the Ohio Administrative Code require owners/operators of hazardous waste Treatment, Storage, or Disposal (TSD) facilities to have written closure plans for those units. As required, this closure plan identifies the steps to be taken to completely close the Storage Pad North of Plant 6. Copies of this closure plan and any subsequent revisions will be kept at the facility until final closure has been completed and certified in accordance with OAC 3745-55-15. There are 14 hazardous waste TSD units at the FMPC. The units are listed in the FMPC RCRA Part A Permit Application submitted March 23, 1989 and in the FMPC RCRA Part B Permit Application.

This closure plan specifically addresses closure of the Storage Pad North of Plant 6. A copy of this closure plan will be maintained onsite and available for review by U. S. EPA or Ohio EPA.

If an amendment to this closure plan should be required due to any of the reasons listed below:

- o A change in the expected date of closure
- o An unexpected event encountered during closure activities
- o A change in operating plans or facility design

A written request for amendment will be submitted to U. S. EPA and Ohio EPA. Any change in the expected year of closure will be submitted within 60 days of occurrence. Unexpected events occurring during the closure activities will be submitted within 30 days of the occurrence.

**I-1a Closure Performance Standard**

Closure of the Storage Pad North of Plant 6 will be conducted in accordance with performance standards in OAC 3745-66-11. These standards include the following:

- o Minimizing the need for further maintenance by decontaminating the storage pad. In the unlikely event that a portion of the pad cannot be completely decontaminated to levels below allowable limits, that portion will be removed and managed in accordance with applicable requirements. Post-closure maintenance of the pad will not be required since wastes or waste constituents will not remain at the unit.

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- o Controlling, minimizing, or eliminating, to the extent necessary to protect human health and the environment, the escape of hazardous waste, hazardous waste constituents, leachate, contaminated rainfall, or waste decomposition products to the ground or surface waters or to the atmosphere. This will be accomplished by completely decontaminating the pad to levels at or below acceptable limits, containing decontamination rinseates, removing rinseates from the site, and managing the rinseates in accordance with applicable regulations.

**I-1b Partial Closure**

Partial closure involves closure of one a facilities units. This plan addresses the steps to be performed to accomplish complete closure of the pad, which constitutes partial closure of the facility. The entire pad will be closed completely in accordance with RCRA closure requirements.

**I-1c Maximum Waste Inventory**

At the present time, no RCRA wastes are stored at the Storage Pad North of Plant 6. During the time the pad operated, drummed waste oils (hazardous waste codes D008 and F002) were placed on the pad. A lot of 40 drums could be accumulated for transfer to another FMPC RCRA waste management unit. At the time RCRA closure activities begin at this unit, there will be no waste inventory present. If, due to circumstances unforeseen at this time, RCRA wastes are present on the pad at the time closure begins, they will be removed and managed onsite at an FMPC RCRA waste management unit.

**I-1d Inventory Removal, Disposal, or Decontamination of Equipment**

The Storage Pad North of Plant 6 consists of a concrete storage pad 8' wide x 40' long. At present, no RCRA wastes are being stored on the pad and it is expected that none will be stored here at the time of closure. This site was used for temporary storage of RCRA wastes, oils contaminated with lead and 1,1,1-trichloroethane. Forty drums were accumulated on the pad, then moved to another RCRA storage pad onsite.

Based on this information, a potential exists for contamination on the pad from drum leaks, spills, and other transportation-related incidents. In addition, the possibility exists for contamination below the storage pad in the soils, as well.

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If at the time of the closure any wastes exist on the pad, these will be moved to an approved FMPC RCRA storage pad for storage prior to disposal. Since oily wastes are known to have been stored here, the pad will be first be decontaminated with a high pressure water spray. Washwater and rinseate will be collected and containerized for characterization prior to disposal. Containers will be sampled using an approved method of sampling, such as a Coliwasa tube for drums, as required by SW-846. Analyses required will be the F002 solvents and E. P. Toxicity for the eight RCRA metals (D004-D011).

Once the initial cleaning is completed, portions of concrete will be removed to expose the soil below the pad. The portion of concrete removed will be analyzed to determine if F002 organics or RCRA metals are present in the concrete. The area of sample collection and number of samples will be determined using the requirements set forth in SW-846.

All sampling materials will be held until analyses are completed to determine proper disposal. If levels of greater than 1 part per million (ppm) of the F002 solvents are present in the samples or concentration of E. P. Toxic metals exceed the RCRA characteristic limits in OAC 3745-51-24, then additional decontamination will be required. If contamination above the regulatory limits does not exist, further cleaning will not be required. Decontamination, including washing and rinsing will be conducted up to three times to attempt complete decontamination. Otherwise, removal of the concrete will be required to assure proper closure in accordance with the performance standard.

Since the potential for contamination of soils exists, sampling of soils underlying the pad will be required. The area under and surrounding the pad will be sampled using SW-846 for the appropriate number and location of the sampling grids. The soils below the pad will be sampled by boring into the concrete and sampling the underlying materials. Samples will be analyzed for the F002 solvents and the eight RCRA metals (total only). If the sample concentration exceeds the upper limits of the range for Ohio farm soils found in Background Levels of Heavy Metals in Ohio Farm Soils, T. J. Logan and R. H. Miller, 1983 or if the organic concentration exceeds the analytical detection limit specified in SW-846 method 8240 for organic compounds, all affected soils will be removed and managed as a RCRA waste and stored at approved RCRA storage pads or facilities, until hazardous constituents can be evaluated.

If washwaters and rinseate are determined to be non-hazardous, the waste will be disposed of in the FMPC wastewater system. The level of contamination for washwaters and rinseates will be 1 ppm for organics. If levels of organics are detected above 1 ppm, the washwater and rinseate will be handled as hazardous waste.

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A complete sampling plan will be submitted to both U. S. EPA and Ohio EPA after submittal of this closure and in advance of actual closure. The sampling plan will include procedures for sampling and types of analyses.

**I-1d(1) Closure of Containers**

The closure of the Storage Pad north of Plant 6 will require removal of the RCRA wastes as well as any materials stored on the pad, thorough decontamination, wipe sampling of the pad, sampling of the surrounding and underlying soils, and additional removal work as analyses require. Washwater, rinseate, sampling materials, and soils will be analyzed for the F002 solvents and the eight RCRA metals. Any materials proven to be hazardous will be placed in appropriate containers and managed at an FMPC RCRA storage unit to await proper disposal.

**I-1d(2) Closure of Tanks**

This section is not applicable to this closure plan. No tanks are associated with the Storage Pad north of Plant 6.

**I-1d(3) Closure of Waste Piles**

This section is not applicable to this closure plan. No waste piles are associated with the Storage Pad north of Plant 6.

**I-1d(4) Closure of Surface Impoundments**

This section is not applicable to this closure plan. No surface impoundments are associated with the Storage Pad north of Plant 6.

**I-1d(5) Closure of Incinerators**

This section is not applicable to this closure plan. No incinerators are associated with the Storage Pad north of Plant 6.

**I-1d(6) Closure of Land Treatment Facilities**

This section is not applicable to this closure plan. No land treatment facilities are associated with the Storage Pad north of Plant 6.

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**I-1e Closure of Disposal Units**

This section is not applicable to this closure plan. No waste piles, landfills, or surface impoundments will exist as a result of closing the Storage Pad north of Plant 6. However, in the unlikely event that all contamination cannot be removed at closure, this closure plan will be amended to provide for post-closure care.

**I-1f Continuance of Operations**

This section is not applicable to this closure plan. There are no hazardous waste surface impoundments, waste piles, land treatment facilities, or landfills associated with the Storage Pad north of Plant 6. Therefore, monitoring and control of this type of unit does not pertain to this closure plan and will not be addressed in this closure plan.

**I-1g Schedule for Closure**

The expected year of closure for the Plant 6 storage pad depends on when the closure plan approval is received from U. S. EPA and Ohio EPA. It is anticipated that the FMPC will initiate closure of the Storage Pad North of Plant 6 upon receipt of the closure plan approval.

The schedule for closure is provided in Attachment 1 to this closure plan. At this time, it is anticipated that if required, removal of all RCRA hazardous waste can be accomplished within 90 days after receipt of Ohio EPA and U. S. EPA approval of this closure plan. It is also expected that final closure of the pad and closure certification will be completed within the 180 days allowed. Attachment 1 provides approximate milestones for closure; the time required for decontamination of equipment and removal of soils will depend on the extent of contamination found on the equipment and in the soils.

If requested by Ohio EPA, FMPC will contact the facility inspector at least five days in advance of certain critical activities so that the inspector may be present to observe these activities.

**I-1h Extensions for Closure Time**

An extension for closure is required only if the unit will not be completely closed within 180 days of approval of the closure plan by both U. S. and Ohio EPA. The schedule presented in Attachment I indicates that closure is anticipated within this time frame. If additional time will be required to close the unit, the FMPC will make such a request of the EPA Region V Administrator and Ohio EPA.

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If it is anticipated that closure activities will require more than 180 days to complete, FMPC will notify U. S. EPA Region V and Ohio EPA and submit a petition for an extension of the closure time. Unexpected events that might warrant a need for extension in closure time might include inclement weather, delay in laboratory analysis of soils and rinseates, or need for extensive excavation of contaminated soils.

#### **I-1i Certification of Closure**

The FMPC and an independent registered engineer shall submit certification of closure. The certification will follow the wording and signature requirements required in OAC 3745-50-42.

In addition, the Ohio EPA's facility inspector shall be contacted at least five (5) business days in advance of certain critical closure activities. These activities shall be designated as soil sampling or removal and rinsewater sampling.

#### **I-2 POST CLOSURE PLAN**

This section is not applicable to this closure plan. As noted in OAC 3745-55-10 B, post-closure care and a post-closure plan are required only when closing hazardous waste surface impoundment, land treatment units, or landfills. Closure of the Storage Pad north of Plant 6 does not involve any of these types of units.

#### **I-3 NOTICE IN DEED**

A notation in the property deed is required under OAC 3745-55-19 B 1 which involves post-closure care. Post-closure care is required only for hazardous waste disposal facilities, waste piles, and surface impoundments, as noted in OAC 3745-55-10 B. Since post-closure care is not required when closing a container storage pad, a notation will not be made in the FMPC property deed.

#### **I-4 CLOSURE COST ESTIMATE**

This section is not applicable to this closure plan. The FMPC is a federally owned facility. According to OAC 3745-55-40 C, the Federal Government is exempt from Financial Requirements, which includes submittal of a cost estimate for closure.

#### **I-5 FINANCIAL ASSURANCE MECHANISM FOR CLOSURE**

This section is not applicable to this closure plan. The FMPC is a federally owned facility. According to OAC 3745-55-40 C, the federal Government is exempt from Financial Requirements, which includes submittal of a financial assurance mechanism.

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**I-6 POST-CLOSURE COST ESTIMATE**

This section is not applicable to this closure plan. The FMPC is a federally owned facility. According to OAC 3745-55-40 C, the federal government is exempt from Financial Requirements, which includes submittal of a post-closure cost estimate.

**I-7 FINANCIAL ASSURANCE MECHANISM FOR POST-CLOSURE CARE**

This section is not applicable to this closure plan. The FMPC is a federally owned facility. According to OAC 3745-55-40 C, the federal government is exempt from Financial Requirements, which includes submittal of a financial assurance mechanism for post-closure care.

**I-8 LIABILITY REQUIREMENTS**

This section is not applicable to this closure plan. The FMPC is a federally owned facility. According to OAC 3745-55-40 C, the federal government is exempt from Financial Requirements, which includes submitting proof of liability in the event of an accident.

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## ATTACHMENT I

SCHEDULE FOR CLOSURE OF THE  
STORAGE PAD NORTH OF PLANT 6

<u>Action</u>	<u>Cumulative Days to Complete</u>
o Approval of Closure Plan and Sampling Plans by U. S. and Ohio EPA and Initiate Closure	0
o Remove and Store Accumulated Wastes at an FMPC RCRA Storage Location	10
o Decontaminate Pad Structure	30
o Analyze Washwater, Rinseate, and Sampling Materials	60
o Decontaminate Storage Pad as Required after Initial Sampling	80
o Sample Soil Surrounding the Storage Pad and Underlying the Pad	100
o Storage Pad and Soil Removal as Required by Sample Results	120
o Complete Closure Including Certification by an Independent Professional Engineer	180

The time required for decontamination of the storage pad and excavation of soil will depend on the extent of above acceptable levels of RCRA contaminants found on the storage pad and in the soil.



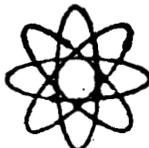


# NLO, Inc.

A SUBSIDIARY OF NL INDUSTRIES, INC.

ENCLOSURE 2

P. O. BOX 39158



CINCINNATI, OHIO 45229

5467

PHONE: AREA CODE: 513-738-1151

MAR 6 1981

Mr. H. D. Hickman, Assistant Manager  
for Defense Programs  
Oak Ridge Operations  
Department of Energy  
P. O. Box E  
Oak Ridge, Tennessee 37830

Dear Mr. Hickman:

## 1980 EFFLUENT AND DISCHARGE REPORT

Ref: Letter, J. P. Hamric to Addressees, "Reporting Requirements For The Effluent Information System/Onsite Discharge Information System (EIS/ODIS)," dated 2/4/81

Enclosed are three copies of forms DOE F-5821.1 submitted as the 1980 Radioactive Effluent and Onsite Discharge Data Report for the Feed Materials Production Center.

Amended forms are included to close out the record of the oil burner and the previous solid waste incinerator. The new incinerator, located in the former calciner building, is identified as new release point 019. An amended form is also included to change the name of the graphite burner location. The location is now called "Pad 74." Previously, it was known as the "oil burner facility."

Revised maps are also enclosed. They show the following changes:

- (a) On map no. 001 the location of the previous incinerator, release point 015, was removed. The amended data sheet being submitted reports the facility ceased operation December, 1979.
- (b) On map no. 002 the location of the new solid waste incinerator is shown as release point 019.
- (c) On map no. 002 the location of the oil burner, release point 016, was removed. Also, the name "Oil Burner Facility" was changed to "Pad 74" to avoid confusion when the new liquid waste incinerator is built at another location. The graphite

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burner, release point 017, is at this pad and will remain in the report system as an active operation. Previously, the graphite burner location was identified as the "oil burner facility." Continued use of this old term might have caused problems when the new liquid waste incinerator starts operation and is included in this report.

The reference letter, received with a batch of revised report forms, requested that a dispersion value be included for each airborne effluent release point. This value would then be used to produce a contaminant concentration at the site boundary. However, for the dispersion value to be used, a release point concentration is needed. At the FMPC, airborne effluents volumes never have been measured-- only the amount of released uranium or thorium is determined and reported in these forms. Therefore, a dispersion factor cannot be used and none are reported in the enclosed forms.

Deriving dispersion factors so that this report system can calculate boundary concentrations seems a waste of time. DOE sites are required to carry out sufficient direct monitoring to obtain boundary data. Results of that direct monitoring are reported in annual environmental reports and provide a far better indication of boundary concentrations than can be obtained from a derived dispersion value and effluent concentration.

Sincerely yours,

Original Signed By  
R. M. SPENCELEY

R. M. Spenceley  
Manager

MRE/vvs

attach.

cc: ~~M.~~ W. Boback  
C. H. Handel - w/c forms  
R. C. Heatherton - w/o forms  
H. D. Hickman - 2x  
W. C. Hill - w/o forms  
V. J. D'Amico

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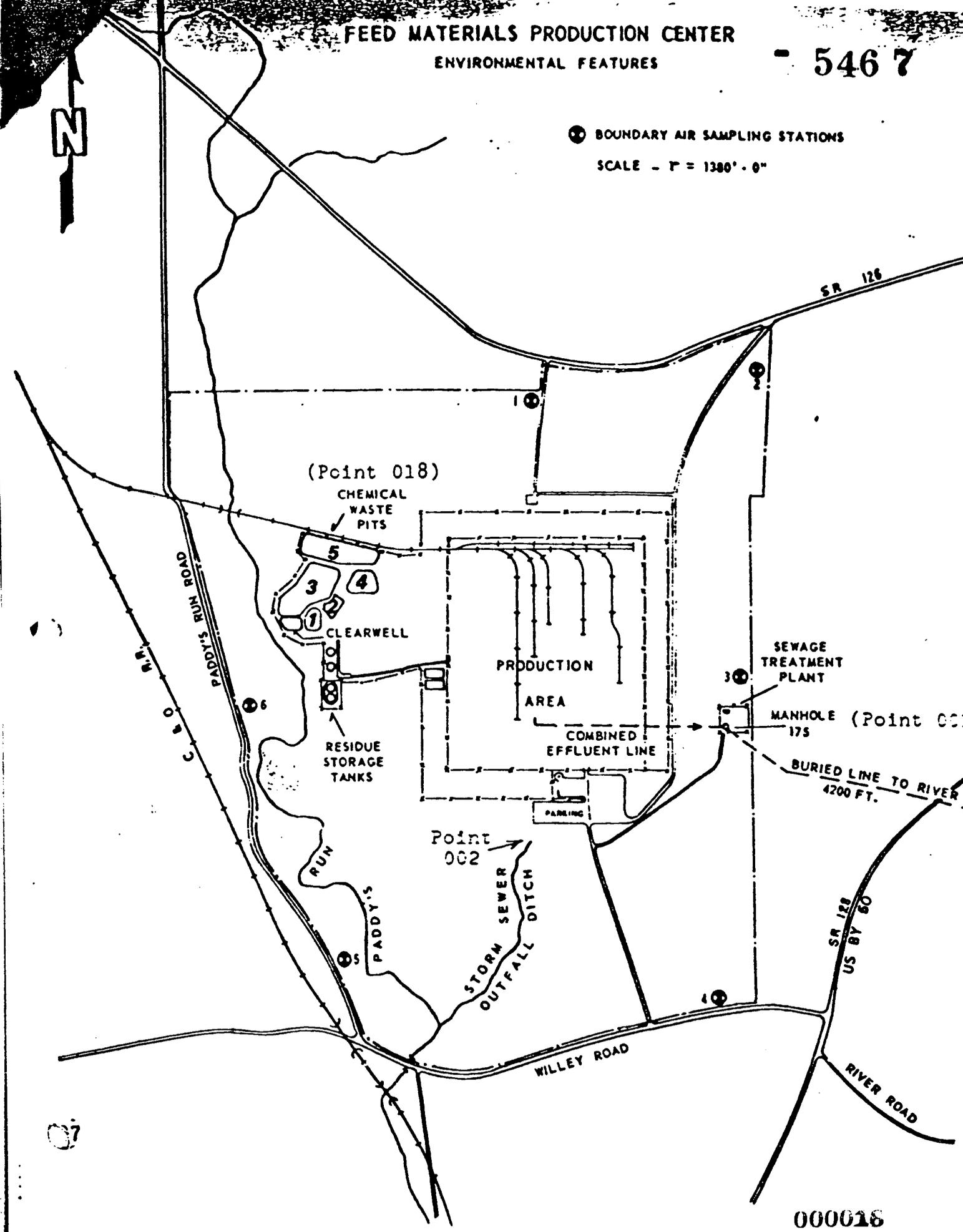
# FEED MATERIALS PRODUCTION CENTER

## ENVIRONMENTAL FEATURES

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● BOUNDARY AIR SAMPLING STATIONS

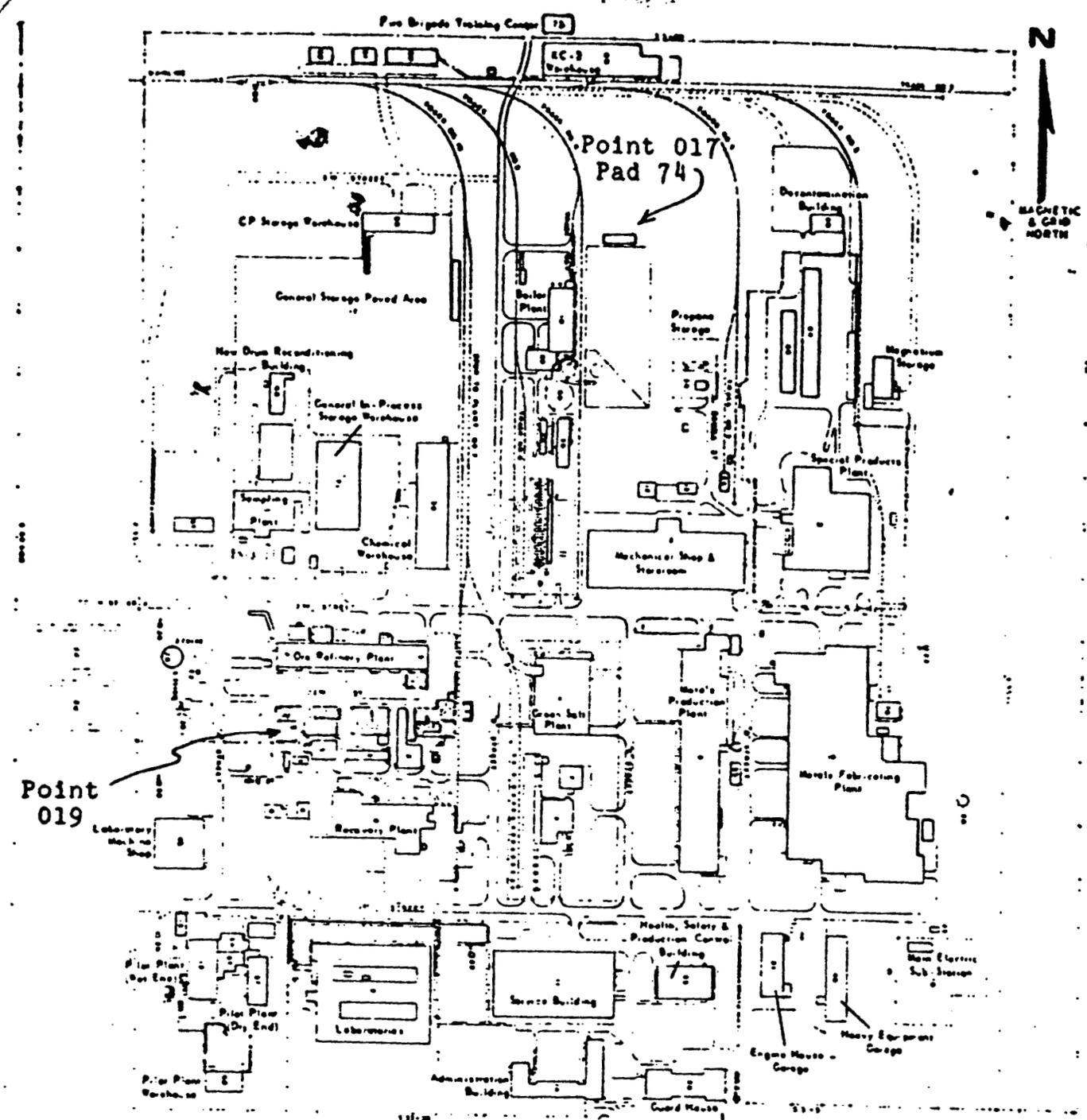
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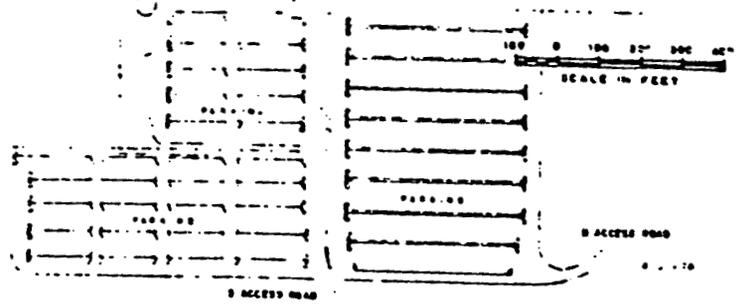
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Map No. 002  
 Airborne Effluent Release Points (Revised 3/3/81)

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Eldg. No. or Title	Point Identity Number
1	003
2/3	004
4	005
6	007
8	008
8	009
9	010
7, 54	011
7	014
ad 74	017
ncin. Bldg.	019



00001

