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Prepped by Ollie Stewart

Document Number:

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Docket Number:

A-97-33

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STATE OF MISSOURI
DEPARTMENT OF NATURAL RESOURCES

Mei Carahan, Governor • David A. Shorr, Director

OFFICE OF THE DIRECTOR

P.O. Box 176 Jefferson City, MO 65102-0176 (314) 751-4422
FAX (314) 751-7627

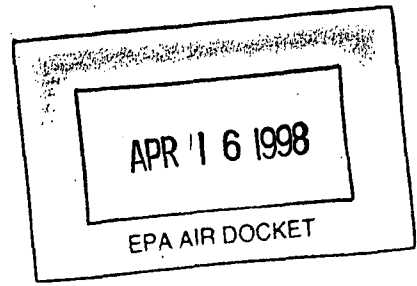
July 2, 1993

RECEIVED

JUL 12 1993

AIR & TOXICS
DIVISION

Mr. William Rice
Acting Regional Administrator
U.S. Environmental Protection Agency
Region VII
726 Minnesota Ave.
Kansas City, KS 66101



Dear Mr. Rice:

The Missouri Air Conservation Commission has adopted a revision to the Missouri State Implementation Plan (SIP) for Lead. We are submitting this revision for U. S. Environmental Protection Agency approval as required under Section 110 of the Clean Air Act as amended November 15, 1990.

This revision pertains to the ambient air in the vicinities of two (2) primary lead smelter-refinery installations and consists of two plans for attainment, one for each smelter vicinity. At present both vicinities are nonattainment areas for lead, with one located at Herculanum in Jefferson County and the other near Buick in Iron County. Both smelters are owned and operated by The Doe Run Company.

Included herewith are the following documents:

- Lead SIP Revision (5 copies) dated May 1993 consisting of:

- Part I - SIP pages 23.12 through 23.31, demonstration of attainment for the Herculanum smelter,
- Part II - pages 31.1 through 31.22, demonstration of attainment for the Buick (Iron County) smelter; and

Mr. William Rice
July 2, 1993
Page Two

Part III - pages i through v, 1 through 1.2, 6.1, 6.3 through 6.6, 11, 12, 15.1, 48, and 49; Appx. F, consent order for Herculanum smelter and consent order for Buick smelter; Appx. G, pages G-8 through G-11 regarding rule amendment to 10 CSR 10-6.120, and also the revision to the Herculanum work practice manual (11 pages).

- Lead SIP References applicable to this SIP revision (*indicates already submitted and not here included)

17. "Evaluation of Lead Emission Controls at the Doe Run Company's Buick Smelter" (near Bixby, Missouri); Fluor Daniel, Inc., June 1991, Volumes (projects) 1/2, 3, 5, 7, 8, and 9.*
18. "Technical Memoranda: Potential Lead Emission Reductions at the Buick Smelter"; The Doe Run Company, February 1993.*
19. "Baseline Modeling of the Buick Lead Smelter Using ISCLT 2 Model for Primary and Secondary Lead Smelter and Modeling Analysis Report Demonstrating the Effects of Potential Lead Emission Reductions at the Doe Run Company's Buick Smelter"; Shell Engineering & Assoc., Inc., June 1993, in two volumes.
20. "Modeling Analysis Report Demonstrating the Effects of Potential Lead Emissions from Current (1993) Lead Producing Conditions at the Doe Run Company's Buick Smelter"; Shell Engineering & Assoc., Inc., June 1993.
21. Smith, C., Technical Report to Doe Run-Buick file on 1993 Buick modeling results; Missouri Department of Natural Resources, Air Pollution Control Program, July 1993.
22. "Technical Memoranda: Potential Lead Emission Reductions at the Herculanum Smelter"; The Doe Run Company, February 1993.
23. 10 CSR 10-6.060 Permits Required (re: CAA Part D).*
24. "RACT Analysis for the Herculanum Smelter"; The Doe Run Company, April 1993.*

Mr. William Rice
July 2, 1993
Page Three

25. "RACT Analysis for the Buick Smelter"; The Doe Run Company, April 1993.*

WORK PRACTICE MANUALS (required in 10 CSR 10-6.120):

26. "Work Practice Manual" for Herculaneum Smelter, January 1991.*
27. "Work Practice Manual" for Buick Smelter, March 1993.

Sent to you under separate cover are the proof of advertising of public hearing in newspapers, DNR notice of public hearing, and the transcript of the public hearing held on April 29, 1993.

If any additional information is required, please advise Cindy Kemper, Director, Air Pollution Control Program.

Very truly yours,

DEPARTMENT OF NATURAL RESOURCES



David A. Shorr
Director

DAS:gcj

Enclosures

P.5
APR 05 1995

MEMORANDUM

SUBJECT: Missouri State Implementation Plan (SIP) Revision for
the Doe Run-Herculaneum Lead Smelter

FROM: William A. Spratlin, Director
Air, RCRA, and Toxics Division

TO: Dennis Grams, P.E.
Regional Administrator

IDENTIFICATION OF ACTION

Attached for your signature is a Federal Register notice which takes final action to approve the Doe Run-Herculaneum lead nonattainment area SIP.

SUMMARY OF ACTION

On June 3, 1986, EPA issued a call for a revision to the Missouri SIP in response to violations of the National Ambient Air Quality Standards (NAAQS) for lead near the Doe Run primary lead smelter in Herculaneum, Missouri (Doe Run-Herculaneum). The state submitted an SIP revision on September 6, 1990, with additional materials submitted on May 8, 1991.

Pursuant to sections 107(d)(1) and (5) of the Clean Air Act (CAA), as amended, EPA promulgated a nonattainment designation for the area in the vicinity of Doe Run-Herculaneum. The designation was published on November 6, 1991 (56 FR 56694), and became effective on January 6, 1992. As a result of EPA's promulgation of the nonattainment designation, the Part D requirements of the CAA became applicable to the Missouri SIP revision for Doe Run-Herculaneum. EPA granted limited approval for Missouri's 1990 SIP revision on March 6, 1992 (57 FR 8076). EPA's full and final approval was contingent upon the state submitting a supplemental SIP revision meeting the applicable Part D requirements.

The state of Missouri submitted a lead attainment plan for the Doe Run-Herculaneum facility on July 2, 1993. In response to EPA comments, the state submitted revisions to the SIP on June 30, 1994, and November 23, 1994. These SIP components

AIRQ/H
Haugen
3/21/95

AIRQ LAH
Hacker
3/30/95

PLDE Hacker
for Leidwanger
3/30/95

CNSL
Patrick
4/14/95
Patrick

ART *for*
Spratlin
4/15/95

OEP
Michaels
4/18/95
Michael

RGAD
Grams
4/18/95
Grams

satisfy the Part D requirements of the CAA, and fulfill the requirements of EPA's March 6, 1992, limited approval. Therefore, EPA is proposing final approval of the submittals. The revised plan also contains a control strategy to address the violations of the NAAQS which occurred upon implementation of the control measures in the 1990 SIP revision. Dispersion modeling indicates that the subsequent control measures will result in attainment of the NAAQS for lead. The new attainment date for the 1993 SIP revision is June 30, 1995. In addition, an amendment to Missouri rule 10 C.S.R. 10-6.120 revises all point source emission limits to a lbs./24-hours basis, and establishes enforceable criteria for determining compliance.

COORDINATION WITH MISSOURI

This SIP is the result of extensive coordination between the state and EPA.

ISSUES

The amendments to Missouri rule 10 C.S.R. 10-6.120 contain provisions which are applicable to other lead smelters in the state. EPA is proposing approval of this SIP revision only insofar as it pertains to the Herculanum lead smelter.

COMMUNICATIONS STRATEGY

A communications strategy has been developed. Those indicated in the strategy will be notified by phone upon publication of the rulemaking in the Federal Register. This is a low visibility action.

PROCEDURAL REVIEW

This rulemaking is being processed as a Table 2 direct-final action. In the procedural changes published on January 19, 1989, Table 2 actions were delegated to the Region for signature, provided Headquarters had an opportunity for review and comment. Headquarters' staff has reviewed this SIP and has no comment.

The Office of Management and Budget (OMB) has exempted this rule from the requirements of Executive Order 12866. Executive Order 12866 superseded Order 12291 on September 30, 1993, and begins a program to reform and make more efficient the regulatory process. OMB will review only SIP actions that are not full approvals.

Attachments

ART/ARBR/PLDE/AIRQ: Haugen: cnovak: 3/27/95: LVH SIP Disk, #32

APR 17 1995

MEMORANDUM

SUBJECT: Missouri State Implementation Plan (SIP) Revision for
the Doe Run Herculanum Lead Smelter

FROM: Carol D. LeValley, SIP Processing Coordinator
Air Planning and Development Section—Region VII

TO: Vickie Reed
Federal Register Office (2131)

Attached are an original and three copies of the signed
Federal Register notice to be published in the Federal Register.

Also attached are a signed typesetting request form and
a memorandum to the Office of the Federal Register, and two
identical copies of the material that is being incorporated
by reference.

If you have any questions, please contact Lisa V. Haugen
at (913) 551-7877.

Attachments

ART/ARBR/PLDE/AIRQ: Haugen: cnovak: 3/27/95: LVH SIP Disk, #36

AIRQ ALH
Haugen
3/24/95

PLDE *col*
LeValley
3/24/95

AIRQ LAH
Hacker
3/30/95

ENVIRONMENTAL PROTECTION AGENCY

40 CFR Part 52

[MO-17-1-6023B ; FRL]

Approval and Promulgation of Implementation Plans;

State of Missouri;

AGENCY: Environmental Protection Agency (EPA).

ACTION: Proposed rule.

SUMMARY: The EPA proposes to approve the State Implementation Plan (SIP) revision submitted by the state of Missouri for the purpose of bringing about the attainment of the National Ambient Air Quality Standards (NAAQS) for lead. The SIP was submitted by the state to satisfy certain Federal requirements for an approvable nonattainment area lead SIP for the Doe Run primary lead smelter in Herculaneum, Missouri. In the final rules section of the Federal Register, the EPA is approving the state's SIP revision as a direct final rule without prior proposal, because the Agency views this as a noncontroversial revision amendment and anticipates no adverse comments. A detailed rationale for the approval is set forth in the direct final rule. If no adverse comments are received in response to this proposed rule, no further activity is contemplated in relation to this rule. If the EPA receives adverse comments, the direct final rule will be withdrawn and all public comments received will be addressed in a subsequent final rule based on this proposed rule. The EPA will not

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ENVIRONMENTAL PROTECTION AGENCY

40 CFR Part 52

[MO-17-1-6023A ; FRL]

Approval and Promulgation of Implementation Plans;

State of Missouri;

AGENCY: Environmental Protection Agency (EPA).

ACTION: Direct final rule.

SUMMARY: This document takes final action to approve the State Implementation Plan (SIP) submitted by the state of Missouri for the purpose of bringing about the attainment of the National Ambient Air Quality Standard (NAAQS) for lead. The SIP was submitted by the state to satisfy certain Federal requirements for an approvable nonattainment area lead SIP for the Doe Run primary lead smelter in Herculaneum, Missouri (Doe Run-Herculaneum).

DATES: This action will be effective [insert date 60 days from the date of publication in the Federal Register] unless by [insert date 30 days from date of publication] adverse or critical comments are received.

ADDRESSES: Copies of the documents relevant to this action are available for public inspection during normal business hours at the: Environmental Protection Agency, Air Branch, 726 Minnesota Avenue, Kansas City, Kansas 66101; and EPA Air & Radiation Docket and Information Center, 401 M Street, SW., Washington, DC 20460.

FOR FURTHER INFORMATION CONTACT: Lisa V. Haugen at (913) 551-7877.

with the control measures implemented under the 1990 SIP revision. These emissions resulted in violations of the lead NAAQS after the 1990 SIP revision attainment date of February 1, 1993. The July 1993 SIP revision was adopted by the Missouri Air Conservation Commission (MACC), after proper notice and public hearing, on June 29, 1993.

In a letter dated September 30, 1993, EPA informed the state that the proposed amendment to Missouri rule 10 CSR 10-6.120 lacked sufficient emission limits to ensure attainment of the standard. On October 7, 1993, EPA notified the state that the SIP revision did not contain contingency measures which adequately addressed the requirements of section 172(c)(9). Missouri and Doe Run agreed to the required changes at meetings held October 18 and 19, 1993. The changes to the SIP were adopted by the MACC at a public hearing held on March 31, 1994. Final changes to Missouri rule 10 CSR 10-6.120 were adopted by the MACC, after proper notice and public hearing, on April 28, 1994, and became effective on August 28, 1994.

The state submitted supplemental material to EPA on June 30, 1994. Upon review, it was noted that the Consent Order signed by the MACC on March 31, 1994, did not contain implementation language for contingency measures. EPA had informed the state of the need for such language in a letter dated February 23, 1994. The implementation language had been included in a prior order adopted by the MACC in

Implementation Plans for Lead Nonattainment Areas; Addendum to the General Preamble for the Implementation of Title I of the Clean Air Act Amendments of 1990" (58 FR 67748).

III. Review of State Submittal

A. Control Strategy

In the 1993 SIP revision, the state generally used the emission inventory which was used in the 1990 SIP revision. However, it was necessary to reanalyze the facility because previously unanticipated emission points had been discovered and several existing emission sources had been relocated. Air dispersion modeling was used to determine that the additional controls were sufficient to attain the lead NAAQS.

The SIP contains the June 24, 1993, Consent Order, and a subsequent amendment to the Consent Order, dated March 1994, which were entered into by the Missouri Department of Natural Resources (MDNR) and the Doe Run Company. Both of these documents set forth the administrative requirements for the implementation of the control measures. The submittal also includes Missouri rule 10 CSR 10-6.120, which establishes enforceable emission limits and work practice requirements. The reader is referred to the EPA-prepared technical support document for a more complete discussion of the specific control measures to be implemented in the Consent Orders.

through a review of journal articles, stack testing, personnel monitoring, and evaluation of post-1985 equipment and procedures. Dispersion modeling was employed in deriving the 1990 SIP control strategy which resulted in the 1990 postcontrol EI. The 1993 baseline EI was obtained by adjusting the 1990 postcontrol EI to account for dust surging problems associated with the installation of certain 1990 SIP controls, and the replacement of four scrubbers with a baghouse.

The state submittal provides a historical summary of the air quality from 1988 through the first calendar quarter of 1993. Ambient lead concentrations have fallen significantly with the implementation of the 1990 SIP controls; however, the average quarterly ambient lead concentrations at several monitors continue to remain above the NAAQS.

D. Reasonably Available Control Measures (RACM)
(Including Reasonably Available Control Technology
(RACT))

The submittal must contain provisions to assure that RACM (including RACT) are implemented (see section 172(c)(1) of the CAA). See 57 FR 13549 and 57 FR 67748 for EPA's interpretation of the RACM and RACT requirement.

A 1989 report, entitled "Evaluation of Lead Emission Controls at the Doe Run Company's Primary Lead Smelter at Herculaneum, Missouri," prepared for the Doe Run Company by

The emission reductions associated with the control strategy will be phased in according to the interim dates which are identified in the Consent Orders submitted with the SIP. These dates were established to allow for engineering and construction of control systems, and provide continuing improvement in air quality.

F. New Source Review (NSR)

Part D of Title I of the CAA requires that the submittal include a permit program for the construction and operation of new and modified major stationary sources. Missouri rule 10 CSR 10-6.020 identifies the current specific descriptions of the lead nonattainment areas in Missouri. 10 CSR 10-6.020 is utilized in conjunction with Missouri rule 10 CSR 10-6.060 which requires a permit for construction of, or major modification to, an installation with potential to annually emit one hundred (100) tons or more of a nonattainment pollutant, or a permit for a modification with potential to annually emit one hundred (100) tons or more of a nonattainment pollutant. Because these provisions include requirements for all nonattainment areas, and are not limited to lead, EPA is acting on the provisions in a separate rulemaking.

G. Contingency Measures

As provided in section 172(c)(9) of the CAA, all nonattainment area SIPs that demonstrate attainment must include contingency measures. Contingency measures should

H. Enforceability

All measures and other elements in the SIP must be enforceable by the state and EPA (see sections 172(c)(6), 110(a)(2)(A), and 57 FR 13556). The state submittal includes a Consent Order entered into by the state and the Company which contains all of the control and contingency measures, with enforceable dates for implementation.

The state submittal also includes an amendment to Missouri rule 10 CSR 10-6.120 which revises all point source emission limits from a lbs./day to a lbs./24-hour basis, and establishes enforceable criteria for determining compliance. The change from lbs./day to lbs./24-hour was necessary to make the emission limits consistent with the new test methods specified in the rule for determining compliance. Missouri rule 10 CSR 10-6.120 contains provisions which are applicable to other lead smelters in the state. EPA has not reviewed the adequacy of the rule as it relates to sources other than the Herculaneum smelter. EPA proposes approval of this rule only as it relates to Doe Run-Herculaneum.

Changes to the Herculaneum Work Practice Manual have also been included with this SIP revision. The Work Practice Manual serves as an enforcement document for the state and EPA. These work practices are designed to limit the fugitive emissions at the facility and are enforced through recordkeeping requirements. Noncompliance with the established work practices is a violation of Missouri

If the EPA receives such comments, this action will be withdrawn before the effective date by publishing a subsequent notice that will withdraw the final action. All public comments received will then be addressed in a subsequent final rule based on this action serving as a proposed rule. The EPA will not institute a second comment period on this action. Any parties interested in commenting on this action should do so at this time.

Nothing in this action should be construed as permitting or allowing or establishing a precedent for any future request for revision to any SIP. Each request for revision to the SIP shall be considered separately in light of specific technical, economic, and environmental factors and in relation to relevant statutory and regulatory requirements.

Under the Regulatory Flexibility Act, 5 U.S.C. § 600 et. seq., EPA must prepare a regulatory flexibility analysis assessing the impact of any proposed or final rule on small entities (5 U.S.C. §§ 603 and 604). Alternatively, EPA may certify that the rule will not have a significant impact on a substantial number of small entities. Small entities include small businesses, small not-for-profit enterprises, and government entities with jurisdiction over populations of less than 50,000.

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effectiveness of such rule or action. This action may not be challenged later in proceedings to enforce its requirements. (See section 307(b)(2).)

List of Subjects in 40 CFR Part 52

Environmental protection, Air pollution control, Incorporation by reference, Intergovernmental relations, Lead, Reporting and recordkeeping requirements.

A-12-95

Dated:



Dennis Grams, P.E.
Regional Administrator

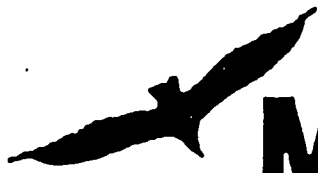
Emissions of Lead From Primary Lead
Smelter-Refinery Installations,
effective August 28, 1994.

- (B) Consent Order, entered into between
the Doe Run Company and MDNR, dated
July 2, 1993.
- (C) Consent Order amendment, signed by the
Doe Run Company on March 31, 1994, and
by MDNR on April 28, 1994.
- (D) Consent Order amendment, signed by the
Doe Run Company on September 6, 1994,
and by MDNR on November 23, 1994.

(ii) Additional material.

- (A) Revisions to the Doe Run Herculanum
Work Practice Manual submitted on
July 2, 1993.
- (B) Revisions to the Doe Run Herculanum
Work Practice Manual submitted on
June 30, 1994.

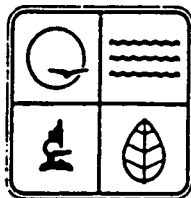
3. Section 52.1323 is amended by removing paragraph
(g) and redesignating paragraph (h) to read as paragraph
(g).



MISSOURI'S AIR POLLUTION CONTROL PLAN

Lead

1993 Revision



STATE OF MISSOURI

DEPARTMENT OF NATURAL RESOURCES

DIVISION OF ENVIRONMENTAL QUALITY

STATE OF MISSOURI
IMPLEMENTATION PLAN FOR LEAD

1993 SIP Revision

Concerning Demonstrations of Attainment
of the Lead NAAQS in the Vicinity of the

Primary Lead Smelter - Refinery

in Herculaneum, Missouri

and

the Primary Lead Smelter - Refinery

near Bixby in Iron County

Air Pollution Control Program
Department of Natural Resources
Jefferson City, MO

May 1993

This 1993 Lead SIP Revision is in three (3) parts:

Part I Herculaneum (The Doe Run Co.) primary lead smelter in Jefferson County; to add to section VII B. of the Lead SIP itself.

Part II Buick (The Doe Run Co.) primary lead smelter near Bixby in Iron County; to add to section VII B. of the Lead SIP.

Part III Revisions to existing pages to substitute, and new pages to add, to the Lead SIP in other than section VII B. for primary lead smelters.

NOTE: All of the material in this SIP Revision is for substitution or inclusion by page number in the State Implementation Plan (SIP) for lead.

PART I

HERCULANEUM (The Doe Run Company)

Primary Lead Smelter

in Jefferson County

1993 Lead SIP Revision

PART I - HERCULANEUM SMELTER

Table of Contents

(These paragraphs N. through T. are to add to the Lead SIP starting with page no. 23.12, into Section VII B. -1. for the Herculanum Smelter.)

<u>Paragraph</u>	<u>Subject</u>	<u>Page No.</u>
N.	Background	23.12
O.	Basic for Need for SIP Revision	23.12
P.	Part D SIP Requirements --	
1.	RACT/RACM	23.14
2.	Reasonable Further Progress	23.20
3.	Emission Inventory	23.21
4.	Permit Requirements	23.21
5.	Contingency Measures	23.22
Q.	Control Measures for Primary Control Strategy	23.24
R.	Demonstration of Attainment	23.27
S.	Attainment Date	23.31
T.	Determination of Attainment	23.31

Lead SIP Revision (1993) HERCULANEUM Smelter

N. Background

From page 1 (revised 1993) of the SIP, the 1990 Clean Air Act Amendments (CAAA) created lead nonattainment areas for the first time and; therefore, require "Part D" SIPs for these areas. The DNR submitted a SIP revision for the Herculanum smelter in 1990 to EPA for approval. The 1990 SIP Revision for Herculanum was given limited approval by EPA (FR 8076, 03-06-92) contingent upon DNR submitting the Part D requirements.

O. Basic for Need for the 1993 SIP Revision at Herculanum

1. The CAAA of 1990 requires "Part D" SIPs for areas designated nonattainment, and that area around the Herculanum smelter was designated nonattainment effective January 6, 1992.
2. Lead air quality data from the monitoring network around the smelter in 1992 indicated to DNR that the lead standard would not be attained by the attainment date of February 1, 1993, in the 1990 SIP revision. See Table III-4 Herculanum Air Quality Data, page 6.3. The Doe Run Company was so notified that another SIP revision is required (see DNR 2/1/93 letter to Doe Run on page 23.13.)

~~JOHN A. SHORR~~
~~XXXXXXXXXXXXXXXXXXXX~~
MEL CARNAHAN
 Governor



~~DAVID A. SHORR~~
~~XXXXXXXXXXXXXXXXXXXX~~
DAVID A. SHORR
 Director

STATE OF MISSOURI
 DEPARTMENT OF NATURAL RESOURCES
 OFFICE OF THE DIRECTOR
 P.O. Box 176 Jefferson City, MO 65102 314-751-4422

February 1, 1993

Mr. Jeffrey Zelms, President
 The Doe Run Company
 11885 Lackland Road
 Suite 400
 St. Louis, Missouri 63146

Dear Mr. Zelms:

In accordance with our State Implementation Plan for Lead as adopted by the Missouri Air Conservation Commission in 1990, there is a need to revise the portion of the plan that pertains to the Doe Run Company's primary lead smelter in Herculaneum.

Review of ambient air quality monitored data for the vicinity of the smelter shows exceedances of the ambient air quality standard for lead of 1.5 micrograms of lead per cubic meter of air. It has been determined by the Department of Natural Resources that additional reductions in lead emissions from the smelter will be needed to bring the smelter into compliance with the lead standard.

The Air Pollution Control Program of DNR will be contacting your environmental superintendent to initiate action in developing the SIP revision.

If you have any questions at this time, please call Cindy Kemper, Staff Director of the Air Pollution Control Program.

Very truly yours,

DEPARTMENT OF NATURAL RESOURCES

David A. Shorr
 Director

DAS:ckg

cc: Mr. William A. Spratlin, U.S. EPA, Region VII



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 23.13

Rev. 5-93, RR-6

P. Part D Nonattainment Area SIP Requirements

1. RACT/RACM - Reasonable Available Control Technology and Measures

- a) The owner/operator of the Herculaneum primary lead smelter has applied RACT emission control equipment, constructions and procedures to the smelting and refining processes at the smelter on a continuing basis. Two significant upgrades of RACT controls took place under state supervision and were implemented as required by consent orders in the 1980 initial Lead SIP and the 1990 lead SIP revision.
- b) For the 1980 initial Lead SIP the owner/operator (then the St. Joe Lead Company) chose to reduce lead emissions as a Clean Air Act requirement to a level that would provide attainment of the lead NAAQS, by implementing fourteen (14) control measures. These were all reasonably available control measures. These measures are listed in the August 1980 consent order for the Herculaneum smelter in Appendix F and as described on page 20 of the SIP.
- c) For the 1990 SIP revision, a RACT analysis was performed under the name of "Evaluation of Lead Emission Controls at the Doe Run Company's Primary Lead Smelter at Herculaneum, Missouri," Fluor Daniel, Inc. July 1989 (see SIP Reference 12). A systematic review of various unit processes and unit operations was performed and control alternatives were identified for four categories of sources at the Herculaneum plant for which potential existed for additional control. The technical feasibility of each alternative and the associated costs were evaluated. Emission reduction estimates were developed for

control strategies from data obtained from the manufacturers of pollution control equipment. The technical feasibility and costs of twenty four (24) potential emission control improvements evaluated for the Herculaneum plant are summarized in Table 1-1 of the report, included here on the next two pages following. The table also lists programs that have been implemented by the Doe Run Company to reduce lead emission levels since the 1987 emission inventory was completed.

The control measures chosen to provide the needed emissions reduction for the 1990 SIP revision are listed in the two July 1990 consent orders in Appendix F and as described on pages 23.7 to 23.9 of the SIP.

- d) For this 1993 SIP revision development Doe Run has conducted a RACT/RACM survey of their emissions controls for all lead emissions to ambient air. Controls were found to be RACT for all stack and process fugitive emission sources. In addition, Doe Run used U. S. EPA Guidance, 1991, List of Available Control Measures (included here on the third page following) to review Doe Run's control of fugitive area emissions.

Analysis of the EPA list of fifteen (15) items was performed by Doe Run (See SIP Reference 24 "RACT Analysis for the Herculaneum Smelter"). The RACT Analysis indicates that additional RACT control measures need to be implemented relating to EPA list item numbers 1, 2, 4, 5, and 12, with 9 and 10 relating to item 5.

TABLE 1-1. SUMMARY OF TECHNICAL FEASIBILITY AND COSTS OF POTENTIAL EMISSION CONTROL IMPROVEMENTS FOR THE DOE RUN COMPANY'S PRIMARY LEAD SMELTER AT HERCULANEUM, MISSOURI

Source	Potential Additional Control	Technical Feasibility	Capital Cost
Sinter Plant	I(a) Replace scrubber #1 with high efficiency venturi scrubber.	(a) Feasible concept because of low collection efficiency of existing wet scrubbers.	\$ 511,000
	I(b) Replace scrubbers #3 and #4 with high efficiency venturi scrubber.	(b) Feasible concept because of low collection efficiency of existing wet scrubbers.	\$ 818,000
	I(c) Good housekeeping practices in the workplace.	(c) Portable industrial vacuum cleaner for housekeeping. Now in place.	\$ 240,000
	I(d) Rehabilitate sinter handling system.	(d) "Stacked crusher" installation as at Buick smelter (Lummus study). Some concerns about feasibility.	\$3,581,000
	I(e) Replace scrubbers #1, 3 and 4 with a pulse-type baghouse.	(e) Concept (SHANTA Study) not feasible on wet crushing system.	\$2,515,000
	I(f) Machine rebuild.	(f) Machine rebuilt in late 1987 to realign and tighten up hooding. Spillage controls improved.	\$4,000,000
	I(g) Process improvements.	(g) Copper circuit at Buick and Brushy Creek operated as copper mill. These processes have been installed at Viburnum.	\$1,800,000
	I(h) Electrostatic Precipitator.	(h) Replace #4 bag house with electrostatic precipitator. Pilot plant underway in 1989.	\$2,350,000
Material Handling	II(a) Storage bins for and improved methods of handling dust from baghouse #5 to mixing drum MD-1. Alternate 1.	(a) New storage bins and enclosed conveying (Redler/Bucket Elevator) systems for transferring dust. (Preferred Alternative.)	\$1,426,000
	II(b) Storage bins for and improved methods of handling dust from baghouses #3 and #4 to mixing drum MD-1. Alternate 2.	(b) Enclosed Redler conveying system.	\$1,399,000
	II(c) Loading sinter to rail car. Good housekeeping.	(c) Skirts around car loading station were installed in 1988. Area around rail cars was paved with concrete to enhance good housekeeping efforts in 1988.	\$ 20,000
	II(d) Ventilation of sinter drop point.	(d) Scheduled for completion in 1989.	\$ 216,000
	II(e) Redler to convey #3/#4 baghouse dust.	(e) Installed in 1989.	\$ 750,000
Blast Furnace/	III(a) Blast furnace controls.	(a) Increasing ventilation rate to 25,000 ACFM on each furnace, scheduled for completion in 1989.	\$ 125,000
Dross Plant	III(b) Continuous drossing pilot project.	(b) Experiment failed.	\$ 675,000

Fluor Daniel, Inc.

5211-01/1 - 07/07/89

vii

23.16

Source	Potential Additional Control	Technical Feasibility	Capital Cost
	III(c) Fugitive dust from caustic dross.	(c) Britannia technology scheduled for mid 1989 will reduce storage of caustic dross.	\$ 300,000
	III(d) Reduce dross inventory.	(d) Enlarging the dross furnace. #2 currently under construction.	\$ 840,000
	III(e) Lead Pot Cooling prior to transfer.	(e) Establish lead pot turntable to allow for ventilated cooling until pot forms crust and transfer at cooler temperature.	\$ 750,000
	III(f) "Hide" Drossing or cooling before transfer to dross kettle.	(f) Research effort to be undertaken.	Undefined
	III(g) Pump bullion from furnace to dross kettles.	(g) Use electromagnetic pumps - feasibility question concerning the drossing up of transfer pipe.	\$1,250,000
	III(h) Euromet Drossing.	(h) Evaluate continuous drossing concept at the Spanish Euronel lead smelter for applicability.	\$ 750,000
Refinery	IV(a) Zinc retorting.	(a) Retort ventilation completed in 1989.	\$ 100,000
	IV(b) Reduced caustic stirrouts.	(b) Vacuum dezincing scheduled for 1990. First half 1989.	\$ 600,000
	IV(c) Kettle covers.	(c) Not feasible due to logistical problems because of refinery arrangement.	\$5,450,000

U. S. EPA Guidance, 1991, Re: RACT/RACM for Lead Nonattainment Areas

List of Available Control Measures

1. Pave, vegetate, or chemically stabilize access points where unpaved traffic surfaces adjoin paved roads.
2. Require dust control plans for construction or land-clearing projects.
3. Require haul trucks to be covered.
4. Provide for traffic rerouting or rapid clean up of temporary (and not readily preventable) sources of dust on paved roads (water erosion runoff, mud/dirt carry-out areas, material spills, skid control sand.) Delineate who is responsible for cleanup.
5. Prohibit permanent unpaved haul roads, and parking or staging areas at commercial, municipal, or industrial facilities.
6. Develop traffic reduction plans for unpaved roads. Use of speed bumps, low speed limits, etc., to encourage use of other (paved) roads.
7. Limit use of recreational vehicles on open land (e.g., confine operations to specific areas, require use permits, outright ban).
8. Require improved material specification for and reduction of usage of skid control sand or salt (e.g., require use of coarse, nonfriable material during snow and ice season).
9. Require curbing and pave or stabilize (chemically or with vegetation) shoulders of paved roads.
10. Pave or chemically stabilize unpaved roads.
11. Pave, vegetate, or chemically stabilize unpaved parking areas.
12. Require dust control measures for material storage piles.
13. Provide for storm water drainage to prevent water erosion onto paved roads.
14. Require re-vegetation, chemical stabilization, or other abatement of wind erodible soil, including lands subjected to water mining, abandoned farms, and abandoned construction sites.
15. Rely upon the soil conservation requirements (e.g., conservation plans, conservation reserve) of the Food Security Act to reduce emissions from agricultural operations.

- e) The RACT control items needed in this SIP revision follow, with the related (EPA) list number given:

<u>List No.</u>	<u>RACT control item</u>
1	Chemically stabilize or pave access area from Station Street to Existing concrete area just north of the Strip Mill Building.
2	Develop formal written guidelines for construction projects, to control fugitive emissions.
4	Develop formal written guidelines for temporary sources of dust on paved roads, to control fugitive emissions.
5	Chemically stabilize or pave river yard access road.
12	Chemically stabilize concentrate storage piles.

See paragraph Q, Control Measures for Primary Control Strategy, for inclusion of these RACT/RACM measures. These measures will also be added to the Work Practice Manual for Herculanum in accordance with 10 CSR 10-6.120.

- f) It is therefore believed that all reasonably available control measures will be provided for at completion of implementation of this SIP revision for the Herculanum smelter.

2. RFP - Reasonable Further Progress

The control measures to be implemented for the Herculanum smelter in this SIP revision are all within a relatively short time frame, with the latest completion date being 07/31/94 or approximately only one year from the SIP submittal date.

There are two RFP milestones in the control measures to be implemented for Herculanum. As given in the consent order for the Herculanum smelter in Appendix F these are:

Project 2 Install drag conveyor to transfer baghouse fume to a mix room metering bin.

(RFP)	Complete engineering by	05/31/93
	Complete installation by	10/31/93

Project 4 Install drag conveyor to transfer #5 baghouse fume to the sinter plant mix room.

(RFP)	Complete engineering by	01/31/94
	Complete Installation by	07/31/94

3. Emission Inventory

The basis for the demonstration of attainment in the 1990 SIP revision for Herculaneum was both the baseline emission inventory and the post-1990 (plan date) projected inventory that would follow implementation of the control measures. The needed revisions to the post-1990 SIP emission inventory in paragraph R of this SIP revision and the subsequent emission reductions from the new control measures are given in Table VII B.1-5.

4. Permit Requirements

The state rule 10 CSR 10-6.020, Definitions at subparagraph (2)(N)5.B. defines the term "nonattainment" to include the area in which the Herculaneum Doe Run smelting facility is located. By defining the term "nonattainment" to include this area, any major lead emitting source within this area that constructs a new or modified lead emitting operation, must go through major source nonattainment new source review as specified at 10 CSR 10-6.060 sections (1), (4) and 8(A)5. and meet with CAA Sec. 172(c)(5) and Sec. 173.

A permit is required to construct a new or modified major stationary source for lead in the smelter's nonattainment area. Sections (1), (4) and (8)(A)5. of 10 CSR 10-6.060²³ apply and meet with CAA Sec. 172(c)(5) and Sec. 173. New source review regulations are presently under review by U. S. EPA and any new requirements may require a subsequent SIP revision.

5. Contingency Measures

- a) This plan provides for specific "contingency" lead emission control measures in addition to the control measures herein that are required to demonstrate attainment of the lead NAAQS. Should the plan fail to attain the standard by the attainment date herein these contingency measures shall take effect without further rulemaking or SIP action by the state (Part D, Sec. 172(c)(9), CAAA).

- b) Determination of Need to Implement Contingency Measures.

If the air quality data for the calendar quarter following the attainment date exceeds the lead NAAQS, DNR shall notify the smelter owner/operator of nonattainment and the maximum air quality value that exceeds the standard. Implementation of contingency measures shall begin in thirty (30) days from receipt of DNR's notice.

- c) Contingency Measures for Herculaneum

The following shall be implemented when need is determined:

- 1) Initiate street sweeping with water truck and sweeper truck once per week on those Herculaneum streets within the area that is most heavily impacted by fugitive emissions and plant resuspension, namely: Main Street from Curved Street south to Station Street; Broad Street from Curved Street south to Station Street; "A" Street from Broad Street west to High Street; the paved portion of "B" Street from Broad Street west to Cross Street; and, High Street from "A" Street south to "B" Street.

- 2) Consume stockpile of concentrate to reduce size of working minimum of 15,000 tons and maintain at that size.
 - 3) Consume stockpile of sinter to reduce size to working minimum of 25, 000 tons and maintain at that size.
 - 4) Run water and sweeper truck inside plant grounds on two shifts Monday-Friday, in lieu of one shift Monday-Friday (except when icy conditions exist).
 - 5) Cover all remaining stockpiles with plastic, canvas or other dust-impervious material and maintain security.
- d) The Contingency Measures listed above are included in a Consent Order for the Herculaneum smelter in Appendix F.
- e) Should these contingency measures be required, Doe Run shall change the Work Practice Manual in accordance with 10 CSR 10-6.120 to incorporate these new control measures.

Q. Control Measures for Primary Control Strategy

The following emission control measures are listed here in two groups. Group 1 is composed of measures with rated effectiveness to provide quantified emission reductions for use in this SIP revision's demonstration of attainment. Group 2 is composed of measures needed to satisfy the CAAA requirements for RACT/RACM and are nonquantified.

1. Group 1 - Quantified controls for E.I. Emission Reduction

- a) The following control measures that relate to specific emission inventory numbers, collectively will provide lead emissions reductions in amounts estimated as necessary to provide attainment. The emission inventory numbers (EI No.) are shown with the related technical memoranda numbers (TM No.) of the control measure²² and the Consent Order Project numbers (CO No.) given in Appendix F, with their respective description of the control measure. See Table VII B. 1-5 in paragraph R for EI source names.

(EI No. 1)	Direct transfer of #5 baghouse fume to sinter plant
(TM No. 4)	feed circuit; install equipment to transfer to fume
(CO No. 4)	by drag conveyor. This eliminates transfer of the
	fume thru the railroad car unloader (EI No. 1) and
	will reduce emissions at that point.
(EI No. 6)	Ventilate sinter plant mixing drum; install
(TM No. 1)	baghouse in sinter plant. This will reduce
(CO No. 1)	emissions from the sinter plant roof monitor
	(EI No. 6).

(EI No. 6) Modify sinter plant feed circuit; install equipment
 (TM No. 2) to transfer sinter plant's ESP, crusher and cooler
 (CO No. 2) baghouse fume by drag conveyor to a mix room
 metering bin. This will reduce emissions from the
 sinter plant room monitor.

(EI No. 18) Automatic dampering equipment for dross
 (TM No. 3) furnaces; install equipment in both dross furnaces
 (CO No. 3) as they are rebuilt. This will reduce emissions
 from the dross furnace roof vents (EI No. 18).

- b) The above control measures were generated from the Doe Run
 Technical Memoranda²².

2. Group 2 - Nonquantified Controls for RACT Requirements

- a) The following control measures are required by (CAAA) Part D RACT
 requirements. The Consent Order Project number (CO No.) is shown
 with a description of the control measure.

(CO No. 5) Chemically stabilize or pave access area from
 Station Street to existing concrete area just north
 of the strip mill building.

(CO No. 6) Chemically stabilize or pave river yard access
 road.

(CO No. 7) Chemically stabilize concentrate storage piles once
 every six months.

(CO No. 8) Develop formal written guidelines for construction projects, to control fugitive emissions.

(CO No. 9) Develop formal written guidelines for temporary sources of dust on paved roads, to control fugitive emissions.

b) The above RACT control measures require changes in the Herculaneum Work Practice Manual and these changes to the manual are shown in Appendix G (included herein Part III of this SIP revision)..

R. Demonstration of Attainment Including Control Strategy

The 1990 SIP Revision for the Herculaneum smelter contained a demonstration of attainment based on the dispersion modeling of an emission inventory listed as the Post-1987 E.I. This projected Post-1987 inventory would be the result of implementing the required control measures in the 1990 SIP Revision to achieve the estimated reductions to achieve attainment of the Lead NAAQS.

Doe Run has determined that several of the above control measures that have been installed in the Sinter Plant, while successfully exhausting their ventilation points, have had the unintended outcome of creating dust surging in the baghouse collection hoppers and therefore surging on the conveyor belt to which they feed. The reason for this surging has to do with temperature variations in the machine as well as differences in the dust generated after delays and start-ups. The outcome of this phenomenon is that the mix drum to which the feed reports is intermittently overfed with dust and emits these dusts in the general air in the sinter plant. This material then leaves through the roof monitors and has increased the fugitive emissions from the sinter plant building (E.I. No. 6). Reevaluation of this emission source with its newly-created emissions has resulted in estimation of this increase and also of the reduction in emissions to be achieved from the control measures TM Nos. 1 and 2 in preceding paragraph Q at E.I. No. 6. The resultant quantity of 2.7 pounds per day is the same quantity as in the Post-1987 E.I. on page 23.6 (copy of page 23.6 here follows).

Similar observations by Doe Run of emissions beyond the amount given in the 1987 E.I. for the Dross Furnace roof vents have resulted in estimation of the increase and also of the reduction from control measure TM No. 3 in paragraph Q at E.I. No. 18. The resultant quantity of 3.8 pounds per day is the same quantity as in the Post-1987 E.I.

An additional control measure - elimination of the handling of fume from the No. 5 baghouse, at the rail car (concentrate) unloader, E.I. No. 1 and TM No. 4 in paragraph Q - will provide a straight reduction of 4.3 pounds per day from the Post-1987 E.I. This actual reduction in the emission inventory for post-1992 is being provided to further ensure attainment in this SIP revision.

These control strategy changes to E.I. Nos. 1, 6, and 18 are shown in Table VII B. 1-6, with the transition in 1993 shown in Table VII B.1-5. Table VII B. 1-5 also shows replacement in E.I. Nos. 2, 3, 4, 5, and 13A with 1993 stack test rates resulting from the 1990 SIP revision.

It is anticipated that implementation of the five (5) RACT control measures as specifically required by (CAAA) Part D will also further attainment of the lead NAAQS.

The Demonstration of Attainment for this 1993 SIP revision for the Herculaneum nonattainment area is that the post-1993 Emissions Inventory is the same or of lesser quantity from the same source locations as the post-1987 E.I. that was modeled to demonstrate attainment in the 1990 SIP revision. Also, due to the changes in stack parameters and changes in source locations within the sinter plant, EPA has performed dispersion modeling of the changed parameters to ensure that the 1993 control strategy demonstrated attainment.

TABLE VII B.1 - 4

Post-1987 Lead Emission Inventory
Herculaneum Smelter

EI No.	Source Name	1987 E.I.	Post-'87 E.I.	%Change
		lbs/day	lbs/day	plus/minus
1	Concentrate Unloading	8.2	4.9	(-) 40
2	Scrubber No. 13; to new baghouse*	1.2	.01*	(-) 99.9
3	Scrubber No. 12	9.3	0.4	(-) 95
4	Scrubber No. 11; to new baghouse*	2.2	.02*	(-) 99.9
5	Scrubber No. 10	0.5	0.5	NC
6	Sinter Plant Roof Monitor	27.4	2.7	(-) 90
7	Scrubber No. 1	76.7	0	(-) 100
8	Scrubber No. 4	180.8	0	(-) 100
9	Scrubber No. 3	86.6	0	(-) 100
10	Scrubber No. 2	6.6	0	(-) 100
11	Scrubber No. 9	2.2	0	(-) 100
12	Scrubber No. 8	1.1	0	(-) 100
13	Main Stack	446.6	446.6	NC
13A	(New) Sinter Plant Stack	-	32.9	(+) 100
14	Baghouse Vents (Nos. 2 & 3)	0.6	0.4	(-) 33
15	B.F. Charge Belts (Doghouses)	36.7	1.8	(-) 95
16	Blast Furnace (B.F.) Roof Monitor	2.7	0.3	(-) 90
17	Baghouse Vents (No. 5)	1.1	1.1	NC
18	Dross Furnace Roof Vents	27.4	3.8*	(-) 86
19	Refinery Roof Vents	1.6	0.5	(-) 70
20	Baghouse Vent (Smooth Rolls)	2.2	2.2	NC
21	Sinter Loading in R.R.Cars	8.2	0.1	(-) 99
22	Concentrate Storage	5.5	5.5	NC
23	Concentrate Transfer	1.6	1.6	NC
24	Slag Pile	3.8	3.8	NC
25	On-plant Resuspension	40.5	-	(-) 86
	a) Wind-caused	-	5.2	-
	b) Traffic-caused	-	0.4	-
TOTALS		981.3	514.7 (or)	- 47.5%

* See Note 1, page 23.9

Table VII B.1 - 5

1993 Lead Emission Inventory
Herculaneum Smelter
 (lbs per day)

EI No.	Source Name	Post-'87	1993 Change - to 1987 E.I.*	1993 EI
1	Conc. Unloading	4.9		4.9
2	Scrubber No. 13	.01)	0
3	Scrubber No. 12	.4) (-) 0.9 ²	0
4	Scrubber No. 11	.02)	0
5	Scrubber No. 10	.5)	0
28	SP Southend BH	-	(+) 2.6 ¹	2.6
6	Sinter Plant Roof	2.7	(+) 128.6 ³	131.3
13	Main Stack	446.6		446.6
13A	Sinter Plant Stack	32.9	(-) 7.2 ²	25.7
14	Nos. 2/3 BH Vent	.4		.4
15	BF Change Belts	1.8		1.8
16	BF Roof Monitor	.3		.3
17	No. 5 BH Vent	1.1		1.1
18	Dross Roof Vents	3.8		6.2
19	Refinery Roof Vent	.5	(+) 2.4 ³	.5
20	Sm Rolls BH Vent	2.2		2.2
21	Sint Load RR cars	.1		.1
22	Conc. Storage	5.5		5.5
23	Conc. Transfer	1.6		1.6
24	Slag Pile	3.8		3.8
25	On-Plant Resuspension			
	a) Wind-caused	5.2		5.2
	b) Traffic-caused	0.4		0.4
	TOTALS	514.7	(+) 125.5	640.2

* 1987 EI - see page 23.6

Notes: ¹ - Replace #10, 11, 12, and 13 scrubbers with SP Southend BH (1993 stack test rate).
 This replacement is an option in 1990 SIP revision chosen by Doe Run.

² - 1993 stack test emission rate.

³ - Estimated emission increases after installation of 1990 SIP control measures.

Table VII B.1 - 6

Post-1993 Lead Emission Inventory

Herculaneum Smelter

(lbs per day)

EI No.	Source Name	1993 EI	1994 Reduction - to 1993 E.I.	Post -1993 E.I.
1	Conc. Unloading	4.9	4.3	.6
28	SP Southend BH	2.6		2.6
6	Sinter Plant Roof	131.3	128.6	2.7
13	Main Stack	446.6		446.6
13A	Sinter Plant Stack	25.7		25.7
14	Nos. 2/3 BH Vents	.4		.4
15	BF Charge Belts	1.8		1.8
16	BF Roof Monitor	.3		.3
17	No. 5 BH Vent	1.1		1.1
18	Dross Roof Vents	6.2	2.4	3.8
19	Refinery Roof Vent	.5		.5
20	Sm Rolls BH Vent	2.2		2.2
21	Sinter Loading RR cars	.1		.1
22	Conc. Storage	5.5		5.5
23	Conc. Transfer	1.6		1.6
24	Slag Pile	3.8		3.8
25	On-plant Resuspension			
	a) Wind-caused	5.2		5.2
	b) Traffic-caused	.4		.4
	TOTALS	640.2	(-) 135.3	504.9

S. Herculaneum Vicinity Attainment Date

The attainment date for this SIP revision in the Herculaneum vicinity is September 30, 1994. This is determined by the latest completion date (July 31, 1994) of any of the control measures in the consent order, plus a two month allowance in time for achieving the design operating efficiencies of the new equipment.

T. Determination of Attainment of the Lead NAAQS

Attainment of the Lead NAAQS will be determined by air quality monitoring. With four (4) continuous calendar quarters of air quality data beyond the SIP attainment date showing that the lead NAAQS has not been exceeded, the attainment of the Lead NAAQS will be considered achieved.

PART II

BUICK (The Doe Run Company)

Primary Lead Smelter

near Bixby in Iron County

1993 Lead SIP Revision

PART II - BUICK SMELTER

Table of Contents

(These paragraphs F. through N. are to add to the Lead SIP starting with page no. 31.1 into Section VII B. -2. for the (formerly AMAX) Buick Smelter.)

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Lead SIP Revision (1993)

Buick Smelter

F. Background

1. The then-called AMAX primary lead smelter in western Iron County near Bixby completed implementation of the emission control measures required in the 1980 Missouri Lead SIP in late 1985. The smelter changed ownership in 1986 and the new owner shut down operations on June 1, 1986 for business/market evaluation.
2. The smelter was shortly thereafter purchased by The Doe Run Company on November 1, 1986, who now call the primary facility the Buick Smelter. Doe Run has not operated the smelter for continuous primary production of lead. They have utilized several lead-making processes within the overall facility on occasion, such as the sinter plant, the blast furnace, and the refinery. Doe Run used the sinter machine to produce sinter to supplement Doe Run's primary lead smelter operation in Herculanum, Missouri. This was during the period when the sinter machine at Herculanum was being rebuilt, providing noninterrupted production of primary lead at Herculanum. Doe Run now uses the blast furnaces and the refinery facilities within the primary smelter as part of the operation of a new secondary (recycling) lead smelter build by Doe Run on the same property in 1990-91.
3. Current (1993) Lead-producing Operations (Secondary Smelter)
 - a) Doe Run is producing secondary lead in its new recycling facility at the Buick lead smelting complex. This overall operation of the secondary smelter includes use of the blast furnaces and the refinery components

of the primary smelter facility. It does not include use or operation of the primary smelter's sinter machine. The blast furnaces may be started up utilizing, when necessary, sinter as feed to facilitate a startup. Sinter used here is produced at Doe Run's Herculanum Smelter.

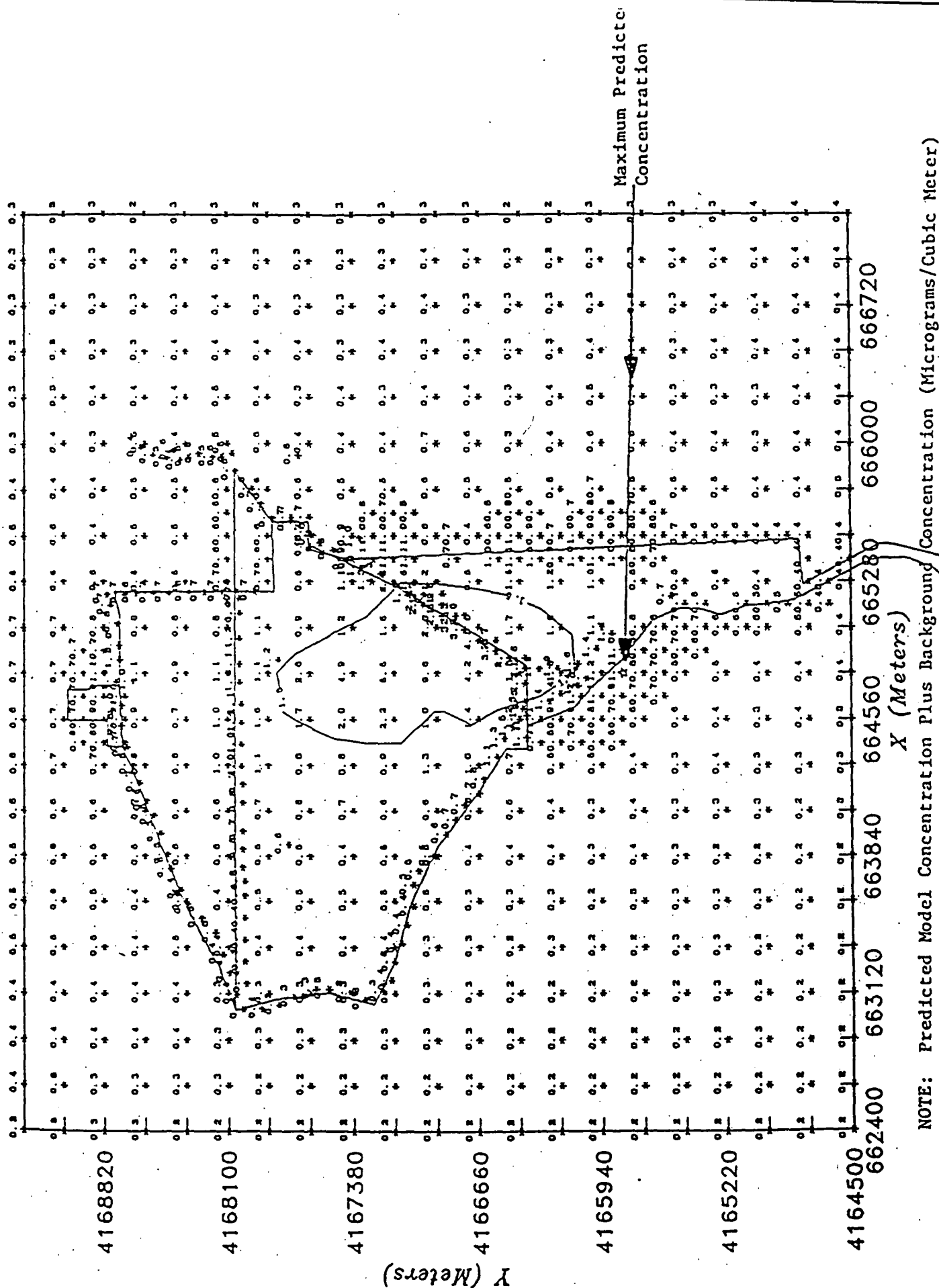
- b) Air quality data derived from the long-term monitoring network since the initial full secondary lead smelting process began shows compliance with the NAAQS for lead. See Table III-5 in Section 3, Air Quality Data for Lead, page 6.6 (in Part III of this SIP revision).
- c) Dispersion modeling has shown that when the full potential of all components of the secondary lead production process would be utilized that surrounding ambient air in the smelter complex vicinity would be in compliance with the NAAQS for lead. See Reference 20, "Modeling Analysis Report Demonstrating the Effects of Potential Lead Emissions from Current (1993) Lead Production Activities at the Doe Run Company's Buick Smelter." The 1.5 ug/m³ isopleth for full secondary smelter operation is shown (from the report) on the page following.

As stated in 3.a) above use of the primary blast furnace component of the primary smelter operation is used in the secondary lead producing process. For the above dispersion modeling a full working charge of 1000 tons per day was used for the blast furnace component to produce the lead emissions used as input in the model.

- d) Attainment Date for the Buick Vicinity

The attainment date of the NAAQS for lead for the Buick smelter vicinity is the effective date of this SIP revision or the date of adoption of the SIP revision by the Missouri Air Conservation Commission in June 1993.

Buick Quarterly Max Pb Conc. BF + Secondary



e) Secondary Smelter Operating Restrictions.

The use of the primary blast furnace component in the secondary smelter operation will be restricted to a charge of 1000 tons per day.

The blast furnace component consists of two blast furnaces and one or both simultaneously may be used as long as a total charge of 1000 tons per day is not exceeded for the blast furnace operation.

This blast furnace emissions restriction will be in the pending rule amendment to 10 CSR 10-6.120, Restriction of Emissions of Lead from Primary Lead Smelter-Refinery Installations.

G. Basis for Need for the 1993 SIP Revision at the Buick Smelter

1. From page 1 (revised 1993) of the lead SIP, the 1990 Clean Air Act Amendments (CAAA) created lead nonattainment areas for the first time and therefore require "Part D" SIPs for areas designated nonattainment, and that area around the Buick Smelter was designated nonattainment effective January 6, 1992.
2. Air quality data for lead from the long-term hi-vol monitoring network around the Buick primary lead smelter shows exceedance of the 1.5 ug/m^3 NAAQS for lead in the calendar quarter immediately following the (then) SIP attainment date of March 29, 1986. Near the end of this second quarter of 1986 the Buick smelter was shut down on June 1, 1986. The air quality data exceedance after the SIP attainment date is a basis for requiring another SIP revision.

H. Air Quality Data

Air quality monitored data for the period 1982 through 1992 taken from hi-vol samplers at monitor locations in the four-monitor network (owned, operated and maintained by the smelter) is shown in Table III-5. Monitor locations are shown in Figure III-2. Both figure and table are shown in Part 3 of this revision (pages 6.4 and 6.5 of Section III of the SIP).

Air quality monitoring continues in the Buick smelter vicinity in accordance with SIP section VI. Long-Term Monitoring Plan.

I. Emission Inventories

1. Baseline 1992 Emission Inventory.

The Emission Inventory of 1992 is the baseline EI for this SIP Revision. This inventory was quantified through stack testing, personnel samplers for fugitive process emissions, evaluation of equipment and procedures, EPA emission estimation methods and engineering judgement. The emission rates are those when the smelter was in full continuous production of primary lead prior to June 1986. See Table VII B.2-4. following.

2. Modeling of Baseline 1992 EI

The dispersion modeling¹⁹ projected the effect of the baseline EI on the vicinity of the smelter. The isopleth for an air quality value of 1.5 ug/m^3 is shown following the baseline EI table.

3. Post-1992 Emission inventory for Attainment.

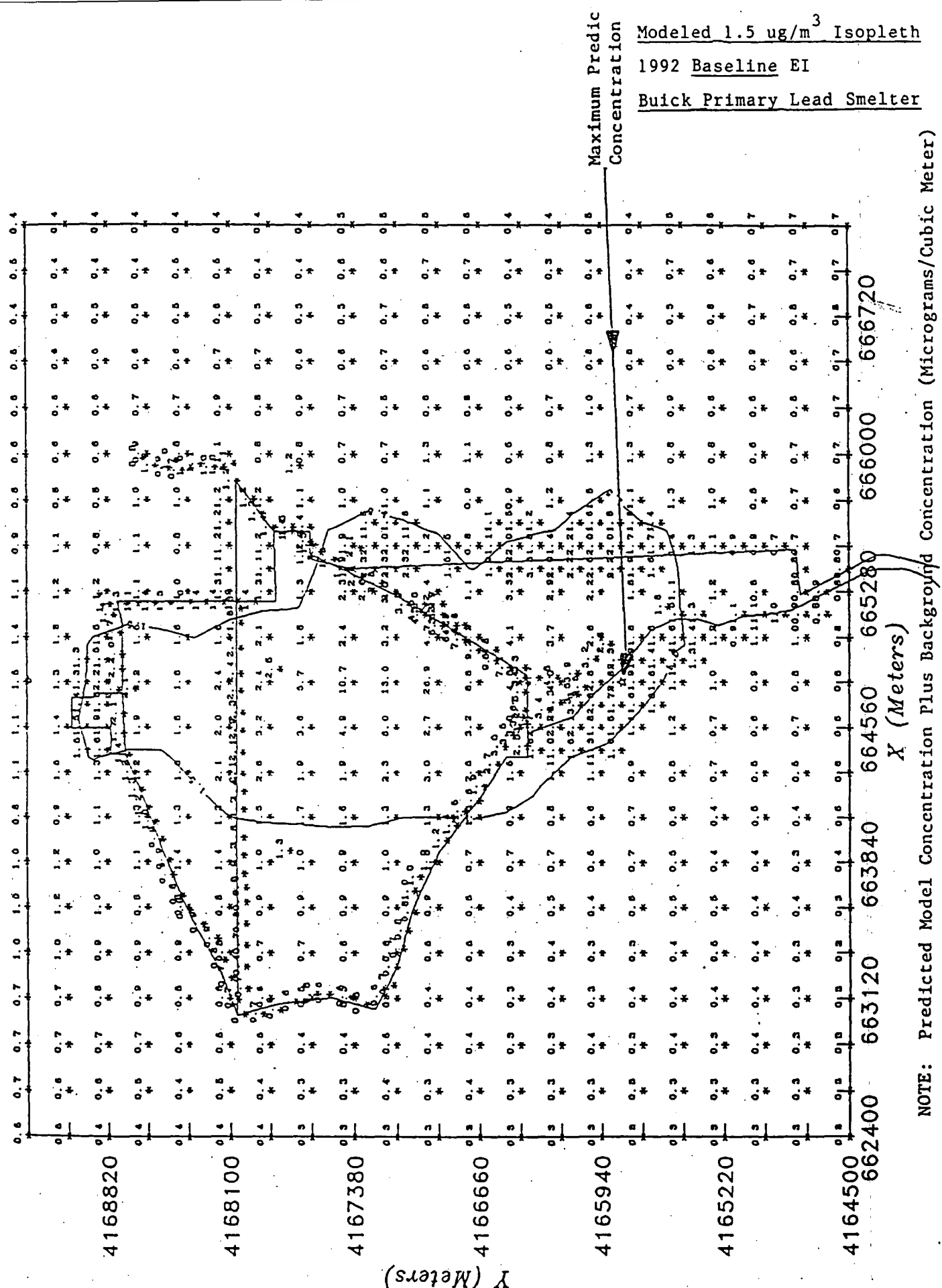
The Post-1992 Emission Inventory shown in Table VII B. 2-5 following is the result of estimating the reductions in lead emissions to be earned from the post-1992 control measures and procedures listed in paragraph K. and deducting these expected reductions from the 1992 baseline EI. Modeling of the post-1992 EI is presented in paragraph L.

Table VII B.2 - 4
1992 Baseline Lead Emission Inventory
Buick Smelter

Emission Inventory (Point or Area) Number (EI No.)	Source Name	Emission Rate lbs/day
1	#1 Scrubber	21.8
2	#2 Scrubber	21.3
3	#6 Scrubber	93.1
4	#7 Scrubber	57.0
5	#8 Scrubber	14.9
6	#9 Scrubber	11.5
7	Stack Crusher BH	17.5
8	Main Stack	1080.0
16	Battery Brking Scrubber	.11
17	Paste Loadout BH	.0002
27	Slag Tower	.09
10	BF Charging Roof Monitor	27.95
10a	BH Dust Transfer	2.79
11	Dross Plant Fugitives	17.53
12	Refinery Fugitives	27.95
13	Conc. Unloading & Storage	4.38
14a	Sinter Prep. Fugitives	10.4
14b	Sinter Machine & Ret. Hand.	83.29
14c	Sinter Product & Crusher	83.29
OF1	Sinter Transfer	2.23
OF2	Sinter Storage Chg. Prep Area	13.13
OF3	Secondaries/Cleanup	0.0
OF4	On-Property Resuspension	112.0
		1702.2

Figure

Buick Quarterly Max Pb Conc, Baseline



Y (Meters)

Table VII B.2 - 5

Post-1992 Lead Emission Inventory

Buick Smelter

Emission Inventory (Point or Area) Number (EI No.)	Source Name	1992 EI lbs/day	Post-'92 EI lbs/day	% Change plus/min.
1	#1 Scrubber	21.8	0	- 100
2	#2 Scrubber	21.3	0	- 100
3	#6 Scrubber	93.1	0	- 100
4	#7 Scrubber	17.5	0	- 100
5	#8 Scrubber	14.9	0	- 100
6	#9 Scrubber	11.5	0	- 100
7	Stack Crusher BH	17.5	17.5	NC
8	Main Stack	1080.9	1080.9	+ .08
16	Battery Brking Scrubber	.1	.01	- 90
17	Paste Loadout BH	.0	.0	NC
27	Slag Tower	.1	.1	NC
30	(New) Drum Shred. BH	-	.2	+ 100
2X	(New) Sinter Prep. BH	-	2.2	+ 100
14X	(New) Sinter Plant BH	-	21.4	+ 100
10	BF Charging Roof Monitor	27.9	27.9	NC
10a	BH Dust Transfer	2.8	2.8	NC
11	Dross Plant Fugitives	17.5	.9	- 95
12	Refinery Fugitives	27.9	1.4	- 97
13	Conc. Unloading & Storage	4.4	4.4	NC
14a	Sinter Prep. Fugitives	10.4	.5	- 95
14b	Sinter Machine & Ret. Hand.	83.3	4.2	- 95
14c	Sinter Product & Crusher	83.3	4.2	- 95
OF1	Sinter Transfer	2.2	0.2	NC
OF2	Sinter Storage Chg. Prep Area	13.2	13.2	NC
OF3	Secondaries/Cleanup	0.0	.0	NC
OF4	On-Property Resuspension	112.0	112.0	NC
	TOTAL	1702.2	1296.0	-24%

Conversion: lbs/day = TPY (2000/351)

J. Part D Nonattainment Area SIP Requirements

1. RACT/RACM - Reasonable Available Control Technology and Measures

- a) The owner/operator of the Buick primary lead smelter has applied RACT emission control equipment, constructions, and procedures to the smelting and refining processes at the smelter on a continuing basis. A significant upgrade of RACT controls took place under state supervision and were implemented as required in the 1980 initial Lead SIP.
- b) For the 1980 initial Lead SIP the owner/operator (then the AMAX - Homestake Lead Trollers) chose to reduce lead emissions as a Clean Air Act requirement to a level that would provide attainment of the lead NAAQS, by implementing six (6) control measures. These were all reasonably available control measures. These measures are listed in the August, 1980 consent order for the Buick (AMAX) smelter in Appendix F and as described on page 26 of the SIP.
- c) For this 1993 SIP revision development Doe Run has conducted a RACT/RACM survey of their emissions controls for all lead emissions to ambient air. This was done by Fluor Daniel, Inc. in a six volume study dated June, 1991 (SIP Reference 17). Controls were found to be RACT for all stack and process fugitive emission sources.

In addition Doe Run used U. S. EPA Guidance, 1991, List of Available Control Measures (see p. 23.18) to review their control of fugitive area emissions. Analysis of the EPA list of fifteen (15) items was performed by Doe Run (See SIP Reference 25 "RACT Analysis for the Herculaneum Smelter"). The RACT Analysis indicates that additional RACT control measures need to be implemented relating to EPA list item numbers 2, 5, and 12, with items 9, 10, and 11 relating to item 5.

- d) The RACT control items needed in this SIP revision follow, with the related (EPA) list number given:

<u>List No.</u>	<u>RACT Control Item</u>
2	Develop formal written guidelines for construction projects, to control fugitive emissions.
5	Chemically stabilize or pave the haul road to steel scrap area.
12	Chemically stabilize (any) unenclosed concentrate storage piles.

See paragraph K, Control Measures for Primary Control Strategy for inclusion of these RACT/RACM measures. These measures will be included in the Work Practice Manual as required in 10 CSR 10-6.120 for the Buick smelter, in addition to the work practices for fugitive emissions control already in place.

It is therefore believed that all reasonable available control measures will be provided for in the context of the CAAA.

2. RFP - Reasonable Further Progress

The control measures to be implemented for the Buick smelter in this SIP revision are all to be in place and operational before the smelter resumes the primary production of lead, whenever that may be. Therefore, the reasonable further progress requirement of Part D will be met at the time of resumption of primary lead production.

3. Permit Requirements

The state rule 10 CSR 10-6.020, Definitions at subparagraph (2)(N)5.B. defines the term "Nonattainment" to include the area in which the Buick Doe Run smelting facility is located. By defining the term "nonattainment" to include this area, any major lead emitting source within this area that constructs a new or modified lead emitting operation, must go through major source nonattainment new source review as specified at 10 CSR 10-6.060 sections (1), (4), and 8(A)5. and meet the CAA Section 172(c)(5) and Section 173.

4. Contingency Measures

- a) This plan provides for specific "contingency" lead emission control measures in addition to the control measures herein that are required to demonstrate attainment of the lead NAAQS. Should the plan fail to attain the standard by the attainment date herein these contingency measures shall take effect without further action by the state (Part D, Section 172(c)(9), CAAA).

- b) Determination of Need to Implement Contingency Measures.

If the air quality data for the calendar quarter following the attainment date exceeds the lead NAAQS, DNR shall notify the smelter owner/operator of nonattainment and the maximum air quality value that exceeds the standard. Implementation of the following contingency measures shall begin in thirty (30) days from receipt of DNR's notice.

- c) Contingency Measures for Buick

The following shall be implemented when need is determined:

(NAAQS) for at least ten (10) years after EPA's designation of attainment of the standard. Therefore, this SIP revision will require the following of the owner or operator of the Buick primary smelter and such requirements are reflected in the 1993 Buick Consent Order in Appendix F., item 9.

a) Notification.

The owner or operator of the smelter shall notify DNR in writing at least sixty (60) days prior to the termination date of any lease in the smelter vicinity. This notification shall also be required by any change in either lease.

b) New Demonstration of Attainment of the Lead NAAQS at termination of a lease.

Upon receipt of notice of lease termination by DNR, the director shall require of the owner or operator a new demonstration of attainment of the lead NAAQS in the vicinity of the smelter to supplement or confirm the demonstration of attainment included in paragraph M of section VII B.2 of the 1993 SIP revision. The boundary of smelter controlled property without the (earlier) leased land shall be the determining boundary in evaluating dispersion modeling impact of current lead emissions.

2. Fencing or Physical Barrier to Restrict Public Access to Property where Air Quality Exceeds the NAAQS for Lead.

By U.S. EPA's definition of ambient air (40 CFR 50.1(e)) and later related EPA determinations, public access must be restricted to smelter-owned or controlled property within which the NAAQS for Lead is exceeded.

At the time of this SIP revision (1993) ambient air in the vicinity of the smelter is in compliance with the NAAQS for lead. This is while the scope of current lead producing operations at the smelter is in accordance with conditions given in F.3. in this 1993 SIP revision.

Doe Run will provide fencing and/or other physical barrier to enclose the approximate area within the 1.5 ug/m^3 isopleth for current (1993) secondary smelter operations shown on page 31.3 (shown here again following).

Doe Run will provide DNR a plot plan showing the proposed public barrier by September 30, 1993 and will complete the enclosure by June 30, 1994.

Installation of such fence or definition of other physical barrier to restrict public access is reflected in item OR-3 of the 1993 Buick Consent Order in Appendix F.

PART III

Revisions to Existing Pages to Substitute,
and New Pages to Add, to the Lead SIP itself
in other than Section VII B. for primary lead smelters
(Section VII B. revisions are in Part I and Part II)

1993 Lead SIP Revision

Part III

Supplementary and Revised Pages
to add and substitute in the Lead SIP
and its Appendices

<u>Pages</u>	<u>Subject</u>
i	Table of Contents
ii	Tables
ii(a)	Tables
ii(b)	Figures
iii	Appendices
iii(a)	Appendices
iv(a)	References
v	SIP Revision References
1 to 1.2	Introduction
6.1, 6.3 to 6.6	Air Quality Data
11	Table IV-3 (State E.I.)
12	State Lead Emission Inventory
15.1	Long-Term Monitoring Plan
48 - 49	Maintenance of the Lead Standard
Appx. F.	Consent Orders
	- Doe Run - Herculaneum, 1993
	- Doe Run - Buick, 1993
Appx. G	Emission Limitations
	(G8-G11) Amendment to Rule 10 CSR 10-6.120,
	Existing Primary Lead Smelters
Cover i, 2, 7	Revisions to Work Practice Manual for Doe Run - Herculaneum
8, 9, ii, A-1,	
B-1, C-1	

STATE OF MISSOURI IMPLEMENTATION PLAN FOR LEAD

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Note: Sip Revisions (beyond initial USEPA Approval in April 1981) - Substituted pages containing revisions are marked at bottom of page with revision date and the revision reference (RR) number. See page v for revision references (subject matter of revision). Revision additions are shown underlined and deletions are shown bracketed for the LATEST revision only. Earlier revisions are parenthetically noted: example (Rev. 7-82).

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(continued)

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- B. Daily and Quarterly Monitoring Values for State's Monitor at Herculaneum, and Daily and "Quarterly" Monitoring Values for Short-Term Monitoring Plan
- C. Emission Inventories (1979) for AMAX, ASARCO and St. Joe Lead Company; Doe Run-Herculaneum (1987); Doe Run-Buick (1992)
- D. Evaluation of Extreme Values for Short-Term Monitoring Site No. 3 at AMAX Lead Company of Missouri
- E. St. Louis County's Lead SIP: graphs, tables and appendices
- F. Consent Orders entered by the Missouri Air Conservation Commission with AMAX, St. Joe Lead Company, and ASARCO, 8-80.

ASARCO Consent Order, added 7-82.

St. Joe Lead C. O. Revision, 3-84.

AMAX Lead C.O. Revision, 9-84.

ASARCO Consent Order, added 5-87.

Doe Run-Herculaneum Consent Order (by DNR only), added 7-90.

Doe Run-Herculaneum Supplemental SIP Agreement, added 7-90.

Doe Run-Herculaneum Consent Order, added 5-93.

Doe Run-Buick Consent Order, added 5-93.

Rev. 5-93, RR-6 and RR-7

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Rev. 5-87, RR-4

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APPENDICES (Continued)

Appendix

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G. Emissions Limitations for Maintenance of the Lead Standard.(Rev.5-87)

Rule 10 CSR 10-6.120 Existing Primary Lead Smelters, added 7-90.

Doe Run-Herculaneum draft proposed rule amendment, added 7-90.

Doe Run-Buick draft proposed rule amendment, added 5-93 and Order of Rulemaking, added 7-93.

REFERENCES (Continued)

15. "Modeling Analysis Report Demonstrating Air Lead Compliance at the Doe Run Company's Herculanum Smelter"; Shell Engineering & Associates, Inc., July 1990.
16. Shissler J., Technical Report to Doe Run - Herculanum file on 1990 Herculanum modeling results. Missouri Department of Natural Resources, Air Pollution Control Program, May 1990.
17. "Evaluation of Lead Emission Controls at the Doe Run Company's Buick Smelter" (near Bixby, Missouri); Fluor Daniel, Inc., June 1991, Volumes (projects) 1/2, 3, 5, 7, 8, and 9.
18. "Technical Memoranda: Potential Lead Emission Reductions at the Buick Smelter"; The Doe Run Company, February 1993.
19. "Baseline Modeling of the Buick Lead Smelter Using ISCLT 2 Model for Primary and Secondary Lead Smelter and Modeling Analysis Report Demonstrating the Effects of Potential Lead Emission Reductions at the Doe Run Company's Buick Smelter"; Shell Engineering & Assoc., Inc., June 1993, in two volumes.
20. "Modeling Analysis Report Demonstrating the Effects of Potential Lead Emissions from Current (1993) Lead Producing Conditions at the Doe Run Company's Buick Smelter"; Shell Engineering & Assoc., Inc., June 1993.
21. Smith, C., Technical Report to Doe Run-Buick file on 1993 Buick modeling results; Missouri Department of Natural Resources, Air Pollution Control Program, July 1993.
22. "Technical Memoranda: Potential Lead Emission Reductions at the Herculanum Smelter"; The Doe Run Company, February 1993.
23. 10 CSR 10-6.060 Permits Required (re: CAA Part D).
24. "RACT Analysis for the Herculanum Smelter"; The Doe Run Company, April 1993.
25. "RACT Analysis for the Buick Smelter"; The Doe Run Company, April 1993.

WORK PRACTICE MANUALS (required in 10 CSR 10-6.120):

26. "Work Practice Manual" for Herculanum Smelter, January 1991.
27. "Work Practice Manual" for Buick Smelter, March 1993.

- | | |
|--|---|
| (EI Nos. 2, <u>2x</u> and 14a)
(TM No. 1A)
(CO Nos. 1 and 2) | Replace #2 Scrubber-Return Sinter (EI No. 1) with new Sinter Prep baghouse <u>2x</u> ; capture portion of sinter preparation plant fugitive emissions (EI Nos. 14a) and direct to new Sinter Prep baghouse. |
| (EI Nos. 1, 3, 4, 5, & 6
<u>14x</u> , 14B, & 14c)
(TM No. 1B)
(CO Nos. 3 & 4) | Replace Scrubbers #1, 6, 7, 8, & 9 EI Nos. 1, 3, 4, 5, and 6) with new Sinter Plant baghouse (EI Nos. <u>14x</u>); capture portion of sinter plant fugitive emissions (EI Nos. 14b and 14c) and direct to new sinter plant baghouse. |
| (EI No. 8, 11, and 12)
(TM No. 2)
(CO No. 5) | Install hoods over all kettles in dross plant and refinery; ventilate fugitive emissions from these areas (EI Nos. 11 and 12) and direct to main baghouse (EI No. 8). |

The above control measures were generated from the Doe Run Technical Memoranda¹⁸ for the Buick smelter.

2. Group 2 - Nonquantified Controls for RACT Requirements

The following control measures are required by (CAAA) Part D. The Consent Order Project number (CO No.) is shown with a description of the control measures.

- | | |
|------------|---|
| (CO No. 6) | Develop formal written guidelines for construction projects, to control fugitive emissions. |
|------------|---|

(CO No. 7)

Chemically stabilize once every six months or more frequently if needed or pave the haul road to steel scrap area.

(CO No. 8)

Chemically stabilize (any) unenclosed concentrate storage piles once every six months or more frequently if needed.

L. Dispersion Modeling - 1993

The Doe Run Company performed dispersion modeling employing U. S. EPA's ISC2 Long-Term Model, version dated 92273. The model input lead emissions are those listed in Table VII B. 2-5, as the Post-1992 Emission Inventory EI. The dispersion modeling projected the effect of control measures on the ambient air in the near vicinity of the smelter as related to the NAAQS for lead of 1.5 ug/m^3 . The isopleth for 1.5 ug/m^3 is shown following.

The modeling¹⁹ of the Post-1992 EI showed no exceedances of the lead standard beyond the Doe Run-controlled property. The modeler's Table III-Individual Contribution of Sources from their report, shown following, lists the contributions that give the maximum concentration for lead of $0.71 (0.708) \text{ ug/m}^3$ north of the smelter on the north side of highway 32. Adding a background value of 0.15 ug/m^3 , gives a maximum projected air quality value of 0.86 ug/m^3 , which is below the NAAQS for lead of 1.5 ug/m^3 .

DNR has reviewed²¹ the modeling and is in agreement with the results.

Figure

Buick Quarterly Max Pb Conc., Final

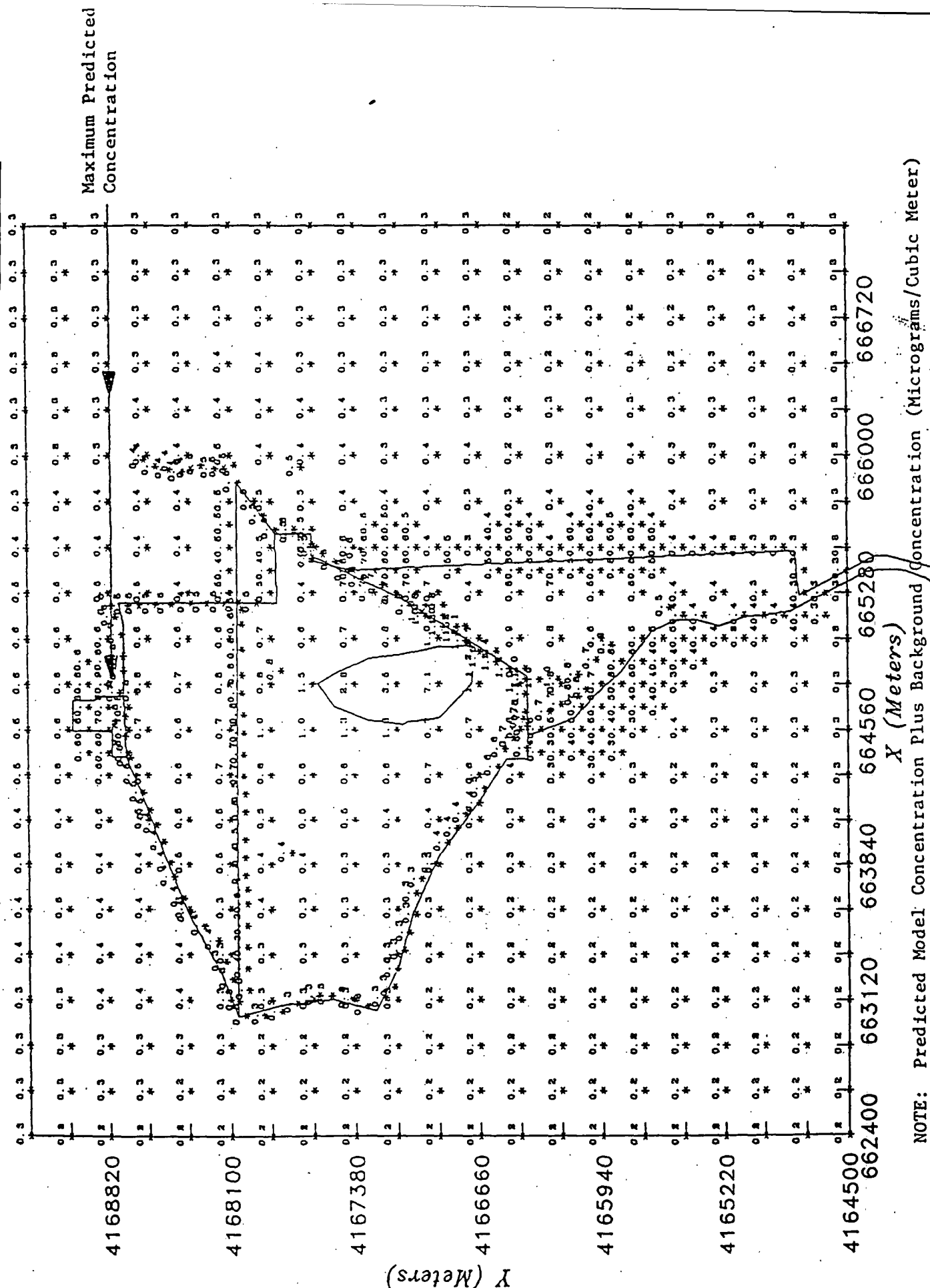
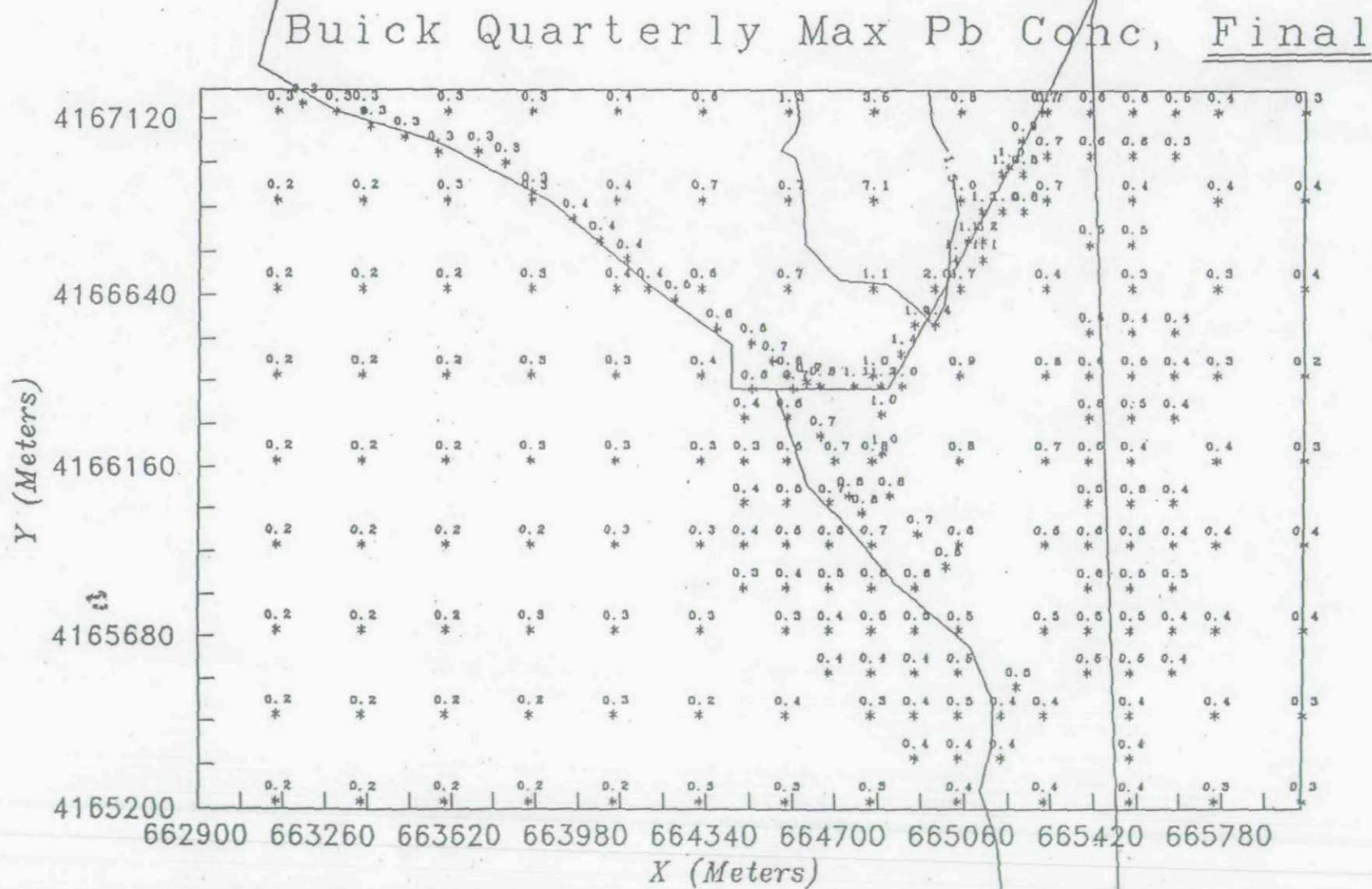


Figure 1



NOTE: Predicted Model Concentration Plus Background Concentration (Micrograms/Cubic Meter)

10
31.16b

Rev. 5-93, RR-7

TABLE III

INDIVIDUAL CONTRIBUTION OF SOURCES - BUICK FINAL MODELING WITH CONTROLS

6/21/93

OFF-SITE QUARTERLY MAXIMUM CONCENTRATION

LOCATION OF MAXIMUM: X=0 m., Y=1920 m., RELATIVE TO MAIN STACK

MAXIMUM OCCURRED IN THIRD QUARTER, 1977

Location	Source	Conc.	Percent	Group Totals	
		ug/cu. m.		ug/cu. m.	Percent
CRUSHER BAGHOUSE	7	0.0473	6.7%		
MAIN STACK	8	0.3749	52.9%		
BATTERY PLANT SCRUBB	16	0.0000	0.0%		
BATTERY PLANT BAGHOU	17	0.0000	0.0%		
SLAG TOWER	27	0.0004	0.1%		
DRUM SHREDDER	30	0.0011	0.2%		
NEW SNTR PREP BAGHOU	31	0.0091	1.3%		
NEW SNTR PLNT BAGHOU	32	0.0890	12.6%		
BLAST FURNACE	1090	0.0225	3.2%	0.1131	16.0%
"	1091	0.0226	3.2%		
"	1092	0.0226	3.2%		
"	1093	0.0227	3.2%		
"	1094	0.0227	3.2%		
BAGHOUSE DUST TRANSP	1100	0.0203	2.9%		
DROSS ROOF MONITOR	1110	0.0006	0.1%	0.0038	0.5%
"	1111	0.0006	0.1%		
"	1112	0.0006	0.1%		
"	1113	0.0006	0.1%		
"	1114	0.0006	0.1%		
"	1115	0.0006	0.1%		
REFINERY FUGITIVES	1120	0.0010	0.1%	0.0060	0.8%
"	1121	0.0010	0.1%		
"	1122	0.0010	0.1%		
"	1123	0.0010	0.1%		
"	1124	0.0010	0.1%		
"	1125	0.0010	0.1%		
SINTER PREP FUGITIVE	1130	0.0003	0.0%	0.0020	0.3%
"	1131	0.0003	0.0%		
"	1132	0.0003	0.0%		
"	1133	0.0003	0.0%		
"	1134	0.0003	0.0%		
"	1135	0.0002	0.0%		
"	1136	0.0002	0.0%		
"	1137	0.0002	0.0%		
SINTER PLANT	1140	0.0023	0.3%	0.0135	1.9%
"	1141	0.0023	0.3%		
"	1142	0.0023	0.3%		
"	1143	0.0023	0.3%		
"	1144	0.0022	0.3%		
"	1145	0.0022	0.3%		
SINTER PRODUCT	1150	0.0026	0.4%	0.0077	1.1%
"	1151	0.0026	0.4%		
"	1152	0.0025	0.4%		

	<u>Source</u>	<u>Max. Conc.</u>	<u>Percent</u>	<u>Group</u>	<u>Totals</u>
SINTER CRUSHER	1153	0.0014	0.2%	0.0083	1.2%
"	1154	0.0014	0.2%		
"	1155	0.0014	0.2%		
"	1156	0.0014	0.2%		
"	1157	0.0007	0.1%		
"	1158	0.0007	0.1%		
"	1159	0.0014	0.2%		
CONC. UNLOAD STORAGE	2000	0.0000	0.0%		
SINTER STORAGE	2010	0.0000	0.0%		
SINTER TRANSFER	2020	0.0000	0.0%		
RESUSPENSION	2030	0.0023	0.3%	0.0116	1.6%
"	2040	0.0032	0.4%		
"	2050	0.0004	0.1%		
"	2060	0.0016	0.2%		
"	2070	0.0040	0.6%		
	Total	0.7080	100.0%		
	(+) .15		Background		
	0.86		Max. Concentration off Doe Run-controlled property		

M. Demonstration of Attainment

DNR considers the 1993 modeling projections, which show no exceedance of the NAAQS for lead, to be the Demonstration of Attainment, and based on the modeling capability and data input, that the area in the vicinity of the Buick primary lead smelter will be in attainment of the lead standard at the time of final lead emissions reduction outlined in this plan.

N. Ambient Air Boundaries at the Buick Smelter

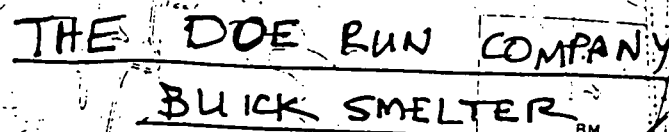
1. Leased Land and Ambient Air

The areal extent of Doe Run's Buick facility is shown in Figure VII B-2.2 (following) as "Land Owned or Leased (by Doe Run) as of July 1, 1992." An enlargement of the smelter area in Figure VII B-2.3 (following) shows property ownership in the area and property leased by Doe Run, with the overall Doe Run-controlled property shown hatched.

Doe Run has leased parcels of land abutting their own from Cominco, the owner and operator of the Magmont lead mine on the adjoining property east of the Buick smelter. Doe Run's latest date as of May, 1993, of entering a lease is July 1, 1992. There are two existing Doe Run leases of Cominco property with both on a from year-to-year renewal basis after June 30, 1993... "unless and until terminated by either party at the end of said original term or at the end of any subsequent year by giving to the other party notice in writing at least sixty (60) days prior to the termination date."

Pursuant to the term of Doe Run's two leases the Clean Air Act requires (section 175a) that the SIP must provide for maintenance of the lead standard

Figure VII B-2.2



Bixby

RECEIVED

Sewage Disposal
Pond
92 SEP 28 PM 2.43

AIR-POLLUTION-
CONTROL PGM

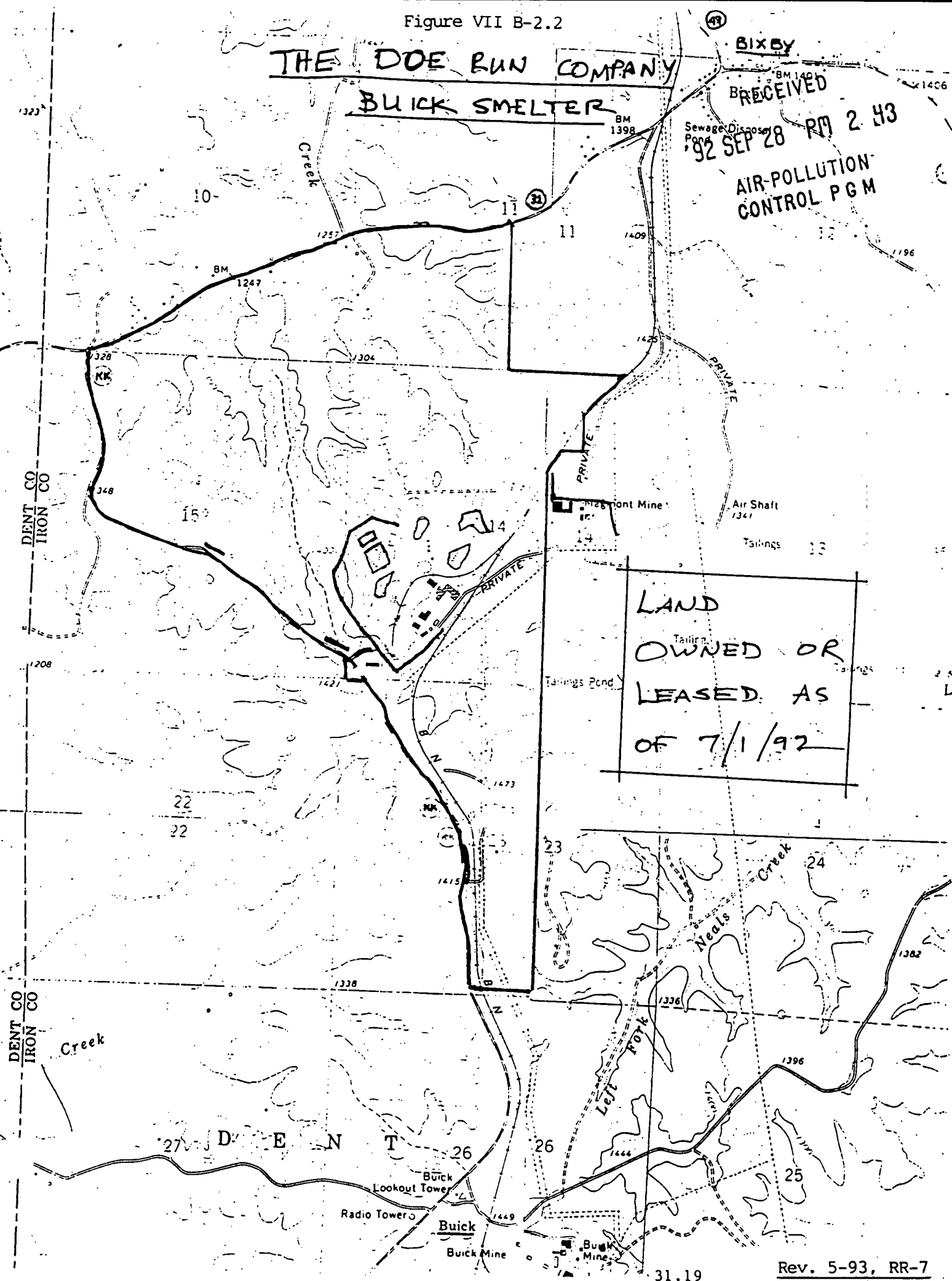
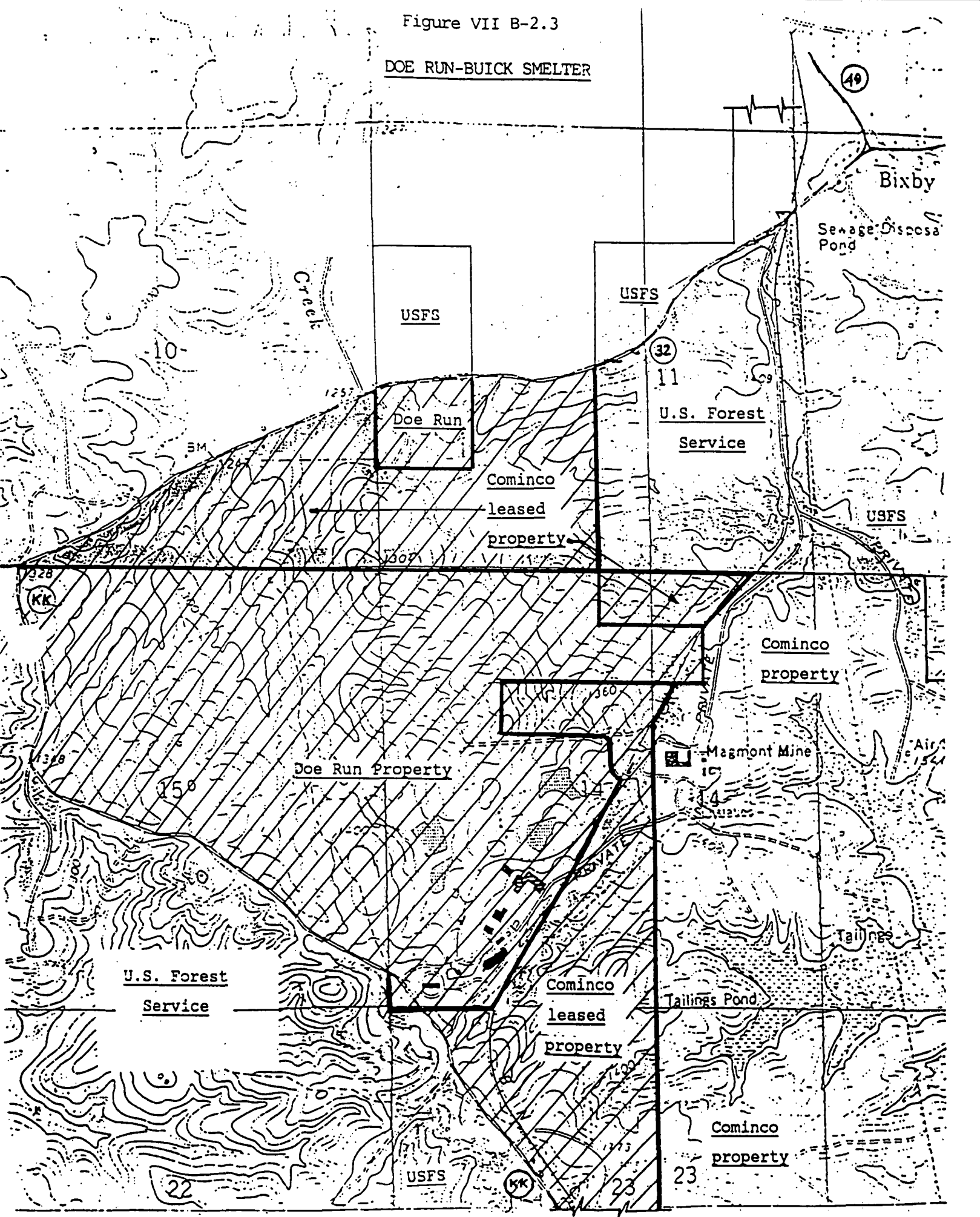


Figure VII B-2.3

DOE RUN-BUICK SMELTER



- not
- 1) Reduce the size of outside stockpiles to working minimums.
 - 2) Cover all remaining stockpiles with plastic, canvas or other dust-impervious material.
 - 3) Run water and sweeper truck inside plant grounds on two shifts, in lieu of one shift Monday to Friday (except when icy conditions exist).
 - d) The Contingency Measures listed above are included in a Consent Order for the Buick smelter in Appendix F.

K. Control Measures for Primary Control Strategy

The following emission control measures are listed here in two groups. Group 1 is composed of measures with rated effectiveness to provide quantified emission reductions for use in this SIP revision's demonstration of attainment. Group 2 is composed of measures needed to satisfy the CAAA requirements for RACT/RACM.

1. Group 1 - Quantified controls for E.I. Emission Reduction

The following control measures that relate to specific emission inventory numbers, collectively will provide lead emissions reductions in amounts estimated as necessary to provide attainment. The emission inventory numbers (EI No.) are shown with the related technical memoranda numbers (TM No.) of the control measure (SIP Reference No. 18) and the Consent Order Project numbers (CO No.) given in Appendix F, with a description of the control measure. See EI table VII B.2-5 for EI names.

SIP REVISION REFERENCES (RR)

<u>RR No.</u>	<u>Date</u>	<u>Subject Matter and Affected Page Nos.</u>
RR-1	7-82	ASARCO modeling: pages i, ii, iv, 11, 15, 33, 35.1, 35.3, 45: Consent Order, added to Appendix F.
RR-2	3-84	St. Joe Lead Co. Consent Order Revision, Item 4; added to Appendix F.
RR-3	9-84	AMAX Lead Co. Consent Order Revision, Item 6; added to Appendix F.
RR-4	5-87	ASARCO Demonstration of Attainment pages 33 to 33.2 and 35.4 to 35.7; Consent Order, added to Appendix F; Maintenance of Lead Standard, added in new Section XII, page 56 and Appendix G; new air quality Monitors added in Section VI.
RR-5	7-90	Doe Run - Herculaneum Demonstration of Attainment pages 23.1 to 33.11; Consent Order and Supplemental SIP Agreement added to Appx. F; 6.1 to 6.3; 11, 12, 15.1 and 15.2; 24, 48, and 49; Appx. C: add Tables 15 and 16; Appx. G.: add pages G-2 to G-7.
<u>RR-6</u>	<u>5-93</u>	<u>Doe Run - Herculaneum Demonstration of Attainment and other SIP Requisites pages 23.12 to 23. ; Consent Order added to Appx. F; 6.1, 6.3, 11, 15.2; Appx. G: revise Work Practice Manual (10 pages).</u>
<u>RR-7</u>	<u>5-93</u>	<u>Doe Run - Buick Demonstration of Attainment and other SIP Requisites pages 31.1 to 31. ; Consent Order added to Appx. F.; 6.4 to 6.6, 15.1, 49; Appx. G.: G-8 to G-11.</u>

SIP CORRECTION REFERENCES (CR)

<u>CR No.</u>	<u>Date</u>	
CR-1	12-88	Correct addition error in table on page 35.2, ASARCO's point source emissions total for 1982.

Rev. 5-93, RR-6 and RR-7

Rev. 7-90, RR-5

Corr. 12-88, CR-1

Rev. 5-87, RR-4

Rev. 9-84, RR-3

Rev. 3-84, RR-2

Rev. 7-82, RR-1

STATE IMPLEMENTATION PLAN FOR LEAD

I. Introduction

A. Need for State Implementation Plan (SIP) for Lead

The provisions of Section 110 of the 1977 Amendments to the Federal Clean Air Act require that each state submit an implementation plan for the control of any criteria pollutant. On October 5, 1978, the Administrator of the United States Environmental Protection Agency (EPA) promulgated a lead ambient air quality standard of 1.5 ug/m³ quarterly arithmetic mean. Each state is to submit its plan within nine months of EPA's promulgation of the standard, followed by EPA having four months to approve the plan, with attainment of the standard required within three years from the approval date. Since the lead standard was promulgated on October 5, 1978, the plan was to have been submitted on July 5, 1979; EPA approval was to have been given by November 5, 1979, and attainment was to have been achieved by November 1982.

Missouri's lead SIP was delayed during completion of the state's amended plans for the other air pollutants and EPA was delayed in promulgating its monitoring guidelines. Target date of July 1980 was agreed to with EPA for submittal of the lead plan. The attainment of the lead standard will be achieved as expeditiously as practicable but in no case no later than five years from the date of approval of this plan by EPA as provided in Section 110(a)(2)(A) and Section 110(e).

Based upon short-term monitoring results, and recognizing that no long-term monitoring guidelines have been promulgated by EPA, the plan provides for the implementation, attainment and enforcement of the national ambient air quality standard for lead in the State of Missouri.

B. Need for Revision of Lead SIP beyond 1990

The Clean Air Act Amendments (CAAA) of November 15, 1990 required designated nonattainment areas for lead for the first time since promulgation of the lead standard (NAAQS) in 1978. These areas were to be determined based on air quality data exceedances of the lead standard. Three areas were so designated in Missouri and are identified on page 1.1 and shown on page 1.2. The designations have an effective date of January 6, 1992. Section 191(A) of the CAAA requires the state to submit a SIP revision to EPA within 18 months of the area designation effective date, or by July 6, 1993.

The CAAA added new requirements for Part D (nonattainment area) SIPs, that now applies to the pollutant lead, and these new requirements are addressed and furnished in Section VII(B) of this 1993 SIP Revision.

The CAAA also provides a national attainment date for nonattainment areas for lead as expeditiously as possible but not later than five (5) years from the area designation effective date of January 6, 1992.

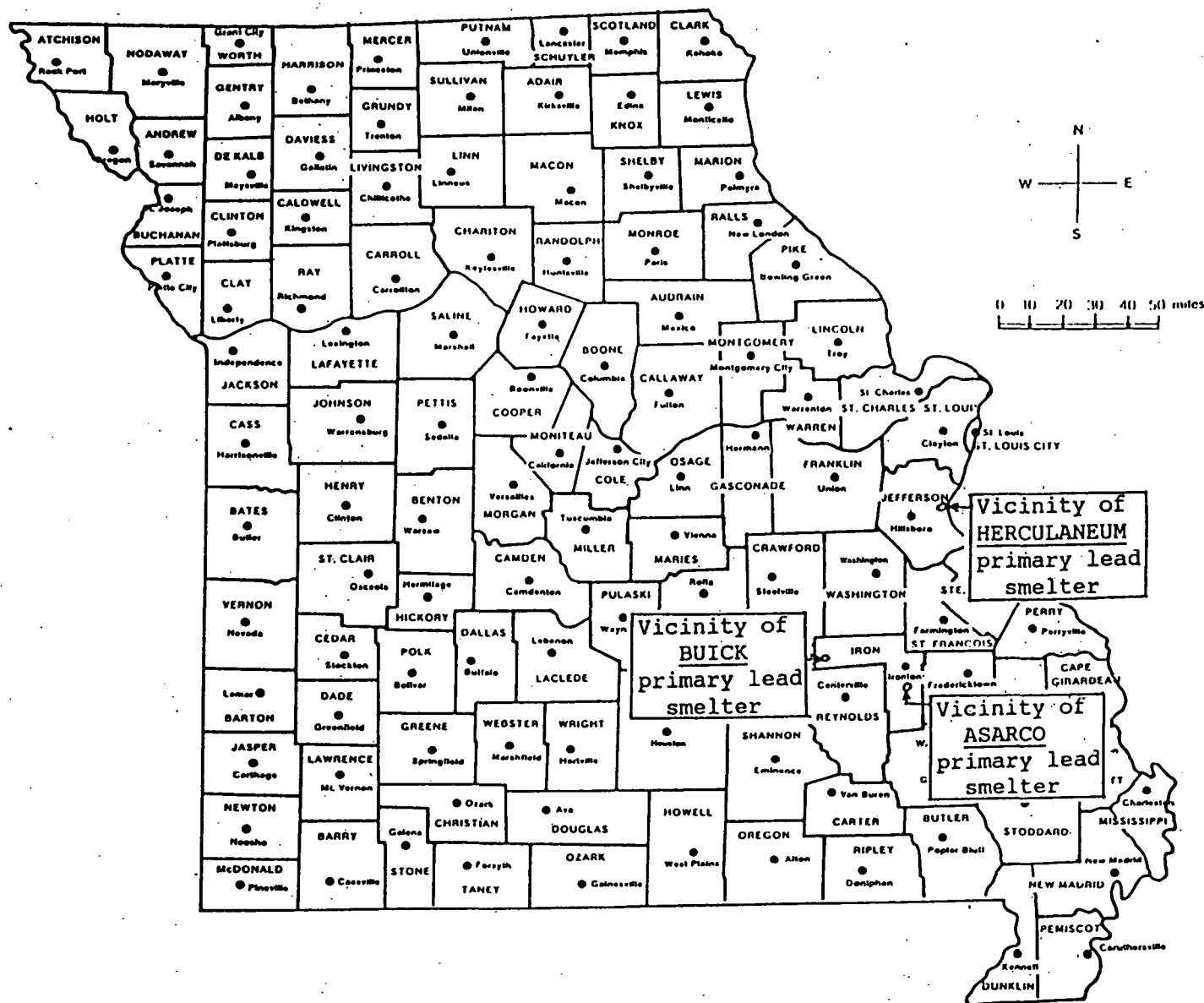
Missouri—Lead

Designated Area	Effective		Designation		Classification (None for lead)	
	Date	Type	Date	Type	Date	Type
• Iron County (part) Within boundaries of Dent Township	1/6/92	Nonattainment	- Doe Run - Buick near Bixby			
• Iron County (part) Within boundaries of Liberty and Arcadia Townships	1/6/92	Nonattainment	- ASARGO Inc. at Glover			
• Jefferson County (part) Within city limits of Herculaneum	1/6/92	Nonattainment	- Doe Run in Herculaneum			
• Dent County	1/6/92	Unclassifiable	- Eastern edge, near Doe Run - Buick			
• Holt County	1/6/92	Unclassifiable	- Schuykill near Forest City			
Rest of State Not Designated						

Missouri—Ozone

Designated Area	Designation		Classification	
	Date ¹	Type	Date ¹	Type
Kansas City Area				
Clay County		Nonattainment		Sub-marginal
Jackson County		Nonattainment		Sub-marginal
Platte County		Nonattainment		Sub-marginal
St. Louis Area				
Franklin County		Nonattainment		Moderate
Jefferson County		Nonattainment		Moderate
St. Charles County		Nonattainment		Moderate
St. Louis		Nonattainment		Moderate
St. Louis Metro		Nonattainment		Moderate
AOCR 054 Metro Kansas City Interstate (Remainder of)		Unclassifiable/Attainment		
Buchanan County				
Cass County				
Ray County				
AOCR 137 N. Missouri Intrastate (part)				
Pike County		Unclassifiable/Attainment		
Ralls County		Unclassifiable/Attainment		
AOCR 137 N. Missouri Intrastate (Remainder of)		Unclassifiable/Attainment		
Adair County				
Andrew County				
Atchison County				
Audrain County				
Boone County				
Calwell County				
Callaway County				
Carroll County				
Chariton County				
Clark County				
Clinton County				
Cole County				
Cooper County				
DeWitt County				
De Kalb County				
Gentry County				
Grundy County				
Harrison County				
Holt County				
Howard County				
Knox County				
Lewis County				
Lincoln County				
Linn County				
Livingston County				
Macon County				
Marion County				
Mercer County				
Monkton County				
Monroe County				
Montgomery County				
Nodaway County				
Osage County				
Pottawattami County				
Randolph County				
Saline County				
Schuyler County				
Scotland County				
Shelby County				

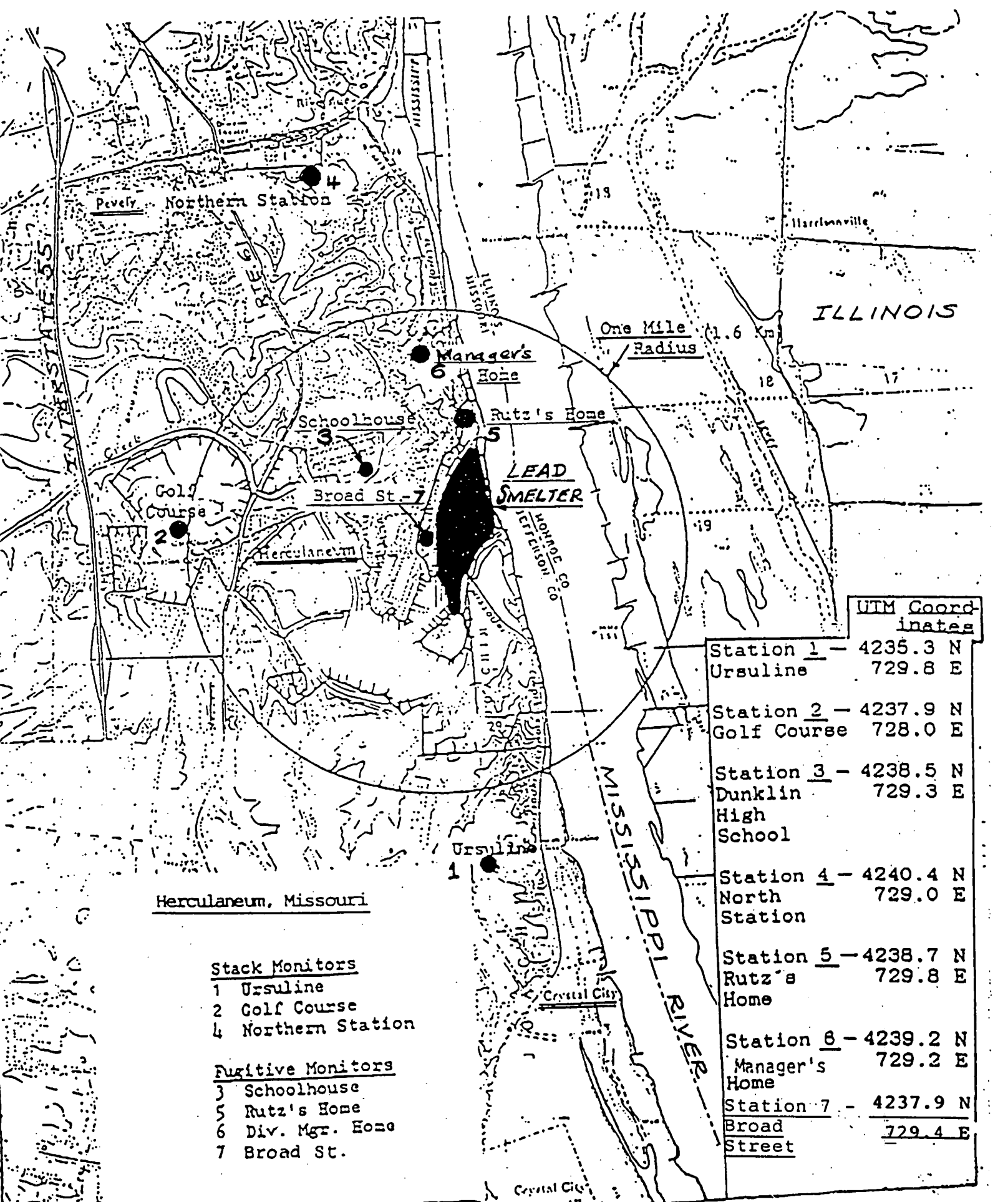
Counties and County Seats



LEAD NONATTAINMENT AREAS
(Initial Designation: January 6, 1992)

Missouri

Figure III - 1



Herculaneum, Missouri

- Stack Monitors
- 1 Ursuline
 - 2 Golf Course
 - 4 Northern Station
- Fugitive Monitors
- 3 Schoolhouse
 - 5 Rutz's Home
 - 6 Div. Mgr. Home
 - 7 Broad St.

UTM Coordinates

Station 1 -	4235.3 N
Ursuline	729.8 E
Station 2 -	4237.9 N
Golf Course	728.0 E
Station 3 -	4238.5 N
Dunklin High School	729.3 E
Station 4 -	4240.4 N
North Station	729.0 E
Station 5 -	4238.7 N
Rutz's Home	729.8 E
Station 6 -	4239.2 N
Manager's Home	729.2 E
Station 7 -	4237.9 N
Broad Street	729.4 E

TABLE III-4

THE DOE RUN COMPANY (formerly St. Joe Lead Co.) PRIMARY LEAD SMELTER, Herculanum, MO
LONG-TERM MONITORING FOR LEAD

- Values in Micrograms per Cubic Meter ($\mu\text{g}/\text{m}^3$)
 - Underlined Qtr Avg Values Exceed the 1.5 Standard for Lead

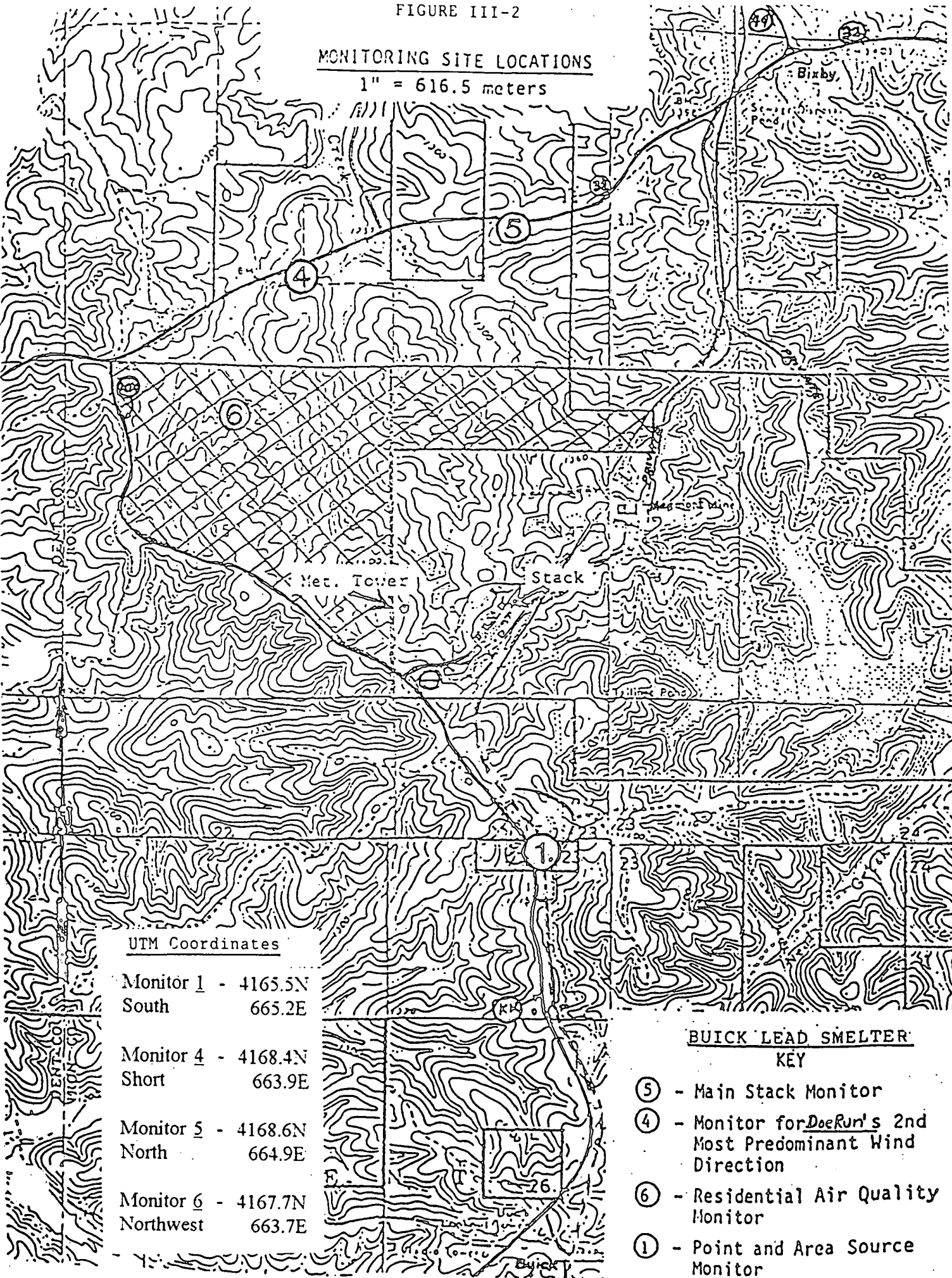
Doe Run's Hi-Vol Monitors																
CALENDAR QUARTER YR/QTR	STATE (CO-LOC), DHS			SITE #3, DHS			SITE #5, Rutz's			SITE #6, Div. Man.			SITE #7, Broad St.			MAX QTR
	Max Obs	2nd Max	Qtr Avg	Max Obs	2nd Max	Qtr Avg	Max Obs	2nd Max	Qtr Avg	Max Obs	2nd Max	Qtr Avg	Max Obs	2nd Max	Qtr Avg	Monitored (All Stations)
88/1	9.28	7.30	<u>2.46</u>	15.39	12.07	<u>3.67</u>	18.33	15.68	<u>7.44</u>	62.94	22.07	<u>8.59</u>				<u>8.59</u>
88/2			<u>1.82</u>	6.27	5.43	1.38	12.81	11.63	<u>3.45</u> *	only 6 samp.						<u>3.45</u>
88/3			1.36	4.46	2.55	<u>1.45</u> *	2.39	1.60	.91	1.96	1.35	.79				1.45
88/4	4.1	2.90	<u>1.23</u>	5.11	2.63	<u>1.54</u>	6.45	4.58	<u>2.20</u> *	1.90	1.67	.93				<u>2.20</u>
89/1	4.70	3.30	1.45	5.66	2.06	1.16	10.97	3.73	<u>2.09</u> *	11.85	3.84	<u>1.60</u>				<u>2.09</u>
89/2	4.20	3.20	1.39	3.97	3.54	<u>1.57</u>	17.23	2.97	<u>2.29</u> *	10.90	3.98	<u>1.82</u>				<u>2.29</u>
89/3	1.52	1.00	.56	5.97	1.87	1.25	5.06	3.76	1.50*	5.12	2.22	.92				1.50
89/4	5.40	4.40	<u>1.56</u>	5.06	4.24	1.32	8.32	4.07	<u>1.93</u> *	7.27	2.93	1.24				<u>1.93</u>
90/1	2.20	2.00	.87	2.12	1.84	.91	11.12	5.45	<u>2.24</u> *	2.35	1.41	.67				<u>2.24</u>
90/2	11.00	4.60	<u>1.97</u> *	10.45	4.15	<u>1.61</u>	5.58	.98	.84	4.39	1.79	.81				<u>1.97</u>
90/3	5.40	2.60	<u>1.61</u> *	3.95	2.33	1.19	3.66	1.71	1.06	2.59	1.72	.87				<u>1.61</u>
90/4	9.20	7.50	<u>2.20</u>	9.06	5.04	<u>1.86</u>	9.64	6.71	<u>2.34</u> *	5.61	5.36	1.37				<u>2.34</u>
91/1	7.20	4.80	<u>1.88</u> *	5.59	4.20	1.45	4.82	3.40	1.30	4.38	1.45	.80				<u>1.88</u>
91/2	1.90	1.60	.77*	3.05	1.81	.71	1.35	1.12	.42	2.47	1.04	.53				.77
91/3	4.70	4.60	<u>1.78</u> *	3.93	3.29	1.37	3.52	2.88	1.17	2.96	2.66	1.14				<u>1.78</u>
91/4	9.10	6.70	<u>2.34</u> *	6.78	5.54	<u>1.66</u>	3.40	1.97	.83	6.07	2.97	1.38				<u>2.34</u>
92/1	1.60	1.50	.72	2.05	1.57	.65	17.05	5.07	<u>1.94</u> *	9.11	5.38	1.43				<u>1.94</u>
92/2	3.60	3.10	.98	7.43	3.67	<u>1.27</u> *	4.75	2.65	1.01	.69	.56	.28				1.27
92/3	6.31	4.80	1.29	12.04	5.93	<u>1.95</u>	7.44	1.51	1.02	3.00	1.75	.58	9.21	5.82	<u>2.40</u>	<u>2.40</u> *
92/4	10.30	7.32	<u>2.18</u>	14.08	8.76	<u>2.54</u>	9.50	2.00	1.28	5.62	2.45	.86	25.99	13.88	<u>5.53</u>	<u>5.58</u> *
93/1	1.40	.32	.31	1.33	.54	.33	1.67	1.50	.58	.73	.51	.28	18.62	8.71	<u>3.68</u>	<u>3.68</u> *

* Monitor with max. value for that quarter

FIGURE III-2

MONITORING SITE LOCATIONS

1" = 616.5 meters



UTM Coordinates

- Monitor 1 - 4165.5N
South 665.2E
- Monitor 4 - 4168.4N
Short 663.9E
- Monitor 5 - 4168.6N
North 664.9E
- Monitor 6 - 4167.7N
Northwest 663.7E

BUICK LEAD SMELTER
KEY

- ⑤ - Main Stack Monitor
- ④ - Monitor for DoeRun's 2nd Most Predominant Wind Direction
- ⑥ - Residential Air Quality Monitor
- ① - Point and Area Source Monitor

TABLE III - 5
 BUICK Primary Lead Smelter near Bixby in Iron County
LONG-TERM MONITORING FOR LEAD
 (Quarterly Values in ug per m³)

Calendar Quarter (Yr/Qtr)	<u>Doe Run's Hi-Vol Monitors</u>			
	No. 1 South	No. 4 NW	No. 5 North	No. 6 WNW
82/3	<u>1.69</u>	<u>1.80</u>	1.19	.72
82/4	.75	<u>3.16</u>	<u>3.09</u>	1.12
83/1	.90	.82	.68	<u>1.67</u>
83/2	<u>2.39</u>	<u>1.74</u>	<u>1.89</u>	1.21
83/3	.55	1.32	1.46	.91
83/4	.39	.70	<u>2.85</u>	1.10
84/1	1.26	.99	1.25	1.10
84/2	<u>2.21</u>	.96	.85	.80
84/3	<u>1.69</u>	.49	.98	.66
84/4	.49	.65	.96	.25
85/1	<u>2.38</u>	.56	.95	.53
85/2	<u>2.09</u>	<u>2.19</u>	<u>1.80</u>	.96
85/3	1.32	<u>4.22</u>	<u>2.73</u>	<u>2.32</u>
85/4	0.24	1.25	1.12	0.81
86/1	<u>1.83</u>	1.48	<u>3.27</u>	0.83
86/2	1.17	0.95	0.88	<u>1.52</u>
86/3	0.14	0.12	0.15	0.07
86/4	0.11	0.15	0.14	0.10
87/1	<u>1.78</u>	<u>2.25</u>	1.23	<u>2.96</u>
87/2	<u>3.49</u>	1.29	1.07	0.94
87/3	<u>2.02</u>	<u>2.96</u>	1.26	<u>2.33</u>
87/4	<u>1.79</u>	<u>1.86</u>	0.35	0.61

TABLE III - 5
 BUICK Primary Lead Smelter near Bixby in Iron County
LONG-TERM MONITORING FOR LEAD
 (Quarterly Values in ug per m³)

Calendar Quarter (Yr/Qtr)	<u>Doe Run's Hi-Vol Monitors</u>			
	No. 1 South	No. 4 NW	No. 5 North	No. 6 WNW
88/1	<u>1.52</u>	0.76	1.38	0.38
88/2	0.68	0.70	<u>1.75</u>	0.74
88/3	0.91	0.98	0.91	0.44
88/4	0.66	1.00	0.80	0.90
89/1	0.39	0.18	0.31	0.11
89/2	0.52	0.32	0.47	0.10
89/3	0.63	0.50	0.35	0.29
89/4	1.16	0.36	0.44	0.14
90/1	0.57	0.21	0.28	0.17
90/2	0.59	0.17	0.15	0.11
90/3	0.33	0.29	0.25	0.47
90/4	0.52	0.73	0.81	0.51
91/1	1.08	1.10	1.29	0.97
91/2	0.60	0.35	0.85	1.49
91/3	0.38	0.38	0.17	0.32
91/4	0.49	0.32	0.68	0.21
92/1	0.89	0.38	0.46	0.41
92/2	0.32	0.46	0.28	0.78
92/3	0.30	0.26	0.30	0.12
92/4	0.51	0.89	0.63	0.28

TABLE IV - 3

STATE OF MISSOURI POINT SOURCE LEAD EMISSION INVENTORY

Source Type ^a	1979 (except as noted)		Calculation Method/Results
	Controlled Lead Emission,TPY		
I. Primary Lead Smelters			
<u>Name</u> [St. Joe Lead Co.] Doe Run Company	<u>Location</u> Hercul.	94.1 ^a (40)-360-178('87)	Detailed in Table 8,9,10 & 11
<u>[AMAX Lead Co of Mo.]</u> <u>Doe Run Co.</u>	<u>Bixby</u>	<u>226.8^c</u> -695-	Detailed in Table 4,5,6 & 7 (Smelter Shutdown 6-86)
ASARCO, Inc.	Glover	52.2** 162-68*(7-82) (5-87)	Detailed in Table 12,13 & 14
II. Secondary Lead Smelters			
<u>Name</u> Schuylkill Metals Corp.	<u>Location</u> Forest City	0.9 1.1 ('87)	Emission Inventory stack, SCC emission factors ² ; Minimum Escaping Fugitives from ambient monitoring and OSHA studies data
III. Lead-Acid Battery Plant			
<u>Name</u> [Globe-Union ^b] <u>Controls</u>	<u>Location</u> St. Joseph	0.4 0.5 ('87)	Emission Inventory <u>Johnson</u> SCC emission factors ² ; excellent absolute filter internal hygiene ventilation
IV. Lead Pigment Plant			
<u>Name</u> Eagle Picher, Inc.	<u>Location</u> Joplin	4.8 zero('87)	Emission Inventory; Ref.3 emission factors 2 times stack emissions for a fugitive estimate.

* - ASARCO 1982 Modeled Lead Emissions, see Table VII B.3-4

** - ASARCO's Post-1986 Modeled Lead Emissions, see Table VII B.3-8

Rev. 5-93,RR-7

Rev. 7-90,RR-5

Rev. 5-87,RR-4

Rev. 7-82,RR-1

TABLE IV - 3 (Continued)

STATE OF MISSOURI POINT SOURCE LEAD EMISSION INVENTORY

Footnotes:

- a. The State of Missouri Air Pollution Control Program computerized inventory was used as a screening device for lead point sources. All applicable SCC sources and corresponding HATRENS emission factors were entered to search the source file. 469 point sources were identified as possible lead emitting sources (some sources within a given installation) of which only 19 installations had lead emissions, after control equipment, over 0.5 tons per year i.e., could be rounded to 1 ton per year. These were then scrutinized for accuracy and corrections made if necessary. The sources less than 0.5 tons per year are listed here for completeness and because of the nature of their industries.
- b. This is the only battery plant in Missouri which produces over 2000 batteries per day at the present time.
- c. Primary crushing at all the mines is done beneath the surface. A 75% loss in total emissions is assumed from Ref. 3 because of this fact. All secondary and tertiary crushers are typically controlled by wet scrubbers or baghouses, 90 - 99% efficient. Ore concentrating is a wet process and little emissions should result. Most mines do concentrate loading in enclosed areas and cover or wet down loads upon departure as well as water and/or vacuum-sweep haul roads.
- d. Large emission rate due to concentrate drying in a rotary dryer. This is the only mine currently using this operation. The operation will be terminated by mid-1980. Section VII C-3 demonstrates that in order to meet the lead standard a 30.7% reduction of emissions is necessary. Termination of the drying operation in its present form accomplishes this, lowering emissions to 1.31 TPY. However, this facility wishes to "bank" the difference in emissions for potential use at this site, hence the resultant emission rate of 19.7 TPY.
- e. Doe Run - Herculanum Post-1987 Modeled E.I., see Table VII B. 1-4, page 23.6.(Rev.7-90)
- f. Doe Run-Buick Post-1993 Modeled E.I., see Table VII B.2-5, page 31.6.

~~[The locations of the monitors will be selected based on real locations of the population in residence in reasonably known continuity which is most susceptible to potential harmful effects of lead in ambient air.]~~ The locations of new monitors follow.

- a. In the vicinity of the ASARCO smelter at Glover, Missouri in Iron County; DNR plans to install a monitor in the community of Hogan which is approximately two (2) miles north of the smelter. At this time ASARCO is not participating in the long-term monitoring plan. See section VII, B-3, e. on page 33. (Rev. 5-87). Monitor installed at Hogan, September 1987. (Rev. 7-90)
- b. In the vicinity of the Doe Run-Buick smelter (formerly AMAX) between Boss and Bixby, Missouri in Iron County: ~~[DNR plans to install a monitor in the community of Bixby which is approximately one and three quarter (1-3/4) miles northeast of the smelter. Installation of the monitor is contingent on resumption of operations at the Buick smelter which ceased production of lead in June 1986.]~~ At this time, since 1982, Doe Run has three monitors in the northern forested sector of the smelter vicinity approximately three-quarter to one mile from the smelter and one monitor three-quarter mile south of the smelter along Rt. KK, all as part of the long-term monitoring plan of this SIP. See map Figure III-2, page 6.4.
- c. In the vicinity of the Doe Run-Herculaneum smelter (formerly St. Joe Lead) in Herculaneum, Missouri in Jefferson County; At this time Doe Run has monitors as part of the long-term monitoring plan of this SIP in the populated areas in the north and northwest sectors of the smelter vicinity approximately one-half (1/2) mile from the smelter stack. These monitors were sited using dispersion modeling in accordance with the U. S. EPA Guidelines for Lead Monitoring dated January 1981. (Rev. 5-87) See map Figure III-1, page 6.1.

DNR plans to install a monitor in Herculaneum at the approximate location determined by the 1990 dispersion model projected as having the maximum ambient air concentration at the projected attainment date of February 1, 1993. DNR plans to install the monitor two (2) calendar quarters prior to this attainment date. (Rev. 7-90)

Monitor installed by Doe Run at Broad Street (Monitor No. 7, June 1992.

XI. Maintenance of the Lead Standard

DNR has promulgated 10 CSR 10-6.120, Restriction of Emission of Lead from Primary Lead Smelter - Refinery Installations, with an effective date of December 29, 1988, that "caps" both point and fugitive lead emissions of each smelter installation at the level of emissions used in the SIP's demonstration of attainment for that installations. See App. G for Rule. (Rev. 7-90)

The purpose of the rule is to limit emissions at the measurable point sources, to provide for the operation and maintenance of all emissions control equipment and procedures that limit and reduce all lead emission from the smelter, and initiate requirements for smelter reporting and DNR compliance inspections regarding lead emissions.

A. In the Vicinity of the ASARCO Primary Lead Smelter in Iron County near Glover, Missouri

At the time of the effective date of this new rule (December 29, 1988) ASARCO's lead emissions will be restricted to those amounts used in the 1987 dispersion modeling and in subsection VII(B) of this plan, and in so doing will provide maintenance of compliance with the lead standard in this vicinity.

[1993 Note: There is no change to this page in this SIP revision, which is included here for review continuity of the subject matter on the following two pages.]

- B. In the Vicinity of the Doe Run Primary Lead Smelter in Jefferson County in Herculaneum, Missouri.

At the time of the effective date of an amendment to this rule (March 14, 1991), Doe Run - Herculaneum's lead emissions will be restricted to those amounts used in the 1990 dispersion modeling and in subsection VII (B) of this plan, and in so doing will provide maintenance of compliance with the lead standard in this vicinity.

- C. In the Vicinity of the Doe Run (Buick) Primary Lead Smelter in Iron County near Bixby, Missouri.

(At the time of this 1993 SIP Revision adoption DNR has completed an amendment to rule 10 CSR 10-6.120 which will limit the lead emissions at this smelter. See App. G for the proposed draft of the rule amendment and also the Order of Rulemaking. The schedule calls for having this amendment effective in November 1993 as published in the Code of State Regulations.)

At the time of the effective date of an amendment to this rule, Doe Run - Buick's lead emissions from the primary smelter will be restricted to those amounts used in the 1993 dispersion modeling and in subsection VII (B) of this plan, and in so doing will provide maintenance of compliance with the lead standard in this vicinity.

APPENDIX F

CONSENT ORDERS by the MISSOURI AIR CONSERVATION COMMISSION

- * Consent Orders entered by the Missouri Air Conservation Commission with AMAX, St. Joe Lead Company, and ASARCO, 8-80.
- * ASARCO Consent Order, added 7-82.
- * St. Joe Lead C.O. Revision, 3-84.
- * AMAX Lead C.O. Revision, 9-84.
- * ASARCO Consent Order, added 5-87.
- * Doe Run-Herculaneum Consent Order (by DNR only), added 7-90.
- * Doe Run Herculaneum Supplemental SIP Agreement, added 7-90.
- * Doe Run-Herculaneum Consent Order, added 5-93
- * Doe Run-Buick Consent Order, added 5-93

BEFORE
THE AIR CONSERVATION COMMISSION
STATE OF MISSOURI

In the Matter of)
The Doe Run Company)
(Herculaneum Smelter))
Consent order)
respecting lead emissions)

STIPULATION

Come now the Doe Run Company (hereafter Doe Run) and the Missouri Department of Natural Resources (hereafter DNR), and covenant and agree as follows:

1. The State of Missouri, through DNR and the Missouri Air Conservation Commission and Doe Run are desirous of submitting to the U. S. Environmental Protection Agency (hereafter EPA) a State Implementation Plan (hereafter SIP) for the attainment and maintenance of the national ambient air quality standard for lead, and having same approved by EPA pursuant to the Clean Air Acts amended in 1990.
2. To this end, DNR and the Missouri Air Conservation Commission are preparing a SIP to be submitted to EPA, to demonstrate attainment and maintenance of the national ambient air quality standard for lead. As part of the SIP, certain emission reductions from Doe Run's Herculaneum, Missouri facility are to be undertaken. DNR and Doe Run agree that the Missouri Air Conservation Commission may enter the order set forth below, to be binding on the parties, providing for certain emission control projects which Doe Run agrees to undertake and complete on the schedule set forth in the order. The parties, by their signatures hereto, acknowledge that they have read and understand the terms of this Stipulation and the order of the Commission, and agree to be bound thereby. The parties further acknowledge and agree that the terms of the below order may be enforced by suit for injunction and penalties pursuant to Section 643.151, RSMo 1986.

ORDER

This matter coming before the Commission on the Stipulation of the parties and after public hearing, the Commission having jurisdiction over the subject matter and the parties, and being fully advised in the premises;

IT IS ORDERED that The Doe Run Company undertake and complete, at its Herculaneum, Missouri facility, the following emission control projects, on the schedule set forth:

A. Projects required as SIP control measures.

Project	Completion Date
1. Install new mixing drum baghouse in the sinter plant (SIP ref. No. 22, Technical Memorandum, February 1993, TM No. 1). Complete installation by	09/30/93
2. Install equipment to modify present transfer of sinter plant's ESP, crusher, and cooler baghouse fume by drag conveyor to a mix room metering bin (TM No. 2). Complete engineering by Complete installation by	05/31/93 10/31/93
3. Install automatic dampering equipment in both dross furnaces as they are rebuilt (TM No. 3). Complete installation on #1 dross furnace by Complete installation on #2 dross furnace by	12/31/93 06/30/94

4. Install equipment to transfer the #5 baghouse
fume by drag conveyor to the sinter plant mix
room (TM No. 4).
Complete engineering by 01/31/94
Complete installation by 07/31/94
5. Chemically stabilize or pave access road just
North of the Strip Mill Building from Station
Street to the existing concrete.
Complete paving or initiate stabilization by 07/31/94

Should Doe Run opt for stabilization, stabilization
to occur at a minimum of once every 6 months
(eg. once during the periods Jul - Dec and Jan - Jun).
6. Chemically stabilize or pave river yard access road.
Complete paving or initiate stabilization by 07/31/94

Should Doe Run opt for stabilization, stabilization
to occur at a minimum of once every 6 months
(eg. once during the period Jul - Dec and Jan - Jun).
7. Chemically stabilize concentrate storage piles
once every 6 months (eg. once during the
periods Jul - Dec and Jan - Jun).
Complete first stabilization by 12-31-93
8. Develop formal written guidelines for
construction projects, to control fugitive emissions.
Complete by 09/01/93

9. Develop formal written guidelines for temporary sources of dust on paved roads, to control fugitive emissions.

Complete by

10/01/93

B. Projects required as Contingency control measures

The undertaking and completion of any of the following projects is contingent upon not attaining the lead standard in the smelter vicinity after completion of the emission control projects 1. through 9. in section A. of this order.

The criteria for determining the need of undertaking these projects is given in the Missouri SIP for Lead, 1980 and as revised by the Commission through 1993, Section VII, B, 1, P, 5. Contingency Measures.

1. Initiate street sweeping with sweeper truck provided with water spray once per week on those Herculaneum streets within the area with the potential to be most heavily impacted by fugitive emissions and plant resuspension. This area includes streets as described in P.5.c) item 1) on page 23.22
2. Consume stockpile of concentrate to reduce size to working minimum of 15,000 tons and maintain at that size.
3. Consume stockpile of sinter to reduce size to working minimum of 25,000 tons and maintain at that level.
4. Run water and sweeper truck inside plant grounds on two shifts Monday-Friday, in lieu of one shift Monday-Friday (except when icy conditions exist).
5. Cover all remaining lead-bearing stockpiles with plastic, canvas or other dust-impervious material.

If it is determined by DNR that any of these contingency projects are needed for the attainment of the national ambient air quality standard for lead, implementation of contingency measures shall begin within thirty (30) days from receipt of DNR's notice of need.

It is acknowledged and agreed that the schedule set forth above shall not apply in the event Doe Run is prevented from completing these emission control projects during the time periods as stated as the result of strikes, Acts of God, and other circumstances beyond its control, and the completion dates will be extended for periods of time corresponding to the time said circumstances are in effect. The burden shall be on Doe Run to establish to the Commission the circumstances and amount of time necessary for a revised schedule.

THE DOE RUN COMPANY

by Walter H. Krawitz / General Counsel June 24, 1993
Tim E. Conley / Director of Env. Affairs (DATE)
MISSOURI DEPARTMENT OF NATURAL RESOURCES

by David R. Olson 7-2-93
(DATE)

entered: _____

MISSOURI AIR CONSERVATION COMMISSION

Johnny Ray Gihl Chairman
Michael J. Foreman Vice-Chairman
Wesley D. Crane Member
Harriet Beard Member
Linda Vaalderhof Member
Kenneth R. Beck Member

Member

WORK PRACTICE MANUAL

Herculaneum Smelter

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WORK PRACTICE MANUAL

HERCULANEUM SMELTER

APPENDICES

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PURPOSE, USE AND CHANGE

1. This manual is written to comply with the Missouri Air Conservation Rule 10 CSR 10-6.120 that states at (3)(A):
2. The owner or operator shall prepare, submit for approval, and then implement a process and area-specific work practice manual that will apply to locations of fugitive lead emissions at the installation;
and at (3)(B)2.:

The manual shall be the method of determining compliance with the provisions of this subsection. Failure to adhere to the work practices in the manual shall be a violation of this rule.

3. Any change to the work practices in the manual requires prior written approval from the DNR director before any change becomes effective and goes into practice.

ACTION TO PREVENT EXCESS PROCESS EMISSIONS

-Utilizing Emissions Predictor Profile Operating Procedures (OP) and Decision Trees (DT)

A	Sinter Hood - Decision Tree	A-1
B	Sinter plant - Waste gas Inlet Temperature to # 3 Baghouse	B-1
C	Blast Furnace/# 5 Baghouse - Waste Gas Inlet Temperature to # 5 Baghouse	C-1
	Dumping to Trestle Bins - Decision Tree Use	C-2

4. Definitions:

Accumulated materials: lead bearing particulate that has the potential to become easily reentrained.

Hose down : to wet or reduce accumulated materials.

Wetting: sufficient water to be used to insure no visible emission immediately following hosedown.

150 Sinter Plant

- 1. A simplified crushing circuit will be installed in 1991 in the sinter plant, resulting in a reduction in the number of physical pieces of equipment, reduced number of transfer points and improved ventilation through more efficient baghouses versus the previous wet scrubbers. The new sinter plant crushing circuit will be ventilated by the new sinter plant baghouse.

- 2. a. The following areas will be hosed down on a per shift basis to wet or reduce accumulated material:

<u>Location</u>	<u>Elevation, ft.</u>	<u>(*)</u>
-- sinter machine main floor	55	
-- claw breaker floor	40	
-- CV-40 floor area	40	
-- <u>Liya</u> roll floor area	19	
-- bottom floor of sinter plant	0	

- b. The following areas are scheduled for hose down on a per day basis to wet or reduce accumulated material:

-- wind box floor area	45
-- <u>crusher baghouse floor</u>	<u>40</u>

(*) In a. and b. elevations are Relative to the bottom floor elevation of 0 feet.

- 3. Hose down will only be performed when weather conditions permit so as not to create slipping hazards due to ice formation or glazing of surfaces. These conditions can exist when the temperature is less than 35 F or whenever the application of water results in the formation of ice, which could result in injury to personnel.

168 Yard

1. Water truck and sweeper truck will wet and sweep those areas of plant that are accessible by the equipment on a daily basis (Monday through Friday schedule). See Appendix E, plant layout with water/sweeper truck routes.
2. Yard/transportation department is responsible for hosing down the area between the blast furnace blower room and the trestle on a weekly basis.
3. Transportation will wet finished sinter cars with a fire hose prior to unloading sinter to stock.
4. Truck watering and hosedown of plant areas may be suspended during any period when the temperature is less than 35 F, or whenever the application of water results in the formation of ice which could result in injury to plant personnel.
5. Record keeping for the yard shall include:
 - a: for wash down of the area between blast furnace blower room and trestle the date, the shift work performed on (eg. day, evening, night) and foreman supervising the shift (eg. John Smith).
6. Chemically stabilize concentrate storage piles once every 8 months between applications (eg., once during the periods Jul-Dec and Jan-Jun). Complete first stabilization by 12/31/83.

(WPM Nos. 7. and 8. are smelter option item nos. 5. and 6. from the Consent Order in the 1983 Lead SIP Revision for Herculaneum. Should Doe Run opt for "paving" in one or both item nos. 5. and 6. from the consent order, then WPM item nos. 7. and 8. would not require chemical stabilization and the new paved areas would be included in WPM 1. above for the work practice of watering and sweeping.)

7. Chemically stabilize the unpaved portion of road from Station Street to the existing paving east. Unpaved portion of road is located just north of the Strip Mill Building. Stabilization to be conducted at a minimum of once every six (6) (eg., once during the periods Jul-Dec and Jan-Jun).
8. Chemically stabilize the river yard access road at a minimum of once every six (6) months between applications (eg., once during the periods Jul-Dec and Jan-Jun).
9. Temporary sources of dust on paved surfaces outside the plant due to spillage of materials will be addressed so as to limit the reentrainment of those materials. Clean

up to consist of those materials being loaded into transfer vehicles by either hand shoveling or should the need arise, mechanized equipment. Final clean up will incorporate the use of floor sweep compound which will/ should adhere to the smaller particles, making them easier to remove.

Construction guidelines
For Capital Construction Projects

1. Prevention of fugitive dust shall be a consideration in the planning of construction projects.
2. Where feasible old building components will be cleaned by either vacuum or water hose prior to removal. Additional power washing may be performed, once the component has been removed to an area where electrical shock or shorting of existing equipment can be avoided.
3. Where feasible both the in house water truck and sweeper truck shall be used during construction projects to address dirt stirred up by trucks.
4. Water hoses/water sprays shall be used to address potential dust emissions during excavation should the specific conditions warrant their use.
5. Excavation materials shall be managed to minimize dust blowing (for example, wetting with water hoses, surface treatment with dust binder, establishment of vegetation, tarping).

2
Rev. 1993

SINTER HOOD DECISION TREE USE

SITUATION	ACTION STEP
OBSERVE "BLUE HAZE" SO2 GAS	<p>SINTER MACHINE OPERATOR</p> <ul style="list-style-type: none"> ° CHECKS FA 12 DAMPER AND OPENS IF NOT ° CHECKS #3 BAGHOUSE TEMPERATURES ° IF "HOT": CHECK HOOD SPRAY / HIGH PRESSURE PUMP
<p>PROBLEM REMAINS WITH: FA 12 DAMPER OPEN AND HOOD SPRAY WORKING</p> <p><u>DILUTION DAMPER WILL OPEN AT 240°F</u></p>	<p>SINTER MACHINE OPERATOR...</p> <ul style="list-style-type: none"> ° SHUTS DOWN FA6 ° CUTS BACK FA5 / FA4 DAMPERS AND CONTACTS #3 BAGHOUSE/ACID PLANT OPERATOR ° BAGHOUSE OPERATOR CONFIRMS: <ul style="list-style-type: none"> ° 2" DRAFT ° CELLS ON LINE ° NEED TO SHAKE BAGS ° ACID PLANT OPERATOR CHECKS... <ul style="list-style-type: none"> ° % ACID PLANT IS RUNNING
<p>#3 BAGHOUSE TEMPERATURE REACHES 250°F</p> <p><u>AT 256° F</u></p>	<p>FA12 SHUTDOWN SINTER MACHINE SHUTDOWN</p> <p>#6 & #7 FANS SHUTDOWN AT #3 BAGHOUSE</p>

EMISSIONS PREDICTOR PROFILE OPERATING PROCEDURES**SINTER PLANT****WASTE GAS INLET TEMPERATURE TO #3 BAGHOUSE**

SITUATION	ACTION STEP
OPTIMUM OPERATING RANGE (UP TO <u>230°F</u>)	<u>ONLY AREA VENTED BY #3 BAGHOUSE</u> <u>IS SINTER PLANT</u>
CAUTION OPERATING TEMPERATURE RANGE (<u>235°F - 245°F</u>) <u>240°F DILUTION DAMPER OPENS</u> ° IN 10' X 14' TRAIL <u>240°F</u> INDICATES THAT TEMPERATURE HAS MOVED TOWARDS POTENTIAL PROBLEM SITUATION	SINTER PLANT CONTROL ROOM OPERATOR ° INCREASE MONITORING FREQUENCY OF INLET TEMPERATURE ° REFER TO EMISSIONS MANAGEMENT IMPROVEMENT MANUAL - SINTER HOOD DECISION TREE ° NOTIFY <u>PREPARATION GROUP LEADER</u> IF UNAVAILABLE, <u>SHIFT FACILITATOR</u> . ° RED LIGHT WILL COME ON IN THE UPPER RIGHT HAND CORNER OF THE CIRCULAR CHART INSTRUMENT
REACTIVE OPERATING TEMPERATURE RANGE (<u>248°F</u>) TEMPERATURE HAS MOVED INTO DANGER AREA	SINTER PLANT CONTROL ROOM OPERATOR NOTIFY <u>PREPARATION GROUP LEADER</u> ° NOTIFY <u>SHIFT FACILITATOR</u> ° REFER TO EMISSION MANAGEMENT IMPROVEMENT MANUAL - SINTER HOOD DECISION TREE ° FANS TO #3 BAGHOUSE WILL AUTOMATICALLY SHUT DOWN AT <u>285°F</u> ° A SECOND RED LIGHT WILL COME ON IN THE UPPER RIGHT HAND CORNER OF THE CIRCULAR CHART INSTRUMENT

<small>Form 2 08-100</small> EMISSIONS PREDICTOR PROFILE OPERATING PROCEDURES BLAST FURNACE / #5 BAGHOUSE WASTE GAS INLET TEMPERATURE TO #5 BAGHOUSE	<small>Revision 1/83</small>
SITUATION	ACTION STEP
OPTIMUM OPERATING RANGE (UP TO 189 °F)	THE ACCEPTABLE OPERATING RANGE
CAUTION OPERATING TEMPERATURE RANGE (190 - 224) °F INDICATES WARNING THAT TEMPERATURE HAS MOVED TOWARDS POTENTIAL PROBLEM SITUATION	#5 BAGHOUSE OPERATOR: <ul style="list-style-type: none"> • INCREASE MONITORING FREQUENCY OF INLET TEMPERATURE • NOTIFY BLAST FURNACE FEED FLOOR OPERATOR OF TEMPERATURE CONDITION • REFER TO EMISSION MANAGEMENT IMPROVEMENT MANUAL - #5 BAGHOUSE INLET TEMPERATURE DECISION TREE • DILUTION AIR DAMPERS WILL OPEN (190 °F) • CHECK FOR COMPLIANCE BLAST FURNACE FEED FLOOR OPERATOR <ul style="list-style-type: none"> • <u>PROCESS GROUP LEADER</u> REFERS TO EMISSIONS MANAGEMENT IMPROVEMENT MANUAL - BLAST FURNACE FEED FLOOR DECISION TREE
REACTIVE OPERATING TEMPERATURE RANGE (225 - 264) °F TEMPERATURE HAS MOVED INTO DANGER AREA	#5 BAGHOUSE OPERATOR <ul style="list-style-type: none"> • HIGH INLET TEMPERATURE ALARM WILL SOUND • NOTIFY <u>PROCESS GROUP LEADER</u> • NOTIFY <u>SINTER PLANT GROUP LEADER</u> • NOTIFY <u>SHIFT FACILITATOR</u> • REFER TO EMISSION MANAGEMENT IMPROVEMENT MANUAL - #5 BAGHOUSE INLET TEMPERATURE DECISION TREE • EMERGENCY DILUTION AIR DAMPER WILL OPEN AND ALARM WILL SOUND • CHECK FOR COMPLIANCE PROCESS GROUP LEADER <ul style="list-style-type: none"> • <u>PROCESS GROUP LEADER</u> REFERS TO EMISSION MANAGEMENT IMPROVEMENT MANUAL - BLAST FURNACE FEED FLOOR DECISION TREE
FAN SHUT DOWN RANGE (ABOVE 265 °F) TEMPERATURE VERY CLOSE TO POINT WHERE BAGHOUSE FANS WILL AUTOMATICALLY SHUT DOWN TO PROTECT BAGHOUSE	#5 BAGHOUSE OPERATOR <ul style="list-style-type: none"> • NOTIFY <u>PROCESS GROUP LEADER</u> • NOTIFY <u>SINTER PLANT GROUP LEADER</u> • NOTIFY <u>SHIFT FACILITATOR</u> • REFER TO EMISSION MANAGEMENT IMPROVEMENT MANUAL - #5 BAGHOUSE INLET TEMPERATURE DECISION TREE • FANS WILL AUTOMATICALLY SHUT DOWN AT 285 °F BLAST FURNACE FEED FLOOR OPERATOR <ul style="list-style-type: none"> • BLAST FURNACE OPERATOR REFERS TO EMISSIONS MANAGEMENT IMPROVEMENT MANUAL - BLAST FURNACE FEED FLOOR DECISION TREE

In the Matter of)
The Doe Run Company)
(Buick Lead Smelter))
Consent order)
respecting lead emissions)

STIPULATION

Come now the Doe Run Company (hereafter Doe Run) and the Missouri Department of Natural Resources (hereafter DNR), and covenant and agree as follows:

1. The State of Missouri, through DNR and the Missouri Air Conservation Commission and Doe Run are desirous of submitting to the U. S. Environmental Protection Agency (hereafter EPA) a State Implementation Plan (hereafter SIP) for the attainment and maintenance of the national ambient air quality standard for lead, and having same approved by EPA pursuant to the Clean Air Act as amended in 1990.

2. To this end, DNR and the Missouri Air Conservation Commission are preparing a SIP to be submitted to EPA, to demonstrate attainment and maintenance of the national ambient air quality standard for lead. As part of the SIP, certain emission reductions from Doe Run's Buick facility in Iron County, Missouri are to be undertaken. DNR and Doe Run agree that the Missouri Air Conservation Commission may enter the order set forth below, to be binding on the parties, providing for certain emission control projects which Doe Run agrees to undertake and complete on the schedule set forth in the order. The parties, by their signatures hereto, acknowledge that they have read and understand the terms of this Stipulation and the order of the Commission, and agree to be bound thereby. The parties further acknowledge and agree that the terms of the below order may be enforced by suit for injunction and penalties pursuant to Section 643.151, RSMo 1986.

ORDER

This matter coming before the Commission on the Stipulation of the parties and after public hearing, the Commission having jurisdiction over the subject matter and the parties, and being fully advised in the premises;

IT IS ORDERED that The Doe Run Company undertake and complete, at its Buick smelter facility, the following emission control projects, on the schedule set forth conditioned as follows:

WHEREAS, Doe Run's Buick facility consists of a primary lead smelter, and a secondary lead smelter and resource recycling operation.

The primary smelter operation, including and especially the sinter plant, processing lead concentrate as feed material, has operated intermittently since 1986, and is currently on standby status.

The primary smelter when processing lead concentrate as feed material and based on name-plate capacity and current control equipment, has failed to attain and maintain the ambient air quality standard for lead when in full operation.

The secondary smelter/resource recycling operation has, since startup in 1990, demonstrated attainment and maintenance of the ambient air quality standard for lead. This overall operation of the secondary smelter includes full use of either or both of the two blast furnaces within the operating restriction in 10 CSR 10-6.120, and the full use of refinery operation of the primary smelter facilities.

NOW THEREFORE, it is agreed that Doe Run will not operate its Buick primary smelter to process lead concentrate and produce primary lead unless and until Doe Run has completed the following emission control projects:

Projects required as SIP control measures.

1. Replace #2 wet scrubber with new (EI No. 2x) sinter prep baghouse.
2. Install ventilation in sinter plant preparation plant (to capture EI No. 14a fugitive emissions) and vent to No. 2x baghouse.
3. Replace #1, 6, 7, 8 and 9 wet scrubbers with new (EI No. 14x) sinter plant baghouse.
4. Install ventilation in sinter plant (to capture EI Nos. 14b and 14c fugitive emissions) and vent to No. 14x baghouse.
5. Install covers on all kettles in the dross plant and refinery and ventilate to existing main baghouse.
6. Develop formal written guidelines for construction projects, to control fugitive emissions.
7. Chemically stabilize or pave the haul road to steel scrap area.
Should Doe Run opt for stabilization, stabilization to occur at a minimum of once every 6 months (eg. once during the periods Jul - Dec and Jan - Jun).
8. Chemically stabilize concentrate storage piles once every 6 months (eg. once during the periods Jul - Dec and Jan - Jun).

It is also therefore agreed that Doe Run will complete the following emission control related projects should there be determination of need:

Projects required as Contingency control measures (C).

The undertaking and completion of any of the following projects is contingent upon ambient air quality data at the Buick smelter facility after completion of the emission control projects 1. through 8. of this order. The criteria for determining the need to undertake these projects is given in the Missouri SIP for Lead, 1980 and as revised by the Commission through 1993, Section VII, B, 2, J, 4.b), Contingency Measures.

- C-1. Reduce the size of outside stockpiles to working minimums.
- C-2. Cover all remaining stockpiles with plastic, canvas or other dust-impervious material.
- C-3. Run water and sweeper truck inside plant grounds on two shifts, in lieu of one shift Monday to Friday (except when icy conditions exist).

If it is determined by DNR that any of these contingency projects are needed for the attainment of the national ambient air quality standard for lead, implementation of contingency measures shall begin within thirty (30) days from receipt of DNR's notice of need.

Other Requirements (OR)

OR-1. Doe Run shall give notice of intent to operate the primary smelter to process lead concentrate to produce primary lead at this installation at least sixty (60) days prior to the start of implementation of control measures required in this order.

OR-2. Leased Property in smelter vicinity.

The owner or operator of the Buick primary lead smelter shall fulfill the requirements specifically relating to leased property in section VII of the Lead SIP, 1993 Revision, at B. 2, N, 1.

OR-3. Restriction of Public Access to smelter property.

Doe Run shall complete the requirements specifically relating to installation of physical barriers to restrict public access to smelter property in section VII of the Lead SIP, 1993 Revision, at B. 2, N, 2.

OR-4. Testing.

- a) Doe Run shall stack test at Emission Inventory point numbers 2x and 14x (the replacement baghouses for scrubber numbers 1, 2, 6, 7, 8, and 9) for evaluation with the emission rates in the Post-'92 EI in Table VII B.-5 (Lead SIP, 1993 Revision).
- b) Stack testing shall be in accordance with 10 CSR 10-6.030(12).
- c) This stack testing shall be undertaken within sixty (60) days following the date of resumption of operation of the primary smelter.

It is acknowledged and agreed that the schedule set forth above shall not apply in the event Doe-Run is prevented from completing these emission control projects during the time periods as stated as the result of strikes, Acts of God, and other circumstances beyond its control, and the completion dates will be extended for periods of time corresponding to the time said circumstances are in effect. The burden shall be on Doe Run to establish to the Commission the circumstances and amount of time necessary for a revised schedule.

THE DOE RUN COMPANY

by Robert Kervator / General Counsel June 24, 1993
Paul W. Wenzel / Director of Env. Affairs (DATE)

MISSOURI DEPARTMENT OF NATURAL RESOURCES

by David A. Orr 7-2-93
 Director (DATE)

entered: _____

MISSOURI AIR CONSERVATION COMMISSION

John R. Cull Chairman
Michael R. Lawrence Vice-Chairman

David S. Crane Member

Harriet Beard Member

Linda Vandenberg Member

Kenneth R. Boek Member

 Member

APPENDIX G

EMISSIONS LIMITATIONS

for

MAINTENANCE

of the

LEAD STANDARD

Rev. 5-93, RR-7

Rev. 7-90, RR-5

Rev. 5-87, RR-4

Missouri Register

Title 10—DEPARTMENT OF
NATURAL RESOURCES
Division 10—Air Conservation
Commission
Chapter 6— Air Quality Standards, Defi-
nitions, Sampling and Reference
Methods and Air Pollution Control Regu-
lations for the Entire State of Missouri

PROPOSED AMENDMENT

10 CSR 10-6.120 Restriction of Emissions of Lead From Primary Lead Smelter-Refinery Installations. The commission is amending provisions of this rule and adding a new section (3).

PURPOSE: This amendment would provide emissions limitations of lead from the Doe Run (Buick) installation near Bixby, Missouri. It would also locate in the rule provisions for required work practice manuals for all three smelter installations.

(1) General Provisions.

(A) Application. This rule shall apply to existing installations in Missouri engaged in primary lead smelting and refining for the production of lead.

(B) Operation and Maintenance of Lead Emissions Control Equipment and Procedures. The owner or operator of any primary lead smelter shall operate and maintain all lead emissions control equipment and perform all procedures (specifically designed to reduce lead emissions) as required by this rule.

(C) Methods of Measurement of Lead Emissions.

1. The method of determining the concentration of visible emissions shall be as specified in 10 CSR 10-6.030(9).

2. The method of measuring lead in stack gases shall be the sampling method as specified in 10 CSR 10-6.030(12).

3. The method of measuring lead in the ambient atmosphere shall be the reference method as specified in 10 CSR 10-6.040(4)(G).

(D) Operational Malfunction.

1. The owner or operator shall maintain a file which identifies the date and time of any significant malfunction of plant process operations or of emission control equipment which results in increased lead emissions. The file shall also contain a description of any corrective action taken, including the date and time. 10 CSR 10-6.050 Start-up, Shutdown and Malfunction Conditions shall apply.

2. All of these files relating to operational malfunction shall be retained for a minimum of two (2) years and, upon request, shall be made available to the director.

(2) [Specific] Provisions Pertaining to [Existing Primary Lead Smelter-Refinery Installations] Limitations of Lead Emis-

sions From Stacks at Specific Installations.

(A) ASARCO Primary Lead Smelter-Refinery at Glover, Missouri.

[1—Lead emissions limits from stacks.] This installation shall limit lead emissions into the atmosphere to the allowable amount as shown in Table I.

Table I

Stack Name	Emissions Limitation (lbs. per day)
Main	50.4
Ventilation Baghouse	52.5
Scrubber	33.7
Blast Furnace	23.2

[2—Restriction of lead emissions other than the stack emissions in Table I.

A. Fugitive emissions of lead from all process and area sources at ASARCO shall be controlled by the measures described in the operational procedures and work practice manuals identified in subparagraph (2)(A)2.B. Adherence to these methods and procedures will result in fugitive lead emissions reduction which will meet the requirements of this rule.

B. Operational procedures and work practice manuals.

(i) The owner or operator shall prepare and implement job-specific work practice manuals for fugitive emissions sources at the smelter.

(ii) The manuals shall be submitted to the director for approval not later than one hundred twenty (120) days (April 28, 1989) following the effective date of this rule (December 20, 1987) applying to this installation. The director will approve or disapprove the manuals after submittal. If disapproved, the director will specify the deficiencies and allow the owner or operator a reasonable time, not to exceed sixty (60) days, to correct the deficiencies and resubmit the manuals. If the deficiencies are not corrected to the satisfaction of the director, the director will rewrite any deficient manual which then will become the approved manual.

(iii) Any changes proposed by the owner or operator in the work practice manuals shall be requested in writing to the director and shall be approved before this change becomes part of this rule.

(iv) After approval, the manuals shall be the method of determining compliance with the provisions of this subsection. Failure to comply with the requirements in the manual shall be a violation of this rule.

C. Recordkeeping.

(i) The owner or operator shall keep records or files, or both, generated by the work practice manuals' implementation.

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(II) A work practice manual shall contain the requirement that records of inspections by ASARCO of fugitive emissions control equipment such as hoods, air ducts and exhaust fans be maintained by ASARCO.

(III) Records shall be kept for a minimum of two (2) years at the installation and shall be made available upon request to the director for purposes of determining compliance.]

(B) Doe Run Primary Lead Smelter-Refinery [at] in Herculanum, Missouri.

[1- Lead emission limits from stacks.] This installation shall limit lead emissions into the atmosphere to the allowable amount as shown in Table II.

Table II

[Emission Inventory] [Limitations*] [Source No.]	Stack Name*	Emissions Limitations[*] (lbs. per day)
[2]	Scrubber No.13	0.011
[3]	Scrubber No.12	0.466
[4]	Scrubber No.11	0.022
[5]	Scrubber No.10	0.548
[13]	Main Stack	446.6
[13A]	Sinter Plant Stack	32.9

[*] These limitations of stack emissions apply to the following compliance dates:

Scrubber No. 13	February 1, 1993
Scrubber No. 12	February 1, 1993
Scrubber No. 11	February 1, 1993
Scrubber No. 10	December 27, 1990
Main Stack	December 27, 1990
Sinter Plant Stack	February 1, 1993

(*The emission inventory source number is 2 for Scrubber No. 13, 3 for 12, 4 for 11, 5 for 10, 13 for Main Stack and 13A for sinter plant stack.)

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[2]-Restriction of lead emissions other than the stack emissions in Table II.

A. Fugitive emissions of lead from all process and area sources at this installation shall be controlled by measures described in a work practice manual identified in subparagraph (2)(B). Adherence to these work practices will result in control of fugitive lead emissions that will meet the requirements of this rule.

B. Work practice manual.

(4) The owner or operator shall prepare, submit for approval and then implement a process and area-specific work practice manual that will apply to location of fugitive lead emissions at this installation.

(4I) The manual shall have received the initial approval of the director prior to the effective date of the rule pertaining to this installation (December 22, 1993).

(4II) The manual shall be the method of determining compliance with the provisions of this subsection. Failure to adhere to the work practices in the manual shall be a violation of this rule.

(4A) Any change to the manual proposed by the owner or operator following the initial approval shall be requested in writing to the director. Any proposed change shall demonstrate that the change in the work practice will not lessen the effectiveness of the fugitive emission reductions for the work practice involved. Written approval by the director is required before any change becomes effective in the manual.

C. Recordkeeping.

(4) The operator shall keep records and files generated by the work practice manual's implementation.

(4I) The work practice manual shall contain the requirement that records of inspections made by the operator of fugitive emissions control equipment such as hoods, air ducts and exhaust fans be maintained by the operator.

(4II) Records shall be kept for a minimum of two (2) years at the installation and shall be made available upon request of the director for purposes of determining compliance.)

(C) Doe Run Primary Lead Smelter-Refinery Near Buick, Missouri. This installation shall limit lead emissions into the atmosphere to the allowable amount as shown in Table III.

Table III

Stack Name	Emissions Limitation ¹ (lbs. per day)
Stack Crusher Baghouse	17.5
Main Stack	1050.9
(New) Sinter Prep. Baghouse	2.23
(New) Sinter Plant Baghouse	21.41

These limitations of stack emissions apply to the following compliance dates:

Stack Crusher Baghouse	November 5, 1993
Main Stack	November 5, 1993
(New) Sinter Prep. Baghouse	Smelter Operation:
(New) Sinter Plant Baghouse	Smelter Operation:

² The compliance date is dependent upon resumption of the smelter's primary production of lead as defined and conditioned in the 1993 Revision to the State Implementation Plan for Lead.

(3) Provisions Pertaining to Limitations of Lead Emissions From Other Than Stacks at All Installations.

(A) The owner or operator shall control fugitive emissions of lead from all process and area sources at an installation by measures described in a work practice manual identified in subsection (3)(B). It shall be a violation of this rule to fail to adhere to the requirements of these work practices.

(B) Work Practice Manual.

1. The owner or operator shall prepare, submit for approval and then implement a process and area-specific work practice manual that will apply to locations of fugitive lead emissions at the installation.

2. The manual shall be the method of determining compliance with the provisions of this section. Failure to adhere to the work practices in the manual shall be a violation of this rule.

3. Any change to the manual proposed by the owner or operator following the initial approval shall be requested in writing to the director. Any proposed change shall demonstrate that the change in the work practice will not lessen the effectiveness of the fugitive emission reductions for the work practice involved. Written approval by the director is required before any change becomes effective in the manual.

4. If the director determines a change in the work practice manual is necessary, the director will notify the owner or operator of that installation. The owner or operator shall revise the manual to reflect these changes and submit the revised manual within thirty (30) days of receipt of notification. These changes shall become effective following written approval of the revised manual by the director.

(C) Recordkeeping.

1. The operator shall keep records and files generated by the work practice manual's implementation.

2. The work practice manual shall contain the requirement that records of inspections made by the operator of fugitive emissions control equipment such as hoods, air ducts and exhaust fans be maintained by the operator.

3. Records shall be kept for a minimum of two (2) years at the installation and shall be made available upon request of the director for purposes of determining compliance.

Auth: section 643.050, RSMo (Cum. Supp. 1992). Original rule filed Aug. 4, 1988, effective Dec. 29, 1988. Amended: Filed Sept. 5, 1990, effective March 14, 1991. Amended: Filed March 4, 1993.

STATE AGENCY COST: This Proposed Amendment will not cost state agencies or political subdivisions more than \$500 in the aggregate.

PRIVATE ENTITY COST: This Proposed Amendment will not cost private entities more than \$500 in the aggregate.

NOTICE TO SUBMIT COMMENTS AND NOTICE OF PUBLIC HEARING: A public hearing on the Proposed Amendment is scheduled for 9:00 a.m., April 29, 1993 at the Harry S. Truman Building, Jefferson City, Missouri. Opportunity to be heard at the hearing shall be afforded any interested person upon written request to Cindy Kemper, Staff Director, Air Pollution Control Program, Division of Environmental Quality, Department of Natural Resources, P.O. Box 176, Jefferson City, MO 65102, (314) 751-4817, not later than seven days prior to the date of the hearing, and to other persons, if convenient. Interested persons, whether or not heard at the hearing, may submit written comments until 5:00 p.m., May 6, 1993 with the Department of Natural Resources, c/o Todd Crawford, Chief of Planning, 205 Jefferson Street, Jefferson City, MO 65102, (314) 751-4817. No FAX accepted.

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to June 30, 1994, and a cost of \$115,800 (excluding one-time costs) for the period from July 1, 1994 to June 30, 1995. Amortizing the one-time costs over the period from Jan. 1, 1994 to July 1, 1996 results in an aggregate cost of \$154,900 for the period from Jan. 1, 1994 to June 30, 1994, and a cost of \$215,000 for the period from July 1, 1994 to June 30, 1995. These estimates are based principally on the figures provided by the affected utilities.

Title 7—DEPARTMENT OF HIGHWAY AND TRANSPORTATION Division 10—Missouri Highway and Transportation Commission Chapter 11—Procurement

ORDER OF RULEMAKING

By the authority vested in the Missouri Highway and Transportation Commission under sections 226.020, 226.130 and 227.030, RSMo (1986), the commission adopts rules as follows:

7 CSR 10-11.010 Definitions of Terms is adopted.

7 CSR 10-11.020 is adopted.

7 CSR 10-11.030 Bidder Registration, Official Mailing Lists, Suspension from List is adopted.

Notices of Proposed Rulemaking containing the texts of the Proposed Rules were published in the *Missouri Register* on April 19, 1993 (18 MoReg 604—607). Additions to the rules as listed in the Summary of Comment are reprinted here. These Proposed Rules become effective ten days after publication of the next update following their original appearances in the *Code of State Regulations*.

SUMMARY OF COMMENT: No comments were received from the public relating to the Proposed Rules. However, the rules were studied by an internal task force which recommended that an additional paragraph be added to 7 CSR 10-11.020. The department agrees with the addition of this provision.

7 CSR 10-11.020 Procedures for Solicitation, Receipt of Bids and Award of Contract

28) Arbitration. The commission unless specifically agreed upon by the parties in writing shall not be bound, by a compulsory arbitration or other compulsory dispute resolution provision which is present in any of vendor's forms or boilerplate.

REVISED STATE AGENCY AND PRIVATE ENTITY COSTS: Since changes made in the Proposed Rule do not alter the cost estimates by more than ten percent, revised cost estimates are not necessary.

Title 10—DEPARTMENT OF NATURAL RESOURCES

Division 10—Air Conservation Commission

Chapter 6—Air Quality Standards, Definitions, Sampling and Reference Methods and Air Pollution Control Regulations for the Entire State of Missouri

ORDER OF RULEMAKING

By the authority vested in the Missouri Air Conservation Commission under sections 643.050, RSMo (Cum. Supp. 1992) and 643.225, RSMo (Cum. Supp. 1989), the commission amends a rule as follows:

10 CSR 10-6.120 Restriction of Emissions of Lead from Primary Lead Smelter-Refinery Installations is amended.

A Notice of Proposed Rulemaking containing the text of the Proposed Amendment was published in the *Missouri Register* on March 15, 1993 (18 MoReg 417—419). No changes have been made to the text of the Proposed Amendment, so it is not reprinted here. This Proposed Amendment becomes effective ten days after publication of the next update following its revised appearance in the *Code of State Regulations*.

SUMMARY OF COMMENT: Comments to the Proposed Amendment to 10 CSR 10-6.120 were heard at a public hearing before the Missouri Air Conservation Commission on April 29, 1993. The U.S. Environmental Protection Agency (EPA) commented on the proposal. The comments are summarized here, followed by the commission's response.

COMMENT: The emission limit table for the Herculanum smelter contains emission limits for Scrubbers 10-13. These scrubbers have been replaced by E.I. no. 28, Southend Baghouse. The rule needs to reflect these changes.

RESPONSE: This Proposed Amendment adds emission limits for the Buick Smelter for the first time. EPA's comment pertains to changing emission limits for the Herculanum smelter. EPA's comment is correct, but this will be reflected in a subsequent amendment planned to affect the Herculanum smelter changes.

COMMENT: The emission limits are expressed in terms of pounds per day and, as such, are not easily enforceable. The averaging time for the limits should be changed to be consistent with the compliance test method cited in 10 CSR 10-6.030(12). Thus, an averaging time exceeding three hours is unacceptable.

RESPONSE: A change to the units used for the emission limits in the rule is planned for a subsequent rule amendment (see the previous comment and response).

Title 13—DEPARTMENT OF SOCIAL SERVICES

Division 15—Division of Aging Chapter 10—General Licensure Requirements

ORDER OF RULEMAKING

By the authority vested in the director of the Division of Aging under section 198.009, RSMo (1986), the director rescinds and readopts a rule as follows:

13 CSR 15-10.010 General Licensure Requirements is rescinded.
13 CSR 15-10.010 is readopted.

Notices of Proposed Rulemaking containing the text of the Proposed Rescission and Proposed Rule were published in the *Missouri Register* on May 3, 1993 (18 MoReg 663—668). All comments received during the comment period were considered. Sections with changes are reprinted as follows. This Proposed Rescission and Proposed Rule become effective ten days after publication of the next update following their appearances in the *Code of State Regulations*.

SUMMARY OF COMMENT: Four comments were received. One agreed with all the proposed changes; one felt that the application process should be shortened by 80%; a third recommended that the division include in section (1) reference to the fact that a reason for denying a license would be that an operator had never been convicted of an offense concerning the operation of a long-term health care facility or other health care facility or ever knowingly acted or knowingly failed to perform any duty which materially and adversely affected the health, safety, welfare or property of a resident, while acting in a management capacity. The fourth commenter felt that the phrase "declining trend in the operator's financial condition" in subsection (1)(M) is extremely vague. The suggestion was to use the term "insolvency" and "tending toward insolvency." The comment was also made that section (5) be reworded to include the term "reasonable" as related to a facility having an opportunity to remedy the situation.

APPENDIX G

(For 1993 Lead SIP Revision)

RE: Work Practice Manual
for the
Herculaneum Smelter

Revisions to pages of the Manual

of the following:

- * Cover
- * Table of Contents (p. i)
- * Pages 1, 2, 7, 8, 9
- * List of Appendices (p. ii)
- * Pages A-1, B-1, C-1

[The Work Practice Manual is a requirement of 10 CSR 10-6.120]

The Doe Run Company
Herculaneum Smelter
Herculaneum, Missouri

WORK PRACTICE MANUAL

January 1991

Use and Maintenance of this manual is a requirement of
Missouri 10 CSR 10-6.120 (3)(B)

Revised 1993 (with the 1993 Lead SIP Revision)

Note: Revisions to manual are shown underlined for revision
date shown on same page.

Rev. 5-93