DEPARTMENT OF ENVIRONMENTAL REGULATION

ROUTING AND TRANSMITTAL SLIP

ACTION NO

ACTION DUE DATE

	Initial	Date
1. TO: (NAME, OFFICE, LOCATION) Mike Harley / Division of Air Resources / Department of Environmental Regulation / Twin Towers Office Building / 2600 Blair Stone Road / Tallahassee, FL 32399-2400		
2.		
3.		
4.		

REMARKS:

FYI -

No renewal application received as of this date.

Copy of this letter also requested by J.P. Subramani.

MFM

INFORMATION

- Review & Return
- Review & File
- Initial & Forward

DISPOSITION

- Review & Respond
- Prepare Response
- For My Signature
- For Your Signature
- Let's Discuss
- Set Up Meeting
- Investigate & Report
- Initial & Forward
- Distribute
- Concurrence
- For Processing
- Initial & Return

FROM: John Lamm

DATE 4/20/90

PHONE

FF

Florida Department of Environmental Regulation

Central District • 3319 Maguire Boulevard, Suite 232 • Orlando, Florida [redacted]67 • 407-894-7555

Bob Martinez, Governor Dale Twachtmann, Secretary John Shearer, Assistant Secretary
Alex Alexander, Deputy Assistant Secretary

March 15, 1990

OCD-AP-89-0903

Mid-Florida Mining Co.
P.O. Box 68
Lowell, Fl. 32663

Attention: David B. Kibler IV, Executive Director

Marion County - AP
Clay Storage Silo and Clay Dryer
Permit - AO42-96009

Dear Mr. Kibler,

Our records indicate the above referenced permit will expire April 11,1990. Constructing or operating this facility without a currently valid permit is a violation of Rule 403.087, Florida Statutes; Rule 17-2.210, F.A.C. and Rule 17-4.030, F.A.C.

Please report the status of this facility. If you intend to operate this facility, please submit a renewal application to this office as soon as possible.

If you have questions regarding this matter, please call John Turner at 407-894-7555 or write to me at the above address.

Sincerely,

Alan D. Zahm, P. E.
Permitting Engineer
Air Resources Management

ADZ/jt

KOOGLER & ASSOCIATES
ENVIRONMENTAL SERVICES
4014 NW THIRTEENTH STREET
GAINESVILLE, FLORIDA 32609
904/377-5822 • FAX 377-7158

3 copies + distribute
Return original for file
done: 3-1-90 PBR

Jim - 2/28
Do you want Mike to handle this?
Patty

YES! 2/28/90 THIS WILL BE A GOOD OPPORT. TO APPRISE THEM OF THE RCRA PROBLEMS
Jim P.

KA 290-88-01

February 26, 1990

RECEIVED
FEB 27 1990
DER - BAQM

Mr. C.H. Fancy
Bureau Chief
Division of Air Resources
Management
Florida Department of
Environmental Regulation
2600 Blair Stone Road
Tallahassee, FL 32399-2400

Subject: Mid-Florida Mining Company
Lowell, Florida
Air Construction Permit AC42-113787
Request for Permit Extension

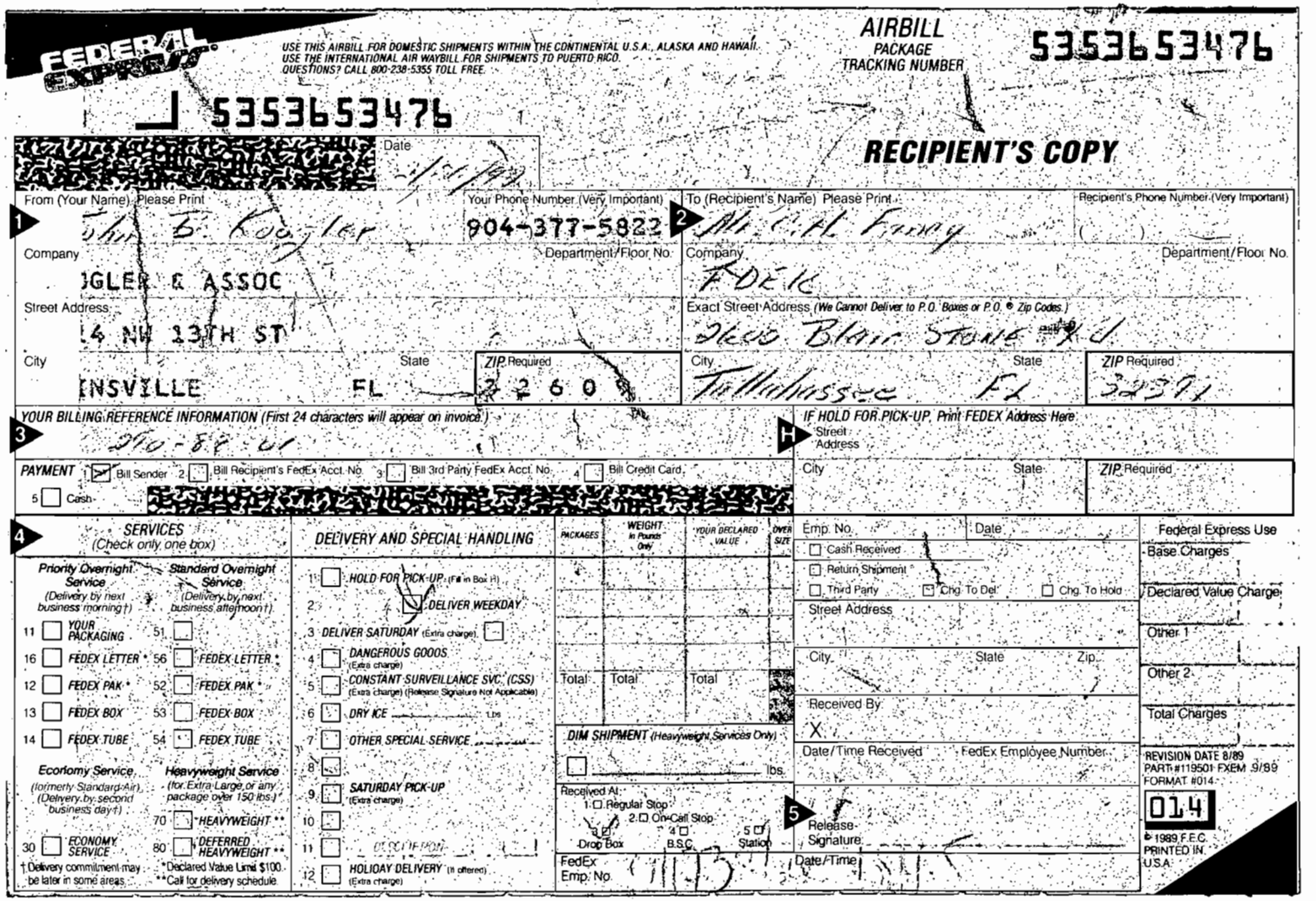
Dear Mr. Fancy:

The subject air construction permit was issued to the Mid-Florida Mining Company on April 19, 1986 for the modified operation of an existing clay dryer and clay storage silo. The modifications included the use of coal as a fuel and various other operational modifications. By Department letter dated March 24, 1988, the permit was extended through February 28, 1990.

As you are aware, Mid-Florida Mining has applied to the Department for an afterburner which will treat the exhaust gases from the clay dryer when the clay dryer is used to process contaminated soil. On September 29, 1989, the Department issued the Technical Evaluation and Preliminary Determination for the afterburner, indicating intent to issued proposed Permit AC42-162296 for the construction and initial operation of the afterburner.

A request for an administrative hearing challenging the issuance of the permit has been filed by a resident living within a few miles of the Mid-Florida Mining plant. As of this date, the administrative hearing has not been scheduled.

Best Available Copy



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RECIPIENT'S COPY

Date

From (Your Name) Please Print: Thos B. Koogler
Your Phone Number (Very Important): 904-377-5822
Company: KOGLER & ASSOC
Department/Floor No.:
Street Address: 14 NW 13TH ST
City: GAINSVILLE
State: FL
ZIP Required: 32601

To (Recipient's Name) Please Print: Mr. C.H. Fenny
Recipient's Phone Number (Very Important):
Company: FDIC
Department/Floor No.:
Exact Street Address (We Cannot Deliver to P.O. Boxes or P.O. Zip Codes): 2nd Blair Stone Rd
City: Tallahassee
State: FL
ZIP Required: 32301

3 YOUR BILLING REFERENCE INFORMATION (First 24 characters will appear on invoice): 210-82-01

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State:
ZIP Required:

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4 SERVICES (Check only one box)

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11 [ ] YOUR PACKAGING	51 [ ]
16 [ ] FEDEX LETTER *	56 [ ] FEDEX LETTER *
12 [ ] FEDEX PAK *	52 [ ] FEDEX PAK *
13 [ ] FEDEX BOX	53 [ ] FEDEX BOX
14 [ ] FEDEX TUBE	54 [ ] FEDEX TUBE
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Date/Time Received FedEx Employee Number

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Date/Time

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REVISION DATE 8/89
PART #119501 FXEM 9/89
FORMAT #014

014

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Because of the upcoming administrative hearing on the afterburner permit and the relationship between the afterburner and clay dryer, Mid-Florida Mining would like to continue operating the clay dryer under the construction permit until matters related to the afterburner permit have been resolved. This strategy will give Mid-Florida Mining the maximum degree of flexibility (should permit changes be required in the operation of the clay dryer), to be consistent with requirements that may be associated with the construction and/or operation of the afterburner.

As a result, I am requesting, on behalf of Mid-Florida Mining Company, that Air Construction Permit AC42-113787 be extended for an approximate 180-day period, through August 31, 1990. If matters related to the afterburner are resolved prior to that date, Mid-Florida Mining will take immediate steps to apply for an operating permit for the subject clay dryer.

I appreciate your consideration of this request and will be able to provide any additional information you may require.

Very truly yours,

KOOGLER & ASSOCIATES

John B. Koogler

John B. Koogler, Ph.D., P.E.

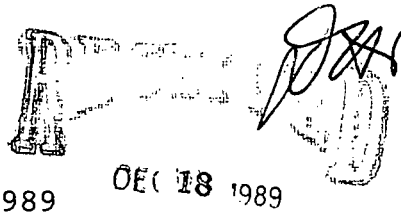
JBK:mab

cc: Mr. David Kibler, MFM Industries, Inc.
M. Harley
C. Collins
CHF/SKP/BT

KOOGLER & ASSOCIATES

Steve S, 28 Dec
1-5-90
FYI PATTY
797

MFM
INDUSTRIES



DEC 18 1989

Office of Secretary

RECEIVED

JAN 02 1990

DER-BAQM

December 15, 1989

The Honorable Dale Twachtmann
Secretary
Department of Enviromental Regulation
2600 Blairstone Road
Tallahassee, Florida 32301

Dear Dale:

Just a note to tell you how much I appreciate your taking time from your tremendously busy schedule to have lunch with David Kibler and me yesterday. I stand in awe of the tremendous task you have at hand and applaud your courage and many accomplishments you have had since being there.

We appreciate the professionalism and dispatch your staff has shown us involving the several items we have had for your review. We look foward to seeing some of the areas we discussed strengthened so that we can feel more comfortable about what is happening in some of the existing operations, particularly the thermal decontamination soil processing.

If there is ever anything we can do to be of service to you, I hope you will not hesitate to call on us.

Again my thanks and best wishes for the Christmas season.

Sincerely,

Whit

Whitfield M. Palmer, Jr.

3300 Southwest 34th Ave., Suite 152 • Ocala, FL 32674 • 904/854-0070 • 1-800-877-0897

file copy

KOOGLER & ASSOCIATES
ENVIRONMENTAL SERVICES
4014 NW THIRTEENTH STREET
GAINESVILLE, FLORIDA 32609
904/377-5822 ▪ FAX 377-7158

KA 290-88-01

March 21, 1989

VIA FAX

Mr. Clair Fancy
Florida Department of
Environmental Regulation
Division of Air Resources Management
Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, FL 32399-2400

Subject: MFM Environmental, Inc.
Amendment to Permit AC42-113787
(Dated February 15, 1989) Authorizing the
Thermal Processing of 10,000 ton of Soil
Contaminated with Creosote on a One-Time Basis

Dear Mr. Fancy:

Confirming our telephone conversation of this date, I am requesting a modification to the subject amendment on behalf of MFM Environmental.

Paragraph 4 of the subject Amendment states:

> The soil to be decontaminated shall be the remaining tonnage of creosote contaminated soil at Southern Wood Piedmont's Baldwin site. The soil to be decontaminated shall have the same qualitative and average quantitative analyses as that shown for contaminated (raw) soil in Attachment 3, Emission Measurements for Metals and Semi-Volatile Organic Compounds During Thermoprocessing of Soil Contaminated with Creosote. The polynuclear aromatic hydrocarbon constituents and levels are shown in Tables 4 and 5 of Attachment 3. The levels of metallic constituents and arsenic are shown in the August 16, 1988, letter from PPB Environmental Laboratories to Dr. John Koogler which is found in Attachment 3. The soil to be decontaminated shall not be of such great character that would be classified as a hazardous waste.

At the present time, there are less than 10,000 tons of contaminated soil at Southern Wood Piedmont's Baldwin site. To allow MFM Environmental to exercise the February 15, 1989, Amendment to Permit AC42-113787 to develop and refine the design parameters for an afterburner tail gas treatment system for the dryer, it is requested that Paragraph 4 be amended to

KOOGLER & ASSOCIATES
ENVIRONMENTAL SERVICES
4014 NW THIRTEENTH STREET
GAINESVILLE, FLORIDA 32609

GAINESVILLE FL 326
21 MAR 1989
P.M

MAR 21 '89
ALWAYS USE ZIP CODE
PB METER

Mr. Clair Fancy
Florida Department of
Environmental Regulation
Division of Air Resources Management
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

authorize the acceptance of contaminated soil from sites other than the Southern Wood Piedmont Baldwin site. This authorization would be granted only after MFM Environmental demonstrates that the soil from the alternate site is "comparably" contaminated.

Suggested wording for Paragraph 4 that will allow MFM the flexibility of accepting soil from an alternate site and assure the Department that the degree of contamination in the soil from the alternate site is comparable to the degree of contamination in the soil from the Southern Wood Piedmont Baldwin site is:

> The soil to be decontaminated shall be the remaining tonnage of creosote contaminated soil at the Southern Wood Piedmont's Baldwin site or a comparably contaminated soil from an alternate site.* The soil to be decontaminated shall have the same qualitative and average quantitative analyses as that shown for contaminated (raw) soil in Attachment 3, Emission Measurements for Metals and Semi-Volatile Organic Compounds During Thermoprocessing of Soil Contaminated with Creosote. The polynuclear aromatic hydrocarbon constituents and levels are shown in Tables 4 and 5 of Attachment 3. The levels of metallic constituents and arsenic are shown in the August 16, 1988, letter from PPB Environmental Laboratories to Dr. John Koogler which is found in Attachment 3. The soil to be decontaminated shall not be of such a character that it would be classified as a hazardous waste. Prior to any soil being accepted from an alternate site, representative samples of the soil shall be collected and analyzed. The results of the analyses shall be presented to the Department to demonstrate that the level of contamination in the soil is comparable to the level of contamination in Southern Wood Piedmont's Baldwin site.*
>
> * - Underlining (except for report title) indicates additions to existing paragraph.

Your expeditious review of this request will be very much appreciated. MFM Environmental is negotiating with prospective clients and must be able to demonstrate that the company has the Department's authorization to except contaminated soil from alternate sites. If any additional information is required to facilitate your review of this matter, please do not hesitate to contact me. Thanks again for your understanding and cooperation.

Very truly yours,

KOOGLER & ASSOCIATES

John B. Koogler, Ph.D, P.E.

JBK:wa

cc: Mr. Dale Twachtmann
Mr. David Kibler

copied: M. Harley
C. Collins, CF Dist.

KOOGLER & ASSOCIATES
ENVIRONMENTAL SERVICES
4014 NW THIRTEENTH STREET
GAINESVILLE, FLORIDA 32609
904/377-5822 • FAX 377-7158

FAX TRANSMITTAL FORM

TO: Mr. Clair Fancy
DER

290-88-01

FROM: John Koogler
K&A

SENT BY: Marion

DATE: 3/21/89

FAX PHONE: 904-377-7158

The text being transmitted consists of 2 pages
PLUS this one.

REMARKS: Hard copy to follow.

DATE: 3/9/89

TO: Frank Holper
FL DER

FROM: David B. Kibler IV

MFM INDUSTRIES
3300 S.W. 34th Avenue
Suite 152
Ocala, Fla. 32674

NUMBER OF PAGES TRANSMITTED (NOT INCLUDING COVER PAGE)

4.

IN CASE MESSAGE IS NOT RECEIVED AS INDICATED, PLEASE CALL: 904-854-0070
OR FAX #: 904-854-1576

THANK YOU.

[illegible] AVENUE, SUITE 104
OCALA FLORIDA 32674
TELEX 810 858 0306

MFM

MFM INDUSTRIES INC.

March 9, 1989

Mr. Frank Wolper
State of Florida
Department of Environmental Regulation
2600 Blairstone Road
Tallahassee, FL 32301

Dear Frank:

I enjoyed talking with you. I appreciate your returning my call so promptly. I look forward to seeing you next Tuesday, March 14, at 2:00 P.M. At that time we can more fully discuss our regulatory ideas concerning soil remediation.

Sincerely,

David B. Kibler, IV
President

DBK:co'd

LACK OF STANDARDS CONTRIBUTES TO SPREADING CONTAMINATION

Because there are no state wide standards for the handling and decontamination of soils, Florida risks the spread of ground contamination sites due to ineffective thermal processing and careless handling. The present practice of using air permits to regulate asphalt kilns and concrete plants has been a colossal failure. This failure is a direct result of the inconsistent application of generally accepted handling and decontamination procedures (or the failure to apply these procedures at all).

Facilities have been permitted to treat soils at low temperatures and high tonnage rates which make even modest decontamination unlikely.[1] Prior to decontamination, soils are stored on the bare ground because there are no permit requirements for storage on impermeable surfaces. After what is often a cursory decontamination effort, soils are declared "clean" and no attempt is made to regulate their handling or disposition. If these soils are returned to the environment, they will begin the cycle of contamination all over again. As shocking as these oversights may be, it is important to understood that other areas of soils decontamination are being handled in an equally inconsistent manner.

In a rush to obtain funding, the legislature and DER have forgotten the original goal of groundwater protection and settled for solutions which are making the contamination problem far worse. This is especially shameful at a time when Florida based industries lead the way with sound technologies on which solid performance standards could be based; high temperature rotary kiln decontamination (with optimal retention times of half an hour) combined with adequate off gas treatment systems offers excellent decontamination and excellent air quality results. It is time to correct these oversights by directing DER to implement solid performance standards for the handling, decontamination of soils, and disposition of purged materials.

---

[1] Petroleum retained in soil doesn't have time to evaporate at high rates of processing. A related problem is that some soils have sufficient insulating capacity such that high temperatures are necessary to effectively drive off the contamination.

LEGISLATIVE PROPOSAL FOR DER REGULATIONS

FOR

HANDLING AND TREATMENT OF CONTAMINATED SOILS

Whereas, contaminated soils represent a major threat to the underground water supplies of this state;

Whereas, there is insufficient capacity within the State of Florida to treat all contaminated soils at EPA approved treatment facilities;

Whereas, alternative technologies are available to treat contaminated soils;

Whereas, any alternative technology facilities have been permitted to handle and treat contaminated soil by modifications to air quality permits;

Whereas, most of these facilities have ignored prudent handling and decontamination procedures, seeking only a compliance with air quality standards;

Therefore, the Secretary of the Florida Department of Environmental Regulation shall promulgate regulations establishing such performance standards, applicable to owners and operators of facilities for the handling, storage, and decontaminations of contaminated soils. Such standards shall include, but need not be limited to, requirements respecting --

1) development of methods appropriate for the identification of materials classified as "contaminated", giving consideration to contamination from both new materials and used materials.

2) definition of minimal levels of contamination acceptable in "decontaminated" soils and acceptable testing procedures to guarantee the achievement of such levels.

3) maintaining records of all soils identified as contaminated and the methods of identification, quantities processed, treatment levels attained, and disposition of processed materials.

4) satisfactory reporting, monitoring, testing, inspection and compliance with a manifest system such that the improper disposal of such soils would be unlikely.

5) the location, design, and construction of alternative treatment and storage facilities for contaminated soils, giving appropriate consideration to storage of materials in such a manner that there will not be additional contamination created by inappropriate open handling.

6) contingency plans for effective action to minimize unanticipated damage from any decontamination, storage, or disposal of these materials, giving appropriate consideration to the likelihood of extreme weather conditions which are likely.

7) the maintenance and operation of such facilities and requiring such additional qualifications as to ownership, continuity of operation, training for personnel, financial responsibility (including financial responsibility for corrective action) as may be necessary or desirable; and

8) consideration of such additional requirements as may be necessary for permitting of such sites and facilities which will handle these materials.

STATE OF FLORIDA

DEPARTMENT OF ENVIRONMENTAL REGULATION

TWIN TOWERS OFFICE BUILDING
2600 BLAIR STONE ROAD
TALLAHASSEE, FLORIDA 32399-2400

BOB MARTINEZ
GOVERNOR

DALE TWACHTMANN
SECRETARY

FAX TRANSMITTAL LETTER

TO:

NAME: David Kibler

AGENCY: MFM Environmental

TELEPHONE NUMBER:

NUMBER OF PAGES (INCLUDING COVER SHEET): 6

FROM:

Name: Clair Fancy

AGENCY: DER

TRANSMITTAL ON A HITACHI HIFAX-35 PHONE NUMBER 904-488-6579

IF ANY OF THE PAGES ARE NOT CLEARLY RECEIVED, PLEASE CALL IMMEDIATELY. Phone No. 904/488-1344

SENDERS NAME: Patty Adams

COMMENTS:

Original letter
sent Federal
Express 2-20-89

Florida Department of Environmental Regulation

Twin Towers Office Bldg. • 2600 Blair Stone Road • Tallahassee, Florida 32399-2400

Bob Martinez, Governor Dale Twachtmann, Secretary John Shearer, Assistant Secretary

February 15, 1989

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

Mr. David Kibler, Executive Director
MFM Environmental Inc.
Suite 152
3300 Southwest 34th Avenue
Ocala, Florida 32674

Dear Mr. Kibler:

Re: One-Time Amendment to AC 42-113787 Giving Authorization To Conduct The Testing Required To Demonstrate That The Clay Dryer Owned by MFM Environmental Will Successfully Decontaminate Soil Contaminated With Creosote And Refine Design Parameters For A Tail Gas Treatment System

The Department has reviewed the information that you provided on November 18 and December 2, 1988, with respect to our meeting of November 17. We have also considered our legal authority to allow you to conduct the requested test. Paragraph 403.061(15), F.S., authorizes the Department to consult with any person proposing to construct a pollution control device or system. Paragraph 403.061(16), F.S., authorizes the Department to encourage voluntary cooperation by persons in order to achieve the purposes of the state environmental control act. Paragraph 403.061(18), F.S., authorizes the Department to encourage and conduct studies, investigations, and research relating to the causes and control of pollution. Florida Administrative Code (F.A.C.) Chapter 17-2.250(5) authorizes the Department to consider variations in industrial equipment and make allowances for excess emissions that provide practical regulatory controls consistent with the public interest.

Pursuant to the provisions of Paragraphs 403.061(15), (16), and (18), F.S., and F.A.C. Rule 17-2.250(5), you are hereby authorized to decontaminate 10,000 tons of soil contaminated with creosote on a one-time basis. The purpose of this activity is to obtain the data needed to determine whether the kiln is capable of safely and satisfactorily decontaminating soil that is contaminated with creosote and obtain the data needed to

complete the design of a tail gas treatment system. The completion of this project will enable MFM Environmental Inc. to utilize the kiln to minimize potential contamination of subsurface waters and reduce air emissions after obtaining the appropriate construction and operation permits. This authorization in no way changes the Department's position with respect to the consent order no. 880938 and settlement of liabilities concerning the unauthorized decontamination of 1700 tons of soil contaminated with creosote by MFM Environmental Inc. during the month of July 1988. The decontamination shall be conducted pursuant to all of the following conditions:

1. The permittee shall sign the consent order no. 880938 and pay the assessed settlement of liabilities prior to conducting the soil decontamination project authorized by this letter amendment. The issuance of this permit amendment shall not be construed as an exoneration of the permittee for the violations which occurred in July 1988 or as justification for those violations.

2. The permittee shall elevate the height of the stack to at least 100 feet and duct all exhaust gases from the kiln through the elevated stack prior to conducting the soil decontamination project.

3. The soil shall be decontaminated during a continuous 40-day period beginning on a weekday and ending 40 days later. The permittee must contact the Department's Central Florida District office, the Bureau of Air Quality Management, and the Bureau of Waste Cleanup at least 5 days prior to the commencement of the trial burn.

4. The soil to be decontaminated shall be the remaining tonnage of creosote contaminated soil at Southern Wood Piedmont's Baldwin site. The soil to be decontaminated shall have the same qualitative and average quantitative analyses as that shown for contaminated (raw) soil in Attachment 3, Emission Measurements For Metals And Semi-Volatile Organic Compounds During The Thermoprocessing Of Soil Contaminated With Creosote. The polynuclear aromatic hydrocarbon constituents and levels are shown in Tables 4 and 5 of Attachment 3. The levels of metallic constituents and arsenic are shown in the August 16, 1988 letter from PPB Environmental Laboratories to Dr. John Koogler which is found in Attachment 3. The soil to be decontaminated shall not be of such a character that it would be classified as a hazardous waste.

5. The fuel specifications and maximum hourly input rate shall not exceed that requested in the last paragraph of page 3 of Attachment 6 to this letter. The maximum soil processing rate shall not exceed 25 tons per hour. The fuel burned during soil decontamination shall also comply with the specifications of the referenced permit.

6. The testing and decontamination shall be conducted under the direct supervision and responsible charge of a professional engineer registered in Florida. The testing and decontamination shall cease if conditions of night-time calm, twilight calm, or downwash persist for two consecutive hours. Operations shall cease for four hours if average windspeed above 10 miles per hour persists from one direction (plus or minus 10 degrees) for two consecutive hours. The wind direction is to be the hourly average wind direction. This testing and decontamination shall not result in the release of objectionable odors and steps shall be taken to minimize visible emissions to the maximum practical extent.

7. The testing and decontamination shall be conducted in such a manner as to minimize emissions of all polynuclear aromatic hydrocarbon compounds including, but not limited to phenol, naphthalene, 2-methylnaphthalene, acenaphthylene, acenaphthene, dibenzofuran, fluorene, pentachlorophenol, phenanthrene, anthracene, fluoranthene, pyrene, benzo(a)anthracene, chrysene, bis(2-ethylhexyl)phthalate, benzo(b)fluoranthene, benzo(k)fluoranthene, benzo(a)pyrene, and benzo(g,h,i)perylene; and to insure that emissions of these compounds do not result in maximum 8-hour concentrations that exceed any applicable ACGIH TLV including that for coal tar volatiles.

8. The testing and decontamination shall be conducted in such a manner as to minimize emissions of all other pollutants including, but not limited to lead, mercury, chromium (both hexavalent and trivalent), copper, zinc, and arsenic. The emissions of these pollutants shall not result in the exceedance and/or violation of any ambient air quality standard that the Department determines to be applicable.

9. Testing and decontamination shall immediately cease upon the occurrence of a valid environmental complaint by a citizen or other party, or a nuisance or danger to public health or welfare. Testing and decontamination shall not resume until appropriate measures to correct the problem have been implemented.

10. The professional engineer registered in Florida and in responsible charge pursuant to Specific Condition 6 of this letter shall sample air emissions, contaminated soil, and decontaminated soil pursuant to appropriate EPA and Department methods to provide the information needed to ensure that the public health and welfare are not jeopardized. The sampling shall also produce data that is directly comparable to data that the company has collected during previous attempts to decontaminate soil contaminated with creosote and coal tar during 1988. The pollutants sampled shall include polynuclear aromatic hydrocarbons, dioxane, heavy metals, and arsenic in addition to the other regulated air pollutants listed in Table 500-2 of F.A.C. Chapter 17-2. The professional engineer shall also ensure that operating parameters of the kiln are continuously monitored and recorded.

11. MFM Environmental Inc. shall provide the Department's Bureau of Air Quality Management, the Bureau of Waste Cleanup, and the Central Florida District Office with copies of the test reports within 60 days of completion of the emission testing.

12. Any and all subsequent decontamination of soils not specifically authorized by air construction permit AC 42-113787 as it existed prior to September 14, 1988 is prohibited. MFM Environmental Inc. shall complete the design of the tail gas control system, submit applications for air construction permits, and receive valid air construction permits prior to any future decontamination of soils not specifically authorized by air construction permit AC 42-113787 as it existed on September 14, 1988. The applications shall be submitted and processed in accordance with all applicable requirements of F.A.C. Chapters 17-2, 17-4, and 17-103.

Attachments:

1. Letter from J. B. Koogler to FDER received November 18, 1988.

2. Letter from J. B. Koogler to FDER received December 2, 1988.

3. Emission Measurements For Metals And Semi-Volatile Organic Compounds During The Thermoprocessing Of Soil Contaminated With Creosote, Koogler & Associates, July 15, 1988, received December 2, 1988.

4. New York State Air Guide-1: Guidelines for the Control of Toxic Ambient Air Contaminates, 1985-86 Edition, New York

State Department of Environmental Conservation, Division of Air Resources, received December 2, 1988.

5. May 6, 1987 Federal Register, "40 CFR Part 260 et. al.: Burning of Hazardous Waste in Boilers and Industrial Furnaces; Proposed Rule," pages 52 FR 16993-16995 and 52 FR 17031-17033, received December 2, 1987.

6. Letter from J. B. Koogler to FDER, received June 16,1988.

7. Fax from J. B. Koogler to FDER, received December 16, 1988.

The FDER has relied upon the information and presentations, both written and verbal, of MFM Environmental, Inc. and its professional engineer registered in Florida in the issuance of this one-time amendment to permit AC 42-113787.

A copy of this letter and its attachments shall be attached to the construction permit no. AC 42-113787.

Sincerely,

Dale Twachtmann
Secretary

DT/ss

cc: J. Koogler, P.E.
C. Collins
J. Brown
M. Rehwinkle
D. Townsend

Florida Department of Environmental Regulation

Twin Towers Office Bldg. • 2600 Blair Stone Road • Tallahassee, Florida 32399-2400

Bob Martinez, Governor Dale Twachtmann, Secretary John Shearer, Assistant Secretary

February 15, 1989

Cornelius A. Link, D.D.S.
P. O. Box 125
Lowell, Florida 32663

Dear Dr. Link:

Thank you for writing to us about the proposed soil decontamination activity by MFM Environmental, Inc. It is true that one of your neighbors did file comments requesting a public hearing; but, the request was recently withdrawn. As a result, the Department plans to proceed with the proposed amendment to air construction permit No. AC 42-113787. The permit amendment will essentially be the same as that which has been available for public inspection at the Marion County Health Department, 3230 Southeast Maricamp Road, Ocala, Florida 32671. The permit amendment contains certain provisions that provide you with the mechanism to obtain relief if the burning produces unacceptable environmental conditions.

If you have any questions, please call me at (904) 488-1344 or write to Clair Fancy, P.E., Deputy Chief, Bureau of Air Quality Management, at the above address.

Sincerely,

William A. Thomas, P.E.
Administrator
Stationary Source Control Section

WT/mh

cc: S. Smallwood
C. Fancy
B. Hewitt
M. Rehwinkle
C. Collins
D. Townsend
D. Kibler
J. Koogler

file

February 10,1989

Laura J. Yantis
P.O. box 216
Lowell, Florida
32663

Department of Environmental Regualtion
Bureau of Air Quality Management
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

Re: Request for Public hearing on
Permit #AC 42-113787
Mid-Florida Mining

Dear Sir:

I have recently met with officials of Mid-Florida Mining (MFM). I now understand both the details of the permit and the procedure to be used to purge the creosole contaminated soil from the Baldwin site. It was also explained , that the strong oder was due to the testing of this soil and changes are being made to deal with the order problem.

At this time I withdraw my request for a public hearing. I trust that the DER will monitor the testing process and secure a safe procedure to significantly reduce or eliminate the oder problem.

Sincerely,

Laura J. Yantis

Laura J. Yantis

State of Florida
DEPARTMENT OF ENVIRONMENTAL REGULATION

For Routing To Other Than The Addressee

To: _____ Location: _____

To: _____ Location: _____

To: _____ Location: _____

From: _____ Date: _____

Interoffice Memorandum

RECEIVED
FEB 16 1989
Office of the Secretary

TO: Dale Twachtmann

FROM: Steve Smallwood

SUBJ: Approval of an Amendment to Construction Permit No. AC 42-113787 MFM Environmental, Inc.

DATE: February 15, 1989

Attached for your approval and signature is a permit amendment prepared by Central Air Permitting giving the above mentioned company authorization to conduct the testing required to demonstrate whether the clay dryer will successfully decontaminate soil that is contaminated with creosote and refine the design parameters for a tail gas treatment system. Written comments opposing the project were received from two residents of Lowell. One of the comments was a request for a public hearing. The request has been withdrawn.

I recommend your approval and signature.

SS/CH/h

attachments

Also - do you think we should send a copy to the person who requested the hearing?

Patty

Mike Harley

this was sent Federal Express 2-20-89

Also sent a copy Dap 2-20-89

BEST AVAILABLE COPY

JAN 18 '89 [illegible] M F M INDUSTRIES

DATE: Jan 18, 1989

TO: Bill Thomas

Division of Air Quality

Department of Environmental Regulation

FROM: Rusty Butler

MFM INDUSTRIES
3300 S.W. 34th Avenue
Suite 152
Ocala, Fla. 32674

NUMBER OF PAGES TRANSMITTED (NOT INCLUDING COVER PAGE)

One

IF THIS MESSAGE IS NOT RECEIVED AS INDICATED, PLEASE
CALL 904-854-0070
OR FAX #1 904-854-1576

RECEIVED
JAN 18 1989
DER - BAQM

[illegible]

BEST AVAILABLE COPY

PROOF OF PUBLICATION

THE OCALA STAR-BANNER

Published Daily

OCALA, MARION COUNTY, FLORIDA

RECEIVED

JAN 18 1989

DER - BAQM

STATE OF FLORIDA,
COUNTY OF MARION

Before me the undersigned authority personally appeared Lynn Maxwell who on oath says that he is Classified Manager of the Ocala Star-Banner, a daily newspaper published at Ocala, in Marion County, Florida; that the attached copy of advertisement, being a notice in the matter of #1795 Notice of Intent

in the Court

was published in said newspaper in the issues of January 3, 1989

Affiant further says that the said THE OCALA STAR-BANNER is a daily newspaper published at Ocala, in said Marion County, Florida, and that the said newspaper has heretofore been continuously published in said Marion County, Florida, daily, and has been entered as second class mail matter at the post office in Ocala, in said Marion County, Florida, for a period of one year next preceding the first publication of the attached copy of advertisement; and affiant further says that he has neither paid nor promised any person, firm or corporation any discount, rebate, commission or refund for the purpose of securing this advertisement for publication in the said newspaper.

[illegible signature]

Sworn to and subscribed before me this [illegible] day of January A.D., 19 89

[illegible signature]

Notary Public

Notary Public, State of Florida
My Commission Expires April [illegible], 1990
Bonded Thru Troy Fain Insurance Inc.

State of Florida
Department of Environmental Regulation

Notice of Intent

The Department of Environmental Regulation hereby gives notice of its intent to issue a letter amendment to construction permit no. AC 42-113707 for MHM Environmental, Inc. to decontaminate soil contaminated with creosote. The purpose of this amendment is to allow MHM Environmental, Inc. to decontaminate soil that poses a threat to Florida's groundwater system and to obtain the data that is needed to complete the design of a proposed [illegible] treatment system. The Department would expect the [illegible] off gas treatment system to effectively control emissions of polynuclear aromatic hydrocarbons, arsenic, chromium, copper, lead, mercury, zinc, and any possible dioxanes, in addition to reducing emissions of normally regulated pollutants. The proposed letter amendment has been conditioned to limit the duration of the planned activity to 40 days, limit adverse environmental impacts, and require decontamination [illegible] environmental [illegible]. The proposed project is located on State Road 329 at the CSX Transportation Railroad, Lowell, Marion County, Florida. The Department is issuing this intent to issue for the reasons stated in the proposed letter amendment to construction permit no. AC 42-113707.

Persons whose substantial interests are affected by the Department's proposed permitting decision may petition for an administrative determination (hearing) in accordance with Section 120.57, Florida Statutes. The petition must conform to the requirements of Chapters 17-103 and 28-5, Florida Administrative Code, and must be filed (received) in the Department's Office of General Counsel, 2600 Blair Stone Road, Twin Towers Office Building, Tallahassee, Florida 32399-2400, within fourteen (14) days of publication of this notice. Failure to file a petition within this time period constitutes a waiver of any right such person has to request an administrative determination (hearing) under Section 120.57, Florida Statutes.

If a petition is filed, the administrative hearing process is designed to formulate [illegible] action. Accordingly, the Department's final action may be different from the proposed agency action. Therefore, persons who may not wish to file a petition may wish to intervene in the proceeding. A petition for intervention must be filed pursuant to Rule 28-5.207, Florida Administrative Code, at least five (5) days before the final hearing and be filed with the hearing officer if one has been assigned at the Division of Administrative Hearings, Department of Administration, 2009 Apalachee Parkway, Tallahassee, Florida 32301. If no hearing officer has been assigned, the petition is to be filed with the Department's Office of General Counsel, 2600 Blair Stone Road, Tallahassee, Florida 32399-2400. Failure to petition to intervene within the allowed time frame constitutes a waiver of any right such person has to request a hearing under Section 120.57, Florida Statutes.

The application [illegible] available for public inspection during normal business hours, 8:00 a.m. to 5:00 p.m., Monday through Friday, except legal holidays, at:

Dept. of Environmental Regulation
Bureau of Air Quality Management
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

Dept. of Environmental Regulation
Central Florida District Office
Suite 232
3319 Maguire Blvd.
Orlando, Florida 328[illegible]

Marion County Health [illegible]
[illegible] Southeast [illegible] Road
Ocala, Florida 3207[illegible]

Any person may send written comments on the proposed action to Mr. [illegible] Thomas at the Department's Tallahassee address. All comments received within [illegible] days of the publication of this notice will be considered in the Department's final determination [illegible].

No. 1795 — January 3, 1989

KOOGLER & ASSOCIATES
ENVIRONMENTAL SERVICES
4014 NW THIRTEENTH STREET
GAINESVILLE, FLORIDA 32609
904/377-5822 ▪ FAX 377-7158

BY FEDERAL EXPRESS

KA 290-88-01

January 16, 1989

Mr. Steve Smallwood, Director
Division of Air Resources Management
Florida Department of
Environmental Regulation
Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, FL 32399-2400

Dear Mr. Smallwood:

In accordance with the requirement of Condition 7 of the Department's letter of September 14, 1988 to Mr. David Kibler of MFM Environmental, Inc., please find attached a report describing the test program, and the results of the test program, conducted as MFM thermally processed soil contaminated with coal tar.

If there are any questions regarding this report, please do not hesitate to contact me.

Very truly yours,

KOOGLER & ASSOCIATES

John B. Koogler, Ph.D, P.E.

JBK:mab

cc: Mr. John Ruddell, FDER, Division of Waste Management
Mr. Charles Collins, FDER, Central Florida District
Mr. David Kibler, MFM Environmental, Inc.

EMISSION MEASUREMENTS FOR SEMI-VOLATILE ORGANIC COMPOUNDS DURING THE THERMOPROCESSING OF SOIL CONTAMINATED WITH COAL-TAR

MFM INDUSTRIES, INC.
LOWELL, FLORIDA

Permit No. AC42-113787

November 16, 1988

KOOGLER & ASSOCIATES
ENVIRONMENTAL SERVICES
4014 N.W. 13TH STREET
GAINESVILLE, FLORIDA 32609
(904) 377-5822

KOOGLER & ASSOCIATES

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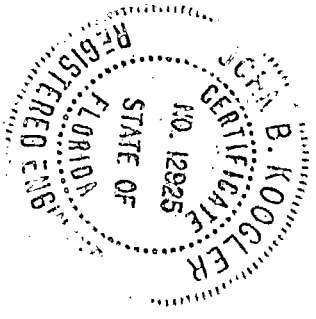
KOOGLER & ASSOCIATES

To the best of my knowledge, all applicable field and analytical procedures comply with Florida Department of Environmental Regulation requirements and all test data and plant operating data are true and correct.



John B. Koogler, PH.D., P.E.

State of Florida
Registration No. 12925

1/16/89
Date

SEAL

KOOGLER & ASSOCIATES

1.0 INTRODUCTION

MFM Industries, Inc. operates a rotary clay dryer near Lowell, Florida. The primary function of the clay dryer is to produce a dried clay product used for cat litter and a calcined clay product used as an oil adsorbent. The dryer is also permitted by Florida Department of Environmental Regulation to decontaminate soils contaminated with certain hydrocarbon products (Permit AC42-113787). By letter dated September 14, 1988, the Department amended the permit to allow MFM to thermally process up to 1300 tons of soil contaminated with coal tar.

On November 16, 1988, Koogler & Associates, Environmental Services of Gainesville, Florida, conducted emission measurements on the dryer for semi-volatile organic compounds while the dryer was being used to process the coal tar contaminated soil. The emission measurements were made with the EPA Modified Method 5 (MM5) sampling train. The purpose of the testing was to determine the emission rate of organic constituents removed from the soil and to develop information that could be used to reduce the emission rate of organic compounds and to improve the thermal-processing efficiency of the dryer. During the period of testing, soil was being processed at the rate of 20 to 25 tons per hour. The September 14, 1988, amendment to permit AC42-113787 limits the processing rate of coal tar contaminated soil to 25 tons per hour.

The semi-volatile organic compounds included in the emission survey included the compounds targeted by the EPA Method 625 Analytical Procedure plus any other semi-volatile compound present in a significant quantity. Seventeen semi-volatile organic compounds were found in the stack gases and the combined emission rate of these compounds averaged 143.5 pounds per hour; approximately 91 percent of which were naphthalene-based compounds.

In addition to measuring the concentration of organic compounds in the stack gas, the concentrations of these compounds were measured in the untreated soil and the processed soil. The thermoprocessing reduced the levels of the soil contaminants to less than 0.5 milligrams per kilogram (ppm); except for naphthalene at 1.0 ppm in one sample and bis (2-ethylhexyl)phthalate at 1.7 ppm in another sample. The total concentration of organics in the untreated soil averaged approximately 3200 ppm.

2.0 PROCESS DESCRIPTION

The rotary dryer operated by MFM is used primarily for drying clay for use as cat litter or for calcining clay for use as an oil adsorbent. The dryer is also permitted by the Florida Department of Environmental Regulation under Permit AC42-113787 to thermally process soil contaminated with certain hydrocarbon products. The maximum throughput rate for thermally processing contaminated soil is 30 tons per hour. Additionally, the Department gave MFM approval by letter dated September 14, 1988, to process up to 1300 tons of soil contaminated with coal tar in the dryer.

The dryer is seven feet in diameter and 72 feet in length. At the time of testing, the dryer was being fired with used-oil fuel at a rate ranging from 230 to 250 gallons per hour. This corresponds to a heat input rate in the range of 30-33 million BTU per hour; or approximately 1.3 million BTU per ton of soil processed.

At a soil processing rate of 20-25 tons per hour, the retention time of the soil in the dryer is estimated to be approximately 35 minutes. The temperature of the soil discharged from the dryer ranged from 700^{o}F to 1000^{o}F.

The combustion gases and particulate matter discharged from the dryer are exhausted through a baghouse dust collector before they are discharged to the atmosphere. During the test period, the gas temperature at the exit of

the dryer ranged from 260-280°F and the temperature in the stack (downstream from the baghouse) ranged from 220-230°F. The gas flow rate in the stack was 24,360 actual cubic feet per minute at a temperature of 223°F and a moisture content of 31.9 percent.

3.0 SAMPLING POINT LOCATION

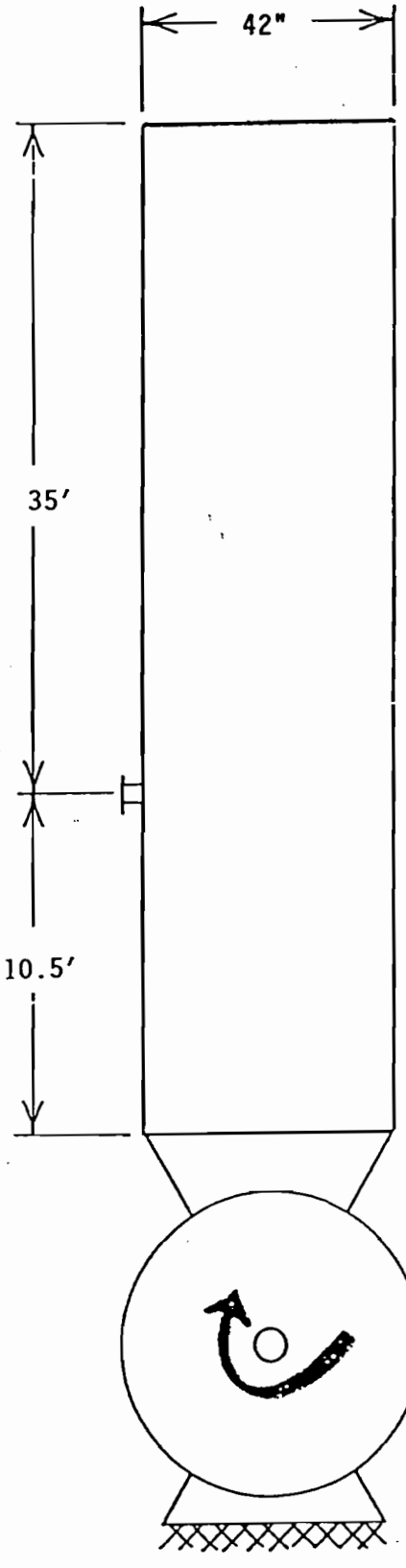
Two sampling ports are located at 90 degrees to one another in the 42 inch-diameter stack venting the baghouse. The sampling ports are 10.5 feet above the I.D. fan and 35 feet below the top of the stack. Using the criteria of EPA Method 1 (40CFR60, Appendix A), it was determined that 24 sampling points should be used for the emission measurements; 12 points on each of the two traverses.

Figure 1 is a schematic diagram of the stack showing the locations of the sampling points.

FIGURE 1

SAMPLING POINT LOCATIONS
NO. 1 DRYER BAGHOUSE

MID-FLORIDA MINING COMPANY
LOWELL, FLORIDA



Traverse Point No.	Inches Inside Stack Wall
1	1.0
2	2.9
3	5.1
4	7.7
5	10.9
6	15.4
7	28.1
8	32.6
9	35.8
10	38.4
11	40.6
12	42.5

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4.0 FIELD AND ANALYTICAL PROCEDURES

The samples were collected using the EPA Modified Method 5 (MM5) sampling train. The sampling point locations were established in accordance with EPA Method 1 and the stack gas velocity and stack gas moisture measurements were made in conjunction with the MM5 tests, in accordance with EPA Method 2 and EPA Method 4, respectively.

The samples from the MM5 sampling train were analyzed for semi-volatile organic compounds in accordance with Method 625 as published in EPA Document SW-846. The analyses identified 17 polynuclear aromatic hydrocarbons (PNAs); most of which were naphthalene-based compounds.

Soil samples were collected during each of the three test runs and analyzed for semi-volatile organic compounds. Samples were collected of the contaminated soil and the processed soil discharged from the dryer. The semi-volatile organic compounds were determined in accordance with Method 8270, as published in SW-846 (this is the test method for soils that is equivalent to Method 625, which was used for analyzing the MM5 samples).

The laboratory reports for semi-volatile organic compounds are included in the Appendix of this report.

5.0 SUMMARY OF RESULTS

During the test period on November 16, 1988, three 120-minute emission measurements were made to determine the emission rates of semi-volatile organic compounds during the thermal processing of soils containing coal tar. The soil throughput rate ranged from 20 to 25 tons per hour during the test period and the fuel firing rate averaged 230 to 250 gallons per hour.

The dryer conditions and total particulate matter emission rates for the test period are summarized in Table 1. The stack gas flow rate averaged 12934 standard cubic feet per minute, dry, at a temperature of 223^{o}F and a moisture content of 31.9 percent (24360 acfm). The particulate matter emission rate averaged 2.06 pounds per hour; compared with a permitted rate of 28.97 pounds per hour.

The emission rates of semi-volatile organic compounds are summarized in Table 2. It should be noted that the three MM5 samples were combined and analyzed collectively to increase the sensitivity of the analyses. Of the target compounds included in the Method 625 analyses, only 17 compounds were found above the detectable limits of the analytical procedures. Those compounds were all PNAs and 91 percent were naphthalene related compounds. The total emission rate of PNAs averaged 143.5 pounds per hour. There is no emission limiting standard in the MFM permit for hydrocarbon products nor were emission limits set in the Department's letter of September 14, 1988.

Laboratory reports included in the Appendix of this report summarize the PNA concentrations in the soil samples; both before and after processing. The Appendix of this report also includes the field data sheets for the MM5 sampling and copies of all laboratory reports, as well as a list of project participants.

Table 1

SUMMARY OF PARTICULATE MATTER EMISSIONS

MID FLA. MINING / LOWELL, FLA.
DRYER
11/16/88

Run No.	Process Weight Rate (Tons/Hr)	Stack Gas Flow Rate (SCFMD)	Stack Gas Temperature (Deg F)	Stack Gas Moisture (%)	Particulate Matter	
					Conc. (gr/SCF)	Emission Rate (Lbs/Hr)
1	20-25	14347	230.0	30.3	.0182	2.24
2	20-25	12213	218.4	32.5	.0143	1.50
3	20-25	12243	220.4	32.8	.0231	2.42
Avg	20-25	12934	222.9	31.9	.0185	2.06

Allowable Particulate Matter Emission Rate = 28.97 Lbs/Hr
(Chap. 17-2, Florida Administrative Code)

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TABLE 2

EMISSION RATE OF SEMI-VOLATILE ORGANIC COMPOUNDS
DURING THERMAL SOIL PROCESSING

MFM INDUSTRIES, INC.
LOWELL, FLORIDA

11/16/88

Compound	Average Emission Rate (lb/hr)
Phenol	0.275
Naphthalene	28.041
Acenaphthylene	1.568
Acenaphthlene	2.596
Fluorene	2.344
Phenanthrene	4.370
Anthracene	0.711
Fluoranthene	0.345
Pyrene	0.392
Naphthalene related PNAs	102.859
Total PNAs	143.500

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APPENDIX

1. Equations and Nomenclature
2. Calculations
3. Field and Laboratory Data Sheets
4. Equipment Calibrations
5. Project Participants

EQUATIONS AND NOMENCLATURE

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SOURCE SAMPLING NOMENCLATURE SHEET

PB - Barometric pressure, inches Hg
PS - Stack pressure, inches Hg
As - Stack area, sq. ft.
AS'- Effective area of positive stack gas flow, sq. ft.
NPTS - Number of traverse points where the pitot velocity head was greater than zero
TSTD - Standard temperature, °R
TS - Stack temperature, °R
TM - Meter temperature, °R
$\overline{H}$ - Average square root of velocity head, $\sqrt{\text{inches } H_2O}$
$\overline{H}$ - Average meter orifice pressure differential, inches H_2O
AN - Sampling nozzle area, square feet
CP - S-type pitot tube correction factor
VM - Recorded meter volume sample, cubic feet (meter conditions)
VC - Condensate and silica gel increase in impingers, milliliters
Po - Pressure at the dry test meter orifice, $\left[PB + \frac{\Delta \overline{H}}{13.6}\right]$ inches Hg
STP - Standard conditions

VWV - Converstion of condensate in milliliters to water vapor in cubic feet (STP)
VSTPD - Volume sampled, cubic feet (STP)
VT - Total water vapor volume and dry gas volume sampled, cubic feet (STP)
W - Moisture fraction of stack gas
FDA - Dry gas fraction
MD - Molecular weight of stack gas, lbs/lb-mole (dry conditions)
MS - Molecular weight of stack gas, lbs/lb-mole (stack conditions)
GS - Specific gravity of stack gas, referred to air
EA - Excess air, %
$\sqrt{\overline{H}xTS}$ - Average square root of velocity head times stack temperature
$\overline{U}$ - Stack gas velocity, feet per minute
QS - Stack gas flow rate, cubic feet per minute (stack conditions)
QD - Stack gas flow rate, cubic feet per minute (dry conditions)
QSTDP - Stack gas flow rate, cubic feet per minute (STP)
PISO - Percent isokinetic volume sampled (method described in Federal Register)
ESTP - Particulate concentration at standard and dry conditions, grains/scf
E_{12} - ESTP corrected to 12% CO_2, grains/scf
E_{50} - ESTP corrected to 50% excess Air, grains/scf
EM - Mass Emission Rate, lbs/hr

* - Stack Gas Saturated

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EQUATIONS FOR CALCULATING EMISSIONS

$$VWV = 0.0000893(TSTD)(VC)$$

$$VSTPD = (VM)(PB + \frac{\Delta H}{13.6})(\frac{TSTD}{TM})(\frac{1}{29.92})$$

$$VT = (VWV) + (VSTPD)$$

$$W = (VWV) \div (VT)$$

$$FDA = (1.0) - (W)$$

FMOIST = Assumed moisture fraction

$$MD = (0.44 \times \%\ CO_2) + (0.32 \times \%\ O_2) + (0.28 \times \%\ N_2) + (0.28 \times \%\ CO)$$

$$MS = (MD \times FDA) + (18 \times W)$$

$$GS = (MS) \div (28.99)$$

$$EA = \frac{\left[(100) \times (\%\ O_2 - \frac{\%\ CO}{2})\right] \div \left[(0.266 \times \%\ N_2) - (\%\ O_2 - \frac{\%\ CO}{2})\right]}{}$$

$$\underline{U} = 4{,}006(CP)\sqrt{H}\sqrt{(\frac{TS}{TSTD})(\frac{29.92}{PS})(\frac{1}{GS})}$$

$$QS = (\underline{U}) \times (AS)$$

$$QD = (QS) \times (FDA)$$

$$QSTPD = TSTD(QD)(PS) \div [TS(29.92)]$$

$$PISO = \left[(0.00267 \times VC \times TS) + (P_o \times TS \times VM \div TM)\right] \div \left[(Time \times \underline{U} \times PS \times AN)\right]$$

$$ESTP = \frac{(\frac{15.43\ grains}{gram})\ (y)}{VSTPD}$$

$$E_{12} = \frac{(ESTP)\ (12)}{(CO_2\ \%)}$$

$$E50 = \frac{(ESTP)\ (100 + EA)}{150}$$

$$EM = (ESTP)\ (QSTPD)\ (60\ \frac{min}{hr})\ (\frac{lb}{7000\ grains})$$

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CALCULATIONS

KOOGLER & ASSOCIATES

KOOGLER & ASSOCIATES, ENVIRONMENTAL SERVICES

Source Sampling Calculations

Plant: MID FLA. MINING / LOWELL, FLA. Date: 11/15/88
Stack: DRYER Run 1 From 1303 - 1613
Weather: CLEAR Total Time: 120 Min

Stack Area	9.62 Sq Ft	Nozzle Area	.000548 Sq Ft
Stack Temp	230 Deg F	Meter Temp	94.4 Deg F
Stack Pressure	30.15 "Hg	Baro. Pressure	30.14 "Hg
Stack Vel Head	.683 "H2O	Meter Press Diff	2.94 "H2O
		Meter Volume	118.798 cf
Pitot Tube Factor	.84	Condensate Volume	1060 ml

1.	Volume Water Vapor	49.926	SCF
2.	Gas Volume Sampled - STPD	114.790	SCFD
3.	Total Volume	164.716	SCF
4.	Moisture in Stack Gas - Volume Fraction	.303	
5.	Dry Stack Gas - Volume Fraction	.697	
6.	Molecular Weight of Stack Gas - Dry Basis	29.00	
7.	Molecular Weight of Stack Gas - Stack Conditions	25.67	
8.	Specific Gravity of Stack Gas Relative to Air	.89	
9.	Excess Air - Percent		
10.	Average Stack Velocity	2775.3	FPM
11.	Average Stack Gas Flow Rate	26698	ACFM
12.	Actual Stack Gas Flow Rate Dry	18606	CFMD
13.	Stack Gas Flow Rate STPD	14347	SCFMD
14.	Percent Isokinetic	116.8	%

Filter:	135.30 Mg	.0182 Gr/SCF	2.24 Lbs/Hr
===Totals===	135.30 Mg	.0182 Gr/SCF	2.24 Lbs/Hr

KOOGLER & ASSOCIATES, ENVIRONMENTAL SERVICES

Source Sampling Calculations

Plant: MID FLA. MINING / LOWELL, FLA. Date: 11/16/88
Stack: DRYER Run 2 From 0944 - 1151
Weather: CLEAR Total Time: 120 Min

Stack Area	9.62 Sq Ft	Nozzle Area	.000548 Sq Ft
Stack Temp	218.4 Deg F	Meter Temp	77.2 Deg F
Stack Pressure	30.15 "Hg	Baro. Pressure	30.13 "Hg
Stack Vel Head	.592 "H2O	Meter Press Diff	1.65 "H2O
		Meter Volume	89.680 cf
Pitot Tube Factor	.84	Condensate Volume	913 ml

1.	Volume Water Vapor	43.002	SCF
2.	Gas Volume Sampled - STPD	89.120	SCFD
3.	Total Volume	132.123	SCF
4.	Moisture in Stack Gas - Volume Fraction	.325	
5.	Dry Stack Gas - Volume Fraction	.675	
6.	Molecular Weight of Stack Gas - Dry Basis	29.00	
7.	Molecular Weight of Stack Gas - Stack Conditions	25.42	
8.	Specific Gravity of Stack Gas Relative to Air	.88	
9.	Excess Air - Percent		
10.	Average Stack Velocity	2399.8	FPM
11.	Average Stack Gas Flow Rate	23086	ACFM
12.	Actual Stack Gas Flow Rate Dry	15572	CFMD
13.	Stack Gas Flow Rate STPD	12213	SCFMD
14.	Percent Isokinetic	106.5	%

Filter:	83.00 Mg	.0143 Gr/SCF	1.50 Lbs/Hr
===Totals===	83.00 Mg	.0143 Gr/SCF	1.50 Lbs/Hr

KOOGLER & ASSOCIATES, ENVIRONMENTAL SERVICES

Source Sampling Calculations

Plant: MID FLA. MINING / LOWELL, FLA. Date: 11/16/88
Stack: DRYER Run 3 From 1536 - 1740
Weather: PARTLY CLOUDY Total Time: 120 Min

Stack Area	9.62 Sq Ft	Nozzle Area	.000548 Sq Ft
Stack Temp	220.4 Deg F	Meter Temp	90 Deg F
Stack Pressure	30.15 "Hg	Baro. Pressure	30.13 "Hg
Stack Vel Head	.597 "H2O	Meter Press Diff	1.50 "H2O
		Meter Volume	89.721 cf
Pitot Tube Factor	.84	Condensate Volume	902 ml

1.	Volume Water Vapor	42.484	SCF
2.	Gas Volume Sampled - STPD	87.054	SCFD
3.	Total Volume	129.538	SCF
4.	Moisture in Stack Gas - Volume Fraction	.328	
5.	Dry Stack Gas - Volume Fraction	.672	
6.	Molecular Weight of Stack Gas - Dry Basis	29.00	
7.	Molecular Weight of Stack Gas - Stack Conditions	25.39	
8.	Specific Gravity of Stack Gas Relative to Air	.88	
9.	Excess Air - Percent		
10.	Average Stack Velocity	2421.7	FPM
11.	Average Stack Gas Flow Rate	23297	ACFM
12.	Actual Stack Gas Flow Rate Dry	15656	CFMD
13.	Stack Gas Flow Rate STPD	12243	SCFMD
14.	Percent Isokinetic	103.8	%

Filter:	130.30 Mg	.0231 Gr/SCF	2.42 Lbs/Hr
===Totals===	130.30 Mg	.0231 Gr/SCF	2.42 Lbs/Hr

Source Sampling Input Data 09:09 23-Nov-88

Plant Name:	MID FLA. MINING / LOWELL, FLA.			Pollutant:	3
Stack Location:	DRYER			H2SO4=1	
Weather:	CLEAR			Part=2	
Run Date:	11/15/88			Scrubber=3	
Run #:	1				
Time Start:	1303				
Time End:	1613			Source Type:	2
Total Min:	120			Combustion=1	
Baro. Press:	30.14			Non-Comb.=2	
Stack Press:	30.15	H2SO4 --- Vt:		ORSAT=3	
Nozzle Diam:	0.317	Vtb:			
Stack Area:	9.62	N:		%CO2:	
Final Meter:	559.100	Vsoln:		ORSAT - % CO:	
Initial Meter:	440.302	Va:		% O2:	
Cond. Volume:	1060	SO2 --- Vt:			
Stack Velocity:	0.466	Vtb:		Weights for -	
Meter Diff:	2.94	N:		Probe Wash:	
Stack Gas Temp:	230	Vsoln:		Filter:	135.3
Meter Temp:	94.4	Va:		:	
		Prod Rate(TPD):		:	
		% O2:		:	

Source Sampling Input Data 09:12 23-Nov-88

Plant Name:	MID FLA. MINING / LOWELL, FLA.			Pollutant:	3
Stack Location:	DRYER			H2SO4=1	
Weather:	CLEAR			Part=2	
Run Date:	11/16/88			Scrubber=3	
Run #:	2				
Time Start:	0944				
Time End:	1151			Source Type:	2
Total Min:	120			Combustion=1	
Baro. Press:	30.13			Non-Comb.=2	
Stack Press:	30.15	H2SO4 --- Vt:		ORSAT=3	
Nozzle Diam:	0.317	Vtb:			
Stack Area:	9.62	N:		%CO2:	
Final Meter:	649.290	Vsoln:		ORSAT - % CO:	
Initial Meter:	559.610	Va:		% O2:	
Cond. Volume:	913	SO2 --- Vt:			
Stack Velocity:	0.351	Vtb:		Weights for -	
Meter Diff:	1.65	N:		Probe Wash:	
Stack Gas Temp:	218.4	Vsoln:		Filter:	83.0
Meter Temp:	77.2	Va:		:	
		Prod Rate(TPD):		:	
		% O2:		:	

Source Sampling Input Data 09:16 23-Nov-88

Plant Name:	MID FLA. MINING / LOWELL, FLA.			Pollutant:	3
Stack Location:	DRYER			H2SO4=1	
Weather:	PARTLY CLOUDY			Part=2	
Run Date:	11/16/88			Scrubber=3	
Run #:	3				
Time Start:	1536				
Time End:	1740			Source Type:	2
Total Min:	120			Combustion=1	
Baro. Press:	30.13			Non-Comb.=2	
Stack Press:	30.15	H2SO4 --- Vt:		ORSAT=3	
Nozzle Diam:	0.317	Vtb:			
Stack Area:	9.62	N:		%CO2:	
Final Meter:	739.231	Vsoln:		ORSAT - % CO:	
Initial Meter:	649.510	Va:		% O2:	
Cond. Volume:	902	SO2 --- Vt:			
Stack Velocity:	0.356	Vtb:		Weights for -	
Meter Diff:	1.50	N:		Probe Wash:	
Stack Gas Temp:	220.4	Vsoln:		Filter:	130.3
Meter Temp:	90	Va:		:	
		Prod Rate(TPD):		:	
		% O2:		:	

FIELD AND LABORATORY DATA SHEETS

KOOGLER & ASSOCIATES

KOOGLER & ASSOCIATES, Environmental Services

1213 NW 6th Street • Gainesville, Florida 32601 • 904/377-5822

SOURCE SAMPLING FIELD DATA SHEET

Plant Mid Fla Mining/Tawell
Sampling Location Dryer
Type of Control Baghouse
Type of Samples M M 5
Date 11-15-88 Run No. 1
Time Start 1303 Time End 1613
Sample Time 10 min/pt ~~240~~ 120 Total min
DB ____ °F, WB ____ °F, VP @ DP ____ "Hg
Bar. Press. 30.14 "Hg, Stack Press. 30.15 "Hg
Moisture 16 %, FDA ____, Gas Density Factor ____
Temp. 85 °F, W/D Vari, W/S 3-8
Weather Clear Thermocouple Readout KA-1
Sample Box No: KA-1 meter Box No. KA-1
Meter ΔH@ 1.76 Pitot Corr. Factor 0.84
Nozzle Dia. 0.317 in., Probe Length 7 ft
Probe Heater Setting 4 Nomograph C_f 6.25
Stack Dimensions 42" in
Stack Area 9.62 ft^2
Effective Stack Area 9.62 ft^2
Stack Height ____ ft

19.0
7.2
11.8

Stack Dimensions

Umbilical Cord 100'
Thermocouple Probe No. KA-75
Pitot Tube No. KA-51

Mat'l Processing Rate ____
Final Gas Meter Reading 559.100 ft^3 118.798
Initial Gas Meter Reading 440.302 ft^3
Condensate Increase in Impingers 25 ml 1060
Moisture in Silica Gel 1035 gm
Silica Gel Container No. 45 Filter No. ____

Orsat:				
$\%CO_2$	7.2			
$\%O_2$	11.8			
%CO	—			
$\%N_2$	81.0			

Test Conducted By: R Paul J Kooglor, E McFarland

Stack Test Observers: ____

Leak Check Meter Box: Initial 0.004 cfm @ 15 In H_2; Final 0.00 cfm @ 14 In Hg

Pitot Tubes –

Impact 3 In H_2O for 15 sec (Stable) Leak
Static 3 In H_2O for 15 sec. (Stable) Leak

%O_2 11.7 Avg

Port and Traverse Point No.	Distance From Inside Stack Wall (in.)	Clock Time	Gas Meter Reading (ft^3)	Stack Velocity Head ("H_2O) .466	Meter Orifice Press. Diff. 2.94 ("H_2O) Calc.	Actual	Stack Gas Temp. (°F) 230	Sample Box Temp. (°F)	Last Imp. Temp. (°F)	Meter Temp. (°F) 94.4	Vacuum on Sample Train ("Hg)	
1			40.3	.33	2.06	2.06	218	259	59	70	7	10.5
2			48.7	.39	2.44	2.44	227	261	63	72	9	10.0
3			57.8	.42	2.63	2.63	234	261	65	77	9	10.2 ← Down
4			67.1	.50	3.13	3.13	241	262	55	96	11	10.0 1327
5			77.4	.68	4.25	4.1	235	252	62	99	14	13.0 up
6			88.8	.60	3.75	3.75	237	265	65	101	14	12.5 1435
7			500.4	.51	3.19	3.19	235	267	64	101	12	
8			10.8	.63	3.94	~~3.80~~ 3.80	225	269	65	102	14	14.5

Port and Traverse Point No.	Distance From Inside Stack Wall (in.)	Clock Time	Gas Meter Reading (ft^3)	Stack Velocity Head ("H_2O)	Meter Orifice Press. Diff. ("H_2O)		Stack Gas Temp. (°F)	Sample Box Temp (°F)	Last Imp. Temp. (°F)	Meter Temp. (°F)	Vacuum on Sample Train ("Hg)	%O_2
					Calc.	Actual						
9			22.1	.58	3.63	3.63	226	265	64	103	14	13.2
10			33.0	.41	2.56	2.56	226	257	64	104	12	12.5
11			42.5	.33	2.06	2.06	231	265	63	104	11	11.0
12			51.0	.31	1.94	1.94	225	255	64	104	11	11.2
1												
2												
3												
4												
5												
6												
7												
8												
9												
10												
11												
12												

KOOGLER & ASSOCIATES, Environmental Services
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SOURCE SAMPLING FIELD DATA SHEET

Plant Mid Fla Mining Tenoll, Fla
Sampling Location Dryer
Type of Control Baghouse
Type of Samples M M 5
Date 11-16-88 Run No. 2
Time Start 0944 Time End 1151
Sample Time 5 min/pt 120 Total min
DB ____ °F, WB ____ °F, VP @ DP ____ "Hg
Bar. Press. 30.13 "Hg, Stack Press. 30.15 "Hg
Moisture 30 %, FDA ____, Gas Density Factor ____
Temp. 69 °F, W/D Vane, W/S 3-8
Weather Clear. Thermocouple Readout KA1
Sample Box No: KA-1 meter Box No. KA-1
Meter ΔH@ 1.76 Pitot Corr. Factor 0.84
Nozzle Dia. 0.317 in., Probe Length 7 ft
Probe Heater Setting 4 Nomograph C_f 4.68
Stack Dimensions 42" in
Stack Area 9.62 ft^2
Effective Stack Area 9.62 ft^2
Stack Height ____ ft

19.2
9.8
14.8
Checked w/ O2 Analyzer

Stack Dimensions

Umbilical Cord 100'
Thermocouple Probe No. KA-75
Pitot Tube No. KA-51

Mat'l Processing Rate ____
Final Gas Meter Reading 649.290 ft^3 89.68
Initial Gas Meter Reading 559.610 ft^3
Condensate Increase in Impingers 890 ml 913
Moisture in Silica Gel 23 gm
Silica Gel Container No. 8 Filter No. ____

Orsat:				
%CO_2	4.4	4.4	4.6	
%O_2	14.8	14.8	14.6	
%CO				
%N_2				

Bag probably leaked - use O_2 from below

Test Conducted By: R Paul - J Koogler, E M° Farland
Stack Test Observers: ____

Leak Check Meter Box: Initial 0.00 cfm @ 15 In H_2, Final ____ cfm @ 14 In Hg
Pitot Tubes: Impact 3 In H_2O for 15 sec. (Stable) Leak; Static 3 In H_2O for 15 sec. (Stable) Leak

Port and Traverse Point No.	Distance From Inside Stack Wall (in.)	Clock Time	Gas Meter Reading (ft^3)	Stack Velocity Head ("H_2O) .351	Meter Orifice Press. Diff. 1.65 ("H_2O) Calc.	Actual	Stack Gas Temp. (°F) 218.4	Sample Box Temp. (°F)	Last Imp. Temp. (°F)	Meter Temp. (°F) 77.2	Vacuum on Sample Train ("Hg)	
1			59.6	.37	1.73	1.73	204	246	74	69	9	10.7
2			63.3	.37	1.73	1.73	220	235	67	70	10	10.5
3			67.0	.37	1.73	1.73	220	241	62	70	10	10.2
4			70.9	.35	1.64	1.64	220	235	60	70	10	10.0
5			74.5	.35	1.64	1.64	224	240	61	72	10	10.0
6			78.3	.37	1.73	1.73	225	236	61	72	11	10.3
7			82.2	.39	1.83	1.83	225	244	62	73	11	10.0
8			86.1	.38	1.78	1.78	225	243	63	73	11	9.5

9.996
9.702

Port and Traverse Point No.	Distance From Inside Stack Wall (in.)	Clock Time	Gas Meter Reading (ft^3)	Stack Velocity Head ("H_2O)	Meter Orifice Press. Diff. ("H_2O)		Stack Gas Temp. (°F)	Sample Box Temp (°F)	Last Imp. Temp. (°F)	Meter Temp. (°F)	Vacuum on Sample Train ("Hg)	% O_2
					Calc.	Actual						
9			90.0	.41	1.92	1.92	224	237	63	74	12	9.5
10			94.1	.38	1.78	1.78	222	247	63	75	12	9.8
11			98.1	.38	1.78	1.78	214	263	65	75	12	10.7
12			602.0	.25	1.17	1.17	192	260	65	76	9	14.3
1			5.1	.26	1.22	1.22	193	261	66	79	10	10.5
2			8.9	.37	1.73	1.73	216	257	65	80	13	9.8
3			11.9	.43	2.01	2.01	215	247	67	81	14	9.6
4			16.1	.41	1.92	1.92	220	237	66	81	14	9.4
5			20.3	.41	1.92	1.92	221	236	65	81	14	9.0
6			24.4	.36	1.68	1.68	222	237	65	82	12	9.0
7			28.2	.31	1.45	1.45	224	232	66	82	12	9.0
8			31.8	.31	1.45	1.45	227	236	66	83	12	9.1
9			35.3	.31	1.45	1.45	226	231	67	83	12	9.4
10			38.8	.32	1.5	1.5	223	235	63	83	12	9.6
11			42.3	.31	1.45	1.45	224	236	61	84	12	10.0
12			45.9	.29	1.36	1.36	215	243	60	84	12	10.0

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SOURCE SAMPLING FIELD DATA SHEET

Plant Mid Fla Mining/Lowell, Fla
Sampling Location Dryer
Type of Control Baghouse
Type of Samples MM5
Date 11-16-88 Run No. 3
Time Start 1536 Time End 1740
Sample Time 5 min/pt 120 Total min
DB ____ °F, WB ____ °F, VP @ DP ____ "Hg
Bar. Press. 30.13 "Hg, Stack Press. 30.15 "Hg
Moisture 32 %, FDA ____, Gas Density Factor ____
Temp. 80 °F, W/D ~~3.5 Max~~ W/S 3-5
Weather Partly Cldy Thermocouple Readout KA1
Sample Box No: KA1 meter Box No. KA1
Meter ΔH@ 1.76 Pitot Corr. Factor 0.84
Nozzle Dia. .317 in., Probe Length 7 ft
Probe Heater Setting 5 Nomograph C_f 4.63
Stack Dimensions 42" in
Stack Area 9.62 ft^2
Effective Stack Area 9.62 ft^2
Stack Height ____ ft

18.4
7.6

Stack Dimensions

Umbilical Cord 100'
Thermocouple Probe No. KA-75
Pitot Tube No. KA-51

Mat'l Processing Rate ____
Final Gas Meter Reading 739.231 ft^3 89.721
Initial Gas Meter Reading 649.510 ft^3
Condensate Increase in Impingers 880 ml 902
Moisture in Silica Gel 22 gm
Silica Gel Container No. 88 Filter No. ____

Orsat:				
%CO_2	8.2	7.6		
%O_2	9.6	10.8		
%CO	4			
%N_2	Grab	Bag		

Test Conducted By: R Paul - J Koogler
E McFarland

Stack Test Observers: ____

Leak Check Meter Box: Initial 0.00 cfm @ 15 In H_2; Final 0.00 cfm @ 15 In Hg
Pitot Tubes: -
Impact 3 In H_2O for 15 sec. ~~Stable~~ Leak
Static 3 In H_2O for 15 sec (Stable), Leak

Port and Traverse Point No.	Distance From Inside Stack Wall (in.)	Clock Time	Gas Meter Reading (ft^3)	Stack Velocity Head ("H_2O) .356	Meter Orifice Press. Diff. 1.50 ("H_2O) Calc.	Actual	Stack Gas Temp. (°F) 220.4	Sample Box Temp. (°F)	Last Imp. Temp. (°F)	Meter Temp. (°F) 90	Vacuum on Sample Train ("Hg)	
												10.2 %O2
1			49.5	.29	1.34	1.34	165	261	77	86	8	10.0
2			52.8	.37	1.71	1.71	188	252	72	86	10	9.6
3			56.7	.45	2.08	2.08	211	236	70	87	13	9.5
4			60.6	.46	2.13	2.13	221	235	67	88	14	9.7
5			65.0	.49	2.27	2.27	~~224~~	234	66	88	15	9.6
6			69.3	.45	2.08	2.08	225	236	67	89	14	9.6
7			73.6	.41	1.9	1.9	233	234	67	89	14	9.7
8			77.8	.40	1.85	1.85	236	245	66	89	13	9.6

Port and Traverse Point No.	Distance From Inside Stack Wall (in.)	Clock Time	Gas Meter Reading (ft^3)	Stack Velocity Head ("H_2O)	Meter Orifice Press. Diff. ("H_2O)		Stack Gas Temp. (°F)	Sample Box Temp (°F)	Last Imp. Temp. (°F)	Meter Temp. (°F)	Vacuum on Sample Train ("Hg)	%O_2
					Calc.	Actual						
9			81.8	.36	1.67	1.67	235	235	65	90	12	9.8
10			85.6	.36	1.67	1.67	241	244	64	91	12	9.8
11			89.6	.40	1.85	1.85	236	237	63	91	13	10.8
12			93.4	.29	1.34	1.34	235	230	63	91	11	10.2
1			96.8	.37	1.71	1.71	237	235	67	92	13	10.2
2			100.6	.35	1.62	1.62	234	230	61	92	12	10.1
3			4.3	.35	1.62	1.62	232	244	61	92	13	10.0
4			8.0	.35	1.62	1.62	231	236	61	92	13	10.0
5			11.9	.35	1.62	1.62	230	237	60	92	13	10.0
6			15.3	.34	1.57	1.57	224	236	60	92	13	10.0
7			18.8	.33	1.53	1.53	225	246	60	92	13	9.8
8			22.5	.29	1.34	1.34	225	246	61	92	12	10.4
9			26.0	.25	1.16	1.16	205	247	62	90	11	11.2
10			29.1	.26	1.2	1.2	200	252	62	90	11	10.9
11			32.3	.33	1.53	1.53	200	246	62	90	13	10.4
12			35.8	.30	1.39	1.39	196	245	61	90	13	14.0

SAMPLING RATE CALCULATIONS

Date 11-15-88

Plant Name Mid Fla Mining

Location Lowell, Fla

Source Dryer

ΔH = Orifice Reading (Inches H_2O)
Dn = Nozzle Diameter (Inches)
ΔH@ = Meter Box Constant
Bw = Moisture Fraction
Tm = Meter Temperature (°F)
Ts = Stack Temperature (°F)
Ms = Wet Molecular Weight of Stack Gas (From Table)
ΔP = Pitot Reading (Inches H_2O)

$$\left[\frac{Tm + 460}{Ms(Ts+460)} (1 - Bw)^2 \; \Delta H@ \; (Dn)^4 \; 17741\right] \quad \Delta P = \Delta H$$

.22-.25-.28

$\frac{537}{27.3\ (700)}$ 19110

$\frac{537}{25.7\ (690)}$ 17733

$\frac{550}{25.5\ (680)}$ 17340

Moisture Fraction	Ms
0.0	29.0
0.05	28.5
0.10	27.9
0.15	27.4
0.20	26.8
0.25	26.2
0.30	25.7
0.35	25.2
0.40	24.6

	Run 1	Run 2	Run 3
$\frac{Tm + 460}{Ms\ (Ts + 460)}$ =	0.0281	0.03028	0.0317
× $(1 - Bw)^2$ =	0.7056	0.49	0.4624
× ΔH@ =	1.76	1.76	1.76
× $(Dn)^4$ =	0.0101	0.0101	0.0101
× 17741 =	17741	17741	17741
× ΔP =	6.25 / 619.1	4.68 / 463.3	4.63

PARTICULATE LAB DATA SHEET

TEST DATE 11-15 & 16-88
PLANT NAME Mid Fla Mining
SOURCE Dryer

	Run 1	Run 2	Run 3	Blank
Container No.				
Total Volume (ml)				
Aliquot Evaporated (ml)				
Final Weight (g)				
Tare Weight (g)	-	-	-	-
Gross Weight Gained (g)				
Average Blank (g)	-	-	-	-
Net Weight (g)				
Aliquot Factor	x	x	x	x
Total Net Weight (mg)				

	Run 1	Run 2	Run 3	Blank
Container No.	1-F	2-F	3-F	
Filter No.	1886	1908	1885	
Final Weight (g)	0.5609	0.5034	0.5558	
Tare Weight (g)	-0.4256	-0.4204	-0.4255	-
Gross Weight Gained (g)	0.1353	0.0830	0.1303	
Average Blank	- —	- —	- —	-
Total Net Weight (mg)	135.3	83.0	130.3	

Tare Balance Check

0 ✓ 50g ✓
10g ✓ 100g
0.5g ✓ T/H
By RC Paul
Date 11-11-88

Final Balance Check

0 ✓ 50g ✓
10g ✓ 100g ✓
0.5g ✓ T/H
By RC Paul
Date 11-18-88

KCCGLER K_2 ASSOCIATES

CHAIN OF CUSTODY RECORD

Project Number 290-88-01

Project Name Mid Fla Mining

Sample Location Lowell, Fla

Dryer

Sample Identification	Remarks
KA-1-1	Probe Wash Analyze for 625
KA-1-2	Filter same plus all
KA-1-3	Trap PNA's. (Samples
KA-1-4	Tubing & Cond. Wash were collected when
KA-1-5-1	Imp catch soil contaminated a/
KA-1-5-2	Rinse coal fire was being
KA-1-5-3	run thru a dryer -
	Samples are of stack
	gas components) Screen
	for dioxins & furans - no
	Chlorinated compounds expected

Sampled By: (Signature) RC Paul Date: 11-15-88 Time: See data sheets

Relinquished By: (Sign) RC Paul Date: 11-18-88 Time: 0953

Received By: (Sign) Pam Sammers Date: 11-18-88 Time: 0953

Relinquished By: (Sign) _____ Date: _____ Time: _____

Received By: (Sign) _____ Date: _____ Time: _____

Relinquished By: (Sign) _____ Date: _____ Time: _____

Received By Lab: (Sign) _____ Date: _____ Time: _____

Sample Shipped VIA: _____ UPS _____ Fed Express _____ Bus

Shipping Bill Number: _____

KOOGLER Ka ASSOCIATES

CHAIN OF CUSTODY RECORD

Project Number 290-88-01

Project Name Mid Fla Mining

Sample Location Lowell Fla

Dryer

Sample Identification	Remarks
KA-2-1	Probe Wash Analyze for 625
KA-2-2	Filter semi plus all
KA-2-3	Trap PNA's. (Samples
KA-2-4	tubing & Cond. Wash were collected when
KA-25-1	Imp catch soil contaminated a/
KA-25-2	& Wash coal fire was being
KA-25-3	run thru a dryer -
	Samples are of stack
	gas components) Screen
	for dioxins & furans - no
	chlorinated compounds expected

Sampled By: (Signature) RC Paul Date: 11-16-88 Time: see data sheets

Relinquished By: (Sign) RC Paul Date: 11-18-88 Time: 0953

Received By: (Sign) Pam Sammons Date: 11-18-88 Time: 0953

Relinquished By: (Sign) _____ Date: _____ Time: _____

Received By: (Sign) _____ Date: _____ Time: _____

Relinquished By: (Sign) _____ Date: _____ Time: _____

Received By Lab: (Sign) _____ Date: _____ Time: _____

Sample Shipped VIA: _____ UPS _____ Fed Express _____ Bus

Shipping Bill Number: _____

KOOGLER Ka ASSOCIATES

CHAIN OF CUSTODY RECORD

Project Number: 290-88-01

Project Name: Mid Fla Mining

Sample Location: Lowell, Fla

Dryer

Sample Identification	Remarks
KA-3-1	Probe Wash Analyze for 625
KA-3-2	Filter series plus all
KA-3-3	Trap PNA's. (Sampler
KA-3-4	tubing + Wash Cond. were collected when
KA-3-5-1	loop catch soil contaminated a/
KA-3-5-2	+ Wash coal fire was being
KA-3-5-3	run thru a dryer -
	Samples are of stack
	gas components) Screen
	for dioxins & furans - no
	Chlorinated compounds expected

Sampled By: (Signature) RC Paul Date: 11-16-88 Time: See data sheets

Relinquished By: (Sign) RC Paul Date: 11-18-88 Time: 0953

Received By: (Sign) Pam Sommers Date: 11-18-88 Time: 0953

Relinquished By: (Sign) _____ Date: _____ Time: _____

Received By: (Sign) _____ Date: _____ Time: _____

Relinquished By: (Sign) _____ Date: _____ Time: _____

Received By Lab: (Sign) _____ Date: _____ Time: _____

Sample Shipped VIA: _____ UPS _____ Fed Express _____ Bus

Shipping Bill Number: _____

KOOGLER Ka ASSOCIATES

TECHNICAL SERVICES, INC.

Environmental Consultants
Analysts—Sampling—Testing—Surveys

JACKSONVILLE, FLORIDA
(904) 353-5761, 353-5762, 358-2908

GENERAL OFFICES:
2471 Swan Street
Jacksonville, FL 32204

MAILING ADDRESS:
P.O. Box 52329
Jacksonville, FL 32201

Laboratory No. 87241, 87242, 87243 Dec 8, 19 88

Sample of Stack Gas Train Components - Three samples combined

Date Received 11-18-88 @ 10:30

For Koogler & Assoc., 4014 N. West 13th St. Gainesville, FL 32609

Marks: Mid Florida Mining, 290-88-01,
Analyze as a composite = 1) KA-3-1, 2) KA-3-2 3) KA-3-3
4) KA-3-4 5) KA-3-5-1 6) KA-3-5-2 7) KA -3-5-3

CERTIFICATE OF ANALYSIS OR TESTS

EPA Method Base Neutral Compound	Total mg	Detection Limit Total mg
Acenaphthene	442	14.0
Acenaphthylene	267	14.0
Anthracene	121	14.0
Benzo (a) anthracene	BDL	14.0
Benzo (b) fluoroanthene	BDL	14.0
Benzo (k) fluoroanthene	BDL	14.0
Benzo (a) Pyrene	BDL	14.0
Benzo (ghi) Perylene	BDL	14.0
Benzidine	BDL	14.0
Bis (2-chloroethyl) ether	BDL	14.0
Bis (2-chloroethoxy) methane	BDL	14.0
Bis (2-ethylhexyl) phthalate	BDL	14.0
Bis (2-chloroisopropyl) ether	BDL	14.0
4-Bromophenyl phenyl ether	BDL	14.0
Butyl benzyl phthalate	BDL	14.0
2-Chloronaphthalene	BDL	14.0
4-Chlorophenyl phenyl ether	BDL	14.0
Chrysene	BDL	14.0
Dibenzo (a,h) anthracene	BDL	14.0
Di-n-butylphthalate	BDL	14.0
1,3-Dichlorobenzene	BDL	14.0
1,4-Dichlorobenzene	BDL	14.0
1,2-Dichlorobenzene	BDL	14.0
3,3'-Dichlorobenzidine	BDL	14.0
Diethylphthalate	BDL	14.0

BDL - Below Detection Limit

LABORATORY I.D. NO. 82145

TECHNICAL SERVICES, INC
Lab No. 87241, 87242, 87243

EPA Method Base Neutral Compound	Total mg	DETECTION LIMIT Total mg
Dimethylphthalate	BDL	14.0
2,4-Dinitrotoluene	BDL	14.0
2,6-Dinitrotoluene	BDL	14.0
Dioctylphthalate	BDL	14.0
1,2-Diphenylhydrazine	BDL	14.0
Fluoranthene	58.8	14.0
Fluorene	399	14.0
Hexachlorobenzene	BDL	14.0
Hexachlorobutadiene	BDL	14.0
Hexachloroethane	BDL	14.0
Hexachlorocyclopentadiene	BDL	14.0
Indeno (1,2,3-cd) pyrene	BDL	14.0
Isophorone	BDL	14.0
Naphthalene	4,774	14.0
Nitrobenzene	BDL	14.0
N-Nitrosodimethylamine	BDL	85.0
N-Nitrosodi-n-propylamine	BDL	14.0
N-Nitrosodiphenylamine	BDL	14.0
Phenanthrene	744.	14.0
Pyrene	66.7	14.0
2,3,7,8-Tetrachlorodibenzo-p-dioxin (Dioxin)	BDL	14.0
1,2,4-Trichlorobenzene	BDL	14.0

Acid Extractable Compound	Total mg	DETECTION LIMIT Total mg
2-Chlorophenol	BDL	14.0
4-Chloro-3-methylphenol	BDL	70.0
2,4-Dichlorophenol	BDL	14.0
2,4-Dimethylphenol	BDL	14.0
2,4-Dinitrophenol	BDL	65.0
2-Methyl-4,6-Dinitrophenol	BDL	70.0
2-Nitrophenol	BDL	14.0
4-Nitrophenol	BDL	70.0
Pentachlorophenol	BDL	70.0
Phenol	46.8	14.0
2,4,6-Trichlorophenol	BDL	40.0

BDL - Below Detection Limit

Method: GCMS
Date: 11-30-88
Analyst: SS

TSI

TECHNICAL SERVICES, INC.

Environmental Consultants
Analysts—Sampling—Testing—Surveys
JACKSONVILLE, FLORIDA
(904) 353-5761, 353-5762, 358-2908

GENERAL OFFICES:
2471 Swan Street
Jacksonville, FL 32204

MAILING ADDRESS:
P.O. Box 52329
Jacksonville, FL 32201

Laboratory No. 87241,87242, 87243

Dec 8, 19 88

Sample of Stack Gas Train Components.

Date Received 11-18-88 2 10:30

For Koogler & Assoc., 4014 N. West 13th St.

Marks: Mid Florida Mining, 290-88-01,
Analize as a composite = 1) KA-3-1, 2) KA-3-2 3) KA-3-3
4) KA-3-4 5) KA-3-5-1 6) KA-3-5-2 7) KA -3-5-3

CERTIFICATE OF ANALYSIS OR TESTS

Non Priority Pollutants Probable I.D.	R.T.	Match Quality (0 to 10,000)	Total mg (approximate)
1-Methyl-naphthalene	16.271	9874	5,598
2-Methy-naphthalene	16.541	9815	4,009
2-Ethenyl-naphthalene	17.447	9903	568
1-Ethyl-naphthalene	17.688	9926	1,176
1,3-Dimethyl-naphthalene	17.873	9903	2,020
1,2-Dimethyl-naphthalene	18.091	9934	2,387
1,7-Dimethyl-naphthalene	18.143	9921	1,147
2-Ethyl-napthalene	18.570	9864	607

LABORATORY I.D. NO. 82145

CHAIN OF CUSTODY RECORD

Project Number: 290-88-01

Project Name: Mid Fla Mining

Sample Location: Lowell, Fla

Dryer

Sample Identification	Remarks
KA-18	Raw soil Run 1
KA-19	Processed soil Run 1
KA-28	Raw soil Run 2
KA-29	Processed soil Run 2
KA-38	Raw soil Run 3
KA-39	Processed soil Run 3
	Analogue soil for PNA's
	— Semi Volatiles that would
	be expected in coal tar

Sampled By: (Signature) RC Paul Date: 11-16-88 Time: See data sheets

Relinquished By: (Sign) RC Paul Date: 11-18-88 Time: 0953

Received By: (Sign) Pam Sammons Date: 11-18-88 Time: 0953

Relinquished By: (Sign) _____ Date: _____ Time: _____

Received By: (Sign) _____ Date: _____ Time: _____

Relinquished By: (Sign) _____ Date: _____ Time: _____

Received By Lab: (Sign) _____ Date: _____ Time: _____

Sample Shipped VIA: _____ UPS _____ Fed Express _____ Bus

Shipping Bill Number: _____

KOOGLER Ka ASSOCIATES

TECHNICAL SERVICES, INC.

Environmental Consultants

Analysts—Sampling—Testing—Surveys

JACKSONVILLE, FLORIDA

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GENERAL OFFICES:
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MAILING ADDRESS:
P.O. Box 52329
Jacksonville, FL 32201

Laboratory No. 87244 Dec 8, 19 88

Sample of Soil – Unprocessed Run #1

Date Received 11-18-88 @ 10:30 am

For Koogler & Assoc., 4014 N. West 13th St. Gainesville, FL 32609

Marks: Mid Florida Mining, 290-88-01 (KA-18)

CERTIFICATE OF ANALYSIS OR TESTS

EPA Method 8270 Base Neutral Compound	Concentration mg/kg	Detection Limit mg/kg
Acenaphthene	80.8	21.0
Acenaphthylene	97.2	21.0
Anthracene	86.6	21.0
Benzo (a) anthracene	54.3	21.0
Benzo (b) fluoroanthene	26.0	21.0
Benzo (k) fluoroanthene	BDL	21.0
Benzo (a) Pyrene	29.7	21.0
Benzo (ghi) Perylene	BDL	21.0
Benzidine	BDL	21.0
Bis (2-chloroethyl) ether	BDL	21.0
Bis (2-chloroethoxy) methane	BDL	21.0
Bis (2-ethylhexyl) phthalate	BDL	21.0
Bis (2-chloroisopropyl) ether	BDL	21.0
4-Bromophenyl phenyl ether	BDL	21.0
Butyl benzyl phthalate	BDL	21.0
2-Chloronaphthalene	BDL	21.0
4-Chlorophenyl phenyl ether	BDL	21.0
Chrysene	52.2	21.0
Dibenzo (a,h) anthracene	BDL	21.0
Di-n-butylphthalate	BDL	21.0
1,3-Dichlorobenzene	BDL	21.0
1,4-Dichlorobenzene	BDL	21.0
1,2-Dichlorobenzene	BDL	21.0
3,3'-Dichlorobenzidine	BDL	21.0
Diethylphthalate	BDL	21.0

BDL - Below Detection Limit

LABORATORY I.D. NO. 82145

TECHNICAL SERVICES, INC
Lab No. 87244 (KA-18)

EPA Method 8270 Base Neutral Compound	CONCENTRATION mg/kg	DETECTION LIMIT mg/kg
Dimethylphthalate	BDL	21.0
2,4-Dinitrotoluene	BDL	21.0
2,6-Dinitrotoluene	BDL	21.0
Dioctylphthalate	BDL	21.0
1,2-Diphenylhydrazine	BDL	21.0
Fluoranthene	114	21.0
Fluorene	119	21.0
Hexachlorobenzene	BDL	21.0
Hexachlorobutadiene	BDL	21.0
Hexachloroethane	BDL	21.0
Hexachlorocyclopentadiene	BDL	21.0
Indeno (1,2,3-cd) pyrene	22.9	21.0
Isophorone	BDL	21.0
Naphthalene	330	21.0
Nitrobenzene	BDL	21.0
N-Nitrosodimethylamine	BDL	60.0
N-Nitrosodi-n-propylamine	BDL	21.0
N-Nitrosodiphenylamine	BDL	21.0
Phenanthrene	322	21.0
Pyrene	186	21.0
2,3,7,8-Tetrachlorodibenzo-p-dioxin (Dioxin)	BDL	21.0
1,2,4-Trichlorobenzene	BDL	21.0

Acid Extractable Compound	CONCENTRATION mg/kg	DETECTION LIMIT mg/kg
2-Chlorophenol	BDL	21.0
4-Chloro-3-methylphenol	BDL	106.0
2,4-Dichlorophenol	BDL	21.0
2,4-Dimethylphenol	BDL	21.0
2,4-Dinitrophenol	BDL	94.0
2-Methyl-4,6-Dinitrophenol	BDL	105.0
2-Nitrophenol	BDL	21.0
4-Nitrophenol	BDL	105.0
Pentachlorophenol	BDL	105.0
Phenol	BDL	21.0
2,4,6-Trichlorophenol	BDL	63.0

BDL - Below Detection Limit

Method: EPA 8270
Date: 11-30-88
Analyst: SS

TSI

TECHNICAL SERVICES, INC.

Environmental Consultants

Analysts—Sampling—Testing—Surveys

JACKSONVILLE, FLORIDA

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GENERAL OFFICES:
2471 Swan Street
Jacksonville, FL 32204

MAILING ADDRESS:
P.O. Box 52329
Jacksonville, FL 32201

Laboratory No. 87244

Dec 8, 1988

Sample of Soil

Date Received 11-18-88 @ 10:30 am

For Koolger & Assoc., 4014 N. West 13th St. Gainesville,FL 32609

Marks: Mid Florida Mining, 290-88-01 (KA-18)

CERTIFICATE OF ANALYSIS OR TESTS

Non Priority Pollutants

Probable I.D.	R.T.	Match Quality (0 to 10,000)	Approximate Conc. (mg/kg)
1-Methyl-naphthalene	16.190	9818	482
2-Methyl-naphthalene	16.453	9773	320
1,3-Dimethyl-naphthalene	17.816	9894	188
1,2-Dimethyl-naphthalene	18.030	9928	207
1,7-Dimethyl-naphthalene	18.075	9897	126
4-Methyl-phenanthrene	24.232	7817	85.3

TECHNICAL SERVICES, INC.

Environmental Consultants
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Jacksonville, FL 32204

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P.O. Box 52329
Jacksonville, FL 32201

Laboratory No. 87244

Dec 8, 1988

Sample of Soil - Unprocessed Run #2

Date Received 11-18-88 @ 10:30 am

For Koogler & Assoc., 4014 N. West 13th St. Gainesville, FL 32609

Marks: Mid Florida Mining, 290-88-01 (KA-28)

CERTIFICATE OF ANALYSIS OR TESTS

EPA Method 8270 Base Neutral Compound	Concentration mg/kg	Detection Limit mg/kg
Acenaphthene	85.4	25.0
Acenaphthylene	97.1	25.0
Anthracene	89.5	25.0
Benzo (a) anthracene	60.5	25.0
Benzo (b) fluoroanthene	BDL	25.0
Benzo (k) fluoroanthene	BDL	25.0
Benzo (a) Pyrene	BDL	25.0
Benzo (ghi) Perylene	BDL	25.0
Benzidine	BDL	25.0
Bis (2-chloroethyl) ether	BDL	25.0
Bis (2-chloroethoxy) methane	BDL	25.0
Bis (2-ethylhexyl) phthalate	BDL	25.0
Bis (2-chloroisopropyl) ether	BDL	25.0
4-Bromophenyl phenyl ether	BDL	25.0
Butyl benzyl phthalate	BDL	25.0
2-Chloronaphthalene	BDL	25.0
4-Chlorophenyl phenyl ether	BDL	25.0
Chrysene	56.9	25.0
Dibenzo (a,h) anthracene	BDL	25.0
Di-n-butylphthalate	BDL	25.0
1,3-Dichlorobenzene	BDL	25.0
1,4-Dichlorobenzene	BDL	25.0
1,2-Dichlorobenzene	BDL	25.0
3,3'-Dichlorobenzidine	BDL	25.0
Diethylphthalate	BDL	25.0

BDL - Below Detection Limit

TECHNICAL SERVICES, INC
Lab No. 87244 (KA-28)

EPA Method 8270 Base Neutral Compound	CONCENTRATION mg/kg	DETECTION LIMIT mg/kg
Dimethylphthalate	BDL	25.0
2,4-Dinitrotoluene	BDL	25.0
2,6-Dinitrotoluene	BDL	25.0
Dioctylphthalate	BDL	25.0
1,2-Diphenylhydrazine	BDL	25.0
Fluoranthene	125	25.0
Fluorene	123	25.0
Hexachlorobenzene	BDL	25.0
Hexachlorobutadiene	BDL	25.0
Hexachloroethane	BDL	25.0
Hexachlorocyclopentadiene	BDL	25.0
Indeno (1,2,3-cd) pyrene	34.0	25.0
Isophorone	BDL	25.0
Naphthalene	266	25.0
Nitrobenzene	BDL	25.0
N-Nitrosodimethylamine	BDL	75.0
N-Nitrosodi-n-propylamine	BDL	25.0
N-Nitrosodiphenylamine	BDL	25.0
Phenanthrene	359	25.0
Pyrene	190	25.0
2,3,7,8-Tetrachlorodibenzo-p-dioxin (Dioxin)	BDL	25.0
1,2,4-Trichlorobenzene	BDL	25.0

Acid Extractable Compound	CONCENTRATION mg/kg	DETECTION LIMIT mg/kg
2-Chlorophenol	BDL	25.0
4-Chloro-3-methylphenol	BDL	125.0
2,4-Dichlorophenol	BDL	25.0
2,4-Dimethylphenol	BDL	25.0
2,4-Dinitrophenol	BDL	112.0
2-Methyl-4,6-Dinitrophenol	BDL	125.0
2-Nitrophenol	BDL	25.0
4-Nitrophenol	BDL	125.0
Pentachlorophenol	BDL	125.0
Phenol	BDL	25.0
2,4,6-Trichlorophenol	BDL	75.0

BDL - Below Detection Limit

Method: EPA 8270
Date: 11-30-88
Analyst: SS

TSI

TECHNICAL SERVICES, INC.

Environmental Consultants
Analysts—Sampling—Testing—Surveys
JACKSONVILLE, FLORIDA
(904) 353-5761, 353-5762, 358-2908

GENERAL OFFICES:
2471 Swan Street
Jacksonville, FL 32204

MAILING ADDRESS:
P.O. Box 52329
Jacksonville, FL 32201

Laboratory No. 87244

Dec 8, 19 88

Sample of Soil

Date Received 11-18-88 @ 10:30 am

For Koolger & Assoc., 4014 N. West 13th St. Gainesville, FL 32609

Marks: Mid Florida Mining, 290-88-01 (KA-28)

CERTIFICATE OF ANALYSIS OR TESTS

Non Priority Pollutants Probable I.D.	R.T.	Match Quality (0 to 10,000)	Approximate Conc. (mg/kg)
1-Methyl-naphthalene	16.172	9299	461
2-Methyl-naphthalene	16.441	9800	314
1,3-Dimethyl-naphthelene	17.803	9879	188
1,2-Dimethyl-naphthalene	18.013	9892	185
1,7-Dimethyl-naphthalene	18.067	9866	121

LABORATORY I.D. NO. 82145

TECHNICAL SERVICES, INC.

Environmental Consultants

Analysts—Sampling—Testing—Surveys

JACKSONVILLE, FLORIDA

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Jacksonville, FL 32204

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P.O. Box 52329
Jacksonville, FL 32201

Laboratory No. 87244

Dec 8, 19 88

Sample of Soil - Unprocessed Run #3

Date Received 11-18-88 @ 10:30 am

For Koolger & Assoc. 4014 N. West 13th St. Gainesville, FL 32609

Marks: Mid Florida Mining, 290-88-01 (KA-38)

CERTIFICATE OF ANALYSIS OR TESTS

EPA Method 8270 Base Neutral Compound	Concentration mg/kg	Detection Limit mg/kg
Acenaphthene	109	11.0
Acenaphthylene	64.6	11.0
Anthracene	82.2	11.0
Benzo (a) anthracene	67.5	11.0
Benzo (b) fluoroanthene	58.6	11.0
Benzo (k) fluoroanthene	56.9	11.0
Benzo (a) Pyrene	40.5	11.0
Benzo (ghi) Perylene	20.4	11.0
Benzidine	BDL	11.0
Bis (2-chloroethyl) ether	BDL	11.0
Bis (2-chloroethoxy) methane	BDL	11.0
Bis (2-ethylhexyl) phthalate	BDL	11.0
Bis (2-chloroisopropyl) ether	BDL	11.0
4-Bromophenyl phenyl ether	BDL	11.0
Butyl benzyl phthalate	BDL	11.0
2-Chloronaphthalene	BDL	11.0
4-Chlorophenyl phenyl ether	BDL	11.0
Chrysene	56.0	11.0
Dibenzo (a,h) anthracene	BDL	11.0
Di-n-butylphthalate	BDL	11.0
1,3-Dichlorobenzene	BDL	11.0
1,4-Dichlorobenzene	BDL	11.0
1,2-Dichlorobenzene	BDL	11.0
3,3'-Dichlorobenzidine	BDL	11.0
Diethylphthalate	BDL	11.0

BDL - Below Detection Limit

LABORATORY I.D. NO. 82145

TECHNICAL SERVICES, INC
Lab No. 87244 (KA-38)

EPA Method 8270 Base Neutral Compound	CONCENTRATION mg/kg	DETECTION LIMIT mg/kg
Dimethylphthalate	BDL	11.0
2,4-Dinitrotoluene	BDL	11.0
2,6-Dinitrotoluene	BDL	11.0
Dioctylphthalate	BDL	11.0
1,2-Diphenylhydrazine	BDL	11.0
Fluoranthene	115	11.0
Fluorene	106	11.0
Hexachlorobenzene	BDL	11.0
Hexachlorobutadiene	BDL	11.0
Hexachloroethane	BDL	11.0
Hexachlorocyclopentadiene	BDL	11.0
Indeno (1,2,3-cd) pyrene	23.1	11.0
Isophorone	BDL	11.0
Naphthalene	48.8	11.0
Nitrobenzene	BDL	11.0
N-Nitrosodimethylamine	BDL	33.0
N-Nitrosodi-n-propylamine	BDL	11.0
N-Nitrosodiphenylamine	BDL	11.0
Phenanthrene	326	11.0
Pyrene	175	11.0
2,3,7,8-Tetrachlorodibenzo-p-dioxin (Dioxin)	BDL	11.0
1,2,4-Trichlorobenzene	BDL	11.0

Acid Extractable Compound	CONCENTRATION mg/kg	DETECTION LIMIT mg/kg
2-Chlorophenol	BDL	11.0
4-Chloro-3-methylphenol	BDL	55.0
2,4-Dichlorophenol	BDL	11.0
2,4-Dimethylphenol	BDL	11.0
2,4-Dinitrophenol	BDL	50.0
2-Methyl-4,6-Dinitrophenol	BDL	55.0
2-Nitrophenol	BDL	11.0
4-Nitrophenol	BDL	55.0
Pentachlorophenol	BDL	55.0
Phenol	BDL	11.0
2,4,6-Trichlorophenol	BDL	33.0

BDL - Below Detection Limit

Method: EPA 8270
Date: 11-30-88
Analyst: SS

TECHNICAL SERVICES, INC.

Environmental Consultants
Analysts—Sampling—Testing—Surveys

JACKSONVILLE, FLORIDA
(904) 353-5761, 353-5762, 358-2908

GENERAL OFFICES:
2471 Swan Street
Jacksonville, FL 32204

MAILING ADDRESS:
P.O. Box 52329
Jacksonville, FL 32201

Laboratory No. 87244 Dec 8, 19 88

Sample of Soil - Processed Run #1

Date Received 11-18-88 @ 10:30 am

For Koogler & Assoc., 4014 N. West 13th St. Gainesville, FL 32609

Marks: Mid Florida Mining, 290-88-01 (KA-19)

CERTIFICATE OF ANALYSIS OR TESTS

EPA Method 8270 Base Neutral Compound	Concentration mg/kg	Detection Limit mg/kg
Acenaphthene	BDL	0.5
Acenaphthylene	BDL	0.5
Anthracene	BDL	0.5
Benzo (a) anthracene	BDL	0.5
Benzo (b) fluoroanthene	BDL	0.5
Benzo (k) fluoroanthene	BDL	0.5
Benzo (a) Pyrene	BDL	0.5
Benzo (ghi) Perylene	BDL	0.5
Benzidine	BDL	0.5
Bis (2-chloroethyl) ether	BDL	0.5
Bis (2-chloroethoxy) methane	BDL	0.5
Bis (2-ethylhexyl) phthalate	BDL	0.5
Bis (2-chloroisopropyl) ether	BDL	0.5
4-Bromophenyl phenyl ether	BDL	0.5
Butyl benzyl phthalate	BDL	0.5
2-Chloronaphthalene	BDL	0.5
4-Chlorophenyl phenyl ether	BDL	0.5
Chrysene	BDL	0.5
Dibenzo (a,h) anthracene	BDL	0.5
Di-n-butylphthalate	BDL	0.5
1,3-Dichlorobenzene	BDL	0.5
1,4-Dichlorobenzene	BDL	0.5
1,2-Dichlorobenzene	BDL	0.5
3,3'-Dichlorobenzidine	BDL	0.5
Diethylphthalate	BDL	0.5

BDL - Below Detection Limit

LABORATORY I.D. NO. 82145

TECHNICAL SERVICES, INC
Lab No. 87244 (KA-19)

EPA Method 8270 Base Neutral Compound	CONCENTRATION mg/kg	DETECTION LIMIT mg/kg
Dimethylphthalate	BDL	0.5
2,4-Dinitrotoluene	BDL	0.5
2,6-Dinitrotoluene	BDL	0.5
Dioctylphthalate	BDL	0.5
1,2-Diphenylhydrazine	BDL	0.5
Fluoranthene	BDL	0.5
Fluorene	BDL	0.5
Hexachlorobenzene	BDL	0.5
Hexachlorobutadiene	BDL	0.5
Hexachloroethane	BDL	0.5
Hexachlorocyclopentadiene	BDL	0.5
Indeno (1,2,3-cd) pyrene	BDL	0.5
Isophorone	BDL	0.5
Naphthalene	1.03	0.5
Nitrobenzene	BDL	0.5
N-Nitrosodimethylamine	BDL	1.5
N-Nitrosodi-n-propylamine	BDL	0.5
N-Nitrosodiphenylamine	BDL	0.5
Phenanthrene	BDL	0.5
Pyrene	BDL	0.5
2,3,7,8-Tetrachlorodibenzo-p-dioxin (Dioxin)	BDL	0.5
1,2,4-Trichlorobenzene	BDL	0.5

Acid Extractable Compound	CONCENTRATION mg/kg	DETECTION LIMIT mg/kg
2-Chlorophenol	BDL	0.5
4-Chloro-3-methylphenol	BDL	2.0
2,4-Dichlorophenol	BDL	0.5
2,4-Dimethylphenol	BDL	0.5
2,4-Dinitrophenol	BDL	2.2
2-Methyl-4,6-Dinitrophenol	BDL	2.5
2-Nitrophenol	BDL	0.5
4-Nitrophenol	BDL	2.5
Pentachlorophenol	BDL	2.5
Phenol	BDL	0.5
2,4,6-Trichlorophenol	BDL	1.5

BDL - Below Detection Limit

Method: EPA 8270
Date: 11-30-88
Analyst: SS

TECHNICAL SERVICES, INC.

Environmental Consultants

Analysts—Sampling—Testing—Surveys

JACKSONVILLE, FLORIDA

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MAILING ADDRESS:
P.O. Box 52329
Jacksonville, FL 32201

Laboratory No. 87244

Dec 8, 1988

Sample of Soil

Date Received 11-18-88 @ 10:30 am

For Koolger & Assoc., 4014 N. West 13th St. Gainesville, FL 32609

Marks: Mid Florida Mining, 290-88-01 (KA-38)

CERTIFICATE OF ANALYSIS OR TESTS

Non Priority Polluants Probable I.D.	R.T.	Match Quality (0 to 10, 000)	Approximate conc. (mg/kg)
1-Methyl-naphthalene	16.187	I.D.	284
2-Methyl-naphthalene	16.457	basd	303
1,3-Dimethyl-naphthalene	17.821	upon	226
1,2-Dimethyl-naphthalene	18.040	R.T. From	284
1,7-Dimethyl-naphthalene	18.088	previous samples	142
4-Methyl-phenanthrene	24.247	9247	62.6

LABORATORY I.D. NO. 82145

TECHNICAL SERVICES, INC.

Environmental Consultants
Analysts—Sampling—Testing—Surveys

JACKSONVILLE, FLORIDA
(904) 353-5761, 353-5762, 358-2908

GENERAL OFFICES:
2471 Swan Street
Jacksonville, FL 32204

MAILING ADDRESS:
P.O. Box 52329
Jacksonville, FL 32201

Laboratory No. 87244

Dec 8, 19 88

Sample of Soil - Processed Run #2

Date Received 11-18-88 @ 10:30 am

For Koolger & Assoc., 4014 N. West 13th St. Gainesville, FL 32609

Marks: Mid Florida Mining, 290-88-01 (KA-29)

CERTIFICATE OF ANALYSIS OR TESTS

EPA Method 8270 Base Neutral Compound	Concentration mg/kg	Detection Limit mg/kg
Acenaphthene	BDL	0.5
Acenaphthylene	BDL	0.5
Anthracene	BDL	0.5
Benzo (a) anthracene	BDL	0.5
Benzo (b) fluoroanthene	BDL	0.5
Benzo (k) fluoroanthene	BDL	0.5
Benzo (a) Pyrene	BDL	0.5
Benzo (ghi) Perylene	BDL	0.5
Benzidine	BDL	0.5
Bis (2-chloroethyl) ether	BDL	0.5
Bis (2-chloroethoxy) methane	BDL	0.5
Bis (2-ethylhexyl) phthalate	BDL	0.5
Bis (2-chloroisopropyl) ether	BDL	0.5
4-Bromophenyl phenyl ether	BDL	0.5
Butyl benzyl phthalate	BDL	0.5
2-Chloronaphthalene	BDL	0.5
4-Chlorophenyl phenyl ether	BDL	0.5
Chrysene	BDL	0.5
Dibenzo (a,h) anthracene	BDL	0.5
Di-n-butylphthalate	BDL	0.5
1,3-Dichlorobenzene	BDL	0.5
1,4-Dichlorobenzene	BDL	0.5
1,2-Dichlorobenzene	BDL	0.5
3,3'-Dichlorobenzidine	BDL	0.5
Diethylphthalate	BDL	0.5

BDL - Below Detection Limit

TECHNICAL SERVICES, INC
Lab No. 87244 (KA-29)

EPA Method Base Neutral Compound	CONCENTRATION mg/kg	DETECTION LIMIT mg/kg
Dimethylphthalate	BDL	0.5
2,4-Dinitrotoluene	BDL	0.5
2,6-Dinitrotoluene	BDL	0.5
Dioctylphthalate	BDL	0.5
1,2-Diphenylhydrazine	BDL	0.5
Fluoranthene	BDL	0.5
Fluorene	BDL	0.5
Hexachlorobenzene	BDL	0.5
Hexachlorobutadiene	BDL	0.5
Hexachloroethane	BDL	0.5
Hexachlorocyclopentadiene	BDL	0.5
Indeno (1,2,3-cd) pyrene	BDL	0.5
Isophorone	BDL	0.5
Naphthalene	BDL	0.5
Nitrobenzene	BDL	0.5
N-Nitrosodimethylamine	BDL	1.5
N-Nitrosodi-n-propylamine	BDL	0.5
N-Nitrosodiphenylamine	BDL	0.5
Phenanthrene	BDL	0.5
Pyrene	BDL	0.5
2,3,7,8-Tetrachlorodibenzo-p-dioxin (Dioxin)	BDL	0.5
1,2,4-Trichlorobenzene	BDL	0.5

Acid Extractable Compound	CONCENTRATION mg/kg	DETECTION LIMIT mg/kg
2-Chlorophenol	BDL	0.5
4-Chloro-3-methylphenol	BDL	2.5
2,4-Dichlorophenol	BDL	0.5
2,4-Dimethylphenol	BDL	0.5
2,4-Dinitrophenol	BDL	2.2
2-Methyl-4,6-Dinitrophenol	BDL	2.5
2-Nitrophenol	BDL	0.5
4-Nitrophenol	BDL	2.5
Pentachlorophenol	BDL	2.5
Phenol	BDL	0.5
2,4,6-Trichlorophenol	BDL	1.5

BDL - Below Detection Limit

Method: EPA 8270
Date: 11-30-88
Analyst: SS

TECHNICAL SERVICES, INC.

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Laboratory No. 87244

Dec 8, 19 88

Sample of Soil - Processed Run #J

Date Received 11-18-88 @ 10:30 am

For Koolger & Assoc., 4014 N. West 13th St Gainesville,FL 32609

Marks: Mid Florida Mining, 290-88-01 (KA-39)

CERTIFICATE OF ANALYSIS OR TESTS

EPA Method 8270 Base Neutral Compound	Concentration mg/kg	Detection Limit mg/kg
Acenaphthene	BDL	0.7
Acenaphthylene	BDL	0.7
Anthracene	BDL	0.7
Benzo (a) anthracene	BDL	0.7
Benzo (b) fluoroanthene	BDL	0.7
Benzo (k) fluoroanthene	BDL	0.7
Benzo (a) Pyrene	BDL	0.7
Benzo (ghi) Perylene	BDL	0.7
Benzidine	BDL	0.7
Bis (2-chloroethyl) ether	BDL	0.7
Bis (2-chloroethoxy) methane	BDL	0.7
Bis (2-ethylhexyl) phthalate	1.74	0.7
Bis (2-chloroisopropyl) ether	BDL	0.7
4-Bromophenyl phenyl ether	BDL	0.7
Butyl benzyl phthalate	BDL	0.7
2-Chloronaphthalene	BDL	0.7
4-Chlorophenyl phenyl ether	BDL	0.7
Chrysene	BDL	0.7
Dibenzo (a,h) anthracene	BDL	0.7
Di-n-butylphthalate	BDL	0.7
1,3-Dichlorobenzene	BDL	0.7
1,4-Dichlorobenzene	BDL	0.7
1,2-Dichlorobenzene	BDL	0.7
3,3'-Dichlorobenzidine	BDL	0.7
Diethylphthalate	BDL	0.7

BDL - Below Detection Limit

TECHNICAL SERVICES, INC
Lab No. 87244 (KA-39)

EPA Method 8270 Base Neutral Compound	CONCENTRATION mg/kg	DETECTION LIMIT mg/kg
Dimethylphthalate	BDL	0.7
2,4-Dinitrotoluene	BDL	0.7
2,6-Dinitrotoluene	BDL	0.7
Dioctylphthalate	BDL	0.7
1,2-Diphenylhydrazine	BDL	0.7
Fluoranthene	BDL	0.7
Fluorene	BDL	0.7
Hexachlorobenzene	BDL	0.7
Hexachlorobutadiene	BDL	0.7
Hexachloroethane	BDL	0.7
Hexachlorocyclopentadiene	BDL	0.7
Indeno (1,2,3-cd) pyrene	BDL	0.7
Isophorone	BDL	0.7
Naphthalene	BDL	0.7
Nitrobenzene	BDL	0.7
N-Nitrosodimethylamine	BDL	2.0
N-Nitrosodi-n-propylamine	BDL	0.7
N-Nitrosodiphenylamine	BDL	0.7
Phenanthrene	BDL	0.7
Pyrene	BDL	0.7
2,3,7,8-Tetrachlorodibenzo-p-dioxin (Dioxin)	BDL	0.7
1,2,4-Trichlorobenzene	BDL	0.7

Acid Extractable Compound	CONCENTRATION mg/kg	DETECTION LIMIT mg/kg
2-Chlorophenol	BDL	0.7
4-Chloro-3-methylphenol	BDL	3.5
2,4-Dichlorophenol	BDL	0.7
2,4-Dimethylphenol	BDL	0.7
2,4-Dinitrophenol	BDL	3.0
2-Methyl-4,6-Dinitrophenol	BDL	3.5
2-Nitrophenol	BDL	0.7
4-Nitrophenol	BDL	3.5
Pentachlorophenol	BDL	3.5
Phenol	BDL	0.7
2,4,6-Trichlorophenol	BDL	2.0

BDL - Below Detection Limit

Method: EPA 8270
Date: 11-30-88
Analyst: SS

EQUIPMENT CALIBRATIONS

KOOGLER & ASSOCIATES

KOOGLER & ASSOCIATES, ENVIRONMENTAL SERVICES
ANNUAL THERMOCOUPLE CALIBRATIONS

Umbilical Cord No. 100 TC No. 64	BOX 1						BOX 2					
	STACK		BOX		IMP		STACK		BOX		IMP	
	TC[1]	ASTM[1]	TC	ASTM	TC	ASTM	TC	ASTM	TC	ASTM	TC	ASTM
Ice Bath	33	32	33	32	33	32	32	33	32	32	33	33
Ambient	85	86	84	86	85	86	84	84	85	84	84	84
212°	212	214	211	213	213	214	211	213	211	212	211	213
400°	457	454	432	434	397	398	460	458	459	458	456	455

Thermocouple Readout No. KA-1 64	UMBILICAL CORD NO.						UMBILICAL CORD NO.					
	STACK		BOX		IMP		STACK		BOX		IMP	
	TC	ASTM	TC	ASTM	TC	ASTM	TC	ASTM	TC	ASTM	TC	ASTM
Ice Bath	33	33	33	32	33	32	33	33	34	33	33	32
Ambient	85	86	85	86	85	84	87	88	86	86	86	87
212°	212	214	212	215	212	214	212	212	211	213	212	214
400°	459	457	421	421	403	404	432	435	437	440	446	442

Thermocouple Probe No.	TEMPERATURE							
	ICE BATH		AMBIENT		212°		400°	
	TC	ASTM	TC	ASTM	TC	ASTM	TC	ASTM
KA-61	32	32	87	87	211	212	391	393
KA-62	33	32	86	87	212	212	405	407
KA-63	33	32	86	87	211	213	421	420
KA-64	33	32	87	88	211	214	439	442
KA-50	32	33	88	89	212	212	456	459
KA-70	32	32	88	88	211	212	410	468
KA-77	34	33	87	88	211	213	458	458
KA-108	33	33	87	88	212	211	414	411
KA-126	33	32	88	89	213	215	433	429
KA-36	32	32	88	90	211	214	401	405

[1] Thermocouple reading (°F)
[2] American Society of Testing Materials Mercury in glass thermometer (°F)

Signature Carly M Farland
Date 8-23-88

KOOGLER Ka ASSOCIATES

PITOT TUBE CALIBRATION MEASUREMENTS

PITOT TUBE IDENTIFICATION NO. KA-ST

DATE CALIBRATED 8-16-88

PITOT TUBE ASSEMBLY LEVEL ? _____ YES ✓ NO

PITOT TUBE OPENINGS DAMAGED ? ____ YES (EXPLAIN BELOW) ✓ NO

α_1= 0.5 ° (<10°) α_2= 1.0 ° (<10°)

β_1= 1.0 ° (<5°) β_2= 0.5 ° (<5°)

Y= 2.5 °, 0= 0.0 °, A= 0.933 IN. = (PA+PB)

Z = A SIN Y = 0.0407 IN. (<0.125 IN.)

W = A SIN θ = 0.0 IN. (<0.031 IN.)

P_A 0.464 IN. P_b 0.469 IN.

D_+ 0.375 IN. (≥ 0.1875 IN. ≤ 0.3750 IN.)

COMMENTS: _____

CALIBRATION REQUIRED? _____ YES ✓ NO

CALIBRATED BY: RC Paul

PTCMFORM 1/8/87

KOOGLER Ka ASSOCIATES

NOZZLE CALIBRATION

DATE 11-15-88

PLANT NAME Mid Fla Mining

LOCATION Lowell, Fla

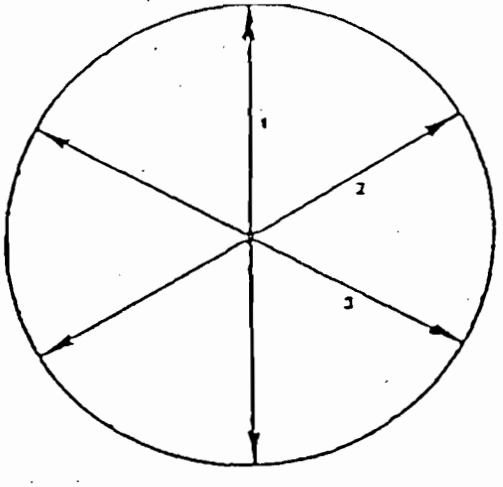
SOURCE Dryer

Measurement No.	Inside Diameter (inches)
1	0.317
2	0.316
3	0.318

Average 0.317

Area of Nozzle 0.000548 ft^2

Calibrated by: RC Paul



Nozzle X-Section

POST-TEST DRY GAS METER CALIBRATION FORM

Date: 11-18-88 Meter Box No.: KA-1 Plant: MID FLA. MINING CO - DRYER SCONTAMINATED SOIL

Barometric Pressure, P_b = 30.25 in Hg Test Meter No.: KA-1 Pretest Y: 1.003

Orifice Manometer Setting, (ΔH) in. H_2O	Gas Volume		Dry Gas Meter Temperature				Time (θ), Min.	Vacuum Setting in. Hg.	Y_i	$Y_i \frac{V_T P_b (t_d + 460)}{V_d (P_b + \frac{\Delta H}{13.6})(t_T + 460)}$
	Test Meter (V_{T_3}), Ft.	Dry Gas Meter (V_{d_3}), Ft.	Test Meter (t_T), °F	Inlet (t_{d_i}), °F	Outlet (t_{d_o}), °F	Average (t_d), a °F				
2.03	8.430	8.560	80			75	10	15	0.9709	
2.03	8.339	8.459	80			75	10	15	0.9719	
2.03	8.316	8.468	82			79	10	15	0.9718	
									Y=0.9715	

[a] If there is only one thermometer on the day gas meter, record the temperature under t_d

where:

V_T = Gas volume passing through the test meter, ft^3.

V_d = Gas volume passing through the dry gas meter, ft^3.

t_T = Temperature of the gas in the test meter, °F.

t_{d_i} = Temperature of the inlet gas of the dry gas meter, °F.

t_{d_o} = Temperature of the outlet gas of the dry gas meter, °F.

t_d = Average temperature of the gas in the dry gas meter, obtained by the average of t_{d_i} and t_{d_o}, °F.

ΔH = Pressure differential across orifice, in. H_2O

Y_i = Ratio of accuracy of test meter to dry gas meter for each run.

Y = Average ratio of accuracy of test meter to dry gas meter for all three runs; tolerance = pretest Y $\pm 0.05Y$.

P_b = Barometric pressure, in. Hg.

θ = Time of calibration run, min.

KOOGLER KA ASSOCIATES

METER CALIBRATION FORM

GAS METER METHOD

DATE: 8-05-88

METER BOX NO: KA-1

BAROMETRIC PRESSURE: 30.08

TEST Δ HD	ORIFICE Δ HD	TEST GAS METER VOLUME FINAL	TEST GAS METER VOLUME INITIAL	TEST GAS METER VOLUME ACTUAL FT3	DRY GAS METER VOLUME FINAL	DRY GAS METER VOLUME INITIAL	DRY GAS METER VOLUME ACTUAL FT3	TEMP OF TEST METER °F	TEMP OF DRY METER °F	RUN TIME MINUTES
.26	.55	307.640	301.057	6.583	575.163	568.925	6.238	88°	88°	15
.28	1.1	313.561	307.640	5.921	580.971	575.163	5.808	88°	88°	10
.31	1.6	290.516	283.278	7.238	558.187	550.965	7.222	88°	88°	10
.33	2.5	322.695	313.561	9.134	580.249	580.971	9.278	88	88°	10
.35	3.5	301.057	290.516	10.541	568.925	558.187	10.738	88°	88°	10

						--MEAN--
DELTA-H :	1.651	1.815	1.766	1.733	1.822	1.758
Y :	1.053	1.016	0.998	0.978	0.972	1.003
SCFM :	0.425	0.573	0.701	0.884	1.020	
QF :	3.165	4.477	5.399	6.749	7.985	

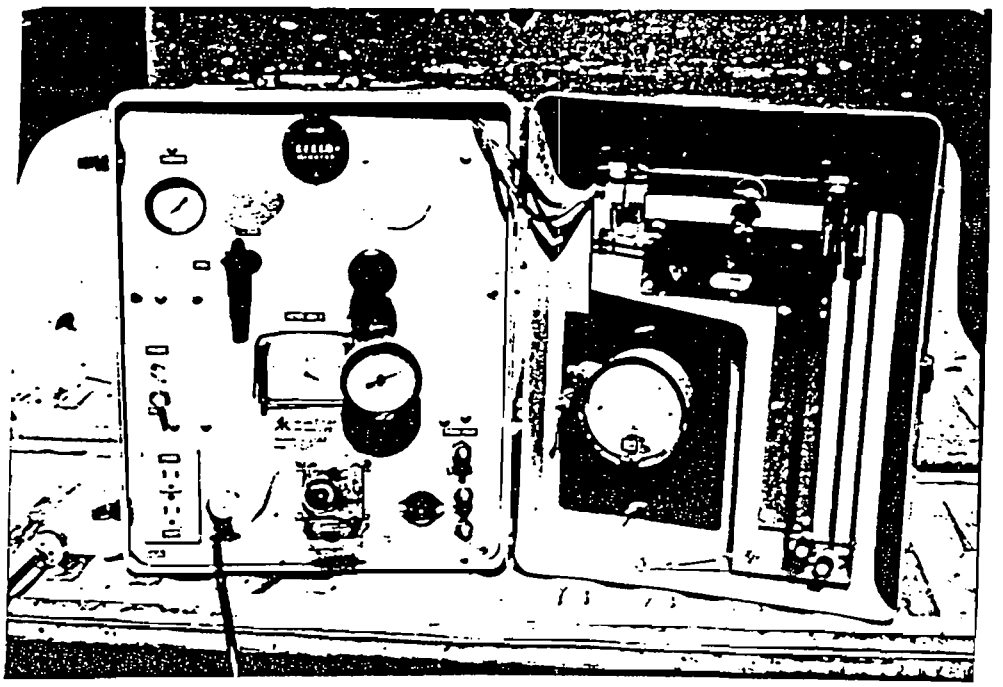
GAS METER THERMOMETER CALIBRATION

N.B.S. MERCURY °F	METER BOX °F
32°	32°
60°	60°
83°	82°
96°	96°
104°	105°

SIGNATURE: Early M Farland

KOOGLER & ASSOCIATES
ENVIRONMENTAL SERVICES

SOURCE SAMPLING EQUIPMENT



METER BOX

Equipment used in Source Sampling is either manufactured by or assembled by Koogler & Associates. The guidelines followed are A.P.T.D. 0581, Details of Isokinetic Source Sampling Equipment, and A.P.T.D. 0576, Maintenance, Calibration and Operation of Isokinetic Source Sampling Equipment.

KOOGLER & ASSOCIATES

PROJECT PARTICIPANTS

KOOGLER & ASSOCIATES

PROJECT PARTICIPANTS

John B. Koogler, Ph.D., P.E.	Project Advisor
Rodney C. Paul	Project Supervisor
Earley McFarland, III	Field Test Crew

KOOGLER & ASSOCIATES

SENDER: Complete items 1 and 2 when additional services are desired, and complete items 3 and 4.

Put your address in the "RETURN TO" Space on the reverse side. Failure to do this will prevent this card from being returned to you. The return receipt fee will provide you the name of the person delivered to and the date of delivery. For additional fees the following services are available. Consult postmaster for fees and check box(es) for additional service(s) requested.

1. ☐ Show to whom delivered, date, and addressee's address. *(Extra charge)*
2. ☐ Restricted Delivery *(Extra charge)*

3. Article Addressed to:

Mr. David Kibler, Exec. Director
MFM Environmental Inc.
Suite 152
3300 Southwest 34th Avenue
Ocala, Florida 32674

4. Article Number
P 274 007 540

Type of Service:
- ☐ Registered
- ☐ Insured
- ☒ Certified
- ☐ COD
- ☐ Express Mail
- ☐ Return Receipt for Merchandise

Always obtain signature of addressee or agent and DATE DELIVERED.

5. Signature — Address
X [signature]

6. Signature — Agent
X

7. Date of Delivery 12/23/88

8. Addressee's Address *(ONLY if requested and fee paid)*

PS Form **3811**, Mar. 1988 ★ U.S.G.P.O. 1988-212-865 **DOMESTIC RETURN RECEIPT**

P 274 007 540

RECEIPT FOR CERTIFIED MAIL

NO INSURANCE COVERAGE PROVIDED
NOT FOR INTERNATIONAL MAIL
(See Reverse)

Sent to Mr. David Kibler, MFM Environmental	
Street and No. 3300 S.W. 34th Ave., Ste. 152	
P.O., State and ZIP Code Ocala, FL 32674	
Postage	$
Certified Fee	
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt showing to whom and Date Delivered	
Return Receipt showing to whom, Date, and Address of Delivery	
TOTAL Postage and Fees	$
Postmark or Date Mailed: 12-22-88 Permit: AC 42-113787	

★ U.S.G.P.O. 1985-480-794

PS Form 3800, June 1985

Florida Department of Environmental Regulation
Twin Towers Office Bldg. • 2600 Blair Stone Road • Tallahassee, Florida 32399-2400
Bob Martinez, Governor Dale Twachtmann, Secretary John Shearer, Assistant Secretary

December 21, 1988

CERTIFIED MAIL-RETURN RECEIPT REQUESTED

Mr. David Kibler, Executive Director
MFM Environmental Inc.
Suite 152
3300 Southwest 34th Avenue
Ocala, Florida 32674

Dear Mr. Kibler:

Attached is one copy of the proposed letter amendment to air construction permit AC 42-113787 for MFM Environmental Inc. to decontaminate soil contaminated with creosote from Southern Wood Piedmont's site in Baldwin, Florida on a one-time basis. The purpose of this letter amendment is to allow MFM Environmental Inc. to obtain the data needed to determine whether the kiln is capable of safely and satisfactorily decontaminating soil contaminated with creosote and obtain the data needed to complete the design of a proposed tail gas treatment system. As indicated in the proposed letter amendment, the intended action does not change the Department's position with respect to the alledged violations during July 1988.

We ask that you publish the attached newspaper notice in the Ocala Star Banner on a one-time basis in order to assure that those whose substantial interests may be affected receive adequate public notice. Please submit any written comments you wish to have considered concerning the Department's proposed action to Mr. Bill Thomas of the Bureau of Air Quality Management.

Sincerely,

for C. H. Fancy, P.E.
Deputy Chief
Bureau of Air Quality
Management

CHF/MH

Attachments

cc: C. Collins
J. Brown
M. Rehwinkle
D. Townsend
J. Koogler, P.E.

BEFORE THE STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL REGULATION

In the Matter of
Application for Permit by:

MFM Environmental Inc.
Suite 152
3300 Southwest 34th Avenue
Ocala, Florida 32674

INTENT TO ISSUE

The Department of Environmental Regulation hereby gives notice of its intent to issue a letter amendment (copy attached) to air construction permit no. AC 42-113787 for the proposed project as detailed in the application specified above. The Department is issuing this Intent to Issue for the reasons stated in the attached Technical Evaluation and Preliminary Determination.

The applicant, MFM Environmental Inc., applied on November 18, 1988, to the Department of Environmental Regulation for a letter amendment to air construction permit no. AC 42-113787 to decontaminate about 10,000 tons of soil contaminated with creosote from Southern Wood Piedmont's site in Baldwin, Florida on a one-time basis. The purpose of this amendment is to allow MFM Environmental to determine whether the kiln is capable of safely and satisfactorily decontaminating soil that is contaminated with creosote and obtain the data needed to complete the design of a proposed tail gas treatment system. The Department will expect a completed tail gas treatment system to effectively limit emissions of polynuclear aromatic hydrocarbons, arsenic, chromium, copper, lead, mercury, zinc, any possible dioxanes; in addition to reducing emissions of normally regulated pollutants. The proposed letter amendment has been conditioned to limit the duration of the planned activity to 40 days, limit adverse environmental impacts, and require decontamination to cease if valid environmental complaints occur. The proposed project is located on State Road 329 at the CSX Transportation Railroad, Lowell, Marion County, Florida.

The Department has permitting jurisdiction under Chapter 403, Florida Statutes, and Florida Administrative Code Rules 17-2 and 17-4. The project is not exempt from permitting procedures. The Department has determined that an air construction permit was needed for the proposed work.

Persons whose substantial interest are affected by the Department's proposed permitting decision may petition for an administrative proceeding (hearing) in accordance with Section 120.57, Florida Statutes. Petitions must comply with the requirements of Florida Administrative Code Rules 17-103.155 and 28-5.201 (copy enclosed) and be filed with (received by) the Office of General Counsel of the Department at 2600 Blair Stone Road, Tallahassee, Florida 32399-2400. Petitions filed by the permit applicant must be filed within fourteen (14) days of receipt of this intent. Petitions filed by other persons must be filed within fourteen (14) days of publication of the public notice or within fourteen (14) days of receipt of this intent, whichever first occurs. Failure to file a petition within this time period shall constitute a waiver of any right such person may have to request an administrative determination (hearing) under Section 120.57, Florida Statutes, concerning the subject permit application. Petitions which are not filed in accordance with the above provisions will be dismissed.

Executed in Tallahassee, Florida.

STATE OF FLORIDA DEPARTMENT
OF ENVIRONMENTAL REGULATION

Per _____
C. H. Fancy, P.E.
Deputy Chief
Bureau of Air Quality
Management

Copies furnished to:

C. Collins
J. Brown
M. Rehwinkle
D. Townsend
J. Koogler, P.E.

RULES OF THE ADMINISTRATIVE COMMISSION
MODEL RULES OF PROCEDURE
CHAPTER 28-5
DECISIONS DETERMINING SUBSTANTIAL INTERESTS

28-5.15 Requests for Formal and Informal Proceedings

(1) Requests for proceedings shall be made by petition to the agency involved. Each petition shall be printed, typewritten or otherwise duplicated in legible form on white paper of standard legal size. Unless printed, the impression shall be on one side of the paper only and lines shall be double spaced and indented.

(2) All petitions filed under these rules should contain:

(a) The name and address of each agency affected and each agency's file or identification number, if known;

(b) The name and address of the petitioner or petitioners;

(c) All disputed issues of material fact. If there are none, the petition must so indicate;

(d) A concise statement of the ultimate facts alleged, and the rules, regulations and constitutional provisions which entitle the petitioner to relief;

(e) A statement summarizing any informal action taken to resolve the issues, and the results of that action;

(f) A demand for the relief to which the petitioner deems himself entitled; and

(g) Such other information which the petitioner contends is material.

CERTIFICATE OF SERVICE

The undersigned duly designated deputy clerk hereby certifies that this NOTICE OF INTENT TO ISSUE and all copies were mailed before the close of business on December 22, 1988.

FILING AND ACKNOWLEDGEMENT
FILED, on this date, pursuant to §120.52(9), Florida Statutes, with the designated Department Clerk, receipt of which is hereby acknowledged.

Martha J. Wise — December 22, 1988
Clerk — Date

State of Florida
Department of Environmental Regulation
Notice of Intent

The Department of Environmental Regulation hereby gives notice of its intent to issue a letter amendment to construction permit no. AC 42-113787 for MFM Environmental Inc. to decontaminate soil contaminated with creosote. The purpose of this amendment is to allow MFM Environmental Inc. to decontaminate soil that poses a threat to Florida's groundwater system and to obtain the data that is needed to complete the design of a proposed tail gas treatment system. The Department would expect the completed tail gas treatment system to effectively control emissions of polynuclear aromatic hydrocarbons, arsenic, chromium, copper, lead, mercury, zinc, and any possible dioxanes; in addition to reducing emissions of normally regulated pollutants. The proposed letter amendment has been conditioned to limit the duration of the planned activity to 40 days, limit adverse environmental impacts, and require decontamination to cease if valid environmental complaints occur. The proposed project is located on State Road 329 at the CSX Transportation Railroad, Lowell, Marion County, Florida. The Department is issuing this Intent to Issue for the reasons stated in the proposed letter amendment to construction permit no. AC 42-113787.

Persons whose substantial interests are affected by the Department's proposed permitting decision may petition for an administrative determination (hearing) in accordance with Section 120.57, Florida Statutes. The petition must conform to the requirements of Chapters 17-103 and 28-5, Florida Administrative Code, and must be filed (received) in the Department's Office of General Counsel, 2600 Blair Stone Road, Twin Towers Office Building, Tallahassee, Florida 32399-2400, within fourteen (14) days of publication of this notice. Failure to file a petition within this time period constitutes a waiver of any right such person has to request an administrative determination (hearing) under Section 120.57, Florida Statutes.

If a petition is filed, the administrative hearing process is designed to formulate agency action. Accordingly, the Department's final action may be different from the proposed agency action. Therefore, persons who may not wish to file a petition may wish to intervene in the proceeding. A petition for intervention must be filed pursuant to Rule 28-5.207, Florida Administrative Code, at least five (5) days before the final

hearing and be filed with the hearing officer if one has been assigned at the Division of Administrative Hearings, Department of Administration, 2009 Apalachee Parkway, Tallahassee, Florida 32301. If no hearing officer has been assigned, the petition is to be filed with the Department's Office of General Counsel, 2600 Blair Stone Road, Tallahassee, Florida 32399-2400. Failure to petition to intervene within the allowed time frame constitutes a waiver of any right such person has to request a hearing under Section 120.57, Florida Statutes.

The application is available for public inspection during normal business hours, 8:00 a.m. to 5:00 p.m., Monday through Friday, except legal holidays, at:

Dept. of Environmental Regulation
Bureau of Air Quality Management
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

Dept. of Environmental Regulation
Central Florida District Office
Suite 232
3319 Maguire Blvd.
Orlando, Florida 32803-3767

Marion County Health Department
3230 Southeast Maricamp Road
Ocala, Florida 32671

Any person may send written comments on the proposed action to Mr. Bill Thomas at the Department's Tallahassee address. All comments received within 14 days of the publication of this notice will be considered in the Department's final determination.

Florida Department of Environmental Regulation
Twin Towers Office Bldg. ● 2600 Blair Stone Road ● Tallahassee, Florida 32399-2400
Bob Martinez, Governor Dale Twachtmann, Secretary John Shearer, Assistant Secretary

January --, 1989 DRAFT

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

Mr. David Kibler, Executive Director
MFM Environmental Inc.
Suite 152
3300 Southwest 34th Avenue
Ocala, Florida 32674

Dear Mr. Kibler:

Re: One-Time Amendment to AC 42-113787 Giving Authorization To Conduct The Testing Required To Demonstrate That The Clay Dryer Owned by MFM Environmental Will Successfully Decontaminate Soil Contaminated With Creosote And Refine Design Parameters For A Tail Gas Treatment System

The Department has reviewed the information that you provided on November 18 and December 2, 1988, with respect to our meeting of November 17. We have also considered our legal authority to allow you to conduct the requested test. Paragraph 403.061(15), F.S., authorizes the Department to consult with any person proposing to construct a pollution control device or system. Paragraph 403.061(16), F.S., authorizes the Department to encourage voluntary cooperation by persons in order to achieve the purposes of the state environmental control act. Paragraph 403.061(18), F.S., authorizes the Department to encourage and conduct studies, investigations, and research relating to the causes and control of pollution. Florida Administrative Code (F.A.C.) Chapter 17-2.250(5) authorizes the Department to consider variations in industrial equipment and make allowances for excess emissions that provide practical regulatory controls consistent with the public interest.

Pursuant to the provisions of Paragraphs 403.061(15), (16), and (18), F.S., and F.A.C. Rule 17-2.250(5), you are hereby authorized to decontaminate 10,000 tons of soil contaminated with creosote on a one-time basis. The purpose of this activity is to obtain the data needed to determine whether the kiln is capable of safely and satisfactorily decontaminating soil that is contaminated with creosote and obtain the data needed to

DRAFT

complete the design of a tail gas treatment system. The completion of this project will enable MFM Environmental Inc. to utilize the kiln to minimize potential contamination of subsurface waters and reduce air emissions after obtaining the appropriate construction and operation permits. This authorization in no way changes the Department's position with respect to the consent order no. 880938 and penalties concerning the unauthorized decontamination of 1700 tons of soil contaminated with creosote by MFM Environmental Inc. during the month of July 1988. The decontamination shall be conducted pursuant to all of the following conditions:

1. The permittee shall sign the consent order no. 880938 and pay the assessed penalties prior to conducting the soil decontamination project authorized by this letter amendment. The issuance of this permit amendment shall not be construed as an exoneration of the permittee for the violations which occurred in July 1988 or as justification for those violations.

2. The permittee shall elevate the height of the stack to at least 100 feet and duct all exhaust gases from the kiln through the elevated stack prior to conducting the soil decontamination project.

3. The soil shall be decontaminated during a continuous 40-day period beginning on a weekday and ending 40 days later. The permittee must contact the Department's Central Florida District office, the Bureau of Air Quality Management, and the Bureau of Waste Cleanup at least 5 days prior to the commencement of the trial burn.

4. The soil to be decontaminated shall be the remaining tonnage of creosote contaminated soil at Southern Wood Piedmont's Baldwin site. The soil to be decontaminated shall have the same qualitative and average quantitative analyses as that shown for contaminated (raw) soil in Attachment 3, Emission Measurements For Metals And Semi-Volatile Organic Compounds During The Thermoprocessing Of Soil Contaminated With Creosote. The polynuclear aromatic hydrocarbon constituents and levels are shown in Tables 4 and 5 of Attachment 3. The levels of metallic constituents and arsenic are shown in the August 16, 1988 letter from PPB Environmental Laboratories to Dr. John Koogler which is found in Attachment 3. The soil to be decontaminated shall not be of such a character that it would be classified as a hazardous waste.

DRAFT

5. The fuel specifications and maximum hourly input rate shall not exceed that requested in the last paragraph of page 3 of Attachment 6 to this letter. The maximum soil processing rate shall not exceed 25 tons per hour. The fuel burned during soil decontamination shall also comply with the specifications of the referenced permit.

6. The testing and decontamination shall be conducted under the direct supervision and responsible charge of a professional engineer registered in Florida. The testing and decontamination shall cease if conditions of night-time calm, twilight calm, or downwash persist for two consecutive hours. Operations shall cease for four hours if average windspeed above 10 miles per hour persists from one direction (plus or minus 10 degrees) for two consecutive hours. The wind direction is to be the hourly average wind direction. This testing and decontamination shall not result in the release of objectionable odors and steps shall be taken to minimize visible emissions to the maximum practical extent.

7. The testing and decontamination shall be conducted in such a manner as to minimize emissions of all polynuclear aromatic hydrocarbon compounds including, but not limited to phenol, naphthalene, 2-methylnaphthalene, acenaphthylene, acenaphthene, dibenzofuran, fluorene, pentachlorophenol, phenanthrene, anthracene, fluoranthene, pyrene, benzo(a)anthracene, chrysene, bis(2-ethylhexyl)phthalate, benzo(b)fluoranthene, benzo(k)fluoranthene, benzo(a)pyrene, and benzo(g,h,i)perylene; and to insure that emissions of these compounds do not result in maximum 8-hour concentrations that exceed any applicable ACGIH TLV including that for coal tar volatiles.

8. The testing and decontamination shall be conducted in such a manner as to minimize emissions of all other pollutants including, but not limited to lead, mercury, chromium (both hexavalent and trivalent), copper, zinc, and arsenic. The emissions of these pollutants shall not result in the exceedance and/or violation of any ambient air quality standard that the Department determines to be applicable.

9. Testing and decontamination shall immediately cease upon the occurrence of a valid environmental complaint by a citizen or other party, or a nuisance or danger to public health or welfare. Testing and decontamination shall not resume until appropriate measures to correct the problem have been implemented.

DRAFT

10. The professional engineer registered in Florida and in responsible charge pursuant to Specific Condition 6 of this letter shall sample air emissions, contaminated soil, and decontaminated soil pursuant to appropriate EPA and Department methods to provide the information needed to ensure that the public health and welfare are not jeopardized. The sampling shall also produce data that is directly comparable to data that the company has collected during previous attempts to decontaminate soil contaminated with creosote and coal tar during 1988. The pollutants sampled shall include polynuclear aromatic hydrocarbons, dioxane, heavy metals, and arsenic in addition to the other regulated air pollutants listed in Table 500-2 of F.A.C. Chapter 17-2. The professional engineer shall also ensure that operating parameters of the kiln are continuously monitored and recorded.

11. MFM Environmental Inc. shall provide the Department's Bureau of Air Quality Management, the Bureau of Waste Cleanup, and the Central Florida District Office with copies of the test reports within 60 days of completion of the emission testing.

12. Any and all subsequent decontamination of soils not specifically authorized by air construction permit AC 42-113787 as it existed prior to September 14, 1988 is prohibited. MFM Environmental Inc. shall complete the design of the tail gas control system, submit applications for air construction permits, and receive valid air construction permits of prior to any future decontamination of soils not specifically authorized by air construction permit AC 42-113787 as it existed on September 14, 1988. The applications shall be submitted and processed in accord with all applicable requirements of F.A.C. Chapters 17-2, 17-4, and 17-103.

Attachments:

1. Letter from J. B. Koogler to FDER received November 18, 1988.

2. Letter from J. B. Koogler to FDER received December 2, 1988.

3. Emission Measurements For Metals And Semi-Volatile Organic Compounds During The Thermoprocessing Of Soil Contaminated With Creosote, Koogler & Associates, July 15, 1988, received December 2, 1988.

4. New York State Air Guide-1: Guidelines for the Control of Toxic Ambient Air Contaminates, 1985-86 Edition, New York

DRAFT

State Department of Environmental Conservation, Division of Air Resources, received December 2, 1988.

5. May 6, 1987 Federal Register, "40 CFR Part 260 et. al.: Burning of Hazardous Waste in Boilers and Industrial Furnaces; Proposed Rule," pages 52 FR 16993-16995 and 52 FR 17031-17033, received December 2, 1987.

6. Letter from J. B. Koogler to FDER, received June 16,1988.

7. Fax from J. B. Koogler to FDER, received December 16, 1988.

The FDER has relied upon the information and presentations, both written and verbal, of MFM Environmental, Inc. and its professional engineer registered in Florida in the issuance of this one-time amendment to permit AC 42-113787.

A copy of this letter and its attachments shall be attached to the construction permit no. AC 42-113787.

Sincerely,

Dale Twachtmann
Secretary

DT/mh

cc: J. Koogler, P.E.
C. Collins
J. Brown
M. Rehwinkle
D. Townsend

January 12,1989
Mrs. Laura J. Yantis
Post Office Box 216
Lowell, Florida 32663

Department of Environmental Regulation
Bureau of Air Quality Management
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

Re: Permit no. AC 42-113787
Mid-Florida Mining
Legal Notice #1795
January 3,1989

Dear Sir:

In regard to the above permit. I wish to request a public hearing be held before such permit is issued.

At the present time we are experiencing air quality problems produced by Mid-Florida Mining and or Southern Materials Inc.

Sincerely,

Laura J. Yantis

Original hand delivered to Carol Goldman's office 1-17-89

PA

RECEIVED
JAN 17 1989
DER-BAQM

STATE OF FLORIDA

DEPARTMENT OF ENVIRONMENTAL REGULATION

TWIN TOWERS OFFICE BUILDING
2600 BLAIR STONE ROAD
TALLAHASSEE FLORIDA 32399-2400

BOB MARTINEZ
GOVERNOR

DALE TWACHTMAN
SECRETARY

FAX TRANSMITTAL LETTER

TO:

NAME: Mr. David Kibler

AGENCY: MFM Environmental Inc.

TELEPHONE NUMBER: 904/854-1576

NUMBER OF PAGES (INCLUDING COVER SHEET): 14

FROM:

NAME: Steve Smallwood

AGENCY: DER Div. of Air Resources Mgt.

TRANSMITTAL ON A Hitachi HIFAX, PHONE NUMBER 904-488-6579 or SUNCOM 278-6579

IF ANY OF THE PAGES ARE NOT CLEARLY RECEIVED, PLEASE CALL IMMEDIATELY.

SENDERS NAME: Patty Adams (904) 488-1344

COMMENTS:

Florida Department of Environmental Regulation
Twin Towers Office Bldg. ● 2600 Blair Stone Road ● Tallahassee, Florida 32399-2400
Bob Martinez, Governor Dale Twachtmann, Secretary John Shearer, Assistant Secretary

12/21

Mr. Kibler:

Please give me a call if you have any questions concerning how you should procedurally publish notice. Also, since the Department will be unable to get the draft permit with its attachments and preliminary technical evaluation out to the district office and Marion County until Friday, 12/23, please do not have the Notice of Intent appear in the Ocala Star Banner until that date.

Sincerely,
Betsy Hewitt
Air Attorney
904-488-9730

PM 1-13-89
Lowell, FL

file copy

RECEIVED
JAN 17 1989
BAQM

Flamingo Farm THOROUGHBRED HORSES P.O. BOX 125, LOWELL, FLORIDA 32663

12 January 1989

Mr. Bill Thomas
State of Florida, DER
2600 Blair Stone Rd.
Tallahassee, Fl.

Re: Intent to amend Permit #AC 42-113787-MFM

Dear Mr. Thomas,

I am a resident in the Lowell area and have been concerned for many years regarding the storage and burning activities of MFM Environmental Inc. Consequently, any expansion of their activities makes me very uneasy. It is my opinion that they are already exceeding their existing permit limits; or else are receiving "favorable" treatment by the DER.

Please register my concern and tacit disapproval of the intended amendment. I understand one or more of my neighbors has already requested the hearing; I hereby request advisment as to when and where it will be.

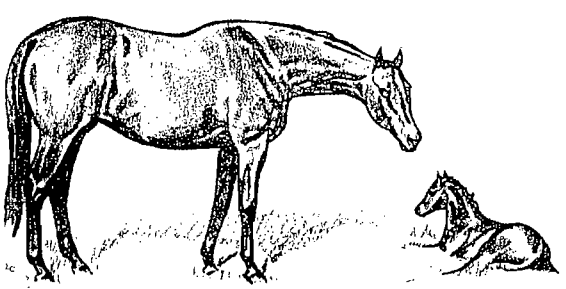
Thank you for your attention in these regards.

Respectfully yours,

Cornelius A. Link, D.D.S.

Cornelius A. Link, D.D.S.

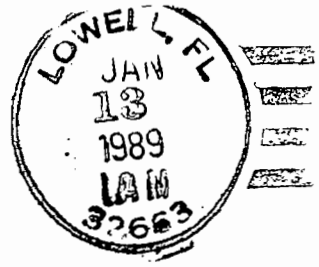
copied: Mike Harley
Betsy Hewitt
CHF/BT



(904) 591-1863

Member Florida Thoroughbred Breeders Association

Flamingo Farm THOROUGHBRED HORSES
P.O. BOX 125, LOWELL, FLORIDA 32663



MR. BILL THOMAS
State of Florida, DER
2600 Blair Stone Rd.
Tallahasse, Fl.
32399-2400

3300 S.W. 34th Avenue, Suite 152
Ocala, Florida 32674
(904) 854-0070

MFM

MFM Environmental, Inc.

December 22, 1988

Mr. Dale Twachtmann, Secretary
State of Florida
Department of Environmental Regulation
Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

Dear Dale:

Governor Kirk and I both appreciate the considerable time and effort you and Steve Smallwood have given us. I think, however, it is time well spent, because we at MFM have a proven decontamination capacity that will greatly assist you in protecting Florida's fragile environment. We are always grateful for the opportunity to work closely with you and your staff.

Because I am so cognizant of the necessity of an effective working relationship with you and your staff, I take this moment to clarify any misunderstanding concerning our July creosote burn. Such a burn would never have occurred had I not been assured that the processing of creosote had the imprimatur of your department. I take full responsibility for that action, and, having learned from it, am committed to engaging in no activity without written departmental permission.

It was my understanding and Governor Kirk's understanding that when we met with you November 19th, you were fully aware of the contested circumstances concerning the July creosote burn. In fact, at that November 19th meeting, Steve Smallwood and I discussed the department's proposed consent order concerning the alleged violations of the July creosote burn. It is probable that while we were discussing our differing views of the proposed consent order you were on the phone with Ernie Fry of your Jacksonville office. Nevertheless, it was never my intention nor the Governor's to keep you unaware of any past or present activity.

DEPARTMENT OF ENVIRONMENTAL REGULATION

ROUTING AND TRANSMITTAL SLIP

ACTION NO

ACTION DUE DATE

1. TO: (NAME, OFFICE, LOCATION) Steve Smallwood	Initial	
	Date	
2. ~~Patty~~, Mike - I put original in MFM File PA	Initial	
	Date	
3.	Initial	
	Date	
4.	Initial	
	Date	

REMARKS:

For MFM File

RECEIVED

DEC 30 1988

DER - BAQM

D Swackhamer

FROM:

INFORMATION	
	Review & Return
	Review & File
	Initial & Forward

DISPOSITION	
	Review & Respond
	Prepare Response
	For My Signature
	For Your Signature
	Let's Discuss
	Set Up Meeting
	Investigate & Report
	Initial & Forward
	Distribute
	Concurrence
	For Processing
	Initial & Return

DATE 12-30

PHONE

Please recognize that Governor Kirk and I comprehend the difficult and complex task that is yours. We desire to assist you in any way possible. Specifically, we have the demonstrated capacity to safely and efficiently rid the state of the danger posed by soil contaminated with creosote and coal tar. Presently, no other Florida concern can make such a statement.

I look forward to meeting and working with you to help eliminate Florida's environmental threats.

Sincerely,

David B. Kibler, IV
President
MFM Industries, Inc.

DBK:lfw

cc: Mr. Steve Smallwood

3300 S.W. 34th Avenue, Suite 152
Ocala, Florida 32674
(904) 854-0070

MFM Environmental, Inc.

December 22, 1988

Mr. Dale Twachtmann, Secretary
State of Florida
Department of Environmental Regulation
Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

Dear Dale:

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KOOGLER & ASSOCIATES
ENVIRONMENTAL SERVICES
4014 NW THIRTEENTH STREET
GAINESVILLE, FLORIDA 32609
904/377-5822 ▪ FAX 377-7158

VIA FAX

KA 290-88-01

December 15, 1988

Mr. Mike Harley
Florida Department of
Environmental Regulation
Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, FL 32399-2400

Subject: MFM Environmental, Inc.
Explanation of EP Toxicity Results

Dear Mike:

Confirming our telephone conversation of December 15, 1988, I provide the following elaboration on the EP toxicity test results reported in our July 15, 1988 test report describing measurements made at MFM while soil containing creosote was being processed. The EP toxicity results are included in the Appendix of our report as a laboratory report from PPB Environmental Laboratories, identified with their project number 87-028.

The results of the EP toxicity test are reported in the units micrograms per liter. This is a measure of the amount of leachable metals removed from 100 grams of soil by two liters of leaching acid. Thus, for example, the 160 micrograms per liter of arsenic reported for Sample KA14 would be equivalent to 320 micrograms of arsenic in the two liters of leachate; or 320 micrograms leached from 100 grams of soil. From one gram of soil 32 micrograms would have been leached and the 32 micrograms per gram is equivalent to 32 parts per million (weight basis). It should be recognized that the metals reported are leachable metals only, not total metals.

If there are any further questions regarding this matter, please do not hesitate to call me.

Very truly yours,

KOOGLER & ASSOCIATES

John B. Koogler/mab

John B. Koogler, Ph.D, P.E.

JBK:mab

cc: Mr. David Kibler, MFM Environmental, Inc.

KOOGLER & ASSOCIATES
ENVIRONMENTAL SERVICES
4014 NW THIRTEENTH STREET
GAINESVILLE, FLORIDA 32609
904/377-5822 ▪ FAX 377-7158

KA 290-88-01

December 1, 1988

Mr. Mike Harley
Florida Department of
Environmental Regulation
Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, FL 32399-2400

Subject: MFM Industries, Inc.
Lowell, Florida

Dear Mr. Harley:

Enclosed are the following items pertaining to MFM Industries, Inc.:

1. A copy of our report, entitled: EMISSION MEASUREMENTS FOR METALS AND SEMI-VOLATILE ORGANIC COMPOUNDS DURING THE THERMOPROCESSING OF SOIL CONTAMINATED WITH CREOSOTE, which describes the results of compliance testing conducted on July 15, 1988.

2. A copy of the "New York State Air Guide-1: Guidelines for the Control of Toxic Ambient Air Contaminants".

3. Information copied from the Federal Register, "Proposed Rules", Vol. 52, No. 87, dated May 6, 1987.

If you have any questions concerning the enclosed, please do not hesitate to give me a call.

Very truly yours,

KOOGLER & ASSOCIATES

John B. Koogler / mab

John B. Koogler, Ph.D, P.E.

JBK:mab

cc Mr. David Kibler, MFM Industries, Inc.

category that posed the greatest potential adverse air impacts was used to establish the limits for that category.

We estimate that approximately 15–20 percent of the facilities burning hazardous wastes are located in terrain which will require that the facilities meet the complex terrain limits.

B. Reference Air Concentrations for Systemic Toxicants

For toxic substances not known to display carcinogenic properties, there appears to be an identifiable exposure threshold below which adverse health effects usually do not occur. Noncarcinogenic effects are manifested when these pollutants are present in concentrations great enough to overcome the homeostatic, compensating, and adaptive mechanisms of the organism. Thus, protection against the adverse health effects of a toxicant is likely to be achieved by preventing exposure levels from exceeding the threshold dose, or the "reference air concentration."

Reference air concentrations (RACs) have been derived from oral RfDs for those threshold compounds listed in Appendix VIII of 40 CFR Part 261 for which the Agency has adequate health effects data (see Appendix A of this preamble). These oral-based RACs are subject to change, and RACs for additional compounds are likely to be developed in the near future given that the Agency has recently established an internal workgroup (the Inhalation RfD Workgroup) to develop inhalation reference doses for use in Agency programs. That workgroup is expected to develop a methodology and inhalation references doses for a number of chemicals by late 1987. In the interest of time, the Agency has decided to propose the oral-based RACs for purposes of today's rule rather than to wait until the internal workgroup completes its efforts.

The Agency's reasoning for proposing RAC's derived from oral RfDs is as follows:

1. EPA has developed verified RfDs and is committed to establishing RfDs for all constituents of Agency interest. The verification process is conducted by an EPA workgroup, and the conclusions and reasoning for these decisions are publicly available.

2. The verification process assures that the critical study is of appropriate length and quality to derive a health limit for long-term, life-term protection.

3. RfDs are based on the best available information that meet minimum scientific criteria and may come from experimental animal studies or human studies.

4. RfDs are designed to give long-term protection for all members of the population, including persons uniquely at risk, such as pregnant women, growing children, and older men and women.

5. RfDs are designated by the Agency as being of high, medium, or low confidence depending on the quality of the information and the amount of the supporting data. The criteria for the confidence rating is discussed in the RfD decision.

The Agency used the following strategy to derive the inhalation exposure limits proposed today:

1. Where a verified oral RfD has been based on an inhalation study, the inhalation exposure limit will be calculated directly from the study.

2. Where a verified oral RfD has been based on an oral study, we will use a conversion factor of 1 for route-to-route extrapolation in deriving an inhalation limit.

3. Where there exists appropriate EPA health documents, such as the Health Effects Assessments (HEAs) and the Health Effects and Environmental Profiles (HEEPs), containing relevant inhalation toxicity data, the data will be used in deriving an inhalation exposure limit. Other agency health documents (e.g., NIOSH's criteria documents) will also be considered.

4. If RfDs or other toxicity data from agency health documents are not available, then other sources of toxicity information will be considered. The calculation will be in accordance with the RfD methodology.

The Agency recognizes the limitations of route-to-route conversions used to derive the RACs and is in the process of examining confounding factors affecting the conversion such as: (a) the appropriateness of extrapolating when a portal of entry is the critical target organ; (b) first pass effects; and (c) effect of route upon dosimetry. The Agency, through its Inhalation RfD Workgroup, is developing reference dose values for inhalation exposure, and many are expected to be available this year. The Agency will use the available inhalation RfDs when this rule is promulgated. If, however, the workgroup develops inhalation reference doses prior to promulgation of today's rule that are substantially different from the RAC's proposed today and if the revised inhalation reference dose could be expected to have a significant adverse impact on the regulated community, the Agency will take public comment on the revised RACs after notice in the Federal Register.

As previously stated, the RACs are derived from oral Reference Doses (RfDs) for the compounds. An oral RfD is an estimate of a daily exposure (via ingestion) for the human population that is likely to be without an appreciable risk of deleterious effects even if exposure occurs daily during a lifetime.[19] The RfD for a specific chemical is calculated by dividing the experimentally-determined no-observed-adverse-effect-level by the appropriate uncertainty factor(s).

The Agency is proposing to use the following equation to convert oral RFDs to RACs:

$$\text{RAC (mg/m}^3\text{)} = \frac{\text{RfD (mg/kg-bw/day)} \times \text{body weight} \times \text{correction factor} \times \text{apportionment factor}}{\text{m}^3 \text{ air breathed/day}}$$

where:

- RfD is the oral reference dose
- Body weight is assumed to be 70 kg for an adult male
- Volume of air breathed by an adult male is assumed to be 20 m^3/day
- Correction factor for route-to-route extrapolation (going from the oral route to the inhalation route) is 1.0
- Factor to apportion the RfD to the intake resulting from direct inhalation of the compound emitted from the source is 0.25 (i.e., an individual is assumed to be exposed to 75% of the RfD from the combination of other sources).

In today's proposed rule, the RACs are used to determine if adverse health effects are likely to result from exposure to stack emissions by comparing maximum annual average ground level concentrations of a pollutant to the pollutant's RAC. If the RAC is not exceeded, adverse health effects are not anticipated. The Agency, however, is also concerned about the impacts of short-term (less than 24-hour) exposures. The ground level concentration of an emitted pollutant can be an order of magnitude greater during a 1-minute or 15-minute period of exposure than the maximum annual average exposure. This is because, during the annual exposure, the periods of exposure to high concentrations are balanced by periods of exposure to low concentrations as wind speed and direction varies. Thus, maximum annual average concentrations are always

[19] Current scientific understanding, however, does not consider this demarcation to be rigid. For brief periods and for small excursions above the RfD, adverse effects are unlikely in most of the population. On the other hand, several circumstances can be cited in which particularly sensitive members of the population suffer adverse responses at levels well below the RfD. See 51 FR 1627 (January 14, 1986).

much lower than short-term exposure concentrations. On the other hand, the short-term exposure RAC is also generally much higher than the life-time exposure RAC. Nonetheless, in some cases, short-term exposure may pose a greater health threat than annual exposure. Unfortunately, the use of RfDs limits the development of short-term acute exposure limits since no acceptable methodology exists for the derivation of less than life-time exposures from RfDs.[20] However, despite this limitation, we are proposing a short-term (i.e., 3-minute) RAC for HCl of 150 mg/m^3 based on limited data documenting a no-observed-effect-level in animals exposed to HCl via inhalation.[21] We do anticipate, however, that short-term RACs for other compounds will be developed by the Agency.

C. Risk From Carcinogens

EPA policy suggests that no threshold dose can be demonstrated experimentally for carcinogens. This leads to the assumption that an exposure theoretically would represent some finite level of risk for carcinogens. EPA's Carcinogen Assessment Group (CAG) has estimated the carcinogenic potency for humans exposed to low dose levels of carcinogens (both known and suspected human carcinogens). The potency factors have been used to estimate the unit risk of carcinogenic constituents on Appendix VIII. The unit risk is the incremental risk to an individual exposed for a life-time to ambient air containing one microgram of the compound per cubic meter of air. We have used the available unit risk values to calculate risk-specific doses (RSDs) for an incremental risk of 10^{-5} (i.e., 1 in 100,000). See Appendix B of this preamble.

For purposes of this regulation, the Agency is proposing that an incremental lifetime risk to the most exposed individual (MEI) of 1×10^{-5} (1 in 100,000) is a reasonable risk. Accordingly, the risk based standards proposed today ensure that the incremental risk from direct inhalation of carcinogenic stack emissions does not exceed 1×10^{-5}. The risks from the individual carcinogens are summed to develop an aggregate MEI risk. Thus, the aggregate risk to the MEI is calculated by predicting the maximum annual average ground level concentration for each carcinogenic emission, calculating the ratio of that concentration to the RSD (See Appendix B), and summing the ratios for all carcinogenic compounds. The sum cannot exceed 1 in order for the risk not to exceed 1×10^{-5}.[22]

We are proposing that a 1×10^{-5} lifetime incremental risk level is reasonable for this regulation because the MEI risk posed by coal and oil-fired boilers is generally in the range of 1×10^{-5}.[23]

The Agency specifically requests comment on whether aggregate population risk or cancer incidence (i.e., cancer incidents/year) should also be considered in developing the national emission limits and in the site-specific risk assessments under the various waivers proposed. Thus, both the risk to the MEI and increased cancer incidence could be considered. This approach could be more conservative than considering only MEI risk because, even if the "acceptable" MEI risk level were not exceeded, large population centers may be exposed to emissions such that the increased cancer incidence could be significant. An incremental cancer incidence in the range of 0.1 to 0.5 cancers per year could be considered significant. Based on public comment and further thought on how to implement this dual approach (i.e., considering both MEI risk and cancer incidence), the final rule could incorporate both approaches. Alternatively, EPA may provide guidance to the permit writer on when and how to consider cancer incidence on a case-by-case basis under authority of Section 3005(c) of HSWA.

D. Assumptions Used in the Risk Assessment

A number of assumptions, some conservative and others nonconservative, have been used in the risk assessment to simplify the analysis or to address issues where definitive data do not exist.

Conservative assumptions include the following:

- Individuals reside at the point of maximum annual average and maximum short-term ground level concentration (for HCl). Further, the risk estimates for carcinogens assume the individual resides at the point of maximum annual average concentration for a 70 year lifetime.
- Indoor air contains the same levels of pollutants as outdoor air.
- For noncarcinogenic health determinations, background exposure already amounts to 75% of the RfD. This includes other routes of exposure including ingestion and dermal. Thus, the boiler or industrial furnace is only allowed to contribute 25% of the RfD via direct inhalation. The only exception is lead where the allowed contribution is 10% of the NAAQS. We are allowing a lower contribution for lead because ambient lead levels in urban areas already represent a substantial portion (e.g., one third or more) of the lead NAAQS. In addition, the Agency is particularly concerned about the health risks from lead in light of health effects data available since the NAAQS was established. The Agency is currently reviewing the lead NAAQS to determine if it should be lowered.

Note.—We have not attempted to quantify indirect exposure through the food chain, ingestion of water contaminated by deposition, and dermal exposure because the methodology has not yet been developed and approved for use in assessing risk from combustion sources. We note, however, that allowing the source to contribute only 25% of the RfD accounts for indirect exposure by assuming a person is exposed to 75% of the RfD from other sources and other exposure pathways. (The Agency has developed such a methodology for application to waste combustion sources and the Agency's Science Advisory Board has reviewed this methodology. Assuming Agency-wide procedures are developed, a more detailed analysis may be applied to boilers and furnaces burning hazardous wastes.)

- Risks are considered both for pollutants that are known human carcinogens and those that are known animal carcinogens and therefore, are suspected human carcinogens.

Nonconservative assumptions include the following:

[20] Memo from Clara Chow thru Reva Rubenstein, Characterization and Assessment Division, EPA to Robert Holloway, Waste Management Division, EPA, entitled "Use of RfDs Versus TLVs for Health Criteria," January 13, 1987.

[21] Memo from Characterization and Assessment Division to Waste Management Division, October 2, 1986, interpreting results from Kirsch, V.H.; Drabke P. (1982), *Assessing the Biological Effects of Hydrogen Chloride*, Z. Gesamte Hyg. Ihre. Grenzgeb. 28:107–109.

[22] We note that the ground level concentrations of interest are the *off-site* concentrations. The risk posed by emissions on-site are more appropriately addressed as an occupational hazard by the Occupational Safety and Health Administration. Thus the Tier IV and low risk waste risk assessments are based on off-site ambient concentrations. EPA specifically requests comments, however, on whether on-site concentrations should be considered for facilities where people reside on-site (e.g., military bases, colleges and universities). (The Tier I–III standards are conservatively based on dispersion modeling that did not consider whether the maximum concentrations were located on-site or off-site.) We note further that the MEI concentration used for this regulation is more correctly the potential MEI concentration in that it represents the maximum annual average ground level concentration irrespective of whether a person actually resides at that location.

[23] Office of Air Quality Planning and Standards, EPA, *Coal and Oil Combustion Study, Summary and Results*, September 1986 Draft Report.

• Although emissions are complex mixtures, additive effects of threshold compounds and interactive effects of threshold or carcinogenic compounds have not been considered given the lack of information.

Note.—Additive effects of carcinogenic compounds are considered by summing the risks for all carcinogens to estimate the aggregate risk to the most exposed individual (MEI).

• Ecological effects (i.e., effects on plants and animals) have not been considered given the lack of information. Adverse effects on plants and animals may occur at doses lower than the levels that cause adverse effects in humans. (The Agency is also developing procedures and requesting Science Advisory Board review to consider ecological effects resulting from emissions from waste combustion facilities.)

III. Proposed Controls for Emissions of Toxic Organic Compounds

A. Hazard Posed by Combustion of Toxic Organic Compounds

The burning of hazardous waste containing toxic organic compounds (i.e., organic compounds listed in Appendix VIII of 40 CFR Part 261) under poor combustion conditions can result in substantial emissions of the original compounds which were not burned and compounds that result from the partial but incomplete combustion of constituents in the waste. The quantity of toxic organic compounds emitted depends on the concentration of the compounds in the waste, the waste firing rate (i.e., the percentage of total boiler or industrial furnace fuel provided by the hazardous waste), and the combustion conditions under which the waste is burned. The risk posed by the emissions depends on the toxicity of the compounds emitted, and the ambient levels to which persons are exposed. Hypothetical risk assessments show that under poor combustion conditions that achieve only 90 percent or 99.9 percent destruction efficiency of organic compounds, risks to the maximum exposed individual from unburned carcinogenic organics found in hazardous waste can result in increased lifetime cancer risks of 10^{-4}.[24]

[24] Engineering-Science. *Background Document for the Development of Regulations To Control the Burning of Hazardous Waste in Boilers and Industrial Furnaces.* Volume III. February 1987.

B. Basis for the DRE and CO Performance Standards for Toxic Organic Compounds

The Agency is proposing to control the emission of toxic organic compounds from boilers and industrial furnaces burning hazardous waste with two performance standards. A 99.99 percent destruction and removal efficiency (DRE) standard for principal organic hazardous constituents (POHCs) in the waste feed would ensure that constituents in the waste would not be emitted at levels that could pose significant risk in virtually all scenarios of which the Agency is aware.[25] In addition, flue gas carbon monoxide (CO) levels would be limited to ensure the device operates continuously at high combustion efficiency. Thus, when burning hazardous waste, these devices cannot operate under upset conditions, which could lead to significant emissions of products of incomplete combustion (PICs), typically evidenced by smoke emissions. The basis for these standards is discussed below.

1. *Results of Emissions Testing.* The Agency conducted field tests on 11 full-scale industrial boilers and 12 industrial furnaces. The test results indicate that:

• Boilers and industrial furnaces can be operated to achieve 99.99 percent DRE of POHCs considered difficult to destroy— carbon tetrachloride, chlorobenzene, trichloroethylene, and tetrachloroethylene.

• Boilers cofiring hazardous waste fuels with fossil fuels where the hazardous waste provides less than 50 percent of the boiler's fuel requirements can achieve 99.99 percent DRE of POHCs under a wide range of operating conditions (e.g., load changes, waste feed rate changes, excess air rate changes).

• When boilers and industrial furnaces are operated at high combustion efficiency, as evidenced by flue gas carbon monoxide (CO) levels of less than 100 ppm, DREs exceed 99.99 percent. Although the tests showed this relationship between CO and DRE, there was no direct correlation between CO (an indicator of combustion efficiency) and DRE. Devices clearly operating under poor combustion conditions, as evidenced, for example, by smoke emissions, still achieved 99.99 percent DRE. It appears that POHCs are immediately destroyed in the flame zone.

• Emissions of products of incomplete combustion (PICs) (i.e., quantitated Appendix VIII pollutants that are not POHCs) generally ranged from 0.5 to 5 times POHC emission rates.

• Emissions of PICs appeared generally to increase as combustion efficiency decreased as evidenced by increased flue gas CO levels.

• Emission of total unburned hydrocarbons (i.e., quantified Appendix VIII pollutants as well as unburned POHCs and other unburned organic compounds) clearly increase as combustion efficiency decreases as evidenced by an increase in flue gas CO levels.

2. *Overview of test program.* The boiler testing program had two primary purposes: (1) To determine if boilers operated under steady-state conditions to achieve maximum combustion efficiency could achieve 99.99 percent destruction and removal efficiency (DRE) of principal organic hazardous constituents (POHCs) in the waste; and (2) to determine how changes in operating conditions (e.g., waste firing rates, boiler load, excess flue gas oxygen levels) would affect the boiler's ability to achieve 99.99 percent DRE of POHCs—so-called nonsteady-state testing.

To meet the first objective (steady-state testing), EPA tested ten boilers that represented a wide variety of boiler types and sizes and that burned a variety of hazardous wastes and auxiliary fuels. The boilers ranged in type and size from a small 8 million Btu/hr fire tube boiler to a 250 million Btu/hr water tube boiler. The hazardous wastes burned ranged from methanol and toluene wastes with a 18,500 Btu/lb heating value similar to that of No. 6 fuel oil (and which was spiked with chlorinated organics for test purposes) to a methyl acetate waste with a heating value of less than half that of No. 6 fuel oil (and which also was spiked with chlorinated organics for test purposes). Waste firing rates ranged from 100 percent of the boiler's fuel requirements (for a waste having a heating value of 9,000 Btu/lb and containing 43 percent chlorine, by weight) to less than 10 percent of the boiler's fuel requirements on a heat input basis. Boiler auxiliary fuels (if any) were natural gas, No. 6 fuel oil, pulverized coal, and waste wood.

EPA conducted nonsteady-state testing on three boilers, one of which was also tested under steady-state conditions. One boiler was a 140 million Btu/hr capacity water tube boiler that could cofire hazardous waste with either natural gas or No. 6 fuel oil. This boiler was cofired with a methyl methacrylate distillation bottom with a heating value of about 11,500 Btu/lb that was spiked with carbon tetrachloride and

[25] Except that a 99.9999% DRE would be required for dioxin-containing listed waste.

TABLE 16.—OVERVIEW OF IMPACTS FOR SMALL ESTABLISHMENTS

[High risk waste scenario]

Establishment size (number of employees)	Total number of facilities	Total number of devices	Average cost of compliance/ cost of production per facility (percent)	Average cost of compliance/ value of shipments per facility (percent)	Average cost of compliance/ cash from operations per facility (percent)	Facilities experiencing significant impacts	
						(Number)	(Percent of total)
<10	193	193	0.24	0.29	1.13	0	0.00
10 to 49	28	33	8.21	6.53	32.38	14	48.87
50 to 99	38	42	0.91	1.73	0.98	1	2.62
100+	480	685	0.12	0.09	0.35	8	1.76
Totals	738	952	0.50	0.47	0.60	23	

In summary, the Agency believes that it is unlikely that small entities will experience significant impacts under the base case scenario. Although one facility does experience significant impacts under the high risk waste scenario, it does not represent a "substantial number" of the affected small entities. Therefore, the proposed rule does not meet the Regulatory Flexibility Act criteria requiring that a full Regulatory Flexibility Analysis be completed.

The Agency solicits public comments and additional data regarding the assumptions, costs, risks, and possible impacts identified in the regulatory analysis.

G. Paperwork Reduction Act

The information collection requirements in this proposed rule have been submitted for approval to the Office of Management and Budget (OMB) under the *Paperwork Reduction Act*, 44 U.S.C. 3501 *et seq.* An Information Collection Request document has been prepared by EPA (ICR No. 1361) and a copy may be obtained from Rick Westlund, Information Policy Branch; EPA; 401 M Street, SW.; (PM-223); Washington, DC 20460 or by calling (202) 382-2745. Submit comments on these requirements to EPA and: Office of Information and Regulatory Affairs; OMB; 726 Jackson Place, NW.; Washington, DC 20503 marked "Attention: Desk Officer for EPA." The final rule will respond to any OMB or public comments on the information collection requirements.

III. *List of Subjects in 40 CFR Parts 260, 261, 264, 265, 266, 270, and 271*

Administrative practices and procedures, Confidential business information, Hazardous materials transportation, Hazardous waste, Indian lands, Insurance, Intergovernmental relations, Packaging and containers, Penalties, Recycling, Reporting and recordkeeping requirements, Security measures, Security bonds, Water pollution control, Water supply.

Dated: April 17, 1987.

Lee M. Thomas,

Administrator.

APPENDIX A.—REFERENCE AIR CONCENTRATIONS (RAC'S) FOR THRESHOLD CONSTITUENTS

Constituent	Maximum annual average ground level concentration ($\mu g/m^3$)
Acetonitrile	10
Acetophenone	500
Acrolein	0.25
Aluminum phosphide	0.25
Allyl alcohol	5
Antimony	0.25
Barium	50
Barium cyanide	50
Benzidine	0.5×10^{-6}
Bis(2-ethylhexyl)phthalate	17
Bromomethane	0.7
Calcium cyanide	25
Carbon disulfide	200
Chlordane	5×10^{-3}
2-chloro-1,3-butadiene	2.5
Chloromethane	0.7
Chromium III	1,000
Copper cyanide	50
Cresols	100
Cyanide(free)	17
Cyanogen	25
Di-n-butyl phthalate	10
O-dichlorobenzene	10
Dichlorodifluoromethane	170
2,4-dichlorophenol	2.5
1,3-dichloropropene	0.25
Diethyl phthalate	10
Dimethoate	1.0
2,4-dinitrophenol	1.0
Diphenylamine	225
Endosulfan	0.01
Endrin	0.05
Flourine	50

APPENDIX A.—REFERENCE AIR CONCENTRATIONS (RAC'S) FOR THRESHOLD CONSTITUENTS—Continued

Constituent	Maximum annual average ground level concentration ($\mu g/m^3$)
Formaldehyde	2×10^{-3}
Formic acid	1700
Heptachlor	0.1
Hexachlorocyclopentadiene	5
Hydrocyanic acid	17
Hydrogen chloride	(1)
Hydrogen sulfide	2.5
Isobutyl alcohol	250
Lead	0.09
Mercury	1.7
Methomyl	23
Methoxychlor	50
Methly ethyl ketone	75
Methyl hydrazine	7×10^{-3}
Methyl parathion	2.5
Nickel	10
Nickel cyanide	17
Nitric oxide	25
Nitrobenzene	0.5
Pentachlorobenzene	1.7
Pentachlorophenol	25
Phenol	100
M-phenylenediamine	5
Phenylmercuric acetate	0.08
Phosphine	0.025
PCBs	2×10^{-4}
Potassium cyanide	50
Potassium silver cyanide	170
Pyridine	5
Selenious acid	2.5
Selenoures	5
Silver	5
Silver cyanide	100
Sodium cyanide	25
Strychnine	0.25
1,2,4,5-tetrachlorobenzene	0.25
2,3,7,8-tetrachlorodibenzo-p-dioxin	5×10^{-9}
2,3,7,8-tetrachlorophenol	10
Tetraethyl lead	1×10^{-4}
Thallic oxide	0.25

APPENDIX A.—REFERENCE AIR CONCENTRATIONS (RAC'S) FOR THRESHOLD CONSTITUENTS—Continued

Constituent	Maximum annual average ground level concentration ($\mu g/m^3$)
Thallium	500
Thallium (I) acetate	0.5
Thallium (I) carbonate	0.25
Thallium (I) chloride	0.5
Thallium (I) nitrate	0.5
Thallium selenite	0.5
Thallium (I) sulfate	0.5
Toluene	500
1,2,4-trichlorobenzene	17
Trichloromonofluoromethane	250
2,4,5-trichlorophenol	100
Vandium pentoxide	17
Vinyl chloride	0.05

[1] Maximum of 150 for three minute average.

APPENDIX B.—RISK SPECIFIC DOSES FOR CARCINOGENIC CONSTITUENTS AT 10^{-5} Risk Level

Constituent	Risk specific dose ($\mu g/m^3$)
Acrylamide	9×10^{-3}
Acrylonitrile	1×10^{-1}
Aldrin	2×10^{-3}
Aniline	1
Arsenic	2×10^{-3}
Benz(a)anthracene	1×10^{-2}
Benzene	1
Benzo(a)pyrene	3×10^{-3}
Beryllium	4×10^{-3}
Bis(2-chloroethyl)ether	3×10^{-2}
Bis(2-chloromethyl)ether	4×10^{-3}
Cadmium	6×10^{-3}
Carbon tetrachloride	7×10^{-1}
1-Chloro-2,3-epoxypropane	8
Chloroform	4×10^{-2}
Chloromethyl methyl ether	4×10^{-3}
Chromium (hexavalent)	8×10^{-4}
DDT	3×10^{-2}
Dibenz(a,h)anthracene	7×10^{-4}
1,2-Dibromo-e-chloropropane	2×10^{-3}
1,2-Dibromoethane	8×10^{-4}
1,4-Dichlorobenzene	2
1,2-Dichloroethane	4×10^{-1}
1,1-Dichloroethylene	2×10^{-1}
Dieldrin	2×10^{-3}
Diethylstilbestrol	7×10^{-6}
Dimethylnitrosamine	1×10^{-4}
2,4-Dinitrotoluene	1×10^{-1}
Dioxane	7
Ethylene oxide	1×10^{-1}
Hexachlorobenzene	2
Hexachlorobutadiene	5×10^{-1}
Hydrazine	3×10^{-3}
Hydrazine Sulfate	3×10^{-3}
3-Methylcholanthrene	4×10^{-3}

APPENDIX B.—RISK SPECIFIC DOSES FOR CARCINOGENIC CONSTITUENTS AT 10^{-5} Risk Level—Continued

Constituent	Risk specific dose ($\mu g/m^3$)
Methylene chloride	2
4,4-Methylene-bis-2-chloroaniline	2×10^{-1}
Nickel (carbonyl and Subsulfide)	3×10^{-2}
2-Nitropropane	4×10^{-3}
N-Nitroso-n-methylurea	1×10^{-4}
N-Nitrosopyrrolidine	2×10^{-2}
Pentachloronitrobenzene	1×10^{-1}
Pronamide	2
Reserpine	3×10^{-3}
1,1,2,2-Tetrachloroethane	2×10^{-2}
Tetrachloroethylene	21
Thiourea	2×10^{-2}
Trichloroethylene	8

Appendix C.—Example Tier I and Tier II Calculations

Example #1 (Tier I)

A 10 MM Btu/hr (heat input) boiler is burning hazardous waste at a rate of 150 lbs/hr along with 400 lbs/hr of heating oil. The boiler is located in flat terrain. The waste has a heating value of 10,000 Btu/lb and contains the metal concentrations:

Arsenic = 0.5 ppm
Cadmium = 1.0 ppm
Chromium = 0.4 ppm
Lead = 1.0 ppm

Question: Is the waste in compliance with Tier I standards?

For this case the following equation from proposed § 266.34–4(b)(3)(i)(B) applies:

$$(1)\ \frac{(As)}{3.9\times10^{-4}} + \frac{(Cd)}{9.8\times10^{-4}} + \frac{(Cr+6)}{1.4\times10^{-4}} < 1.0$$

Note.—For Tier I, all chromium in the waste is treated as hexavalent chromium (Cr + 6).

First (As), (Cd), and (Cr) in units of lb/MM Btu, must be determined for the waste using the following equation(s):

$$(M) = \frac{Cm\ (10^6\ Btu)(10^{-6}\ lbs/ppm)}{Hw}$$

which simplifies to:

$$(2)\ (M) = \frac{Cm}{Hw}$$

where:

(M) is the metal feedrate in the waste in lb/MM Btu.
Cm is the metal concentration in the waste in ppm.
Hw is the heat content of the waste in Btu/lb.

Therefore:

$$(As) = \frac{0.5}{10^4} = 5\times10^{-5}\ lb/MM\ Btu$$

$$(Cd) = \frac{1.0}{10^4} = 1\times10^{-4}\ lb/MM\ Btu$$

$$(Cr) = \frac{0.4}{10^4} = 4\times10^{-5}\ lb/MM\ Btu$$

Substituting in equation #1:

$$\frac{5\times10^{-5}}{3.9\times10^{-4}} + \frac{1\times10^{-4}}{9.8\times10^{-4}} + \frac{4\times10^{-5}}{1.4\times10^{-4}} =$$

$$0.13 + 0.10 + 0.28 = 0.52 < 1.0$$

Therefore, the facility is in compliance with Tier I standards for arsenic, cadmium, and chromium.

As for lead, using equation #2:

$$(Pb) = \frac{10}{10^4} = 1\times10^{-3}\ lb/MM\ Btu$$

From proposed § 266.34–4(b)(3)(i)(B), maximum lead levels are 1.6×10^{-2} lb/MM Btu. Therefore, the facility is in compliance with the all Tier I metal standards. Note: It is proposed that the specific levels for the metals will be fixed in the final permit based on the characteristics of the waste and equation #1.

November 18, 1988

Mr. Steve Smallwood, Director
Division of Air Resources Management
Florida Department of Environmental
Regulation
Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, FL 32399-2400

Re: MFM Industries, Inc.
Marion County - AP
Proposed Amendment for Soil Decontamination in Clay Dryer Permitted under AC42-113787

Dear Steve:

By this letter, I seek an amendment to MFM Industries, Inc. (MFM) permit AC42-113787. I request that the amendment allow the MFM clay dryer to process the remaining tonnage of creosote contaminated soil at Southern Wood Piedmont's Baldwin site. The creosote contaminated soil at the Baldwin site is, as defined by your Department and the Environmental Protection Agency, not hazardous waste. The amount of creosote contaminated soil at the Baldwin site is impossible to accurately estimate but probably is in the 10,000 ton range. The Baldwin site demands swift remediation in that it is under a Departmental consent order. This fact was made clear at a November 17 meeting of MFM representatives and Secretary Twatchmann, John Ruddell and yourself.

It is logical that MFM's permit be amended to allow the processing of this soil because MFM has already demonstrated the capacity to effectively thermally process this very same creosote contaminated soil. In July, MFM thermally processed approximately 1,700 tons of creosote contaminated soil from the Baldwin site. The results of that processing, discussed in detail below, demonstrate that MFM possesses the operational efficiency and effectiveness to thermally process such soil in a fashion that alleviates concern about toxic organics and metals.

During the processing period in July, emission measurements were conducted using the Modified Method 5 (MM5) sampling procedure and the samples were analyzed for 71 semi-volatile organic compounds, including several polynuclear aromatic (PNA)

compounds, and for six metals. Only 19 organic compounds, primarily PNA's associated with creosote, were actually detected; with emission rates ranging from less than 0.001 pounds per hour to approximately two pounds per hour. Total PNA emissions ranged from 4.7 to 8.4 pounds per hour. The emission rates of the metals ranged from less than 0.001 to 0.03 pounds per hour. The emission data from the July, 1988 tests are summarized in the three attached tables.

In the following paragraphs, the emission data will be used to provide the Department with reasonable assurance that excess emissions will not result from the further processing of creosote contaminated soil and that the environmental impact of these emissions will not result in unacceptable health-related risks to the general public. The elements of reasonable assurance that you summarized during our meeting with Secretary Twatchmann were related to:

- Annual emission increases of regulated compounds compared with the de minimis emission rate increases addressed in PSD regulations;

- The environmental impact of air toxics, including both organic compounds and metals; and,

- The minimization of conditions that could result in valid environmental complaints by neighbors of the plant.

The data summarized in Tables 2 and 3 demonstrate that the total emission rate of all organic compounds, during the processing of the creosote contaminated soil, ranged from 4.7 to 8.4 pounds per hour and averaged 6.6 pounds per hour. Even if this soil were to be processed 8,760 hours per year, the increase in organic compound emissions (VOC's) will be less than 30 tons per year. This is less than the 100 ton per year de minimis emission rate increase for organic compounds cited in Florida's PSD regulations (17-2.500, Table 500-2, F.A.C.). The emission rates of the metals, even if all metals are presumed to originate with the creosote contaminated soil, will range from less than one pound per year (mercury) to 260 pounds per year (zinc). These emission rates are also less than the applicable de minimis emission rate increases cited in 17-2.500, Table 500-2, F.A.C.

These data, based on emission measurements conducted on soil identical to what we are again requesting permission to process, should provide the Department with adequate assurance that

emission rate increases will not trigger a PSD review of this request.

As I related during our meeting with Secretary Twatchmann on November 17, we have just completed additional emission measurements at MFM while coal tar contaminated soil was being processed pursuant to approval granted by the Secretary in his letter to MFM dated September 14, 1988. The coal tar contamination was similar in nature to the creosote contaminated soil processed in July. Although the results of these tests will not be available for approximately 40-45 days (the time required for laboratory analysis of the samples), it is my professional opinion that the processing proceeded much more smoothly, process operating temperatures were more stable and higher and emission rates of organic compounds were even lower than those reported herein.

The second matter that you mentioned relative to reasonable assurance, was the environmental impact of organic compounds and metals. In the three attached Tables, I have shown the maximum expected annual concentrations of all compounds measured in the stack gas while creosote contaminated soil was being processed and have also listed Accepted Ambient Levels (AAL) for compounds for which AAL's have been established. The maximum annual concentrations were calculated using the procedures presented to your staff in late August and early September in support of our request to process the coal tar contaminated soil and are based on the assumptions that the dryer will be used to process soil 8,760 hours per year.

It should be recognized that the concept of using annual average exposure is consistent with the Department's approach to establishing AAL's for Air Toxics and the methodology proposed by EPA for evaluating exposures to toxic and carcinogenic compounds associated with the burning of hazardous waste derived fuels. It should also be recognized that MFM will be increasing the height of the stack on the clay dryer; thus, further reducing the ambient impact of the contaminants.

Even with the conservative assumptions that I made in compiling the information in the attached tables, the predicted annual impacts are well below acceptable ambient concentrations that have been reported for the metals and several of the organic compounds. For many of the organic compounds, I could find no reported acceptable ambient concentration. This is undoubtedly due to the fact that these compounds are not considered a serious health hazard as acceptable ambient levels have been developed for nearly all compounds that have known or suspected health effects.

The final matter that you addressed was related to the potential for odors; specifically odors that result in complaints from neighbors of the plant. During the processing of the coal tar contaminated soil this past week, I made several trips around the neighborhood of the plant and noticed no objectionable odors. To further reduce the potential for odors and valid environmental complaints from neighbors, MFM is planning to increase the height of the dryer stack to eliminate plume downwash and enhance plume dispersion.

I would like to reiterate the statement that I made during our meeting with Secretary Twatchmann; a statement that was also made in documentation to support our request to process the coal tar contaminated soil; i.e., MFM is proceeding with the design of a dryer tail gas treatment system to further reduce the emission rate of organic compounds resulting from the processing of contaminated soil. As the details of this system are finalized, they will be presented to your staff for review and approval. The operating conditions reported herein, while environmentally acceptable, will only be significantly improved.

We appreciate the opportunity to discuss our plans with you, and Secretary Twatchmann and John Ruddell and look forward to working with you and your staff on this project. We will be forwarding you a complete copy of the July, 1988 test report early next week and will provide any additional information that may be required to review this request.

Very Truly Yours,

John B. Koogler, Ph.D., P.E.

JBK/clm
Enclosures
cc: Secretary Dale Twatchmann
John Ruddell
Clair Fancy

TABLE 1

AMBIENT IMPACT OF METALS
DURING SOIL DECONTAMINATION

MFM INDUSTRIES, INC.
LOWELL, FLORIDA

July 15, 1988

Metal	Emission Rate (lb/hr)	Annual Impact (ug/m^3)	Acceptable Ambient Conc (ug/m^3)	Ratio: Impact / Accept. Conc
TOXIC METALS (1)				
Lead	0.00178	0.00011	0.09 (4)	0.001
Mercury	0.00005	<0.00001	1.70 (4)	<0.001
Chromium (2) (Trivalent)	0.00813	0.00051	1000 (4)	<0.001
Copper	0.00295	0.00019	4 (5)	<0.001
Zinc	0.03219	0.00203	0.03 (5)	0.068
SUSPECTED CARCINOGENS (3)				
Arsenic	0.00173	0.00011	0.0020 (4)	0.055
SUM OF RATIOS				0.055

(1) For toxic metals, the ratio of the predicted annual impact to the acceptable ambient concentration for each metal must be less than 1.0.

(2) Total chromium emission rate was 0.00813 lb/hr; all was assumed to be trivalent chromium for this analysis, based on the analysis of similar samples.

(3) For suspected carcinogens, the sum of the ratios of the predicted annual impact to the acceptable ambient concentration for each metal must be less than 1.0.

(4) EPA proposed Industrial Furnace Regulations, FR Vol 52, No. 87, 5/6/87, pg 17031-17032.

(5) NYDEC Air Guide-1, 7/86 printing.

TABLE 2

AMBIENT IMPACT OF PNA'S DURING
THERMAL SOIL PROCESSING (1)

MFM ENVIRONMENTAL - LOWELL, FLORIDA

Run No. 1 - 7/15/88

COMPOUND	EMISSION RATE (LB/HR)	MAX ANNUAL IMPACT (UG/M3)	ACCEPTABLE AMBIENT LEVEL (UG/M3)
Phenol	<0.006	<0.0004	10
Naphthalene	1.511	0.0952	167
2-methylnaphthalene	0.427	0.0269	-
Acenaphthylene	0.042	0.0026	-
Acenaphthene	0.019	0.0012	-
Dibenzofuran	0.509	0.0321	-
Fluorene	0.623	0.0392	-
Pentachlorophenol	<0.006	<0.0004	25
Phenanthrene	0.904	0.0569	-
Anthracene	0.186	0.0117	-
Fluoranthene	0.312	0.0197	-
Pyrene	0.131	0.0083	-
Benzo(a)anthracene	<0.006	<0.0004	0.01
Chrysene	<0.006	<0.0004	-
bis(2-Ethylhexyl)phthalate	<0.006	<0.0004	17
Benzo(b)fluoranthene	<0.006	<0.0004	-
Benzo(k)fluoranthene	<0.006	<0.0004	-
Benzo(a)pyrene	<0.006	<0.0004	0.003
Benzo(g,h,i)perylene	<0.006	<0.0004	-
Total PNA (2)	**4.718**	**0.2973 (1)** **1.1945 (3)**	**200**

(1) Annual average impact assuming 24 hour/day, 7 day/week and 52 weeks/year operation.
(2) Compounds phenol through benzo (g, h, i) perylene.
(3) 90th percentile 24-hour average impact.

TABLE 3

AMBIENT IMPACT OF PNA'S DURING
THERMAL SOIL PROCESSING (1)

MFM ENVIRONMENTAL - LOWELL, FLORIDA

Run No. 2 - 7/15/88

COMPOUND	EMISSION RATE (LB/HR)	MAX ANNUAL IMPACT (UG/M3)	ACCEPTABLE AMBIENT LEVEL (UG/M3)
Phenol	0.006	0.0004	10
Naphthalene	1.881	0.1185	167
2-methylnaphthalene	1.235	0.0778	-
Acenaphthylene	0.074	0.0047	-
Acenaphthene	0.104	0.0066	-
Dibenzofuran	1.316	0.0829	-
Fluorene	1.705	0.1074	-
Pentachlorophenol	0.053	0.0033	25
Phenanthrene	1.185	0.0746	-
Anthracene	0.602	0.0379	-
Fluoranthene	0.219	0.0138	-
Pyrene	0.054	0.0034	-
Benzo(a)anthracene	<0.001	<0.0001	0.01
Chrysene	<0.001	<0.0001	-
bis(2-Ethylhexyl)phthalate	<0.001	<0.0001	17
Benzo(b)fluoranthene	<0.001	<0.0001	-
Benzo(k)fluoranthene	<0.001	<0.0001	-
Benzo(a)pyrene	<0.001	<0.0001	0.003
Benzo(g,h,i)perylene	<0.001	<0.0001	-
Total PNA (2)	8.441	0.5318 (1) 2.1371 (3)	200

(1) Annual average impact assuming 24 hour/day, 7 day/week and 52 weeks/year operation.
(2) Compounds phenol through benzo (g, h, i) perylene.
(3) 90th percentile 24-hour average impact.

PM
11-14-88
Gainesville, FL

file copy

KOOGLER & ASSOCIATES
ENVIRONMENTAL SERVICES
4014 NW THIRTEENTH STREET
GAINESVILLE, FLORIDA 32609
904/377-5822 ▪ FAX 377-7158

KA 290-87-01

November 14, 1988

RECEIVED
NOV 15 1988
DER - BAQM

Mr. C. H. Fancy
Division of Air Resources Management
Florida Department of
Environmental Regulation
Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, FL 32399-2400

Subject: MFM Industries, Inc.
Marion County - AP
Soil Decontamination in Clay Dryer
Permitted under AC42-113787

Dear Clair:

By this letter, I would like to readdress the request that I have made on behalf of MFM Industries, Inc. (MFM). This is the request to permit the use of the MFM clay dryer for processing soils contaminated with hydrocarbon products. In a letter to you dated May 27, 1988 (copy attached), I requested that MFM be granted permission to use the dryer to process soils contaminated with hydrocarbon products so long as the conditions of your memo dated April 2, 1987, were met. This requested was amended by my letter to you of June 15, 1988 (copy attached). In this letter, I suggested that we use a procedure proposed by EPA to establish limits for the hydrocarbon products in the soil, in lieu of using the conditions stated in your April 2, 1987, memo. The procedure proposed by EPA is based on an impact analysis and was included in proposed regulations related to the burning of hazardous waste derived fuel (May 1987). My June 15, 1988 letter followed a meeting that we had in your office on June 13, 1988 to discuss the "impact analysis" alternative for establishing limits contaminants in soil fed to the MFM kiln, during which time, you indicated a conceptual approval of this procedure.

Subsequent to the above-referenced correspondence and our meeting in June 1988, MFM requested, and received, approval to thermally process soil contaminated with coal tar on a one-time basis. This approval was granted by letter dated September 14, 1988, from Mr. Twachtmann, Secretary of the Department. The limits on the feed rate of contaminated soil to the clay dryer suggested by MFM to support their request for this approval was based on the "impact analysis" procedure.

By this letter, I am restating our request of May 22, 1988, and June 15, 1988; i.e., that the MFM clay dryer be permitted to process soils contaminated with hydrocarbon products. The hydrocarbon products that might be in the contaminated soils that would be considered by MFM are listed in the attached Table. These compounds include chlorinated and non-chlorinated aliphatic hydrocarbons, some non-chlorinated aromatic hydrocarbons, as well as mixtures such as naphtha and Stoddard solvent.

The chlorinated compounds are included in the list of potential contaminants as the Department presently allows low levels of these compounds to be removed from contaminated groundwater by air stripping and the subsequent release of these compounds to the atmosphere with no control, as long as Acceptable Ambient Levels are not exceeded. Releasing these same chlorinated compounds from the MFM dryer stack as the result of thermally processing soil will be no different than releasing the compounds from an air stripper; again assuming that Acceptable Ambient Levels are not exceeded.

The maximum acceptable concentrations of these compounds in the contaminated soil (as listed in the attached Table) were determined by the air quality modeling procedures that were presented in my letter of June 15, 1988. This included modeling with the ISC-LT model, taking into consideration plume downwash and building-wake effects.

The maximum acceptable concentration of a contaminant in the soil (see attached Table) is the concentration that will result in an ambient concentration of one-half of the Acceptable Ambient Level for the particular compound, assuming no destruction or removal of the hydrocarbon product in the clay dryer. You will note from the attached Table that the acceptable concentrations of the contaminants in the soil range from 0.13 percent for tetrachloroethane to over 10 percent for several of the compounds. In all probability, the soils that MFM might process will contain concentrations of one or more of these compounds in the 100-1,000 milligram per kilogram range (0.01-0.10 percent). Another restriction that MFM would impose is that no contaminated soil will be classified as a hazardous waste.

This present request differs from my request of May 27, 1988, in that I am proposing the "impact analysis" procedure for establishing acceptable limits of soil contaminants rather than the conditions of your April 2, 1987, memo and it differs from my June 15, 1988, request in that the June request assumed a significant destruction efficiency for the organic compounds in the dryer. The present request assumes no destruct or removal and hence, is much more conservative. It should also be recognized that the impact analysis on which the acceptable concentrations of contaminants in soil is based, assumes that the contaminated soil will be processed 24-hours a day, 365 days per year. This is another degree of conservatism.

In framing this request, I have attempted to address the issues that were raised during the review of MFM's request to process coal tar contaminated soil in early September 1988. In doing so, I have attempted to minimize any additional information that you may require. We would appreciate your review of this matter and will be more than happy to provide additional information should it be required.

Very truly yours,

KOOGLER & ASSOCIATES

John B. Koogler, Ph.D, P.E.

JBK:wa
Enc.

cc: Mr. David Kibler, MFM Industries, Inc.

copied: Mike Harley
C. Collins, EF Dist.
CHF/BT

MFM ENVIRONMENTAL

Contaminant	AAL (1) (ug/m3)	Acceptable Conc (2) in Soil (mg/kg)
Tetrachloroethylene	1,116	63,200
Trichloroethylene	900	51,000
1,1,1-trichloroethane	38,000	>100,000
1,1,2-trichloroethane	150	8,500
Methylene chloride	1,167	66,000
Methyl chloride	2,100	>100,000
Tetrachloroethane	23	1,300
Dichloroethylene	67	3,800
Dichloromethane	1,167	66,000
Carbon tetrachloride	100	5,600
Methyl isobutyl ketone	683	38,700
Methyl ethyl ketone	1,967	>100,000
Xylene	1,450	82,000
Acetone	35,600	>100,000
Methanol	867	49,000
Toluene	7,500	>100,000
Isopropanol	3,267	>100,000
Naphtha (mineral spirits)	1,333	75,500
Stoddards solvent	1,750	99,000
Turpentine	11,200	>100,000

(1) AAL - Acceptable Ambient Level from NYDEC Air Guide-1 (or TLV/300); an annual average concentration.

(2) The concentration of a contaminant in the soil that will result in a maximum ambient concentration of the contaminant that is one-half of the AAL. Modeling is based on the ISC-LT with stack-downwash and building-wake effect and assumes no DRE for the contaminate in the kiln or baghouse.

KOOGLER & ASSOCIATES, *Environmental Services*
4014 N.W. 13th Street • Gainesville, Florida 32609 • 904/377-5822

KA 290-87-01

May 27, 1988

Mr. C.H. Fancy
Deputy Chief
Bureau of Air Quality Management
Florida Department
of Environmental Regulation
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

Subject: Mid-Florida Mining Industries, Inc.
Marion County-AP
Soil Decontamination in Clay Dryer
Covered by Permit AC42-113787

Dear Clair:

Confirming our telephone conversation of this date, and following-up a discussion that Jim Kleekamp of Mid-Florida Mining and I had with you during a recent meeting in Tallahassee, Mid-Florida Mining is interested in using the clay dryer permitted by Air Permit AC42-113787 to decontaminate soils contaminated with hydrocarbon products other than petroleum products. By letters dated June 12, 1987 and March 24, 1988, your office approved the use of the clay dryer for decontaminating soils contained with petroleum products, so long as all of the conditions in your memo dated April 2, 1987 are met. Basically, this memo states that a plant's permitted emission limiting standard for all pollutants must be satisfied and that the petroleum products that contaminated the soil must meet all of the on-specifications of used oil criteria, except for flashpoint.

The hydrocarbon products that will be contaminating the soil that Mid-Florida Mining is interested in decontaminating will satisfy the criteria for on-specification used oil, except for flashpoint, and the decontamination of the soil will not cause any of the permitted emission limiting standards for the dryer to be exceeded. None of the contaminated soil will be listed as hazardous or toxic by 40CFR261.

The decontamination of soils contaminated with hydrocarbon products in accordance with the conditions outlined in the above paragraph will not alter any of the existing conditions in Permit AC42-113787, except for the fact that the term "petroleum products" (referring to the soil contaminant) will have to be changed to "hydrocarbon products" in several of the conditions. In the following paragraphs, I will review the specific conditions added to the subject permit by Department letters dated June 12, 1987 and March 24, 1988, allowing the dryer to be used for soil decontamination, and suggest amendments to these conditions.

SPECIFIC CONDITION NO. 5 - Added by Department Letter dated March 24, 1988

No change required.

SPECIFIC CONDITION NO. 21 - Added by Department Letter dated June 12, 1987

Change the term petroleum products to hydrocarbon products. This condition presently references your memo dated April 2, 1987, requiring the contaminating material in the soils to satisfy the criteria for on-specification used oil, except for flashpoint.

SPECIFIC CONDITION NO. 22 - Added by Department Letter dated June 12, 1987

Change the term petroleum products to hydrocarbon products. The remaining requirements of this condition are acceptable.

SPECIFIC CONDITION NO. 23 - Added by Department Letter dated March 24, 1988

No change required.

SPECIFIC CONDITION NO. 24 - Added by Department Letter dated March 24, 1988

Change the term petroleum products to hydrocarbon products in two places. The other requirements of the condition are acceptable.

SPECIFIC CONDITION NO. 25 - Added by Department Letter dated March 24, 1988

No change required.

SPECIFIC CONDITION NO. 26 - Added by Department Letter dated June 12, 1987

No change required.

SPECIFIC CONDITION NO. 27 - Added by Department Letter dated June 12, 1987

Change the term petroleum products to hydrocarbon products. The other requirements of this condition are acceptable.

SPECIFIC CONDITION NO. 28 - Added by Department Letter dated March 24, 1988

Change the term petroleum products to hydrocarbon products. The other requirements of this condition are acceptable.

We appreciate your review of this request and would like to have a decision as soon as practically possible. Mid-Florida Mining has had several opportunities to decontaminate soils containing hydrocarbon products and is presently pursuing a potential project that will require a commitment in the very near future.

Your consideration and prompt action on this matter will be very much appreciated.

Very truly yours,

KOOGLER & ASSOCIATES

John B. Koogler, Ph.D, P.E.

JBK:mab

cc: Mr. James B. Kleekamp, Mid-Florida Mining
Mr. David Kibbler, Mid-Florida Mining
Mr. Tony Trippy, Mid-Florida Mining

KOOGLER & ASSOCIATES, *Environmental Services*
4014 N.W. 13th Street • Gainesville, Florida 32609 • 904/377-5822

KA 190-87-01

June 15, 1988

Mr. C.H. Fancy
Deputy Chief
Bureau of Air Quality Management
Florida Department
of Environmental Regulation
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

Subject: Mid-Florida Mining Company, Inc.
Marion County-AP
Soil Decontamination in Clay Dryer
Permitted by Permit AC42-113787

Dear Clair:

In accordance with the discussion that you, Jim Kleekamp, Tony Trippi and I had in your office on June 13, 1988, I am transmitting herewith, information that will support a request by Mid-Florida Mining Company, Inc. (MFM) to amend the conditions of the subject air permit that currently allow the clay dryer to be used to decontaminate soils.

By letter dated May 27, 1988 (copy attached) I requested, on behalf of MFM, that the subject permit be amended to allow soils contaminated with hydrocarbon products to be decontaminated in the subject clay dryer. The current permit conditions allow only soils contaminated with petroleum products to be decontaminated in the dryer. In that letter I stated that the hydrocarbon products that would contaminate the soils that MFM is interested in decontaminating would satisfy the criteria for on-specification used oil, except for flashpoint. By this letter, and in accordance with our meeting of June 13, 1988, I am requesting that the subject air permit be amended to allow the MFM clay dryer to be used to decontaminate soils contaminated with hydrocarbon products that may exceed some or all of the limits established for on-specification used oil.

The various policy memos issued by the Department that deal with the decontamination of soils in dryers and kilns appear to be based on used oil regulations and/or the regulations that EPA proposed for burning hazardous waste derived fuels in industrial furnaces. The latter regulations were proposed in May, 1987 and have since been withdrawn. The amendment that MFM is now proposing to the subject permit is also based upon a concept

proposed in the referenced EPA regulations. This is the concept of setting emission limits or limits on the amount of materials input to a dryer such that the limits will assure that the concentrations of these materials in the ambient air will not exceed acceptable levels. This concept takes into consideration the destruction/removal efficiency or the control efficiency of a specific facility and it also takes into consideration the site-specific dispersion characteristics of the facility.

For the MFM clay dryer, I have run the ISC-LT Air Quality Model, assuming both stack-tip downwash and taking into consideration building-wake effects. Receptors were established in concentric rings around the dryer at distances ranging from 0.1 to 5.0 kilometers from the dryer. The model was run with an arbitrary emission rate of 10.0 grams per second (79.4 pounds per hour). The maximum annual impact under these conditions was found to be 11.66 micrograms per cubic meter at a distance of 100 meters from the dryer.

In accordance with our discussion on June 13, 1988, I reviewed the New York Department of Environmental Conservation Air Guide-1 for the acceptable ambient levels of several compounds that might be discharged from the stack of the MFM clay dryer. The compounds include several metals, hydrogen chloride and several organic compounds as listed on Page 1 of 6 of the attached calculations. The acceptable ambient levels (maximum ambient concentrations acceptable over an annual period) were selected from the 1985-86 edition of Air Guide-1, as this was the most recent edition of this document that I have available.

Control efficiencies or destruction/removal efficiencies for metals, hydrogen chloride and organic compounds were based upon the results of a trial burn conducted by an EPA contractor at MFM in February 1984. A copy of this test report is being forwarded to you under separate cover. The results of the trial burn demonstrated that less than 10 percent of the metals fired to the kiln in the fuel were discharged in the stack gas; less than 33 percent of the HCl fired to the kiln in the fuel was discharged in the stack gas and less than 0.1 percent of the organic constituents fired to the kiln in the fuel were discharged in the stack gas. The stated control efficiencies and the destruction/removal efficiencies are very conservative, as you will note when you review the complete report. It should also be noted that control and destruction/removal efficiencies for constituents in the soil are expected to be at least as great as for these same constituents in the fuel.

Based upon the air quality modeling that I conducted, the acceptable ambient levels for the several constituents that might be discharged from the MFM clay dryer and the control or destruction/removal efficiencies for

organic and inorganic compounds, I calculated maximum acceptable levels of various constituents that could be present in soil decontaminated in the MFM clay dryer. It should be noted that, in accordance with your suggestion, I reduced the acceptable ambient levels in the NYDEC Air Guide-1 by 50 percent when making these calculations.

The calculations that I referenced are documented in the attachment to this letter. The assumption was made that the kiln would be used to decontaminate soil at the rate of 30 tons per hour. When operating at this rate, the kiln will be fired with up to 245 gallons per hour of fuel (in accordance with current permit conditions). For purposes of these calculations, it was assumed that the typical maximum lead content of the fuel will be 500 ppm, the typical maximum concentration of any other metal in the fuel will be 200 ppm, the typical maximum halogen (chloride) concentration in the fuel will be 4000 ppm and the typical maximum concentration of any organic compound of concern in the fuel will be 1000 ppm. The calculations demonstrate that under these assumed conditions, the soil that is decontaminated in the MFM clay dryer can have a lead concentration of up to 40 ppm, a concentration of any other metal of up to 90 ppm, a chloride concentration of up to 24000 ppm and a concentration of critical organic compounds of up to 23000 ppm.

The matter of the chloride concentration in the contaminated soil was also pursued, at your suggestion, on the basis of the contaminating hydrocarbon products containing a maximum of 4000 ppm halogens. Following our meeting on June 13th, we contacted John Gentry with the Department's Bureau of Operations, regarding the porosity of typical Florida soils. Mr. Gentry stated that a typical Florida soil would have a porosity of 35-45 percent and that it could be assumed that all of the pore space would be filled with a hydrocarbon product. Based upon these conditions, it has been calculated (see the attachment) that the maximum chloride concentration of the contaminated soil will be in the range of 900-1000 ppm.

Since soils with up to 24000 ppm chlorides can be decontaminated without exceeding one-half of the acceptable ambient level, it is proposed that MFM be permitted to decontaminate soils containing up to 2000 ppm chlorides, so long as the contaminated soils are not classified as a hazardous waste.

In reviewing the attached calculations, it will be noted that the concentration limits for metals in the contaminated soil (other than lead) and the concentration limits for organic compounds in contaminated soil are based upon the metals (cadmium and hexavalent chromium) and the organic compound (vinyl chloride) having the lowest acceptable ambient level for each category of compounds. The concentration limits for other metals and organic compounds in the soils could be higher than the 90 ppm metals limit

and the 23000 ppm organic compound limit.

For simplicity of amending the subject permit, it is suggested that MFM be allowed to decontaminate soils containing up to 40 ppm lead, up to 90 ppm of any other metal and up to 2000 ppm halogens reported as chlorides. It is suggested that no limit be established for specific organic compounds, as it appears the destruction/removal efficiency of the clay dryer is such that acceptable ambient limits for organic compounds will not be approached. It is further suggested that the permit be amended to state that during the decontamination of such soils, the fuel firing rate to the kiln will not exceed 245 gallons per hour (the current permitted rate) and that a typical maximum concentration of lead in the fuel will be 500 ppm, a typical maximum concentration of other metal in the fuel will be 200 ppm and that a typical maximum concentration of halogens (reported as chlorides) in the fuel will be 4000 ppm.

Your review of this request and a decision on the matter at the earliest possible time will be very much appreciated. If I can clarify any information that I have provided herein or if I can provide you with additional information to expedite your review and approval of this matter, please do not hesitate to contact me.

Very truly yours,

KOOGLER & ASSOCIATES

John B. Koogler, Ph.D, P.E.

JBK:mab

cc: Mr. David Kibler
Mr. Jim Kleekamp
Mr. Tony Trippi

12/16/88 11:52 ☎ 904 377 7158 KOOGLER & ASSOC. 01

KA LOGO

RECEIVED
DEC 16 1988
DER-BAQM

FAX TRANSMITTAL FORM

TO: Mr. Mike Harley
FDER

FROM: John Koogler
K+A

SENT BY: M. Beldock

DATE: 12/16/88

FAX PHONE: 904-377-7158

The text being transmitted consists of 1 pages
PLUS this one.

REMARKS:

See Dale on this.

Dunbar –

Claude Kirk — 681-6855 X214

— Smallwood – air

David Kibler KMK Ocala

1330

Whit Palmer – Ocala

MFM

Burn dirt – purify petrochemicals

Dr. Quisby formerly ESE

also doing coal tars + creosotes

We know about them

Want to do it full time

Application coming

Dukmajian –

Waste Mgmt. big incin. in Mexico

So they need out

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DER - BAQM

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Put your address in the "RETURN TO" Space on the reverse side. Failure to do this will prevent this card from being returned to you. The return receipt fee will provide you the name of the person delivered to and the date of delivery. For additional fees the following services are available. Consult postmaster for fees and check box(es) for additional service(s) requested.

1. ☐ Show to whom delivered, date, and addressee's address. †*(Extra charge)*†
2. ☐ Restricted Delivery †*(Extra charge)*†

3. Article Addressed to:	4. Article Number
Mr. David B. Kibler IV Executive Director MFM Environmental, Inc. 3300 Southwest 34th Avenue Suite 152 Ocala, FL 32674	P 274 007 492
	Type of Service: ☐ Registered ☐ Insured ☒ Certified ☐ COD ☐ Express Mail
	Always obtain signature of addressee or agent and DATE DELIVERED.
5. Signature – Addressee X J. C. Williams	8. Addressee's Address *(ONLY if requested and fee paid)*
6. Signature – Agent X	
7. Date of Delivery 10/31	

PS Form **3811**, Mar. 1987 ★ U.S.G.P.O. 1987-178-268 **DOMESTIC RETURN RECEIPT**

P 274 007 492

RECEIPT FOR CERTIFIED MAIL

NO INSURANCE COVERAGE PROVIDED
NOT FOR INTERNATIONAL MAIL
(See Reverse)

Sent to Mr. David B. Kibler IV, MFM	
Street and No. 3300 S.W. 34th Aven, Suite Environmental 152	
P.O., State and ZIP Code Ocala, FL 32674	
Postage	$
Certified Fee	
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt showing to whom and Date Delivered	
Return Receipt showing to whom, Date, and Address of Delivery	
TOTAL Postage and Fees	$
Postmark or Date Mailed: 10-28-88 Permit: AC 42-113787	

PS Form 3800, June 1985 ☆ U.S.G.P.O. 1985-480-794

Florida Department of Environmental Regulation

Twin Towers Office Bldg. • 2600 Blair Stone Road • Tallahassee, Florida 32399-2400

Bob Martinez, Governor Dale Twachtmann, Secretary John Shearer, Assistant Secretary

October 28, 1988

CERTIFIED MAIL-RETURN RECEIPT REQUESTED

Mr. David B. Kibler IV
Executive Director
MFM Environmental, Inc.
3300 Southwest 34th Avenue
Suite 152
Ocala, Florida 32674

Dear Mr. Kibler:

Enclosed are documents that you furnished to us at our meeting of August 12, 1988. We are returning these documents because you indicated that they were of a sensitive nature. Since the one-time only amendment to construction permit No. AC 42-113787, has been issued we have no further reason to retain these documents. We do ask that you maintain this information in a file which can be made available to the Department should the need for further examination arise. Thank you for making this information available to assist in the review of that request.

Please call Mr. Bill Thomas at (904) 488-1344 or write to me at the above address, if we can be of assistance.

Sincerely,

C. H. Fancy, P.E.
Deputy Bureau Chief
Bureau of Air Quality
Management

mdh

cc: John B. Koogler, P.E.
Charles Collins

SENDER: Complete items 1 and 2 when additional services are desired, and complete items 3 and 4.

Put your address in the "RETURN TO" Space on the reverse side. Failure to do this will prevent this card from being returned to you. The return receipt fee will provide you the name of the person delivered to and the date of delivery. For additional fees the following services are available. Consult postmaster for fees and check box(es) for additional service(s) requested.

1. ☒ Show to whom delivered, date, and addressee's address. *†(Extra charge)†*
2. ☐ Restricted Delivery *†(Extra charge)†*

3. Article Addressed to:	4. Article Number
Mr. David Kibler, Exec. Director MFM Environmental Inc. Suite 152 3300 Southwest 34th Avenue Ocala, FL 32674	P 274 007 453
	Type of Service: ☐ Registered ☐ Insured ☒ Certified ☐ COD ☐ Express Mail
	Always obtain signature of addressee or agent and DATE DELIVERED.
5. Signature – Addressee X Karen Kibler	8. Addressee's Address *(ONLY if requested and fee paid)*
6. Signature – Agent X	
7. Date of Delivery 9/19/88	

PS Form **3811**, Mar. 1987 ★ U.S.G.P.O. 1987-178-268 **DOMESTIC RETURN RECEIPT**

P 274 007 453

RECEIPT FOR CERTIFIED MAIL

NO INSURANCE COVERAGE PROVIDED
NOT FOR INTERNATIONAL MAIL
(See Reverse)

Sent to Mr. David Kibler, MFM Env.	
Street and No. 3300 S.W. 34th Ave., Ste. 152	
P.O., State and ZIP Code Ocala, FL 32674	
Postage	$
Certified Fee	
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt showing to whom and Date Delivered	
Return Receipt showing to whom, Date, and Address of Delivery	
TOTAL Postage and Fees	$
Postmark or Date Mailed: 9-16-88 Permit: AC 42-113787	

PS Form 3800, June 1985 ★ U.S.G.P.O. 1985-480-794

Florida Department of Environmental Regulation

Twin Towers Office Bldg. ● 2600 Blair Stone Road ● Tallahassee, Florida 32399-2400

Bob Martinez, Governor Dale Twachtmann, Secretary John Shearer, Assistant Secretary

September 14, 1988

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

Mr. David Kibler, Executive Director
MFM Environmental Inc.
Suite 152
3300 Southwest 34th Avenue
Ocala, Florida 32674

Dear Mr. Kibler:

Re: One-Time Only Amendment to AC 42-113787 Giving Authorization to Conduct the Testing Required to Design An Efficient Flue Gas Incineration Device for the Kiln at MFM Environmental Inc.

The Department has reviewed the information that you provided at our meeting of August 12, 1988. We have also considered our legal authority to allow you to conduct the requested test. Paragraph 403.061(15), F.S. authorizes the Department to consult with any person proposing to construct any pollution control device. Paragraph 403.061(16), F.S. authorizes the Department to encourage voluntary cooperation by persons in order to achieve the purposes of the state environmental control act. Paragraph 403.061(18), F.S. authorizes the Department to encourage and conduct studies, investigations, and research relating to the causes and control of pollution. FAC Chapter 17-2.250(5) authorizes the Department to consider variations in industrial equipment and make allowances for excess emissions that provide practical regulatory controls consistent with the public interest.

Pursuant to the provisions of Paragraphs 403.061(15), (16), and (18), F.S. and FAC Rule 17-2.250(5), you are hereby authorized to decontaminate 1300 tons of soil contaminated with up to 5% coal tar on a one-time basis. The purpose of this activity is to obtain the data needed to design an afterburner capable of achieving maximum destruction of VOCs and halogenated compounds. The completion of this project will enable MFM Environmental Inc. to utilize the kiln to minimize potential contamination of subsurface waters and reduce air emissions after obtaining the appropriate construction and operation permits. The decontamination shall be conducted pursuant to the following conditions:

1. The soil shall be decontaminated during a 5-day period beginning on a Monday and ending on a Friday. The permittee must contact the Department's Central Florida District office, the Bureau of Air Quality Management, and the Bureau of Waste Cleanup at least 5 days prior to the commencement of the trial burn.

2. The soil to be decontaminated shall be that shown on the attached Resource Recovery Mid South, Inc. material characterization sheet for Suffolk Gas (Foot Hill Street) dated August 3, 1988, in Attachments 2 and 8. The soil to be decontaminated shall not be of such a character that it would be classified as a hazardous waste.

3. The fuel specifications and maximum hourly fuel input rate shall not exceed that requested in the last paragraph of page 3 of Attachment 6 to this letter. The maximum soil processing rates shall not exceed 25 tons per hour. The fuel burned during soil decontamination shall also comply with the specifications of the referenced permit.

4. The testing and decontamination shall be conducted under the direct supervision and responsible charge of a professional engineer registered in Florida. The testing and decontamination shall cease if conditions of night-time calm, twilight calm, or downwash persist for two consecutive hours. Operations shall cease for four hours if windspeed above 10 miles per hour perists from one direction (plus or minus 10 degrees) for two consecutive hours. This testing and decontamination shall not result in the release of objectionable odors and steps shall be taken to minimize visible emissions to the maximum practical extent. The testing and decontamination shall be conducted in such a manner as to minimize emissions of the polynuclear aromatic hydrocarbon compounds, anthracene, benzo-a-pyrene, phenanthrene, acridine, chrysene, pyrene, fluorene, acenaphthene, and methylnaphthene; and, to insure that emissions of these compounds do not result in maximum 8-hour ambient air concentrations in excess of 200 ug/m^3.

5. Testing and decontamination shall immediately cease upon the occurrence of a valid environmental complaint by a citizen or other party, or a nuisance or danger to public health or welfare.

6. The professional engineer registered in Florida and in responsible charge pursuant to Specific Condition 4 of this letter shall sample air emissions, contaminated soil, and decontaminated soil pursuant to appropriate EPA and Department methods.

7. MFM Environmental Inc. shall provide the Department's Bureau of Air Quality Management, the Bureau of Waste Cleanup, and the Central Florida District Office with copies of the test reports within 60 days after the completion of the emission testing.

8. Any and all subsequent decontamination of soils not specifically authorized by air construction permit AC 42-113787 as it existed prior to this amendment is prohibited. MFM Environmental Inc. shall apply for and obtain air construction permits from the FDER prior to the subsequent decontamination of soils not specifically authorized by air construction permit AC 42-113787 as it existed prior to this amendment.

Attachments:

1. Letter from J. B. Koogler to FDER received September 1, 1988.
2. Letter from D. B. Kibler to FDER dated August 31, 1988.
4. Letter from J. B. Koogler to FDER received June 21, 1988.
5. Letter from J. B. Koogler to FDER received June 17, 1988.
6. Letter from J. B. Koogler to FDER received June 16, 1988.
7. FAX from J. B. Koogler to D. B. Kibler sent September 2, 1988.
8. FAX from M. H. Gordon to FDER sent September 1, 1988.
9. FAX from J. B. Koogler to FDER sent August 31, 1988.
10. FAX from J. B. Koogler to FDER sent September 8, 1988.

The FDER has relied upon the information and presentations, both written and verbal, of MFM Environmental Inc. and its professional engineer registered in Florida in the issuance of this one-time only amendment to permit AC 42-113787.

A copy of this letter and its attachments shall be attached to the air construction permit AC 42-113787.

Sincerely,

Dale Twachtmann
Secretary

DT/mh

cc: J. Koogler, P.E.
C. Collins
J. Brown

State of Florida
DEPARTMENT OF ENVIRONMENTAL REGULATION

For Routing To Other Than The Addressee	
To:	Location:
To:	Location:
To:	Location:
From:	Date:

Interoffice Memorandum

TO: Dale Twachtmann

FROM: Steve Smallwood

SUBJ: Approval of a Permit Amendment for Soil Decontamination at MFM Environmental Inc.
State Construction Permit Number: AC 42-113787

DATE: September 14, 1988

Attached for your approval and signature is a permit amendment prepared by Central Air Permitting for the above mentioned company to perform a one-time only trial decontamination of soil in order to develop the parameters needed to design improved air emission control equipment. Once the appropriate equipment has been designed the company can then apply for construction permits to install the equipment and decontaminate soils on a regular basis. The project is located in Lowell, Marion County, Florida.

Even though this request is not subject to the 90-day clock, we are endeavoring to cooperate with the permittee by allowing the testing to be conducted expeditiously.

I recommend your approval and signature.

SS/mh

attachments

Please call
Patty Adams
when signed
4-1344

State of Florida
DEPARTMENT OF ENVIRONMENTAL REGULATION

For Routing To Other Than The Addressee	
To _____	Location _____
To _____	Location _____
To _____	Location _____
From _____	Date: _____

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SS/mh

attachments

KOOGLER & ASSOCIATES, Environmental Services
4014 N.W. 13th Street • Gainesville, Florida 32609 • 904/377-5822

FAX TRANSMITTAL FORM

TO: Mike Harley
DER
290-88-01

FROM: John Koogler

SENT BY: Marion Beldock
DATE: 9/8/88
FAX PHONE: 904-377-7158

The text being transmitted consists of 8 pages PLUS this one.

Faxed to Mike [illegible]
9/8/88

KOOGLER & ASSOCIATES
Environmental Services
904/377-5822

JOB MFM Environmental
SHEET NO. 1 OF 1
CALCULATED BY JJK DATE 9/8/88
CHECKED BY ____ DATE ____
SCALE ____

Soil Processing Impact Analysis
MFM Environmental
Lawell, Florida

Soil Processing Rate - 25 tph
CoalTar Volatile Emission Rate - 62.8 lb/hr (See data submitted 9/2/88 by KBA)

Model - ISC-ST
Met data - Orlando Fl 1974-1978
Receptor Locations - 3 receptor rings of 36 receptors each at 100, 200 and 300 meters from plant
Modeled emission rate - 10.0 g/s* (79.4 lb/hr)

* Impacts must be corrected by multiplying by ratio of actual emission rate to modeled emission rate; or by 62.8/79.4

Impact Analysis
Select 90th percentile impact for each modeled year rather than 2nd highest impact, as the soil processing will be a one-time event occurring during a 5 day period.

Year	Correct Impact
1974	12.3 $\mu g/m^3$
1975	12.6
1976	12.9
1977	13.9
1978	15.9

TLV for coal tar volatiles (all volatiles collectively) - 200 $\mu g/m^3$ (0.2 mg/m^3)

Ratio of Max Impact/TLV = 15.9/200 = 0.08
(or 1/12.6 x TLV)

*** MID FLORIDA MINING CO., CONC. RUN

CALCULATE (CONCENTRATION=1,DEPOSITION=2)	ISW(1) = 1
RECEPTOR GRID SYSTEM (RECTANGULAR=1 OR 3, POLAR=2 OR 4)	ISW(2) = 4
DISCRETE RECEPTOR SYSTEM (RECTANGULAR=1,POLAR=2)	ISW(3) = 1
TERRAIN ELEVATIONS ARE READ (YES=1,NO=0)	ISW(4) = 0
CALCULATIONS ARE WRITTEN TO TAPE (YES=1,NO=0)	ISW(5) = 0
LIST ALL INPUT DATA (NO=0,YES=1,MET DATA ALSO=2)	ISW(6) = 1
COMPUTE AVERAGE CONCENTRATION (OR TOTAL DEPOSITION)	
WITH THE FOLLOWING TIME PERIODS:	
HOURLY (YES=1,NO=0)	ISW(7) = 0
2-HOUR (YES=1,NO=0)	ISW(8) = 0
3-HOUR (YES=1,NO=0)	ISW(9) = 0
4-HOUR (YES=1,NO=0)	ISW(10) = 0
6-HOUR (YES=1,NO=0)	ISW(11) = 0
8-HOUR (YES=1,NO=0)	ISW(12) = 0
12-HOUR (YES=1,NO=0)	ISW(13) = 0
24-HOUR (YES=1,NO=0)	ISW(14) = 1
PRINT 'N'-DAY TABLE(S) (YES=1,NO=0)	ISW(15) = 1
PRINT THE FOLLOWING TYPES OF TABLES WHOSE TIME PERIODS ARE	
SPECIFIED BY ISW(7) THROUGH ISW(14):	
DAILY TABLES (YES=1,NO=0)	ISW(16) = 0
HIGHEST & SECOND HIGHEST TABLES (YES=1,NO=0)	ISW(17) = 1
MAXIMUM 50 TABLES (YES=1,NO=0)	ISW(18) = 1
METEOROLOGICAL DATA INPUT METHOD (PRE-PROCESSED=1,CARD=2)	ISW(19) = 1
RURAL-URBAN OPTION (RU.=0,UR. MODE 1=1,UR. MODE 2=2,UR. MODE 3=3)	ISW(20) = 0
WIND PROFILE EXPONENT VALUES (DEFAULTS=1,USER ENTERS=2,3)	ISW(21) = 1
VERTICAL POT. TEMP. GRADIENT VALUES (DEFAULTS=1,USER ENTERS=2,3)	ISW(22) = 1
SCALE EMISSION RATES FOR ALL SOURCES (NO=0,YES>0)	ISW(23) = 0
PROGRAM CALCULATES FINAL PLUME RISE ONLY (YES=1,NO=2)	ISW(24) = 1
PROGRAM ADJUSTS ALL STACK HEIGHTS FOR DOWNWASH (YES=2,NO=1)	ISW(25) = 1
PROGRAM USES BUOYANCY INDUCED DISPERSION (YES=1,NO=2)	ISW(26) = 1
CONCENTRATIONS DURING CALM PERIODS SET = 0 (YES=1,NO=2)	ISW(27) = 1
REG. DEFAULT OPTION CHOSEN (YES=1,NO=2)	ISW(28) = 2
TYPE OF POLLUTANT TO BE MODELLED (1=SO2,2=OTHER)	ISW(29) = 2
DEBUG OPTION CHOSEN (YES=1,NO=2)	ISW(30) = 2
ABOVE GROUND (FLAGPOLE) RECEPTORS USED (YES=1,NO=0)	ISW(31) = 0
NUMBER OF INPUT SOURCES	NSOURC = 1
NUMBER OF SOURCE GROUPS (=0,ALL SOURCES)	NGROUP = 0
TIME PERIOD INTERVAL TO BE PRINTED (=0,ALL INTERVALS)	IPERD = 0
NUMBER OF X (RANGE) GRID VALUES	NXPNTS = 3
NUMBER OF Y (THETA) GRID VALUES	NYPNTS = 36
NUMBER OF DISCRETE RECEPTORS	NXNYPT = 0
SOURCE EMISSION RATE UNITS CONVERSION FACTOR	TK =.10000E+07
HEIGHT ABOVE GROUND AT WHICH WIND SPEED WAS MEASURED	ZR = 10.00 METERS
LOGICAL UNIT NUMBER OF METEOROLOGICAL DATA	IMET = 9
DECAY COEFFICIENT FOR PHYSICAL OR CHEMICAL DEPLETION	DECAY =0.000000E+00
SURFACE STATION NO.	ISS = 12815
YEAR OF SURFACE DATA	ISY = 74
UPPER AIR STATION NO.	IUS = 12842
YEAR OF UPPER AIR DATA	IUY = 74
ALLOCATED DATA STORAGE	LIMIT = 43500 WORDS
REQUIRED DATA STORAGE FOR THIS PROBLEM RUN	MIMIT = 1391 WORDS

*** MID FLORIDA MINING CO., CONC. RUN

*** SOURCE DATA ***

SOURCE NUMBER	T Y P E	W A K E	NUMBER PART. CATS.	EMISSION RATE TYPE=0,1 (GRAMS/SEC) TYPE=2 (GRAMS/SEC) *PER METER**2	X (METERS)	Y (METERS)	BASE ELEV. (METERS)	HEIGHT (METERS)	TEMP. TYPE=0 (DEG.K); VERT.DIM TYPE=1 (METERS)	EXIT VEL. TYPE=0 (M/SEC); HORZ.DIM TYPE=1,2 (METERS)	DIAMETER TYPE=0 (METERS)	BLDG. HEIGHT TYPE=0 (METERS)	BLDG. LENGTH TYPE=0 (METERS)	BLDG. WIDTH TYPE=0 (METERS)
1	0	0	0	0.10000E+02	0.0	0.0	0.0	13.70	380.00	23.30	1.12	0.00	0.00	0.00

$C = 10.0 \text{ g/sec}$

$= 79.4 \text{ lb/hr}$

Actual Emission Rate (See 9/2/88 Data)

$= 62.8 \text{ lb/hr}$

MAX 50
24-HR
GROUP# 1

*** MID FLORIDA MINING CO., CONC. RUN MET=1974

* 50 MAXIMUM 24-HOUR AVERAGE CONCENTRATION (MICROGRAMS/CUBIC METER) *

* FROM ALL SOURCES *

RANK	CON.	PER.	DAY	X OR RANGE (METERS)	Y(METERS) OR DIRECTION (DEGREES)	RANK	CON.	PER.	DAY	X OR RANGE (METERS)	Y(METERS) OR DIRECTION (DEGREES)
1	26.82336C	1	171	300.0	230.0	26	16.48015C	1	225	300.0	230.0
2	24.23212	1	99	300.0	100.0	27	16.43568	1	94	300.0	340.0
3	23.18446C	1	125	300.0	40.0	28	16.37383C	1	150	300.0	110.0
4	23.07416	1	145	300.0	120.0	29	16.25008C	1	241	300.0	300.0
5	22.47397	1	297	300.0	180.0	30	16.17426C	1	107	300.0	170.0
6	21.43227C	1	62	300.0	300.0	31	16.08603C	1	90	300.0	70.0
7	21.11961C	1	90	300.0	60.0	32	16.05521C	1	220	300.0	320.0
8	20.47115C	1	171	300.0	220.0	33	16.01700	1	140	300.0	270.0
9	20.24965	1	99	300.0	110.0	34	15.96799C	1	168	300.0	80.0
10	20.14925C	1	150	300.0	120.0	35	15.82604	1	158	300.0	320.0
11	19.46851C	1	191	300.0	120.0	36	15.68530C	1	188	300.0	350.0 ← 90th perc.
12	19.36649C	1	100	300.0	220.0	37	15.48464C	1	87	300.0	60.0
13	19.08072C	1	139	300.0	290.0	38	15.46494C	1	168	300.0	70.0
14	18.75270C	1	91	300.0	360.0	39	15.46227C	1	117	300.0	230.0
15	18.29082	1	146	300.0	50.0	40	15.34992C	1	65	300.0	310.0
16	18.12222	1	145	300.0	130.0	41	15.25076	1	195	300.0	230.0
17	17.61557C	1	139	300.0	300.0	42	15.18671	1	135	300.0	360.0
18	17.44838C	1	125	300.0	50.0	43	15.09798C	1	63	300.0	330.0
19	17.28087C	1	110	300.0	240.0	44	15.07303C	1	163	300.0	140.0
20	17.15308C	1	111	300.0	270.0	45	15.06445C	1	33	300.0	360.0
21	17.03999	1	250	300.0	330.0	46	15.05035	1	159	300.0	320.0
22	17.03987C	1	117	300.0	220.0	47	14.95788C	1	62	300.0	310.0
23	17.02101	1	279	300.0	180.0	48	14.92377C	1	188	300.0	340.0
24	16.76492C	1	114	300.0	130.0	49	14.85644	1	145	300.0	140.0
25	16.62149C	1	225	300.0	220.0	50	14.83844C	1	114	300.0	140.0

Impact corrected for actual emission rate

$$15.6\,\mu g/m^3 \times \frac{62.8}{79.4} = 12.3\,\mu g/m^3$$

MAX 50
24-HR
SGROUP

*** MID FLORIDA MINING CO., CONC. RUN MET= 1975

* 50 MAXIMUM 24-HOUR AVERAGE CONCENTRATION (MICROGRAMS/CUBIC METER) *

* FROM ALL SOURCES *

RANK	CON.	PER.	DAY	X OR RANGE (METERS)	Y(METERS) OR DIRECTION (DEGREES)	RANK	CON.	PER.	DAY	X OR RANGE (METERS)	Y(METERS) OR DIRECTION (DEGREES)
1	28.44289	1	157	300.0	80.0	26	17.14088C	1	115	300.0	360.0
2	27.40839C	1	119	300.0	10.0	27	16.89281C	1	223	300.0	360.0
3	26.59686C	1	180	300.0	120.0	28	16.81244C	1	144	300.0	250.0
4	24.04413C	1	117	300.0	300.0	29	16.63007C	1	223	300.0	10.0
5	23.75819C	1	119	300.0	20.0	30	16.27698	1	194	300.0	340.0
6	23.70572	1	157	300.0	70.0	31	16.26788	1	139	300.0	140.0
7	23.38426C	1	167	300.0	10.0	32	16.18655	1	174	300.0	240.0
8	20.75981C	1	215	300.0	20.0	33	16.17697C	1	180	300.0	110.0
9	20.57701C	1	180	300.0	130.0	34	16.09288	1	113	300.0	300.0
10	20.21205	1	109	300.0	360.0	35	16.08900C	1	102	300.0	160.0
11	20.21005C	1	147	300.0	340.0	36	15.92569C	1	167	300.0	20.0 ← 90%
12	19.99066C	1	163	300.0	120.0	37	15.86264C	1	143	300.0	280.0
13	19.97641C	1	145	300.0	230.0	38	15.81486C	1	166	300.0	40.0
14	19.86700C	1	181	300.0	250.0	39	15.73271C	1	216	300.0	360.0
15	19.36966C	1	167	300.0	360.0	40	15.69521	1	112	300.0	260.0
16	18.73366C	1	145	300.0	220.0	41	15.63455C	1	300	300.0	240.0
17	18.42162C	1	163	300.0	130.0	42	15.61327C	1	203	300.0	50.0
18	18.12939C	1	261	300.0	340.0	43	15.46585	1	186	300.0	50.0
19	18.11131C	1	215	300.0	10.0	44	15.46332C	1	110	300.0	70.0
20	17.95126C	1	129	300.0	110.0	45	15.42511C	1	210	300.0	360.0
21	17.87622C	1	214	300.0	280.0	46	15.41282	1	151	300.0	340.0
22	17.80002C	1	205	300.0	280.0	47	15.39956	1	231	300.0	140.0
23	17.46225C	1	234	300.0	270.0	48	15.32741	1	186	300.0	60.0
24	17.38492C	1	223	300.0	350.0	49	15.30919	1	158	300.0	70.0
25	17.26938	1	112	300.0	270.0	50	15.28456C	1	147	300.0	350.0

$15.9 \times \frac{62.8}{79.4} = 12.6 \mu g/m^3$

MAX 50
24-HR
GROUPS 1

*** MID FLORIDA MINING CO., CONC. RUN MET= 1976

* 50 MAXIMUM 24-HOUR AVERAGE CONCENTRATION (MICROGRAMS/CUBIC METER) *

* FROM ALL SOURCES *

RANK	CON.	PER.	DAY	X OR RANGE (METERS)	Y(METERS) OR DIRECTION (DEGREES)	RANK	CON.	PER.	DAY	X OR RANGE (METERS)	Y(METERS) OR DIRECTION (DEGREES)
1	24.99959	1	196	300.0	90.0	26	17.57753C	1	192	300.0	320.0
2	23.76205C	1	186	300.0	30.0	27	17.31602C	1	95	300.0	40.0
3	22.82181C	1	186	300.0	40.0	28	17.17685C	1	263	300.0	230.0
4	21.58203C	1	186	300.0	20.0	29	17.16121	1	240	300.0	220.0
5	21.12617C	1	152	300.0	360.0	30	17.02927C	1	235	300.0	130.0
6	20.98170	1	100	300.0	200.0	31	16.86130C	1	278	300.0	260.0
7	20.67290C	1	152	300.0	10.0	32	16.79674	1	139	300.0	90.0
8	20.47510C	1	95	300.0	50.0	33	16.59468	1	117	300.0	50.0
9	20.24442C	1	164	300.0	210.0	34	16.33385C	1	153	300.0	330.0
10	20.03792C	1	185	300.0	340.0	35	16.28680C	1	268	300.0	260.0
11	19.85274	1	166	300.0	220.0	36	16.26976C	1	164	300.0	220.0 ← 90%
12	19.49483C	1	228	300.0	340.0	37	16.26329C	1	243	300.0	250.0
13	18.87569C	1	101	300.0	240.0	38	16.21722C	1	96	300.0	140.0
14	18.86473	1	302	300.0	180.0	39	16.13292C	1	192	300.0	330.0
15	18.72911C	1	63	300.0	280.0	40	16.04671	1	59	300.0	260.0
16	18.45377	1	197	300.0	90.0	41	15.93596	1	223	300.0	360.0
17	18.43098	1	242	300.0	230.0	42	15.85318C	1	120	300.0	300.0
18	18.36218C	1	120	300.0	290.0	43	15.60928C	1	93	300.0	120.0
19	18.18507C	1	153	300.0	340.0	44	15.57606	1	215	300.0	360.0
20	18.05373C	1	225	300.0	250.0	45	15.48447C	1	124	300.0	150.0
21	17.97247	1	140	300.0	200.0	46	15.36920C	1	228	300.0	360.0
22	17.91330C	1	264	300.0	230.0	47	15.35338C	1	182	300.0	360.0
23	17.90454C	1	187	300.0	20.0	48	15.30520C	1	185	300.0	350.0
24	17.83363C	1	228	300.0	350.0	49	15.27512C	1	95	300.0	60.0
25	17.65781	1	242	300.0	240.0	50	15.23121C	1	141	300.0	250.0

$$16.3 \times \frac{67.8}{79.4} = 12.9 \text{ mg/m}^3$$

MAI 50
24-HR
SGROUP# 1

*** MID FLORIDA MINING CO., CONC. RUN MET= 1977

* 50 MAXIMUM 24-HOUR AVERAGE CONCENTRATION (MICROGRAMS/CUBIC METER) *

* FROM ALL SOURCES *

RANK	CON.	PER.	DAY	X OR RANGE (METERS)	Y(METERS) OR DIRECTION (DEGREES)	RANK	CON.	PER.	DAY	X OR RANGE (METERS)	Y(METERS) OR DIRECTION (DEGREES)
1	29.26541C	1	121	300.0	300.0	26	18.52739C	1	278	300.0	240.0
2	29.01315C	1	136	300.0	300.0	27	18.31815C	1	248	300.0	20.0
3	28.40210C	1	258	300.0	300.0	28	18.28050C	1	148	300.0	40.0
4	26.86584	1	207	300.0	360.0	29	18.20824C	1	249	300.0	330.0
5	24.19170	1	242	300.0	270.0	30	18.16386C	1	140	300.0	300.0
6	23.33377C	1	121	300.0	310.0	31	18.10664C	1	172	300.0	50.0
7	22.79518	1	94	300.0	360.0	32	17.85970	1	127	300.0	110.0
8	22.57387C	1	214	300.0	360.0	33	17.85844	1	177	300.0	50.0
9	22.47884	1	217	300.0	270.0	34	17.71069C	1	145	300.0	30.0
10	22.14365C	1	209	300.0	310.0	35	17.70912	1	218	300.0	260.0
11	21.93880C	1	144	300.0	360.0	36	17.70477	1	216	300.0	300.0 ← 90%
12	21.25319C	1	203	300.0	160.0	37	17.56876C	1	258	300.0	290.0
13	21.07698	1	207	300.0	10.0	38	17.56357C	1	227	300.0	290.0
14	20.87109C	1	255	300.0	250.0	39	17.43037C	1	189	300.0	360.0
15	20.84344C	1	236	300.0	360.0	40	17.22969C	1	249	300.0	320.0
16	20.83411	1	230	300.0	10.0	41	17.10826	1	161	300.0	120.0
17	19.89709	1	99	300.0	200.0	42	16.89055	1	112	300.0	310.0
18	19.73720C	1	141	300.0	240.0	43	16.76785C	1	166	300.0	10.0
19	19.66377C	1	145	300.0	40.0	44	16.73769	1	176	300.0	90.0
20	19.26111C	1	255	300.0	240.0	45	16.57632	1	230	300.0	350.0
21	19.14540C	1	142	300.0	230.0	46	16.52751	1	102	300.0	240.0
22	19.06834C	1	203	300.0	170.0	47	16.51567	1	117	300.0	140.0
23	18.87047C	1	238	300.0	270.0	48	16.26440	1	243	300.0	250.0
24	18.86362	1	219	300.0	250.0	49	16.23766C	1	248	300.0	30.0
25	18.64023C	1	255	300.0	260.0	50	16.19695	1	133	300.0	230.0

$17.6 \times \frac{62.8}{79.4} = 13.9 \mu g/m^3$

MAX 50
24-HR
SGROUPS 1

*** MID FLORIDA MINING CO., CONC. RUN MET= 1978

* 50 MAXIMUM 24-HOUR AVERAGE CONCENTRATION (MICROGRAMS/CUBIC METER) *

* FROM ALL SOURCES *

RANK	CON.	PER.	DAY	X OR RANGE (METERS)	Y(METERS) OR DIRECTION (DEGREES)	RANK	CON.	PER.	DAY	X OR RANGE (METERS)	Y(METERS) OR DIRECTION (DEGREES)
1	32.28172C	1	143	300.0	260.0	26	20.56395C	1	222	300.0	320.0
2	28.73563C	1	203	300.0	300.0	27	20.56314C	1	119	300.0	40.0
3	25.48521C	1	120	300.0	360.0	28	20.49977C	1	237	300.0	230.0
4	24.97055C	1	117	300.0	130.0	29	20.49686C	1	205	300.0	290.0
5	24.82959	1	102	300.0	360.0	30	20.43297C	1	215	300.0	310.0
6	24.35172C	1	143	300.0	270.0	31	20.32710C	1	279	300.0	140.0
7	24.23737	1	149	300.0	260.0	32	20.22284C	1	191	300.0	340.0
8	23.88405	1	169	300.0	270.0	33	20.18257C	1	154	300.0	340.0
9	23.72034C	1	120	300.0	350.0	34	20.18034C	1	279	300.0	130.0
10	23.60570	1	103	300.0	360.0	35	20.10365C	1	204	300.0	270.0
11	23.41725C	1	106	300.0	250.0	36	19.76353C	1	145	300.0	210.0 ← 90%
12	22.36592C	1	184	300.0	20.0	37	19.63988C	1	171	300.0	270.0
13	22.32974C	1	222	300.0	310.0	38	19.52597C	1	212	300.0	10.0
14	22.17271	1	148	300.0	280.0	39	19.50032C	1	202	300.0	290.0
15	21.59764C	1	195	300.0	260.0	40	19.48738C	1	269	300.0	230.0
16	21.40909C	1	160	300.0	350.0	41	19.28001	1	140	300.0	270.0
17	21.40523C	1	142	300.0	260.0	42	19.26721C	1	129	300.0	350.0
18	21.37834C	1	202	300.0	270.0	43	19.22205C	1	119	300.0	30.0
19	21.34966C	1	240	300.0	240.0	44	18.95242C	1	216	300.0	300.0
20	21.32446C	1	196	300.0	350.0	45	18.88371C	1	117	300.0	140.0
21	21.23543C	1	180	300.0	350.0	46	18.78477C	1	93	300.0	280.0
22	21.13823C	1	106	300.0	240.0	47	18.64740	1	249	300.0	130.0
23	21.13811C	1	163	300.0	260.0	48	18.55092C	1	267	300.0	230.0
24	20.99165C	1	158	300.0	330.0	49	18.50693C	1	131	300.0	270.0
25	20.97234C	1	207	300.0	340.0	50	18.48123	1	102	300.0	350.0

$19.7 \times \frac{62.8}{79.4} = 15.6 \mu g/m^3$

KOOGLER & ASSOCIATES, Environmental Services
4014 N.W. 13th Street • Gainesville, Florida 32609 • 904/377-5822

FAX TRANSMITTAL FORM

TO: David Kibler
c/o Hopping Boyd
290-88-01

FROM: John Koogler

SENT BY: Marion Beldock
DATE: 9/2/88
FAX PHONE: 904-377-7158

The text being transmitted consists of 4 pages PLUS this one.

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Environmental Services
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JOB MFM Environmental
SHEET NO. 1 OF 2
CALCULATED BY JAC DATE 9/2/98
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SCALE

Estimate of PNA (polynuclear aromatic) hydrocarbons in coal for contaminated soil

Compound	Reported Conc in Coal Tar Pitch (1)	Measured Conc (2) in Coal Tar contaminated soil	Measured Conc in Creosote Contaminated Soil
Anthracene	NR	NR	514
Benzo-a-Pyrene	12500 mg/kg	NR	22
Phenanthrene	25000 mg/kg	250 mg/kg	757
Acridine	9200 mg/kg	NR	NR
Chrysene	NR	NR	196
Pyrene	19000 mg/kg	150 mg/kg	478
Fluorene	1200 mg/kg	120 mg/kg	230
Acenaphthene	NR	130 mg/kg	108 mg/kg
Methylnaphthalene	10000 mg/kg	170 mg/kg	13 mg/kg

	Coal Tar Pitch Conc x 1/100	Measured Conc in Coal Tar Soil	Measured Conc in Creosote Soil x 1/3
Anthracene	—	—	170
BaP	125	—	7
Phenanthrene	250	250	252
Acridine	92	—	—
Chrysene	—	—	65
Pyrene	190	150	159
Fluorene	12	120	77
Acenaphthene	—	130	36
Methylnaphthalene	100	170	4

	Measured or Estimated Conc in Coal Tar Soil
Anthracene	170 mg/kg
BaP	100 mg/kg
Phenanthrene	250 mg/kg
Acridine	100 mg/kg
Chrysene	65 mg/kg
Pyrene	150 mg/kg
Fluorene	120 mg/kg
Acenaphthene	130 mg/kg
Methylnaphthalene	170 mg/kg

Total PNA in Coal tar Contaminated Soil = 1255 mg/kg

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JOB MFM Environmental
SHEET NO. 2 OF 2
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Emission Rate from Clay Dryer

Assume no DRE in dryer

Soil Processing Rate = 25 tph
Soil Processing Time = 1800 tons / 25 tph
= 72 hr/year

PNA Emissions = 25 tph × 2000 lb/ton × 1/2.2 kg/lb
× 1255 mg PNA/kg × 1/1000 g/mg
× 1/454 lb/g

= 62.8 lb/hr

Ambient Impact (Annual Average)

Previous modeling (ISCLT) demonstrates an emission rate of 79.4 lb/hr for 8760 hr/yr results in a max. annual impact of 11.66 $\mu g/m^3$

$$\text{PNA Impact} = 11.66 \left(\frac{62.8}{79.4}\right)\left(\frac{72 \text{ hr/yr}}{8760 \text{ hr/yr}}\right)$$

$$= 0.076 \ \mu g/m^3$$

Acceptable Ambient Level per M. Harley = 0.47 $\mu g/m^3$ annual avg

Ratio Impact (Annual Avg) / AAL = 0.076 / 0.47
= 0.16 (or 1/6 the AAL)

(1) Handbook of Environmental Data on Organic Chemicals, 2nd ed
(2) See attached ILI Report

Industrial & Environmental Analysts, Inc.
P.O. Box 12846 • Research Triangle Park, NC 27709 • 919-467-9919

July 2, 1987

RECEIVED JUL 08 1987

Mr. Boyd C. Hogan
Suffolk Gas Corp.
130 Commerce Street
Suffolk, VA 23434

Reference: IEA Report No. 145-1

Dear Mr. Hogan:

Transmitted herewith are the results of analyses on a single sample submitted to our laboratory on May 11, 1987.

		Soil Sample
Copper	mg/Kg	9.8
Iron	mg/Kg	3700
Zinc	mg/Kg	42

Please see the enclosed report for the remainder of your results.

Very truly yours,

INDUSTRIAL & ENVIRONMENTAL ANALYSTS, INC.

Joseph B. Adamovic

Joseph B. Adamovic
Senior Chemist

JBA/jcl

		Soil Sample
Benzene	WT %	1.0
2-Ethoxyethanol	WT %	1.0
Xylene	WT %	1.0
Acetone	WT %	1.0
Ethyl acetate	WT %	1.0
Ethyl benzene	WT %	1.0
Ethyl ether	WT %	1.0
Methyl isobutyl ketone	WT %	1.0
n-Butyl alcohol	WT %	1.0
Cyclohexanone	WT %	1.0
Methanol	WT %	1.0
Cresol/cresylic acid	WT %	1.0
Pyridine	WT %	1.0
Nitrobenzene	WT %	1.0
Toluene	WT %	1.0
2-Nitropropane	WT %	1.0
1,1,2-Trichloroethane	WT %	1.0
Methyl ethyl ketone	WT %	1.0
Carbon disulfide	WT %	1.0
Isobutanol	WT %	1.0
Tetrachloroethylene	WT %	1.0
Trichloroethylene	WT %	1.0
Methylene chloride	WT %	1.0
1,1,1-Trichloroethane	WT %	1.0
Carbon tetrachloride	WT %	1.0
Chlorobenzene	WT %	1.0
1,1,2-Trichloro-1,2,2-trifluoroethane	WT %	1.0
Ortho-dichlorobenzene	WT %	1.0
Trichlorofluoromethane	WT %	1.0
Chlorinated fluorocarbons	WT %	1.0
Acenaphthene	µg/Kg	130,000 ←
Fluoranthene	WT %	1.0
Naphthalene	WT %	1.0
Benzo(a)anthracene	WT %	1.0
Benzo(b)fluoranthene	WT %	1.0
Chrysene	WT %	1.0
Acenaphthylene	WT %	1.0
Anthracene	µg/Kg	120,000 ←
Fluorene	µg/Kg	250,000 ←
Phenanthrene	µg/Kg	150,000 ←
Pyrene	WT %	1.0
Dibenzofuran	µg/Kg	170,000 ←
2-Methylnaphthalene	WT %	1.0
Styrene	WT %	1.0
o-Xylene		

RESOURCE RECOVERY MID SOUTH, INC.

Mailing Address: P. O. Box 3228, Suffolk, VA 23434 Telephone

MESSAGE TO: Michael Harley FROM: Michael H. G

Company: Fla. DER Subject: Air Permit

Number of pages including cover sheet: 6

Date: 9-1-88

OPERATOR: MHG

IF YOU ARE EXPERIENCING ANY DIFFICULTIES IN RECEIVING THIS TELECOPY, PLEASE CALL (804) 539-0005 AND SPEAK WITH THE OPERATOR LISTED ABOVE.

COMMENTS: Requeste Lab work on coal

Industrial & Environmental Analysts, Inc.
P.O. Box 12846 • Research Triangle Park, NC 27709 • 919-467-9911

July 2, 1987

Mr. Boyd C. Hogan
Suffolk Gas Corp.
130 Commerce Street
Suffolk, VA 23434

Reference: IEA Report No. 145-1

Dear Mr. Hogan:

Transmitted herewith are the results of analyses on a single sample submitted to our laboratory on May 11, 1987.

		Soil Sample
Copper	mg/Kg	9.0
Iron	mg/Kg	3700
Zinc	mg/Kg	42

Please see the enclosed report for the remainder of your results.

Very truly yours,

INDUSTRIAL & ENVIRONMENTAL ANALYSTS, INC.

Joseph B. Adamovic
Senior Chemist

JBA/jcl

Comments

602

BDL - BELOW DETECTION LIMIT
Xylenes - Detection Limit: 250 µg/Kg
Concentration: 28,000 µg/Kg ppb

Purgeable Aromatics

IEA Sample No. 414010 1
Sample Identification Suffolk Gas
Date Analyzed March 18, 1987 **By** Cornwell

Number	Compound	Detection Limit µg/Kg	Result Concentration µg/Kg
1	Benzene	250	250
2	Chlorobenzene	250	BDL
3	1,2-Dichlorobenzene	250	BDL
4	1,3-Dichlorobenzene	250	BDL
5	1,4-Dichlorobenzene	250	BDL
6	Ethylbenzene	250	5200
7	Toluene	250	6100

March 20, 1987
Reference: IEA Report No. 414-10

		Suffolk Gas Co.
Ignitability	°F	>200
EP-TOX Barium	mg/L	0.30
EP-TOX Arsenic	mg/L	<0.005
EP-TOX Cadmium	mg/L	<0.01
EP-TOX Chromium	mg/L	<0.03
EP-TOX Lead	mg/L	<0.005
EP-TOX Mercury	mg/L	<0.0002
EP-TOX Selenium	mg/L	<0.005
EP-TOX Silver	mg/L	<0.05
Reactivity Cyanide	mg/Kg	5.6
Reactivity Sulfide	mg/Kg	340
Reactivity Water		N/R
Reactivity Explosive		N/R
Naphthalene	µg/g	600
Corrosivity	mmpy	<6.35
pH		6.4

N/R: Not Reactive

July 2, 1987
Reference: TEA Report No. 143-1

		Soil Sample
Benzene	WT %	1.0
2-Ethoxyethanol	WT %	1.0
Xylene	WT %	1.0
Acetone	WT %	1.0
Ethyl acetate	WT %	1.0
Ethyl benzene	WT %	1.0
Ethyl ether	WT %	1.0
Methyl isobutyl ketone	WT %	1.0
n-Butyl alcohol	WT %	1.0
Cyclohexanone	WT %	1.0
Methanol	WT %	1.0
Cresol/cresylic acid	WT %	1.0
Pyridine	WT %	1.0
Nitrobenzene	WT %	1.0
Toluene	WT %	1.0
2-Nitropropane	WT %	1.0
1,1,2-Trichloroethane	WT %	1.0
Methyl ethyl ketone	WT %	1.0
Carbon disulfide	WT %	1.0
Isobutanol	WT %	1.0
Tetrachloroethylene	WT %	1.0
Trichloroethylene	WT %	1.0
Methylene chloride	WT %	1.0
1,1,1-Trichloroethane	WT %	1.0
Carbon tetrachloride	WT %	1.0
Chlorobenzene	WT %	1.0
1,1,2-Trichloro-1,2,2-trifluoroethane	WT %	1.0
Ortho-dichlorobenzene	WT %	1.0
Trichlorofluoromethane	WT %	1.0
Chlorinated fluorocarbons	WT %	1.0
Acenaphthene	µg/Kg	130,000
Fluoranthene	WT %	1.0
Naphthalene	WT %	1.0
Benzo(a)anthracene	WT %	1.0
Benzo(b)fluoranthene	WT %	1.0
Chrysene	WT %	1.0
Acenaphthylene	WT %	1.0
Anthracene	WT %	1.0
Fluorene	µg/Kg	130,000
Phenanthrene	µg/Kg	250,000
Pyrene	µg/Kg	170,000
Dibenzofuran	WT %	1.0
2-Methylnaphthalene	µg/Kg	100,000
Styrene	WT %	1.0
o-Xylene	WT %	1.0

ATTACHMENT #1

SPECIFIC CHEMICAL DESCRIPTION

1) Coal Tar Sludge 40% - 60%

2) Sand & Clean Fill 60% - 40%

Coal Tar Sludge Composition

2-Methynapthalene (includes other various P.A.H.'s)	250 ppm.
Pyrene	150 ppm.
Phenanthrene	250 ppm.
Acenanapthalene	130 ppm.
Benzene	0.29 ppm.
Ethylbenzene	5.20 ppm.
Toluene	6.10 ppm.
Xylene	28.0 ppm.

KOOGLER & ASSOCIATES, Environmental Services
4014 N.W. 13th Street · Gainesville, Florida 32609 · 904/377-5822

FAX TRANSMITTAL FORM

8-1344

TO: Mike Harley
FDER

290-88-01

FROM: John Koogler

SENT BY: Marion Beldock

DATE: 8/31/88

FAX PHONE: 904-377-7158

The text being transmitted consists of 6 pages PLUS this one.

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Environmental Services
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JOB MFM Environmental
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MFM - Thermal Processing of Coal-tar Creosote

Ambient Impact of Coal tar Volatiles

I Acceptable Ambient Level (AAL)

A. per M. Harley / J Glenn EDF ER

AAL = 0.2 mg/m³ (ACGIH TWA-TLV) / 4.20
= 0.47 mg/m³

B. per NYDEC Air-Guide 1

AAL = 0.2 mg/m³ / 300
= 0.67 mg/m³

Note: AAL's are annual average ambient concentrations that should not be exceeded (See attached pg NYDEC Air-Guide 1). Furthermore, risk assessments for carcinogens are based on a continuous 24 hr exposure at a concentration equivalent to the AAL

II Coal-tar Volatiles - Definition (See 29 CFR 19

Anthracene
Benzo-a-pyrene
Phenanthrene
Acridine
Chrysene
Pyrene

} See Attached Table Z-1 29 CFR 1910.1000

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III Estimated Concentration of Coal tar Volatiles in Contaminated Soil

Concentrations in creosote contaminated soil presented by MFM

Anthracene	=	550 mg/kg
Benzo-a-pyrene	=	25
Phenanthrene	=	800
Acridine	=	100 (estimated)
Chrysene	=	200
Pyrene	=	500
		2175 mg/kg combined coal

Degree of contamination - creosote contaminated soil ~ 2000 ppm/lb

- coal tar contaminated soil = 330 ppm/lb

Concentration of Coal tar volatiles in coal tar contaminated soil

$= \left(\frac{330}{2000}\right) \times 2175 \text{ mg/kg}$

$= 424 \text{ mg/kg}$

IV Emission Rate from Dryer (assume 1% in dryer)

Soil Processing rate = 25 tph
Soil Processing time = 1800 total tonnage / 25 tph

Emissions = 25 tph x 2000 lb/ton x 1/2.2 kg/lb
x 1/1000 g/mg x 1/454 lb/g
= 21.2 lb/hr

KOOGLER & ASSOCIATES
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JOB MFM Env
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V Ambient Impact (Annual Average)

ISCLT modeling results previously submitted to MFM Environmental

Emission Rate of 79.4 lb/hr (10.0 g/sec) in max annual impact of 11.66 ng/m³ emissions occur 8760 hr/yr

Impact of Coal tar volatiles

$$= 11.66 \left(\frac{21.2 \text{ lb/hr}}{79.4 \text{ lb/hr}}\right)\left(\frac{72 \text{ hr/yr}}{8760 \text{ hr/yr}}\right)$$

$$= 0.026 \text{ ng/m}^3$$

Ratio Impact / AAL = 0.026/0.47

= 0.055 (or 1/18 the

Ratio Impact / AAL for 70 year lifetime

= (0.026/0.47)(1 year/70 yr

= 0.0008 (or 1/1265

Lifetime

In addition to reviewing control requirements under 6NYCRR Part 212, the A. Guide-1 screening methods may be used to assess other air contamina. sources which may cause contravention of ambient air quality standa and/or cause air pollution. This is in accordance with the concern f. ambient air quality as expressed in 6NYCRR Parts 200 and 257. In such ca. where contravention occurs, or may occur, the commissioner may specify t. degree and/or method of emission control required.

It is DEC's intention to list in AG-1 an AAL guideline value specifica. developed for each chemical. Contaminant specific AAL's are determined DEC and DOH toxicologists after analysis of all available data using t. assessment technology suitable for the contaminant. These values identified by a (DEC) or (DOH) in the tables.

Given the vast numbers of chemicals in use in NYS, the toxicity da available, and the lengthy process involved in developing each contamina. specific AAL, only a portion of the chemicals listed in AG-1 ha. contaminant specific AAL's. For the remaining chemicals, interim AAL valu. - identified by (T) - are derived from the American Conference of Industrial Governmental Hygienists' (ACGIH) Threshold Limit Value-Time Weight. Averages (TWA-TLV, or TLV). This is done even though the ACGIH TLV booklet states: "They (TLV's) are not intended for use, or modification for use (1) as a relative index of hazard or toxicity, (2) in the evaluation control of community air pollution nuisances, (3) in estimating the tox potential of continuous, uninterrupted exposures.." It further states, "T. TLV-TWAs should be used as guides in the control of health hazards a. should not be used as fine lines between safe and dangerous concentrations.

Notwithstanding these ACGIH caveats, the TLV values are the most comple. listing of quantified acceptable exposure levels available, and are th considered by DEC to be a valuable tool. To address the concern about usi TLV's for non-occupational exposures, DEC and DOH scientists ha. categorized chemicals into high, moderate, or low toxicity classificatio. which are defined in Appendix B. These categories are based on the type o. chronic and/or acute toxic effect of each chemical of concern. The safet. factors used with the TLV's to calculate AAL's are a function of th. chemicals's toxicity classification.

The ACGIH concern that TLV's "not be used as fine lines between safe an. dangerous concentrations" is addressed by the screening guideline nature o. the Air Guide-1 document. The Acceptable Ambient Levels (AAL's) given a. guideline values - not standards. Also, the meteorologic dis. calculations of Appendix A, while conservative in nature, are mathemati. estimates only, a factor contributing to the guideline status of the A. Guide-1 methodologies.

I. High Toxicity Air Contaminants

A. High Toxicity air contaminants are demonstrated or pos. carcinogens, and other substances posing a significan. to humans. When reviewing sources which emit High Toxi. contaminants, the following guidelines must be consi.

(1) The maximum annual average ambient concentration should not exceed the AAL as defined in paragraph (B) and;

(2) BACT (best available control technology) should be applied to sources emitting High Toxicity Air Contaminants as outlined in paragraph (C).

B. For any High Toxicity air contaminant that has (1) an applicable National or State Ambient Air Quality Standard (Table I), or (2) specific National Emission Standards for Hazardous Air Pollutants (NESHAPS), (Table 1A), the applicable standard shall be used by the RAPCE. The ambient air quality impact should be verified as acceptable in relation to these standards, or applicable AAL, for any High Toxicity Air Contaminant.

An AAL is the contaminant concentration which is considered to be an acceptable average concentration at a receptor on an annual basis. These values are developed as guidelines to safeguard receptors against potential chronic effects resulting from continuing exposures.

Chemicals classified High Toxicity by DEC and/or DOH toxicologists have AAL's listed in Table II. Chemicals for which a complete toxicity analysis has been done have contaminant specific AAL's listed. These are identified by a (DEC) or (DOH) after the value in the Table. For chemicals not yet evaluated, an interim AAL (denoted by (T) in Table II), is determined by multiplying the current American Conference of Governmental Industrial Hygienists (ACGIH) time weighted average threshold level value (TWA-TLV) for the contaminant by the factor (1/300). If there is no current TWA-TLV, or if the standard or AAL is not met when BACT is applied, the RAPCE should consult with the Toxics Management Section for further guidance as indicated in Figure 1, Decision Process.

C. Any chemical designated as a High Toxicity air contaminant (Table II) by the New York State Department of Environmental Conservation (DEC), and the Department of Health (DOH), and not otherwise regulated for specific processes under 40 CFR 61, the National Emission Standards for Hazardous Air Pollutants (NESHAPS), or 40 CFR 761, the Toxic Substance Control Act (TSCA) must be assigned an "A" environmental rating and BACT shall be required for the source. The RAPCE is advised to consult with the Bureau of Source Control for further guidance in those cases where BACT results in less than 99% control.

D. If the emission rate potential (ERP) for any High Toxicity air contaminant is less than 1.0 lb/hr (without air cleaning), the RAPCE has an option of waiving BACT and setting other control requirements (including no control) provided the impact calculated from the source's actual emission rate yields a predicted ambient concentration at any off-site receptor which does not exceed the applicable ambient standard or AAL. If the RAPCE determines the standard or AAL will not be met, the procedure outlined in paragraphs A through C above should be followed.

TABLE Z-1—Continued

Substance	p/m*	mg./M*
Chloroform (trichloromethane)	50	240
Chloro-1-nitropropane	20	100
Chloropicrin	0.1	0.7
Chloroprene (2-chloro-1,3-butadiene)—Skin	25	90
Chromium, sol. chromic, chromous salts as Cr		0.5
Metal and insol. salts		1
Coal tar pitch volatiles (benzene soluble fraction) anthracene, BaP, phenanthrene, acridine, chrysene, pyrene		0.2
Cobalt, metal fume and dust		0.1
Copper fume		0.1
Dusts and Mists		1
Cotton dust (raw)		1
Crag® herbicide		15
Cresol (all isomers)—Skin	5	22
Crotonaldehyde	2	6
Cumene—Skin	50	245
Cyanide (as CN)—Skin		5
Cyclohexane	300	1,050
Cyclohexanol	50	200
Cyclohexanone	50	200
Cyclohexene	300	1,015
Cyclopentadiene	75	200
2,4-D		10
DDT—Skin		1
DDVP —SKIN		1
Decaborane—Skin	0.05	0.3
Demeton®—Skin		0.1
Diacetone alcohol (4-hydroxy-4-methyl-2-pentanone)	50	240
1,2-diaminoethane, see Ethylenediamine		
Diazomethane	0.2	0.4
Diborane	0.1	0.1
Dibutylphthalate		5
o-Dichlorobenzene	50	300
p-Dichlorobenzene	75	450
Dichlorodifluoromethane	1,000	4,950
1,3-Dichloro-5,5-dimethyl hydantoin		0.2
1,1-Dichloroethane	100	400
1,2-Dichloroethylene	200	790
Dichloroethyl ether—Skin	15	90
Dichloromethane, see Methylenechloride		
Dichloromonofluoromethane	1,000	4,200
1,1-Dichloro-1-nitroethane	10	60

TABLE Z-1—Continued

Substance	p/m*	mg./M*
Dimethylamine	10	
Dimethylaminobenzene, see Xylidene		
Dimethylaniline (N-dimethyl-aniline)—Skin	5	
Dimethylbenzene, see Xylene		
Dimethyl 1,2-dibromo-2,2-dichloroethyl phosphate, (Dibrom)		
Dimethylformamide—Skin	10	
2,6-Dimethylheptanone, see Diisobutyl ketone		
1,1-Dimethylhydrazine—Skin	0.5	
Dimethylphthalate		
Dimethylsulfate—Skin	1	
Dinitrobenzene (all isomers)—Skin		
Dinitro-o-cresol—Skin		
Dinitrotoluene—Skin		
Dioxane (Diethylene dioxide)—Skin	100	
Diphenyl	0.2	
Diphenylmethane diisocyanate (see Methylene bisphenyl isocyanate (MDI)		
Dipropylene glycol methyl ether—Skin	100	
Di-sec. octyl phthalate (Di-2-ethylhexylphthalate)		
Endrin—Skin		
Epichlorhydrin—Skin	5	
EPN—Skin		
1,2-Epoxypropane, see Propyleneoxide		
2,3-Epoxy-1-propanol, see Glycidol		
Ethanethiol, see Ethylmercaptan		
Ethanolamine	3	
2-Ethoxyethanol—Skin	200	
2-Ethoxyethylacetate (Cellosolve acetate)—Skin	100	
Ethyl acetate	400	
Ethyl acrylate—Skin	25	
Ethyl alcohol (ethanol)	1,000	
Ethylamine	10	
Ethyl sec-amyl ketone (5-methyl-3-heptanone)	25	
Ethyl benzene	100	
Ethyl bromide	200	
Ethyl butyl ketone (3-Heptanone)	50	

August 31, 1988

Mr. C. H. Fancy
Deputy Chief
Bureau of Air Quality management
Florida Department of
Environmental Regulation
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

Subject: Request for "One-Time" Modification to Mid-Florida Mining's Permit No. AC42-113787 to Thermally Process Coal-Tar Contaminated Soil

Dear Clair:

Pursuant to our recent meeting we hereby request a "one-time" Permit to process coal-tar contaminated soil for a one-week time frame (i.e., from Monday A.M. to Friday P.M.).

The purpose of this request is to allow us to determine the operating parameters necessary for processing similar hydrocarbon contaminated soils in an environmentally acceptable and safe manner. Based on the information received from such tests, we plan to create a model contaminated soil processing facility. Towards this end we agree to have a qualified air engineering firm perform appropriate air emission testing during the contaminated soil processing. In addition, extensive testing will be conducted on both the contaminated soil feedstock and the processed finished product. Of course we will make all this test data available to your office for evaluation. We also would welcome the opportunity of having DER personnel observe this processing at any time. As a further precaution, should any nearby resident of the community register a non-frivolous substantiated complaint with Orlando DER concerning the coal tar processing, we agree to cease the soil processing operation as soon as the processing allows.

The parameters for the hydrocarbon contaminated soil are as modeled by John B. Koogler, Ph.D., P.E., in his letters to you dated June 15, 1988 and June 16, 1988. These parameters were summarized on Page 4 of his letter of June 15, 1988 and are as follows:

a. Lead - 40 ppm maximum
b. Other metals (Arsenic, Chromium, Cadmium, and Nickel) - 90 ppm maximum
c. Halogens reported as Chlorides - 2,000 ppm maximum
d. The soil contaminant can be hydrocarbon products, provided however, that the contaminated soil shall not be classified as a Hazardous Waste as defined in 40 C.F.R., Section 261.3.

We appreciate the time you and Mike Harley spent with us on our recent visit and the attention you have given towards expediting this request. Should you have any questions or require amplification in any area, please do not hesitate to contact me.

Sincerely,

David B. Kibler, IV
Executive Director
Mid-Florida Mining

DBK/hgb

BEST AVAILABLE COPY

RESOURCE RECOVERY MID SOUTH, INC.

CODE # _____

MATERIAL CHARACTERIZATION SHEET

Generator Name: Suffolk Gas
Facility Address: Foot of Hill Street
City, State, Zip: Suffolk, Va 23434
Technical Contact: Jim Clark / Greg Daugherty
Title: CH M M / OPS. Mngr.
Telephone NO. (804) 539 0005 EXT: _____
Facility EPA ID #: N A

Bill To: Resource Recovery Mid South Inc
Company Contact: Jim Clarke
Container Size: Dump Trucks APPRox 20 yd³
EPA Waste No.: NA
Generating Process: Coal Tar Sludge From Gas Processing
Common Name of Waste: Dirt and Coal Tar
Rate of Generation: 1000 (Quan) tons (Units) PER 1 time (Time Interval)
Volume in Storage: 1000 (Quan) tons (Units) IN: Tank (OPEN) (Container Size and Type)
Is Waste DOT Hazardous: [ ] YES [X] NO
Proper DOT Shipping Name: Waste Soil Contaminated w/ Coal Tar
Hazard Class: — ID No.: —
Transportation Equipment: Dump Trucks
Placarding: None

CHEMICAL COMPOSITION (No Trade Name)

(Totals must add up to 100%)

Dirt and Debris	95-100 %
Coal Tar	1-5 %
(Containing Wood, Leaves, Paper and Gravel.)	%
	%
	%
	%

METALS (EP Toxicity Test, mg/l)

Arsenic (As)	<.005	Silver (Ag)	<.05
Barium (Bz)	.3	Copper (Cu)	9.8
Cadmium (Cd)	<.01	Nickel (Ni)	—
Chromium (cr)	<.03	Zinc (Zn)	42
Lead (Pb)	<.005	Iron (Fe)	3700
Mercury (Hg)	<.0002		
Selenium (Se)	<.005		

INORGANICS (mg/l or ppm)

Total CN	0	Iodine	0
Free CN	0	Asbestos	0
Sulfide	0		
Chloride	0		
Risulfite	0		
Sulfite	0		
Sulfate	0		
Phosphate	0		
Flourine	0		
Bromine	0		
Chlorine	0		

ORGANICS (mg/l or ppm)

Endrin	0	Organohalide	0
Methoxychlor	0	Mercaptans	0
Toxaphene	0		
2, 4-5	0		
2,4,5-T	0		
Phenol(ics)	0		
PCBs	0		
Dioxin	0		
TOC	5000 - 10000		

PHYSICAL DESCRIPTION

Physical State	[ ] Liquid	[ ] Semi-solid	[X] Solid
Phase/Layering	[X] Uni-Layer	[ ] Bilayer	[ ] Multilayer
Viscosity	[X] High	[ ] Medium	[ ] Low
Type of Solids	[X] Organic	[ ] Inorganic	[ ] Mixed

Total Solids (wt. %): 100 Suspended Solids (wt. %): —
BTU/lb 590 % Ash Content 15 % Water (by weight) _____
Flash Point (°F) > 200°F Type Closed Cup
Specific Gravity ~ 1.6
Boiling Point, (°C) NA Freezing Point, (°C) NA
Vapor Pressure (mm Hg @ 24°C) _____
pH (Avg) 6.4 (Range) 5 to 8
Total Alkalinity/Acidity (%) 0
Odor Tar / oil
Color Dark Black to Brown.

HAZARDOUS PROPERTIES

[ ] Water Reactive	[ ] Reactive	[X] NONE	
[ ] Shock Sensitive	[ ] Pyrophoric	[ ] Explosive	
[ ] Radioactive	[ ] Pesticide Residual	[ ] Polymriable	
[ ] Corrotive	[ ] Toxic Vapor	[ ] Ignitable	
[ ] Biological	[ ] Etiological	[ ] Pathogen	

[ ] Other _____

REQUIRED PERSONNEL PROTECTIVE EQUIPMENT AND PROCEDURES: Organic Vapor Cartridge respirator, Gloves and Tyvek Suits

PLEASE ATTACH ALL MATERIAL SAFETY DATA SHEETS, LOGISTIC SHEETS, ANALYSIS REPORTS, HANDLING PRECAUTIONS, ADDITIONAL HAZARD SUPPORT INFORMATION, DATA & COMMENTS.

CERTIFICATION: I hereby certify that the above and attached description is complete and accurate to the best of my knowledge and ability to determine, that no deliberate or willful omission of composition or properties exists, and that all known or suspected hazards have been disclosed. I certify that the materials tested are representative of all the materials subject to the contract.

DATE 8-3-85 GENERATOR'S SIGNATURE: Contractor

PM
9-31-88
Gainesville, FL

file copy

KOOGLER & ASSOCIATES, *Environmental Services*
4014 N.W. 13th Street • Gainesville, Florida 32609 • 904/377-5822

KA 290-88-02

August 31, 1988

Mr. C. H. Fancy
Deputy Chief
Bureau of Air Quality Management
Florida Department of
Environmental Regulation
Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, FL 32399-2400

Subject: MFM Environmental
Request for "One-Time" Approval to Thermally
Process Coal Tar Contaminated Soil

Dear Clair:

Confirming our telephone conversation of August 30, 1988, I would like to provide you with a summary of operation constraints and engineering considerations that will be incorporated during the operation of the MFM Environmental clay dryer while the dryer is being used to thermally process the soil contaminated with coal tar. As we have discussed with you and Chuck Collins of the Department's Central District office in Orlando, the "one-time" approval to process the coal tar contaminated soil will cover a time period of approximately one week.

First, the purpose for requesting approval to process the coal tar contaminated soil is to allow MFM Environmental to develop operational and design information that can be used to upgrade the clay dryer to allow the processing of hydrocarbon contaminated soil on a routine basis. The processing of the coal tar contaminated soil will allow us to conduct the tests necessary to determine the fraction of coal tar contaminants that is combusted in the dryer and the fraction that is volatilized and discharged from the dryer with the combustion gas and excess air passing through the dryer. The information developed will contribute to the development of design criteria for an afterburner to destruct the hydrocarbon products discharged from the dryer, and for a quench system for the gases leaving afterburner and entering the baghouse. The information is also necessary to resize the baghouse, if necessary, and possibly to develop information to design a scrubber system (a dry scrubber or conventional scrubber) to control acid gases.

During the approximate one week period that the existing dryer will be used

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Mr. C. H. Fancy
Deputy Chief
Bureau of Air Quality Management
Florida Department of Environmental Regulation
Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, FL 32399-2400

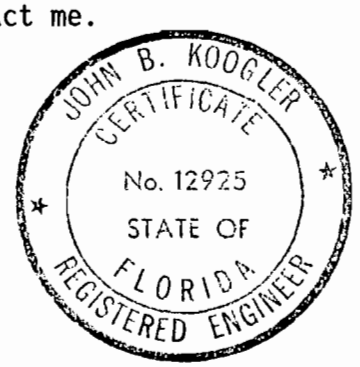
process the coal tar contaminated soil, all of the gases discharged from the dryer will pass through the existing baghouse. Under present operating conditions, there is no afterburner associated with the dryer.

Through the processing of petroleum contaminated soil and the one-time processing of creosote contaminated soil, MFM has developed dryer operating experience that will assure the processing of coal tar contaminated soil can be conducted in a safe and environmentally responsible manner. MFM has demonstrated that the processing of the soil (the removal of the organic constituents from the soil) can be routinely accomplished by maintaining the temperature of the soil discharged from the dryer in the 900-1100^{o}F temperature range. While achieving this material discharge temperature, MFM continually monitors and controls the gas discharge temperature at the tail end of the kiln by bleeding excess air through the kiln or by bleeding dilution air in at the tail end of the kiln. By controlling the gas discharge temperature from the kiln, MFM can assure that the baghouse will neither overheat (thus destroying the integrity and efficiency of the bags) nor will the temperature drop below the dew point of organic acids, inorganic acids, or organic compounds in the gas stream. By maintaining the temperature of the baghouse above the dew points of these various compounds, MFM can assure that the bags will not be damaged by organic or inorganic acids nor will they be blinded by a coating of organic (coal tar) products. The use of sacrificial bags that can be periodically removed for visual inspection and the monitoring of baghouse pressure drop will also assure the effective operation of the baghouse.

To eliminate the potential for visible emissions from the dryer and to minimize the potential for odors, MFM will begin processing the coal tar contaminated soil at a low throughput rate (in the range of approximately 10 tons per hour). This throughput rate will be gradually increased with all kiln operating characteristics maintained at steady state and environmentally acceptable conditions. If a dryer upset does occur, the throughput rate to the dryer will be decreased or the dryer will be shut down until operational problems are corrected. Based upon past operating experience, MFM is confident that acceptable operational conditions can be maintained.

In addition to monitoring the operating characteristics of dryer, we will also be collecting samples of the soil fed to the dryer, soil discharged from the dryer, dust collected in the baghouse and samples of the stack gas discharged from the dryer baghouse. All of these samples will be analyzed for coal tar products so that we can determine the fate of the coal tar products during the processing of the soil. These test data will also provide the basis for the design of the afterburner, scrubber, and baghouse systems addressed in earlier paragraphs of this letter.

We appreciate the time and effort that you and your staff and Chuck Collins and his staff have dedicated to this request. If there are any additional information or assurances that I might provide you, please do not hesitate to contact me.



Very truly yours,

KOOGLER & ASSOCIATES

John B. Koogler, Ph.D, P.E.
State of Florida P.E.
Registration No. 12925

JBK:wa

cc: Mr. James Kleekamp
Mr. David Kibler
Mr. Chuck Collins

copied: Mike Harley
Barry Andrews
CHF/BT

PM
6-20-89
Gainesville, FL

file copy

KOOGLER & ASSOCIATES, *Environmental Services*
4014 N.W. 13th Street • Gainesville, Florida 32609 • 904/377-5822

RECEIVED
JUN 21 1988
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KA 190-87-01

June 20, 1988

Mr. C.H. Fancy
Deputy Chief
Bureau of Air Quality Management
Florida Department
of Environmental Regulation
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

Subject: Revision of Calculations

Dear Clair:

Attached is a revision of Page 5 of 6 of the calculations I submitted to you under cover of my letter dated June 15, 1988.

If you have any questions, please give me a call.

Very truly yours,

KOOGLER & ASSOCIATES

John B. Koogler/MAB

John B. Koogler, Ph.D., P.E.

JBK:mab

copied: Mike Harley
CHF/BT
T. Sawicki - CF Dist } 6-21-88
CHM

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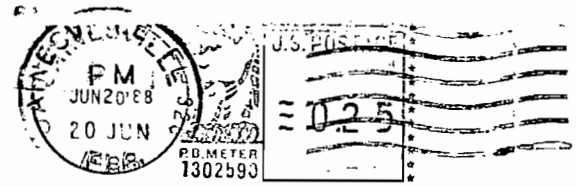
4014 N.W. 13th Street • Gainesville, Florida 32609 • 904/377-5822



Mr. C.H. Fancy
Deputy Chief
Bureau of Air Quality Management
Florida Department of
Environmental Regulation
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

Based on telephone conversation with Gentry, the maximum expected soil chloride concentration has been calculated assuming the contaminating hydrocarbon has a chloride content of 4000 ppm

Density of dry, packed earth – 95 lb/ft^3
(Chemical Engineers Hdbk, 1950, pg 194)

Density of typical contaminated hydrocarbon – 70 lb/ft^3

Saturated soil weight
= 95 lb/ft^3 + 0.4 ft^3 (70 lb/ft^3)
= 123 lb/ft^3 when saturated with hydrocarbons

Chloride concentration in soil

95 lb	x	0	= 0
28 lb	x	4000	= 112000
123 lb			112000

Avg Cl$^-$ = 112000/123
= 910 ppm

The maximum chloride concentration in the soil fed to the kiln can be 24000 ppm without exceeding th AAL for HCl. The maximum (typical) chloride concentration in Florida soils contaminated with a hydrocarbon containing 4000 ppm chlorides is in the range of 910 ppm.

It is proposed that MFH be permitted to decontaminate soils containing up to 2000 ppm chlorides so long as the soil is not classified a hazardous waste.

Revised 6/20/88

Fed Exp # 763724484 5
6/16/88
Gainesville, FL

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KOOGLER & ASSOCIATES, Environmental Services
4014 N.W. 13th Street • Gainesville, Florida 32609 • 904/377-5822

KA 290-87-01

June 16, 1988

Mr. C.H. Fancy
Deputy Chief
Bureau of Air Quality Management
Florida Department
of Environmental Regulation
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

RECEIVED
JUN 17 1988
DER - BAQM

Subject: Mid-Florida Mining Company, Inc.
Marion County-AP
Soil Decontamination in the Clay Dryer
Permitted by Permit AC42-113787

Dear Clair:

With reference to my letter to you dated June 15, 1988, I am transmitting herewith a complete copy of the report of the trial burn conducted by an EPA contractor at Mid-Florida Mining Company, Inc. (MFM) in February 1984. I am also transmitting a copy of the air quality modeling that I referenced in my June 15, 1988 letter. This modeling was conducted with the ISC-LT Model and estimates the annual impact of emissions from the MFM clay dryer at receptors ranging in distance from 0.1 to 5.0 kilometers from the dryer.

In addition to transmitting the two referenced documents, I would also like to address two matters related to the subject matter discussed in my letter dated June 15, 1988. The first matter is related to the maximum potential emission rates of metals under the current permit conditions for the clay dryer and under amended conditions as requested in my letter of June 15th. The other matter has to do with the potential emission rate of hexavalent chromium from the MFM clay dryer, or any other combustion source for that matter.

On the attached calculation sheet, I have estimated the maximum potential emission rates of five metals under current permit conditions and the maximum potential emission rates of these same metals under the amended conditions proposed in my letter of June 15, 1988. Under present conditions, the maximum emission rate of lead would be 0.002 pounds per hour and the maximum potential emission rate of nickel would be 0.24 pounds per hour; the two extreme emission rates expected for metals. Under proposed conditions, the maximum potential rate of lead will increase to 0.003 pounds per hour while the maximum potential rate of nickel will increase to 0.35 pounds per hour; again, the extreme limits of expected metal emission rates. Since the maximum expected increase in metals emissions will range only from 0.001 to 0.1 pounds per hour (and will generally be less than 0.05 pounds per hour), the impact of these emissions

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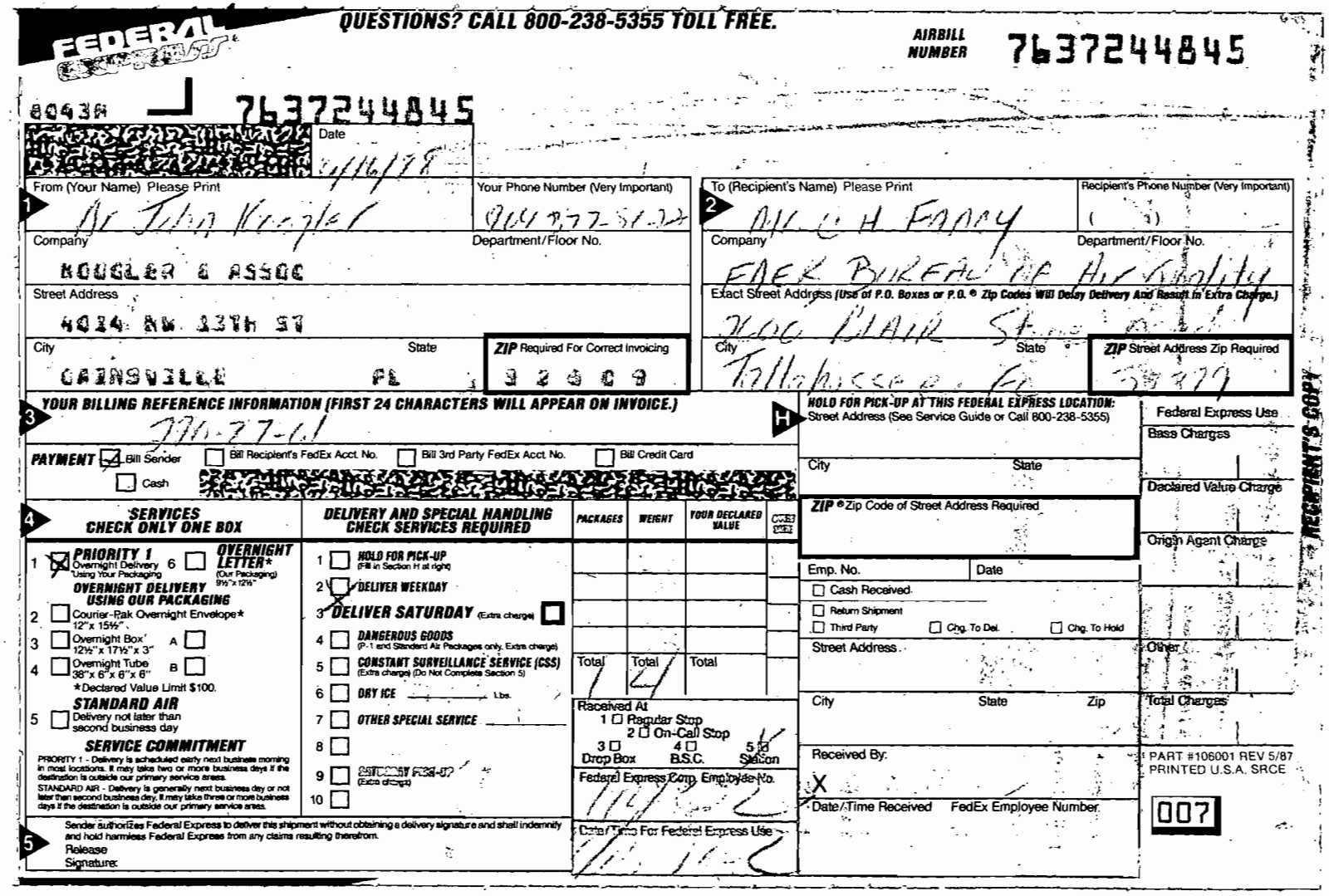

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is expected to be extremely small. As reported in my letter of June 15, 1988, the total impact of the metals emissions under proposed conditions will be less than half of the acceptable ambient levels.

Because the projected impacts are expected to be so slight, it is suggested that perhaps the requested amendments can be made to the subject permit without the necessity of the public notice that we discussed during our meeting with you on June 13, 1988. If the amendments can be made without the permit notice, MFM would very much appreciate it; not that MFM objects to the public notice, but the additional two weeks for public comment is another time restriction that could cause additional hardship to MFM. Your consideration of this matter is appreciated.

The other matter that I would like to discuss is the potential for hexavalent chromium emissions from any combustion source. As you are aware, hexavalent chromium is the form of chromium that is of greatest environmental concern. Bivalent and trivalent chromium are of little environmental concern in concentrations normally experienced.

Hexavalent chromium is the acidic form of chromium and is an extremely strong oxidizing agent. Being a strong oxidizing agent, the hexavalent chromium is readily reduced to the trivalent or bivalent states if there is any oxidizable material present. Oxidizable materials can include any organic materials (such as organic compounds in fuels or soil) or sulfur dioxide in a combustion source. Because of the ubiquitous availability of organic compounds and the presence of sulfur dioxide in virtually all combustion sources, the potential for hexavalent chromium to be oxidized to the bivalent or trivalent states is extremely high. For this reason, very little, if any, hexavalent chromium is expected in the stack gas of any combustion source, including the MFM clay dryer. As I related to you during our meeting on June 13, 1988, the testing that we have recently completed on five combustion sources burning fuel containing chromium demonstrated that there was no detectable hexavalent chromium in the stack gases of any of the sources.

If there are any questions regarding information contained herein or any questions related to my letter of June 15, 1988, please do not hesitate to contact me.

Very truly yours,

KOOGLER & ASSOCIATES

John B. Koogler, Ph.D., P.E.

JBK:mab

cc: Mr. David Kibler, MFM
Mr. Jim Kleekamp, MFM
Mr. Tony Trippi, MFM

copied: Mike Harley
Tom Sawicki
CHF/BT
Larry George
6-17-88

Comparison of Potential Metals Emission Rates From MFM Clay Dryer Under Existing Permit Conditions and Conditions Requested by Letter Dated 6/15/88

Current Permit Conditions (AC 42-113787)

Fuel firing rate - 245 gph (density ~ 8 lb/gal)
Max. lead concentration in fuel - 1000 ppm
Max. concentration of other metals - 2000 ppm

Max. potential emission rates assuming no metals in the dryer feed stock:

$E_{Pb} = 245\,gph\,(8\,lb/gal)(10^{-6})(1000\,lb/10^{6}\,lb)(1-0.999)^{*}$
$= 0.002\,lb/hr$ lead

$E_{Cd} = 245(8)(10^{-6})(2000)(1-0.98)^{*} = 0.08\,lb/hr$ cadmium

$E_{Cr} = 245(8)(10^{-6})(2000)(1-0.97)^{*} = 0.12\,lb/hr$ chromium

$E_{Ni} = 245(8)(10^{-6})(2000)(1-0.94)^{*} = 0.24\,lb/hr$ nickel

$E_{Zn} = 245(8)(10^{-6})(2000)(1-0.999)^{*} = 0.004\,lb/hr$ zinc

Proposed Conditions (Letter dated 6/15/88)

Fuel firing rate = 245 gph (@ 8 lb/gal)
Max soil processing rate = 30 tph
Max lead concentration in fuel = 500 ppm
in soil = 40 ppm
Max concentration of other metals in fuel = 200 ppm
in soil = 90 ppm

Max. potential emission rates of metals:

$E_{Pb} = [30\,tph(2000\,lb/ton)(10^{-6})(40) + 245\,gph(8\,lb/gal)(10^{-6})(500)](1-0.999)^{*}$
$= 0.003\,lb/hr$ lead

$E_{Cd} = [30(2000)(10^{-6})(90) + 245(8)(10^{-6})(200)](1-0.98)^{*} = 0.11\,lb/hr$ cadmium

$E_{Cr} = [30(2000)(10^{-6})(90) + 245(8)(10^{-6})(200)](1-0.97)^{*} = 0.17\,lb/hr$ chromium

$E_{Ni} = [30(2000)(10^{-6})(90) + 245(8)(10^{-6})(200)](1-0.94)^{*} = 0.35\,lb/hr$ nickel

$E_{Zn} = [30(2000)(10^{-6})(90) + 245(8)(10^{-6})(200)](1-0.999)^{*} = 0.006\,lb/hr$ zinc

* Actual control efficiency for metals from Tables 7-1, 7-2 and 7-3 of EPA trial burn report.

- ISCLT INPUT DATA -

NUMBER OF SOURCES = 1
NUMBER OF X AXIS GRID SYSTEM POINTS = 10
NUMBER OF Y AXIS GRID SYSTEM POINTS = 36
NUMBER OF SPECIAL POINTS = 0
NUMBER OF SEASONS = 1
NUMBER OF WIND SPEED CLASSES = 6
NUMBER OF STABILITY CLASSES = 6
NUMBER OF WIND DIRECTION CLASSES = 16
FILE NUMBER OF DATA FILE USED FOR REPORTS = 1
THE PROGRAM IS RUN IN RURAL MODE
CONCENTRATION (DEPOSITION) UNITS CONVERSION FACTOR =0.10000000E+07
ACCELERATION OF GRAVITY (METERS/SEC**2) = 9.800
HEIGHT OF MEASUREMENT OF WIND SPEED (METERS) = 10.000
CORRECTION ANGLE FOR GRID SYSTEM VERSUS DIRECTION DATA NORTH (DEGREES) = 0.000
DECAY COEFFICIENT =0.00000000E+00
PROGRAM OPTION SWITCHES = 1, 2, 1, 0, 0, 3, 2, 2, 3, 2, 2, 0, 0, 0, 0, 0, 0, 1, 0, 1, 0, 1, 1, 1,
ALL SOURCES ARE USED TO FORM SOURCE COMBINATION 1
RANGE X AXIS GRID SYSTEM POINTS (METERS)= 100.00, 200.00, 300.00, 500.00, 700.00, 1000.00,
1500.00, 2000.00, 3000.00, 5000.00,
AZIMUTH BEARING Y AXIS GRID SYSTEM POINTS (DEGREES)= 10.00, 20.00, 30.00, 40.00, 50.00, 60.00,
70.00, 80.00, 90.00, 100.00, 110.00, 120.00, 130.00, 140.00, 150.00, 160.00,
170.00, 180.00, 190.00, 200.00, 210.00, 220.00, 230.00, 240.00, 250.00, 260.00,
270.00, 280.00, 290.00, 300.00, 310.00, 320.00, 330.00, 340.00, 350.00, 360.00,

- AMBIENT AIR TEMPERATURE (DEGREES KELVIN) -

	STABILITY CATEGORY 1	STABILITY CATEGORY 2	STABILITY CATEGORY 3	STABILITY CATEGORY 4	STABILITY CATEGORY 5	STABILITY CATEGORY 6
SEASON 1	298.0000	298.0000	298.0000	298.0000	298.0000	298.0000

- MIXING LAYER HEIGHT (METERS) -

SEASON 1

	WIND SPEED CATEGORY 1	WIND SPEED CATEGORY 2	WIND SPEED CATEGORY 3	WIND SPEED CATEGORY 4	WIND SPEED CATEGORY 5	WIND SPEED CATEGORY 6
STABILITY CATEGORY 1	0.100000E+04	0.100000E+04	0.100000E+04	0.100000E+04	0.100000E+04	0.100000E+04
STABILITY CATEGORY 2	0.100000E+04	0.100000E+04	0.100000E+04	0.100000E+04	0.100000E+04	0.100000E+04
STABILITY CATEGORY 3	0.100000E+04	0.100000E+04	0.100000E+04	0.100000E+04	0.100000E+04	0.100000E+04
STABILITY CATEGORY 4	0.100000E+04	0.100000E+04	0.100000E+04	0.100000E+04	0.100000E+04	0.100000E+04
STABILITY CATEGORY 5	0.100000E+05	0.100000E+05	0.100000E+05	0.100000E+05	0.100000E+05	0.100000E+05
STABILITY CATEGORY 6	0.100000E+05	0.100000E+05	0.100000E+05	0.100000E+05	0.100000E+05	0.100000E+05

- ISCLT INPUT DATA (CONT.) -

- FREQUENCY OF OCCURRENCE OF WIND SPEED, DIRECTION AND STABILITY -

SEASON 1

STABILITY CATEGORY 1

DIRECTION (DEGREES)	WIND SPEED CATEGORY 1 (1.5000MPS)	WIND SPEED CATEGORY 2 (2.5000MPS)	WIND SPEED CATEGORY 3 (4.3000MPS)	WIND SPEED CATEGORY 4 (6.8000MPS)	WIND SPEED CATEGORY 5 (9.5000MPS)	WIND SPEED CATEGORY 6 (12.5000MPS)
0.000	0.00018000	0.00005000	0.00000000	0.00000000	0.00000000	0.00000000
22.500	0.00009000	0.00002000	0.00000000	0.00000000	0.00000000	0.00000000
45.000	0.00019000	0.00023000	0.00000000	0.00000000	0.00000000	0.00000000
67.500	0.00024000	0.00025000	0.00000000	0.00000000	0.00000000	0.00000000
90.000	0.00042000	0.00057000	0.00000000	0.00000000	0.00000000	0.00000000
112.500	0.00033000	0.00027000	0.00000000	0.00000000	0.00000000	0.00000000
135.000	0.00024000	0.00025000	0.00000000	0.00000000	0.00000000	0.00000000
157.500	0.00030000	0.00039000	0.00000000	0.00000000	0.00000000	0.00000000
180.000	0.00023000	0.00023000	0.00000000	0.00000000	0.00000000	0.00000000
202.500	0.00014000	0.00016000	0.00000000	0.00000000	0.00000000	0.00000000
225.000	0.00008000	0.00011000	0.00000000	0.00000000	0.00000000	0.00000000
247.500	0.00020000	0.00018000	0.00000000	0.00000000	0.00000000	0.00000000
270.000	0.00016000	0.00018000	0.00000000	0.00000000	0.00000000	0.00000000
292.500	0.00015000	0.00011000	0.00000000	0.00000000	0.00000000	0.00000000
315.000	0.00014000	0.00009000	0.00000000	0.00000000	0.00000000	0.00000000
337.500	0.00010000	0.00009000	0.00000000	0.00000000	0.00000000	0.00000000

SEASON 1

STABILITY CATEGORY 2

DIRECTION (DEGREES)	WIND SPEED CATEGORY 1 (1.5000MPS)	WIND SPEED CATEGORY 2 (2.5000MPS)	WIND SPEED CATEGORY 3 (4.3000MPS)	WIND SPEED CATEGORY 4 (6.8000MPS)	WIND SPEED CATEGORY 5 (9.5000MPS)	WIND SPEED CATEGORY 6 (12.5000MPS)
0.000	0.00073001	0.00153001	0.00094001	0.00000000	0.00000000	0.00000000
22.500	0.00078001	0.00164001	0.00084001	0.00000000	0.00000000	0.00000000
45.000	0.00101001	0.00402003	0.00205002	0.00000000	0.00000000	0.00000000
67.500	0.00145001	0.00507004	0.00363003	0.00000000	0.00000000	0.00000000
90.000	0.00224002	0.00774005	0.00612004	0.00000000	0.00000000	0.00000000
112.500	0.00111001	0.00308002	0.00235002	0.00000000	0.00000000	0.00000000
135.000	0.00075001	0.00283002	0.00169001	0.00000000	0.00000000	0.00000000
157.500	0.00063000	0.00256002	0.00153001	0.00000000	0.00000000	0.00000000
180.000	0.00088001	0.00260002	0.00219002	0.00000000	0.00000000	0.00000000
202.500	0.00034000	0.00132001	0.00110001	0.00000000	0.00000000	0.00000000
225.000	0.00053000	0.00121001	0.00094001	0.00000000	0.00000000	0.00000000
247.500	0.00056000	0.00155001	0.00107001	0.00000000	0.00000000	0.00000000
270.000	0.00083001	0.00190001	0.00219002	0.00000000	0.00000000	0.00000000
292.500	0.00069001	0.00174001	0.00100001	0.00000000	0.00000000	0.00000000
315.000	0.00037000	0.00142001	0.00112001	0.00000000	0.00000000	0.00000000
337.500	0.00038000	0.00119001	0.00050000	0.00000000	0.00000000	0.00000000

- ISCLT INPUT DATA (CONT.) -

- FREQUENCY OF OCCURRENCE OF WIND SPEED, DIRECTION AND STABILITY -

SEASON 1

STABILITY CATEGORY 3

DIRECTION (DEGREES)	WIND SPEED CATEGORY 1 (1.5000MPS)	WIND SPEED CATEGORY 2 (2.5000MPS)	WIND SPEED CATEGORY 3 (4.3000MPS)	WIND SPEED CATEGORY 4 (6.8000MPS)	WIND SPEED CATEGORY 5 (9.5000MPS)	WIND SPEED CATEGORY 6 (12.5000MPS)
0.000	0.00035000	0.00201002	0.00448003	0.00037000	0.00002000	0.00000000
22.500	0.00045000	0.00324002	0.00352003	0.00057000	0.00007000	0.00000000
45.000	0.00060000	0.00600005	0.00669005	0.00139001	0.00000000	0.00000000
67.500	0.00080001	0.00527004	0.00671005	0.00203002	0.00002000	0.00000000
90.000	0.00091001	0.00769006	0.01206009	0.00390003	0.00005000	0.00000000
112.500	0.00040000	0.00331003	0.00699005	0.00228002	0.00009000	0.00000000
135.000	0.00042000	0.00272002	0.00475003	0.00075001	0.00000000	0.00000000
157.500	0.00056000	0.00224002	0.00324002	0.00048000	0.00000000	0.00000000
180.000	0.00056000	0.00315002	0.00635005	0.00068001	0.00002000	0.00000000
202.500	0.00021000	0.00121001	0.00192001	0.00048000	0.00002000	0.00000000
225.000	0.00011000	0.00162001	0.00340003	0.00066000	0.00005000	0.00000000
247.500	0.00025000	0.00228002	0.00304002	0.00078001	0.00005000	0.00000000
270.000	0.00022000	0.00215002	0.00646005	0.00114001	0.00007000	0.00005000
292.500	0.00015000	0.00183001	0.00404003	0.00066000	0.00009000	0.00000000
315.000	0.00025000	0.00110001	0.00342003	0.00066000	0.00000000	0.00000000
337.500	0.00020000	0.00103001	0.00203002	0.00011000	0.00000000	0.00000000

SEASON 1

STABILITY CATEGORY 4

DIRECTION (DEGREES)	WIND SPEED CATEGORY 1 (1.5000MPS)	WIND SPEED CATEGORY 2 (2.5000MPS)	WIND SPEED CATEGORY 3 (4.3000MPS)	WIND SPEED CATEGORY 4 (6.8000MPS)	WIND SPEED CATEGORY 5 (9.5000MPS)	WIND SPEED CATEGORY 6 (12.5000MPS)
0.000	0.00088001	0.00411003	0.01893014	0.01731013	0.00155001	0.00005000
22.500	0.00066000	0.00448003	0.00979007	0.00970007	0.00128001	0.00018000
45.000	0.00098001	0.00612004	0.00986008	0.00927007	0.00062000	0.00005000
67.500	0.00097001	0.00527004	0.00856007	0.00690005	0.00030000	0.00005000
90.000	0.00108001	0.00694005	0.01224009	0.01107008	0.00037000	0.00000000
112.500	0.00070001	0.00363003	0.00769006	0.00733006	0.00014000	0.00000000
135.000	0.00050000	0.00356003	0.00902007	0.00582004	0.00032000	0.00005000
157.500	0.00049000	0.00345003	0.00943007	0.00877006	0.00105001	0.00005000
180.000	0.00095001	0.00541004	0.01601012	0.01484011	0.00251002	0.00014000
202.500	0.00031000	0.00233002	0.00678005	0.00507004	0.00094001	0.00009000
225.000	0.00071001	0.00267002	0.00735006	0.00669005	0.00100001	0.00023000
247.500	0.00042000	0.00313002	0.00612004	0.00432003	0.00103001	0.00018000
270.000	0.00055000	0.00324002	0.00692005	0.00895007	0.00183001	0.00021000
292.500	0.00046000	0.00265002	0.00580004	0.00747006	0.00146001	0.00023000
315.000	0.00045000	0.00219002	0.00557004	0.00863006	0.00112001	0.00002000
337.500	0.00048000	0.00228002	0.00623005	0.00626004	0.00034000	0.00009000

- ISCLT INPUT DATA (CONT.) -

- FREQUENCY OF OCCURRENCE OF WIND SPEED, DIRECTION AND STABILITY -

SEASON 1

STABILITY CATEGORY 5

DIRECTION (DEGREES)	WIND SPEED CATEGORY 1 (1.5000MPS)	WIND SPEED CATEGORY 2 (2.5000MPS)	WIND SPEED CATEGORY 3 (4.3000MPS)	WIND SPEED CATEGORY 4 (6.8000MPS)	WIND SPEED CATEGORY 5 (9.5000MPS)	WIND SPEED CATEGORY 6 (12.5000MPS)
0.000	0.00000000	0.00849006	0.01393010	0.00000000	0.00000000	0.00000000
22.500	0.00000000	0.00628005	0.00459003	0.00000000	0.00000000	0.00000000
45.000	0.00000000	0.00843006	0.00352003	0.00000000	0.00000000	0.00000000
67.500	0.00000000	0.00612004	0.00221002	0.00000000	0.00000000	0.00000000
90.000	0.00000000	0.00740005	0.00272002	0.00000000	0.00000000	0.00000000
112.500	0.00000000	0.00457003	0.00208002	0.00000000	0.00000000	0.00000000
135.000	0.00000000	0.00505004	0.00281002	0.00000000	0.00000000	0.00000000
157.500	0.00000000	0.00571004	0.00285002	0.00000000	0.00000000	0.00000000
180.000	0.00000000	0.00968007	0.00457003	0.00000000	0.00000000	0.00000000
202.500	0.00000000	0.00358003	0.00190001	0.00000000	0.00000000	0.00000000
225.000	0.00000000	0.00422003	0.00190001	0.00000000	0.00000000	0.00000000
247.500	0.00000000	0.00322002	0.00203002	0.00000000	0.00000000	0.00000000
270.000	0.00000000	0.00299002	0.00276002	0.00000000	0.00000000	0.00000000
292.500	0.00000000	0.00242002	0.00372003	0.00000000	0.00000000	0.00000000
315.000	0.00000000	0.00148001	0.00370003	0.00000000	0.00000000	0.00000000
337.500	0.00000000	0.00269002	0.00630004	0.00000000	0.00000000	0.00000000

SEASON 1

STABILITY CATEGORY 6

DIRECTION (DEGREES)	WIND SPEED CATEGORY 1 (1.5000MPS)	WIND SPEED CATEGORY 2 (2.5000MPS)	WIND SPEED CATEGORY 3 (4.3000MPS)	WIND SPEED CATEGORY 4 (6.8000MPS)	WIND SPEED CATEGORY 5 (9.5000MPS)	WIND SPEED CATEGORY 6 (12.5000MPS)
0.000	0.01493011	0.01868014	0.00000000	0.00000000	0.00000000	0.00000000
22.500	0.01270010	0.01324010	0.00000000	0.00000000	0.00000000	0.00000000
45.000	0.01156009	0.01217009	0.00000000	0.00000000	0.00000000	0.00000000
67.500	0.00960007	0.00872006	0.00000000	0.00000000	0.00000000	0.00000000
90.000	0.00992008	0.00840006	0.00000000	0.00000000	0.00000000	0.00000000
112.500	0.00780006	0.00610004	0.00000000	0.00000000	0.00000000	0.00000000
135.000	0.00757005	0.00566004	0.00000000	0.00000000	0.00000000	0.00000000
157.500	0.00691005	0.00646005	0.00000000	0.00000000	0.00000000	0.00000000
180.000	0.00983008	0.01073008	0.00000000	0.00000000	0.00000000	0.00000000
202.500	0.00352003	0.00324002	0.00000000	0.00000000	0.00000000	0.00000000
225.000	0.00397003	0.00454003	0.00000000	0.00000000	0.00000000	0.00000000
247.500	0.00435003	0.00397003	0.00000000	0.00000000	0.00000000	0.00000000
270.000	0.00572004	0.00676005	0.00000000	0.00000000	0.00000000	0.00000000
292.500	0.00483003	0.00527004	0.00000000	0.00000000	0.00000000	0.00000000
315.000	0.00274002	0.00281002	0.00000000	0.00000000	0.00000000	0.00000000
337.500	0.00391003	0.00500004	0.00000000	0.00000000	0.00000000	0.00000000

- ISCLT INPUT DATA (CONT.) -

- VERTICAL POTENTIAL TEMPERATURE GRADIENT (DEGREES KELVIN/METER) -

	WIND SPEED CATEGORY 1	WIND SPEED CATEGORY 2	WIND SPEED CATEGORY 3	WIND SPEED CATEGORY 4	WIND SPEED CATEGORY 5	WIND SPEED CATEGORY 6
STABILITY CATEGORY 1	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00
STABILITY CATEGORY 2	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00
STABILITY CATEGORY 3	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00
STABILITY CATEGORY 4	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00
STABILITY CATEGORY 5	0.200000E-01	0.200000E-01	0.200000E-01	0.200000E-01	0.200000E-01	0.200000E-01
STABILITY CATEGORY 6	0.350000E-01	0.350000E-01	0.350000E-01	0.350000E-01	0.350000E-01	0.350000E-01

- WIND PROFILE POWER LAW EXPONENTS -

	WIND SPEED CATEGORY 1	WIND SPEED CATEGORY 2	WIND SPEED CATEGORY 3	WIND SPEED CATEGORY 4	WIND SPEED CATEGORY 5	WIND SPEED CATEGORY 6
STABILITY CATEGORY 1	0.700000E-01	0.700000E-01	0.700000E-01	0.700000E-01	0.700000E-01	0.700000E-01
STABILITY CATEGORY 2	0.700000E-01	0.700000E-01	0.700000E-01	0.700000E-01	0.700000E-01	0.700000E-01
STABILITY CATEGORY 3	0.100000E+00	0.100000E+00	0.100000E+00	0.100000E+00	0.100000E+00	0.100000E+00
STABILITY CATEGORY 4	0.150000E+00	0.150000E+00	0.150000E+00	0.150000E+00	0.150000E+00	0.150000E+00
STABILITY CATEGORY 5	0.350000E+00	0.350000E+00	0.350000E+00	0.350000E+00	0.350000E+00	0.350000E+00
STABILITY CATEGORY 6	0.550000E+00	0.550000E+00	0.550000E+00	0.550000E+00	0.550000E+00	0.550000E+00

- SOURCE INPUT DATA -

C A R D	T A P E	SOURCE NUMBER	SOURCE TYPE	X COORDINATE (M)	Y COORDINATE (M)	EMISSION HEIGHT (M)	BASE ELEVATION (M)	- SOURCE DETAILS DEPENDING ON TYPE -
X		1	STACK	0.00	0.00	13.70	0.00	GAS EXIT TEMP (DEG K)= 380.00, GAS EXIT VEL. (M/SEC)= 23.20, STACK DIAMETER (M)= 1.120, HEIGHT OF ASSO. BLDG. (M)= 10.70, WIDTH OF ASSO. BLDG. (M)= 30.00, WAKE EFFECTS FLAG = 0

- SOURCE STRENGTHS (GRAMS PER SEC) -

SEASON 1	SEASON 2	SEASON 3	SEASON 4
1.00000E+01			

** ANNUAL GROUND LEVEL CONCENTRATION (MICROGRAMS PER CUBIC METER) FROM ALL SOURCES COMBINED **

- GRID SYSTEM RECEPTORS -
- X AXIS (, METERS) -

Y AXIS (, DEGREES)	100.000	200.000	300.000	500.000	700.000	1000.000	1500.000	2000.000	3000.000
	- CONCENTRATION -								
360.000	9.773202	4.750987	3.662849	3.850271	3.457170	2.801645	2.119509	1.720819	1.249700
350.000	7.865918	3.883307	2.950371	3.161761	2.860992	2.314626	1.753156	1.423988	1.036884
340.000	6.056061	2.999851	2.365550	2.544938	2.293966	1.849411	1.396802	1.134343	0.826130
330.000	5.322232	2.685649	2.142241	2.343464	2.121239	1.709291	1.286240	1.042447	0.759297
320.000	4.980663	2.567880	2.090210	2.312230	2.096139	1.685728	1.261876	1.020262	0.742115
310.000	5.003671	2.655199	2.181288	2.410337	2.172320	1.732099	1.279603	1.026349	0.741195
300.000	5.393627	2.959072	2.434491	2.643793	2.348558	1.843580	1.335279	1.058060	0.755350
290.000	6.116360	3.446307	2.882745	3.102013	2.726009	2.113057	1.501465	1.173629	0.823650
280.000	7.732778	4.499429	3.826271	4.164244	3.661860	2.823995	1.976789	1.521592	1.044586
270.000	9.448626	5.561799	4.916561	5.310547	4.634221	3.547207	2.453624	1.870825	1.264898
260.000	7.807505	4.582593	3.954301	4.353804	3.855443	2.993643	2.108343	1.631505	1.127789
250.000	6.268097	3.618208	3.152022	3.492826	3.120460	2.456444	1.767900	1.395365	0.991185
240.000	6.107219	3.410522	2.898160	3.241564	2.939129	2.355917	1.736580	1.394922	1.013900
230.000	6.464635	3.452521	2.888939	3.243499	2.974594	2.422363	1.822411	1.485456	1.096740
220.000	6.561009	3.372698	2.742990	3.056747	2.823943	2.328238	1.784955	1.475484	1.108433
210.000	6.401031	3.142879	2.420022	2.666250	2.488095	2.081678	1.633319	1.373132	1.054543
200.000	6.899441	3.218790	2.379746	2.553353	2.386128	2.014848	1.611933	1.374214	1.071459
190.000	9.224464	4.168065	2.943935	3.106182	2.893893	2.438515	1.956388	1.662466	1.289022
180.000	11.662615	5.082916	3.605228	3.737741	3.451694	2.894881	2.320901	1.967628	1.515072
170.000	8.358592	3.703434	2.580742	2.694664	2.497544	2.095149	1.673259	1.410295	1.078701
160.000	5.146691	2.290030	1.628381	1.711139	1.579808	1.318590	1.038433	0.862441	0.645568
150.000	4.594279	2.125938	1.540063	1.605994	1.483233	1.180852	0.895633	0.722453	0.520629
140.000	4.951657	2.382663	1.769063	1.806457	1.592551	1.253672	0.912366	0.713752	0.494400
130.000	5.121067	2.515302	1.883861	1.926000	1.689314	1.318390	0.946638	0.734272	0.503922
120.000	5.111845	2.530541	1.905740	1.972412	1.744250	1.372223	0.995416	0.781986	0.548409
110.000	5.270351	2.628036	2.019717	2.095128	1.851531	1.457693	1.059866	0.837867	0.594310
100.000	5.782141	2.995682	2.293770	2.367165	2.075410	1.618722	1.164815	0.915315	0.645758
90.000	6.372871	3.352770	2.650593	2.690844	2.324315	1.790751	1.273504	0.995619	0.697939
80.000	5.170984	2.720219	2.116383	2.209178	1.947766	1.529030	1.107944	0.874237	0.618299
70.000	4.033381	2.081308	1.657609	1.774780	1.595174	1.278706	0.946472	0.755794	0.539260
60.000	4.006317	2.041570	1.589631	1.706667	1.544857	1.246411	0.930721	0.746573	0.535014
50.000	4.388981	2.196982	1.688101	1.787706	1.612095	1.297103	0.968923	0.777734	0.557122
40.000	4.382724	2.179325	1.663732	1.754081	1.579225	1.269510	0.949983	0.763357	0.547002
30.000	3.987213	1.985398	1.510690	1.600945	1.443666	1.162849	0.873840	0.703252	0.504492
20.000	4.373746	2.164927	1.654298	1.752728	1.580114	1.274739	0.961848	0.776520	0.558835
10.000	7.035151	3.466093	2.616673	2.773911	2.508522	2.029828	1.537214	1.246463	0.904092

- GRID SYSTEM RECEPTORS -
- X AXIS (, METERS) -

Y AXIS (, DEGREES)	5000.000
	- CONCENTRATION -
360.000	0.788908
350.000	0.656244

** - ANNUAL GROUND LEVEL CONCENTRATION (MICROGRAMS PER CUBIC METER) FROM ALL SOURCES COMBINED (CONT.) **

- GRID SYSTEM RECEPTORS -
- X AXIS (, METERS) -

5000.000

Y AXIS (, DEGREES)	- CONCENTRATION -
340.000	0.523871
330.000	0.482660
320.000	0.472455
310.000	0.470117
300.000	0.475504
290.000	0.510890
280.000	0.632800
270.000	0.754300
260.000	0.687944
250.000	0.621568
240.000	0.649271
230.000	0.710775
220.000	0.729702
210.000	0.708383
200.000	0.728436
190.000	0.868671
180.000	1.012153
170.000	0.714439
160.000	0.417734
150.000	0.324272
140.000	0.296808
130.000	0.300793
120.000	0.336000
110.000	0.369702
100.000	0.400581
90.000	0.431478
80.000	0.383568
70.000	0.335596
60.000	0.333433
50.000	0.346650
40.000	0.340061
30.000	0.313507
20.000	0.348546
10.000	0.568847

- PROGRAM DETERMINED MAXIMUM 10 VALUES -

X COORDINATE (METERS)	Y COORDINATE (DEGREES)	CONCENTRATION
100.00	180.00	11.662615
100.00	360.00	9.773202
100.00	270.00	9.448626
100.00	190.00	9.224464

** ANNUAL GROUND LEVEL CONCENTRATION (MICROGRAMS PER CUBIC METER) FROM ALL SOURCES COMBINED (CONT.) **

- PROGRAM DETERMINED MAXIMUM 10 VALUES -

X COORDINATE (METERS)	Y COORDINATE (DEGREES)	CONCENTRATION
100.00	170.00	8.358592
100.00	350.00	7.865918
100.00	260.00	7.807505
100.00	280.00	7.732778
100.00	10.00	7.035151
100.00	200.00	6.899441

EMISSION MEASUREMENTS FOR METALS AND SEMI-VOLATILE ORGANIC COMPOUNDS DURING THE THERMOPROCESSING OF SOIL CONTAMINATED WITH CREOSOTE

MFM INDUSTRIES, INC.
LOWELL, FLORIDA

Permit No. AC42-113787

July 15, 1988

KOOGLER & ASSOCIATES
ENVIRONMENTAL SERVICES
4014 N.W. 13TH STREET
GAINESVILLE, FLORIDA 32609
(904) 377-5822

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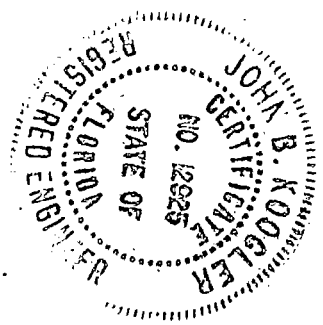
KOOGLER & ASSOCIATES

To the best of my knowledge, all applicable field and analytical procedures comply with Florida Department of Environmental Regulation requirements and all test data and plant operating data are true and correct.



John B. Koogler, PH.D., P.E.
State of Florida
Registration No. 12925

10/27/88
Date

SEAL

KOOGLER & ASSOCIATES

1.0 INTRODUCTION

MFM Industries, Inc. operates a rotary clay dryer near Lowell, Florida. The primary function of the clay dryer is to produce a dried clay product uSed for cat litter and a calcined clay product used as an oil adsorbent. The dryer is also permitted by Florida Department of Environmental Regulation to decontaminate soils contaminated with certain hydrocarbon products.

On July 15, 1988, Koogler & Associates, Environmental Services of Gainesville, Florida, conducted emission measurements on the dryer for metals and semi-volatile organic compounds while the dryer was being used to decontaminate soil containing creosote. The emission measurements were made with the EPA Modified Method 5 sampling train. The purpose of the testing was to determine the fate of metals and organic constituents removed from the soil and to develop information that can be used to improve the control efficiency of organic compounds during the thermoprocessing of soil. During the period of testing, soil was being processed at the rate of 20 to 30 tons per hour. Permit AC42-113787 limits the processing rate of contaminated soil to 30 tons per hour.

The metals that were included in the emission testing included lead, mercury, chromium, copper, zinc and arsenic. The emission rates of the metals ranged from a low of 0.00005 pounds per hour for mercury to 0.032 pounds per hour for zinc. The emission rate of chromium was 0.008 pounds

per hour; all of which was presumed to be trivalent chromium because of the oxidizing conditions within the dryer.

There are no specific emission limiting standards for any of the metals included in the emission survey. In regulations proposed by EPA on May 6, 1987 (burning of hazardous waste in boilers and industrial furnaces), emission limiting standards were proposed for arsenic, cadmium, hexavalent chromium and lead. The proposed emission limiting standard for arsenic that would be most applicable to the MFM clay dryer would have been in the range of 0.0025 pounds per hour for the conditions under which the dryer was operating at the time of the tests. The equivalent emission limiting standard for lead would have been in the range of 0.1 pounds per hour, based on kiln operating conditions. The measured emission rate of arsenic was 0.0017 pounds per hour and that of lead was 0.0018 pounds per hour.

The semi-volatile organic compounds included in the emission survey included 71 specific compounds targeted by the EPA Method 625 Analytical Procedure. Nineteen semi-volatile organic compounds were found in the stack gases and the combined emission rate of these compounds range from 4.7 to 8.4 pounds per hour.

In addition to measuring the concentration of organic compounds in the stack gas, the concentrations of these compounds were also measured in the untreated soil, the processed soil and in the dust collected in the baghouse used for controlling air pollutant emissions. For compounds present in the soil in significant concentrations, the thermoprocessing

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reduced the levels of the compounds by 99.8-99.9 percent. For compounds present in the untreated soil in fairly low concentrations, the reported treatment efficiency is less than 99 percent; probably more a function of analytical error than processing efficiency.

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2.0 PROCESS DESCRIPTION

The rotary dryer operated by MFM is used primarily for drying clay for use as cat litter or for calcining clay for use as an oil adsorbent. The dryer is also permitted by the Florida Department of Environmental Regulation to thermally process soil contaminated with certain hydrocarbon products. The maximum throughput rate for thermally processing contaminated soil is 30 tons per hour.

The dryer is 72 feet in length, and at the time of testing, was being fired with used-oil fuel at a rate ranging from 185 to 205 gallons per hour. This corresponds to a heat input rate in the range of 24-27 million BTU per hour; or approximately one million BTU per ton of soil processed.

At a soil processing rate of 20-30 tons per hour, the retention time of the soil in the dryer is estimated to be approximately 35 minutes. The temperature of the soil discharged from the dryer ranged from 730^{o}F to 805^{o}F.

The combustion gases and particulate matter discharged from the dryer are exhausted through a baghouse dust collector before they are discharged to the atmosphere. During the test period, the gas temperature at the exit of the dryer ranged from 230-235^{o}F and the temperature in the stack (downstream from the baghouse) ranged from 204-230^{o}F. The gas flow rate in the stack was 32,535 actual cubic feet per minute at a temperature of 217^{o}F and a moisture content of 16.7 percent.

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3.0 SAMPLING POINT LOCATION

Two sampling ports are located at 90 degrees to one another in the 42 inch-diameter stack venting the baghouse. The sampling ports are 10.5 feet above the I.D. fan and 35 feet below the top of the stack. Using the criteria of EPA Method 1 (40CFR60, Appendix A), it was determined that 24 sampling points should be used for the emission measurements; 12 points on each of the two traverses.

Figure 1 is a schematic diagram of the stack showing the locations of the sampling points.

3.0 SAMPLING POINT LOCATION

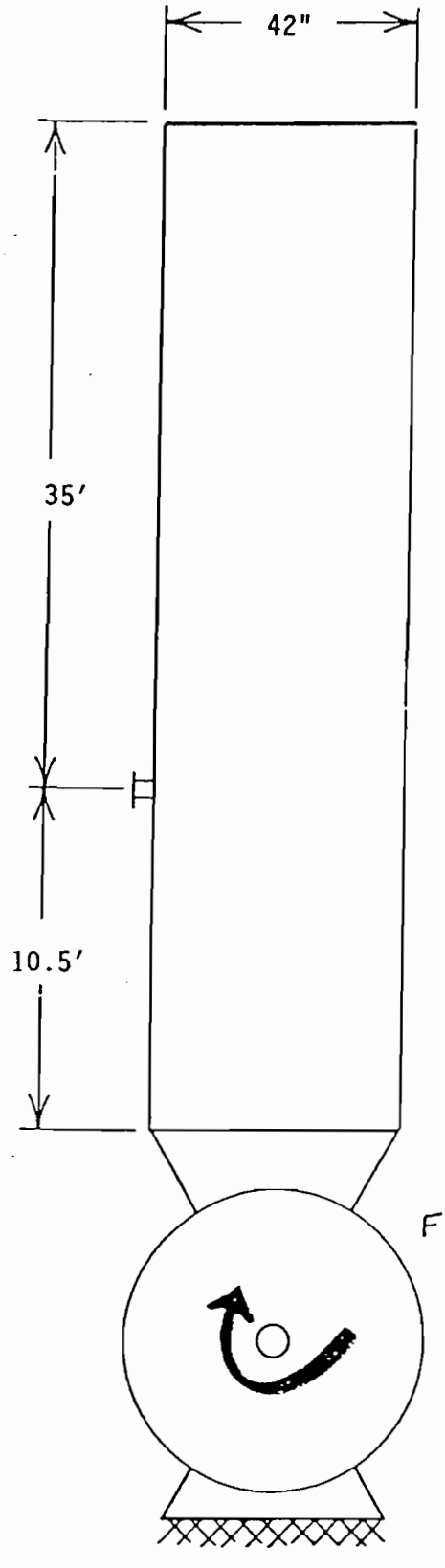
Two sampling ports are located at 90 degrees to one another in the 42 inch-diameter stack venting the baghouse. The sampling ports are 10.5 feet above the I.D. fan and 35 feet below the top of the stack. Using the criteria of EPA Method 1 (40CFR60, Appendix A), it was determined that 24 sampling points should be used for the emission measurements; 12 points on each of the two traverses.

Figure 1 is a schematic diagram of the stack showing the locations of the sampling points.

FIGURE 1

SAMPLING POINT LOCATIONS
NO. 1 DRYER BAGHOUSE

MID-FLORIDA MINING COMPANY
LOWELL, FLORIDA



Traverse Point No.	Inches Inside Stack Wall
1	1.0
2	2.9
3	5.1
4	7.7
5	10.9
6	15.4
7	28.1
8	32.6
9	35.8
10	38.4
11	40.6
12	42.5

KOOGLER & ASSOCIATES

4.0 FIELD AND ANALYTICAL PROCEDURES

The samples were collected using the EPA Modified Method 5 (MM5) sampling train. The sampling point locations were established in accordance with EPA Method 1 and the stack gas velocity and stack gas moisture measurements were made in conjunction with the MM5 tests, in accordance with EPA Method 2 and EPA Method 4, respectively.

The probe wash and filter from the MM5 sampling trains were split. Half of the samples were analyzed for metals (arsenic, chromium, copper, lead, mercury and zinc) and the remaining portion of the samples, along with the samples collected in the back half of the sampling train, were analyzed for semi-volatile organic compounds. The metals were analyzed in accordance with methods published in EPA Publication EPA-600/4-79-020. The semi-volatiles collected in the MM5 sampling train were analyzed in accordance with Method 625 as published in EPA Document SW-846.

Soil samples were collected during each of the two test runs and analyzed for metals and semi-volatile organic compounds. Samples were collected of the contaminated soil, the processed soil discharged from the dryer and the dust collected in the baghouse. The EP toxicity test was run to determine the extractable metals in the soil. The semi-volatile organic compounds were determined in accordance with Method 8270, as published in SW-846 (this is the test method for soils that is equivalent to Method 625, which was used for analyzing the MM5 samples).

The laboratory reports for metals and semi-volatile organic compounds are included in the Appendix of this report.

5.0 SUMMARY OF RESULTS

During the test period on July 15, 1988, two 72-minute emission measurements were made to determine the emission rates of metals and semi-volatile organic compounds during the thermal processing of soils containing creosote. The soil throughput rate ranged from 20 to 30 tons per hour during the test period. In Table 1, the operating parameters of the processing unit are summarized.

The emission rates of the six metals are summarized in Table 2. The emission rates of the metals were quite low; ranging from 0.00005 pounds per hour for mercury to 0.032 pounds per hour for zinc. There are no emission limiting standards for any of the metals. However, EPA did propose emission limits for arsenic, cadmium, hexavalent chromium and lead in proposed standards for the burning of hazardous waste fuels in boilers and industrial furnaces in May 1987. These regulations have been withdrawn but are expected to be re-proposed in late 1988. As a point of reference, the proposed emission limits for arsenic and lead, converted to the operating conditions at the time of the test, would be approximately 0.0025 pounds per hour for arsenic and approximately 0.10 pounds per hour for lead. The measured emission rates of these two metals were below the proposed limits.

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The EP toxicity tests for these same six metals were conducted on the contaminated soil, the processed soil and the baghouse dust and are reported in the Appendix of this report. These results show that the metals concentrations, as determined by the EP toxicity tests in all samples, are well below the RCRA limits. In reviewing the data, it is interesting to note that the thermoprocessing of the soil tended to reduce the concentrations of chromium, copper, lead and zinc in the soil. The concentration of arsenic remained essentially unchanged, while the levels of mercury were below detectable limits in all samples.

The emission rates of semi-volatile organic compounds are summarized in Table 3. Of the 71 target compounds included in the Method 625 analyses, only 19 compounds were found above the detectable limits of the analytical procedures. The total emission rate of polynuclear aromatic hydrocarbons range from 4.7 to 8.4 pounds per hour. There is no emission limiting standard in the MFM permit for hydrocarbon products.

Tables 4 and 5 report the concentrations of semi-volatile organic compounds in the soil samples; Table 4 for the samples collected during Run No. 1 and Table 5 for the samples collected during Run No. 2. The results presented in these tables demonstrate that the thermoprocessing is quite effective in reducing the level of semi-volatile organic compounds in the soil. In most cases, the concentrations were reduced by 99 percent or more. In general, when the removal efficiency was less than 99 percent, the measured concentration of the compound was near or below the limit of detection. It should be noted that the concentrations of semi-volatile organic compounds

in the dust collected in the baghouse remained quite high. It is suggested that during future soil processing activities, this material be removed from the baghouse, mixed with clean soil and introduced again into the dryer.

The Appendix of this report includes the field data sheets for the MM5 sampling and copies of all laboratory reports, as well as a list of project participants.

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TABLE 1

SUMMARY OF DRYER OPERATING CONDITIONS

MFM INDUSTRIES, INC.
LOWELL, FLORIDA

7/15/88

Run No.	Time (1)	Process Weight Rate (Tons/Hr)	Soil Discharge Temp. (^{O}F)	Fuel Use (gph)	Stack Gas Flow Rate (SCFMD)	Stack Gas Temp. (^{O}F)	Stack Gas Moisture (%)
1	1042-1203	20-30	730	205	21622	204	17.8
2	1447-1742 (2)	20-30	805	185	21042	230	15.5
AVG:		20-30	768	195	21332	217	16.6

(1) Test time - 72 minutes.

(2) Delay of 93 minutes due to severe rain.

TABLE 2

METALS EMISSION RATES
DURING SOIL DECONTAMINATION

MFM INDUSTRIES, INC.
LOWELL, FLORIDA

7/15/88

Metal	Emission Rate (lb/hr)		
	Run 1	Run 2	Avg
Arsenic	0.00328	0.00019	0.00174
Chromium (1) (Trivalent)	0.00772	0.00854	0.00813
Copper	0.00374	0.00216	0.00295
Lead	0.00239	0.00117	0.00178
Mercury	0.00004	0.00006	0.00005
Zinc	0.05918	0.00531	0.03220

(1) Total chromium emission rate was 0.00813 lb/hr; all was assumed to be trivalent chromium based on the analysis of similar samples.

TABLE 3

EMISSION RATE OF SEMI-VOLATILE ORGANIC COMPOUNDS
DURING THERMAL SOIL PROCESSING

MFM INDUSTRIES, INC.
LOWELL, FLORIDA

7/15/88

Compound	Emission Rate (Lb/Hr) Run #1	Run #2
Phenol	<0.006	0.006
Naphthalene	1.511	1.881
2-methylnaphthalene	0.427	1.235
Acenaphthylene	0.042	0.074
Acenaphthene	0.019	0.104
Dibenzofuran	0.509	1.316
Fluorene	0.623	1.705
Pentachlorophenol	<0.006	0.053
Phenanthrene	0.904	1.185
Anthracene	0.186	0.602
Fluoranthene	0.312	0.219
Pyrene	0.131	0.054
Benzo(a)anthracene	<0.006	<0.001
Chry sene	<0.006	<0.001
bis(2-Ethylhexyl)phthalate	<0.006	<0.001
Benzo(b)fluoranthene	<0.006	<0.001
Benzo(k)fluoranthene	<0.006	<0.001
Benzo(a)pyrene	<0.006	<0.001
Benzo(g,h,i)perylene	<0.006	<0.001
Total PNA (1)	4.718	8.441

(1) Polynuclear aromatic hydrocarbons - Compounds phenol through benzo (g, h, i) perylene.

TABLE 4

THERMAL SOIL PROCESSING EFFECTIVENESS

MFM INDUSTRIES, INC.
LOWELL, FLORIDA

RUN NO. 1 - 7/15/88

COMPOUND	CONCENTRATION (PPB) UNTREATED SOIL	CONCENTRATION (PPB) PROCESSED SOIL	PERCENT REDUCTION	CONCENTRATION IN BAGHOUSE DUST (PPB)
Phenol	<700	142	<80	<50
Naphthalene	12509	466	96.3	2036
2-methylnaphthalene	13041	110	99.2	24727
Acenaphthylene	<700	<2.5	99.6	4652
Acenaphthene	133842	<2.5	>99.9	76766
Dibenzofuran	111310	225	99.8	94401
Fluorene	265703	40	>99.9	135808
Pentachlorophenol	76477	156	99.8	182687
Phenanthrene	833665	1198	99.9	212787
Anthracene	589659	<2.5	>99.9	111945
Fluoranthene	1217723	1922	99.8	149172
Pyrene	545449	445	99.9	120427
Benzo(a)anthracene	148617	<2.5	>99.9	51100
Chry sene	221666	1332	99.4	62340
bis(2-Ethylhexyl)phthalate	<700	200	71.4	453
Benzo(b)fluoranthene	64002	1109	98.3	23307
Benzo(k)fluoranthene	<700	<2.5	99.6	16328
Benzo(a)pyrene	24239	128	99.5	17121
Benzo(g,h,i)perylene	<700	<2.5	99.6	5497

TABLE 4

THERMAL SOIL PROCESSING EFFECTIVENESS

MFM INDUSTRIES, INC.
LOWELL, FLORIDA

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TABLE 3

EMISSION RATE OF SEMI-VOLATILE ORGANIC COMPOUNDS
DURING THERMAL SOIL PROCESSING

MFM INDUSTRIES, INC.
LOWELL, FLORIDA

7/15/88

Compound	Emission Rate (Lb/Hr) Run #1	Run #2
Phenol	<0.006	0.006
Naphthalene	1.511	1.881
2-methylnaphthalene	0.427	1.235
Acenaphthylene	0.042	0.074
Acenaphthene	0.019	0.104
Dibenzofuran	0.509	1.316
Fluorene	0.623	1.705
Pentachlorophenol	<0.006	0.053
Phenanthrene	0.904	1.185
Anthracene	0.186	0.602
Fluoranthene	0.312	0.219
Pyrene	0.131	0.054
Benzo(a)anthracene	<0.006	<0.001
Chrysene	<0.006	<0.001
bis(2-Ethylhexyl)phthalate	<0.006	<0.001
Benzo(b)fluoranthene	<0.006	<0.001
Benzo(k)fluoranthene	<0.006	<0.001
Benzo(a)pyrene	<0.006	<0.001
Benzo(g,h,i)perylene	<0.006	<0.001
Total PNA (1)	4.718	8.441

(1) Polynuclear aromatic hydrocarbons - Compounds phenol through benzo (g, h, i) perylene.

TABLE 5

THERMAL SOIL PROCESSING EFFECTIVENESS

MFM INDUSTRIES, INC.
LOWELL, FLORIDA

RUN NO. 2 - 7/15/88

COMPOUND	CONCENTRATION (PPB) UNTREATED SOIL	CONCENTRATION (PPB) PROCESSED SOIL	PERCENT REDUCTION	CONCENTRATION IN BAGHOUSE DUST (PPB)
Phenol	<650	<2.5	99.6	<50
Naphthalene	15554	34	99.8	<50
2-methylnaphthalene	13692	<2.5	>99.9	<50
Acenaphthylene	2731	<2.5	>99.9	2835
Acenaphthene	81956	<2.5	>99.9	112350
Dibenzofuran	81847	<2.5	>99.9	70636
Fluorene	194425	<2.5	>99.9	138068
Pentachlorophenol	132605	<2.5	>99.9	78607
Phenanthrene	680495	15	>99.9	155284
Anthracene	437197	<2.5	>99.9	101479
Fluoranthene	355279	<2.5	>99.9	206777
Pyrene	410095	<2.5	>99.9	105543
Benzo(a)anthracene	116377	<2.5	>99.9	37276
Chry sene	1070012	<2.5	>99.9	47521
bis(2-Ethylhexyl)phthalate	<650	<2.5	99.6	511
Benzo(b)fluoranthene	55656	<2.5	>99.9	21274
Benzo(k)fluoranthene	<650	<2.5	99.6	<50
Benzo(a)pyrene	19662	<2.5	>99.9	10938
Benzo(g,h,i)perylene	<650	<2.5	99.6	<50

TABLE 5

THERMAL SOIL PROCESSING EFFECTIVENESS

MFM INDUSTRIES, INC.
LOWELL, FLORIDA

RUN NO. 2 - 7/15/88

COMPOUND	CONCENTRATION (PPB) UNTREATED SOIL	CONCENTRATION (PPB) PROCESSED SOIL	PERCENT REDUCTION	CONCENTRATION IN BAGHOUSE DUST (PPB)
Phenol	<650	<2.5	99.6	<50
Naphthalene	15554	34	99.8	<50
2-methylnaphthalene	13692	<2.5	>99.9	<50
Acenaphthylene	2731	<2.5	>99.9	2835
Acenaphthene	81956	<2.5	>99.9	112350
Dibenzofuran	81847	<2.5	>99.9	70636
Fluorene	194425	<2.5	>99.9	138068
Pentachlorophenol	132605	<2.5	>99.9	78607
Phenanthrene	680495	15	>99.9	155284
Anthracene	437197	<2.5	>99.9	101479
Fluoranthene	355279	<2.5	>99.9	206777
Pyrene	410095	<2.5	>99.9	105543
Benzo(a)anthracene	116377	<2.5	>99.9	37276
Chry sene	1070012	<2.5	>99.9	47521
bis(2-Ethylhexyl)phthalate	<650	<2.5	99.6	511
Benzo(b)fluoranthene	55656	<2.5	>99.9	21274
Benzo(k)fluoranthene	<650	<2.5	99.6	<50
Benzo(a)pyrene	19662	<2.5	>99.9	10938
Benzo(g,h,i)perylene	<650	<2.5	99.6	<50

APPENDIX

1. Equations and Nomenclature
2. MM5 Calculations
3. Field Data Sheets
4. Laboratory Reports
5. Project Participants

APPENDIX

1. Equations and Nomenclature
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EQUATIONS AND NOMENCLATURE

EQUATIONS FOR CALCULATING EMISSIONS

$$VWV = 0.0000893(TSTD)(VC)$$

$$VSTPD = (VM)(PB + \frac{\Delta H}{13.6})(\frac{TSTD}{TM})(\frac{1}{29.92})$$

$$VT = (VWV) + (VSTPD)$$

$$W = (VWV) \div (VT)$$

$$FDA = (1.0) - (W)$$

FMOIST = Assumed moisture fraction

$$MD = (0.44 \times \%\ CO_2) + (0.32 \times \%\ O_2) + (0.28 \times \%\ N_2) + (0.28 \times \%\ CO)$$

$$MS = (MD \times FDA) + (18 \times W)$$

$$GS = (MS) \div (28.99)$$

$$EA = \frac{\left[(100) \times (\%\ O_2 - \frac{\%\ CO}{2})\right] \div \left[(0.266 \times \%\ N_2) - (\%\ O_2 - \frac{\%\ CO}{2})\right]}{}$$

$$\underline{U} = 4{,}006(CP)\sqrt{H}\sqrt{(\frac{TS}{TSTD})(\frac{29.92}{PS})(\frac{1}{GS})}$$

$$QS = (\underline{U}) \times (AS)$$

$$QD = (QS) \times (FDA)$$

$$QSTPD = TSTD(QD)(PS) \div [TS(29.92)]$$

$$PISO = \left[(0.00267 \times VC \times TS) + (P_o \times TS \times VM \div TM)\right] \div \left[(Time \times \underline{U} \times PS \times AN)\right]$$

$$ESTP = \frac{(\frac{15.43\ grains}{gram})\ (y)}{VSTPD}$$

$$E_{12} = \frac{(ESTP)\ (12)}{(CO_2\ \%)}$$

$$E50 = \frac{(ESTP)\ (100 + EA)}{150}$$

$$EM = (ESTP)\ (QSTPD)\ (60\ \frac{min}{hr})\ (\frac{lb}{7000\ grains})$$

KOOGLER & ASSOCIATES

SOURCE SAMPLING NOMENCLATURE SHEET

PB - Barometric pressure, inches Hg
PS - Stack pressure, inches Hg
As - Stack area, sq. ft.
AS'- Effective area of positive stack gas flow, sq. ft.
NPTS - Number of traverse points where the pitot velocity head was greater than zero
TSTD - Standard temperature, °R
TS - Stack temperature, °R
TM - Meter temperature, °R
H - Average square root of velocity head, $\sqrt{\text{inches } H_2O}$
$\overline{H}$ - Average meter orifice pressure differential, inches H_2O
AN - Sampling nozzle area, square feet
CP - S-type pitot tube correction factor
VM - Recorded meter volume sample, cubic feet (meter conditions)
VC - Condensate and silica gel increase in impingers, milliliters
Po - Pressure at the dry test meter orifice, $\left[PB + \frac{\Delta \overline{H}}{13.6}\right]$ inches Hg
STP - Standard conditions

VWV - Converstion of condensate in milliliters to water vapor in cubic feet (STP)
VSTPD - Volume sampled, cubic feet (STP)
VT - Total water vapor volume and dry gas volume sampled, cubic feet (STP)
W - Moisture fraction of stack gas
FDA - Dry gas fraction
MD - Molecular weight of stack gas, lbs/lb-mole (dry conditions)
MS - Molecular weight of stack gas, lbs/lb-mole (stack conditions)
GS - Specific gravity of stack gas, referred to air
EA - Excess air, %
$\sqrt{\text{HxTS}}$ - Average square root of velocity head times stack temperature
$\overline{U}$ - Stack gas velocity, feet per minute
QS - Stack gas flow rate, cubic feet per minute (stack conditions)
QD - Stack gas flow rate, cubic feet per minute (dry conditions)
QSTDP - Stack gas flow rate, cubic feet per minute (STP)
PISO - Percent isokinetic volume sampled (method described in Federal Register)
ESTP - Particulate concentration at standard and dry conditions, grains/scf
E_{12} - ESTP corrected to 12% CO_2, grains/scf
E_{50} - ESTP corrected to 50% excess Air, grains/scf
EM - Mass Emission Rate, lbs/hr

* - Stack Gas Saturated

KOOGLER & ASSOCIATES

MM5 CALCULATIONS

KOOGLER & ASSOCIATES, ENVIRONMENTAL SERVICES

Source Sampling Calculations

Plant: MID FLA. MINNING /LOWEL, FLA.
Stack: NO.1 DRYER
Weather: CLOUDY

Date: 7/15/88
Run 1 From 1042 - 1203
Total Time: 72 Min

Stack Area	9.62 Sq Ft	Nozzle Area	.000346 Sq Ft
Stack Temp	203.9 Deg F	Meter Temp	85.8 Deg F
Stack Pressure	30.15 "Hg	Baro. Pressure	30.10 "Hg
Stack Vel Head	.878 "H2O	Meter Press Diff	1.52 "H2O
		Meter Volume	46.865 cf
Pitot Tube Factor	.84	Condensate Volume	210 ml

1.	Volume Water Vapor	9.891	SCF
2.	Gas Volume Sampled - STPD	45.778	SCFD
3.	Total Volume	55.669	SCF
4.	Moisture in Stack Gas - Volume Fraction	.178	
5.	Dry Stack Gas - Volume Fraction	.822	
6.	Molecular Weight of Stack Gas - Dry Basis	29.00	
7.	Molecular Weight of Stack Gas - Stack Conditions	27.05	
8.	Specific Gravity of Stack Gas Relative to Air	.93	
9.	Excess Air - Percent		
10.	Average Stack Velocity	3410.4	FPM
11.	Average Stack Gas Flow Rate	32808	ACFM
12.	Actual Stack Gas Flow Rate Dry	26979	CFMD
13.	Stack Gas Flow Rate STPD	21622	SCFMD
14.	Percent Isokinetic	81.6	%

Filter:
===Totals===

KOOGLER & ASSOCIATES, ENVIRONMENTAL SERVICES

Source Sampling Calculations

Plant: MID FLA. MINNING /LOWEL, FLA. Date: 7/15/88
Stack: NO.1 DRYER Run 2 From 1447 - 1742
Weather: RAIN Total Time: 72 Min

Stack Area	9.62 Sq Ft	Nozzle Area	.000181 Sq Ft
Stack Temp	229.5 Deg F	Meter Temp	81.8 Deg F
Stack Pressure	30.15 "Hg	Baro. Pressure	30.10 "Hg
Stack Vel Head	.851 "H2O	Meter Press Diff	.56 "H2O
		Meter Volume	28.561 cf
Pitot Tube Factor	.84	Condensate Volume	109 ml

1.	Volume Water Vapor	5.134	SCF
2.	Gas Volume Sampled - STPD	28.040	SCFD
3.	Total Volume	33.173	SCF
4.	Moisture in Stack Gas - Volume Fraction	.155	
5.	Dry Stack Gas - Volume Fraction	.845	
6.	Molecular Weight of Stack Gas - Dry Basis	29.00	
7.	Molecular Weight of Stack Gas - Stack Conditions	27.3	
8.	Specific Gravity of Stack Gas Relative to Air	.94	
9.	Excess Air - Percent		
10.	Average Stack Velocity	3353.5	FPM
11.	Average Stack Gas Flow Rate	32261	ACFM
12.	Actual Stack Gas Flow Rate Dry	27268	CFMD
13.	Stack Gas Flow Rate STPD	21042	SCFMD
14.	Percent Isokinetic	98.5	%

Filter:
===Totals===

FIELD DATA SHEETS

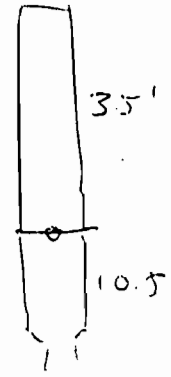
KOOGLER & ASSOCIATES

KOOGLER & ASSOCIATES, Environmental Services
1213 NW 6th Street • Gainesville, Florida 32601 • 904/377-5822

1.6
185

SOURCE SAMPLING FIELD DATA SHEET

Plant HFM
Sampling Location Dryer
Type of Control Baghouse
Type of Samples EM5
Date 7/15/88 Run No. 1
Time Start 1042 Time End 1203
Sample Time 5 min/pt 72 Total min
DB ____ °F, WB ____ °F, VP @ DP ____ "Hg
Bar. Press. 30.10 "Hg, Stack Press. 30.15 "Hg
Moisture 28 %, FDA ____, Gas Density Factor ____
Temp. 85 °F, W/D SW, W/S 2-6
Weather Cloudy Thermocouple Readout K/A-2
Sample Box No: 2 meter Box No. 2
Meter ΔH@ 1.561 Pitot Corr. Factor 0.84
Nozzle Dia. 0.252 in., Probe Length 6' Teflon ft
Probe Heater Setting ____ Nomograph C_f ____
Stack Dimensions 42" ⌀ in
Stack Area 9.62 ft^2
Effective Stack Area 9.62 ft^2
Stack Height ____ ft



Stack Dimensions

Umbilical Cord ____
Thermocouple Probe No. ____
Pitot Tube No. ____

Mat'l Processing Rate ____
Final Gas Meter Reading 476.195 ft^3 (246.2)
Initial Gas Meter Reading 429.330 ft^3
Condensate Increase in Impingers 13+185 ml (210)
Moisture in Silica Gel 12 gm
Silica Gel Container No. ____ Filter No. ____

Orsat: %CO_2 ____
%O_2 ____
%CO ____
%N_2 ____

Test Conducted By: JBK, RAS

Stack Test Observers: ____

Leak Check Meter Box
Initial 0.01 cfm @ 12 In H_2
Final 0.01 cfm @ 12 In Hg

Pitot Tubes
Impact 3 In H_2O for 15 sec. Stable, Leak
Static 3 In H_2O for 15 sec. Stable, Leak

Port and Traverse Point No.	Distance From Inside Stack Wall (in.)	Clock Time / End Time	Gas Meter Reading (ft^3)	Stack Velocity Head ("H_2O)	Meter Orifice Press. Diff. ("H_2O)		Stack Gas Temp. (°F)	Sample Box Temp. (°F)	Last Imp. Temp. (°F)	Meter Temp. (°F)	Vacuum on Sample Train ("Hg)
				0.7707	Calc. 1.517	Actual	2039			858	
Starts			429.330								
1		3	431.0	0.49	0.94	0.94	190	262	78	80	3.5
2		6	432.5	0.57	1.10	1.10	193	255	60	80	4.2
3		9	434.5	0.72	1.39	1.39	195	255	58	82	5.5
4		12		0.65	1.25	1.25	190	268	49	82	5.2
5		15	438.0	0.80	1.54	1.54	190	252	45	82	8.0
6		18		1.20	2.31	1.92	203	259	43	83	8.0
7		21		1.10	2.2	1.92	202	257	45	83	8.0

Port and Traverse Point No.	Distance From Inside Stack Wall (in.)	Clock Time	Gas Meter Reading (ft^3)	Stack Velocity Head ("H_2O)	Meter Orifice Press. Diff. ("H_2O)		Stack Gas Temp. (°F)	Sample Box Temp (°F)	Last Imp. Temp. (°F)	Meter Temp. (°F)	Vacuum on Sample Train ("Hg)	O_2
					Calc.	Actual						
8		24	444.8	1.10	2.2	2.05	217	252	45	83	8.0	
9		27	447.2	1.05	2.05	2.05	205	253	46	84	8.0	
10		30	449.5	1.00	1.96	1.96	216	258	46	84	8.0	
11		33		0.93	1.82	1.82	213	258	47	85	8.0	
12		36	453.842	0.82	1.61	1.61	211	255	48	86	7.2	
West												
1		3	455.1	0.37	0.73	0.73	196	256	52	87	3.5	
2		6	456.5	0.41	0.80	0.80	203	255	49	87	4.0	
3		9		1.0	1.96	1.96	197	256	48	87	8.5	16.2
4		12	460.7	0.92	1.80	1.80	198	253	47	88	8.5	15.7
5		15	462.7	0.82	1.61	1.61	211	250	48	88	8.5	15.2
6		18	464.7	0.90	1.77	1.70	215	252	53	88	9.0	16.2
7	1148hrs	21	466.7	0.88	1.73	1.60	219	253	53	89	9.0	
8		24	468.7	1.00	1.96	1.55	218	253	53	89	9.0	16.5
9		27	470.7	0.70	1.37	1.37	213	252	54	90	9.0	17.5
10		30	472.6	0.67	1.32	1.32	204	247	55	90	9.0	
11		33	474.4	0.63	1.24	1.24	199	246	55	90	8.5	
12	1203	36		0.60	1.17	1.17	195	252	54	92	8.5	

Best Available Copy

[redacted] Environmental Services

4014 N.W. 13th Street • Gainesville, Florida 32609 • 904/377-5822

SOURCE SAMPLING FIELD DATA SHEET

Plant NFM

Sampling Location Dryer

Type of Control Baghouse

Type of Samples HMS

Date 7/15/88 Run No. 2

Time Start 1447 Time End 1742

Sample Time 3 min/pt 72 Total min

DB 206 °F, WB ___ °F, VP @ DP ___ "Hg

Bar. Press. 30.10 "Hg, Stack Press. ___ "Hg

Moisture 19 %, FDA ___, Gas Density Factor ___

Temp. 90 °F, W/D S, W/S 2-4

Weather Rain Thermocouple Readout KA2

Sample Box No: 2 Meter Box No. 2

Meter ΔH@ 1.56 Pitot Corr. Factor 0.84

0.182 Nozzle Dia. ~~0.182~~ in., Probe Length 6 Tef ft

Probe Heater Setting – Nomograph C_f ~~2.24~~ 0.610

Stack Dimensions 42" ⌀ in

Stack Area 9.62 ft²

Effective Stack Area 9.62 ft²

Stack Height ___ ft

566
475
90

483.757
483.868

SUBTRACT difference from Vm

Stack Dimensions

Umbilical Cord ___

Thermocouple Probe No. ___

Pitot Tube No. ___

Mat'l Processing Rate ___

Final Gas Meter Reading 505.418 ft³

Initial Gas Meter Reading 476.857 ft³

Condensate Increase in Impingers 8 ml

Moisture in Silica Gel 11 + 90 gm

Silica Gel Container No. ___ Filter No. ___

Orsat: $\%CO_2$ ___

$\%O_2$ ___

$\%CO$ ___

$\%N_2$ ___

Test Conducted By: JBK RAB

Stack Test Observers: ___

Leak Check Meter Box: Initial 0.02 cfm @ 14 In Hg; Final ___ cfm @ ___ In Hg

Pitot Tubes: Impact 3 In H_2O for 15 sec. Stable, Leak; Static 3 In H_2O for 15 sec. Stable, Leak

33.
12C
O2
16.3

Y = 1.00

Port and Traverse Point No.	Distance From Inside Stack Wall (in.)	Clock Time	Gas Meter Reading (ft³)	Stack Velocity Head ("H_2O")	Meter Orifice Press. Diff. ("H_2O") 0.564 Calc.	Actual	Stack Gas Temp. (°F)	Sample Box Temp. (°F)	Last Imp. Temp. (°F)	Meter Temp. (°F)	Vacuum on Sample Train ("Hg)
West				0.7242			229.5			81.8	
1		3		0.90	2.0	2.0	204	254	78	91	8.5
2		6	481.3	0.95	2.1	2.1	208	242	66	91	9.0
3		9		0.87	1.9	0.9	215	263	63	91	11.0
4	1505 RA	12		0.90	0.54	0.54	216	270	63	91	12.0
5	1630 N	~~X~~3	49[illegible]	0.70	0.43	0.43	209	269	78	80	3.0
6		~~X~~6	486.1	0.70	0.43	0.43	213	265	66	80	[illegible]
7	1640	~~X~~9	487.2	0.67	0.41	0.41	236	264	63	80	10.0
8		~~X~~12	488.3	0.65	0.40	0.40	241	260	60	80	10.0

Port and Traverse Point No.	Distance From Inside Stack Wall (in.)	Clock Time	Gas Meter Reading (ft^3)	Stack Velocity Head ("H_2O)	Meter Orifice Press. Diff. ("H_2O)		Stack Gas Temp. (°F)	Sample Box Temp (°F)	Last Imp. Temp. (°F)	Meter Temp. (°F)	Vacuum on Sample Train ("Hg)	
					Calc.	Actual						
9		15	489.4	0.72	0.44	0.44	250	258	59	80	10.0	
10		18	490.6	0.75	0.42	0.42	251	260	62	80	10.0	
11		21	491.7	0.72	0.40	0.40	246	258	63	80	9.0	17.0
12		24	492.815	0.69	0.39	0.39	244	255	62	80	8.0	17.0
Sp. Pt.												
13	1708	3		0.79	0.44	0.44	245	265	71	80	12.0	18.0
14		6	495.2	0.85	0.47	0.47	247	265	67	80	5.0	
15		9	496.4	0.90	0.51	0.51	245	256	63	80	4.5	18.0
16		12	497.6	0.85	0.48	0.48	229	255	60	80	5.0	
17		15	498.7	0.86	0.48	0.48	230	255	59	80	5.0	17.6
18		18	499.8	0.84	0.47	0.47	230	257	57	80	5.0	
19		21	502.0	0.76	0.43	0.43	229	258	57	80	4.5	17.5
20		24		0.65	0.36	0.36	232	252	57	80	4.0	17.5
21		27	502.9	0.52	0.29	0.29	226	256	57	80	3.5	
22		30		0.46	0.26	0.26	223	255	55	80	3.0	
23		33	504.6	0.40	0.22	0.22	221	255	56	80	3.0	18.7
24		36	505.	0.48	0.27	0.27	228	252	56	80	3.0	

Stack 02

LABORATORY REPORTS
FOR
METALS ANALYSES

KOOGLER & ASSOCIATES

ppb

July 29, 1988

Dr. John Koogler
Koogler and Associates
4014 N.W. 13th Street
Gainesville, Florida 32609

Dear Dr. Koogler:

Enclosed are the results of our analysis of the soil and filter samples that we received on July 19, 1988.

All data were determined in accordance with published procedures (EPA-600/4-79-020, Methods for Chemical Analysis of Water and Wastes, Revised March 1983). PPB is certified by the Florida DHRS (Lab Nos. 82282 and E82001).

If you have any questions concerning this report, please do not hesitate to give me a call.

Sincerely,

Tom Park

Tom Park
Project Manager

TP/jlm

Enclosure

ENVIRONMENTAL LABORATORIES, INC.

REPORT OF ANALYSIS
(All data as total micrograms on filters)

Dr. John Koogler
Koogler and Associates
4014 N.W. 13th Street
Gainesville, FL 32609

PROJECT NO.: 87-028

DATE: 7/29/88

REFERENCE: Verbal/Koogler

Table 2. Filter Data.

Station ID: / PPB #:	KA11 & KA12 29024	KA21 & KA22 29025
Arsenic	28.4	1.0
Chromium	66.8	46.5
Copper	32.3	11.8
Lead	20.7	6.4
Mercury	0.3	0.3
Zinc	511	28.9

Run #1 MM5

Run #2 MM5

Tom Pace
PROJECT MANAGER

621 SW ARCHER ROAD, GAINESVILLE, FLORIDA 32608 Tel. (904) 377-2349

ppb

August 16, 1988

Dr. John Koogler
Koogler and Associates
4014 N.W. 13th Street
Gainesville, Florida 32609

Dear Dr. Koogler:

Enclosed are the results of the RCRA EP Toxicity testing of the soil samples that was requested on August 2, 1988.

All data were determined in accordance with published procedures (EPA-600/4-79-020, Methods for Chemical Analysis of Water and Wastes, Revised March 1983). PPB is certified by the Florida DHRS (Lab Nos. 82282 and E82001).

If you have any questions concerning this report, please do not hesitate to give me a call.

Sincerely,

Tom Park

Tom Park
Project Manager

TP/jlm

Enclosure

ppb
ENVIRONMENTAL LABORATORIES INC.

REPORT OF ANALYSIS
(All data as micrograms per liter)

Dr. John Koogler
Koogler and Associates
4014 N.W. 13th Street
Gainesville, FL 32609

PROJECT NO.: 87-028

DATE: 8/16/88

REFERENCE: Verbal/Koogler

Table 1. RCRA EP Toxicity Results

Station ID:	KA14	KA15	KA16	KA24	KA25	KA26	RCRA
PPB #:	29018	29019	29020	29021	29022	29023	Limit
Arsenic	160	186	483	147	110	358	5,000
Chromium	152	<10	172	33	<10	25	5,000
Copper	425	<10	261	23	<10	28	--
Lead	143	<34	108	<34	38	38	5,000
Mercury	<2	<2	<2	<2	<2	<2	200
Zinc	1,330	113	1,180	261	58	462	--

Raw Soil	Processed Soil	Baghouse Dust	Raw Soil	Processed Soil	Baghouse Dust
	Run #1 Soil			Run #2 Soil	

Tom Park
PROJECT MANAGER

621 SW ARCHER ROAD, GAINESVILLE, FLORIDA 32601 (904) 377-2345

LABORATORY REPORTS
FOR
SEMI-VOLATILE ORGANIC COMPOUNDS

KOOGLER & ASSOCIATES

CASE NARRATIVE

Triangle Laboratories, Inc
801-10 Capitola Dr.
Research Triangle Park, NC 27713
(919) 544-5729

DATE: August 18, 1988

CLIENT NO: 290-88-01

TLI NO: 12584

OBJECTIVE: Analysis of MM-5 and Soil Samples for Semivolatile Compounds

The MM5 samples were spiked with 100 ug of 2-fluorobiphenyl, nitrobenzene-d5, and terphenyl-d14 and 200 ug of phenol-d5, 2-fluorophenol and 2,4,6-Tribromophenol. The samples were Soxhlett extracted for 16 hours with toluene. All solvents were concentrated and combined with the extracts prior to analysis. The extract was split with half for the analysis of semivolatile compounds and half for the analysis of PCDD/F. The analysis method for the semivolatile compounds was 8270 from EPAs SW-846(this is method 625 applied to MM5). Sample Train 1 KA11-14 required a 400:1 dilution and no surrogate spikes could be detected. Sample Train 2 KA21-24 required a 80:1 dilution and no surrogate spikes could be detected. SBLK 080488 was the MM5 blank and when toluene is used as the extraction solvent then the recoveries of the more volatile surrogate spikes are low (nitrobenzene-d5, phenol-d5, and 2-fluorophenol).

The initial extraction of ten gram soil samples indicated that samples KA-15 and KA-25 needed a larger amount extracted (30 gm) and samples KA-16, KA-17, KA-26, and KA-27 needed a smaller amount extracted (1 gm). Method 3550 (sonication) from EPAs SW-846 was used as the extraction method. The analysis method was 8270 from SW-846. Sample KA-16 required a 10:1 dilution and this diluted out the nitrobenzene-d5 and the 2,4,6-tribromophenol. SBLK 080988(.03kG) was the low soil blankand SBLK 080988(.001kG) was the medium soil blank.

Internal standards were added immediately prior to analysis by GC/MS.

The GC/MS analysis conditions are listed below:

SEMIVOLATILES:
GC CONDITIONS:

Column:	J&W DB-5, 30m x .32mm x 25micron film thickness
Program:	40C hold 3 min to 300C at 8C/min hold 4.5 min

MS CONDITIONS:

Instrument:	VG 12-250, 11-250 data system
Scan:	35-510 amu at 1s/scan
Ion Source:	180C
Interface:	Capillary 230C

The data are reported as summary sheets, chromatograms, interim reports, and spectra of target and tentatively indentified compounds.

TRIANGLE LABORATORIES, INC.
801-10 Capitola Drive
Research Triangle Park, NC 27713
Telephone: (919) 544-5729

DATA FILE:Q9273041 SAMPLE ID TRAIN1 KA11-14 - MM5 - Run #1
RF FILE: Q9271 DILN FACTOR 400
DATE: 08/18/88

QUANTITATION REPORT

	NAME	AREA	RF	SCAN	ISID	AMOUNT, ug	CODE	QUAN LIMIT
1	1,4-Dichlorobenzene-d4	6679		267	1		D	
2	Phenol	0	2.2315	0	1	100.00	ND	4000
3	bis(2-Chloroethyl)ether	0	1.6240	0	1	100.00	ND	4000
4	2-Chlorophenol	0	1.3014	0	1	100.00	ND	4000
5	1,3-Dichlorobenzene	0	1.4637	0	1	100.00	ND	4000
6	1,4-Dichlorobenzene	0	1.6167	0	1	100.00	ND	4000
7	Benzyl alcohol	0	1.1327	0	1	100.00	ND	4000
8	1,2-Dichlorobenzene	0	1.6792	0	1	100.00	ND	4000
9	2-Methylphenol	0	1.6171	0	1	100.00	ND	4000
10	bis(2-Chloroisopropyl)ether	0	2.9484	0	1	100.00	ND	4000
11	4-Methylphenol	0	1.6675	0	1	100.00	ND	4000
12	N-Nitroso-di-n-propylamine	0	1.6248	0	1	100.00	ND	4000
13	Hexachloroethane	0	.7681	0	1	100.00	ND	4000
14	Naphthalene-d8	38300		484	14		D	
15	Nitrobenzene	0	.3325	0	14	100.00	ND	4000
16	Isophorone	0	.6378	0	14	100.00	ND	4000
17	2-Nitrophenol	0	.1359	0	14	100.00	ND	4000
18	2,4-Dimethylphenol	0	.1885	0	14	100.00	ND	4000
19	Benzoic acid	0	.0628	0	14	100.00	ND	4000
20	bis(2-Chloroethoxy)methane	0	.4046	0	14	100.00	ND	4000
21	2,4-Dichlorophenol	0	.2171	0	14	100.00	ND	4000
22	1,2,4-Trichlorobenzene	0	.2491	0	14	100.00	ND	4000
23	Naphthalene	49776	.8597	487	14	24187.38	D	4000
24	4-Chloroaniline	0	.3286	0	14	100.00	ND	4000
25	Hexachlorobutadiene	0	.1028	0	14	100.00	ND	4000
26	4-Chloro-3-methylphenol	0	.1971	0	14	100.00	ND	4000
27	2-Methylnaphthalene	13001	.7953	614	14	6626.74	D	4000
28	Acenaphthene-d10	22451		803	28		D	
29	Hexachlorocyclopentadiene	0	.1064	0	28	100.00	ND	4000
30	2,4,6-Trichlorophenol	0	.2591	0	28	100.00	ND	4000
31	2,4,5-Trichlorophenol	0	.2799	0	28	100.00	ND	4000
32	2-Chloronaphthalene	0	1.1668	0	28	100.00	ND	4000
33	2-Nitroaniline	0	.3578	0	28	100.00	ND	4000
34	Dimethylphthalate	0	1.2415	0	28	100.00	ND	4000
35	Acenaphthylene	2050	2.1770	772	28	671.09	E	4000
36	3-Nitroaniline	0	.2476	0	28	100.00	ND	4000
37	Acenaphthene	435	1.0069	810	28	307.89	E	4000
38	2,4-Dinitrophenol	0	.0755	0	28	100.00	ND	4000
39	4-Nitrophenol	0	.1048	0	28	100.00	ND	4000
40	Dibenzofuran	17657	1.5441	838	28	8149.67	D	4000
41	2,4-Dinitrotoluene	0	.3499	0	28	100.00	ND	4000
42	2,6-Dinitrotoluene	0	.2495	0	28	100.00	ND	4000

CODES: ND = Not Detected; D = Detected; E = Estimated

MMS-#1

43 Diethylphthalate	0	1.2184	0	28	100.00	ND	4000
44 4-Chlorophenyl-phenylether	0	.5446	0	28	100.00	ND	4000
45 Fluorene	17129	1.2244	900	28	9970.01	D	4000
46 4-Nitroaniline	0	.2718	0	28	100.00	ND	4000
47 Phenanthrene-d10	44835		1067	47		D	
48 4,6-Dinitro-2-methylphenol	0	.0936	0	47	100.00	ND	4000
49 N-Nitrosodiphenylamine(1)	0	.3948	0	47	100.00	ND	4000
50 4-Bromophenyl-phenylether	0	.2107	0	47	100.00	ND	4000
51 Hexachlorobenzene	0	.2016	0	47	100.00	ND	4000
52 Pentachlorophenol	0	.0902	0	47	100.00	ND	4000
53 Phenanthrene	48274	1.1910	1071	47	14464.09	D	4000
54 Anthracene	9985	1.0779	1078	47	2975.01	E	4000
55 Di-n-butylphthalate	0	1.1242	0	47	100.00	ND	4000
56 Fluoranthene	15277	1.0911	1387	47	4996.67	D	4000
57 Chrysene-d12	29214		1553	57		D	
58 Pyrene	7874	2.0567	1324	57	2096.77	E	4000
59 Butylbenzylphthalate	0	.7974	0	57	100.00	ND	4000
60 3,3'-Dichlorobenzidine	0	.3373	0	57	100.00	ND	4000
61 Benzo(a)anthracene	0	1.0042	0	57	100.00	ND	4000
62 Chrysene	0	.8359	0	57	100.00	ND	4000
63 bis(2-Ethylhexyl)phthalate	0	.8939	0	57	100.00	ND	4000
64 Perylene-d12	10144		1800	64		D	
65 Di-n-octylphthalate	0	1.7274	0	64	100.00	ND	4000
66 Benzo(b)fluoranthene	0	1.8275	0	64	100.00	ND	4000
67 Benzo(k)fluoranthene	0	2.6170	0	64	100.00	ND	4000
68 Benzo(a)pyrene	0	1.6575	0	64	100.00	ND	4000
69 Indeno(1,2,3-cd)pyrene	0	.9023	0	64	100.00	ND	4000
70 Dibenz(a,h)anthracene	0	.6758	0	64	100.00	ND	4000
71 Benzo(g,h,i)perylene	0	1.0275	0	64	100.00	ND	4000

SURROGATE SUMMARY	AREA	RT	SCAN	ISTD	AMOUNT	CODE	% RECOVERY
72 Nitrobenzene-d5	0	.3284	0	14	100.00	ND	.00
73 2-Fluorobiphenyl	0	1.0235	0	28	100.00	ND	.00
74 Terphenyl-d14	0	1.8344	0	57	100.00	ND	.00
75 Phenol-d5	0	1.7474	0	1	100.00	ND	.00
76 2-Fluorophenol	0	.9559	0	1	100.00	ND	.00
77 2,4,6-Tribromophenol	0	.2253	0	28	100.00	ND	.00

CODES: ND = Not Detected; D = Detected; E = Estimated

TRIANGLE LABORATORIES, INC.
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DATA FILE:Q9247 SAMPLE ID KA-15 REA – TREATED SOIL – RUN #1
RF FILE: Q9245 SAMP. WT .03 KG
DATE: 08/18/88

QUANTITATION REPORT

	NAME	AREA	RF	SCAN	ISTD	CONC ug/KG	CODE	QUAN LIMIT
1	1,4-Dichlorobenzene-d4	13994		257	1			
2	Phenol	3209	2.1633	133	1	142.306	E	330
3	bis(2-Chloroethyl)ether	0	1.3566	0	1	2.500	ND	330
4	2-Chlorophenol	0	1.1801	0	1	2.500	ND	330
5	1,3-Dichlorobenzene	0	1.5779	0	1	2.500	ND	330
6	1,4-Dichlorobenzene	0	1.6324	0	1	2.500	ND	330
7	Benzyl alcohol	0	1.2665	0	1	2.500	ND	330
8	1,2-Dichlorobenzene	0	1.5795	0	1	2.500	ND	330
9	2-Methylphenol	0	1.7579	0	1	2.500	ND	330
10	bis(2-Chloroisopropyl)ether	0	3.0534	0	1	2.500	ND	330
11	4-Methylphenol	0	1.8208	0	1	2.500	ND	330
12	N-Nitroso-di-n-propylamine	0	1.3318	0	1	2.500	ND	330
13	Hexachloroethane	0	.7276	0	1	2.500	ND	330
14	Naphthalene-d8	88844		473	14			
15	Nitrobenzene	0	.2884	0	14	2.500	ND	330
16	Isophorone	0	.6044	0	14	2.500	ND	330
17	2-Nitrophenol	0	.1221	0	14	2.500	ND	330
18	2,4-Dimethylphenol	0	.1373	0	14	2.500	ND	330
19	Benzoic acid	0	.0563	0	14	2.500	ND	330
20	bis(2-Chloroethoxy)methane	0	.3500	0	14	2.500	ND	330
21	2,4-Dichlorophenol	0	.1725	0	14	2.500	ND	330
22	1,2,4-Trichlorobenzene	0	.1491	0	14	2.500	ND	330
23	Naphthalene	25055	.8074	476	14	485.713	D	330
24	4-Chloroaniline	0	.3239	0	14	2.500	ND	330
25	Hexachlorobutadiene	0	.0756	0	14	2.500	ND	330
26	4-Chloro-3-methylphenol	0	.1575	0	14	2.500	ND	330
27	2-Methylnaphthalene	4144	.5644	603	14	110.186	E	330
28	Acenaphthene-d10	47213		792	28			
29	Hexachlorocyclopentadiene	0	.1353	0	28	2.500	ND	330
30	2,4,6-Trichlorophenol	0	.3124	0	28	2.500	ND	330
31	2,4,5-Trichlorophenol	0	.3328	0	28	2.500	ND	330
32	2-Chloronaphthalene	0	1.5374	0	28	2.500	ND	330
33	2-Nitroaniline	0	.3949	0	28	2.500	ND	330
34	Dimethylphthalate	0	1.1610	0	28	2.500	ND	330
35	Acenaphthylene	0	2.1537	0	28	2.500	ND	330
36	3-Nitroaniline	0	.2186	0	28	2.500	ND	330
37	Acenaphthene	0	1.0172	0	28	2.500	ND	330
38	2,4-Dinitrophenol	0	.0573	0	28	2.500	ND	330
39	4-Nitrophenol	0	.1262	0	28	2.500	ND	330
40	Dibenzofuran	19785	1.7298	829	28	225.056	E	330
41	2,4-Dinitrotoluene	0	.3396	0	28	2.500	ND	330
42	2,6-Dinitrotoluene	0	.2556	0	28	2.500	ND	330

CODES: ND = Not Detected; D = Detected; E = Estimated

43	Diethylphthalate	0	1.4773	0	28	2.500	ND	333
44	4-Chlorophenyl-phenylether	0	.5003	0	28	2.500	ND	333
45	Fluorene	1468	1.0392	890	28	40.286	E	333
46	4-Nitroaniline	0	.2961	0	28	2.500	ND	333
47	Phenanthrene-d10	88697		1057	47			
48	4,6-Dinitro-2-methylphenol	0	.0952	0	47	2.500	ND	333
49	N-Nitrosodiphenylamine(1)	0	.4236	0	47	2.500	ND	333
50	4-Bromophenyl-phenylether	0	.1963	0	47	2.500	ND	333
51	Hexachlorobenzene	0	.2309	0	47	2.500	ND	333
52	Pentachlorophenol	961	.0947	1044	47	156.081	E	333
53	Phenanthrene	101577	1.3043	1061	47	1137.735	D	333
54	Anthracene	0	1.1843	0	47	2.500	ND	333
55	Di-n-butylphthalate	0	1.2239	0	47	2.500	ND	333
56	Fluoranthene	125079	1.0011	1280	47	1921.553	D	333
57	Chrysene-d12	59086		1546	57			
58	Pyrene	34730	1.7653	1316	57	444.711	D	333
59	Butylbenzylphthalate	0	.6035	0	57	2.500	ND	333
60	3,3'-Dichlorobenzidine	0	.2960	0	57	2.500	ND	333
61	Benzo(a)anthracene	0	1.0705	0	57	2.500	ND	333
62	Chrysene	51767	.8773	1551	57	1331.589	D	333
63	bis(2-Ethylhexyl)phthalate	7418	.8378	1519	57	199.803	E	333
64	Perylene-d12	33417		1794	64			333
65	Di-n-octylphthalate	0	1.7866	0	64	2.500	ND	333
66	Benzo(b)fluoranthene	56717	2.0401	1734	64	1109.276	D	333
67	Benzo(k)fluoranthene	0	2.1066	0	64	2.500	ND	333
68	Benzo(a)pyrene	5039	1.5762	1783	64	127.555	E	333
69	Indeno(1,2,3-cd)pyrene	0	1.3471	0	64	2.500	ND	333
70	Dibenz(a,h)anthracene	0	.9630	0	64	2.500	ND	333
71	Benzo(g,h,i)perylene	0	1.1736	0	64	2.500	ND	333

SURROGATE SUMMARY	AREA	RF	SCAN	ISTD	AMOUNT	CODE	% RECOVERY
72 Nitrobenzene-d5	21356	.2816	354	14	1138.75	D	66.33
73 2-Fluorobiphenyl	50098	1.4783	682	28	957.03	D	57.42
74 Terphenyl-d14	66262	1.0423	1369	57	1434.55	D	86.07
75 Phenol-d5	58851	1.7454	231	1	3125.66	D	93.77
76 2-Fluorophenol	23953	.9935	80	1	2313.66	D	69.41
77 2,4,6-Tribromophenol	8604	.2037	933	28	1192.57	D	35.78

CODES: ND = Not Detected; D = Detected; E = Estimated

TRIANGLE LABORATORIES, INC.
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DATA FILE:Q9251 SAMPLE ID KA-16 1:10 DILN MED RAW SOIL-RUN #1
RF FILE: Q9245 SAMP. WT .001 kG
DATE: 06/18/88

QUANTITATION REPORT

	NAME	AREA	RF	SCAN	ISID	CONC ug/KG	CODE	QUAN LIMIT
1	1,4-Dichlorobenzene-d4	18483		258	1			
2	Phenol	0	2.1633	0	1	700.00	ND	100000
3	bis(2-Chloroethyl)ether	0	1.5589	0	1	700.00	ND	100000
4	2-Chlorophenol	0	1.1801	0	1	700.00	ND	100000
5	1,3-Dichlorobenzene	0	1.5778	0	1	700.00	ND	100000
6	1,4-Dichlorobenzene	0	1.6324	0	1	700.00	ND	100000
7	Benzyl alcohol	0	1.2665	0	1	700.00	ND	100000
8	1,2-Dichlorobenzene	0	1.5795	0	1	700.00	ND	100000
9	2-Methylphenol	0	1.7578	0	1	700.00	ND	100000
10	bis(2-Chloroisopropyl)ether	0	3.0534	0	1	700.00	ND	100000
11	4-Methylphenol	0	1.8208	0	1	700.00	ND	100000
12	N-Nitroso-di-n-propylamine	0	1.9318	0	1	700.00	ND	100000
13	Hexachloroethane	0	.7276	0	1	700.00	ND	100000
14	Naphthalene-d8	138412		475	14			
15	Nitrobenzene	0	.2884	0	14	700.00	ND	100000
16	Isophorone	0	.6044	0	14	700.00	ND	100000
17	2-Nitrophenol	0	.1221	0	14	700.00	ND	100000
18	2,4-Dimethylphenol	0	.1373	0	14	700.00	ND	100000
19	Benzoic acid	0	.0563	0	14	700.00	ND	100000
20	bis(2-Chloroethoxy)methane	0	.3500	0	14	700.00	ND	100000
21	2,4-Dichlorophenol	0	.1725	0	14	700.00	ND	100000
22	1,2,4-Trichlorobenzene	0	.1491	0	14	700.00	ND	100000
23	Naphthalene	3495	.8074	477	14	12509.21	E	100000
24	4-Chloroaniline	0	.3239	0	14	700.00	ND	100000
25	Hexachlorobutadiene	0	.0756	0	14	700.00	ND	100000
26	4-Chloro-3-methylphenol	0	.1575	0	14	700.00	ND	100000
27	2-Methylnaphthalene	2547	.5544	594	14	13041.02	E	100000
28	Acenaphthene-d10	47771		794	28			
29	Hexachlorocyclopentadiene	0	.1353	0	28	700.00	ND	100000
30	2,4,6-Trichlorophenol	0	.3124	0	28	700.00	ND	100000
31	2,4,5-Trichlorophenol	0	.3326	0	28	700.00	ND	100000
32	2-Chloronaphthalene	0	1.5874	0	28	700.00	ND	100000
33	2-Nitroaniline	0	.3949	0	28	700.00	ND	100000
34	Dimethylphthalate	0	1.1810	0	28	700.00	ND	100000
35	Acenaphthylene	0	2.1537	0	28	700.00	ND	100000
36	3-Nitroaniline	0	.2188	0	28	700.00	ND	100000
37	Acenaphthene	16259	1.0172	799	28	133841.62	D	100000
38	2,4-Dinitrophenol	0	.0573	0	28	700.00	ND	100000
39	4-Nitrophenol	0	.1262	0	28	700.00	ND	100000
40	Dibenzofuran	22995	1.7296	829	28	111310.59	D	100000
41	2,4-Dinitrotoluene	0	.3396	0	28	700.00	ND	100000
42	2,6-Dinitrotoluene	0	.2556	0	28	700.00	ND	100000

CODES: ND = Not Detected; D = Detected; E = Estimated

43 Diethylphthalate	0	1.4773	0	28	700.00	ND	100000
44 4-Chlorophenyl-phenylether	0	.5093	0	28	700.00	ND	100000
45 Fluorene	32660	1.0292	891	28	265703.38	D	100000
46 4-Nitroaniline	0	.2961	0	28	700.00	ND	100000
47 Phenanthrene-d10	93735		1059	47			
48 4,6-Dinitro-2-methylphenol	0	.0952	0	47	700.00	ND	100000
49 N-Nitrosodiphenylamine(1)	0	.4236	0	47	700.00	ND	100000
50 4-Bromophenyl-phenylether	0	.1953	0	47	700.00	ND	100000
51 Hexachlorobenzene	0	.2300	0	47	700.00	ND	100000
52 Pentachlorophenol	1697	.0947	1046	47	76477.30	E	100000
53 Phenanthrene	254802	1.3043	1065	47	833665.43	D	100000
54 Anthracene	163640	1.1843	1072	47	589655.85	D	100000
55 Di-n-butylphthalate	0	1.2239	0	47	700.00	ND	100000
56 Fluoranthene	285665	1.0011	1261	47	1217723.02	D	100000
57 Chrysene-d12	81661		1548	57			
58 Pyrene	196580	1.7653	1319	57	545448.65	D	100000
59 Butylbenzylphthalate	0	.6035	0	57	700.00	ND	100000
60 3,3'-Dichlorobenzidine	0	.2960	0	57	700.00	ND	100000
61 Benzo(a)anthracene	32481	1.0705	1544	57	146617.43	D	100000
62 Chrysene	39700	.8773	1552	57	221665.95	D	100000
63 bis(2-Ethylhexyl)phthalate	0	.6378	0	57	700.00	ND	100000
64 Perylene-d12	50631		1796	64			100000
65 Di-n-octylphthalate	0	1.7866	0	64	700.00	ND	100000
66 Benzo(b)fluoranthene	16527	2.0401	1734	64	64001.84	E	100000
67 Benzo(k)fluoranthene	0	2.1066	0	64	700.00	ND	100000
68 Benzo(a)pyrene	4836	1.5762	1784	64	24238.88	E	100000
69 Indeno(1,2,3-cd)pyrene	0	1.3471	0	64	700.00	ND	100000
70 Dibenz(a,h)anthracene	0	.9630	0	64	700.00	ND	100000
71 Benzo(g,h,i)perylene	0	1.1736	0	64	700.00	ND	100000

SURROGATE SUMMARY	AREA	RF	SCAN	ISTD	AMOUNT	CODE	% RECOVERY
72 Nitrobenzene-d5	753	.2816	355	14	7728.18	D	7.73
73 2-Fluorobiphenyl	2883	1.4783	683	28	16329.29	D	16.33
74 Terphenyl-d14	4791	1.0423	1370	57	22514.77	D	22.51
75 Phenol-d5	2955	1.7454	230	1	41123.30	D	41.13
76 2-Fluorophenol	1677	.9935	79	1	41007.19	D	41.01
77 2,4,6-Tribromophenol	0	.2037	0	28	700.00	ND	.00

CODES: ND = Not Detected; D = Detected; E = Estimated

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DATA FILE:Q9249 SAMPLE ID KA-17 MED BAGHOUSE DUST - RUN #1
RF FILE: Q9245 SAMP. WT .001 KG
DATE: 08/18/88

QUANTITATION REPORT

	NAME	AREA	RF	SCAN	ISID	CONC ug/KG	CODE	QUAN LIMIT
1	1,4-Dichlorobenzene-d4	19956		257	1			
2	Phenol	0	2.1633	0	1	50.000	ND	10000
3	bis(2-Chloroethyl)ether	0	1.6588	0	1	50.000	ND	10000
4	2-Chlorophenol	0	1.1801	0	1	50.000	ND	10000
5	1,3-Dichlorobenzene	0	1.5778	0	1	50.000	ND	10000
6	1,4-Dichlorobenzene	0	1.6324	0	1	50.000	ND	10000
7	Benzyl alcohol	0	1.2665	0	1	50.000	ND	10000
8	1,2-Dichlorobenzene	0	1.6795	0	1	50.000	ND	10000
9	2-Methylphenol	0	1.7578	0	1	50.000	ND	10000
10	bis(2-Chloroisopropyl)ether	0	3.0534	0	1	50.000	ND	10000
11	4-Methylphenol	0	1.8208	0	1	50.000	ND	10000
12	N-Nitroso-di-n-propylamine	0	1.9318	0	1	50.000	ND	10000
13	Hexachloroethane	0	.7276	0	1	50.000	ND	10000
14	Naphthalene-d8	147145		474	14			
15	Nitrobenzene	0	.2884	0	14	50.000	ND	10000
16	Isophorone	0	.6044	0	14	50.000	ND	10000
17	2-Nitrophenol	0	.1221	0	14	50.000	ND	10000
18	2,4-Dimethylphenol	0	.1373	0	14	50.000	ND	10000
19	Benzoic acid	0	.0563	0	14	50.000	ND	10000
20	bis(2-Chloroethoxy)methane	0	.3500	0	14	50.000	ND	10000
21	2,4-Dichlorophenol	0	.1725	0	14	50.000	ND	10000
22	1,2,4-Trichlorobenzene	0	.1491	0	14	50.000	ND	10000
23	Naphthalene	6046	.8074	477	14	2035.537	E	10000
24	4-Chloroaniline	0	.3239	0	14	50.000	ND	10000
25	Hexachlorobutadiene	0	.0756	0	14	50.000	ND	10000
26	4-Chloro-3-methylphenol	0	.1575	0	14	50.000	ND	10000
27	2-Methylnaphthalene	51341	.5644	604	14	24727.219	D	10000
28	Acenaphthene-d10	61550		794	28			
29	Hexachlorocyclopentadiene	0	.1353	0	28	50.000	ND	10000
30	2,4,6-Trichlorophenol	0	.3124	0	28	50.000	ND	10000
31	2,4,5-Trichlorophenol	0	.3328	0	28	50.000	ND	10000
32	2-Chloronaphthalene	0	1.5874	0	28	50.000	ND	10000
33	2-Nitroaniline	0	.3949	0	28	50.000	ND	10000
34	Dimethylphthalate	0	1.1810	0	28	50.000	ND	10000
35	Acenaphthylene	15417	2.1537	763	28	4652.008	E	10000
36	3-Nitroaniline	0	.2188	0	28	50.000	ND	10000
37	Acenaphthene	120153	1.0172	799	28	76765.880	D	10000
38	2,4-Dinitrophenol	0	.0573	0	28	50.000	ND	10000
39	4-Nitrophenol	0	.1262	0	28	50.000	ND	10000
40	Dibenzofuran	251268	1.7298	830	28	94400.985	D	10000
41	2,4-Dinitrotoluene	0	.3396	0	28	50.000	ND	10000
42	2,6-Dinitrotoluene	0	.2556	0	28	50.000	ND	10000

CODES: ND = Not Detected; D = Detected; E = Estimated

43 Diethylphthalate	0	1.4773	0	28	50.000	ND	10000
44 4-Chlorophenyl-phenylether	0	.5003	0	28	50.000	ND	10000
45 Fluorene	215084	1.0292	892	28	135807.968	D	10000
46 4-Nitroaniline	0	.2961	0	28	50.000	ND	10000
47 Phenanthrene-d10	87428		1060	47			
48 4,6-Dinitro-2-methylphenol	0	.0852	0	47	50.000	ND	10000
49 N-Nitrosodiphenylamine(1)	0	.4236	0	47	50.000	ND	10000
50 4-Bromophenyl-phenylether	0	.1963	0	47	50.000	ND	10000
51 Hexachlorobenzene	0	.2300	0	47	50.000	ND	10000
52 Pentachlorophenol	37810	.0947	1050	47	182687.415	D	10000
53 Phenanthrene	605177	1.3043	1066	47	212286.616	D	10000
54 Anthracene	289763	1.1843	1073	47	111945.212	D	10000
55 Di-n-butylphthalate	0	1.2239	0	47	50.000	ND	10000
56 Fluoranthene	326396	1.0011	1285	47	149172.082	D	10000
57 Chrysene-d12	76348		1548	57			
58 Pyrene	405781	1.7653	1320	57	120426.837	D	10000
59 Butylbenzylphtnalate	0	.6035	0	57	50.000	ND	10000
60 3,3'-Dichlorobenzidine	0	.2960	0	57	50.000	ND	10000
61 Benzo(a)anthracene	104416	1.0705	1545	57	51100.417	D	10000
62 Chrysene	104385	.8773	1553	57	62339.541	D	10000
63 bis(2-Ethylhexyl)phthalate	724	.8378	1611	57	452.753	E	10000
64 Perylene-d12	66899		1795	64			10000
65 Di-n-octylphthalate	0	1.7866	0	64	50.000	ND	10000
66 Benzo(b)fluoranthene	79522	2.0401	1735	64	23306.797	D	10000
67 Benzo(k)fluoranthene	57528	2.1066	1738	64	16328.446	D	10000
68 Benzo(a)pyrene	45133	1.5762	1785	64	17120.536	D	10000
69 Indeno(1,2,3-cd)pyrene	0	1.3471	0	64	50.000	ND	10000
70 Dibenz(a,h)anthracene	0	.9630	0	64	50.000	ND	10000
71 Benzo(g,h,i)perylene	10790	1.1736	2001	64	5497.317	E	10000

U R R O G A T E S U M M A R Y	AREA	RF	SCAN	ISID	AMOUNT	CODE	% RECOVERY
72 Nitrobenzene-d5	23672	.2816	355	14	22853.12	D	22.85
73 2-Fluorobiphenyl	55165	1.4783	683	28	24250.61	D	24.25
74 Terphenyl-d14	75833	1.0423	1371	57	38116.81	D	38.12
75 Phenol-d5	55148	1.7454	231	1	74814.06	D	74.81
76 2-Fluorophenol	30863	.9935	79	1	62266.34	D	62.27
77 2,4,6-Tribromophenol	17960	.2037	940	28	57285.35	D	57.29

CODES: ND = Not Detected; D = Detected; E = Estimated

TRIANGLE LABORATORIES, INC.
801-10 Capitola Drive
Research Triangle Park, NC 27713
Telephone: (919) 544-5729

DATA FILE:Q9273051 SAMPLE ID TRAIN 2 KA21-24 MM5-RUN #2
RF FILE: Q9271 DILN FACTOR 80
DATE: 08/18/88

QUANTITATION REPORT

	NAME	AREA	RF	SCAN	ISID	AMOUNT, ug	CODE	QUAN LIMIT
1	1,4-Dichlorobenzene-d4	9927		268	1		D	
2	Phenol	429	2.2315	243	1	62.46	E	800
3	bis(2-Chloroethyl)ether	0	1.6240	0	1	14.00	ND	800
4	2-Chlorophenol	0	1.3814	0	1	14.00	ND	800
5	1,3-Dichlorobenzene	0	1.4637	0	1	14.00	ND	800
6	1,4-Dichlorobenzene	0	1.5167	0	1	14.00	ND	800
7	Benzyl alcohol	0	1.1327	0	1	14.00	ND	800
8	1,2-Dichlorobenzene	0	1.5792	0	1	14.00	ND	800
9	2-Methylphenol	0	1.6171	0	1	14.00	ND	800
10	bis(2-Chloroisopropyl)ether	0	2.9484	0	1	14.00	ND	800
11	4-Methylphenol	0	1.6575	0	1	14.00	ND	800
12	N-Nitroso-di-n-propylamine	0	1.6248	0	1	14.00	ND	800
13	Hexachloroethane	0	.7681	0	1	14.00	ND	800
14	Naphthalene-d8	56749		465	14		D	
15	Nitrobenzene	0	.3325	0	14	14.00	ND	800
15	Isophorone	0	.6378	0	14	14.00	ND	800
17	2-Nitrophenol	0	.1350	0	14	14.00	ND	800
18	2,4-Dimethylphenol	0	.1885	0	14	14.00	ND	800
19	Benzoic acid	0	.0628	0	14	14.00	ND	800
20	bis(2-Chloroethoxy)methane	0	.4046	0	14	14.00	ND	800
21	2,4-Dichlorophenol	0	.2171	0	14	14.00	ND	800
22	1,2,4-Trichlorobenzene	0	.2491	0	14	14.00	ND	800
23	Naphthalene	288890	.8597	469	14	18948.36	D	800
24	4-Chloroaniline	0	.3286	0	14	14.00	ND	800
25	Hexachlorobutadiene	0	.1028	0	14	14.00	ND	800
26	4-Chloro-3-methylphenol	0	.1971	0	14	14.00	ND	800
27	2-Methylnaphthalene	175449	.7953	516	14	12439.00	D	800
28	Acenaphthene-d10	36657		804	28		D	
29	Hexachlorocyclopentadiene	0	.1064	0	28	14.00	ND	800
30	2,4,6-Trichlorophenol	0	.2591	0	28	14.00	ND	800
31	2,4,5-Trichlorophenol	0	.2799	0	28	14.00	ND	800
32	2-Chloronaphthalene	0	1.1666	0	28	14.00	ND	800
33	2-Nitroaniline	0	.3678	0	28	14.00	ND	800
34	Dimethylphthalate	0	1.2415	0	28	14.00	ND	800
35	Acenaphthylene	18690	2.1770	773	28	749.46	E	800
36	3-Nitroaniline	0	.2476	0	28	14.00	ND	800
37	Acenaphthene	12099	1.0069	812	28	1048.98	D	800
38	2,4-Dinitrophenol	0	.0755	0	28	14.00	ND	800
39	4-Nitrophenol	0	.1048	0	28	14.00	ND	800
40	Dibenzofuran	234535	1.5441	840	28	13259.93	D	800
41	2,4-Dinitrotoluene	0	.3499	0	28	14.00	ND	800
42	2,6-Dinitrotoluene	0	.2485	0	28	14.00	ND	800

CODES: ND = Not Detected; D = Detected; E = Estimated

43 Diethylphthalate	0	1.2184	0	29	14.00	ND	800
44 4-Chlorophenyl-phenylether	0	.5446	0	28	14.00	ND	800
45 Fluorene	240974	1.2244	904	28	17180.77	D	800
46 4-Nitroaniline	0	.2718	0	29	14.00	ND	800
47 Phenanthrene-d10	75269		1069	47		D	
48 4,6-Dinitro-2-methylphenol	0	.0996	0	47	14.00	ND	800
49 N-Nitrosodiphenylamine(1)	0	.3948	0	47	14.00	ND	800
50 4-Bromophenyl-phenylether	0	.2107	0	47	14.00	ND	800
51 Hexachlorobenzene	0	.2016	0	47	14.00	ND	800
52 Pentachlorophenol	1121	.0902	1056	47	528.65	E	800
53 Phenanthrene	334412	1.1910	1073	47	11936.87	D	800
54 Anthracene	153800	1.0778	1091	47	6066.76	D	800
55 Di-n-butylphthalate	0	1.1242	0	47	14.00	ND	800
56 Fluoranthene	56688	1.0911	1288	47	2208.84	D	800
57 Chrysene-d12	71460		1554	57		D	
58 Pyrene	25024	2.0567	1325	57	544.84	E	800
59 Butylbenzylphthalate	0	.7974	0	57	14.00	ND	800
60 3,3'-Dichlorobenzidine	0	.3373	0	57	14.00	ND	800
61 Benzo(a)anthracene	0	1.0042	0	57	14.00	ND	800
62 Chrysene	0	.8359	0	57	14.00	ND	800
63 bis(2-Ethylhexyl)phthalate	0	.8939	0	57	14.00	ND	800
64 Perylene-d12	25483		1801	64		D	
65 Di-n-octylphthalate	0	1.7274	0	64	14.00	ND	800
66 Benzo(b)fluoranthene	0	1.8275	0	64	14.00	ND	800
67 Benzo(k)fluoranthene	0	2.6170	0	64	14.00	ND	800
68 Benzo(a)pyrene	0	1.6575	0	64	14.00	ND	800
69 Indeno(1,2,3-cd)pyrene	0	.9023	0	64	14.00	ND	800
70 Dibenz(a,h)anthracene	0	.6756	0	64	14.00	ND	800
71 Benzo(g,h,i)perylene	0	1.0275	0	64	14.00	ND	800

SURROGATE SUMMARY	AREA	RF	SCAN	ISTD	AMOUNT	CODE	% RECOVERY
72 Nitrobenzene-d5	0	.3264	0	14	14.00	ND	.00
73 2-Fluorobiphenyl	0	1.0235	0	28	14.00	ND	.00
74 Terphenyl-d14	0	1.0344	0	57	14.00	ND	.00
75 Phenol-d5	0	1.7474	0	1	14.00	ND	.00
76 2-Fluorophenol	0	.9569	0	1	14.00	ND	.00
77 2,4,6-Tribromophenol	0	.2253	0	28	14.00	ND	.00

CODES: ND = Not Detected; D = Detected; E = Estimated

TRIANGLE LABORATORIES, INC.
801-10 Capitola Drive
Research Triangle Park, NC 27713
Telephone: (919) 544-5729

DATA FILE:Q9248021 SAMPLE ID KA-25 REX TREATED SOIL - RUN #2
RF FILE: Q9245 SAMP. WT .03 kG
DATE: 08/18/88

QUANTITATION REPORT

	NAME	AREA	RF	SCAN	ISID	CONC ug/kG	CODE	QUAN LIMIT
1	1,4-Dichlorobenzene-d4	10531		257	1			
2	Phenol	0	2.1533	0	1	2.500	ND	333
3	bis(2-Chloroethyl)ether	0	1.6588	0	1	2.500	ND	333
4	2-Chlorophenol	0	1.1601	0	1	2.500	ND	333
5	1,3-Dichlorobenzene	0	1.5778	0	1	2.500	ND	333
6	1,4-Dichlorobenzene	0	1.6324	0	1	2.500	ND	333
7	Benzyl alcohol	0	1.2665	0	1	2.500	ND	333
8	1,2-Dichlorobenzene	0	1.6795	0	1	2.500	ND	333
9	2-Methylphenol	0	1.7578	0	1	2.500	ND	333
10	bis(2-Chloroisopropyl)ether	0	3.0534	0	1	2.500	ND	333
11	4-Methylphenol	0	1.8208	0	1	2.500	ND	333
12	N-Nitroso-di-n-propylamine	0	1.9318	0	1	2.500	ND	333
13	Hexachloroethane	0	.7276	0	1	2.500	ND	333
14	Naphthalene-d8	74369		474	14			
15	Nitrobenzene	0	.2684	0	14	2.500	ND	333
16	Isophorone	0	.6044	0	14	2.500	ND	333
17	2-Nitrophenol	0	.1221	0	14	2.500	ND	333
18	2,4-Dimethylphenol	0	.1373	0	14	2.500	ND	333
19	Benzoic acid	0	.0563	0	14	2.500	ND	333
20	bis(2-Chloroethoxy)methane	0	.3500	0	14	2.500	ND	333
21	2,4-Dichlorophenol	0	.1725	0	14	2.500	ND	333
22	1,2,4-Trichlorobenzene	0	.1491	0	14	2.500	ND	333
23	Naphthalene	1519	.8074	477	14	33.729	E	333
24	4-Chloroaniline	0	.3239	0	14	2.500	ND	333
25	Hexachlorobutadiene	0	.0756	0	14	2.500	ND	333
26	4-Chloro-3-methylphenol	0	.1575	0	14	2.500	ND	333
27	2-Methylnaphthalene	0	.5644	0	14	2.500	ND	333
28	Acenaphthene-d10	31881		793	28			
29	Hexachlorocyclopentadiene	0	.1353	0	28	2.500	ND	333
30	2,4,6-Trichlorophenol	0	.3124	0	28	2.500	ND	333
31	2,4,5-Trichlorophenol	0	.3328	0	28	2.500	ND	333
32	2-Chloronaphthalene	0	1.5874	0	28	2.500	ND	333
33	2-Nitroaniline	0	.3949	0	28	2.500	ND	333
34	Dimethylphthalate	0	1.1810	0	28	2.500	ND	333
35	Acenaphthylene	0	2.1537	0	28	2.500	ND	333
36	3-Nitroaniline	0	.2188	0	28	2.500	ND	333
37	Acenaphthene	0	1.0172	0	28	2.500	ND	333
38	2,4-Dinitrophenol	0	.0573	0	28	2.500	ND	333
39	4-Nitrophenol	0	.1262	0	28	2.500	ND	333
40	Dibenzofuran	0	1.7298	0	28	2.500	ND	333
41	2,4-Dinitrotoluene	0	.3396	0	28	2.500	ND	333
42	2,6-Dinitrotoluene	0	.2556	0	28	2.500	ND	333

CODES: ND = Not Detected; D = Detected; E = Estimated

43 Diethylphthalate	0	1.4773	0	28	2.500	ND	333
44 4-Chlorophenyl-phenylether	0	.5003	0	28	2.500	ND	333
45 Fluorene	0	1.0292	0	28	2.500	ND	333
46 4-Nitroaniline	0	.2361	0	29	2.500	ND	333
47 Phenanthrene-d10	61482		1058	47			
48 4,6-Dinitro-2-methylphenol	0	.0852	0	47	2.500	ND	333
49 N-Nitrosodiphenylamine(1)	0	.4238	0	47	2.500	ND	333
50 4-Bromophenyl-phenylether	0	.1963	0	47	2.500	ND	333
51 Hexachlorobenzene	0	.2300	0	47	2.500	ND	333
52 Pentachlorophenol	0	.0947	0	47	2.500	ND	333
53 Phenanthrene	931	1.3043	1061	47	15.480	E	333
54 Anthracene	0	1.1843	0	47	2.500	ND	333
55 Di-n-butylphthalate	3349	1.2239	1212	47	59.340	E	333
56 Fluoranthene	0	1.0011	0	47	2.500	ND	333
57 Chrysene-d12	29480		1546	57			
58 Pyrene	0	1.7853	0	57	2.500	ND	333
59 Butylbenzylphthalate	0	.6035	0	57	2.500	ND	333
60 3,3'-Dichlorobenzidine	0	.2960	0	57	2.500	ND	333
61 Benzo(a)anthracene	0	1.0705	0	57	2.500	ND	333
62 Chrysene	0	.9773	0	57	2.500	ND	333
63 bis(2-Ethylhexyl)phthalate	0	.8379	0	57	2.500	ND	333
64 Perylene-d12	16920		1793	64			333
65 Di-n-octylphthalate	0	1.7866	0	64	2.500	ND	333
66 Benzo(b)fluoranthene	0	2.0401	0	64	2.500	ND	333
67 Benzo(k)fluoranthene	0	2.1066	0	64	2.500	ND	333
68 Benzo(a)pyrene	0	1.5762	0	64	2.500	ND	333
69 Indeno(1,2,3-cd)pyrene	0	1.3471	0	64	2.500	ND	333
70 Dibenz(a,h)anthracene	0	.9530	0	64	2.500	ND	333
71 Benzo(g,h,i)perylene	0	1.1736	0	64	2.500	ND	333

SURROGATE SUMMARY	AREA	RF	SCAN	ISID	AMOUNT	CODE	% RECOVERY
72 Nitrobenzene-d5	22952	.2818	355	14	1461.38	D	87.68
73 2-Fluorobiphenyl	29131	1.4783	683	28	824.12	D	49.45
74 Terphenyl-d14	39440	1.0423	1359	57	1711.37	D	102.68
75 Phenol-d5	40777	1.7454	232	1	2957.88	D	88.74
76 2-Fluorophenol	19040	.9935	81	1	2426.41	D	72.79
77 2,4,6-Tribromophenol	5781	.2037	939	28	1186.63	D	35.60

CODES: ND = Not Detected; D = Detected; E = Estimated

TRIANGLE LABORATORIES, INC.
801-10 Capitola Drive
Research Triangle Park, NC 27713
Telephone: (919) 544-8729

DATA FILE:Q9256 SAMPLE ID KA-26 1:5 DILN MED RAW SOIL - RUN #2
RF FILE: Q9245 SAMP. WT .001 KG
DATE: 08/18/88

QUANTITATION REPORT

	NAME	AREA	RF	SCAN	ISTD	CONC ug/KG	CODE	QUAN LIMIT
1	1,4-Dichlorobenzene-d4	11798		257	1			
2	Phenol	0	2.1633	0	1	650.00	ND	50000
3	bis(2-Chloroethyl)ether	0	1.6588	0	1	650.00	ND	50000
4	2-Chlorophenol	0	1.1901	0	1	650.00	ND	50000
5	1,3-Dichlorobenzene	0	1.5778	0	1	650.00	ND	50000
6	1,4-Dichlorobenzene	0	1.6324	0	1	650.00	ND	50000
7	Benzyl alcohol	0	1.2665	0	1	650.00	ND	50000
8	1,2-Dichlorobenzene	0	1.6795	0	1	650.00	ND	50000
9	2-Methylphenol	0	1.7578	0	1	650.00	ND	50000
10	bis(2-Chloroisopropyl)ether	0	3.0634	0	1	650.00	ND	50000
11	4-Methylphenol	0	1.9208	0	1	650.00	ND	50000
12	N-Nitroso-di-n-propylamine	0	1.9318	0	1	650.00	ND	50000
13	Hexachloroethane	0	.7276	0	1	650.00	ND	50000
14	Naphthalene-d8	53303		474	14			
15	Nitrobenzene	0	.2884	0	14	650.00	ND	50000
16	Isophorone	0	.6044	0	14	650.00	ND	50000
17	2-Nitrophenol	0	.1221	0	14	650.00	ND	50000
18	2,4-Dimethylphenol	0	.1373	0	14	650.00	ND	50000
19	Benzoic acid	0	.0563	0	14	650.00	ND	50000
20	bis(2-Chloroethoxy)methane	0	.3590	0	14	650.00	ND	50000
21	2,4-Dichlorophenol	0	.1725	0	14	650.00	ND	50000
22	1,2,4-Trichlorobenzene	0	.1491	0	14	650.00	ND	50000
23	Naphthalene	3975	.8074	477	14	15553.98	E	50000
24	4-Chloroaniline	0	.3239	0	14	650.00	ND	50000
25	Hexachlorobutadiene	0	.0756	0	14	650.00	ND	50000
26	4-Chloro-3-methylphenol	0	.1575	0	14	650.00	ND	50000
27	2-Methylnaphthalene	2446	.5644	604	14	13691.74	E	50000
28	Acenaphthene-d10	58386		794	28			
29	Hexachlorocyclopentadiene	0	.1353	0	28	650.00	ND	50000
30	2,4,6-Trichlorophenol	0	.3124	0	28	650.00	ND	50000
31	2,4,5-Trichlorophenol	0	.3328	0	28	650.00	ND	50000
32	2-Chloronaphthalene	0	1.5874	0	28	650.00	ND	50000
33	2-Nitroaniline	0	.3949	0	28	650.00	ND	50000
34	Dimethylphthalate	0	1.1810	0	28	650.00	ND	50000
35	Acenaphthylene	1129	2.1537	763	28	2731.24	E	50000
36	3-Nitroaniline	0	.2188	0	28	650.00	ND	50000
37	Acenaphthene	16000	1.0172	798	28	81955.63	D	50000
38	2,4-Dinitrophenol	0	.0573	0	28	650.00	ND	50000
39	4-Nitrophenol	0	.1262	0	28	650.00	ND	50000
40	Dibenzofuran	27173	1.7298	829	28	81846.86	D	50000
41	2,4-Dinitrotoluene	0	.3396	0	28	650.00	ND	50000
42	2,6-Dinitrotoluene	0	.2556	0	28	650.00	ND	50000

CODES: ND = Not Detected; D = Detected; E = Estimated

43 Diethylphthalate	0	1.4773	0	28	650.00	ND	50000
44 4-Chlorophenyl-phenylether	0	.5003	0	28	650.00	ND	50000
45 Fluorene	38407	1.0292	892	28	194425.28	D	50000
46 4-Nitroaniline	0	.2961	0	28	650.00	ND	50000
47 Phenanthrene-d10	72393		1059	47			
48 4,6-Dinitro-2-methylphenol	0	.0852	0	47	650.00	ND	50000
49 N-Nitrosodiphenylamine(1)	0	.4238	0	47	650.00	ND	50000
50 4-Bromophenyl-phenylether	0	.1963	0	47	650.00	ND	50000
51 Hexachlorobenzene	0	.2300	0	47	650.00	ND	50000
52 Pentachlorophenol	4545	.0947	1047	47	132634.37	D	50000
53 Phenanthrene	321263	1.3043	1066	47	690494.91	D	50000
54 Anthracene	187409	1.1843	1073	47	437196.84	D	50000
55 Di-n-butylphthalate	0	1.2229	0	47	650.00	ND	50000
56 Fluoranthene	128737	1.0011	1284	47	355279.44	D	50000
57 Chrysene-d12	60398		1548	57			
58 Pyrene	218629	1.7653	1318	57	410094.98	D	50000
59 Butylbenzylphthalate	0	.6035	0	57	650.00	ND	50000
60 3,3'-Dichlorobenzidine	0	.2960	0	57	650.00	ND	50000
61 Benzo(a)anthracene	37524	1.0705	1545	57	118377.08	D	50000
62 Chrysene	45041	.8773	1552	57	170011.63	D	50000
63 bis(2-Ethylhexyl)phthalate	0	.8378	0	57	650.00	ND	50000
64 Perylene-d12	34003		1795	64			50000
65 Di-n-octylphthalate	0	1.7866	0	64	650.00	ND	50000
66 Benzo(b)fluoranthene	19304	2.0401	1736	64	85556.39	D	50000
67 Benzo(k)fluoranthene	0	2.1066	0	64	650.00	ND	50000
68 Benzo(a)pyrene	5269	1.5762	1765	64	19661.92	E	50000
69 Indeno(1,2,3-cd)pyrene	0	1.3471	0	64	650.00	ND	50000
70 Dibenz(a,h)anthracene	0	.9630	0	64	650.00	ND	50000
71 Benzo(g,h,i)perylene	0	1.1736	0	64	650.00	ND	50000

SURROGATE SUMMARY	AREA	RF	SCAN	ISTD	AMOUNT	CODE	% RECOVERY
72 Nitrobenzene-d5	2004	.2816	355	14	22485.34	D	22.49
73 2-Fluorobiphenyl	6495	1.4783	683	28	22890.93	D	22.89
74 Terphenyl-d14	12325	1.0423	1370	57	39155.28	D	39.16
75 Phenol-d5	5418	1.7454	231	1	52620.65	D	52.62
76 2-Fluorophenol	3281	.9935	78	1	55983.05	D	55.98
77 2,4,6-Tribromophenol	2428	.2037	940	28	62088.50	D	62.09

CODES: ND = Not Detected; D = Detected; E = Estimated

TRIANGLE LABORATORIES, INC.
801-10 Capitola Drive
Research Triangle Park, NC 27713
Telephone: (919) 544-8729

DATA FILE:Q9248031 SAMPLE ID KA-27 MED BAGHOUSE DUST - RUN #2
RF FILE: Q9245 SAMP. WT .001 KG
DATE: 08/18/88

QUANTITATION REPORT

	NAME	AREA	RF	SCAN	ISTD	CONC ug/KG	CODE	QUAN LIMIT
1	1,4-Dichlorobenzene-d4	11774		257	1			
2	Phenol	0	2.1633	0	1	50.000	ND	10000
3	bis(2-Chloroethyl)ether	0	1.6588	0	1	50.000	ND	10000
4	2-Chlorophenol	0	1.1801	0	1	50.000	ND	10000
5	1,3-Dichlorobenzene	0	1.5778	0	1	50.000	ND	10000
6	1,4-Dichlorobenzene	0	1.6324	0	1	50.000	ND	10000
7	Benzyl alcohol	0	1.2665	0	1	50.000	ND	10000
8	1,2-Dichlorobenzene	0	1.6795	0	1	50.000	ND	10000
9	2-Methylphenol	0	1.7578	0	1	50.000	ND	10000
10	bis(2-Chloroisopropyl)ether	0	3.0534	0	1	50.000	ND	10000
11	4-Methylphenol	0	1.8208	0	1	50.000	ND	10000
12	N-Nitroso-di-n-propylamine	0	1.9318	0	1	50.000	ND	10000
13	Hexachloroethane	0	.7276	0	1	50.000	ND	10000
14	Naphthalene-d8	76218		474	14			
15	Nitrobenzene	0	.2884	0	14	50.000	ND	10000
16	Isophorone	0	.6044	0	14	50.000	ND	10000
17	2-Nitrophenol	0	.1221	0	14	50.000	ND	10000
18	2,4-Dimethylphenol	0	.1373	0	14	50.000	ND	10000
19	Benzoic acid	0	.0563	0	14	50.000	ND	10000
20	bis(2-Chloroethoxy)methane	0	.3500	0	14	50.000	ND	10000
21	2,4-Dichlorophenol	0	.1725	0	14	50.000	ND	10000
22	1,2,4-Trichlorobenzene	0	.1491	0	14	50.000	ND	10000
23	Naphthalene	0	.8974	0	14	50.000	ND	10000
24	4-Chloroaniline	0	.3239	0	14	50.000	ND	10000
25	Hexachlorobutadiene	0	.0756	0	14	50.000	ND	10000
26	4-Chloro-3-methylphenol	0	.1575	0	14	50.000	ND	10000
27	2-Methylnaphthalene	9200	.5644	603	14	8554.344	E	10000
28	Acenaphthene-d10	39280		793	28			
29	Hexachlorocyclopentadiene	0	.1353	0	28	50.000	ND	10000
30	2,4,6-Trichlorophenol	0	.3124	0	28	50.000	ND	10000
31	2,4,5-Trichlorophenol	0	.3328	0	28	50.000	ND	10000
32	2-Chloronaphthalene	0	1.5674	0	28	50.000	ND	10000
33	2-Nitroaniline	0	.3949	0	28	50.000	ND	10000
34	Dimethylphthalate	0	1.1810	0	28	50.000	ND	10000
35	Acenaphthylene	5995	2.1537	762	28	2834.565	E	10000
36	3-Nitroaniline	0	.2188	0	28	50.000	ND	10000
37	Acenaphthene	112223	1.0172	800	28	112349.739	D	10000
38	2,4-Dinitrophenol	0	.0573	0	28	50.000	ND	10000
39	4-Nitrophenol	0	.1262	0	28	50.000	ND	10000
40	Dibenzofuran	119986	1.7298	829	28	70636.065	D	10000
41	2,4-Dinitrotoluene	0	.3395	0	28	50.000	ND	10000
42	2,6-Dinitrotoluene	0	.2556	0	28	50.000	ND	10000

CODES: ND = Not Detected; D = Detected; E = Estimated

KA-27-#2

43 Diethylphthalate	0	1.4773	0	28	50.000	ND	10000
44 4-Chlorophenyl-phenylether	0	.5003	0	28	50.000	ND	10000
45 Fluorene	139547	1.0292	892	28	138068.379	D	10000
46 4-Nitroaniline	0	.2951	0	28	50.000	ND	10000
47 Phenanthrene-d10	63471		1058	47			
48 4,6-Dinitro-2-methylphenol	0	.0852	0	47	50.000	ND	10000
49 N-Nitrosodiphenylamine(1)	0	.4238	0	47	50.000	ND	10000
50 4-Bromophenyl-phenylether	0	.1963	0	47	50.000	ND	10000
51 Hexachlorobenzene	0	.2300	0	47	50.000	ND	10000
52 Pentachlorophenol	11811	.0947	1046	47	78607.471	D	10000
53 Phenanthrene	321374	1.3043	1065	47	155293.796	D	10000
54 Anthracene	190694	1.1843	1071	47	101478.684	D	10000
55 Di-n-butylphthalate	0	1.2239	0	47	50.000	ND	10000
56 Fluoranthene	328462	1.0011	1293	47	206777.395	D	10000
57 Chrysene-d12	50155		1546	57			
58 Pyrene	233623	1.7653	1319	57	105543.283	D	10000
59 Butylbenzylphthalate	0	.6035	0	57	50.000	ND	10000
60 3,3'-Dichlorobenzidine	0	.2960	0	57	50.000	ND	10000
61 Benzo(a)anthracene	50037	1.0705	1544	57	37276.239	D	10000
62 Chrysene	52273	.8773	1551	57	47521.086	D	10000
63 bis(2-Ethylhexyl)phthalate	537	.8378	1610	57	511.188	E	10000
64 Perylene-d12	34442		1794	64			10000
65 Di-n-octylphthalate	0	1.7866	0	64	50.000	ND	10000
66 Benzo(b)fluoranthene	37370	2.0401	1733	64	21274.025	D	10000
67 Benzo(k)fluoranthene	0	2.1069	0	64	50.000	ND	10000
68 Benzo(a)pyrene	14845	1.5762	1783	64	10937.917	D	10000
69 Indeno(1,2,3-cd)pyrene	0	1.3471	0	64	50.000	ND	10000
70 Dibenz(a,h)anthracene	0	.9630	0	64	50.000	ND	10000
71 Benzo(g,h,i)perylene	0	1.1736	0	64	50.000	ND	10000

SURROGATE SUMMARY	AREA	RF	SCAN	ISID	AMOUNT	CODE	% RECOVERY
72 Nitrobenzene-d5	11569	.2816	354	14	21562.26	D	21.56
73 2-Fluorobiphenyl	34976	1.4783	683	28	24094.09	D	24.09
74 Terphenyl-d14	42999	1.0423	1370	57	32899.55	D	32.90
75 Phenol-d5	38966	1.7454	230	1	75882.26	D	75.88
76 2-Fluorophenol	18426	.9335	78	1	63008.01	D	63.01
77 2,4,6-Tribromophenol	10685	.2037	939	28	53403.33	D	53.40

CODES: ND = Not Detected; D = Detected; E = Estimated

PROJECT PARTICIPANTS

KOOGLER & ASSOCIATES

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KOOGLER & ASSOCIATES

John B. Koogler, Ph.D., P.E.

Robert A. Baker, P.E.

MFM INDUSTRIES, INC.

David B. Kibler

Guy Sirois

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Federal Express
No. 763-7244-812

PM
6.15.88
Gainesville, FL

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KOOGLER & ASSOCIATES, *Environmental Services*
4014 N.W. 13th Street • Gainesville, Florida 32609 • 904/377-5822

KA 190-87-01

June 15, 1988

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DER - BAQM

Mr. C.H. Fancy
Deputy Chief
Bureau of Air Quality Management
Florida Department
of Environmental Regulation
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

Subject: Mid-Florida Mining Company, Inc.
Marion County-AP
Soil Decontamination in Clay Dryer
Permitted by Permit AC42-113787

Dear Clair:

In accordance with the discussion that you, Jim Kleekamp, Tony Trippi and I had in your office on June 13, 1988, I am transmitting herewith, information that will support a request by Mid-Florida Mining Company, Inc. (MFM) to amend the conditions of the subject air permit that currently allow the clay dryer to be used to decontaminate soils.

By letter dated May 27, 1988 (copy attached) I requested, on behalf of MFM, that the subject permit be amended to allow soils contaminated with hydrocarbon products to be decontaminated in the subject clay dryer. The current permit conditions allow only soils contaminated with petroleum products to be decontaminated in the dryer. In that letter I stated that the hydrocarbon products that would contaminate the soils that MFM is interested in decontaminating would satisfy the criteria for on-specification used oil, except for flashpoint. By this letter, and in accordance with our meeting of June 13, 1988, I am requesting that the subject air permit be amended to allow the MFM clay dryer to be used to decontaminate soils contaminated with hydrocarbon products that may exceed some or all of the limits established for on-specification used oil.

The various policy memos issued by the Department that deal with the decontamination of soils in dryers and kilns appear to be based on used oil regulations and/or the regulations that EPA proposed for burning hazardous waste derived fuels in industrial furnaces. The latter regulations were proposed in May, 1987 and have since been withdrawn. The amendment that MFM is now proposing to the subject permit is also based upon a concept proposed in the referenced EPA regulations. This is the concept of setting

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8043M 7637244812

[redacted]

Date 1/5/87

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Your Phone Number (Very Important): ( )
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Department/Floor No.
Street Address: 4034 NW 13TH ST
City: GAINESVILLE State: FL
ZIP Required For Correct Invoicing: 32609

2 To (Recipient's Name) Please Print: Clair Fancy
Recipient's Phone Number (Very Important): ( )
Company: FDER - Air Quality
Department/Floor No.
Exact Street Address (Use of P.O. Boxes or P.O. ® Zip Codes Will Delay Delivery And Result In Extra Charge.): 2600 Blair Stone Rd
City: Tallahassee State: FL
ZIP Street Address Zip Required: 32399-2400

3 YOUR BILLING REFERENCE INFORMATION (FIRST 24 CHARACTERS WILL APPEAR ON INVOICE.): 290-87-01

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4 ☐ Overnight Tube 38"x 6"x 6"x 6" B ☐
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emission limits or limits on the amount of materials input to a dryer such that the limits will assure that the concentrations of these materials in the ambient air will not exceed acceptable levels. This concept takes into consideration the destruction/removal efficiency or the control efficiency of a specific facility and it also takes into consideration the site-specific dispersion characteristics of the facility.

For the MFM clay dryer, I have run the ISC-LT Air Quality Model, assuming both stack-tip downwash and taking into consideration building-wake effects. Receptors were established in concentric rings around the dryer at distances ranging from 0.1 to 5.0 kilometers from the dryer. The model was run with an arbitrary emission rate of 10.0 grams per second (79.4 pounds per hour). The maximum annual impact under these conditions was found to be 11.66 micrograms per cubic meter at a distance of 100 meters from the dryer.

In accordance with our discussion on June 13, 1988, I reviewed the New York Department of Environmental Conservation Air Guide-1 for the acceptable ambient levels of several compounds that might be discharged from the stack of the MFM clay dryer. The compounds include several metals, hydrogen chloride and several organic compounds as listed on Page 1 of 6 of the attached calculations. The acceptable ambient levels (maximum ambient concentrations acceptable over an annual period) were selected from the 1985-86 edition of Air Guide-1, as this was the most recent edition of this document that I have available.

Control efficiencies or destruction/removal efficiencies for metals, hydrogen chloride and organic compounds were based upon the results of a trial burn conducted by an EPA contractor at MFM in February 1984. A copy of this test report is being forwarded to you under separate cover. The results of the trial burn demonstrated that less than 10 percent of the metals fired to the kiln in the fuel were discharged in the stack gas; less than 33 percent of the HCl fired to the kiln in the fuel was discharged in the stack gas and less than 0.1 percent of the organic constituents fired to the kiln in the fuel were discharged in the stack gas. The stated control efficiencies and the destruction/removal efficiencies are very conservative, as you will note when you review the complete report. It should also be noted that control and destruction/removal efficiencies for constituents in the soil are expected to be at least as great as for these same constituents in the fuel.

Based upon the air quality modeling that I conducted, the acceptable ambient levels for the several constituents that might be discharged from the MFM clay dryer and the control or destruction/removal efficiencies for organic and inorganic compounds, I calculated maximum acceptable levels of various constituents that could be present in soil decontaminated in the MFM clay dryer. It should be noted that, in accordance with your suggestion, I reduced the acceptable ambient levels in the NYDEC Air Guide-1 by 50 percent when making these calculations.

The calculations that I referenced are documented in the attachment to this letter. The assumption was made that the kiln would be used to decontaminate soil at the rate of 30 tons per hour. When operating at this rate, the kiln will be fired with up to 245 gallons per hour of fuel (in

accordance with current permit conditions). For purposes of these calculations, it was assumed that the typical maximum lead content of the fuel will be 500 ppm, the typical maximum concentration of any other metal in the fuel will be 200 ppm, the typical maximum halogen (chloride) concentration in the fuel will be 4000 ppm and the typical maximum concentration of any organic compound of concern in the fuel will be 1000 ppm. The calculations demonstrate that under these assumed conditions, the soil that is decontaminated in the MFM clay dryer can have a lead concentration of up to 40 ppm, a concentration of any other metal of up to 90 ppm, a chloride concentration of up to 24000 ppm and a concentration of critical organic compounds of up to 23000 ppm.

The matter of the chloride concentration in the contaminated soil was also pursued, at your suggestion, on the basis of the contaminating hydrocarbon products containing a maximum of 4000 ppm halogens. Following our meeting on June 13th, we contacted John Gentry with the Department's Bureau of Operations, regarding the porosity of typical Florida soils. Mr. Gentry stated that a typical Florida soil would have a porosity of 35-45 percent and that it could be assumed that all of the pore space would be filled with a hydrocarbon product. Based upon these conditions, it has been calculated (see the attachment) that the maximum chloride concentration of the contaminated soil will be in the range of 900-1000 ppm.

Since soils with up to 24000 ppm chlorides can be decontaminated without exceeding one-half of the acceptable ambient level, it is proposed that MFM be permitted to decontaminate soils containing up to 2000 ppm chlorides, so long as the contaminated soils are not classified as a hazardous waste.

In reviewing the attached calculations, it will be noted that the concentration limits for metals in the contaminated soil (other than lead) and the concentration limits for organic compounds in contaminated soil are based upon the metals (cadmium and hexavalent chromium) and the organic compound (vinyl chloride) having the lowest acceptable ambient level for each category of compounds. The concentration limits for other metals and organic compounds in the soils could be higher than the 90 ppm metals limit and the 23000 ppm organic compound limit.

For simplicity of amending the subject permit, it is suggested that MFM be allowed to decontaminate soils containing up to 40 ppm lead, up to 90 ppm of any other metal and up to 2000 ppm halogens reported as chlorides. It is suggested that no limit be established for specific organic compounds, as it appears the destruction/removal efficiency of the clay dryer is such that acceptable ambient limits for organic compounds will not be approached. It is further suggested that the permit be amended to state that during the decontamination of such soils, the fuel firing rate to the kiln will not exceed 245 gallons per hour (the current permitted rate) and that a typical maximum concentration of lead in the fuel will be 500 ppm, a typical maximum concentration of other metal in the fuel will be 200 ppm and that a typical maximum concentration of halogens (reported as chlorides) in the fuel typically will be 4000 ppm.

Your review of this request and a decision on the matter at the earliest possible time will be very much appreciated. If I can clarify any information that I have provided herein or if I can provide you with additional information to expedite your review and approval of this matter, please do not hesitate to contact me.

Very truly yours,

KOOGLER & ASSOCIATES

John B. Koogler, Ph.D, P.E.

JBK:mab

cc: Mr. David Kibler
Mr. Jim Kleekamp
Mr. Tony Trippi
Mike Harley
CHF/BT
T. Samicki - CF Dist. } 6.16.88

Calculation of Acceptable Limits for Various Compounds in Contaminated Soils

MFM Industries, Inc
Marion County, FL

Summary of Air Quality Modeling

Model - ISC-LT with stack-tip down-wash and building wake effect

Met Data - Orlando; 5yr summary

Receptors - 36 receptors per ring with rings at 0.1, 0.2, 0.3, 0.5, 0.7, 1.0, 1.5, 2.0, 3.0 and 5.0 km

Modeled Emission Rate = 10.0 gram/sec
= 79.4 lb/hr

Max Annual Impact = 11.66 ug/m^3 at 100meters

Acceptable Ambient Concentrations from NYDEC Air Guide-1, 1985-86 ed.

Compound	AAL (ug/m^3, annual)	Compound	AAL (ug/m^3, annual)
As	0.67	Benzene	100
Cd (oxide)	0.167	Dichloroethylene	66.7
Cr^{+6}	0.167	Ethyl benzene	1450
Pb	0.15, quarterly	MEK	1967
Hg	0.33	Pentachlorophenol	1.67
Ni	3.3	TCE	900
Zn (oxide)	16.7	Turpentine	11200
HCl	140	Vinyl chloride	0.4
		Xylene	1450

Ambient Concentration of Compounds in Kiln Stack Gas

Assume ambient concentrations are to be approximately 0.5 x AAL's

$$\text{Amb Conc} = \frac{\text{Emission Rate from kiln}}{\text{Modeled Emission Rate}} \times \left(\text{Maximum Modeled Impact}\right)$$

$$\leq 0.5 \times \text{AAL}$$

$$\chi(\mu g/m^3, \text{annual}) = \frac{\text{Emission Rate from Kiln (lb/hr)}}{79.4\ \text{lb/hr}} \times 11.66\ \mu g/m^3$$

EMISSION ESTIMATES FROM KILN BASED ON EPA TRIAL BURN (COPY ATTACHED)

METALS - Assume 90% control per Tables 7-1, 7-2 and 7-3

CHLORIDES - Assume 67% control per page 5-12

ORGANICS - Assume 99.9% DRE per Section 6

SOIL FEED RATE TO KILN - 30 TPH per permit

FUEL FEED RATE TO KILN - 245 GPH per permit at 8 lb/gal

EMISSION RATE FROM KILN

$$E = [(\text{Soil feed rate}) \times (\text{Contaminant Conc. in Soil}) + (\text{Fuel feed rate}) \times (\text{Contaminant Conc in Fuel})] \times \text{Control efficiency}$$

Max emission rate from kiln

$$\leq (0.5 \times AAL)(79.4\ lb/hr) / (11.66\ ug/m^3)$$

$$\leq [(\text{Soil Rate})(\text{Soil Conc}) + (\text{Fuel Rate})(\text{Fuel Conc})] \times \text{control}$$

$$3.40\ AAL = [30\ tph\ (2000\ lb/ton)(10^{-6})\ C_S] + [245\ gph\ (8\ lb/gal)(10^{-6})\ C_F] \times \text{Control}$$

$$3.40\ AAL_{(ug/m^3)} = [\,0.060\ C_S + 0.002\ C_F\,] \times \text{Control factor}$$

Metals

a) Assume annual AAL for lead is 0.1 $\mu g/m^3$

This is lowest AAL for any expected metal

Assume concentration of lead in fuel fired to kiln is 500 ppm

Therefore:

$$3.40(0.1) = [0.06 C_s + 0.002(500)](1-0.90)$$

$$C_s = 40 \text{ ppm lead in soil}$$

b) Assume the concentration of Cr^{+6} in fuel fired to kiln is 200 ppm

Therefore:

$$3.40(0.167) = [0.06 C_s + 0.002(200)](1-0.90)$$

$$C_s = 88 \text{ ppm } Cr^{+6} \text{ in soil}$$

HCl

Assume the concentration of chlorides in the fuel fired to the kiln is 4000 ppm

Therefore

$$3.40(140) = [0.06 C_s + 0.002(4000)](1-0.67)$$

$$C_s = 24{,}000 \text{ ppm } Cl^- \text{ in soil}$$

Note: Telephone conversation with John Gentry on 6/13/88 – porosity of soils range from 25% (coarse sand) to 60% (clays). Porosity of typical Florida soil is 35-45%. It can be assumed that all pores are saturated with hydrocarbon products when hydrocarbons have been in soil for considerable period of time.

Based on telephone conversation with Gentry, the maximum expected soil chloride concentration has been calculated assuming the contaminating hydrocarbon has a chloride content of 4000 ppm

Density of dry, packed earth – 95 lb/ft^3
(Chemical Engineers Hdbk, 1950, pg 194)

Density of typical contaminated hydrocarbon – 70 lb/ft^3

Saturated soil weight
= 95 lb/ft^3 + 0.4 ft^3 (70 lb/ft^3)

= 123 lb/ft^3 when saturated with hydrocarbons

Chloride concentration in soil

95 lb	x	0	= 0
28 lb	x	4000	= 112000
123 lb			112000

Avg Cl$^-$ = 112000/123
= 910 ppm

The maximum chloride concentration in the soil fed to the kiln can be 24000 ppm without exceeding th AAL for HCl. The maximum (typical) chloride concentration in Florida soils contaminated with a hydrocarbon containing 4000 ppm chlorides is in the range of 910 ppm.

It is proposed that MFM be permitted to decontaminate soils containing up to 00 ppm chlorides so long as the soil is not classified a hazardous waste.

Organics

Select vinyl chloride as it has the lowest AAL - 0.4 $\mu g/m^3$, annual average

Assume 1000 ppm vinyl chloride in the fuel fired to the kiln

Therefore:

$$3.40(0.4) = [0.06C_s + 0.002(1000)](1 - 0.999)$$

$$C_s = 22,600 \text{ ppm}$$

PM, 30 May '88 Gainesville, FL

File Copy

KOOGLER & ASSOCIATES, *Environmental Services*

4014 N.W. 13th Street · Gainesville, Florida 32609 · 904/377-5822

KA 290-87-01

May 27, 1988

Mr. C.H. Fancy
Deputy Chief
Bureau of Air Quality Management
Florida Department
of Environmental Regulation
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

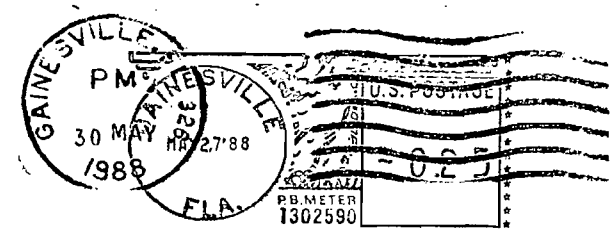
Subject: Mid-Florida Mining Industries, Inc.
Marion County-AP
Soil Decontamination in Clay Dryer
Covered by Permit AC42-113787

Dear Clair:

Confirming our telephone conversation of this date, and following-up a discussion that Jim Kleekamp of Mid-Florida Mining and I had with you during a recent meeting in Tallahassee, Mid-Florida Mining is interested in using the clay dryer permitted by Air Permit AC42-113787 to decontaminate soils contaminated with hydrocarbon products other than petroleum products. By letters dated June 12, 1987 and March 24, 1988, your office approved the use of the clay dryer for decontaminating soils contained with petroleum products, so long as all of the conditions in your memo dated April 2, 1987 are met. Basically, this memo states that a plant's permitted emission limiting standard for all pollutants must be satisfied and that the petroleum products that contaminated the soil must meet all of the on-specifications of used oil criteria, except for flashpoint.

The hydrocarbon products that will be contaminating the soil that Mid-Florida Mining is interested in decontaminating will satisfy the criteria for on-specification used oil, except for flashpoint, and the decontamination of the soil will not cause any of the permitted emission limiting standards for the dryer to be exceeded. None of the contaminated soil will be listed as hazardous or toxic by 40CFR261.

KOOGLER & ASSOCIATES, *Environmental Services*
4014 N.W. 13th Street • Gainesville, Florida 32609 • 904/377-5822



Mr. C.H. Fancy
Florida Department of
Environmental Regulation
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

The decontamination of soils contaminated with hydrocarbon products in accordance with the conditions outlined in the above paragraph will not alter any of the existing conditions in Permit AC42-113787, except for the fact that the term "petroleum products" (referring to the soil contaminant) will have to be changed to "hydrocarbon products" in several of the conditions. In the following paragraphs, I will review the specific conditions added to the subject permit by Department letters dated June 12, 1987 and March 24, 1988, allowing the dryer to be used for soil decontamination, and suggest amendments to these conditions.

SPECIFIC CONDITION NO. 5 - Added by Department Letter dated March 24, 1988

No change required.

SPECIFIC CONDITION NO. 21 - Added by Department Letter dated June 12, 1987

Change the term petroleum products to hydrocarbon products. This condition presently references your memo dated April 2, 1987, requiring the contaminating material in the soils to satisfy the criteria for on-specification used oil, except for flashpoint.

SPECIFIC CONDITION NO. 22 - Added by Department Letter dated June 12, 1987

Change the term petroleum products to hydrocarbon products. The remaining requirements of this condition are acceptable.

SPECIFIC CONDITION NO. 23 - Added by Department Letter dated March 24, 1988

No change required.

SPECIFIC CONDITION NO. 24 - Added by Department Letter dated March 24, 1988

Change the term petroleum products to hydrocarbon products in two places. The other requirements of the condition are acceptable.

SPECIFIC CONDITION NO. 25 - Added by Department Letter dated March 24, 1988

No change required.

SPECIFIC CONDITION NO. 26 - Added by Department Letter dated June 12, 1987

No change required.

SPECIFIC CONDITION NO. 27 - Added by Department Letter dated June 12, 1987

Change the term petroleum products to hydrocarbon products. The other requirements of this condition are acceptable.

SPECIFIC CONDITION NO. 28 - Added by Department Letter dated March 24, 1988

Change the term petroleum products to hydrocarbon products. The other requirements of this condition are acceptable.

We appreciate your review of this request and would like to have a decision as soon as practically possible. Mid-Florida Mining has had several opportunities to decontaminate soils containing hydrocarbon products and is presently pursuing a potential project that will require a commitment in the very near future.

Your consideration and prompt action on this matter will be very much appreciated.

Very truly yours,

KOOGLER & ASSOCIATES

John B. Koogler, Ph.D, P.E.

JBK:mab

cc: Mr. James B. Kleekamp, Mid-Florida Mining
Mr. David Kibbler, Mid-Florida Mining
Mr. Tony Trippy, Mid-Florida Mining

Copied: CHF/BT
Mike Harley
Tom Saucke-central Dist } 6-1-88

SENDER: Complete items 1 and 2 when additional services are desired, and complete items 3 and 4.

Put your address in the "RETURN TO" space on the reverse side. Failure to do this will prevent this card from being returned to you. The return receipt fee will provide you the name of the person delivered to and the date of delivery. For additional fees the following services are available. Consult postmaster for fees and check box(es) for additional service(s) requested.

1. ☒ Show to whom delivered, date, and addressee's address. 2. ☐ Restricted Delivery.

3. Article Addressed to:

Mr. James A. Slowinski
Executive Vice President
Mid-Florida Mining Company
P.O. Box 68
Lowell, FL 32663

4. Article Number
P 274 010 368

Type of Service:
☐ Registered ☐ Insured
☒ Certified ☐ COD
☐ Express Mail

Always obtain signature of addressee or agent and DATE DELIVERED.

5. Signature – Addressee
X

6. Signature – Agent
X

7. Date of Delivery

8. Addressee's Address *(ONLY if requested and fee paid)*

PS Form 3811, Feb. 1986 **DOMESTIC RETURN RECEIPT**

P 274 010 368

RECEIPT FOR CERTIFIED MAIL
NO INSURANCE COVERAGE PROVIDED
NOT FOR INTERNATIONAL MAIL
(See Reverse)

Sent James A. Slowinski, Exe. V.P
Mid-Florida Mining Company
Street and No.
P.O. Box 68
P.O., State and ZIP Code
Lowell, FL 32663

Postage	$
Certified Fee	
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt showing to whom and Date Delivered	
Return Receipt showing to whom, Date, and Address of Delivery	
TOTAL Postage and Fees	$

Postmark or Date
Mailed: 04/06/88
Permits Amended:
AC 41-113786, -787

PS Form 3800, June 1985 ★ U.S.G.P.O. 1985-480-794

STATE OF FLORIDA

DEPARTMENT OF ENVIRONMENTAL REGULATION

TWIN TOWERS OFFICE BUILDING
2600 BLAIR STONE ROAD
TALLAHASSEE, FLORIDA 32399-2400

BOB MARTINEZ
GOVERNOR

DALE TWACHTMANN
SECRETARY

March 24, 1988

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

Mr. James A. Slowinski
Executive Vice-President
Mid-Florida Mining Company
Post Office Box 68
Lowell, Florida 32663

Dear Mr. Slowinski:

Re: Mid-Florida Mining Company
AC 42-113786 Coal Handling System
Permit Extension
AC 42-113787 Clay Dryer/Silo Permit
Extension and Amendments to Specific Conditions

We have reviewed Dr. Koogler's letters dated October 2, 1987; November 24, 1987; and February 26, 1988. The subject permits are amended as follows.

The construction permit AC 42-113786 is amended by extending the expiration date until February 28, 1990.

The construction permit AC 42-113787 is amended by extending the expiration date until February 28, 1990. Also, based on Dr. Koogler's requests Specific Conditions 5, 23, 24, and 25 are amended to read:

5. The maximum amount of lead content in the waste oil is limited to a maximum of ~~1% or 10,000 ppm~~ 1,000 ppm. Yearly waste oil fuel analysis must be conducted on the actual waste oil used on the site. The analysis is due at the same time as the stack test.

23. The firing rate of waste oil, terpene derivatives, used kerosene, and non-halogenated hydrocarbons, shall not exceed 272 gallons per hour and the contaminated soil input rate to the rotary dryer shall not exceed ~~40.8~~ 30.0 tons per hour. The firing rate of No. 5 fuel shall not exceed 245 gallons per hour. Coal shall not be burned when soil is being decontaminated. ~~The company shall install and maintain~~

~~calibrated devices that continuously record the quantities of soil and fuel input to the rotary dryer~~. The company shall record the type of fuel, the fuel flow rate, and the totalizer reading of the fuel flow meter at 30-minute intervals during the period of time that soils are being decontaminated in the dryer. The company shall maintain records showing the quantity of contaminated soil delivered to the site and the time required to decontaminate that quantity of soil in the dryer. Records shall be maintained in such a way that compliance with the allowable process rates can be determined.

24. Soils contaminated with petroleum products shall be tested prior to shipment to Mid-Florida Mining Company to ensure compliance with Specific Condition 21; and, after processing to ensure compliance with Specific Condition 22. Contaminated soil may be tested for compliance with Specific Condition 21 after shipment to Mid-Florida Mining Company but prior to decontamination if:

    a. The contaminated soil is the result of a spill or other emergency that requires immediate cleanup; and,

    b. Sufficient documentation is available to provide a reasonable expectation that the soil is contaminated with petroleum products pursuant to Specific Condition 21.

25. Compliance with the emission limiting standards in Specific Condition 13 shall initially be demonstrated pursuant to Specific Conditions 14 through 17 of this permit while the rotary dryer is being used to decontaminate soils meeting the specifications in Specific Condition 21 of this permit and burning the worst case liquid fuel (allowed by this permit) that the company intends to use when decontaminating soils. ~~This emission testing shall also demonstrate that the decontamination of soil will not result in increased emissions of lead referenced in Specific Condition 5~~. Thereafter, compliance with applicable emission limits in Specific Condition 13 while the rotary kiln is used to decontaminate soils may be demonstrated annually using EPA Methods 5 and 9, unless otherwise requested by the Department pursuant to FAC 17-2.700(2)(b).

A new Specific condition 28 is added to construction permit AC 42-113787 to ensure that compliance testing while

decontaminating soil is done in a timely manner. The condition is:

28. The initial test to demonstrate compliance with Specific Condition 13 while decontaminating soils contaminated with petroleum products meeting the specifications in Specific Condition 21 shall be conducted as soon as a sufficient quantity of contaminated soil is received to conduct the testing. But, the testing shall be conducted prior to the completion of 180 days of soil decontamination at less than full load or 60 days of soil decontamination at full load, but not later than February 28, 1989.

A copy of this letter and its attachments shall be attached to the respective permits.

Sincerely,

Dale Twachtmann
Secretary

DT/plm

Attachments

cc: T. Sawicki
J.B. Kleekamp
J.B. Koogler, P.E.

State of Florida
DEPARTMENT OF ENVIRONMENTAL REGULATION

Interoffice Memorandum

FOR ROUTING TO OTHER THAN THE ADDRESSEE

To: Dale Loctn: _____
To: _____ Loctn: _____
To: _____ Loctn: _____
From: _____ Date: _____

TO: Dale Twachtmann

FROM: Howard L. Rhodes

SUBJ: Approval of Amendments to Mid Florida Mining Company's State Construction Permits Number: AC 42-113786
AC 42-113787

DATE: March 24, 1988

Attached for your approval and signature are amendments to permit(s) prepared by Central Air Permitting for the above mentioned company to extend the expiration dates of the referenced permits until February 28, 1990. The amendments also grant certain changes to the specific conditions that allow the company to decontaminate soil. The facility is located in Lowell, Marion County, Florida.

The format of these amendments is different from that previously used by Central Air Permitting. The new format makes it easier for affected parties to review and understand the amendments to permit conditions. The coding is also consistent with that presently used for rule changes.

I recommend your approval and signature.

HLR/aqm/mh

Attachments

RECEIVED
MAR 31 1988
DER - BAQM

RECEIVED
MAR 30 1988
Office of the Secretary

PM
26 Feb. 1988
Gainesville, FL

File Copy

KOOGLER & ASSOCIATES, *Environmental Services*
4014 N.W. 13th Street • Gainesville, Florida 32609 • 904/377-5822

RECEIVED
FEB 29 1988
DER - BAQM

KA 290-87-01

February 26, 1988

Mr. C.H. Fancy
Deputy Chief,
Bureau of Air Quality Management
Florida Department of
Environmental Regulation
2600 Blair Stone Road
Tallahassee, FL 32301

Subject: Mid-Florida Mining Industries, Inc.
Marion County-AP
Extension of Air Construction Permits:

AC42-113786 - Coal Handling System
AC42-113787 - Clay Dryer/Silo

Dear Mr. Fancy:

By letter dated October 2, 1987, I requested, on behalf of Mid-Florida Mining Industries, Inc., that the expiration dates of the two subject air construction permits be extended from February 28, 1988 to February 28, 1990. I spoke with Mr. Mike Harley of your staff on January 13, 1988 regarding this matter, as we had received no response from your office regarding our request. Mr. Harley stated that our October 2, 1987 request had been received but that no action had been taken because of the current work load of the Central Air Permitting section. Mr. Harley further stated that, consistent with the Department policy, since the request for extension was submitted in a timely manner, the extension would be considered granted until such time the Department issued written notification.

Since February 28, 1988, the expiration dates of the two subject permits, is upon us, I would again like to restate our request for an extension to the expiration dates of the subject permits from February 28, 1988 to February 28, 1990, and to reconfirm the fact that this extension is considered granted until such time that written notice is received from the Department.

As stated in our October 2, 1987 letter, the requested extension is due to a change in the scheduled installation of a coal handling system at the Mid-Florida Mining plant resulting from the drastic drop in oil prices about the time the construction permits were issued. Mid-Florida Mining still intends to install the coal handling system but under a different schedule.

If there are any questions regarding this matter, please do not hesitate to contact me.

Very truly yours,

KOOGLER & ASSOCIATES

John B. Koogler, Ph.D., P.E.

JBK:mab

cc: Mr. Roger B. Holt, Mid-Florida Mining
Mr. Jim Kleekamp, Mid-Florida Mining

Copied: CHF/BT
Mike Harley } 3-1-88

KOOGLER & ASSOCIATES, *Environmental Services*
4014 N.W. 13th Street • Gainesville, Florida 32609 • 904/377-5822

Mr. C.H. Fancy
Deputy Chief
Bureau of Air Quality Management
Florida Department
of Environmental Regulation
2600 Blair Stone Road
Tallahassee, Florida 32301

PM
24 Nov. 1987
Gainesville, FL

File Copy

KOOGLER & ASSOCIATES, *Environmental Services*
1213 NW 6th Street • Gainesville, Florida 32601 • 904/377-5822

KA 290-86-01

November 24, 1987

DER
NOV 25 1987
BAQM

Mr. C.H. Fancy
Bureau of Air Quality Management
Florida Department
of Environmental Regulation
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

Subject: Mid-Florida Mining Company
Marion County, Florida
Amendments to Specific Conditions of Permit AC42-113787

Dear Mr. Fancy:

During our meeting in your office on October 20, 1987, Mr. Jim Kleekamp, Mr. Tony Trippy and I discussed with you the use of the clay dryer operated by Mid-Florida Mining under the subject air construction permit for decontaminating soils contaminated with hydrocarbon products. By letter dated June 12, 1987, the Department added conditions to the subject air construction permit, allowing Mid-Florida Mining use the dryer to decontaminate soils contaminated with hydrocarbon products meeting the criteria for on-specification used oil. Our discussion on June 20, 1987 was directed toward amendments to some of the conditions added by the June 12, 1987 letter to render the use of the dryer for soil decontamination more practical. In the following paragraphs, I will address the specific conditions that we discussed.

Specific Condition No. 23

The condition states in part:

> The company shall install and maintain calibrated devices that continuously record the quantities of soil and fuel input to the rotary dryer.

Best Available Copy

KOOGLER & ASSOCIATES,
Environmental Services
1213 NW 6th Street, Gainesville, Florida 32601

Mr. C.H. Fancy
Bureau of Air Quality Management
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

FIRST CLASS MAIL

As we explained to you, Mid-Florida Mining (MFM) currently has a fuel flow meter that provides an instantaneous record of the fuel flow to the clay dryer and also totalizes the fuel flow. The meter, however, is not equipped with a recording device. To comply with the intent of Specific Condition No. 23, MFM suggested that the fuel flow rate and the totalizer reading of the fuel flow meter be recorded every 30 minutes during the time the dryer is used to decontaminate soil. This procedure for documenting fuel consumption would be substituted for the present requirement to "continuously record" the quantity of fuel consumed in the dryer.

Regarding the requirement to continuously record the quantity of soil input to the dryer, MFM explained that they presently do not monitor the clay feed rate to the dryer because of the sticky nature of the clay and the problems this characteristic introduces in trying to continuously weigh the feed rate of such a material. MFM went on to explain that the product from the dryer is weighed by a belt scale as it is loaded into rail cars for bulk shipment or as it passes through the bagging machines. The requirement of Specific Condition No. 23 to continuously record the quantity of contaminated soil fed to the dryer would necessitate the installation of a weighing device that would be used only when soil was being decontaminated. The cost for such a weighing device was estimated to be in the range of $50,000.

As an alternative to the requirement to continuously record the quantity of soil fed to the dryer, MFM suggested that records be maintained of the weight of contaminated soil delivered to the plant and the time required for the decontamination of this soil. MFM further suggested that during the time the soil is being decontaminated, the average contaminated soil feed rate to the dryer would be maintained at 30 tons per hour or less. The present dryer permit (AC42-113787, Specific Condition No. 1) limits the feed rate of clay to the dryer to 40.8 tons per hour. By reducing the average contaminated soil feed rate to the dryer to 30 tons per hour or less, and by maintaining records of the quantity of the soil being decontaminated and the time period over which the soil is decontaminated, MFM can assure the Department that the permitted feed rate of 40.8 tons per hour is not exceeded.

Specific Condition No. 24

This condition requires that soils contaminated with petroleum products be tested prior to shipment to MFM to demonstrate that the soils are contaminated only with products meeting the on-specification used oil criteria.

MFM is of the opinion that there are times when it would be advantageous to ship the contaminated soil prior to testing; specifically, in response to an emergency clean-up of spilled materials. In such cases, an emergency crew cleaning up a spill (from a diesel-powered truck, for example) could ship the contaminated soil to MFM for storage and testing prior to decontamination. You suggested that the condition could probably be amended to read:

> When time permits, soils contaminated with petroleum products should be tested prior to shipment to the Mid-Florida Mining Company ... to ensure compliance with Specific Condition No. 21.

Specific Condition No. 25

This condition sets forth the requirements for demonstrating compliance with the emission limiting standards set forth in Specific Condition No. 13 of the original permit; that is, emission limiting standards for particulate matter, sulfur dioxide, nitrogen oxides and carbon monoxide.

In discussing this requirement, MFM pointed out that the decontamination of soil would not effect the carbon monoxide, sulfur dioxide or nitrogen oxides emissions from the kiln. The only air pollutant emission rate that could differ during soil decontamination from the emission rate expected during normal operation would be that of particulate matter and possibly, the related opacity of emissions. As a result, MFM suggested conducting the compliance testing required by Specific Conditions 14 through 17 of the original permit annually while the dryer is being used in the normal production mode to dry clay and that annual tests for particulate matter and visible emissions only be conducted when the dryer is being used to decontaminate soil.

To demonstrate that the treatment of decontaminated soil will not result in an increase in lead emissions (also a requirement of Specific Condition No. 25), MFM agreed to reduce the lead content of the waste oil fired to the dryer at all times to 1000 ppm or less. Specific Condition No. 5 of the original construction permit allows MFM to burn waste oil having a maximum lead content of 10,000 ppm.

I appreciate your review and consideration of these requested amendments and appreciate the time you spent with us on October 20, 1987 to discuss these matters. If any additional information is required to complete your review, please do not hesitate to contact me.

Very truly yours,

KOOGLER & ASSOCIATES

John B. Koogler, Ph.D., P.E.

JBK:mab

cc: Mr. Jim Kleekamp, Mid-Florida Mining Company
Mr. Tony Trippy, Mid-Florida Mining Company

Copied: Mike Harley
CHF/BT
12/1/87

PM
2 Oct
Gainesville FL

File Copy

KOOGLER & ASSOCIATES, *Environmental Services*
1213 NW 6th Street • Gainesville, Florida 32601 • 904/377-5822

DER
OCT 5 1987
BAQM

KA 290-87-01

October 2, 1987

Mr. C.H. Fancy, P.E.
Deputy Chief
Bureau of Air Quality Management
Florida Department
of Environmental Regulation
2600 Blair Stone Road
Tallahassee, Florida 32301

Re: Mid-Florida Mining Industries Permit Extension
AC42-113786 - Coal Handling System
AC42-113787 - Clay Dryer/Silo

Dear Mr. Fancy:

On behalf of our client, Mid-Florida Mining Industries, we request that the expiration dates of Air Construction Permits AC42-113786 (coal system) and AC42-113787 (clay dryer/silo) be extended from February 28, 1988 to February 28, 1990. This request is due to a change in the scheduled installation of the coal handling system, brought about by the drastic reduction in oil prices. Mid-Florida still intends to install the coal system, but under a different schedule.

If you have any questions, please do not hesitate to give me a call.

Very truly yours,

KOOGLER & ASSOCIATES

John B. Koogler, Ph.D., P.E.

JBK:mab

cc: Roger B. Holt, Mid-Florida Mining Industries

Copied: Mike Harley - 10/6/87 MH

KOOGLER & ASSOCIATES, *Environmental Services*
1213 NW 6th Street • Gainesville, Florida 32601 • 904/377-5822

GAINESVILLE, FL 326
PM
2 OCT
1987

OCT
ALWAYS
USE ZIP CODE

Mr. C.H. Fancy, P.E.
Deputy Chief
Bureau of Air Quality Management
FDER
2600 Blair Stone Road
Tallahassee, Florida 32301

PM
7.28.87
Gainesville, FL

file

KOOGLER & ASSOCIATES, *Environmental Services*
1213 NW 6th Street • Gainesville, Florida 32601 • 904/377-5822

KA 290-87-01

July 28, 1987

DER
JUL 29 1987
BAQM

Mr. C.H. Fancy
Florida Department
of Environmental Regulation
Bureau of Air Quality Management
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

Subject: Mid-Florida Mining Company
Permit AC42-113787
Use of Clay Dryer to Decontaminate Soil
Contaminated with On-Specification Hydrocarbon Products

Dear Mr. Fancy:

By letter June 12, 1987, the Department amended Air Construction Permit AC42-113787 for the Mid-Florida Mining Company to allow a clay dryer operated by Mid-Florida Mining under that permit to be used to treat soil that has been contaminated with on-specification hydrocarbon products. The decontamination requested by Mid-Florida Mining, and allowed under the permit amendments granted by the Department, will be conducted under the conditions of your memo dated April 2, 1987, referencing the decontamination of soil in asphalt plants. Mid-Florida Mining feels that the permit conditions associated with the decontamination of soil are overly restrictive and is proposing amendments to these conditions. The proposed amendments are addressed in the following paragraphs.

Specific Condition No. 23

The condition states in part: "The company shall install and maintain calibrated devices that continuously record the quantities of soil and fuel input to the rotary dryer."

Mid-Florida Mining presently does not monitor the feed rate of clay to the dryer nor do they monitor the dry clay output rate from the dryer. The product is weighed only when it is being bagged or as it is being loaded to rail cars for bulk shipment. The clay feed rate to the dryer has not been measured by Mid-Florida Mining because of the sticky nature of the clay and the difficulties encountered in weighing such a material with belt scales. The dry clay output of the dryer has not been measured by Mid-Florida Mining since Mid-Florida Mining has determined that it is more convenient to measure their product as it is being prepared for shipment.

The fuel that is fired to the clay dryer passes through a fuel flow meter equipped with a totalizer. The fuel flow for a given period of time can be determined by dividing the difference in the totalizer readings by the time period between which the readings were taken. The fuel flow meter is not connected to a recorder.

Mid-FLorida Mining feels that the requirement to continuously record the quantity of soil and fuel input to the dryer during the decontamination of soil is overly burdensome and goes beyond the basic requirements of the Department's memo dated April 2, 1987. The fraction of time that the clay dryer will be used by Mid-Florida Mining for soil decontamination will be small when compared with the time that the dryer is used for producing dried clay product. The small fraction of time the dryer will be used for decontaminating soil will certainly not justify the installation of belt scales or other weighing devices to continuously weigh and record the amount of decontaminated soil input to the dryer.

To demonstrate that the contaminated soil input rate to the dryer does not exceed the permitted input rate of 40.8 tons per hour, Mid-Florida Mining proposes, on request, to measure the contaminated soil throughput rate by weighing the soil discharged from the dryer over a known period of time and calculating the contaminated soil throughput rate from these parameters. This is the procedure that Mid-Florida Mining presently uses to demonstrate the clay throughput rate during compliance testing.

Regarding the input rate of fuel to the dryer during decontamination of soil, Mid-Florida Mining proposes to record the fuel flow meter totalizer reading at the beginning and the end of the period of time that the dryer is used for decontaminating soil and to record the times that these readings were taken. Based upon the totalizer readings and the time period between readings, the fuel flow can be determined. These readings will be taken each time the dryer is used for decontaminating soil and will be maintained on file by Mid-Florida Mining.

The procedures that Mid-Florida Mining has proposed herein for measuring the contaminated soil and fuel input rates to the clay dryer during soil decontamination are consistent with procedures that Mid-Florida Mining is currently using for demonstrating the clay and fuel input rate to the dryer. Furthermore, the proposed use of the dryer to decontaminate soil will not result in an increase of any air pollutant emission rates and therefore, will not be classified as a modification by definition. Since the use of the dryer for decontaminating soil is not a modification, Mid-Florida Mining feels that the Department should not impose recording requirements that are more stringent than those presently imposed by Permit AC42-113787.

Specific Condition No. 24

This condition states in part: "Soils contaminated with petroleum products shall be tested prior to shipment to Mid-Florida Mining Company..." (Emphasis added).

Mid-Florida Mining proposes that the condition be reworded to state: "Soils contaminated with petroleum products shall be tested prior to treatment at Mid-FLorida Mining Company..."

The proposed amendment to this condition will allow the contaminated soil to be removed from a site and delivered to Mid-Florida Mining for storage prior to treatment. The expeditious removal of contaminated soil is advantageous to prevent further contamination of ground water and the spread of the contaminating material in the case of an accidental release or spill. At Mid-Florida Mining, the contaminated soil will be stored on an impermeable concrete pad in accordance with Specific Condition No. 26 and such storage will prevent further contamination by the spill product.

The fact that the soil will be tested prior to treatment certainly satisfies the intent of Specific Condition No. 24 and the expeditious removal of spilled material will be a benefit to the environment.

Specific Condition No. 25

This condition states that compliance with the emission limiting standards of Specific Condition No. 13 (particulate matter, sulfur dioxide, nitrogen oxides and carbon monoxide) shall be demonstrated while the clay dryer is used to decontaminate soil. The condition further requires that the emission testing demonstrate that the use of the dryer to decontaminate soils will not result in increased lead emissions. Mid-Florida Mining feels that the emission testing required by Specific Condition No. 25 goes well beyond the emission testing requirements envisioned during the preparation of the Department's April 2, 1987 memo. In this memo it states:

> "Until more data is available for this operation, a particulate matter compliance test should be required." (Emphasis added).

The memo states that a particulate matter compliance test should be conducted. However, Specific Condition No. 25 requires a particulate matter test, sulfur dioxide test and tests for nitrogen oxides and carbon monoxide. It is quite apparent that the use of the dryer to decontaminate soil will not affect the emission rates of sulfur dioxide, nitrogen oxides, or carbon monoxide since these pollutants are all generated by fuel combustion. Fuel combustion, whether for purposes of drying clay or decontaminating soil, will not change. Mid-Florida Mining therefore requests that the requirement to conduct emission measurements for sulfur dioxide, nitrogen oxides and carbon monoxide while the dryer is being used to decontaminate soil be eliminated as a permit condition.

Regarding compliance with the particulate matter emission limiting standard, Mid-Florida Mining stated in information previously submitted to the Department that the size of clay particles normally fed to the dryer are much smaller than the size anticipated for contaminated soil particles. As a result of this, it is apparent that the use of the dryer to decontaminate soils will, if anything, result in a lower particulate matter emission rate. To demonstrate this to the satisfaction of the Department, Mid-Florida Mining suggests that the requirement to conduct particulate matter emission measurements in accordance with EPA Method 5 be replaced by a requirement to conduct visible emissions observations on the clay dryer one time only while the dryer is being used for soil decontamination. Compliance with the particulate matter emission limiting standard would be demonstrated by the opacity of visible emissions of five percent or less. If the opacity of emissions from the dryer, while the dryer is being used to decontaminate soil, exceeds five percent, Mid-FLorida Mining will conduct an emission test in accordance with EPA Method 5 to demonstrate that the mass particulate matter emission rate from the dryer is not exceeded. Compliance with the emission limiting standards after the one-time visible emissions observation will be demonstrated by the annual compliance test requirements of Specific Conditions 13-17 of Permit No. AC42-113787.

To assure the Department that the use of the clay dryer to decontaminate soil will not result in increased lead emissions, Mid-Florida Mining proposes to use fuel with a maximum lead content of 5,000 parts per million when the dryer is being used to decontaminate soil. The present permit (Specific Condition No. 5) allows the use of a waste oil fuel with a maximum lead content of 10,000 ppm.

Assuming a maximum fuel firing of 272 gallons per hour, the decrease in lead content in the fuel from 10,000 ppm to 5,000 ppm will result in a reduction of the lead input to the dryer of 10.9 pounds per hour. Based upon information provided in my letter to the Department of March 19, 1987 (a copy of which is attached to the June 12, 1987 permit amendments), the maximum amount of hydrocarbon product expected in 40 tons per hour of contaminated soil will be 21 gallons per hour. Assuming a maximum lead content of this hydrocarbon product of 100 ppm (in accordance with the Department's memo of April 2, 1987), the maximum amount of lead input to the kiln with contaminated soil will be approximately 0.02 pounds per hour. The proposal by Mid-Florida Mining to use fuel with a lead content of 5,000 ppm or less when the dryer is being used in decontaminating soil will more than offset any potential lead emissions resulting from the lead content of the contaminated soil.

The Specific Conditions No. 21, 22, 26 and 27 imposed by the Department's letter amendment to Permit AC42-113787, dated June 12, 1987, are acceptable to Mid-Florida Mining.

We would appreciate your review of our suggested changes to permit Conditions 23, 24 and 25, and the incorporation of our suggestions into the permit conditions for the dryer. If there are any questions regarding our suggested changes or if further discussion of these changes is required, please feel free to contact me.

Very truly yours,

KOOGLER & ASSOCIATES

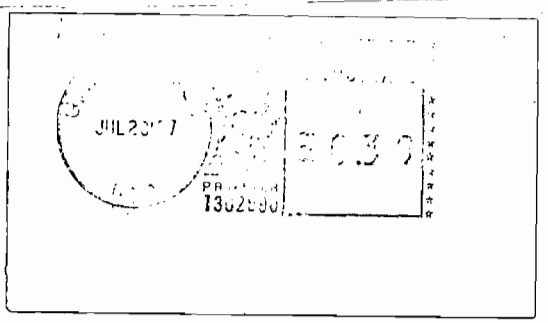
John B. Koogler, Ph.D., P.E.

JBK:mab

cc: Jim Kleekamp, Mid-Florida Mining Company

Copied: Mike Harley
Tom Sawicki - DER Orlando
BT/CHF
7/29/87 mr

Best Available Copy



KOOGLER & ASSOCIATES,
Environmental Services
1213 NW 6th Street, Gainesville, Florida 32601

Mr. C.H. Fancy
Florida Department
of Environmental Regulation
Bureau of Air Quality Management
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

FIRST CLASS MAIL

P 274 007 707

RECEIPT FOR CERTIFIED MAIL

NO INSURANCE COVERAGE PROVIDED
NOT FOR INTERNATIONAL MAIL
(See Reverse)

Sent to Mr. James A. Slowinski ~~Mid-Florida Mining Co.~~	
Street and No. P.O. Box 68	
P.O., State and ZIP Code Lowell, FL 32663	
Postage	$
Certified Fee	
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt showing to whom and Date Delivered	
Return Receipt showing to whom, Date, and Address of Delivery	
TOTAL Postage and Fees	$
Postmark or Date Mailed: 8/28/87 Permit: AC 42-113787	

PS Form 3800, June 1985 ☆ U.S.G.P.O. 1985-480-794

PS Form 3811, July 1983 447-845

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1. ☒ Show to whom, date and address of delivery.
2. ☐ Restricted Delivery.

3. Article Addressed to: Mr. James A. Slowinski
Executive Vice President
Mid-Florida Mining Company
Post Office Box 68
Lowell, FL 32663

4. Type of Service:	Article Number
☐ Registered ☐ Insured ☒ Certified ☐ COD ☐ Express Mail	P 274 007 707

Always obtain signature of addressee or agent and DATE DELIVERED.

5. Signature – Addressee
X

6. Signature – Agent
X

7. Date of Delivery

8. Addressee's Address *(ONLY if requested and fee paid)*

DOMESTIC RETURN RECEIPT

File Copy

STATE OF FLORIDA

DEPARTMENT OF ENVIRONMENTAL REGULATION

TWIN TOWERS OFFICE BUILDING
2600 BLAIR STONE ROAD
TALLAHASSEE, FLORIDA 32399-2400

BOB MARTINEZ
GOVERNOR

DALE TWACHTMANN
SECRETARY

August 28, 1987

CERTIFIED MAIL-RETURN RECEIPT REQUESTED

Mr. James A. Slowinski
Executive Vice President
Mid-Florida Mining Company
Post Office Box 68
Lowell, Florida 32663

Dear Mr. Slowinski:

RE: Requested Changes To Specific Conditions 23-25 of Mid-Florida Mining Company Permit AC 42-113787

We have received Dr. Koogler's letter of July 28, 1987, which requested changes to Specific Conditions 23 through 25 of the above referenced permit on July 29, 1987. We have reviewed the requested changes and have arrived at the following conclusions with respect to each item requested:

Specific Condition 23

The hourly limitation on soil input to the clay dryer was a condition of the above referenced permit when it was originally issued. Since Specific Condition 23 is one of the seven specific conditions that allow the company to decontaminate soils that are contaminated with "on-specification" hydrocarbon products while burning "off-specification" fuels, the Department believes the requirement to continuously monitor soil and fuel inputs to the clay dryer is reasonable. Specific Conditon 23 is consistent with the reasonable assurance provisions of Rules 17-2.200 and 17-4.070(1), FAC; the proper operation and maintenance provisions of Rule 17-2.250, FAC; and, the reporting provisions of Rule 17-4.140, FAC. The Department must have the ability to determine that the source is being operated in accordance with the permit.

The Department's memorandum of April 2, 1987 is general internal guidance that does not address those cases where "off-specification" fuels are burned during the decontamination of soil. This memorandum is general guidance for the decontamination of soils in asphalt plants which usually burn "on-specification" fuels.

The proposal to monitor soil output "on request" is not acceptable as an alternative. The Department will consider other alternatives to the installation of belt scales for monitoring soil input rates--if you wish to offer other proposals. A surrogate parameter for the soil input weight rates would be considered providing you can demonstrate that it directly tracks the soil input weight rates.

The recording of fuel totalizer differentials on an hourly basis may be an acceptable alternative to the continuous monitoring and recording of fuel input rates--providing the question of soil input weight rates can be resolved.

Specific Condition 24

The Department believes Specific Condition 24 is reasonable as originally written. The purpose of the seven added specific conditions is to allow the decontamination of soils contaminated with "on-specification" hydrocarbon products pursuant to the Department's April 2, 1987 memorandum.

While there is a definite benefit to be obtained by the expeditious removal of any contaminated soil from the site of contamination--there are potential liabilities if the soil is contaminated with "off-specification" hydrocarbon products. If the soil were found to be contaminated with "off-specification" hydrocarbon products after being transported to the company, the soil would have to be stored and eventually removed to another site. During storage the potential exists for the inadvertant mixing and processing of this soil. The transfer of soil contaminated with "off-specification" products from your location to another site would provide additional opportunities for environmental contamination.

Specific Condition 24 should not substantially delay the removal of soil from the site of contamination, since other regulations already make it incumbent upon the owner to test wastes prior to shipment.

We also note that Specific Condition 24 is substantially consistent with a measure offered on page 2 of Dr. Koogler's May 31, 1987 letter to Mr. T. A. Sawicki. Specific Condition 24, as originally written, is necessary to provide the Department with reasonable assurance pursuant to the provisions of Rules

17-2.200, and 17.4.070(1), FAC, that the clay dryer is only handling those materials authorized by the construction permit.

Specific Condition 25

The Department believes Specific Condition 25 should remain as originally written. Specific Condition 25 does require testing in addition to that recommended by the Department's April 2, 1987 memorandum. But, the April 2, 1987 memorandum is guidance of a general nature for the decontamination of soils in asphalt plants which usually burn "on-specification" fuels. This guidance does not address the situation where "off-specification" hydrocarbon fuels are being burned while, at the same time, decontaminating soils that are contaminated with "on-specification" hydrocarbon products.

We recognize that you do not expect an increase in air pollutant emissions when the clay dryer is being used to decontaminate soils that are contaminated with "on-specification" hydrocarbon products. The information that you furnished in support of the amendment to Permit AC 42-113787 provided sufficient reasonable assurance on a design basis for the Department to amend the federally enforceable construction permit. But, we recognize that there may be unforseen differences, based on actual operation, in the clay to be treated in the clay dryer and the contaminated soil which could result in increased emissions. We also recognize the high visibility that air toxics issues have received.

So, Specific Condition 25, as originally written, is necessary for three reasons. First, it is necessary to conclusively demonstrate that the decontamination of soils that are contaminated with "on-specification" hydrocarbon products do not result in a modification pursuant to Rule 17-2.100(117), FAC. Second, it is necessary to demonstrate compliance with applicable emission limiting standards prior to obtaining and renewing an operation permit pursuant to Rules 17-2.210 and 17-4.070(2), FAC. Third, it is necessary to affirmatively provide reasonable assurance that the operation does not result in emissions which exceed the permit limitations pursuant to Rule 17-4.070(1), FAC.

Conclusion

We feel that the requested changes to Specific Conditon 23 may be open to further discussion. Presently, we do not view the requested changes to Specific Condition 24 and 25 as approvable; but, we are also willing to discuss them further. If you have any questions or wish to meet with us, please call Mike Harley at (904)488-1344 or write to me at the address above.

Sincerely,

C.H. Fancy, P.E.
Deputy Chief
Bureau of Air Quality
Management

CF/plm

cc: T. A. Sawicki
J. B. Kleekamp
J. B. Koogler, P.E.

PM
5-21-87
Gainesville, FL

File Copy

KOOGLER & ASSOCIATES, *Environmental Services*
1213 NW 6th Street • Gainesville, Florida 32601 • 904/377-5822

KA 290-86-01

May 20, 1987

Mr. Bill Thomas
Florida Department of
Environmental Regulation
Northwest District Branch Office
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

Subject: Mid-Florida Mining Company
Marion County, Florida
Amendment to Permit AC42-113787 to Allow the Treatment of Soil Contaminated with On-Specification Fuels

Dear Bill:

On May 14, 1987, Mr. Jim Kleekamp of the Mid-Florida Mining Company and I stopped by and talked with Mike Harley and Willard Hanks about the use of Mid-Florida's clay dryer for decontaminating soil contaminated with various hydrocarbon products. The amendment requested to the permit, and the proposed uses of the dryer, were addressed in my letter to you dated April 23, 1987.

During our meeting with Mike Harley and Willard Hanks, we discussed the three separate requests made in the April 23rd letter, and the priority of each of the requests. The specific requests were: (1) to amend the dryer construction permit to allow the use of the dryer to decontaminate soil contaminated with on-specification fuels in accordance with the Department's memo of April 2, 1987; (2) to amend the dryer permit to allow the dryer to be used to decontaminate soils contaminated with off-specification hydrocarbon products; and (3) to amend and to reformat Specific Conditions of the construction permit for the dryer. Mid-Florida stated that the request having the highest priority is the rather straightforward amendment to allow the use of the dryer to treat soils contaminated with on-specification fuels, in accordance with the Department's memo of April 2, 1987. This amendment will allow Mid-Florida to take advantage of

an opportunity immediately available to them; that is, the decontamination of soil that has been excavated from around a leaking underground storage tank and is presently in storage awaiting treatment.

As I had previously discussed with you, and as was discussed with Mike Harley and Willard Hanks during our meeting on May 14th, the request for an amend to allow the use of the dryer to treat soil decontaminated with on-specification hydrocarbon products was made to the Central Florida District office of FDER. Although that office appeared sympathetic with Mid-Florida's request, no written authorization (in accordance with the Department's April 2, 1987 memo) has ever been issued. As requested by Mike Harley during our meeting, I am enclosing copies of the correspondence with the Central Florida District office to document what has transpired relative to our request and to provide him with additional technical information. It should be recognized in reviewing this correspondence that many of the conditions proposed by Mid-Florida were proposed before the Department's April 2, 1987 memo was released. As a result, some of the proposed conditions went beyond what the Department is now requiring. We request the amendment to Mid-Florida's permit be made in accordance with the conditions of the Department's memo.

In addition to the attached correspondence, there have been several telephone calls to the Central Florida District office of FDER and visits to the office by Mid-Florida personnel. During my most recent telephone conversation with the Central Florida District office (on May 20, 1987) I was told that probably the best way to assure approval was to write a letter requesting an amendment to Permit No. AC42-113787 to allow the treatment of soil contaminated with on-specification hydrocarbon products. Following this procedure, we would be assured that our request would be acted upon within 90 days (!) in accordance with the standard permitting timeclock.

As I've discussed with you in the past, Mid-Florida has an immediate opportunity to get involved in the treatment of contaminated soils and an additional 90-day delay is totally unreasonable; especially in view of the relatively simple procedure for permit amendment described in the Department's April 2, 1987 memo. Because of the inactivity on this matter in the Central Florida District office of FDER, and the fact that the dryer is still operating under a construction permit (AC42-113787) issued by your office, I am appealing to you to provide Mid-Florida with a letter authorizing them to use the dryer to treat soils contaminated with on-specification hydrocarbon products. The other two requests in my letter of April 23, 1987 can be addressed at a more leisurely pace.

Whatever assistance that you can provide on this matter will be greatly appreciated. We will be glad to provide you with any additional information that you might need to act on this matter.

Very truly yours,

KOOGLER & ASSOCIATES

John B. Koogler, Ph.D., P.E.

JBK:mab

cc: Clair Fancy, FDER, Tallahassee
Mike Harley, FDER, Tallahassee (w/attachments)
Jim Kleekamp, Mid-Florida Mining Company (w/attachments)
Tom Sawicki 5-22-87 RAM

KOOGLER & ASSOCIATES, *Environmental Services*
1213 NW 6th Street • Gainesville, Florida 32601 • 904/377-5822

KA 290-86-01

May 21, 1987

Mr. A.T. Sawicki
Florida Department of
Environmental Regulation
3319 Maguire Boulevard, Suite 232
Orlando, Florida 32803

Subject: Marion County - AP
Mid-Florida Mining Company
Amendment to Permit AC42-113787 to Permit the Use of the Clay Dryer to Treat Contaminated Soils

Dear Tom:

In accordance with our telephone conversation of May 20, 1987, I am hereby requesting, on behalf of the Mid-Florida Mining Company, an amendment to Permit AC42-113787 to allow the use of Mid-Florida's clay dryer for treating soils contaminated with on-specification hydrocarbon products, in accordance with the Department's memo dated April 2, 1987. This request is in accordance with written requests to your office dated March 6, March 19, and March 31, 1987. It is my understanding that this requested amendment to the subject permit will be acted upon within the 90 day schedule set forth in 17-4 of the Florida Administrative code.

If you need technical information in addition to that which we provided on March 6, March 19 and March 31, 1987, to act on this request, please do not hesitate to contact me.

Very truly yours,

KOOGLER & ASSOCIATES

John B. Koogler, Ph.D., P.E.

JBK:mab

cc: Bill Thomas, FDER, Tallahassee
Jim Kleekamp, Mid-Florida Mining Company

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL REGULATION

CENTRAL FLORIDA DISTRICT
3319 MAGUIRE BOULEVARD
SUITE 232
ORLANDO, FLORIDA 32803-3767

March 19, 1987

COMPLETENESS SUMMARY AIR POLLUTION SOURCES

SOURCE NAME: Mid-Florida Mining Co.
Clay Dryer (AO42-96009)

DATE RECEIVED: 3/9/87

DATE REVIEWED: 3/17/87

APPLICANT NAME: John B. Koogler, Ph.D., P.E.
Koogler & Associates,
Environmental Services

REVIEWED BY: John Turner

APPLICANT ADDRESS: 1213 N. W. 6th Street
Gainesville, Florida 32601

Your application for a permit change to this referenced project has been received, and reviewed for completeness. The following checked items are needed to complete your application.

( ) Application fee of $_____. Make check payable to the Department of Environmental Regulation.

( ) Letter authorizing applicant to represent owner.

( ) 8-1/2" x 11" diagram of flow process.

( ) 8-1/2" x 11" location map.

( ) 8-1/2" x 11" plant layout sketch showing emission points.

( ) Test results showing compliance with emission limitations of the department.

( ) Air diffusion modeling results showing compliance with ambient air standards and PSD increment.

( ) Engineer's report pursuant to Florida Administrative Code Rule 17-4.21(1)(c).

( ) See comments on application attached.

(X) Other: (Any section of the application which is incomplete or lacks sufficient information to be evaluated).

1) Submit the maximum amount of fuel (gal/ton) that is to be burned to decontaminate soil contaminated with hydrocarbons. Also, provide estimates of emissions from burning this fuel and emissions from the contaminated soil. Assume worse case conditions.

DER Form 17-1.202(2), Effective Date November 30, 1982

2) Clarify whether coal is to be utilized as a fuel (refer to Permit Number AC42-113787, which has an expiration date of February 28, 1987).

3) Submit information concerning how determinations are made that soil contaminants meet specification used oil standards. Otherwise, submit the VOC content of the soil to be decontaminated and the individual constituents and their emission rates.

4) Submit the expected temperature and the dwell time of the contaminated soil in the dryer.

5) Clarify whether the contaminants in the soil and whether the soil itself are likely to erode or corrode the bags and baghouse materials.

6) State how determinations are made that soil decontamination has been completed.

7) Provide information on disposition of decontaminated soil.

8) Provide information on how air emissions from stored contaminated soil are to be controlled prior to decontamination. Also, what provisions are to be made to prevent VOC's from leaching into the ground.

The purpose of this request for additional information is to establish that the currently permitted air emissions shall not be exceeded, and that a modification, as defined in Rule 17-2.100(118) F.A.C., does not apply to your submittal of March 9, 1987.

Pursuant to Section 120.60(2) Florida Statutes, the department may deny an application if the applicant, after receiving timely notice fails to correct errors, omissions or supply additional information within a reasonable period of time.

If there are any questions, please call at 305/894-7555 or write to me at the above address.

Sincerely,

A. T. Sawicki

A. T. Sawicki, P.E., Supervisor
Air Engineering

ATS/jte

P 274 007 621

RECEIPT FOR CERTIFIED MAIL

NO INSURANCE COVERAGE PROVIDED
NOT FOR INTERNATIONAL MAIL
(See Reverse)

Sent to Mid-Florida Mining Co	
Street and No. P O Box 68	
P.O., State and ZIP Code Lowell, Fl 32663	
Postage	$
Certified Fee	
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Return Receipt showing to whom and Date Delivered	
Return Receipt showing to whom, Date, and Address of Delivery	
TOTAL Postage and Fees	$
Postmark or Date AC 42-113787 6/15/87	

PS Form 3800, June 1985 ☆ U.S.G.P.O. 1985-480-794

PS Form 3811, July 1983 447-845

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1. ☒ Show to whom, date and address of delivery.
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3. Article Addressed to:

James A. Slowinski
Mid-Florida Mining Company
P O Box 68
Lowell, Fl 32663

4. Type of Service:	Article Number
☐ Registered ☐ Insured ☒ Certified ☐ COD ☐ Express Mail	P 274 007 621

Always obtain signature of addressee or agent and DATE DELIVERED.

5. Signature – Addressee
X

6. Signature – Agent
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8. Addressee's Address *(ONLY if requested and fee paid)*

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State of Florida
DEPARTMENT OF ENVIRONMENTAL REGULATION

Interoffice Memorandum

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To: _____ Location: _____
To: _____ Location: _____
To: _____ Location: _____
From: _____

RECEIVED
JUN 12 1987
Office of the Secretary

TO: Dale Twachtmann

THRU: Howard Rhodes

FROM: Clair Fancy

DATE: June 12, 1987

SUBJ: Amendments to Construction Permit No. AC 42-113787
Mid-Florida Mining Company

Mid-Florida Mining Company has asked that the conditions of the above referenced construction permit for their rotary dryer be amended. The company wants to be allowed to decontaminate soil that is contaminated with "on-specification" petroleum products.

The attached letter accomplishes this noncontroversial action. Therefore, the bureau recommends your approval.

CHF/MH/s

Attachment

STATE OF FLORIDA

DEPARTMENT OF ENVIRONMENTAL REGULATION

TWIN TOWERS OFFICE BUILDING
2600 BLAIR STONE ROAD
TALLAHASSEE, FLORIDA 32399-2400

BOB MARTINEZ
GOVERNOR

DALE TWACHTMANN
SECRETARY

June 12, 1987

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

Mr. James A. Slowinski
Executive Vice President
Mid-Florida Mining Company
Post Office Box 68
Lowell, Florida 32663

Dear Mr. Slowinski:

We have reviewed Dr. Koogler's letter of April 23, 1987, on your behalf, which requested a two-phase modification to permit No. AC 42-113787. The first phase of the requested changes would allow Mid-Florida Mining Company to treat soil that has been contaminated with "on-specification" fuels. We do not see any major obstacles to amending your permits so that this activity will be allowed, providing certain conditions are met.

The changes requested for the second phase appear to involve more complex issues. As agreed upon with Mr. Kleekamp and Dr. Koogler, the second phase which involves two requests will be addressed later. Initially, it appears that the requested second phase changes may be subject to RCRA and may be a modification pursuant to Florida Administrative Code (FAC) Rule 17-2.100(117). A modification will require a complete permit application with a fee.

The construction permit No. AC 42-113787 for Mid-Florida Mining Company shall be amended to include the following specific conditions:

21. The company shall be allowed to use the rotary dryer to decontaminate soils that are contaminated with petroleum products providing all conditions of the April 2, 1987 memorandum from Clair Fancy (copy attached) are met.

22. The decontaminated soil shall contain no more than 500 ppm of petroleum products as determined with an organic vapor analyzer using a photoionization detector. The measurements shall be performed pursuant to the procedure in proposed FAC Rule 17-70.003(4) (copy attached).

23. The firing rate of waste oil, terpene derivatives, used kerosene, and non-halogenated hydrocarbons, shall not exceed 272 gallons per hour and the contaminated soil input rate to the rotary dryer shall not exceed 40.8 tons per hour. The firing rate of No. 5 fuel shall not exceed 245 gallons per hour. Coal shall not be burned when soil is being decontaminated. The company shall install and maintain calibrated devices that continuously record the quantities of soil and fuel input to the rotary dryer.

24. Soils contaminated with petroleum products shall be tested prior to shipment to Mid-Florida Mining Company to ensure compliance with Specific Condition 21; and, after processing to ensure compliance with Specific Condition 22.

25. Compliance with the emission limiting standards in Specific Condition 13 shall be demonstrated pursuant to Specific Conditions 14 through 17 of this permit while the rotary dryer is being used to decontaminate soils meetng the specifications in Specific Condition 21 of this permit and burning the worst case liquid fuel (allowed by this permit) that the company intends to use when decontaminating soils. This emission testing shall also demonstrate that the decontamination of soil will not result in increased emissions of lead referenced in Specific Condition 5.

26. In order to minimize on-site emissions from contaminated soil the following practices shall be implemented:

    a. Unconfined emissions of particulate matter during unloading, loading, and handling of contaminated and decontaminated soil shall be minimized.

    b. Contaminated soil brought to the site shall be processed as expeditiously as possible in order to minimize storage time.

    c. Contaminated soil shall be stored on an impermeable concrete pad which is covered and semi-enclosed. Any leachate that drains from the contaminated soil shall be collected and mixed with the contaminated soil prior to introduction into the rotary dryer for decontamination.

27. Those statements in the Engineer's letter of May 20, 1987, to the Department (with attachments) are relied upon and made a part of this permit as specifically related to the

decontamination of soil that is contaminated with petroleum products pursuant to Specific Condition 21.

A copy of this letter shall be attached to the construction permit.

Sincerely,

Dale Twachtmann
Secretary

DT/ks

cc: T. Sawicki
J. B. Kleekamp
J. Koogler

PM
4-27-87
Gainesville, FL

File Copy

KOOGLER & ASSOCIATES, *Environmental Services*
1213 NW 6th Street • Gainesville, Florida 32601 • 904/377-5822

KA 290-83-02

April 23, 1987

DER
APR 28 1987
BAQM

Mr. Bill Thomas
Florida Department of Environmental Regulation
2600 Blair Stone Road
Tallahassee, Florida 32301-8201

Subject: Mid-Florida Mining Company
Marion County, Florida
Amendment to and Reformatting of
Air Construction Permit AC42-113787

Dear Bill:

During my visit to Tallahassee on April 16, 1987, we discussed an amendment to the air construction permit for the Mid-Florida Mining Company clay dryer (Permit AC42-113787) to allow the dryer to be used to decontaminate soil contaminated with any hydrocarbon product that Mid-Florida Mining is presently permitted to burn as fuel in the dryer. Conceptually, this use of the clay dryer appeared acceptable to you and we then discussed the mechanism for granting approval. We discussed the option of amending the air construction permit by a letter from the Central Florida District Office of FDER and the option of having the permit modified by Central Air Permitting in Tallahassee. The option of having the permit modified by Central Air Permitting was considered since Central Air Permitting originally issued the permit.

In reviewing the conditions of the permit and an immediate opportunity that Mid-Florida has to get into the soil decontamination business, it was decided to request a two-phase modification to permit AC42-113787 through your office. First, Mid-Florida requests, at the earliest possible date, an amendment that will allow the use of the clay dryer to decontaminate soil contaminated with "on-specification" fuels in accordance with the Department's memo of April 2, 1987. This will allow Mid-Florida to take advantage of the opportunity immediately available to them.

Secondly, Mid-Florida would like to request the reformatting of, and minor modifications to Specific Conditions 5-10 of Permit AC42-113787, as well as the amendment to use the dryer to decontaminate soils as we discussed. As a result of the decision to request a two-phase modification, and because of the nature of the second modification, it was decided to address all of our requests to you.

The reformatting of specific permit conditions is requested by Mid-Florida to state in a more orderly and concise manner, the requirements of several Specific Conditions that have been added to the permit over the years. Along

with reformatting, Mid-Florida is proposing additional modifications to certain conditions to further clarify operating conditions of the kiln. In the attached table, I have listed existing Specific Conditions 5-10 and opposite these conditions, have listed the proposed Specific Conditions 5-8. In reviewing the proposed permit conditions, you will note that proposed Specific Condition No. 5 addresses all of the liquid fuels or blends of these fuels that can be burned in the clay dryer. These fuels were previously addressed in Specific Conditions 5-8. Proposed Specific Condition No. 6 is added to limit the metals, sulfur and chloride content of fuels other than spent non-halogenated hydrocarbon solvents; limits which previously did not exist. Proposed Specific Condition No. 6 also limits the PCB content of fuels to less than 5 parts per million. In the existing permit condition, the PCB concentration of spent kerosene only was limited to "below detectable limits."

Proposed Specific Condition No. 7 addresses liquid fuel testing requirements previously addressed by Specific Conditions 5 and 10. Proposed Specific Condition No. 8 expands existing Specific Condition No. 9, incorporating supplemental information into the permit application.

The modifications incorporated into the proposed reformatted Specific Conditions include:

1. Specific Condition No. 5(c) allows the use of spent jet fuel, No. 2 fuel oil, No. 5 fuel oil, No. 6 fuel oil, and gasoline as acceptable fuel components in addition to the spent kerosene presently permitted by existing Specific Condition No. 7.

2. Specific Permit Condition No. 5(d) allows spent non-halogenated hydrocarbons solvents to be blended with used oil in a 40/60 ratio rather than the presently permitted 20/80 ratio. The condition also increases the chloride limit of these solvents to 2.5 percent from 1.5 percent and increases the chloride limit of the "as-fired" 40/60 solvent/waste oil mixture from 0.94 percent to 1.5 percent. Based on present fuel firing rates, the proposed increase in the chloride concentration of the fuel mixture from 0.94 percent to 1.5 percent will result in a chloride emission rate increase of less than four pounds per hour (from 6.3 to 10.0 pounds per hour). This increase takes into consideration the 70-75 percent chloride absorption measured within the kiln.

3. Specific Permit Condition 5(d) also changes the limit on chromium, lead, nickel, cadmium and arsenic to a <u>combined</u> concentration of 2000 ppm. The present permit condition (Specific Condition No. 8) limits the concentration of chromium, nickel, lead and nine other metals to 2000 ppm each and sets no limit for cadmium and arsenic.

4. Specific Condition No. 6 provides limits on the lead, chromium, cadmium, arsenic, sulfur and chlorides in all liquid fuels except the spent non-halogenated hydrocarbon solvents and waste oil. The present permit has no specific limits for any of these constituents in fuels other than the non-halogenated spent solvents and waste oil.

5. Specific Condition No. 6 also limits the PCB concentration of all liquid fuels to less than 5 ppm. The only existing permit condition addressing PCB is Specific Condition No. 7, which limits the concentration of PCB in kerosene to "below detectable limits." Proposed Specific Condition No. 6 expands the PCB limit to all fuels and sets a numeric limit on the PCB concentration since the "limit of detectability" continues to decrease.

6. Specific Conditions No. 7 and No. 8 include minor editorial changes to clarify the wording and clarify the intent of the permit.

The amendment that we would like to make to Permit AC42-113787 is an amendment to allow the use of the clay dryer to decontaminate soils contaminated with any liquid hydrocarbon product equivalent in characteristic to liquid fuels that Mid-Florida is permitted to burn. This would include the decontamination of soil contaminated with kerosene, jet fuel, No. 2 fuel oil, No. 5 fuel oil, No. 6 fuel oil, gasoline, non-halogenated hydrocarbon solvents and terpene-type compounds. The contaminating hydrocarbons could have lead concentrations of up to 10,000 ppm, chromium up to 500 ppm, cadmium up to 100 ppm, arsenic up to 250 ppm and chlorides and sulfur combined up to 4.5 percent. Any contaminating material would have to have a PCB concentration of less than 5 ppm.

If soil contaminated with such products is decontaminated in the Mid-Florida clay dryer, no material will be introduced to the dryer that is not already allowed by permit conditions. Hence, there should be no increase in emission rates of any air pollutant from the dryer. Additionally, since contaminated soils will normally be a mixture of sand, silt and or/clays, the size of particles of contaminated soil will in all probability be larger than the size of the particles of clay presently dried in the dryer. This will make the control of particular matter emissions easier (since the size of the particles will be larger), thus potentially reducing particular matter emissions.

We would appreciate your review of these request modifications. If there are questions regarding our requests or if additional information is required to implement the requested modifications, please give me a call.

Very truly yours,

KOOGLER & ASSOCIATES

John B. Koogler, Ph.D., P.E.

JBK:mab

cc: Jim Kleekamp
Tom Sawicki on 4/28 by wmh

EXISTING AND PROPOSED PERMIT CONDITIONS
FOR MID-FLORIDA MINING COMPANY CLAY DRYER PERMIT AC42-113787

EXISTING PERMIT CONDITIONS	PROPOSED PERMIT CONDITIONS
	5. The following liquid fuels and/or blends of these fuels are permitted:
5. Max lead content of waste oil is limited to 1% or 10,000 ppm. Yearly waste oil fuel analysis must be conducted on actual oil used on site annually and due at time of stack test.	(a) Waste oil type fuels with a maximum content of 1% or 10,000 ppm. (See Proposed Condition No. 7)
6. Terpene derivation type fuels are to be mixed 50/50 with waste oil.	(b) Terpene derivation type fuels blended 50/50 with waste oil.
7. Used kerosene from the Miami Herald contaminated with newspaper ink can be used as fuel, in mixtures or alone. If PCB in the kerosene is below detectable limits.	(c) Discarded and/or spent kerosene, <u>jet fuel, No. 2 fuel oil, No. 5 fuel oil, No. 6 fuel oil or gasoline.</u> (See Proposed Condition No. 6)
8. Non-halogenated spent hydrocarbon solvents shall be a permitted fuel at a maximum volume mixture of 20% with waste oils. The upper limit of chloride content will be 1.5% by weight and when blended in a 20/80 mixture will have actual limit of 0.94% chloride to prevent corrosive action on the baghouse filter material.	(d) Non-halogenated spent hydrocarbon solvents blended at a maximum ratio of ~~20~~ <u>40%</u> solvents to ~~80~~ <u>60%</u> waste oil. The maximum chloride concentration of these solvents shall not exceed ~~1.5~~ <u>2.5%</u> by weight and when blended in a ~~20/80~~ <u>40/60</u> mixture with waste oil, the maximum chloride concentration shall not exceed ~~0.94~~ <u>1.5%</u>.

The following will have an upper limit of 2,000 ppm: chromium, lead, copper, tin, aluminum, nickel, antimony, manganese, barium, phosphorus, zinc and molybdenum.	In the non-halogenated spent solvent blended fuel, the following will have a combined upper limit of 2000 ppm: chromium, lead, nickel, ~~copper, tin, aluminum, antimony, manganese, barium, phosphorus, zinc, and molybdenum~~ cadmium and arsenic.
	6. Except as provided for in Specific Conditions 5(a) and 5(d), any fuel and/or fuel blend (as burned), shall be limited to the following: Lead - 5000 ppm (by weight) max Chromium - 500 ppm (by weight) max Cadmium - 100 ppm (by weight) max Arsenic - 250 ppm (by weight) max Sulfur and Chlorides (combined) - 4.5% (by weight) max PCB - <5 ppm (by weight) max
7. ...PCB...below detectable limits.	
5. ...Yearly waste oil fuel analysis must be conducted on actual oil used on site annually and due at time of stack test.	7. To demonstrate compliance with Specific Conditions No. 5 and No. 6, annual ~~oil~~ fuel analyses shall be conducted on actual ~~oil~~ fuel used on site. The results of these analyses shall be submitted with the annual compliance test.
10. All solvent testing equipment must be calibrated at least once a year.	All ~~solvent~~ waste fuel testing equipment shall be calibrated at least once a year.
9. Statements made in the Engineer's September 16, 1983 letter to the Department are relied upon and are made part of the applications.	8. Statements made in the Engineer's letters of September 16, 1983 and March 14, 1986 to the Department are relied upon and are made part of the applications.

State of Florida
DEPARTMENT OF ENVIRONMENTAL REGULATION

Interoffice Memorandum

FOR ROUTING TO OTHER THAN THE ADDRESSEE

To: _____ Locin: _____
To: _____ Locin: _____
To: _____ Locin: _____
From: _____ Date: _____

TO: District Managers
District Air Engineers

THRU: Howard Rhodes
Randy Armstrong

FROM: Clair Fancy

DATE: April 2, 1987

DER
APR 08 1987
BAQM

SUBJ: Decontamination of Soil in Asphalt Plants

The department has received several inquiries recently concerning the regulatory requirements involved in the use of asphalt plants to decontaminate soil. The soil was contaminated with petroleum products such as gasoline from leaking underground storage tanks.

BAQM has investigated this issue and concluded that it is consistent with current regulations and policies to allow the use of asphalt plants or similar permitted operations to decontaminate soil when the following conditions are met.

1. The plant's permitted emission standard for any pollutant will not be exceeded when the plant is being used to decontaminate soil, and;

2. The petroleum product that contaminated the soil meets all of the used oil specifications, except for flash point, that were listed in the January 5, 1987, memorandum that referenced Used Oil as a Fuel. The applicable specifications are:

Constituent/Property	Allowable Level
Arsenic	5 ppm maximum
Cadmium	2 ppm maximum
Chromium	10 ppm maximum
Lead	100 ppm maximum
Total Halogens	4,000 ppm maximum

If there is no increase in emissions caused by the decontamination of the soil in the plant, then the operation is not a modification by definition. If the applicant claims these conditions are met, BAQM recommends the permit to operate the plant be modified to authorize its use in the decontamination of soil. Until more data is available for this operation, a particulate matter compliance test should be required. If test results show that increases in emissions above the allowables from this type of operation is common, or indicate other problems associated with this operation, the premise upon which this memo is based could be invalidated and warrant further study.

If the stated conditions are not met (off spec. oil or emissions standards will be exceeded), then a new permit to construct would be required for this type operation. Any application would need to be carefully reviewed on a case-by-case basis.

WH/ks

cc: Bill Buzick
Greg Parker
John Ruddell

KOOGLER & ASSOCIATES, *Environmental Services*
1213 NW 6th Street • Gainesville, Florida 32601 • 904/377-5822

KA 290-86-01

March 31, 1987

Mr. A. T. Sawicki
Florida Department of
Environmental Regulation
Central Florida District
3319 Maguire Blvd.
Suite 232
Orlando, FL 32803

Subject: Marion County-AP
Mid-Florida Mining Company
Use of Clay Dryer (Permit AC42-113787) to treat contaminated soil

Dear Tom:

The following information has been prepared in response to your letter of March 19, 1987 requesting additional information in order to complete your review of the request made by the Mid-Florida Mining Company to use their existing clay dryer to treat soils contaminated with hydrocarbon products. The clay dryer is presently permitted under air construction permit AC42-113787. Some of the information requested in your letter of March 19, 1987 has been provided in my letter to you also dated March 19, 1987. My letter was prepared in response to a telephone conversation we had regarding the subject matter.

EDER Request No. 1

Submit the maximum amount of fuel (gallons/ton) that is to be burned to decontaminate soil that has been contaminated with hydrocarbons. Also, provide estimates of emissions from burning this fuel and emissions from the contaminated soil. Assume worst case conditions.

Response

The maximum fuel firing rate to the kiln during the decontamination of soil will not exceed 270 gallons per hour or 6.75 gallons per ton at a permitted throughput rate of 40 tons of soil per hour. The fuel firing rate was also addressed in

DEPARTMENT OF ENVIRONMENTAL REGULATION

ROUTING AND TRANSMITTAL SLIP

ACTION NO

ACTION DUE DATE

1. TO: (NAME, OFFICE, LOCATION) Bill Thomas, BAQM/CAPS	Initial	
	Date	
2.	Initial	
	Date	
3.	Initial	
	Date	
4.	Initial	
	Date	

REMARKS: For your information.

DER

APR 3 1987

BAQM

INFORMATION	
	Review & Return
	Review & File
	Initial & Forward

DISPOSITION	
	Review & Respond
	Prepare Response
	For My Signature
	For Your Signature
	Let's Discuss
	Set Up Meeting
	Investigate & Report
	Initial & Forward
	Distribute
	Concurrence
	For Processing
	Initial & Return

FROM: Tom Sawicki

DATE 4/1/87

PHONE SC 325-1408

my letter to you of March 19, 1987 on pages 2 and 3. The emission rates of contaminants to the air (resulting from the hydrocarbon products in the soil) was addressed on pages 3 and 4 of my letter of March 19, 1987. The emission rates that I estimated were also related to the impact of emissions on ambient air quality.

FDER Request No. 2

Clarify whether coal is to be utilized as a fuel (refer to permit No. AC42-113787, which has an expiration date of February 28, 1988).

Response

Coal will not be used as a fuel during the decontamination of soil.

FDER Request No. 3

Submit information concerning how determinations are made that soil contaminants meet specification used oil standards. Otherwise, submit the VOC content of the soil to be decontaminated and the individual constituents and their emission rates.

Response

The soil that will be decontaminated in the Mid-Florida clay dryer will be soil that is contaminated with virgin hydrocarbon products, such as gasoline, kerosene, or fuel oils. In these cases, there should be no question about the soil with the contaminated hydrocarbon products meeting "specification used oil" standards.

In the event that the soil to be decontaminated was contaminated with used oil or hydrocarbon products other than virgin fuels, the contaminated soil will be tested for compliance with specification used oil standards prior to being shipped to Mid-Florida for treatment. Under the conditions of this request, soils not meeting these standards will not be treated.

FDER Request No. 4

Submit the expected temperature and the dwell time of the contaminated soil in the dryer.

Response

The expected discharge temperature of the soil will be in the range of 350-400°F. The expected dwell time of the contaminated soil in the kiln will be approximately 40 minutes.

FDER Request No. 5

Clarify whether the contaminants in the soil and whether the soil itself are likely to erode or corrode the bags and the baghouse material.

Response

As stated in my letter of March 19, 1987, the maximum expected contaminant levels in the soil will be less than the maximum contaminant levels in fuel that Mid-Florida is presently permitted to burn. As a result, it is not anticipated that the contaminants in the soil itself will cause accelerated corrosion to the bags or baghouse. The contaminated soil that will be treated will generally be mixtures of sands and clays. These soils are typical of soils that commonly pass through devices (asphalt plants, sand dryers, rock dryers, etc.) that have emissions controlled by baghouses. No undue erosion is experienced in these plants and likewise, no undue erosion is anticipated in the Mid-Florida baghouse.

Until Mid-Florida can verify with certainty that the treatment of contaminated soils will not cause excessive erosion or corrosion to the baghouse, Mid-Florida will inspect the baghouse and the bags for any excessive or unusual wear and/or corrosion. These inspections will be made once a week during periods of time when soil is being decontaminated.

FDER Request No. 6

State how determinations are made that soil decontamination has been complete.

Response

Mid-Florida proposes to test both the untreated and treated soil with an OVA (Organic Vapor Analyzer) using a photo ionization detector (PID). It is tentatively proposed by Mid-Florida that an acceptably treated soil will have a total hydrocarbon reading on the OVA of 100 ppm or less, with the measurement being made in the head space of a half-filled 16-ounce soil jar. The soil sample will be brought to a temperature of 20°C (68°F) with a water bath and sampled five minutes thereafter.

Rob Sandl, Cargant Hg.

It should be noted that the Department in proposed rule 17-70.002, FAC, entitled Petroleum Contamination Site Cleanup Criteria (copy attached) defines "excess soil contamination" as soil producing a total hydrocarbon reading in excess of 500 ppm when the soil is sampled as described in the above paragraph.

The tentative criteria of 100 ppm of total hydrocarbons in the head space that is proposed by Mid-Florida Mining is a limit that Mid-Florida feels they can achieve during soil decontamination because of the temperature and dwell time that can be achieve in the clay dryer. Mid-Florida intends to conduct extensive sampling of both the treated and untreated soils to define the effectiveness of their decontamination activities. If it should be determined that the 100 ppm total hydrocarbon limit is unreasonable to achieve, Mid-Florida will request a change in their tentative criteria but in no case will the requested criteria exceed 500 ppm total hydrocarbons.

FDER Request No. 7

Provide information on disposition of decontaminated soil.

Response

It is the intention of Mid-Florida to return the treated soil to the generating site as this has been the request of most owners or operators of contaminated soil sites. Alternatively, Mid-Florida will use the treated soil as fill material in the Land Restoration and Reclamation Program at their existing mining site.

FDER Request No. 8

Provide information on how air emissions from stored contaminated soil are to be controlled prior to decontamination. Also, what provisions are to be made to prevent VOC's from leaching into the ground.

Response

The emissions from contaminated soil stored at Mid-Florida will be minimized by storing the soil in piles to minimize the surface to volume ratio of the stored soil and also by treating the contaminated soil as soon after it arrives on site as practical.

The potential for the contamination of soil or groundwater at Mid-Florida will be controlled by storing the contaminated soil on a concrete pad under a steel roof prior to treatment. The storage structure has a concrete wainscot, a steel roof, and steel curtain walls to protect against rain and subsequent

rainfall runoff. Contaminated water that might drain from the soil while in storage will be collected, mixed back with the soil, and introduced to the dryer.

Mid-Florida would like to proceed with soil decontamination projects at the earliest possible date and is requesting Department approval to proceed on either a trial basis or under a permanent amendment to permit AC42-113783; whichever can be granted most expeditiously. If you feel that you can grant approval for the initial runs more quickly as a temporary amendment to the clay dryer permit, we would like to proceed along those lines. On the other hand, if a permanent amendment to the permit can be granted in the same time frame, Mid-Florida would much prefer the permanent amendment. Regarding a permanent amendment, it is my understanding, based upon a telephone conversation with Clair Fancy last week, that a memo establishing the Department's policy on the use of permitted facilities for soil decontamination should be out by the week of April 6, 1987. You may want to contact Mr. Fancy to assure that the conditions of approval for Mid-Florida are consistent with the state-wide policy being developed in Tallahassee.

Regarding either the temporary or permanent amendments to the existing Mid-Florida permit to allow the use of the clay dryer to decontaminate soil, we suggest the following conditions:

1. The use of the dryer to decontaminate soils contaminated with hydrocarbon products be limited to decontaminating soils contaminated with products meeting the "specification used oil" standards,

2. The contaminated soil throughput rate not exceed 40 tons per hour,

3. The fuel firing rate is not exceed 270 gallons per hour, and the fuel fired to the dryer during soil decontamination will be limited to the liquid fuels that Mid-Florida is presently permitted to burn,

4. Soils contaminated with hydrocarbon products other than virgin materials (gasoline, kerosene, fuel oil, jet fuel) is to be tested to assure compliance with "specification used oil" standards prior to the soil being shipped to Mid-Florida,

5. The storage time for contaminated soils at the Mid-Florida site is to be minimized as much as practical prior to the time the soil is treated and the soil is to be stored on a covered concrete pad. Any water that drains from the contaminated soil is to be collected and mixed with the soil prior to the introduction of the soil to the clay dryer for decontamination.

Mid-Florida feels that these conditions will provide the Department the necessary assurance that soil decontamination can be carried out with minimal impact at the Mid-Florida site. If you feel that it is necessary, Mid-Florida will also accept a baghouse inspection condition to assure the Department that the treatment of contaminated soil is not causing excessive erosion or corrosion to the baghouse. As stated earlier, this is not expected to be a problem and any inspection schedule imposed by the Department should have a termination provision if Mid-Florida verifies that erosion/corrosion is not occurring. The other condition that the Department might want to consider is the limit in the total hydrocarbons after soil decontamination. As stated in previous paragraphs, Mid-Florida is proposing a tentative standard of 100 ppm total hydrocarbons in the head space in a half-filled 16 ounce soil jar. Mid-Florida would like the opportunity to conduct trial runs to assure that this standard can be achieved before this standard becomes a permanent condition.

I hope that the information provided herein adequately addresses the issues stated in your March 19, 1987 letter. If additional information is required, please do not hesitate to contact me. As I have stated previously, Mid-Florida is extremely anxious to proceed with this project and will do everything possible to expedite your review of our request.

Very truly yours,

KOOGLER & ASSOCIATES

John B. Koogler, Ph.D., P.E.

JBK:app

cc: Jim Kleekamp

KOOGLER & ASSOCIATES, *Environmental Services*
1213 NW 6th Street • Gainesville, Florida 32601 • 904/377-5822

KA 290-86-01

March 19, 1987

Mr. A. T. Sawicki
Florida Department of
Environmental Regulation
Central Florida District
3319 Maguire Blvd.
Suite 232
Orlando, FL 32803

Subject: Marion County - AP
Mid-Florida Mining Company
Request for approval to use clay dryer permitted by permit AC42-113787 to decontaminate soil contaminated with hydrocarbon products

Dear Tom:

Confirming our recent telephone conversation, I would like to request, on behalf of the Mid-Florida Mining Company (Mid-Florida), temporary approval to use their clay dryer to decontaminate soil contaminated with hydrocarbon products. By my letter of March 6, 1987, we had requested approval to use the subject clay dryer on a routine basis for the decontamination of soils. We understand that the Department is in the process of developing a consistent statewide policy that will allow certain permitted facilities in the state to be used for the routine decontamination of soils and that it is highly probably that the Mid-Florida clay dryer can be granted approval under this forthcoming policy. Mid-Florida is requesting temporary approval to use the subject clay dryer to decontaminate soil since Mid-Florida feels that a trial period for soil decontamination will allow them to develop kiln operating parameters and other information that could be beneficial to both Mid-Florida and the Department in establishing the conditions under which soil can be decontaminated on a routine basis once the Department's policy on this matter has been established.

In evaluating this request for temporary approval to decontaminate soils contaminated with hydrocarbon products, I would like to summarize some of the operating characteristics and permit conditions of the Mid-Florida clay dryer. The dryer is presently permitted under permit AC42-113787 and emission tests have demonstrated that the dryer complies with all of the conditions of this permit. The dryer is permitted to be fired with waste oil, terpene derivative fuels, non-halogenated spent hydrocarbon solvent mixtures, used kerosene, coal and No. 5 fuel oil. Thus, the use of the kiln

to decontaminate soil contaminated with hydrocarbon products meeting used oil specifications, will not be inconsistent with the present permit conditions for the dryer. The dryer is presently permitted for a clay throughput of 40.8 tons per hour at a heat input of approximately 35,000,000 BTU per hour. I would like to note that the heat input to the dryer is not a permit condition. The heat input is typically supplied by burning approximately 270-275 gallons per hour of the spent solvent/used oil fuel. Air pollution emissions from the dryer are controlled with a baghouse.

When the dryer is used to decontaminate soil contaminated with hydrocarbon products, the throughput of contaminated soil will not exceed the permitted 40.8 ton per hour throughput rate. Since the contaminated soils will generally be a mixture of sand and clays, it can be expected that the size of the contaminated soil particles will be larger than the particle size of clay normally dried in the dryer. As a result, the efficiency of the baghouse for controlling particulate matter emissions and the emission of metals and other contaminants sorbed on the particles should be increased (as a result of the larger particle size). Hence, the use of the dryer to decontaminate soils, if anything, will result in a reduction of particulate matter emissions from the dryer.

In accordance with our recent telephone conversation, I have also made some calculations to estimate the quantity of hydrocarbon products that might be contained in the contaminated soil. The first assumption that I made was that soil with a porosity of 0.2 was totally saturated with a hydrocarbon product and that 50 percent of the hydrocarbon product drained from the soil by natural drainage. Assuming a soil density of 85 pounds per cubic foot and a hydrocarbon product density of 55 pounds per cubic foot, the drained soil would contain 60,000 ppm of hydrocarbon product. Assuming a 40 ton per hour throughput rate for the dryer, the hydrocarbon product introduced with the soil would be approximately 640 gallons per hour; or approximately 2.4 times the amount of fuel that would normally be required to fire the dryer. Obviously, this assumption grossly overstates the amount of hydrocarbon product that could be in the contaminated soil.

The second approach that I used, and probably the most realistic approach, was based upon statements made at a DER Bureau of Restoration workshop held in Orlando on February 25, 1987. At this workshop, data were presented that indicated that soil reached a limit of flammability when the concentration of hydrocarbon products reached the 1,500 - 2,000 ppm level. From a safety standpoint, soil with a hydrocarbon content exceeding the flammability limit would not be handled because of the potential for fire or explosion as the material was being fed to the dryer. If soils with hydrocarbon products in excess of 1,500 - 2,000 ppm were to be decontaminated, the soils would have to be mixed with clean soil to reduce the hydrocarbon concentration below the flammability limit before the soil could be fed to the dryer.

Following this premise, I estimated the amount of hydrocarbon product that would be introduced to the dryer in 40 tons of soil contaminated with 2,000 ppm of hydrocarbon product. Under these conditions, approximately 21 gallons

per hour of hydrocarbon product would be introduced to the dryer. This is equivalent to approximately eight percent of the heat input required by the dryer.

One other point of reference that I have used to evaluate the quantity of hydrocarbon product that could be introduced to the dryer with the contaminated soil is to consult with a company that has been involved in petroleum site cleanup. The information provided by this firm indicates that the maximum concentration of hydrocarbons observed at sites of petroleum spills has typically been in the range of 200 parts per million, or approximately 10 percent of the flammability limit discussed in the preceding paragraph. At this level of contamination, the hydrocarbon product introduced to the dryer with the contaminated soil would be in the range of two gallons per hour or less than one percent of the fuel required to fire the dryer.

To evaluate the potential impact of emissions from the hydrocarbon product contained in the contaminated soil on air quality, two approaches can be used. First, it can be assumed that the fuel fired to the dryer will be reduced by 2-21 gallons per hour as a result of the hydrocarbon product in the contaminated soil. The other alternative is to assume no heating value for the hydrocarbon product in the contaminated soil (i.e., no reduction in the fuel fired to the dryer) but then assume that the potential contaminants in the hydrocarbon product in the soil will be released to the atmosphere.

Based upon the first approach, there will be a potential reduction in the emission rate of contaminants used to typify used oil (arsenic, cadmium, chromium, lead, and chlorides) since the dryer is presently permitted to be fired with a fuel containing up to 8,400 ppm lead (as fired), 2,000 chromium and 9,400 ppm chlorides (as fired). There are no permit limits for arsenic and cadmium. The maximum expected concentrations of these contaminants in the hydrocarbon product in the soil would be 5 ppm arsenic, 2 ppm cadmium, 10 ppm chromium, 100 ppm lead, and 4,000 chlorides. Thus, if the hydrocarbon product in the contaminated soil resulted in a reduction in the amount of fuel fired to the dryer, there would be a potential reduction in the emission rates of the specified air pollutants.

The other approach is to assume that the hydrocarbon product in the contaminated soil will not offset fuel fired to the dryer but that the contaminants in this product will contribute to air pollutant emissions. Under these assumptions, I calculated the maximum expected emission rates of arsenic, cadmium, chromium, lead, and hydrogen chloride, assuming 21 gallons per hour of hydrocarbon product was contained in the contaminated soil and assuming that these contaminants were present in the hydrocarbon product at the limits for used oil stated in the Department memo dated January 5, 1987 related to used oil as fuel. The emission rates that I calculated (and the amount of contaminant in the hydrocarbon product) were:

Arsenic	- (5 ppm in product)	- 8.2 x 10-4 lb/hr
Cadmium	- (2 ppm in product)	- 3.3 x 10-4 lb/hr
Chromium	- (10 ppm in product)	- 16.3 x 10-4 lb/hr
Lead	- (100 ppm in product)	- 163 x 10-4 lb/hr
HCl	- (4,000 ppm in product)	- 0.67 lb/hr

Based upon information in my letter to your office dated October 6, 1981 and referenced in my letter to the Department dated February 3, 1984 supporting the present dryer permit, I established that an emission rate from the clay dryer of 2.03 pounds per hour of any material will result in a maximum expected 24-hour impact on ambient air quality of 1.23 micrograms per cubic meter. Based upon this relationship and the emission rates for the various contaminants from the above paragraph, I estimated the maximum 24-hour concentration of these contaminants that could be expected in the ambient air as a result of decontaminating soil. I then compared these maximum concentrations with an Occupational Safety and Health exposure limit reduced by a factor of 300 to account for a 24-hour exposure and for general population exposure. In making these calculations and comparisons, I assumed no removal of the contaminant from the gas stream as a result of the pollution control system on the dryer. A test conducted by an EPA contractor demonstrated that generally 99 percent of the metals introduced to the dryer and 70-75 percent of the chlorides introduced to the dryer will be removed by the control system (see attached information). The maximum expected ambient concentrations of the five specified contaminants and the modified exposure limits are:

Contaminant	Maximum expected 24-hr concentration (ug/m3)	Modified Exposure Limit (ug/cu meter)	Ratio of Exposure Limit to Expected Concentration
Arsenic	5.0 x 10-4	1.7	3400
Cadmium	2.0 x 10-4	0.3	1500
Chromium	10.0 x 10-4	1.7	1700
Lead	99.0 x 10-4	0.7	71
HCl	0.41	23.3	57

From these data it will be observed that the maximum expected impact of emissions from decontaminating soil will be 57-3,400 times below an acceptable exposure limits assuming no control of emissions. If typical control efficiencies are considered, the impacts will be 190 to several hundred thousand times below acceptable exposure limits.

Based upon the analyses presented herein, it is apparent that the use of the Mid-Florida clay dryer to decontaminate soils contaminated with hydrocarbon products will result in, at most, an insignificant impact on ambient air quality and possibly a reduction in the emission rates of particulate matter and specific metals and halogens. This being the case, Mid-Florida is requesting approval from your office to use the clay dryer to decontaminate soils contaminated with hydrocarbon product on a trial basis. These trial runs will allow Mid-Florida to develop kiln operating data and levels of soil decontamination that will be beneficial to both Mid-Florida and the Department when establishing conditions under which the dryer can be used on a routine basis for decontaminating soils.

We would appreciate your immediate review of these materials and would like to receive approval at the earliest possible date to proceed with trial runs on a temporary basis. If there is any additional information that you may require prior to granting temporary approval, please let us know. Your attention to this matter is very much appreciated.

Very truly yours,

KOOGLER & ASSOCIATES

John B. Koogler, Ph.D., P.E.

JBK:app
cc: Mr. Jim Kleekamp

DRAFT

3/12/87

PETROLEUM CONTAMINATION

SITE CLEANUP CRITERIA

17-70.002 INTRODUCTION AND SCOPE.

(1) Section 376.3071(5)(b), F.S., requires that the Department adopt criteria by rule for the purpose of determining, on a case by case basis, the point at which a petroleum product contamination site rehabilitation program is complete. Such criteria are to be based upon the following factors:

(a) The degree to which human health, safety, or welfare may be affected by exposure to the contamination;

(b) The size of the population or area affected by the contamination;

(c) The present and future uses of the affected aquifer or surface waters, with particular consideration as to the probability that the contamination is substantially affecting, or will migrate to and substantially affect, a known public or private source of potable water;

(d) The effect of the contamination on the environment;

(e) Individual site characteristics, including natural rehabilitation processes;

(f) Applicable state water quality standards; and

(g) Whether deviation from state water quality standards or from established criteria is appropriate, based upon the degree to which the desired cleanup level is achievable and can be reasonably and cost-effectively implemented within available technologies or control strategies, except that, where a state water quality standard is applicable, such deviation may

CODING: Words underlined are additions; words in ~~struck-through~~ type are deletions from existing law.

not result in the application of standards more stringent than said standard.

(2) Section 403.061, F.S., provides that the Department may promulgate rules for the control and abatement of pollution in waters of the state. Contamination of waters by petroleum products constitutes pollution for purposes of Chapter 403, F.S.

(3) In order to ensure that each site rehabilitation is completed to an acceptable endpoint based on these criteria, this rule establishes a cleanup process which must be undertaken at all petroleum product contamination sites. The cleanup process is divided into the following steps, some or all of which may need to be undertaken at each site:

(a) An Initial Remedial Action to minimize the spread of free product and reduce the potential for further contamination;

(b) A Contamination Assessment which investigates site conditions and which may include a risk assessment to support a no action alternative or cleanup level other than the state water quality standards and minimum criteria established in Chapter 17-3, F.A.C., and the cleanup criteria established in this Chapter;

(c) A remedial action; and

(d) A determination that the site cleanup is complete.

Specific Authority: 376.303, 376.3071, 403.061, F.S.

Law Implemented: 376.3071, 403.021, 403.061, 403.062, F.S.

History: New _____.

CODING: Words underlined are additions; words in ~~struck-through~~ type are deletions from existing law.

17-70.003 DEFINITIONS.

All words and phrases defined in Section 376.301, F.S., shall have the same meaning when used in this chapter unless the context clearly indicates otherwise. The following words and phrases used in this chapter shall, unless the context clearly indicates otherwise, have the following meanings:

(1) "Bureau" means the Bureau of Restoration, Florida Department of Environmental Regulation.

(2) "Cleanup", "rehabilitation", or "remedial action" mean those actions taken to eliminate or minimize contamination caused by the discharge of petroleum products so as to clean ground water and surface waters to acceptable levels and minimize further migration of contaminants into uncontaminated areas. These terms include, but are not limited to, the assessment of the nature and extent of contamination, product recovery, removal or treatment of contaminated soil, recovery and treatment of contaminated water, and any monitoring reasonably required to assess the effectiveness of the action.

(3) "Contamination" or "Contaminated" means a discharge of petroleum products into surface waters, groundwaters or upon the land, in quantities which may result in a violation of Chapter 17-3, F.A.C., water quality standards.

(4) "Excess soil contamination" means all soils saturated with petroleum products and those soils that cause a total hydrocarbon reading of greater than 500 ppm on an organic vapor analysis instrument with a flame ionization detector in the survey mode upon sampling the headspace in a half-filled 16-ounce soil jar. The soil sample shall be brought to a temperature of 20°C with a water bath and sampled five minutes thereafter. Other analytical methods may be used subject to Bureau approval.

CODING: Words underlined are additions; words in ~~struck-through~~ type are deletions from existing law.

(5) "Free Product" means petroleum product in excess of 0.1 inches in thickness, measured at its thickest point, floating on the surface of surface water or groundwaters.

(6) "Groundwater" means water beneath the surface of the ground within a zone of saturation whether or not flowing through known or definite channels.

(7) "Product recovery" means the removal of free product.

(8) "Quality Assurance Project Plan" or "QAPP" means a quality assurance plan which applyies to all sampling and analysis and which is prepared in accordance with the requirements described in the document "DER Guidelines for Preparing Quality Assurance Plans, DER-QA-001-85."

(9) "Site" or "petroleum product contamination site" means any contiguous land, surface water, and groundwater areas upon or into which a discharge of petroleum products has occurred or is suspected to have occurred.

(10) "Surface waters" shall include, but not be limited to, rivers, lakes, streams, springs, impoundments and all other waters upon the surface of the earth, whether contained in bounds created naturally or artificially, or diffused. On site stormwater retention facilities with no discharge to other surface waters shall not be included in the definition of surface waters.

(11) "Waters" or "waters of the state" means those waters as defined in section 403.031, F.S.

Specific Authority: 376.303, 376.3071, 403.061, F.S.

Law Implemented: 376.3071, 403.021, 403.061, 403.062, F.S.

History: New _____.

CODING: Words underlined are additions; words in ~~struck-through~~ type are deletions from existing law.

KOOGLER & ASSOCIATES, *Environmental Services*
1213 NW 6th Street • Gainesville, Florida 32601 • 904/377-5822

KA 290-86-01

March 6, 1987

Mr. A. T. Sawicki
FDER, Central Florida District
3319 Maguire Blvd., Suite 232
Orlando, FL 32803

Subject: Marion County-AP
Mid-Florida Mining Company
Amendment to Permit AC42-113787 to allow the clay dryer to be used to decontaminate soil

Dear Tom:

Confirming our telephone conversation of March 4, 1987, I would like to request approval on behalf of the Mid-Florida Mining Company (Mid-Florida), to use the clay dryer permitted by air construction permit AC42-113787 and operated by Mid-Florida at their plant in Lowell, Florida, to decontaminate soils contaminated with hydrocarbon products. The dryer is presently permitted under a valid air permit and emissions from the dryer are controlled with a baghouse. The dryer is operating in full compliance with all permit conditions.

Mid-Florida would like approval to use the dryer to decontaminate soils that have been contaminated with hydrocarbon products. The contaminated soil will be fed to the dryer at a rate that will not exceed 40.8 tons per hour; the maximum input rate to the dryer allowed by permit AC42-113787. The soil fed to the dryer will have less than 5 ppm arsenic, less than 2 ppm cadmium, less than 10 ppm chromium, less than 100 ppm lead, and less than 4,000 ppm total halogens. The flashpoint of the contaminated soil will be greater than 100°F. The limits placed on the soil to be decontaminated are consistent with the specifications for "on-specification" used oil as defined in the Department memorandum dated January 5, 1987 related to used oil as a fuel.

It is my understanding that it is a working policy of the Central Air Permitting Section of the Bureau of Air Quality Management in Tallahassee to allow the use of properly permitted facilities (such as asphalt plants and material dryers) for decontaminating soils so long as the facility is equipped with a baghouse (or equivalent) and the contaminant levels in the soil do not exceed the contaminate levels established for "on-specification" used oil.

Mid-Florida would appreciate approval to use the subject clay dryer to decontaminate soil as quickly as possible as they have a potential client interested in evaluating the effectiveness of their facility. For your information, the Central Air Permitting Section (Mr. Bill Thomas) has granted approval to an asphalt plant in the Fort Myers area to decontaminate soil contaminated with hydrocarbon products. If you have any questions regarding the precedent set by the Department or the policy of the Department in these matters, I would suggest that you contact Bill Thomas with the Central Air Permitting Section.

If there is any additional information required on behalf of Mid-Florida Mining, please feel free to contact me.

Very truly yours,

KOOGLER & ASSOCIATES

John B. Koogler/app

John B. Koogler, Ph.D., P.E.

JBK:app

cc: Mr. Jim Kleekamp

STATE OF FLORIDA

DEPARTMENT OF ENVIRONMENTAL REGULATION

TWIN TOWERS OFFICE BUILDING
2600 BLAIR STONE ROAD
TALLAHASSEE, FLORIDA 32301-8241

BOB GRAHAM
GOVERNOR

VICTORIA J. TSCHINKEL
SECRETARY

MEMORANDUM

TO: Managers of Electric Utilities, Asphalt Plants, and Other Industrial Burners

FROM: Victoria J. Tschinkel

DATE: January 5, 1987

RE: Used Oil as a Fuel

On April 28, 1986, I issued a memorandum to inform you of recently promulgated federal rules on the burning of used oil. Because some recipients of that memorandum have voiced concerns about the Department's interpretation of certain provisions of the regulations, this memorandum supersedes all previous communication on the subject of used oil as a fuel.

On November 29, 1985, the U.S. EPA promulgated final RCRA regulations on the burning of used oil fuel. The Department has adopted these regulations by reference. The EPA regulations establish specifications for used oil fuel that may be burned in nonindustrial boilers.

Used Oil Specifications

Constituent/Property	Allowable Level
Arsenic	5 ppm maximum
Cadmium	2 ppm maximum
Chromium	10 ppm maximum
Lead	100 ppm maximum
Total Halogens	4,000 ppm maximum
Flash Point	100 degrees Fahrenheit minimum

Burning of off-specification used oil and hazardous waste fuels in non-industrial boilers is prohibited by the RCRA rules. The April 28 memorandum may have left some readers with the impression that industrial burners were also restricted by these rules to burning fuel that met specifications; however,

industrial boilers and furnaces may burn hazardous waste fuel and used oil fuel, regardless of whether the fuels meet specifications. It should be noted, however, that facilities that burn hazardous waste fuel and off-specification used oil fuel are still subject to administrative requirements such as notification, receipt of an identification number, compliance with the manifest or invoice systems, and, for hazardous waste fuels, compliance with hazardous waste storage standards for hazardous waste fuels.

No level for PCBs is included in the used oil specifications, since the use, including burning for energy recovery, of used oil containing any concentrations of PCBs is prohibited under current federal regulations. Some readers of the April 28 memorandum expressed concern about this statement, asserting that 40 CFR §761.1 makes federal PCB regulations applicable only to substances containing more than 50 ppm PCBs. I have conferred with EPA headquarters concerning the federal position on the issue of burning used oil contaminated with less than 50 ppm PCBs. It is EPA's position that the burning for energy recovery of used oils containing <u>any</u> concentration of PCBs was prohibited as of October 1, 1984. This conclusion is based on 40 CFR §761.20(a), which prohibits <u>use</u> of PCBs in any concentration unless it is specifically authorized under 40 CFR §761.30. Although EPA has authorized the processing and distribution in commerce of PCBs in concentrations of less than 50 PPM for purposes of <u>disposal</u>, 40 CFR §761.20(c)(4), that agency has taken the position that burning for energy recovery is "use" rather than "disposal" and is, therefore, prohibited. Note, however, that PCBs in concentrations of less than 50 ppm may be burned in a high efficiency boiler as an approved PCB disposal method pursuant to 40 CFR §761.60, provided that state air permitting requirements have also been satisfied.

Ms. Jane Kim of the Office of Toxic Substances at EPA headquarters (202/382-3991) has indicated to Department staff that EPA is considering amending federal PCB regulations to allow the burning for energy recovery of used oil containing less than 50 ppm PCBs. Until then, she suggests that companies wishing to burn these oils submit a request to EPA Region IV for authorization with respect to the federal rules. I suggest that interested parties direct any comments on the federal regulation or the anticipated amendment directly to EPA.*

* Since the state PCB rule, Rule 17-34, Florida Administrative Code, only regulates the storage for <u>disposal</u> of PCBs, the <u>use</u> of PCBs is not regulated by the Department. However, Department air rules 17-2, F.A.C., and the basic permitting requirement of Chapter 403 F.S. must be complied with.

Although the specification for total halogens (chemicals containing chlorine, bromine, iodine, or fluorine) is 4,000 ppm, used oil containing over 1,000 ppm will be presumed to have been mixed with a halogenated hazardous waste. In the April 28 memorandum, I stated that used oil fuels with more than 1,000 ppm total halogens should not be burned in boilers unless the marketer can show that the used oil does not contain any halogenated hazardous wastes. To clarify any confusion that this statement may have caused, I would like to make the following points:

1. As noted above, hazardous waste fuel and off-specification used oil fuel may be burned for energy recovery in industrial boilers. We did not intend to suggest that such use is prohibited by the RCRA rule.

2. Also, as previously noted, persons may rebut the presumption that used oil containing more than 1,000 ppm total halogens has been mixed with hazardous waste (for example, by showing that the used oil does not contain significant concentrations of halogenated hazardous constituents). The use of the word "any" may have caused some confusion in our cautionary statement; however, since the management and storage standards for used oil and hazardous waste fuels differ, the Department felt that a strong caution was in order.

Finally, I would like to clarify the discussion in my April 28, 1986, memorandum regarding air permitting considerations for the burning of used oil. In that memorandum I stated that the authorization to burn used oil requires that air construction permits be modified to insure that any changes to permit conditions will be federally enforceable. Upon reconsideration on this point, I am now revising the guidance in the previous memorandum as follows:

1. If your current air pollution operation permit, construction permit, or BACT determination does not specifically prohibit the burning of used oil, then you may responsibly burn "on-specification" used oil without any permit modification until the Department notifies you that your permit needs to be revised.

2. If your air permit or BACT determination specifically prohibits the burning of used oil, or if you are burning "off-specification" used oil, you will need to contact the appropriate Department district office within the next 90 days to discuss what type of authorization is needed.

In addition to the air permitting considerations, facilities that burn more than 10,000 gallons of used oil annually must register with the Department as use oil recyclers in accordance with Florida Administrative Code Rule 17-7, Part V, unless specifically exempted under the provisions of that rule.

By burning used oil in an approved manner, you will help Florida recycle a valuable resource, to cut down on its energy dependence, and to protect our fragile environment. You also will be saving money on your fuel bill. We will all benefit by efforts to properly recycle used oil through its use as a fuel.

If you have any questions or comments, please refer them to David Kelley at (904)488-0300 in the Bureau of Waste Management or Barry Andrews at (904)488-1344 in the Bureau of Air Quality Management.

VJT/ks

P 408 533 189

RECEIPT FOR CERTIFIED MAIL

NO INSURANCE COVERAGE PROVIDED—
NOT FOR INTERNATIONAL MAIL

(See Reverse)

Sent to Mr. James A. Slowinski	
Street and No.	
P.O., State and ZIP Code	
Postage	$
Certified Fee	
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt Showing to whom and Date Delivered	
Return Receipt Showing to whom, Date, and Address of Delivery	
TOTAL Postage and Fees	$
Postmark or Date 4/24/86	

PS Form 3800, Feb. 1982

PS Form 3811, July 1983

SENDER: Complete items 1, 2, 3 and 4.

Put your address in the "RETURN TO" space on the reverse side. Failure to do this will prevent this card from being returned to you. The return receipt fee will provide you the name of the person delivered to and the date of delivery. For additional fees the following services are available. Consult postmaster for fees and check box(es) for service(s) requested.

1. ☐ Show to whom, date and address of delivery.
2. ☐ Restricted Delivery.

3. Article Addressed to:
Mr. James A. Slowinski
Mid-Florida Mining Company
Post Office Box 68
Lowell, Florida 32663

4. Type of Service:
☐ Registered ☐ Insured
☒ Certified ☐ COD
☐ Express Mail

Article Number
P 408 533 189

Always obtain signature of addressee or agent and DATE DELIVERED.

5. Signature — Addressee
X

6. Signature — Agent
X

7. Date of Delivery

8. Addressee's Address *(ONLY if requested and fee paid)*

LOWELL APR 28 1986

DOMESTIC RETURN RECEIPT

STATE OF FLORIDA

DEPARTMENT OF ENVIRONMENTAL REGULATION

TWIN TOWERS OFFICE BUILDING
2600 BLAIR STONE ROAD
TALLAHASSEE, FLORIDA 32301-8241

BOB GRAHAM
GOVERNOR

VICTORIA J. TSCHINKEL
SECRETARY

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL REGULATION
NOTICE OF PERMIT

Mr. James A. Slowinski
Executive Vice President
Mid-Florida Mining Company
Post Office Box 68
Lowell, Florida 32663

Enclosed are Permit Numbers AC 42-113786 and AC 42-113787 to Mid-Florida Mining Company to construct a coal handling facility and to combust the coal in the clay dryer at the Mid-Florida Mining facility in Lowell, Marion County, Florida.

Any Party to these permits has the right to seek judicial review of the permits pursuant to Section 120.68, Florida Statutes, by the filing of a Notice of Appeal pursuant to Rule 9.110, Florida Rules of Appellate Procedure, with the clerk of the Department in the Office of General Counsel, 2600 Blair Stone Road, Tallahassee, Florida 32301; and by filing a copy of the Notice of Appeal accompanied by the applicable filing fees with the appropriate District Court of Appeal. The Notice of Appeal must be filed within 30 days from the date these permits are filed with the clerk of the Department.

Executed in Tallahassee, Florida.

STATE OF FLORIDA DEPARTMENT
OF ENVIRONMENTAL REGULATION

C. H. Fancy, P.E.
Deputy Chief
Bureau of Air Quality Management

Copies furnished to:

John B. Koogler, P.E.
Tom Sawicki

CERTIFICATE OF SERVICE

This is to certify that this NOTICE OF PERMIT and all copies were mailed before the close of business on April 24, 1986 to the listed persons.

FILING AND ACKNOWLEDGEMENT
FILED, on this date, pursuant to §120.52(9), Florida Statutes, with the designated Department Clerk, receipt of which is hereby acknowledged.

Patricia G. Adams 4/24/86
Clerk Date

Final Determination

Mid-Florida Mining Company
Marion County

Coal Handling, Dried Clay Storage Silo and Clay Dryer

Permit Numbers
AC 42-113786
AC 42-113787

Florida Department of Environmental Regulation
Bureau of Air Quality Management
Central Air Permitting

April 18, 1986

Final Determination

Mid-Florida Mining Company's applications for permits to construct a coal handling facility and combust the coal in their clay dryer at their facility in Lowell, Marion County, Florida have been reviewed by the Bureau of Air Quality Management. Public Notice of the department's Intent to Issue the permits was published in the Ocala Star-Banner of March 14, 1986.

Copies of the preliminary determination have been available for public inspection at the St. Johns River District office in Orlando and the Bureau of Air Quality Management office in Tallahassee.

Comments on the proposed permits were received on behalf of the applicant from J. B. Koogler, P.E.

Mr. Koogler requests that the expiration dates of the permits be changed from February 28, 1987 to February 28, 1988 due to a change in the scheduled installation of the coal handling system. The expiration dates have been changed in accordance with this request.

Mr. Koogler requests that specific condition 7 of the permit AC 42-113786 be changed to allow an opacity of ten percent from all coal handling drop points. Due to the size and location of the facility, specific condition 7 will be changed to allow visible emissions of ten percent opacity.

Mr. Koogler also requests that specific condition 8 of permit AC 42-113787 be changed to allow the maximum chlorine content of blended fuels to be 0.94 percent. The request was made because of the possible chlorine content of 0.8 percent in waste oils. Testing at the facility has demonstrated a 70 to 75 percent absorption rate of chlorine in the dryer system. Because a zero absorption was assumed in the original review, an upper limit of 0.94 percent chlorine in the fuel will not result in an increased emission of chlorine. Specific condition 8 will be changed to reflect this chlorine limit in the blended fuel.

The final action of the department will be to issue the permits to construct with the changes discussed above.

STATE OF FLORIDA

DEPARTMENT OF ENVIRONMENTAL REGULATION

TWIN TOWERS OFFICE BUILDING
2600 BLAIR STONE ROAD
TALLAHASSEE, FLORIDA 32301-8241

BOB GRAHAM
GOVERNOR

VICTORIA J. TSCHINKEL
SECRETARY

PERMITTEE:
Mid-Florida Mining Company
P. O. Box 68
Lowell, Florida 32663

Permit Number: AC 42-113786
Expiration Date: February 28, 1988
County: Marion
Latitude/Longitude: 29° 19' 52"N/ 82° 11' 28" W
Project: Coal Handling System

This permit is issued under the provisions of Chapter 403, Florida Statutes, and Florida Administrative Code Rule(s) 17-2 and 17-4. The above named permittee is hereby authorized to perform the work or operate the facility shown on the application and approved drawing(s), plans, and other documents attached hereto or on file with the department and made a part hereof and specifically described as follows:

For the construction of a coal railcar unloading system, a 250 ton capacity coal storage area, and a packaged coal grinder. The ground coal will be pneumatically conveyed to the existing clay dryer, where it will be combusted. The project will be located at the existing facility of Mid-Florida Mining Company, Lowell, Marion County, Florida.

Construction shall be in accordance with the attached permit application and additional information except as otherwise noted in the Specific Conditions.

Attachments:

1. Application to construct Air Pollution Sources, DER Form 17-1.122(16).

PERMITTEE:
Mid-Florida Mining Company

Permit Number: AC 42-113786
Expiration Date: February 28, 1988

GENERAL CONDITIONS:

1. The terms, conditions, requirements, limitations, and restrictions set forth herein are "Permit Conditions" and as such are binding upon the permittee and enforceable pursuant to the authority of Sections 403.161, 403.727, or 403.859 through 403.861, Florida Statutes. The permittee is hereby placed on notice that the department will review this permit periodically and may initiate enforcement action for any violation of the "Permit Conditions" by the permittee, its agents, employees, servants or representatives.

2. This permit is valid only for the specific processes and operations applied for and indicated in the approved drawings or exhibits. Any unauthorized deviation from the approved drawings, exhibits, specifications, or conditions of this permit may constitute grounds for revocation and enforcement action by the department.

3. As provided in Subsections 403.087(6) and 403.722(5), Florida Statutes, the issuance of this permit does not convey any vested rights or any exclusive privileges. Nor does it authorize any injury to public or private property or any invasion of personal rights, nor any infringement of federal, state or local laws or regulations. This permit does not constitute a waiver of or approval of any other department permit that may be required for other aspects of the total project which are not addressed in the permit.

4. This permit conveys no title to land or water, does not constitute state recognition or acknowledgement of title, and does not constitute authority for the use of submerged lands unless herein provided and the necessary title or leasehold interests have been obtained from the state. Only the Trustees of the Internal Improvement Trust Fund may express state opinion as to title.

5. This permit does not relieve the permittee from liability for harm or injury to human health or welfare, animal, plant or aquatic life or property and penalties therefore caused by the construction or operation of this permitted source, nor does it allow the permittee to cause pollution in contravention of Florida Statutes and department rules, unless specifically authorized by an order from the department.

GENERAL CONDITIONS:

6. The permittee shall at all times properly operate and maintain the facility and systems of treatment and control (and related appurtenances) that are installed or used by the permittee to achieve compliance with the conditions of this permit, as required by department rules. This provision includes the operation of backup or auxiliary facilities or similar systems when necessary to achieve compliance with the conditions of the permit and when required by department rules.

7. The permittee, by accepting this permit, specifically agrees to allow authorized department personnel, upon presentation of credentials or other documents as may be required by law, access to the premises, at reasonable times, where the permitted activity is located or conducted for the purpose of:

a. Having access to and copying any records that must be kept under the conditions of the permit;

b. Inspecting the facility, equipment, practices, or operations regulated or required under this permit; and

c. Sampling or monitoring any substances or parameters at any location reasonably necessary to assure compliance with this permit or department rules.

Reasonable time may depend on the nature of the concern being investigated.

8. If, for any reason, the permittee does not comply with or will be unable to comply with any condition or limitation specified in this permit, the permittee shall immediately notify and provide the department with the following information:

a. a description of and cause of non-compliance; and

b. the period of noncompliance, including exact dates and times; or, if not corrected, the anticipated time the noncompliance is expected to continue, and steps being taken to reduce, eliminate, and prevent recurrence of the noncompliance.

GENERAL CONDITIONS:

The permittee shall be responsible for any and all damages which may result and may be subject to enforcement action by the department for penalties or revocation of this permit.

9. In accepting this permit, the permittee understands and agrees that all records, notes, monitoring data and other information relating to the construction or operation of this permitted source, which are submitted to the department, may be used by the department as evidence in any enforcement case arising under the Florida Statutes or department rules, except where such use is proscribed by Sections 403.73 and 403.111, Florida Statutes.

10. The permittee agrees to comply with changes in department rules and Florida Statutes after a reasonable time for compliance, provided however, the permittee does not waive any other rights granted by Florida Statutes or department rules.

11. This permit is transferable only upon department approval in accordance with Florida Administrative Code Rules 17-4.12 and 17-30.30, as applicable. The permittee shall be liable for any non-compliance of the permitted activity until the transfer is approved by the department.

12. This permit is required to be kept at the work site of the permitted activity during the entire period of construction or operation.

13. This permit also constitutes:

( ) Determination of Best Available Control Technology (BACT)
( ) Determination of Prevention of Significant Deterioration (PSD).
( ) Compliance with New Source Performance Standards.

14. The permittee shall comply with the following monitoring and record keeping requirements:

a. Upon request, the permittee shall furnish all records and plans required under department rules. The retention period for all records will be extended automatically, unless otherwise stipulated by the department, during the course of any unresolved enforcement action.

GENERAL CONDITIONS:

b. The permittee shall retain at the facility or other location designated by this permit records of all monitoring information (including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation), copies of all reports required by this permit, and records of all data used to complete the application for this permit. The time period of retention shall be at least three years from the date of the sample, measurement, report or application unless otherwise specified by department rule.

c. Records of monitoring information shall include:

- the date, exact place, and time of sampling or measurements;
- the person responsible for performing the sampling or measurements;
- the date(s) analyses were performed;
- the person responsible for performing the analyses;
- the analytical techniques or methods used; and
- the results of such analyses.

15. When requested by the department, the permittee shall within a reasonable time furnish any information required by law which is needed to determine compliance with the permit. If the permittee becomes aware that relevant facts were not submitted or were incorrect in the permit application or in any report to the department, such facts or information shall be submitted or corrected promptly.

SPECIFIC CONDITIONS:

1. The total amount of coal handled shall not exceed 12,300 tons/year.

2. The coal storage area shall be constructed in accordance with the description presented in Attachment 1 of the permit application.

3. The transfer rate of ground coal to the clay dryer shall not exceed 2,800 pounds per hour.

PERMITTEE:
Mid-Florida Mining Company

Permit Number: AC 42-113786
Expiration Date: February 28, 1988

SPECIFIC CONDITIONS:

4. The feed system from the hopper to the coal grinder, the coal grinder, and the pneumatic conveying system shall be totally enclosed.

5. Water shall be sprayed on the coal storage pile, as needed, to minimize dust.

6. Total emissions of particulate matter from the coal handling system shall not exceed 0.18 lbs/hr of 0.07 tons/yr.

7. Compliance with the particulate matter limit will be demonstrated by DER Method 9 showing visible emissions not to exceed 10 percent opacity at all drop points.

8. Compliance test results will be submitted to DER's St. Johns River District Office-Air Programs within 45 days after completion of the tests.

9. Fifteen (15) day notification of compliance tests to DER's St. Johns River District Office-Air Programs is requried.

10. The construction shall reasonable conform to the plans and schedule submitted in the application. If the permittee is unable to complete construction on schedule, he must notify the Department in writing 60 days prior to the expiration of the construction permit and submit a new schedule and request for an extension of the construction permit. (Rule 17-2.09, Flordia Administrative Code)

11. To obtain a permit to operate, the permittee must demonstrate compliance with the conditions of the construction permit and submit a complete application for an operating permit, including the application fee, along with compliance test results and Certificate of Completion, to the Department's St. Johns River District office 90 days prior to the expiration date of the construction permit. The permittee may continue to operate in compliance with all terms of the construction permit until its expiration date. Operation beyond the construction permit expiration date requries a valid permit to operate. (Rule 17-4.22 and 17-4.23, Florida Administrative Code).

PERMITTEE:
Mid-Florida Mining Company

Permit Number: AC 42-113786
Expiration Date: February 28, 1988

SPECIFIC CONDITIONS:

12. If the construction permit expires prior to the permittee requesting an extension or obtaining a permit to operate, then all activities at the project must cease and the permittee must apply for a new permit to construct which can take up to 90 days to process a complete application. (Rule 17-4.10 Florida Administrative Code)

Issued this 18 day of April 1986.

STATE OF FLORIDA DEPARTMENT
OF ENVIRONMENTAL REGULATION

Victoria J. Tschinkel

VICTORIA J. TSCHINKEL, Secretary

____ pages attached.

STATE OF FLORIDA

DEPARTMENT OF ENVIRONMENTAL REGULATION

TWIN TOWERS OFFICE BUILDING
2600 BLAIR STONE ROAD
TALLAHASSEE, FLORIDA 32301-8241

BOB GRAHAM
GOVERNOR

VICTORIA J. TSCHINKEL
SECRETARY

PERMITTEE:
Mid-Florida Mining Company
P. O. Box 68
Lowell, Florida 32663

Permit Number: AC 42-113787
Expiration Date: February 28, 1988
County: Marion
Latitude/Longitude: 29° 19' 52"N/ 82° 11' 28" W
Project: Dried Clay Storage Silo and Clay Dryer

This permit is issued under the provisions of Chapter 403, Florida Statutes, and Florida Administrative Code Rule(s) 17-2 and 17-4. The above named permittee is hereby authorized to perform the work or operate the facility shown on the application and approved drawing(s), plans, and other documents attached hereto or on file with the department and made a part hereof and specifically described as follows:

Coal, with a maximum sulfur content of 1.25 percent, will be used to fire the existing clay dryer, in addition to number 5 fuel oil, waste oil, terpene derivatives, spent non-halogenated hydrocarbon solvents, or used kerosene. Emissions will be controlled by an existing baghouse collector servicing the clay rotary dryer kiln and the dried clay storage silo. The project is located at the existing facility of Mid-Florida Mining Company, Lowell, Marion County, Florida.

Construction shall be in accordance with the attached permit application and additional information except as otherwise noted in the Specific Conditions.

Attachments:

1. Application to construct Air Pollution Sources, DER Form 17-1.122(16).

PERMITTEE:
Mid-Florida Mining Company

Permit Number: AC 42-113787
Expiration Date: February 28, 1988

GENERAL CONDITIONS:

1. The terms, conditions, requirements, limitations, and restrictions set forth herein are "Permit Conditions" and as such are binding upon the permittee and enforceable pursuant to the authority of Sections 403.161, 403.727, or 403.859 through 403.861, Florida Statutes. The permittee is hereby placed on notice that the department will review this permit periodically and may initiate enforcement action for any violation of the "Permit Conditions" by the permittee, its agents, employees, servants or representatives.

2. This permit is valid only for the specific processes and operations applied for and indicated in the approved drawings or exhibits. Any unauthorized deviation from the approved drawings, exhibits, specifications, or conditions of this permit may constitute grounds for revocation and enforcement action by the department.

3. As provided in Subsections 403.087(6) and 403.722(5), Florida Statutes, the issuance of this permit does not convey any vested rights or any exclusive privileges. Nor does it authorize any injury to public or private property or any invasion of personal rights, nor any infringement of federal, state or local laws or regulations. This permit does not constitute a waiver of or approval of any other department permit that may be required for other aspects of the total project which are not addressed in the permit.

4. This permit conveys no title to land or water, does not constitute state recognition or acknowledgement of title, and does not constitute authority for the use of submerged lands unless herein provided and the necessary title or leasehold interests have been obtained from the state. Only the Trustees of the Internal Improvement Trust Fund may express state opinion as to title.

5. This permit does not relieve the permittee from liability for harm or injury to human health or welfare, animal, plant or aquatic life or property and penalties therefore caused by the construction or operation of this permitted source, nor does it allow the permittee to cause pollution in contravention of Florida Statutes and department rules, unless specifically authorized by an order from the department.

GENERAL CONDITIONS:

6. The permittee shall at all times properly operate and maintain the facility and systems of treatment and control (and related appurtenances) that are installed or used by the permittee to achieve compliance with the conditions of this permit, as required by department rules. This provision includes the operation of backup or auxiliary facilities or similar systems when necessary to achieve compliance with the conditions of the permit and when required by department rules.

7. The permittee, by accepting this permit, specifically agrees to allow authorized department personnel, upon presentation of credentials or other documents as may be required by law, access to the premises, at reasonable times, where the permitted activity is located or conducted for the purpose of:

a. Having access to and copying any records that must be kept under the conditions of the permit;

b. Inspecting the facility, equipment, practices, or operations regulated or required under this permit; and

c. Sampling or monitoring any substances or parameters at any location reasonably necessary to assure compliance with this permit or department rules.

Reasonable time may depend on the nature of the concern being investigated.

8. If, for any reason, the permittee does not comply with or will be unable to comply with any condition or limitation specified in this permit, the permittee shall immediately notify and provide the department with the following information:

a. a description of and cause of non-compliance; and

b. the period of noncompliance, including exact dates and times; or, if not corrected, the anticipated time the noncompliance is expected to continue, and steps being taken to reduce, eliminate, and prevent recurrence of the noncompliance.

GENERAL CONDITIONS:

The permittee shall be responsible for any and all damages which may result and may be subject to enforcement action by the department for penalties or revocation of this permit.

9. In accepting this permit, the permittee understands and agrees that all records, notes, monitoring data and other information relating to the construction or operation of this permitted source, which are submitted to the department, may be used by the department as evidence in any enforcement case arising under the Florida Statutes or department rules, except where such use is proscribed by Sections 403.73 and 403.111, Florida Statutes.

10. The permittee agrees to comply with changes in department rules and Florida Statutes after a reasonable time for compliance, provided however, the permittee does not waive any other rights granted by Florida Statutes or department rules.

11. This permit is transferable only upon department approval in accordance with Florida Administrative Code Rules 17-4.12 and 17-30.30, as applicable. The permittee shall be liable for any non-compliance of the permitted activity until the transfer is approved by the department.

12. This permit is required to be kept at the work site of the permitted activity during the entire period of construction or operation.

13. This permit also constitutes:

( ) Determination of Best Available Control Technology (BACT)
( ) Determination of Prevention of Significant Deterioration (PSD).
( ) Compliance with New Source Performance Standards.

14. The permittee shall comply with the following monitoring and record keeping requirements:

a. Upon request, the permittee shall furnish all records and plans required under department rules. The retention period for all records will be extended automatically, unless otherwise stipulated by the department, during the course of any unresolved enforcement action.

GENERAL CONDITIONS:

b. The permittee shall retain at the facility or other location designated by this permit records of all monitoring information (including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation), copies of all reports required by this permit, and records of all data used to complete the application for this permit. The time period of retention shall be at least three years from the date of the sample, measurement, report or application unless otherwise specified by department rule.

c. Records of monitoring information shall include:

- the date, exact place, and time of sampling or measurements;
- the person responsible for performing the sampling or measurements;
- the date(s) analyses were performed;
- the person responsible for performing the analyses;
- the analytical techniques or methods used; and
- the results of such analyses.

15. When requested by the department, the permittee shall within a reasonable time furnish any information required by law which is needed to determine compliance with the permit. If the permittee becomes aware that relevant facts were not submitted or were incorrect in the permit application or in any report to the department, such facts or information shall be submitted or corrected promptly.

SPECIFIC CONDITIONS:

1. The rotary dryer is limited to a maximum input rate of 40.8 tons/hr of clay.

2. Maximum input to the dried clay storage silo shall not exceed 7.5 tons/hr and maximum output shall not exceed 20 tons/hr.

3. The rotary dryer can be fired only with waste oil, #5 fuel oil, terpene derivative type fuels, non-halogenated spent hydrocarbon solvent mixtures (such as xylene, acetone, etc.), used kerosene, or coal.

PERMITTEE:
Mid-Florida Mining Company

Permit Number: AC 42-113787
Expiration Date: February 28, 1988

SPECIFIC CONDITIONS:

4. The maximum sulfur content of the coal shall not exceed 1.25 percent.

5. The maximum amount of lead content in the waste oil is limited to a maximum of 1% or 10,000 ppm. Yearly waste oil fuel analysis must be conducted on the actual waste oil used on the site. The analysis is due at the same time as the stack test.

6. Terpene derivation type fuels are to be mixed 50/50 with waste oil.

7. Used kerosene from the Miami Herald is contaminated with newspaper ink and the fuel shall be sampled for PCB concentrations. If the concentration of PCB is below the detectable limit, the fuel can be utilized in a mixture up to and including 100%.

8. Non-halogenated spent hydrocarbon solvents shall be a permitted fuel at a maximum volume mixture of 20% with waste oils. The upper limit of chlorinde content will be 1.5% by weight and when blended in a 20/80 mixture will have actual limit of 0.94% chloride to prevent corrosive action on the baghouse filter material. The following will have an upper limit of 2,000 ppm: chromium, lead, copper, tin, aluminum, nickel, antimony, manganese, barium, phosphorus, zinc, and molybdenum.

9. Statements made in the Engineer's September 16, 1983 letter to the department are relied upon and are made a part of the applications.

10. All solvent testing equipment must be calibrated at least once a year.

11. The baghouse shall be properly maintained to operate at approximately its rated efficiency.

12. The baghouse bags will be HAN1530SST composed of Dralon T homopolymer acrylic.

13. Emissions shall not exceed the following:

	Maximum lb/hr	Annual ton/yr
Particulate Matter	15.0	65.7
Sulfur Dioxide	52.5	230.6
Nitrogen Oxides	29.4	129.2
Carbon Monoxide	0.8	3.7

PERMITTEE:
Mid-Florida Mining Company

Permit Number: AC 42-113787
Expiration Date: February 28, 1988

SPECIFIC CONDITIONS:

14. Visible Emissions shall be less than 20% opacity as set forth in Rule 17-2.610(2), FAC.

15. Compliance with these limits shall be demonstrated in accordance with DER Methods 5, 6, 9 and EPA Method 7 and 10.

16. Compliance tests, in accordance with FAC Rule 17-2.700, shall be submitted to DER's St. Johns River District office within 45 days after completion of the tests.

17. Fifteen (15) days notification of the compliance tests to DER's St. Johns River District office is required.

18. The construction shall reasonably conform to the plans and schedule submitted in the application. If the permittee is unable to complete construction on schedule, he must notify the Department in writing 60 days prior to the expiration of the construction permit and submit a new schedule and request for an extension of the construction permit. (FAC Rule 17-4.09)

19. To obtain a permit to operate, the permittee must demonstrate compliance with the conditions of the construction permit and submit a complete application for an operating permit, including the application fee, along with test results and Certificate of Completion, to the Department's St. Johns River District office 90 days prior to the expiration date of the construction permit. The permittee may continue to operate in compliance with all terms of the construction permit until its expiration date. Operation beyond the construction permit expiration date requires a valid permit to operate. (FAC Rule 17-4.22 and 17-4.23)

20. If the construction permit expires prior to the permittee requesting an extension or obtaining a permit to operate, then all activities at the project must cease and the permittee must apply for a new permit to construct which can take up to 90 days to process a complete application. (FAC Rule 17-4.10)

Issued this 19 day of April, 1986

STATE OF FLORIDA DEPARTMENT OF ENVIRONMENTAL REGULATION

Victoria J. Tschinkel, Secretary

_____ pages attached.

State of Florida
DEPARTMENT OF ENVIRONMENTAL REGULATION

Interoffice Memorandum

FOR ROUTING TO OTHER THAN THE ADDRESSEE

To: _____ Loctn: _____
To: _____ Loctn: _____
To: _____ Loctn: _____
From: _____ Date: _____

DER

APR 21 1986

BAQM

TO: Victoria J. Tschinkel

FROM: Clair Fancy

DATE: April 18, 1986

SUBJ: Approval of Attached Air Construction Permits

Attached for your approval and signature are two Air Construction Permits to Mid-Florida Mining Company to construct a coal handling facility and to combust the coal in the clay dryer at their existing facility in Lowell, Marion County, Florida.

Day 90, after which the permits would be issued by default, is April 21, 1986.

The Bureau recommends your approval and signature.

CF/pa

Attachment

RECEIVED
APR 18 1986
Office of the Secretary

SHOLTES & KOOGLER, ENVIRONMENTAL CONSULTANTS
1213 N.W. 6th Street Gainesville, Florida 32601 (904) 377-5822

SKEC 290-85-02

March 20, 1986

Mr. Ed Svec
Florida Department of
Environmental Regulation
Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, Florida 32301

Subject: Mid-Florida Mining Company
Marion County, Florida
Permit Nos. AC42-113786 and AC42-113787

Dear Ed:

As we discussed during our brief meeting on March 18, 1986, I would appreciate it if the expiration dates of the two subject Air Pollution Source Construction Permits could be modified from February 28, 1987 to February 28, 1988. The reason for this requested modification is the recent drop in oil prices and the impact of this drop on the schedule that Mid-Florida Mining Company has for installing the coal grinder.

Mid-Florida Mining anticipates that the coal grinder and the use of coal as a fuel in the clay dryer addressed in the two subject Construction Permits, will be implemented. Because of the current low oil prices, however, Mid-Florida Mining feels that it would be impractical to utilize coal as a fuel at the present time. Hence, Mid-Florida Mining is requesting the additional time on the Construction Permits to allow further evaluation of coal fuel alternatives.

If there are any questions regarding this request, please do not hesitate to contact me.

Very truly yours,

SHOLTES & KOOGLER,
ENVIRONMENTAL CONSULTANTS

John B. Koogler, Ph.D., P.E.

DER
MAR 21 1986
BAQM

JBK:ssc

cc: Mr. James B. Kleekamp

PM
3-19-86
Lowell, FL

CM- P-275-990-665

MID-FLORIDA MINING COMPANY
BOX 68, LOWELL, FLORIDA 32663 AC 904 732-7227

March 19, 1986

CERTIFIED MAIL
RETURN RECEIPT

Dept. of Environmental Regulation
Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, Florida 32301-8241

Attention: C. H. Fancy, P.E.

Dear Mr. Fancy:

Per your letter dated February 25, 1986 regarding our construction permit for a coal-handling system, please find enclosed "Proof of Publication".

We trust this meets the publication obligations outlined in your letter.

Very truly yours,

MID-FLORIDA MINING COMPANY

James B. Kleekamp

James B. Kleekamp
Manager, Energy Division

JBK/sp
Enclosure

cc: J. B. Koogler, P.E.

DER
MAR 20 1986
BAQM

PROOF OF PUBLICATION

THE OCALA STAR-BANNER

Published—Daily

OCALA, MARION COUNTY, FLORIDA

STATE OF FLORIDA,
COUNTY OF MARION.

Before me the undersigned authority personally appeared Harry Griffiths, who on oath says that he is Classified Manager of the Ocala Star-Banner, a daily newspaper published at Ocala, in Marion County, Florida; that the attached copy of advertisement, being a notice in the matter of #1603 - State of Florida Department of Environmental Regulation Notice Of Intent

_____ in the _____ Court,

was published in said newspaper in the issues of March 14, 1986

Affiant further says that the said THE OCALA STAR-BANNER is a daily newspaper published at Ocala, in said Marion County, Florida, and that the said newspaper has heretofore been continuously published in said Marion County, Florida, daily, and has been entered as second class mail matter at the post office in Ocala, in said Marion County, Florida, for a period of one year next preceding the first publication of the attached copy of advertisement; and affiant further says that he has neither paid nor promised any person, firm or cooperation any discount, rebate, commission or refund for the purpose of securing this advertisement for publication in the said newspaper.

Harry Griffiths

Sworn to and subscribed before me this 19th day of March, A.D., 19 86.

Barbara L. Gowie

(Seal) NOTARY PUBLIC, STATE OF FLORIDA AT LARGE, Notary Public
MY COMMISSION EXPIRES AUGUST 4, 1989.

BARBARA L. GOWIE NOTARY PUBLIC STATE OF FLORIDA

State of Florida
Department of
Environmental Regulation
Notice of Intent

The Department gives notice of its intent to issue permits Mid-Florida Mining Company to construct a coal handling system and to modify a clay dryer storage silo at the applicant's existing facility in Lowell, Marion County, Florida. A determination of best available control technology was not required.

Persons whose substantial interests are affected by the Department's proposed permitting decision may petition for an administrative determination (hearing) in accordance with Section 120.57, Florida Statutes. The petition must conform to the requirements of Chapters 17-103 and 28-5, Florida Administrative Code, and must be filed (received) in the Department's Office of General Counsel, 2600 Blair Stone Road, Tallahassee, Florida 32301, within fourteen (14) days of publication of this notice. Failure to file a petition within the fourteen (14) days constitutes a waiver of any right such person has to an administrative determination (hearing) pursuant to Section 120.57, Florida Statutes.

If a petition is filed, the administrative hearing process is designed to formulate agency action. Accordingly, the Department's final action may be different from the proposed agency action. Therefore, persons who may not wish to file a petition may wish to intervene in the proceeding. A petition for intervention must be filed pursuant to Rule 28-5.207, Florida Administrative Code at least five (5) days before the final hearing and be filed with the hearing officer if one has been assigned at the Division of Administrative Hearings, Department of Administration, 2009 Apalachee Parkway, Tallahassee, Florida 32301. If no hearing officer has been assigned the petition is to be filed with the Department's Office of General Counsel, 2600 Blair Stone Road, Tallahassee, Florida 32301. Failure to petition to intervene within the allowed time frame constitutes a waiver of any right such person has to request a hearing under Section 120.57, Florida Statutes.

The application is available for public inspection during normal business hours, 8:00 a.m. to 5:00 p.m., Monday through Friday, except legal holidays, at: Dept. of Environmental Regulation, Bureau of Air Quality Management, 2600 Blair Stone Road, Tallahassee, Florida 32301, Dept. of Environmental Regulation, St. Johns River District, 3319 Maguire Blvd., Suite 232, Orlando, Florida 32803.

Any person may send written comments on the proposed action to Mr. Bill Thomas at the department's Tallahassee address. All comments mailed within 30 days of the publication of this notice will be considered in the department's final determination.

No. 1603 March 14, 1986.

PM
3-14-86
Gainesville, FL

SHOLTES & KOOGLER, ENVIRONMENTAL CONSULTANTS
1213 N.W. 6th Street Gainesville, Florida 32601 (904) 377-5822

DER
MAR 17 1986
BAQM

SKEC 290-85-02

March 14, 1986

Mr. C.H. Fancy, Deputy Chief
Bureau of Air Quality Management
Florida Department of Environental Regulation
2600 Blair Stone Road
Tallahassee, Florida 32301-8241

Subject: Mid-Florida Mining Company
Permit No. AC42-113786 - Coal Handling System
Permit No. AC42-113787 - Clay Dryer and Clay Storage Silo

Dear Mr. Fancy:

Under cover letter dated February 25, 1986, the Department transmitted the Technical Evaluation and Preliminary Determination and proposed construction permits (referenced above) for a coal handling system and related modifications to an existing clay dryer to the Mid-Florida Mining Company. By this letter, I am requesting modifications to one proposed Specific Condition in each of the two proposed Construction Permits and am offering clarification on an issue raised by Mr. Ed Svec of your staff during a recent telephone conversation.

Specific Condition No. 7 of proposed permit AC42-113786 for the coal handling system limits the opacity of particulate matter emissions from all coal handling drop points to five percent opacity. From an engineering standpoint, a visible emission limit of five percent opacity (no visible emissions) appears overly stringent considering the size of the coal handling facility and the location of the facility. The proposed facility will handle no more than 1.4 tons of coal per hour or 12,300 tons of coal per year. Furthermore, the facility is located in a particulate matter attainment area and there is no evidence that the total suspended particulate matter air quality standard in the vicinity of the Mid-Florida Mining plant is threatened.

In view of these facts, it is requested that the opacity of emissions at all coal handling drop points be revised from five percent to ten percent with compliance being demonstrated by DER Method 9. The proposed wording for Specific Condition No. 7 would be:

> Compliance with the particulate matter limit will be demonstrated by DER Method 9 showing visible emissions not to exceed ten percent opacity at all drop points.

The modification requested to proposed permit AC42-113787 for the clay dryer is to Specific Condition No. 8. This condition, as written, limits the content of the non-halogenated spent hydrocarbon solvents fired to the kiln to 1.5 percent by weight and further requires these spent solvents be blended with waste oil before they are fired to the kiln. The blending ratio specified in Specific Condition No. 8 is 20 percent or less spent solvents and 80 percent or more waste oil. Specific Condition No. 8 also limits the chloride content of the blended fuel to a maximum of 0.3 percent chloride to "prevent corrosion action on the baghouse filter material".

As pointed out in Attachment 1 to the application for proposed permit AC42-113787, the 0.3 percent chloride limit in the blended fuel can be achieved only if there are no chlorides present in the waste oil (assuming a 1.5 percent chloride content in the waste solvents). Mid-Florida Mining requested in Attachment 1 to the application for proposed permit AC42-113787 that the chloride limit in the blended fuel be increased to 0.94 percent in anticipation of up to 0.8 percent chloride in the waste oil. In the referenced Attachment 1, Mid-Florida Mining further demonstrated that with a measured 70 to 75 percent chloride absorption rate in the dryer system, the chloride emission rate resulting from a 0.94 percent chloride content in the blended fuel would be no greater than the emission rate resulting from fuels with a 0.3 percent chloride limit assuming no chloride absorption (the assumption made when the 0.3 percent limit was originally imposed). Mid-Florida Mining further points out (in referenced Attachment 1) that plant operations over the past several years demonstrated that "corrosive action" in the baghouse is not a problem because the temperature maintained in the baghouse is above the dew point of the stack gases.

It is requested that the information presented in Attachment 1 of the application for proposed permit AC42-113787 again be reviewed and the maximum chloride limit of the blended spent solvent/waste oil fuel be increased from 0.3 percent chloride to 0.94 percent chloride.

The matter upon which clarification is offered was raised by Mr. Ed Svec of your staff during a recent telephone conversation and relates to the potential for lead emissions from the clay dryer during the combustion of waste oil with a maximum permitted lead content of one percent. If the worst case condition is assumed; that is, the clay dryer is fired with waste oil containing one percent lead for 8,760 hours per year, the uncontrolled lead emission rate would be 20.3 pounds per hour and 88.8 tons per year. (This is based on a fuel firing rate of 272 gallons per hour, a fuel density of 7.45 pounds per gallon and a lead content of one percent by weight.) Information presented in Attachment 1 to the application for proposed permit AC42-113787 states that a 99.9 percent control efficiency can be expected for lead based upon measurements made on the clay dryer by an EPA contractor. Applying this control efficiency, the controlled lead emissions from the clay dryer, while operating under "worst case" conditions, will be 0.09 tons per year. This emission rate is well below the five ton per year limit that would cause the clay dryer to be classified as a major emitting facility for lead. Even at a control efficiency of 95 percent (an efficiency 50 times less effective than the demonstrated lead control efficiency) the lead emissions from the dryer will be 4.4 tons per year; still less than the five ton per year limit. Based on this information, there appears to be no reason for modifying Specific Condition No. 5 of proposed permit AC42-113787 to further limit lead emissions.

If there are any questions regarding the information presented herein or the modification requested herein, please do not hesitate to contact me.

Very truly yours,

SHOLTES & KOOGLER,
ENVIRONMENTAL CONSULTANTS

John B. Koogler, Ph.D., P.E.

JBK:pdt

cc: Mr. Ed Svec
Mr. Jim Kleekamp

P 408 533 220

RECEIPT FOR CERTIFIED MAIL

NO INSURANCE COVERAGE PROVIDED—
NOT FOR INTERNATIONAL MAIL

(See Reverse)

Sent to Mr. James A. Slowinski	
Street and No.	
P.O., State and ZIP Code	
Postage	$
Certified Fee	
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt Showing to whom and Date Delivered	
Return Receipt Showing to whom, Date, and Address of Delivery	
TOTAL Postage and Fees	$
Postmark or Date 2/25/86	

PS Form 3800, Feb. 1982

State requirement
12,300 tpy coal

Say: calculations based
on 11,000 TPY coal

PS Form 3811, July 1983

● **SENDER: Complete items 1, 2, 3 and 4.**

Put your address in the "RETURN TO" space on the reverse side. Failure to do this will prevent this card from being returned to you. The return receipt fee will provide you the name of the person delivered to and the date of delivery. For additional fees the following services are available. Consult postmaster for fees and check box(es) for service(s) requested.

1. ☐ Show to whom, date and address of delivery.
2. ☐ Restricted Delivery.

3. Article Addressed to:
Mr. James A. Slowinski
Mid-Florida Mining Company
Post Office Box 68
Lowell, Florida 32663

4. Type of Service:
☐ Registered ☐ Insured
☒ Certified ☐ COD
☐ Express Mail

Article Number
P 408 533 220

Always obtain signature of addressee or agent and DATE DELIVERED.

5. Signature – Addressee
X

6. Signature – Agent
X

7. Date of Delivery

8. Addressee's Address *(ONLY if requested and fee paid)*

DOMESTIC RETURN RECEIPT

STATE OF FLORIDA

DEPARTMENT OF ENVIRONMENTAL REGULATION

TWIN TOWERS OFFICE BUILDING
2600 BLAIR STONE ROAD
TALLAHASSEE, FLORIDA 32301-8241

BOB GRAHAM
GOVERNOR

VICTORIA J. TSCHINKEL
SECRETARY

February 25, 1986

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

Mr. James A. Slowinski
Executive Vice President
Mid-Florida Mining Company
P. O. Box 68
Lowell, Florida 32663

Dear Mr. Slowinski:

Attached is one copy of the Technical Evaluation and Preliminary Determination, and proposed permits to construct a coal handling system at your facility in Lowell, Marion County, Florida.

Before final action can be taken on your draft permit, you are required by Florida Administrative Code Rule 17-103.150 to publish the attached Notice of Proposed Agency Action in the legal advertising section of a newspaper of general circulation in Marion County no later than fourteen days after receipt of this letter. The department must be provided with proof of publication within seven days of the date the notice is published. Failure to publish the notice may be grounds for denial of the permits.

Please submit, in writing, any comments which you wish to have considered concerning the department's proposed action to Mr. Bill Thomas of the Bureau of Air Quality Management.

Sincerely,

For C. H. Fancy, P.E.
Deputy Chief
Bureau of Air Quality
Management

CHF/ks

attachments

cc: John B. Koogler, P.E.
Tom Sawicki

BEFORE THE STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL REGULATION

In the Matter of an
Application for Permit by:

Mid-Florida Mining Company
Post Office Box 68
Lowell, Florida 32663

DER File No. AC 42-113786
DER File No. AC 42-113787

INTENT TO ISSUE

The Department of Environmental Regulation hereby gives notice of its intent to issue a permit (copy attached) for the proposed project as detailed in the application specified above. The Division is issuing this Intent to Issue for the reasons stated in the attached Technical Evaluation and Preliminary Determination.

The applicant, Mid-Florida Mining Company, applied on December 16, 1986, to the Department of Environmental Regulation for a permit to construct a coal handling system and modify a clay dryer storage silo at the applicant's existing facility in Lowell, Marion County, Florida.

The Department has permitting jurisdiction under Chapter 403, Florida Statutes, and Florida Administrative Code Rules 17-2 and 17-4. The project is not exempt from permitting procedures. The Department has determined that air construction permits are required for the proposed work.

Pursuant to Section 403.815, F.S. and DER Rule 17-103.150, FAC, you (the applicant) are required to publish at your own expense the enclosed Notice of Proposed Agency Action on permit application. The notice must be published one time only in a section of a major local newspaper of general circulation in the county in which the project is located and within thirty (30) days from receipt of this intent. Proof of publication must be provided to the Department within seven days of publication of the notice. Failure to publish the notice and provide proof of publication within the allotted time may result in the denial of the permit.

The Department will issue the permits with the attached conditions unless petition for an administrative proceeding (hearing) is filed pursuant to the provisions of Section 120.57, F.S.. A person whose substantial interests are affected by the Department's proposed permitting decision may petition for an administrative proceeding (hearing) in accordance with Section 120.57, Florida Statutes. Petitions must comply with the requirement of Florida Administrative Code Rules 17-103.155 and 28-5.201 (copies enclosed) and be filed with (received by) the Office of General Counsel of the Department at 2600 Blair Stone Road, Tallahassee, Florida 32301-8241. Petitions filed by the permit applicant must be filed within fourteen (14) days of receipt of this intent. Petitions filed by other persons must be filed within fourteen (14) days of publication of the public notice or within fourteen (14) day of receipt of this intent, whichever first occurs. Failure to file a petition within this time period shall constitute a waiver of any right such person may have to request an administrative determination (hearing) under Section 120.57, Florida Statutes, concerning the subject permit application. Petitions which are not filed in accordance with the above provisions will be dismissed.

Executed in Tallahassee, Florida.

STATE OF FLORIDA DEPARTMENT
OF ENVIRONMENTAL REGULATION

for C. H. Fancy, Deputy Chief
Bureau of Air Quality
Management

Copies furnished to:

James A. Slowinski
John B. Koogler, P.E.
Tom Sawicki

CERTIFICATE OF SERVICE

The undersigned duly designated deputy clerk hereby certifies that this NOTICE OF INTENT TO ISSUE and all copies were mailed before the close of business on February 25, 1986.

Clerk Stamp

FILING AND ACKNOWLEDGEMENT
FILED, on this date, pursuant to §120.52(9), Florida Statutes, with the designated Department Clerk, receipt of which is hereby acknowledged.

Patricia G. Adams 2/25/86

Clerk Date

State of Florida
Department of Environmental Regulation
Notice of Intent

The Department gives notice of its intent to issue permits Mid-Florida Mining Company to construct a coal handling system and to modify a clay dryer storage silo at the applicant's existing facility in Lowell, Marion County, Florida. A determination of best available control technology was not required.

Persons whose substantial interests are affected by the Department's proposed permitting decision may petition for an administrative determination (hearing) in accordance with Section 120.57, Florida Statutes. The petition must conform to the requirements of Chapters 17-103 and 28-5, Florida Administrative Code, and must be filed (received) in the Department's Office of General Counsel, 2600 Blair Stone Road, Tallahassee, Florida 32301, within fourteen (14) days of publication of this notice. Failure to file a petition within the fourteen (14) days constitutes a waiver of any right such person has to an administrative determination (hearing) pursuant to Section 120.57, Florida Statutes.

If a petition is filed, the administrative hearing process is designed to formulate agency action. Accordingly, the Department's final action may be different from the proposed agency action. Therefore, persons who may not wish to file a petition may wish to intervene in the proceeding. A petition for intervention must be filed pursuant to Rule 28-5.207, Florida Administrative Code, at least five (5) days before the final hearing and be filed with the hearing officer if one has been assigned at the Division of Administrative Hearings, Department of Administration, 2009 Apalachee Parkway, Tallahassee, Florida 32301. If no hearing officer has been assigned, the petition is to be filed with the Department's Office of General Counsel, 2600 Blair Stone Road, Tallahassee, Florida 32301. Failure to petition to intervene within the allowed time frame constitutes a waiver of any right such person has to request a hearing under Section 120.57, Florida Statutes.

The application is available for public inspection during normal business hours, 8:00 a.m. to 5:00 p.m., Monday through Friday, except legal holidays, at:

Dept. of Environmental Regulation
Bureau of Air Quality Management
2600 Blair Stone Road
Tallahassee, Florida 32301

Dept. of Environmental Regulation
St. Johns River District
3319 Maguire Blvd., Suite 232
Orlando, Florida 32803

Any person may send written comments on the proposed action to Mr. Bill Thomas at the department's Tallahassee address. All comments mailed within 30 days of the publication of this notice will be considered in the department's final determination.

RULES OF THE ADMINISTRATIVE COMMISSION
MODEL RULES OF PROCEDURE
CHAPTER 28-5
DECISIONS DETERMINING SUBSTANTIAL INTERESTS

28-5.15 Requests for Formal and Informal Proceedings

(1) Requests for proceedings shall be made by petition to the agency involved. Each petition shall be printed typewritten or otherwise duplicated in legible form on white paper of standard legal size. Unless printed, the impression shall be on one side of the paper only and lines shall be double spaced and indented.

(2) All petitions filed under these rules should contain:

(a) The name and address of each agency affected and each agency's file or identification number, if known;

(b) The name and address of the petitioner or petitioners;

(c) All disputed issues of material fact. If there are none, the petition must so indicate;

(d) A concise statement of the ultimate facts alleged, and the rules, regulations and constitutional provisions which entitle the petitioner to relief;

(e) A statement summarizing any informal action taken to resolve the issues, and the results of that action;

(f) A demand for the relief to which the petitioner deems himself entitled; and

(g) Such other information which the petitioner contends is material.

Preliminary Determination
and
Technical Review

Mid-Florida Mining Company
Marion County

Coal Handling, Dried Clay Storage Silo and Clay Dryer

Permit Numbers
AC 42-113786
AC 42-113787

Florida Department of Environmental Regulation
Bureau of Air Quality Management
Central Air Permitting

February 24, 1986

I. Project Description

A. Applicant

Mid-Florida Mining Company
Post Office Box 68
Lowell, Florida 32663

B. Project Location

The proposed project consists of the construction of a coal handling system at the applicant's existing facility. The applicant proposes to burn the coal in an existing clay dryer. This will require a modification to the construction permit for the existing clay dryer. Mid-Florida Mining Company is located on State Road 329 at the Seaboard Coast Line Railroad, Marion County, Lowell, Florida. The universal transverse mercator (UTM) coordinates of the source are Zone 17, 304.50 km East and 3245.3 km North.

C. Process and Controls

The applicant estimates that 12,300 tons of coal will be required each year. Approximately four railcars would have to be unloaded each week to supply this demand. The coal would be bottom dumped from the railcar into an under-track receiving hopper at a rate of 25 tons per hour. A short drag chain conveyor will transfer the coal onto an inclined belt conveyor which goes to a storage pile.

The storage pile will have a capacity of 250 tons. The storage facility will be a covered concrete pad. A four foot high wall will surround the pad on three sides to contain the coal. The fourth side of the pad will be open to allow a front-end loader to reclaim the coal. A sump will be placed in the coal storage pad to collect any water which will be sprayed back on the coal pile for dust control.

The coal will be reclaimed from the storage area with a front-end loader. The front-end loader will deliver the coal to the hopper of the coal grinding system. The coal grinder is a packaged unit and the feed system from the hopper to the grinder, the grinder, and pneumatic conveying system for transporting the ground coal to the existing clay dryer are all totally enclosed.

The existing clay dryer is currently permitted to be fired with No. 5 fuel oil, waste oil, terpene derivatives, spent non-halogenated hydrocarbon solvents, or used kerosene. Air pollutant emissions from the dryer and associated dry clay storage silo are controlled with a baghouse filter. The proposed modification to the dryer/storage silo permit will allow coal to

be fired in the clay dryer, in addition to the other permitted fuels.

D. Sources Reviewed

Applications have been submitted for:

Source	Permit Numbers
Coal Handling System	AC 42-113786
Clay Dryer/Storage Silo	AC 42-113787

E. Standard Industrial Classification Code (SIC)

The facility is classified as:

Major Group No. 145; Clay Ceramic and Refractory Minerals
Industry No. 1454; Fuller's Earth

F. Facility Category

Mid-Florida Mining Company is classified as a major emitting facility for the pollutants sulfur dioxide and nitrogen oxides.

G. Application Completeness Date

(i) Applications received: December 16, 1985
(ii) Applications deemed complete: December 16, 1985

II. Rule Applicability

Mid-Florida Mining Company is a major facility for sulfur dioxide and nitrogen oxides emissions as defined in FAC Rule 17-2.100(110).

The proposed project is located in an area classified as attainment for all criteria pollutants, FAC Rule 17-2.420.

The proposed project is exempt from the requirements of FAC Rule 17-2.500, Prevention of Significant Deterioration, FAC Rule 17-2.500(2)(d)4.a.(ii), because it is not located within 10 km of any Class I area and the emissions of any pollutant are less than 250 tons per year.

III. Summary of Emissions and Air Quality Analysis

Emissions from the drying and handling of clay and the combustion of fuels are as follows:

	Maximum lbs/hr	Annual tons/yr
Particulate Matter	15.0	65.7
Sulfur Dioxide	52.5	230.6
Nitrogen Oxides	29.4	129.2
Carbon Monoxide	0.8	3.7
Volatile Organic Compounds	0.2	0.9

The emission of particulate matter from the coal handling system is a maximum of 0.18 pounds per hour and a total of 0.07 tons per year.

D. Air Quality Analysis

Since the increase of emissions is exempted from the requirements of Florida Administrative Code Rule 17-2.500, Prevention of Significant Deterioration, an ambient air quality analysis is not required.

IV. Conclusion

The emission limits that will be imposed have been determined to be in compliance with all applicable requirements of Florida Administrative Code 17-2. The permitted maximum allowable emission limits should not cause any violation of Florida's ambient air quality standards.

The General and Specific Conditions listed in the proposed construction permits (attached) will assure compliance with all applicable requirements of Florida Administrative Code Rule 17-2.

STATE OF FLORIDA

DEPARTMENT OF ENVIRONMENTAL REGULATION

TWIN TOWERS OFFICE BUILDING
2600 BLAIR STONE ROAD
TALLAHASSEE, FLORIDA 32301-8241

BOB GRAHAM
GOVERNOR

VICTORIA J. TSCHINKEL
SECRETARY

PERMITTEE:
Mid-Florida Mining Company
P. O. Box 68
Lowell, Florida 32663

Permit Number: AC 42-113786
Expiration Date: February 28, 1987
County: Marion
Latitude/Longitude: 29° 19' 52"N/
82° 11' 28"W
Project: Coal Handling System

This permit is issued under the provisions of Chapter 403, Florida Statutes, and Florida Administrative Code Rule(s) 17-2 and 17-4. The above named permittee is hereby authorized to perform the work or operate the facility shown on the application and approved drawings, plans, and other documents attached hereto or on file with the department and made a part hereof and specifically described as follows:

For the construction of a coal railcar unloading system, a 250 ton capacity coal storage area, and a packaged coal grinder. The ground coal will be pneumatically conveyed to the existing clay dryer, where it will be combusted. The project will be located at the existing facility of Mid-Florida Mining Company, Marion County, Lowell, Florida.

Construction shall be in accordance with the attached permit application and additional information except as otherwise noted in the Specific Conditions.

Attachments are as follows:

1. Application to Construct an Air Pollution Source, DER Form 17-1.202(1).

PERMITTEE:
Mid-Florida Mining Company

Permit Number: AC 42-113786
Expiration Date: February 28, 1987

GENERAL CONDITIONS:

1. The terms, conditions, requirements, limitations, and restrictions set forth herein are "Permit Conditions" and as such are binding upon the permittee and enforceable pursuant to the authority of Sections 403.161, 403.727, or 403.859 through 403.861, Florida Statutes. The permittee is hereby placed on notice that the department will review this permit periodically and may initiate enforcement action for any violation of the "Permit Conditions" by the permittee, its agents, employees, servants or representatives.

2. This permit is valid only for the specific processes and operations applied for and indicated in the approved drawings or exhibits. Any unauthorized deviation from the approved drawings, exhibits, specifications, or conditions of this permit may constitute grounds for revocation and enforcement action by the department.

3. As provided in Subsections 403.087(6) and 403.722(5), Florida Statutes, the issuance of this permit does not convey any vested rights or any exclusive privileges. Nor does it authorize any injury to public or private property or any invasion of personal rights, nor any infringement of federal, state or local laws or regulations. This permit does not constitute a waiver of or approval of any other department permit that may be required for other aspects of the total project which are not addressed in the permit.

4. This permit conveys no title to land or water, does not constitute state recognition or acknowledgement of title, and does not constitute authority for the use of submerged lands unless herein provided and the necessary title or leasehold interests have been obtained from the state. Only the Trustees of the Internal Improvement Trust Fund may express state opinion as to title.

5. This permit does not relieve the permittee from liability for harm or injury to human health or welfare, animal, plant or aquatic life or property and penalties therefore caused by the construction or operation of this permitted source, nor does it allow the permittee to cause pollution in contravention of Florida Statutes and department rules, unless specifically authorized by an order from the department.

GENERAL CONDITIONS:

6. The permittee shall at all times properly operate and maintain the facility and systems of treatment and control (and related appurtenances) that are installed or used by the permittee to achieve compliance with the conditions of this permit, as required by department rules. This provision includes the operation of backup or auxiliary facilities or similar systems when necessary to achieve compliance with the conditions of the permit and when required by department rules.

7. The permittee, by accepting this permit, specifically agrees to allow authorized department personnel, upon presentation of credentials or other documents as may be required by law, access to the premises, at reasonable times, where the permitted activity is located or conducted for the purpose of:

a. Having access to and copying any records that must be kept under the conditions of the permit;

b. Inspecting the facility, equipment, practices, or operations regulated or required under this permit; and

c. Sampling or monitoring any substances or parameters at any location reasonably necessary to assure compliance with this permit or department rules.

Reasonable time may depend on the nature of the concern being investigated.

8. If, for any reason, the permittee does not comply with or will be unable to comply with any condition or limitation specified in this permit, the permittee shall immediately notify and provide the department with the following information:

a. a description of and cause of non-compliance; and

b. the period of noncompliance, including exact dates and times; or, if not corrected, the anticipated time the noncompliance is expected to continue, and steps being taken to reduce, eliminate, and prevent recurrence of the noncompliance.

GENERAL CONDITIONS:

The permittee shall be responsible for any and all damages which may result and may be subject to enforcement action by the department for penalties or revocation of this permit.

9. In accepting this permit, the permittee understands and agrees that all records, notes, monitoring data and other information relating to the construction or operation of this permitted source, which are submitted to the department, may be used by the department as evidence in any enforcement case arising under the Florida Statutes or department rules, except where such use is proscribed by Sections 403.73 and 403.111, Florida Statutes.

10. The permittee agrees to comply with changes in department rules and Florida Statutes after a reasonable time for compliance, provided however, the permittee does not waive any other rights granted by Florida Statutes or department rules.

11. This permit is transferable only upon department approval in accordance with Florida Administrative Code Rules 17-4.12 and 17-30.30, as applicable. The permittee shall be liable for any non-compliance of the permitted activity until the transfer is approved by the department.

12. This permit is required to be kept at the work site of the permitted activity during the entire period of construction or operation.

13. This permit also constitutes:

( ) Determination of Best Available Control Technology (BACT)
( ) Determination of Prevention of Significant Deterioration (PSD)
( ) Compliance with New Source Performance Standards.

14. The permittee shall comply with the following monitoring and record keeping requirements:

a. Upon request, the permittee shall furnish all records and plans required under department rules. The retention period for all records will be extended automatically, unless otherwise stipulated by the department, during the course of any unresolved enforcement action.

GENERAL CONDITIONS:

b. The permittee shall retain at the facility or other location designated by this permit records of all monitoring information (including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation), copies of all reports required by this permit, and records of all data used to complete the application for this permit. The time period of retention shall be at least three years from the date of the sample, measurement, report or application unless otherwise specified by department rule.

c. Records of monitoring information shall include:

- the date, exact place, and time of sampling or measurements;
- the person responsible for performing the sampling or measurements;
- the date(s) analyses were performed;
- the person responsible for performing the analyses;
- the analytical techniques or methods used; and
- the results of such analyses.

15. When requested by the department, the permittee shall within a reasonable time furnish any information required by law which is needed to determine compliance with the permit. If the permittee becomes aware that relevant facts were not submitted or were incorrect in the permit application or in any report to the department, such facts or information shall be submitted or corrected promptly.

SPECIFIC CONDITIONS:

1. The total amount of coal handled shall not exceed 12,300 tons/year.

2. The coal storage area shall be constructed in accordance with the description presented in Attachment 1 of the permit application.

3. The transfer rate of ground coal to the clay dryer shall not exceed 2,800 pounds per hour.

4. The feed system from the hopper to the coal grinder, the coal grinder, and the pneumatic conveying system shall be totally enclosed.

PERMITTEE:
Mid-Florida Mining Company

Permit Number: AC 42-113786
Expiration Date: February 28, 1987

SPECIFIC CONDITIONS:

5. Water shall be sprayed on the coal storage pile, as needed, to minimize dust.

6. Total emissions of particulate matter from the coal handling system shall not exceed 0.18 lbs/hr or 0.07 tons/yr.

7. Compliance with the particulate matter limit will be demonstrated by DER Method 9 showing no visible emissions (5 percent opacity) at all drop points.

8. Compliance test results will be submitted to DER's St. Johns River District Office-Air Programs within 45 days after completion of the tests.

9. Fifteen (15) day notification of compliance tests to DER's St. Johns River District Office-Air Programs is required.

10. The construction shall reasonably conform to the plans and schedule submitted in the application. If the permittee is unable to complete construction on schedule, he must notify the Department in writing 60 days prior to the expiration of the construction permit and submit a new schedule and request for an extension of the construction permit. (Rule 17-2.09, Florida Administrative Code)

11. To obtain a permit to operate, the permittee must demonstrate compliance with the conditions of the construction permit and submit a complete application for an operating permit, including the application fee, along with compliance test results and Certificate of Completion, to the Department's St. Johns River District office 90 days prior to the expiration date of the construction permit. The permittee may continue to operate in compliance with all terms of the construction permit until its expiration date. Operation beyond the construction permit expiration date requires a valid permit to operate. (Rule 17-4.22 and 17-4.23, Florida Administrative Code).

12. If the construction permit expires prior to the permittee requesting an extension or obtaining a permit to operate, then all activities at the project must cease and the permittee must apply for a new permit to construct which can take up to 90 days to process a complete application. (Rule 17-4.10, Florida Admininstrative Code)

PERMITTEE:
Mid-Florida Mining Company

Permit Number: AC 42-113786
Expiration Date: February 28, 1987

SPECIFIC CONDITIONS:

Issued this_____day of_____, 19__

STATE OF FLORIDA DEPARTMENT OF
ENVIRONMENTAL REGULATION

_____
VICTORIA J. TSCHINKEL, Secretary

____ pages attached.

STATE OF FLORIDA

DEPARTMENT OF ENVIRONMENTAL REGULATION

TWIN TOWERS OFFICE BUILDING
2600 BLAIR STONE ROAD
TALLAHASSEE, FLORIDA 32301-8241

BOB GRAHAM
GOVERNOR

VICTORIA J. TSCHINKEL
SECRETARY

PERMITTEE:
Mid-Florida Mining Company
P. O. Box 68
Lowell, Florida 32663

Permit Number: AC 42-113787
Expiration Date: February 28, 1987
County: Marion
Latitude/Longitude: 29° 19' 52"N/
82° 11' 28"W
Project: Dried Clay Storage Silo
and Clay Dryer

This permit is issued under the provisions of Chapter 403, Florida Statutes, and Florida Administrative Code Rule(s) 17-2 and 17-4. The above named permittee is hereby authorized to perform the work or operate the facility shown on the application and approved drawings, plans, and other documents attached hereto or on file with the department and made a part hereof and specifically described as follows:

Coal, with a maximum sulfur content of 1.25 percent, will be used to fire the existing clay dryer, in addition to number 5 fuel oil, waste oil, terpene derivatives, spent non-halogenated hydrocarbon solvents, or used kerosene. Emissions will be controlled by an existing baghouse collector servicing the clay rotary dryer kiln and the dried clay storage silo. The project is located at the existing facility of Mid-Florida Mining Company, Marion County, Lowell, Florida.

Construction shall be in accordance with the attached permit application and additional information except as otherwise noted in the Specific Conditions.

Attachments are as follows:

1. Application to Construct an Air Pollution Source, DER Form 17-1.202(1).

GENERAL CONDITIONS:

1. The terms, conditions, requirements, limitations, and restrictions set forth herein are "Permit Conditions" and as such are binding upon the permittee and enforceable pursuant to the authority of Sections 403.161, 403.727, or 403.859 through 403.861, Florida Statutes. The permittee is hereby placed on notice that the department will review this permit periodically and may initiate enforcement action for any violation of the "Permit Conditions" by the permittee, its agents, employees, servants or representatives.

2. This permit is valid only for the specific processes and operations applied for and indicated in the approved drawings or exhibits. Any unauthorized deviation from the approved drawings, exhibits, specifications, or conditions of this permit may constitute grounds for revocation and enforcement action by the department.

3. As provided in Subsections 403.087(6) and 403.722(5), Florida Statutes, the issuance of this permit does not convey any vested rights or any exclusive privileges. Nor does it authorize any injury to public or private property or any invasion of personal rights, nor any infringement of federal, state or local laws or regulations. This permit does not constitute a waiver of or approval of any other department permit that may be required for other aspects of the total project which are not addressed in the permit.

4. This permit conveys no title to land or water, does not constitute state recognition or acknowledgement of title, and does not constitute authority for the use of submerged lands unless herein provided and the necessary title or leasehold interests have been obtained from the state. Only the Trustees of the Internal Improvement Trust Fund may express state opinion as to title.

5. This permit does not relieve the permittee from liability for harm or injury to human health or welfare, animal, plant or aquatic life or property and penalties therefore caused by the construction or operation of this permitted source, nor does it allow the permittee to cause pollution in contravention of Florida Statutes and department rules, unless specifically authorized by an order from the department.

GENERAL CONDITIONS:

6. The permittee shall at all times properly operate and maintain the facility and systems of treatment and control (and related appurtenances) that are installed or used by the permittee to achieve compliance with the conditions of this permit, as required by department rules. This provision includes the operation of backup or auxiliary facilities or similar systems when necessary to achieve compliance with the conditions of the permit and when required by department rules.

7. The permittee, by accepting this permit, specifically agrees to allow authorized department personnel, upon presentation of credentials or other documents as may be required by law, access to the premises, at reasonable times, where the permitted activity is located or conducted for the purpose of:

a. Having access to and copying any records that must be kept under the conditions of the permit;

b. Inspecting the facility, equipment, practices, or operations regulated or required under this permit; and

c. Sampling or monitoring any substances or parameters at any location reasonably necessary to assure compliance with this permit or department rules.

Reasonable time may depend on the nature of the concern being investigated.

8. If, for any reason, the permittee does not comply with or will be unable to comply with any condition or limitation specified in this permit, the permittee shall immediately notify and provide the department with the following information:

a. a description of and cause of non-compliance; and

b. the period of noncompliance, including exact dates and times; or, if not corrected, the anticipated time the noncompliance is expected to continue, and steps being taken to reduce, eliminate, and prevent recurrence of the noncompliance.

GENERAL CONDITIONS:

The permittee shall be responsible for any and all damages which may result and may be subject to enforcement action by the department for penalties or revocation of this permit.

9. In accepting this permit, the permittee understands and agrees that all records, notes, monitoring data and other information relating to the construction or operation of this permitted source, which are submitted to the department, may be used by the department as evidence in any enforcement case arising under the Florida Statutes or department rules, except where such use is proscribed by Sections 403.73 and 403.111, Florida Statutes.

10. The permittee agrees to comply with changes in department rules and Florida Statutes after a reasonable time for compliance, provided however, the permittee does not waive any other rights granted by Florida Statutes or department rules.

11. This permit is transferable only upon department approval in accordance with Florida Administrative Code Rules 17-4.12 and 17-30.30, as applicable. The permittee shall be liable for any non-compliance of the permitted activity until the transfer is approved by the department.

12. This permit is required to be kept at the work site of the permitted activity during the entire period of construction or operation.

13. This permit also constitutes:

( ) Determination of Best Available Control Technology (BACT)
( ) Determination of Prevention of Significant Deterioration (PSD)
( ) Compliance with New Source Performance Standards.

14. The permittee shall comply with the following monitoring and record keeping requirements:

a. Upon request, the permittee shall furnish all records and plans required under department rules. The retention period for all records will be extended automatically, unless otherwise stipulated by the department, during the course of any unresolved enforcement action.

GENERAL CONDITIONS:

b. The permittee shall retain at the facility or other location designated by this permit records of all monitoring information (including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation), copies of all reports required by this permit, and records of all data used to complete the application for this permit. The time period of retention shall be at least three years from the date of the sample, measurement, report or application unless otherwise specified by department rule.

c. Records of monitoring information shall include:

- the date, exact place, and time of sampling or measurements;
- the person responsible for performing the sampling or measurements;
- the date(s) analyses were performed;
- the person responsible for performing the analyses;
- the analytical techniques or methods used; and
- the results of such analyses.

15. When requested by the department, the permittee shall within a reasonable time furnish any information required by law which is needed to determine compliance with the permit. If the permittee becomes aware that relevant facts were not submitted or were incorrect in the permit application or in any report to the department, such facts or information shall be submitted or corrected promptly.

SPECIFIC CONDITIONS:

1. The rotary dryer is limited to a maximum input rate of 40.8 tons/hr of clay.

2. Maximum input to the dried clay storage silo shall not exceed 7.5 tons/hr and maximum output shall not exceed 20 tons/hr.

3. The rotary dryer can be fired only with waste oil, #5 fuel oil, terpene derivative type fuels, non-halogenated spent hydrocarbon solvent mixtures (such as xylene, acetone, etc.), used kerosene, or coal.

4. The maximum sulfur content of the coal shall not exceed 1.25 percent.

SPECIFIC CONDITIONS:

5. The maximum amount of lead content in the waste oil is limited to a maximum of 1% or 10,000 ppm. Yearly waste oil fuel analysis must be conducted on the actual waste oil used on the site. This analysis is due at the same time as the stack test.

6. Terpene derivation type fuels are to be mixed 50/50 with waste oil.

7. Used kerosene from the Miami Herald is contaminated with newspaper ink and the fuel shall be sampled for PCB concentrations. If the concentration of PCB is below the detectable limit, the fuel can be utilized in a mixture up to and including 100%.

8. Non-halogenated spent hydrocarbon solvents shall be a permitted fuel at a maximum volume mixture of 20% with waste oils. The upper limit of chloride content will be 1.5% by weight and when blended in a 20/80 mixture will have actual limit of 0.3% chloride to prevent corrosive action on the baghouse filter material. The following will have an upper limit of 2,000 ppm: chromium, lead, copper, tin, aluminum, nickel, antimony, manganese, barium, phosphorus, zinc, and molybdenum.

9. Statements made in the Engineer's September 16, 1983 letter to the department are relied upon and are made a part of the applications.

10. All solvent testing equipment must be calibrated at least once a year.

11. The baghouse shall be properly maintained to operate at approximately its rated efficiency.

12. The baghouse bags will be HAN1530SST composed of Dralon T homopolymer acrylic.

13. Emissions shall not exceed the following:

	Maximum lb/hr	Annual ton/yr
Particulate Matter	15.0	65.7
Sulfur Dioxide	52.5	230.6
Nitrogen Oxides	29.4	129.2
Carbon Monoxide	0.8	3.7

PERMITTEE:
Mid-Florida Mining Company

Permit Number: AC 42-113787
Expiration Date: February 28, 1987

SPECIFIC CONDITIONS:

14. Visible emissions shall be less than 20% opacity as set forth in Rule 17-2.610(2), FAC.

15. Compliance with these limits shall be demonstrated in accordance with DER Methods 5, 6, 9 and EPA Method 7 and 10.

16. Compliance tests, in accordance with FAC Rule 17-2.700, shall be submitted to DER's St. Johns River District office within 45 days after completion of the tests.

17. Fifteen (15) days notification of the compliance tests to DER's St. Johns River District office is required.

18. The construction shall reasonably conform to the plans and schedule submitted in the application. If the permittee is unable to complete construction on schedule, he must notify the Department in writing 60 days prior to the expiration of the construction permit and submit a new schedule and request for an extension of the construction permit. (Rule 17-2.09, Florida Administrative Code)

19. To obtain a permit to operate, the permittee must demonstrate compliance with the conditions of the construction permit and submit a complete application for an operating permit, including the application fee, along with compliance test results and Certificate of Completion, to the Department's St. Johns River District office 90 days prior to the expiration date of the construction permit. The permittee may continue to operate in compliance with all terms of the construction permit until its expiration date. Operation beyond the construction permit expiration date requires a valid permit to operate. (Rule 17-4.22 and 17-4.23, Florida Administrative Code).

20. If the construction permit expires prior to the permittee requesting an extension or obtaining a permit to operate, then all activities at the project must cease and the permittee must apply for a new permit to construct which can take up to 90 days to process a complete application. (Rule 17-4.10, Florida Admininstrative Code)

PERMITTEE:
Mid-Florida Mining Company

Permit Number: AC 42-113787
Expiration Date: February 28, 1987

SPECIFIC CONDITIONS:

Issued this_____day of_____, 19__

STATE OF FLORIDA DEPARTMENT OF
ENVIRONMENTAL REGULATION

_____
VICTORIA J. TSCHINKEL, Secretary

____ pages attached.

No. 024280

INVOICE NUMBER	INVOICE DATE	INVOICE DESCRIPTION	GROSS AMOUNT	DISCOUNTS	NET AMOUNT THIS CHECK
		Application Fee for Coal Permitting			
	12/12/85	Modification Permit Fee			$ 1,000.00
	12/12/85	New Construction Permit Fee			100.00
					1,100.00
Acct. 01-55776		vendor 006000			

MFM INDUSTRIES, INC.
BOX 68 LOWELL, FL 32663 AC 904-732-7227

DETACH BEFORE DEPOSITING
THIS COPY PROVIDED FOR YOUR RECORDS

MFM INDUSTRIES, INC.
BOX 68 LOWELL, FL 32663 AC 904-732-7227

THE CITIZENS & SOUTHERN NATIONAL BANK
ATLANTA, GEORGIA
64-5 / 610

No. 024280

Pay	DATE	AMOUNT
The Sum of **1,100 Dollars and No/100**	12/12/85	**$1,100.00**

TO THE ORDER OF
Florida Department of Environmental Regulation
2600 Blair Stone Road
Twin Tower Office Building
Tallahassee, FL 32301

Jean Bounds
AUTHORIZED SIGNATURE

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL REGULATION

No. 76102

RECEIPT FOR APPLICATION FEES AND MISCELLANEOUS REVENUE

Received from MFM Industries, Inc. Date Dec. 16, 1985

Address Box 68 Lowell FL 326663 Dollars $ 1,100.00

Applicant Name & Address Mid-Florida Marina Co. Box 68, Lowell, FL

Source of Revenue

Revenue Code 001231 Application Number AC 42-113786, 42-113787

By Patricia J. Adams

MID-FLORIDA MINING COMPANY
BOX 68 LOWELL, FLORIDA 32663 904-732-7227

December 12, 1985

DER

DEC 16 1985

BAQM

Florida Dept. of Environmental Regulation
2600 Blair Stone Road
Twin Tower Office Building
Tallahassee, Florida 32301

Attention: Mr. Clair Fancy

Dear Mr. Fancy:

Enclosed please find four (4) copies of "Construction Permit Application for Coal-Handling System" and four (4) copies of "Modification to Clay Dryer Storage Silo Permit". Also enclosed is our check in the amount of $1,100.00, of which $1,000.00 is for the Modification Permit and $100.00 is for the Coal-Handling System.

It is our understanding that Mr. John Koogler, of our environmental consulting firm Sholtes & Koogler, has spoken with your office regarding these permit applications. At the suggestion of Mr. Koogler, the applications are being sent to you as the pollutant emission rates exceed 100 tons per year. In addition, Mr. Bill Thomas of your office and Mr. Koogler consulted together regarding the proper form of these permit applications.

Should you have any questions regarding these applications, please contact the writer or Mr. John Koogler.

Very truly yours,

MID-FLORIDA MINING COMPANY

James A. Slowinski

James A. Slowinski
Executive Vice President

JAS/sp
Enclosures

cc: J. B. Kleekamp
J. B. Koogler
W. M. Palmer, Jr.

CERTIFIED MAIL
RETURN RECEIPT

Fines and Ash 3000 #/hr to Silo
unload ? 40,000 #/hr
Product wt 78800 dryer 40,000
fines 38800
118800 #/hr ? input

do you wish to burn 100% Coal or 100% spent solvents, ect?

AC 42-113784

STATE OF FLORIDA

DEPARTMENT OF ENVIRONMENTAL REGULATION

ST. JOHNS RIVER DISTRICT
3319 MAGUIRE BOULEVARD
SUITE 232
ORLANDO, FLORIDA 32803

DER

DEC 16 1985

BAQM

BOB GRAHAM
GOVERNOR
VICTORIA J. TSCHINKEL
SECRETARY
ALEX SENKEVICH
DISTRICT MANAGER

APPLICATION TO ~~OPERATE~~/CONSTRUCT AIR POLLUTION SOURCES

SOURCE TYPE: Coal Handling System [X] New[1] [ ] Existing[1]

APPLICATION TYPE: [X] Construction [ ] Operation [ ] Modification

COMPANY NAME: Mid-Florida Mining Company COUNTY: Marion

Identify the specific emission point source(s) addressed in this application (i.e. Lime Kiln No. 4 with Venturi Scrubber; Peaking Unit No. 2, Gas Fired) Coal Handling System

SOURCE LOCATION: Street SR 329 @ SCL RR City Lowell

UTM: East (17) 304.500 km North 3245.300 km

Latitude 29 ° 19 ' 52 "N Longitude 82° 11 ' 28 "W

APPLICANT NAME AND TITLE: James A. Slowinski, Executive Vice President

APPLICANT ADDRESS: Mid-Florida Mining Company, Post Office Box 68, Lowell, FL 32663

SECTION I: STATEMENTS BY APPLICANT AND ENGINEER

A. APPLICANT

I am the undersigned owner or authorized representative* of Mid-Florida Mining Co.

I certify that the statements made in this application for a Construction permit are true, correct and complete to the best of my knowledge and belief. Further I agree to maintain and operate the pollution control source and pollution contro facilities in such a manner as to comply with the provision of Chapter 403, Florid Statutes, and all the rules and regulations of the department and revisions thereof. also understand that a permit, if granted by the department, will be non-transferabl and I will promptly notify the department upon sale or legal transfer of the permitte establishment.

*Attach letter of authorization

Signed: James A. Slowinski

James A. Slowinski, Executive Vice-President
Name and Title (Please Type)

Date: 12/12/85 Telephone No. (904) 732-7227

B. PROFESSIONAL ENGINEER REGISTERED IN FLORIDA (where required by Chapter 471, F.S.)

This is to certify that the engineering features of this pollution control project hav been ~~designed~~/examined by me and found to be in conformity with modern engineerin principles applicable to the treatment and disposal of pollutants characterized in th permit application. There is reasonable assurance, in my professional judgment, tha

[1] See Florida Administrative Code Rule 17-2.100(57) and (104)

the pollution control facilities, when properly maintained and operated, will discharge an effluent that complies with all applicable statutes of the State of Florida and the rules and regulations of the department. It is also agreed that the undersigned will furnish, if authorized by the owner, the applicant a set of instructions for the proper maintenance and operation of the pollution control facilities and, if applicable, pollution sources.

Signed _____

John B. Koogler, Ph.D., P.E.
Name (Please Type)

Sholtes & Koogler, Environmental Consultants
Company Name (Please Type)

1213 NW 6th Street, Gainesville, Fl 32601
Mailing Address (Please Type)

Florida Registration No. 12925 Date: 12/11/85 Telephone No. (904) 377-5822

SECTION II: GENERAL PROJECT INFORMATION

A. Describe the nature and extent of the project. Refer to pollution control equipment, and expected improvements in source performance as a result of installation. State whether the project will result in full compliance. Attach additional sheet if necessary.

A coal storage area with a capacity of 250 tons of coal will be constructed. The coal will be delivered from storage to a package coal grinder where it will be ground and fired to an existing clay dryer permitted under Permit A042-96009. The system will operate in compliance with all applicable regulations.

B. Schedule of project covered in this application (Construction Permit Application Only)

Start of Construction February 1986 Completion of Construction October 1986

C. Costs of pollution control system(s): (Note: Show breakdown of estimated costs only for individual components/units of the project serving pollution control purposes. Information on actual costs shall be furnished with the application for operation permit.)

None; no add on pollution control equipment.

D. Indicate any previous DER permits, orders and notices associated with the emission point, including permit issuance and expiration dates.

None

E. Requested permitted equipment operating time: hrs/day 24 ; days/wk 7 ; wks/yr 52 ;

if power plant, hrs/yr_____; if seasonal, describe:_____

F. If this is a new source or major modification, answer the following questions. (Yes or No)

NOT APPLICABLE: Minor modification to a minor emitting facility.

1. Is this source in a non-attainment area for a particular pollutant? _____

   a. If yes, has "offset" been applied? _____

   b. If yes, has "Lowest Achievable Emission Rate" been applied? _____

   c. If yes, list non-attainment pollutants. _____

2. Does best available control technology (BACT) apply to this source? If yes, see Section VI. _____

3. Does the State "Prevention of Significant Deterioriation" (PSD) requirement apply to this source? If yes, see Sections VI and VII. _____

4. Do "Standards of Performance for New Stationary Sources" (NSPS) apply to this source? _____

5. Do "National Emission Standards for Hazardous Air Pollutants" (NESHAP) apply to this source? _____

H. Do "Reasonably Available Control Technology" (RACT) requirements apply to this source? _____

   a. If yes, for what pollutants?_____

   b. If yes, in addition to the information required in this form, any information requested in Rule 17-2.650 must be submitted.

Attach all supportive information related to any answer of "Yes". Attach any justification for any answer of "No" that might be considered questionable.

SECTION III: AIR POLLUTION SOURCES & CONTROL DEVICES (Other than Incinerators)

A. Raw Materials and Chemicals Used in your Process, if applicable:

Description	Contaminants		Utilization Rate - lbs/hr	Relate to Flow Diagram
	Type	% Wt		
Coal-Railcar Unloading	Part.Matter	Silt 10%	50,000	1-4
Coal-to Grinder	Part.Matter	Silt 10%	50,000	6-7
Coal-to Dryer	None	0	2,800	8

B. Process Rate, if applicable: (See Section V, Item 1)

1. Total Process Input Rate (lbs/hr): Not Applicable

2. Product Weight (lbs/hr): Not Applicable

C. Airborne Contaminants Emitted: (Information in this table must be submitted for each emission point, use additional sheets as necessary)

Name of Contaminant	Emission[1]		Allowed[2] Emission Rate per Rule 17-2	Allowable[3] Emission lbs/hr	Potential[4] Emission		Relate to Flow Diagram
	Maximum lbs/hr	Actual T/yr			lbs/hr	T/yr	
Part.Matter	0.18	0.07	NA	0.18	0.18	0.07	1-7

[1]See Section V, Item 2.

[2]Reference applicable emission standards and units (e.g. Rule 17-2.600(5)(b)2. Table II, E. (1) - 0.1 pounds per million BTU heat input)

[3]Calculated from operating rate and applicable standard.

[4]Emission, if source operated without control (See Section V, Item 3).

D. Control Devices: (See Section V, Item 4)

Name and Type (Model & Serial No.)	Contaminant	Efficiency	Range of Particles Size Collected (in microns) (If applicable)	Basis for Efficiency (Section V Item 5)
None				

E. Fuels

Type (Be Specific)	Consumption*		Maximum Heat Input (MMBTU/hr)
	avg/hr	max./hr	
None			

*Units: Natural Gas--MMCF/hr; Fuel Oils--gallons/hr; Coal, wood, refuse, other--lbs/hr.

Fuel Analysis:

Percent Sulfur: _____ Percent Ash: _____

Density: _____ lbs/gal Typical Percent Nitrogen: _____

Heat Capacity: _____ BTU/lb _____ BTU/gal

Other Fuel Contaminants (which may cause air pollution): _____

F. If applicable, indicate the percent of fuel used for space heating.

Annual Average Not Applicable Maximum _____

G. Indicate liquid or solid wastes generated and method of disposal.

Rainfall runoff from the storage pile will be minimized by covering the pile. Any runoff that does accumulate will be collected in a sump and sprayed back on the pile for dust control.

H. Emission Stack Geometry and Flow Characteristics (Provide data for each stack):
Not applicable; all emissions are fugitive

Stack Height: _____ ft. Stack Diameter: _____ ft.

Gas Flow Rate: _____ ACFM _____ DSCFM Gas Exit Temperature: _____ °F.

Water Vapor Content: _____ % Velocity: _____ FPS

SECTION IV: INCINERATOR INFORMATION

NOT APPLICABLE

Type of Waste	Type 0 (Plastics)	Type I (Rubbish)	Type II (Refuse)	Type III (Garbage)	Type IV (Pathological)	Type V (Liq.& Gas By-prod.)	Type VI (Solid By-prod.)
Actual lb/hr Incinerated							
Uncontrolled (lbs/hr)							

Description of Waste _____

Total Weight Incinerated (lbs/hr) _____ Design Capacity (lbs/hr) _____

Approximate Number of Hours of Operation per day _____ day/wk _____ wks/yr. _____

Manufacturer _____

Date Constructed _____ Model No. _____

	Volume $(ft)^3$	Heat Release (BTU/hr)	Fuel		Temperature (°F)
			Type	BTU/hr	
Primary Chamber					
Secondary Chamber					

Stack Height: _____ ft. Stack Diamter: _____ Stack Temp. _____

Gas Flow Rate: _____ ACFM _____ DSCFM* Velocity: _____ FPS

*If 50 or more tons per day design capacity, submit the emissions rate in grains per standard cubic foot dry gas corrected to 50% excess air.

Type of pollution control device: [ ] Cyclone [ ] Wet Scrubber [ ] Afterburner

[ ] Other (specify) _____

Brief description of operating characteristics of control devices: _____

_____

_____

_____

_____

Ultimate disposal of any effluent other than that emitted from the stack (scrubber water, ash, etc.):

_____

_____

_____

_____

NOTE: Items 2, 3, 4, 6, 7, 8, and 10 in Section V must be included where applicable.

SECTION V: SUPPLEMENTAL REQUIREMENTS

(See Pages 7a and 7b)

Please provide the following supplements where required for this application.

1. Total process input rate and product weight -- show derivation [Rule 17-2.100(127)]

2. To a construction application, attach basis of emission estimate (e.g., design calculations, design drawings, pertinent manufacturer's test data, etc.) and attach proposed methods (e.g., FR Part 60 Methods 1, 2, 3, 4, 5) to show proof of compliance with applicable standards. To an operation application, attach test results or methods used to show proof of compliance. Information provided when applying for an operation permit from a construction permit shall be indicative of the time at which the test was made.

3. Attach basis of potential discharge (e.g., emission factor, that is, AP42 test).

4. With construction permit application, include design details for all air pollution control systems (e.g., for baghouse include cloth to air ratio; for scrubber include cross-section sketch, design pressure drop, etc.)

5. With construction permit application, attach derivation of control device(s) efficiency. Include test or design data. Items 2, 3 and 5 should be consistent: actual emissions = potential (1-efficiency).

6. An 8 1/2" x 11" flow diagram which will, without revealing trade secrets, identify the individual operations and/or processes. Indicate where raw materials enter, where solid and liquid waste exit, where gaseous emissions and/or airborne particles are evolved and where finished products are obtained.

7. An 8 1/2" x 11" plot plan showing the location of the establishment, and points of airborne emissions, in relation to the surrounding area, residences and other permanent structures and roadways (Example: Copy of relevant portion of USGS topographic map).

8. An 8 1/2" x 11" plot plan of facility showing the location of manufacturing processes and outlets for airborne emissions. Relate all flows to the flow diagram.

SECTION V
SUPPLEMENTAL REQUIREMENTS

1. Process Input and Production Rate:

Coal unloading rate from railcars - 25 tons per hour for a 3-hour period 4 times per week.

Coal reclamation from storage - 25 tons per hour for a 30-minute period once each 8-hour shift.

Coal to dryer - 2800 pounds per hour, 24 hours per day, 365 days per year.

2/3. Controlled and Uncontrolled Emissions

Points 1-4 (See Flow Diagram In ATTACHMENT 1).

E_1 = 6.39×10^{-5} lb/ton x 25 tons/hr = 0.002 lbs/hr
E_2 = 1.06×10^{-5} lb/ton x 25 tons/hr = 0.001 lbs/hr
E_3 = 2.13×10^{-5} lb/ton x 25 tons/hr = 0.001 lbs/hr
E_4 = 6.39×10^{-4} lb/ton x 25 tons/hr = 0.016 lbs/hr
0.019 lbs/hr

Annual

E_{1-4} = 0.0045 tons/yr (from ATTACHMENT 1).

Point 5 (See ATTACHMENT 1).

Hourly
E_5 = 1.7 (S/1.5)[(365-p)/235](f/15) lb/ac-day
= 1.7 (6/1.5)[(365-0)/235](100/15)(0.037 ac)(1/24) day/hr
= 0.109 lb/hr.

Annual
E_5 = 0.0238 ton/yr (from ATTACHMENT 1).

Point 6 (See ATTACHMENT 1)

Hourly (Based on 4 trips in 30 minutes once each 8 hours)
E_6 = 0.204 lb/VMT x 4 trips x 250 ft/trip x 1/5280
= 0.039 lbs/hr.

Annual
E_6 = 0.0365 tons/yr (from ATTACHMENT 1).

Point 7 (See ATTACHMENT 1)

Hourly
E_7 = 4.64×10^{-4} lb/ton x 25 tons/hr = 0.012 lb/hr.

Annual
E_7 = 0.0029 tons/year (from ATTACHMENT 1).

Total

Maximum Hourly = 0.179 lb/hr
Annual = 0.07 tons/yr.

4. Details of pollution control system - See ATTACHMENTS 2 and 3 for description of coal grinder.

5. Control Equipment Efficiency - Not Applicable.

6. Process Flow Diagram - See ATTACHMENT 1.

7. Location Map - See ATTACHMENT 4.

8. Site Map - See ATTACHMENT 5.

9. The appropriate application fee in accordance with Rule 17-4.05. The check should be made payable to the Department of Environmental Regulation.

10. With an application for operation permit, attach a Certificate of Completion of Construction indicating that the source was constructed as shown in the construction permit.

SECTION VI: BEST AVAILABLE CONTROL TECHNOLOGY

NOT APPLICABLE

A. Are standards of performance for new stationary sources pursuant to 40 C.F.R. Part 60 applicable to the source?

[ ] Yes [ ] No

Contaminant	Rate or Concentration

B. Has EPA declared the best available control technology for this class of sources (If yes, attach copy)

[ ] Yes [ ] No

Contaminant	Rate or Concentration

C. What emission levels do you propose as best available control technology?

Contaminant	Rate or Concentration

D. Describe the existing control and treatment technology (if any).

1. Control Device/System:
2. Operating Principles:
3. Efficiency:*
4. Capital Costs:

*Explain method of determining

5. Useful Life:

6. Operating Costs:

7. Energy:

8. Maintenance Cost:

9. Emissions:

Contaminant	Rate or Concentration

10. Stack Parameters

a. Height: ft.

b. Diameter: ft.

c. Flow Rate: ACFM

d. Temperature: °F.

e. Velocity: FPS

E. Describe the control and treatment technology available (As many types as applicable, use additional pages if necessary).

1.

a. Control Device:

b. Operating Principles:

c. Efficiency:[1]

d. Capital Cost:

e. Useful Life:

f. Operating Cost:

g. Energy:[2]

h. Maintenance Cost:

i. Availability of construction materials and process chemicals:

j. Applicability to manufacturing processes:

k. Ability to construct with control device, install in available space, and operate within proposed levels:

2.

a. Control Device:

b. Operating Principles:

c. Efficiency:[1]

d. Capital Cost:

e. Useful Life:

f. Operating Cost:

g. Energy:[2]

h. Maintenance Cost:

i. Availability of construction materials and process chemicals:

[1]Explain method of determining efficiency.
[2]Energy to be reported in units of electrical power - KWH design rate.

j. Applicability to manufacturing processes:

k. Ability to construct with control device, install in available space, and operate within proposed levels:

3.

a. Control Device:

b. Operating Principles:

c. Efficiency:[1]

d. Capital Cost:

e. Useful Life:

f. Operating Cost:

g. Energy:[2]

h. Maintenance Cost:

i. Availability of construction materials and process chemicals:

j. Applicability to manufacturing processes:

k. Ability to construct with control device, install in available space, and operate within proposed levels:

4.

a. Control Device:

b. Operating Principles:

c. Efficiency:[1]

d. Capital Costs:

e. Useful Life:

f. Operating Cost:

g. Energy:[2]

h. Maintenance Cost:

i. Availability of construction materials and process chemicals:

j. Applicability to manufacturing processes:

k. Ability to construct with control device, install in available space, and operate within proposed levels:

F. Describe the control technology selected:

1. Control Device:

2. Efficiency:[1]

3. Capital Cost:

4. Useful Life:

5. Operating Cost:

6. Energy:[2]

7. Maintenance Cost:

8. Manufacturer:

9. Other locations where employed on similar processes:

a. (1) Company:

(2) Mailing Address:

(3) City:

(4) State:

[1]Explain method of determining efficiency.
[2]Energy to be reported in units of electrical power - KWH design rate.

(5) Environmental Manager:

(6) Telephone No.:

(7) Emissions:[1]

Contaminant	Rate or Concentration

(8) Process Rate:[1]

b. (1) Company:

(2) Mailing Address:

(3) City: (4) State:

(5) Environmental Manager:

(6) Telephone No.:

(7) Emissions:[1]

Contaminant	Rate or Concentration

(8) Process Rate:[1]

10. Reason for selection and description of systems:

[1]Applicant must provide this information when available. Should this information not be available, applicant must state the reason(s) why.

SECTION VII - PREVENTION OF SIGNIFICANT DETERIORATION

NOT APPLICABLE

A. Company Monitored Data

1. _____no. sites _____ TSP _____( ) SO^2* _____ Wind spd/dir

Period of Monitoring _____/_____/_____ to _____/_____/_____
month day year month day year

Other data recorded _____

Attach all data or statistical summaries to this application.

*Specify bubbler (B) or continuous (C).

2. Instrumentation, Field and Laboratory

a. Was instrumentation EPA referenced or its equivalent? [ ] Yes [ ] No

b. Was instrumentation calibrated in accordance with Department procedures?

[ ] Yes [ ] No [ ] Unknown

B. Meteorological Data Used for Air Quality Modeling

1. _____ Year(s) of data from _____/_____/_____ to _____/_____/_____
month day year month day year

2. Surface data obtained from (location)_____

3. Upper air (mixing height) data obtained from (location)_____

4. Stability wind rose (STAR) data obtained from (location)_____

C. Computer Models Used

1. _____ Modified? If yes, attach description.

2. _____ Modified? If yes, attach description.

3. _____ Modified? If yes, attach description.

4. _____ Modified? If yes, attach description.

Attach copies of all final model runs showing input data, receptor locations, and principle output tables.

D. Applicants Maximum Allowable Emission Data

Pollutant	Emission Rate	
TSP	_____	grams/sec
SO^2	_____	grams/sec

E. Emission Data Used in Modeling

Attach list of emission sources. Emission data required is source name, description of point source (on NEDS point number), UTM coordinates, stack data, allowable emissions, and normal operating time.

F. Attach all other information supportive to the PSD review.

G. Discuss the social and economic impact of the selected technology versus other applicable technologies (i.e., jobs, payroll, production, taxes, energy, etc.). Include assessment of the environmental impact of the sources.

H. Attach scientific, engineering, and technical material, reports, publications, journals, and other competent relevant information describing the theory and application of the requested best available control technology.

ATTACHMENT 1

DESCRIPTION OF COAL HANDLING SYSTEM
AND FLOW DIAGRAM

COAL HANDLING SYSTEM

Coal Requirement = 12,300 tons/year
Delivery by rail @ 75 tons/railcar
Delivery schedule
= 12,300 / 75 tons / railcar
≅ 164 railcars / yr
× 1/52 wk/yr
≅ 4 railcars/week, max
Railcar unloading rate = 25 tons/hr

Handling System

The coal will be bottom dumped from the railcar into an under-track receiving hopper. The unloading rate will be 25 tons per hour; thus, requiring three hours to unload each railcar.

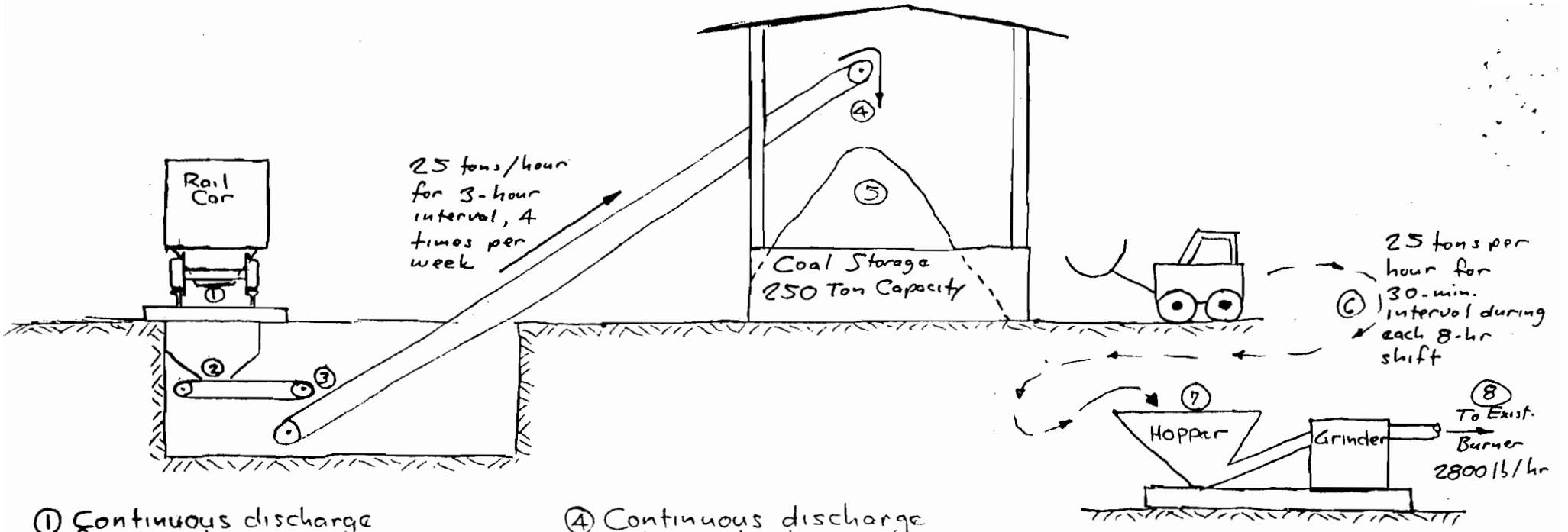
The coal from the under-track hopper will feed directly onto a short drag chain conveyor that will transfer the coal to an inclined conveyor belt. The conveyor belt will transfer the coal to a covered coal storage pile.

The coal will be stored on a covered concrete pad. The pad will be surrounded on three sides by a four foot high wall to contain the coal. The fourth side of the pad will be open to allow access by a front-end loader for coal reclamation. Although the coal storage area will be covered, a sump will be placed in the coal storage pad to collect any water that might accumulate in the area. The water collected in the sump will be sprayed back on to the coal storage pile for dust control.

The coal will be reclaimed from the coal storage area by a front-end loader with a two cubic yard bucket. The front-end loader will deliver the coal to the hopper of the coal grinding system. The area traveled by the front-end loader will be paved with concrete and cleaned periodically to minimize fugitive particulate matter emissions generated by vehicle travel.

The coal grinder, including the coal hopper, is a packaged unit. The feed system from the hopper to the coal grinder, the grinder itself, and the pneumatic conveying system for transporting the ground coal to the clay dryer are all totally enclosed.

Following is a sketch of the coal handling system and the calculations for fugitive particulate matter emissions expected from the system.



① Continuous discharge from rail car
Drop ht = 2 ft
Wind spd = 6 mph
Silt content = 6%
Moisture = 5%
k = 0.77 fraction of particles <30um

② Continuous discharge onto drag chain conveyor
Drop ht = 1 ft
Wind spd = 2 mph
Silt content = 6%
Moisture = 5%
k = 0.77

③ Continuous discharge onto inclined conveyor
Drop ht = 2 ft
Wind spd = 2 mph
Silt content = 6%
Moisture = 5%
k = 0.77

④ Continuous discharge onto coal pile
Drop ht = 15 ft
Wind spd = 8 mph
Silt content = 6%
Moisture = 5%
k = 0.77

⑤ Wind erosion from coal pile
Silt content = 6%
Number of days with ≥0.01 inches of ppt = 0 since pile is covered
Fraction of time that wind speed exceeds 12 mph at pile height = 5%
Pile size = 40 ft x 40 ft = 0.037 acre

⑥ Front-end loader travel
Distance = 250 ft, round trip
k = 0.86
I = 1.0 (all travel on pavement)
Equivalent number of traffic lanes (per MRI recommendation) n = 4
Silt content of surface material = 10%
Surface dust loading on traveled area = 1000 lb/mi
Vehicle wt = 12 tons
Number of trips = 7365/year @ 1.67 tons/trip

⑦ Batch drop of Coal into hopper
Drop ht = 4 ft
Wind spd = 8 mph
Silt content = 6%
Moisture = 5%
Batch size = 2 cu.yd.
k = 0.73

⑧ No Emissions

Emissions Calculations for 11,100 ton of Coal per year

Continuous Drop Points (①, ②, ③ & ④)

$$E = k(0.0018)(S/5)(U/5)(H/10)/(M/2)^2 \times 12{,}300/2000$$

Equation (2), Section 11.2.3, AP-42

- K = fraction of particles ≤ 30 μm A
- S = Silt content (%)
- U = wind speed (mph)
- H = Drop ht (ft)
- M = Moisture (%)
- 11,100 = tons of coal /yr

$E_{①}$ = 0.0004 tons/yr
$E_{②}$ = 0.0001 tons/yr
$E_{③}$ = 0.0001 tons/yr
$E_{④}$ = 0.0039 tons/yr

Wind Erosion (⑤)

$$E = 1.7(S/1.5)[(365-p)/235](f/15) \times 365 \text{ day/yr} \times 0.037 \text{ ac} \times 1/2000$$

Equation (3), Section 11.2.3, AP-42

- S = Silt Content (%)
- p = Number of days with ≥ 0.01 in ppt
- f = fraction of time wind ≥ 12 mph

$E_{⑤}$ = 0.0238 tons/yr

Vehicle Travel (⑥)

$$E = k(0.05)I(4/n)(S/10)(L/1000)(W/3)^{0.7} \times \text{total mileage}/2000$$

Equation (1), Section 11.2.6, AP-42

- k = fraction of particles ≤ 30 μm A
- I = Augmentation factor
- n = number of lanes
- s = surface material silt content (%)
- L = surface dust loading (lb/mi)
- W = Vehicle weight (tons)

$E_{⑥}$ = 0.0356 tons/yr

Batch Drop Point (⑦)

$$E = k(0.0018)(S/5)(U/5)(H/5)/(H/2)^2(Y/6)^{0.33} \times 12{,}300/2000$$

Equation (1), Section 11.2.3, AP-42

- Y = Batch size (cu. yd)
- Others as defined in Continuous Drop Equation

$E_{⑦}$ = 0.0029 tons/yr

Total Fugitive Emission from Coal Handling

$E_{⑦}$ = 0.07 tons/year

ATTACHMENT 2

DESCRIPTION OF COAL GRINDER

POLYSIUS CORPORATION

180 Interstate North, Suite 500
Atlanta, Georgia 30339

Phone (404) 955-3660 Telex 54-2850

POLFIRE

COAL FIRING SYSTEM

EQUIPMENT FEATURES

Skid Mounted - Coal Hopper, Coal Pulverizer, and Pulverizer Exhaust Fan

Burner for Coal, LPG, Natural Gas or #2 Oil

Ductwork and Controls

Capacity - Up to 150 million BTU's/hr with Capabilities to Burn Coal with 10% Surface Moisture

SKID UNIT

Skid unit is a heavy frame section which is semi-portable on a legal size truck load. It consists of: 1. Coal hopper with screw feeder; 2. Feed chute with a permanent magnet tramp iron collector; 3. Coal pulverizer; 4. Pulverizer exhaust fan; 5. Ductwork; 6. Dampers and actuators.

1. Coal Hopper with Screw Feeder - Hopper with 10'-0" long x 5'-6" wide opening with over 8 cubic yards capacity. Hopper 3/8" carbon steel with stiffeners and support legs mounted on the skid. The twin screw feeder will extract coal from the hopper and deliver it to the pulverizer. The twin screw feeder operates at a maximum of 10 to 15 rpm, depending on size of unit. The twin screw concept will evenly distribute coal to the pulverizer to maximize the pulverizers hammers wear life. Spur gears with a 5 hp variable speed D.C. drive will drive the screws to the proper speed to deliver the necessary coal to the system for accurate temperature control. The screw conveyor trough is designed to provide an air seal for the pulverizer when coal is in the hopper.

2. Feed chute with Permanent Magnet - Chute from twin screw feeder to mill has a high strength permanent magnet section to collect tramp iron. The magnet is hinged so that opening for cleaning the magnet is easily accessible. Safety clamps are provided to maintian the NFPA explosion containment rating.

3. Coal Pulverizer - Steel housing with wear resistant side linings, twin rotors, heavy duty antifriction bearings, bearing temperature indicators, antivibration base frame, V-belt drive and belt guard, two 1800 rpm motors with horsepowers sized according to mill size and adjustable fineness classifier with appropriate size 1800 rpm motor. Unit is 3 bar pressure rated for explosion resistance.

4. Pulverizer Exhaust Fan - Steel housing with wear liners of chrome carbide and 3 bar pressure rated for explosion resistance. Impeller has high hardness abrasion resistant coating of chrome carbide, antivibration base complete with motor with V-belt drive and guard.

5. Ductwork - Ducting will consist of a hot gas take-off from the dryer to the pulverizer mill inlet, duct from pulverizer to the pulverizer exhaust fan, duct from the pulverizer exhaust fan to the burner. The ducting will include flanges and supports. All ducting is minimum 1/4" carbon steel pipe with long radius rectangular elbows of 1/2" plate.

6. Dampers and Actuators - A heavy duty tempering tee damper with actuator will control hot gas temperature to the pulverizer. A pulverizer exhaust fan inlet damper will be included with manual actuator to control air sweep thru the pulverizer.

BURNER ASSEMBLY

Burner assembly consists of: 1. The multi-fuel burner; 2. Combustion air blowers and ductwork and; 3. Fuel metering instruments.

1. Burner consists of unit with extended burner tile type combustion chamber with front wall and connecting flange, windbox with adjustable air damper and air direction vanes for coal flame shaping and anchored pre-installed castable refractory material. Fuel oil, natural gas or LPG start-up equipment with appropriate gun for selected fuel to be used is furnished. Gas electric ignition is used consisting of natural gas or propane gas pilot, ignition transformer with cable, solenoid valves, low pressure switch and flexible hose.

2. Combustion air blower with Arrangement 4, with piezometer for measuring air flow, inlet screen, vibration absorbers, discharge damper with automatic actuator, and motor and drive premounted on the fan. Ductwork for conveying air from the fan to the burner is included.

3. Fuel metering instruments include an oil flow transmitter or a gas flow transmitter and a generator signal from the coal screw feeder drive. These signals plus the air flow signal are fed to the automatic combustion control microprocessor for maintaining constant air fuel ratios throughout the operating range.

CONTROLS

Controls will be housed in a standard floor mounted console or wall mounted enclosure. Controls will consist of flame safeguard, interlock controls, signal lamps, remote/local selectors, relays/microprocessor, start/stop pushbuttons, temperature controllers, temperature recorder, pulverizer motor ammeters and bearing temperature indicators and alarm. Automatic combustion control for constant air/fuel ratio throughout the operating range will be mated with the fuel metering instruments through the microprocessor.

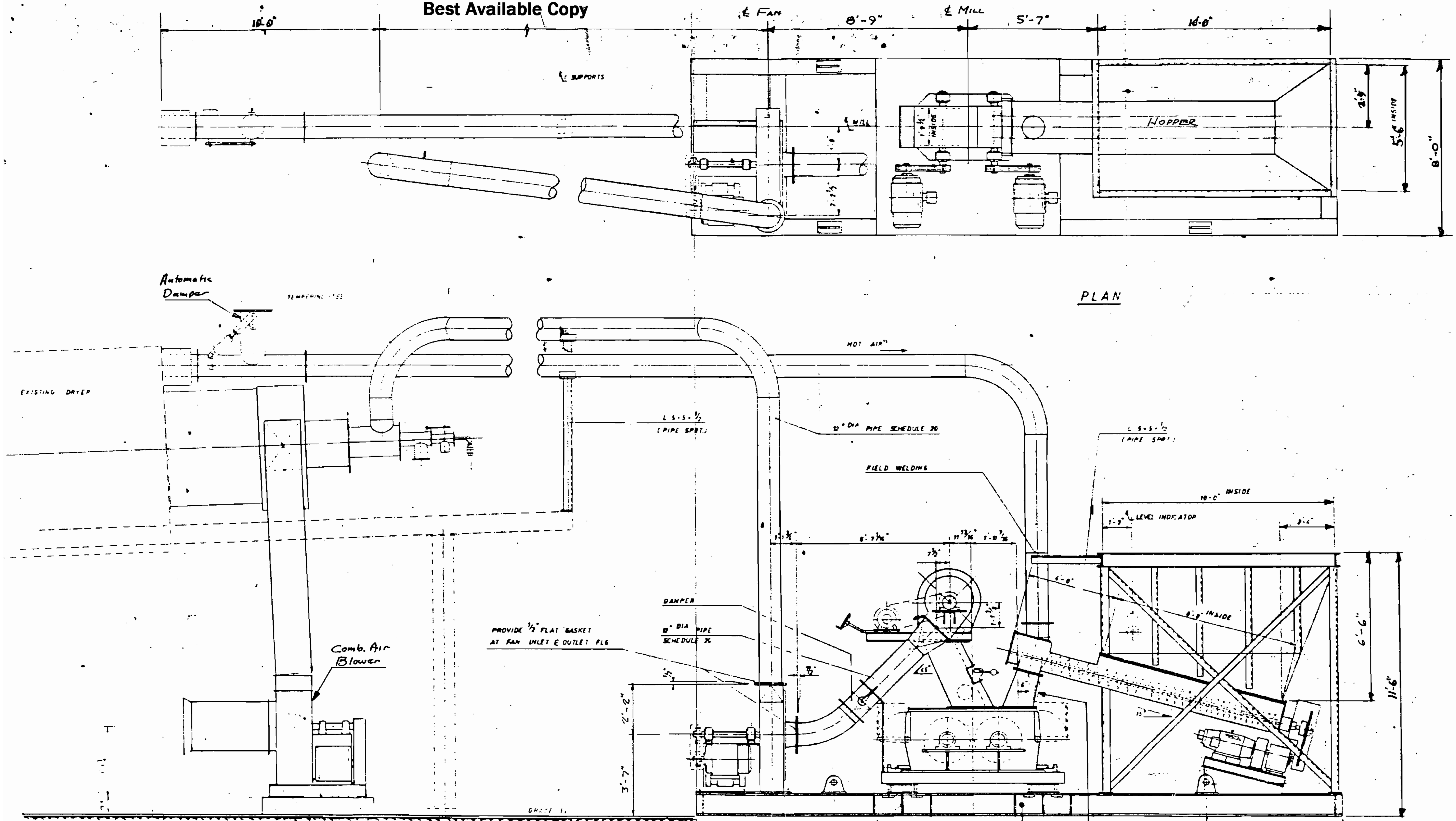
OPTIONS

Options will include custom selected motor controls and switchgear for the appropriate indoor or outdoor application. Complete skid mounted oil pump and oil metering sets are available. Customized control designs are available for integrating into an existing control system with adequate reserve capacity. Spare parts quotations with recommended spares are available through Polysius' Spare Parts Department.

ATTACHMENT 3

DRAWING OF COAL GRINDER

Best Available Copy



POLFIRE 650/500

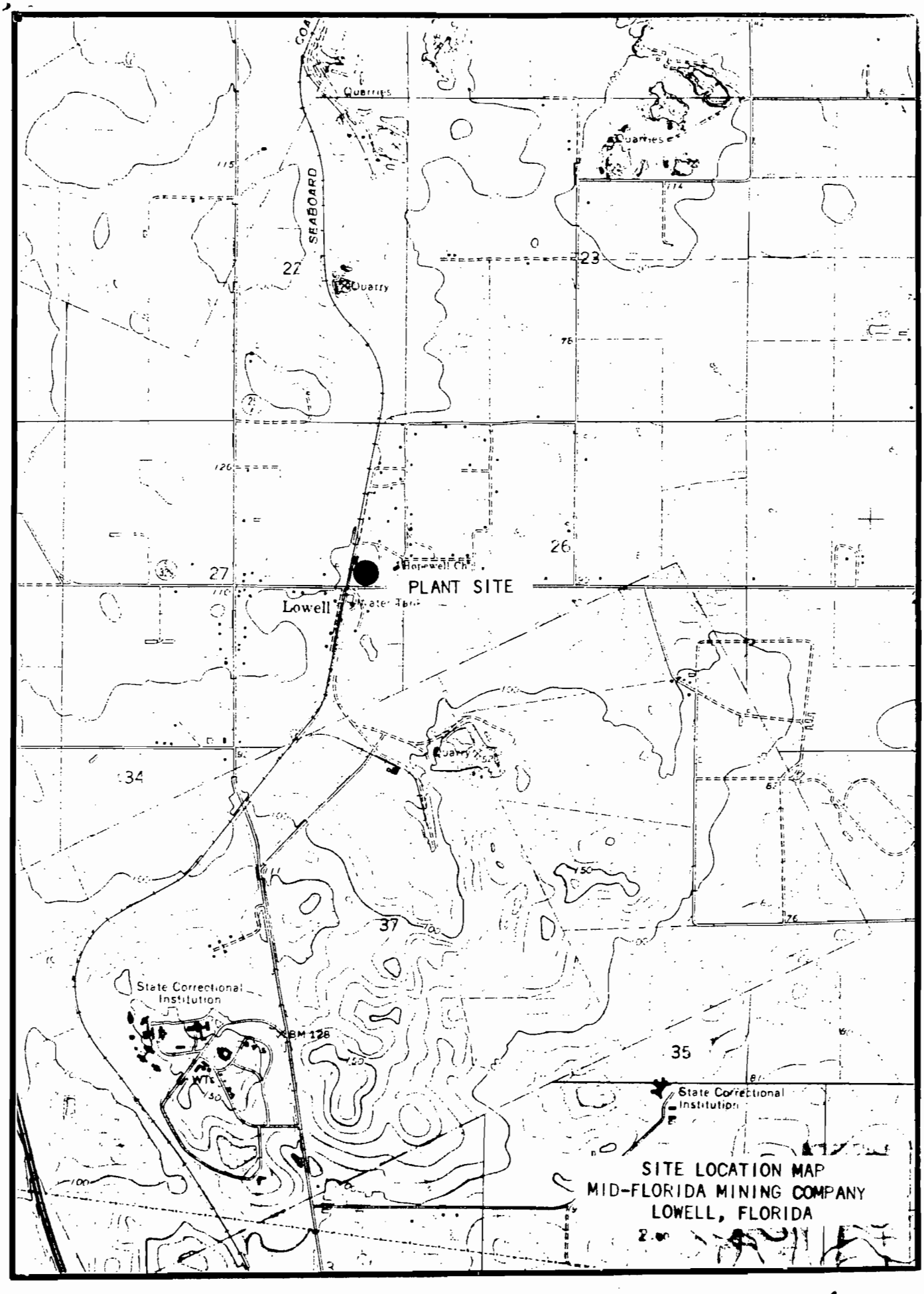
GENERAL ARRANGEMENT OF COAL FIRING SYSTEM

Scale 1/2" = 1'-0"

POLYSIUS

Best Available Copy

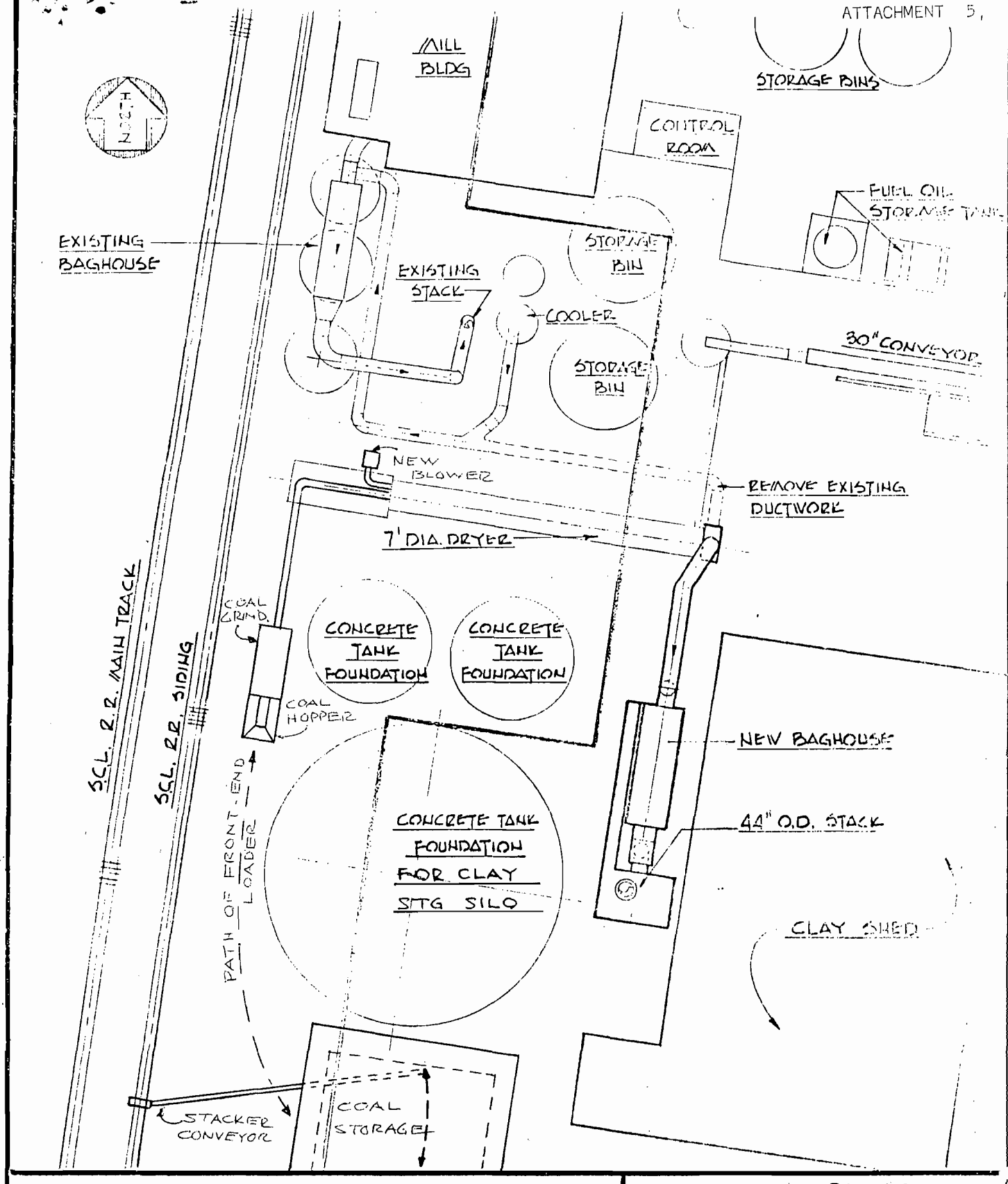
ATTACHMENT 4



SITE LOCATION MAP
MID-FLORIDA MINING COMPANY
LOWELL, FLORIDA

SHOLTES & KOOGLER

ATTACHMENT 5,



MID-FLORIDA MINING CO. - LOWELL, FLORIDA			COAL HANDLING SYSTEM
JOB NO. 8019	DATE 5-18-80	DRAWN JAH/LMS	Scale 1" = 30'

SPECIFICATIONS (Some Features Quoted as Options)

	24-II	48-V	60-III	66-I	48" vs. 60" % Increase	60" vs. 66" % Increase
Floor Area (Sq. Ft.)	6.6	20	30.7	43.5	+54%	+42%
Machine Height	59"	77"	83"	89"	—	—
Net Weight	525#	1600#	2800#	3600#	—	—
Drive	¾ HP	2 HP	5 HP	10 HP	—	—
VariSpeed (RPM)	12-36	2-14	1¾-13	1¼-12	—	—
Pan Perimeter Velocity (FPM)	75/226	25/176	27/204	22/207	—	—
Pan Opening Dia.	11"	19"	19"	19"	—	—
Front/Pan Rear (I.D.)	20½	39½	49	62½	—	—
Pan Lip Height to Floor	38"	40"	40"	43"	—	—
Brim Volume (Cu. Ft.)	3/4	6 2/3	15	30	+125%	+100%
Max. Load Weight	45#	400# 184	900# 409	1800# 818	+125%	+100%
Tablet Bed Height (Static)	6½"	14½"	20½"	23½"	+41%	+14½%
Exhaust Plenum Area (Sq. In.)	77	400/490*	825/1037*	1451/1825*		
Exhaust Plenum Pos (Degrees)	24/65	37/102* or 37/90	20/108* or 20/90	20/108* or 20/90		
Exhaust Volume (CFM)	350	800/2200	1200/4700	1500/8300		
Air Velocity thru Tablet Bed (in/sec. @ max.)	130	130	130	130		
Exhaust Connection	4" Dia.	12" Dia.	18" Dia.	20" Dia.		
Static Pressure Max. " W.G.	6"	8"	11"	12"		
CFM/100# Prod. @ Max.	777	550	522	461		
Sink Depth	3½	8	10	10		
Vibration Leveling Pads	Yes	Yes	Yes	Yes		
Self-Contained Exhaust Blower	Yes (1 HP)	No	No	No		
Pan Unloader	No	Yes	Yes	Yes		
Baffles	2	4	6	6		

*Plenum supplied with closure panel to reduce opening when required.

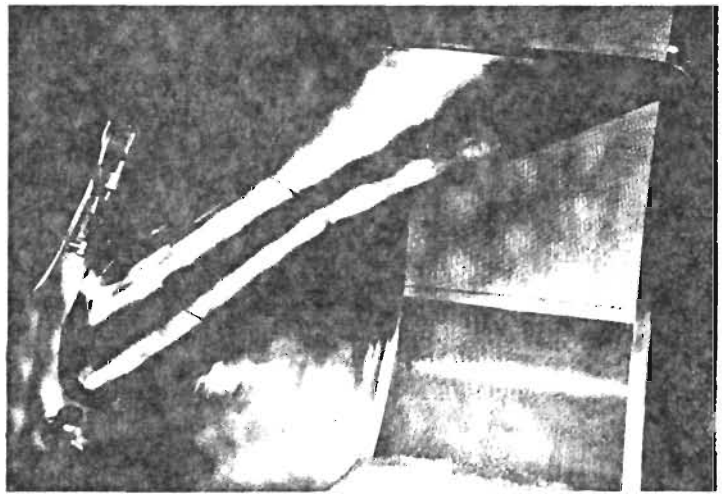
U.S. Pat. Nos. 3573966 and 3601086, CAN. Pat. No. 883719

ACCELA•SCOOP

NO MORE SCOOPING!

- Unloads 900 lbs. of tablets in seconds.
- Gentle action.
- Available for 48" or 60" ACCELA•COTAS
- Construction is of stainless steel for easy, thorough cleaning.
- Saves time, saves money.
- Clamps quickly to pan.

The ACCELA•SCOOP fastens to the pan simply and conveniently. Jog the pan for 3-4 revolutions and *all* of the tablets are unloaded.



THOMAS ENGINEERING INC.

CENTRAL AND ELA ROADS, P.O. BOX 198 • HOFFMAN ESTATES, ILLINOIS 60195
312/358-5800 • TELEX 28-1054

PRINTED IN USA FORM NO AC-79

MID-FLORIDA MINING COMPANY
BOX 68 LOWELL, FLORIDA 32663 904-732-7227

DER

DEC 16 1985

BAQM

Dept. of Environmental Regulation
3319 Maguire Blvd., Suite 232
Orlando, Florida 32803

Gentlemen:

Please be advised that Mr. James A. Slowinski, our Executive Vice President, has been and is empowered by the Board of Directors to review and execute all necessary documents pertaining to air quality environmental standards.

Very truly yours,

MID-FLORIDA MINING COMPANY

Whitfield M. Palmer, Jr.
Chairman of the Board

WMP/sp

AC 42-113787

STATE OF FLORIDA

DEPARTMENT OF ENVIRONMENTAL REGULATION

ST. JOHNS RIVER DISTRICT
3319 MAGUIRE BOULEVARD
SUITE 232
ORLANDO, FLORIDA 32803

DER

DEC 16 1985

BAQM

BOB GRAHAM
GOVERNOR

VICTORIA J. TSCHINKEL
SECRETARY

ALEX SENKEVICH
DISTRICT MANAGER

APPLICATION TO ~~OPERATE~~/CONSTRUCT AIR POLLUTION SOURCES

SOURCE TYPE: Clay dryer/Storage Silo [ ] New[1] [X] Existing[1]

APPLICATION TYPE: [X] Construction [ ] Operation [ ] Modification

COMPANY NAME: Mid-Florida Mining Company COUNTY: Marion

Identify the specific emission point source(s) addressed in this application (i.e. Lime Kiln No. 4 with Venturi Scrubber; Peaking Unit No. 2, Gas Fired) Clay dryer/Storage Silo

SOURCE LOCATION: Street SR 329 @ SCL RR City Lowell

UTM: East (17) 304.500 km North 3245.300 km

Latitude 29 ° 19 ' 52 "N Longitude 82 ° 11 ' 28 "W

APPLICANT NAME AND TITLE: James A. Slowinski, Executive Vice President

APPLICANT ADDRESS: Mid-Florida Mining Company, Post Office Box 68, Lowell, FL 32663

SECTION I: STATEMENTS BY APPLICANT AND ENGINEER

A. APPLICANT

I am the undersigned owner or authorized representative* of Mid-Florida Mining Co.

I certify that the statements made in this application for a Construction permit are true, correct and complete to the best of my knowledge and belief. Further I agree to maintain and operate the pollution control source and pollution contro facilities in such a manner as to comply with the provision of Chapter 403, Florid Statutes, and all the rules and regulations of the department and revisions thereof. also understand that a permit, if granted by the department, will be non-transferabl and I will promptly notify the department upon sale or legal transfer of the permitt establishment.

*Attach letter of authorization

Signed: James A. Slowinski

James A. Slowinski, Executive Vice-President
Name and Title (Please Type)

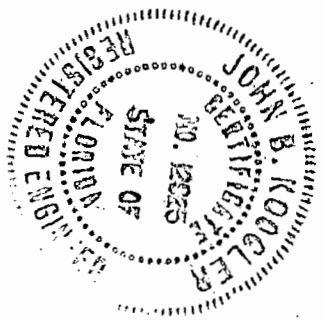
Date: _____ Telephone No. (904) 732-7227

B. PROFESSIONAL ENGINEER REGISTERED IN FLORIDA (where required by Chapter 471, F.S.)

This is to certify that the engineering features of this pollution control project hav been ~~designed~~/examined by me and found to be in conformity with modern engineerin principles applicable to the treatment and disposal of pollutants characterized in th permit application. There is reasonable assurance, in my professional judgment, tha

[1] See Florida Administrative Code Rule 17-2.100(57) and (104)

the pollution control facilities, when properly maintained and operated, will discharge an effluent that complies with all applicable statutes of the State of Florida and the rules and regulations of the department. It is also agreed that the undersigned will furnish, if authorized by the owner, the applicant a set of instructions for the proper maintenance and operation of the pollution control facilities and, if applicable, pollution sources.



Signed _____

John B. Koogler, Ph.D., P.E.
Name (Please Type)

Sholtes & Koogler, Environmental Consultants
Company Name (Please Type)

1213 NW 6th Street, Gainesville, Florida 32601
Mailing Address (Please Type)

Florida Registration No. 12925 Date: 12/11/85 Telephone No. (904) 377-5822

SECTION II: GENERAL PROJECT INFORMATION

A. Describe the nature and extent of the project. Refer to pollution control equipment, and expected improvements in source performance as a result of installation. State whether the project will result in full compliance. Attach additional sheet if necessary.

See Attachment 1

B. Schedule of project covered in this application (Construction Permit Application Only)

Start of Construction February 1986 Completion of Construction October 1986

C. Costs of pollution control system(s): (Note: Show breakdown of estimated costs only for individual components/units of the project serving pollution control purposes. Information on actual costs shall be furnished with the application for operation permit.)

No new or additional air pollution control equipment will be required on the dryer/silo system.

D. Indicate any previous DER permits, orders and notices associated with the emission point, including permit issuance and expiration dates.

A042-96009 issued 4/23/85, expiring 4/11/90; AC42-77048 issued 4/6/84, expired 11/30/84; A042-68788 issued 2/30/83, expired 4/6/84 with issuance of AC42-77048; AC42-43771 issued 10/8/81, expired 2/30/83 with issuance of A042-68788.

E. Requested permitted equipment operating time: hrs/day 24 ; days/wk 7 ; wks/yr 52 ;

if power plant, hrs/yr_____; if seasonal, describe:_____

F. If this is a new source or major modification, answer the following questions. (Yes or No)

NOT APPLICABLE; minor modification to a minor source.

1. Is this source in a non-attainment area for a particular pollutant? _____

   a. If yes, has "offset" been applied? _____

   b. If yes, has "Lowest Achievable Emission Rate" been applied? _____

   c. If yes, list non-attainment pollutants. _____

2. Does best available control technology (BACT) apply to this source? If yes, see Section VI. _____

3. Does the State "Prevention of Significant Deterioriation" (PSD) requirement apply to this source? If yes, see Sections VI and VII. _____

4. Do "Standards of Performance for New Stationary Sources" (NSPS) apply to this source? _____

5. Do "National Emission Standards for Hazardous Air Pollutants" (NESHAP) apply to this source? _____

H. Do "Reasonably Available Control Technology" (RACT) requirements apply to this source? _____

   a. If yes, for what pollutants?_____

   b. If yes, in addition to the information required in this form, any information requested in Rule 17-2.650 must be submitted.

Attach all supportive information related to any answer of "Yes". Attach any justification for any answer of "No" that might be considered questionable.

SECTION III: AIR POLLUTION SOURCES & CONTROL DEVICES (Other than Incinerators)

A. Raw Materials and Chemicals Used in your Process, if applicable:

Description	Contaminants		Utilization Rate - lbs/hr	Relate to Flow Diagram
	Type	% Wt		
Dryer: Clay	Part. Matter	2-4%	81,600	1
Coal*	Ash	10%	2,800	2
Silo: Dried Fullers	None	--	9,000 to silo	3
Earth	(All Product)		40,000 from silo	4
*Only when dryer is fired with coal				

B. Process Rate, if applicable: (See Section V, Item 1)

1. Total Process Input Rate (lbs/hr): 84,400 to dryer/9,000 fines to silo
2. Product Weight (lbs/hr): 78,880 from dryer/40,000 fines from silo

C. Airborne Contaminants Emitted: (Information in this table must be submitted for each emission point, use additional sheets as necessary)

Name of Contaminant	Emission[1]		Allowed[2] Emission Rate per Rule 17-2	Allowable[3] Emission lbs/hr	Potential[4] Emission		Relate to Flow Diagram
	Maximum lbs/hr	Actual T/yr			lbs/hr	T/yr	
Part.Matter	15.0	65.7	17-2.61(1)	31.3	3,000	13,140	5
SO_2	52.5	230.6	NA	52.5	70	307.5	5
NOx	29.4	129.2	NA	29.4	29.4	129.2	5
CO	0.8	3.7	NA	0.8	0.8	3.7	5
VOC*	0.2	0.9	NA	0.2	0.2	0.9	5

*With spent solvent firing; all other emission rates based on coal firing.

[1] See Section V, Item 2.

[2] Reference applicable emission standards and units (e.g. Rule 17-2.600(5)(b)2. Table II, E. (1) - 0.1 pounds per million BTU heat input)

[3] Calculated from operating rate and applicable standard.

[4] Emission, if source operated without control (See Section V, Item 3).

D. Control Devices: (See Section V, Item 4)

Name and Type (Model & Serial No.)	Contaminant	Efficiency	Range of Particles Size Collected (in microns) (If applicable)	Basis for Efficiency (Section V Item 5)
Flex-Kleen 120	Part. Matter	99.5	> 2 um	Estimated
WMWC 600 XLIII A-81 JC-115 Baghouse				Lowest effic. for coal
with 4:1 air:cloth ratio				firing.

E. Fuels

Type (Be Specific)	Consumption* avg/hr	Consumption* max./hr	Maximum Heat Input (MMBTU/hr)
Coal	2800	2800 lbs/hr	35.0
No. 5 fuel	245	245 gal/hr	35.0
Waste oil, terpene derivatives, Used kerosene, non-halogenated hydrocargons	272	272 gal/hr	35.0

*Units: Natural Gas--MMCF/hr; Fuel Oils--gallons/hr; Coal, wood, refuse, other--lbs/hr.

Fuel Analysis: Coal/No. 5 fuel/Waste Oils

Percent Sulfur: 1.25/1.25/0.5 Percent Ash: 10/0.5/0/2

Density: NA/7.8/7.45 lbs/gal Typical Percent Nitrogen: 1.0/0.3/Nil

Heat Capacity: 12,500/18,300/17,300 BTU/lb NA/142,740/128,885 BTU/gal

Other Fuel Contaminants (which may cause air pollution): Waste oils and solvents can contain up to 10,000 ppm lead and 2,000 ppm Cr, Cn, Sn, Al, Ni, Sb, Mn, Ba, P, Zn & Mo.

F. If applicable, indicate the percent of fuel used for space heating.

Annual Average NOT APPLICABLE Maximum _____

G. Indicate liquid or solid wastes generated and method of disposal.

Fines collected in the baghouse are marketed as an impervious liner for pond bottoms.

H. Emission Stack Geometry and Flow Characteristics (Provide data for each stack):

Stack Height: 45 ft. Stack Diameter: 3/6 ft.

Gas Flow Rate: 43,750 ACFM 25,900 DSCFM Gas Exit Temperature: 200 °F.

Water Vapor Content: 26 % Velocity: 70.6 FPS

SECTION IV: INCINERATOR INFORMATION

NOT APPLICABLE

Type of Waste	Type 0 (Plastics)	Type I (Rubbish)	Type II (Refuse)	Type III (Garbage)	Type IV (Pathological)	Type V (Liq.& Gas By-prod.)	Type VI (Solid By-prod.)
Actual lb/hr Incinerated							
Uncontrolled (lbs/hr)							

Description of Waste _____

Total Weight Incinerated (lbs/hr) _____ Design Capacity (lbs/hr) _____

Approximate Number of Hours of Operation per day _____ day/wk _____ wks/yr. _____

Manufacturer _____

Date Constructed _____ Model No. _____

	Volume $(ft)^3$	Heat Release (BTU/hr)	Fuel		Temperature (°F)
			Type	BTU/hr	
Primary Chamber					
Secondary Chamber					

Stack Height: _____ ft. Stack Diamter: _____ Stack Temp. _____

Gas Flow Rate: _____ ACFM _____ DSCFM* Velocity: _____ FPS

*If 50 or more tons per day design capacity, submit the emissions rate in grains per standard cubic foot dry gas corrected to 50% excess air.

Type of pollution control device: [ ] Cyclone [ ] Wet Scrubber [ ] Afterburner

[ ] Other (specify) _____

Brief description of operating characteristics of control devices: _____

_____

_____

_____

_____

Ultimate disposal of any effluent other than that emitted from the stack (scrubber water, ash, etc.):

_____

_____

_____

_____

NOTE: Items 2, 3, 4, 6, 7, 8, and 10 in Section V must be included where applicable.

SECTION V: SUPPLEMENTAL REQUIREMENTS

(See Pages 7a and 7b)

Please provide the following supplements where required for this application.

1. Total process input rate and product weight -- show derivation [Rule 17-2.100(127)]

2. To a construction application, attach basis of emission estimate (e.g., design calculations, design drawings, pertinent manufacturer's test data, etc.) and attach proposed methods (e.g., FR Part 60 Methods 1, 2, 3, 4, 5) to show proof of compliance with applicable standards. To an operation application, attach test results or methods used to show proof of compliance. Information provided when applying for an operation permit from a construction permit shall be indicative of the time at which the test was made.

3. Attach basis of potential discharge (e.g., emission factor, that is, AP42 test).

4. With construction permit application, include design details for all air pollution control systems (e.g., for baghouse include cloth to air ratio; for scrubber include cross-section sketch, design pressure drop, etc.)

5. With construction permit application, attach derivation of control device(s) efficiency. Include test or design data. Items 2, 3 and 5 should be consistent: actual emissions = potential (1-efficiency).

6. An 8 1/2" x 11" flow diagram which will, without revealing trade secrets, identify the individual operations and/or processes. Indicate where raw materials enter, where solid and liquid waste exit, where gaseous emissions and/or airborne particles are evolved and where finished products are obtained.

7. An 8 1/2" x 11" plot plan showing the location of the establishment, and points of airborne emissions, in relation to the surrounding area, residences and other permanent structures and roadways (Example: Copy of relevant portion of USGS topographic map).

8. An 8 1/2" x 11" plot plan of facility showing the location of manufacturing processes and outlets for airborne emissions. Relate all flows to the flow diagram.

SECTION V
SUPPLEMENTAL REQUIREMENTS

1. Process Input and Product Weight Rates:

Input:	Clay	81,600 lb/hr	(dry wt)
	Coal	2,800 lb/hr	(only when coal is fired
	Total	84,400 lb/hr	
Product:	Clay	78,880 lb/hr	(dry wt)
	Fines & Ash	3,000 lb/hr	(to storage silo)
	Total	81,880 lb/hr	

2/3. Uncontrolled and Controlled Emissions:

Particulate Matter

Maximum expected Controlled Emission Rate will be 15.0 lb/hr or 65.7 tpy.

Uncontrolled emissions, based on a 99.5% collection efficiency
= 15.0/(1 - 0.995) = 3000 lb/hr
x 8760/2000
= 13,140 tpy.

Sulfur Dioxide

Uncontrolled
= 2800 lb coal/hr x (0.0125 x 2) lb SO_2/lb coal
= 70.0 lb/hr
or
= 12,300 tpy coal x (0.0125 x 2) ton SO_2/ton coal
= 307.5 tpy.

Controlled, assuming 25% sorption when coal is fired
(Worst Case)
= 70.0 x (1 - 0.25)
= 52.5 lb/hr
or
= 230.6 tpy.

Nitrogen Oxides

Controlled and Uncontrolled @ 21 lb/ton of coal
= (2800/2000) tons coal/hr x 21 lb/ton
= 29.4 lb/hr
or
= 12,300 tpy coal x 21 lb/ton x 1/2000
= 129.2 tpy.

Carbon Monoxide

Controlled and Uncontrolled @ 0.6 lb/ton of coal
= (2800/2000) x 0.6 lb/ton
= 0.8 lb/hr
or
= 12,300 tpy coal x 0.6 lb/ton x 1/2000
= 3.7 tpy.

VOC (Non-Methane)

Controlled and Uncontrolled @ 0.07 lb/ton of coal
= (2800/2000) x 0.07 lb/ton
= 0.1 lb/hr
or
= 12,300 tpy coal x 0.07 lb/ton x 1/2000
= 0./4 tpy.

4. Air Pollution Control System:

Flex-Kleen Baghouse - Model 120 WMWC 600 XLIII, A-81JC-115, with 4:1 air:cloth ratio.
The specifications for this baghouse are in the existing permit file.

5. Control Efficiencies:

Worst case control efficiency for particulate matter has been estimated to be 99.5% and the lowest sulfur dioxide sorption rate has been estimated to be 25%; both when coal is fired to the kiln.

6. Process Flow Diagram - See Attachment 5.

7. Location Map -See Attachment 6.

8. Site Map - See Attachment 7.

9. The appropriate application fee in accordance with Rule 17-4.05. The check should be made payable to the Department of Environmental Regulation.

10. With an application for operation permit, attach a Certificate of Completion of Construction indicating that the source was constructed as shown in the construction permit.

SECTION VI: BEST AVAILABLE CONTROL TECHNOLOGY

A. Are standards of performance for new stationary sources pursuant to 40 C.F.R. Part 60 applicable to the source? NOT APPLICABLE

[ ] Yes [ ] No

Contaminant	Rate or Concentration

B. Has EPA declared the best available control technology for this class of sources (If yes, attach copy)

[ ] Yes [ ] No

Contaminant	Rate or Concentration

C. What emission levels do you propose as best available control technology?

Contaminant	Rate or Concentration

D. Describe the existing control and treatment technology (if any).

1. Control Device/System:
2. Operating Principles:
3. Efficiency:*
4. Capital Costs:

*Explain method of determining

5. Useful Life:

6. Operating Costs:

7. Energy:

8. Maintenance Cost:

9. Emissions:

Contaminant	Rate or Concentration

10. Stack Parameters

a. Height: ft.

b. Diameter: ft.

c. Flow Rate: ACFM

d. Temperature: °F.

e. Velocity: FPS

E. Describe the control and treatment technology available (As many types as applicable, use additional pages if necessary).

1.

a. Control Device:

b. Operating Principles:

c. Efficiency:[1]

d. Capital Cost:

e. Useful Life:

f. Operating Cost:

g. Energy:[2]

h. Maintenance Cost:

i. Availability of construction materials and process chemicals:

j. Applicability to manufacturing processes:

k. Ability to construct with control device, install in available space, and operate within proposed levels:

2.

a. Control Device:

b. Operating Principles:

c. Efficiency:[1]

d. Capital Cost:

e. Useful Life:

f. Operating Cost:

g. Energy:[2]

h. Maintenance Cost:

i. Availability of construction materials and process chemicals:

[1]Explain method of determining efficiency.
[2]Energy to be reported in units of electrical power - KWH design rate.

j. Applicability to manufacturing processes:

k. Ability to construct with control device, install in available space, and operate within proposed levels:

3.

a. Control Device:

b. Operating Principles:

c. Efficiency:[1]

d. Capital Cost:

e. Useful Life:

f. Operating Cost:

g. Energy:[2]

h. Maintenance Cost:

i. Availability of construction materials and process chemicals:

j. Applicability to manufacturing processes:

k. Ability to construct with control device, install in available space, and operate within proposed levels:

4.

a. Control Device:

b. Operating Principles:

c. Efficiency:[1]

d. Capital Costs:

e. Useful Life:

f. Operating Cost:

g. Energy:[2]

h. Maintenance Cost:

i. Availability of construction materials and process chemicals:

j. Applicability to manufacturing processes:

k. Ability to construct with control device, install in available space, and operate within proposed levels:

F. Describe the control technology selected:

1. Control Device:

2. Efficiency:[1]

3. Capital Cost:

4. Useful Life:

5. Operating Cost:

6. Energy:[2]

7. Maintenance Cost:

8. Manufacturer:

9. Other locations where employed on similar processes:

a. (1) Company:

(2) Mailing Address:

(3) City:

(4) State:

[1]Explain method of determining efficiency.
[2]Energy to be reported in units of electrical power - KWH design rate.

(5) Environmental Manager:

(6) Telephone No.:

(7) Emissions:[1]

Contaminant	Rate or Concentration

(8) Process Rate:[1]

b. (1) Company:

(2) Mailing Address:

(3) City: (4) State:

(5) Environmental Manager:

(6) Telephone No.:

(7) Emissions:[1]

Contaminant	Rate or Concentration

(8) Process Rate:[1]

10. Reason for selection and description of systems:

[1]Applicant must provide this information when available. Should this information not be available, applicant must state the reason(s) why.

SECTION VII - PREVENTION OF SIGNIFICANT DETERIORATION

NOT APPLICABLE

A. Company Monitored Data

1. _____ no. sites _____ TSP _____ ( ) SO^2* _____ Wind spd/dir

Period of Monitoring ____/____/____ to ____/____/____
month day year month day year

Other data recorded _____

Attach all data or statistical summaries to this application.

*Specify bubbler (B) or continuous (C).

2. Instrumentation, Field and Laboratory

a. Was instrumentation EPA referenced or its equivalent? [ ] Yes [ ] No

b. Was instrumentation calibrated in accordance with Department procedures?

[ ] Yes [ ] No [ ] Unknown

B. Meteorological Data Used for Air Quality Modeling

1. _____ Year(s) of data from ____/____/____ to ____/____/____
month day year month day year

2. Surface data obtained from (location)_____

3. Upper air (mixing height) data obtained from (location)_____

4. Stability wind rose (STAR) data obtained from (location)_____

C. Computer Models Used

1. _____ Modified? If yes, attach description.

2. _____ Modified? If yes, attach description.

3. _____ Modified? If yes, attach description.

4. _____ Modified? If yes, attach description.

Attach copies of all final model runs showing input data, receptor locations, and principle output tables.

D. Applicants Maximum Allowable Emission Data

Pollutant	Emission Rate	
TSP	_____	grams/sec
SO^2	_____	grams/sec

E. Emission Data Used in Modeling

Attach list of emission sources. Emission data required is source name, description of point source (on NEDS point number), UTM coordinates, stack data, allowable emissions, and normal operating time.

F. Attach all other information supportive to the PSD review.

G. Discuss the social and economic impact of the selected technology versus other applicable technologies (i.e., jobs, payroll, production, taxes, energy, etc.). Include assessment of the environmental impact of the sources.

H. Attach scientific, engineering, and technical material, reports, publications, journals, and other competent relevant information describing the theory and application of the requested best available control technology.

ATTACHMENT 1

SECTION IIA
DESCRIPTION OF THE PROJECT

An existing clay dryer is permitted (A042-96009) to be fired with No. 5 fuel oil, waste oil, terpene derivatives, spent non-halogenated hydrocarbon solvents or used kerosene. Air pollutant emissions from the dryer and an associated dried clay storage silo are controlled with a fabric filter collector (a baghouse). The proposed modification to the dryer/storage silo permit is to allow the clay dryer to be fired with coal having a maximum sulfur content of 1.25 percent. The permitted production rate of the clay dryer (40.8 tons per hour input), the permitted dried clay input rate to the storage silo (4.5 tons per hour), and the permitted dried clay unloading rate from the silo (20.0 tons per hour) will not be effected by the proposed modification.

Data presented herein establish that the existing Mid-Florida Mining Company facility is a minor emitting facility; i.e., the emission rate of no single criteria pollutant exceeds 250 tons per year (See ATTACHMENT 2). The data presented in Attachment 2 show that the present actual particulate matter emissions from the clay

dryer/storage silo are 10.0 tons per year and the particulate matter emissions from the fugitive dust control system are 10.6 tons per year; resulting in a total actual particulate matter emission rate from the facility of 20.6 tons per year. Actual sulfur dioxide emissions have been established at 19.4 tons per year, nitrogen oxides emissions at 30.9 tons per year, carbon monoxide emissions at 1.0 tons per year and non-methane hydrocarbon emissions at 0.7 tons per year.

The proposed modification to permit coal firing to the clay dryer will result in an increase in sulfur dioxide emissions of 211.2 tons per year and lesser increases in the emission rates of particulate matter, nitrogen oxides and carbon monoxide. The combustion of coal will result in a decrease in the emission rate of non-methane hydrocarbons but since the option to burn liquid fuels will be retained, tghere will be no change in volatile hydrocarbonemissions (See ATTACHMENTS 3&4).

Since the existing Mid-Florida Mining Company facility is a minor emitting facility, a modification to the facility will be subject to the New Source Review Requirements of Chapter 17-2.500, Florida Administrative Code (FAC), only if the modification itself will result in an emission rate increase of any criteria pollutant in excess of 250 tons per year (see 17-2.500(2)(d)3, FAC). Since the proposed

modification will result in a maximum increase of a criteria pollutant of 211.2 tons per year, the proposed modification to allow coal firing to the clay dryer will not be subject to the New Source Review Requirements of 17-2.500, FAC; the PSD review requirements.

In addition to modifying Permit A042-96009 to permit coal firing, a request is being made to modify two other specific conditions of permit No. A042-96009. The conditions that will be effected by these modifications are Specific Condition No. 10 and Specific Condition No. 13.

Specific Condition No. 10 of the subject permit states, in part, "the maximum amount of lead content in the waste oil shall be limited to a maximum of 1,000 ppm by weight." This conditions is not consistent with Specific Condition No. 13 in Construction Permit AC42-77048 issued by the Central Air Permitting Section (CAPS), Bureau of Air Quality Management, Florida Department of Environmental Regulation, Tallahassee, Florida. Specific Condition No. 13 of Construction Permit AC42-77048 states "the maximum amount of lead content in the waste oil is limited to a maximum of 1% or 10,000 ppm."

In establishing Specific Condition No. 13 of the constructionn permit (allowing 10,000 ppm of lead), CAPS relied upon the Sholtes & Koogler

Environmental Consultants' letter of February 3, 1984 to Mr. Charles M. Collins; a copy of which was forwarded to Mr. Clair Fancy on March 23, 1984. Copies of both the February 3 and March 23, 1984 correspondence are attached hereto.

In the February 3, 1984 letter, it was demonstrated that waste oil with a 10,000 ppm lead content can be mixed with spent hydrocarbon solvents having a lead content of 2,000 ppm in the ratio 80 percent waste oil to 20 percent solvents and that the blended fuel (having a lead content of 8400 ppm) can be burned in the Mid-Florida Mining dryer without violating the ambient air quality standard for lead. It was demonstrated in the February 3, 1984 letter that the combustion of such a blended fuel will result in a maximum 24-hour lead impact of 10.0 micrograms per cubic meter assuming no control of lead emissions. This 24-hour impact is equivalent to a quarterly (calendar) impact of 1.1 micrograms per cubic meter (using a time-concentration relationship developed in the February 3, 1984 letter).

The lead impact of 1.1 microgram per cubic meter, quarterly average, compares with the EPA established ambient air quality standard for lead of 1.5 micrograms per cubic meter, quarterly average. Again, it should be stressed that the reported impact of 1.1 microgram per cubic meter assumes no control of lead emissions.

Subsequent to the referenced correspondence, EPA reported on trial burn conducted at the Mid-Florida Mining facility to evaluate the effectiveness of the dryer for destroying waste oil and waste solvents. Portions of this report have been reproduced and are attached hereto. On page 7-1 of the report it states, "These [lead and zinc] emission rates generally correspond to less than 0.1 percent of the total input rate. Therefore, the bulk of these metals were absorbed by the clay product or collected in the baghouse."

Based on results of the EPA report, the control efficiency for lead in the Mid-Florida Mining dryer is 99.9+ percent. If this control is applied to the lead emissions referenced in February 3, 1984 SKEC letter, the resulting quarterly impact of lead emissions will be 0.0011 micrograms per cubic meter; compared with the air quality standard for lead of 1.5 micrograms per cubic meter, quarterly average.

Based upon the above information, it is requested that the maximum allowable lead content of the waste oil burned by Mid-Florida Mining again be increased to 10,000 ppm, by weight, as it was originally permitted in Construction Permit AC42-77048.

The second modification requested is to Specific Condition No. 13 of the referenced Operating Permit. This condition states, in part, "The upper limit of chloride content will be 1.5% by weight [in the spent hydrocarbon solvents] and when blended in 20/80 mixture will have an actual limit of 0.3% chloride. . .". The 0.3 percent chloride limit will result only if there are no chlorides present in the waste oil that is blended with the spent solvents (assuming a 1.5 percent chloride content in the waste solvents).

Mid-Florida Mining anticipates that there may be some chlorides in the waste oil received and requests that the maximum chloride limit of the blended fuel (20 percent solvents and 80 percent waste oil) be increased to 0.94 percent. This will allow a maximum chloride content in the waste oil of 0.8 percent.

The referenced EPA trial burn report states that 70-75 percent of the chlorides in the fuel to the dryer are absorbed within the system. Assuming this absorption rate, the chloride limit of 0.94 percent in the blended fuel will result in an emission rate that is almost identical with the emission rate that would result from the combustion of a blended fuel with 0.3 percent chloride content (0.94 x 0.3 = 0.28 percent vs. 0.3 percent); assuming no absorption with the 0.3 percent chloride fuel as was assumed when developing the permit.

The original chloride limit of 0.3 percent was established, as stated in the subject operating permit, "to prevent corrosive action on the baghouse filter material." The limit was not established to limit the ambient impact. Since the resulting chloride emissions, assuming 70-75 percent absorption, will be no more than the permitted chloride emissions rate under existing permit conditions and since the operation of the dryer system is controlled so that the dew point of the gases in the baghouse are never reached (stack gas temperatures average 200°F with a moisture content of approximately 26 percent), there is no environmental or operational reason for not allowing the requested higher chloride limit to the blended fuel.

If the requested modifications to both Specific Conditions No., 10 and No. 13 of permit A042-96009 can be granted, the suggested wording follows:

10. The maximum lead content in the waste oil shall be limited to a maximum of 10,000 ppm by weight and the maximum chloride content of the waste oil must be limited to 0.8% by weight. Yearly waste oil fuel analyses must be conducted on the actual waste oil used on the site. The results of the analyses shall be submitted to the Department at the same time as the compliance test report.

13. Non-halogenated spent hydrocarbon solvents shall be a permitted fuel at a maximum volume mixture of 20 percent with waste oils. The upper limit of the chloride content of the spent solvents shall be 1.5 percent by weight. When spent solvents are blended in a 20/80 mixture with wasteoil, the blended fuel shall have an upper limit of 0.94 percent chloride. The following metals will have an upper limit of 2,000 ppm by weight in the spent solvents: chromium, lead, copper, tin, aluminum, nickel, antimony, manganese, barium, phosphorus, zinc and molybdenum.

The facility, after the proposed modifications, will operate in compliance with all applicable air quality regulations.

SHOLTES & KOOGLER, ENVIRONMENTAL CONSULTANTS
1213 N.W. 6th Street Gainesville, Florida 32601 (904) 377-5822

SKEC 290-83-02

March 23, 1984

Mr. Clair Fancy
Florida Department of
Environmental Regulation
Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, Florida 32301

DER

Subject: Mid-Florida Mining Company
Marion County, Florida
Clay Dryer and Clay Storage Silo
Permit AC24-77048

Dear Mr. Fancy:

On February 3, 1984, I sent the attached letter to Mr. Charles Collins of the FDER St. Johns River District Office regarding the subject facility. In this letter, I requested a modification of Specific Condition 21 which was added to Air Pollution Source Operating Permit A042-68788 on October 19, 1983. Permit A042-68788 is the operating permit under which the Mid-Florida Mining clay dryer presently operates and the permit which will be replaced by the subject permit.

Specific Condition 21 of Permit A042-68788 was incorporated in the subject permit as Specific Condition 16. This Condition restricts the concentration of chromium, lead, copper, tin, aluminum, nickel, antimony, manganese, barium, phosphorus, zinc and molybdenum in a mixture of 20 percent non-halogenated spent hydrocarbon solvents and 80 percent waste oil to 400 parts per million. In my letter of February 3, 1984 to Mr. Collins, we requested that the 400 parts per million limit be removed. Support for this request is provided in the letter to Mr. Collins, a copy of which is attached.

Based upon information contained in the attached letter we are also requesting of you that the 400 parts per million limit on the specific heavy metals be removed from Permit Condition 16 of draft Permit AC42-77058. If there are any questions regarding this matter or if additional information is necessary, please contact me.

Very truly yours,

SHOLTES & KOOGLER,
ENVIRONMENTAL CONSULTANTS, INC.

John B. Koogler, Ph.D., P.E.

JBK:ldh
Enclosure

cc: Mr. Jim Kleekamp

SHOLTES & KOOGLER, ENVIRONMENTAL CONSULTANTS
1213 N.W. 6th Street Gainesville, Florida 32601 (904) 377-5822

SKEC 290-83-02

February 3, 1984

Mr. Charles M. Collins
Florida Department of
Environmental Regulation
3319 Maguire Boulevard, Suite 232
Orlando, Florida 32803

Subject: Marion County - AP
Mid-Florida Mining Company
Clay Dryer - A042-68788
Modification of Conditions

Dear Mr. Collins:

On behalf of Mid-Florida Mining, I would like to request a modification of permit Condition 21 for the subject air pollution source operating permit as set forth the permit modifications dated October 19, 1983. This condition permits the use of a blended fuel consisting of 20 percent non-halogenated spent hydrocarbon solvents and 80 percent waste oil. The condition further limits the concentration of 12 metals in the spent solvents to 2,000 parts per million and limits the concentration of these metals in the blended fuel to 400 parts per million. We are requesting a modification to the 400 parts per million limit.

The 400 parts per million limit for the metals apparently derives from my letter to you of September 16, 1983. In this letter I state, "mixing the spent hydrocarbon solvents, containing a maximum of 2,000 parts per million of any one heavy metal, with other fuel will result in a maximum heavy metals concentration in the blended fuel of 400 parts per million." This statement is true if one assumes that the "other fuels" contain no heavy metals to begin with. In reality, and I apologize for not taking this into consideration when I prepared my letter of September 16, 1983, the waste oil that Mid-Florida Mining

blends with the spent solvents can contain up to 10,000 parts per million of lead (Specific Condition 9 of Permit A042-68788 as issued on August 30, 1983).

In the following paragraphs it will be demonstrated that the ambient exposure limit for lead is more stringent than the exposure limits for other metals addressed in the subject permit and further demonstrated that a blend fuel consisting of 80 percent waste oil with 10,000 parts per million lead and 20 percent spent solvents with 2,000 parts per million lead can be burned without creating a threat to ambient air quality.

If one assumes that the spent solvents containing 2,000 parts per million of lead are blended with a waste oil containing 10,000 parts per million of lead in a ratio of 20 percent to 80 percent, the resulting blended fuel will have a lead concentration of 8,400 parts per million (see attached calculation sheet). The density of the blended fuel will be 7.33 pounds per gallon and the firing rate of the fuel to the clay dryer will be 271 gallons per hour. Based on these conditions, the uncontrolled lead emissions could approach 16.7 pounds per hour.

Referring to my letter of October 6, 1981, it will be noted that a lead emission rate from the subject dryer of 2.03 pounds per hour resulted in a maximum 24-hour lead impact on ambient air of 1.23 micrograms per cubic meter. By proportion, the 16.7 pound per hour lead emission rate will result in a 10.1 microgram per cubic meter lead impact for the 24-hour period; assuming zero lead removal in both the dryer and the baghouse. Realistically, one would expect at least a 90 percent lead removal in the combined system resulting in a maximum 24-hour lead impact of 1.0 micrograms per cubic meter.

Referring to my October 6, 1981 letter again, a relationship between ambient concentrations and averaging times was developed. This relationship is:

$$X = X_0(t_0/t)^{(0.49)}$$

where: X = ambient concentration (micrograms per cubic meter) during averaging time t (hours, and

X_0 = ambient concentration (micrograms per cubic meter) during averaging time t_0 (hours).

This equation was based on emissions from the Mid-Florida Mining clay dryer and Orlando meteorological data; making it an appropriate equation to evaluate conditions at Mid-Florida Mining. The equation can be used to relate the EPA developed quarterly (3 month) ambient air quality standard for lead (1.5 micrograms per cubic meter) to an equivalent lead standard for other averaging times. For convenience, the quarterly lead standard was used to calculate an equivalent 8-hour exposure standard and an equivalent 24-hour exposure standard. The 8-hour equivalent standard was calculated so that a direct comparison could be made with the 8-hour Occupational Safety and Health Administration exposure standard. The equivalent 24-hour standard was calculated since the 24-hour impact of lead emissions from Mid-Florida Mining is known (10.1 micrograms per cubic meter with no control or 1.0 micrograms per cubic meter with 90 percent control).

The equivalent 8-hour lead standard was calculated to be 23.5 micrograms per cubic meter and the equivalent 24-hour lead standard was calculated to be 11.7 micrograms per cubic meter (see attached). The Occupational Safety and Health Administration exposure limit for lead (see attached table) is 200 micrograms per cubic meter or approximately 10 times greater than the equivalent EPA lead standard. Based on the factor of 10 difference between the two standards, equivalent 8-hour EPA standards for the metals limited by Condition 21 of your October 19, 1983 letter were calculated and are listed in the attached table. Likewise, equivalent 24-hour standards for all of the metals are also listed.

Again, returning to lead since the exposure limit to this metal is the most stringent standard, one notes that the equivalent 24-hour lead standard is 11.7 micrograms per cubic meter. This standard is greater than the expected impacts of 10.1 micrograms per cubic meter assuming no control and 1.0 micrograms per cubic meter, assuming 90 percent control. The equivalent standards for the other metals are from 2.5 to 75 times greater than the standard for lead; or between 3 to 90 times greater than the ambient concentration of any metal if the metal was present in the waste oil in a concentration of 10,000 parts per million and in the spent solvent in a concentration of 2,000 parts per million. And, this assumes no emission control.

The information provided in the above paragraphs demonstrates that the concentration of any of the metals in the blended fuel consisting of spent solvents and waste oil, can be as high as 8,400 parts per million without causing adverse on environmental impact. Based upon this information, we request that the sentence, "Once mixed

20 max/80 the actual limit is 400 ppm." be removed from Condition 21 as stated in the modification of conditions to permit A042-68788 dated October 19, 1983.

If any additional information is required of if you have any questions regarding the information contained herein, please feel free to contact me.

Very truly yours,

SHOLTES & KOOGLER,
ENVIRONMENTAL CONSULTANTS, INC.

John B. Koogler

John B. Koogler, Ph.D., P.E.

JBK:ldh
Enclosure

cc: Mr. Jim Kleekamp

AIR QUALITY STANDARDS FOR METALS LIMITED BY PERMIT A042-68788

Metal	Exposure Concentration (ug/m^3) 8-Hr OSHA Std.	Equivalent[1] 8-Hr EPA Standard	Equivalent[2] 24-Hr EPA Standard	Quarterly[3] (3-Mo) EPA Standard	24-Hr Impact of Mid-Florida Emissions Worst Case[4]
Chromium	500	50	29.1		
Lead	200	20	11.7	1.5	10.1
Nickel	1000	100	58.3		
Copper	1000	100	58.3		
Antimony	500	50	29.1		
Phosphorus	1000	100	58.3		
Tin	2000	200	116.6		
Manganese	5000	500	291.5		
Barium	500	50	29.1		
Molybdenum	5000	500	291.5		
Aluminum	15000	1500	874.5		
Zinc	5000	500	291.5		

(1) EPA standard assumed to be 10 times more stringent based on ratio of EPA lead standard and OSHA lead standard (see attached calculation sheet for lead).

(2) Ratio of equivalent 24-hour EPA standard to equivalent 8-hour EPA standard is 0.58 based on 1974 Orlando meteorology (see attached calculations).

(3) Ratio of quarterly EPA standard to equivalent 24-hour EPA standard is 0.11 based on 1974 Orlando meteorology (see attached calculations).

(4) "Worst case" assumes firing blend oil at 271 gal/hr; the blend consisting of 80% waste oil at 10,000 ppm lead and 20% spent solvents at 2,000 ppm, and zero lead removal in the clay dryer and baghouse.

Standard Development

OSHA 8-hr exposure std for lead = 200 $\mu g/m^3$

Equivalent 8-hr EPA std for lead = 23.5 $\mu g/m^3$

Ratio EPA/OSHA = 23.5/200 = 0.12

Say 0.1; that is the EPA std for lead is 10 times more stringent than OSHA std.

Assume 10 x factor holds for all metals

Therefore:

Metal	8-hr OSHA std	÷ 10 =	Equiv 8-hr EPA std
Chromium	500 $\mu g/m^3$		50 $\mu g/m^3$
Lead	200		20 *
Nickel	1000		100
Copper	1000		100
Antimony	500		50
Phosphorus	1000		100
Tin	2000		200
Manganese	5000		500
Barium	500		50
Molybdenum	5000		500
Aluminum	15000		1500
Zinc	5000		500

* Most Stringent Std

24-hour lead standard = $20(8/24)^{0.49}$ = 11.7 $\mu g/m^3$

3-mo avg lead standard = 1.5 $\mu g/m^3$, NAAQS

Mid-Florida Mining
Lead Emissions Calculations

Blend Oil

Spent Solvent @ 2000 ppm (max) lead - 20%
Waste Oil @ 10,000 ppm (max) lead - 80%

Lead in blend oil
= 2000(0.2) + 10,000(0.8)
= 8400 ppm (max)

Density = 7.33 lb/gal

Firing Rate = 271 gal/hr

Uncontrolled Lead Emissions
= 271 gal/hr x 7.33 lb/gal x 1/10^6 x 8400 ppm
= 16.68 lb/hr, uncontrolled

From 10/6/81 SKEC letter:

Lead emissions of 2.03 lb/hr resulted in a 24-hr impact of 1.23 $\mu g/m^3$

Impact @ 16.68 #/hr
$= \frac{16.68}{2.03} \times 1.23$
= 10.1 $\mu g/m^3$, 24-hr avg, with no control

From 10/6/81 SKEC letter:

$$\chi = \chi_0 (t_0/t)^{0.49}$$

χ = gnd-level conc ($\mu g/m^3$) for avg time t (hrs)
χ_0 = gnd-level conc ($\mu g/m^3$) for avg time t_0 (hrs)

Lead std (USEPA, quarterly std)
= 1.5 $\mu g/m^3$, 3 mo avg (2190 hrs)

Equivalent 8-hr std

$$\chi_8 = 1.5 (2190/8)^{0.49} = 23.5 \mu g/m^3, \text{ 8-hr avg}$$

Equivalent 24-hr std

$$\chi_{24} = 1.5 (2190/24)^{0.49} = 13.7 \mu g/m^3, \text{ 24-hr avg}$$

August 1984

Acurex Technical Report TR-84-160/EE

DRAFT

FIELD EVALUATION OF RESOURCE RECOVERY OF HAZARDOUS WASTES

by

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EPA Contract No. 68-02-3176

EPA Project Officer: Robert E. Mournighan
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for

U.S. ENVIRONMENTAL PROTECTION AGENCY
Office of Research and Development
Washington, DC 20460

SECTION 1

EXECUTIVE SUMMARY

This report describes emission results obtained from field testing of two rotary process kilns burning liquid hazardous chemical wastes. The primary objective of the tests was to evaluate the destruction and removal efficiency (DRE) of principal organic hazardous constituents (POHC's) in these waste fuels, and identify products of incomplete combustion (PIC's) emitted from the two kilns. This work was supervised by the Incineration Branch of Environmental Protection Agency (EPA) under contract no. 68-02-3176, task 4B.

1.1 KILNS DESCRIPTION

Mid-Fla Mining

Table 1-1 summarizes the key design and operating features of the two kilns tested in this program. Site I is a rotary kiln dryer tested at a capacity of about 10 Kg/s (40 tons/hr) when fired with a heat input capacity of approximately 11 MW (37.5 million Btu/hr). The kiln dries earth-type clays reducing the moisture content typically from 50 percent to 8 percent. The 8 percent clay product is marketed as cat litter and as an impermeable liner for ponds. This product can be further processed to reduce the moisture to 0.5 percent, resulting in a product that is marketed as an oil and grease absorbant. However, the principal product at site I is the 8 percent clay.

Figure 1-1 illustrates a schematic of the site I kiln facility. The plant receives and stores liquid burnable wastes. These wastes are blended

TABLE 1-1. KILNS DESCRIPTION

Parameter	Site I Rotary kiln dryer
Length, m (ft)	21.3 (70)
Diameter, m (ft)	2.1 (7)
Kiln rotation, rpm	6.25
Feed material	Earth-type clays
Process capacity, kg/s (tons/hr)	10 (40)
Feed material moisture, percent	50
Product moisture, percent	8[a]
Process temperature, °C (°F)	590 to 650 (1,100 to 1,200)
Estimated gas residence time, sec	2.5
Typical heat input at capacity, MW (million Btu/hr)	11.0 (37.5)
Fuel fired	Waste oils and waste solvents
Particulate control device	Fabric filter baghouse Mid-Florida Mining Co.

[a]Product can be reprocessed for 0.5 percent moisture.

NA -- Not available.

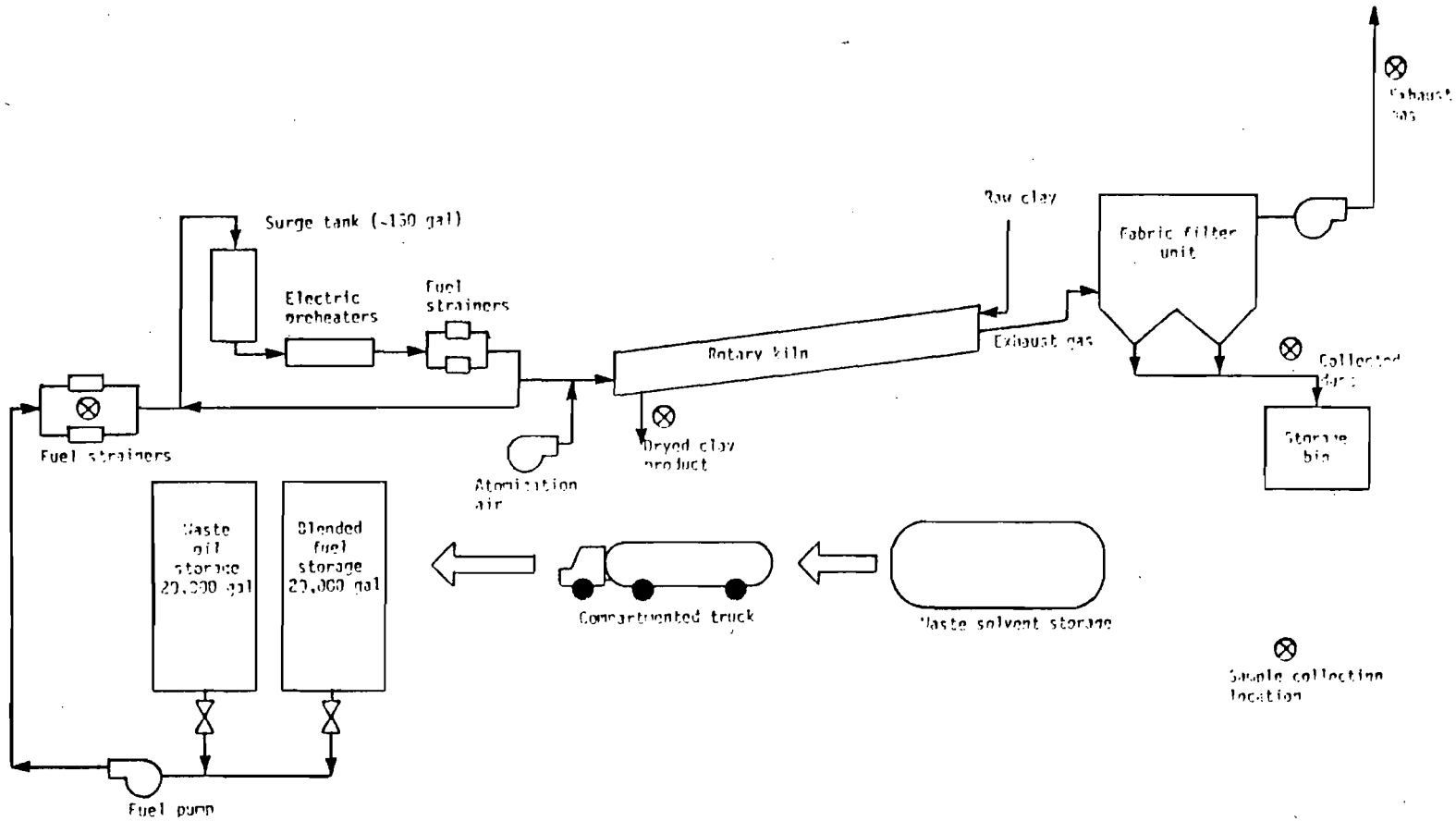

Figure 1-1. Process flow schematic and sample collection locations -- site I.

with reclaimed oils or virgin oil before being fired in the kiln. The single burner is fired with a typical 20/80 mixture of waste fuel and reclaimed oils, resulting in an early combustible fuel. The kiln process temperature ranges between 590° and 650°C (1,100 and 1,200°F) with an estimated per residence time of 2.5 sec. This is a relatively low temperature environment for efficient hazardous waste destruction as results described here will indicate. Flue gas particulate emissions are controlled with a fabric filter baghouse.

SECTION 4

TEST PROGRAM AND KILNS OPERATION

The primary objective of the test program at both test sites was to measure the kiln's destruction and removal efficiency (DRE) of hazardous organic compounds in the waste fuels under typical kiln operating conditions. Waste fuels at both sites were spiked with a known quantity of 1,1,2-trichloro-2,2,1-trifluoroethane (Freon 113) to permit a direct comparison of DRE results between the two test sites and to investigate the feasibility of using Freon 113 as a surrogate for DRE measurements of other major POHC's in the waste fuels. Three tests were performed at site I over a 3-day period with the kiln firing a mixture of waste oil and spent hydrocarbon solvents. At site II, four tests were performed over a 4-day period. Two tests were performed with the kiln burning a combination of liquid waste and pulverized coal. Liquid waste only was burned during the remaining two tests. Kilns production rates for Site II tests were typical for this facility. The following section discusses the operation of the kilns during the test program and presents the organic and inorganic composition of the waste fuels.

4.1 KILNS OPERATION

Table 4-1 summarizes the operation of the kilns during each test. For the most part, process information available at each site was limited to waste fuel flowrates and kiln production rates. Both kilns were

TABLE 4-1. SUMMARY OF KILNS OPERATION

Site	Test number	Kiln production kg/s (tons/hr)	Waste fuel flowrate, ml/s (gph)		Waste fuel heat input	
			Range	Test average	MW (million Btu/hr)[a]	Percent of total
I	1	~6.8 (27)[b]	205-216 (195-205)	210 (200)	7.45 (25.4)	100
	2	~7.6 (30)[b]	226-263 (215-250)	238 (226)	8.41 (28.7)	100
	3	~7.6 (30)[b]	220-252 (209-240)	237 (225)	8.39 (28.6)	100
II	1[c]	2.17 (8.62)	220-284 (209-270)	242 (230)	6.07 (20.7)	59
	2[c]	2.25 (8.94)	142-255 (135-243)	197 (187)	5.01 (17.1)	47
	3	2.19 (8.69)	270-348 (257-331)	315 (300)	8.50 (29.0)	100
	4	NA	270-354 (257-337)	318 (302)	8.71 (29.7)	100

[a]Calculated from the fuel heating values presented in Section 4-2.
[b]Not a measured value.
[c]Tests 1 and 2 correspond to kiln firing a combination of waste fuel and pulverized coal. During Tests 3 and 4, the waste fuel accounted for 100 percent of the fuel to the kiln.

NA -- Not available.

insufficiently instrumented to permit recording of detailed process conditions. As stated earlier, three tests were performed at site I. Production rate of the kiln was maintained relatively constant during these three tests with the rotary kiln drying feed clay at approximately 50 percent moisture content to approximately 8 percent moisture at an estimated process temperature of between 593° to 650°C (1,122° to 1,200°F). The fuel burned during the tests was a mixture of waste oil and spent hydrocarbon solvents in a 20/80 percent blend that is typical of current site I practice. This waste fuel mixture, which accounted for all the fuel burned in the kiln, was preheated to a temperature ranging from 66° to 77°C (150° to 172°F) for tests 2 and 3 and 49° to 69°C (120° to 157°F) for test 1.

The measured flowrate of the waste fuel blend ranged from about 210 to 242 ml/s (222 to 230 gph) corresponding to a total heat input to the kiln of about 7.5 to 8.4 MW (25 to 29 million Btu/hr). Test 1 heat input was about 12 percent lower than either tests 2 or 3. This total heat input corresponds to about 67 to 77 percent of the kiln capacity. A production rate of about 7.6 kg/s (32 ton/hr) was estimated based on the calculated heat input and a kiln capacity of 10 kg/s (40 tons/hr).

SECTION 7

TRACE ELEMENT EMISSION RESULTS

Trace element analyses of fuels burned and flue gas emissions were performed at both test sites. The laboratory analyses were limited to the thirteen listed priority pollutant elements. Analytical results of flue gas samples were based on the filter particulate captured by the modified EPA Method 5 sample train for site I and the filter particulate of the EPA Method 5 train for site II.

Tables 7-1 through 7-3 summarizes the analytical results of trace metals for site I. Both input mass rates and flue gas emission rates of each element detected in the samples is shown. Lead, copper, and zinc had the highest waste fuel concentration ranging from about 400 to nearly 700 ppm. The corresponding kiln input rates of these metals were on the order of 84 to 145 mg/s. Other metals detected in the waste fuel were cadmium, chromium, and nickel in concentrations ranging from about 1 to 5 ppm corresponding to mass rates in the range of about 200 to 1,000 µg/s.

Lead and zinc were the two metals found to have highest concentrations in the flue gas samples. Emissions ranged between 60 to 130 µg/s with no statistically significant difference between the three tests. These emission rates generally correspond to less than 0.1 percent of the total input rate. Therefore, the bulk of these metals were absorbed by the clay product or collected in the baghouse. No laboratory analyses were performed on these streams. Emissions of other trace metals generally ranged from about 5 to 35 µg/s, corresponding to about 1 to 13 pecent of the total input rate.

TABLE 7-1. SITE I TRACE METALS EMISSIONS -- TEST 1

Element[a]	Waste fuel concentration (ppm)	Total input rate (µg/s)	Total emission rate[b] (µg/s)	Mass balance (out/in) (percent)
Cadmium	1.1	230	<5.8	2.5
Chromium	4.8	990	29	2.9
Copper	460	95,000	32	0.03
Lead	530	109,000	66	0.06
Nickel	1.3	270	35	13
Zinc	570	120,000	130	0.11
Total	--	325,000	290	0.09

[a]Analysis was limited to priority pollutant elements. Metals listed are those that were detected in both fuels amd flue gas emission streams.
[b]Emissions are blank corrected.

TABLE 7-2. SITE I TRACE METALS EMISSIONS -- TEST 2

Element[a]	Waste fuel concentration (ppm)	Total input rate (µg/s)	Total emission rate[b] (µg/s)	Mass balance (out/in) (percent)
Cadmium	1.0	210	<2	<1.0
Chromium	4.0	850	10	1.2
Copper	400	84,600	92	0.11
Lead	630	133,000	70	0.05
Nickel	1.2	250	5	2.0
Silver	<1.0	<200	15	>7.5
Zinc	580	123,000	59	0.05
Total	--	342,000	250	0.07

[a]Analysis was limited to priority pollutants. Metals listed are those that were detected in both fuels and flue gas emission streams.
[b]Emissions are blank corrected.

TABLE 7-3. SITE I TRACE METALS EMISSIONS -- TEST 3

Element[a]	Waste fuel concentracion (ppm)	Total input rate (µg/s)	Total emission rate[b] (µg/s)	Mass balance (out/in) (percent)
Cadmium	1.0	210	<2	<1.0
Chromium	4.2	880	15	1.7
Copper	410	86,000	12	1.4
Lead	690	145,000	96	0.07
Nickel	1.3	270	8.5	3.2
Silver	<1	<200	4.8	>2.4
Zinc	570	120,000	99	0.08
Total	--	352,000	235	0.07

[a]Analysis was limited to priority pollutants. Metals listed are those that were detected in both fuels and flue gas emission streams.
[b]Emissions are blank corrected.

ATTACHMENT 2

1984-1985
ACTUAL EMISSIONS

MID-FLORIDA MINING COMPANY
LOWELL, FLORIDA

1984-85 ACTUAL EMISSIONS

FUGITIVE DUST SYSTEM (A042-74474)

Annual hours of operation (from 1984 Annual Report)
= 6636 hr/yr

Particulate Matter (Maximum measured emission rate during 1984-1985 is 3.2 lb/hr on 9/12-13/85. Allowable emission rate is ~ 32 lb/hr)

Annual emissions = 6636 hr/yr × 3.2 lb/hr × 1/2000 ton/lb
= 10.6 tons/yr

CLAY DRYER / SILO (A042-68788)

Annual hours of operation (from 1984 Annual Report)
= 6636 hr/yr

Fuel Consumption (from 1984 Annual Report)
= 1.8×10^6 gal/yr of spent solvents

Fuel Properties

Sulfur:

2/1984 EPA Test	=	0.35%
9/1984 SKEC Test	=	0.45%
8/1985 SKEC Test	=	0.36%
Avg	=	0.39%

Heating Value:

2/1984 EPA Test	=	17,126 BTU/lb
9/1984 SKEC Test	=	17,208 BTU/lb
8/1985 SKEC Test	=	17,588 BTU/lb
Avg	=	17,307 BTU/lb

Density:

2/1984 EPA Test	=	7.41 lb/gal
9/1984 SKEC Test	=	7.47 lb/gal
8/1985 SKEC Test	=	7.50 lb/gal
Avg	=	7.45 lb/gal

Emission Rates

Particulate Matter (Maximum measured emission rate during 1984-85 is 3.0 lb/hr on 8/28/85. Allowable emission rate is ~ 30 lb/hr)

Annual emissions = 6636 hr/yr x 3.0 lb/hr
x 1/2000
= 10.0 tons/yr

Sulfur Dioxide (Measured during 2/1984 EPA test at 27 ppm)

Annual emissions = 21,679 ft^3/min x 60 min/hr
x 6636 hr/yr x 27/10^6
x 1/385 lb-mole/ft^3 x 64 lb/lb-
x 1/2000
= 19.4 tons/yr

Nitrogen Oxides (Measured during 2/1984 EPA test at 60 ppm)

Annual emissions = 21,679 ft^3/min x 60 min/hr
x 6636 hr/yr x 60/10^6
x 1/385 lb-mole/ft^3 x 46 lb/lb-m
x 1/2000
= 30.9 tons/yr

Carbon Monoxide (Measured during 2/1984 EPA test at 3.1 ppm)

Annual emissions = 21,679 ft^3/min x 60
x 6636 hr/yr x 3.1/10^6
x 1/385 x 28 lb/lb-mole
x 1/2000
= 1.0 ton/yr

Non-methane Hydrocarbons (AP-42 for fuel oil reports 0.76 lb/1000gal - Utility boilers)

Annual emissions = 1.8 x 10^6 gal/yr x 0.76/1000
x 1/2000
= 0.7 tons/year

Sulfur Dioxide Sorption in Dryer

Emission Rate = 19.4 tons/yr

Sulfur in Fuel = 1.8×10^6 gal/yr x 7.45 lb/gal x 0.0039 lb S/lb fuel x 1/2000
= 26.2 tons/yr

Potential SO_2 = 26.2 tons S x 2 ton SO_2/ton S
= 52.3 tons SO_2/yr

Sorption = (52.3 - 19.4) x 100 / 52.3
= 62.9 %

EMISSION RATE SUMMARY - ACTUAL EMISSIONS

Particulate Matter

Fugitive Dust System	10.6 tpy
Dryer / Silo	10.0 tpy
	20.6 tpy

Sulfur Dioxide

Dryer / Silo	19.4 tpy

Nitrogen Oxides

Dryer / Silo	30.9 tpy

Carbon Monoxide

Dryer / Silo	1.0 tpy

Non-methane Hydrocarbons

Dryer / Silo	0.7 tpy

Emission Rate for Major Emitting Facility - 250 tpy

August 1984

Acurex Technical Report TR-84-160/EED

DRAFT

FIELD EVALUATION OF RESOURCE RECOVERY OF HAZARDOUS WASTES

By

A. W. Wyss, C. Castaldini, and M. M. Murray
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Energy & Environmental Division
555 Clyde Avenue
P.O. Box 7555
Mountain View, California 94039

Project 7951
EPA Contract 68-02-3176

EPA Project Officer: Robert E. Mournighan
Industrial Environmental Research Laboratory
Incineration Research Branch
26 West St. Claire
Cincinnati, Ohio 45268

for

U.S. ENVIRONMENTAL PROTECTION AGENCY
Office of Research and Development
Washington, DC 20460

TABLE 4-2. WASTE FUEL ANALYSIS -- SITE I[a]

Composition	Test 1	Test 2	Test 3	Average
Proximate analysis, as received:				
Ash, percent	0.70	0.69	0.66	0.68
Moisture, percent	7.50	7.05	6.95	7.17
Volatile matter, percent[b]	98.49	98.56	98.52	98.52
Fixed carbon, percent	0.81	0.75	0.82	0.79
Higher heating value, MJ/kg	39.74	39.85	39.80	39.80
(Btu/lb)	(17,100)	(17,148)	(17,126)	(17,126)
Ultimate analysis, percent by weight as received:				
Chlorides[b]	0.60	0.64	0.74	0.66
Carbon	76.5	76.4	76.7	76.5
Hydrogen	12.7	12.6	12.7	12.7
Oxygen (by difference)	8.05	8.22	8.49	8.25
Sulfur	0.35	0.35	0.35	0.35
Nitrogen	1.1	1.1	1.1	1.1
Trace elements, ppm:				
Antimony, Sb	<1	<1	<1	<1
Arsenic, As	<1	<1	<1	<1
Beryllium, Be	<1	<1	<1	<1
Cadmium, Cd	1.1	1.0	1.0	1.0
Chromium, Cr	4.8	4.0	4.2	4.3
Copper, Cu	460	400	410	420
Lead, Pb	530	630	690	620
Mercury, Hg	<0.1	<0.1	<0.1	<0.1
Nickel, Ni	1.3	1.2	1.3	1.3
Selenium, Se	<1	<1	<1	<1
Silver, Ag	<1	<1	<1	<1
Thallium, Tl	<1	<1	<1	<1
Zinc, Zn	570	580	570	570
Specific gravity	0.890	0.888	0.888	0.889

[a]Each sample is a composite of four individual grab samples taken during each test.
[b]Volatile matter includes moisture.
[c]Total chloride in each sample by separate analysis indicates chloride concentration in the range of 0.35 to 0.54 percent with an average for all waste solvents of 0.46 percent.

TABLE 5-3. CONTINUOUSLY MONITORED CRITERIA GASEOUS EMISSIONS -- SITE I

Date	Test number	As measured concentrations, dry basis					Corrected to 15 percent O_2, dry basis		
		O_2 (percent)	CO_2 (percent)	CO (ppm)	SO_2 (ppm)	NO_x (ppm)	CO (ppm)	SO_2 (ppm)	NO_x (ppm)
2/14/84	1	14.9 to 16.6	2.6 to 4.0	--[a]	12 to 33	55 to 74	--	13 to 36	60 to 81
		(15.5)[b]	(3.4)	--	(23)	(66)	--	(25)	(72)
2/15/84	2	15.3 to 16.4	2.5 to 3.7	15 to 105	33 to 53	51 to 63	18 to 129	41 to 65	63 to 77
		(16.1)	(3.0)	(50)	(44)	(57)	(61)	(54)	(70)
2/16/84	3	15.8 to 16.3	2.8 to 3.2	25 to 110	3 to 22	49 to 59	30 to 132	4 to 26	59 to 71
		(16.0)	(3.0)	(57)	(13)	(56)	(69)	(16)	(67)

[a]Moisture contamination in CO cell, thus no data were obtained.
[b]Numbers in parentheses are test averages of recorded measurements.

TABLE 5-6. SUMMARY OF PARTICULATE EMISSIONS TEST DATA -- SITE I

Date	Test no.	Test time	Stack gas moisture, percent	Stack gas temperature, °C (°F)	Stack gas velocity, m/s (ft/sec)	Sample volume, dscm (dscf)	Particulate catch (mg)		Particulate concentration, mg/dscm (gr/dscf)	Isokinetic, percent
							Filter	Probe and nozzle		
2-14-84	1	1500-1815 1930-2050	28.6	79 (174)	17.9 (58.7)	3.63 (128.2)	4.74	2.17	1.9 (0.0008)	95.6
2-15-84	2	1400-2030	28.2	73 (163)	16.4 (3.8)	9.81 (346.3)	4.22	3.97	0.83 (0.0004)	99.2
2-16-84	3	1010-1630	24.7	76 (168)	16.8 (5.2)	9.93 (350.8)	9.84	7.05	1.7 (0.0007)	94.6
	Average		27.2	76 (168)	17.0 (55.9)	7.79 (275.1)	6.27	4.37	1.48 (0.0006)	--

Stack dia = 44"
Stack area = 10.56 ft²
Stack gas flow = 10.56 x 55.9 ft/sec x 60 sec/min
= 35418 Acfm
x 528/(460+168) x (1-0.272)
= 21,679 Scfm, dry

THORNTON LABORATORIES, INC.
1145 EAST CASS STREET
TAMPA, FLORIDA 33601 - 2880
MARINE, ANALYTICAL AND ENVIRONMENTAL SERVICES

TWX 810 876-9134
THORNT LAB TPA

TELEPHONE (813) 223-9702
P.O. BOX 2880

September 12, 1985

Laboratory Number 625389

Sample of Waste Solvent

Date Received September 3, 1985

For Mid - Florida Mining Company
State Road 329, P.O. Box 68
Lowell, Florida 32663

Attn: J.B. Kleekamp

Marks: MFM/082885 P.O. #11606

CERTIFICATE OF ANALYSIS

API Gravity @ 60°F	25.60
Specific Gravity @60°F/60°F	0.9007
Flash Point, Tagliabue Closed Cup, °F	156
BTU/lb	17,588
BTU/gallon	131,910
Sulfur (S)	0.36%
Total Halogens as Chloride	0.22%

THORNTON LABORATORIES, INC.

Fred R. Hartlage, Jr.

THORNTON LABORATORIES, INC.
1145 EAST CASS STREET
TAMPA, FLORIDA 33601 - 2880
ANALYTICAL AND CONSULTING CHEMISTS

TWX 810 876-9134
THORNT LAB TPA

TELEPHONE (813) 223-9702
P.O. BOX 2880

October 1, 1984

Laboratory Number 608577

Sample of Spent Solvent

Date Received September 17, 1984

For Mid Florida Mining Co.
P.O. Box 68
Lowell, FL 32663

Attn: J.B. Kleekamp

Marks: PO# 11606 MFM Sample #0809284

CERTIFICATE OF ANALYSIS

Specific Gravity 60°F/60°F	0.898
Flash Point, Tagliabue Closed Cup°F	106
BTU/lb	17,150
BTU/gallon	128,244
Sulfur (S)	0.45%
Total Halogen as Chloride	0.23%

THORNTON LABORATORIES, INC.

Fred R. Hudgens, Jr.

ATTACHMENT 3

PROPOSED EMISSIONS AND FUEL USE

MID-FLORIDA MINING COMPANY
LOWELL, FLORIDA

PROPOSED EMISSIONS

FUGITIVE DUST SYSTEM (A042-74474)

Annual hours of operation - 8760 hr/yr
(100% operating factor)

Particulate Matter (Maximum expected emission rate is 15.0 lb/hr)

Annual emissions = 8760 hr/yr x 15.0 lb/hr
x 1/2000
= 65.7 tons/yr.

CLAY DRYER / SILO (A042-68788)

Annual hours of operation - 8760 hr/yr

Fuel Consumption

Assume dryer will be fired 100% of time with coal having a sulfur content of 1.25% (max). This will represent worst case conditions. The option to fire all presently permitted fuels will be retained.

Fuel consumption 1984 - 1.8×10^6 gal
x 7.45 lb/gal x 17,307 BTU/lb
= 0.232×10^{11} BTU/yr

Hours of operation 1984 - 6636 hr

Kiln heat input = 0.232×10^{11} / 6636
= 35.0×10^6 BTU/hr

Proposed coal requirement
= 35.0×10^6 BTU/hr x 8760 hr/yr
x 1/12,500 lb coal/BTU x 1/2000
= 12,264 tons/year
say 12,300 tons/year

Emission Rates

Particulate Matter (Maximum expected emission rate with coal firing will be 15.0 lb/hr)

Annual emissions = 8760 hr/yr x 15.0 lb/hr
x 1/2000
= 65.7 tons/yr

Sulfur Dioxide (Estimate a 25% sorption efficiency in the dryer for fuel with 1.25% sulfur based on a sorption of 62.9% with a 0.39% sulfur fuel)

Annual emissions = 12,300 tons/year
x 0.0125 lb S/lb coal
x 2 lb SO_2/lb S
x (1 - 0.25) sorption
= 230.6 tons/year

Nitrogen Oxides (AP-42 reports 21 lb/ton coal)

Annual emissions = 12,300 ton/yr x 21 lb/ton
x 1/2000
= 129.2 tons/yr

Carbon Monoxide (AP-42 reports 0.6 lb/ton coal)

Annual emissions = 12,300 x 0.6 lb/ton
x 1/2000
= 3.7 tons/yr

Non-methane Hydrocarbons (AP-42 reports 0.07 lb/ton coal)

Annual emissions = 12,300 x 0.07 lb/ton
x 1/2000
= 0.4 tons/year

COAL HANDLING SYSTEM

Coal Requirement = 12,300 tons/year

Delivery by rail @ 75 tons/railcar

Delivery schedule

= 12,300 / 75 tons / railcar

≅ 164 railcars / yr

× 1/52 wk/yr

≅ 4 railcars/week, max

Railcar unloading rate = 25 tons/hr

Handling System

The coal will be bottom dumped from the railcar into an under-track receiving hopper. The unloading rate will be 25 tons per hour; thus, requiring three hours to unload each railcar.

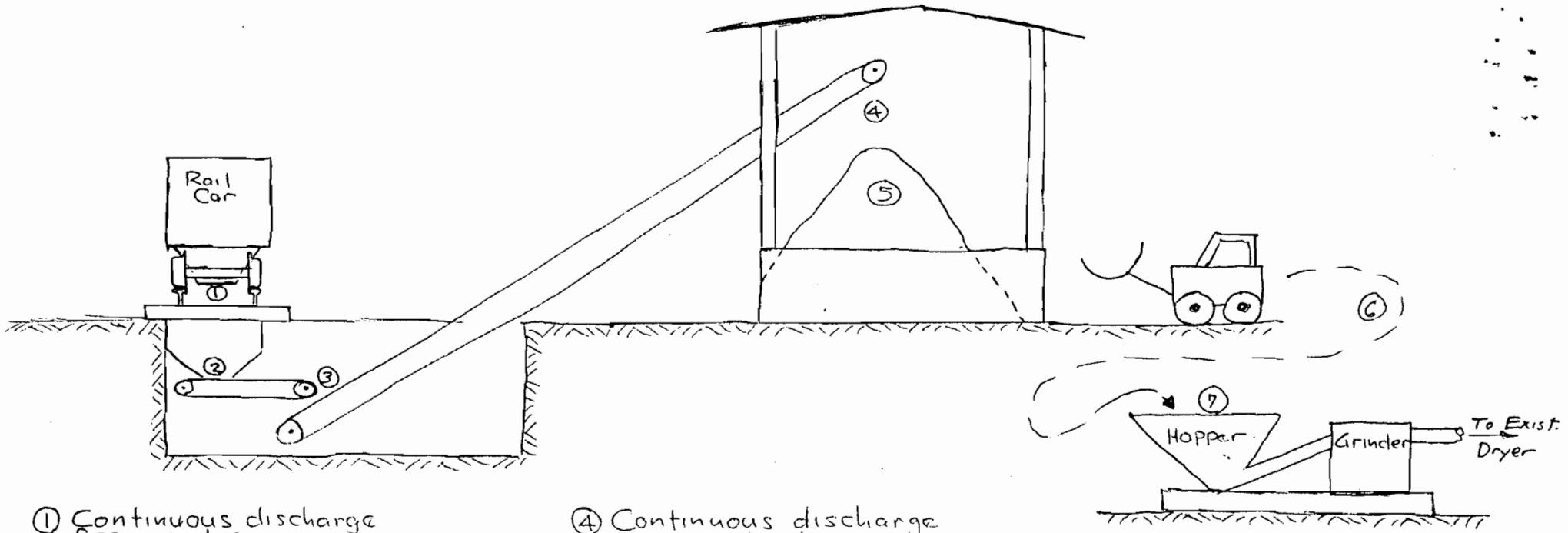
The coal from the under-track hopper will feed directly onto a short drag chain conveyor that will transfer the coal to an inclined conveyor belt. The conveyor belt will transfer the coal to a covered coal storage pile.

The coal will be stored on a covered concrete pad. The pad will be surrounded on three sides by a four foot high wall to contain the coal. The fourth side of the pad will be open to allow access by a front-end loader for coal reclamation. Although the coal storage area will be covered, a sump will be placed in the coal storage pad to collect any water that might accumulate in the area. The water collected in the sump will be sprayed back on to the coal storage pile for dust control.

The coal will be reclaimed from the coal storage area by a front-end loader with a two cubic yard bucket. The front-end loader will deliver the coal to the hopper of the coal grinding system. The area traveled by the front-end loader will be paved with concrete and cleaned periodically to minimize fugitive particulate matter emissions generated by vehicle travel.

The coal grinder, including the coal hopper, is a packaged unit. The feed system from the hopper to the coal grinder, the grinder itself, and the pneumatic conveying system for transporting the ground coal to the clay dryer are all totally enclosed.

Following is a sketch of the coal handling system and the calculations for fugitive particulate matter emissions expected from the system.



① Continuous discharge from rail car
Drop ht = 2 ft
Wind spd = 6 mph
Silt content = 6%
Moisture = 5%
k = 0.77 fraction of particles <30um

② Continuous discharge onto drag chain conveyor
Drop ht = 1 ft
Wind spd = 2 mph
Silt content = 6%
Moisture = 5%
k = 0.77

③ Continuous discharge onto inclined conveyor
Drop ht = 2 ft
Wind spd = 2 mph
Silt content = 6%
Moisture = 5%
k = 0.77

④ Continuous discharge onto coal pile
Drop ht = 15 ft
Wind spd = 8 mph
Silt content = 6%
Moisture = 5%
k = 0.77

⑤ Wind erosion from coal pile
Silt content = 6%
Number of days with ≥0.01 inches of ppt = 0 since pile is covered
Fraction of time that wind speed exceeds 12 mph at pile height = 5%
Pile size = 40 ft x 40 ft = 0.037 acre

⑥ Front-end loader travel
Distance = 250 ft, round trip
k = 0.86
I = 1.0 (all travel on pavement)
Equivalent number of traffic lanes (per MRI recommendation) n = 4
Silt content of surface material = 10%
Surface dust loading on traveled area = 1000 lb/mi
Vehicle wt = 12 tons
Number of trips = 7365/year @ 1.67 tons/trip

⑦ Batch drop of coal in to hopper
Drop ht = 4 ft
Wind spd = 8 mph
Silt content = 6%
Moisture = 5%
Batch size = 2 cu. yd.
k = 0.73

Emissions Calculations for 11,100 ton of Coal per year

Continuous Drop Points (①, ②, ③ & ④)

$$E = k(0.0018)(S/5)(U/5)(H/10)/(M/2)^2 \times 12{,}300/2000$$

Equation (2), Section 11.2.3, AP-42

- k = fraction of particles $\leq 30\ \mu m$ A
- S = Silt content (%)
- U = Wind speed (mph)
- H = Drop ht (ft)
- M = Moisture (%)
- 11,100 = tons of coal / yr

$E_{①}$ = 0.0004 tons/yr
$E_{②}$ = 0.0001 tons/yr
$E_{③}$ = 0.0001 tons/yr
$E_{④}$ = 0.0039 tons/yr

Wind Erosion (⑤)

$$E = 1.7(S/1.5)[(365-p)/235](f/15) \times 365\ day/yr \times 0.037\ ac \times 1/2000$$

Equation (3), Section 11.2.3, AP-42

- S = Silt Content (%)
- p = Number of days with ≥ 0.01 in ppt
- f = fraction of time wind ≥ 12 mph

$E_{⑤}$ = 0.0238 tons/yr

Vehicle Travel (⑥)

$$E = k(0.05)I(4/n)(S/10)(L/1000)(W/3)^{0.7} \times \text{total mileage}/2000$$

Equation (1), Section 11.2.6, AP-42

- k = fraction of particles $\leq 30\ \mu m$ A
- I = Augmentation factor
- n = number of lanes
- s = surface material silt content (%)
- L = surface dust loading (lb/mi)
- W = Vehicle weight (tons)

$E_{⑥}$ = 0.0356 tons/yr

Batch Drop Point (⑦)

$$E = k(0.0018)(S/5)(U/5)(H/5)/(H/2)^2(Y/6)^{0.33} \times 12{,}300/2000$$

Equation (1), Section 11.2.3, AP-42

- Y = Batch size (cu. yd)
- Others as defined in Continuous Drop Equation

$E_{⑦}$ = 0.0029 tons/yr

Total Fugitive Emission from Coal Handling

$E_{⑦}$ = 0.071 tons/year

Emission Rate Summary - Proposed Emissions

Particulate Matter

Fugitive Dust System	- 65.7 tpy	
Dryer / Silo	- 65.7 tpy	
Coal Handling	- 0.1 tpy	
		131.5 tpy

Sulfur Dioxide

Dryer / silo	230.6 tpy

Nitrogen Oxides

Dryer / silo	129.2 tpy

Carbon Monoxide

Dryer / Silo	3.7 tpy

Non-methane Hydrocarbons

Dryer / Silo	0.4 tpy

ATTACHMENT 4

SUMMARY OF PRESENT ACTUAL
AND PROPOSED EMISSIONS

MID-FLORIDA MINING COMPANY
LOWELL, FLORIDA

SUMMARY OF EMISSION CHANGES

Pollutant	Annual Emissions (tons/yr)		
	Present Actual(2)	Proposed(3)	Change
Part. Matter	20.6	131.5	110.9
SO_2	19.4	230.6	211.2
NO_x	30.9	129.2	98.3
CO	1.0	3.7	2.7
VOC(1)	0.7	0.4	0(4)
Major Source Emission Rate	250	250	250(5)

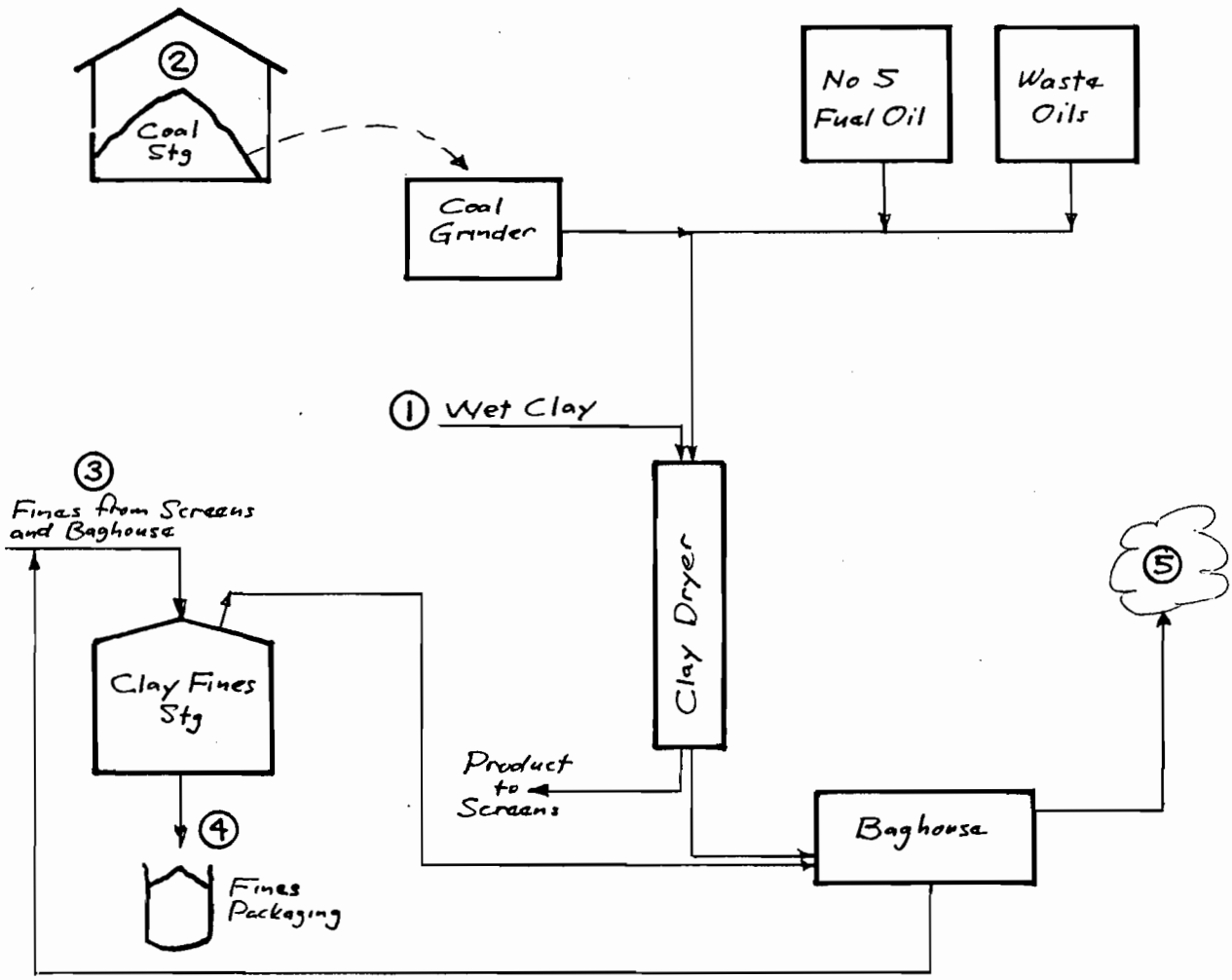
(1) Non-methane Hydrocarbons

(2) Present emissions from firing spent solvents to clay dryer plus emissions from material handling

(3) Proposed emissions from firing coal plus emissions from material handling and coal handling

(4) No change since option to burn presently permitted fuels will be retained

(5) Emission rate increase necessary to subject proposed modification to New Source Review of 17-2.500(2)(d)2, FAC

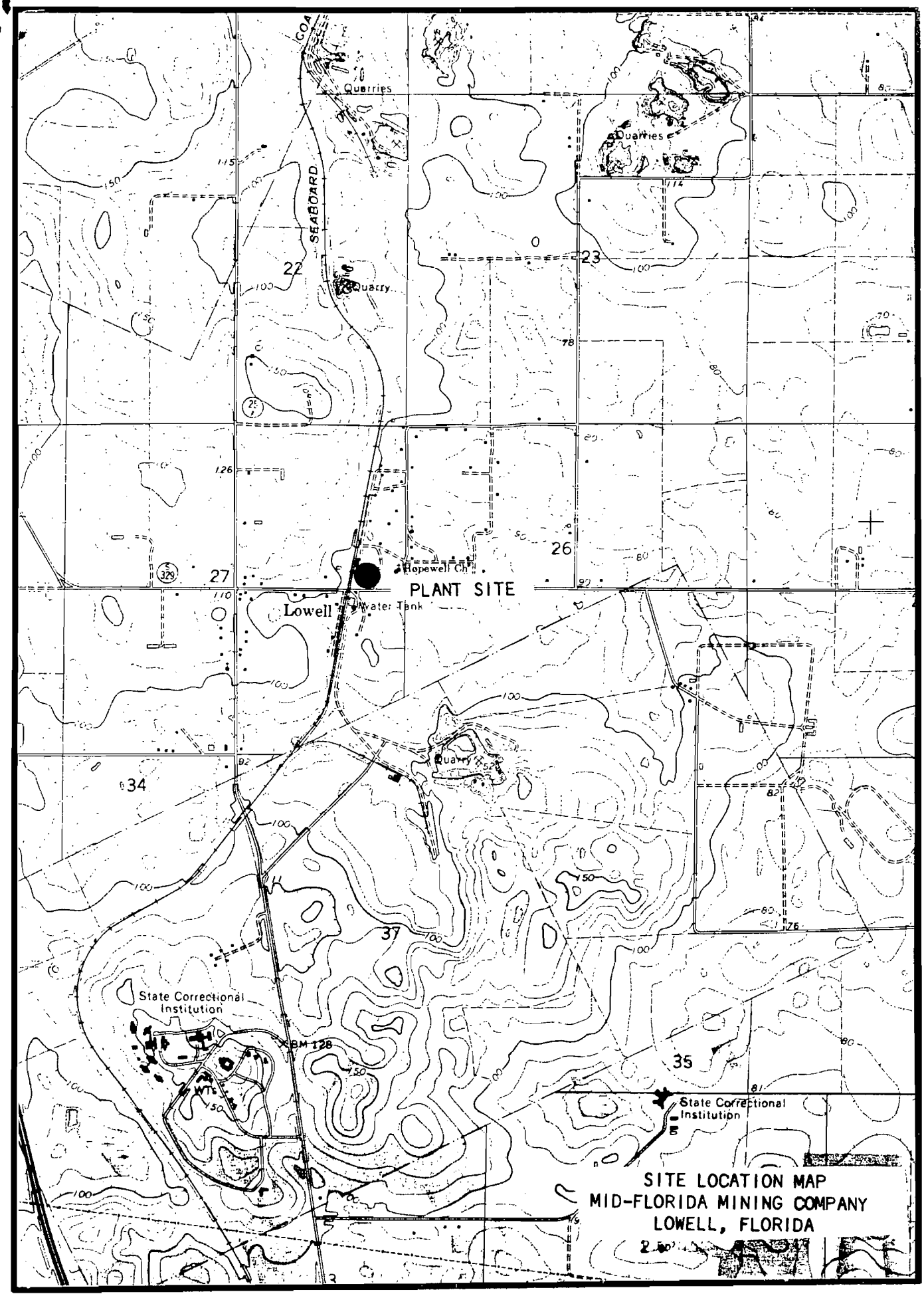


MID-FLORIDA MINING COMPANY

CLAY DRYER/STORAGE SILO
FLOW DIAGRAM

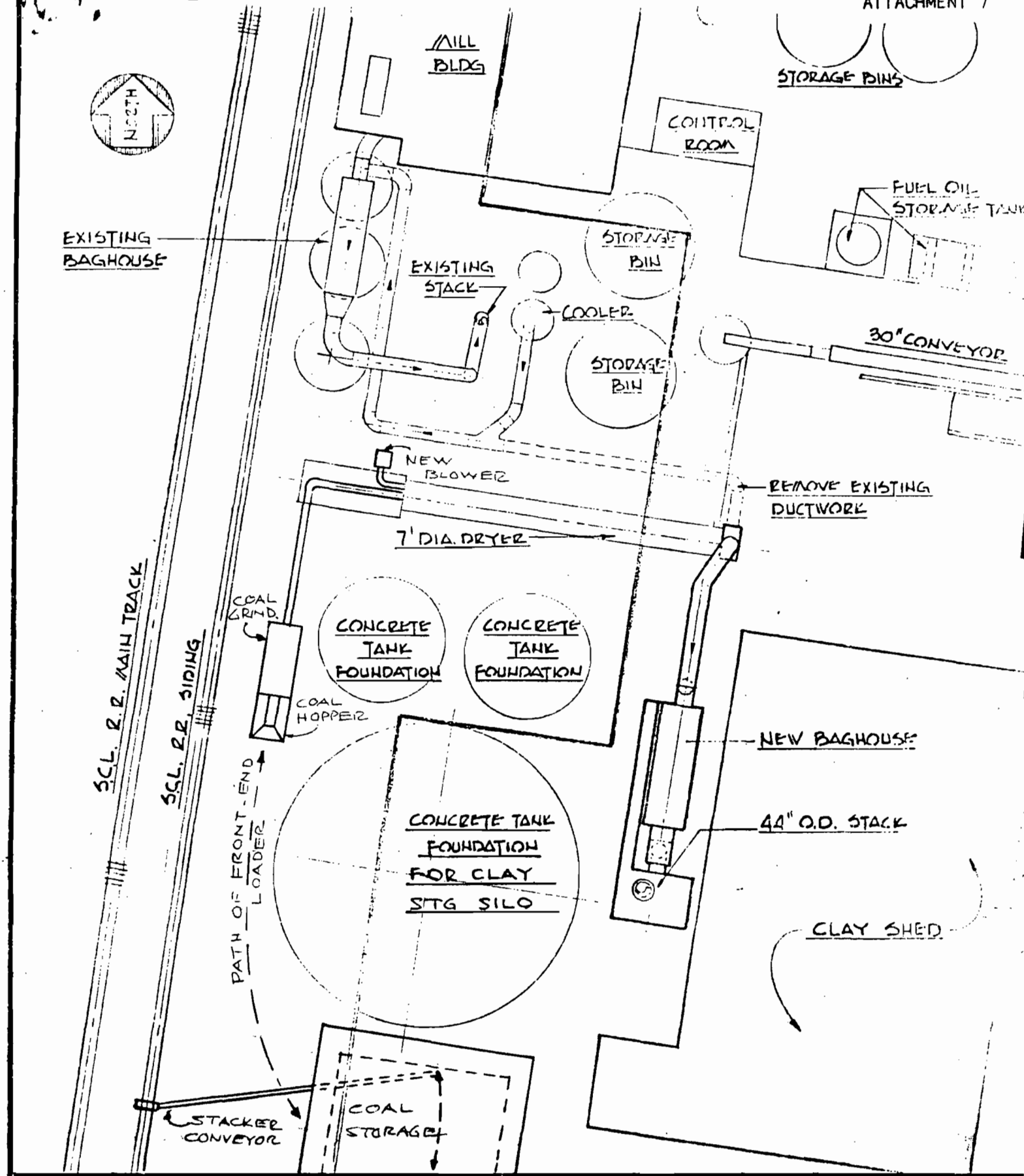
Best Available Copy

ATTACHMENT 6



SHOLTES & KOOGLER

ATTACHMENT 7



MID-FLORIDA MINING CO. - LOWELL, FLORIDA			SITE MAP MID-FLORIDA MINING COMPANY LOWELL, FLORIDA
JOB NO. 8019	DATE 5-18-80	DRAWN JAH/LAS	