CHARLES W. METCALF, 1840-1924
WILLIAM P. METCALF, 1872-1940
JOHN W. APPERSON, 1896-1985

CHARLES METCALF CRUMP
JERRE G. DUZANE
JOHN B. MAXWELL, JR.
ALLEN T. MALONE
PHILIP G. KAMINSKY
ROBERT L. DINKELSPIEL
MICHAEL E. HEWGLEY
JAMES F. RUSSELL
JOHN L. RYDER
THOMAS R. BUCKNER
MELODY W. OLIVER
WILLIAM B. MASON, JR.
STEVEN N. DOUGLASS
RANDY S. GARDNER

SAMUEL RUBENSTEIN
OF COUNSEL

LAW OFFICES
APPERSON, CRUMP, DUZANE & MAXWELL
SUITE 2110
ONE COMMERCE SQUARE
MEMPHIS, TENNESSEE 38103
901/525-1711

TELECOPY 901/521-0789

EAST OFFICE
SUITE 100
KIRBY CENTRE
1755 KIRBY PARKWAY
MEMPHIS, TENNESSEE 38119
901/756-6300
TELECOPY 901/757-1296

September 8, 1989

RECEIVED
SEP 11 1989
Dept. of Natural Resources
Bureau of Pollution Control

Mr. Sam Mabry
Director
Division of Hazardous Waste
Mississippi Department of
Environmental Quality
P. O. Box 10385
Jackson, Mississippi 39209

Re: Cedar Chemical Corporation/Vicksburg Plant

Dear Sam:

Since you were copied on a letter dated August 25, 1989, from Patrick Tobin of EPA, Region IV, to Steve Boswell at the Vicksburg Plant, I am enclosing for your file all of the recent correspondence between Cedar and EPA relative to the subject information request.

Sincerely yours,

Allen T. Malone

ATM:jw

Enclosures

cc: Mr. Steve Boswell

DIVISION OF SOLID WASTE
REVIEWED BY TC
DATE 9/18/89
COMMENTS

CHARLES W. METCALF, 1840-1924
WILLIAM P. METCALF, 1872-1940
JOHN W. APPERSON, 1896-1985

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September 8, 1989

Ms. Jeaneanne Gettle
Environmental Engineer
Waste Compliance Section
United States Environmental
Protection Agency
Region IV
345 Courtland Street, N.E.
Atlanta, Georgia 30365

Re: Cedar Chemical Corporation
July 18 and August 25, 1989
Requests for Information

Dear Ms. Gettle:

Pursuant to our telephone conversation on September 6, 1989, I enclose herewith the following documents:

1. Construction Agreement between Vertac Chemical and Buford Construction dated September 15, 1983.

2. Letter from Gee & Strickland, Inc. to Bob James, Jr., P.E. dated October 25, 1983.

3. Letter from Robert W. James, Jr., P.E. to Charles H. Estes, III, P.E. dated November 4, 1983.

4. A copy of the "As Built" Drawing certified by Gee & Strickland, referred to in each of the above letters.

As indicated in my letter to Allan Antley of September 1, 1989, we did not consider information contained in these documents to be responsive to the referenced information request. Nevertheless, if there are other documents relating to the closure of the inactive disposal area in 1983 which might be useful to you, we will be happy to search Cedar's files and records and provide them to you if they can be located. As we discussed, our review of the files has indicated no information regarding the materials which were disposed of in the old landfill area prior to 1979 (the year when the previous owner discontinued use of the landfill) other than the documents which were enclosed with Steve Boswell's letter to Allan Antley of August 3, 1989.

As stated in my recent letter to Mr. Antley, Cedar is anxious to cooperate with the agency in connection with any matters pertaining to the Vicksburg Plant. If there are additional questions concerning your recent information request, I hope you will contact me by telephone. (My copy of the Agency's letter of August 25, 1989 has still not arrived, although it was received at the Plant on September 1, 1989, and a photocopy of the letter which apparently was resent, was received at the Plant today.) I have always felt that an open line of communication between your Agency and Cedar would make your job as well as mine and Steve's more efficient and perhaps more pleasant.

Sincerely yours,

Allen T. Malone

ATM:jw

Enclosures

cc: Allan E. Antley, Chief
Waste Compliance Section

cc: Mr. Sam Mabry
Mississippi Department of
Environmental Quality

cc: Mr. Steve Boswell
Director of Environmental Affairs
Cedar Chemical Corporation
Vicksburg Plant

GRADING AND CAPPING OF THE INACTIVE DISPOSAL AREA AND SURFACE IMPOUNDMENT DIKE IMPROVEMENTS

VERTAC CHEMICAL CORPORATION
VICKSBURG, MS 39180

GEE & STRICKLAND, INC
Vicksburg, Mississippi
Engineers • Surveyors • Planners • Material Testing

GRADING AND CAPPING OF
THE INACTIVE DISPOSAL AREA
AND
SURFACE IMPOUNDMENT
DIKE IMPROVEMENTS

VERTAC CHEMICAL CORPORATION
VICKSBURG, MS 39180

OWNER:

VERTAC CHEMICAL CORPORATION
5100 POPLAR STREET
MEMPHIS, TN 38137

ENGINEERS:

MCI/CONSULTING ENGINEERS
NASHVILLE, TN

GEE & STRICKLAND, INC.
1104 OPENWOOD STREET
VICKSBURG, MS 39180

AUGUST 26, 1983

INFORMATION FOR BIDDERS

BIDS will be received by Vertac Chemical Corporation (herein called the "OWNER"), at 1104 Openwood, Vicksburg, MS until 2:00 p.m. 9/7, 19 83, and then at said office publicly opened and read aloud.

Each BID must be submitted in a sealed envelope, addressed to Vertac Chemical Corporation at 1104 Openwood
Each sealed envelope containing a BID must be plainly marked on the outside as BID for Inactive disposal area and dike improvement and the envelope should bear on the outside the name of the BIDDER, his address, his license number if applicable and the name of the project for which the BID is submitted. If forwarded by mail, the sealed envelope containing the BID must be enclosed in another envelope addressed to the OWNER at 1104 Openwood, Vicksburg, Mississippi

All BIDS must be made on the required BID form. All blank spaces for BID prices must be filled in, in ink or typewritten, and the BID form must be fully completed and executed when submitted. Only one copy of the BID form is required.

The OWNER may waive any informalities or minor defects or reject any and all BIDS. Any BID may be withdrawn prior to the above scheduled time for the opening of BIDS or authorized postponement thereof. Any BID received after the time and date specified shall not be considered. No BIDDER may withdraw a BID within 60 days after the actual date of the opening thereof. Should there be reasons why the contract cannot be awarded within the specified period, the time may be extended by mutual agreement between the OWNER and the BIDDER.

BIDDERS must satisfy themselves of the accuracy of the estimated quantities in the BID Schedule by examination of the site and a review of the drawings and specifications including ADDENDA. After BIDS have been submitted, the BIDDER shall not assert that there was a misunderstanding concerning the quantities of WORK or of the nature of the WORK to be done.

The OWNER shall provide to BIDDERS prior to BIDDING, all information which is pertinent to, and delineates and describes, the land owned and rights-of-way acquired or to be acquired.

The CONTRACT DOCUMENTS contain the provisions required for the construction of the PROJECT. Information obtained from an officer, agent, or employee of the OWNER or any other person shall not affect the risks or obligations assumed by the CONTRACTOR or relieve him from fulfilling any of the conditions of the contract.

Each BID must be accompanied by a BID bond payable to the OWNER for five percent of the total amount of the BID. As soon as the BID prices have been compared, the OWNER will return the BONDS of all except the three lowest responsible BIDDERS. When the Agreement is executed the bonds of the two remaining unsuccessful BIDDERS will be returned. The BID BOND of the successful BIDDER will be retained until the payment BOND and performance BOND have been executed and approved, after which it will be returned. A certified check may be used in lieu of a BID BOND.

A performance BOND and a payment BOND, each in the amount of 100 percent of the CONTRACT PRICE, with a corporate surety approved by the OWNER, will be required for the faithful performance of the contract.

Attorneys-in-fact who sign BID BONDS or payment BONDS and performance BONDS must file with each BOND a certified and effective dated copy of their power of attorney.

The party to whom the contract is awarded will be required to execute the Agreement and obtain the performance BOND and payment BOND within ten (10) calendar days from the date when NOTICE OF AWARD is delivered to the BIDDER. The NOTICE OF AWARD shall be accompanied by the necessary Agreement and BOND forms. In case of failure of the BIDDER to execute the Agreement, the OWNER may at his option consider the BIDDER in default, in which case the BID BOND accompanying the proposal shall become the property of the OWNER.

The OWNER within ten (10) days of receipt of acceptable performance BOND, payment BOND and Agreement signed by the party to whom the Agreement was awarded shall sign the Agreement and return to such party an executed duplicate of the Agreement. Should the OWNER not execute the Agreement within such period, the BIDDER may by WRITTEN NOTICE withdraw his signed Agreement. Such notice of withdrawal shall be effective upon receipt of the notice by the OWNER.

The NOTICE TO PROCEED shall be issued within ten (10) days of the execution of the Agreement by the OWNER. Should there be reasons why the NOTICE TO PROCEED cannot be issued within such period, the time may be extended by mutual agreement between the OWNER and CONTRACTOR. If the NOTICE TO PROCEED has not been issued within the ten (10) day period or within the period mutually agreed upon, the CONTRACTOR may terminate the Agreement without further liability on the part of either party.

The OWNER may make such investigations as he deems necessary to determine the ability of the BIDDER to perform the WORK, and the BIDDER shall furnish to the OWNER all such information and data for this purpose as the OWNER may request. The OWNER reserves the right to reject any BID if the evidence submitted by, or investigation of, such BIDDER fails to satisfy the OWNER that such BIDDER is properly qualified to carry out the obligations of the Agreement and to complete the WORK contemplated therein.

A conditional or qualified BID will not be accepted.

Award will be made to the lowest responsible BIDDER.

All applicable laws, ordinances, and the rules and regulations of all authorities having jurisdiction over construction of the PROJECT shall apply to the contract throughout.

Each BIDDER is responsible for inspecting the site and for reading and being thoroughly familiar with the CONTRACT DOCUMENTS. The failure or omission of any BIDDER to do any of the foregoing shall in no way relieve any BIDDER from any obligation in respect to his BID.

Further, the BIDDER agrees to abide by the requirements under Executive Order No. 11246, as amended, including specifically the provisions of the equal opportunity clause set forth in the SUPPLEMENTAL GENERAL CONDITIONS.

The low BIDDER shall supply the names and addresses of major material SUPPLIERS and SUBCONTRACTORS when requested to do so by the OWNER.

Inspection trips for prospective BIDDERS will leave from the office of the

Engineer at by appointment

The ENGINEER is Gee & Strickland, Inc. His address

is 1104 Openwood , Vicksburg, Mississippi

NOTICE OF AWARD

To: Buford Construction Company

Route 1, Box 430

Vicksburg, MS 39180

PROJECT Description: Grading and Capping of the Inactive Disposal Area and Surface Impoundment Dike Improvements, Vertac Chemical Corporation.

The OWNER has considered the BID submitted by you for the above described WORK in response to its Advertisement for Bids dated August 26, 19 83, and Information for Bidders.

You are hereby notified that your BID has been accepted for items in the amount of $ 204,750.

You are required by the Information for Bidders to execute the Agreement and furnish the required ~~CONTRACTOR'S Performance BOND, Payment BOND~~ and certificates of insurance within ten (10) calendar days from the date of this Notice to you.

If you fail to execute said Agreement and to furnish said BONDS within ten (10) days from the date of this Notice, said OWNER will be entitled to consider all your rights arising out of the OWNER'S acceptance of your BID as abandoned and as a forfeiture of your BID BOND. The OWNER will be entitled to such other rights as may be granted by law.

You are required to return an acknowledged copy of this NOTICE OF AWARD to the OWNER.

Dated this 14th day of ~~September~~, 19 83.

Vertac Chemical Corporation
Owner

By _____

Title General Manager Vicksburg Plant

ACCEPTANCE OF NOTICE

Receipt of the above NOTICE OF AWARD is hereby acknowledged

by Buford Construction Company

this the 14TH day of SEPTEMBER, 19 83

By President

Title _____

BID

Proposal of Buford Construction Company (hereinafter called "BIDDER"), organized and existing under the laws of the State of Mississippi doing business as Corporation*.

To the Vertac Chemical Company

(hereinafter called "OWNER").

In compliance with your Advertisement for Bids, BIDDER hereby proposes to perform all WORK for the construction of grading and capping the inactive disposal area and surface Impoundment Dike Improvements. in strict accordance with the CONTRACT DOCUMENTS, within the time set forth therein, and at the prices stated below.

By submission of this BID, each BIDDER certifies, and in the case of a joint BID each party thereto certifies as to his own organization, that this BID has been arrived at independently, without consultation, communication, or agreement as to any matter relating to this BID with any other BIDDER or with any competitor.

BIDDER hereby agrees to commence WORK under this contract on or before a date to be specified in the NOTICE TO PROCEED and to fully complete the PROJECT within sixty (60) consecutive calendar days thereafter. BIDDER further agrees to pay as liquidated damages, the sum of $100.00 for each consecutive calendar day thereafter as provided in Section 15 of the General Conditions.

BIDDER acknowledges receipt of the following ADDENDUM:

None.

*Insert "a corporation", "a partnership", or "an individual" as applicable.

NO.	ITEM	UNIT	UNIT PRICE	AMOUNT	TOTAL PRICE
1.	Grading and capping of Inactive Disposal Area			Lump sum	$70,725.00
2.	Surface Impoundment Dike Improvements			Lump sum	$134,025.00

TOTAL OF BID $204,750.00

LUMP SUM PRICE (if applicable) ..... $

Respectfully submitted:

B. E. Burton Jr.
Signature

Route 1, Box 430
Vicksburg, MS 39180
Address

President
Title

September 6, 1983
Date

License Number (if applicable)

(SEAL – if BID is by a corporation)

Attest

(F) General Conditions

(G) SUPPLEMENTAL GENERAL CONDITIONS

(H) ~~XXXXXXXXXXXX~~ - Deleted

(I) ~~XXXXXXXXXXXXXXX~~ - Deleted

(J) NOTICE OF AWARD

(K) NOTICE TO PROCEED

(L) CHANGE ORDER

(M) DRAWINGS prepared by MCI numbered 1 through 4 and dated Jan 24, 19 83 and by MCI numbered 1 through 5 dated 8/8/83.

(N) SPECIFICATIONS prepared or issued by Gee & Strickland, Inc. and MCI, dated _____, 19_____

(O) ADDENDA:

No. _____, dated _____, 19_____

No. _____, dated _____, 19_____

No. _____, dated _____, 19_____

No. _____, dated _____, 19_____

No. _____, dated _____, 19_____

No. _____, dated _____, 19_____

6. The OWNER will pay to the CONTRACTOR in the manner and at such times as set forth in the General Conditions such amounts as required by the CONTRACT DOCUMENTS.

7. This Agreement shall be binding upon all parties hereto and their respective heirs, executors, administrators, successors, and assigns.

IN WITNESS WHEREOF, the parties hereto have executed, or caused to be executed by their duly authorized officials, this Agreement in (Three) each of which shall be deemed an original on the date first above written.

(Number of Copies)

AGREEMENT

THIS AGREEMENT, made this 14th day of September, 19 83, by and between Vertac Chemical Corporation (Name of Owner), (an individual), hereinafter called "OWNER"

and Buford Construction Company doing business as (~~a sole proprietorship~~) or (~~a partnership~~) or (a corporation) hereinafter called "CONTRACTOR".

WITNESSETH: That for and in consideration of the payments and agreements hereinafter mentioned:

1. The CONTRACTOR will commence and complete the construction of

Grading and capping of Inactive Disposal Area and Surface Impoundment Dike Improvements.

2. The CONTRACTOR will furnish all of the material, supplies, tools, equipment, labor and other services necessary for the construction and completion of the PROJECT described herein.

3. The CONTRACTOR will commence the work required by the CONTRACT DOCUMENTS within 10 calendar days after the date of the NOTICE TO PROCEED and will complete the same within 60 calendar days unless the period for completion is extended otherwise by the CONTRACT DOCUMENTS.

4. The CONTRACTOR agrees to perform all of the WORK described in the CONTRACT DOCUMENTS and comply with the terms therein for the sum of $ 204,750.00, or as shown in the BID schedule.

5. The term "CONTRACT DOCUMENTS" means and includes the following:

(A) Advertisement For BIDS

(B) Information For BIDDERS

(C) BID

(D) ~~XXXXXXXX~~ - Deleted

(E) Agreement

OWNER:

Vertac Chemical Corporation

BY F. L. Ahlers

Name F. L. Ahlers
(Please Type)

Title General Manager
Vicksburg Plant

(SEAL)

ATTEST:

Name ROBERT W JAMES Jr PE
(Please Type)

Title

CONTRACTOR:

Buford Construction Company

BY B. P. Buford

Name B. P. Buford
(Please Type)

President

Address Route 1, Box 430

Vicksburg, MS 39180

(SEAL)

ATTEST:

Name PHILIP. C. GEE PE.
(Please Type)

GENERAL CONDITIONS

1. *DEFINITIONS*

1.1 Wherever used in the CONTRACT DOCUMENTS, the following terms shall have the meanings indicated which shall be applicable to both the singular and plural thereof:

1.2 ADDENDA—Written or graphic instruments issued prior to the execution of the Agreement which modify or interpret the CONTRACT DOCUMENTS, DRAWINGS and SPECIFICATIONS, by additions, deletions, clarifications or corrections.

1.3 BID—The offer or proposal of the BIDDER submitted on the prescribed form setting forth the prices for the WORK to be performed.

1.4 BIDDER—Any person, firm or corporation submitting a BID for the WORK.

1.5 BONDS—Bid, Performance, and Payment Bonds and other instruments of security, furnished by the CONTRACTOR and his surety in accordance with the CONTRACT DOCUMENTS.

1.6 CHANGE ORDER—A written order to the CONTRACTOR authorizing an addition, deletion or revision in the WORK within the general scope of the CONTRACT DOCUMENTS, or authorizing an adjustment in the CONTRACT PRICE or CONTRACT TIME.

1.7 CONTRACT DOCUMENTS—The contract, including Advertisement For Bids, Information For Bidders, BID, Bid Bond, Agreement, Payment Bond, Performance Bond, NOTICE OF AWARD, NOTICE TO PROCEED, CHANGE ORDER, DRAWINGS, SPECIFICATIONS, and ADDENDA.

1.8 CONTRACT PRICE—The total monies payable to the CONTRACTOR under the terms and conditions of the CONTRACT DOCUMENTS.

1.9 CONTRACT TIME—The number of calendar days stated in the CONTRACT DOCUMENTS for the completion of the WORK.

1.10 CONTRACTOR—The person, firm or corporation with whom the OWNER has executed the Agreement.

1.11 DRAWINGS—The part of the CONTRACT DOCUMENTS which show the characteristics and scope of the WORK to be performed and which have been prepared or approved by the ENGINEER.

1.12 ENGINEER—The person, firm or corporation named as such in the CONTRACT DOCUMENTS.

1.13 FIELD ORDER—A written order effecting a change in the WORK not involving an adjustment in the CONTRACT PRICE or an extension of the CONTRACT TIME, issued by the ENGINEER to the CONTRACTOR during construction.

1.14 NOTICE OF AWARD—*The written notice of the* acceptance of the BID from the OWNER to the successful BIDDER.

1.15 NOTICE TO PROCEED—Written communication issued by the OWNER to the CONTRACTOR authorizing him to proceed with the WORK and establishing the date of commencement of the WORK.

1.16 OWNER—A public or quasi-public body or authority, corporation, association, partnership, or individual for whom the WORK is to be performed.

1.17 PROJECT—The undertaking to be performed as provided in the CONTRACT DOCUMENTS.

1.18 RESIDENT PROJECT REPRESENTATIVE—The authorized representative of the OWNER who is assigned to the PROJECT site or any part thereof.

1.19 SHOP DRAWINGS—All drawings, diagrams, illustrations, brochures, schedules and other data which are prepared by the CONTRACTOR, a SUBCONTRACTOR, manufacturer, SUPPLIER or distributor, which illustrate how specific portions of the WORK shall be fabricated or installed.

1.20 SPECIFICATIONS—A part of the CONTRACT DOCUMENTS consisting of written descriptions of a technical nature of materials, equipment, construction systems, standards and workmanship.

1.21 SUBCONTRACTOR—*An individual, firm or* corporation having a direct contract with the CONTRACTOR or with any other SUBCONTRACTOR for the performance of a part of the WORK at the site.

1.22 SUBSTANTIAL COMPLETION—That date as certified by the ENGINEER when the construction of the PROJECT or a specified part thereof is sufficiently completed, in accordance with the CONTRACT DOCUMENTS, so that the PROJECT or specified part can be utilized for the purposes for which it is intended.

1.23 SUPPLEMENTAL GENERAL CONDITIONS—

CONTRACTOR or the SUBCONTRACTOR subject to a chattel mortgage or under a conditional sale contract or other agreement by which an interest is retained by the seller.

7. *INSPECTION AND TESTING*

7.1 All materials and equipment used in the construction of the PROJECT shall be subject to adequate inspection and testing in accordance with generally accepted standards, as required and defined in the CONTRACT DOCUMENTS.

7.2 The OWNER shall provide all inspection and testing services not required by the CONTRACT DOCUMENTS.

7.3 The CONTRACTOR shall provide at his expense the testing and inspection services required by the CONTRACT DOCUMENTS.

7.4 If the CONTRACT DOCUMENTS, laws, ordinances, rules, regulations or orders of any public authority having jurisdiction require any WORK to specifically be inspected, tested, or approved by someone other than the CONTRACTOR, the CONTRACTOR will give the ENGINEER timely notice of readiness. The CONTRACTOR will then furnish the ENGINEER the required certificates of inspection, testing or approval.

7.5 Inspections, tests or approvals by the engineer or others shall not relieve the CONTRACTOR from his obligations to perform the WORK in accordance with the requirements of the CONTRACT DOCUMENTS.

7.6 The ENGINEER and his representatives will at all times have access to the WORK. In addition, authorized representatives and agents of any participating Federal or state agency shall be permitted to inspect all work, materials, payrolls, records of personnel, invoices of materials, and other relevant data and records. The CONTRACTOR will provide proper facilities for such access and observation of the WORK and also for any inspection, or testing thereof.

7.7 If any WORK is covered contrary to the written instructions of the ENGINEER it must, if requested by the ENGINEER, be uncovered for his observation and replaced at the CONTRACTOR'S expense.

7.8 If the ENGINEER considers it necessary or advisable that covered WORK be inspected or tested by others, the CONTRACTOR, at the ENGINEER'S request, will uncover, expose or otherwise make available for observation, inspection or testing as the ENGINEER may require, that portion of the WORK in question, furnishing all necessary labor, materials, tools, and equipment. If it is found that such WORK is defective, the CONTRACTOR will bear all the expenses of such uncovering, exposure, observation, inspection and testing and of satisfactory reconstruction. If, however, such WORK is not found to be defective, the CONTRACTOR will be allowed an increase in the CONTRACT PRICE or an extension of the CONTRACT TIME, or both, directly attributable to such uncovering, exposure, observation, inspection, testing and reconstruction and an appropriate CHANGE ORDER shall be issued.

8. *SUBSTITUTIONS*

8.1 Whenever a material, article or piece of equipment is identified on the DRAWINGS or SPECIFICATIONS by reference to brand name or catalogue number, it shall be understood that this is referenced for the purpose of defining the performance or other salient requirements and that other products of equal capacities, quality and function shall be considered. The CONTRACTOR may recommend the substitution of a material, article, or piece of equipment of equal substance and function for those referred to in the CONTRACT DOCUMENTS by reference to brand name or catalogue number, and if, in the opinion of the ENGINEER, such material, article, or piece of equipment is of equal substance and function to that specified, the ENGINEER may approve its substitution and use by the CONTRACTOR. Any cost differential shall be deductible from the CONTRACT PRICE and the CONTRACT DOCUMENTS shall be appropriately modified by CHANGE ORDER. The CONTRACTOR warrants that if substitutes are approved, no major changes in the function or general design of the PROJECT will result. Incidental changes or extra component parts required to accommodate the substitute will be made by the CONTRACTOR without a change in the CONTRACT PRICE or CONTRACT TIME.

9. *PATENTS*

9.1 The CONTRACTOR shall pay all applicable royalties and license fees. He shall defend all suits or claims for infringement of any patent rights and save the OWNER harmless from loss on account thereof, except that the OWNER shall be responsible for any such loss when a particular process, design, or the product of a particular manufacturer or manufacturers is specified, however if the CONTRACTOR has reason to believe that the design, process or product specified is an infringement of a patent, he shall be responsible for such loss unless he promptly gives such information to the ENGINEER.

10. *SURVEYS, PERMITS, REGULATIONS*

10.1 The OWNER shall furnish all boundary surveys and establish all base lines for locating the principal component parts of the WORK together with a suitable number of bench marks adjacent to the WORK as shown in the CONTRACT DOCUMENTS. From the information provided by the OWNER, unless otherwise specified in the CONTRACT DOCUMENTS, the CONTRACTOR shall develop and make all detail surveys needed for construction such as slope stakes, batter boards, stakes for pile locations and other working points, lines, elevations and cut sheets.

10.2 The CONTRACTOR shall carefully preserve bench marks, reference points and stakes and, in case of willful or careless destruction, he shall be charged with the resulting expense and shall be responsible for any mistakes that may be caused by their unnecessary loss or disturbance.

10.3 Permits and licenses of a temporary nature necessary for the prosecution of the WORK shall be secured and paid for by the CONTRACTOR unless otherwise stated in the SUPPLEMENTAL GENERAL CONDITIONS. Permits, licenses and easements for permanent structures or permanent changes in existing facilities shall be secured and paid for by the OWNER, unless otherwise specified. The CONTRACTOR shall give all notices and comply with all laws, ordinances, rules and regulations bearing on the conduct of the WORK as drawn and specified. If the CONTRACTOR

Modifications to General Conditions required by a Federal agency for participation in the PROJECT and approved by the agency in writing prior to inclusion in the CONTRACT DOCUMENTS, or such requirements that may be imposed by applicable state laws.

1.24 SUPPLIER – Any person or organization who supplies materials or equipment for the WORK, including that fabricated to a special design, but who does not perform labor at the site.

1.25 WORK – All labor necessary to produce the construction required by the CONTRACT DOCUMENTS, and all materials and equipment incorporated or to be incorporated in the PROJECT.

1.26 WRITTEN NOTICE – Any notice to any party of the Agreement relative to any part of this Agreement in writing and considered delivered and the service thereof completed, when posted by certified or registered mail to the said party at his last given address, or delivered in person to said party or his authorized representative on the WORK.

2. *ADDITIONAL INSTRUCTIONS AND DETAIL DRAWINGS*

2.1 The CONTRACTOR may be furnished additional instructions and detail drawings, by the ENGINEER, as necessary to carry out the WORK required by the CONTRACT DOCUMENTS.

2.2 The additional drawings and instruction thus supplied will become a part of the CONTRACT DOCUMENTS. The CONTRACTOR shall carry out the WORK in accordance with the additional detail drawings and instructions.

3. *SCHEDULES, REPORTS AND RECORDS*

3.1 The CONTRACTOR shall submit to the OWNER such schedule of quantities and costs, progress schedules, payrolls, reports, estimates, records and other data where applicable as are required by the CONTRACT DOCUMENTS for the WORK to be performed.

3.2 Prior to the first partial payment estimate the CONTRACTOR shall submit construction progress schedules showing the order in which he proposes to carry on the WORK, including dates at which he will start the various parts of the WORK, estimated date of completion of each part and, as applicable:

3.2.1. The dates at which special detail drawings will be required; and

3.2.2 Respective dates for submission of SHOP DRAWINGS, the beginning of manufacture, the testing and the installation of materials, supplies and equipment.

3.3 The CONTRACTOR shall also submit a schedule of payments that he anticipates he will earn during the course of the WORK.

4. *DRAWINGS AND SPECIFICATIONS*

4.1 The intent of the DRAWINGS and SPECIFICATIONS is that the CONTRACTOR shall furnish all labor, materials, tools, equipment, and transportation necessary for the proper execution of the WORK in accordance with the CONTRACT DOCUMENTS and all incidental work necessary to complete the PROJECT in an acceptable manner, ready for use, occupancy or operation by the OWNER.

4.2 In case of conflict between the DRAWINGS and SPECIFICATIONS, the SPECIFICATIONS shall govern. Figure dimensions on DRAWINGS shall govern over scale dimensions, and detailed DRAWINGS shall govern over general DRAWINGS.

4.3 Any discrepancies found between the DRAWINGS and SPECIFICATIONS and site conditions or any inconsistencies or ambiguities in the DRAWINGS or SPECIFICATIONS shall be immediately reported to the ENGINEER, in writing, who shall promptly correct such inconsistencies or ambiguities in writing. WORK done by the CONTRACTOR after his discovery of such discrepancies, inconsistencies or ambiguities shall be done at the CONTRACTOR'S risk.

5. *SHOP DRAWINGS*

5.1 The CONTRACTOR shall provide SHOP DRAWINGS as may be necessary for the prosecution of the WORK as required by the CONTRACT DOCUMENTS. The ENGINEER shall promptly review all SHOP DRAWINGS. The ENGINEER'S approval of any SHOP DRAWING shall not release the CONTRACTOR from responsibility for deviations from the CONTRACT DOCUMENTS. The approval of any SHOP DRAWING which substantially deviates from the requirement of the CONTRACT DOCUMENTS shall be evidenced by a CHANGE ORDER.

5.2 When submitted for the ENGINEER'S review, SHOP DRAWINGS shall bear the CONTRACTOR'S certification that he has reviewed, checked and approved the SHOP DRAWINGS and that they are in conformance with the requirements of the CONTRACT DOCUMENTS.

5.3 Portions of the WORK requiring a SHOP DRAWING or sample submission shall not begin until the SHOP DRAWING or submission has been approved by the ENGINEER. A copy of each approved SHOP DRAWING and each approved sample shall be kept in good order by the CONTRACTOR at the site and shall be available to the ENGINEER.

6. *MATERIALS, SERVICES AND FACILITIES*

6.1 It is understood that, except as otherwise specifically stated in the CONTRACT DOCUMENTS, the CONTRACTOR shall provide and pay for all materials, labor, tools, equipment, water, light, power, transportation, supervision, temporary construction of any nature, and all other services and facilities of any nature whatsoever necessary to execute, complete, and deliver the WORK within the specified time.

6.2 Materials and equipment shall be so stored as to insure the preservation of their quality and fitness for the WORK. Stored materials and equipment to be incorporated in the WORK shall be located so as to facilitate prompt inspection.

6.3 Manufactured articles, materials and equipment shall be applied, installed, connected, erected, used, cleaned and conditioned as directed by the manufacturer.

6.4 Materials, supplies and equipment shall be in accordance with samples submitted by the CONTRACTOR and approved by the ENGINEER.

6.5 Materials, supplies or equipment to be incorporated into the WORK shall not be purchased by the

observes that the CONTRACT [redacted]MENTS are at variance therewith, he shall promptly notify the ENGINEER in writing, and any necessary changes shall be adjusted as provided in Section 13, CHANGES IN THE WORK.

11. *PROTECTION OF WORK, PROPERTY AND PERSONS*

11.1 The CONTRACTOR will be responsible for initiating, maintaining and supervising all safety precautions and programs in connection with the WORK. He will take all necessary precautions for the safety of, and will provide the necessary protection to prevent damage, injury or loss to all employees on the WORK and other persons who may be affected thereby, all the WORK and all materials or equipment to be incorporated therein, whether in storage on or off the site, and other property at the site or adjacent thereto, including trees, shrubs, lawns, walks, pavements, roadways, structures and utilities not designated for removal, relocation or replacement in the course of construction.

11.2 The CONTRACTOR will comply with all applicable laws, ordinances, rules, regulations and orders of any public body having jurisdiction. He will erect and maintain, as required by the conditions and progress of the WORK, all necessary safeguards for safety and protection. He will notify owners of adjacent utilities when prosecution of the WORK may affect them. The CONTRACTOR will remedy all damage, injury or loss to any property caused, directly or indirectly, in whole or in part, by the CONTRACTOR, any SUBCONTRACTOR or anyone directly or indirectly employed by any of them or anyone for whose acts any of them be liable, except damage or loss attributable to the fault of the CONTRACT DOCUMENTS or to the acts or omissions of the OWNER or the ENGINEER or anyone employed by either of them or anyone for whose acts either of them may be liable, and not attributable, directly or indirectly, in whole or in part, to the fault or negligence of the CONTRACTOR.

11.3 In emergencies affecting the safety of persons or the WORK or property at the site or adjacent thereto, the CONTRACTOR, without special instruction or authorization from the ENGINEER or OWNER, shall act to prevent threatened damage, injury or loss. He will give the ENGINEER prompt WRITTEN NOTICE of any significant changes in the WORK or deviations from the CONTRACT DOCUMENTS caused thereby, and a CHANGE ORDER shall thereupon be issued covering the changes and deviations involved.

12. *SUPERVISION BY CONTRACTOR*

12.1 The CONTRACTOR will supervise and direct the WORK. He will be solely responsible for the means, methods, techniques, sequences and procedures of construction. The CONTRACTOR will employ and maintain on the WORK a qualified supervisor or superintendent who shall have been designated in writing by the CONTRACTOR as the CONTRACTOR'S representative at the site. The supervisor shall have full authority to act on behalf of the CONTRACTOR and all communications given to the supervisor shall be as binding as if given to the CONTRACTOR. The supervisor shall be present on the site at all times as required to perform adequate supervision and coordination of the WORK.

13. *CHANGES IN THE WORK*

13.1 The OWNER may at any time, as the need arises, order changes w[redacted] the scope of the WORK without invalidating the Agreement. If such changes increase or decrease the amount due under the CONTRACT DOCUMENTS, or in the time required for performance of the WORK, an equitable adjustment shall be authorized by CHANGE ORDER.

13.2 The ENGINEER, also, may at any time, by issuing a FIELD ORDER, make changes in the details of the WORK. The CONTRACTOR shall proceed with the performance of any changes in the WORK so ordered by the ENGINEER unless the CONTRACTOR believes that such FIELD ORDER entitles him to a change in CONTRACT PRICE or TIME, or both, in which event he shall give the ENGINEER WRITTEN NOTICE thereof within seven (7) days after the receipt of the ordered change. Thereafter the CONTRACTOR shall document the basis for the change in CONTRACT PRICE or TIME within thirty (30) days. The CONTRACTOR shall not execute such changes pending the receipt of an executed CHANGE ORDER or further instruction from the OWNER.

14. *CHANGES IN CONTRACT PRICE*

14.1 The CONTRACT PRICE may be changed only by a CHANGE ORDER. The value of any WORK covered by a CHANGE ORDER or of any claim for increase or decrease in the CONTRACT PRICE shall be determined by one or more of the following methods in the order of precedence listed below:

(a) Unit prices previously approved.

(b) An agreed lump sum.

(c) The actual cost for labor, direct overhead, materials, supplies, equipment, and other services necessary to complete the work. In addition there shall be added an amount to be agreed upon but not to exceed fifteen (15) percent of the actual cost of the WORK to cover the cost of general overhead and profit.

15. *TIME FOR COMPLETION AND LIQUIDATED DAMAGES*

15.1 The date of beginning and the time for completion of the WORK are essential conditions of the CONTRACT DOCUMENTS and the WORK embraced shall be commenced on a date specified in the NOTICE TO PROCEED.

15.2 The CONTRACTOR will proceed with the WORK at such rate of progress to insure full completion within the CONTRACT TIME. It is expressly understood and agreed, by and between the CONTRACTOR and the OWNER, that the CONTRACT TIME for the completion of the WORK described herein is a reasonable time, taking into consideration the average climatic and economic conditions and other factors prevailing in the locality of the WORK.

15.3 If the CONTRACTOR shall fail to complete the WORK within the CONTRACT TIME, or extension of time granted by the OWNER, then the CONTRACTOR will pay to the OWNER the amount for liquidated damages as specified in the BID for each calendar day that the CONTRACTOR shall be in default after the time stipulated in the CONTRACT DOCUMENTS.

15.4 The CONTRACTOR shall not be charged with liquidated damages or any excess cost when the delay in completion of the WORK is due to the following, and the CONTRACTOR has promptly given WRITTEN NOTICE of such delay to the OWNER or ENGINEER.

15.4.1 To any preference, priority or allocation

cuted and all expenses sustained. In addition and in lieu of terminating the CONTRACT, if the ENGINEER has failed to act on a request for payment or if the OWNER has failed to make any payment as aforesaid, the CONTRACTOR may upon ten (10) days written notice to the OWNER and the ENGINEER stop the WORK until he has been paid all amounts then due, in which event and upon resumption of the WORK, CHANGE ORDERS shall be issued for adjusting the CONTRACT PRICE or extending the CONTRACT TIME or both to compensate for the costs and delays attributable to the stoppage of the WORK.

18.6 If the performance of all or any portion of the WORK is suspended, delayed, or interrupted as a result of a failure of the OWNER or ENGINEER to act within the time specified in the CONTRACT DOCUMENTS, or if no time is specified, within a reasonable time, an adjustment in the CONTRACT PRICE or an extension of the CONTRACT TIME, or both, shall be made by CHANGE ORDER to compensate the CONTRACTOR for the costs and delays necessarily caused by the failure of the OWNER or ENGINEER.

19. *PAYMENTS TO CONTRACTOR*

19.1 At least ten (10) days before each progress payment falls due (but not more often than once a month), the CONTRACTOR will submit to the ENGINEER a partial payment estimate filled out and signed by the CONTRACTOR covering the WORK performed during the period covered by the partial payment estimate and supported by such data as the ENGINEER may reasonably require. If payment is requested on the basis of materials and equipment not incorporated in the WORK but delivered and suitably stored at or near the site, the partial payment estimate shall also be accompanied by such supporting data, satisfactory to the OWNER, as will establish the OWNER's title to the material and equipment and protect his interest therein, including applicable insurance. The ENGINEER will, within ten (10) days after receipt of each partial payment estimate, either indicate in writing his approval of payment and present the partial payment estimate to the OWNER, or return the partial payment estimate to the CONTRACTOR indicating in writing his reasons for refusing to approve payment. In the latter case, the CONTRACTOR may make the necessary corrections and resubmit the partial payment estimate. The OWNER will, within ten (10) days of presentation to him of an approved partial payment estimate, pay the CONTRACTOR a progress payment on the basis of the approved partial payment estimate. The OWNER shall retain ten (10) percent of the amount of each payment until final completion and acceptance of all work covered by the CONTRACT DOCUMENTS. The OWNER at any time, however, after fifty (50) percent of the WORK has been completed, if he finds that satisfactory progress is being made, shall reduce retainage to five (5%) percent on the current and remaining estimates. When the WORK is substantially complete (operational or beneficial occupancy), the retained amount may be further reduced below five (5) percent to only that amount necessary to assure completion. On completion and acceptance of a part of the WORK on which the price is stated separately in the CONTRACT DOCUMENTS, payment may be made in full, including retained percentages, less authorized deductions.

19.2 The request for payment may also include an allowance for the cost of such major materials and equipment which are suitably stored either at or near the site.

19.3 Prior to SUBSTANTIAL COMPLETION, the OWNER, with the approval of the ENGINEER and with the concurrence of the CONTRACTOR, may use any completed or substantially completed portions of the WORK. Such use shall not constitute an acceptance of such portions of the WORK.

19.4 The OWNER shall have the right to enter the premises for the purpose of doing work not covered by the CONTRACT DOCUMENTS. This provision shall not be construed as relieving the CONTRACTOR of the sole responsibility for the care and protection of the WORK, or the restoration of any damaged WORK except such as may be caused by agents or employees of the OWNER.

19.5 Upon completion and acceptance of the WORK, the ENGINEER shall issue a certificate attached to the final payment request that the WORK has been accepted by him under the conditions of the CONTRACT DOCUMENTS. The entire balance found to be due the CONTRACTOR, including the retained percentages, but except such sums as may be lawfully retained by the OWNER, shall be paid to the CONTRACTOR within thirty (30) days of completion and acceptance of the WORK.

19.6 The CONTRACTOR will indemnify and save the OWNER or the OWNER'S agents harmless from all claims growing out of the lawful demands of SUBCONTRACTORS, laborers, workmen, mechanics, materialmen, and furnishers of machinery and parts thereof, equipment, tools, and all supplies, incurred in the furtherance of the performance of the WORK. The CONTRACTOR shall, at the OWNER'S request, furnish satisfactory evidence that all obligations of the nature designated above have been paid, discharged, or waived. If the CONTRACTOR fails to do so the OWNER may, after having notified the CONTRACTOR, either pay unpaid bills or withhold from the CONTRACTOR'S unpaid compensation a sum of money deemed reasonably sufficient to pay any and all such lawful claims until satisfactory evidence is furnished that all liabilities have been fully discharged whereupon payment to the CONTRACTOR shall be resumed, in accordance with the terms of the CONTRACT DOCUMENTS, but in no event shall the provisions of this sentence be construed to impose any obligations upon the OWNER to either the CONTRACTOR, his Surety, or any third party. In paying any unpaid bills of the CONTRACTOR, any payment so made by the OWNER shall be considered as a payment made under the CONTRACT DOCUMENTS by the OWNER to the CONTRACTOR and the OWNER shall not be liable to the CONTRACTOR for any such payments made in good faith.

19.7 If the OWNER fails to make payment thirty (30) days after approval by the ENGINEER, in addition to other remedies available to the CONTRACTOR, there shall be added to each such payment interest at the maximum legal rate commencing on the first day after said payment is due and continuing until the payment is received by the CONTRACTOR.

order duly issued by the OWNER.

15.4.2 To unforeseeable causes beyond the control and without the fault or negligence of the CONTRACTOR, including but not restricted to, acts of God, or of the public enemy, acts of the OWNER, acts of another CONTRACTOR in the performance of a contract with the OWNER, fires, floods, epidemics, quarantine restrictions, strikes, freight embargoes, and abnormal and unforeseeable weather; and

15.4.3 To any delays of SUBCONTRACTORS occasioned by any of the causes specified in paragraphs 15.4.1 and 15.4.2 of this article.

16. *CORRECTION OF WORK*

16.1 The CONTRACTOR shall promptly remove from the premises all WORK rejected by the ENGINEER for failure to comply with the CONTRACT DOCUMENTS, whether incorporated in the construction or not, and the CONTRACTOR shall promptly replace and re-execute the WORK in accordance with the CONTRACT DOCUMENTS and without expense to the OWNER and shall bear the expense of making good all WORK of other CONTRACTORS destroyed or damaged by such removal or replacement.

16.2 All removal and replacement WORK shall be done at the CONTRACTOR'S expense. If the CONTRACTOR does not take action to remove such rejected WORK within ten (10) days after receipt of WRITTEN NOTICE, the OWNER may remove such WORK and store the materials at the expense of the CONTRACTOR.

17. *SUBSURFACE CONDITIONS*

17.1 The CONTRACTOR shall promptly, and before such conditions are disturbed, except in the event of an emergency, notify the OWNER by WRITTEN NOTICE of:

17.1.1 Subsurface or latent physical conditions at the site differing materially from those indicated in the CONTRACT DOCUMENTS; or

17.1.2 Unknown physical conditions at the site, of an unusual nature, differing materially from those ordinarily encountered and generally recognized as inherent in WORK of the character provided for in the CONTRACT DOCUMENTS.

17.2 The OWNER shall promptly investigate the conditions, and if he finds that such conditions do so materially differ and cause an increase or decrease in the cost of, or in the time required for, performance of the WORK, an equitable adjustment shall be made and the CONTRACT DOCUMENTS shall be modified by a CHANGE ORDER. Any claim of the CONTRACTOR for adjustment hereunder shall not be allowed unless he has given the required WRITTEN NOTICE; provided that the OWNER may, if he determines the facts so justify, consider and adjust any such claims asserted before the date of final payment.

18. *SUSPENSION OF WORK, TERMINATION AND DELAY*

18.1 The OWNER may suspend the WORK or any portion thereof for a period of not more than ninety days or such further time as agreed upon by the CONTRACTOR, by WRITTEN NOTICE to the CONTRACTOR and the ENGINEER which notice shall fix the date on which WORK shall be resumed. The CONTRACTOR will resume that WORK on the date so fixed. The CONTRACTOR will be allowed an increase in the CONTRACT PRICE or an extension of the CONTRACT TIME, or both, directly attributable to any suspension.

18.2 If the CONTRACTOR is adjudged a bankrupt or insolvent, or if he makes a general assignment for the benefit of his creditors, or if a trustee or receiver is appointed for the CONTRACTOR or for any of his property, or if he files a petition to take advantage of any debtor's act, or to reorganize under the bankruptcy or applicable laws, or if he repeatedly fails to supply sufficient skilled workmen or suitable materials or equipment, or if he repeatedly fails to make prompt payments to SUBCONTRACTORS or for labor, materials or equipment or if he disregards laws, ordinances, rules, regulations or orders of any public body having jurisdiction of the WORK or if he disregards the authority of the ENGINEER, or if he otherwise violates any provision of the CONTRACT DOCUMENTS, then the OWNER may, without prejudice to any other right or remedy and after giving the CONTRACTOR and his surety a minimum of ten (10) days from delivery of a WRITTEN NOTICE, terminate the services of the CONTRACTOR and take possession of the PROJECT and of all materials, equipment, tools, construction equipment and machinery thereon owned by the CONTRACTOR, and finish the WORK by whatever method he may deem expedient. In such case the CONTRACTOR shall not be entitled to receive any further payment until the WORK is finished. If the unpaid balance of the CONTRACT PRICE exceeds the direct and indirect costs of completing the PROJECT, including compensation for additional professional services, such excess SHALL BE PAID TO THE CONTRACTOR. If such costs exceed such unpaid balance, the CONTRACTOR will pay the difference to the OWNER. Such costs incurred by the OWNER will be determined by the ENGINEER and incorporated in a CHANGE ORDER.

18.3 Where the CONTRACTOR'S services have been so terminated by the OWNER, said termination shall not affect any right of the OWNER against the CONTRACTOR then existing or which may thereafter accrue. Any retention or payment of monies by the OWNER due the CONTRACTOR will not release the CONTRACTOR from compliance with the CONTRACT DOCUMENTS.

18.4 After ten (10) days from delivery of a WRITTEN NOTICE to the CONTRACTOR and the ENGINEER, the OWNER may, without cause and without prejudice to any other right or remedy, elect to abandon the PROJECT and terminate the Contract. In such case, the CONTRACTOR shall be paid for all WORK executed and any expense sustained plus reasonable profit.

18.5 If, through no act or fault of the CONTRACTOR, the WORK is suspended for a period of more than ninety (90) days by the OWNER or under an order of court or other public authority, or the ENGINEER fails to act on any request for payment within thirty (30) days after it is submitted, or the OWNER fails to pay the CONTRACTOR substantially the sum approved by the ENGINEER or awarded by arbitrators within thirty (30) days of its approval and presentation, then the CONTRACTOR may, after ten (10) days from delivery of a WRITTEN NOTICE to the OWNER and the ENGINEER, terminate the CONTRACT and recover from the OWNER payment for all WORK exe-

20. *ACCEPTANCE OF FINAL PAYMENT AS RELEASE*

20.1 The acceptance by the CONTRACTOR of final payment shall be and shall operate as a release to the OWNER of all claims and all liability to the CONTRACTOR other than claims in stated amounts as may be specifically excepted by the CONTRACTOR for all things done or furnished in connection with this WORK and for every act and neglect of the OWNER and others relating to or arising out of this WORK. Any payment, however, final or otherwise, shall not release the CONTRACTOR or his sureties from any obligations under the CONTRACT DOCUMENTS or the Performance BOND and Payment BONDS.

21. *INSURANCE*

21.1 The CONTRACTOR shall purchase and maintain such insurance as will protect him from claims set forth below which may arise out of or result from the CONTRACTOR'S execution of the WORK, whether such execution be by himself or by any SUBCONTRACTOR or by anyone directly or indirectly employed by any of them, or by anyone for whose acts any of them may be liable:

21.1.1 Claims under workmen's compensation, disability benefit and other similar employee benefit acts;

21.1.2 Claims for damages because of bodily injury, occupational sickness or disease, or death of his employees;

21.1.3 Claims for damages because of bodily injury, sickness or disease, or death of any person other than his employees;

21.1.4 Claims for damages insured by usual personal injury liability coverage which are sustained (1) by any person as a result of an offense directly or indirectly related to the employment of such person by the CONTRACTOR, or (2) by any other person; and

21.1.5 Claims for damages because of injury to or destruction of tangible property, including loss of use resulting therefrom.

21.2 Certificates of Insurance acceptable to the OWNER shall be filed with the OWNER prior to commencement of the WORK. These Certificates shall contain a provision that coverages afforded under the policies will not be cancelled unless at least fifteen (15) days prior WRITTEN NOTICE has been given to the OWNER.

21.3 The CONTRACTOR shall procure and maintain, at his own expense, during the CONTRACT TIME, liability insurance as hereinafter specified:

21.3.1 CONTRACTOR'S General Public Liability and Property Damage Insurance including vehicle coverage issued to the CONTRACTOR and protecting him from all claims for personal injury, including death, and all claims for destruction of or damage to property, arising out of or in connection with any operations under the CONTRACT DOCUMENTS, whether such operations be by himself or by any SUBCONTRACTOR under him, or anyone directly or indirectly employed by the CONTRACTOR or by a SUBCONTRACTOR under him. Insurance shall be written with a limit of liability of not less than $500,000 for all damages arising out of bodily injury, including death, at any time resulting therefrom, sustained by any one person in any one accident; and a limit of liability of not less than $500,000 aggregate for any such damages sustained by two or more persons in any one accident. Insurance shall be written with a limit of liability of not less than $200,000 for all property damage sustained by any one person in any one accident; and a limit of liability of not less than $200,000 aggregate for any such damage sustained by two or more persons in any one accident.

21.3.2 The CONTRACTOR shall acquire and maintain, if applicable, Fire and Extended Coverage insurance upon the PROJECT to the full insurable value thereof for the benefit of the OWNER, the CONTRACTOR, and SUBCONTRACTORS as their interest may appear. This provision shall in no way release the CONTRACTOR or CONTRACTOR'S surety from obligations under the CONTRACT DOCUMENTS to fully complete the PROJECT.

21.4 The CONTRACTOR shall procure and maintain, at his own expense, during the CONTRACT TIME, in accordance with the provisions of the laws of the state in which the work is performed, Workmen's Compensation Insurance, including occupational disease provisions, for all of his employees at the site of the PROJECT and in case any work is sublet, the CONTRACTOR shall require such SUBCONTRACTOR similarly to provide Workmen's Compensation Insurance, including occupational disease provisions for all of the latter's employees unless such employees are covered by the protection afforded by the CONTRACTOR. In case any class of employees engaged in hazardous work under this contract at the site of the PROJECT is not protected under Workmen's Compensation statute, the CONTRACTOR shall provide, and shall cause each SUBCONTRACTOR to provide, adequate and suitable insurance for the protection of his employees not otherwise protected.

21.5 The CONTRACTOR shall secure, if applicable, "All Risk" type Builder's Risk Insurance for WORK to be performed. *Unless specifically authorized* by the OWNER, the amount of such insurance shall not be less than the CONTRACT PRICE totaled in the BID. The policy shall cover not less than the losses due to fire, explosion, hail, lightning, vandalism, malicious mischief, wind, collapse, riot, aircraft, and smoke during the CONTRACT TIME, and until the WORK is accepted by the OWNER. The policy shall name as the insured the CONTRACTOR, the ENGINEER, and the OWNER.

22. *CONTRACT SECURITY*

22.1 The CONTRACTOR shall within ten (10) days after the receipt of the NOTICE OF AWARD furnish the OWNER with a Performance Bond and a Payment Bond in penal sums equal to the amount of the CONTRACT PRICE, conditioned upon the performance by

ENGINEER will make visits to the site and determine if the WORK is proceeding in accordance with the CONTRACT DOCUMENTS.

27.2 The CONTRACTOR will be held strictly to the intent of the CONTRACT DOCUMENTS in regard to the quality of materials, workmanship and execution of the WORK. Inspections may be made at the factory or fabrication plant of the source of material supply.

27.3 The ENGINEER will not be responsible for the construction means, controls, techniques, sequences, procedures, or construction safety.

27.4 The ENGINEER shall promptly make decisions relative to interpretation of the CONTRACT DOCUMENTS.

28. *LAND AND RIGHTS-OF-WAY*

28.1 Prior to issuance of NOTICE TO PROCEED, the OWNER shall obtain all land and rights-of-way necessary for carrying out and for the completion of the WORK to be performed pursuant to the CONTRACT DOCUMENTS, unless otherwise mutually agreed.

28.2 The OWNER shall provide to the CONTRACTOR information which delineates and describes the lands owned and rights-of-way acquired.

28.3 The CONTRACTOR shall provide at his own expense and without liability to the OWNER any additional land and access thereto that the CONTRACTOR may desire for temporary construction facilities, or for storage of materials.

29. *GUARANTY*

29.1 The CONTRACTOR shall guarantee all materials and equipment furnished and WORK performed for a period of one (1) year from the date of SUBSTANTIAL COMPLETION. The CONTRACTOR warrants and guarantees for a period of one (1) year from the date of SUBSTANTIAL COMPLETION of the system that the completed system is free from all defects due to faulty materials or workmanship and the CONTRACTOR shall promptly make such corrections as may be necessary by reason of such defects including the repairs of any damage to other parts of the system resulting from such defects. The OWNER will give notice of observed defects with reasonable promptness. In the event that the CONTRACTOR should fail to make such repairs, adjustments, or other WORK that may be made necessary by such defects, the OWNER may do so and charge the CONTRACTOR the cost thereby incurred. The Performance BOND shall remain in full force and effect through the guarantee period.

30. *ARBITRATION*

30.1 All claims, disputes and other matters in question arising out of, or relating to, the CONTRACT DOCUMENTS or the breach thereof, except for claims which have been waived by the making and acceptance of final payment as provided by Section 20, shall be decided by arbitration in accordance with the Construction Industry Arbitration Rules of the American Arbitration Association. This agreement to arbitrate shall be specifically enforceable under the prevailing arbitration law. The award rendered by the arbitrators shall be final, and judgment may be entered upon it in any court having jurisdiction thereof.

30.2 Notice of the demand for arbitration shall be filed in writing with the other party to the CONTRACT DOCUMENTS and with the American Arbitration Association, and a copy shall be filed with the ENGINEER. Demand for arbitration shall in no event be made on any claim, dispute or other matter in question which would be barred by the applicable statute of limitations.

30.3 The CONTRACTOR will carry on the WORK and maintain the progress schedule during any arbitration proceedings, unless otherwise mutually agreed in writing.

31. *TAXES*

31.1 The CONTRACTOR will pay all sales, consumer, use and other similar taxes required by the law of the place where the WORK is performed.

the CONTRACTOR of all undertakings, covenants, terms, conditions and agreements of the CONTRACT DOCUMENTS, and upon the prompt payment by the CONTRACTOR to all persons supplying labor and materials in the prosecution of the WORK provided by the CONTRACT DOCUMENTS. Such BONDS shall be executed by the CONTRACTOR and a corporate bonding company licensed to transact such business in the state in which the WORK is to be performed and named on the current list of "Surety Companies Acceptable on Federal Bonds" as published in the Treasury Department Circular Number 570. The expense of these BONDS shall be borne by the CONTRACTOR. If at any time a surety on any such BOND is declared a bankrupt or loses its right to do business in the state in which the WORK is to be performed or is removed from the list of Surety Companies accepted on Federal BONDS, CONTRACTOR shall within ten (10) days *after notice from the OWNER to do so, substitute an* acceptable BOND (or BONDS) in such form and sum and signed by such other surety or sureties as may be satisfactory to the OWNER. The premiums on such BOND shall be paid by the CONTRACTOR. No further payments shall be deemed due nor shall be made until the new surety or sureties shall have furnished an acceptable BOND to the OWNER.

23. *ASSIGNMENTS*

23.1 Neither the CONTRACTOR nor the OWNER shall sell, transfer, assign or otherwise dispose of the Contract or any portion thereof, or of his right, title or interest therein, or his obligations thereunder, without written consent of the other party.

24. *INDEMNIFICATION*

24.1 The CONTRACTOR will indemnify and hold harmless the OWNER and the ENGINEER and their agents and employees from and against all claims, damages, losses and expenses including attorney's fees arising out of or resulting from the performance of the WORK, provided that any such claims, damage, *loss or expense is attributable to bodily injury*, sickness, disease or death, or to injury to or destruction of tangible property including the loss of use resulting therefrom; and is caused in whole or in part by any negligent or willful act or omission of the CONTRACTOR, and SUBCONTRACTOR, anyone directly or indirectly employed by any of them or anyone for whose acts any of them may be liable.

24.2 In any and all claims against the OWNER or the ENGINEER, or any of their agents or employees, by any employee of the CONTRACTOR, any SUBCONTRACTOR, anyone directly or indirecily employed by any of them, or anyone for whose acts any of them may be liable, the indemnification obligation shall not be limited in any way by any limitation on the amount or type of damages, compensation or benefits payable by or for the CONTRACTOR or any SUBCONTRACTOR under workmen's compensation acts, disability benefit acts or other employee benefits acts.

24.3 The obligation of the CONTRACTOR under this paragraph shall not extend to the liability of the ENGINEER, his agents or employees arising out of the *preparation or approval of maps*, DRAWINGS, opinions, reports, surveys, CHANGE ORDERS, designs or SPECIFICATIONS.

25. *SEPARATE CONTRACTS*

25.1 The OWNER reserves the right to let other contracts in connection with this PROJECT. The CONTRACTOR shall afford other CONTRACTORS reasonable opportunity for the introduction and storage of their materials and the execution of their WORK, and shall properly connect and coordinate his WORK with theirs. If the proper execution or results of any part of the CONTRACTOR'S WORK depends upon the WORK of any other CONTRACTOR, the CONTRACTOR shall inspect and promptly report to the ENGINEER any defects in such WORK that render it unsuitable for such proper execution and results.

25.2 The OWNER may perform additional WORK related to the PROJECT by himself, or he may let other contracts containing provisions similar to these. The CONTRACTOR will afford the other CONTRACTORS who are parties to such Contracts (or the OWNER, if he is performing the additional WORK himself), reasonable opportunity for the introduction and storage of materials and equipment and the execution of WORK, and shall properly connect and coordinate his WORK with theirs.

25.3 If the performance of additional WORK by other CONTRACTORS or the OWNER is not noted in the CONTRACT DOCUMENTS prior to the execution of the CONTRACT, written notice thereof shall be given to the CONTRACTOR prior to starting any such additional WORK. If the CONTRACTOR believes that the performance of such additional WORK by the OWNER or others involves him in additional expense or entities him to an extension of the CONTRACT TIME, he may make a claim therefor as provided in Sections 14 and 15.

26. *SUBCONTRACTING*

26.1 The CONTRACTOR may utilize the services of specialty SUBCONTRACTORS on those parts of the WORK which, under normal contracting practices, are performed by specialty SUBCONTRACTORS.

26.2 The CONTRACTOR shall not award WORK to SUBCONTRACTOR(s), in excess of fifty (50%) percent of the CONTRACT PRICE, without prior written approval of the OWNER.

26.3 The CONTRACTOR shall be fully responsible to the OWNER for the acts and omissions of his SUBCONTRACTORS, and of persons either directly or indirectly employed by them, as he is for the acts and omissions of persons directly employed by him.

26.4 The CONTRACTOR shall cause appropriate provisions to be inserted in all subcontracts relative to the WORK to bind SUBCONTRACTORS to the CONTRACTOR by *the terms of the CONTRACT DOCUMENTS* insofar as applicable to the WORK of SUBCONTRACTORS and to give the CONTRACTOR the same power as regards terminating any subcontract that the OWNER may exercise over the CONTRACTOR under any provision of the CONTRACT DOCUMENTS.

26.5 Nothing contained in this CONTRACT shall create any contractual relation between any SUBCONTRACTOR and the OWNER.

27. *ENGINEER'S AUTHORITY*

27.1 The ENGINEER shall act as the OWNER'S representative during the construction period. He shall decide questions which may arise as to quality and acceptability of materials furnished and WORK performed. He shall interpret the intent of the CONTRACT DOCUMENTS in a fair and unbiased manner. The

Supplemental General Conditions

1. Ponds number 2 and 3 must be dewatered sufficiently that all fill material is placed "in the dry." This will not be necessary in pond 1.

2. Dikes constructed around outlet pipes and the pump station for dewatering must be removed when the work is completed.

3. Only one pond may be dewatered at a time.

4. Six borings were made on the inactive disposal area and the logs of these borings are available in Gee & Strickland's office. The contracter is responsible for the information contained in these logs.

5. There is some potential extra processing of the borrow material may be required due to excess moisture. Permission is granted by Vertac to excavate in the borrow area.

6. It is anticipated Notice to Proceed will be issued in time to begin work by October 3, 1983. The order of work shall be the dike work first, then the inactive disposal area. As long as sufficient progress is being made on the dike, additional equipment may be mobilized for the disposal area.

7. The following quantities have been provided by MCI for the dike improvements. The contractor assumes all responsibility for the use of these quantities.

a)	On site cut and fill	3,200 yd^3
b)	Haul in fill	3,000 yd^3
c)	Gravel for chimney drain	785 yd^3
d)	Rip rap	2,700 yd^3
e)	Filter cloth	60,000 ft^2
f)	Seeding	2,900 yd^2

SITE WORK

EARTHWORK

GENERAL

SCOPE OF WORK

Work consists of all stripping, grubbing, related items of demolition, excavation, fill, backfill, and grading for the entire project as shown on the drawings and/or specified herein.

GENERAL

Operations of earthwork shall be suspended at any time when satisfactory results cannot be obtained on account of rain, inclement weather or other unsatisfactory conditions of the field. Contractor shall provide and maintain area of Limits of Work with proper drainage at all times.

FIELD CONTROL

The Owner shall retain services of a testing laboratory to perform all tests required under this contract. In areas where density of fill or embankment is specified, field density tests will be performed as directed by the Engineer.

Unsatisfactory Material. If controlled fills are found to be unsatisfactory by the Testing Laboratory, material shall be removed and replaced to produce the class fill specified, and retested at the Contractor's expense.

CLEARING AND GRUBBING

Clear and grub the site of all trees, vegetation, and topsoil. This material is to be removed from the site. No disposal site is provided by the Owner unless shown on the plans.

FILLING

Fill materials shall be approved by the Engineer and shall conform to the following unless otherwise noted on the drawings.

Fill shall be free of organic matter, vegetation and debris with a liquid limit less than 30 and a plastic index less than 10.

FILL CLASSIFICATION

All fills shall be compacted to 95% ASTM D698 (Standard Proctor) unless otherwise shown on the plans.

TECHNICAL SPECIFICATIONS
FOR THE
GRADING AND CAPPING
INACTIVE DISPOSAL AREA
VERTAC CHEMICAL CORPORATION
VICKSBURG, MS 39180

GEE & STRICKLAND, INC.
1104 OPENWOOD STREET
VICKSBURG, MS 39180

EXECUTION

HAUL ROADS. The contractor shall maintain the haul roads with sufficient moisture to prevent dust becoming a nuisance to plant operations or a safety hazard.

ROUGH GRADING

Grading. Grade the entire area within .2'±, of the noted elevations.

DRAINAGE

Both temporary and permanent drainage shall be maintained during performance of the Work. Surface of unfinished fills shall be bladed smooth to a crown or grade to permit water run-off. Contractor shall control grading so as to prevent water from running into excavated areas; provide all ditching and/or pumping required to keep excavated areas free of water.

Saturation. Fill that has become saturated with water because of improper drainage shall be removed to a depth determined by the Engineer and shall be disposed of or reconditioned to conform to these Specifications.

SEEDING

After grading operations have been completed, all areas shown on the plans shall be seeded as herein specified.

LAYOUT

The Engineer will provide grade stakes at the beginning of the project and blue tops for the proposed grade and final grade as shown on the plans. The contractor shall notify the Engineer at least two working days before grade stakes are required. The contractor shall exercise reasonable care in preserving grade stakes.

QUANTITY ESTIMATES

This parcel has been cross-sectioned at 50' intervals with cut and fill volumes determined from the plans at 50' cross-sectioned intervals. These computations show 20,000 cubic yards of on-site cut and 16,500 cubic yards of on-site fill. An additional 14,000 cubic yards must be hauled from the borrow areas to provide the 18" cap shown on the plans. Both of these volumes are in-place material and volumes do not provide for any shrinkage factors. These volumes are provided for the convenience of bidders, however, the Contractor assumes all responsibility for the use of these volumes.

SITE VISIT

As noted on the plans, some changed conditions exist. The contractor is responsible to visit the site and familiarize himself with the site and haul conditions. Failure to do so will not be a basis of a change order.

PAYMENT

Payment will be made at the Lump Sum price shown on the Bid Schedule.

it unsuitable for use will not be accepted. Fertilizer shall not have been exposed to weather prior to delivery and shall be protected at the job site until use. Fertilizer used shall contain the following percentage by weight:

13% of nitrogen
13% of phosperic acid
13% of potash
or as otherwise specified herein.

MULCH

The mulching agent which is incorporated in the slury is to be approved by the Engineer.

WATERING

If soil moisture is deficient when planting, apply sufficient water for seed germination. Continue watering until a stand of grass sufficient to retard errosion is established.

INSPECTION AND ACCEPTANCE

When a sufficient stand of grass has been established to retard errosion, the Engineer will inspect the site and notify the Contractor of acceptance. Watering may be stopped at that time.

MEASUREMENT AND PAYMENT

Measurement of the area will be done by the Engineer and payment will be at the unit price in the Bid Schedule.

TECHNICAL SPECIFICATIONS
SURFACE IMPOUNDMENT DIKE IMPROVEMENTS
VERTAC CHEMICAL CORPORATION
VICKSBURG, MISSISSIPPI

Prepared by:

MCI/Consulting Engineers, Inc.
P.O. Box 23010
10628 Dutchtown Road
Knoxville, Tennessee 37933-1010

August 8, 1983

SEEDING

GENERAL

This section includes furnishing all materials, labor and equipment necessary to seed and produce a grass cover on the limits of work shown on the plans and specified herein.

SCOPE

The seeding shall be done by hydromulching process as performed by Mississippi Grass, Brandon, MS, or equal.

GRASS

The seed shall be of the best grade, and of known vitality, purity, and germination and shall be delivered in bags as required by law, each bag being tagged showing the percent of germination and purity of the seed, also the percent of noxious weeds and inert litter. All seed shall be free of wild onion, Canada thistle, and Johnson grass. One (1) pound of seed shall not contain more than 300 noxious seeds. No seed more than one year old will be accepted. Seeding shall be done with grasses which will germinate in the season planted, as shown in the following table and at the prescribed rates:

March 1 to Aug. 15	-Bermuda Grass at 50 lbs. per Acre.
August 15 to Nov. 15	-Annual Rye Grass at 50 lbs. per Acre.

Bermuda grass seed shall be hulled. If Annual Rye Grass is planted as necessitated by the schedule, Bermuda Grass must be overseeded and an acceptable stand established at a later date by the Contractor as a permanent cover within its permitted planting season as specified above.

In areas where the final slope is at or steeper than 2½ horizontal to 1 vertical, the areas shall be sodded with the apppropriate grasses as above.

FERTILIZERS

Commercial fertilizers shall be complete formula and shall conform to the applicable regulations and laws. It shall be uniform in composition, dry and free flowing, and shall be delivered to the site in the original, unopened containers, each bearing the manufacturer's guaranteed analysis. Any fertilizer which becomes caked or otherwise damaged, making

TABLE OF CONTENTS

4. GENERAL PROVISIONS

A. Lines and Grades: The fills shall be constructed to the lines and grades indicated on the drawings. Grading shall be finished with a tolerance of 0.1 foot of the grades indicated.

B. Conduct of the Work: The contractor shall maintain the site in a well-drained satisfactory condition at all times until final completion and acceptance of all work under the contract. Any approved fill material which is rendered unsuitable after being placed in the embankment and before final acceptance of the work shall be replaced by the contractor in a satisfactory manner at no additional cost to the Owner.

Throughout construction it is essential that the site be maintained in a well-drained condition. Water should not be allowed to pond or be impounded in any area, and drainage shall be controlled in a manner which will insure the quality of the work.

C. Density Tests: The grading operation will be continuously monitored by the engineer designated by the Owner or their representative hereinafter called the Engineer. During the construction of any fill, density and other tests will be conducted which may cause delays in the contractor's placing and compaction operations. The contractor shall coordinate his work with the operations of the Engineer.

5. MATERIALS

A. General: Fill shall consist of earth or rock. Materials to be stockpiled or wasted are to be specifically designated as such. Materials containing brush, roots, sod, or other deleterious materials will not be considered suitable. The suitability of the materials and their deposition shall be subject to the approval of the Engineer. Considerable drying of materials excavated within the existing dike will probably be required to allow proper compaction.

6. FILL

A. General: The suitability of all materials placed in the fill will be determined by the Engineer.

B. Definitions: The term "Fill" as used in these specifications is defined as the earth to be imported or excavated on the site and deposited in layers and compacted by rolling and/or tamping. Earth fill is considered to be organic-free soil derived from on-site excavations, or approved borrow areas.

7. PREPARATION FOR FILL PLACEMENT

A. General: All areas to have fill placed upon them will be examined by the Engineer after stripping, and any soft or otherwise deleterious materials will be removed prior to placement. No fill material shall be placed until the subgrade has been examined and approved by the Engineer.

B. Proofrolling: After stripping and prior to fill placement those areas which will have fill placed upon them shall be proofrolled with heavy, pneumatic-tired construction equipment. Any soft, unstable or otherwise unacceptable zones detected thereby, as determined by the Engineer, shall be undercut to firm soil, stabilized by compaction or otherwise

compacted using heavy rollers or tracked equipment until judged stable by the Engineer.

C. Compaction Equipment: Compaction equipment shall conform to standards of the industry and shall be used as prescribed. The Contractor will furnish and have on the job the various types of compaction and grading equipment which may be required to properly consolidate the various types of materials incorporated in the fill, or which are otherwise required to prepare the site.

D. Spreading: After dumping, the material shall be spread by bulldozer or grader in approximate horizontal layers over the fill areas. Concentration of oversize material will not be permitted. If, in the opinion of the geotechnical engineer, any individual stone or stones interfere with proper and smooth compaction, they shall be removed from the lift. During the dumping and spreading processes, the contractor shall maintain at all times a force of men adequate to remove all roots and debris from all fill materials. The entire surface of any fill under construction shall be maintained in such condition that construction equipment can travel over it. Ruts in the surface of any layer shall be filled satisfactorily before compacting.

9. MOISTURE CONTROL

The materials in each layer of the fill shall contain the amount of moisture necessary to obtain the desired compaction as determined by the Engineer. Material that is too wet when placed in the fill shall be spread over the fill surface and permitted to dry, assisted by discing or harrowing, if applicable, until the moisture content is reduced to an amount within tolerable limits. When the material is too dry, the contractor will be required to sprinkle

each layer of fill. Discing, or other approved methods, will be required to work the moisture into the material until a uniform distribution of moisture is obtained. Water applied on a layer of fill shall be accurately controlled in amounts so that free water will not appear on the surface during or subsequent to rolling. Should too much water be added to any part of the fill so that the material is too wet to obtain the desired compaction, the rolling and all work on that section of the fill shall be delayed until the moisture content of the material is reduced to an amount with the specified limits. If, in the opinion of the Engineer, the top or contact surface of a partial fill section becomes too wet or too dry to permit suitable bond between these surfaces and the additional fill to be placed thereon, the contractor shall loosen the wet or dried material by scarifying or discing to such depths as may be directed, shall dampen or dry the loosened material to an acceptable moisture content, and shall then compact this layer in accordance with the applicable requirements to densities comparable to the underlying fill.

Drainage and Rockfill

SECTION IV

1. SCOPE

The work covered by this section consists of furnishing all plant, labor, equipment, and performing all operations in connection with the construction and placing of the subsurface drains and rock toe in accordance with the Drawings and these specifications.

2. TOE DRAIN

Toe drains shall be installed at the base of the slope as shown by the drawing. The rock shall be reasonably well graded with a maximum rock dimension of 12 inches. The rock shall contain no greater than 5% material passing a #200 sieve and shall have at least 50% of the particles (by weight) greater than 6 inches. The rock shall be placed in lifts not to exceed one foot and shall be composed of durable limestone that does not slake in water. Filter fabric (Supac 5-P or equivalent) shall be placed beneath the rock as shown on the drawings.

3. CHIMNEY DRAIN

Chimney drains shall be installed on the appropriately prepared slope as shown on the drawings. The rock shall conform to ASTM D 448, Size Number 357 or an alternate rock approved by MCI/Consulting Engineers, Inc. The rock shall be placed in lifts not exceeding eight inches and shall be composed of durable limestone that does not slake in water, or a washed, clean river gravel approved by MCI/Consulting Engineers, Inc. Filter fabric (Supac 5-P or equivalent) shall be placed around the rock fill as shown on the drawings and shall be overlapped a minimum of two feet at all locations where joints are necessary.

repaired as deemed necessary by the Engineer. It is the intent of these specifications to provide a uniformly stable surface on which to place fill.

8. PLACEMENT

A. General: No fill shall be placed in any area until such areas have been inspected and approved. The gradation and distribution of materials throughout the compacted fill section shall be such that the fill will be free from lenses, pockets, streaks, layers of material differing substantially in texture or gradation from surrounding material of the same class. Successive loads of materials shall be dumped at locations on the fill as directed or approved by the Engineer. No fill shall be placed upon a frozen surface, nor shall snow, ice, or frozen earth be incorporated in the fill. Unless otherwise directed, all earth fill materials shall be kept crowned with temporary slopes of at least 2% until completed.

B. Compaction: Fill shall be constructed of approved materials and shall be placed in lifts to the lines and grades on the drawings and staked in the field.

Where the fill is predominately earth, it will be placed in uniform layers no greater than eight inches in thickness. Successive layers shall be compacted to at least 95% of its maximum density according to ASTM D 698 (standard Proctor). Compaction shall be accomplished by sheepsfoot rollers, power rollers or other equipment approved by the Engineer.

Rock fill shall be placed in lifts approximately equal in thickness to the maximum particle size contained therein, but in no case greater than twelve inches. This material shall be

Specifications for Grading

SECTION III

1. SCOPE OF WORK

The work covered in this section consists of furnishing all plant, labor and equipment and performing all operations in connection with the required excavation and placing all fills, including compaction, in accordance with the contract drawings and these specifications.

2. CLASSIFICATION

A. Excavation

All excavation shall be considered as unclassified. Subsurface exploratory data are available for review to assist the contractor in assessing the difficulty in achieving all excavations and in evaluating the work in general. However, the contractor is hereby notified that subsurface data furnished by the Owner is for general information only and the contractor is solely responsible for assessing the conditions.

3. DRAINAGE STRUCTURES

Drainage structures including ditches and inlets shall conform to the alignment, grades and details shown by the Plans.

Specifications for Clearing and Grubbing

SECTION II

1. SCOPE OF WORK

This specification covers the clearing and grubbing associated with site preparation and related works and disposal of all brush, timber and debris and all incidental work related thereto.

2. LIMITS OF THE WORK

All trees, stumps, vegetation, topsoil and other deleterious materials must be removed from all areas of the site which require excavation, filling or grading. Topsoil shall be removed to the depth necessary to remove all roots and organic matter.

3. DISPOSAL OF MATERIALS

All timber, brush and other organic materials from clearing operations shall be disposed of on-site. The area for disposal will be adjacent to the project, but not in a drainageway.

Vegetation

SECTION V

1. Permanent vegetation will be placed on all exposed or bare areas in accordance with the following sections.

   A. Soil Improvement: Evenly apply 150 pounds of agricultural limestone per 1000 square feet. Apply 10 pounds of 10-10-10 analysis fertilizer or equivalent per 1000 square feet.

   B. Seeding: Evenly apply 2 pounds of Rye Grass per 1000 square feet and 1/4 pound Common Bermuda per 1000 square feet. The lime, fertilizer, and seed may be applied separately by hand or with mechanical equipment, or they may be applied simultaneously by using a hydraulic seeder. Other seed as necessary to establish a year-round grass stand shall be applied.

   C. Protective Cover: To provide protective cover and conserve moisture during the establishment of vegetative cover, an erosion control fabric such as Hold-Gro or equivalent will be installed according to manufacturer's recommended procedures.

VERTAC CHEMICAL CORPORATION
24th Floor • 5100 Poplar • Memphis, TN 38137 • 901-767-6851

REPLY TO: P. O. BOX 3
VICKSBURG, MS 39180
(601) 636-1231

November 4, 1983

Mr. Charles H. Estes, III., P.E.
Mississippi Department of Natural Resources
Bureau of Pollution Control
Division of Solid Waste Management
P.O. Box 10385
Jackson, MS 39209

SUBJECT: Inactive Disposal Area - Vertac Chemical Corporation, Vicksburg, MS

Dear Mr. Estes:

Enclosed herewith is one certified copy of Gee & Strickland drawing dated October 25, 1983 showing As Built conditions for final capping on the Inactive Disposal Area. Also enclosed is Gee & Strickland letter dated October 25, 1983 by Philip C. Gee, P.E. certifying substantial compliance by the contractor with the plans and specifications of the contract dated September 14, 1983. This contract was based in part on drawings prepared by MCI/Consulting Engineers (Project 82-529 Sheets 1 thru 4 of 4).

The As Built drawing compares well to MCI Sheet 3 of 4 showing the final capping plan. In addition, these Gee & Strickland documents represent the condition found on the Ms/DNR Inspection on the afternoon of Monday, October 31, 1983 conducted by Mr. Estes and Mr. Spengler.

The contractor is aware of the seriousness of the vegetation cover requirements and his contract is written such that neither progress payment will be made nor performance retention released until such time as a mowable stand of grass is attained. Seeding operations for the Dike Improvements are scheduled within the next week and it is anticipated that such reseeding as is necessary for the Disposal Area will be accomplished at that time. In addition, it is expected that watering will be accomplished by a sprinkler system.

Very truly yours,

Robert W. James, Jr., P.E.
Project Engineer

RWJ/ksh

Enclosures

cc F. Ahlers
F. Bleyer (w/encl)
P. Buford (Buford Const.) (w/encl)
P. Gee (G&S)
D. Karkkainen (w/encl)
D. Madsen (w/encl)
F. Wilson (MCI) (w/encl & dwg)

GEE & STRICKLAND, INC.

CONSULTING ENGINEERS & SURVEYORS
1 Openwood Plaza
1104 Openwood St.
Vicksburg, Miss. 39180

Philip C. Gee, P.E.
Joseph G. Strickland, R.L.S.

Phone: 601-636-7831

October 25, 1983

Mr. Bob James, Jr., P.E.
Vertac Chemical Company
P.O. Box 3
Vicksburg, MS 39180

Re: Grading & Capping
Inactive Disposal Area

Dear Mr. James,

This letter is to serve as certification that Buford Construction Company has completed the Grading and Capping of the inactive disposal area in substantial compliance with plans and specifications of the contract dated September 14, 1983. The only major exception is a mowable stand of grass has not been achieved. The grass has been planted and fertilized and is beginning to emerge. A good grass cover should be established within the next few weeks. A copy of the As Built topographic survey is attached.

The grading does not extend as far to the South or West as shown on the plans. When grading began, the cut material was extremely wet and as it dried out during processing much higher than normal shrinkage factors were encountered. Accordingly, the inplace yardage of soil was reduced.

The end product complies with the intent of a minimum 18 inch cap of clean material and a final uniform grade providing drainage. All cap material was compacted to 95% ASTM D-698. Testing was done in accordance with ASTM D-2922.

Very Truly Yours,

Philip C. Gee, P.E.

PCG/jh

CHARLES W. METCALF, 1840-1924
WILLIAM P. METCALF, 1872-1940
JOHN W. APPERSON, 1896-1985

CHARLES METCALF CRUMP
JERRE G. DUZANE
JOHN B. MAXWELL, JR.
ALLEN T. MALONE
PHILIP G. KAMINSKY
ROBERT L. DINKELSPIEL
MICHAEL E. HEWGLEY
JAMES F. RUSSELL
JOHN L. RYDER
THOMAS R. BUCKNER
MELODY W. OLIVER
WILLIAM B. MASON, JR.
STEVEN N. DOUGLASS
RANDY S. GARDNER

SAMUEL RUBENSTEIN
OF COUNSEL

LAW OFFICES
APPERSON, CRUMP, DUZANE & MAXWELL
SUITE 2110
ONE COMMERCE SQUARE
MEMPHIS, TENNESSEE 38103
901/525-1711

TELECOPY 901/521-0789

EAST OFFICE
SUITE 100
KIRBY CENTRE
1755 KIRBY PARKWAY
MEMPHIS, TENNESSEE 38119
901/756-6300
TELECOPY 901/757-1296

September 1, 1989

Allan E. Antley, Chief
Waste Compliance Section
United States Environmental
Protection Agency
Region IV
345 Courtland Street, N.E.
Atlanta, Georgia 30365

VIA FEDERAL EXPRESS

Dear Mr. Antley:

In accordance with our telephone conversation today, this letter is in response to a letter from Patrick M. Tobin, Director, Waste Management Division, dated August 25, 1989 to Steven T. Boswell, Director, Environmental Affairs of Cedar Chemical Corporation's Vicksburg, Mississippi Plant, which was received at the Plant this date. Since Steve is out of town on vacation and will not return to the Plant until after next week, I am responding to the letter.

As we discussed today, the enclosures to Mr. Boswell's letter of August 3, 1989 are the only documents in Cedar's files which are responsive to the questions which were raised in Mr. Tobin's earlier letter dated July 18, 1989. Steve's reference to correspondence pertaining to closure of the old landfill following a field investigation by your office in 1981 was only intended to direct your attention to that file in case there might be something in the file which would be responsive to the questions raised. We of course do not have access to that file.

To reiterate, after an extensive search of its records both at the Vicksburg Plant and at the Company's corporate office in Memphis, and after review of files at the Mississippi Bureau of Pollution Control, Cedar is not aware of any information relating to material disposed of in the old landfill area (or relating to the other matters on which information was requested) except for the information contained in the documents that were enclosed with Steve's letter to you dated August 3, 1989. The sampling report which was generated by your office and submitted to the previous plant owner by letter of March 2, 1982, was not

deemed responsive and in any event, it was assumed that you had access to that report. The same is true of the letter from the Department of Natural Resources dated February 14, 1983 approving the closure plan for the landfill which was implemented by the previous plant owner that year.

I want to assure you and your associates that Cedar is committed to provide the Agency with any additional information at Cedar's disposal concerning questions regarding past operations and practices on the Vicksburg Plant site. At your suggestion, I attempted to reach Jeaneanne Gettle to determine the additional information which the Agency would like us to provide. By copy of this letter to Ms. Gettle, I ask that she contact me by telephone to clarify what additional information is being requested. As we discussed, it is likely that someone has misinterpreted Steve's letter and concluded that we have additional documents responsive to Mr. Tobin's earlier letter which were not provided. If that is the case, it is my fault since I helped Steve draft the response after we had reviewed numerous old files and records. If additional documents are required, I will get them to you as soon as possible, with the understanding that to the extent I need Steve to assist in a review of files, I may need some additional time since he will not return to work until September 13, 1989.

Thank you for your consideration. I will look forward to hearing from Ms. Gettle.

Sincerely yours,

Allen T. Malone

ATM:jw

cc: Ms. Jeaneanne Gettle
Environmental Engineer

cc: Mr. Steven T. Boswell

Rec'd 9/1/89
HDM

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION IV

345 COURTLAND STREET, N.E.
ATLANTA, GEORGIA 30365

AUG 25 1989

4WD-RCRA

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

Mr. Steven T. Boswell, Director
Environmental Affairs
Cedar Chemical Corporation
P.O. Box 3
Vicksburg, Mississippi 39180

RE: July 18, 1989 Request for Information Pursuant to Section 104 of CERCLA and Section 3007 of RCRA

Dear Mr. Boswell:

The United States Environmental Protection Agency requested, in the referenced document, certain information on the source, extent and nature, of the release or threatened release of hazardous substances, pollutants or contaminants on or about the Cedar Chemical Corporation (CCC) in Vicksburg, Mississippi. The information was requested pursuant to the provisions of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) of 1980, 42 U.S.C. Section 9604, as amended by the Superfund Amendments and Reauthorization Act of 1986 (SARA), P.L. 99-499, and Section 3007 of the Resource Conservation and Recovery Act (RCRA), 42 U.S.C. Section 6927.

In your response, dated August 3, 1989, you admitted having in your files certain information which was responsive to this request, but failed to provide this information to the Agency. You are hereby directed to provide all information responsive to our July 18, 1989 request to the following address within five (5) calendar days of receipt of this letter.

Allan E. Antley, Chief
Waste Compliance Section
U.S. EPA - Region IV
345 Courtland Street, N.E.
Atlanta, Georgia 30365

If you fail again to provide all information within your possession which is responsive to the referenced request, EPA will seek the imposition of penalties of up to twenty-five thousand dollars ($25,000) for each day of continued non-compliance.

The information requested must be provided notwithstanding its possible characterization as confidential information or trade secret. You may, if you desire, assert a business confidentiality claim covering part or all of the information requested, in the manner described by 40 C.F.R. Section 2.203 (b),

by attaching to such information at the time it is submitted, a notice employing language such as "trade secret," or "proprietary," or "company confidential." Information covered by such a claim will be disclosed by EPA only to the extent, and only by the means of the procedures set forth in 40 C.F.R. Part 2, Subpart B. If no such claim accompanies the information when it is received by EPA it may be made available to the public by EPA without further notice to you. You should read the above cited regulation carefully before asserting a business confidentiality claim, since certain categories of information are not properly the subject of such a claim.

Should you have any questions, please contact Jeaneanne Gettle, Environmental Engineer at (404) 347-7603 or Zylpha Pryor, Assistant Regional Counsel, at (404) 347-2641.

Sincerely,

Patrick M Tobin

Patrick M. Tobin
Director
Waste Management Division

cc: Sam Mabry
Mississippi Department of Natural Resources

Allen T. Malone
Apperson, Crump, Duzane and Maxwell

CEDAR CHEMICAL CORPORATION

24th Floor • 5100 Poplar Avenue • Memphis, TN 38137 • 901-685-5348

REPLY TO: P.O. BOX 3
VICKSBURG, MS 39181
(601) 636-1231

RECEIVED
AUG 07 1989
Dept. of Natural Resources
Bureau of Pollution Control

August 3, 1989

CERTIFIED MAIL
RETURN RECEIPT REQUESTED
P 677 981 840

Mr. Allan E. Antley, Chief
Waste Compliance Section
U.S. EPA, Region IV
RCRA Branch
345 Courtland Street, NE
Atlanta, Georgia 30365

DIVISION OF SOLID WASTE
REVIEWED BY TC
DATE 8/8/89

Re: Request for Information Pursuant to Section 104 of CERCLA and Section 3007 of RCRA for Cedar Chemical Corporation in Vicksburg, Mississippi

Dear Mr. Antley:

Pursuant to the above-referenced request, we have reviewed all available records and files including those maintained by previous owners of the Vicksburg Chemical Plant. I have also discussed the request with present and former employees at the Vicksburg Plant who were involved in environmental and safety compliance. Based on all of this, I have found the following:

Response to Questions No. 1 and 2:

Please see attached report dated February 18, 1983 from R. F. Maraman of Vertac (Cedar's predecessor) to Mr. Charles Estes of the Mississippi Bureau of Pollution Control.

This is the only incident that has ever caused implementation of the SPCC or Contingency Plan to the best of my knowledge.

Response to Question No. 3:

Please see attached letter dated March 17, 1980, from Mr. Jim Hardage of the Mississippi State Board of Health to Mr. Rodger Marentis of Vertac, Inc. (a former owner of the site). The letter is accompanied by a sketch displaying the approximate location of previously disposed materials. I am told that the previous owner of the Plant arranged to dispose of certain of these wastes in a permitted facility off the site and I have found correspondence dating back to 1979 indicating that such a plan had been recommended, but I have found nothing to document exactly what was removed and where it was taken.

In addition to the sketch referred to above, please see the enclosed aerial photograph.

The "old landfill" was inactive after 1979 and was closed and capped in late 1983 pursuant to an order of the Mississippi Department of Natural Resources dated November 10, 1982. The Order directed Vertac, the previous owner of the Vicksburg Plant, to carry out various studies and develop plans in connection with closure of the old landfill. I believe the order was precipitated in part by a field investigation by EPA on October 29, 1981. A copy of the sampling report generated as a result of that investigation was sent by EPA Region IV to the previous plant owner by letter dated March 2, 1982. I assume you have a copy of that report.

Our files do include voluminous correspondence between the prevous plant owner and officials at the Mississippi Department of Natural Resources concerning development and implementation of the closure plan. The plan was approved by a letter from the Department on February 14, 1983 and was fully implemented thereafter. Grading and capping were carried out under a contract between the former owner of the plant and its contractor, Gee Strickland, Inc., based on plans and specifications prepared by MCI/Consulting Engineers of Knoxville, Tennessee. I am sure that the Mississippi Bureau of Pollution Control has complete files documenting the closure, including copies of all reports and correspondence that are included in the previous plant owner's files which are in Cedar's possession.

If we can provide any additional information that would be responsive to your requests, please identify in writing the additional information needed, with a copy to Cedar's attorney identified below.

Sincerely,

Steven T. Boswell
Director of Environmental Affairs

STB:ld
Enc.

cc: Mr. Allen T. Malone
Apperson, Crump, Duzane & Maxwell
Suite 2110, One Commerce Square
Memphis, Tennessee 38103

cc: Mr. Steven Spengler
Mississippi Department of Natural Resources
Bureau of Pollution Control

VERTAC CHEMICAL CORPORATION
24th Floor • 5100 Poplar • Memphis, TN 38137 • 901-767-6851

REPLY TO: P. O. BOX 3
VICKSBURG, MS 39180
(601) 636-1231

February 18, 1983

Bureau of Pollution Control
Hazardous Waste Division
P.O. Box 10385
Jackson, MS 39209

Attention: Mr. Charles Estes

Subject: Report on Holding Pond Incident

In compliance with existing regulations the following report is submitted.

OWNER OF THE FACILITY:

Vertac Chemical Corporation
24th Floor, 5100 Poplar
Memphis, TN 38137
901-767-6851

NAME, ADDRESS AND TELEPHONE NUMBER OF THE FACILITY:

Vertac Chemical Corporation
Vicksburg, MS Plant
P.O. Box 3
Rifle Range Road
Vicksburg, MS 39180
601-636-1231

DATE, TIME AND TYPE OF INCIDENT:

February 5, 1983
Between midnight and 0800.
Fracture in the dike on the East side of the holding pond causing approximately 60% of same to empty into Stouts Bayou.

NAME AND QUANTITY OF MATERIALS INVOLVED:

Approximately 700,000 gallons of waste water containing an estimated 4 ppm Dinitro Butyl Phenol as the major toxic constituent.

EXTENT OF INJURIES:

None to personnel.

No apparent injury to fish, wildlife, or the environment as estimated from subsequent chemical analysis and inspection.

POTENTIAL HAZARDS:

A potential hazard existed to fish and wildlife, but was estimated to be minimal due to the immense volume of rain water run-off in the bayou.

It rained heavily before the fracture and continued to rain through 2-5-83 and until approximately noon on 2-6-83.

ESTIMATION - QUANTITY AND DISPOSITION OF RECOVERED MATERIAL:

Recovered material, estimated at two (2) yards of contaminated mud from the pond, was removed from the fracture repair area and placed back into the pond impoundment area.

In addition to the above, the following is a running account of events from February 5, 1983 through February 14, 1983:

1. 2-5-83 - Approximately 0830:

   Plant officials met at the fracture to assess the situation and determine possible hazards to human health and the environment.

   No hazards were apparent in the immediate vicinity nor did it appear that any evacuation would be necessary.

   Attention was turned to stopping the rain water run-off flowing to the creek. The pond consists of a settling section and a holding section separated by a finger dike except for a 6 foot section to allow effluent passage. Plans were made to first close the settling section, thus stopping the flow to the creek, then repair the fracture in the main dike.

   A contractor, Miller Construction, was called in to start the closing operation.

   The fracture was caused by the heavy rains in the area.

   Approximately 0900:

   The emergency response center was contacted. The situation was reported to Rick Sherrard and he contacted Steve Spengler.

   Approximately 1000:

   The bayou was inspected approximately two (2) miles South of the plant near MP&L. The bayou was muddy and approximately 10 foot deep.

   No fish kills or environmental damage was observed there or in the near by area.

   Meanwhile, Miller Construction had arrived at the plant and closed the finger dike, thus stopping any discharge to the fracture and into the creek.

   The DNBP Plant was shutdown, the Toxaphene Plant was not in operation, and the hill tank flow was stopped. At this time the plant effluent

consisted of rain water run-off.

Approximately 1300:

A return trip was made to the bayou near MP&L. The water had risen to near bank level but again no dead fish or apparent environmental damage was observed.

A creek sample was taken. The analysis was 0.4 ppm DNBP and 30 ppb Toxaphene.

Approximately 1600:

Heavy rain had set in.

Steve Spengler visited to inspect the fracture, and obtained samples of the pond bottom. Steve discussed several courses of action and outlined precautions to be taken.

Vertac also sampled the pond bottom. The analysis was 31.6 mg/Kilo DNBP and 132 mg/Kilo.

An emergency watch was set up to prevent leaks from the finger dike dam during the night.

2. 2-6-83:

Since the dike surrounding the pond was saturated from recent rains, it would not support heavy equipment. Therefore, Miller Construction started constructing a road across the "dry" mid section of the pond to reach the fracture. They worked 24 hours per day to reach the fracture.

Steve Spengler visited to review progress and meet with Vertac officials and Dick Karkkainen, the Environmental Manager.

At 1130 the bayou near MP&L was sampled. The analysis was less than 0.1 ppm DNBP and 5 ppb Toxaphene.

The bayou was bank full with water. No dead fish or environmental damage was observed.

3. 2-7-83:

Miller Construction reached and filled the fracture. Reinforcing dirt was placed for almost 15 feet North and South of the closed fracture.

Plans were formulated to extend the existing dike by extending the width to approximately 20 feet, the length of the pond on the East side.

A consultant, Gee-Strickland, arrived to observe repairs and make recommendations.

A 36 inch concrete pipe was placed in the new road allowing the dammed up water to flow to the effluent pumps.

Steve Spengler and Charles Estes collected additional samples and advised moving the contaminated mud that had oozed out from under the dirt fill. The mud was removed by Miller Construction and placed in the "dry" pond area.

During the night water started to breach the access road, but the emergency crew repaired the leak and prevented major damage.

Approximately 1130:

The bayou at MP&L was inspected and sampled. It was about 15 feet deep. No dead fish or environmental damage was observed.

The analysis was nil DNBP and less than 1 ppb Toxaphene.

4. 2-8-83:

A storm front was expected to arrive. It was anticipated that rain water would run from the South hill area into the "dry" portion. A diesel pump was brought in to pump the water into the containment section.

A nearby source of good dirt was located to be used to extend the East dike.

The rain started in the afternoon.

5. 2-9-83:

The rain became a 2 1/2 inch downpour. Run-off water broke through the access road, but the diesel pump kept the situation under control.

The rest of the evening was a holding action.

Stouts Bayou rose to within inches of the top of the fracture repair and sandbags were placed to prevent the bayou from running into the pond.

The repair held with only minor washing on the bayou side.

6. 2-10-83:

Access road and fracture repair brought up to proper elevation.

7. 2-11-83:

Progress continued in a North-South direction on the East dike extention and it was completed on 2-14-83.

Steve Spengler and Charles Estes visited to inspect the progress.

Approximately 1/2 the pond is operational with the remainder to be placed in service as soon as possible.

To this point Vertac has spent approximately $63,000 to repair the fracture.

The strategy to protect Vertac's repair investment is currently being discussed at the corporate level.

R. F. Maraman

R.F. MARAMAN
Chief Chemist

RFM/tsd

cc: Steve Spengler
R.F. Maraman
Effluent File
File

MISSISSIPPI
STATE BOARD OF HEALTH
2423 NORTH STATE STREET, P. O. BOX 1700
JACKSON, MISSISSIPPI 39205

ALTON B. COBB, M.D., M.P.H.
STATE HEALTH OFFICER

March 17, 1980

Mr. Rodger Marentis
Vertac, Inc.
P. O. Box 3
Vicksburg, MS 39180

Dear Mr. Marentis:

As you know, David Lee and I met with you and other company officials on December 6, 1979 in regard to chemical waste disposal. We recently forwarded an assessment to EPA, based primarily on information you submitted to us during that meeting.

Since you indicated that some of the information discussed with us may be confidential, we request that you review the enclosed copy of the assessment and notify this agency in writing within fifteen (15) calendar days concerning any proprietary information in the report that should remain confidential and the reasons why. Please send your reply to the attention of the Director, Mr. Jack McMillan.

You may want to make a similar request for confidentiality to EPA Region IV. The mailing address for that is as follows:

Mr. Joel Veater
Chemical Site Unit
Hazardous Materials Division
EPA Region IV
345 Courtland Street
Atlanta, GA 30308

If you have any questions, please contact this agency.

Sincerely,

Jim Hardage

Jim Hardage, Chemist
Division of Solid Waste Management

JH/cs

cc: Mr. Joel Veater

POTENTIAL HAZARDOUS WASTE SITE
IDENTIFICATION AND PRELIMINARY ASSESSMENT

IV

(Signed by HQ)

NOTE: This form is completed for each potential hazardous waste site to help set priorities for site inspection. The information entered on this form is based on available records and may be updated on subsequent forms as a result of additional inquiries and on-site inspections.

GENERAL INSTRUCTIONS: Complete Sections I and III through X as completely as possible before Section II (*Preliminary Assessment*). File this form in the Regional Hazardous Waste Log File and submit a copy to: U.S. Environmental Protection Agency; Site Tracking System; Hazardous Waste Enforcement Task Force (*EN-335*); 401 M St., SW; Washington, DC 20460.

I. SITE IDENTIFICATION

A. SITE NAME
Vicksburg Chemical Company, Drum Burial Site

B. STREET (*or other identifier*)
Rifle Range Road

C. CITY
Vicksburg

D. STATE
MS

E. ZIP CODE

F. COUNTY NAME
Warren

G. OWNER/OPERATOR (*If known*)

1. NAME
(Now owned by) Vertac Chemical Company

2. TELEPHONE NUMBER
601-636-1231

H. TYPE OF OWNERSHIP

☐ 1. FEDERAL ☐ 2. STATE ☐ 3. COUNTY ☐ 4. MUNICIPAL ☒ 5. PRIVATE ☐ 6. UNKNOWN

I. SITE DESCRIPTION

J. HOW IDENTIFIED (*i.e., citizen's complaints, OSHA citations, etc.*)
Eckhardt's Report

K. DATE IDENTIFIED (*mo., day, & yr.*)
11/2/79

L. PRINCIPAL STATE CONTACT

1. NAME
Mississippi State Board of Health
Division of Solid Waste Management

2. TELEPHONE NUMBER
601-982-6317

II. PRELIMINARY ASSESSMENT (*complete this section last*)

A. APPARENT SERIOUSNESS OF PROBLEM

☐ 1. HIGH ☐ 2. MEDIUM ☐ 3. LOW ☐ 4. NONE ☒ 5. UNKNOWN

B. RECOMMENDATION

☐ 1. NO ACTION NEEDED (*no hazard*)

☐ 2. IMMEDIATE SITE INSPECTION NEEDED
a. TENTATIVELY SCHEDULED FOR:
b. WILL BE PERFORMED BY:

☒ 3. SITE INSPECTION NEEDED
a. TENTATIVELY SCHEDULED FOR:
b. WILL BE PERFORMED BY:
STATE

☐ 4. SITE INSPECTION NEEDED (*low priority*)

C. PREPARER INFORMATION

1. NAME
James Hardage, David Lee

2. TELEPHONE NUMBER
601-982-6317

3. DATE (*mo., day,*
12/10/79

III. SITE INFORMATION

A. SITE STATUS

☐ 1. ACTIVE (*Those industrial or municipal sites which are being used for waste treatment, storage, or disposal on a continuing basis, even if intermittently.*)

☒ 2. INACTIVE (*Those sites which no longer receive wastes.*)

☐ 3. OTHER (*specify*): (*Those sites that include such incidents like "midnight dumping" no regular or continuing use of the site for waste disposal has oc*

B. IS GENERATOR ON SITE?

☐ 1. NO ☒ 2. YES (*specify generator's four-digit SIC Code*): 2819, 2873

C. AREA OF SITE (*in acres*)
About 5 acres

D. IF APPARENT SERIOUSNESS OF SITE IS HIGH, SPECIFY COORDINATES

1. LATITUDE (*deg.—min.—sec.*)

2. LONGITUDE (*deg.—min.—sec.*)

E. ARE THERE BUILDINGS ON THE SITE?

☒ 1. NO ☐ 2. YES (*specify*):

Continued From Front

IV. CHARACTERIZATION OF SITE ACTIVITY

Indicate the major site activity(ies) and details relating to each activity by marking 'X' in the appropriate boxes.

A. TRANSPORTER	B. STOPER	C. TREATER	D. DISPOSER
	1. PILE	1. FILTRATION	X 1. LANDFILL
1. RAIL	X 2. SURFACE IMPOUNDMENT	2. INCINERATION	2. LANDFARM
2. SHIP	3. DRUMS	3. VOLUME REDUCTION	3. OPEN DUMP
3. BARGE	4. TANK, ABOVE GROUND	4. RECYCLING/RECOVERY	X 4. SURFACE IMPOUNDMENT
4. TRUCK	5. TANK, BELOW GROUND	5. CHEM./PHYS. TREATMENT	5. MIDNIGHT DUMPING
5. PIPELINE	6. OTHER (specify):	6. BIOLOGICAL TREATMENT	6. INCINERATION
6. OTHER (specify):		7. WASTE OIL REPROCESSING	7. UNDERGROUND INJECTION
		8. SOLVENT RECOVERY	8. OTHER (specify):
		9. OTHER (specify):	

E. SPECIFY DETAILS OF SITE ACTIVITIES AS NEEDED

See additional comments on page 3.

V. WASTE RELATED INFORMATION

A. WASTE TYPE

☐ 1 UNKNOWN ☒ 2 LIQUID ☒ 3. SOLID ☐ 4. SLUDGE ☐ 5. GAS

B. WASTE CHARACTERISTICS

☐ 1. UNKNOWN ☒ 2. CORROSIVE ☐ 3. IGNITABLE ☐ 4 RADIOACTIVE ☐ 5 HIGHLY VOLATILE
☒ 6. TOXIC ☐ 7 REACTIVE ☐ 8. INERT ☐ 9 FLAMMABLE

☐ 10. OTHER (specify):

C. WASTE CATEGORIES

1. Are records of wastes available? Specify items such as manifests, inventories, etc. below.

Records are incomplete according to the company.

2. Estimate the amount (specify unit of measure) of waste by category; mark 'X' to indicate which wastes are present.

a. SLUDGE	b. OIL	c. SOLVENTS	d. CHEMICALS	e. SOLIDS	f. OTHER
AMOUNT: 3000 - 4000	AMOUNT:	AMOUNT:	AMOUNT: about 200,000	AMOUNT: 325-330	AMOUNT:
UNIT OF MEASURE: cu. yards	UNIT OF MEASURE:	UNIT OF MEASURE:	UNIT OF MEASURE: gal.	UNIT OF MEASURE: Drums*	UNIT OF MEASURE:
X (1) PAINT, PIGMENTS	X (1) OILY WASTES	X (1) HALOGENATED SOLVENTS	X (1) ACIDS	X (1) FLYASH	X (1) LABORATORY PHARMACEUT
(2) METALS SLUDGES	(2) OTHER (specify):	(2) NON-HALOGNTD SOLVENTS	(2) PICKLING LIQUORS	(2) ASBESTOS	(2) HOSPITAL
(3) POTW		(3) OTHER (specify):	(3) CAUSTICS	(3) MILLING/ MINE TAILINGS	(3) RADIOACTIV
(4) ALUMINUM SLUDGE			(4) PESTICIDES	(4) FERROUS SMLTG. WASTES	(4) MUNICIPAL
(5) OTHER (specify):			(5) DYES/INKS	(5) NON-FERROUS SMLTG. WASTES	(5) OTHER (spec
dredge material with trace contaminants (DNBP and atrazine)			(6) CYANIDE	(6) OTHER (specify): *See bottom of page 4.	
			(7) PHENOLS		
			(8) HALOGENS		
			(9) PCB		
			(10) METALS		
			(11) OTHER (specify) Dinitrobutyl phenol (DNBP) wastewater		

Continue On Pag

Continued From Page 2

V. WASTE RELATED INFORMATION (continued)

3. LIST SUBSTANCES OF GREATEST CONCERN WHICH MAY BE ON THE SITE (place in descending order of hazard).

See attached page for details.

4. ADDITIONAL COMMENTS OR NARRATIVE DESCRIPTION OF SITUATION KNOWN OR REPORTED TO EXIST AT THE SITE.

VI. HAZARD DESCRIPTION

A. TYPE OF HAZARD	B. POTENTIAL HAZARD (mark 'X')	C. ALLEGED INCIDENT (mark 'X')	D. DATE OF INCIDENT (mo., day, yr.)	E. REMARKS
1. NO HAZARD				
2. HUMAN HEALTH				
3. NON-WORKER INJURY/EXPOSURE				
4. WORKER INJURY				
5. CONTAMINATION OF WATER SUPPLY				
6. CONTAMINATION OF FOOD CHAIN				
7. CONTAMINATION OF GROUND WATER				
8. CONTAMINATION OF SURFACE WATER				
9. DAMAGE TO FLORA/FAUNA				
10. FISH KILL				
11. CONTAMINATION OF AIR				
12. NOTICEABLE ODORS				
13. CONTAMINATION OF SOIL				
14. PROPERTY DAMAGE				
15. FIRE OR EXPLOSION				
16. SPILLS/LEAKING CONTAINERS/ RUNOFF/STANDING LIQUIDS				
17. SEWER, STORM DRAIN PROBLEMS				
18. EROSION PROBLEMS				
19. INADEQUATE SECURITY				
20. INCOMPATIBLE WASTES				
21. MIDNIGHT DUMPING				
22. OTHER (specify):				

Continue On Reverse

A. INDICATE ALL APPLICABLE PERMITS HELD BY THE SITE.

[X] 1. NPDES PERMIT [X] 2. SPCC PLAN [ ] 3. STATE PERMIT (specify):
[X] 4. AIR PERMITS [ ] 5. LOCAL PERMIT [ ] 6. RCRA TRANSPORTER
[ ] 7. RCRA STORER [ ] 8. RCRA TREATER [ ] 9. RCRA DISPOSER

[ ] 10. OTHER (specify):

B. IN COMPLIANCE?

[ ] 1. YES [X] 2. NO [ ] 3. UNKNOWN

4. WITH RESPECT TO (list regulation name & number): Not in compliance with NPDES permit with respect to Nitrates

VIII. PAST REGULATORY ACTIONS

[ ] A. NONE [X] B. YES (summarize below)

Fined by Bureau of Pollution Control for permit violation.

IX. INSPECTION ACTIVITY (past or on-going)

[ ] A. NONE [X] B. YES (complete items 1,2,3, & 4 below)

1. TYPE OF ACTIVITY	2. DATE OF PAST ACTION (mo., day, & yr.)	3. PERFORMED BY: (EPA/State)	4. DESCRIPTION
Inspection	Aug., 1979	EPA	Geological assessment
Inspection	Dec. 6, 1979	STATE	

X. REMEDIAL ACTIVITY (past or on-going)

[ ] A. NONE [X] B. YES (complete items 1, 2, 3, & 4 below)

1. TYPE OF ACTIVITY	2. DATE OF PAST ACTION (mo., day, & yr.)	3. PERFORMED BY: (EPA/State)	4. DESCRIPTION
			Vertac is considering removal of solids
			secure landfill

NOTE: Based on the information in Sections III through X, fill out the Preliminary Assessment (Section II) information on the first page of this form.

continued from question No. 2, page 2

Records do not specify size of drums; but probably are 55-gal. drums.
Drummed wastes are as follows:

1. 17 drums of spent activated carbon (containing unknown trace organics)
2. 31 drums of plastic liners (from bags containing sodium nitrophenol) and empty bromine bottles.
3. 25-30 drums of DMU (dimethyl urea) and IPA (isopropyl amine)
4. 172 drums cyanuric chloride (from atrazine process)
5. 80 drums PCl_3, $PSCl_3$, or $PS(CH_3)_2Cl$

Three small pits contain dredge material from surge lagoon under NPDES permit. The dredge material is mostly dirt with traces of DNBP and atrazine. (DNBP has a 170 day half-life. Atrazine has a 90-day half-life.) The dirt comes from runoff that flows into surge lagoon. Rainwater falling into the pits is drained into surge lagoon.

Another pit contains about 200,000 gallons of DNBP wastewater. About 1 1/2 million gallons have already been treated on-site by carbon absorbtion before discharge (NPDES system). Pit should be emptied by January, 1980.

Drums contain solid materials buried in late 1974 and early 1975 by Vicksburg Chemical Company. Drummed wastes are from processes that are no longer operational. Drummed wastes, though buried in the same general area, were segregated. PCl_3 wastes were buried in a seperate area.

An additional 4000 empty drums were placed in another pit in 1975-76. Vicksburg Chemical attempted to dissolve the drums with HCl acid. Volume of acid unknown. Acid was drained off after one to two months. Probably bled into wastewater treatment system. All but about 200 deteriorated drums have been removed.

Since September, 1975, all waste materials are taken to permitted industrial waste landfills in Louisiana. There is no current on-site disposal. The methyl parathion plant is no longer operational.

This information was obtained from Vertac Chemical Company Officials.

SOLID WASTE DISPOSAL SITES

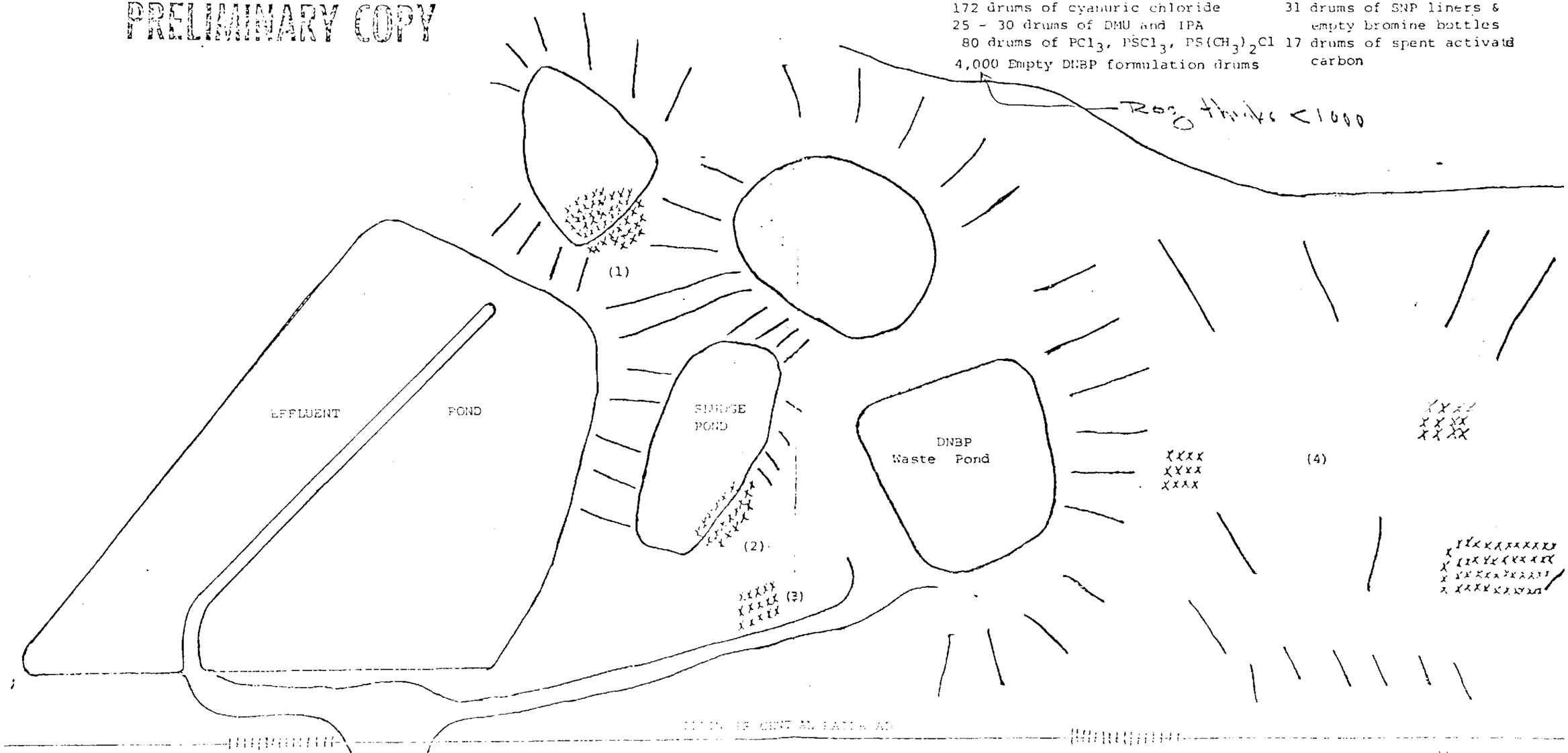
PRELIMINARY COPY

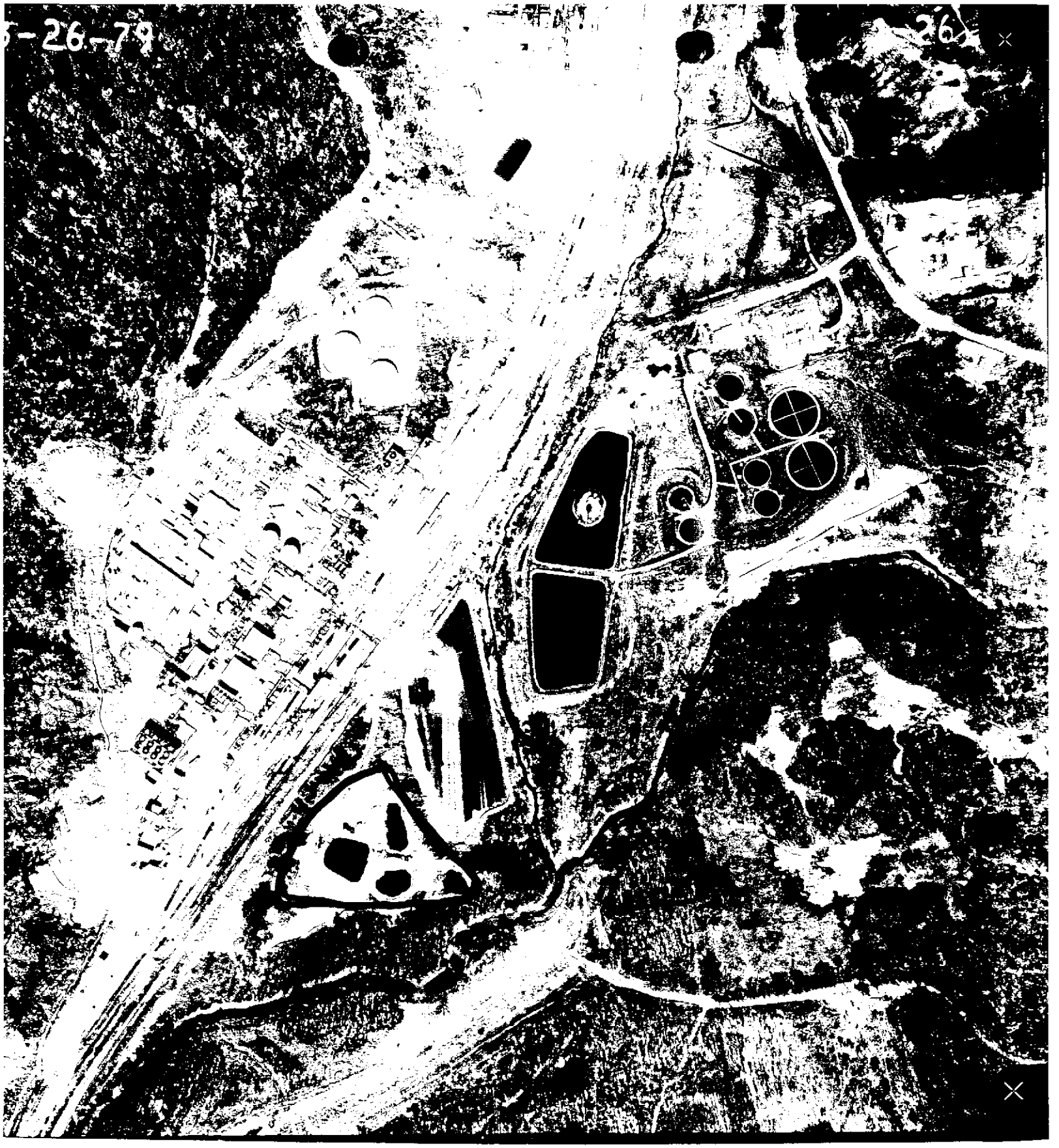
1. Empty DNBP formulation drums
2. Residue and debris Methyl Parathion fire
3. PCl_3, $PSCl_3$, $PS(CH_3)_2Cl$
4. Cyanuric Chloride, SNP liners, Bromine bottles, DMU, IPA, spent activated carbon

Between Jan. 1 and Sept. 17, 1975 the following material was disposed of in this area:

172 drums of cyanuric chloride
25 - 30 drums of DMU and IPA
80 drums of PCl_3, $PSCl_3$, $PS(CH_3)_2Cl$
4,000 Empty DNBP formulation drums
31 drums of SNP liners & empty bromine bottles
17 drums of spent activated carbon

Rec'd thru < 1000




5-26-79
26

Division of
Enviro/Analysis Corp.

Environmental Protection Systems

Comprehensive Engineering Services and Analytical Testing

November 3, 1988
File No. 1.89.3.0733

RECEIVED
NOV - 4 1988
Dept. of Natural Resources
Bureau of Pollution Control

Mr. Louis H. Crawford, P.E.
TDS Branch, Hazardous Waste Division
Bureau of Pollution Control
P. O. Box 10385
Jackson, MS 39209

Dear Mr. Crawford:

Subject: Vicksburg Chemical Results

The "not determined" results for the Well No. 1A at Vicksburg Chemical was a result of no qualitative recovery of surrogate standard for that sample. This was the probable result of new analysts doing this complicated esterification process for the first time. I have required our new Organic Group to successfully esterify dinitrobutyphenol and a surrogate standard on at least three sets of blank water samples before analyzing the next quarter's samples from these wells.

If you have any questions or comments, please do not hesitate to call.

Sincerely,

ENVIRONMENTAL PROTECTION SYSTEMS

John Broussard

John P. Broussard
Laboratory Coordinator

JPB/ncr

DIVISION OF SOLID WASTE
REVIEWED BY
DATE 7 NOV 88
COMMENTS Copy in Comp. file
Copy to EPA

P. O. Box 20382 • Jackson, MS 39289-1382
Branches: Jackson, MS • Pensacola, FL • Nashville, TN •
(601) 922-8242 • Fax (601) 922-9263
Memphis, TN • Chantilly, VA • Fair Lawn, NJ • Hayward, CA

MISSISSIPPI DEPARTMENT OF NATURAL RESOURCES
Bureau of Pollution Control
P. O. Box 10385
Jackson, Mississippi 39209
(601) 961-5171

MEMORANDUM

TO: File

FROM: Toby Cook

SUBJECT: Cedar Chemical, Vicksburg

DATE: January 30, 1989

Steve Spengler and I met with Steve Boswell and Allen Malone representing Cedar Chemical on January 27, 1989. They reported that the contract has been let and the contractor has moved on site to begin partial closure and make modifications to the impoundment. They left us a copy of the contractor's performance bond.

Cedar had requested in a letter dated December 21, 1988, that we consider reducing the frequency of sampling and number of wells being sampled. We stated that further consultations with our hydrologist would be required, but that the following schedule would be considered:

	Semi-annually	Annually
Well #	1A	2
	5	4
	6	8
	7	9
	10	12
	11	13
	14	
	16	

We also pointed out that RCRA regs would require four replicates from each well and statistical analysis of the results.

A discussion took place regarding the vagueness of the order requiring groundwater monitoring and it was suggested that we would draft a new order containing more specific language, and likely a 30 year requirement for sampling.

A discussion also took place regarding the existing closure trust fund. It was stated that Cedar was not interested in making an additional immediate contribution to the trust fund, although additional contributions were not entirely ruled out. It appears that a clear definition of the trust fund use is also needed in any subsequent order.

The need for remedial action in monitoring well 1A was discussed. It was suggested that water could be pumped from well 1A, treated and discharged in accordance with their NPDES permit. It was pointed out that discharging the well water directly into the impoundment could potentially endanger the non-regulated status of the impoundment.

TC:lr

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION IV
345 COURTLAND STREET, N.E.
ATLANTA, GEORGIA 30365

RECEIVED
JAN - 2 1990
Dept. of Environmental Quality
Bureau of Pollution Control

DEC 2 1 1989

4WD-RCRA

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

Mr. Steven T. Boswell
Director of Environmental Affairs
Cedar Chemical Corporation
P.O. Box 3
Vicksburg, Mississippi 39181

RE: Cedar Chemical Corporation
Vicksburg Facility
EPA ID NO: MSD 990 714 081

Dear Mr. Boswell:

Enclosed please find the United States Environmental Protection Agency's (EPA's) Determination of Release for the referenced facility. This determination is made pursuant to Section 3008(h) of the Resource Conservation and Recovery Act (RCRA), 42 U.S.C. Section 6928(h).

If you have any questions regarding the determinations, please contact Zylpha K. Pryor, Assistant Regional Counsel, at (404) 347-2641.

Sincerely yours,

Patrick M. Tobin

Patrick M. Tobin, Director
Waste Management Division

Enclosure

cc: [redacted]

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION IV
345 COURTLAND STREET, N.E.
ATLANTA, GEORGIA 30365

IN THE MATTER OF:	)	Resource Conservation and Recovery Act
	)	
Cedar Chemical Corporation	)	Section 3008(h)
(fka: Vertac Chemical Corp)	)	42 U.S.C. Section 6928(h)
Vicksburg, Mississippi	)	
	)	
EPA ID No: MSD 990 714 081	)	

DETERMINATION OF RELEASE

Pursuant to the authority of Section 3008(h) of the Resource Conservation and Recovery Act (RCRA), 42 U.S.C. Section 6928(h), as duly delegated, the Director of the Waste Management Division, Region IV, United States Environmental Protection Agency (EPA), makes the following Findings of Fact, Conclusions of Law, and Determinations.

SCOPE

This Determination is not intended to document all releases which have occurred at the facility. Releases not documented herein may require corrective action under any authority invoked pursuant to this determination, or under any other authority which the Administrator or his delegate deems necessary.

I
FINDINGS OF FACT

The Director of the Waste Management Division, Region IV, EPA, finds that:

1. Cedar Chemical Corporation (CCC) is a corporation doing business in the State of Mississippi.

2. CCC owns and has operated a hazardous waste management facility located on Rifle Range Road, Warren County, Vicksburg, Mississippi.

CCC has generated, treated, stored and disposed of hazardous waste and hazardous waste constituents at the Vicksburg facility. Those wastes include specifically, wastes associated with the manufacture of toxaphene (K098 and K041), dinoseb (P020) and monosodium methane arsenate (K031).

- K098 is untreated process wastewater from the production of toxaphene.

- K041 is wastewater treatment sludge from the production of toxaphene.

- P020 is discarded commercial chemical product, dinoseb.

- K031 is by-product salts from the production of MSMA.

3. In addition to the manufacture of those materials generating hazardous wastes, CCC manufactured other organic chemicals which may be associated with hazardous constituents. These include: methyl parathion, atrazene, dimethyl urea, isopropyl amine, dinitro-ortho-creosol, and cyanazene.

4. Pursuant to Section 3010 of the Resource Conservation and Recovery Act (RCRA), 42 U.S.C. 6930, CCC (as Vertac) submitted its notification of hazardous waste activity on June 23, 1980. On November 18, 1980, CCC submitted Part A of its hazardous waste permit application.

5. Having timely submitted the required notification and Part A permit application, CCC achieved interim status for its Vicksburg Facility under Section 3005(e) of RCRA, 42 U.S.C. 6925(e).

6. On July 27, 1989, EPA inspected the landfill at CCC. The inspectors noted a yellow discoloration on the surface of the landfill, and within the erosion channels that ran down the east, west, and northwest sides of the landfill. It also appeared that the leachate may have been coming from the northwest side of the landfill and going into the drainage ditch. A pesticide odor was present.

7. The hazardous waste container storage area was also inspected by EPA on July 27, 1981. The inspectors reported that approximately 700 drums were present in this area, sitting on and off a concrete pad. A number of drums containing carbon were rusted through; some were oozing dark liquid. Many of the drums were in an advanced state of deterioration.

8. On October 28, 1981, EPA inspected CCC and sampled drainage from the landfill. The inspectors noted that surface runoff from the landfill drained in three directions: (1) east into the surface impoundment, (2) south into Hatcher Bayou, and (3) west into a small valley.

9. The sediment sample collected from the east corner of the landfill contained several organic compounds: cyanazine (21 mg/kg), atrazine (84 mg/kg), toxaphene (13 mg/kg), and Arochlor - 1254 (PCB, 7 mg/kg). These organic compounds were not detected in the upstream sediment sample from Stouts Bayou. Cyanide (0.68 ug/kg) was also measured in this sediment sample and not in the upstream sediment sample from Stouts Bayou. Other chemicals detected included barium, chromium, lead, and mercury (see Table 1).

10. The sediment sample collected from the small valley west of the landfill contained atrazine (18 mg/kg) and toxaphene (65 mg/kg). Cyanide (0.58 mg/kg) was also detected in this sediment sample. Other chemicals detected included barium, chloroform, chromium, and lead (see Table 1).

11. In February 1983, a portion of the south levee containing CCC's surface impoundment failed, resulting in the release of approximately 700,000 gallons of liquid to the adjacent bayous.

12. On October 31, 1983, CCC sampled groundwater monitoring wells. Analyses of these samples indicated the presence of dinoseb in well MW-1 (117 ug/L) and atrazine in wells MW-1, MW-2, MW-6, MW-7 and MW-8 (see Table 2).

13. On November 9, 1983, the Mississippi Bureau of Pollution Control (MBPC) sampled wells MW-1, MW-4, MW-5, MW-6, MW-7, and MW-8. Analyses of these samples indicated 1,200 ug/L of dinoseb in well MW-1. Atrazine was detected in wells MW-1 (80 ug/L), MW-2 (10 ug/L), MW-5 (10 ug/L), MW-6 (100 ug/L), and MW-8 (110 ug/L).

14. In November 1983, CCC reported a statistically significant increase in total organic halides and specific conductance in well MW-1 when compared to the background MW-4.

15. On January 24, 1984, MBPC notified CCC of possible groundwater contamination at the Vicksburg Facility.

16. On December 14, 1984, MBPC sampled MW-1 and MW-8. Organic compounds detected in MW-1 included dinoseb (1000 ug/L) and trichloroethene (15 ug/L). Organic compounds detected in MW-8 included 2,5-diethytetra-hydrofuran (60 ug/L) and atrazine (60 ug/L) (see Table 2).

17. From May 23, 1985, through June 10, 1985, CCC sampled wells MW-1 through MW-8 and analyzed the samples for Appendix VIII constituents. The results of the analyses indicated the following (see Table 2):

    Concentrations of several chemicals were detected in well MW-1 and not detected in background well MW-4: chromium (30 ug/L), chloroform (10.6 ug/L), cyanide (total - 72 ug/L), dinoseb (1130 ug/L), nickel (30 ug/L), pentachlorophenol (34 ug/L), and trichloroethene (19.5 ug/L).

TABLE 1

SITE FIELD INVESTIGATION -- OCTOBER 28. 1981
SUMMARY OF REPORTED DATA

Constituent	Soil/Sediment Concentration (mg/kg) VL-002 Erosional Area East Corner	VL-003 Erosional Area West Corner	SBU-001 Stouts Bayou Upstream-Control
Arochlor-1254 (PCB)	7.	ND[a]	ND
Atrazine	84.	18.	ND
Barium	213.	211.	64.
Chloroform	ND	0.010	ND
Chromium	30.	22.	ND
Cyanazine	21.	<7.6[b]	--[c]
Cyanide	0.86	0.58	ND
Dinoseb	ND	<15.	ND
Lead	20.	20.	ND
Mercury	0.12	ND	ND
Toxaphene	13.	65.	ND

Notes:

Data reproduced from U.S. Environmental Protection Agency, January 26, 1982. Report: Hazardous Waste Site Investigation, January 22, 1982, Vertac Chemical Corporation, Vicksburg, Mississippi.

a ND indicates that the compound was analyzed for but not detected.

b The less than symbol indicates that the compound was detected by GC/MS at a concentration less than the minimum quantifiable level (MQL). The number indicates the MQL.

c The double hyphen indicates that the compound was not reported by the laboratory.

TABLE 2

SUMMARY OF ANALYSES OF WATER SAMPLES FROM MONITORING WELLS MW-1 THROUGH MW-8

Sheet 1 of 3

Constituent	Concentration (ug/L) and Well Number 1	2	3	4	5	6	7	8
** Sampled by Respondent on October 31, 1983[a]								
Atrazine x 10^3	62.6	22.4	--[f]	--	NR[g]	75.0	4.5	191
Dinoseb	117.	<25	--	--	NR	<25	<25	<25
Toxaphene	<0.3	<0.3	--	--	NR	<0.3	<0.3	<0.3
** Sampled by MBPC on November 9, 1983[b]								
2-Bromo-cyclo-hexanol	5.	--	--	ND[h]	ND	ND	ND	ND
Atrazine	ND	--	--	ND	ND	20.	ND	150.
Dinoseb	1200.	--	--	ND	ND	ND	ND	ND
** Sampled by Respondent in November 1983[c]								
Atrazine	80.[i]	10.	--	--	10.	100.	<10	110.
Dinoseb	<25	<25	--	--	<25	<25	<25	<25
Toxaphene	<5	<5	--	--	<5	<5	<5	<5
Total organic halide[j]	0.22	0.11	--	NR	0.046	0.054	0.044	0.014
Specific conductance (umhos)[j]	3988.	1022.	--	NR	1448.	1491.	778.	1095.
** Sampled by MBPC on December 14, 1984[d]								
2-Bromo-cyclo-hexanol	100.	--	--	--	--	--	--	ND
2,5-Diethyl-tetrahydro-furan	ND	--	--	--	--	--	--	200.
Atrazine	ND	--	--	--	--	--	--	60.
Diethyl phthalate	140.	--	--	--	--	--	--	ND
Dinoseb	1000.	--	--	--	--	--	--	ND
Pentachloro-phenol	50.	--	--	--	--	--	--	ND
Trichloroethene	15.	--	--	--	--	--	--	ND

TABLE 2

SUMMARY OF ANALYSES OF WATER SAMPLES FROM MONITORING WELLS MW-1 THROUGH MW-8

Sheet 2 of 3

Constituent	Concentration (ug/L) and Well Number 1	2	3	4	5	6	7	8
** Sampled by Respondent in May and June 1985[e]								
Aroclor-1254	<1.0	<1.0	<1	<1.0	1.1	<1	<1	<1.0
Arsenic	<10	<10	<10	<10	19.	15.	30.	80.
Barium	302.	243.	360.	253.	614.	915.	400.	600.
Chloroform	10.6	<10	<1.6	<10	<1.6	<1.6	<1.6	<10
Chromium	30.	<30	<20	<30	<20	<20	<20	<30
Cyanide, Total	72.	<25	<25	<25	<25	120.	<25	<25
Copper	<10	<10	<10	<10	<10	20.	<10	<10
Dinoseb	1130	<25	<10	<25	<10	<10	<10	<25
Mercury	<0.2	<0.2	<0.2	<0.2	0.2	0.2	<0.2	<0.2
Nickel	30.	<20	<20	<20	<20	<20	<20	<20
Pentachloro-phenol	34	<25	<3.6	<25	<3.6	<3.6	<3.6	<25
Trichloro-ethene	19.5	<10	<1.9	<10	<1.9	<2.8	<1.9	<10

Notes:

[a] Data reproduced from Dick Karkkainen, Vertac Chemical Corporation, January 13, 1984. Analytical Results for Ground-Water Sampling of Well Numbers 1, 2, 5, 6, 7, and 8, Taken in November 1983 at the Vicksburg Plant. Letter to Charles Estes, MDNR.

[b] Data reproduced from James P. Minyard, Jr., Mississippi State Chemical Laboratory, December 16, 1983. Analytical Results for Vertac Well Water Samples Taken November 9, 1983.

[c] Data reproduced from Dick Karkkainen, Vertac Chemical Corporation, March 9, 1984. Analytical Results for Ground-Water Sampling at the Vicksburg Plant. Letter to Chuck Estes, MDNR.

[d] Data reproduced from Mississippi State Chemical Laboratory, Mississippi State University, February 18, 1985. Analytical Results of Ground-Water Samples from Vertac Chemical Wells #1 and #8.

[e] Data reproduced from John G. Hill, Vertac Chemical Corporation, September 4, 1985. Appendix VIII Analytical Results for Ground-Water Monitoring Wells at the Vicksburg Plant. Letter to Charles Estes, MDNR.

TABLE 2

SUMMARY OF ANALYSES OF WATER SAMPLES FROM MONITORING WELLS MW-1 THROUGH MW-8

Sheet 3 of 3

Notes (Continued):

f --; A hyphen indicates that the well was not sampled

g NR - not reported. These wells were reported to be sampled, but the data were not reported.

h ND - not detected.

i This value is semi-quantitative because of interference peak.

j These values are the results of averaging four measurements.

Barium was detected in all wells. Wells MW-5 and MW-8 showed barium concentrations twice as high as background, and well MW-6 showed barium three times higher than background.

Arsenic was detected in wells MW-5 (19 ug/L), MW-6 (15 ug/L), MW-7 (30 ug/L), and MW-8 (80 ug/L).

Cyanide was detected in well MW-1 (total - 72 ug/L) and well MW-6 (120 ug/L).

18. On several occasions in 1985, 1986, and 1987, dinoseb was detected in these wells ranging from 1130 ug/L in MW-15 on February 6, 1987, to 265 ug/L in well MW-1A on July 28, 1987 (see Table 3).

19. On August 20, 1985, EPA conducted a Preliminary Assessment/Site Investigation (PA/SI) at the Facility. The report stated that prior to and after closure of the inactive landfill several contaminated seeps or run-off streams were observed near Hennesseys Bayou.

20. On November 22, 1985, EPA conducted a loss of interim status inspection to verify that CCC was no longer placing hazardous waste in the surface impoundment at the south plant.

21. On August 6, 1986, EPA inspected the container storage area and adjacent returned product storage area at CCC. During the inspection, EPA noted that both areas had large spills on the ground. Floor drains and sumps in the container storage area were overflowing with waste-contaminated rain water. Spills were apparent by the presence of yellow and black stained areas on the ground.

22. During the August 6, 1986, there were 28 30-gallon drums of monosodium methane arsenate (MSMA) and 60 to 200 other drums of various sizes (55 - 75 gallons) containing dinoseb, MSMA, and other wastes. Many of the drums of dinoseb were leaking.

23. On September 3, 1986, MBPC conducted sampling to determine if hazardous wastes were entering the surface impoundment through spills from process areas. Dinoseb, atrazine and several metals were present in most of the samples. A summary of the results is presented in Table 4 and discussed below:

The highest concentrations of dinoseb were found in sediment at the returned product storage area (330,000 mg/L) and the sediment in cell 1 of the surface impoundment (13,000 mg/L). Dinoseb was also detected in the water samples taken from: (1) the sump below the dinoseb drumming area (260 mg/L), (2) the sump northwest of the dinoseb plant (300 mg/L), (3) the sump near the returned product storage area (130 mg/L), and (4) the influent pipe to the surface impoundment (8 mg/L).

TABLE 3

ANALYSES OF WATER FROM SEVERAL WELLS FOR DINOSEB

Date	Dinoseb Concentration (ug/L)			
	MW-1	MW-1A	MW-9	MW-15
October 15, 1985[a]	370.	--[e]	--	--
December 6, 1985[a]	600.	--	125.	--
March 5, 1986[b]	940.	--	<40	--
July 28, 1986[c]	--	265.	--	--
July 29, 1986[c]	--	380.	--	--
February 6, 1987[d]	--	290.	<40	1130.

Notes:

[a] Data reproduced from IT Corporation, January 8, 1986. Final Report, Groundwater Assessment Program, Prepared for Vertac Chemical Corporation, Vicksburg, Mississippi, IT Corporation Project No. 846545-02.

[b] Data reproduced from John G. Hill, Environmental Engineer, Vertac Chemical Corporation, March 12, 1986. Letter to Jack McCord, Mississippi Department of Natural Resources, Bureau of Pollution Control, Industrial Wastewater Section. Subject: Latest Analytical Results.

[c] Data reproduced from John G. Hill, Environmental Engineer, Vertac Chemical Corporation, August 4, 1986. Letter to Jack McCord, Mississippi Department of Natural Resources, Bureau of Pollution Control, Industrial Wastewater Section. Subject: Analytical results of groundwater samples from monitoring well MW-1A.

[d] Data reproduced from John G. Hill, Cedar Chemical Corporation, February 16, 1987. Letter to Jack McCord, Mississippi Department of Natural Resources, Bureau of Pollution Control, Industrial Wastewater Section. Subject: Commission Order No. 1046-86.

[e] A double hyphen (--) represents wells not sampled, data not reported, or not detectable

TABLE 4

SUMMARY OF RESULTS OF DINOSEB FLOW STUDY

Sample Location ID Letter[a]	Sample Type/Location[b]	Dinoseb	Atrazine	Total Chromium	Total Arsenic	Total Lead	Barium	Cadmium	Selenium
A	Water; Influent pipe to surface impoundment	8.	0.03	0.03	0.29	0.008	0.04	0.02	<0.003
B	Sludge; SI Cell No. 1	13,000.	5.	123.	362.	142.	64.2	1.90	2.58
C	Water; SI Cell No. 2	6.	0.03	0.05	0.74	0.01	0.06	0.01	0.05
C	Sludge; SI Cell No. 2	5.8	2.6	10.2	21.	5.3	49.3	1.30	0.50
D	Water; sump at returned product storage area	130.	15.	0.03	2.47	0.05	0.02	0.02	0.01
E	Water; sump below dinoseb drumming area	260.	0.2	108.	0.68	2.9	0.97	0.03	0.11
F	Sediment; returned product storage area	330,000.	ND[c]	47.1	44.3	16.7	78.5	5.5	4.06
G	Soil; northwest of dinoseb plant	96.	ND	40.1	27.8	170.	71.5	3.0	1.27
H	Water; sump northwest of dinoseb plant	300.	0.01	<0.3	0.02	0.02	0.05	0.01	<0.03

Notes:

Data reproduced from Jack McCord, MDNR, September 22, 1986. Memorandum to file. Subject: September 3, 1986 sampling trip to Vicksburg Chemical.

a Sample location identification letters are used in Figure 6.

b Concentrations of chemicals in water are reported in mg/L. Concentrations of chemicals in soil or sludge are reported in mg/kg.

c ND -- not detected.

Atrazine, arsenic, chromium, and lead concentrations of 5, 362, 123, and 142 mg/L, respectively, were detected in the surface impoundment sludge.

Concentrations of 15, 2.47, 0.03, and 0.05 mg/L, respectively, were detected in the sump water near the returned product area.

Concentrations of 0.2, 0.68, 108, and 2.9 mg/L, respectively, were detected in the sump water below the dinoseb drumming area.

Concentrations of 44.3, 47.1, and 16.7 mg/L, respectively, of arsenic, chromium, and lead were detected in the sediment at the returned product area and concentrations of 27.8, 40.1, and 170 mg/L, respectively, were detected in the soil northwest of the dinoseb plant.

24. On October 31, 1986, MBPC conducted a sampling investigation in CCC's surface impoundment. Eleven composite samples were collected and analyzed. The highest concentration of contaminants was found at depths of two to four feet. Contaminants found include arsenic ranging from 7.1 to 216 mg/kg, atrazine from 5 to 78,000 mg/kg, Arochlor - 1254 (PCB - 1254) from non-detectable to 58.4 mg/kg, Dinoseb from 3.7 to 5910 mg/kg, and toxaphene from non-detectable to 2320 mg/kg (see Table 5).

25. On February 19, 1987, EPA inspected CCC and noted two inches of standing yellow liquid in the dinoseb production area. At two locations, the liquids had apparently overtopped the production area berm and were running into a catch basin. Previously, the catch basin had drained to the surface impoundment.

26. In February 1987, EPA conducted a sampling investigation at CCC. Groundwater samples, streamwater samples, sediment samples and soil samples were all taken. Numerous chemical compounds were detected in these samples.

Samples from monitoring well MW-1 showed eleven organic compounds, including: tetrachlorophenol (2ug/L), dinoseb (562 ug/L), atrazine (26 ug/L), trichloroethene (8.5 ug/L) and pentachlorophenol (68 ug/L) (see Table 6).

Five organic compounds were detected in well MW-8 including: cyanazine (0.82 ug/L), and atrazine (63 ug/L) (see Table 6).

Two organic compounds were detected in MW-2: phenol and petroleum products (see Table 6).

Three organic compounds were detected in MW-6: cyanazine, atrazine and petroleum products (see Table 6).

TABLE 5

SUMMARY OF RESULTS OF SURFACE IMPOUNDMENT SEDIMENT STUDY (MG/KG)

Composite Samples Sample Numbers	Arsenic	Atrazine	Aroclor 1254	Dinoseb	Toxaphene	Others	
** 0 to 2 feet							
1, LA	114.	8,000.	ND[a]	1,800.	17.5	4-Nitrophenol	70.
2, 5	216.	2,000.	ND	160.	18.1	---	
3, 4	108.	360.	ND	620.	1.8	4-Nitrophenol	30.
6, 7, 8	93.5	220.	ND	15.	1.2	4-Nitrophenol	Trace
9, 10, 11, 12	29.2	13.	ND	11.	ND	---	
13, 14	41.	230.	ND	10.	ND	---	
15, 16	57.8	1,500.	ND	4.	ND	---	
17, 18	16.9	1,000.	51.9	6.	22.	4-Nitrophenol	Trace
19, 20	46.2	300.	4.7	92.	29.	Pentachlorophenol	1.2
21, 22, 24	50.3	5.	9.2	60.	4.6	---	
23, 25	96.5	--	33.8	--	42.9	---	

** 2 to 4 feet							
1, LA	143.	3,900.	ND	5,910.	2,320.	Methyl Parathion	400.
2, 5	66.9	78,000.	ND	330.	541.	---	
3, 4	40.1	30,000.	ND	1,100.	381.	4-Nitrophenol	50.
6, 7, 8	7.9	15,000.	ND	25.	6.3	2,4-Dinitrophenol	Trace
						4-Nitrophenol	Trace
** 4 to 6 feet							
1, LA	43.8	21,000.	ND	64.	536.	1,2-Dichlorobenzene	20.
2, 5	7.1	3,000.	58.4	40.	223.	Methyl Parathion	400.
3, 4	14.5	9,000.	ND	770.	680.	---	
6, 7, 8	9.0	8,000.	37.1	170.	322.	---	

Notes:

Data reproduced from Reproduced from Mississippi State Chemical Laboratory, Mississippi State University, November 18, 1986. Analytical Results of 19 Sediment Samples from Vicksburg Chemical Company.

[a] ND - Not detected.

TABLE 6

GROUND-WATER DATA - SUMMARY OF HAZARDOUS CONSTITUENTS FEBRUARY 1987

Parameter (ug/L)	MW-1	MW-2	MW-4 [a]	MW-6	MW-8	P-01 [b]
Aluminum	1900.	26,000.	3,000.	6,600.	920.	1,100.
Arsenic	--	--	--	--	67.	140.
Barium	270.	450.	250.	600.	470.	37.
Chromium	38.	64.	--	11.	--	75.
Nickel	22.	--	--	--	--	--
Strontium	760.	560.	250.	610.	350.	85.
Zinc	--	91.	16.	21.	--	13.
Cyanide	--	NA	--	8.	--	--
Atrazine	26.	--	--	3.9	63.	29.
Bromacil	3JN	--	--	--	--	--
Bromodichloromethane	--	--	--	--	--	6.7
Carbon tetrachloride	--	--	--	--	--	70.
Chlorobis(methylethyl)-triazinediamine	--	--	--	--	3JN	--
Chloroform	2.8J	--	--	--	--	42.
Cyanazine	6.6J	--	--	1.2	0.82	1.3
Dibromochloromethane	--	--	--	--	--	4.2J
Dinoseb	562.	--	--	--	--	200JN
Methyl parathion	--	--	--	--	--	0.011J
Phenol	--	1.0J	--	--	--	--
Pentachlorophenol	68.	--	--	--	--	--
Petroleum product	N	N	--	N	N	--
Tetrachlorophenol	2JN	--	--	--	--	--
Trichloroethene	8.5	--	--	--	--	4.2J
Vinyl chloride	--	--	--	--	2.5J	--

Notes:

Data reproduced from U.S. Environmental Protection Agency, February 1987. RCRA Environmental Investigation, Cedar Chemical Company, Vicksburg, Mississippi.

[a] Upgradient well, used for comparison to wells downgradient of waste management units.

[b] Sample of influent liquid into surface impoundment.

-- Material was analyzed for but not detected.

J -- Estimated value.

N -- Presumptive evidence of presence of material.

NA -- Not analyzed

Soil sample CC-01 contained organic compounds including: toxaphene (6700 ug/kg), cyanazine (6000 ug/kg) and atrazine (100,000 ug/kg). Ten polynuclear aromatic hydrocarbons (PAH total - 33,890 ug/kg) and arsenic (53 mg/kg) were also detected (see Table 7).

Soil sample CC-02 contained the following organic compounds: atrazine (5000 ug/kg), cyanazine (240 ug/kg), and toxaphene (3700 ug/kg) (see Table 7).

Soil sample CC-03 contained organic compounds including: atrazine (5400 ug/kg), and cyanizine (30 ug/kg). Ten PAH compounds were also identified in the soil (total PAH - 11,920 ug/kg). Metals detected included arsenic (19 mg/kg) and mercury (0.1 mg/kg) (See Table 7).

Soil sample CC-04 contained organic compounds including: atrazine (4000 ug/kg), dinoseb (640,000 ug/kg) and eight PAH compounds (total PAH - 18,900 ug/kg) (see Table 7).

Soil sample CC-05 contained organic compounds including: atrazine (32 ug/kg), dinoseb (12,000 ug/kg), and toxaphene (47,000 ug/kg). PAH compounds found totalled 3100 ug/kg (see Table 7).

Soil sample CC-06 contained organic compounds including: atrazine (25 ug/kg) and Arochlor - 1254 (200 ug/kg). Metals were also detected including: arsenic (10 mg/kg) and mercury (0.25 mg/kg) (see Table 7).

Water sample A-3 and sediment sample A-3S contained numerous organic compounds including: atrazine (0.64 ug/L) and Arochlor - 1254 (3 ug/L) (see Table 8 and 9).

Water sample A-2 contained atrazine (0.18 ug/L), and diethyltetrahydrofuran (7 ug/L) and sediment sample A-2S contained Arochlor -1254 (3700 ug/kg) (see Table 8 and 9).

Water sample E-1 contained arsenic (89 ug/L), atrazine (26 ug/L), cyanazine (6.8 ug/L), dinoseb (4.6 ug/L) and trichloroethene (11 ug/L). Sediment sample E-1S contained arsenic (44 ug/kg), atrazine (970 ug/kg), pyrene (600 ug/kg), Arochlor - 1254 (7400 ug/kg) and toxaphene (56,000 ug/kg) (see Table 8 and 9).

Additional compounds were found in water and sediment samples as shown in Table 8 and 9.

27. In February 1989, EPA again conducted a sampling investigation at CCC. The investigation included groundwater and soil samples. Generally the samples again showed contamination with organics and metals (see Tables 10 and 11).

TABLE 7

SOIL DATA - SUMMARY OF HAZARDOUS CONSTITUENTS FEBRUARY 1987

Parameter (mg/kg)	CC-01	CC-02	CC-03	CC-04	CC-05	CC-06
Aluminum	6,000	4,500	11,000	7,200	8,800	6,200
Arsenic	53	550	19	18	27	10J
Barium	100	72	150	100	140	210
Chromium	44	14	27	37	18	12
Mercury	--	--	0.1	--	--	0.25
Strontium	34	190	35	39	35	48
Zinc	53	130	65	75	94	35
(ug/kg)						
Atrazine	100,000JN	5,000	5,400	4,000	32J	25J
Cyanazine	6000JN	240	30J	--	--	--
Dinoseb	--	--	--	640,000	12,000	--
Heptachlor epoxide	38	--	--	--	--	--
Methyl ethyl ketone	--	--	--	23J	--	--
Arochlor-1254	--	--	710	--	--	200
Propazine	7,000JN	--	3,000JN	--	--	--
Toluene	--	--	--	3.8J	--	--
Toxaphene	6,700	3,700	--	--	47,000	--
Total PAHs	33,890	--	11,920	18,900	3,100	--
Total xylenes	--	--	--	2.8J	--	--

Notes:

Data reproduced from U.S. Environmental Protection Agency, February 1987. RCRA Environmental Investigation, Cedar Chemical Company, Vicksburg, Mississippi.

J = Estimated value.

N = Presumptive evidence of presence of material.

TABLE 8

STREAM WATER DATA - SUMMARY OF HAZARDOUS CONSTITUENTS FEBRUARY 1987

Parameter (ug/L)	A-1	A-2	A-3	B-1	B-2	C-1	D-1	E-1
Aluminum	260	370	1,100	440	780	3,900	2,900	420
Arsenic	--	--	--	--	--	--	--	89
Barium	80	120	220	170	170	170	160	170
Cyanide	6	--	--	--	--	--	--	--
Atrazine	--	0.18N	0.64JN	--	--	0.20N	0.28N	26A
Bromocyclohexene	--	--	1JN	--	--	--	--	--
Bromodichloromethane	3.6J	1.7J	1J	--	11	--	--	--
Carbon tetrachloride	--	--	--	--	--	--	1.3J	--
Chloroform	5.1	4.9J	16	--	14	--	2J	--
Chlorocyclohexanol	--	--	5JN	--	--	--	--	--
Chlorobis(methylethyl)-triazinediamine	--	--	--	--	--	--	--	3JN
Cyanazine	--	--	--	--	--	--	--	6.8A
Dibromochloromethane	2.7J	1.2J	--	--	--	--	--	--
Dichlorocyclohexane	--	--	70J	--	--	--	--	--
Diethyltetra-hydrofuran	--	7JN	10JN	--	--	--	--	--
Dihydroindolone	--	--	4JN	--	--	--	--	4.6AN
Dinoseb	--	--	--	--	--	--	--	--
Heptanol	--	--	8JN	--	--	--	--	--
Nitrosomorpholine	--	--	1JN	--	--	--	--	--
Arochlor-1254	--	--	3.0	--	--	--	--	11
Trichloroethene	--	--	--	--	--	--	--	--
Tri(butoxyethanol)-phosphate	--	--	--	3JN	5JN	--	--	--
Toluene	0.8J	--	--	--	--	--	--	--
Three unidentified compounds	--	--	70J	--	--	--	--	--

Notes:

Data reproduced from U.S. Environmental Protection Agency, February 1987. RCRA Environmental Investigation, Cedar Chemical Company, Vicksburg, Mississippi.

A = Average value.

J = Estimated value.

N = Presumptive evidence of presence of material.

TABLE 9

STREAM SEDIMENT DATA - SUMMARY OF HAZARDOUS CONSTITUENTS FEBRUARY 1987

Parameter (mg/kg)	A-1s	A-2s	A-3s	B-1s	B-2s	C-1s	D-1s	E-1s
Aluminum	7,400	11,000	4,500	5,500	8,400	13,000	11,000	5,000
Arsenic	--	9.2	--	--	--	6.0	6.9	44
Barium	120	260	220	120	130	62	170	96
Chromium	13	22	97	17	14	12	17	71
Nickel	11	21	14	8.4	13	7.0	16	9.6
Lead	14	20	13	45	21	11	15	8.8
Mercury	--	0.12	--	--	--	--	--	--
Strontium	33	24	84	51	28	19	29	35
Zinc	66	78	35	51	62	19	52	41
ug/kg								
Atrazine	--	--	--	--	--	--	--	970
Chloroform	--	--	8.4	--	--	--	--	--
Chrysene	1,300J	--	--	--	--	--	--	--
Fluoranthene	1,300J	--	--	--	--	--	--	--
PCB-1254	--	3,700	--	--	--	--	--	7,400
Pyrene	1,400J	--	--	--	--	--	--	660J
Toluene	--	--	--	--	38	--	--	--
Total unidentified alkylhydrocarbons	--	--	--	--	200J	--	--	--

Notes:

Data reproduced from U.S. Environmental Protection Agency February 1987. RCRA Environmental Investigation, Cedar Chemical Company, Vicksburg, Mississippi.

A = Average value.

J = Estimated value.

N = Presumptive evidence of presence of material.

Cyanide was detected in well MW-6 at a concentration of 0.006 mg/L.

Atrazine, cyanazine, and propazine was detected in MW-6 at concentrations of 17 ug/L, 47 ug/L and 2.6 ug/L, respectively.

Cyanide was present in samples CC-3 at a concentration of 01.14 mg/kg and CC-4 at a concentration of 58.0 mg/kg.

Dinoseb at a concentration of 15 ug/kg was detected in the background soil sample. It was also present in the other four samples collected at concentrations ranging from 96 ug/kg to 380,000 ug/kg in samples CC-2 and CC-4, respectively.

From one to six additional pesticide/PCB compounds were detected in these four samples. These ranged in concentration from 53 ug/kg for heptachlor epoxide in sample CC-1 to 140,000 ug/kg for toxaphene in sample CC-4.

One extractable organic compound (EOC) was detected in one well sample. Thirteen EOCs were detected in one soil sample and two to four in the rest. One EOC, (methylpropyl)dinitrophenol, was found at high concentrations in three of the five soil samples.

II
CONCLUSIONS OF LAW

Based on the Findings of Fact set out above, the Director of the Waste Management Division, Region IV, EPA, concludes that:

1. Cedar Chemical Corporation (CCC) is a person within the meaning of Section 1004 (15) of RCRA, 42 U.S.C. Section 6903 (15).

2. CCC is an owner and operator of the Vicksburg facility.

3. The Vicksburg facility was authorized to operate under Section 3005(e) of RCRA, 42 U.S.C. Section 6925(e).

4. Certain wastes and waste constituents found at the CCC Facility are hazardous wastes and constituents thereof, as defined by Section 1004 (5) of RCRA, 42 U.S.C. Section 6921, and 40 C.F.R. Part 261.

III
DETERMINATIONS

Based on the Findings of Fact and Conclusions of Law set out above, the Director of the Waste Management Division, Region IV, EPA determines that:

1. There is or has been a release of hazardous wastes and/or hazardous constituents into the environment from the CCC Facility.

TABLE 10

ANALYTCAL DATA SUMMARY (GROUND WATER)
CEDAR CHEMICAL CORPORATION
VICKSBURG, MISSISSIPPI
FEBRUARY 1989

	CC-TB TRIP BLANK 02/01/89 1610	MW-4 UPGRADNT WELL 01/31/89 1230	MW-16 NEW WELL 01/31/89 1545	MW-6 DOWNGRAD WELL 02/01/89 0930	MW-7 DOWNGRAD WELL 02/01/89 1000	MW-2 DOWNGRAD WELL 02/01/89 1540
INORGANIC ELEMENTS	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L
CALCIUM	--	97	74	220	100	150
IRON	--	0.59	3.8	3.9	3.4	3.8
MAGNESIUM	--	43	29	120	46	63
SODIUM	--	15	12	28	16	28
	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L
ALUMINUM	--	620	410	3200	1300	2600
BARIUM	--	210	320	420	290	260
CHROMIUM	--	--	--	10	--	--
COBALT	--	--	--	19	--	--
MANGANESE	--	340	190	340	1100	480
STRONTIUM	--	230	270	490	310	460
TITANIUM	--	30	17	130	48	130
ZINC	--	13	20	22	15	36
GENERAL INORGANIC PARAMETERS	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L
CYANIDE	--	--	--	.006	--	--
PESTICIDE/PCB COMPOUNDS	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L
ATRAZINE	--	--	--	17C	--	--
CYANAZINE	--	--	--	47C	--	--
DINOSEB (DNBP)	--	--	--	1.2	1.2	--
PROPAZINE	--	--	--	2.6C	--	--
EXTRACTABLE ORGANIC COMPOUNDS	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L
CHLOROBIS(METHYLETHYL)TRIAZINEDIAMINE	--	--	--	2JN	--	--
PURGEABLE ORGANIC COMPOUNDS	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L
1,1,1-TRICHLOROETHANE	--	--	--	--	0.60J	--
CIS-1,2-DICHLOROETHENE	--	--	--	--	--	3.6J
TRICHLOROETHENE(TRICHLOROETHYLENE)	--	--	--	--	--	1.1J

****

FOOTNOTES

NA - NOT ANALYZED
J - ESTIMATED VALUE
N - PRESUMPTIVE EVIDENCE OF PRESENCE OF MATERIAL
-- - MATERIAL WAS ANALYZED FOR BUT NOT DETECTED
C - CONFIRMED BY GC/MS

TABLE 11

ANALYTICAL DATA SUMMARY (SOIL)
CEDAR CHEMICAL CORPORATION
VICKSBURG, MISSISSIPPI
FEBRUARY 1989

	CC-BG BACKGND SOIL 02/01/89 1300	CC-1 S. END OF PLANT 02/01/89 1310	CC-2 S.E. END IMPOUND 02/01/89 1355	CC-3 S.E. END LANDFILL 02/01/89 1420	CC-4 SW OF MW-10 02/01/89 1500
INORGANIC ELEMENTS	MG/KG	MG/KG	MG/KG	MG/KG	MG/KG
ALUMINUM	19000	8200	7800	12000	7100
ARSENIC	--	13	--	--	7.2
BARIUM	140	96	120	120	110
CALCIUM	1700	31000	30000	28000	31000
CHROMIUM	18	22	12	16	36
COBALT	6.7	3.5	4.3	6.2	2.9
COPPER	17	14	12	13	26
IRON	24000	20000	13000	16000	16000
LEAD	--	--	17	14	49
MAGNESIUM	3400	14000	15000	13000	8200
MANGANESE	730	420	460	530	220
MERCURY	--	--	--	--	0.56
MOLYBDENUM	--	--	--	--	2.5
NICKEL	19	12	12	15	13
POTASSIUM	1900	1100	1100	1400	910
SODIUM	--	--	870	380	270
STRONTIUM	22	28	32	29	32
TITANIUM	510	240	360	280	300
VANADIUM	44	22	22	28	19
YTTRIUM	11	8.2	9.0	11	6.9
ZINC	69	43	59	43	82
GENERAL INORGANIC PARAMETERS	MG/KG	MG/KG	MG/KG	MG/KG	MG/KG
CYANIDE	--	--	--	0.14	58.0A
PESTICIDE/PCB COMPOUNDS	UG/KG	UG/KG	UG/KG	UG/KG	UG/KG
ATRAZINE	--	680J	200JN	100J	6800J
DIELDRIN	--	--	--	--	530J
DINOSEB (DNBP)	15	230000	96	57000	380000
ENDRIN	--	--	--	--	1500J
ENDRIN KETONE	--	--	--	--	430
HEPTACHLOR EPOXIDE	--	53	--	--	--
METHYL PARATHION	--	1300	--	--	820J
TOXAPHENE	--	48000	--	--	140000JN
EXTRACTABLE ORGANIC COMPOUNDS	UG/KG	UG/KG	UG/KG	UG/KG	UG/KG
4-NITROPHENOL	--	920J	--	--	--
BENZO(B AND/OR K)FLUORANTHENE	--	290J	--	--	--
BENZO(GHI)PERYLENE	--	160J	--	--	--
CHRYSENE	--	180J	--	--	--
FLUORANTHENE	--	310J	--	--	--
HEXACHLOROBENZENE (HCB)	--	140J	--	--	--
PHENANTHRENE	--	190J	--	--	--
PYRENE	--	260J	--	--	--
(METHYLPROPYL)DINITROPHENOL	500JN	400000JN	200000JN	200JN	6E7JN
1 UNIDENTIFIED COMPOUND	--	--	--	--	200000J
2 UNIDENTIFIED COMPOUNDS	--	10000J	--	--	--
BUTYLDINITROANISOLE	--	10000JN	--	--	--
DIMETHYLHEPTANONE	--	--	600JN	800JN	--
HEXADECANOIC ACID	400JN	300JN	800JN	800JN	--
METHOXYNITROBENZENE	--	800JN	--	--	--
OCTANOIC ACID	--	--	300JN	200JN	--
PURGEABLE ORGANIC COMPOUNDS	UG/KG	UG/KG	UG/KG	UG/KG	UG/KG
ACETONE	--	--	--	--	330J
METHYL ETHYL KETONE	--	--	--	--	94J
O-XYLENE	--	--	--	--	9.9J
FOUR UNIDENTIFIED COMPOUNDS	--	--	--	300JN	--
TRIMETHYLBENZENE	--	--	--	--	30JN

FOOTNOTES
A - AVERAGE VALUE
NA - NOT ANALYZED
J - ESTIMATED VALUE
N - PRESUMPTIVE EVIDENCE OF PRESENCE OF MATERIAL
-- - MATERIAL WAS ANALYZED FOR BUT NOT DETECTED

2. Corrective action will be required to protect human health and the environment.

Patrick M. Tobin

Patrick M. Tobin, Director
Waste Management Division
United States Environmental
Protection Agency
Region IV

10-16-89

Date

FILE COPY

November 18, 1983

Mr. Dick Karkkainen
Vertac Chemical Company Corporation
24th Floor, 5100 Poplar
Memphis, Tennessee 38137

Dear Mr. Karkkainen:

Re: MSD990714081

On November 17, 1983, Steve Spengler and I visited the Vicksburg facility to review the construction improvements at the inactive landfill and surface impoundment dike.

The inactive landfill had been capped with clean borrow material as required by the approved plans. The grading and capping did not extend as far to the Southwest as indicated on the plans we approved which were prepared by MCI/Consulting Engineers. This area constitutes the ditch and the low areas between the railroad track and the inactive landfill which has filled with sediment.

Because these sediments have shown contamination by organics, we will continue to monitor this area. Should runoff from the area become a problem, capping of the area, as shown in the approved plans, or another method may be required in the future.

The dike appeared to be constructed according to the approved plans prepared by MCI. The plans and engineering report by MCI demonstrated an adequate structural integrity of the dike and an elevation in excess of the 100 year flood.

At the time of the inspection, the dike and capped landfill had just recently been seeded. Should there be insufficient rainfall, watering by sprinkler trucks will be necessary. A good cap on the landfill and integrity of the dike can only be maintained through minimizing erosion. We encourage Vertac Chemical to take all appropriate actions to establish and maintain a vegetation cover to avoid requirements for additional earthwork in the future to repair erosional damage.

Please contact our office, should you have any questions.

Sincerely,

Charles Estes, P. E.
Division of Solid Waste Management

CE:els
cc: Mr. Steve Spengler, BPC

GEE & STRICKLAND, INC.

CONSULTING ENGINEERS & SURVEYORS
1 Openwood Plaza
1104 Openwood St.
Vicksburg, Miss. 39180

Philip C. Gee, P.E.
Joseph G. Strickland, R.L.S.

Phone: 601-636-7831

October 25, 1983

Mr. Bob James, Jr., P.E.
Vertac Chemical Company
P.O. Box 3
Vicksburg, MS 39180

Re: Grading & Capping
Inactive Disposal Area

Dear Mr. James,

This letter is to serve as certification that Buford Construction Company has completed the Grading and Capping of the inactive disposal area in substantial compliance with plans and specifications of the contract dated September 14, 1983. The only major exception is a mowable stand of grass has not been achieved. The grass has been planted and fertilized and is beginning to emerge. A good grass cover should be established within the next few weeks. A copy of the As Built topographic survey is attached.

The grading does not extend as far to the South or West as shown on the plans. When grading began, the cut material was extremely wet and as it dried out during processing much higher than normal shrinkage factors were encountered. Accordingly, the inplace yardage of soil was reduced.

The end product complies with the intent of a minimum 18 inch cap of clean material and a final uniform grade providing drainage. All cap material was compacted to 95% ASTM D-698. Testing was done in accordance with ASTM D-2922.

Very Truly Yours,

Philip C. Gee, P.E.

PCG/jh

VERTAC CHEMICAL CORPORATION
24th Floor • 5100 Poplar • Memphis, TN 38137 • 901-767-6851

REPLY TO: P. O. BOX 3
VICKSBURG, MS 39180
(601) 636-1231

November 4, 1983

RECEIVED
NOV - 8 RECD
DEPT OF NATURAL RESOURCE
BUREAU OF POLLUTION CONTROL

Mr. Charles H. Estes, III., P.E.
Mississippi Department of Natural Resources
Bureau of Pollution Control
Division of Solid Waste Management
P.O. Box 10385
Jackson, MS 39209

SUBJECT: Inactive Disposal Area - Vertac Chemical Corporation, Vicksburg, MS

Dear Mr. Estes:

Enclosed herewith is one certified copy of Gee & Strickland drawing dated October 25, 1983 showing As Built conditions for final capping on the Inactive Disposal Area. Also enclosed is Gee & Strickland letter dated October 25, 1983 by Philip C. Gee, P.E. certifying substantial compliance by the contractor with the plans and specifications of the contract dated September 14, 1983. This contract was based in part on drawings prepared by MCI/Consulting Engineers (Project 82-529 Sheets 1 thru 4 of 4).

The As Built drawing compares well to MCI Sheet 3 of 4 showing the final capping plan. In addition, these Gee & Strickland documents represent the condition found on the Ms/DNR Inspection on the afternoon of Monday, October 31, 1983 conducted by Mr. Estes and Mr. Spengler.

The contractor is aware of the seriousness of the vegetation cover requirements and his contract is written such that neither progress payment will be made nor performance retention released until such time as a mowable stand of grass is attained. Seeding operations for the Dike Improvements are scheduled within the next week and it is anticipated that such reseeding as is necessary for the Disposal Area will be accomplished at that time. In addition, it is expected that watering will be accomplished by a sprinkler system.

Very truly yours,

Robert W. James, Jr., P.E.
Project Engineer

RWJ/ksh

Enclosures

cc F. Ahlers
F. Bleyer (w/encl)
P. Buford (Buford Const.) (w/encl)
P. Gee (G&S)
D. Karkkainen (w/encl)
D. Madsen (w/encl)
F. Wilson (MCI) (w/encl & dwg)

MISSISSIPPI DEPARTMENT OF NATURAL RESOURCES
Bureau of Pollution Control
P. O. Box 10385
Jackson, Mississippi 39209
(601) 961-5171

MEMORANDUM

TO: File

FROM: Chuck Estes

SUBJECT: Remedial Actions at Vertac Chemical

DATE: October 26, 1983

On Monday, October 11, 1983, an inspection was made of the remedial action taking place at Vertac Chemical's Vicksburg facility.

The inactive landfill was completely capped. The operation had been completed several days before. As required by the plan approved by the Commission on Natural Resources, the high hill area had been lowered and clean soil brought in to cap the area. Grass seed had been broad cast but there had been no rain to cause germination. A water truck will be used if the area does not get a rain soon. The ditch to the west of the inactive landfill was not capped. This area must continue to be monitored.

The work on the surface impoundment dike is on-going. It appeared that work was centering on completing the rock toe to create a stable base on which to build. The liquid in the impoundment bordering the dike has been lowered to prevent a breech during construction. The completion date is expected to be the end of October. Construction of the dike is as described by the construction plans reviewed by our office.

CE:cbl
cc: Steve Spengler

MCI/CONSULTING ENGINEERS, INC.
P. O. Box 23154
McBride Lane
Knoxville, Tennessee 37922
Telephone (615) 966-9788

February 22, 1983

Mr. Charles Estes
Bureau of Pollution Control
P. O. Box 10385
Jackson, MS 39209

RE: Capping and Grading Plans,
Inactive Disposal Area;
Vertac Chemical Corp.,
Vicksburg, MS; MCI-82-529

Dear Chuck:

Please find enclosed a revised copy of the subject plans. No contaminated fill is to be placed on the ICG Railroad ROW under these revised plans.

Please give me a call if you have questions.

Yours truly,

MCI/CONSULTING ENGINEERS, INC.

Felon R. Wilson, P.E.
Manager of Industrial Operations

FRW:jrd

Enclosure

FEB 28 RECD

February 14, 1983

Mr. Dick Karkkainen
Vertac Chemical Corp.
24th Floor
5100 Poplar
Memphis, TN 38137

Dear Mr. Karkkainen:

After reviewing the grading and capping plans for the inactive disposal area at the Vicksburg facility, we find that the plans are acceptable as submitted. The capping and grading project may begin whenever the weather conditions become favorable.

The proposed locations and depths for the four groundwater monitoring wells to be installed are also acceptable. Our office will be available to assist in the final location of the wells.

Should you have any further questions, please contact our office.

Sincerely,

Charles Estes, P.E.
Division of Solid Waste Management

CE:cb

MCI/CONSULTING ENGINEERS, INC.
P. O. Box 23154
McBride Lane
Knoxville, Tennessee 37922
Telephone (615) 966-9788

January 4, 1983

Mr. Charles Estes
Bureau of Pollution Control
P. O. Box 10385
Jackson, MS 39209

RE: Vertac Chemical Corp.;
MCI-82-529

Dear Chuck:

As discussed by phone Monday, a new topographic map of the disposal area at the Vicksburg facility is being prepared and is expected to be completed by the end of this week. On a preliminary basis, we are examining the option of placing a sediment pond on the southwestern side of the disposal area. This will contain sediments which have washed or may wash down from the disposal site.

Our soils laboratory reports that virgin soils near the disposal area have a remolded permeability on the order of 10^{-5} cm/sec. Therefore, with proper compaction, this material should adequately serve as final cover.

Please call if you have comments.

RECEIVED
1983 JAN 10 AM 9 42
AIR & WATER POLLUTION
CONTROL COMMISSION
STATE OF MISSISSIPPI

Yours truly,

MCI/CONSULTING ENGINEERS, INC.

Felon R. Wilson, P.E.
Manager of Industrial Operations

FRW:kd

cc: Dick Karkkainen
Bob James

GEOLOGIC ASSOCIATES, INC.
LABORATORY DIVISION
Franklin, Tennessee 615 794-3596
Knoxville, Tennessee 615 966-9761

Report No. _____

REPORT OF PERMEABILITY TESTING

Client M.C.I. Consulting Engineers Date December 30, 1982

Project No. 82-824 Project Name & Location Vertac Chemical Corporation
Vicksburg, Mississippi
MCI 82-529

The soil sample which was delivered to our office was remolded to 97.7% of the soils maximum dry density as determined by the Standard Proctor Method (ASTM D-698-78). After remolding, the sample was tested for permeability. The test results are as follows:

$$K = \frac{(H)(F)(Kc)}{(T)(P_B)(D^2)} \quad \text{where;}$$

K = Permeability
H = Height of Sample (in inches)
F = Flow (in cubic centimeters)
K_c = Permeability Constant
T = Time (seconds)
P_B = Back Pressure (in P.S.I.)
D = Diameter of the Sample

$$K = \frac{(5.6)(35)(.00713)}{(960)(8)(2.8^2)} = \frac{1.3975}{60211} = 2.3 \times 10^{-5} \text{ cm/sec}$$

CLIENT M.C.I. Consulting Engineers

PROJECT Vertac Chemical Corporation

PROJECT NO. 82-824

SAMPLE LOCATION Delivered by Client

TEST METHOD: ASTM D-698, Method A

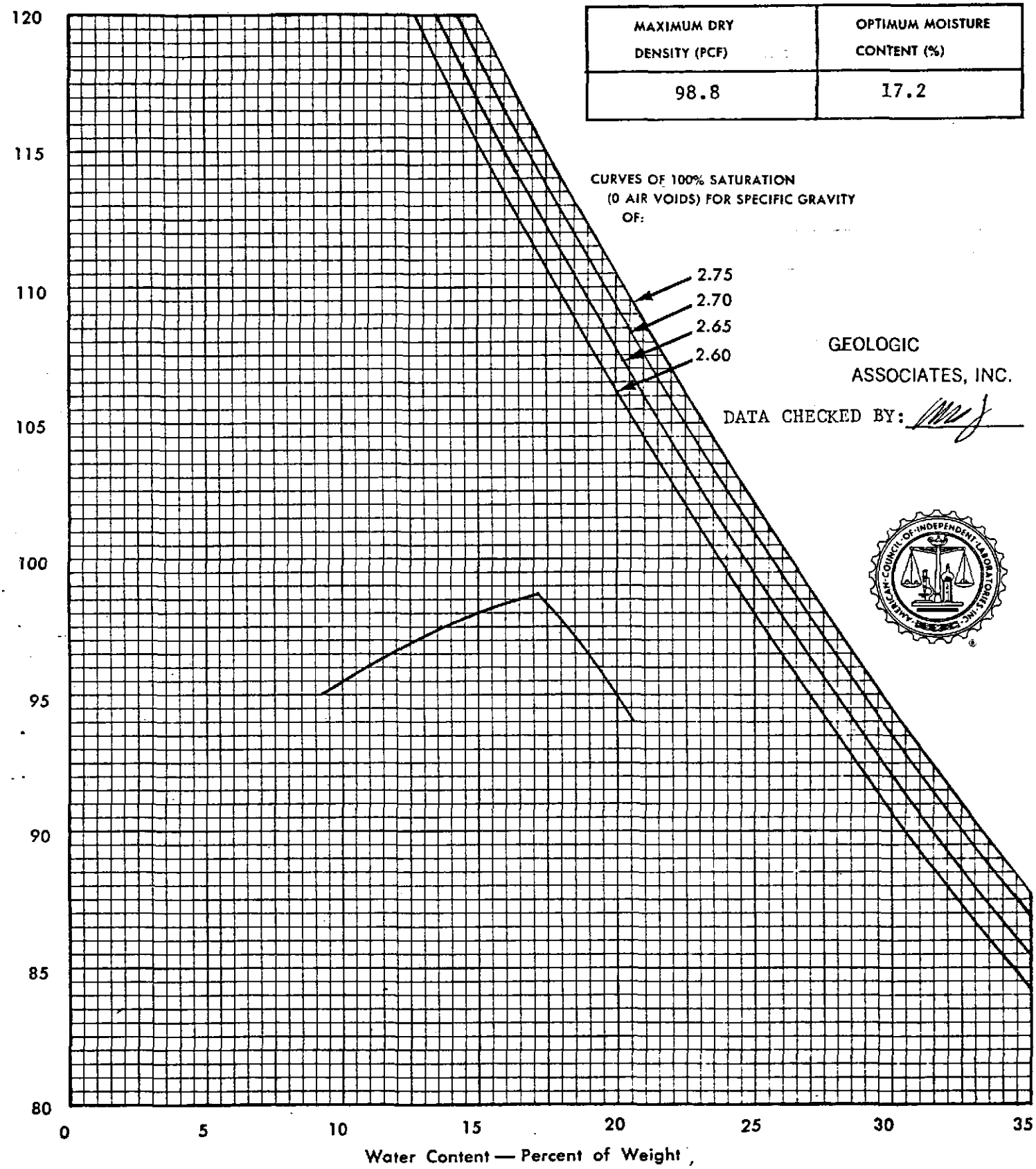
DATE December 15, 1982

SOIL PROPERTIES:

NATURAL MOISTURE (%) 22.8

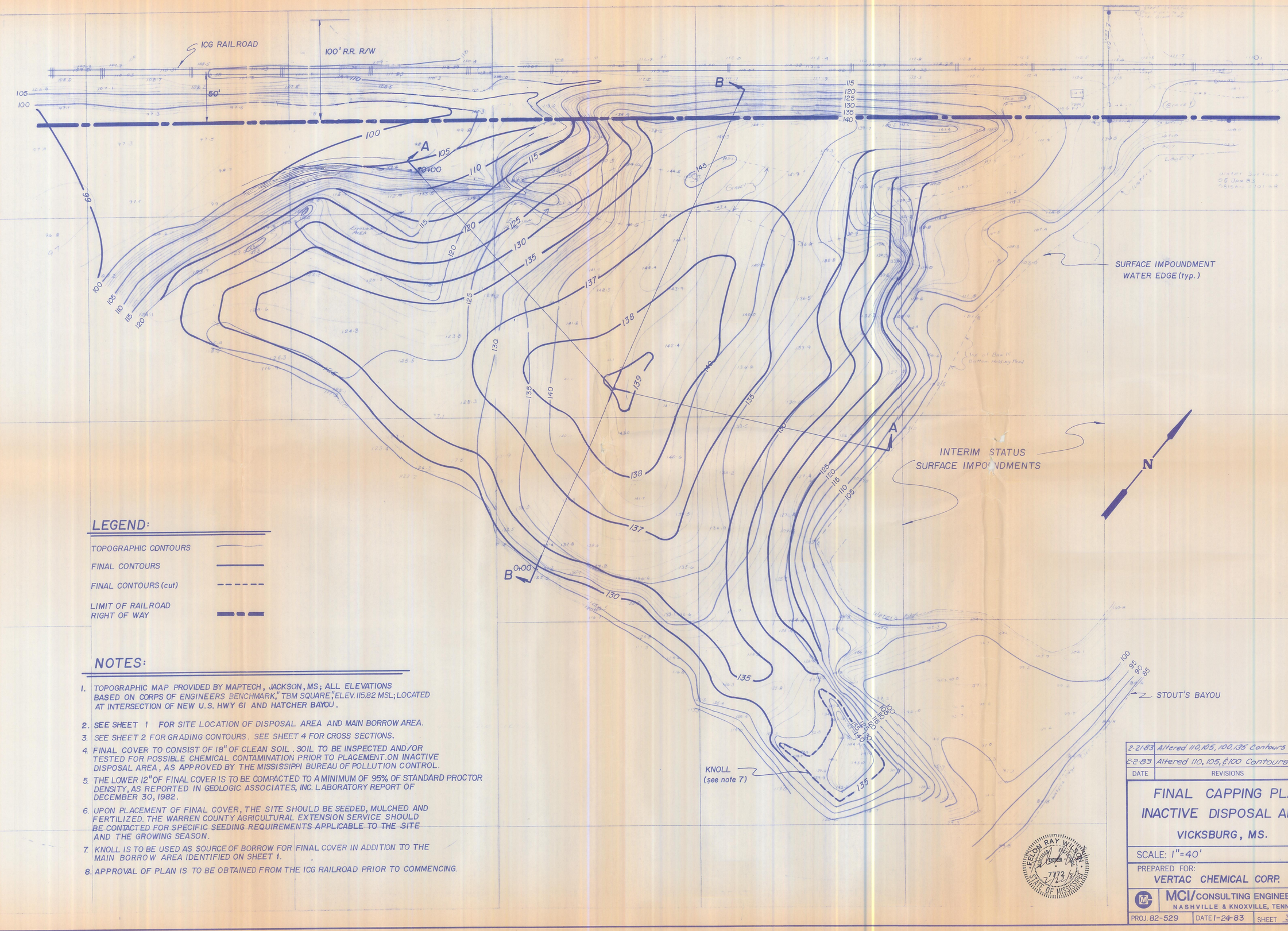
SOIL DESCRIPTION Silt, (loess) Brown

MAXIMUM DRY DENSITY (PCF)	OPTIMUM MOISTURE CONTENT (%)
98.8	17.2



GEOLOGIC ASSOCIATES, INC.

DATA CHECKED BY:



LEGEND:

- TOPOGRAPHIC CONTOURS
- FINAL CONTOURS
- FINAL CONTOURS (cut)
- LIMIT OF RAILROAD RIGHT OF WAY

NOTES:

1. TOPOGRAPHIC MAP PROVIDED BY MAPTECH, JACKSON, MS; ALL ELEVATIONS BASED ON CORPS OF ENGINEERS BENCHMARK, "TBM SQUARE", ELEV. 115.82 MSL; LOCATED AT INTERSECTION OF NEW U.S. HWY 61 AND HATCHER BAYOU.
2. SEE SHEET 1 FOR SITE LOCATION OF DISPOSAL AREA AND MAIN BORROW AREA.
3. SEE SHEET 2 FOR GRADING CONTOURS. SEE SHEET 4 FOR CROSS SECTIONS.
4. FINAL COVER TO CONSIST OF 18" OF CLEAN SOIL. SOIL TO BE INSPECTED AND/OR TESTED FOR POSSIBLE CHEMICAL CONTAMINATION PRIOR TO PLACEMENT ON INACTIVE DISPOSAL AREA, AS APPROVED BY THE MISSISSIPPI BUREAU OF POLLUTION CONTROL.
5. THE LOWER 12" OF FINAL COVER IS TO BE COMPACTED TO A MINIMUM OF 95% OF STANDARD PROCTOR DENSITY, AS REPORTED IN GEOLOGIC ASSOCIATES, INC. LABORATORY REPORT OF DECEMBER 30, 1982.
6. UPON PLACEMENT OF FINAL COVER, THE SITE SHOULD BE SEEDED, MULCHED AND FERTILIZED. THE WARREN COUNTY AGRICULTURAL EXTENSION SERVICE SHOULD BE CONTACTED FOR SPECIFIC SEEDING REQUIREMENTS APPLICABLE TO THE SITE AND THE GROWING SEASON.
7. KNOLL IS TO BE USED AS SOURCE OF BORROW FOR FINAL COVER IN ADDITION TO THE MAIN BORROW AREA IDENTIFIED ON SHEET 1.
8. APPROVAL OF PLAN IS TO BE OBTAINED FROM THE ICG RAILROAD PRIOR TO COMMENCING.

DATE	REVISIONS	BY
2-21-83	Altered 110, 105, 100, 135 Contours	F.R.W.
2-22-83	Altered 110, 105, & 100 Contours	F.R.W.

FINAL CAPPING PLAN
INACTIVE DISPOSAL AREA
VICKSBURG, MS.

SCALE: 1"=40'

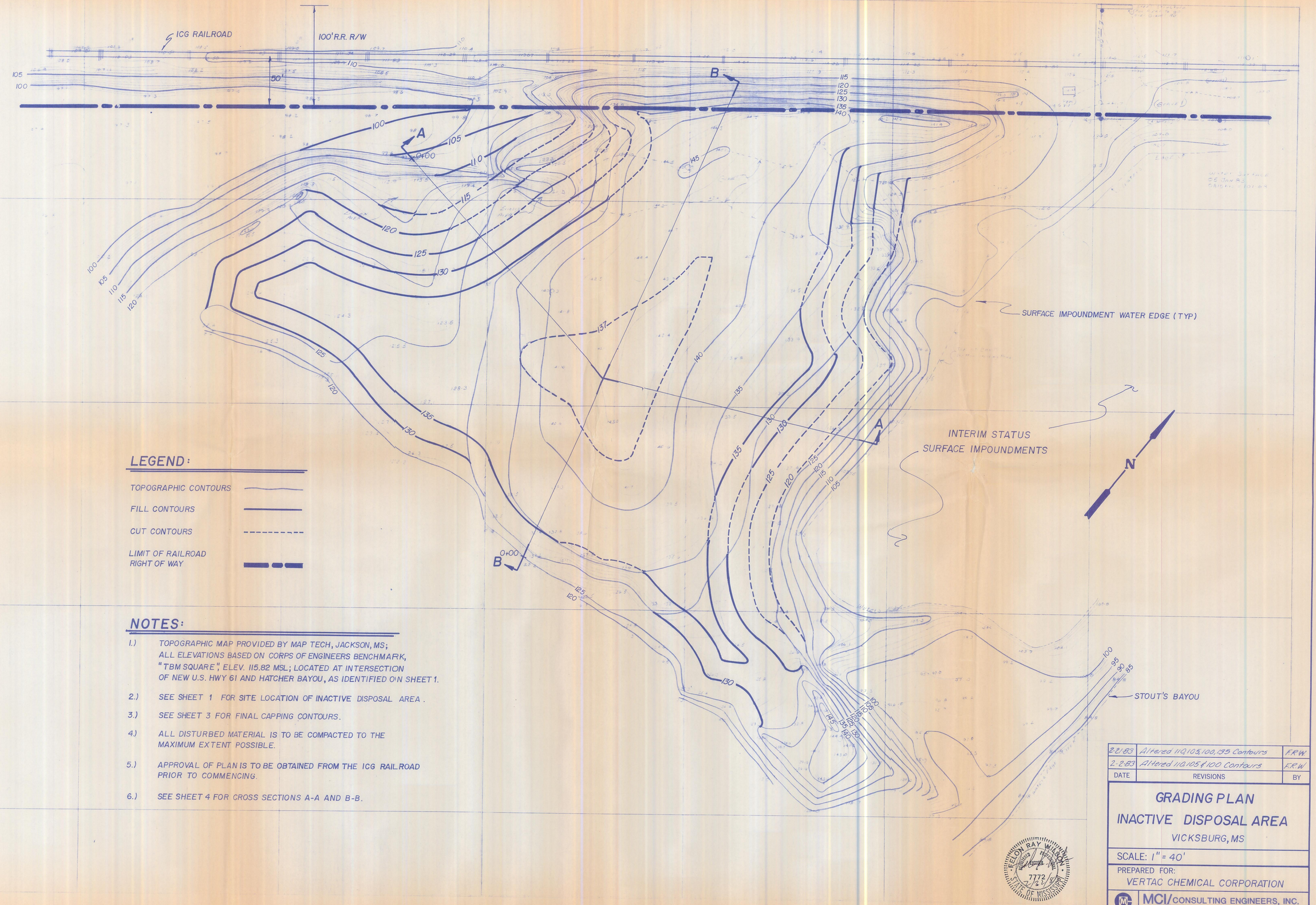
PREPARED FOR:
VERTAC CHEMICAL CORP.

MCI/CONSULTING ENGINEERS, INC.
NASHVILLE & KNOXVILLE, TENNESSEE

PROJ. 82-529 | DATE 1-24-83 | SHEET 3 OF 4

FENTON RAY WILSON — REGISTERED — 7773 — STATE OF MISSISSIPPI

BRUNING 44-142 26653



LEGEND:

- TOPOGRAPHIC CONTOURS
- FILL CONTOURS
- CUT CONTOURS
- LIMIT OF RAILROAD RIGHT OF WAY

NOTES:

1.) TOPOGRAPHIC MAP PROVIDED BY MAP TECH, JACKSON, MS; ALL ELEVATIONS BASED ON CORPS OF ENGINEERS BENCHMARK, "TBM SQUARE", ELEV. 115.82 MSL; LOCATED AT INTERSECTION OF NEW U.S. HWY 61 AND HATCHER BAYOU, AS IDENTIFIED ON SHEET 1.

2.) SEE SHEET 1 FOR SITE LOCATION OF INACTIVE DISPOSAL AREA.

3.) SEE SHEET 3 FOR FINAL CAPPING CONTOURS.

4.) ALL DISTURBED MATERIAL IS TO BE COMPACTED TO THE MAXIMUM EXTENT POSSIBLE.

5.) APPROVAL OF PLAN IS TO BE OBTAINED FROM THE ICG RAILROAD PRIOR TO COMMENCING.

6.) SEE SHEET 4 FOR CROSS SECTIONS A-A AND B-B.

DATE	REVISIONS	BY
2-22-83	Altered 110,105,100,135 Contours	F.R.W.
2-2-83	Altered 110,105 & 100 Contours	F.R.W.

GRADING PLAN
INACTIVE DISPOSAL AREA
VICKSBURG, MS

SCALE: 1" = 40'

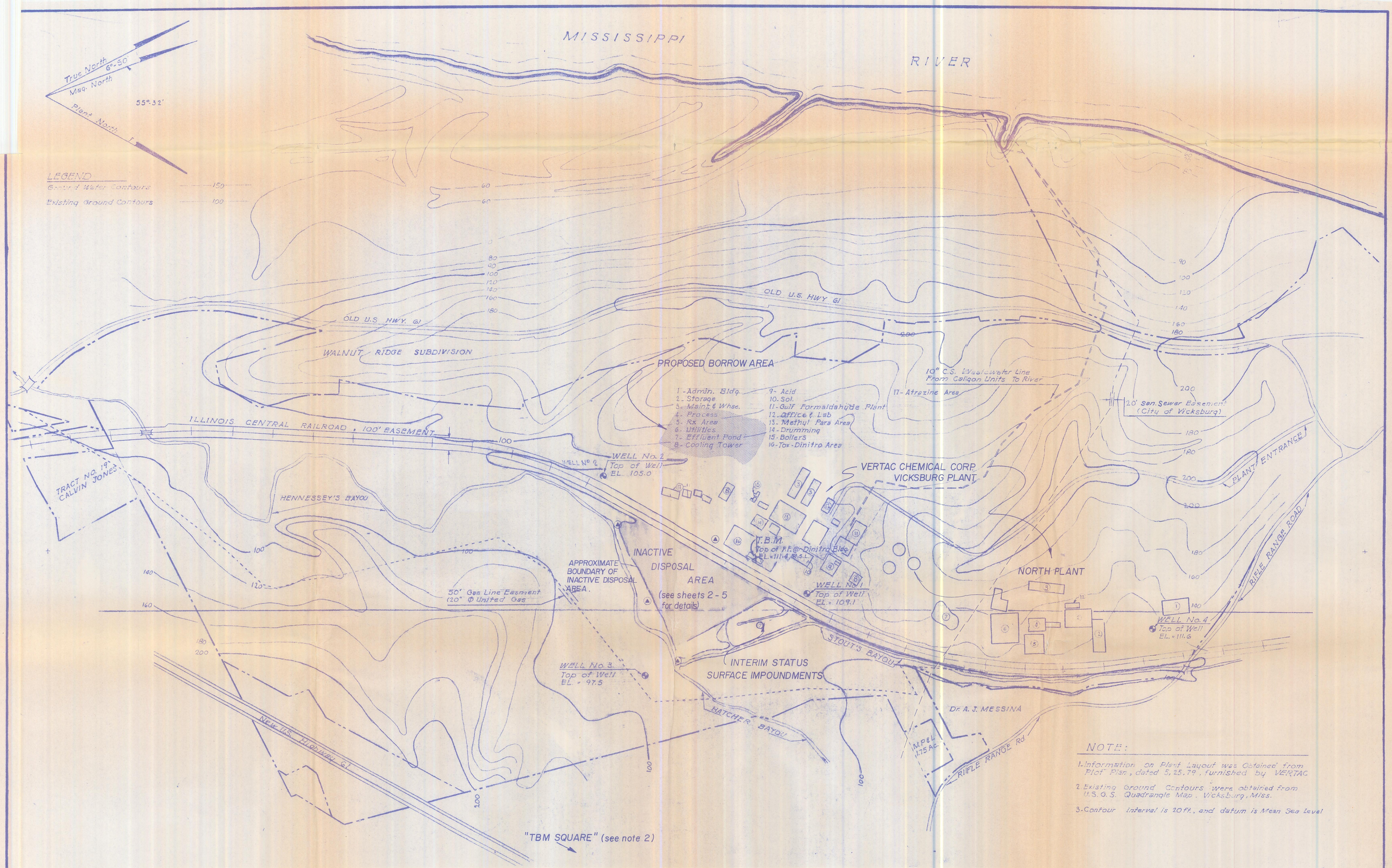
PREPARED FOR:
VERTAC CHEMICAL CORPORATION

MCI/CONSULTING ENGINEERS, INC.
NASHVILLE & KNOXVILLE, TENNESSEE

PROJ. 82-529 | DATE 1/24/83 | SHEET 2 OF 4

FELON RAY WILSON
REGISTERED
7772
12/29/83
STATE OF MISSISSIPPI

BRUNING 44-142 26653-7



NOTE:

1. Information on Plant Layout was Obtained from Plot Plan, dated 5.25.79, furnished by VERTAC
2. Existing Ground Contours were obtained from U.S.G.S. Quadrangle Map, Vicksburg, Miss.
3. Contour interval is 20ft., and datum is Mean Sea Level

NOTES:

1.) MAP AND ELEVATIONS PROVIDED BY DISC, MEMPHIS, TN.

2.) CORPS OF ENGINEERS BENCHMARK, LOCATED AT THE INTERSECTION OF NEW U.S. HWY 61 AND HATCHER BAYOU, WAS USED TO ESTABLISH ELEVATIONS FOR TOPOGRAPHIC MAP OF INACTIVE DISPOSAL AREA. SEE SHT. 2 & 3 OF THESE PLANS FOR FURTHER DETAILS.

3.) EXACT LOCATION OF PROPOSED MONITORING WELLS TO BE DETERMINED IN THE FIELD BY REPRESENTATIVES OF VERTAC AND THE MISSISSIPPI BUREAU OF POLLUTION CONTROL.

LEGEND:

PROPOSED MONITORING WELL LOCATIONS

EXISTING MONITORING WELLS

PROPOSED BORROW AREA FOR SOURCE OF SOIL TO BE USED AS COVER MATERIAL

FELTON RAY WILSON 7772 REGISTERED STATE OF MISSISSIPPI

DATE	REVISIONS	BY

SITE MAP
VERTAC CHEMICAL CORP.
VICKSBURG, MS.

SCALE: 1" = 300'

PREPARED FOR:
VERTAC CHEMICAL CORPORATION

MCI/CONSULTING ENGINEERS, INC.
NASHVILLE & KNOXVILLE, TENNESSEE

PROJ. 82-529 | DATE 1/24/83 | SHEET 1 OF 4

GRADING AND CAPPING PLAN

INACTIVE DISPOSAL AREA

VERTAC CHEMICAL CORPORATION

VICKSBURG, MISSISSIPPI

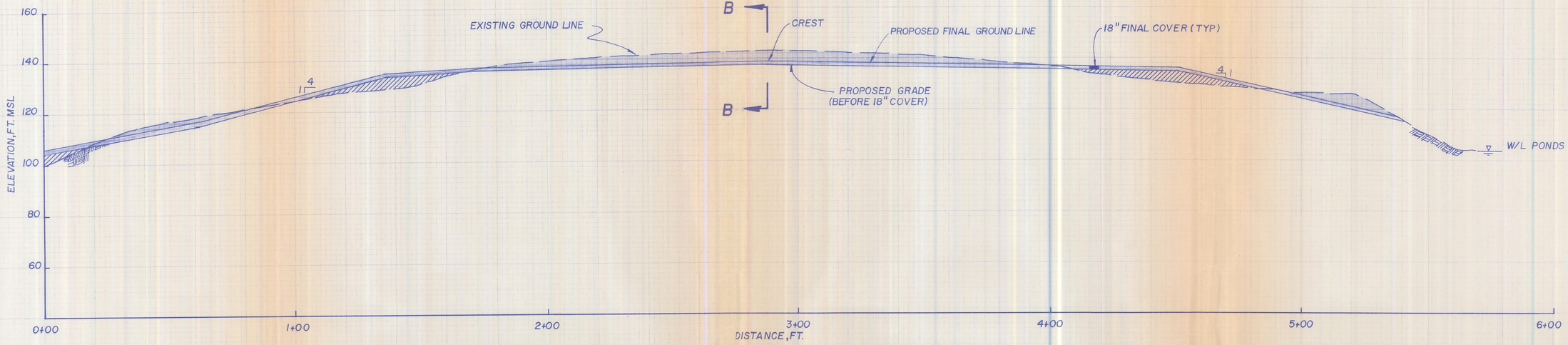
PREPARED BY:

MCI/CONSULTING ENGINEERS, INC.

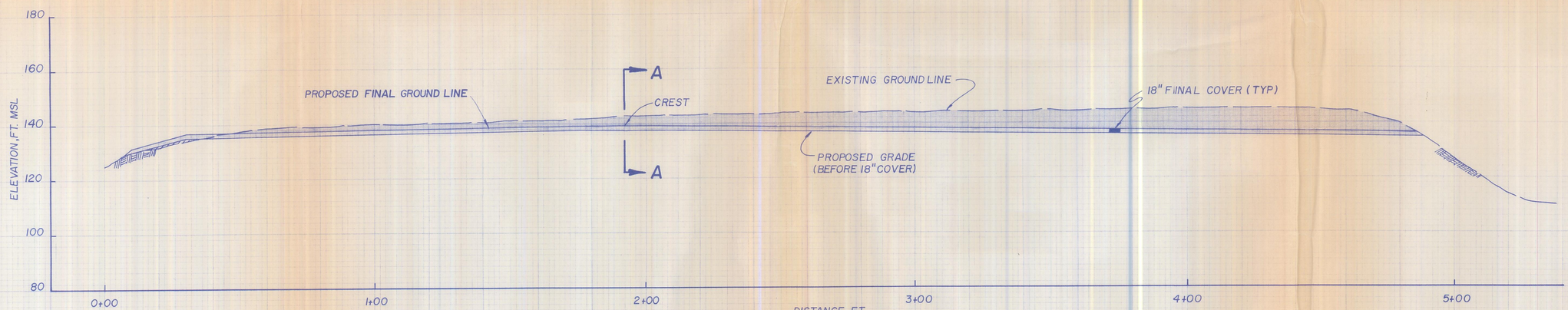
P.O. BOX 23154

McBRIDE LANE

KNOXVILLE, TENNESSEE 37922



SECTION A-A



SECTION B-B

PROPOSED FILL

PROPOSED CUT

DATE	REVISIONS	BY

CROSS SECTIONS
INACTIVE DISPOSAL AREA
VICKSBURG, MS.

SCALE: 1" = 20' (horiz. & vert.)

PREPARED FOR:
VERTAC CHEMICAL CORPORATION

MCI/CONSULTING ENGINEERS, INC.
NASHVILLE KNOXVILLE, TENNESSEE

PROJ. 82-529 | DATE 1/24/83 | SHEET 4 OF 4

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BRUNING 44-142 26653