DMEA Form 9

UNITED STATES
DEPARTMENT OF THE INTERIOR
Defense Minerals Exploration Administration

OFFICIAL DOCKET FILE

1103

DMEA NO. 4674

2 7 JUN 1957

Application (Denied
(Withdrawn
(After disposition, delete items not applicable)

Contract (Terminated - not Certified
(Cancelled
(Terminated - Certified
(Royalty Agreement

This is the official contract file containing all official records of the project. The records contained in the files are checked and are arranged in this order:

Left Side

Interim Royalty Audits
Reports of Royalty Review
Certification of Discovery
✓Certificate of Audit (Final) Peptzler
Interim Audit(s)
Report of Review
Termination Notice or Agreement
Recision Notice
Assignment of Contract
X Contract Amendments (latest on top)
✓ Contract with all exhibits and annexes 6-27-57
Owner's Consent to Lien
Subordination Agreement
✓ Leases and assignments of leases
✓ Application and attachments
(3) Envelope for maps

Right Side

✓ Project summary
X Work completed analysis
All other material is filed in chronological order with correspondence including the following reports as checked:

X Final Field Team Report (Tab)
X Operator's Final Report
(2R) Interim Reports
(2R) ✓ Operator's monthly reports and all attachments (latest on top)
X On-site Exam Report(s) (Tab)
(4) Settlement Sheets

When the volume of records is expected to warrant additional folders, or when convenience of reference warrants separate folders for certain records, they should be set up in this order:

Left Side

Folder No. 2: (In chron. order)
Interim Summary Reports by W. O. Engineers

Right Side

Operator's Semi-Annual Report for Certified Project, Field Team Interim Reports, Operator's Monthly Report with transmittal, narrative, maps, and Field Team review.

Folder No. 3: Maps (Use pocket folder or envelope. Fold maps with title block out and show reference to related document or correspondence.)

Folder No. 4: Settlement Sheets

Folder No. 5: Drill Logs

DEFENSE MINERALS EXPLORATION ADMINISTRATION
CONTRACT ADMINISTRATION AND AUDIT DIVISION

2/24/58 RK

REPORT OF REVIEW

I have reviewed the Monthly Reports of:

The New Jersey Zinc Company
Mineral, Virginia
and
160 Front Street
New York 38, New York

pertaining to Exploration Project Contract No. Idm-E1103, DMEA No. 4674, including Amendment No. 1, for the period of July 26, 1957, to November 3, 1957, inclusive, covering a project for the exploration of zinc, lead, and copper on property, known as the Bondurant Area located in Buckingham County, Virginia.

My review included an examination of the Monthly Reports (Forms MF-104) and supporting documents attached thereto, comparison of the costs claimed with the contract and pertinent schedules, verification of work performed by reference to Field Team reports and correspondence, and a determination of the reasonableness and propriety of the costs.

This review was made in lieu of a final audit of the Operator's accounts and records for the following reasons:

(a) the Monthly Reports were supported by documentary proof of that portion ($6,464.30) of the costs which covered work performed at unit rates under independent contract;
(b) the balance ($1,550.02) of the costs incurred were under a contract provision for payment by the Government on the basis of fixed unit costs of work actually performed; and
(c) the administrative cost to the Government of an audit would be excessive in relation to the estimated amount of possible further disallowances thereunder.

The review disclosed the following facts in regard to the amount paid or to be paid the contractor:

Total cost as billed by Operator		$8,072.02
Exceptions (schedule attached):		
Prior to this review	$19.20	
Herewith	51.00	70.20
Net acceptable cost claimed		8,001.82
Acceptable cost not claimed, to partially offset exceptions		12.50
Total accepted cost		$8,014.32

The contract calls for a 50 percent participation of exploration expenses by the United States Government. Therefore, payment to the Operator by the Government in the amount of Four thousand seven and 16/100 Dollars is valid and proper, provided that the Regional Executive Officer, the Administrator, or other competent official has accepted or will accept the project as having otherwise met the terms of the contract.

Amount payable to Operator	$4,007.16
Amount reimbursed	3,985.91
Balance due Operator	$ 21.25

E. R. Talbert

February 4, 1958

E. R. Talbert, Auditor

Exceptions prior to this review:

Aggregate of 96 feet of diamond drilling (76' NX, 19' NX, and 1' NXWL), allowable at $2.70/ft., claimed by Operator as churn drilling at $2.90/ft. Difference disallowed, 96 ft. @ $0.20..... $19.20

Exceptions during this review:

Assays of 17 samples for gold and silver claimed by Operator, whereas contract provides for assays for zinc, lead, and copper only. Disallowed, 17 assays @ $3.00..... 51.00

Additional acceptable cost, not claimed:

50 wooden core boxes claimed by Operator at $2.25/each, whereas a fixed unit cost of $2.50/each is provided by the contract. Additional allowance for difference, 50 ea. @ $0.25..... 12.50

Government's copy

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DATE | INITIALS | CODE

EXPLORATION PROJECT CONTRACT
THE NEW JERSEY ZINC COMPANY
DOCKET NO. DMEA-4674

AMENDMENT NO. 1

It is agreed this 13th day of November, 1957, between the United States of America, acting through the Department of the Interior, Defense Minerals Exploration Administration, and The New Jersey Zinc Company, that Exploration Project Contract No. Idm-E1103 (Docket No. DMEA-4674), dated June 27, 1957, is amended, effective June 27, 1957, as follows:

In Exhibit "A", under Description of the Work, the first sentence of the second paragraph is revised to read as follows:

"A fence of seven holes shall be drilled, spaced at not less than 200-foot intervals."

This amendment shall not be construed to increase the estimated total cost of the project, the aggregate total amount which the Government may be required to contribute, the fixed unit cost of any item of work, or the amount of any item designated as a maximum.

Executed in quintuplicate the day and year first above written.

THE UNITED STATES OF AMERICA

By C. Mittenzwey
Administrator, Defense Minerals
Exploration Administration

THE NEW JERSEY ZINC COMPANY

By J. Bordwin

Title VICE PRESIDENT

Government's Copy

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DMEA
RECEIVED JUL 11 1957

DATE	INITIALS	CODE

MF-200
(Revised June 1954)

Docket No. DMEA 4674

Commodity Zinc-Lead-Copper

Contract No. Idm-E 1103

UNITED STATES OF AMERICA
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION

EXPLORATION PROJECT CONTRACT[1]

It is agreed this 27 JUN 1957 day of ....., 195..., between the United States of America, acting through the Department of the Interior, Defense Minerals Exploration Administration, hereinafter called the "Government," and [2] The New Jersey Zinc Company, A new Jersey Corporation, whose mailing address is 160 Front Street New York 38, New York, hereinafter called the "Operator," as follows:

ARTICLE 1. *This contract* is entered into under the authority of the Defense Production Act of 1950, as amended. It consists of this form (MF-200), the attached Exhibit "A," Annex I, and Annex II, and two maps

The Operator shall not transfer or assign this contract or any right thereunder without the written consent of the Government.

ARTICLE 2. *Operator's property rights.*—(a) The land which is the subject of this contract (hereinafter called "the land") is in the State of Virginia, County of Buckingham, and is described in Annex I.[3]

(b) The Operator represents and undertakes that:

(1) The Operator is the [4] lessee and optionee of [5] See Annex I in the land, in possession and entitled to possession for all of the purposes of this contract, under and by virtue of a [6] See Annex I, [7] ....recorded in Book ....., page ....., official records of said County; and

(2) The Operator's right, title, or interest (whether as owner, lessee, or otherwise) is subject only to the following claims, liens, or encumbrances: interests of landowners

(c) The Subordination Agreement of the holder of any claim, lien, or encumbrance listed above, and (if the Operator does not hold the legal title) the Consent to Lien of any holder of the legal title

[1] If sufficient space is not provided in any blank, use an extra sheet of paper and refer to it in the blank.
[2] Insert name, and if an organization, its nature (corporation and place of incorporation, partnership with names of partners, etc.).
[3] State on a separate sheet marked "Annex I" the legal description or enough to identify the property, particularly excluding any areas from which the production is not to be subject to the Government's percentage royalty.
[4] Insert "owner," "lessee," "contract purchaser," "locator," etc.
[5] Insert "the entire interest," "the mineral rights," "an undivided one-third," etc.
[6] Insert "deed," "lease," "contract," "location notice," "patent," etc.
[7] If not recorded, so indicate by inserting "un."

of the land (lessor, seller, optionor, etc.), are attached, as follows: Consents to Lien and Subordination Agreements of owners of land are waived.

(d) The Operator shall preserve and maintain his right, title, and interest in the land and his right to the possession thereof for the purposes of this contract, and shall devote the land and all existing improvements, facilities, buildings, installations, and appurtenances to the purposes of this contract. Until the lapse of the time within which the Government may make a certification of discovery or development without any such certification having been made, and after any such certification has been made, the Operator shall neither transfer, convey, nor surrender the land nor any right, title, or interest therein, nor permit nor suffer any claim, lien, or encumbrance thereon, without expressly referring to and providing in the instrument of conveyance, lien, or encumbrance for the preservation of the Government's right to a percentage royalty on production and lien for the payment thereof. If the Government makes no certification of discovery or development within the time limited in Article 8, it shall thereafter have no claim against the land or any production therefrom except for any production referred to in Article 8(b)(1).

ARTICLE 3. *The exploration project.*—The project is a search for indicated or undeveloped deposits of Zinc, lead, copper. The work to be performed is described in Exhibit "A." The Operator on or before 30 days after date of contract shall commence the work, and on or before 6 months after date of contract (unless the Operator's obligation to prosecute the work is terminated—see Article 10) shall ~~either~~ have completed the work ~~or shall have incurred allowable costs (see Article 8) in an amount not less than the estimated total allowable costs set forth in Exhibit "A"~~ See Annex II.

ARTICLE 4. *Performance of the work.*—(a) *Operator's responsibility.*—The work shall be performed with reasonable diligence, efficiently, expertly, in a workmanlike manner, in accordance with good mining standards and State regulations for health and safety and for liability insurance covering employment; and with suitable and adequate equipment, facilities, materials, supplies, and labor, to bring it to completion within the time fixed.

(b) *Independent contracts.*—To the extent that the allowable costs are estimated in Exhibit "A" with express reference to performance by independent contractors on a unit-price basis (such as per foot of drilling, per foot of drifting, per hour of bulldozer operations), the work may be so performed; but if the reference in Exhibit "A" to any such independent contract requires the Government's approval thereof, payments under such contract will not be allowable costs unless the Government gives its written approval of the contract. Any such independent contract shall refer to some specific and identifiable part of the work, and shall be subject to all of the pertinent terms and conditions of this exploration contract; but the Government shall not be considered a party thereto, and its rights under this contract, including the right to terminate its contributions, shall not be affected thereby. Regardless of the provisions of any such independent contract and regardless of the Government's approval thereof, the Government will participate in payments to the independent contractor only on account of work performed in accordance with the provisions of this exploration project contract, and only to the extent that the Government deems the unit prices for the work under the independent contract to be reasonable.

(c) *Government may inspect.*—The Operator shall consult with and inform the Government on all phases of the work as it progresses. The Government may enter at all reasonable times to inspect the work under the contract, and also after a certification of discovery or development to inspect production operations and underground workings. The operator shall provide the Government with all reasonable means of access for such inspections.

ARTICLE 5. *Contribution by the Government.*—The estimated total allowable cost of the project, set forth in Exhibit "A," is the sum of $8,370.00. The Government shall contribute 50 percent of the allowable costs as they are incurred in a total sum not in excess of $4,185.00: *Provided,* That until the Operator has rendered to the Government his final report, and any final auditing required by the Government has been made, and a final settlement of the contract has been made, the Government may withhold from the last

voucher or vouchers such sums as it sees fit not in excess of 10 percent of the estimated total cost of the work or not in excess of the amount of the Government's contribution to the cost of property which is or may become subject to disposal as provided in Article 9(c), whichever is greater. The Government will make its contribution on the basis of the monthly vouchers referred to in Article 7(b), but all payments by the Government are provisional only, subject to audit, until the account between the Operator and the Government is finally audited and settled. "Costs incurred" mean costs that have been paid or have become due and payable, or that in the opinion of the Government have become an obligation. The Government may make payments directly to independent contractors and suppliers for the account of the Operator rather than to the Operator.

ARTICLE 6. *Estimated costs.*—(a) *Categories of costs.*—The allowable costs of the work to which the Government shall contribute are limited to those that are direct, reasonable, necessary, and that are estimated in Exhibit "A" by categories as specified in this article. If any category or subcategory is omitted from the estimate of costs, or if the word "none" is annexed to the listing thereof, costs under such category or subcategory are not allowable. Any excess over any estimate which is indicated as the maximum of any category, subcategory, or item, either as to requirement or related cost, and any excess over the estimated total allowable cost of the work, shall not be allowable. Any excess over the estimate of any category, subcategory, or item, either as to requirement or related cost, not indicated as a maximum shall be allowable within the limit of the estimated total allowable cost of the work. To the extent that excesses over maximums other than the estimated total allowable cost of the work may be necessary for the performance of the work, the Operator shall incur such excesses for his own account without contribution by the Government; [redacted] **See Annex II.**

To the extent specified in this article or in Exhibit "A" the following categories, subcategories, and elements thereof are maximums; but if not so specified either here or in Exhibit "A" they are not maximums, and may be exceeded within the limit of the estimated total allowable cost of the work:

CATEGORY (1)—INDEPENDENT CONTRACTS.—Work to be performed under independent contracts (see Article 4(b)). The estimated total amount of this category and the estimated cost of each unit of work for performance under an independent contract are maximums. **See Annex II**

CATEGORY (2)—PERSONAL SERVICES.

Subcategory (a)—Supervision.—All elements of this subcategory (number of supervisors, periods of employment, rates of pay, and total) are maximums.

Subcategory (b)—Technical services.—All elements of this subcategory (number of technicians, periods of employment, rates of pay, and total) are maximums.

Subcategory (c)—Labor.

CATEGORY (3)—OPERATING MATERIALS AND SUPPLIES.—Includes such items as drill bits and steel, explosives, fuel, pipe, power, small tools costing less than $50 each, timber, track.

CATEGORY (4)—OPERATING EQUIPMENT.

Subcategory (a)—Rental.—The number of each object to be rented [6 mine cars, 1 truck], the rate of rental [$100 per month, $5 per hour], and the total of this subcategory are maximums.

Subcategory (b)—Purchases.—The estimated total of this subcategory is a maximum.

Subcategory (c)—Depreciation.—All elements of this subcategory (time periods, rate of depreciation, and subcategory total) are maximums.

CATEGORY (5)—INITIAL REHABILITATION AND REPAIRS.—Estimates under this category include all requirements and related costs, such as labor, materials and supplies, and supervision at a rate not higher than provided for in Category (2), and shall not be duplicated under any other category. The estimated total of this category is a maximum.

Subcategory (a)—Initial rehabilitation and repairs of existing buildings, fixtures, and installations (exclusive of mine workings).—The estimated total of this subcategory is a maximum.

Subcategory (b)—Initial rehabilitation and repairs of operating equipment.—The estimated total of this subcategory is a maximum.

CATEGORY (6)—NEW BUILDINGS, FIXTURES, AND INSTALLATIONS (EXCLUSIVE OF MINE WORKINGS).—Estimates under this category include all requirements and related costs, such as labor, materials and supplies, and supervision at a rate not higher than provided for in Category (2), and shall not be duplicated under any other category. The estimated total of this category is a maximum.

CATEGORY (7)—MISCELLANEOUS.—Repairs and maintenance (other than initial) of operating equipment, analytical work, prints and other reproductions, accounting, Operator's share of payroll taxes, liability insurance covering employment, travel, communications, and any other items of requirement or cost that do not fall within any of the first 6 categories.

THE ESTIMATED TOTAL ALLOWABLE COST of the work is a maximum.

(b) *Nonallowable costs.*—The following costs are not allowable for contribution by the Government:

(1) *Costs of the land,* such as rental, depreciation, depletion, or other cost of acquiring, owning, or holding possession;

(2) *Indirect costs,* such as general overhead, corporate management, interest, taxes (other than payroll and sales taxes), insurance (other than liability insurance covering employment), damages to persons, damages to property (other than necessary repairs or replacements of equipment or other property used in the work);

(3) *Previous work* performed or costs incurred before the date of this contract; and

(4) *Deferred payments.*—Any costs incurred by the Operator under any rental-purchase agreement, installment-purchase agreement, or any agreement for the purchase of goods under the provisions of which payment of the full purchase price is deferred more than 90 days from the delivery of the goods; unless the purchase agreement is approved by the Government in writing.

(c) *Reductions in costs.*—The Operator shall account for and give the Government credit for any incidental benefits, credits, or money received in the ordinary course of business in prosecuting the work (as by salvage or sale of materials or equipment, furnishing of room or board, furnishing of power or services to third persons, rebates or discounts on purchases, etc.), in the same ratio in which the Government contributes to costs; and such amounts shall be treated as a reduction in costs incurred so that they are available for use within the limit of the original estimated total cost. This provision does not apply to receipts from production which are subject to the Government's percentage royalty under the provisions of Article 8. **See Annex II.**

ARTICLE 7. *Reports, accounts, audits.*—(a) *Operator's records.*—The Operator shall keep suitable records and accounts of the work performed and of any production in which the Government may have an interest; and shall preserve those with respect to work performed for at least three years after final payment by the Government, and those with respect to production for at least three years after any obligation to pay royalties to the Government has terminated. The Government may inspect and audit said records and accounts at any time, either by itself or by a certified public accountant. If the Government elects to audit said records and accounts relating to the exploration work by certified public accountant, it may do so as a cost of the work to which the Operator shall contribute. The Comptroller General of the United States or his representative, until the expiration of said three-year periods, shall have access to and the right to examine any pertinent books, documents, papers, and records of the Operator. All of the Operator's vouchers and records and accounts relating thereto and the Government's payments thereof remain subject to adjustment until final audit by the Government. If work under this contract is carried on in conjunction with any other operations, or if labor, supervision, services, materials, supplies, equipment, facilities, or other requirements for carrying on the work are also used in connection with other operations, the costs shall be segregated and accounted for on a basis and by methods and accounts that are satisfactory to and approved by the Government.

(b) *Progress reports and vouchers.*—The Operator shall provide the Government with five copies of monthly progress reports in three sections as follows: (1) Operator's Monthly Report and Voucher showing detailed costs incurred during the reporting period; (2) Operator's Unit Cost and Progress Report showing the various types of work performed during the reporting period and costs incurred for each type of work; and (3) a Narrative Report of the work performed during the reporting period including adequate engineering-geological maps or sketches, drill hole logs and locations, and assay reports on samples taken concurrently with advance in mineralized ground. (Forms for reporting under (1) and (2) above will be provided by the Government.)

(c) *Final report.*—Upon completion of the work or termination of the Government's obligation to contribute to costs, the Operator shall furnish the Government with five copies of a final report (in addition to the final progress report and voucher). This final report shall include a geological and engineering evaluation of the results of the work performed under the contract with an estimate of the ore reserves resulting from such work, complete assay data, adequate geological and engineering maps or sketches, and a summary of the work performed and related costs incurred.

(d) *Report of sales.*—The Operator shall provide the Government with suitable accounting and documentary evidence covering all production to which the Government's percentage royalty relates, such as copies of smelter or concentrator settlement sheets, and certified accounts of production and sale or other disposition of production.

(e) *Compliance with requirements.*—If in the opinion of the Government any of the Operator's reports, records, or accounts are insufficient or incomplete, or if the Operator fails to make them, the Government may procure the making or completion of such with suitable attachments as an expense of the work to which the Operator shall contribute. The Government may withhold approval and payment of any vouchers relating to insufficient or incomplete reports, records, or accounts.

ARTICLE 8. *Repayment by Operator.*—(a) *Certification.*—If the Government considers that a discovery or development from which production may be made has resulted from the work, the Government, at any time not later than six months after a sufficient final report and final account (see Article 7) has been rendered, may so certify in writing to the Operator. Such certification shall describe broadly or indicate the nature of the discovery or development.

(b) *Royalty on production.*—The Operator, as principal if the Operator is the producer, or as surety if the Operator is not the producer, shall pay to the Government a royalty on all minerals mined or produced from the land, as follows: (1) regardless of any certification of discovery or development, from the date of the contract until the lapse of the time within which the Government may make such certification, or until the total net amount contributed by the Government without interest is fully repaid, whichever occurs first; or (2) if the Government makes a certification of discovery or development, within a period of ~~xxx~~ 30 years from the date of the contract, or until the total net amount contributed by the Government without interest is fully repaid, whichever occurs first.

(c) *Basis for computation.*—The Government's royalty shall be a percentage of the gross proceeds (including any bonuses, premiums, allowances, or other benefits) from the production sold, in the form sold (ore, concentrates, metal, or equivalent), at the point of delivery (the f. o. b. point); *except,* that charges of *the buyer* arising in the regular course of business, and shown as deductions on the buyer's settlement sheets, on account of the cost of treatment processes performed by *the buyer,* sampling and assaying to determine the value of the production sold, and freight paid by *the buyer* to a carrier (not the Operator), shall be allowed as deductions in arriving at the "gross proceeds" as that term is used herein. Any costs of treatment processes, sampling or assaying, or transportation, performed or paid by the Operator or by anyone other than the buyer, are not deductible in arriving at the "gross proceeds" as that term is here used. The term "treatment processes," as here used, means those processes (such as milling, concentrating, smelting, refining, or equivalent) applied to the crude ore or other production after it is extracted from the ground, to put it into a commercially marketable form; excluding fabricating or manufacturing. **See Annex II.**

(d) *Unsold production.*—If any production (ore, concentrates, metal, or equivalent), after the lapse of six months from the date the ore was extracted from the ground, remains neither sold nor used by the Operator in integrated manufacturing or fabricating operations (for instance, if it is stockpiled), the Government, at its option, as long as it so remains, may require the computation and payment of its royalty on the value of such production in the form (ore, concentrates, metal, or equivalent) it is in when the Government elects to require computation and payment. If any production is used by the Operator in integrated manufacturing or fabricating operations before the Government makes its election, the Government's royalty on such production shall be computed on the value therof in the form in which and at the time when it is so used. "Value" as here used means what is or would be gross income from mining operations for percentage depletion purposes in Federal income tax determination, or the market value, whichever is greater.

(e) *Percentages of royalty.*—The percentages of the Government's royalty shall be as follows:

One and one-half (1½) percent of amounts ("gross proceeds" or "value") not in excess of eight dollars ($8.00) per ton of production in the form in which sold, held, or used, plus one-half (½)

percent for each additional full fifty cents ($0.50) by which such amounts exceed eight dollars ($8.00) per ton, but not in excess of five (5) percent of such amounts.

(For instance: the royalty on an amount of five dollars ($5.00) per ton would be one and one-half (1½) percent; on an amount of ten dollars ($10.00) per ton, three and one-half (3½) percent.)

(f) *Time for computation and payment.*—The Government's royalty shall be computed and paid currently upon each lot sold, held, or used in integrated operations, as the case may be, as above provided in this article.

(g) *Lien for payment.*—To secure the payment of its percentage royalty, there is hereby granted to the Government a lien upon the land or the Operator's interest in the land and upon any production of minerals therefrom, until the royalty claim is extinguished by lapse of time or is fully paid.

(h) *Notice to purchasers.*—The Operator shall give notice of the Government's claim for royalty to any purchaser of the production, and shall authorize and direct such purchaser to pay the royalty directly to the Government and to furnish the Government with copies of the settlement sheets. If the records of any production and sales or other disposition of production, whether the production is by the Operator or by others, are not made available to the Government, the amount of the royalty may be estimated by the Administrator, Defense Minerals Exploration Administration, or his successor, and his estimate thereof shall be final and binding upon the Operator.

(i) *No obligation to produce.*—Nothing in this contract is to be construed as imposing any obligation on the Operator or the Operator's successor in interest to engage in any production operations.

(j) *Government not obligated to buy.*—Nothing in this contract shall be construed as imposing any obligation on the Government to purchase any minerals mined or produced from the land.

ARTICLE 9. *Interests in purchased property.*—(a) *Title and ownership.*—All costs under this contract shall be incurred by the Operator in the Operator's own name and for the Operator's own account; but any property acquired to the cost of which the Government contributes shall belong to the Operator and the Government jointly in proportion to their respective contributions, although title thereto shall be taken in the name of the Operator.

(b) *Preservation of property.*—Until the final disposal of any property in which the Government has an interest the Operator shall preserve and protect same for the best interest of the Government, any reasonable and necessary costs thereof to be treated as an allowable cost of the project. After the completion of the work or termination of the Government's obligation to contribute, or when such property is not in use for or needed for the work, the Operator shall neither use it without the written consent of the Government nor without paying a reasonable rental to be fixed by the Government for its interest.

(c) *Disposal of property.*—Upon the completion of the work or termination of the Government's obligation to contribute to costs, or when the property is no longer needed for the work, the Operator shall promptly dispose of salable or salvageable property in which the Government has an interest for the joint account of the Government and the Operator, either by return to the vendor, by sale to others, or purchase by the Operator or the Government at a price at least as high as could be obtained from others, unless the Government in writing waives its interest in any such property. Without advance approval of the sales price by the Government the Operator shall not sell at any price any item of property the cost of which was more than $500, and shall not sell at less than 25 percent of the purchase price any item of property which cost $500 or less. The Government, in lieu of approving the sales price for any such item, may itself purchase the item at the best price which the Operator is able to obtain or himself cares to give. Property remaining upon any termination of the work shall be considered in groups or categories (such as drill steel, or explosives, or pipe, or rails), and if the original cost of the remaining unexpended portion of any such group or category is less than $50, the Government waives its interest therein. If necessary to accomplish the disposal of any item the Operator shall dismantle and sever it from the land, the cost thereof to be treated as a cost of the project.

(d) *Default of the Operator re disposal.*—If within 90 days after the completion of the work or termination of the Government's obligation to contribute to costs, or after the property is no longer needed for the work, or after such further time as the Government may in writing allow, the Operator has failed to sell or otherwise liquidate or dispose of any property in which the Government has an interest, the Government, at any time prior to final settlement under the contract, may pursue one of the following two courses: (1) the Government, by written notice to the Operator, may place upon such property what in its opinion is a fair valuation thereof, not in excess of the cost less 1.66 percent per month from the

date such property was purchased under this contract to the termination of said 90-day period; and such property shall thereupon be considered and accounted for as having been purchased by the Operator at the valuation so fixed by the Government; or (2) the Government may enter and take possession of such property wherever it may be found, and remove and dispose of it for the joint account of the parties.

ARTICLE 10. *Termination of the Government's obligations.*—(a) If in the opinion of the Government operations at any time have failed to achieve anticipated results that indicate the probability of making a worthwhile discovery, and in the opinion of the Government further operations are not justified, the Government may give the Operator written notice thereof, and thereupon: (1) the Government shall be free of all obligation to contribute to costs not then incurred other than such as may be allowable under the provisions of the contract as necessary and incidental to winding up, reporting, and accounting; and (2) the Operator shall be free of all obligation to prosecute the work other than such as may be necessary and incidental to winding up, reporting, and accounting.

(b) If in the opinion of the Government the Operator is in any manner in default under the terms of the contract, the Government may give the Operator written notice of such default with a specification of reasonable time within which the default must be cured; and if the Operator fails to cure such default as required, thereupon: (1) the Government shall be relieved of all obligation to contribute to costs not incurred when the notice was given, other than such as may be allowable by the provisions of the contract as necessary and incidental to winding up, reporting, and accounting; and (2) the Operator shall be free of all obligation to prosecute the work other than such as may be necessary and incidental to winding up, reporting, and accounting. The remedy provided for the Government in this paragraph "(b)" is in addition to any other remedy provided in this contract, and in addition to any other remedy the law may provide for breach of contract.

(c) The giving of any notice by the Government under the provisions of this Article 10 shall not affect the Government's rights as provided for in the contract with respect to a percentage royalty, and such rights shall be fully preserved.

ARTICLE 11. *Notices to be given by the Government* may be delivered to the Operator, or may be sent by registered mail addressed to the Operator at his mailing address stated in this contract. If mailed, notices are deemed to have been delivered five days after the date of mailing.

ARTICLE 12. *Officials not to benefit.*—No member of or delegate to Congress or resident commissioner shall be admitted to any share or part of this contract or to any benefit that may arise therefrom; but this provision shall not be construed to extend to this contract if made with a corporation for its general benefit.

ARTICLE 13. *Changes and added provisions.*—
See Annex II.

Appd. Sol. Off.

Executed in sextuplicate the day and year first above written.

THE UNITED STATES OF AMERICA

By C P Mitteudorf

Administrator, Defense Minerals Exploration Administration

THE NEW JERSEY ZINC COMPANY
(Operator)

By S S Goodwin

Title VICE PRESIDENT

I, Walter R. Angan, certify that I am the secretary of the corporation named as Operator herein; that S. S. Goodwin who signed this contract on behalf of the Operator, was then Vice President of said corporation; that said contract was duly signed for and in behalf of said corporation by authority of its governing body, and is within the scope of its corporate powers.

Walter R. Angan

[CORPORATE SEAL]

U. S. GOVERNMENT PRINTING OFFICE 16—70617-1

EXPLORATION PROJECT CONTRACT
THE NEW JERSEY ZINC COMPANY
DOCKET NO. DMEA-4674

ANNEX I

The land referred to in Article 2 of the contract consists of approximately 921 acres in Buckingham County, Virginia, about 8 miles southwest of Dillwyn, Virginia, as outlined in blue color, on the attached map entitled "The New Jersey Zinc Company, File No. AXV-402-D-B." The land is described in the agreements listed below, copies of which are contained in Docket No. DMEA-4674, and the land descriptions therein, which are incorporated therein by reference, are also incorporated herein by reference.

A. Lands on which the Operator has Right to Prospect and Mine, plus Option to Purchase Mineral and Surface Rights.

1. Agreement between Evelyn A. Coleman and J. A. Coleman, and The New Jersey Zinc Company, dated September 20, 1955, for a period of one year, is renewable for further periods up to September 20, 1960, covering two tracts containing approximately 88 acres.

B. Lands on which the Operator has the Right to Prospect for Minerals and to Mine Minerals under a Lease Agreement.

A Lease Agreement between R. S. Burruss, Jr., and Margaret B. Burruss, husband and wife, and The New Jersey Zinc Company, dated August 3, 1955, for one year and renewable for four additional periods up to August 3, 1960, to prospect for and explore for minerals. The owners further grant Lessee the exclusive right during three successive twenty-year periods, if Agreement is extended, to prospect for and mine minerals.

1. Two parcels known as the Gary Tract, containing approximately 80 and 56 acres, or a total of 136 acres.

2. Parcel known as the Bondurant Tract, containing 392 acres, more or less.

3. A parcel of land comprising 305 acres, more or less, known as the Maxey Tract.

SPECIAL AGREEMENT CONCERNING LAND

1. In the event the Operator or any subsidiary thereof at any time during the period expiring ten years from the date of this contract acquires any interest, title, or equity, in any lands contiguous to the premises described in this contract, it is agreed that such contiguous lands shall thereupon become subject to the provisions of this contract, and the parties hereto shall promptly execute amendments to this contract listing such contiguous lands as lands included in this contract.

2. It is further agreed that the Operator may, at any time before the expiration of sixty days following the conclusion or termination of exploration work performed pursuant to the terms of this contract, request the Government to delete from this contract such of the land described in the land agreements listed in this Annex I under A. and B. above or in any amendments thereof, as has no known value for mineral production. The Government will promptly prepare amendments removing the specified land from the contract, which amendments shall provide that the Operator:

(a) certifies the lands have no known value for mineral production;

(b) has, prior to the execution of the respective amendment, surrendered or otherwise disposed of all its interest, title, and equity in such land, and any minerals produced therefrom, including any option, lease, or permit thereto, without any consideration whatsoever, including future compensation, for such surrender or disposition, other than relief from the cost of maintaining such interest;

(c) agrees that no benefit from such land or any production of minerals therefrom will accrue to the Operator or to any of its subsidiaries, directly or indirectly, during the period expiring thirty years from the date of this contract; and

(d) agrees that if the Operator or any subsidiary thereof acquires any interest, title, or equity in such land or any minerals produced therefrom, or derives any benefit therefrom, before the expiration of thirty years from the date of this contract, the land with respect to which such interest, title, or equity is acquired, and any minerals produced therefrom, shall be deemed subject to this contract and any certification from the date that the Operator or any subsidiary thereof acquired such interest, title, or equity, or any benefit therefrom, until the expiration of thirty years from the date of this contract, or until the total net amount contributed by the Government without interest is fully repaid, whichever occurs first.

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EXPLORATION PROJECT CONTRACT
THE NEW JERSEY ZINC COMPANY
DOCKET NO. DMEA-4674

ANNEX II

(Article 13 changes and added provisions)

1. In Article 3, the words following the reference to Article 10 are deleted, and the following words are substituted: "shall have completed the work."

2. In Article 6(a), that part of the last sentence in the first paragraph beginning after the semicolon is deleted.

3. Categories (2) through (7) of Article 6(a) are deleted.

4. In Article 6(c), the words "Article 9" are change to "Article 8."

5. In Article 8(b), the words "ten years" are changed to "thirty years."

6. The following clause is added to Article 8(c): Provided, however, That so long as the Operator operates smelting facilities as an integrated part of its business, the settlement made by the Operator's smelter to its mine or mill on the ore or concentrates subject to the Government's royalty shall be, for the purpose of calculating the royalty payable to the Government under this contract, on the same settlement basis that the said smelter makes to its independent suppliers under the schedule most favorable to any independent supplier, or should gross income from mining operations for percentage depletion purposes in Federal income tax determination show a greater value for ore or concentrate sales than that value which would result from applying the smelter schedule most favorable to an independent supplier, the greater value will be used as the basis for calculating royalty payable to the Government.

7. In addition to the costs of work estimated in Exhibit "A" by categories of actual costs, the costs of work requirements specified in Exhibit "A" as "Fixed Unit Costs" are allowable costs of the project. The Government will contribute to the fixed unit costs as work units are performed. A "Fixed Unit Cost" is an agreed price for each unit of work to be performed regardless of costs incurred by the Operator. Costs set forth in Exhibit "A" include all allowable costs of the work to be performed under the contract.

8. Notwithstanding any other provision of the contract, the allowable unit cost per foot of a drilling item is the average unit cost per foot computed on the basis of all the actual unit costs of said drilling item incurred by the Operator: Provided, That the Government will not contribute to any portion of an average unit cost of a drilling item that exceeds the estimated unit cost of said item set forth in the contract.

EXPLORATION PROJECT CONTRACT
THE NEW JERSEY ZINC COMPANY
DOCKET NO. DMEA-4674

EXHIBIT "A"

Description of the Work

The purpose of the project is to explore for ores of zinc, lead, and copper by diamond drilling (and such churn drilling of overburden as may be required). Base Metal potential is indicated by several geochemical anomalies of zinc along the strike of the beds. It is desired to test the largest of these areas, which extends 1,000 feet along the strike and 600 feet across the strike of the beds.

A fence of 6 holes shall be drilled, spaced at not less than 200-foot intervals. The inclination of the holes shall be approximately 45° and the direction shall be at right angles approximately to the strike of the foliation of the rocks. The locations of the holes are tentatively shown on the attached map entitled "The New Jersey Zinc Company, File No. AXV-542-D-B", but the actual locations, directions, inclinations, and depths of all holes are subject to prior Government approval.

Drilling shall not be done at locations closer than 200 feet from an outer boundary of the land.

It is estimated that the holes will average 400 feet in depth, and not more than 2,400 feet of drilling shall be performed.

All diamond drilling shall be done with AX size, or larger, coring bits, except when it is necessary to use an EX size bit in order to complete a hole. Drill holes shall be reamed and cased or cemented and redrilled as necessary.

All drill holes shall be logged and all drill core shall be made available to the Government for examination. All significantly mineralized core shall be split and one half thereof shall be properly sampled and assayed for zinc, lead, and copper. The remaining half of all significantly mineralized core samples shall be furnished to the Government upon request.

All assays shall be reported monthly to the Government, together with drill logs and proper plan maps and sections, showing the progress of the work and sample locations.

All drilling and sample preparation shall be properly supervised by competent engineers and geologists.

Estimated Costs of the Project

Actual Costs

Category (1) Independent Contracts

Overburden drilling to 100-foot depth, approximately 360 feet @ $2.90/ft.	$1,044.00	
Diamond drilling to 500-foot depth, approximately 2,040 feet @ $2.70/ft. for AX size bit	5,508.00	$6,552.00

Diamond drilling with EX size bit is allowable @ $2.60/ft.

The above rates include charges for cementing and redrilling, water supply, changing of locations, reaming and casing, and any other charges which may be incurred by the drilling contractor

Neither the cost nor the value of casing left in drill holes at the option of the Operator will be accepted as a charge to the contract.

Categories (2) through (7) None

Fixed Unit Costs (See Annex II of the contract)

Incidental allowance 1/ for each foot of drilling completed, 2,400 feet @ $0.58	$1,392.00	
Core boxes - 50 @ $2.50 each (wooden)	125.00	
Sample analyses - 100 @ $3.00/each sample	300.00	1,817.00
Estimated Total Cost of the Project (rounded to)		$8,370.00
Government Participation @ 50%		$4,185.00

1/ Includes all costs that might otherwise be allowable costs of the project under Categories (1) through (7) of Article 6(a), except as otherwise scheduled in Exhibit "A".

THE NEW JERSEY ZINC COMPANY
(ESTABLISHED 1848)

HORSE HEAD PRODUCTS ®

OFFICE OF THE
VICE PRESIDENT

100 FRONT STREET

NEW YORK 38, N.Y.

March 1, 1957

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The Defense Minerals
Exploration Administration
Department of the Interior
Washington 25, D. C.

BONDURANT AREA
BUCKINGHAM COUNTY, VIRGINIA
DMEA EXPLORATION PROJECT
THE NEW JERSEY ZINC COMPANY

Gentlemen:

Enclosed herewith you will find a DMEA application in quadruplicate, pursuant to DMEA Order I, under the Defense Production Act of 1950, as amended, for an exploration project in Virginia. This one of three projects for which we are applying. It is our desire to drill these three projects in the following sequence: (1) Bondurant Area, Buckingham County; (2) The Val Zinco Area, Spotsylvania County; and (3) The Hunter Area, Louisa County.

Because of the desire to drill them in sequence we have refrained from filling in (5C) in the application. We believe we can start the first project within two weeks after the application is granted. In the same sequence as above, the projects are expected to take (1) 3 months, (2) 4 months, and (3) 6 months.

These projects are regarded as having limited objectives. Prospecting by geochemistry backed up in some cases by geophysics has discovered anomalies which are regarded as worthy of a limited test. If the proposed limited tests are unsuccessful, we would expect to drop the prospect. If successful, we will expect to do more work. We have found this procedure successful and productive in the Piedmont.

Very truly yours,

S. S. Goodwin
Vice President

SSG:ahg

Enclosure: DMEA Application

MF-103
(Revised April 1952)

UNITED STATES DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION

Form Approved.
Budget Bureau No. 42-R1035.2.

RECEIVED MAR 8 1957 D.M.E.A.

APPLICATION FOR AID IN AN EXPLORATION PROJECT, PURSUANT TO DMEA ORDER 1, UNDER THE DEFENSE PRODUCTION ACT OF 1950, AS AMENDED

Not to be filled in by applicant

Docket No. 4674
Metal or Mineral Zinc Lead Copper
Date Received 3-8-57
Estimated Cost $9,681.00
Participation (Government %)

INSTRUCTIONS

1. *Name of applicant.*—(*a*) State here your full legal name, in the form in which you will wish to contract, and your mailing address: The New Jersey Zinc Company
160 Front Street
New York 38, New York

(*b*) If other than an individual, add to your name above whether a corporation, partnership, etc., and the name of the State in which incorporated or otherwise organized. A New Jersey Corporation

(*c*) If a corporation, add to above statement, titles, names and addresses of officers. See Sheet No. 1 attached.

(*d*) If a partnership, add to the above statement the names and addresses of all partners.

2. *General.*—Read DMEA Order 1, "Government Aid in Defense Exploration Projects," before completing this application. Submit this application and all accompanying papers in quadruplicate (four copies), with your name and address on each sheet of the application and on all accompanying papers. Where sufficient space is not provided on the form for all required information, state it on an accompanying paper, with a reference in each case to the instruction to which it refers by number. Comply with all applicable instructions; or, if not applicable, so state. File the application with Defense Minerals Exploration Administration, Department of the Interior, Washington 25, D. C., or with the nearest field executive officer thereof.

3. *Applicant's property rights.*—(*a*) State the legal description of the land upon which you wish to explore, including all land which you possess or control that may be benefited by the exploration, and excluding any land or interest in land which is not to be included in the exploration project contract
See Sheet No. 2 Attached.

(*b*) State any mine name by which the property is known. See Sheet No. 2

(*c*) State your interest in the land, whether owner, lessee, purchaser under contract, or otherwise
See Sheet No. 2

(*d*) If you are not the owner, submit with this application a copy of the lease, contract, or other document under which you control the property. See Exhibit "A" and Sheet No. 2

(*e*) If you own the land, describe any liens or encumbrances on it

(*f*) If the land consists of unpatented claims, add to the description above, the book and page numbers for each recorded location notice.

4. *Physical description.*—(*a*) Describe in detail any mining or exploration operations which have been or now are being conducted upon the land, including existing mine workings and production facilities. State your interest, if any, in such operations. Also describe accessibility of mine workings for examination purposes. See Sheet No. 3

(*b*) State past and current production, and ore reserves, if any, giving quantities and grades. See Sheet No. 3

(*c*) Describe the geologic features of the property, including mineralization, type of deposit (vein, bedded, etc.), and your reasons for wishing to explore. Illustrate with maps or sketches. Send with your application (but not necessarily as a part of it) any geologic or engineering report, assay maps, or other technologic information you may have, indicating on each whether you require its return to you. See Sheet No. 3 Attached.

(*d*) State the facts with respect to the accessibility of the project: Access roads, distances to shipping, supply and residence points. See Sheet No. 3 attached.

(*e*) State the availability of manpower, materials, supplies, equipment, water, and power.

See Sheet No. 3 attached.

16—66551-1

THE NEW JERSEY ZINC COMPANY
160 FRONT STREET, NEW YORK, N. Y.

5. *The exploration project.*—(*a*) State the mineral or minerals for which you wish to explore This exploration seeks to discover ore bodies containing zinc, copper and lead.

(*b*) Describe fully the proposed work, including a map or sketch of the property showing a plan (and cross sections if needed) of any present mine workings, and the location of the proposed exploration work as related to such features as contacts, veins, ore-bearing beds, etc. See Sheet No. 4 attached.

(*c*) The work will start within ..... days and be completed within ..... months from the date of an exploration project contract.

(*d*) State the operating experience and background of the applicant with relation to the ability to carry out such exploration project, and also that of the person or persons who will supervise the operations. See Sheet No. 4 attached.

6. *Estimate of costs.*—Furnish a detailed estimate of the costs of the proposed work (you will have to use a separate sheet), under the following headings. Add the totals under all headings to give the estimated total cost of the project:

(*a*) *Independent contracts.*—(Note.—If the applicant does not intend to let any of the work to contractors, write "none" after this item. To the extent that the work is to be contracted, do not repeat the cost of the contract-work in subsequent items.) State the cost of any proposed independent contracts for the performance of all or any part of the work, expressed in terms of units of work (such as per foot of drilling, per foot of drifting, per hour of bulldozer operations, per cubic yard of material moved, etc.).

(*b*) *Labor, supervision, consultants.*—Include an itemized schedule of numbers, classes and rates of wages, salaries or fees for necessary labor, supervision and engineering and geological consultants.

(*c*) *Operating materials and supplies.*—Furnish an itemized list, including items of equipment costing less than $50 each, and power, water and fuel.

(*d*) *Operating equipment.*—Furnish an itemized list of any operating equipment to be rented, purchased, or which is owned and will be furnished by the Operator, with the estimated rental, purchase price, or suggested use-allowance based on present value, as the case may be.

(*e*) *Rehabilitation and repairs.*—Furnish a detailed list showing the cost of any necessary initial rehabilitation or repairs of existing buildings, installations, fixtures, and movable operating equipment, now owned by the Operator and which will be devoted to the exploration project.

(*f*) *New buildings, improvements, installations.*—Furnish a detailed list showing the cost of any necessary buildings, fixed improvements, or installations to be purchased, installed or constructed for the benefit of the exploration project.

(*g*) *Miscellaneous.*—Furnish a detailed list showing the cost of repairs to and maintenance of operating equipment (not including initial rehabilitation or repairs of the Operator's equipment), analytical work, accounting, workmen's compensation and employers' liability insurance, and payroll taxes.

(*h*) *Contingencies.*—Give an estimate of any necessary allowances for contingencies not included in the costs stated above.

NOTE.—No items of general overhead, corporate management, interest, taxes (other than payroll and sales taxes), or any other indirect costs, or work performed or costs incurred before the date of the contract, should be included in the estimate of costs. See Sheet No. 5 attached

7. (*a*) Are you prepared to furnish your share of the cost of the proposed project in accordance with the regulations on Government participation (Sec. 7, DMEA No. 1)? Yes

(*b*) How do you propose to furnish your share of the costs?

[X] Money [ ] Use of equipment owned by you [ ] Other

Explain in detail on acompanying paper.

CERTIFICATION

The undersigned, whether as an individual, corporate officer, partner, or otherwise, both in his own behalf and acting for the applicant, certifies that the information set forth in this form and accompanying papers is correct and complete, to the best of his knowledge and belief.

THE NEW JERSEY ZINC COMPANY
160 FRONT ST., NEW YORK 38, N. Y.

Dated 1 March, 1957

(Applicant)

By [signature]

Vice President

Title 18, U. S. Code (Crimes), Section 1001, makes it a criminal offense to make a willfully false statement or representation to any department or agency of the United States as to any matter within its jurisdiction.

U. S. GOVERNMENT PRINTING OFFICE 16—66551-1

Sheet No. 1
No. 1 (C) of Instructions
Titles, Names and Addresses of Officers

Mr. R. L. McCann, President	160 Front,St., New York
Mr. C. Howard George, Executive Vice President	ditto
Mr. S. S. Goodwin, Vice President	ditto
Mr. Walter R. Anyan, Secretary	ditto
Mr. E. E. Schwegler, Vice President and Comptroller	ditto
Mr. Samuel Riker, Treasurer	ditto
Mr. R. G. Kenly, Vice President	ditto
Mr. F. H. Baxter, Vice President	ditto
Mr. L. F. Johnson, Vice President	ditto
Mr. P. M. Ginder, Vice President	ditto
Mr. R. A. Oberfell, Assistant Secretary	ditto
Mr. W. L. Brookfield, Assistant Secretary	ditto
Mr. W. W. Gamwell, Assistant Treasurer	ditto

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THE NEW [illegible] COMPAN[illegible]
[illegible] NS. N. [illegible]

Sheet No. 2
No. 3 of Instructions
Applicant's Property Rights

(a) The land under consideration consists of the properties outlined in blue on the attached map AXV-402. The legal description of each tract is included in the agreement under which the property is controlled by this company. A copy of the contract for each property is attached to this application (Exhibit A).

A summary listing of the property data follows:

Name of Owner	Acreage	Type Agreement	Expiration Date of Option
R. S. Burruss, Jr.	833	Option and Lease	8/23/60
J. A. Coleman et ux	88 / 21	Option and Mineral Rights Purchase	9/20/60

(b) Bondurant Mine, The Anderson Mine

(c) The New Jersey Zinc Company holds an option for the lease of the Burruss mineral rights and limited surface for a period up to 60 years. The Company also holds an option to purchase the Coleman mineral rights and up to twenty acres of surface. This Company holds the exclusive right to prospect and explore for minerals on the above properties.

(d) See Exhibit A

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THE NEW JERSEY ZINC COMPANY
160 BROADWAY, NEW YORK 38, N. Y.

Sheet No. 3
No. 4 of Instructions
Physical Description

(a) No operations are being conducted on the land at present, and the Bondurant workings are flooded and inaccessable. Until the present option period the Company has had no interest in any operations on these properties.

Geochemical, geophysical, and geologic exploration has been conducted on these properties by The New Jersey Zinc Company since 1955. Geologic work has revealed widely dispersed limonitic float, considerable quartz float in the vicinity of the old workings but only sparse outcrops. Geophysical results have been inconclusive. The primary indication that base metal potential exists has been shown thru reconnaissance and detailed geochemical sampling. In this way a generally high belt of zinc-equivalent values, ranging up to 850 parts per million has been shown to exist on strike from the mine workings. It is proposed to test two of the high anomalous centers by drilling.

Stephen Taber describes the past history of production on the Bondurant in Virginia Geological Survey Bulletin 7, pages 192-193:

"Placer mining is said to have been conducted on this property as early as 1836, and some of the hillsides as well as the branches were washed for gold. A few years later it was leased from the owner, Mr. Bondurant, by Major Miller, who built a small stamp mill on the branch flowing through the property and worked a vein that outcrops on the hill about 400 feet to the south. A royalty of a tenth of the gold recovered was paid to the owner, and during the period of 10 months in which mining was carried on, he is said to have received $240. Credner visited the property in 1865 and writes that two parallel veins, 30 feet distant from each other, have been opened by excavations 20 to 25 feet deep, and by two shafts, 35 and 45 feet deep, respectively. One of these veins is two feet wide and the other four and a half feet. They stand nearly vertical, cross the property for three-quarters of a mile,

THE NEW JERSEY ZINC COMPANY
NEW YORK 38, N. Y.

and carry sandy quartz with much oxide of iron and free gold. The ores were crushed in a stamp mill and amalgamated in arrastras; but tailings only now mark the place where these works stood.

"About 1875 a small stamp mill was operated on the property for a short time, with what results is not known. In 1901, a tunnel starting near the creek was driven southeast for a distance of 410 feet, connecting with three shafts having depths of 30, 40, and 71 feet, respectively, and from a point near its extremity a drive was opened for 96 feet southwest along a vein. Mr. Moore, who had charge of the work at the time, states that 5 parallel veins were encountered in the tunnel, the largest being 31 feet thick while the others ranged from 3 to 8 feet, and that another vein was located by a test pit on the opposite side of the creek. He says that assays were obtained running as high as $65 per ton, the veins averaging $4.50 per ton in gold."

The Anderson Mine, whose workings may have been located on the optioned property, is described by Taber in Bulletin 7 on page 195:

"The big bed of quartzite opened on the Bondurant can also be traced across this property by outcrops and old pits scattered along its line of strike. A shaft is said to have been sunk on the property to a depth of 50 feet, connecting with a tunnel 70 yards long, but both had caved before 1865, and to-day there is little trace of their former existence. A little placer washing was done in the branches soon after gold was discovered, but that is the extent of the mining operations conducted on this property."

(b) No production or reserve figures are available for the Bondurant or Anderson mine properties.

(c) The area is underlain by Wissahickon granitized gneiss according to the 1928 edition of the Geologic Map of Virginia. Our mapping indicates that an alternating series of sericite schists and quartzites make up the country rock. The foliation generally strikes northeast and dips vertically or steeply southeast. In general, the geologic features appear quite similar to the sections of the mineralized Peters Creek quartzite we have explored in the Virginia Piedmont. Float rocks and gossan outcrops, as well as the description in Bulletin 7 of the Virginia Geological Survey, all indicate the presence of pyrite and gold

mineralization in parallel, steeply dipping veins. Our geochemical sampling has indicated the presence of base metal mineralization in anomalous amounts over several areas on strike from the Bondurant mine workings. The largest of these areas extends more than 1000 feet on strike and 600 feet across strike. It is believed that these anomalous areas justify a test by means of diamond drilling.

(d) This area is approximately 7 miles from U. S. highways 15 and 60, both of which are hard surface dual lane highways. It is 8 miles from a Chesapeake and Ohio rail terminus at Dillwym, Virginia. Paved county roads extend from the main highways and railway to the area. Richmond is approximately sixty miles to the east and is the nearest good shipping point. Richmond would be a good supply point, as would be Lynchburg, approximately forty miles west.

Living accomodations are available within a radius of ten miles from the property area.

(e) Because of its location in a settled farming community, manpower, materials, supplies, equipment, water and power are readily available.

THE NEW JERSEY ZINC COMPANY
160 [illegible] ST., NEW YORK 38, [illegible]

Sheet No. 4
No. 5 of Instructions
The Exploration Project

(b) As a preliminary test of the anomalous zone we propose to drill shallow, 400-500 foot holes inclined at 45° and directed approximately at right angles to the strike of the foliation. These holes would be spaced 200 feet apart initially because of the moderate size of the anomaly centers. Two fences are proposed to penetrate the mineralized horizon downdip from the largest two anomaly centers. The proposed fences are shown on map AXV-402.

The Bondurant mine workings as mapped from surface features are shown on AXV-402.

(d) The New Jersey Zinc Company has had wide experience in large scale exploration programs in the Appalachian Piedmont as well as in many other mining districts in the U. S. This project will be under the supervision of W. L. Albers, Superintendent, and W. Horatio Brown, Chief Geologist, who have been active in Virginia for 30 and 16 years respectively.

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NEW JERSEY ZINC COMPANY
250 PARK AVE., NEW YORK 28, N. Y.

Sheet No. 5

No. 6 of Instructions - Estimated Costs

Category No. 1 - Independent Contracts
Diamond Drilling 2,400 @ $2.90/ft - $ 6,960

See Exhibit "B"

Bids from E. J. Longyear Co., Joy Mfg. Co., and Sprague & Henwood

$2.70 Av. Depth
.10 Service
.10 Casing
$2.90

Category No. 2

a. Supervision

Geologist - half time ~~3~~ 2 mo. (600/mo) ✓600
Asst. Geologist-Surveyor - half time ~~3~~ 2 mo. (450/mo) ~~900~~ ~~675~~ ✓450

b. Technical Services

Draftsman - 1/3 time (262/mo) ✓ 174.66 ~~262~~

c. Operating Materials & Supplies

Core boxes, etc. 100 @ 2.50 ✓N.G. # 250 F.T. 75

d. Operating Equipment

Cars 5400 mi. @ 8¢ 2500 ✓200 ~~432~~

e. Rehabilitation & Repairs -- None

f. New Buildings, Improvements -- None

g. Miscellaneous

Chemical Assays	100 @ $1.50	Zn + Cu	150
Accounting Charges	30/mo. x ~~3~~ 2		X 60 ~~90~~
Secretarial Charges			
Workmen's Comp. Ins.	1% x 1927	67%	77.08 19
Payroll Taxes	3% x 1927		58
Core Storage		2 mo @ $10	20 ~~60~~
			$ 9,681

1384.66

100 @ 3 oz X 300.00

THE NEW JERSEY ZINC COMPANY
160 FRONT ST., NEW YORK 38, N. Y.

Fire Insurance 103.00

777.08

Ft. # 9,271.24

Exhibit "A"

Option Contracts

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DATE	INITIALS	COL.

NEW JERSEY ZINC COMPANY
[illegible] NEW YORK 38, N. Y

This AGREEMENT made and entered into on this 20th day of September, 1955, by and between Evelyn A. Coleman and J. A. Coleman, her husband, hereinafter called the Owners, parties of the first part, and THE NEW JERSEY ZINC COMPANY, a New Jersey corporation, authorized to do business in the State of Virginia, party of the second part, hereinafter called the Company:

W I T N E S S E T H :

That for and in consideration of the sum of ONE ($1.00) DOLLAR and other good and valuable considerations in hand paid, the receipt of which is hereby acknowledged, Owners grant unto the Company for a period of one (1) year from the date hereof, with the privilege of extension for further periods not to extend beyond September 20, 1960, upon payment of sums of money agreed upon, the exclusive option to purchase all minerals, mineral substances, metals, ores, ore-bearing materials, and rock of every kind in, under or on the following described premises situated in the Francisco Magisterial District of Buckingham County, Virginia:

All those two certain adjoining tracts or parcels of land containing 88 acres, be the same more or less, bounded on the northwest by County Road 640, on the southwest by R. S. Burruss, Jr., on the southeast by R. S. Burruss, Jr., and T. L. McCraw and on the northeast by E. P. Anderson and R. S. Burruss, Jr., and being the residue of a tract of 57 acres of land conveyed to Joseph W. Anderson from John J. Anderson et als dated Nov. 27, 1936, and recorded in the Clerk's Office of Buckingham County, Va., in Deed Book 33, page 149, and a tract of 35 acres conveyed to the said Joseph W. Anderson by deed from Emma M. McCraw et al dated Dec. 23, 1936, and recorded in said office in Deed Book 33, page 10, after deducting therefrom a parcel of 4 acres conveyed off by E. A. and J. A. Coleman to ~~Emma M.~~ McCraw et al by deed dated Nov. 10, 1949, and recorded in said office in Deed Book 51, page 104. The said E. A. Coleman, formerly Nancy E. Anderson, having acquired the said lands under the will of said Joseph W. Anderson recorded in said office in Will Book 5, page 29. And reference is hereby made to said deeds and will for a more accurate description of said land.

together with the right to prospect for, mine, mill, store and remove the same, water rights, the right of ingress and egress, and the right to purchase surface acreage, all in accordance with the terms of an Agreement of even date herewith entered into between the parties hereto. The Owners also grant to the Company during said periods the right to prospect for, explore and examine all said minerals, mineral substances, metals, ores, ore-bearing materials, and rock of every kind in, under or on all of said premises, including the right to enter thereupon, to use available water and to remove samples, in accordance with the terms of the last mentioned Agreement. The terms of this option Agreement are fully set out in the Agreement of even date herewith, which is here referred to and made a part hereof as if fully set out at length.

The term "parties of the first part" as herein used shall be construed to mean, "the parties of the first part, their heirs, assigns and successors in title howsoever such succession may be accomplished" and the term "party of the second part" shall be construed to mean "party of the second part, its assignees, designees and successors in title howsoever such succession may be accomplished."

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THE NEW JERSEY ZINC COMPANY
160 FRANKLIN, NEW YORK 13

IN WITNESS WHEREOF the parties of the first part have hereunto set their hands and seals the day and year first above written.

_____ (Seal)
Evelyn A. Coleman

_____ (Seal)
J. A. Coleman

STATE OF VIRGINIA,

COUNTY OF BUCKINGHAM, to-wit:

I. , a Notary Public in and for the County aforesaid, in the State of Virginia, whose commission expires on the day of , 19 , hereby certify that Evelyn A. Coleman and J. A. Coleman, her husband, whose names are signed to the aforegoing writing bearing date on the day of , 19 have this day personally appeared before me in my said County and acknowledged the same.

Given under my hand this day of , 1955.

_____
Notary Public

THE NEW JERSEY ZINC COMPANY
160 FRONT ST., NEW YORK 38

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L E A S E

This AGREEMENT made and entered into as of the 3rd day of August, 1955, by and between R. S. BURRUSS, JR. and MARGARET B. BURRUSS, husband and wife, parties of the first part, hereinafter called the "Owners", and THE NEW JERSEY ZINC COMPANY, a New Jersey corporation, qualified to do business in Virginia, party of the second part, hereinafter called the "Lessee".

W I T N E S S E T H :

In consideration of the sum of One dollar ($1.00), the receipt whereof is hereby acknowledged, and other good and valuable considerations, Owners grant to Lessee the rights hereinafter set forth with respect to the following described lands and premises situated in the Francisco Magisterial District of Buckingham County, Virginia:

(A.) All those certain Two (2) parcels of land, respectively comprising Eighty (80) and Fifty-six (56) Acres, more or less, and together known as the Gary tract, being the same parcels as conveyed to R. S. Burruss, Sr., by Irene E. Gary, a widow, by deed dated December 27, 1941, and of record in the Clerk's Office of Buckingham County, Virginia, in Deed Book 41 at page 295, and to which reference is herein made for a more complete description thereof;

(B.) All that certain parcel of land comprising Three hundred ninety-two (392) Acres, more or less, and known as the Bondurant tract, being the same tract as conveyed to R. S. Burruss Sr. by James T. Carter, et al, by deed dated December 21, 1934, and of record in the Clerk's Office of Buckingham County, Virginia, in Deed Book 36 at page 259, and to which reference is herein made for a more complete description thereof, excepting herefrom, however, Twenty-eight One-hundredths (28/100) of an acre as conveyed by R. S. Burruss, Jr. to Eugene C. Flood by deed dated June 23, 1950.

THE NEW JERSEY ZINC COMPANY
160 FRONT ST., NEW YORK 38, N.

(C.) All that certain parcel of land comprising Three hundred five (305) Acres, more or less, and known as the Maxey tract, being the same tract as conveyed to R. S. Burruss, Sr. by James T. Carter, et al, by deed dated December 21, 1934, and of record in the Clerk's Office of Buckingham County, Virginia, in Deed Book 36 at page 259, and to which reference is herein made for a more complete description thereof,

During the first year of this Agreement, with the privilege of extension for four (4) additional annual periods, Owners grant to Lessee the exclusive right to prospect for, explore and examine all minerals, metals, ores, ore-bearing materials and rock of every kind, in, under or on said premises, the right of ingress and egress, the right to use water thereon and to remove samples in connection therewith. Owners further grant Lessee the exclusive right, during three (3) successive twenty-year periods, if this Agreement be so extended, to prospect for, mine, mill and remove all the minerals, mineral substances, metals, ores, ore-bearing materials and rock of every kind, in, under or on said premises, water rights, rights of ingress and egress, and the right to use necessary surface.

The parties hereto have entered into a written lease and agreement of even date herewith setting out fully the rights and privileges granted in this Agreement and the terms and conditions upon which they may be exercised, and the parties hereto refer to said lease and agreement for a more complete description of these rights and privileges and the terms and conditions upon which they may be exercised, as fully as if said lease and agreement was herein set out at length.

The term "parties of the first part" as herein used, shall be construed to mean "the parties of the first part, their heirs, assigns and successors in title howsoever such succession may be accomplished" and the term "party of the second part" shall be

160 Fifth St., New York

construed to mean "the party of the second part, its assignees, designees and successors in title howsoever such succession may be accomplished".

IN WITNESS WHEREOF, the parties hereto have executed this Agreement as of the day and year first above written.

_____ (L.S.)
R. S. Burruss, Jr.

_____ (L.S.)
Margaret E. Burruss

THE NEW JERSEY ZINC COMPANY

S E A L

By _____
S.S.Goodwin, Vice President

S.V.

ATTEST:

_____
Walter R. Anyan, Secretary

THE NEW JERSEY ZINC COMPANY
160 FRONT ST., NEW YORK 38, N. Y.

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STATE OF VIRGINIA

CITY OF LYNCHBURG

I, Cecil E. Stout, a Notary Public in the State of Virginia, City of Lynchburg, do hereby certify that R. S. Burruss, Jr. and Margaret B. Burruss, his wife, whose names are signed to the foregoing Agreement bearing date the 23rd day of August, 1955, personally appeared before me on this date in my City aforesaid and acknowledged the due execution of the said Agreement.

Witness my hand and official seal this 7th day of September, 1955.

S E A L

Cecil E. Stout
Notary Public

My commission expires July 23, 1957

STATE OF NEW YORK :
: SS.
COUNTY OF NEW YORK :

I, Larry Rosenthal, a Notary Public in and for the County and State aforesaid, do certify that B. S. Goodwin and Walter R. Anyan, whose names, as Vice President and Secretary respectively, of The New Jersey Zinc Company, are signed to the foregoing Agreement bearing date the 23rd day of August, 1955, have acknowledged the same before me in my County and State aforesaid.

Witness my hand and official seal this 5 day of September, 1955.

S E A L

Larry Rosenthal
Notary Public

My commission expires

THE NEW JERSEY ZINC COMPANY

EXHIBIT "B"

JOY MANUFACTURING COMPANY
900 WOODLAND AVENUE
MICHIGAN CITY, INDIANA

EXECUTIVE OFFICES
HENRY W. OLIVER BUILDING
PITTSBURGH 22, PA.

January 29, 1957

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DATE	INITIALS	CODE

New Jersey Zinc Company
160 Front St.
New York 1, N. Y.

Attention: Mr. A. E. Turner
Asst. Manager of Purchasing

Subject: Diamond Drilling - 1-X-524
Bondurant Prospect - Buckingham County, Va.

Gentlemen:

In compliance with your letter dated January 14th, we quote below prices and conditions covering a minimum of 1,500 feet of drilling at the above prospect situated 70 miles north of Mineral, Virginia.

From Surface to a depth of 1,000 ft. @$3.00 per ft.

Size of Core - AX

Maximum depth holes - 1,000 ft.

Direction of Holes - 45° to vertical

Maximum distance to water - 1,000 ft.

New Jersey to furnish core boxes.

Joy to haul core boxes to field storage near drill.

We will furnish for this proposed drilling, one Joy #12-B gasoline driven core drill complete with operating equipment, and will conduct the drilling operations on the basis of two 8-hour shifts per day and six days per week.

Yours very truly,

JOY MANUFACTURING COMPANY

W. J. Pilarski

W. J. Pilarski, Mgr.
Contract Drill Division

WJP/et

SPRAGUE & HENWOOD, Inc.
Contractors for DIAMOND DRILLING
MINERAL EXPLORATION • SOIL SAMPLING • PRESSURE GROUTING

EXECUTIVE OFFICES & PLANT
221 WEST OLIVE STREET
SCRANTON, PENNSYLVANIA
Telephone Diamond 4-8507

February 5, 1957

The New Jersey Zinc Company
160 Front Street
New York 38, New York

RE: Diamond Drilling -
Virginia Piedmont -
Mineral, Virginia 1-X-524

Attention: Mr. A. E. Turner, Asst. Mgr. of Purchasing

Gentlemen:

We are pleased to quote you on Diamond Drilling at the Bondurant Prospect, near Andersonville in Buckingham County, Virginia, as per your letters dated January 14 and 17,1957. Our Contract Representative, Mr. L. E. Mark, met your Mr. E. L. Weinberg Tuesday, January 29, and went over the proposed drilling sites. We are pleased to quote you on this work as follows:

ITEM NO.

1 - For drilling AX holes to a maximum depth of 1,000 feet based on a minimum of 1,500 feet of drilling.

AX HOLES

0'	to	500'	-	$ 3.90 per lin. ft.
500'	to	750'	-	$ 4.10 per lin. ft.
750'	to	1000'	-	$ 4.35 per lin. ft.

2 - Reaming and casing holes - reaming holes AX to BX and inserting AX casing - $ 1.50 per lin. ft.

3 - Casing lost in holes, or left in holes at your request --
AX casing - $ 1.70 per lin. ft.
(drive pipe for other sizes AT COST)

4 - For surveying holes, acid tube method or delays caused by you - for use of drill crew - $12.00 per hour

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The above prices do not include core boxes which we understand you will furnish.

We would use Sprague & Henwood, Type No. 40 C Skid Mounted Drilling Rig as we understand many of these holes will be drilled at an angle.

We have the necessary equipment and experienced personnel available to take care of this work.

THE NEW JERSEY ZINC COMPANY
160 FRONT ST., NEW YORK 38, N.Y.

TO:
The New Jersey Zinc Company

February 5, 1957

Payments to be made within thirty (30) days after date of invoice.

We trust you will find this quotation acceptable.

We wish to thank you for the opportunity of quoting on this work.

Very truly yours,

SPRAGUE & HENWOOD, INC.

Wm. J. Schank
Vice President

cgw
Enclosure: In Triplicate

DEPT. PURCHASING
FEB 5 1957

THE NEW JERSEY ZINC COMPANY
160 FRONT ST., NEW YORK 33, N. Y.

Longyear

E. J. LONGYEAR COMPANY
General Offices, Foshay Tower
Minneapolis 2, Minnesota, U. S. A.
TELEPHONE: FEDERAL 2-2447 • CABLE LONGCO

February 22, 1957

The New Jersey Zinc Company
160 Front Street
New York 38, New York

Attn: Mr. A. E. Turner, Assistant Manager Purchasing

DIAMOND DRILLING - VIRGINIA PIEDMONT - MINERAL, VIRGINIA - 1-X-524

Gentlemen:

Confirming our telephone conversation of yesterday, we are prepared to carry out the drilling operations which you are presently considering in connection with the subject exploration program at the prices set forth in our proposal dated February 12, 1957, even though the minimum footage drill may be less than the 13,000 feet originally planned.

Trusting that we will have an opportunity to make our services available for this program, we remain,

Sincerely yours,

E. J. LONGYEAR COMPANY

M. J. Gleason

Manager
Contract Drilling Division

M. J. Gleason:vr

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DATE	INITIALS	CODE

THE NEW JERSEY ZINC COMPANY
160 FRONT ST., NEW YORK 38, N. Y.

Longyear

E. J. LONGYEAR COMPANY
General Offices, Foshay Tower
Minneapolis 2, Minnesota, U. S. A.
TELEPHONE. FEDERAL 2-2447 • CABLE LONGCO

February 12, 1957

The New Jersey Zinc Company
160 Front Street
New York 38, New York

Attention: Mr. A. E. Turner

DIAMOND DRILLING - VIRGINIA PIEDMONT - MINERAL, VIRGINIA - 1-X-524

Gentlemen:

1. Pursuant to your letters of January 14 and 17, we are pleased to submit below proposal for your contemplated exploratory drilling program which is to be carried out in the above-described district.

2. We understand that this program will consist of a minimum of 13,000 feet of diamond drilling involving four locations, with specifications as follows:

a) Bondurant Prospect, Buckingham County, Virginia
Location - 70 miles south of Mineral, Virginia
Formation - country rock - biotite quartz schist
Angle of holes - vertical or inclined to as much as 45°.
Depth of holes will vary from 300 to 1000 feet - average 300 to 500 feet.
Size of core - AX
Water supply - available within a maximum of 1,000 feet of any proposed drill hole
Minimum footage - 1500 feet

b) Austin Run, Stafford County, Virginia
Location - 55 miles north of Mineral, Virginia
Formation - country rock - feldspathic, quartz gneiss
Angle of holes - vertical or inclined to as much as 45°.
Depth of holes will vary from 300 to 1000 feet - average 300 to 500 feet
Size of core - AX
Water supply - maximum distance to water 1200 feet
Minimum footage - 1500 feet

c) Walzinco Mine, Spotsylvania County, Virginia
Location - ten miles north of Mineral, Virginia
Formation - country rock - sericite-quartz schist
Angle of holes - vertical or inclined as flat as 45°.
Depth of holes will vary 300 to 1000 feet - average 300 to 500 feet.
Size of core - AX
Water supply - maximum distance to water will be 3500 feet
Minimum footage - 3000 feet

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PURCHASING DEPT.

THE NEW JERSEY ZINC COMPANY
160 FRONT ST., NEW YORK 38, N. Y.

d) Hunter Property, Louisa County, Virginia
Location - in and adjoining the town of Mineral, Virginia
Formation - sericite-quartz schist
Angle of holes - vertical or inclined as flat as 45°.
Depth of holes will vary from 300 to 1000 feet - average 300 to 500 feet.
Size of core - AX
Water Supply - maximum distance to water 2,000 feet.
Minimum footage - 4,000 feet

3. For this work we propose to furnish one Longyear gasoline-driven, truck-mounted diamond core drill, together with the necessary accessory equipment required to accomplish the work as now planned; and further to furnish all other service equipment required for moving and for supplying water for drilling purposes. We further propose to operate the drill on a double shift basis, six days per week.

4. We will carry public liability insurance covering personal injury and property damage, and Workmen's Compensation insurance, and also, all-risk insurance on the drilling equipment protecting against loss by theft, fire, flood, land-slides and other similar hazards.

We will also assume and pay any and all Old Age Benefit, Unemployment and Social Security taxes and contributions imposed by federal or state authorities.

Certificates showing the coverage referred to will be furnished upon request.

5. Based upon the conditions as outlined above, we are pleased to quote as follows:

a) Overburden Drilling

0 to 100 feet in depth, measured from the collar of the hole.....$2.90 per foot

b) Diamond Core Drilling

Top of Ledge to 1000 feet in depth, measured from the collar of the hole -

AX-size, recovering core approximately 7/8" in diameter.....$2.60 per foot

AX-size, and/or EX wire line, recovering core approximately 1-3/16" in diameter.....$2.70 per foot

BX-size, recovering core approximately 1-5/8" in diameter.....$3.20 per foot

NX-size, recovering core approximately 2-1/8" in diameter.....$3.75 per foot

c) Drill hole surveying using Tro-Pari instrument with instrument furnished by you.....$5.00 per hour

RECEIVED FEB 13 1957 PURCHASING DEPT.

THE NEW JERSEY ZINC COMPANY
160 FRONT ST., NEW YORK 38, N. Y.

d) Hauling drill core from drill hole location to drill storage sheds.....$3.25 per hour

e) Capping drill holes.....$3.00 per hour, plus cost of caps and other materials used in capping operation.

f) Casing left in drill holes at your request -

EX-size.....$1.47 per foot
AX-size.....$1.54 per foot
BX-size.....$1.96 per foot
NX-size.....$2.66 per foot

g) Cleaning up of drill hole locations to be carried out at the sole expense of the Longyear Company.

h) Reaming and casing, when required, will be carried out at the sole expense of the Longyear Company.

6. The above-quoted drilling rates are based on wages currently being paid in the southeastern district. If during the life of this project it becomes necessary for us to adjust the wages being paid our workmen because of demands of labor union or otherwise, it is understood and agreed that the Longyear Company reserves the right to increase drilling rates to cover resultant additional operating expenses.

7. Drill cores are to be placed in receptacles furnished by you at each drill hole location and transported to point of permanent storage as provided for herein.

8. Invoices covering work performed will be prepared in accordance with your instructions.

9. We appreciate being afforded the opportunity to consider this work. If our proposal is found acceptable, we are prepared to furnish the equipment from our Max Meadows warehouse, and commence the drilling operations promptly after receipt of official notice to proceed.

Sincerely,

H. J. LONGYEAR COMPANY

Manager
Contract Drilling Division

FEB 13 1957
PURCHASING DEPT

M.J.Gleason:bal

ACCEPTED:

THE NEW JERSEY ZINC COMPANY

THE NEW JERSEY ZINC COMPANY
160 FRONT ST., NEW YORK, N.Y.

By: _____

Date: _____

Longyear

E. J. LONGYEAR COMPANY
General Offices, Foshay Tower
Minneapolis 2, Minnesota, U. S. A.
TELEPHONE: FEDERAL 2-2447 • CABLE LONGCO

February 12, 1957

The New Jersey Zinc Company
160 Front Street
New York 38, New York

Attention: Mr. A. E. Turner

DIAMOND DRILLING - VIRGINIA PIEDMONT - MINERAL, VIRGINIA - 1-X-524

Gentlemen:

1. Pursuant to your letters of January 14 and 17, we are pleased to submit below proposal for your contemplated exploratory drilling program which is to be carried out in the above-described district.

2. We understand that this program will consist of a minimum of 13,000 feet of diamond drilling involving four locations, with specifications as follows:

a) Bondurant Prospect, Buckingham County, Virginia
Location - 70 miles south of Mineral, Virginia
Formation - country rock - biotite quartz schist
Angle of holes - vertical or inclined to as much as 45°.
Depth of holes will vary from 300 to 1000 feet - average 300 to 500 feet.
Size of core - AX
Water supply - available within a maximum of 1,000 feet of any proposed drill hole.
Minimum footage - 1500 feet

b) Austin Run, Stafford County, Virginia
Location - 55 miles north of Mineral, Virginia
Formation - country rock - feldspathic, quartz gneiss
Angle of holes - vertical or inclined to as much as 45°.
Depth of holes will vary from 300 to 1000 feet - average 300 to 500 feet
Size of core - AX
Water supply - maximum distance to water 1200 feet
Minimum footage - 1500 feet

c) Valzinco Mine, Spotsylvania County, Virginia
Location - ten miles north of Mineral, Virginia
Formation - country rock - sericite-quartz schist
Angle of holes - vertical or inclined as flat as 45°.
Depth of holes will vary 300 to 1000 feet - average 300 to 500 feet.
Size of core - AX
Water supply - maximum distance to water will be 3500 feet
Minimum footage - 3000 feet

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THE NEW JERSEY ZINC
160 FRONT ST.

d) Hunter Property, Louisa County, Virginia
Location - in and adjoining the town of Mineral, Virginia
Formation - sericite-quartz schist
Angle of holes - vertical or inclined as flat as 45°.
Depth of holes will vary from 300 to 1000 feet - average 300 to 500 feet.
Size of core - AX
Water Supply - maximum distance to water 2,000 feet.
Minimum footage - 4,000 feet

3. For this work we propose to furnish one Longyear gasoline-driven, truck-mounted diamond core drill, together with the necessary accessory equipment required to accomplish the work as now planned; and further to furnish all other service equipment required for moving and for supplying water for drilling purposes. We further propose to operate the drill on a double shift basis, six days per week.

4. We will carry public liability insurance covering personal injury and property damage, and Workmen's Compensation insurance, and also, all-risk insurance on the drilling equipment protecting against loss by theft, fire, flood, land-slides and other similar hazards.

We will also assume and pay any and all Old Age Benefit, Unemployment and Social Security taxes and contributions imposed by federal or state authorities.

Certificates showing the coverage referred to will be furnished upon request.

5. Based upon the conditions as outlined above, we are pleased to quote as follows:

a) Overburden Drilling

0 to 100 feet in depth, measured from the collar of the hole.....$2.90 per foot

b) Diamond Core Drilling

Top of Ledge to 1000 feet in depth, measured from the collar of the hole -

AX-size, recovering core approximately 7/8" in diameter.....$2.60 per foot

AX-size, and/or BX wire line, recovering core approximately 1-3/16" in diameter.....$2.70 per foot

BX-size, recovering core approximately 1-5/8" in diameter.....$3.20 per foot

NX-size, recovering core approximately 2-1/8" in diameter.....$3.75 per foot

c) Drill hole surveying using Tro-Pari instrument with instrument furnished by you.....$5.00 per hour

RECEIVED FEB 13 1957 PURCHASING DEPT.

THE NEW JERSEY ZINC COMPANY
160 FRONT ST., NEW YORK 38, N. Y.

d) Hauling drill core from drill hole location to drill storage sheds.....$3.25 per hour

e) Capping drill holes.....$3.00 per hour, plus cost of caps and other materials used in capping operation.

f) Casing left in drill holes at your request -

EX-size.....$1.47 per foot
AX-size.....$1.54 per foot
BX-size.....$1.96 per foot
NX-size.....$2.66 per foot

g) Cleaning up of drill hole locations to be carried out at the sole expense of the Longyear Company.

h) Reaming and casing, when required, will be carried out at the sole expense of the Longyear Company.

6. The above-quoted drilling rates are based on wages currently being paid in the southeastern district. If during the life of this project it becomes necessary for us to adjust the wages being paid our workmen because of demands of labor union or otherwise, it is understood and agreed that the Longyear Company reserves the right to increase drilling rates to cover resultant additional operating expenses.

7. Drill cores are to be placed in receptacles furnished by you at each drill hole location and transported to point of permanent storage as provided for herein.

8. Invoices covering work performed will be prepared in accordance with your instructions.

9. We appreciate being afforded the opportunity to consider this work. If our proposal is found acceptable, we are prepared to furnish the equipment from our Max Meadows warehouse, and commence the drilling operations promptly after receipt of official notice to proceed.

Sincerely,

E. J. LONGYEAR COMPANY

Manager
Contract Drilling Division

PURCHASING DEPT. FEB 13 1957

M.J.Gleason:bal

ACCEPTED:

THE NEW JERSEY ZINC COMPANY

THE NEW JERSEY ZINC CO. 160 FRONT ST. N.Y.

By:_____

Date:_____

VIA A

Mr. George C. Selfridge, Chairman
DMEA Operating Committee
Department of the Interior
Washington 25, D. C.

PROJECT SUMMARY REPORT

By: J. W. Alt November 13, 1958

1. Docket No. DMEA-4674 (Zinc-Lead-Copper)
Contract No. Idm-E1103
Property: Bondurant Area
Buckingham County, Virginia

Operator: The New Jersey Zinc Company
160 Front Street
New York 38, New York

Operator's Property Rights: Lessee and Optionee.
Option Agreement - dated September 20, 1955.
Lease - dated August 23, 1955

2. Contract dated June 27, 1957. To complete - 12-27-57

Work Authorized

Diamond drill 6 holes and it is estimated that the holes will average 400 feet in depth. Not more than 2400 feet of drilling shall be performed.

Estimated Costs of the Project

Actual Costs

Category (1) Independent Contracts

Overburden drilling to 100-foot depth, approximate 360 feet, @ $2.90/ft.	$1,044.00	
Diamond drilling to 500-foot depth, approximately 2,040 feet, @ $2.70/ft. AX size	5,508.00	$6,552.00
Diamond drilling with EX size bit is allowable @ $2.60/ft.		

Fixed Unit Costs

Fixed Unit Costs

Incidental allowance for each foot of drilling completed, 2,400 feet @ $0.58/ft.	$1,392.00	
Core boxes - 50 @ $2.50/ea. (wooden)	125.00	
Sample analyses - 100 @ $3.00/each sample	300.00	$1,817.00
Estimated Total Cost of Project (Rounded to)		$8,370.00
Government's participation, 50%		$4,185.00

Amendments

No. 1 Dated November 13, 1957, effective June 27, 1957.

Change in the Description of the Work.

Work Completed

Overburden drilling, 340 feet, @ $2.90/ft.	$ 986.00
Diamond drilling (7 holes), 2,029 feet, @ $2.70/ft.	5,478.30
Incidental allowance per foot drilled, 2,369 feet, @ $0.58/ft.	1,374.00
50 Core boxes @ $2.25/box	125.00
17 Sample analysis, @ $3.00/each	51.00
Total Cost of the Project	$8,014.32
Government's participation, 50%	$4,007.16

Work on the project under the terms of the contract was started on July 26, 1957 and was completed on September 30, 1957.

3. Audit - Report of Review dated February 4, 1958.

Total cost as billed by Contractor	$8,072.02
Less Exceptions	70.20
	8,001.82
Acceptable cost not claimed	12.50
Total accepted cost	$8,014.32
Government's participation, 50%	$4,007.16

Operator's final report dated November 1957.
Field Team's final report dated October 24, 1958.

4. Certification of Discovery or Development - None issued.

No certification was made as there was no ore discovered, and was not recommended by the Field Team.

5. Comments

Actual drilling operations were carried out in a workmanlike manner. Good practice characterized the handling, storing and logging of core by the company geologists. Maps and sections accompanying the monthly reports were of high quality, but the same cannot be said of the cost reports. In this connection, practically no consideration was given the terms of the contract and advised corrections were not reflected in following reports.

Zinc, lead, and copper mineralization was intercepted in six holes, the core from one hole containing only zinc mineralization. The Field Team has calculated that this exploration has resulted in finding a total of 747,682 tons of mineralized material with an average per ton content of 0.87% zinc, 0.25% lead, 0.06% copper, 0.24 ounces of silver and 0.01 ounces of gold. The mineralization has been taken to extend from the bottom of the overburden down to sea level, an average vertical distance of 330 feet.

In consideration of the comparatively small tonnage, together with the low mineral contend, the Field Team recommends that no certification of this contract be made.

Further exploration on this property with Government assistance is not warranted.

J. W. Ait

J. W. Ait

JWA/er
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DMEA Form 17
Feb. 58

DEFENSE MINERALS EXPLORATION ADMINISTRATION

WORK COMPLETED ANALYSIS

After final audit or review report is received, prepare original only and file in official docket

Operator THE NEW JERSEY ZINC COMPANY		Actual Cost	X
State VIRGINIA		Agreed Unit Cost *	X
Final Report of Audit		Commodity	Docket No. DMEA-4674
Final Report of Review	X	ZINC-LEAD-COPPER	Contract No. Idm-E1103

Operation	Authorized by Contract and Amendments		Completed		Net cost after sale of Government Property
	Units	Cost	Units	Cost	
Drifting & Crosscutting					
Raising					
Shafts					
Overburden Drilling and Diamond Drilling to 100 foot depth	360' @ $2.90/ft.	$1,044.00	340'	$ 986.00	
Diamond Drilling to 500 foot depth (AX) (Specify) EX @ $2.60/ft.	2,040' @ $2.70/ft.	5,508.00	(2,369') 2,029'	5,478.30	$6,464.30
Incidental allowance per foot drilled, 2,400' @ $0.58/ft. *		1,392.00	2,369'	1,374.02	1,374.02
Underground Excavation					
Core Boxes (wooden) 50 @ $2.5ea. *		125.00	50	125.00	125.00
Operating Equipment Purchased					
Surface Rehabilitation & Repairs					
Underground Rehabilitation					
New Building, Improvements, etc.					
Other (Specify) Sample Analyses 100 @ $3.00 each *		300.00	17	51.00	51.00
Totals		$ 8,370.00		$ 8,014.32	* $ 8,014.32

* Net cost total must agree with final report of audit or review.

Prepared by W. P. Klugescheid Date 10/10/58.

31390

☒ Audited 2/4/58. R.R. WORK ANALYSIS SHEET - DMEA PROJECT ☒ Actual Cost

☐ Certified No. Analysis as of Sept 1957 * ☒ Agreed Unit Costs

Incl. Voucher for Audit

Name The New Jersey Zinc Company Docket No. DMEA-4674

State Buckingham County, Virginia Commodity Zinc-Lead-Copper. Idm-E No. E1103

OPERATION	AUTHORIZED Units	AUTHORIZED Cost	COMPLETED Units	COMPLETED Cost	NET COST
Drifting & Crosscutting					
Raising					
Total Drilling Cost.			2,369'		$7,838.32
Overburden drilling and Diamond drilling to 100 foot Depth	360' @ $2.90/ft.	$1,044.00	340'	986.00	
Drilling (Specify) Diamond to 500 foot depth (Ex-$2.60)	2,040' @ $2.70/ft.	5,508.00	2,029'	5478.30	
Incidental allowance per foot drilled 2,400' @ $0.58/ft. *		1,392.00	2,369'	1,374.02 ✓	
Underground Excavation					
Core Boxes (wooden) * 50 @ $2.50 each		125.00	50	125.00 ✓	125.00
Operating Equipment Purchased					
Surface Rehabilitation & Repairs					
Underground Rehabilitation					
New Building, Improvements, etc.					
Other (Specify) Sample Analyses 100 @ $3.00 each *		300.00	17	51.00 ✓	51.00
Totals		$8,370.00		$8,014.32	$8,014.32

Checks Audit

Date of Contract--June 27, 1957.
Completion date December 27, 1957.
Expiration date of Royalty Payments June 27, 1987.
Operator's Final Report recieved--January 8, 1958.
Terminal Letter written--July 16, 1958.

Prepared by W. K. Kluegescheid

7162

actual costs -

Overburden drilling to 100' depth,
approx. 360' @ 2.90/ft. 1,044.00

D.D. to 500' depth approx. 2,040' 5,508.00
@ 2.70/ft (AX) EX - 2.60/ft.

Fixed Unit costs
Incidental Allowance per foot drilled
2,400' @ $0.58/ft. 1,392.00

Core boxes 50 @ 2.50 (wooden) 125.00

Sample Analyses - 100 @ 3.00 300.00

$8,370.00

Spent. 1957 ~~July + Aug~~ Sept

Overburden Drilling @ 2.90/ft. ~~177'~~ 340'		986.00 ~~513.30~~
D.D. to 500' depth @ 2.70/ft. ~~951'~~ 2,029'		5,478.30 ~~2,567.70~~
Fixed unit costs		
Core boxes @ 2.50	50	112.50
Incidental allowance @ 0.58/ft. ~~128'~~ 2,369'		1374.02 ~~654.29~~
		7,950.82 ~~3,847.74~~

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF MINES
WASHINGTON 25, D. C.

November 3, 1958

Re: DMEA 4674, Idm E1103
New Jersey Zinc Co.
Bondurant Area
Buckingham County, Virginia

Memorandum

To: W. R. Griswold, OME

From: O. M. Bishop, USBM

Subject: Review of Field Team memorandum of October 27, transmitting final project report dated October 24, 1958

I have reviewed the field team memorandum and the final report on the Bondurant area. Although mineralization was encountered in each of the seven holes, the lead, copper, zinc, gold, and silver were present in such limited concentrations and over such limited areal extent that the material does not constitute ore at present or in the foreseeable future.

There is a possibility that the deposit might be worthwhile if the pyrite, pyrrhotite concentrations are sufficient. A search of the facts transmitted shows no data on the iron sulfides except the note that pyrite and pyrrhotite both exceed the other sulfides in abundance.

I suggest the field team be asked to check with the operator, or otherwise secure sulfur analysis of the core. At some future date this may be of considerable interest, and possibly of importance.

O. M. Bishop

O. M. Bishop

Copy to Division of Minerals
Branch of Base Metals (2)
Thor Kiilsgaard
F. D. Lamb
F I L E S

UNITED STATES
DEPARTMENT OF THE INTERIOR
OFFICE OF MINERALS EXPLORATION
ROOM 2-B POST OFFICE BLDG.
KNOXVILLE 2, TENN.

October 27, 1958

OFFICIAL FILE COPY
O. M. E.
RECEIVED OCT 29 1958

DATE	INITIALS	CODE
10/29	C	
10/29	es	220
		130
		110
11/4	es	130
		220

Memorandum

To: Operating Committee, OME - Washington, D.C.

From: Field Team, OME - Region V - Knoxville, Tennessee

Subject: DMEA-4674, Idm-E1103, zinc-lead, copper.
The New Jersey Zinc Company, New York, N.Y.
Bondurant Area, Buckingham County, Virginia

Enclosed are the original and two copies of the Field Team final report on the subject exploration project.

None of the seven blocks of mineralized ground indicated by this exploration can be considered as even marginal ore, and therefore certification of discovery is not recommended.

Robert A. Laurence
Robert A. Laurence
Executive Officer, OME
Region V

V. J. Lynch
V. J. Lynch, Member
Bureau of Mines

Reviewed by
OME OPERATING COMMITTEE
11/4/58
(date)

UNITED STATES

DEPARTMENT OF THE INTERIOR

OFFICE OF MINERALS EXPLORATION

OFFICIAL FILE COPY
O. M. E.
RECEIVED OCT 29 1958

DATE	INITIALS	CODE

FINAL REPORT

DMEA-4674, Idm-E1103, BONDURANT AREA (zinc, lead, copper)
Buckingham County, Virginia

FIELD TEAM
FINAL REPORT.

H. L. Burmeister, Mining Engineer
U. S. Bureau of Mines

Helmuth Wedow, Jr., Geologist
U. S. Geological Survey

October 24, 1958

Reviewed by
OME OPERATING COMMITTEE
11/4/58
(date)

FIELD TEAM FINAL REPORT ON COMPLETED CONTRACT

Docket DMEA-4674 (zinc, lead, copper), Contract No. Idm-E1103
New Jersey Zinc Company, Bondurant Area
Buckingham County, Virginia

by

Helmuth Wedow, Jr. and H. L. Burmeister

Name and Location of Property

The area explored is designated as the Bondurant Area due to the old Bondurant mine being located about 6,000 feet southwesterly of this project area.

To reach the exploration site from Sprouse's Corner at the intersection of U. S. Routes 15 and 60, proceed southwesterly on Route 640 to the junction of Route 638, a distance of 6-1/8 miles. From this point follow a woods road to the left for about 4,500 feet to the drilling area. Location of the property is shown on Fig. 1 and drill hole locations in relation to property lines on Fig. 2.

Summary and Recommendations

Exploration under this contract started July 26, 1957 and was completed September 30, 1957. The contract provided for core drilling a total of 2,400 feet in 6 holes at a total estimated cost of $8,370.00. Amendment No. 1 provided for the addition of one drill hole. A total of 2,369 feet were drilled in seven holes at a total accepted cost of $8,014.32 in which the Government's 50 percent participation amounted to $4,007.16.

Helmuth Wedow, Jr., Geologist, U. S. Geological Survey
H. L. Burmeister, Mining Engineer, U. S. Bureau of Mines

Zinc, lead, and copper mineralization was intercepted in six drill holes, the core from one hole containing only zinc mineralization. The Field Team has calculated that this exploration has resulted in finding a total of 747,682 tons of mineralized material with an average per ton content of 0.87 percent zinc, 0.25 percent lead, 0.06 percent copper, 0.24 ounces of silver and 0.01 ounces of gold. The mineralization has been taken to extend from the bottom of overburden down to sea level, an average vertical distance of 330 feet.

In consideration of the comparatively small tonnage, together with the low mineral content, the Field Team recommends that no certification of this contract be made.

Description of Work

Core drilling under this contract started with hole 72B on July 26, 1957 and was finished September 30, 1957 with completion of drill hole 78B. The contract specified a maximum of 2,400 feet of core drilling in 6 holes. Amendment No. 1 increased the number of holes to seven.

The initial drill hole 72B, was collared as indicated on the examination report and contract maps. The five remaining drill holes specified in the contract were relocated to compensate for a higher dip angle than had been anticipated. The seventh or added hole (78B) was collared 370 feet northeast of hole 77B, as mineralization was indicated in previous holes to increase in a northeasterly direction. (Figs. 1 and 2) Average depth of overburden in the 7 holes was 51.6 feet and average total depth of hole was 338.4 feet.

All drilling was done with truck mounted BXWL equipment. After a total of 1,396 feet had been drilled in three holes, it was found that advance had averaged 55 feet per shift while actually drilling, including two moves the rate of advance averaged 42 feet per shift.

Geologic Setting

The Bondurant property is located in the belt of Precambrian crystalline and metamorphic rocks of the Piedmont physiographic province. Surface mapping by the Operator's geologists showed that the immediate area proposed for exploration by drilling is crossed by a band of hematitic sericite-quartz schist overlain by a garnet-chlorite-sericite-quartz schist and underlain by feldspar gneiss and schist with chlorite, sericite, and quartz in varying ratios. The average strike of the foliation or schistosity of these rocks is about N. 45° E.; the dip is from about 70° SE. to vertical. The few structural observations obtained suggest that the area is on the west limb of an overturned anticline. Rolls in the schistosity plunge south or southwest, whereas certain crinkle lineations plunge northeast. A dolerite dike transects the schists in the northeast end of the drilling area with a general trend slightly west of north.

The stratigraphic details of the core obtained from drilling are summarized in Table 1. The average strike of the schistosity as obtained from the drilling data is N. 42° E. The average dip is 62° SE.

Mineralization

All seven holes drilled in the Bondurant area encountered some mineralized ground. The sulfide minerals recognized are, in order of abundance, pyrite, pyrrhotite, sphalerite, galena, and chalcopyrite. Much of the pyrite and pyrrhotite occurs as disseminations throughout most of the stratigraphic units penetrated, but they are also relatively concentrated in the zone wherein the base-metal minerals occur. The base-metal zone appears to follow a bed of sericite-quartz schist that may well be a highly altered quartzite. As seen from the assay results shown in Table II and in Figure 3, the amounts of base metals (zinc-lead-copper) in the mineralized zone are not sufficient to class the ground as ore. The mineralization appears to be strongest in the middle third of the strike length tested and weakest in the southwest third. There also appears to be some lateral zoning as shown by the increase in the relative amount of copper (see Zn:Pb:Cu ratio chart, fig. 3) toward the northeast. Insufficient data are available to indicate the significance of this increase.

Little is known of the structures controlling the localization of the mineralization. It is likely, however, that the rolls in the schistosity may have been a controlling factor, as well as the lithologic nature of the host stratigraphic zone. If such is the case, then a mineralized shoot will probably plunge to the south or southwest paralleling the rolls. This hypothesis was not tested by deeper down dip drilling, as the grade of the mineralization encountered in the shallower exploration was not sufficient to warrant such a test. Also, as the amount of mineralization discovered was sufficient to account for the geochemical

and geophysical anomalies that led to the drilling, the possibility for an increase in grade down dip or down plunge is highly problematical.

Tonnage of Mineralized Rock

The tonnage of mineralized rock discovered by drilling under this contract is shown block by block in Table III. The calculations made by the Field Team compare closely with those made by the Operator. The extremely low grade of the mineralized zone does not warrant classification of the ground as ore.

Expenditures

Total approved	$8,370.00
Total accepted cost of Project	8,014.32
Government's share of cost at 50%	4,007.16
Government's share unexpended	177.84
Value of production during exploration	None
Royalty due the Government	None

Efficiency of Operations

Actual drilling operations were carried out in a workmanlike manner. Good practice characterized the handling, storing and logging of core by the company geologists. Maps and sections accompanying the monthly reports were of high quality, but the same cannot be said of any portion of the cost reports. In this connection, practically no consideration was given the terms of the contract and advised corrections were not reflected in following reports.

Equipment for Project

No equipment was purchased.

H. L. Burmeister, Mining Engineer
U. S. Bureau of Mines

Helmuth Wedow, Jr., Geologist
U. S. Geological Survey

Table I.--Summary of stratigraphy in rocks penetrated by drilling, Bondurant area, Buckingham County, Virginia (DMEA-4674, Idm-E1103; Zinc-lead-copper).

Unit No.	Description	Stratigraphic thickness	Remarks
1.	Overburden; chiefly saprolite from schist and gneiss	- -	Thickness of overburden penetrated in drill holes ranged from 33-80 feet, averaging 52 feet; thus, vertical thickness of overburden in vicinity of the hole-collars ranges from 23-56 feet, averaging 36 feet.
2.	Chlorite-carbonate-sericite-quartz schist	11 plus	Present in Hole 72B only
3.	Carbonate-amphibole-biotite-sericite-chlorite-quartz gneiss	170	Present in all holes except 77B; collaring unit for all holes except 72B and 77B
4.	Carbonate-biotite-sericite-quartz-schist	20	Present in Hole 72B only
5.	Carbonate-chlorite-amphibole-quartz-gneiss	8	Present in Hole 72B only
6.	Carbonaceous-biotite-chlorite-quartz schist and gneiss; "A" marker	6-21	Present in all holes
7.	Garnet-sericite-biotite-chlorite-quartz schist	10-38	Present in all holes
8.	Same lithology as Unit 6; "B" marker	9-18	Present in all holes
9.	Same lithology as Unit 7	6-13	Present in Holes 75B, 76B, and 77B only
10.	Chlorite-biotite-sericite-quartz schist and gneiss	6-28	Present in all holes

Table I.--(Continued)

Unit No.	Description	Stratigraphic thickness	Remarks
11.	Zinc-, lead-, and copper-bearing zone in schist and gneiss similar to Unit 10	8-26	Present in all holes
12.	Same lithology as Unit 10	33-72	Present in all holes
13.	Same lithology as Unit 6; "C" marker	2-16	Present in all holes; bottoming unit for Hole 77B
14.	Chlorite-biotite-sericite-quartz schist and gneiss	12-22	Present in all holes except 77B; bottoming unit for all holes except 73B, 74B, and 77B
15.	Sericite-biotite-chlorite-quartz schist and gneiss	55 plus	Present only in Holes 73B and 74B; also bottoming unit for these holes
16.	Serpentine-pyroxene-feldspar (dolerite) dike	- -	Present only in Hole 77B; 176 feet penetrated; collaring unit for Hole 77B

Table II.--Sample assay data, Bondurant area, Buckingham County, Virginia (DMEA-4674, Idm-E1103; Zinc-lead-copper).

Interval sampled	Core length	Stratigraphic thickness	Percent Zinc	Percent Lead	Percent Copper
		Hole 74B			
189-208	19	17	0.10	tr	tr
			(estimated, not assayed)		
		Hole 72B			
357-380	23	22	0.25	tr	--
			(estimated, not assayed)		
		Hole 73B			
169-189	20	--	1.00	--	--
			(estimated, not assayed)		
189-193	4	--	1.49	0.66	0.05
193-197	4	--	0.25	tr	--
			(estimated, not assayed)		
Weighted average: 169-197	28	26	0.96	0.09	0.01
		Hole 75B			
237-241	4	--	0.67	0.19	0.07
241-245	4	--	0.67	0.12	0.03
245-249	4	--	0/79	0.30	0.04
249-253	4	--	4.19	1/73	0.07
253-258	5	--	2.07	0.83	0.06
Weighted average: 237-258	21	20	1.70	0.64	0.05
		Hole 76B			
256-262	6	--	0.10	tr	tr
			(estimated not assayed)		
262-266	4	--	0.52	0.09	0.29
266-271	5	--	1.70	0.63	0.02
Weighted average: 256-271	9	8	1.18	0.39	0.14

Table II.--Sample assay data.--(Continued)

Interval sampled	Core length	Stratigraphic thickness	Percent Zinc	Percent Lead	Percent Copper
		Hole 77B			
257-265	8	--	tr	tr	tr
			(estimated, not assayed)		
265-269	4	--	0.10	0.05	0.07
269-273	4	--	2.11	0.36	0.18
273-277	4	--	0.59	0.16	0.11
277-282½	5½	--	0.86	0.57	0.08
Weighted average: 265-282½	17½	16	0.91	0.31	0.11
		Hole 78B			
228-232	4	--	0.21	nil	0.06
232-236	4	--	1.88	0.91	0.44
236-240	4	--	0.54	0.24	0.24
240-244	4	--	1.12	0.55	0.07
244-247	3	--	2.79	0.68	0.36
Weighted average: 228-247	19	17	1.23	0.47	0.23

TONNAGE OF MINERALIZED ZONE

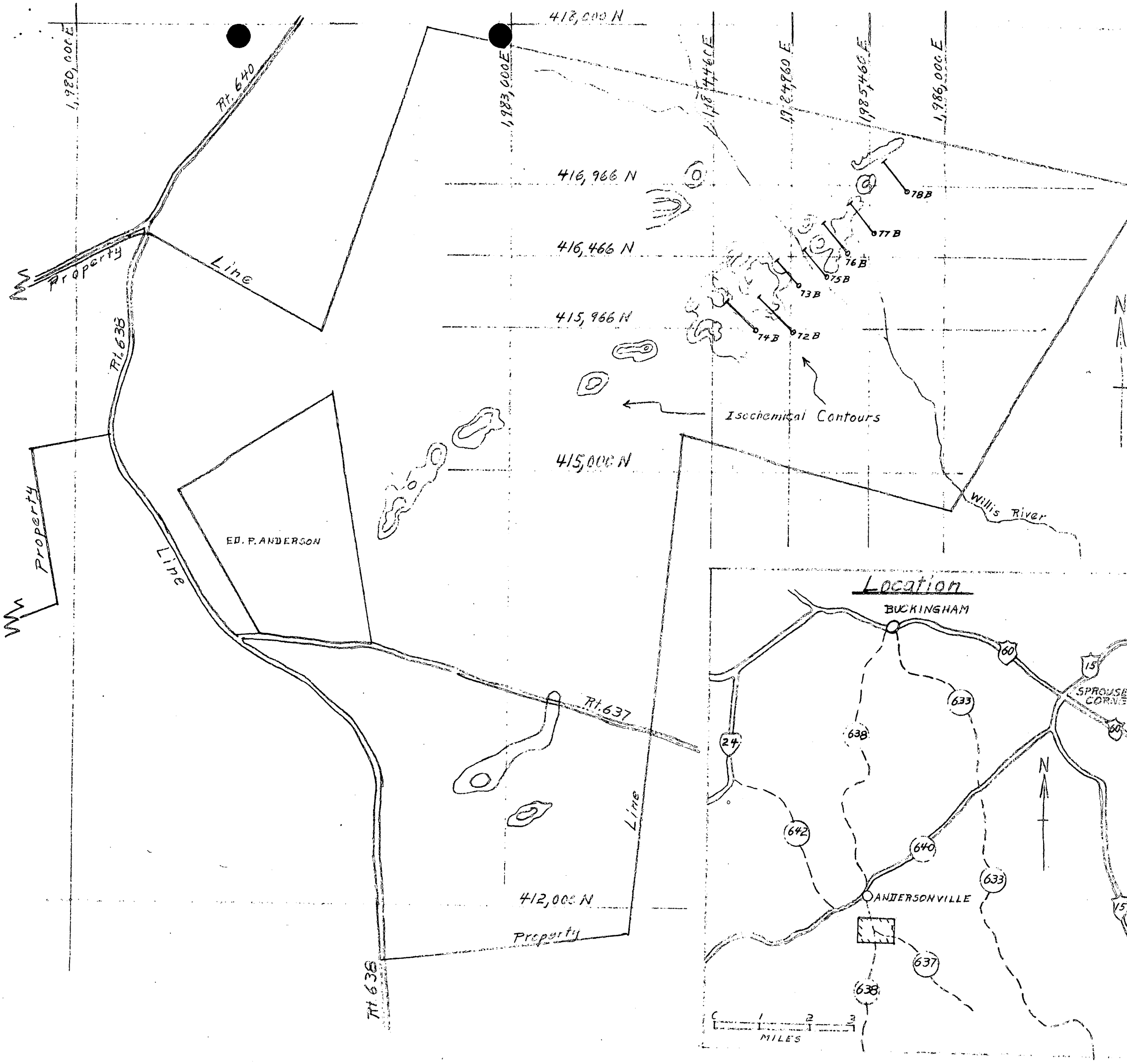
Hole Area	Block	True Width	(12 cu.ft = 1 ton) Tonnage	Assay and/or Estimate Zn	Pb	Cu	Ag	Au	DIMENSION OF ORE BLOCKS BOTTOM of OVERBURDEN TO SEA LEVEL-(Ft.)
74B	I	17	111,916	0.10	Tr	Tr	—	—	17 x 200 x 395
72B	II	22	135,850	0.25	—	—	—	—	22 x 195 x 380
73B	III	26	160,333	0.96	0.09	0.01	0.03	.002	26 x 200 x 370
75B	IV	20	119,583	1.70	0.64	0.05	0.61	0.02	20 x 205 x 350
76B	V	8	53,750	1.18	0.39	0.14	0.53	0.02	8 x 215 x 375
77B	VI	16	60,000	0.91	0.31	0.11	0.25	0.01	16 x 120 x 375
78B	VII	17	106,250	1.23	0.47	0.23	0.50	—	17 x 200 x 375
Totals			747,682						
Weighted Average									
	I-VII	18	747,682	0.87	0.25	0.06	0.24	0.01	

DMEA 4674, CONTRACT, E 1103
NEW JERSEY ZINC CO.-BONDURANT AREA
BUCKINGHAM COUNTY, VA.

TABLE- III

Feb. 1958

716



DMEA-4674

NEW JERSEY ZINC CO.

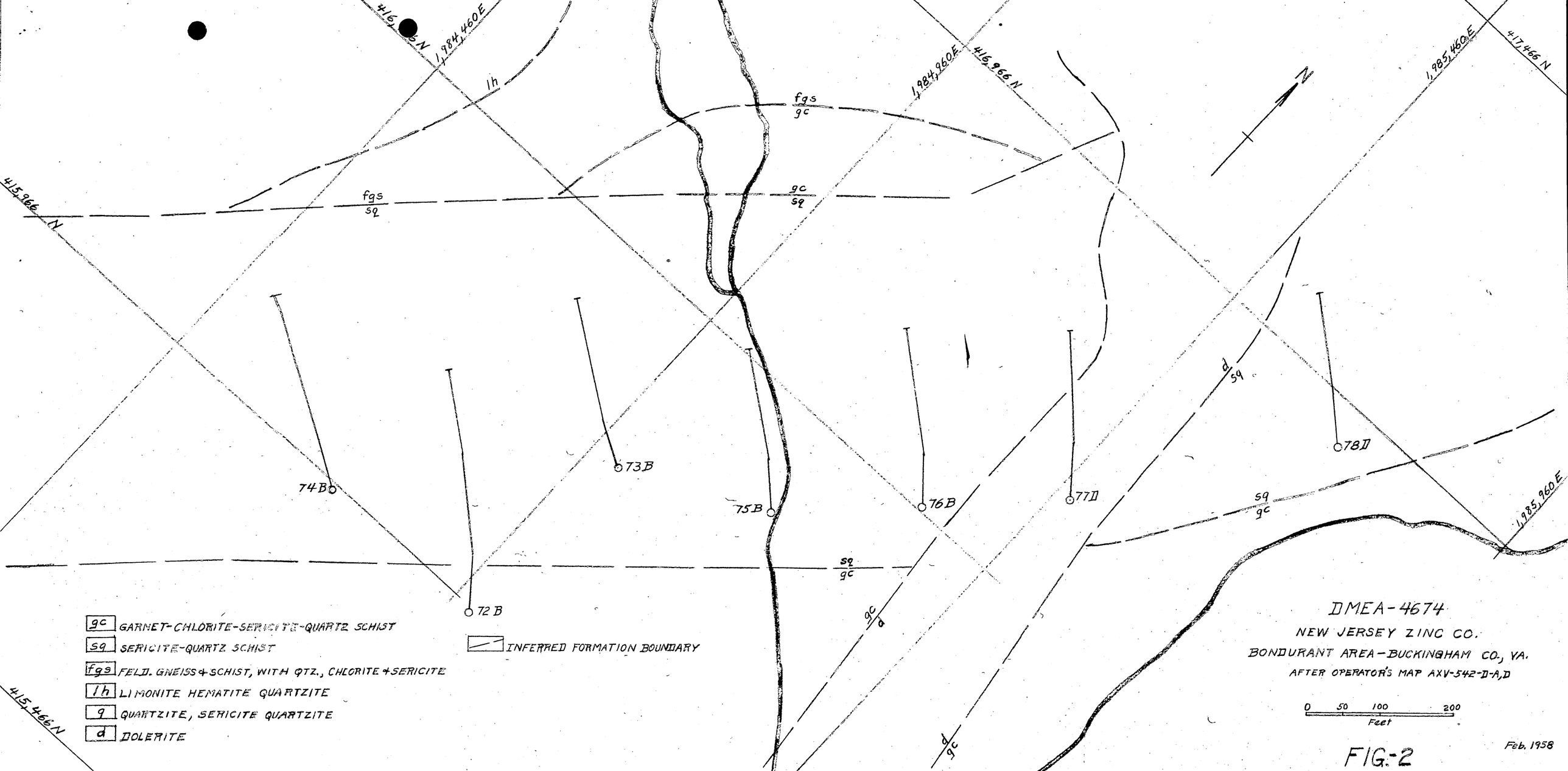
BONDURANT AREA - BUCKINGHAM CO, VA.

PORTION OF OPERATOR'S MAP, AXV-402-II-B, WITH ADDITIONS

0 250 500 1000 1500 2000

FEET

FIG.-1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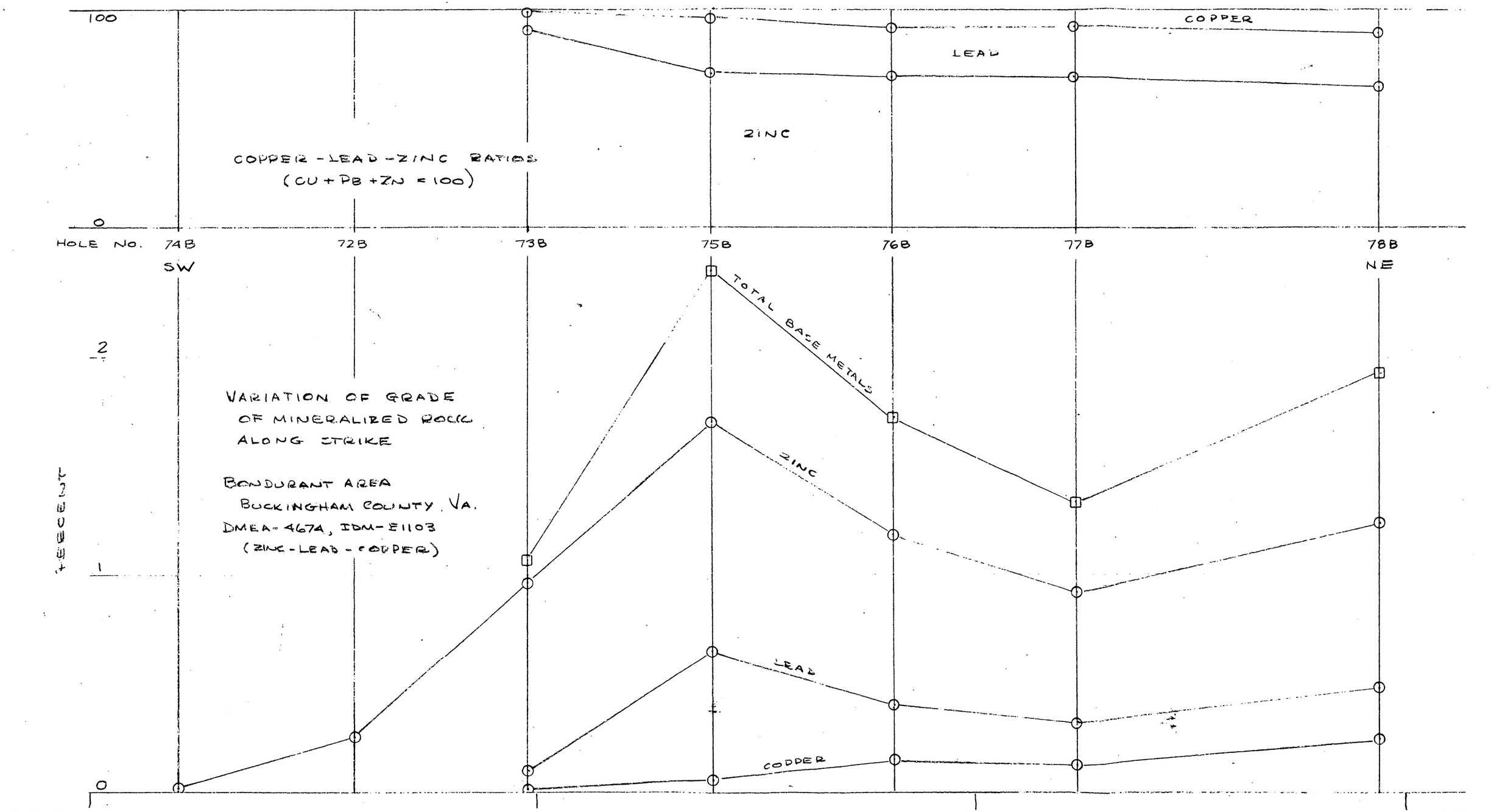
sq SERICITE-QUARTZ SCHIST
fgs FELD. GNEISS & SCHIST, WITH QTZ., CHLORITE & SERICITE
lh LIMONITE HEMATITE QUARTZITE
q QUARTZITE, SERICITE QUARTZITE
d DOLERITE
INFERRED FORMATION BOUNDARY
DMEA-4674
NEW JERSEY ZINC CO.
BONDURANT AREA-BUCKINGHAM CO., VA.
AFTER OPERATOR'S MAP AXV-542-D-A,D
0 50 100 200
Feet
Feb. 1958

FIG.-2

FIGURE 3



HW - 10/58

DMEA Form 7
(12-56)

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Date	Surname	Code
7/14	Klugescheid	500
	Disinsel	500
"	Chamblin	~~800~~
7/15	Martin	~~190~~ 100
		~~120~~
		~~195~~
7/15	Johnson	110
"	Mittendorf	100
7/16	H. H. D	220
		500

JUL 16 1958

Mr. S. S. Goodwin
Vice President
The New Jersey Zinc Company
160 Front Street
New York 38, New York

Re: Docket No. DMEA-4674 (Zinc-Lead-Copper)
The New Jersey Zinc Company
Bondurant Area
Buckingham County, Virginia
Contract No. Idm-E1103

Dear Mr. Goodwin:

Reference is made to your completed exploration contract with the Government.

We sincerely regret that the work performed did not result in a certification of discovery or development under the provisions of the contract. In the absence of such certification, the Government retains no claim or lien against the property subject to the contract or any future production therefrom. We, therefore, are closing our books and records on this project. Your attention, however, is called to the provisions of the contract which require the Operator to keep and preserve records for the period indicated.

Your interest in the Defense Minerals Exploration Administration exploration program and participation therein are fully appreciated.

Sincerely yours,

C. O. Mittendorf (for)

Administrator

WPKlugescheid/er 7/14/58
Copy to: Docket
Admr R. File
Op. Committee
Mr. Bishop, USBM
Mr. Kiilsgaard, USGS
Region V (2)
Chron.
Mr. Chambers, DMEA

8623

July 2, 1959

Memorandum

To: Operating Committee, HSRA - Washington

From: HSRA Field Team, Region V - Knoxville, Tennessee

Subject: Final Reports on Completed Projects

Enclosed is a list of Field Team final reports on completed projects which have not yet been submitted.

No work has been done on final reports since April, in order that the field men could concentrate on field examinations and reports on referred applications. During April, May and June, 41 field examination reports were transmitted, and eight others were partially complete at the close of business on June 30.

These reports will be completed and sent to you as soon as feasible. We estimate a total of 2 man-years will be required to complete these reports.

It should be noted that contracts presently in force will be completed at various dates between now and October 1, 1959. Thus there will be several final reports which will have to be written in fiscal year 1960.

Robert A. Lawrence
Executive Officer, HSRA-Reg.V

cc:
Mr. Speedy Hillegaard, Lamb
Mr. Lawrence, Lambert Feldler
Mr. Shelly, Shelly
Mr. Walter Williams
File
Chron

T. J. Lynch, Member
Bureau of Mines

FINAL REPORTS DUE - REGION V

	DMEA No.	Project	Operator's final report Rec'd.	Geologist	Engineer
	*2546	W. New Market	12-20-56	Wedow	
	P4119	Talbot	4-25-57	"	
	4178	Beaver Creek	11-21-57	"	Shirley
	4746	Vermont Copper	12-2-58	White	Burmeister
XXX	4674	Bonduruant	1-8-58	Wedow	Burmeister
	C4177	Eidson	2-13-58	"	Shirley
	4673	Valzinco	3-6-58	"	Burmeister
C?	4625	Moody Rock	3-7-58	Leaure	Feitler
	4646	Howard McKinney	3-27-58	"	"
	4833	W.T. Geouge	4-7-58	"	"
	4690	Moody	4-7-58	"	"
	4779	Johnson	4-17-58	"	"
	4381	Indian Creek	4-24-58	Wedow	Shirley
	4805	Avery	4-30-58	Leaure	Feitler
	4681	Williams	5-7-58	Wedow	Shirley
	4886	Pruitt # 4	5-15-58	Williams	Burmeister
	4173	James-Woodruff	6-10-58	Wedow	Shirley
	4675	Hunter-Hemmer	N.R.Y.	Wedow	Burmeister
	C3522	Caledonia	N.R.Y.	White	Stahlik
	C4216	Mamma	N.R.Y.	Williams	Burmeister

* Already certified

P Pseudo certified

C Certification will be recommended
N.R.Y Not received yet

RESUME OF DRILLING RESULTS-----DMEA-4674.

Hole No.	Total Depth	Results.
72B	446'	357'-380' Trace of Zinc and Lead. 379.5'-380' Estimated 1% Zn.
73B	314'	189'-193' 1.49% Zn, 0.66% Pb, 0.05% Cu. 169'-197' Estimated 1% Zn.
74B	368'	193'-208' Estimated Trace Zn and Pb.
75B	300'	237'-241' Assay 0.67% Zn, 0.19% Pb, 0.07% Cu. 241'-245' " 0.67% Zn, 0.12% Pb, 0.03% Cu. 245'-249' " 0.79% Zn, 0.30% Pb, 0.04% Cu. 249'-253' " 4.19% Zn, 1.73% Pb, 0.04% Cu. 253'-258' " 2.07% Zn, 0.83% Pb, 0.06% Cu.
76B	330'	262'-266' " 0.52% Zn, 0.09% Pb, 0.29% Cu. 266'-271' " 1.70% Zn, 0.63% Pb, 0.02% Cu.
77B	319'	265'-269' " 0.10% Zn, 0.05% Pb, 0.07% Cu. 269'-273' " 2.11% Zn, 0.36% Pb, 0.18% Cu. 273'-277' " 0.59% Zn, 0.16% Pb, 0.11% Cu. 277'-282.5' " 0.86% Zn, 0.57% Pb, 0.08% Cu.
78B	292'	228'-232' " 0.21 % Zn, ----- 0.06% Cu. 232'-236' " 1.87% Zn, 0.91% Pb, 0.44% Cu. 236'-240' " 0.54% Zn, 0.24% Pb, 0.24% Cu. 240'-244' " 1.12% Zn, 0.55% Pb, 0.07% Cu. 244'-247' " 2.79% Zn, 0.68% Pb, 0.36% Cu.
Total	2,369'	

DMEA Form 7
(12-56)

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Date	Surname	Code
2/4	Talbert	800
2/5	C	220
	Klug	500

FEB 5 1958

Mr. Robert A. Laurence
Executive Officer
DMEA Field Team, Region V
Room 13, Post Office Building
Knoxville 2, Tennessee

Re: Docket No. DMEA-4674
(Zinc, Lead, Copper)
The New Jersey Zinc Company
Bondurant Area
Buckingham County, Virginia
Contract No. Idm-E1103

Dear Mr. Laurence:

Enclosed are the original and three copies of a Report of Review in lieu of a final audit of the referenced project.

If you concur with the facts stated in this Report of Review, the original and one copy should be released to the regional finance officer, one copy should be forwarded to the Operator, and one copy should be retained in your files. If for any reason you do not concur, please return the original and three copies to this Division with your comments.

Sincerely yours,

(Signed) J. L. Chambers

Jay L. Chambers, Director
Contract Administration
and Audit Division

Enclosure

EDTalbert/wb
February 4, 1958

Copy to: Docket
Admr. Reading File
Helen R. Miller
Mr. Chambers

ORIGINAL FILE COPY
DMEA
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DATE	INITIALS	CODE
2/3	C	220
		500

January 31, 1958

Memorandum

To: Mr. Jay L. Chambers, Chief
Contract Administration and Audit Division
Defense Minerals Exploration Administration
Washington, D. C.

From: Field Team, DMEA, Region V, Knoxville, Tennessee

Subject: DMEA-4674, Contract Idm-E1103 (Zinc-lead-copper)
The New Jersey Zinc Company, New York, N. Y.
Bondurant area, Buckingham County, Virginia

In reply to your letter of January 21, 1958 on the subject project:

1) Our reply to the Operating Committee's letter of January 16, 1958 requesting clarification of overburden footage was transmitted on January 24, 1958.

2) Review of data from our field examiners' records shows that more than 50 core boxes were used, thus confirming the Operator's claim for the maximum of 50 boxes permitted by the contract.

3) In connection with the number of samples assayed, our review of available data also substantiates assays for only 17 samples and no payment should be made for claims in excess of this number.

V. J. Lynch
Acting Executive Officer

Helmuth Wedow Jr.
Geologist
Geological Survey

HWjr/mg
cc - Operating Committee (2)
Mr. Burmeister
Mr. Lynch
Mr. Wedow
File

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION
ROOM 13 POST OFFICE BLDG.
KNOXVILLE 2, TENN.

January 24, 1958

OPERATING COM
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1/27 C 220
1/27 KLUG 500

Memorandum

To: Operating Committee, DMEA - Washington, D. C.

From: DMEA Field Team, Region V - Knoxville, Tennessee

Subject: DMEA-4674, Idm-E1103 (Zinc-lead-copper)
The New Jersey Zinc Company, Bondurant area,
Buckingham County, Virginia

In reply to your letter of January 16, 1958 all data on overburden versus diamond drilling on the subject project available to the Field Team has been reviewed. The matter has been discussed with the Operator's representatives in Mineral and Austinville. The results of the review and discussions follow:

1) The major discrepancy in the totals of overburden thickness resulted from the mistaken belief of the Operator's district geologist at Mineral that the NX or BX diamond drilling in soft rock, in order to set casing, constituted overburden drilling.

2) The thickness of overburden shown in the Operator's logs submitted in the monthly reports and also appended to the final report agrees with the thickness of overburden invoiced by the drilling contractor in 5 of the 7 holes drilled. In Holes 75-B and 76-B, the Operator logged an additional 3 and 18 feet of overburden, respectively. These additional footages are purely the result of geologic interpretation of material recovered by the diamond drilling--that is, poor core recovery in the soft, less cohesive saprolite as opposed to better core recovery in the weathered, but still firm, zone of bedrock overlying completely unweathered fresh rock. The additional 21 feet of overburden, thus logged, when added to the 340 feet invoiced by the drilling contractor gives the total of 361 feet of overburden shown by the Operator's logs. We feel, therefore, that

it is unnecessary for the geologically interpreted thickness of overburden to jibe with thickness reported as cut by the drilling contractor.

3) The difference of 1 foot in the BX drilling in Hole 72-B--that is, 80-81 feet in the driller's invoice and 80-82 feet in the Operator's summary cannot be resolved, and it is believed to be a clerical error. Suffice it to say that the resolution of this difference is not pertinent to payments to be made by the Government. (see below)

4) It is recommended by the Field Team, after consultation with the Operator's field representatives, that the accepted figure for total overburden drilling be 340 feet. Thus, costs should be computed at $2.90 per foot for 340 feet of overburden drilling and at $2.70 per foot for 2,029 feet BXWL diamond drilling--for a total of 2,369 feet for the project.

5) It is further recommended by the Field Team that in future, similar contracts an allowance be made for small amounts of NX and/or BX diamond drilling to set the necessary casing for efficient drilling and thus make a more equitable division of costs between the Operator and the Government.

V. J. Lynch, Acting
Executive Officer, DMEA
Region V

Helmuth Wedow, Jr. Geologist
Geological Survey

DMEA Form 7
(12-56)

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1/27	Talbot	800
"	Chambers	800
	[illegible]	500
1/24	[illegible]	130
"	[illegible]	100
		100
1/27	[illegible]	220
		500

JAN 24 1958

Mr. Robert A. Laurence
Executive Officer
DMEA Field Team, Region V
Room 13, Post Office Building
Knoxville 2, Tennessee

Re: Docket No. DMEA-4674 (Zinc-Lead-Copper)
The New Jersey Zinc Company
Bonaturant Area
Buckingham County, Virginia
Contract No. Idm-E1103
and
Docket No. DMEA-4746 (Copper)
Appalachian Sulphides, Inc.
Elizabeth Mine
Orange County, Vermont
Contract No. Idm-E1100

Dear Mr. Laurence:

Your memorandum of January 20, 1958, requests clarification of the meaning of the second paragraph of Article 6 (a) of contract form MF-200 (Revised June 1954). Your request is occasioned by the two, apparently to you, conflicting decisions on the referenced contracts as rendered by this Committee and the Contract Administration and Audit Division, respectively.

Actually there is no conflict. This Committee's letter of November 14, 1957, in reference to Docket DMEA-4674, pertains to the specifications of the work, as set forth in the "Description of the Work" portion of Exhibit "A", to be performed in accordance with Article 3 of the contract. The Division's letter of January 8, 1958, in reference to Docket DMEA-4746, deals with the "Estimated Costs of the Project" portion of Exhibit "A", which costs are defined and limited by Article 6 of the contract.

The work description under Contract Idm-E1103, Docket DMEA-4674, provided that "A fence of 6 holes shall be drilled ****." This was a definite specification. There was no authority, without amendment of the contract, for the Government to contribute to the costs of a seventh hole even though no maximum cost under Article 6 was exceeded.

On the other hand, the work description under Contract Idm-E1100, Docket DMEA-4746, contained no specifications as to the number of hours of drilling delays, because such were not items of work but

8623

costs incurred in connection with the performance of the drilling work. The 64 hours of delays, as estimated in the costs portion of Exhibit "A", were specified in neither Article 6 nor Exhibit "A" as a maximum, but the unit costs of the delays were maximums under Article 6.

Reference to Section III, pages 8-21 and the appendix following page 21, of the manual "Audit Procedure for Exploration Work under DMEA Exploration Contracts" may be of further assistance in clarification of this matter. Also, it is understood that a DMEA auditor will be visiting your office in the near future. He undoubtedly can help in resolving any additional questions you may have.

Sincerely yours,

George C. Selfridge

Chairman, Operating Committee (GHB)

APPROVED:

Frank D. Lamb (GHB)

Member, Bureau of Mines

Thor H. Kiilsgaard (GHB)

Member, Geological Survey

EDTalbert/wb
January 23, 1958

Copy to: Docket (2)
Admr. Reading File
Operating Committee
Mr. Bishop, USBM
Mr. McMahom, USBM
Mr. Kiilsgaard, USGS
Mr. Chambers
Helen R. Miller

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1/21	Talbert	800
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JAN 21 1958

Mr. Robert A. Laurence
Executive Officer
DMEA Field Team, Region V
Room 13, Post Office Building
Knoxville 2, Tennessee

Re: Docket No. DMEA-4674
(Zinc-Lead-Copper)
The New Jersey Zinc Company
Bondurant Area
Buckingham County, Virginia
Contract No. Idm-E1103

Dear Mr. Laurence:

The review in lieu of a final audit of the referenced project, as requested by your memorandum of January 8, 1958, has been performed but release of the Report of Review is being withheld pending:

(1) Reply to the Operating Committee's letter of January 16, 1958, requesting an explanation of the differences in the aggregate overburden and core drilling footages as reported and claimed by the Operator, as indicated by the drill logs, and as invoiced by the drilling contractor and approved by the Field Team.

(2) Confirmation by you of the number of wooden core boxes used in the project work and the number of samples assayed. In connection with the assays it is noted that the documentation submitted for review supports the assaying of only 17 samples for zinc, lead, and copper, whereas, the Operator has claimed costs for 34 assays. The additional 17 assays appear to be for gold and silver. Such assays are not authorized by the contract.

The original of the final (November 1957) MF-104 and attachments, together with invoices and assay reports applicable to prior vouchers are being returned by certified mail to Mrs. Miller with a copy of this letter.

Sincerely yours,

(Signed) J. L. Chambers

Jay L. Chambers, Director
Contract Administration
and Audit Division

EDTalbert/wb
January 21, 1958

Copy to: Docket
Admr. Reading File
Helen R. Miller (w/att. cert.)
Mr. Chambers
Mr. Talbert

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UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION
~~WASHINGTON, D.C.~~
Room 13, Post Office Bldg.
Knoxville 2, Tenn.

January 20, 1958

Memorandum

To: Operating Committee, DMEA - Washington

From: DMEA Field Team, Region V - Knoxville, Tennessee

Subject: Designation of "Maximums" in Contracts.

We need some clarification of the meaning of the second paragraph of Article 6 (a) of the long form contract, MF-200 (Revised June 1954). We are not sure what is meant by "to the extent specified" because of two apparently conflicting decisions.

In your letter of November 14, 1957 relative to DMEA-4674, Idm-E1103, you pointed out that "a fence of six holes" designates a maximum because it was not "a fence of approximately six holes." However, in a letter dated January 6, 1958, Mr. Talbert, referring to DMEA-4746, Idm-E1100, states that "neither Article 6 of the contract nor Exhibit 'A' provide that the estimate of 64 hours for drilling delays is a maximum." However, the wording in Exhibit 'A' is simply "Drilling delays, 64 hours @ $6.00/hr.", therefore we considered this to be a maximum and disallowed the excess over 64 even though the excess is considered reasonable and necessary. We do not find the word "approximately" used in connection with this item.

Please advise just what is necessary to interpret an item under actual costs as a maximum, and what wording implies that an item is not a maximum.

Robert A. Laurence
Executive Officer, DMEA
Region V

V. J. Lynch, Member
Bureau of Mines

RAL/zm
Lynch
Files

DMEA Form 7
(12-56)

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1/15	Klugescheid	500
	Adsmt	500
1/15	GCS	130
"	Gmm	110
"	Mattendorf	100
		~~HB~~
1/16	C	220
		500

500

JAN 16 1958

Mr. Robert A. Laurence
Executive Officer
DMEA Field Team, Region V
Room 13, Post Office Bldg.
Knoxville 2, Tennessee

Re: Docket No. DMEA-4674 (Zinc-Lead)
The New Jersey Zinc Company
Bendurant Area
Buckingham County, Virginia

Dear Mr. Laurence:

There seem to be discrepancies in the overburden footages and the footages for drilling in rock, as corrected on the MF-104 and MF-104A for September 1957, the logs of the holes on the monthly reports, and the Operator's Final Report. The footages are as follows:

MF-104 & MF-104A

Overburden September 1957	BXWL	Drill Logs Overburden	BXWL	Operator's Final Report Overburden	BXWL
340'	2,029'	361'	2,008'	436'	1,933'

OK

Will you kindly clarify this matter for us as the unit costs are different.

Sincerely yours,

George C. Selfridge

Chairman, Operating Committee

APPROVED:

Frank D. Lamb

Member, Bureau of Mines

Thor H. Kiilsgaard

Member, Geological Survey

WPKlugescheid/er 1/15/58
Copy to: Docket
Admr R File
Op. Committee
Mr. Bishop, USBM
Mr. Kiilsgaard, USGS
Chron.

8623

January 8, 1958 1/7 Kleg 500

Memorandum

To: Jay L. Chambers, Director-Contract Administration and Audit Division, DMEA

From: DMEA Field Team, Region V - Knoxville, Tenn.

Subject: Completion of DMEA-4674, Idm-21103(zinc-lead-copper) The New Jersey Zinc Co. Mineral, Virginia. Bondurant Area, Buckingham County, Va.

Work on the subject contract has been completed.

The following units of work have been acceptably performed as verified by our Field Examiners:

Overburden drilling----------340 ft.

Diamond drilling (size AX) 2029 ft.

An adequate final engineering and geological report has been received.

A Report of Review is requested, the original copy of the final voucher (form-Mf-104 and 104A) are enclosed.

Robert A. Laurence, Executive Officer
DMEA Field Team, Region V

VJL/zm
cc
Lynch
Laurence
Opr. Com-2

V. J. Lynch, Member
Bureau of Mines

Re: DMBA - 4674

Bill —

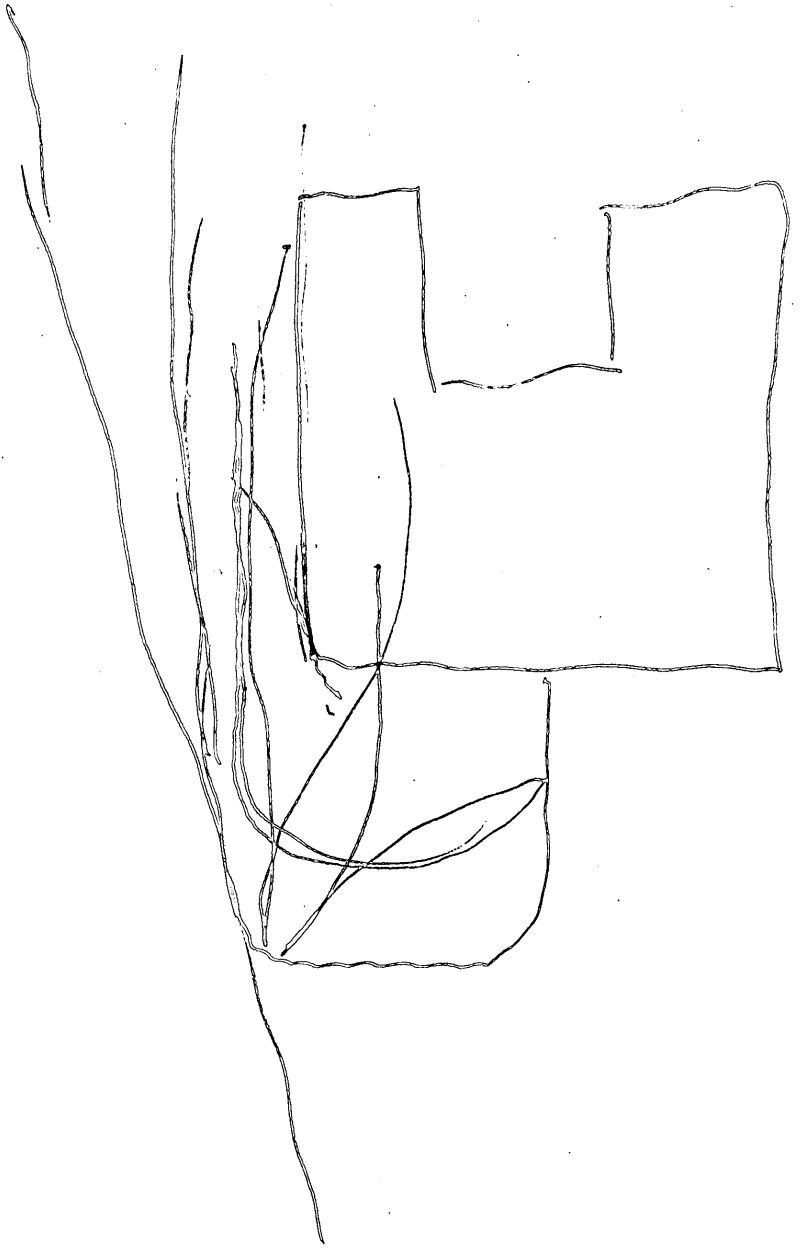
Pls. note table of footages drilled on page 2 of Operator's Final Report.

The distribution between Overburden (NX and BX) and BXWL is quite different from logs attached to monthly reports; and both logs and report are at variance with Field Team interim reports.

Clarification necessary since there is a 20 cent difference in unit costs.

Val

1/10/58



UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION
ROOM 13 POST OFFICE BLDG.
KNOXVILLE 2, TENN.

WASHINGTON 25, D. C.

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DATE	INITIALS	CODE
1-10	C	220
1/10	[illegible]	800
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January 8, 1958

Memorandum

To: Operating Committee, DMEA - Washington

From: DMEA Field Team, Region V - Knoxville, Tenn.

Subject: Operator's Final Engineering and Geological Report DMEA-4674, Idm-E1103 (zinc) Bondurant Area, Buckingham County, Virginia

Transmitted are three copies of the Operator's report on the subject contract. This project was completed November 20, 1957.

Robert A. Laurence
Robert A. Laurence
Executive Officer, DMEA
Region V

V. J. Lynch
V. J. Lynch, Member
Bureau of Mines

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OPERATOR'S FINAL REPORT

FINAL REPORT

BONDURANT AREA

BUCKINGHAM COUNTY, VIRGINIA

by

E. L. Weinberg and C. L. Hamilton

The New Jersey Zinc Company
Mineral, Virginia
November, 1957

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DIAMOND DRILLING	2
GEOLOGY AND MINERALIZATION	3
CONCLUSIONS	3
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Plan and section - DDH 72-B (AXV-567-B)
Plan and section - DDH 73-B (AXV-569-B)
Plan and section - DDH 74-B (AXV-572-B)
Plan and section - DDH 75-B (AXV-573-B)
Plan and section - DDH 76-B (AXV-576-B)
Plan and section - DDH 77-B (AXV-577-B)
Plan and section - DDH 78-B (AXV-578-B)
Plan and combined longitudinal section for all drill holes (AXV-586-D)
Geology, Bondurant Area (AXV-542-D)

Appendix

Logs for drill holes 72 thru 78

SUMMARY

This report covers results of diamond drilling performed under DMEA contract number Idm-E-1103, from July through September, 1957.

Surface exploration and diamond drilling on the Bondurant area, Buckingham County, Virginia has revealed a mineralized zone averaging 18 feet in thickness, and containing 759,000 tons of 0.89% zinc, 0.25% lead and 0.06% copper. This zone is steeply dipping, appears to be stratigraphically controlled, and is below ore grade in all penetrations except 4 feet in hole 75-B.

GENERAL INTRODUCTION

Diamond drilling in the Bondurant area was performed under DMEA Contract number Idm-E-1103.

The area includes two properties, the J. A. Coleman tract with 88 acres and the R. S. Burruss tracts with 833 acres. These two contiguous properties are located at Andersonville in Buckingham County, approximately six miles due south of Buckingham Court House.

According to the Geologic Map of Virginia, edition of 1928, the area is underlain by Wissahickon chlorite-muscovite schist near its eastern contact with hornblende gabbro and gneiss.

The only previous mineral activity was in the early part of the 19th century on the Bondurant and Andersonville gold prospects. A limited amount of underground development and placer mining is described by Stephen Taber (1913) in the Virginia Geological Survey Bulletin 7, pages 192, 193 and 195. Since 1955 The New Jersey Zinc Company has conducted geochemical, geophysical and geological exploration on these properties, the results of which were shown on maps accompanying our DMEA application. A combined geochemical and self potential anomaly was revealed by this exploration and was tested by the drilling program just completed.

DIAMOND DRILLING

Drilling on the Bondurant area took place from July 26 to September 30, 1957. The seven holes drilled totalled 2,369 feet and can be summarized as follows:

Hole No.	Overburden[x]	BXWL (AX)	Total Footage
72-B	0-82 (82')	82-446 (364')	446'
73-B	0-50 (50')	50-314 (264')	314'
74-B	0-70 (70')	70-368 (298')	368')
75-B	0-50 (50')	50-300 (250')	300'
76-B	0-40 (40')	40-330 (290')	330'
77-B	0-53 (53')	53-319 (266')	319'
78-B	0-91 (91')	91-292 (201')	292'
Total	436'	1933'	2369'

[x]Includes NX and BX footage necessary to set casing

Holes 72-B through 78-B are shown on maps AXV-567, 569, 572, 573, 576, 577, and 578 respectively and also on the longitudinal section, AXV-586, all of which are attached hereto. Formation boundaries on the sections correspond to those used in the attached logs. Abbreviations conform to a standardized list in use at the Mineral office and can also be correlated with the names used on the logs.

All seven holes penetrated the same general stratigraphic sequence, including the three marker beds "A", "B", and "C". An intrusive dike, previously mapped on the surface, was penetrated by hole 77-B. (see stratigraphic section, AXV-586). The relative projections of the mineralized zone and markers "B" and "C", shown in plan on all the cross-sections and the longitudinal section, are generally parallel and indicate stratigraphic control of mineralization.

Traces of zinc, lead, and copper were penetrated between the "B" and "C" markers in all seven holes. The best penetrations were in holes 75, 77, and 78.

Tonnage of the mineralized zone, calculated between the overburden-bedrock interface and sea level, is 759,000 tons averaging 0.89% zinc, 0.25% lead, and 0.06% copper. This grade is regarded as a minimum and is based on both assays and estimates. The zone ranges in thickness from 14 to 26 feet and averages 18 feet (see map AXV-586). The grade of the mineralized zone is sub-marginal but runs highest near the north and on both sides of the dolerite dike.

GEOLOGY AND MINERALIZATION

Surface mapping and the drilling show the bedrock is a series of quartz-rich schists and gneisses with amphibole, garnet, calcite, chlorite, sericite, and biotite. The regional strike is approximately N45°E and dip is 50° to 80° southeast. A dolerite dike trending northwesterly and dipping vertically is present and cuts across the schists and gneisses, including the mineralized zone. (see map AXV-542-D-A).

Although outcrops are more numerous than usual in the Piedmont, few clues could be found to the structure. Crinkle lineations plunge northeast while rolls in the schistosity plunge southwest. A few drag folds indicate the area is on the west limb of an overturned anticline.

The mineralization consists of sphalerite, galena, chalcopyrite, pyrite, pyrrhotite, and a trace of fluorite. Pyrite and pyrrhotite occur disseminated throughout the formations (although both are not present in all the formations) and much of this mineralization probably is syngenetic, especially in the carbonaceous marker beds. The mineralized zone is essentially parallel to the stratigraphy and could be either sedimentary or hydrothermal in origin. Details of the mineralization point to the latter mode of origin.

The sphalerite, galena, chalcopyrite, pyrite, and pyrrhotite are subhedral to euhedral, which can be explained by hydrothermal deposition or recrystallization of sedimentary deposits. The mineralization follows the sericite-rich bands of the schist and small veinlets cut across the foliation and follow fractures, indicating hydrothermal origin. The sphalerite is light yellow to red-brown in color and may grade from yellow to red within one inch along a veinlet. The color of the sphalerite is not related to the presence or absence of iron-bearing minerals. The occurrence of traces of fluorite in two of the holes also probably indicates the passage of mineralizing solutions through the formation.

It is possible that the mineralization improves in grade to the north or with depth but the probability cannot be predicted.

CONCLUSIONS

From the grade and tonnage outlined thus far, it is evident that this mineralization is below ore grade and that the project has been non-productive. We, therefore, consider our work completed in this area.

P. L. Weinberg
C. L. Hamilton

ILLUSTRATIONS

Bondurant Area

See Envelope

APPENDIX

Bondurant Area

DDH 72-B

Started: July 26, 1957
Bottomed: August 12, 1957
Location: 400 feet south-east of center of gechemical anomaly.
Coordinates: 415,959.98N
1,984,994.06E
Bearing: N39½°W @ collar, -45°;
and N36° W @ 200', -43°;
Inclination: N41° W @ 499' -38½°;
Elevation at collar: 393'

0-80'	Overburden
80-92'	Chlorite-carbonate-sericite-quartz schist. Estimated 3% sulfides, mostly pyrrhotite with some pyrite disseminated through matrix
92-244'	Biotite-chlorite-carbonate-quartz-amphibole gneiss.
244-265½	Carbonate-biotite-sericite-quarts gneiss
265½-279	Carbonate-chlorite-amphibole-quartz gneiss.
279-290	"A" marker-carbonaceous-carbonate-chlorite-quartz schist.
290-327	Garnet-chlorite-quartz schist 285-286 Estimated 3% pyrite 327-330 Estimated 3% pyrite with pyrrhotite
327-339½	[illegible] "B" marker
339½-446	Carbonate-sericite-quartz gneiss 357-380 Estimated traces of zinc and lead. 379½-380 Estimated 1% zinc; Zinc contained in red and honey-colored sphalerite 437-439-"C" marker
446	Bottom

DDH 73-B

Started: August 14, 1957
Bottomed: August 20, 1957
Location: 280 feet N3°E of 72-B
Coordinates: 416,241.69N
1,985.006.71E
Bearing: N59°W @ collar
N43°W @ 200'
Elevation at collar: 356'
Inclination: -45° @ collar
-40° @ 200'

0 - 37	Overburden
37 - 98½	Biotite-chlorite-quartz gneiss and amphibole-biotite-chlorite-quartz gneiss, with carbonate. 62½-63½ Estimated 12% pyrite
98½ - 113	"A" marker-carbonaceous chlorite-quartz gneiss.
113 - 152	Garnet-biotite-chlorite-quartz schist and gneiss. 142½-152 - "B" marker
152 - 282	Sericite-quartz schist and chlorite-biotite-sericite-quartz schist and gneiss. 169-197 Estimated 1% zinc, traces lead, including 189-193 assay 1.49% zinc, 0.66% lead, 0.05% copper, 0.20 oz. silver, 0.015 oz. gold. Zinc in red and honey colored sphalerite 254-260 - "C" marker.
282 - 314	Biotite-chlorite-quartz gneiss.
314	Bottom

DDH 74-B

Started: August 21, 1957
Bottomed: August 30, 1957
Location: 247 feet S89° W of DDH 72-B
Coordinates: 415,959,02N
1,984,745,97E
Bearing: N57° W @ collar,
N47° W @ 200'
Elevation at collar: 394'
Inclination: -45° @ collar,
-42½° @ 200'

0-60	Overburden
60-112	Biotite-sericite-quartz gneiss and amphibole-biotite-chlorite-quartz gneiss. Estimated 2% pyrite.
131-171	Garnet-biotite-chlorite-quartz schist ("B" marker 158-171)
171-305	Sericite-quartz schist and chlorite-biotite-sericite-quartz schist and gneiss. ("C" marker 282-285½) <u>193-208</u> Estimated traces of zinc and lead; zinc contained in honey-colored sphalerite.
305-368	Sericite-biotite-chlorite-quartz schist
368	Bottom

DDH 75-B

Started: August 31, 1957
Bottomed: September 6, 1957
Location: 212 feet N65°E of 73-B
Coordinates: 416,332.51N
1,985,197.47E
Bearing: N45°W @ collar
N53°W @ 200'
Inclination: -45° @ collar
-42° @ 200'
Elevation at collar: 345'

0 - 48	Overburden
48 - 171	Amphibole-carbonate-biotite-chlorite-quartz gneiss. 130-133 Estimated 6% pyrite.
171 - 185½	"A" marker- Carbonaceous biotite-chlorite-quartz schist.
185½ - 224½	Garnet-biotite-chlorite-quartz schist. "B" marker- Carbonaceous biotite-chlorite quartz schist @ 199-212. 201-212 Estimated 1% pyrite, 1% pyrrhotite.
224½ - 290	Sericite-quartz schist and biotite-sericite-quartz schist and gneiss. 237-241 Assay 0.67% zinc, 0.19% lead, 4.52% iron, 0.07% copper, 4.89% sulfur, 0.17oz. silver, 0.015oz. gold. 241-245 0.67% zinc, 0.12% lead, 5.24% iron, 0.03% copper, 3.94% sulfur, 0.25oz. silver, 0.02oz. gold. 245-249 0.79% zinc, 0.30% lead, 3.84% iron, 0.04% copper, 3.92% sulfur, 1.40oz. silver, 0.015oz. gold. 249-253 Assay-4.19% zinc, 1.73% lead, 0.07% copper, 2.80% iron, 4.38% sulfur, 0.90oz. silver, 0.02oz. gold. 253-258 Assay-2.07% zinc, 0.83% lead, 0.06% copper, 3.92% iron, 4.62% sulfur, 0.40oz. silver, 0.01oz. gold.
290 - 300	"C" marker- Carbonaceous biotite-chlorite-quartz schist.
300'	Bottom

DDH 76-B

Started: September 10, 1957
Bottomed: September 16, 1957
Location: 200 feet N44°E of 75-B
Coordinates: 416,475.37N
1,985,336.98E
Bearing: N42°W @ collar
N49½°W @ 200'
Inclination: -46° @ collar
-42° @ 200'
Elevation: @ collar: 361'

0 - 38	Overburden
38 - 192	Amphibole-carbonate-biotite-chlorite-quartz gneiss, chlorite biotite-quartz gneiss, and carbonate quartzite. 151-157 Estimated 1½% pyrite. 174-177 Estimated 1% pyrite.
192 - 216	"A" marker- Carbonaceous biotite-chlorite-quartz schist.
216 - 250	Garnet-chlorite-quartz schist "B" marker- Carbonaceous biotite-chlorite-quartz schist @ 228-241.
250 - 330	Sericite-quartz schist and chlorite-biotite-sericite-quartz schist and gneiss. "C" marker- Carbonaceous biotite-chlorite-quartz schist @ 297-317. 256-266 Estimated trace of zinc, lead, and copper, including 262-266 assay 0.52% zinc, 0.09% lead, 9.68% iron, 0.29% copper, 10.72% sulfur, 0.25 oz. silver, 0.015 oz. gold. 266-271 Assay 1.70% zinc, 0.63% lead, 4.56% iron, 0.02% copper, 10.72% sulfur, 0.75 oz. silver, 0.02 oz. gold. 269½ - 4" Estimated 5% zinc, 2% lead.
330	Bottom

DDH 77-B

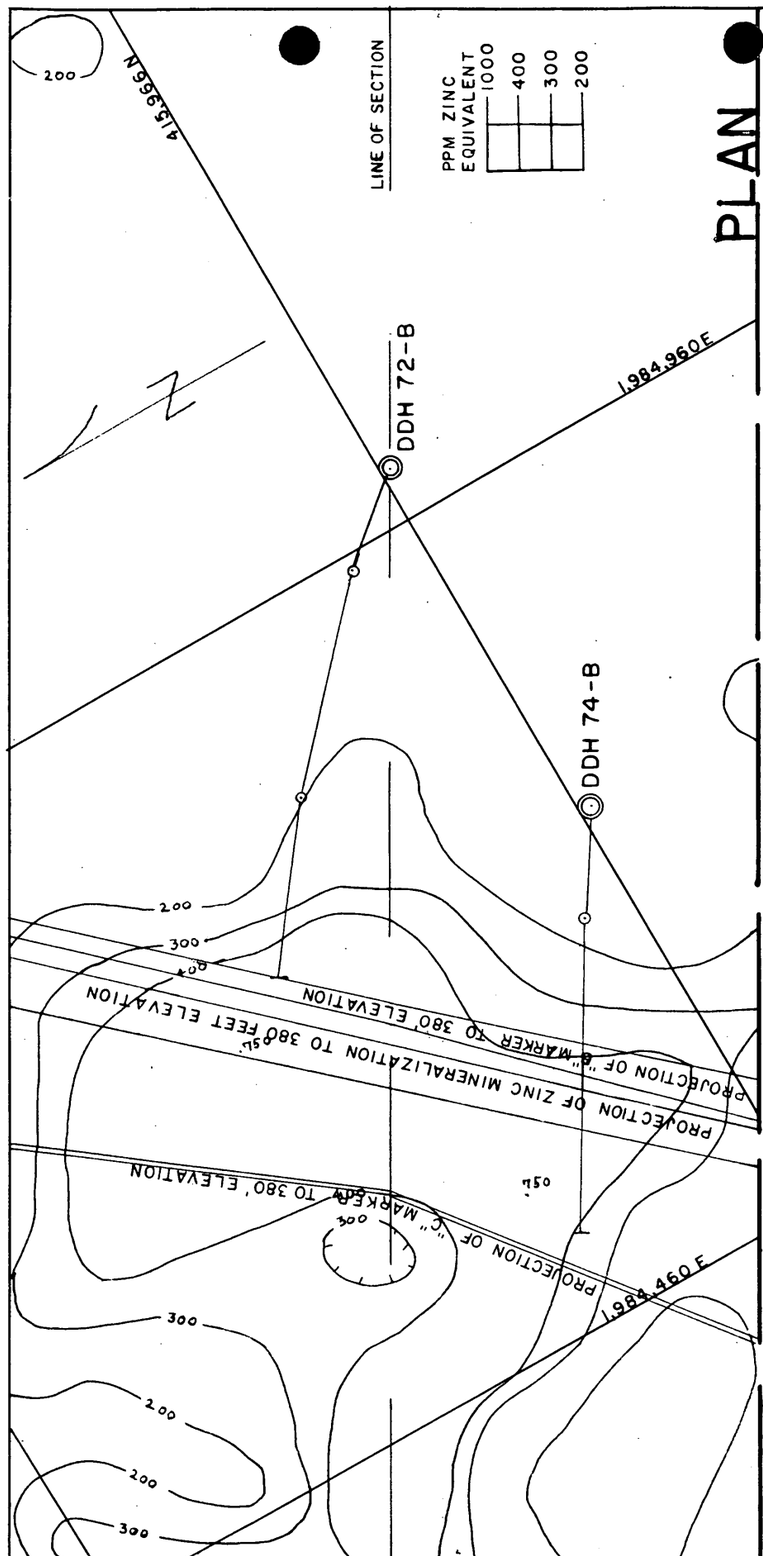
Started: September 18, 1957
Bottomed: September 25, 1957
Location: 204 feet N45°E of 76-B
Coordinates: 416.621.09N
1,985.476.95E
Bearing: N40°W @ collar
N44½°W @ 200'
Inclination: -45° @ collar
-46° @ 200'
Elevation at collar: 359'

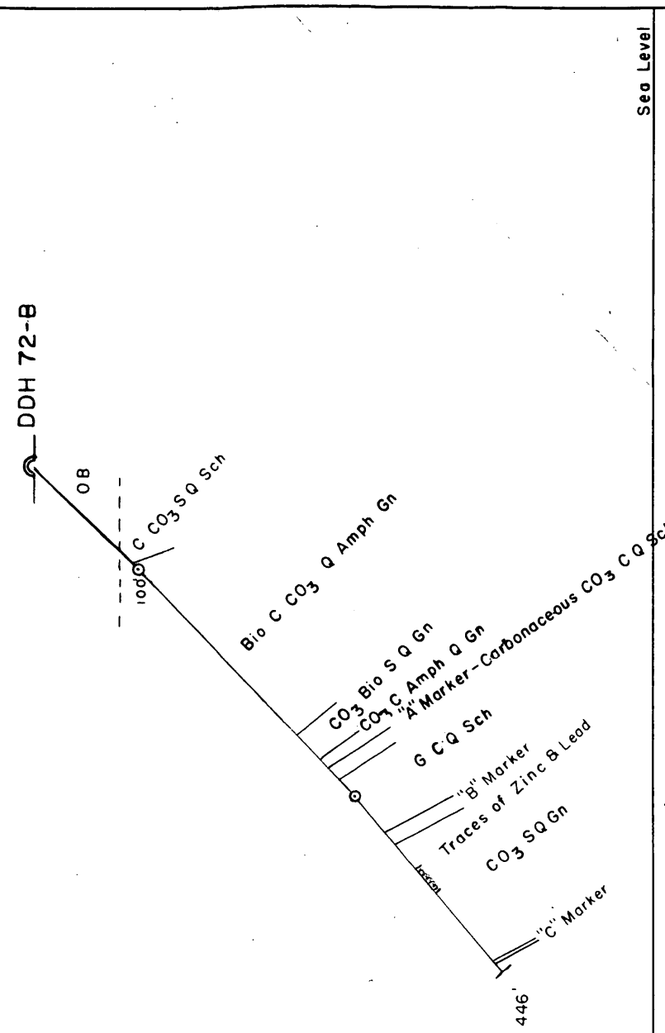
0 - 33	Overburden
33 - 209	Dolerite-serpentine-pyroxene-feldspar dike.
209 - 216	"A" marker- Carbonaceous chlorite-quartz schist.
216 - 253½	Garnet-chlorite-quartz schist "B" marker @ 231-241½.
253½ - 309½	Biotite-sericite-quartz schist and sericite-quartz schist 257-282½ Estimated 1% zinc, trace lead and copper including 265-269 assay 0.10% zinc, 0.05% lead, 5.28% iron, 0.07% copper, 4.50% sulfur, 0.05 oz. silver, 0.01 oz. gold. 269-273 assay 2.11% zinc, 0.36% lead, 8.96% iron, 0.18% copper, 10.37% sulfur, 0.23 oz. silver, 0.01 oz. gold. 273-277 assay 0.59% zinc, 0.16% lead, 6.24% iron, 0.11% copper, 3.71% sulfur, 0.04 oz. silver, trace gold. 277-282½ 0.86% zinc, 0.57% lead, 9.20% iron, 0.08% copper, 6.96% sulfur, 0.55 oz. silver, 0.01 oz. gold.
309½ - 319	"C" marker- Carbonaceous chlorite-quartz gneiss.
319	Bottom

DDH 78-B

Started: September 26, 1957
Bottomed: September 30, 1957
Location: 370 feet N41°E of 77-B
Coordinates: 416,915.84N
1,985,697.75E
Bearing: N47°W @ collar
N56°W @ 200'
Inclination: -45° @ collar
-42° @ 200'
Elevation at collar: 378'

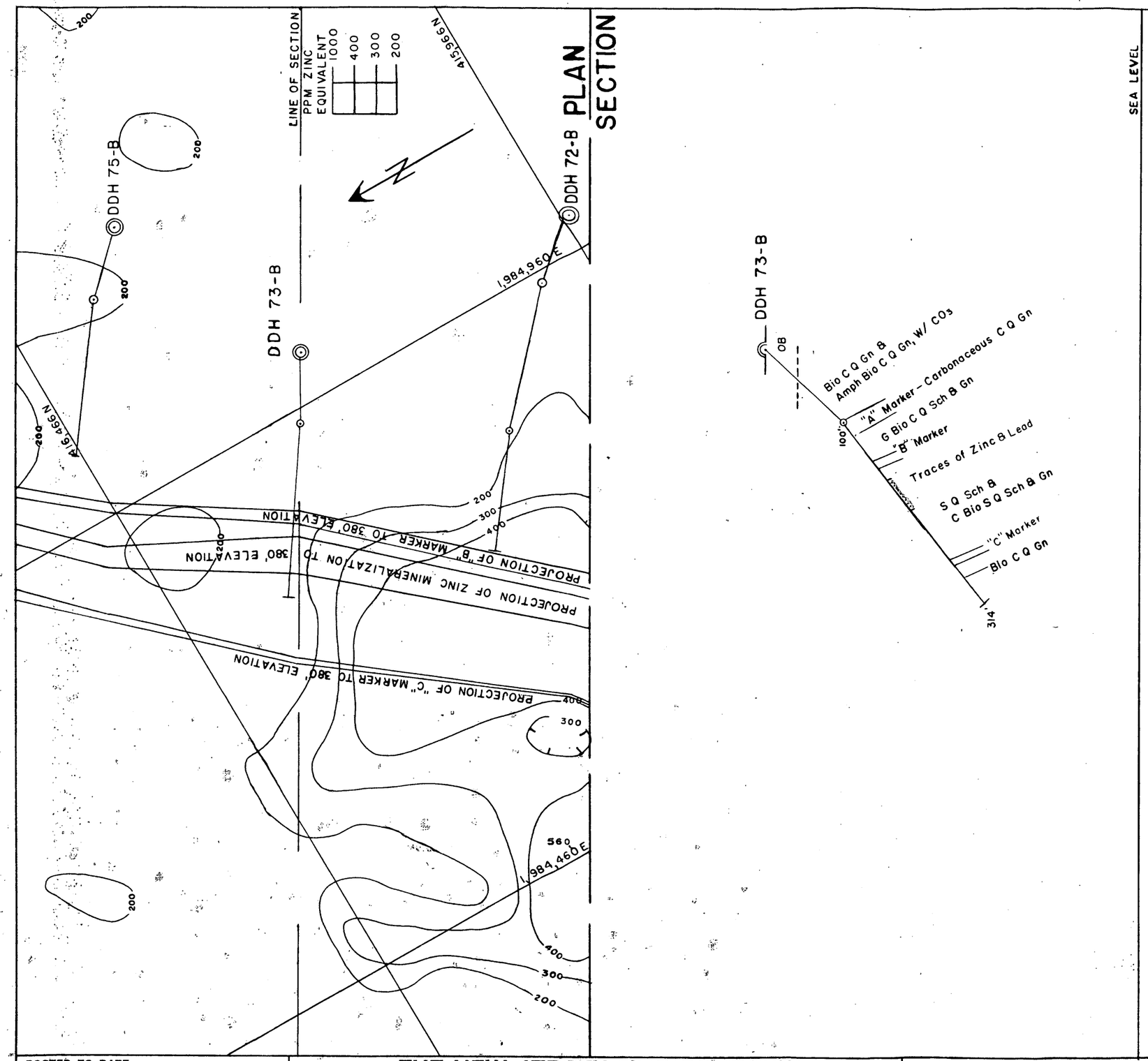
0 - 65	Overburden
65 - 169	Amphibole-biotite-chlorite-quartz gneiss.
169 - 186½	"A" marker- Carbonaceous chlorite-quartz schist.
186½ - 220	Garnet-sericite-chlorite-quartz schist. "B" marker @ 210-221.
220 - 292	Sericite-quartz schist and biotite-sericite-quartz schist and gneiss. "C" marker @ 271-287 228-232 assay 0.21% zinc, nil lead, 3.36% iron, 0.06% copper, 3.37% sulfur, 0.05oz. silver, trace gold. 232-236 assay 1.87% zinc, 0.91% lead, 6.64% iron, 0.44% copper, 8.60% sulfur, 0.03oz. silver, trace gold. 236-240 0.54% zinc, 0.24% lead, 6.00% iron, 0.24% copper, 6.81% sulfur, 0.11oz silver, trace gold. 240-244 assay 1.12% zinc, 0.55% lead, 4.24% iron, 0.07% copper, 3.43% sulfur, 0.20oz. silver, trace gold. 244-247 assay 2.79% zinc, 0.68% lead, 5.76% iron, 0.36% copper, 6.75% sulfur, 2.65oz. silver, 0.015oz. gold.
247	Bottom





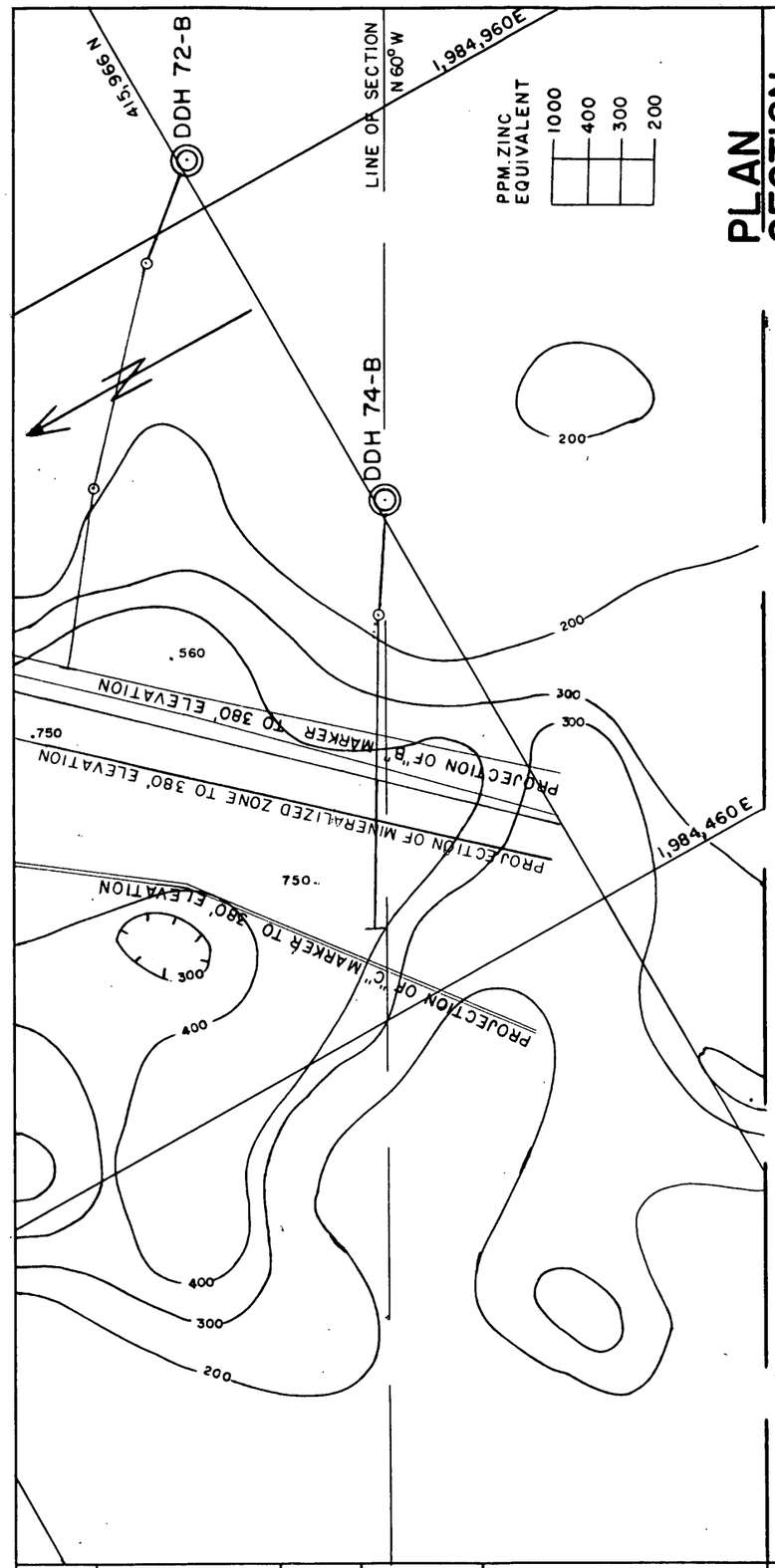
SERIAL NUMBER		DATE ISSUED		REFERENCE DRAWINGS	REVISIONS	THE NEW JERSEY ZINC COMPANY MINERAL, VA.	DRAWN E L W	PLAN & VERTICAL SECTION	DATE 7/57
THIS DRAWING IN DESIGN AND DETAIL IS OUR PROPERTY AND MUST NOT BE USED EXCEPT IN CONNECTION WITH OUR WORK. ALL RIGHTS OF DESIGN AND INVENTION ARE RESERVED. THIS DRAWING MUST BE RETURNED TO THE NEW JERSEY ZINC COMPANY.				AXV-542-D	ELW 8/14/57		TRACED		SCALE 1" = 100'
					CLH-8/27/57		CHECKED	DDH 72B	
					CLH 9/4/57		APPROVED	BONDURANT AREA	AXV-567-B-

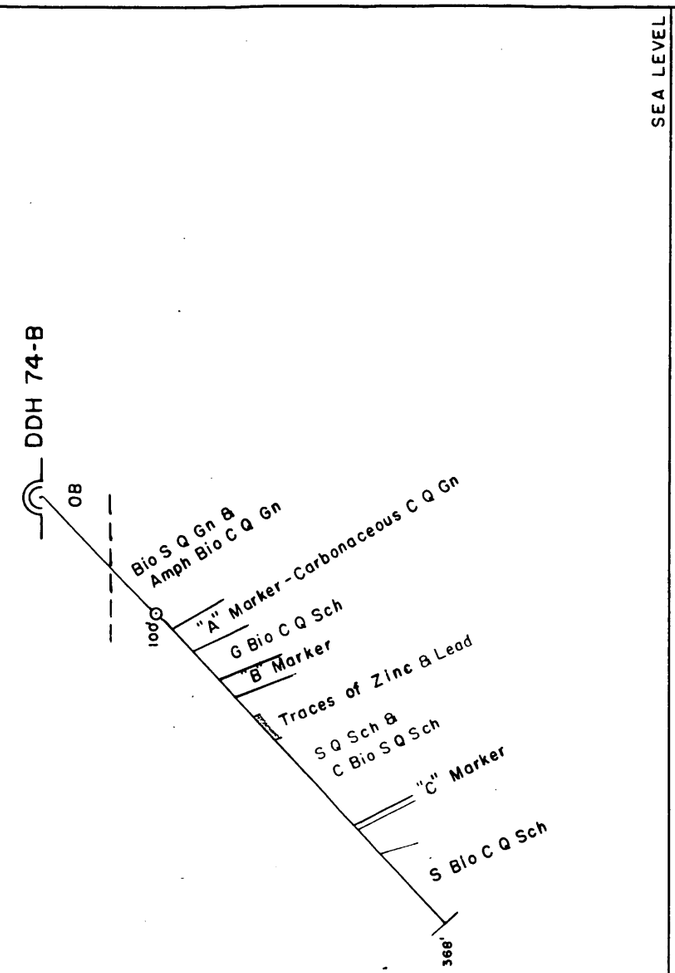
X5453B 1M 11-54



POSTED TO DATE CLH 8/27/57 CLH 9/4/57	THE NEW JERSEY ZINC COMPANY	DRAWN CLH DATE 8/15/57 TRACED SCALE: 1"=100'	PLAN & VERTICAL SECTION DDH 73-B BONDURANT AREA
			DISTRICT MINERAL, VA. FILE NO. AXV-569-B-A

X 5407 B 1M 3-53

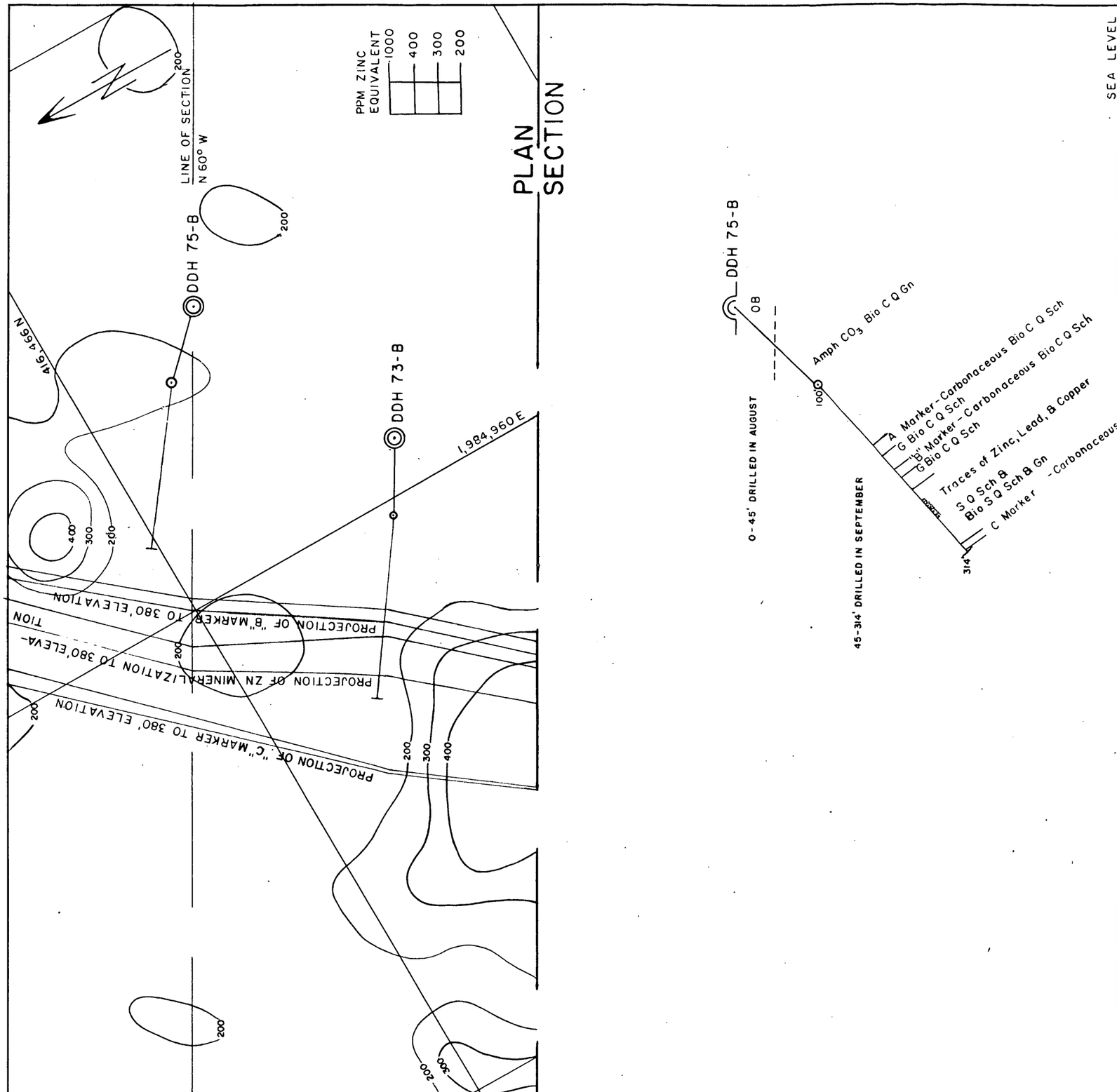




OFFICIAL FILE COPY
DMEA
RECEIVED JAN 10 1958
DATE
CODE

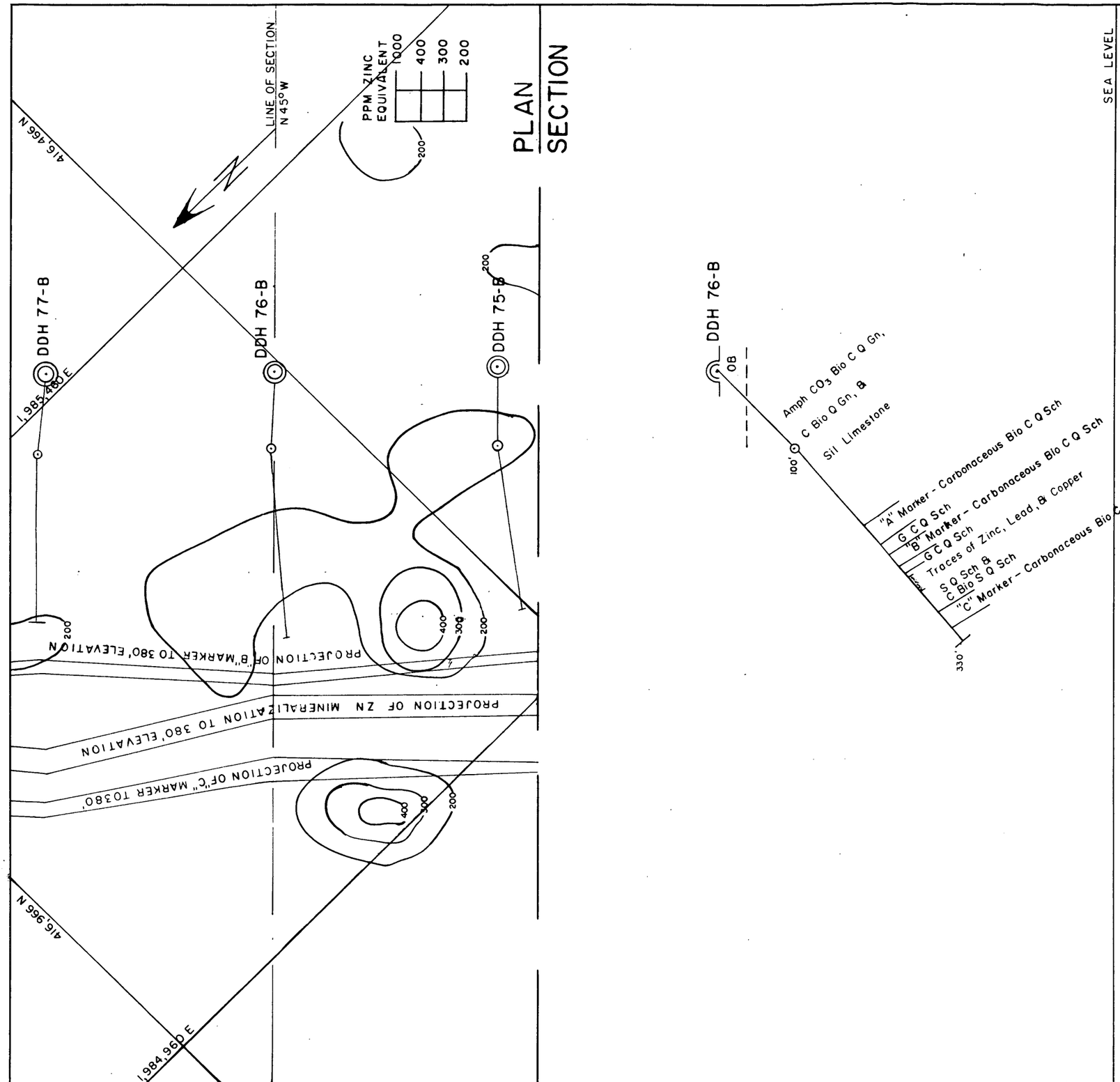
SERIAL NUMBER		DATE ISSUED		REFERENCE DRAWINGS	REVISIONS	THE NEW JERSEY ZINC COMPANY MINERAL, VA.	DRAWN CLH	PLAN & VERTICAL SECTION DDH 74-B BONDURANT AREA	DATE 9/4/57
THIS DRAWING IN DESIGN AND DETAIL IS OUR PROPERTY AND MUST NOT BE USED EXCEPT IN CONNECTION WITH OUR WORK. ALL RIGHTS OF DESIGN AND INVENTION ARE RESERVED. THIS DRAWING MUST BE RETURNED TO THE NEW JERSEY ZINC COMPANY.				AXV-542-D	CLH 9/4/57		TRACED		SCALE 1" = 100'
							CHECKED		AXV-572-B-A
							APPROVED		

X5453B 1M 11-54



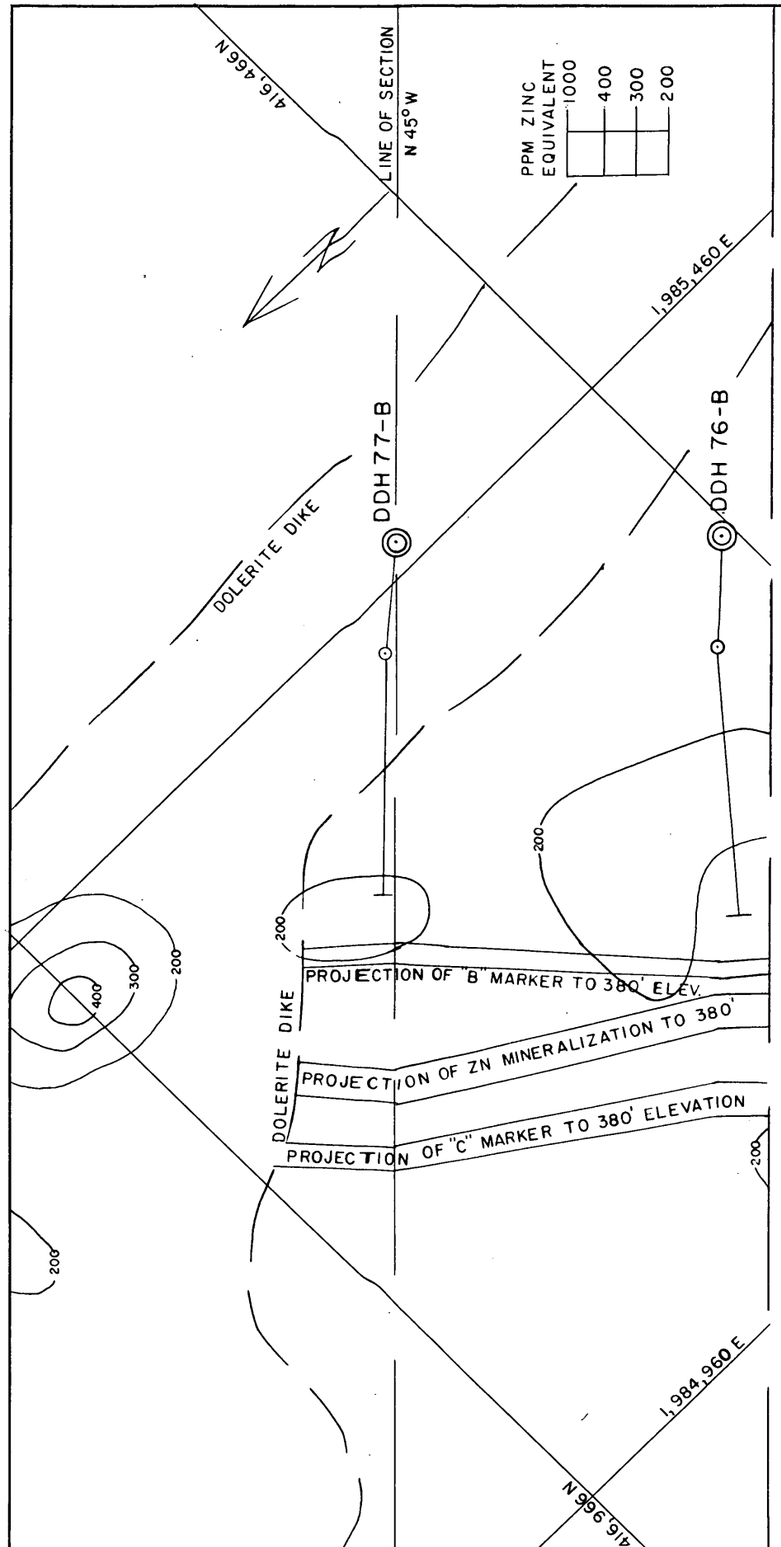
SERIAL NUMBER		DATE ISSUED		REFERENCE DRAWINGS	REVISIONS	THE NEW JERSEY ZINC COMPANY MINERAL, VA.	DRAWN CLH	PLAN & VERTICAL SECTION	DATE 9/10/57
THIS DRAWING IN DESIGN AND DETAIL IS OUR PROPERTY AND MUST NOT BE USED EXCEPT IN CONNECTION WITH OUR WORK. ALL RIGHTS OF DESIGN AND INVENTION ARE RESERVED. THIS DRAWING MUST BE RETURNED TO THE NEW JERSEY ZINC COMPANY.				AXV-542-D	CLH 9/10/57		TRACED	DDH 75-B	SCALE 1" = 100'
							CHECKED	BONDURANT AREA	AXV-573-B-A
							APPROVED		

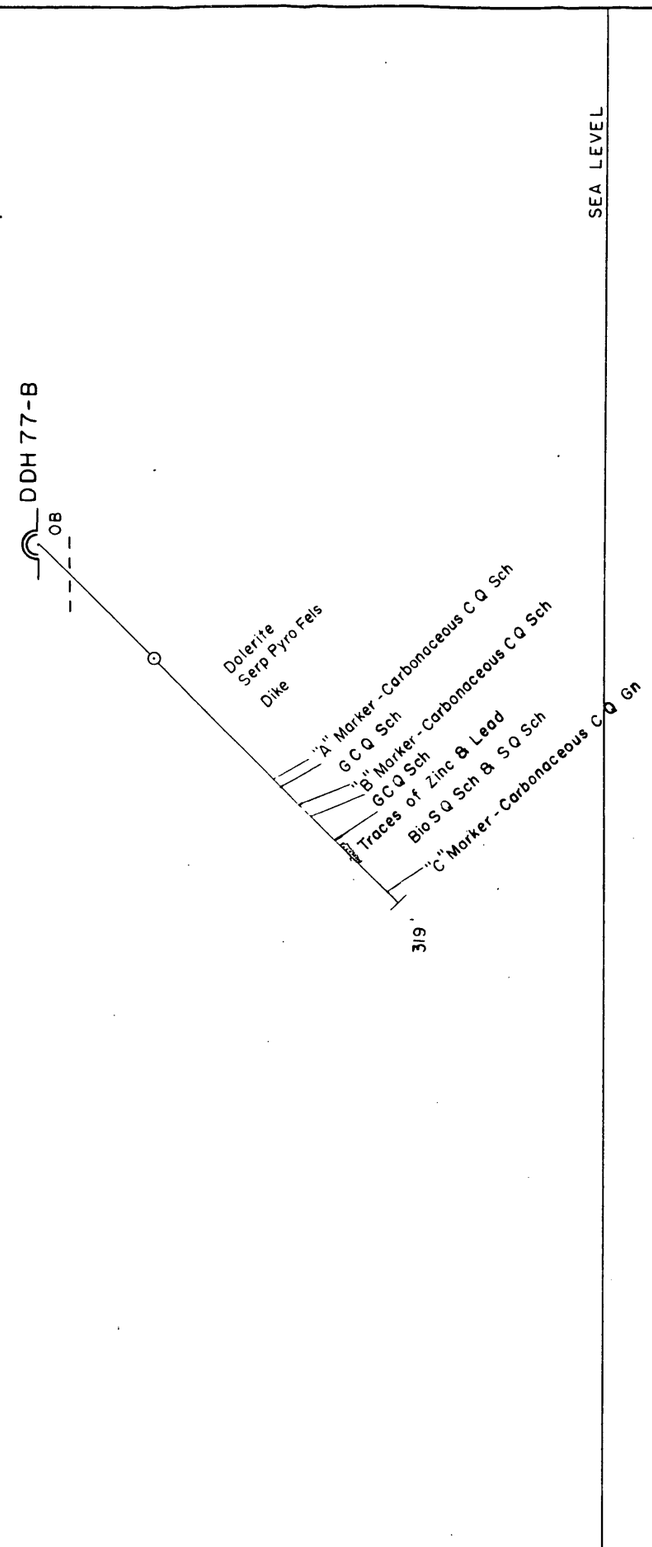
X5453B 1M 11-54



SERIAL NUMBER		DATE ISSUED		REFERENCE DRAWINGS	REVISIONS	THE NEW JERSEY ZINC COMPANY MINERAL, VA.	DRAWN CLH	PLAN & VERTICAL SECTION DDH 76-B BONDURANT AREA	DATE 9/18/57
THIS DRAWING IN DESIGN AND DETAIL IS OUR PROPERTY AND MUST NOT BE USED EXCEPT IN CONNECTION WITH OUR WORK. ALL RIGHTS OF DESIGN AND INVENTION ARE RESERVED. THIS DRAWING MUST BE RETURNED TO THE NEW JERSEY ZINC COMPANY.				AXV-542-D	CLH 9/18/57		TRACED		SCALE 1" = 100'
							CHECKED		AXV-576-B-A
							APPROVED		

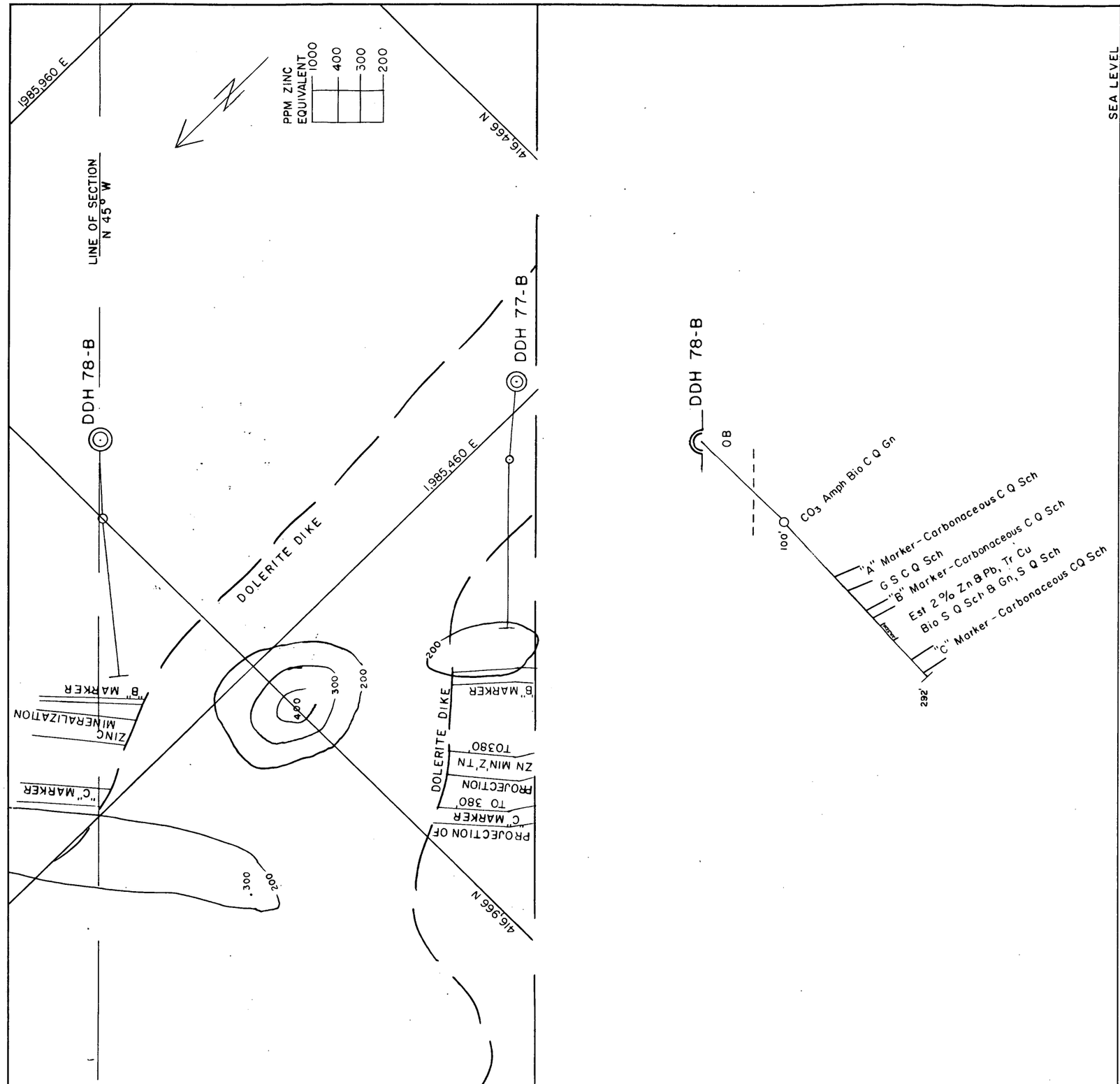
X5453B 1M 11-54





SERIAL NUMBER		DATE ISSUED		REFERENCE DRAWINGS	REVISIONS	THE NEW JERSEY ZINC COMPANY MINERAL, VA.	DRAWN CLH	PLAN & VERTICAL SECTION DDH 77-B BONDURANT AREA	DATE 10/2/57
THIS DRAWING IN DESIGN AND DETAIL IS OUR PROPERTY AND MUST NOT BE USED EXCEPT IN CONNECTION WITH OUR WORK. ALL RIGHTS OF DESIGN AND INVENTION ARE RESERVED. THIS DRAWING MUST BE RETURNED TO THE NEW JERSEY ZINC COMPANY.				AXV-542-D	CLH 10/2/57		TRACED		SCALE 1" = 100'
							CHECKED		AXV-577-B-A
							APPROVED		

X5453B 1M 11-54



SERIAL NUMBER		DATE ISSUED		REFERENCE DRAWINGS	REVISIONS	THE NEW JERSEY ZINC COMPANY MINERAL, VA.	DRAWN JET-CLH	PLAN & VERTICAL SECTION	DATE 10/3/57
THIS DRAWING IN DESIGN AND DETAIL IS OUR PROPERTY AND MUST NOT BE USED EXCEPT IN CONNECTION WITH OUR WORK. ALL RIGHTS OF DESIGN AND INVENTION ARE RESERVED. THIS DRAWING MUST BE RETURNED TO THE NEW JERSEY ZINC COMPANY.				AXV-542-D			TRACED	DDH 78-B	SCALE 1" = 100'
							CHECKED	BONDURANT AREA	AXV-578-B-A
							APPROVED		

X5453B 1M 11-54

S ADMINISTRATION
TON 25, D. C.
BUSINESS

Maps for Operator's Final Report.

(PMGC)

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION
ROOM 250 FEDERAL BLDG.
KNOXVILLE 2, TENN.

WASHINGTON

November 29, 1957

OFFICIAL FILE COPY
DMEA
RECEIVED DEC 2 1957

DATE		CODE
12/2		220
12/2		500

Memorandum

To: Operating Committee - DMEA - Washington

From: Executive Officer, DMEA - Region V - Knoxville, Tenn.

Subject: Signed Amendment No.1. DMEA-4674, Idm-E1103-zinc
The New Jersey Zinc Co. Austinville, Virginia
Bondurant Mine, Buckingham County, Virginia

Transmitted are two signed copies of the subject amendment. The usual distribution of the other copies has been made by this office.

Robert A. Laurence
Robert A. Laurence
Executive Officer, DMEA
Region V

.ey

THE NEW JERSEY ZINC COMPANY
(ESTABLISHED 1848)
160 FRONT STREET
NEW YORK 38, N.Y.

CABLE ADDRESS
"JERSEZINC"

October 31, 1957

OFFICIAL FILE COPY
DMEA
RECEIVED NOV 15 1957

DATE	INITIALS	CODE
11/15	gb	220
11/15	[illegible]	800
11/18	Klug.	500

PLEASE ADDRESS REPLY TO
P. O. Box 67
Mineral, Va.

Mr. Robert A. Laurence
Regional Executive Officer
Defense Minerals Exploration Administration
Room 13, Post Office Building
Knoxville 2, Tennessee

Subject: Final Report
Docket DMEA 4674, Contract Idm-E-1103
Bondurant Area, Buckingham County,
Virginia

Dear Mr. Laurence:

We anticipate that the final report covering work in the Bondurant area will be delayed past the end of this month since we have not yet received the driller's vouchers on all of the holes. All drilling was completed by the end of September and was reported on in the monthly report for September.

Yours sincerely,

W. L. Albers,
Superintendent

E. L. Weinberg/jjf
in quintuplicate

RECEIVED
NOV 6 - 1957
U. S. Geological Survey
Geologic Division

DMEA Form 7
(12-56)

OFFICIAL FILE COPY

Date	Surname	Code
11/8	Klugescheid	500
	Schwarzel	500
11-8	Chamber	800
	Martin	130
11/13	Johnson	110
"	Mittendorf	100
11/14	gb	220
		500

500

Mr. Robert A. Laurence
Executive Officer
DMEA Field Team, Region V
Room 13, Post Office Bldg.
Knoxville 2, Tennessee

NOV 14 1957

Re: Docket No. DMEA-4674 (Zinc-Lead-Copper)
The New Jersey Zinc Company
Bondurant Area
Buckingham County, Virginia
Contract No. Idm-E1103

Dear Mr. Laurence:

Enclosed are the original and four copies of a proposed Amendment No. 1 to the cited contract, signed by the Administrator, Defense Minerals Exploration Administration. It consists of the Amendment (one page). Two extra copies of the amendment are also enclosed for the use of the Field Team.

In the second paragraph of Exhibit "A" of the contract we unfortunately specified "A fence of six holes shall be drilled", instead of "A fence of approximately six holes", as we usually do. There is no clause in the Exhibit "A" which states that the number of holes to be drilled could be changed at the discretion of the Field Team. The amendment is therefore necessary in order that payment for the seventh hole may be made.

If the amendment meets with your approval, kindly present it to the Operator for approval and signature and, when completed, distribute the copies in the usual manner. Otherwise, and if any proposed change should lie beyond your delegated authority, all copies should be returned to us with your recommendations.

Sincerely yours,

W. S. Martin

ACTING Chairman, Operating Committee (b6)

Enclosures
APPROVED:

Frank D. Lamb (b6)
Member, Bureau of Mines

Thor H. Kiilsgaard (b6)
Member, Geological Survey

WPKlugescheid/er 11/8/57
Copy to: Docket
Admr R File
Op. Committee
Mr. Bishop, USBM
Mr. Kiilsgaard, USGS
Chron.

8623

DMEA Form 7
(12-56)

OFFICIAL FILE COPY

Date	Surname	Code
11/4	Klugescheid	500

500

November 4, 1957

Memorandum

To: Associate Solicitor, Division of Mineral Resources

From: Director, Division of Base Metals

Subject: Preparation of Amendment No. 1 for the New Jersey Zinc Company, Docket No. DMEA-4674, Bondurant Area, Buckingham County, Virginia, Contract No. Idm-E1103, Zinc-Lead-Copper.

Will you kindly prepare an Amendment No. 1 for the cited contract as follows:

In Exhibit "A", Description of the Work, change the first sentence of paragraph two, which at present reads:

"A fence of 6 holes shall be drilled, spaced at not less than 200-foot intervals."

To read as follows:

"A fence of seven holes shall be drilled, spaced at not less than 200-foot intervals".

W. R. Griswold

WPKlugescheid/er
Copy to: Docket
Chron.

8623

DMEA Form 7
(12-56)

OFFICIAL FILE COPY

Date	Surname	Code

November 4, 1957

Memorandum for the File

From: W. P. Klugescheid, Division of Base Metals

Subject: Justification for Amendment No. 1, for Docket No. DMEA-4674, The New Jersey Zinc Company, Bondurant Area, Buckingham County, Virginia, Contract No. Idm-E1103, Zinc-Lead-Copper.

Exhibit "A" of the contract, specified 6 holes with a total of 2,400 feet of drilling. The Field Team authorized a seventh hole as the footage was not used up. The hole has been drilled so an amendment is necessary to permit payment to the Operator for the seventh hole.

W.P.Klugescheid

W. P. Klugescheid

WPKlugescheid/er
Copy to: Docket
Chron.

8623

THE NEW JERSEY ZINC COMPANY

ESTABLISHED 1848

160 FRONT STREET

NEW YORK 38, N.Y.

October 2, 1957

PLEASE ADDRESS REPLY TO
P. O. Box 67
Mineral, Virginia

Regional Executive Officer
Defense Minerals Exploration Administration
Room 13, Post Office Building
Knoxville 2, Tennessee

DMEA-4674

Re: DMEA 4673(Zinc-lead-copper)
Valzinco Area
Spotsylvania County, Virginia
Contract Idm-E 1109

Dear Sir:

This will confirm my telephone conversation of September 27, 1957 with Mr. H. L. Burmeister, at which time I advised him the drill on our Bondurant DMEA project would be moved to the Valzinco area on or about October 2, 1957. With this move the drilling on the Bondurant will have been completed to within a few feet of the authorized footage.

The drill will first be located on the Valzinco at diamond drill hole site 1 on anomaly 1, as authorized by your letter of September 13, 1957.

Very truly yours,

W. L. Albers,
Superintendent

E. L. Weinberg
in quintuplicate

EXTRA COPY
DMEA
RECEIVED OCT 9 1957

DATE	INITIALS	CODE
10/9	Klug	500

RECEIVED
OCT 7 - 1957
U. S. Survey
Geologic Division
Knoxville, Tenn.

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION
ROOM 13 POST OFFICE BLDG.
KNOXVILLE 2, TENN.

OFFICIAL FILE COPY
DMEA
RECEIVED SEP 23 1957

DATE	INITIALS	CODE
9/23	C	220
~~9/23~~	~~Klug~~	~~500~~

September 19, 1957

Mr. W. L. Albers, Supt.
The New Jersey Zinc Co.

P.O. Box 67
Mineral, Virginia

Re: DMEA-4674 (zinc)
Bondurant Area
Buckingham County, Va.
Idm-E1103

Dear Mr. Albers:

This will confirm the telephone conversation with Dr. Brown, whereby Government approval is given for drilling more than six holes provided the maximum footage of 2400 feet is not exceeded. This is authorized by Article 6 of the contract (lines 25 to 27).

We have substituted the revised August voucher for the one you sent originally. Therefore, you should include the entire hole 75-B on your September report. We will forward your August voucher for payment as soon as we receive the contractor's invoices from you.

Sincerely yours,

Robert A. Laurence
Executive Officer, DMEA
Field Team, Region V

RAL/sm
cc
Opr. Com.-2
Finance Office
Burmeister
Lynch
Files

DMEA Form 7
(12-56)

OFFICIAL FILE COPY

Date	Surname	Code
7/19	Friswold	500
7/19	Klugescheid	500
7/19	Martin	130
"	Johnson	110
	Butterworth	500
7/22	P.K. O	221
		500

500

JUL 22 1957

7/19. Bishop (130

Mr. Robert A. Laurence
Executive Officer
DMEA Field Team, Region V
Room 13, Post Office Bldg.
Knoxville 2, Tennessee

Re: Docket No. DMEA-4674 (Zinc-Lead-Copper)
The New Jersey Zinc Company
Bondurant Area
Buckingham County, Virginia
Contract No. Idm-E1103

Dear Mr. Laurence:

Enclosed are the Field Team and Finance Office copies of the cited contract, signed by the Operator and the Government.

We are also enclosing an unsigned copy of the contract for the use of the Field Team.

Sincerely yours,

W. S. Martin
ACTING Chairman, Operating Committee (JHB)

WPKlugescheid/er 7/19/57
Copy to: Docket
Admr R File
Op. Committee
Mr. Bishop, USBM
Mr. Kiilsgaard, USGS
Chron.

Enclosures

APPROVED:

O. M. Bishop (JHB)
Member, Bureau of Mines

Thor H. Kiilsgaard (JHB)
Member, Geological Survey

8623

THE NEW JERSEY ZINC COMPANY

(ESTABLISHED 1848)

HORSE HEAD PRODUCTS ®

OFFICE OF THE
VICE PRESIDENT

100 FRONT STREET

NEW YORK 38, N.Y.

July 9, 1957

OFFICIAL FILE COPY DMEA RECEIVED JUL 11 1957		
DATE	INITIALS	CODE
7/11	P.K.	220
7/12	B	215
7/12	Klug	500

Mr. C. O. Mittendorf, Administrator
United States Department Of The Interior
Defense Minerals Exploration Administration
Washington 25, D. C.

Re: Docket No. DMEA-4674
(Zinc-Lead-Copper)
The New Jersey Zinc Company
Bondurant Area
Buckingham County, Virginia

Dear Mr. Mittendorf:

Returned herewith are the original and four copies of Contract #IDM-E1103, duly signed in accordance with your letter dated June 27, 1957. We have retained the "Operator's Copy".

Very truly yours,

S. S. Goodwin
Vice President

SSG:ei

DMEA Form 7
(12-56)

OFFICIAL FILE COPY

Date	Surname	Code
6/21	Klugescheid	500
	[illegible]	500
6/24	Taffert	800
6/24	Selfridge	130
6/24	[illegible]	130
6/24	Nelson	130
6/25	Johnson	110
	No attendance	100
6-27	[illegible]	225

JUN 27 1957

B

Mr. S. S. Goodwin, Vice President
The New Jersey Zinc Company
160 Front Street
New York 38, New York

Re: Docket No. DMEA-4674 (Zinc-Lead-Copper)
The New Jersey Zinc Company
Bondurant Area
Buckingham County, Virginia

Dear Mr. Goodwin:

In reference to your application of March 1, 1957, we are enclosing the original and five copies of a proposed long-form contract signed by the Administrator, Defense Minerals Exploration Administration, for an exploration project on the cited property.

The contract consists of the form (MF-200), Annex I (two pages), Annex II (two pages), Exhibit "A" (two pages), and two maps.

If the contract meets with your approval, please sign all copies, retain the "Operator's Copy" for your files, and transmit the others to this office. In case it should not meet with your approval, please return all copies to us with your comments.

The diamond drilling costs are based on the bid submitted by the E. J. Longyear Company.

Sincerely yours,

Administrator

WPKlugescheid/er 6/21/57
Copy to: Docket
Admr R File
Op. Committee
Mr. Bishop, USBM
Mr. Kiilsgaard, USGS
Region V (2)
Chron.

Enclosures

8623

Neither the cost nor the value of casing left in drill holes at the option of the Operator will be accepted as a charge to the contract.

Estimated Costs of the Project

Actual Costs

Category (1) Independent Contracts

Overburden drilling to 100-foot depth, approximately 360 feet @ $2.90/ft.	$1,044.00	
Diamond drilling to 500-foot depth, approximately 2,040 feet @ $2.70/ft. for AX size bit	5,508.00	$6,552.00

Diamond drilling with EX size bit is allowable @ $2.60/ft.

The above rates include charges for cementing and redrilling, water supply, changing of locations, reaming and casing, and any other charges which may be incurred by the drilling contractor.

Neither the cost nor the value of casing left in drill holes will be accepted as a charge to the contract. See attached sheet

Categories (2) through (7) None

Fixed Unit Costs (See Annex II of the contract)

Incidental allowance 1/ for each foot of drilling completed, 2,400 feet @ $0.58	$1,392.00	
Core boxes - 50 @ $2.50 each (wooden)	125.00	
Sample analyses - 100 @ $3.00/each sample	300.00	1,817.00
Estimated Total Cost of the Project (rounded to)		$8,370.00
Government Participation @ 50%		$4,185.00

1/ Includes all costs that might otherwise be allowable costs of the project under Categories (1) through (7) of Article 6(a), except as otherwise scheduled in Exhibit "A".

DMEA Form 7
(12-56)

OFFICIAL FILE COPY

Date	Surname	Code
6/21	Klugescheid	500
	[illegible]	200
6/24	Talbert	800
6/24	[illegible]	130
6/25	Johnson	110
26	[illegible]	100
6-27	[illegible]	220
		520

500

JUN 27 1957

Mr. Robert A. Laurence
Executive Officer
DMEA Field Team, Region V
Room 13, Post Office Bldg.
Knoxville 2, Tennessee

Re: Docket No. DMEA-4674 (Zinc-Lead-Copper)
The New Jersey Zinc Company
Bondurant Area
Buckingham County, Virginia

Dear Mr. Laurence:

As requested by the Applicant, we are forwarding the original and five copies of a proposed long-form contract to its New York office.

We are enclosing two extra copies, minus the form, for Field Team use. This material consists of Annex I, (two pages), Annex II (two pages), Exhibit "A" (two pages), and two maps.

Sincerely yours,

George C. Selfridge

Chairman, Operating Committee (JLB)
WPKlugescheid/er 6/21/57
Copy to: Docket
Admr R File
Op. Committee
Mr. Bishop, USBM
Mr. Kiilsgaard, USGS
Chron.

Enclosures

APPROVED:

P. F. Yopes (JLB)
Member, Bureau of Mines

N. E. Nelson (JLB)
Member, Geological Survey

8623

UNITED STATES
DEPARTMENT OF THE INTERIOR
OFFICE OF THE SOLICITOR
WASHINGTON 25, D. C.

MAY 31 1957

Memorandum

To: Administrator, DMEA
Attention: Chief, Base Metals Division

From: Associate Solicitor, Division of Mineral Resources

Subject: Docket No. DMEA-4674 (Zinc-Lead-Copper)
The New Jersey Zinc Company
Bondurant Area
Buckingham County, Virginia

Pursuant to your memorandum dated May 13, 1957, we have prepared the attached Contract in satisfactory legal form for execution, subject to the attachment of the two maps referred to in your memorandum.

Robert P. Dwyer

IN REPLY REFER TO:

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
WASHINGTON 25, D. C.

OFFICIAL FILE COPY
DMEA
RECEIVED JUN 5 1957

DATE	INITIALS	CODE
6/5	JWJ	220
		500

June 5, 1957
Re: DMEA 4674
New Jersey Zinc Company
Bondurant Area
Buckingham County, Va.
Appl. Est. $9,681.00
Rec'd " $9,291.74
zinc, lead, copper

Memorandum

To: W. R. Griswold, Defense Minerals Exploration Administration

From: N. E. Nelson, U. S. Geological Survey

Subject: Review of Field Team Report

The applicant requested assistance in exploring, by diamond drilling, a tract of land that had been prospected geochemically, and surveyed by self-potential and a modified electromagnetic geophysical methods.

The results of the first and second surveys agreed and show anomalous areas, one of which the examiners consider is worth testing by diamond drilling.

The work proposed consists of 2,400 feet of diamond drilling in a fence of 6 holes.

I concur with the recommendation of the examiners and the Field Team.

N. E. Nelson

N. E. Nelson

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF MINES
WASHINGTON 25, D. C.

OFFICIAL FILE COPY
DMEA
RECEIVED JUN 5 1957

DATE	INITIALS	CODE
6-5	C	220
		500

June 4, 1957

Memorandum

To: W. R. Griswold, Defense Minerals Exploration Administration

From: A. D. McMahon, Commodity Specialist, Branch of Base Metals

Subject: Report of Examination, Docket No. DMEA 4674 (Zinc-Lead-Copper), New Jersey Zinc Co. Bondurant Area, Buckingham County, Virginia. $9,291.74

The examiners report that the applicant's geophysical exploration work has resulted in geo-chemical and self-potential anomalies that are large and strong enough to warrant exploration by diamond core drilling methods under the DMEA program. Accordingly, they recommend a contract for 2,400 feet of diamond drilling in a maximum of 6 holes at an estimated cost of $9,291.74.

I concur in their recommendation.

A. D. McMahon

A. D. McMahon

cc: Division of Minerals
Mr. Killsgaard
Mr. Lamb
Files

UNITED STATES
DEPARTMENT OF THE INTERIOR
OFFICE OF THE SOLICITOR
WASHINGTON 25, D. C.

MAY 31 1957

Memorandum

To: Administrator, DMEA
Attention: Chief, Base Metals Division

From: Associate Solicitor, Division of Mineral Resources

Subject: Docket No. DMEA-[illegible] (Zinc-Lead-Copper)
The New Jersey Zinc Company
Bondurant Area
Buckingham County, Virginia

Pursuant to your memorandum dated May 13, 1957, we have prepared the attached Contract in satisfactory legal form for execution, subject to the attachment of the two maps referred to in your memorandum.

Robert P. Dwyer

HCRubin/wog
May 31, 1957
Copy to: Solicitor (2)
DMEA Docket
W.R.Griswold (2)
R.P.Dwyer
H.C.Rubin
Chron.

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION
ROOM 13 POST OFFICE BLDG.
KNOXVILLE 2, TENN.

May 29, 1957

FILE COPY
D M E A
RECEIVED MAY 31 1957

DATE	INITIALS	CODE
5/31	C	220
		130
6-4	C	220
		500

Memorandum

To: Operating Committee, DMEA - Washington

From: DMEA Field Team - Region V - Knoxville, Tennessee

Subject: Examination Report - DMEA-4674, New Jersey Zinc Co. Bondurant Area, Buckingham County, Virginia (Zinc-lead-copper)

ON SITE REPORT

Submitted are four copies of the subject examination report.

The Field Team agrees with the recommendations of the Field Examiners in their alternate proposal for an exploration project.

The allowable costs recommended for the project appear to be reasonable, although the cost per foot for incidental allowance is much more than was approved for other zinc contracts. This is because the amount of diamond drilling is small as compared to our other projects, while the fixed unit costs of necessity remain about normal.

Robert A. Laurence
Robert A. Laurence
EXECUTIVE OFFICER
DMEA FIELD TEAM
REGION V

Reviewed by
DMEA OPERATING COMMITTEE
6-3-57
(date)

V. J. Lynch
V. J. LYNCH
MEMBER, BUREAU OF MINES

FIELD TEAM REPORT ON EXAMINATION OF PROPERTY

OFFICIAL FILE COPY
DMEA
RECEIVED MAY 31 1957
DATE | INITIALS | CODE
130~~26~~
220

by

W. P. Williams and H. L. Burmeister 1/

DMEA Docket No. 4674 (zinc, lead, copper)
New Jersey Zinc Company, 160 Front Street
New York 38, New York

SUMMARY

This property was examined on April 10, 1957. In conference with the Operator's representatives certain revisions were made in the drilling procedure and costs as they were outlined in the application. These revisions were made with the agreement of the Operator's representative and are found in this report under, "Proposed Alternate Proposal" and "Allowable Costs of Project".

The proposed project consists of a total of 2,400 feet of diamond core drilling in a maximum of 6 holes at a total estimated cost of $9,291.74.

In the field it is evident that the Applicant's geochemical and geophysical surveys have been conducted with thoroughness and care.

1/ W. P. Williams, geologist, U. S. Geological Survey
H. L. Burmeister, engineer, U. S. Bureau of Mines

Reviewed by
DMEA OPERATING COMMITTEE
4-3-57
(date)

CONCLUSIONS AND RECOMMENDATIONS

The field examiners believe that the Applicant's exploration work has resulted in geo-chemical and self-potential anomalies that are large and strong enough to warrant exploration by diamond core drilling methods under the DMEA program. The geophysical surveys constitute the best and most applicable justification for further exploration because of the complete soil cover of the property and the all but complete lack of rock exposures in old caved prospect pits. The few rock exposures that are present show that the ore host rock, quartzite and sericite schist, is present on the property and will form the target for the proposed drilling.

It is recommended that a DMEA contract be prepared to provide for an exploration drilling project as outlined in this report.

TIME SPENT ON PROPERTY ETC.

About five hours were spent on this property in the field and about two hours in the company offices. The examiners were accompanied by Allen Heyl, U. S. G. S. and the following employees of the Applicant; W. Horatio Brown, company regional geologist, E. L. Weinberg and Charles Hamilton, company geologists. Mr. Weinberg would be in direct charge of any work done under the DMEA program.

NAME AND LOCATION OF PROPERTY

This property is located in the southern portion of Buckingham County, Virginia, near the Village of Andersonville.

For the purpose of this application the property is known as the Bondurant Area because the old Bondurant mine is located on the ground concerned. The Bondurant Mine is situated approximately 6,000 feet southwesterly of the geophysical anomaly recommended for exploration.

The exploration area is reached from Sprouse's Corner at the intersection of U. S. Routes 15 and 60, by proceeding southwestward on Route 640 to the junction of Route 638, a distance of 6 - 1/8 miles. From this point follow a woods road to the left for about 4,500 feet to the anomaly, (Fig. 1).

All roads leading to the property are hard surfaced except the woods road which should be servicable in all seasons.

COMPETENCY OF APPLICANT AND PERSONNEL

The New Jersey Zinc Company unquestionably has a competent geophysical and geological staff. Exploration would be under the general direction of W. Horatio Brown, company regional geologist and under the direct supervision of E. L. Weinberg, geologist in charge of the company office in Mineral, Virginia.

APPLICANT'S PROPERTY RIGHTS

The Applicant holds the 88 acre J. A. Coleman property under an option to purchase mineral and surface rights. The R. S. Burruss, Jr. option and mineral lease covers 4 separate parcels totaling 833 acres. One parcel is erroneously marked on the application map as containing 406 acres but it actually contains 392 acres. "Consent to Lien" has been waived by the Government. The total 921 acres are subject to Government royalty.

The application map shows the Ed. P. Anderson property as being controlled by the Applicant. This is in error.

GEOLOGY AND ORE DEPOSITS

The Bondurant property is located in the Piedmont physiographic province. The land surface in the vicinity is gently rolling and consists of broad flat-topped hills or ridges and narrow valleys. Topographic relief in the area may be as much as 300 feet. The property is situated within the belt of old crystalline and metamorphic rocks that extends from New Brunswick to Alabama. The area is also a part of the old gold belt in the Southern Appalachians region.

Rocks in the near vicinity of the property consist of an alternating series of ferruginous quartzites and sericite schists that are probably late Precambrian in age. The strike of the bedding and foliation is about N 45° E and the dip may be vertical in places but is usually about 80° to the southeast. The ferruginous quartzite consists mostly of quartz, hematite, and magnetite with quartz predominant. At some places the quartzite contains sericite and biotite. With increase of those minerals the quartzite passes into ferruginous sericite schist. The schist ranges in texture from fine to medium coarse grained and in composition from sericite-bearing quartzite to mica-rich schist.

Outcrops are very scarce on the Bondurant property. The few exposures present indicate that the country rocks are strongly similar to those in the mines at Dillwyn. Nine small, scattered prospect pits now caved and overgrown, offer some exposure of the country rocks. An old caved vertical shaft, about

40 feet deep judging from the size of the dump, also exists on the property. The prospect pits and shaft dump exhibit gossanous hematitic, sericitic, schistose quartzite. Pyrite is locally very abundantly disseminated in the quartzite. Chalcopyrite is locally sparsely disseminated in the sulfide-rich areas.

Bulletin No. 7, Virginia Geological Survey, reports (p.192) that placer mining for gold was done on the property as early as 1836. In 1865 two parallel "veins" were worked by means of two shafts and excavations. In 1901 about 500 feet of adit crosscutting and drifting were performed. The veins exposed by the latter work are reported to have averaged $4.50 per ton in gold. No records of any kind were found showing the amount of past production from the property. There are no known ore reserves on the property.

What have been referred in the old reports as gold "veins" appear to be mineralized quartzite beds. The sulfide and gold minerals are disseminated through the quartzite but are very probably more abundant along principal bedding planes and in proximity to crystalline quartz veinlets.

The Applicant completed extensive and thorough geophysical surveys on the property prior to making application for DMEA assistance. The surveys consisted of geochemical soil sampling, self-potential or spontaneous polorization analysis, and a modified electromagnetic survey called "PEM" by the Applicant (Palmerton electromagnetic). The geophysical surveys resulted in marked anomalies by geochemical and self-potential methods. The electromagnetic survey, however, did not provide an anomaly. The geochemical anomalies are shown on Figures 2 and 3. Two hundred parts per million zinc equivalent

is considered background for the region. Figures 2 and 3, upon which are plotted sample points and equivalent zinc values, show that values within the largest geochemical anomaly range as high as 750 ppm.

The self-potential anomaly is shown on figure 4. According to persons in the Geophysical Branch, U. S. Geological Survey the anomaly is a well developed and significant one. From the maps it will be noted that the geochemical and self-potential anomalies are both located in the same general area. Thus each anomaly is supplementary to the other.

AVAILABILITY OF MANPOWER, SUPPLIES, POWER, ETC.

Manpower is readily available in this well settled farming area and also from nearby Lynchburg and Richmond. Labor does not enter into this application.

Materials and supplies may be secured from Lynchburg or Richmond; and Chespeake and Ohio Railroad facilities are available in Dillwyn, Virginia. Power lines could be easily extended to the exploration area.

APPLICANT'S PROPOSAL

The Applicant proposed to drill a total of 2,400 feet of hole recovering AX size core. An unspecified number of drill holes were to be drilled on 2 geochemical anomalies on 200 feet spacing and at a minus 45° inclination with holes 400 - 500 feet each in length.

With agreement of the Applicant it was decided to eliminate the small anomaly at coordinates 415,000 N - 1,983,000 E (Fig. 3) from exploration and

concentrate total drilling on the larger anomaly to the northeast. It is believed that the purpose of the exploration will be more adequately accomplished in this manner.

Adjustments in date of starting and completion as well as in hole sequence and costs of the project were made with agreement of the Operator. The revised exploration program is outlined in this report under,"Proposed Project". Revised maps accompany this report.

PROPOSED ALTERNATE PROJECT

It is proposed that exploration be conducted on this project previous to starting work on projects DMEA 4673 or DMEA 4675.

In the interest of what is considered a better project, the Operator and the examiners mutually agreed to eliminate the southwestern anomaly, (coordinates 415,000 N - 1,983,000 E) (Fig. 3) and do all drilling on the northeastern anomaly, (coordinates 416,250 N - 1, 984,500 E).

It is proposed to diamond core drill a total of 2400 feet (AX-BXWL) size in 6 holes averaging approximately 400 feet each in length and at 200-foot spacing. All holes would be drilled on a minus 45° inclination, and on a bearing approximately at right angles to the strike of the foliation. Hole No. 1 would be located near the center of the drill fence line as shown on the accompanying map, Fig. 2. All drill hole collars are to be on a final 200-foot spacing, but sequence of holes is to be governed by results obtained in previously drilled holes.

It is planned to use 1 drill on a 2 - shift, 6 day-per-week basis. Review of company records over 4 months indicates that an average advance of

31 feet per shift should be maintained if unusual difficulties are not encountered. In calculating costs, a period of 2 months is allowed for completion of work, with agreement of the Operator, rather than 3 months specified in the application.

The application did not indicate starting or completion time. The Operator has requested that the time for starting after signing of contract be considered not over 1 month and the time of completion not over 3 months.

ALLOWABLE COSTS OF PROJECT

Independent Contracts

(E. J. Longyear bid)

2,400 feet (AX - BXWL) core drilling

basic	$2.70 per foot
service	.10 per foot
casing	.10 per foot
	$2.90 per foot

Total Independent Contracts - 2,400 ft. @ $2.90 $6,960.00

Labor, Supervision

Geologist (half-time) 2 months @ $300.00	$600.00
Assist. geologist, surveyor, (half-time) 2 months @ $225.00	450.00
Draftsman (1/3 time) 2 months @ $87.33	174.66
Accounting and typing 2 months @ $30.00	60.00
Total Labor, Supervision	$1,284.66

Operating Equipment

None

Operating Materials & Supplies

100 core boxes - @ $2.50	$250.00

New or Rehabilitated Buildings

None

Rental

Core shed, 2 months @ $10.00	$20.00

Miscellaneous

Car mileage - 3 round trips per week for 5 weeks - 2,500 miles @ $0.08 = 16 [illegible]	$200.00
Workmens Comp. 1.0% Payroll taxes 5.0% Total 6.0% on $1,284.66	$77.08 changed
Chemical Assays (Cu-Pb-Zn) 100 @ $3.00	$300.00
Fire Assays (Au-Ag) 100 @ $2.00	$200.00
Total Miscellaneous	$777.08
Total Project	$9,291.74

H. L. Burmeister

H. L. Burmeister
U. S. Bureau of Mines

W. P. Williams

W. P. Williams
U. S. Geological Survey

DMEA Form 7
(12-56)

OFFICIAL FILE COPY

Date	Surname	Code
5/13	Klugescheid	500

500

May 13, 1957

Memorandum

To: Associate Solicitor, Division of Mineral Resources

From: Chief, Base Metals Division

Subject: Preparation of Contract for The New Jersey Zinc Company, Bondurant Area, Docket No. DMEA-4674 (Zinc-Lead-Copper), Buckingham County, Virginia

Will you please prepare a contract for the cited application. A draft of the contract, Exhibit "A", Annex I, and Annex II are attached to this memorandum. Consents to Lien have been waived. The necessary numbers of maps will be available in a few days.

W. R. Griswold

W. R. Griswold

WPKlugescheid/er

Copy to: Docket
Chron.

8623

DMEA Form 7
(12-56)

36

OFFICIAL FILE COPY

Date	Surname	Code
3/20	Klugescheid	500
3/20	Kiilsgaard	500
3/22	Selfridge	130
3/22	Jorman	110
3/25	C. O. Mittendorf	100
		220
		500

MAR 25 1957

Mr. S. S. Goodwin, Vice President
The New Jersey Zinc Company
160 Front Street
New York 38, New York

Re: Docket No. DMEA-4674 (Zinc-Lead-Copper)
The New Jersey Zinc Company
Bondurant Area
Buckingham County, Virginia

Lamb
Kiilsgaard

Dear Mr. Goodwin:

Your application for Government assistance to explore the cited property has been reviewed by the Base Metals Division of the Defense Minerals Exploration Administration and has been referred to:

Mr. Robert A. Laurence
Executive Officer
DMEA Field Team, Region V
Room 13, Post Office Bldg.
Knoxville 2, Tennessee

If the Field Team requires additional information concerning your application, they will contact you at an early date.

Sincerely yours,

C. O. Mittendorf

Administrator

WPKlugescheid/er 3/20/57
Copy to: Docket
Admr R File
Op. Committee
Base Metals
Mr. Bishop, USBM
Mr. Kiilsgaard, USGS
Region V (2)
Chron.

8623

DMEA Form 7
(12-56)

OFFICIAL FILE COPY

Date	Surname	Code
3/20	Klugescheid	500
3/20	Reinwald	500
3/22	Selfridge	130
"	Johnson	110
"	Matthewson	100
		225
		500

500

MAR 25 1957

Mr. Robert A. Laurence
Executive Officer
DMEA Field Team, Region V
Room 13, Post Office Bldg.
Knoxville 2, Tennessee

Re: Docket No. DMEA-4674 (Zinc-Copper-Lead)
The New Jersey Zinc Company
Bondurant Area
Buckingham County, Virginia

Dear Mr. Laurence:

The cited application for exploration assistance is being referred to your office for consideration, a field examination of the property if warranted, and recommendations.

This project is to have precedence over DMEA-4673 and DMEA-4675, as requested by the Applicant.

On map AIV-402D-B, near North-South coordinate 1,977,000 E, we have a tract named R. S. Burruss, Jr., 406 Ac. We believe this to be the one referred to in the lease as the Bondurant Tract and it is given as 392 acres. Will you please check this for us so that we may have the acreages correct on the map. If the acreage is 392, the total acreage for R. S. Burruss will be correct.

Copies of memoranda dated March 14, 1957, by N. E. Nelson, Geological Survey, and O. M. Bishop, Bureau of Mines, relating to the project, are enclosed for your information. We are also enclosing a copy of the application for the use of the Field Team.

Sincerely yours,

George C. Selfridge

Chairman, Operating Committee (GCS)

WPKlugescheid/er 3/20/57

Copy to: Docket
Admr R File
Op. Committee
Mr. Bishop, USBM
Mr. Kiilsgaard, USGS
Chron.

Enclosures

APPROVED:

Frank D. Lamb (GCS)

Member, Bureau of Mines

Thor H. Kiilsgaard (GCS)

Member, Geological Survey

8623

IN REPLY REFER TO:

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
WASHINGTON 25, D. C.

OFFICIAL FILE COPY
DMEA
RECEIVED MAR 15 1957

DATE	INITIALS	CODE
3/15	C	220
3/15	WPK	500

March 14, 1957
Re: DMEA's 4673, 4674, and 4675
New Jersey Zinc Company
Tracts in (a) Spotsylvania,
(b) Buckingham, and (c) Louisa
Counties, Virginia
(a) $14,769
(b) $ 9,681 Zinc-copper-lead
(c) $22,092

Memorandum

To: W. R. Griswold, Defense Minerals Exploration Administration

From: N. E. Nelson, U. S. Geological Survey

Subject: Review of 3 applications

In the 3 similar applications the applicant requests assistance in exploring by drilling 3 areas that have been prospected by geochemical field work and which show anomalous soil zinc conditions.

The zinc indications, it is proposed to explore, are all located in the broad band of schists and gneisses which extends from Buckingham to Stafford Counties. DMEA assisted work has been done on tracts held by Virginia Mining Company and the Roland Beers interests. Limited success and certification attended the Virginia Mining Company work. The Beers work was generally unsuccessful and certification was not recommended.

Referral of the applications to the Field Team is recommended.

N. E. Nelson

N. E. Nelson

OFFICIAL FILE COPY
DMEA 15
RECEIVED MAR 15 1957

DATE	INITIALS	CODE
3/15	C	220
3/15	WBK	500

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF MINES
WASHINGTON 25, D. C.

March 14, 1957

Re: DMEA 4674; Cu-Pb-Zn;
$9,681
The New Jersey Zinc Co.
Bondurant Area
Buckingham County, Va.

Memorandum

To: W. R. Griswold, DMEA

From: O. M. Bishop, USBM

Subject: Application dated March 1, 1957 and received March 12, 1957

The New Jersey Zinc Co. holds options to lease 921 acres which include the Bondurant and the probable locations of the Anderson mines. The two properties were mined for gold in the 19th century. No production data is available and the mine workings are now inaccessible. The country rock is a series of sericite schists and quartzites in which the foliation strikes northeast and dips almost vertically. Gold and pyrite are found as float mineral, and geochemical prospecting indicates the presence of zinc in anomalous quantities.

The New Jersey Zinc Company proposes to explore the largest of these anomalous areas. The one proposed for drilling has a strike length of more than 1,000 feet, and a width of 600 feet. It is planned to drill two lines of holes to test down-dip from the twin-centered anomaly. Holes will be drilled at an inclination of 45 degrees, normal to the strike of the foliation and 200 feet apart within the line of drill holes. If the drilling proves favorable the company expects to do additional work.

I recommend that the application be referred to the field team for review and examination, if they consider such necessary. In any case it may be necessary to more specifically locate drill sites. In my opinion work done to date amply justifies the limited project proposed. I therefore recommend that a single contract be written to permit participation in this project and also that outlined in application in DMEA Dockets 4673 and 4675.

O. M. Bishop

O. M. Bishop

Copy to: Division of Minerals
Mr. Kiilsgaard
Mr. Lamb
Files

UNITED STATES
DEPARTMENT OF THE INTERIOR
Defense Minerals Exploration Administration
Washington 25, D. C.

March 11, 1957

New Jersey Zinc Company
160 Front Street
New York 38, New York

Subject: DMEA-4674
Re: Exploration Assistance
Bondurant Mine

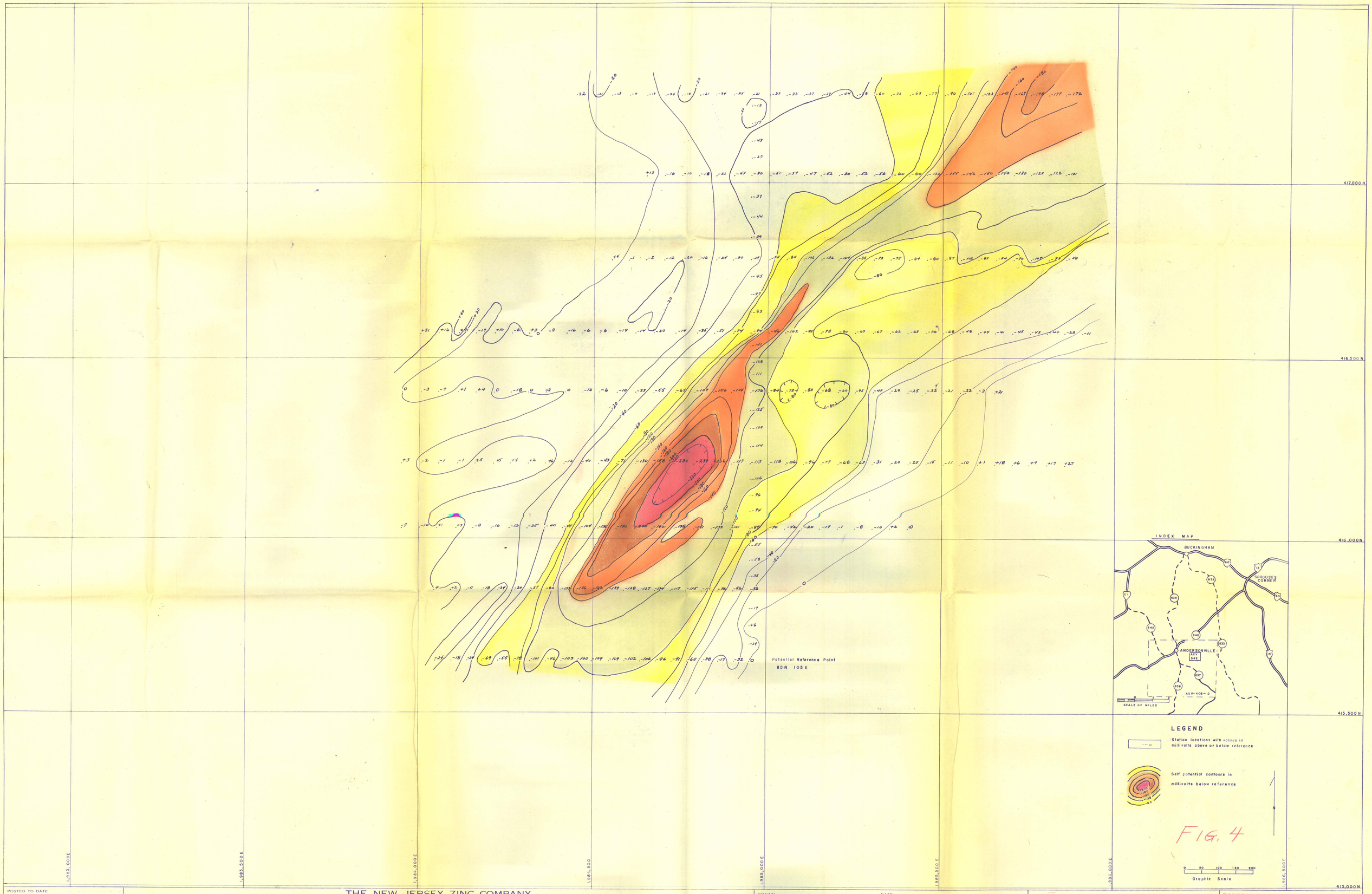
Gentlemen:

Your application for exploration assistance, dated March 1, 1957 submitted to our office at Washington, D. C. has been assigned Docket Number DMEA-4674 and referred to the Base Metals Division in the Washington office. Kindly identify all future correspondence relating to your application by this Docket Number.

Sincerely yours,

Allen S. Dakan, Chief
Operations Control and
Statistics Division

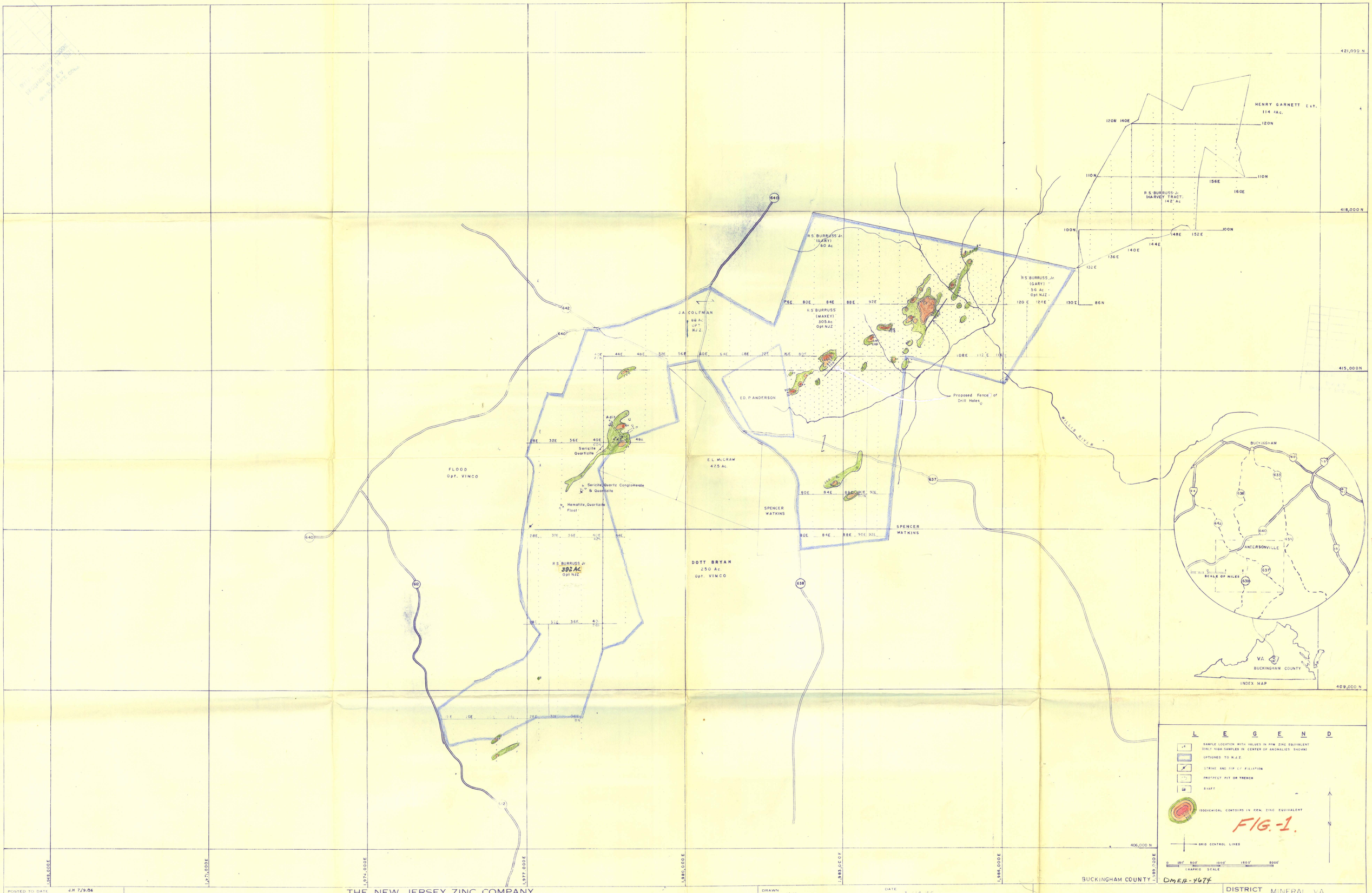
Copy to: Region V



POSTED TO DATE

THE NEW JERSEY ZINC COMPANY

DRAWN CLH	DATE MARCH 15, 1957	N E BURRUSS (Maxey Gary) Property, Buckingham County, Virginia.	DISTRICT Mineral, Va.
TRACED NAK	SCALE 1" = 100'	SELF POTENTIAL	FILE NO. AXV-542-D-Ck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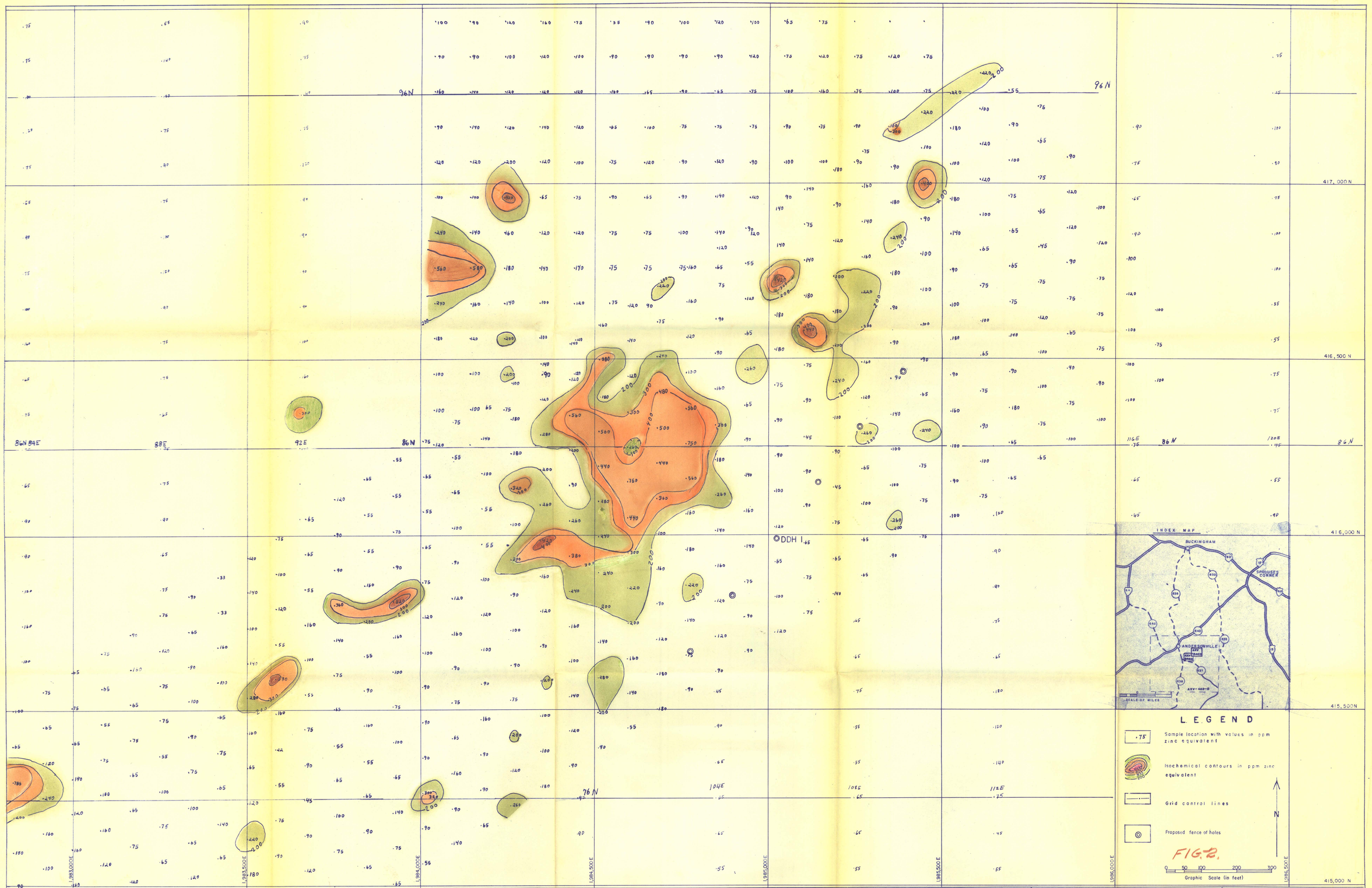
HENRY GARNETT Et al.
114 Ac.
R.S. BURRUSS Jr.
(HARVEY TRACT)
142 Ac
R.S. BURRUSS Jr.
(GARY)
80 Ac
R.S. BURRUSS Jr.
(GARY)
56 Ac
Opt. NJZ
R.S. BURRUSS
(MAXEY)
305 Ac
Opt. NJZ
J.A. COLEMAN
88 Ac
Opt. NJZ
ED. P. ANDERSON
E.L. McGRAW
47.5 Ac.
SPENCER WATKINS
DOTT BRYAN
250 Ac
Opt. VIMCO
FLOOD
Opt. VIMCO
R.S. BURRUSS Jr.
392 Ac
Opt. NJZ
Proposed Fence of Drill Holes
Adit
Sericite Quartzite
Sericite Quartz Conglomerate & Quartzite
Hematite, Quartzite Float
WILLIS RIVER
BUCKINGHAM
ANDERSONVILLE
SCALE OF MILES
VA
BUCKINGHAM COUNTY
INDEX MAP
L E G E N D
SAMPLE LOCATION WITH VALUES IN PPM ZINC EQUIVALENT (ONLY HIGH SAMPLES IN CENTER OF ANOMALIES SHOWN)
OPTIONED TO N.J.Z.
STRIKE AND DIP OF FOLIATION
PROSPECT PIT OR TRENCH
SHAFT
ISOCHEMICAL CONTOURS IN PPM. ZINC EQUIVALENT
FIG.-1.
GRID CONTROL LINES
GRAPHIC SCALE
BUCKINGHAM COUNTY
DMEA-4674
POSTED TO DATE J.H 7/9/56
THE NEW JERSEY ZINC COMPANY
DRAWN JHH
TRACED
DATE 3.14.56
SCALE 660' 1" 40° INCL
ANDERSONVILLE 660 GEOCHEMISTRY
DISTRICT MINERAL, VA.
FILE NO. AXV-402D-B



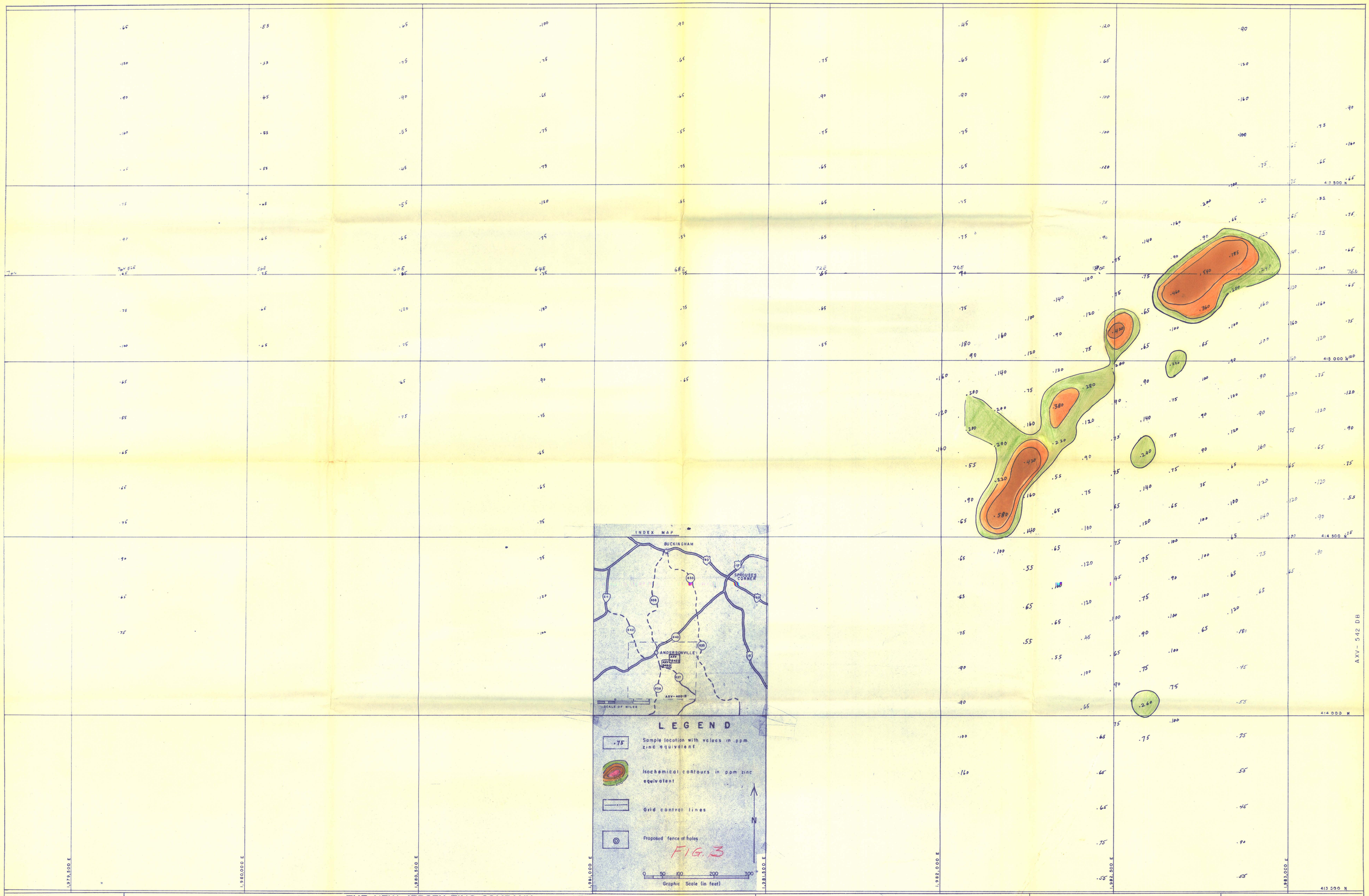
POSTED TO DATE

THE NEW JERSEY ZINC COMPANY

DRAWN N.A.K. DATE 4/57
TRACED F.I.L. SCALE 1"=100'

Northeast Burrus Property (Maxey-Gary)
Buckingham County, Virginia
GEOCHEMISTRY

DISTRICT Mineral, Va.
FILE NO. AXV-- 542-D-B



POSTED TO DATE

THE NEW JERSEY ZINC COMPANY

DRAWN E.T.G. DATE 4/57

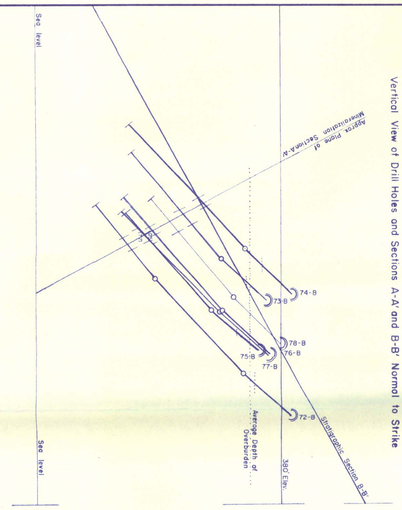
TRACED SCALE 1" = 100'

Central Burrus Property (Maxey-Gary)
Buckingham County, Virginia

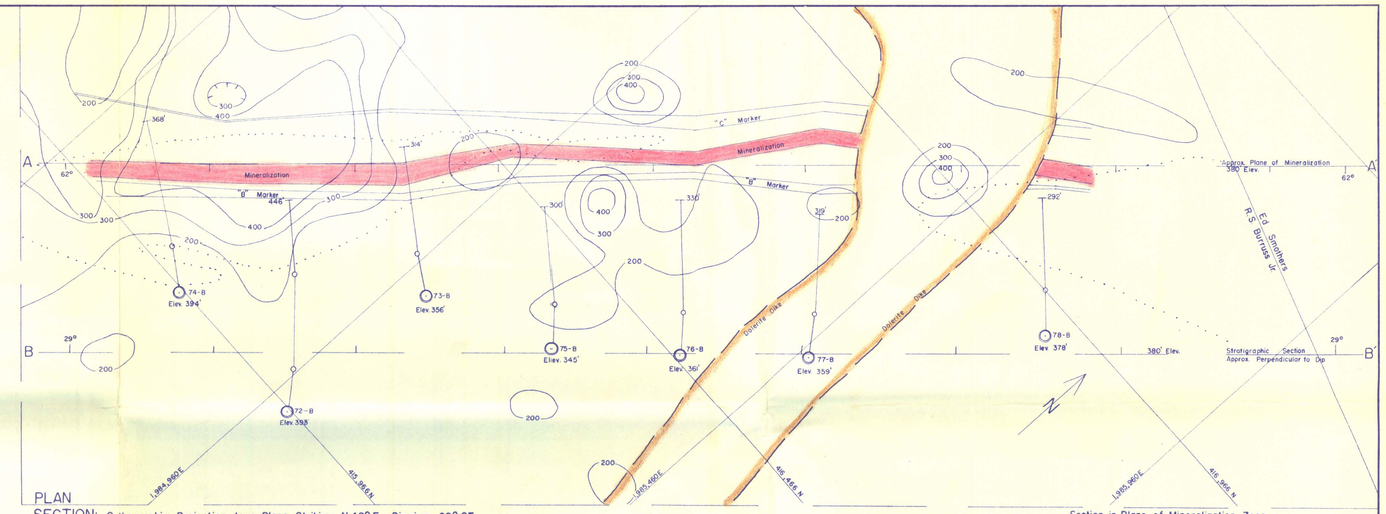
GEOCHEMISTRY

DISTRICT Mineral, Virginia

FILE NO. AXV-549-D-B



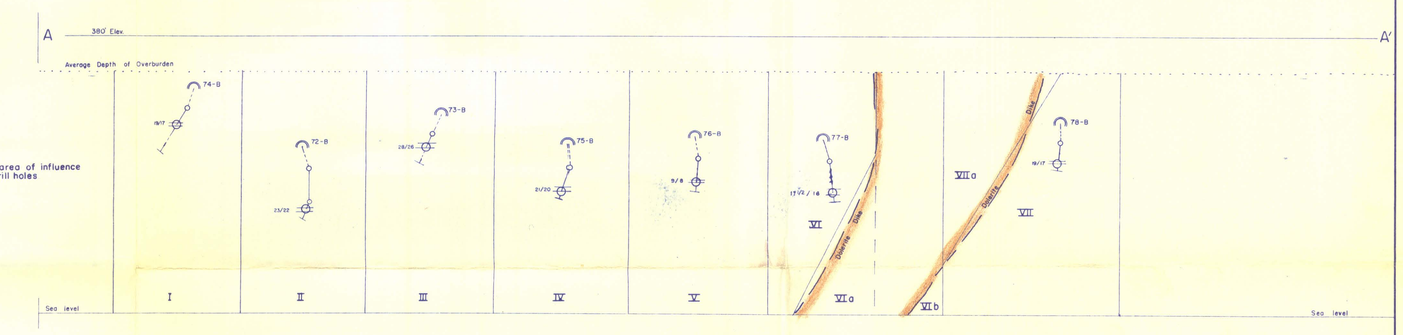
Vertical View of Drill Holes and Sections A-A' and B-B' Normal to Strike



PLAN

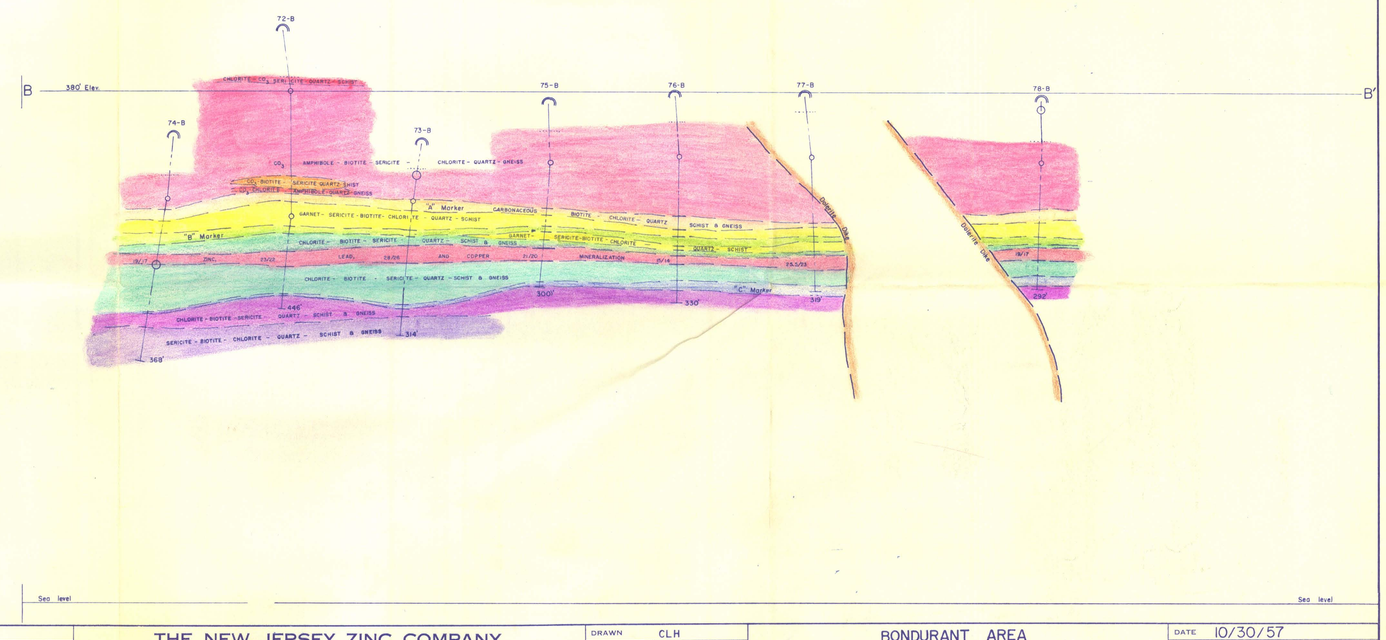
Section in Plane of Mineralization Zone

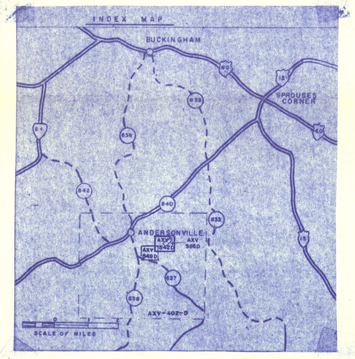
SECTION: A-A' Orthographic Projection to a Plane Striking N 42° E, Dipping 62° SE; Plane Approximately Parallel to Mineralization.



Blocks indicate area of influence of associated drill holes

SECTION: B-B' Orthographic Projection to a Plane Striking N 42° E, Dipping 29° NW; Stratigraphic Section- Plane Approximately Normal to Dip.





TONNAGE OF MINERALIZED ZONE

Block	True Width	Tonnage	Assay and/or Estimate				
			Zn	Pb	Cu	Ag	Au
I	17	106,000	0.10	Tr	Tr	–	–
II	22	133,000	0.25	–	–	–	–
III	26	163,000	0.96	0.09	0.01	0.03	.002
IV	20	130,000	1.70	0.64	0.05	0.61	0.02
V	8	55,000	1.18	0.39	0.14	0.53	0.02
VI	16	64,000	0.91	0.31	0.11	0.25	0.01
VII	17	108,000	1.23	0.47	0.23	0.50	–
Totals		759,000					
Weighted Average							
I-VII	18	759,000	0.89	0.25	0.06	0.24	0.01

WEIGHTED ESTIMATES AND ASSAYS OF MINERALIZED ZONE

Hole No.		From	To	Distance	Recovery	True Width	Zn %	Pb %	Cu %	Fe %	S %	Ag oz	Au oz
72-B	Estimate	357	380	23	23	22	0.25	–	–				
73-B	Estimate	169	189	20	20	18 1/2	1.00	Tr	–				
	Assay	189	193	4	4	3 3/4	1.49	0.66	0.05	3.44	2.33	0.20	.015
	Estimate	193	197	4	4	3 3/4	0.25	Tr	–				
74-B	Estimate	189	208	19	19	17	0.10	Tr	Tr				
75-B	Assay	237	258	21	19 1/4	20	1.70	0.64	0.05	4.06	4.40	0.61	0.02
76-B	Estimate	256	262	6	6	6	0.10	Tr	Tr	Not included in tonnage estimate			
	Assay	262	271	9	9	8	1.18	0.39	0.14	6.84	7.52	0.53	0.02
77-B	Estimate	257	265	8	8	7	Tr	Tr	Tr	Not included in tonnage estimate			
	Assay	265	282 1/2	17 1/2	17 1/2	16	0.91	0.31	0.11	7.58	6.43	0.25	0.01
78-B	Assay	228	247	19	19	17	1.23	0.47	0.23	5.17	5.74	0.50	.001

L E G E N D

- Intersection of drill hole with plane of section
- 23/22 — Penetration of mineralized zone
- Hole width / True width
- DDH over 10' in front of section
- DDH over 10' behind section
- Bottom of overburden
- Self potential anomaly
- 400 / 300 / 200 — Geochemical anomaly — PPM zinc equivalent

Coordinates based on Virginia State Coordinate System - South zone

0 25' 50' 75' 100' 200' 300'
Graphic Scale

SERIAL NUMBER		DATE ISSUED	

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REFERENCE DRAWINGS: AXV- 542-D; AXV- 402-D

REVISIONS: PLW 12/5/57

THE NEW JERSEY ZINC COMPANY

DRAWN CLH
TRACED PLW
CHECKED
APPROVED

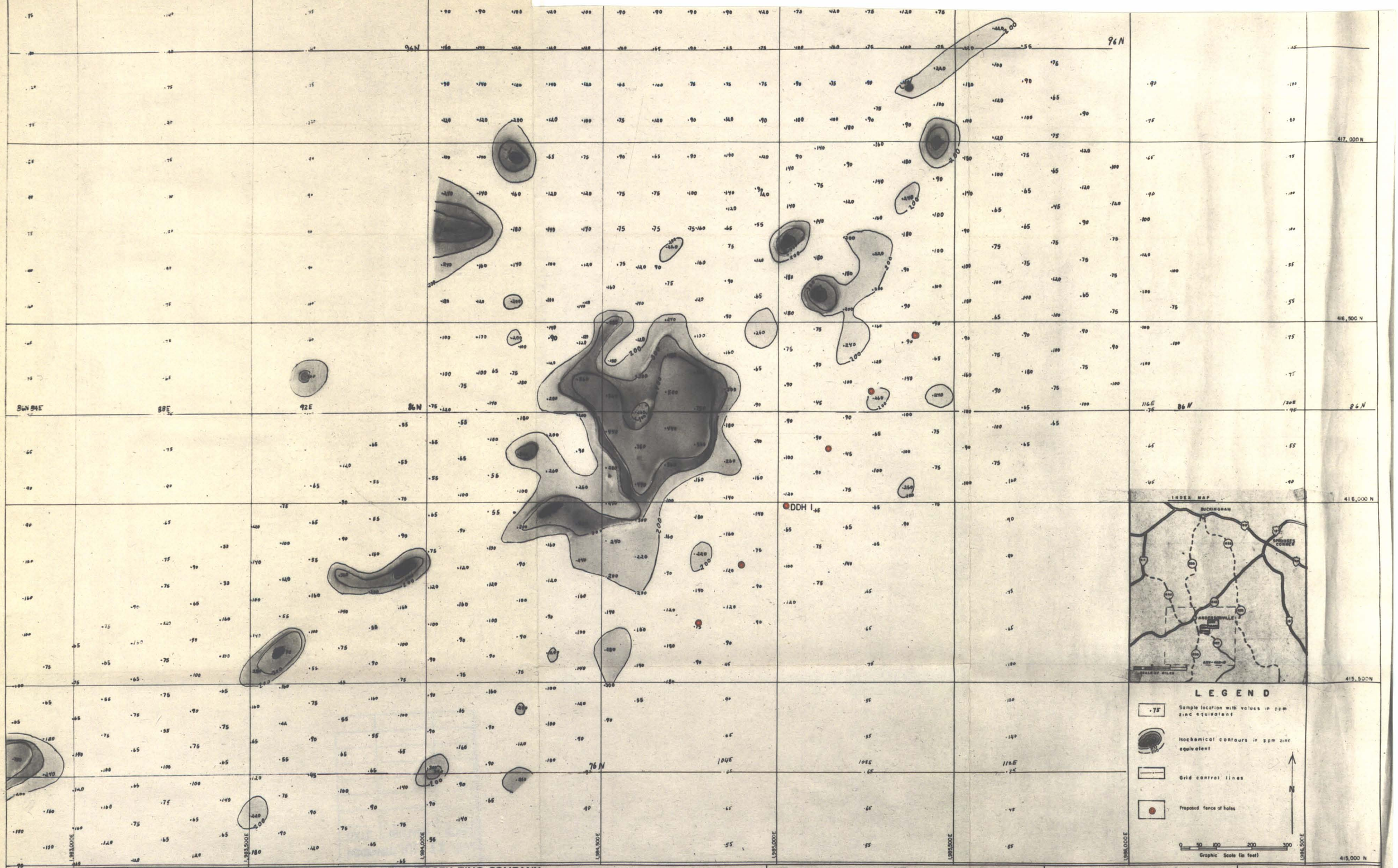
BONDURANT AREA

Plan And Sections – showing mineralization and stratigraphy

DATE 10/30/57
SCALE 1" = 100'

AXV- 586-D-A

X54530 1M 11-54



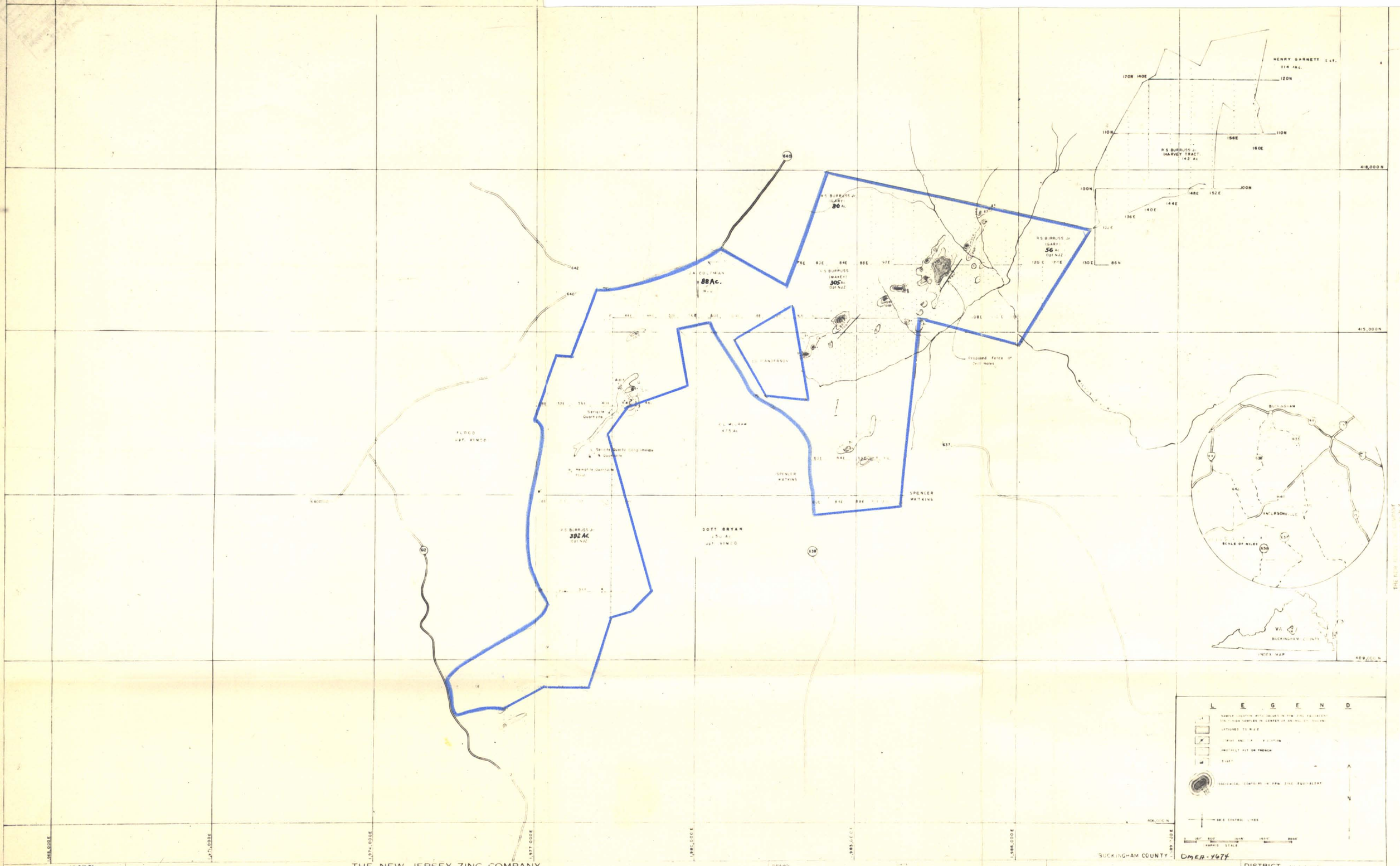
POSTED TO DATE

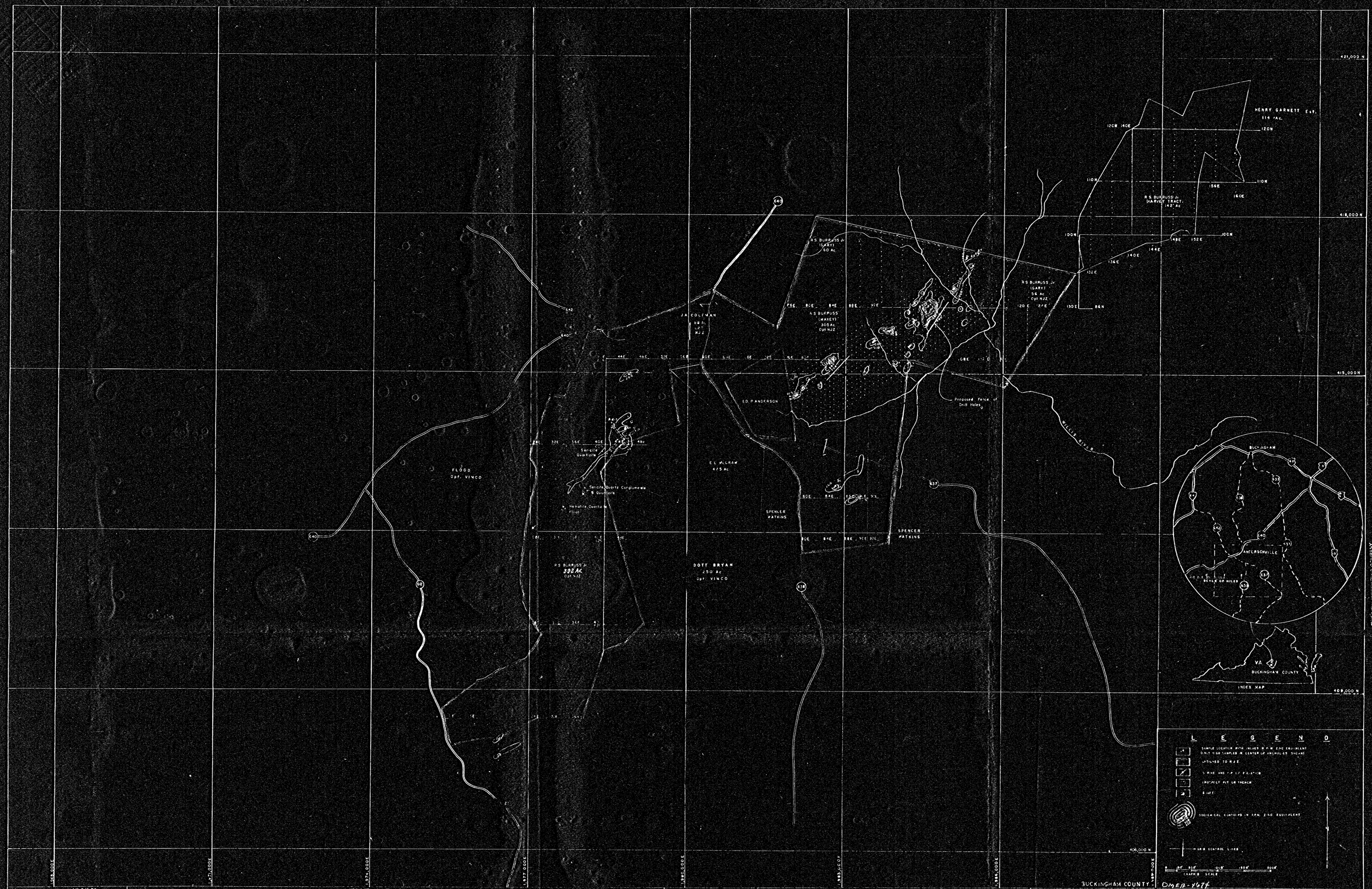
THE NEW JERSEY ZINC COMPANY

DRAWN N.A.K. TRACED F.I.L. DATE 4/57 SCALE 1"=100'

Northeast Burrus Property (Maxey-Gary)
Buckingham County, Virginia
GEOCHEMISTRY

DISTRICT Mineral, Va.
FILE NO. AXV-542-D-B


HENRY GARNETT EST.
114 AC.
R.S. BURRUSS JR.
HARVEY TRACT
142 AC.
R.S. BURRUSS JR.
(GARY)
80 AC.
R.S. BURRUSS JR.
(GARY)
56 AC.
Opt. NJZ
R.S. BURRUSS
(MAKEY)
305 AC.
Opt. NJZ
J.A. COLTMAN
88 Ac.
R.S. BURRUSS JR.
(GARY)
382 AC.
Opt. NJZ
DOTT BRYAN
Opt. VINCO
SPENCER WATKINS
Proposed Fence of Drill Holes
BUCKINGHAM COUNTY
INDEX MAP
LEGEND
THE NEW JERSEY ZINC COMPANY
DISTRICT
FILE NO. AXV-402D-B
POSTED TO DATE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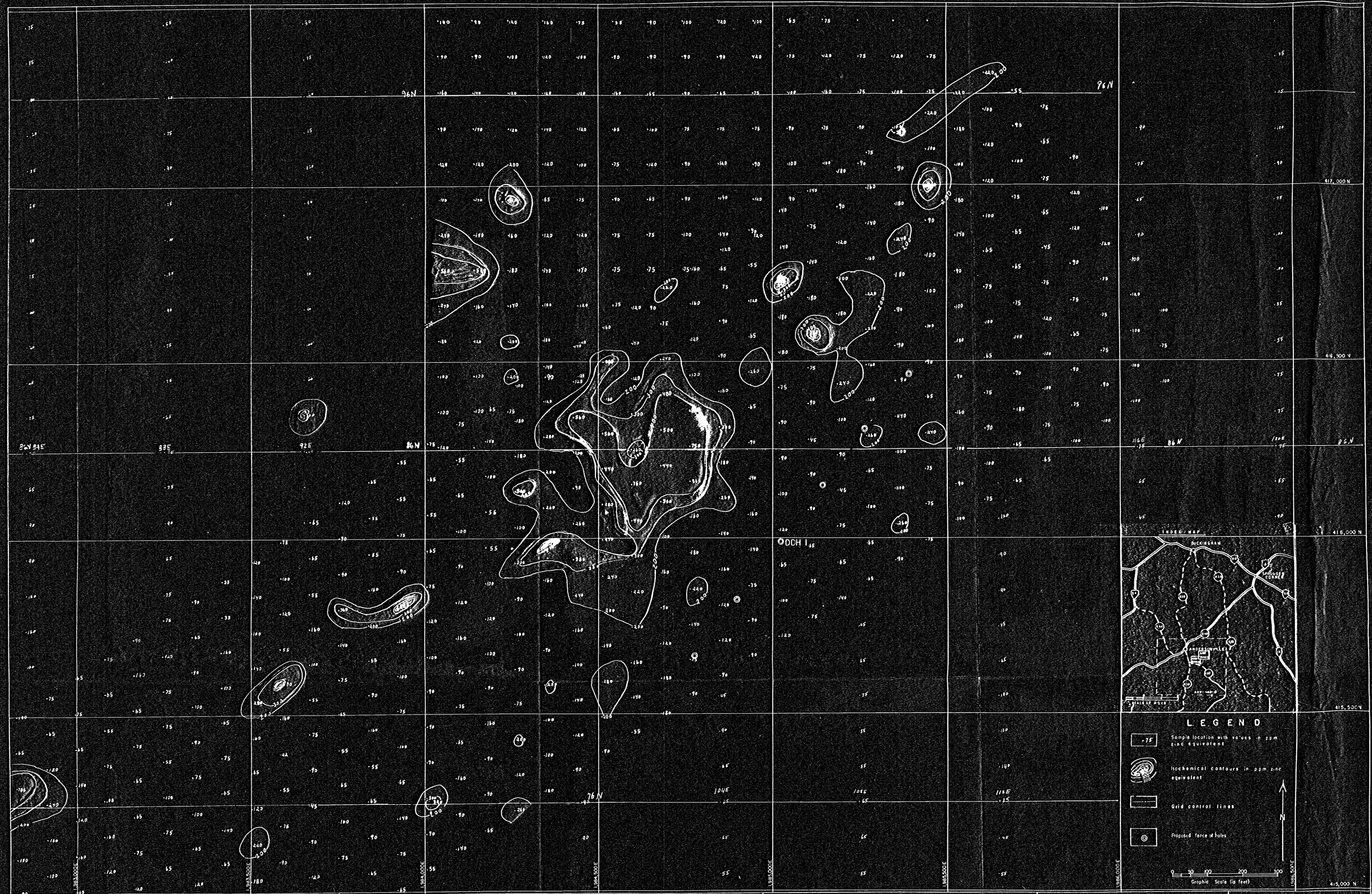
(GARY)
56 Ac
Opt NJZ
R.S. BURRUSS Jr.
(GARY)
60 Ac
R.S. BURRUSS
(WAXEY)
305 Ac
Opt NJZ
J.A. COLEMAN
ED. P. ANDERSON
Proposed Fence of Drill Holes
WILLIS RIVER
E.L. MCGRAW
475 Ac
SPENCER
WATKINS
FLOOD
Opt. VINCO
Sericite Quartzite
Sericite Quartz Conglomerate
Hematite Quartzite
Float
R.S. BURRUSS Jr.
332 Ac
Opt NJZ
DOTT BRYAN
250 Ac
Opt. VINCO
421,000 N
418,000 N
415,000 N
409,000 N
406,000 N
BUCKINGHAM
ANDERSONVILLE
SCALE OF MILES
VA
BUCKINGHAM COUNTY
INDEX MAP
L E G E N D
SAMPLE LOCATION WITH VALUES IN % ZINC EQUIVALENT
ONLY 1 OR 2 SAMPLES IN CENTER OF UNSAMPLED SQUARE
UNTUNNELED TO RAISE
% ZINC END OF LIFE EXPLORATION
PROPOSED PIT OR TRENCH
SHAFT
ISOCHEMICAL CONTOURS IN % ZINC EQUIVALENT
GRID CONTROL LINES
GRAPHIC SCALE
BUCKINGHAM COUNTY
Omer-4674
POSTED TO DATE J.H. 7/9/56
THE NEW JERSEY ZINC COMPANY
DRAWN
TRACED
DATE
SCALE 660' = 40" INCH
ANDERSONVILLE 660 GEOCHEMISTRY
DISTRICT MINERAL, VA.
FILE NO. AXV- 402D-B
THE NEW JERSEY ZINC COMPANY
160 FRONT ST., NEW YORK CITY, N.Y.



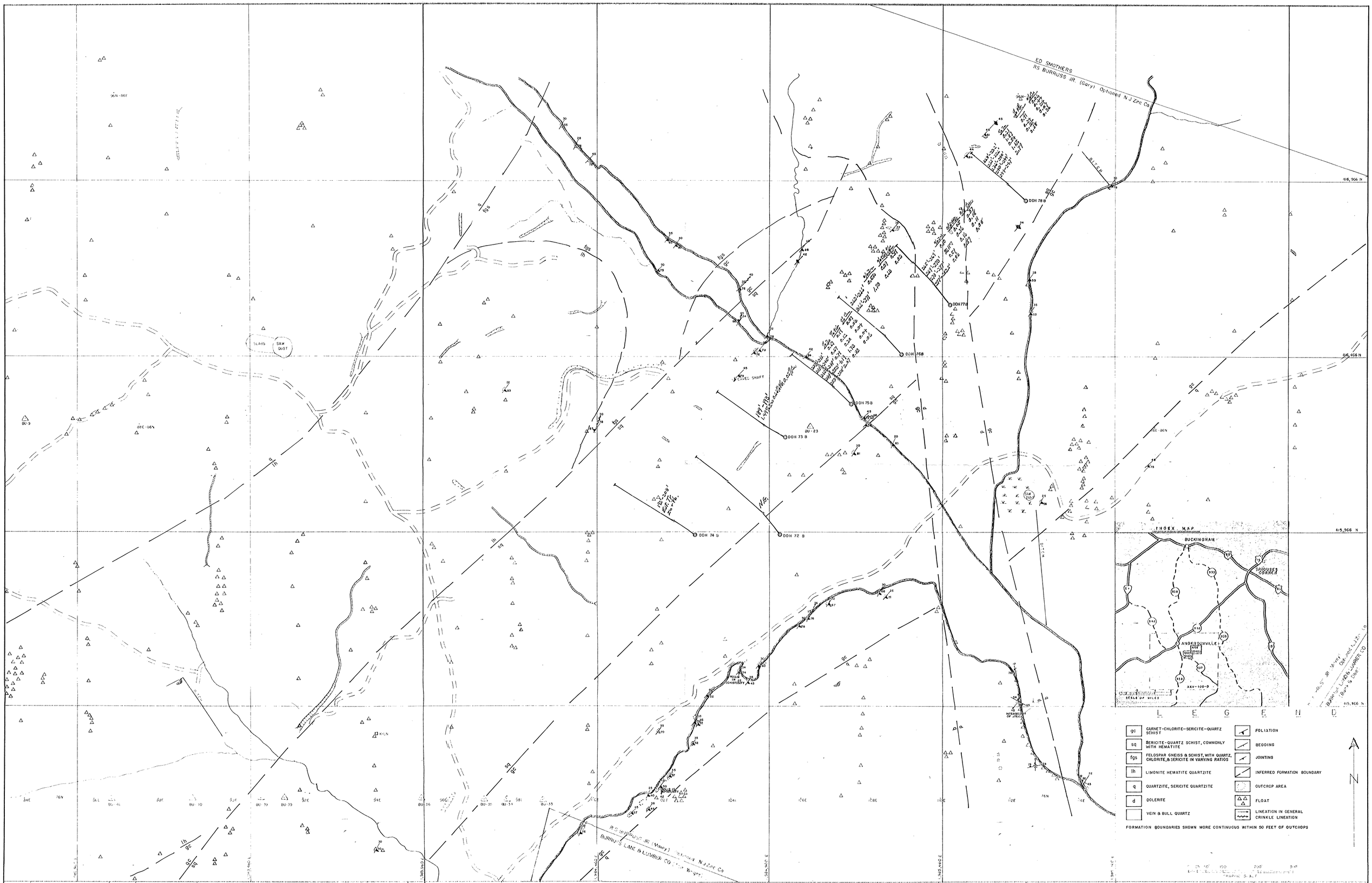
POSTED TO DATE

THE NEW JERSEY ZINC COMPANY

DRAWN N.A.K. TRACED F.I.L. DATE 4/57 SCALE 1"=100'

Northeast Burrus Property (Maxey-Gary)
Buckingham County, Virginia
GEOCHEMISTRY

DISTRICT Mineral, Va.
FILE NO. AXV--542-D-B



SERIAL NUMBER	DATE ISSUED	REFERENCE DRAWINGS	REVISIONS	THE NEW JERSEY ZINC COMPANY	DRAWN C.L.H.	NORTHEAST BURRUSS PROPERTY, (MAXEY-GARY)	DATE 10/18/57
			10/24/57 NAK		TRACED P.L.W.	BUCKINGHAM COUNTY, VIRGINIA	SCALE 1" = 100'
					CHECKED	GEOLOGY	AXV-542-D-A,D
					APPROVED		

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