DEFENSE MINERALS EXPLORATION ADMINISTRATION
CONTRACT ADMINISTRATION AND AUDIT DIVISION

REPORT OF REVIEW

I have reviewed the Monthly Reports of:

Reynolds Metals Company
301 East Grace Street
Richmond, Virginia

pertaining to Exploration Project Contract No. Idm-E1152, DMFA No. 4750, including Amendment No. 1, for January 1958 to March 1958, inclusive, covering a fluorspar project on the Kemper Property, Livingston County, Kentucky.

My review included an examination of the Monthly Reports (Forms MF-104) and supporting documents, comparison of the claimed costs 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 reasons given below:

(a) the Monthly Reports were supported by documentary proof of that portion ($6,836.03) of the costs covering work performed at unit rates under independent contract;
(b) the balance ($1,122.90) of the costs was under a contract provision for payment by the Government at fixed unit costs for work performed; and
(c) the administrative cost to the Government of an audit would be excessive in relation to the estimated amount of possible disallowances.

The findings of this review are stated in the following summary:

Total cost billed by Operator		$7,958.93
Exceptions:		
Prior to this review	$ -0-	
Herewith	-0-	-0-
Accepted cost		$7,958.93

The contract calls for a 50 percent contribution of the allowable costs by the Government. Therefore, if the project is otherwise accepted as having met the terms of the contract, payments as follows are valid and proper:

Payable on audited claim	$3,979.46
Paid to date	2,249.44
Balance due Operator	$1,730.02

May 5, 1958

E. D. Talbert, Auditor

MAY 6 1958

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

Re: Docket No. DMEA-4750 (Fluorspar)
Reynolds Metals Company
Kemper Property
Livingston County, Kentucky
Contract No. Idm-F1152

Dear Mr. Laurence:

Enclosed are the original and three copies of a Report of Review, as requested by your May 1, 1958, memorandum.

If you concur with the facts as stated in this report, please make the usual distribution. If for any reason you do not concur, please return the original and all copies with your comments to this Division.

Sincerely yours,

(Signed) E. D. Talbert

E. D. Talbert, Acting Director
Contract Administration
and Audit Division

Enclosures

EDTalbert/ama
May 5, 1958

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

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

May 1, 1958

OFFICIAL FILE COPY
DMEA
RECEIVED 5 1958

DATE	INITIALS	CODE
5/5	C	220
		800

Memorandum

To: Jay L. Chambers, Director, Contract ~~Administration and~~ Audit Division - DMEA - Washington, D. C.

From: Acting Executive Officer, DMEA - Region V - Knoxville

Subject: Termination of DMEA-4750, Idm-E1152-mica. Kemper Property, Livingston County, Kentucky. Reynolds Metals Company, Richmond, Virginia.

Work on the subject contract was terminated on completion of Stage I, March 18, 1958.

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

1) A total of 1572 feet of diamond drilling was completed.

2) Sixty core boxes were used.

An adequate final engineering and geological report has been received. A Report of Review is requested.

V. J. Lynch

V. J. Lynch

APR 22 1958

Mrs. Helen R. Miller
Personnel Assistant
Bureau of Mines, Region V
P. O. Box 237
Morris, Tennessee

CERTIFIED MAIL

Re: Docket No. DMA-4790 (Fluorspar)
Reynolds Metals Company
Kemper Property
Livingston County, Kentucky
Contract No. Ida-21152

Dear Mrs. Miller:

As requested by your April 18 memorandum an audit review has been made of the referenced project. The final (March 1958) MF-104 and attachments, together with the invoices applicable to prior MF-104s, are returned herewith.

A Report of Review will be issued promptly upon submission by the Executive Officer of a memorandum identifying the units of work acceptably performed and the receipt of the Operator's final geological and engineering report.

Sincerely yours,

(Signed) J. L. Chambers

Jay L. Chambers, Director
Contract Administration
and Audit Division

Enclosures

EDTalbert/ama
April 22, 1958

Copy to: Docket
Admr. Reading File
Mr. Lawrence
Mr. Chambers
Mr. Talbert

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF MINES
REGION V

ELECTROTECHNICAL
EXPERIMENT STATION

P. O. BOX 217
NORRIS, TENNESSEE

April 18, 1958

REGISTERED MAIL

Memorandum

To: Jay L. Chambers, Defense Minerals Exploration Administration, Interior Building, Washington 25, D. C.

From: Personal Assistant, Norris, Tennessee

Subject: Report of Review in lieu of Final Audit - Contract Idm-E1152

A report of review in lieu of final audit is requested on Contract Idm-E1152, Docket No. DMEA-4750, Reynolds Metals Company, Kemper Property (fluorspar). The following documents are enclosed:

1. Original MF-104, 104A and attachments

2. Original invoices covering previously paid vouchers (6 copies)

Helen R. Miller

Helen R. Miller

Attachments
/hbm
Copies to R. A. Laurence
V. J. Lynch
Norris files
Day files

OFFICIAL FILE COPY
DMEA
RECEIVED APR 22 1958

DATE		
4/22	C	220
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Form MF-104 (Rev.)
(April 1952)

Budget Bureau No. 42-R1036.5

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION
OPERATOR'S MONTHLY REPORT AND VOUCHER

PAID ON VOUCHER & SCHEDULE OF PAYMENTS R-56

Month of March, 1958 Docket No. DMEA 4750 Contract No. Idm-E1152
Operator's Name Reynolds Metals Company Minerals fluorspar
Address Reynolds Metals Building, Richmond, Virginia
Contract Amount, $10,260.00 Government Participation: 50 % Amount, $5,130.00

ITEMS OF COSTS	FOR OPERATOR'S USE: Monthly Total	Totals Previously Reported	Totals To Date	FOR GOVERNMENT USE ONLY: Approved Monthly Total	Approved Totals Previously Reported	Approved Totals To Date
(1) Independent Short Form Contracts:						
Drilling Core /	3040.65	3795.38	6836.03			
Bulldozing						
Crosscutting						
Drifting						
(2) Labor and Supervision:						
Labor						
Supervision						
Technical Services						
(3) Operating Mat'ls. and Supplies:						
Timber						
Explosives						
Pipe						
Track						
Core boxes	--	180.00	180.00			
(4) Operating Equipment:						
Rental						
Purchase						
Depreciation						
(5) Initial Rehabilitation and Repairs						
(6) New Bldgs., Improvements, etc.						
(7) Miscellaneous:						
Repairs to Equipment						
Sampling and Analysis						
Payroll Taxes						
Liability Insurance						
Incidental allow.	419.40	523.50	942.90			
Assays	--	--	--			
(8) Contingencies (specify):						
TOTALS	3460.05	4498.88	7958.93	$3460.05	$4498.88	$7958.93

I certify that the above bill is correct and just and that payment therefor has not been received.

Date 4-11-58 *Payee Reynolds Metals Company

Per [signature] Title Accounting Official

*When a voucher is signed or receipted in the name of a company or corporation, the name of the person writing the company or corporate name, as well as the capacity in which he signs, must appear. For example: "John Doe Company, per John Smith, Secretary," or "Treasurer," as the case may be.

NOTE.—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.

(Instructions on reverse)

Pursuant to authority vested in me, I certify that this account is correct and proper for payment in the amount of:

$1730.02

Signature [signature]
(Authorized Certifying Officer)

Date MAY 9 1958 Vou. No. 168
(See other side)

3+7 T 3/18 $1,730.03

(For Government use only)

CERTIFICATION BY GOVERNMENT REPRESENTATIVE:

I certify that to the best of my knowledge and belief the contractor submitting this voucher is operating a Defense Minerals Exploration Administration project under Contract No. E 1152 in accordance with the terms of the contract.

Signature [illegible] Title Mining Engr. Date 4/15/58

APPROVAL BY DMEA EXECUTIVE OFFICER OR ALTERNATE:

EXECUTIVE OFFICER
DMEA FIELD TEAM
REGION V

Signature [illegible] Title Date MAY 8 1958

MONTHLY REPORT OF OPERATOR

The Operator (Contractor) of an exploration project is required to make a monthly report to the Government through the Regional Executive Officer. This report consists of three parts as follows:

(a) *Form MF-104—Operator's Monthly Report and Voucher.*—This form details expenditures and constitutes a voucher for reimbursing the Operator for the Government's share of costs;

(b) *Form MF-104A—Operator's Unit Cost and Progress Report.*—This is a statistical report of expenditures which shows costs for the various types of operation; and

(c) *Narrative.*—A concise narrative description of progress made, results accomplished, and any unusual difficulties encountered must be furnished as an attachment to this Report and Voucher. Wherever possible, the narrative is to be illustrated with maps or sketches showing formations penetrated and location and assays of samples taken as well as advances in workings. In the case of diamond drilling or churn drilling, the location and inclination of holes is to be shown on a map; logs and assays also are to be submitted.

The Monthly Report of Operator should be prepared in an original and four copies all of which must be sent to the Executive Officer of the Region not later than the 15th of the month following.

Preparation of Form MF-104—Operator's Monthly Report and Voucher.—All the applicable spaces in Form MF-104 should be filled in by the Operator, and the Operator or his agent should sign the certification in the lower left corner of the form.

The items of costs are arranged in the order they appear in Article 6 (a) of Form MF-200 (Revised February 1952), however, this form is readily adaptable for use in reporting activities under other contract forms.

Under Item (1) delete words "Short Form" if the contract is a sub-contract under Form MF-200; and delete word "Independent" if the contract reported is on Form MF-200 (A). Also, report work paid for on a unit basis under contract Form MF-200 as though it were performed under an independent contract.

Under Item (2) include labor, supervision and technical services incurred for the exploratory operations. Do not include labor, supervision and technical services used for work performed under items (5) and (6).

Under Item (3) include the costs of material and supplies used in the project other than that used under items (5) and (6).

Under Item (4) appear the three types of operating equipment expenditures, that is, rental, purchase and depreciation. The expenditures made for renting equipment belonging to a third party will be reported under "Rental". The amount paid or duly obligated for payment for the purchase of equipment will be reported under "Purchase". The amount of expenditures due the Operator to reimburse him for depreciation of equipment owned will be reported under "Depreciation".

Item (5) comprises costs of labor, supervision, technical services, materials, etc., which are used in the initial rehabilitation and repair of existing buildings, installations, fixtures, and equipment. These costs, therefore, should not be reported under items (2) and (3).

Item (6) includes the labor, supervision, technical services, materials, etc., used in the installation or construction of new buildings, fixed improvements, etc., necessary for the project. These costs, therefore, should not be reported under items (2) and (3).

Item (7) covers miscellaneous types of expenditure such as payroll taxes, liability insurance, workmen's compensation insurance, repairs to equipment and sampling and analysis. Only that part of payroll taxes, liability insurance and workmen's compensation which are paid by the operator should be reported under item (7). The share paid by the employee as a payroll deduction is to be included under item (2) as labor costs.

Item (8) includes any unforeseen costs not included in the other seven categories.

The original of Form MF-104 when submitted for reimbursable expenses incurred under contract Form MF-200 must be supported by original documentation or by certified copies of purchase orders, payrolls or transcripts of payrolls, unless such documentation has been waived by the Regional Executive Officer. This certification may be stated thus, "Certified True Copy (or Transcript)", followed by appropriate signature. If the Executive Officer of the Region determines that a contract under Form MF-200 should have an "on-site" audit, that is, a Government auditor should make an audit of the Operator's books and records of account, the Operator need not support his monthly voucher with original or certified documents except in cases of equipment purchases whose individual costs exceed $50.00. In these cases the original or a certified copy of the purchase order or invoice should be attached to the Monthly Voucher. N. B.—Only the *original* of Form MF-104 is required to be documented. The four copies of Form MF-104 are not to be thus supported.

Form MF-104 submitted for reimbursement under fixed price contracts on Form MF-200 (A), however, are not required to be supported by documentation of any kind. The Operator will submit his claim under item (1) of Form MF-104 by deleting as stated above the word "Independent" and by showing the number of feet or other units immediately after the appropriate descriptive word, such as, drilling, bulldozing, crosscutting, drifting, etc., and giving the "Monthly Total" amount due. "Totals Previously Reported", and "Totals to Date" columns should also be filled in.

Form MF-104A
(April 1952)

Budget Bureau No. 42-R1151.2

RECEIVED MAY 12

UNITED STATES
DEPARTMENT OF THE INTERIOR

DEFENSE MINERALS EXPLORATION ADMINISTRATION

OPERATOR'S UNIT COST AND PROGRESS REPORT

Month of March 1958 Docket No. DMEA 4750 Contract No. Idm-E1152

Operator's Name Reynolds Metals Company Minerals Fluorspar

Address Reynolds Metals Bldg., Richmond, Virginia

OPERATION	UNIT	COSTS THIS MONTH	UNITS THIS MONTH	COSTS TO DATE	UNITS TO DATE	UNIT COSTS TO DATE	AUTHORIZED BY CONTRACT	
							Units	Unit Costs
Drifting								
Crosscutting								
Raising								
Shafts								
Winzes								
Drilling: Core	feet	3040.65	699	6836.03	1571.5		2000	4.35
Churn								
Auger								
~~Stripping~~ Core boxes	1			180.00	60		60	3.00
Trenching								
~~Test Pits~~ Assays	1						30	6.00
Roads and Trails								
Incidental Allow.	feet	419.40	699	942.90	15715		2000	0.60
TOTAL DISTRIBUTED COSTS		3460.05		7958.93				TOTAL COSTS AUTHORIZED BY CONTRACT
Operating Equipment Purchased								
Initial Rehabilitation and Repairs								
New Buildings, Improvements, etc.								
TOTAL COSTS		3460.05		7958.93				10,260.00

The undersigned company, and the official executing this certification on its behalf, hereby certify that the information contained in this report is correct and complete to the best of their knowledge and belief.

Date 4-11-58 Operator Reynolds Metals Company

Per [signature] Title Accounting Official

REMARKS: Drilling and incidental allowance costs are for holes K-4 and K-5.

All information on K-4 was submitted in February report, except for the Unit Costs Progress Report.

NOTE.—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.

(Instructions on reverse)

[signature] 4/15/58

(For Government use only)

INSTRUCTIONS

Preparation of Form MF-104A—Operator's Unit Cost and Progress Report.—Applicable places on Form 104A should be filled in by the Operator. The purpose of this form is twofold as follows: (1) to furnish the supervising engineers and other administrators with statistical information necessary to better determine the progress of the project; and (2) to furnish more permanent information on mining costs for future use. The more important phases of operation on which permanent information is desired have been outlined in the form. There are blank lines, however, for those unusual phases which may need to be reported for a particular project. It will be necessary for the Operator to distribute his costs among the applicable phases reported with the exception of three items the costs of which are not to be distributed by the Operator. These three items are: "Operating Equipment Purchased", "Initial Rehabilitation and Repairs", and "New Buildings, Improvements, etc." The reason for not distributing these items on a monthly basis is doubtless clear to the Operator, since such distribution might well overstate the cost for any one month or period short of the entire contract period.

Form MF-104A has been designed to tie in with Form MF-104 for both monthly and cumulative costs. The "Total Costs" on Form MF-104A for each month should equal the monthly "Total Costs" as reported on Form MF-104. This is also true of the "Total Costs To Date".

In preparing Form MF-104A, it will be necessary frequently to distribute certain costs over a number of items. For instance, supervisory and engineering costs may have to be distributed over several phases, such as, drifting, crosscutting, raising, etc., provided that these items were reported active for the month. Such distributions should be made on the basis of time spent on the various phases, on man days of labor charged to such phases, or on some other equitable basis. "Operating Equipment", "Initial Rehabilitation and Repairs", and "New Buildings Improvements, etc.", will be distributed to the several phases of the project by the Washington Office of DMEA at the close of the project if determined necessary. The last two columns headed "Authorized by Contract" will be filled in by the Operator if such information is found in the contract. This information is usually a part of Exhibit "A" of the contract. A space for remarks has been provided for the use of the Operator to call attention to any unusual circumstances causing excessive or disproportionate unit costs.

GPO 872894

KEMPER PROJECT
DMRA 4750 Idm - K1152

Narrative for March
J. W. Hock, Resident Geologist

Hole K-5 was completed in March. Costs for both K-4 and K-5 are included in this report.

Hole K-5 cut a wide faulted zone of limestone, sandstone and calcite breccia, with more vein calcite than in K-4. The hole contained neither fluorspar nor barite.

Recovery in the vein was 80% using BX Wireline tools.

A detailed log and cross section is enclosed, the summary is as follows:

K-5

Coordinates: N-5801, E-5398 Elevation: 396.0 Bearing: N40W Angle: -45°
Started: 3/3/58 Finished: 3/12/58 Bottom: 392.5 feet

From	To	Description
0	14	Overburden
14	34.5	Hardinsburg sandstone
34.5	194.5	Golconda shale and limestone
194.5	276.5	Cypress sandstone and shale
276.5	278.5	Paint Creek limestone and shale
278.5	316.5	Fault zone. Limestone, sandstone and calcite breccia and vein calcite.
316.5	392.5	St. Louis limestone.

Bottom depth - 392.5

Total completed - 392.5 feet.
(Completed footage shown on invoice includes K-4 and K-5 - 699 feet.)

RECEIVED
APR 10 1958
ACCOUNTING DEPT.
BAUXITE

REYNOLDS METALS COMPANY

Diamond Drill Hole No. K-5 Angle: -45° Bearing: N48W Depth: 392.5
Coordinates: N-5801; E-5398 Elevation: 396.0'
Property: Kemper Area: Corn-Wright County: Livingston State: Kentucky
Driller: E. J. Hayes Foreman: E. J. Hayes
Contractor: Joy Manufacturing Company Started: 3/3/58 Finished: 3/12/58

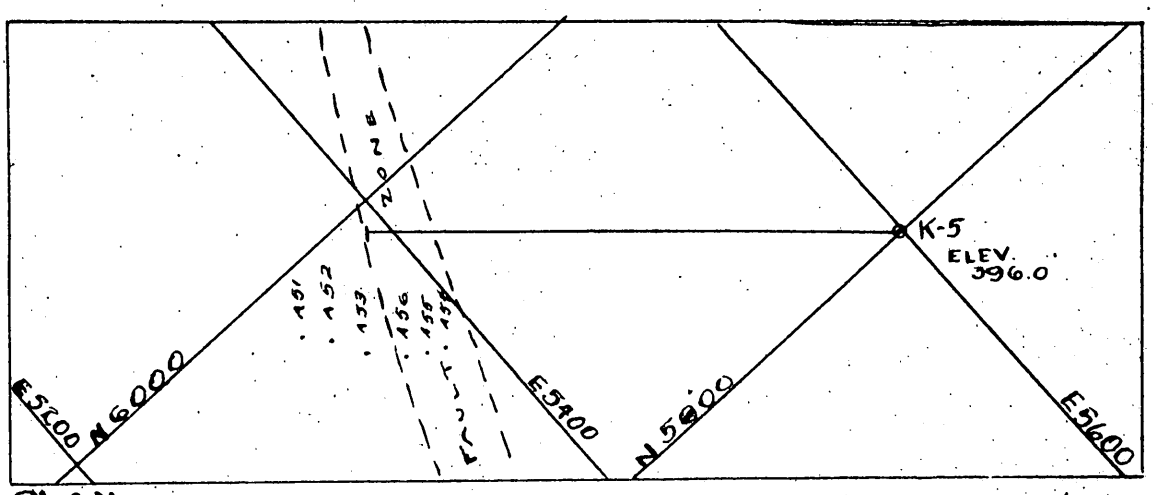
From	To	Fm	Description
0	12		Overburden
14	34.5	Ch	Sandstone, light brown to grey, medium grained, weathered.
34.5	55	Cg	Shale, dark grey, weathered green and brown.
55	59.5	Cg	Limestone, medium grey, coarse crystaline, shaley and fossiliferous, fossils replaced by brown calcite.
59.5	62.5	Cg	Shale, dark grey, slightly calcareous.
62.5	73	Cg	Limestone, medium grey, coarse crystaline, shaley, fossiliferous, fossils replaced by brown calcite, shale zone at 67'. Grades in to limey shale below.
73	78	Cg	Shale, medium grey, calcareous, fossiliferous. Angle of bedding with hole 58°.
78	86.5	Cg	Limestone, dark brown, fine crystaline, few fossils, 6" weathered zone 3" down from top. Calcite stringer at 82', 1" fossiliferous zone at 83' and from 84-85.
86.5	91.5	Cg	Shale, medium grey, calcareous, fossiliferous, angle of bedding with hole 58°.
91.5	95.5	Cg	Limestone, medium grey, coarse crystaline, fossiliferous, few calcite stringers, broken in last 2'.
95.5	194.5	Cg	Shale, grey, with evidence of movement along bedding. 108'-112', 1' recovery. Limestone at 112', fossiliferous. 125-126, fossiliferous limestone, medium grey and coarse crystaline. 129-130, limestone, medium grey and coarse crystaline, fossiliferous. 145-148, limestone as above. At 190.5, sandy lime.
194.5	195	Cc	Cgl, shale, limestone and sand.
195	204	Cc	Sandstone, interbedded with shale. Ss. is grey, medium grained, increase of sand with depth.
204	224.5	Cc	Shale, dark grey, sandy, with some marcasite.

FROM	To	Fm	Description
224.5	251.5	Cc	Sandstone, light grey, medium grained, broken 222-225, 228-231, 235-239.
251.5	273	Cc	Sandstone, brecciated in upper 1.5'. Broken to 273. 3' recovery 251.5-261.5, 2' recovery 262-268.
273	274	Cc	Sandstone, dark grey, brecciated, 1/2" calcite veinlets in lower 6".
274	276.5	Cc	Sandstone, blocky, upper 3" subangular cgl, green shale at 276.
276.5	278.5	Cpc	Shale, brown grey, fossiliferous, calcite stringers, some evidence of movement.
278.5	316.5		Fault zone:
			278.5 – 279: limestone, blocky, grey, medium crystalined, slightly shaley.
			279 – 281: limestone, shale and calcite breccia.
			281 – 282: Sandstone and calcite breccia.
			282 – 303: limestone breccia, limestone, light grey, fine crystaline, heavy calcite veinlets, gouge at 291, 4" calcite at 289-290.5, 300-300.5.
			303 – 316.5: Calcite, with scattered limestone breccia, heavy limestone breccia at 305-306. Increase in limestone breccia in last 2'.
316.5	353.5	Cal	Limestone, brown grey, medium crystaline, chert nodules, stylolitic, with few calcite stringers. Broken and weathered from 344-346, 348-349, and at 353.
353.5	371	Cal	Limestone, brown grey, fine crystaline, cherty. 4" calcite at 366, calcite veinlets up to 1" below this.
371	392.5	Cal	Limestone, brown grey, medium crystaline, fossiliferous, cherty, weathered zone from 387.5-388.

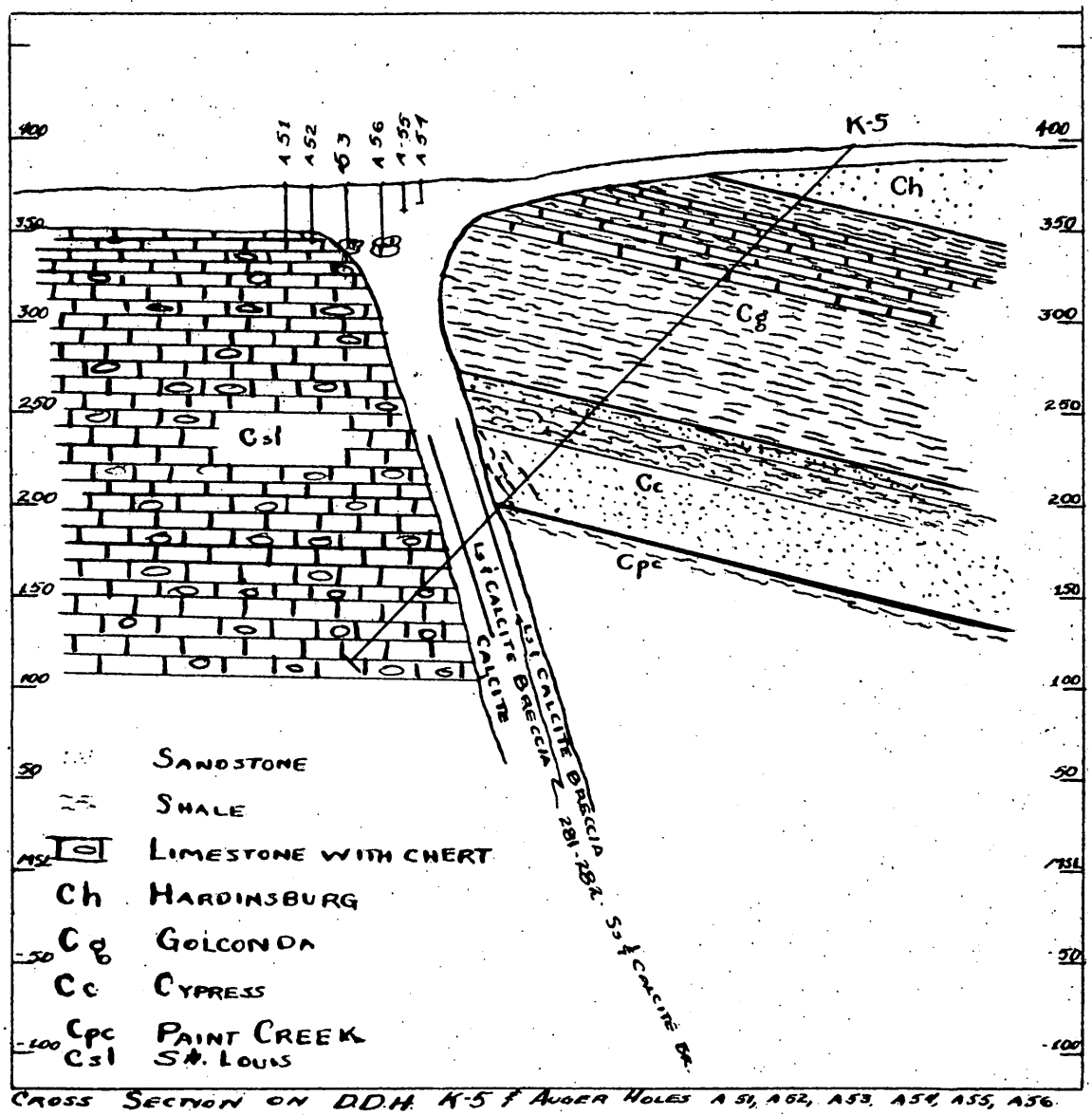
Bottom 392.5

KEMPER PROPERTY

LIVINGSTON COUNTY, KENTUCKY



PLAN



CROSS SECTION ON D.D.H. K-5 & AUGER HOLES A51, A52, A53, A54, A55, A56

VERT. & HORZ. SCALES 1" = 100'

0 50 100 200 300 FEET

T.R.W. MAR., 1958

OFFICIAL FILE COPY
DMEA
RECEIVED MAY 12 1958

DATE	INITIALS	CODE

Anne — Extra copy. Keep in that in case Mrs. Fuller needs.
5/13/58

OFFICIAL FILE COPY
DMEA
RECEIVED MAY 12 1958

DATE	INITIALS	CODE

Form MF-104 (Rev.)
(April 1952)

Budget Bureau No. 42-R1036.5

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION
OPERATOR'S MONTHLY REPORT AND VOUCHER

RECEIVED MAY 12 DMEA

Month of March, 1958 Docket No. DMEA 4750 Contract No. Nom-E1152
Operator's Name Reynolds Metals Company Minerals Fluorspar
Address Reynolds Metals Building, Richmond, Virginia
Contract Amount, $10,260.00 Government Participation: 50 % Amount, $ 5,130.00

ITEMS OF COSTS	FOR OPERATOR'S USE: Monthly Total	Totals Previously Reported	Totals To Date	FOR GOVERNMENT USE ONLY: Approved Monthly Total	Approved Totals Previously Reported	Approved Totals To Date
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Crosscutting						
Drifting						
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Technical Services						
(3) Operating Mat'ls. and Supplies:						
Timber						
Explosives						
Pipe						
Track						
Core boxes	--	180.00	180.00			
(4) Operating Equipment:						
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Purchase						
Depreciation						
(5) Initial Rehabilitation and Repairs						
(6) New Bldgs., Improvements, etc.						
(7) Miscellaneous:						
Repairs to Equipment						
Sampling and Analysis						
Payroll Taxes						
Liability Insurance						
Incidental allow.	419.40	523.50	942.90			
Assays	--	--	--			
(8) Contingencies (specify):						
TOTALS	3460.05	4498.88	7958.93	$3,460.05	$4,498.88	$7,958.93

I certify that the above bill is correct and just and that payment therefor has not been received.

Date 4-11-58 *Payee Reynolds Metals Company

Per E D Simmons Title Accounting Official

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(Instructions on reverse)

Pursuant to authority vested in me, I certify that this account is correct and proper for payment in the amount of:

$1,730.02

Signature Helen R. Miller
(Authorized Certifying Officer)

Date ..... Vou. No. .....
(See other side)

1730.03

(For Government use only)

CERTIFICATION BY GOVERNMENT REPRESENTATIVE:

I certify that to the best of my knowledge and belief the contractor submitting this voucher is operating a Defense Minerals Exploration Administration project under Contract No. E 1152 in accordance with the terms of the contract.

Signature [illegible] Title Mining Engr. Date 4/15/58

APPROVAL BY DMEA EXECUTIVE OFFICER OR ALTERNATE:

Signature Robert A. Lawrence Title EXECUTIVE OFFICER DMEA FIELD TEAM REGION V Date MAY 8 1958

MONTHLY REPORT OF OPERATOR

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Preparation of Form MF-104—Operator's Monthly Report and Voucher.—All the applicable spaces in Form MF-104 should be filled in by the Operator, and the Operator or his agent should sign the certification in the lower left corner of the form.

The items of costs are arranged in the order they appear in Article 6 (a) of Form MF-200 (Revised February 1952), however, this form is readily adaptable for use in reporting activities under other contract forms.

Under Item (1) delete words "Short Form" if the contract is a sub-contract under Form MF-200; and delete word "Independent" if the contract reported is on Form MF-200 (A). Also, report work paid for on a unit basis under contract Form MF-200 as though it were performed under an independent contract.

Under Item (2) include labor, supervision and technical services incurred for the exploratory operations. Do not include labor, supervision and technical services used for work performed under items (5) and (6).

Under Item (3) include the costs of material and supplies used in the project other than that used under items (5) and (6).

Under Item (4) appear the three types of operating equipment expenditures, that is, rental, purchase and depreciation. The expenditures made for renting equipment belonging to a third party will be reported under "Rental". The amount paid or duly obligated for payment for the purchase of equipment will be reported under "Purchase". The amount of expenditures due the Operator to reimburse him for depreciation of equipment owned will be reported under "Depreciation".

Item (5) comprises costs of labor, supervision, technical services, materials, etc., which are used in the initial rehabilitation and repair of existing buildings, installations, fixtures, and equipment. These costs, therefore, should not be reported under items (2) and (3).

Item (6) includes the labor, supervision, technical services, materials, etc., used in the installation or construction of new buildings, fixed improvements, etc., necessary for the project. These costs, therefore, should not be reported under items (2) and (3).

Item (7) covers miscellaneous types of expenditure such as payroll taxes, liability insurance, workmen's compensation insurance, repairs to equipment and sampling and analysis. Only that part of payroll taxes, liability insurance and workmen's compensation which are paid by the operator should be reported under item (7). The share paid by the employee as a payroll deduction is to be included under item (2) as labor costs.

Item (8) includes any unforeseen costs not included in the other seven categories.

The original of Form MF-104 when submitted for reimbursable expenses incurred under contract Form MF-200 must be supported by original documentation or by certified copies of purchase orders, payrolls or transcripts of payrolls, unless such documentation has been waived by the Regional Executive Officer. This certification may be stated thus, "Certified True Copy (or Transcript)", followed by appropriate signature. If the Executive Officer of the Region determines that a contract under Form MF-200 should have an "on-site" audit, that is, a Government auditor should make an audit of the Operator's books and records of account, the Operator need not support his monthly voucher with original or certified documents except in cases of equipment purchases whose individual costs exceed $50.00. In these cases the original or a certified copy of the purchase order or invoice should be attached to the Monthly Voucher. N. B.—Only the *original* of Form MF-104 is required to be documented. The four copies of Form MF-104 are not to be thus supported.

Form MF-104 submitted for reimbursement under fixed price contracts on Form MF-200 (A), however, are not required to be supported by documentation of any kind. The Operator will submit his claim under item (1) of Form MF-104 by deleting as stated above the word "Independent" and by showing the number of feet or other units immediately after the appropriate descriptive word, such as, drilling, bulldozing, crosscutting, drifting, etc., and giving the "Monthly Total" amount due. "Totals Previously Reported", and "Totals to Date" columns should also be filled in.

Form MF-104A
(April 1952)

Budget Bureau No. 42-R1151.2

RECEIVED MAY 12 U.F.A.

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION
OPERATOR'S UNIT COST AND PROGRESS REPORT

Month of March 1958 Docket No. DMEA 4750 Contract No. 1[illegible]-21152
Operator's Name Reynolds Metals Company Minerals Fluorspar
Address Reynolds Metals Bldg., Richmond, Virginia

OPERATION	UNIT	COSTS THIS MONTH	UNITS THIS MONTH	COSTS TO DATE	UNITS TO DATE	UNIT COSTS TO DATE	AUTHORIZED BY CONTRACT	
							Units	Unit Costs
Drifting								
Crosscutting								
Raising								
Shafts								
Winzes								
Drilling: Core	feet	3040.65	699	6836.03	1571.5		2000	4.35
Churn								
Auger								
~~Sinking~~ Core boxes	1			180.00	60		60	3.00
Trenching								
~~Trucks~~ Assays	1						30	6.00
Roads and Trails								
Incidental Allow.	feet	419.40	699	942.90	15715		2000	0.60
TOTAL DISTRIBUTED COSTS		3460.05		7958.93				TOTAL COSTS AUTHORIZED BY CONTRACT
Operating Equipment Purchased								
Initial Rehabilitation and Repairs								
New Buildings, Improvements, etc.								
TOTAL COSTS		3460.05		7958.93				10,260.00

The undersigned company, and the official executing this certification on its behalf, hereby certify that the information contained in this report is correct and complete to the best of their knowledge and belief.

Date 4-11-58 Operator Reynolds Metals Company

Per [signature] Title Accounting Official

REMARKS: Drilling and incidental allowance costs are for holes K-4 and K-5.
All information on K-4 was submitted in February report, except for the Unit Costs Progress Report.

NOTE.—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.

(Instructions on reverse)

(For Government use only)

[signature] 4/15/58

INSTRUCTIONS

Preparation of Form MF-104A—Operator's Unit Cost and Progress Report.—Applicable places on Form 104A should be filled in by the Operator. The purpose of this form is twofold as follows: (1) to furnish the supervising engineers and other administrators with statistical information necessary to better determine the progress of the project; and (2) to furnish more permanent information on mining costs for future use. The more important phases of operation on which permanent information is desired have been outlined in the form. There are blank lines, however, for those unusual phases which may need to be reported for a particular project. It will be necessary for the Operator to distribute his costs among the applicable phases reported with the exception of three items the costs of which are not to be distributed by the Operator. These three items are: "Operating Equipment Purchased", "Initial Rehabilitation and Repairs", and "New Buildings, Improvements, etc." The reason for not distributing these items on a monthly basis is doubtless clear to the Operator, since such distribution might well overstate the cost for any one month or period short of the entire contract period.

Form MF-104A has been designed to tie in with Form MF-104 for both monthly and cumulative costs. The "Total Costs" on Form MF-104A for each month should equal the monthly "Total Costs" as reported on Form MF-104. This is also true of the "Total Costs To Date".

In preparing Form MF-104A, it will be necessary frequently to distribute certain costs over a number of items. For instance, supervisory and engineering costs may have to be distributed over several phases, such as, drifting, crosscutting, raising, etc., provided that these items were reported active for the month. Such distributions should be made on the basis of time spent on the various phases, on man days of labor charged to such phases, or on some other equitable basis. "Operating Equipment", "Initial Rehabilitation and Repairs", and "New Buildings Improvements, etc.", will be distributed to the several phases of the project by the Washington Office of DMEA at the close of the project if determined necessary. The last two columns headed "Authorized by Contract" will be filled in by the Operator if such information is found in the contract. This information is usually a part of Exhibit "A" of the contract. A space for remarks has been provided for the use of the Operator to call attention to any unusual circumstances causing excessive or disproportionate unit costs.

GPO 872894

KEMPER PROJECT
ERDA 4750 Idm - R1158

Narrative for March
J. W. Hook, Resident Geologist

Hole K-5 was completed in March. Costs for both K-4 and K-5 are included in this report.

Hole K-5 cut a wide faulted zone of limestone, sandstone and calcite breccia, with more vein calcite than in K-4. The hole contained neither fluorspar nor barite.

Recovery in the vein was 80% using BX Wireline tools.

A detailed log and cross section is enclosed, the summary is as follows:

K-5

Coordinates: N-5801, E-5398 Elevation: 396.0 Bearing: N40W Angle: -45°
Started: 3/3/58 Finished: 3/12/58 Bottom: 392.5 feet

From	To	Description
0	14	Overburden
14	34.5	Hardinsburg sandstone
34.5	194.5	Golconda shale and limestone
194.5	276.5	Cypress sandstone and shale
276.5	278.5	Paint Creek limestone and shale
278.5	316.5	Fault zone. Limestone, sandstone and calcite breccia and vein calcite.
316.5	392.5	St. Louis limestone.

Bottom depth - 392.5

Total completed - 392.5 feet.
(Completed footage shown on invoice includes K-4 and K-5 - 699 feet.)

RECEIVED
APR 10 1958
ACCOUNTING DEPT.
BAUXITE

REYNOLDS METALS COMPANY

Diamond Drill Hole No. K-5 Angle: -45° Bearing: N40W Depth: 392.5
Coordinates: N-5861; E-5398 Elevation: 396.0'
Property: Kemper Area: Corn-Wright County: Livingston State: Kentucky
Driller: E. J. Hayes Foreman: E. J. Hayes
Contractor: Jey Manufacturing Company Started: 3/3/58 Finished: 3/12/58

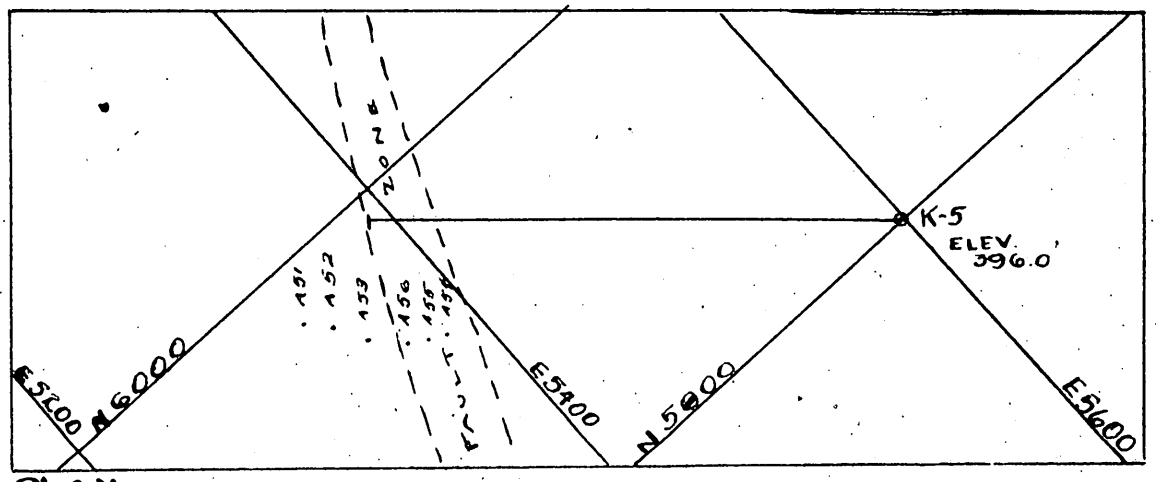
From	To	Fm	Description
0	12		Overburden
14	34.5	Ch	Sandstone, light brown to grey, medium grained, weathered.
34.5	55	Cg	Shale, dark grey, weathered green and brown.
55	59.5	Cg	Limestone, medium grey, coarse crystaline, shaley and fossiliferous, fossils replaced by brown calcite.
59.5	62.5	Cg	Shale, dark grey, slightly calcareous.
62.5	73	Cg	Limestone, medium grey, coarse crystaline, shaley, fossiliferous, fossils replaced by brown calcite, shale zone at 67'. Grades in to limey shale below.
73	78	Cg	Shale, medium grey, calcareous, fossiliferous. Angle of bedding with hole 58°.
78	86.5	Cg	Limestone, dark brown, fine crystaline, few fossils, 6" weathered zone 3" down from top. Calcite stringer at 82', 1" fossiliferous zone at 83' and from 84-85.
86.5	91.5	Cg	Shale, medium grey, calcareous, fossiliferous, angle of bedding with hole 58°.
91.5	95.5	Cg	Limestone, medium grey, coarse crystaline, fossiliferous, few calcite stringers, broken in last 2'.
95.5	194.5	Cg	Shale, grey, with evidence of movement along bedding. 103'-112', 1' recovery. Limestone at 112', fossiliferous. 125-126, fossiliferous limestone, medium grey and coarse crystaline. 129-130, limestone, medium grey and coarse crystaline, fossiliferous. 145-148, limestone as above. At 190.5, sandy lime.
194.5	195	Cc	Cgl, shale, limestone and sand.
195	204	Cc	Sandstone, interbedded with shale. Ss. is grey, medium grained, increase of sand with depth.
204	224.5	Cc	Shale, dark grey, sandy, with some marcasite.

FROM	To	Fm	Description
224.5	251.5	Ce	Sandstone, light grey, medium grained, broken 222-225, 228-231, 235-239.
251.5	273	Ce	Sandstone, brecciated in upper 1.5'. Broken to 273. 3' recovery 251.5-261.5, 2' recovery 268-268.
273	274	Ce	Sandstone, dark grey, brecciated, 1/2" calcite veinlets in lower 6".
274	276.5	Ce	Sandstone, blocky, upper 3" subangular cgl, green shale at 276.
276.5	278.5	Cpc	Shale, brown grey, fossiliferous, calcite stringers, some evidence of movement.
278.5	316.5		Fault zone:
			278.5 – 279: limestone, blocky, grey, medium crystalined, slightly shaley.
			279 – 281: limestone, shale and calcite breccia.
			281 – 282: Sandstone and calcite breccia.
			282 – 303: limestone breccia, limestone, light grey, fine crystaline, heavy calcite veinlets, gouge at 291, 4" calcite at 289-290.5, 300-300.5.
			303 – 316.5: Calcite, with scattered limestone breccia, heavy limestone breccia at 305-306. Increase in limestone breccia in last 2'.
316.5	353.5	Cal	Limestone, brown grey, medium crystaline, chert nodules, stylolitic, with few calcite stringers. Broken and weathered from 344-346, 348-349, and at 353.
353.5	371	Cal	Limestone, brown grey, fine crystaline, cherty. 4" calcite at 366, calcite veinlets up to 1" below this.
371	392.5	Cal	Limestone, brown grey, medium crystaline, fossiliferous, cherty, weathered zone from 387.5-388.

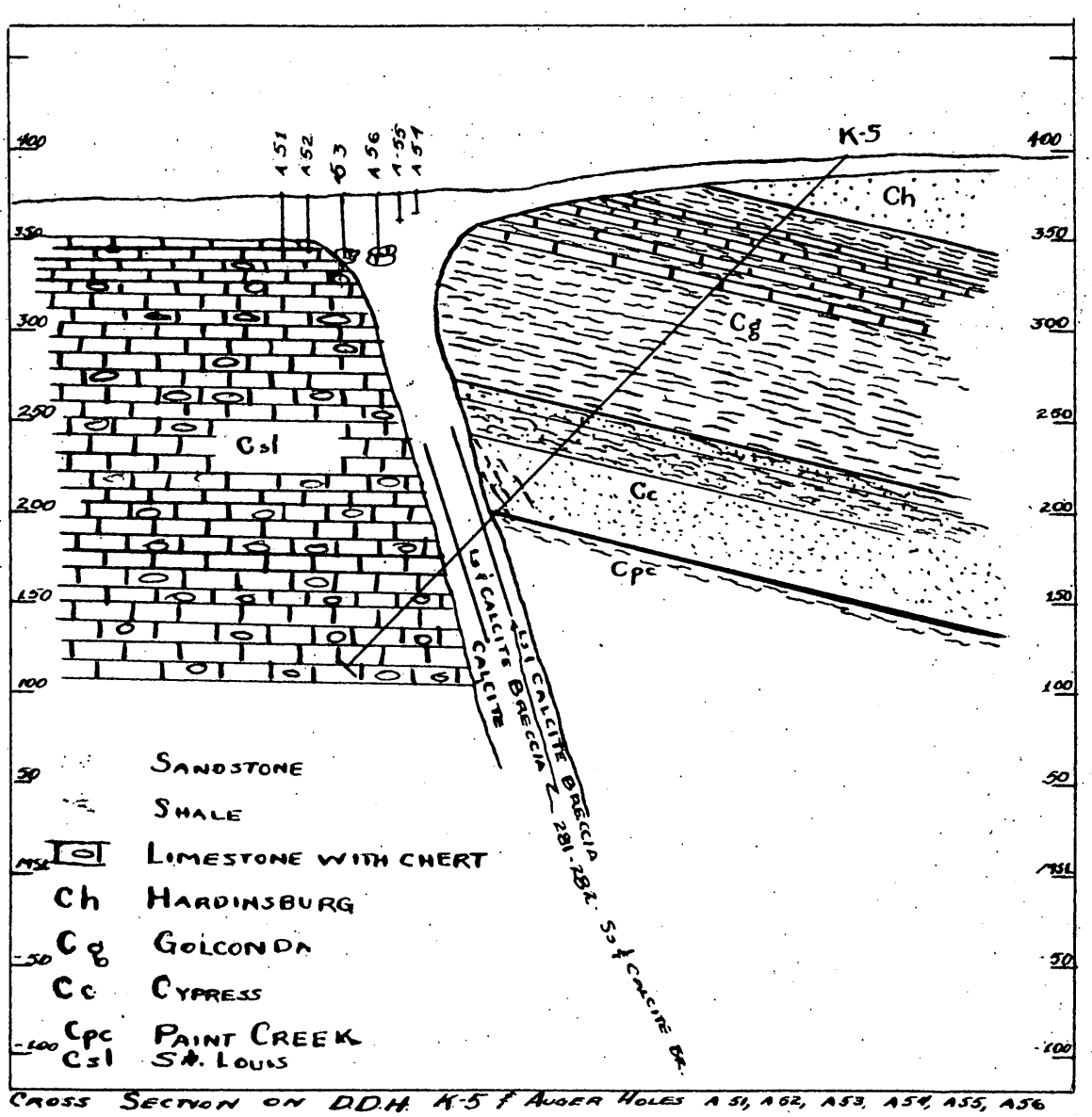
Bottom 392.5

KEMPER PROPERTY

LIVINGSTON COUNTY, KENTUCKY



PLAN



CROSS SECTION ON D.D.H. K-5 & AUGER HOLES A 51, A 62, A 53, A 54, A 55, A 56

VERT. & HORZ. SCALES 1" = 100'

0 50 100 200 300 FEET

T.R.W. MAR., 1958

EXTRA COPY
DMEA
RECEIVED MAY 12 1958

DATE	INITIALS	CODE

Form MF-104 (Rev.)
(April 1952)

Budget Bureau No. 42-R1036.5

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION
OPERATOR'S MONTHLY REPORT AND VOUCHER

RECEIVED MAR 24 1958 D.M.E.A.

PAID ON VOUCHER & SCHEDULE OF PAYMENTS K- 50

1152

STAGE ONE

Month of February, 1958 Docket No. DMEA 4750 Contract No. Idm: K1157

Operator's Name Reynolds Metals Company Minerals Fluorspar

Address Reynolds Metals Building, Richmond, Va.

Contract Amount, $ 10,260.00 Government Participation 50 % Amount, $ 5,130.00

ITEMS OF COSTS	FOR OPERATOR'S USE: Monthly Total	Totals Previously Reported	Totals To Date	FOR GOVERNMENT USE ONLY: Approved Monthly Total	Approved Totals Previously Reported	Approved Totals To Date
(1) Independent Short Form Contracts:						
Drilling Core	2546.93	1248.45	3795.38			
Bulldozing						
Crosscutting						
Drifting						
(2) Labor and Supervision:						
Labor						
Supervision						
Technical Services						
(3) Operating Mat'ls. and Supplies:						
Timber						
Explosives						
Pipe						
Track						
Core Boxes		180.00	180.00			
(4) Operating Equipment:						
Rental						
Purchase						
Depreciation						
(5) Initial Rehabilitation and Repairs						
(6) New Bldgs., Improvements, etc.						
(7) Miscellaneous:						
Repairs to Equipment						
Sampling and Analysis						
Payroll Taxes						
Liability Insurance						
Incidental Allow	351.30	172.20	523.50			
Assays	--	0	--			
(8) Contingencies (specify):						
TOTALS	2898.23	1600.65	4498.88	2898.23	1600.65	4498.88

I certify that the above bill is correct and just and that payment therefor has not been received.

Date 3-7-58 *Payee Reynolds Metals Company

Per H. L. McClanan Title Accounting Official

*When a voucher is signed or receipted in the name of a company or corporation, the name of the person writing the company or corporate name, as well as the capacity in which he signs, must appear. For example: "John Doe Company, per John Smith, Secretary," or "Treasurer," as the case may be.

NOTE.—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.

(Instructions on reverse)

Pursuant to authority vested in me, I certify that this account is correct and proper for payment in the amount of:

$ 1449.12

Signature Helen R. Miller
(Authorized Certifying Officer)

Date MAR 20 1958 Vou. No. 151

(See other side)

1449.11

(For Government use only)

CERTIFICATION BY GOVERNMENT REPRESENTATIVE:

I certify that to the best of my knowledge and belief the contractor submitting this voucher is operating a Defense Minerals Exploration Administration project under Contract No. E 1152 in accordance with the terms of the contract.

Signature [illegible] Title Mining Engr. Date 3/17/58

APPROVAL BY DMEA EXECUTIVE OFFICER OR ALTERNATE:

Signature Robert A. Lawrence Title EXECUTIVE OFFICER DMEA FIELD TEAM REGION II Date MAR 20 1958

MONTHLY REPORT OF OPERATOR

The Operator (Contractor) of an exploration project is required to make a monthly report to the Government through the Regional Executive Officer. This report consists of three parts as follows:

(a) *Form MF-104—Operator's Monthly Report and Voucher.*—This form details expenditures and constitutes a voucher for reimbursing the Operator for the Government's share of costs;

(b) *Form MF-104A—Operator's Unit Cost and Progress Report.*—This is a statistical report of expenditures which shows costs for the various types of operation; and

(c) *Narrative.*—A concise narrative description of progress made, results accomplished, and any unusual difficulties encountered must be furnished as an attachment to this Report and Voucher. Wherever possible, the narrative is to be illustrated with maps or sketches showing formations penetrated and location and assays of samples taken as well as advances in workings. In the case of diamond drilling or churn drilling, the location and inclination of holes is to be shown on a map; logs and assays also are to be submitted.

The Monthly Report of Operator should be prepared in an original and four copies all of which must be sent to the Executive Officer of the Region not later than the 15th of the month following.

Preparation of Form MF-104—Operator's Monthly Report and Voucher.—All the applicable spaces in Form MF-104 should be filled in by the Operator, and the Operator or his agent should sign the certification in the lower left corner of the form.

The items of costs are arranged in the order they appear in Article 6 (a) of Form MF-200 (Revised February 1952), however, this form is readily adaptable for use in reporting activities under other contract forms.

Under Item (1) delete words "Short Form" if the contract is a sub-contract under Form MF-200; and delete word "Independent" if the contract reported is on Form MF-200 (A). Also, report work paid for on a unit basis under contract Form MF-200 as though it were performed under an independent contract.

Under Item (2) include labor, supervision and technical services incurred for the exploratory operations. Do not include labor, supervision and technical services used for work performed under items (5) and (6).

Under Item (3) include the costs of material and supplies used in the project other than that used under items (5) and (6).

Under Item (4) appear the three types of operating equipment expenditures, that is, rental, purchase and depreciation. The expenditures made for renting equipment belonging to a third party will be reported under "Rental". The amount paid or duly obligated for payment for the purchase of equipment will be reported under "Purchase". The amount of expenditures due the Operator to reimburse him for depreciation of equipment owned will be reported under "Depreciation".

Item (5) comprises costs of labor, supervision, technical services, materials, etc., which are used in the initial rehabilitation and repair of existing buildings, installations, fixtures, and equipment. These costs, therefore, should not be reported under items (2) and (3).

Item (6) includes the labor, supervision, technical services, materials, etc., used in the installation or construction of new buildings, fixed improvements, etc., necessary for the project. These costs, therefore, should not be reported under items (2) and (3).

Item (7) covers miscellaneous types of expenditure such as payroll taxes, liability insurance, workmen's compensation insurance, repairs to equipment and sampling and analysis. Only that part of payroll taxes, liability insurance and workmen's compensation which are paid by the operator should be reported under item (7). The share paid by the employee as a payroll deduction is to be included under item (2) as labor costs.

Item (8) includes any unforeseen costs not included in the other seven categories.

The original of Form MF-104 when submitted for reimbursable expenses incurred under contract Form MF-200 must be supported by original documentation or by certified copies of purchase orders, payrolls or transcripts of payrolls, unless such documentation has been waived by the Regional Executive Officer. This certification may be stated thus, "Certified True Copy (or Transcript)", followed by appropriate signature. If the Executive Officer of the Region determines that a contract under Form MF-200 should have an "on-site" audit, that is, a Government auditor should make an audit of the Operator's books and records of account, the Operator need not support his monthly voucher with original or certified documents except in cases of equipment purchases whose individual costs exceed $50.00. In these cases the original or a certified copy of the purchase order or invoice should be attached to the Monthly Voucher. N. B.—Only the *original* of Form MF-104 is required to be documented. The four copies of Form MF-104 are not to be thus supported.

Form MF-104 submitted for reimbursement under fixed price contracts on Form MF-200 (A), however, are not required to be supported by documentation of any kind. The Operator will submit his claim under item (1) of Form MF-104 by deleting as stated above the word "Independent" and by showing the number of feet or other units immediately after the appropriate descriptive word, such as, drilling, bulldozing, crosscutting, drifting, etc., and giving the "Monthly Total" amount due. "Totals Previously Reported", and "Totals to Date" columns should also be filled in.

Form MF-104A
(April 1952)

Budget Bureau No. 42-R1151.2

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION

RECEIVED MAR 24 1958 DMEA

OPERATOR'S UNIT COST AND PROGRESS REPORT

Month of February 1958 Docket No. DMEA 4750 Contract No. Idm-M152
Operator's Name Reynolds Metals Company Minerals Fluorspar
Address Reynolds Metals Building, Richmond, Va.

OPERATION	UNIT	COSTS THIS MONTH	UNITS THIS MONTH	COSTS TO DATE	UNITS TO DATE	UNIT COSTS TO DATE	AUTHORIZED BY CONTRACT Units	AUTHORIZED BY CONTRACT Unit Costs
Drifting								
Crosscutting								
Raising								
Shafts								
Winzes								
Drilling: Core	Feet	2546.93	585.5	3795.38	872.5		2000	4.35
Churn								
Auger								
~~Sinking~~ Core Boxes	1			180.00	60		60	3.00
Trenching								
~~Test Pits~~ Assays	1						30	6.00
Roads and Trails								
Incidental Allow.	Feet	351.30	585.5	523.50	872.5		2000	0.60
TOTAL DISTRIBUTED COSTS		2898.23		4498.88				TOTAL COSTS AUTHORIZED BY CONTRACT
Operating Equipment Purchased								
Initial Rehabilitation and Repairs								
New Buildings, Improvements, etc.								
TOTAL COSTS		2898.23		4498.88				10,260.00

The undersigned company, and the official executing this certification on its behalf, hereby certify that the information contained in this report is correct and complete to the best of their knowledge and belief.

Date 3-7-58 Operator Reynolds Metals Company

Per H. E. McDaniel Title Accounting Official

NOTE.—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.

REMARKS: Drilling and incidental allowance costs are for holes K-2 and K-3.

Hole No. K-4 was bottomed at 307' on February 26, 1958.

Joy Manufacturing invoice includes drilling through February 25, 1958 only.

(Instructions on reverse)

(For Government use only)

W. J. Burmeister 3/17/58

MINING ENGINEER
U. S. BUREAU OF MINES

INSTRUCTIONS

Preparation of Form MF-104A—Operator's Unit Cost and Progress Report.—Applicable places on Form 104A should be filled in by the Operator. The purpose of this form is twofold as follows: (1) to furnish the supervising engineers and other administrators with statistical information necessary to better determine the progress of the project; and (2) to furnish more permanent information on mining costs for future use. The more important phases of operation on which permanent information is desired have been outlined in the form. There are blank lines, however, for those unusual phases which may need to be reported for a particular project. It will be necessary for the Operator to distribute his costs among the applicable phases reported with the exception of three items the costs of which are not to be distributed by the Operator. These three items are: "Operating Equipment Purchased", "Initial Rehabilitation and Repairs", and "New Buildings, Improvements, etc." The reason for not distributing these items on a monthly basis is doubtless clear to the Operator, since such distribution might well overstate the cost for any one month or period short of the entire contract period.

Form MF-104A has been designed to tie in with Form MF-104 for both monthly and cumulative costs. The "Total Costs" on Form MF-104A for each month should equal the monthly "Total Costs" as reported on Form MF-104. This is also true of the "Total Costs To Date".

In preparing Form MF-104A, it will be necessary frequently to distribute certain costs over a number of items. For instance, supervisory and engineering costs may have to be distributed over several phases, such as, drifting, crosscutting, raising, etc., provided that these items were reported active for the month. Such distributions should be made on the basis of time spent on the various phases, on man days of labor charged to such phases, or on some other equitable basis. "Operating Equipment", "Initial Rehabilitation and Repairs", and "New Buildings Improvements, etc.", will be distributed to the several phases of the project by the Washington Office of DMEA at the close of the project if determined necessary. The last two columns headed "Authorized by Contract" will be filled in by the Operator if such information is found in the contract. This information is usually a part of Exhibit "A" of the contract. A space for remarks has been provided for the use of the Operator to call attention to any unusual circumstances causing excessive or disproportionate unit costs.

GPO 872894

KEMPER PROJECT

DMRA 4750 Idm - K1152

Narrative for February
J.N. Rook, Resident Geologist

Holes K-3 and K-4 were completed in February, though K-4 was not completed until after the Joy Manufacturing Company invoice, dated 2/25/58, was compiled. Costs for K-2 and K-3 are included with this report. K-4 costs will be submitted in the March report.

Hole K-3 cut a wide vein of calcite and limestone breccia, similar to holes K-1 and K-2. K-4 cut a much wider vein of calcite, limestone and shale breccia, with less vein calcite than in the previous holes. Neither hole contained fluorspar or barite.

Recoveryin the vein material was 100% for K-3, 77% for K-4, using BX - Wireline tools.

Detailed logs and cross sections are enclosed, the summaries are as follows:

K-3

Coordinates N6517, E5787: Elev. 442': Bearing N50W: Angle -57°
Started 2/3/58 Finished 2/11/58 Bottom 292.5'

From	To	Description
0	40	Overburden
40	82	Golconda Shale
82	136½	Cypress sandstone
136½	163	Paint Creek shale
163	266½	Bethel sandstone
226½	233½	Renault limestone and shale
233½	250½	Fault Zone, calcite and limestone breccia, vein calcite.
250½	292½	St. Louis Limestone

K-4

Coordinates N6196, E5570: Elev. 420': Bearing N53W: Angle -50°
Started 2/15/58 Finished 2/26/58 Bottom 307'

From	To	Description
0	47	Overburden
47	123	Golconda limestone and shale
123	196	Cypress sandstone
196	226½	Paint Creek Shale
226½	231½	Bethel Sandstone
231½	284	Fault zone, calcite and limestone breccia
284	307	St. Louis limestone

Summary

K-3	Started	2/3/58	Finished	2/11/58	Bottom Depth 292.5
K-4	Started	2/15/58	Finished	2/26/58	Bottom Depth 307 (not on invoice)

Total completed 599.5
(Completed footage shown on invoice, excluding hole K-2 582.5)

REYNOLDS METALS COMPANY

Diamond Drill Hole No. K-3 Angle 57° Bearing N50W Depth 292.5'
Coordinates 6517N : 5787E Elevation 442'
Property: Hamper Area: Corn-Wright County: Livingston State: Kentucky
Contractor: Joy Manufacturing Co. Started: 2/3/58 Finished: 2/11/58

From	To	Fm	Description
0	40		Overburden
40	61	Cg	Shale, dark grey, weathered brown and green.
61	70	Cg	Limestone, green grey, medium grained, partly silicified with thin shale zones from 61-66½. Limestone, fossiliferous with calcite stringers.
70	77	Cc	Sand, grey, weathered, slightly fractured with calcite stringers.
77	82	Cc	Shale, medium grey, irregular bedding, slightly sandy, aragonite along bedding, last 3" is weathered and soft.
82	133	Cc	Sandstone, medium grey, medium grained, 2" shale at 83½'. Slightly fractured with small calcite stringers. Slightly shaley at 88½' increasing to 92'. From 92'-98' sandstone, light brown, slightly shaley to 100'. From 100' to 133', blocky and weathered sandstone.
133	136½	Cc	Conglomerate, sub-angular shale in sandstone matrix. Marcasite along contact at 136½.
136½	163	Pc	Shale, dark grey, interbedded with thin bedded sandstone. Shale is fissile, bractured in places with calcite stringers. Angle of bedding at 137', 70°. 155'-159', sand with shale. 140½-149, 1" core recovery. Fractured at base.
163	164½	Cb	Sandstone and calcite breccia
164½	226½	Cb	Sandstone, light grey, medium grained, with calcite veinlets from 182½-202. Blocky from 201-202, 208-209½, 212-215.
226½	227½	Cr	Shale, green grey, calcareous, fossiliferous, fractured with calcite stringers.
227½	231½	Cr	Limestone, medium grey, fine crystaline, shaley, fractured with calcite stringers.

From	To	Fm	Description
231½	233½	Cr	Shale, green grey, fractured with calcite stringers. Fractured limestone from 333-333½.
233½	250½		Fault Zone.
			233½-234½ Shaley gouge, soft.
			234½-238½ Limestone, shale and calcite breccia.
			238½-242½ Calcite
			242½-244 Limestone, brown, and calcite breccia.
			244-245½ Limestone, brown, medium crystaline, fairly undisturbed.
			245-250½ Limestone and calcite breccia, 3" calcite at 248'.
250½	260½	Cal	Limestone, brown, medium grained, fossiliferous, cherty. Few calcite stringers, stycolitic.
260½	264	Cal	Limestone, brown, fine crystaline, heavy chert.
264	265½	Cal	Limestone, brown, coarse crystaline.
265½	292½	Cal	Limestone, brown, fine crystaline, cherty, with weathered zones from 268-270, 275-278. Few calcite stringers.

Bottom 292½'

Recovery for hole 70%
Recovery in vein 100%

BX-WL Tools

REYNOLDS METALS COMPANY K-4

Diamond Drill Hole No. K-4: Angle, 50°: Bearing N53W: Depth, 301'
Coordinates, 6196N : 5570E Elevation 420'
Property; Kemper Area: Corn-Wright County: Livingston State: Kentucky
Contractor: Joy Manufacturing Co. Started: 2/15/58 Finished: 2/26/58

From	To	Fm	Description
0	47		Overburden
47	67½	Cg	Shale, grey green, weathered brown. Fossiliferous, Aragonite along bedding. Thin limestone bed at 65'. Angle of bedding 75°.
67½	70½	Cg	Limestone, medium grey, fine crystaline, fossiliferous, silty.
70.5	74.5	Cg	Shale, dark grey, calcareous, interbedded with silty limestone.
74½	76	Cg	Limestone, dark grey, medium crystaline, silty, grades into shale below.
76	79½	Cg	Shale, dark grey, calcareous, fossiliferous, grades into limestone below.
79½	82½	Cg	Limestone, dark grey, coarse grained, fossiliferous, grades into shale.
82½	94½	Cg	Shale, dark grey, fossiliferous, calcareous, grades into limey shale at 88½'.
94½	99	Cg	Limestone, dark grey, coarse crystaline, slightly shaley, fossiliferous, few calcite stringers.
99	123	Cg	Shale, dark grey, broken in upper 6'. Poor recovery. Some slippage along bedding. Soft at 120'.
123	132	Cc	Sandstone, light grey, medium grained, 2" calcite at top, shaley.
132	142½	Cc	Shale medium grey, sandy, Pyrites throughout.
142½	193	Cc	Sandstone, light grey, medium grained, blocky from 148 - 149. Zones of weathered brown sandstone. Blocky from 160½ - 161.
193	196	Cc	Conglomerate, shale in sandstone matrix, subangular.
196	218	Cpc	Shale, dark grey, fissile, angle of bedding 75°.
218	222½	Cpc	Shale and sandstone irregularly bedded, conglomeritic in zones. Grades into conglomeritic sandy fossiliferous shale.

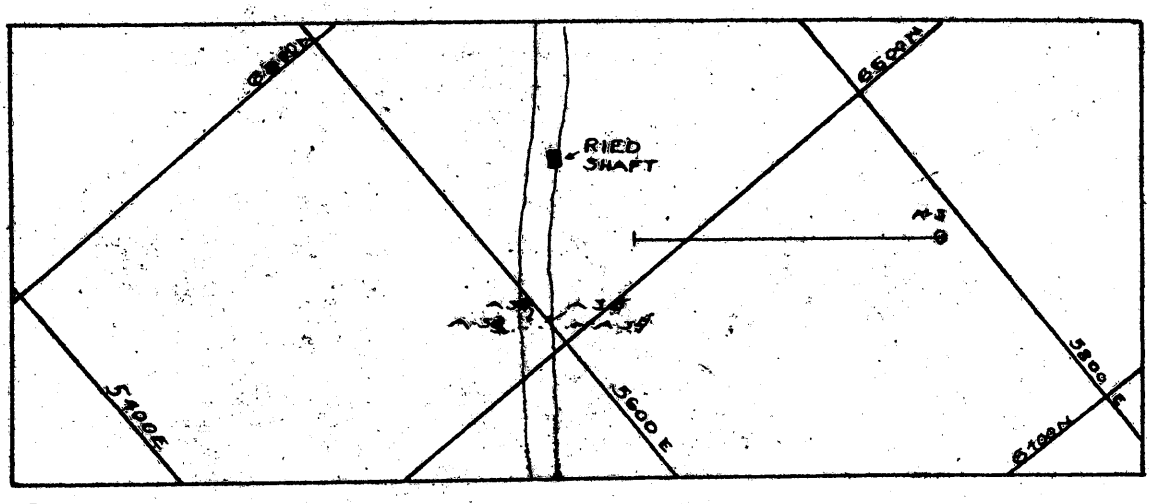
From	To	Fm	Description
222½	226½	Cpc	Shale, dark grey, slightly fossiliferous and calcareous at 223. Interbedded with thin sandstone beds. Sandstone increases with depth.
226½	231½	Cb	Sandstone, light grey, medium grained, slightly shaley at top. Calcite veinlets, blocky from 231-231½.
231½	284		Fault Zone.
			231½-244 Limestone and calcite breccia. Few oil stains in calcite. Gouge from 242-242½ with calcite to 243½. Limestone, brown, medium crystaline, with styolites. Fairly undisturbed in upper foot.
			244 -248 Limestone, medium brown grey, medium crystaline and slightly fossiliferous, with small calcite veinlets.
			248 -253 Limestone and calcite breccia. 3" gouge at 253, 2" calcite below gouge.
			253 -255.5 Limestone, dark grey, fine grained, shaley fossiliferous with calcite stringers.
			255½-256½ Shale, dark grey, fossiliferous, calcareous.
			256½-262½ Limestone, dark brown, fine crystaline, fractured with calcite stringers to 259, 3" calcite at 261½. Broken to 262.5.
			262½-269½ Shale, dark grey, slightly sandy, with calcite. Limestone, medium grey, fine crystaline from 264-265. Limestone and calcite breccia 267½-268½.
			269½-275 Limestone and calcite breccia. Gouge in lower 6".
			275 -284 Limestone and calcite breccia, gouge at 280'.
284	289	Csl	Limestone, medium grey, fine grained, styolitic, slightly fractured with calcite stringers.
289	297	Csl	Limestone, dark grey, coarse grained, few calcite stringers.
297	307	Csl	Limestone, dark grey, medium to fine crystaline, with massive chert nodules.

Bottom 307'

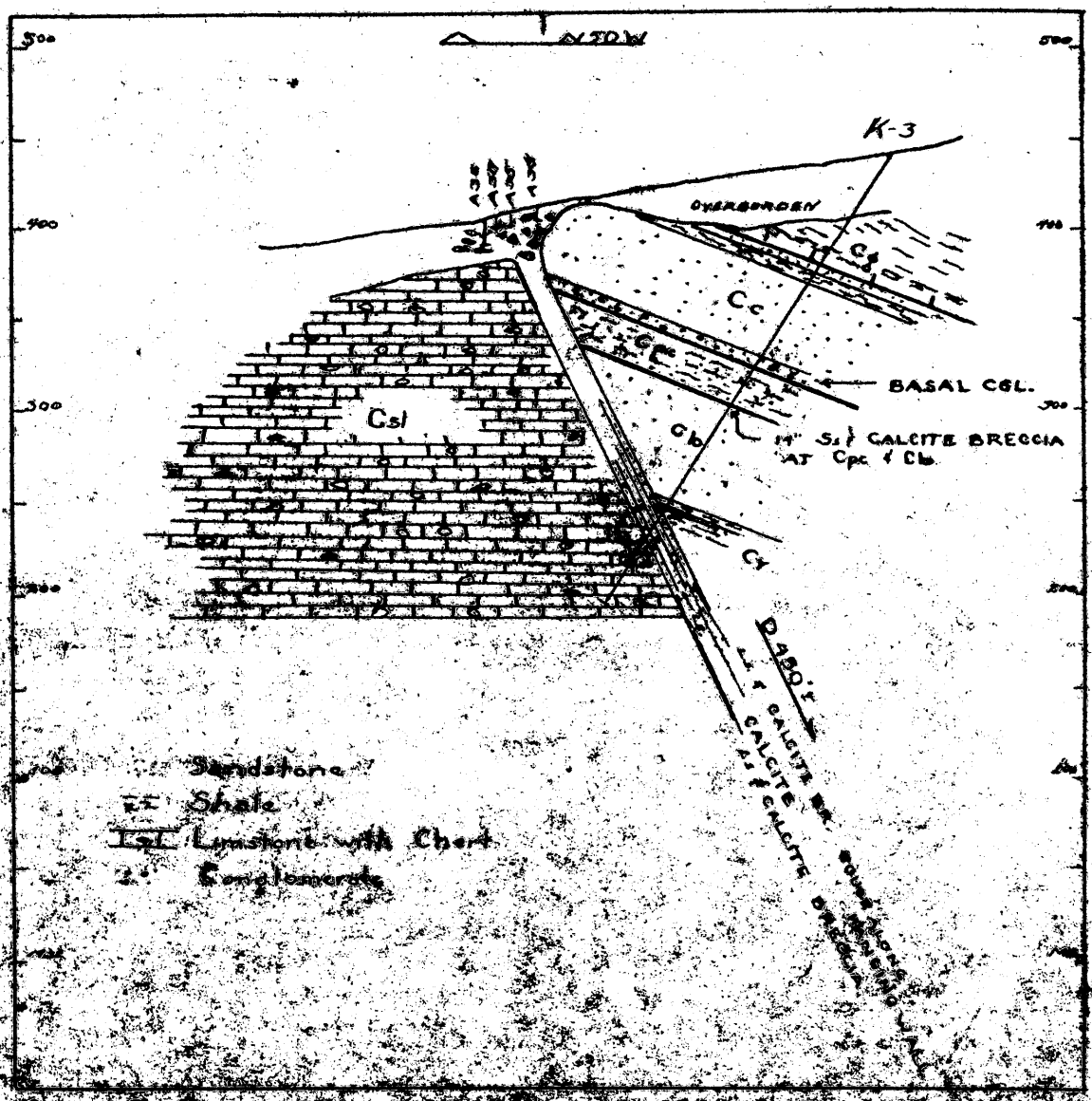
Recovery for hole 74%
Recovery in vein 77%
BX-WL Tools

KEMPER PROPERTY

Livingston County, Kentucky



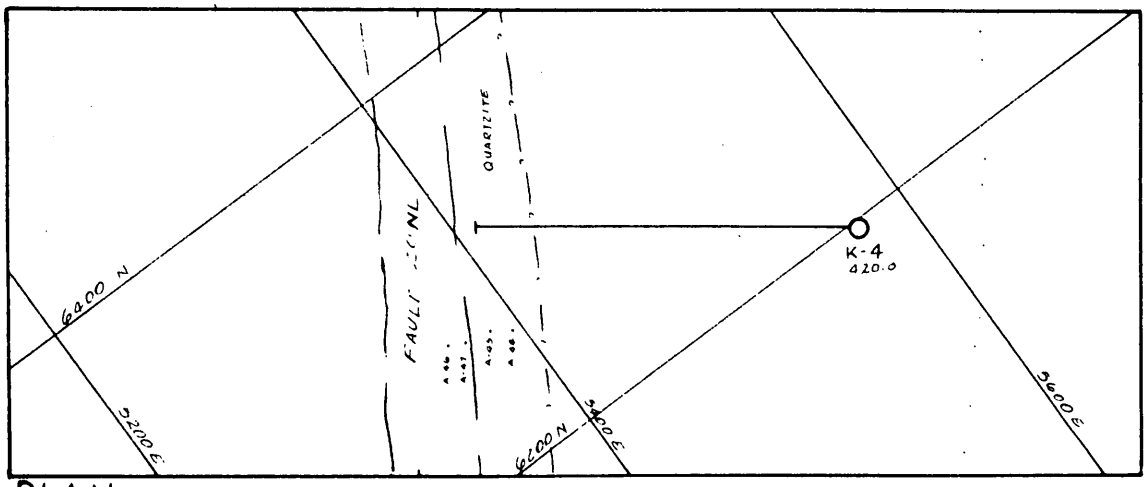
PLAN



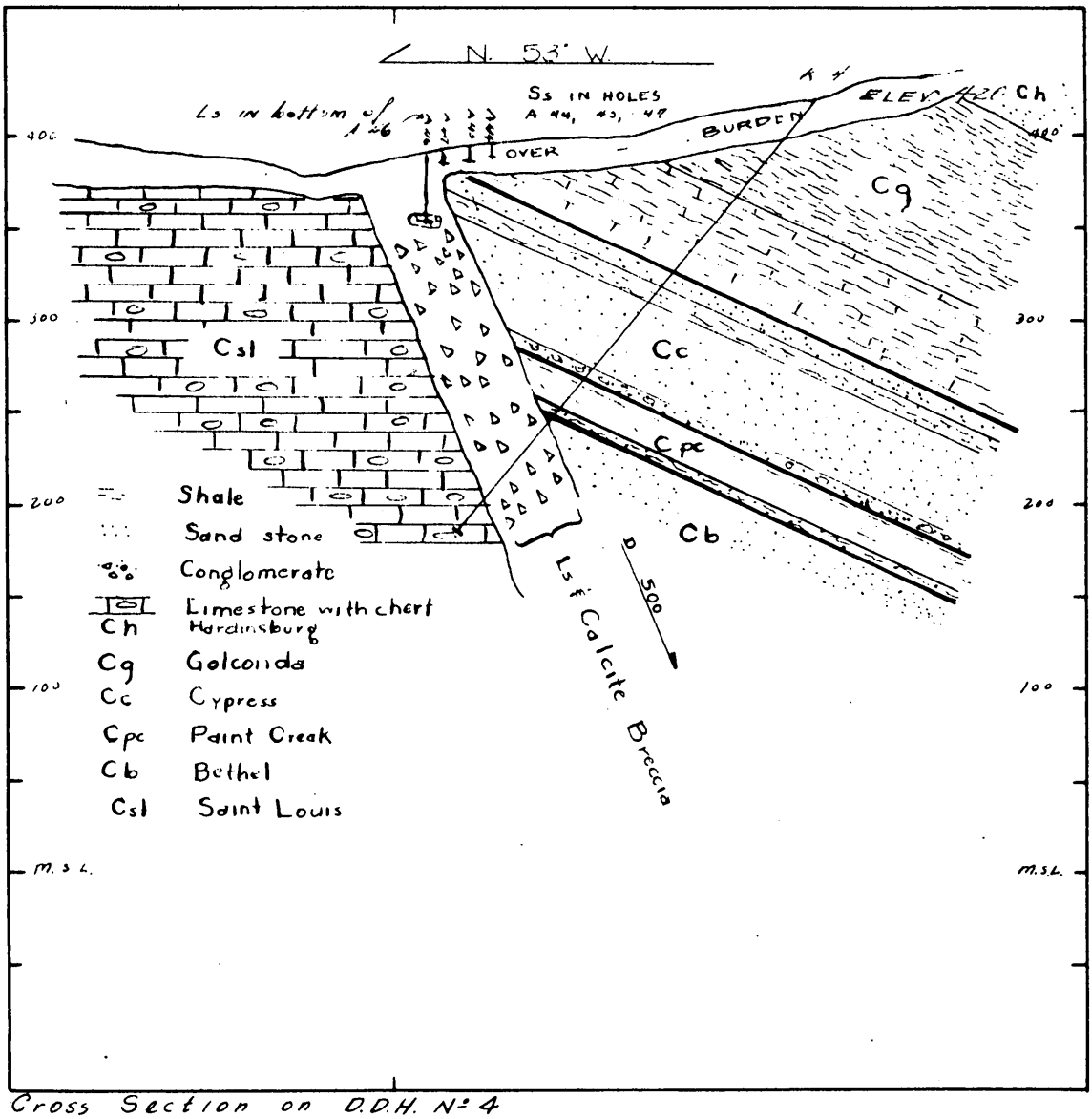
VERTICAL SCALE 1"=100'

KEMPER PROPERTY

Crittenden County, Kentucky



PLAN



Cross Section on D.D.H. No 4

VERT. & HORZ. SCALES: 1" = 100'

0 50 100 200 300 FT.

DN FEB. 1958

Form MF-101 (Rev. 3) (April 1956)

RECEIVED FEB 28 1958

Budget Bureau No. 42-R1036.5

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION

PAID ON VOUCHER & SCHEDULE OF PAYMENTS K- 43

STAGE I

OPERATOR'S MONTHLY REPORT AND VOUCHER

Month of January, 1958 Docket No. DMEA 4750 Contract No. Idm-K1152

Operator's Name Reynolds Metals Company Minerals Fluorspar

Address Richmond, Virginia

Contract Amount, $10,260.00 Government Participation: 50 % Amount, $ 5,130.00

ITEMS OF COSTS	FOR OPERATOR'S USE: Monthly Total	Totals Previously Reported	Totals To Date	FOR GOVERNMENT USE ONLY: Approved Monthly Total	Approved Totals Previously Reported	Approved Totals To Date
(1) Independent Short Form Contracts:						
Drilling core	1248.45	0	1248.45			
Bulldozing						
Crosscutting						
Drifting						
(2) Labor and Supervision:						
Labor						
Supervision						
Technical Services						
(3) Operating Mat'ls. and Supplies:						
Timber						
Explosives						
Pipe						
Track						
core boxes	180.00	0	180.00			
(4) Operating Equipment:						
Rental						
Purchase						
Depreciation						
(5) Initial Rehabilitation and Repairs						
(6) New Bldgs., Improvements, etc.						
(7) Miscellaneous:						
Repairs to Equipment						
Sampling and Analysis						
Payroll Taxes						
Liability Insurance						
Incidental allowance	172.20	0	172.20			
Assays	--	0	---			
(8) Contingencies (specify):						
TOTALS	1600.65	0	1600.65	1600.65	—	1600.65

I certify that the above bill is correct and just and that payment therefor has not been received.

Date 2-11-58 *Payee Reynolds Metals Company

Per [signature] Title Accounting Official

*When a voucher is signed or receipted in the name of a company or corporation, the name of the person writing the company or corporate name, as well as the capacity in which he signs, must appear. For example: "John Doe Company, per John Smith, Secretary," or "Treasurer," as the case may be.

NOTE.—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.

(Instructions on reverse)

Pursuant to authority vested in me, I certify that this account is correct and proper for payment in the amount of:

$ 800.32

Signature [signature] (Authorized Certifying Officer)

Date B 26 1958 Vou. No. 139

(See other side)

115

800-32

(For Government use only)

CERTIFICATION BY GOVERNMENT REPRESENTATIVE:

I certify that to the best of my knowledge and belief the contractor submitting this voucher is operating a Defense Minerals Exploration Administration project under Contract No. E 1152 in accordance with the terms of the contract.

Signature [illegible] Burmeister Title Mining Eng'r. Date 2/20/58

APPROVAL BY DMEA EXECUTIVE OFFICER OR ALTERNATE:

Signature Robert A Lawrence Title EXECUTIVE OFFICER Date FEB 21 1958

MONTHLY REPORT OF OPERATOR

The Operator (Contractor) of an exploration project is required to make a monthly report to the Government through the Regional Executive Officer. This report consists of three parts as follows:

(a) *Form MF-104—Operator's Monthly Report and Voucher.*—This form details expenditures and constitutes a voucher for reimbursing the Operator for the Government's share of costs;

(b) *Form MF-104A—Operator's Unit Cost and Progress Report.*—This is a statistical report of expenditures which shows costs for the various types of operation; and

(c) *Narrative.*—A concise narrative description of progress made, results accomplished, and any unusual difficulties encountered must be furnished as an attachment to this Report and Voucher. Wherever possible, the narrative is to be illustrated with maps or sketches showing formations penetrated and location and assays of samples taken as well as advances in workings. In the case of diamond drilling or churn drilling, the location and inclination of holes is to be shown on a map; logs and assays also are to be submitted.

The Monthly Report of Operator should be prepared in an original and four copies all of which must be sent to the Executive Officer of the Region not later than the 15th of the month following.

Preparation of Form MF-104—Operator's Monthly Report and Voucher.—All the applicable spaces in Form MF-104 should be filled in by the Operator, and the Operator or his agent should sign the certification in the lower left corner of the form.

The items of costs are arranged in the order they appear in Article 6 (a) of Form MF-200 (Revised February 1952), however, this form is readily adaptable for use in reporting activities under other contract forms.

Under Item (1) delete words "Short Form" if the contract is a sub-contract under Form MF-200; and delete word "Independent" if the contract reported is on Form MF-200 (A). Also, report work paid for on a unit basis under contract Form MF-200 as though it were performed under an independent contract.

Under Item (2) include labor, supervision and technical services incurred for the exploratory operations. Do not include labor, supervision and technical services used for work performed under items (5) and (6).

Under Item (3) include the costs of material and supplies used in the project other than that used under items (5) and (6).

Under Item (4) appear the three types of operating equipment expenditures, that is, rental, purchase and depreciation. The expenditures made for renting equipment belonging to a third party will be reported under "Rental". The amount paid or duly obligated for payment for the purchase of equipment will be reported under "Purchase". The amount of expenditures due the Operator to reimburse him for depreciation of equipment owned will be reported under "Depreciation".

Item (5) comprises costs of labor, supervision, technical services, materials, etc., which are used in the initial rehabilitation and repair of existing buildings, installations, fixtures, and equipment. These costs, therefore, should not be reported under items (2) and (3).

Item (6) includes the labor, supervision, technical services, materials, etc., used in the installation or construction of new buildings, fixed improvements, etc., necessary for the project. These costs, therefore, should not be reported under items (2) and (3).

Item (7) covers miscellaneous types of expenditure such as payroll taxes, liability insurance, workmen's compensation insurance, repairs to equipment and sampling and analysis. Only that part of payroll taxes, liability insurance and workmen's compensation which are paid by the operator should be reported under item (7). The share paid by the employee as a payroll deduction is to be included under item (2) as labor costs.

Item (8) includes any unforeseen costs not included in the other seven categories.

The original of Form MF-104 when submitted for reimbursable expenses incurred under contract Form MF-200 must be supported by original documentation or by certified copies of purchase orders, payrolls or transcripts of payrolls, unless such documentation has been waived by the Regional Executive Officer. This certification may be stated thus, "Certified True Copy (or Transcript)", followed by appropriate signature. If the Executive Officer of the Region determines that a contract under Form MF-200 should have an "on-site" audit, that is, a Government auditor should make an audit of the Operator's books and records of account, the Operator need not support his monthly voucher with original or certified documents except in cases of equipment purchases whose individual costs exceed $50.00. In these cases the original or a certified copy of the purchase order or invoice should be attached to the Monthly Voucher. N. B.—Only the *original* of Form MF-104 is required to be documented. The four copies of Form MF-104 are not to be thus supported.

Form MF-104 submitted for reimbursement under fixed price contracts on Form MF-200 (A), however, are not required to be supported by documentation of any kind. The Operator will submit his claim under item (1) of Form MF-104 by deleting as stated above the word "Independent" and by showing the number of feet or other units immediately after the appropriate descriptive word, such as, drilling, bulldozing, crosscutting, drifting, etc., and giving the "Monthly Total" amount due. "Totals Previously Reported", and "Totals to Date" columns should also be filled in.

Form MF-104A
(April 1952)

Budget Bureau No. 42-R1151.2

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION

RECEIVED FEB 28 1958 D.M.E.A.

STAGE I

OPERATOR'S UNIT COST AND PROGRESS REPORT

Month of January 195 8 Docket No. DMEA 4750 Contract No. Idm-R1152
Operator's Name Reynolds Metals Company Minerals Fluorspar
Address Richmond, Virginia

OPERATION	UNIT	COSTS THIS MONTH	UNITS THIS MONTH	COSTS TO DATE	UNITS TO DATE	UNIT COSTS TO DATE	AUTHORIZED BY CONTRACT	
							Units	Unit Costs
Drifting								
Crosscutting								
Raising								
Shafts								
Winzes								
Drilling: Core	feet	1248.45	287	1248.45	287		2000	4.35
Churn								
Auger								
core boxes	1	180.00	60	180.00	60		60	3.00
Trenching								
assays	1	---	0	--	0		30	6.00
Roads and Trails								
Incidental allowance	feet	172.20	287	172.20	287		2000	0.60
TOTAL DISTRIBUTED COSTS		1600.65		1600.65				TOTAL COSTS AUTHORIZED BY CONTRACT
Operating Equipment Purchased								
Initial Rehabilitation and Repairs								
New Buildings, Improvements, etc.								
TOTAL COSTS		1600.65		1600.65				10,260.00

The undersigned company, and the official executing this certification on its behalf, hereby certify that the information contained in this report is correct and complete to the best of their knowledge and belief.

Date 2-11-58 Operator Reynolds Metals Company

Per E. M. Daniel Title Accounting Official

NOTE.—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.

(Instructions on reverse)

REMARKS: Drilling and incidental allowance costs are for hole K-1 only. Hole K-2 bottomed 1-28-58 at 293' but since the bottom depth does not appear on the Joy Mfg. Co. invoice (dated 1-25-58) it cannot be included in this report. K-2 costs will be charged to the February Report.

W. Burmeister 2/20/58

(For Government use only)

INSTRUCTIONS

Preparation of Form MF-104A—Operator's Unit Cost and Progress Report.—Applicable places on Form 104A should be filled in by the Operator. The purpose of this form is twofold as follows: (1) to furnish the supervising engineers and other administrators with statistical information necessary to better determine the progress of the project; and (2) to furnish more permanent information on mining costs for future use. The more important phases of operation on which permanent information is desired have been outlined in the form. There are blank lines, however, for those unusual phases which may need to be reported for a particular project. It will be necessary for the Operator to distribute his costs among the applicable phases reported with the exception of three items the costs of which are not to be distributed by the Operator. These three items are: "Operating Equipment Purchased", "Initial Rehabilitation and Repairs", and "New Buildings, Improvements, etc." The reason for not distributing these items on a monthly basis is doubtless clear to the Operator, since such distribution might well overstate the cost for any one month or period short of the entire contract period.

Form MF-104A has been designed to tie in with Form MF-104 for both monthly and cumulative costs. The "Total Costs" on Form MF-104A for each month should equal the monthly "Total Costs" as reported on Form MF-104. This is also true of the "Total Costs To Date".

In preparing Form MF-104A, it will be necessary frequently to distribute certain costs over a number of items. For instance, supervisory and engineering costs may have to be distributed over several phases, such as, drifting, crosscutting, raising, etc., provided that these items were reported active for the month. Such distributions should be made on the basis of time spent on the various phases, on man days of labor charged to such phases, or on some other equitable basis. "Operating Equipment", "Initial Rehabilitation and Repairs", and "New Buildings Improvements, etc.", will be distributed to the several phases of the project by the Washington Office of DMEA at the close of the project if determined necessary. The last two columns headed "Authorized by Contract" will be filled in by the Operator if such information is found in the contract. This information is usually a part of Exhibit "A" of the contract. A space for remarks has been provided for the use of the Operator to call attention to any unusual circumstances causing excessive or disproportionate unit costs.

GPO 872894

KEEPER PROJECT
Stage I

DMMA- 4750 IDm-E1152

Narrative for January Report
J. W. Keck, Resident Geologist

The first two holes, K-1 and K-2, were completed in January and the drill rig moved to the site of K-3. (Only K-1 was complete by the date of the Joy Mfg. Co. invoice, 1-25-58, and Drilling and Incidental Allowance costs shown on the accounting forms are for this hole only. The costs for K-2 will appear on the February Report.)

Both holes cut wide veins of calcite and limestone breccia with only shines of fluorspar and barite. Excellent recovery, 98% for K-1 and 100% for K-2, was made in the vein material with BX-Wireline tools.

Detailed logs and cross-sections are enclosed. These logs may be summarized as follows:

K-1

Coordinates: N-7,387, E-6,475 Elev.: 394.5 Bearing: N50W Angle: -60°
Started: 1-8-58 Finished: 1-15-58 Bottom: 287'

From	To	Formation
0	10	Overburden.
10	90	Caleonda shale and limestone.
90	109	Cypress sandstone.
109	116.5	Fault - brecciated sandstone.
116.5	122.5	Paint Creek limestone and shale.
122.5	175.5	Bethel sandstone.
175.5	228	Renault limestone and shale.
228	267	Vein calcite with limestone breccia and shines of CaF_2.
267	287	St. Louis limestone.

Bottom at 287'

K-2

Coordinates: N-6,838, E-6,618 Elev.: 451.0 Bearing: N50W Angle: -60°
Started: 1-22-58 Finished: 1-28-58 Bottom: 293'

From	To	Formation
0	30	Overburden.
30	132	Caleonda limestone.
132	135	Fault, limestone breccia.
135	149	Cypress sandstone.
149	155	Fault, shale and limestone breccia.
155	164	Sandstone and shale breccia, fault at 164.
164	204	Bethel sandstone.
204	239	Renault limestone and shale.

K-2 (continued)

From	To	Formation
239	269.5	Brecciated limestone and vein calcite with shines of CaF_2 and $BaSO_4$.
269.5	293	St. Louis limestone. Bottom at 293'

SUMMARY

K-1	Started: 1- 8-58	Finished: 1-15-58	Bottom Depth:	287'
K-2	Started: 1-22-58	Finished: 1-28-58	Bottom Depth:	293' (not on invoice)

Total completed feet: 580

(Completed footage shown on invoice: 287)

REYNOLDS METALS COMPANY

Diamond Drill Hole No. K-1 Angle: -60° Bearing: N 50° W Depth: 287'
Coordinates: N-7,387, E-6,475 Elevation: 394.5'
Property: Ranger Area: Corn-Wright County: Livingston State: Kentucky
Contractor: Joy Manufacturing Co. Started: 1-8-58 Finished: 1-15-58

From	To	Fm	Description
0	10		Overburden
10	53-8"	Cg	Shale, black, calcareous. 1/2 inch siltstone at 51'. Angle of bedding, 73°.
53'8"	68	Cg	Limestone, dark grey, fine crystaline, fossiliferous, shaley, fossils replaced by brown calcite.
68	73-8"	Cg	Limestone, medium to dark grey, fine crystaline silicified, with pyrites.
73-8"	81	Cg	Shale, black, slightly calcareous. 2 inch limestone, silicified and shaley at 74' 6". Shale grades into shaley limestone (silicified) from 77' - 80-6". Shale grading into silicified limestone, to 81'.
81	90	Cg	Limestone, greenish grey, fine grained, sandy, fossiliferous, grading into sandstone.
90	109	Ce	Sandstone, light brown (oxidized), medium grained, quartzitic. Becomes blocky at 105.5' to 109.
109	116.5	Fault	Sandstone, blocky, quartzitic, poor recovery.
116.5	121.5	Cpc	Shale, dark grey, with some slippage along bedding in lower foot.
121.5	122.5	Cpc	Limestone, medium grey, fine crystaline, partially silicified. Base of Paint Creek.
122.5	175.5	Cb	Sandstone, brown, fine grained, oxidized, slightly quartzitic. Blocky, poor recovery 126.5 to 134.5.
175.5	177	Cr	Limestone, medium grey, fine crystaline, slightly silicified. Marcasite at 177'.
177	182.5	Cr	Shale, dark to dark grey green, calcareous. Marcasite and aragonite along bedding.
182.5	184.5	Cr	Limestone, dark grey, medium grained, shaley (grades into shale above) stylolitic with calcite stringers.
184.5	186	Cr	Limestone, medium grey, fine crystaline, fractured, with calcite stringers.

From	To	Fm	Description
186	188	Cr	Shale, light grey, with calcite stringers, calcareous, with marcasite along bedding. Angle of bedding 75°. Grades into shaley lime. Slippage along some of the bedding planes.
188	190.5	Cr	Limestone, brown, fine crystaline, finely brecciated with some of limestone residue. Fine calcite veinlets.
190.5	197	Cr	Limestone, medium grey, medium crystaline, fossiliferous, shaley, good shines of CaF_2 in fractured zones from 190.5 to 192. Calcite with CaF_2. Increase in number of veinlets below 192' with trace of CaF_2.
197	201	Cr	Limestone as above with increase of brecciation and calcite with depth. Limestone residue 200' to 201'.
201	207	Cr	Shale, dark grey, fossiliferous, calcareous, with bedding at 45°. Slippage along bedding planes. Soft shale 203.5' to 205'.
207	212	Cr	Limestone, dark grey, medium to fine crystaline, fractured, with calcite veinlets up to 1/2". Blocky from 210' to 210.5". Grades into limey shale at 212'.
212	218	Cr	Limestone, medium grey medium crystaline, shaley, highly fossiliferous, fractured with calcite veins at 216.5' (2"). Increase in shale at depth. Grades into shale at 218'.
218	220.5	Cr	Shale, dark grey, calcareous. Slippage along bedding in upper part. At 219' angle of bedding is 85°. Calcite veinlets at 220.
220.5	228	Cr	Limestone, medium to dark grey, fine crystaline, fossiliferous slightly fractured. 1" calcite vein at 222.5.
228	267	Fault	267 - 230 Limestone and calcite breccia. 230 - 234 Limestone horst, brown, fine grained, brecciated, few calcite stringers. 234 - 241.5 Limestone and calcite breccia. Trace CaF_2 at 238. 241.5 - 242.5 Good shines of CaF_2 in limestone and calcite breccia. 242.5 - 250 Calcite. 250 - 254.5 Limestone horst, dark grey fine grained, brecciated, few calcite veins. 254.5 - 267 Calcite and limestone breccia with chert. (98% recovery with EX-WL tools.)

From	To	Fm	Description
267	287	Cal	Limestone, medium grey, fine crystaline, cherty, few calcite stringers.

Cavity 270 - 271 2" weathered limestone at 271. Weathered zone at 274.5, blocky at 281.

Bottom 287'

Recovery for hole - 85%

Recovery in vein - 98%

EX-WL Tools

REYNOLDS METALS COMPANY

Diamond Drill Hole No. K-2 Angle: -60° Bearing: N 50° W Depth: 293'
Coordinates: E-6,838, N-6,018 Elevation: 451.0'
Property: Hunter Area: Corn-Wright County: Livingston State: Kentucky
Driller: E. J. Hayes Foreman: E. J. Hayes
Contractor: Joy Manufacturing Co. Started: 1-22-58 Finished: 1-28-58

From	To	Fm	Description
0	30		Overburden.
30	34	Cg	Shale, weathered with fossil remnants, few green shale chips.
34	36	Cg	Limestone, medium to dark grey, coarse crystaline, highly fossiliferous, partially oxidized in upper foot. Shaley zones.
36	37.5	Cg	Shale, weathered, green shale in clay, highly fossiliferous.
37.5	41.5	Cg	Shale, light grey green, calcareous, fossiliferous fissile.
41.5	44.5	Cg	Shale fossiliferous, weathered, green.
44.5	45	Cg	Limestone, light grey, fine crystaline, fossiliferous, slightly fractured, mostly oxidized, brown fresh line at the base.
45	49.5	Cg	Shale, green calcareous, fossiliferous in upper few feet, fissile. Weathered zone from 46' to 48'.
49.5	67.5	Cg	Shale, medium to dark grey, calcareous, fossiliferous, fissile slightly sandy, angle bedding 75°.
70.5	74	Cg	Shale, dark grey, calcareous, fossiliferous. Limestone shale contact gradational.
74	75	Cg	Limestone, medium grey, fine crystaline, fossiliferous, few small calcite stringers, grades into shale at 75'.
75	77	Cg	Shale, dark grey, calcareous, fissile.
77	78	Cg	Limestone, medium to dark grey, fine crystaline, shaley, calcite, stringers, fossiliferous. Weathered zones at top and bottom. Grades into calcareous shale at 78'.
78	85.5	Cg	Shale, light grey to green, calcareous, fossiliferous, grades into a shaley limestone from 81-83.5'.

From	To	Fm	Description
85.5	88	Cg	Limestone, dark grey, medium to fine grained, shaley zone from 86' to 86.5'. Limestone is conglomeritic, shaley, fossiliferous.
88	102	Cg	Shale, dark grey, fissile, calcareous, fossiliferous, angle of bedding 75°.
102	105.5	Cg	Limestone, light to medium grey, fine crystaline, shaley, fossiliferous.
105.5	132	Cg	Shale, dark grey, calcareous, light tan siltstone in beds up to 1/2", angle of bedding 75°.
132	135	Cg	Limestone, dark grey, fine crystaline, fractured with calcite veinlet. 3" recovery from 3' run.
135	149	Fault	Sandstone, light grey, fine grained, calcareous, weathered from top to 142'.
149	155	Fault	Limestone, medium grey, medium to coarse crystaline, fractured with slickensides along bedding at 154'.
155	157.5	Fault	Sandstone and shale, disturbed and broken, brecciated at 157.5. Angle of bedding nearly parallel to drill hole.
157.5	164	Fault	Shale, dark grey, calcareous, with calcite stringers.
164	167	Cb	Sandstone and shale, interbedded. Sandstone, light grey, fine grained, brecciated with calcite veinlets, calcareous.
167	204.5	Cb	Sandstone, fine grained, weathered brown, blocky from 168' to 170', slightly calcareous, slightly fractured from 170' to 180', blocky 180' to 182', sheared from 184' to 186', shaley zone from 188' to 189.5', angle of bedding 32°.
204.5	214.5	Cr	Shale, med grey, fissile, light grey green in first feet (soft and weathered), calcareous. Grades into limestone at 209.5' to 210.5'. Limestone, light grey shaley, fossiliferous, grades into shale at 210.5 feet. 1/2" calcite stringer at 211.5. Shale fossiliferous from 210.5'.
214.5	223	Cr	Limestone, light brown fine grained shaley fossiliferous, calcite stringer at 216'. 218-221, 1.5' recovery. Blocky line in lower part of run. From 221 limestone is broken with calcite veinlets, stylolitic.
223	225.5	Cr	Limestone as above, in calcite and limestone breccia.
225.5	229	Cr	Limestone as above, less fractured.
229	236.5	Cr	Limestone, fractured, heavy calcite veins. Gouge at 230'.

From	To	Fm	Description
236.5	239	Cr	Shale, dark grey, brecciated, with calcite.
239	269.5	Fault zone	239 - 241 Fractured limestone and shale. 241 - 241.5 Shale gouge. 241.5 - 242.5 Calcite with trace of CaF_2. 242.5 - 250 Limestone with calcite veins. Limestone heavily fractured. Gouge 245.5-246. 250 - 252.5 Limestone and shale, fractured with calcite stringers. 252.5 - 267 Limestone fractured with calcite veins, limestone is light grey brown, fossiliferous. 267 - 268.5 Limestone breccia and calcite. 268 - 269 Good shines of CaF_2. 269 - 269.5 Brecciated limestone. (100% recovery with BX-WL tools).
269.5	293	Cal	Limestone medium grey fine grained, cherty. Broken with calcite veinlets from 269.5 to 271. Brown weathered areas from 275 - 275.5.

Bottom at 293'.

Recovery for hole - 75%

Recovery in vein - 100%

BX-WL Tools.

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION
WASHINGTON 25, D. C. 600

JUL 23 1958

Reynolds Metals Company
301 East Green Street
Richmond, Virginia

Re: Docket No. DMEA-4750-Fluorspar
Reynolds Metals Company
Kemper Property
Livingston County, Kentucky
Contract No. Idm-4115?

Gentlemen:

Reference is made to your terminated 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 certain records for the period indicated.

Your interest in the DMEA exploration program and participation therein are fully appreciated.

Sincerely yours,

C. O. Mittendorf

Administrator

WCAnderson:rai 7/21/58
Copy to: Admr. R. File
Mr. Chambers
Field Team, Region V
Mr. Kiilsgaard, 5222
Mr. McDougal, 3522
Mr. Houk
Mrs. Jessie Kemper

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION
WASHINGTON 25, D. C. 600

JUL 23 1958

Mrs. Jessie Kemper

Salem, Kentucky

Re: Docket No. DMEA-4750-Fluorspar
Reynolds Metals Company
Kemper Property
Livingston County, Kentucky
Contract No. Idm-E1152

Dear Mrs. Kemper:

Enclosed is a copy of a self-explanatory letter of today to the Operator under the above-cited contract.

This correspondence relates to the Consent to Lien and Subordination Agreement signed by you on July 16, 1957.

Sincerely yours,

C. O. Mittendorf

Administrator

Enclosure

WCAnderson:rsi 7/21/58
Copy to: Admr. R. File
Mr. Chambers
Field Team, Region V
Mr. Kiilsgaard, 5222
Mr. McDougal, 3522
Mr. Houk

Audit's copy

RECEIVED JUN 20 1958
800

TERMINATION AGREEMENT

It is agreed this 3rd day of June, 1958, between the United States of America, acting through the Department of the Interior, Defense Minerals Exploration Administration, hereinafter referred to as the "Government", and Reynolds Metals Company, hereinafter referred to as the "Operator", parties to that certain Exploration Project Contract Idm-E1152 (Docket No. DMEA-4750), dated November 14, 1957, as amended, hereinafter referred to as the "Contract", that:

1. Effective March 20, 1958, the Contract and all obligations of the parties thereunder, except as otherwise herein expressly provided, shall be and are hereby terminated.

2. The Government shall contribute only to the fixed unit costs of work performed prior to said effective date.

3. The Operator shall promptly perform all winding-up and settlement actions provided for in the Contract, including the rendering of the final report and final account.

4. All rights of the Government respecting Certification of Discovery or Development, percentage royalty and liens to secure payment thereof, reports (including preservation of Operator's records), accounts, audits, and the right to recover any overpayment, are preserved.

5. The Operator hereby releases and agrees to save the Government harmless from all claims or demands under or arising out of said Contract, except as otherwise provided in this termination agreement.

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

THE UNITED STATES OF AMERICA

By C. M. Mattendorf
Administrator, Defense Minerals Exploration Administration

REYNOLDS METALS COMPANY

By C. G. Coghill

Title Vice President & Treasurer

G.T.K.

FILE COPY
DMEA
RECEIVED APR 2 1958
DATE | RELEASE | CODE
200

March 31, 1958

Reynolds Metals Company
301 East Grace Street
Richmond, Virginia

Re: DMEA-4750, Idm-21152-fluorspar
Reynolds Metals Co.
Kemper Property
Livingston County, Kentucky

Gentlemen:

This will confirm the verbal agreement between our Field Examiner and your geologist that the subject contract should be recessed pending termination.

Results of the work completed to date indicates that further work is unwarranted. Therefore, Stage II of the contract will not be authorized.

Very truly yours,

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

VJL/mm
cc
Burmeister
Lynch
Opr. Log-2
Files

OFFICIAL FILE COPY
DMEA
RECEIVED JAN 22 1958

DATE	INITIALS	CODE
		800

Audit's copy

EXPLORATION PROJECT CONTRACT
REYNOLDS METALS COMPANY
DOCKET NO. DMEA-4750

AMENDMENT NO. 1

It is agreed this 10th day of January, 1958, between the United States of America, acting through the Department of the Interior, Defense Minerals Exploration Administration, and Reynolds Metals Company, that Exploration Project Contract No. Idm-E1152 (Docket No. DMEA-4750), dated November 14, 1957, is amended as follows:

Article 2(b)(2) is revised to read as follows:

"The Operator's right, title, or interest (whether as owner, lessee, or otherwise) is subject only to the following claims, liens, or encumbrances: a royalty of 10% of the gross price per ton on all minerals mined, payable to lessor, and Indenture of Mortgage and Deed of Trust dated June 1, 1955, held by Manufacturers Trust Company which is by its terms subject to the lien provided for in this contract."

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

Executed in quintuplicate the day and year first above written.

THE UNITED STATES OF AMERICA

By Frank E. Johnson
Administrator, Defense Minerals
Exploration Administration

REYNOLDS METALS COMPANY

By C. L. Cyphert

Title Vice President and Treasurer

DMEA Form 14

Contract No. Idm-E 1152

Docket No. 4750

DEPARTMENT OF THE INTERIOR

Terminated contract

DEFENSE MINERALS EXPLORATION ADMINISTRATION

Obligation Document

TO: Chief, Finance Section, Budget and Finance Branch, Bureau of Mines

Please make the following entry on the records of the Defense Minerals Exploration Administration under the Strategic and Critical Minerals Exploration Program.

Date of Contract	Region	State	Commodity
November 14, 1957	V	Kentucky	Flourspar

Name and Address of Operator: Reynolds Metals Co.
301 East Grace Street
Richmond, Virginia

	Reserve	Obligation
Prior Amount	0	22,945.00
Increase	0	0
Decrease	0	18,965.54
Revised Amount	0	3,979.46

Remarks:

(Name)
Allen S. Dokan, Chief
Operations Control and
Statistics Division
(Title)

Date delivered to Bureau of Mines, Washington 5/20/58

22845

DMEA Form 14

Contr[illegible] No. Idm-E 1152

Docket No. 4750

DEPARTMENT OF THE INTERIOR

Executed contract

DEFENSE MINERALS EXPLORATION ADMINISTRATION

Obligation Document

TO: Chief, Finance Section, Budget and Finance Branch, Bureau of Mines

Please make the following entry on the records of the Defense Minerals Exploration Administration under the Strategic and Critical Minerals Exploration Program.

Date of Contract	Region	State	Commodity
November 14, 1957	V	Kentucky	Fluorspar

Name and Address of Operator: Reynolds Metals Co.
301 East Grace Street
Richmond, Virginia

	Reserve	Obligation
Prior Amount	22,945.00	0
Increase	0	22,945.00
Decrease	22,945.00	0
Revised Amount	0	22,945.00

Remarks:

ALLEN S. DAKAN
(Name)

Allen S. Dakan, Chief
Operations Control and
Statistics Division
(Title)

Date delivered to Bureau of Mines, Washington 12/18/57

22845

OFFICIAL FILE COPY
DMEA
RECEIVED DEC 18 1957
DATE | INITIALS | CODE

Audit copy

MF-200
(Revised June 1954)

Docket No. DMEA 4750

Commodity Fluorspar

Contract No. Idm-E 1152

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

EXPLORATION PROJECT CONTRACT[1]

It is agreed this 14 NOV 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] Reynolds Metals Company, a Delaware Corporation, whose mailing address is 301 East Grace Street Richmond, Virginia, 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~~ xxx Annex II, and one map (Figure 2). 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 Kentucky, County of Livingston, and is described in Annex I.[3]

(b) The Operator represents and undertakes that:

(1) The Operator is the [4] Lessee of [5] the mineral rights in the land, in possession and entitled to possession for all of the purposes of this contract, under and by virtue of a [6] lease, [7] recorded in Book 4, page 100, 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: a royalty of 10% of the gross price per ton on all minerals mined, payable to lessor.

(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: Consent to Lien and Subordination Agreement executed by the lessor, Mrs. Jessie Kemper

(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 Fluorspar. The work to be performed is described in Exhibit "A." The Operator on or before February 1, 1958 shall commence the work, and on or before January 1, 1959 (unless the Operator's obligation to prosecute the work is terminated—see Article 10) shall either have completed the work or shall have expended allowable costs (see Article 6) in a sum not less than the estimated total allowable costs set forth in Exhibit "A", except as otherwise provided in Exhibit "A" with respect to stages of work. 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 $45,890.00. The Government shall contribute 50 percent of the allowable costs as they are incurred in a total sum not in excess of $22,945.00: *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; but except for any such excess in excess in categories, subcategories, or items thereunder the Operator is not obligated to incur more than his agreed percentage of the estimated total allowable cost of the work. 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 ~~9~~ 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.)

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

(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 ten 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.

(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)

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.

Executed in sextuplicate the day and year first above written.

THE UNITED STATES OF AMERICA

By O. Mitterdorf

Administrator, Defense Minerals Exploration Administration

REYNOLDS METALS COMPANY

(Operator)

By C. E. Coghill

Title Vice President and Treasurer

I, Richard I. Dawes, certify that I am the assistant secretary of the corporation named as Operator herein; that C. E. Coghill who signed this contract on behalf of the Operator, was then Vice President and Treasurer 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.

Richard I. Dawes

ASS'T SECRETARY

[CORPORATE SEAL]

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

EXPLORATION PROJECT CONTRACT
REYNOLDS METALS COMPANY
DOCKET NO. DMEA-4750

ANNEX I

The land referred to in Article 2 of the Contract, known as the Kemper Property, is situated 1.7 miles southeast of Lola, Kentucky, and 3.7 miles northwest of Salem, Kentucky. The Operator is in possession by virtue of a mineral lease and option agreement executed January 15, 1957, by Jessie Kemper, and recorded in Mineral Lease Book 4, page 100, official records of Livingston County, Kentucky, wherein the leased premises are described as follows:

> All of the mineral, minerals, mineral and mining rights, except oil and gas and gaseous substance in, on, and under a certain tract of land lying in Livingston County, Kentucky, on the north side of the Cumberland River and described as follows:
>
> Beginning at an iron pin in J. E. Guess' line and with said line N 2° 30' W 1830 feet to a 30" hickory and iron pin, with another of said Guess lines S 87° 45' E 1640 feet to an iron pin in a branch and also corner to O. Shucraft with Shucraft's line N 70° 15' W 1650 feet to an iron pin, with Shucraft's line N 18° 30' E 385 feet to a 6" hickory on a county road, then S 45° 30' W 390 feet with county road to an iron pin, also corner to F. Harris, with Harris, line N 5° 30' W 1870 feet to an oak and iron pin being corner to Harris and H. Belt, with belt's line N 76° W 1040 feet, then N 77° W 785 feet, then N 87° W 830 feet, then S 77° 30' W, crossing Deer Creek at 25 feet, then up lane in all 1835 feet, with lane S 67° W 350 feet to southwest side of old road and being the old Bayliss, Kennedy and Robinson corner, now being corner to C. O. Strong, with Strong's line S 46° E 1230 feet to an iron pin on southwest side of old road, with Strong's line S 61° 30' W 235 feet

to an iron pin, with another of Strong's lines S 16° 30' E 690 feet to an iron pin on a lane, with lane S 64° 30' W 200 feet to State Highway No. 133, with Hwy. S 56° E 325 feet then with C. Johnson's line S 16° 30' E 1335 feet to an iron pin, then N 71° 45' E 390 feet to an iron pin, then N 53° E 900 feet to State Highway 133, with Hwy. and its meanders S 68° 30' E crossing Deer Creek and Canada bridge at 210 feet in all 960 feet, with Hwy. S 61° 30' E 1400 feet, then S 45° 30' E 210 feet feet, then S 30 E 195 feet, then S 16° E 325 feet, then leaving Hwy. and running S 87° 30' E 190 feet to the beginning, containing 338 acres more or less.

This being part of the same property acquired by Lee Kemper, deceased, in two tracts by deeds from the Master Commissioner of Livingston County, which deeds are of record in Deed Book 54, beginning on page 62, records of the Livingston County Court Clerk's Office, and willed by the said Lee Kemper, deceased, to the lessor herein. See Will Book "D," page 420, Livingston County Court Clerk's Office.

MF-205
(Combines and supercedes MF-201 and MF-203)
June 1956

Government's Use Only
EXPLORATION PROJECT CONTRACT
Operator
Docket No. DMEA-
Contract No. Idm-E 1152
Contract Date 14 NOV 1957

RECEIVED
SEP 25 1957
D.M.E.A.

CONSENT TO LIEN
and
SUBORDINATION AGREEMENT 1/

To the United States of America:

Referring to that certain land in the County of Livingston, State of Kentucky, described as follows: 2/

in a mining lease and option agreement dated January 15, 1957, and recorded in Mineral Lease Book 4, page 100, official records of said county.

which is the subject of a proposed exploration project contract, hereinafter called the "contract," with the United States of America, hereinafter called the "Government;" in consideration of the contract and as an inducement to the Government to enter into it, the undersigned hereby--

1. Undertakes and agrees that property in which the Government may acquire an interest or equity under the contract may be dismantled, severed from the land, and removed, as may be provided in the contract; and the Government's interest and equity in such property shall be prior and superior to any adverse right or claim of the undersigned;

2. Grants to the Government a lien upon all of the undersigned's right, title, and interest in the land and upon any production of minerals therefrom, to secure the payment to the Government of a percentage royalty on production as may be provided for by the Contract;

3. Subordinates the undersigned's right, title, claim, or interest in or against the land and in any production therefrom to the rights of the Government under the contract with respect to royalty on production and liens to secure same;

4. Represents and undertakes that there is no claim, lien, or encumbrance upon the undersigned's right, title, claim, or interest in or against the land other than the following: (If "none" insert the word "none." Do not leave lines blank.)

None

1/ Mining or production from the land is not required, and in the absence of production there is no obligation to pay royalty to the Government.

2/ Either (a) insert the legal description of the land, or (b) strike out the words "as follows" and insert "in a lease [or contract, deed, or other document] dated _____, and recorded in Book _____, Page _____, official records of said county." If (b) is used, the book and page of recordation cannot be dispensed with. If the space provided is insufficient, use an Annex, and refer to the Annex in the space.

5. Undertakes and agrees (a) neither to commit any act nor assert any claim in conflict with the provisions of this Agreement; and (b) to give advance notice of the Government's rights under this Agreement to any subsequent transferee, mortgagee, encumbrancer, or lessee of any of the undersigned's right, title, claim, or interest in or against the land, or any production therefrom furnishing the Government with two copies of such notice; and

6. Consents to all amendments (including an agreement of termination) and assignments of the contract without notice thereof, and undertakes and agrees that this Agreement shall extend and apply thereto.

7. Added provision: None (State "None" or "See Annex No.____")

Dated this 16 day of July, 1957.

[redacted] [Seal] [redacted] [Address]

Mrs Jessie Kempes [Seal] Salem [Address]

_____ [Seal] Ky. [Address]

_____ [Seal] _____ [Address]

_____ [Seal] _____ [Address]

_____ [Seal] _____ [Address]

I, _____ certify that I am the _____ _____ (Secretary, etc.) of the corporation named herein; that _____ _____ who signed this agreement was then _____ (President or Vice-President, etc.) of said corporation; that said agreement was duly signed for and in behalf of said corporation by authority of its governing body, and was within the scope of its corporate powers.

_____

[Corporate Seal]

EXPLORATION PROJECT CONTRACT
REYNOLDS METALS COMPANY
DOCKET NO. DMEA-4750

ANNEX II

Article 13. Changes and added provisions.--

(a) That part of the last sentence of Article 3 beginning with the word "either" is deleted and replaced by the words "have completed the work, except as otherwise provided in Exhibit 'A' with respect to stages of work."

(b) That part of the last sentence in the first paragraph of Article 6(a) commencing after the semicolon is deleted.

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

(d) 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.

(e) In the last sentence of Article 6(c), the words "Article 8" are substituted for the words "Article 9".

(f) 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
REYNOLDS METALS COMPANY
DOCKET NO. DMEA-4750

Exhibit "A"

Description of the Work

General Provisions

Exploration for fluorspar shall be performed with conventional BX and/or BXWL core drilling tools in the area indicated on the map, entitled "Reynolds Metals Company, Kemper Property, Livingston County, Ky.", attached hereto and made a part hereof.

The Government shall not contribute to the cost of an uncompleted hole, or one that bottoms less than BXWL size.

Records of each hole drilled, together with assay certificates of samples taken and type of rock penetrated, shall be submitted with the Operator's monthly progress report, which shall also include a map showing the location, inclination and direction of all holes drilled during the reporting period. All samples shall be properly identified as to drill hole number and depths represented.

The holes shall be drilled into the fault zone as indicated on the map. The location, inclination, direction, and extent of all drilling are subject to the approval of the Government.

The work shall be divided into two stages as hereinafter described. The Operator shall complete Stage I, and shall perform as much of Stage II as the Government approves in writing.

Stage I

Drill five diamond core holes averaging approximately 400 feet in length and aggregating not more than 2,000 feet, at the approximate locations indicated on the attached map.

The inclination of the holes shall be from -45° to -60° in order to cut the fault zone in vertical depth, at least 180 feet for holes K-1 and K-2, and at least 120 feet for holes K-3, K-4, and K-5. The holes shall be drilled in the approximate direction of N 50° W, or as nearly normal to the strike of the fault zone as possible.

Stage II

Stage II shall consist of not more than 6500 feet of diamond drilling. The number, locations, inclinations, and depths of the holes shall be determined by agreement of the Operator and the Government. The holes shall be drilled as normal as possible to the strike of the fault zone.

Estimated costs of the Project

Stage I

Actual Costs

Category (1) Independent Contracts

2,000 feet of diamond drilling @ $4.35/ft. 1/	$8,700.00
Categories (2) through (7)	None

Fixed Unit Costs (See Article 13 of the Contract)

Incidental allowance for each foot of drilling completed 2/, 2,000 feet @ $0.60/ft.	$1,200.00
60 wooden core boxes @ $3.00 each	180.00

30 samples to be assayed for CaF_2, $BaSO_4$, $CaCO_3$, and SiO_2 @ $6.00/sample	$180.00	
Estimated total cost, Stage I		$10,260.00

Stage II

Actual Costs

Category (1) Independent Contracts

6500 feet of diamond drilling @ $5.00/ft. 1/	$32,500.00	
Categories (2) through (7)	None	

Fixed Unit Costs (See Article 13 of the Contract)

Incidental allowance for each foot of drilling completed 2/, 6500 feet @ $0.38/ft.	$2,470.00	
100 wooden core boxes @ $3.00/ each	300.00	
60 samples to be assayed for CaF_2, $BaSO_4$, $CaCO_3$, and SiO_2 @ $6.00/ sample	360.00	
Estimated total cost, Stage II		$35,630.00

SUMMARY

Estimated total cost Stage I	$10,260.00	
Estimated total cost Stage II	35,630.00	
Estimated total cost of project		$45,890.00
Government participation @ 50%		$22,945.00

1/ Includes charges for moving in and out, changing of locations, reaming, casing, cementing, water supply, replacement of bits, and all charges which may be insurred by the diamond drill contractor. Casing left in the hole at option of the Operator will not be accepted as a charge to the Contract.

2/ Includes all costs that otherwise would be allowable costs under Categories (1) through (7) except as scheduled in Exhibit "A."

DMEA Form 14

Contract No. Idm-E 1152

Docket No. 4750

DEPARTMENT OF THE INTERIOR

Approved contract

DEFENSE MINERALS EXPLORATION ADMINISTRATION

Obligation Document

TO: Chief, Finance Section, Budget and Finance Branch, Bureau of Mines

Please make the following entry on the records of the Defense Minerals Exploration Administration under the Strategic and Critical Minerals Exploration Program.

Date of Contract	Region	State	Commodity
November 14, 1957	V	Kentucky	Fluorspar

Name and Address of Operator: Reynolds Metals Co.
301 East Grace Street
Richmond, Virginia

	Reserve	Obligation
Prior Amount	0	0
Increase	22,945.00	0
Decrease	0	0
Revised Amount	22,945.00	0

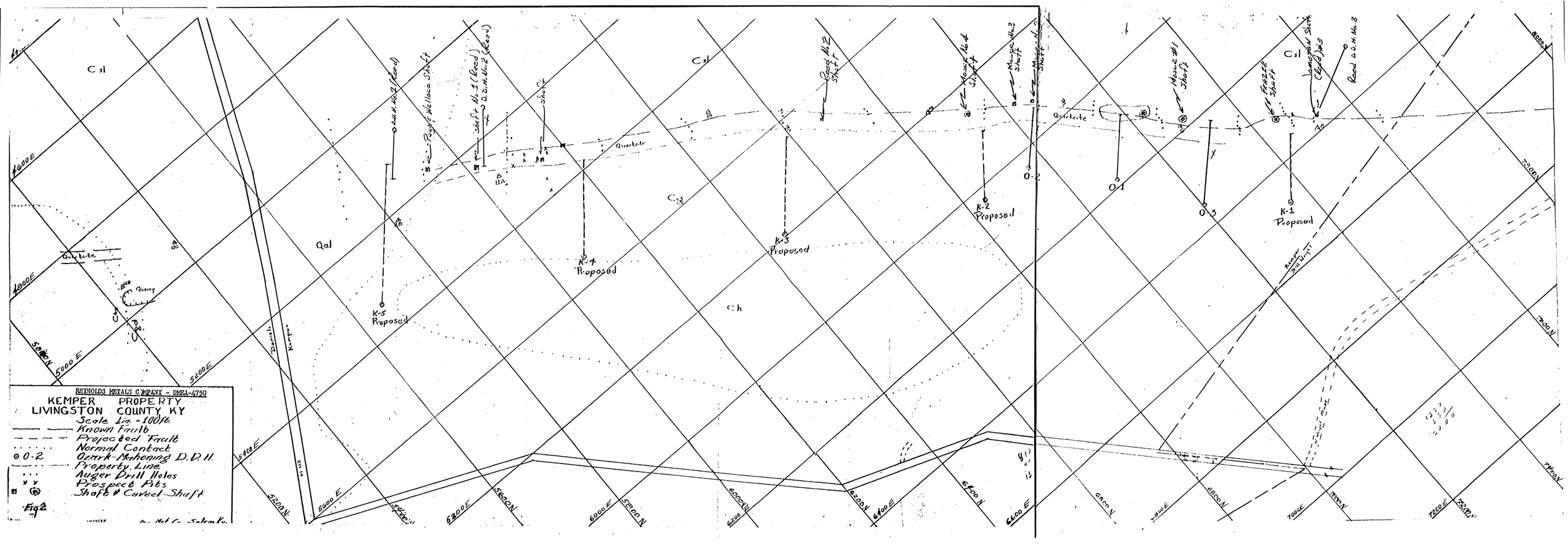
Remarks:

ALLEN S. DAKAN
(Name)

Allen S. Dakan, Chief
Operations Control and
Statistics Division
(Title)

Date delivered to Bureau of Mines, Washington 11/14/57

22845


REYNOLDS METALS COMPANY - DMRA-4750
KEMPER PROPERTY
LIVINGSTON COUNTY KY
Scale 1in. = 100ft.
Known Fault
Projected Fault
Normal Contact
O-2 Ozark-Mahoning D.D.H.
Property Line
Auger Drill Holes
Prospect Pits
Shaft # Caved Shaft
Fig 2
Csl
Qal
Ch
Quartzite
Quarry
Property Line
Rogers Wallace Shaft
D.D.H. No. 2 (Reed)
Shaft No. 1 (Reed)
D.D.H. No. 1 (Reed)
Reed No. 2 Shaft
Mack No. 4 Shaft
Mack No. 3 Shaft
Mack No. 2 Shaft
Mack #1 Shaft
Fraze Shaft
Langan Shaft
Reed D.D.H. No. 3
Kemper Drill Shaft
K-5 Proposed
K-4 Proposed
K-3 Proposed
K-2 Proposed
K-1 Proposed
O-2
O-1
O-3
4600 E
4800 E
5000 E
5200 E
5400 E
5600 E
5800 N
6000 N
6200 N
6400 N
6600 N
6800 N
7000 N
7200 N
7400 N
7600 N
7800 N
7000 E
7200 E
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