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

RECEIVED JAN 31

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION

Budget Bureau No. 42-R1036.5

PAID ON VOUCHER & SCHEDULE OF PAYMENTS K- 39

OPERATOR'S MONTHLY REPORT AND VOUCHER

Month of September, 1957 Docket No. DMEA 4746 Contract No. Idm-E 1100
Operator's Name Appalachian Sulphides, Incorporated Minerals Copper
Address South Strafford, Vermont
Contract Amount, $62,860.00 Government Participation: 50 % Amount, $ 31,430.00

ITEMS OF COSTS	FOR OPERATOR'S USE			FOR GOVERNMENT USE ONLY		
	Monthly Total	Totals Previously Reported	Totals To Date	Approved Monthly Total	Approved Totals Previously Reported	Approved Totals To Date
(1) Independent Contractors: E.J.Longyear Co.						
Drilling Surface	3,097.15	17,755.70	20,852.85	7/29/58		
Drilling-Undgrnd	3,583.20	11,058.40	14,641.60			
Crosscutting						
Hole Surveys	186.00	726.00	912.00			
Delays		384.00	384.00			
(2) Labor and Supervision:						
Labor						
Supervision						
Technical Services						
(3) Operating Mat'ls. and Supplies:						
Timber						
Explosives						
Pipe						
Track						
Core Boxes @ 2.00	190.00	878.00	1,068.00			
(4) Operating Equipment:						
Rental Dozer @ 8.50	17.00	446.25	463.25			
Purchase						
Depreciation						
(5) Initial Rehabilitation and Repairs						
(6) New Bldgs., Improvements, etc.						
(7) Miscellaneous:						
Repairs to Equipment						
Sampling and Analysis	49.00	95.00	144.00			
Payroll Taxes						
Liability Insurance						
(8) Contingencies (specify) Incidental Allowances						
Surface @ 0.37	438.45	2,435.34	2,873.79			
Undergrnd @ 0.69	1,030.17	3,167.79	4,197.96			
TOTALS	8,590.97	36,946.48	45,537.45	8590.97	36946.48	45537.45

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

Date Nov. 8, 1957 *Payee Appalachian Sulphides, Inc.

Per Clarence B. Benson Title Asst. Treasurer

*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:

$ 4295.48

Signature Helen R. Miller
(Authorized Certifying Officer)

Date JAN 29 1958 Vou. No. 124
(See other side)

4295.48

(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 1100 in accordance with the terms of the contract.

Signature [illegible] Title Mining Engr. Date 11/26/57

APPROVAL BY DMEA EXECUTIVE OFFICER OR ALTERNATE:

Signature Robert A. Lawson Title EXECUTIVE OFFICER DMEA REGION V Date JAN 28 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 1962)

Budget Bureau No. 42-R1151.2

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION

RECEIVED JAN 31

OPERATOR'S UNIT COST AND PROGRESS REPORT

Month of September 1957 Docket No. DMEA 4746 Contract No. Idm-E 1100
Operator's Name Appalachian Sulphides, Inc. Minerals Copper
Address South Strafford, Vermont

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 D.D. Overburden	foot	36.00	9	92.00	23	4.00	280	4.00
Crosscutting D.D. Surface	"	1,178.40	491	7,144.80	2,977	2.40	6220	2.40
Raising D.D. Surface	"	1,457.50	550	7,420.00	2,800	2.65	3900	2.65
Shafts D.D. Surface	"	425.25	135	6,196.05	1,967	3.15	1000	3.15
Winzes D.D. Underground	"	3,583.20	1,493	14,121.60	5,884	2.40	7500	2.40
Drilling: Core D.D. Undgrd.	"			520.00	200	2.60	300	2.60
Churn Survey	hour	186.00	31	912.00	152	6.00	192	6.00
Auger Delays	"			384.00	64	6.00	64	6.00
Stripping Surface Incid.	Foot	438.45	1,185	2,873.79	7,767	0.37	11400	0.37
Trenching Under. Incid.	"	1,030.17	1,493	4,197.96	6,084	0.69	7800	0.69
Test Pits Bulldozing	hour	17.00	2	463.25	54½	8.50	208	8.50
Roads and Trails Assays	1	49.00	49	144.00	144	1.00	203	1.00
Core Boxes	1	190.00	95	1,068.00	534	2.00	720	2.00
Total Distributed Costs		8,590.97		45,537.45				Total Costs Authorized by Contract
Operating Equipment Purchased								
Initial Rehabilitation and Repairs								
New Buildings, Improvements, etc.								
Total Costs		8,590.97		45,537.45				62,860.00

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 Nov. 8, 1957 Operator Appalachian Sulphides, Inc.

Per Clarence B. Benson Title Asst. Treasurer

Remarks:

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)

W. L. Zurmeister 11/26/57

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

APPALACHIAN SULPHIDES, INC.
SOUTH STRAFFORD
VERMONT

Telephone - South Strafford 5-2411

OFFICIAL FILE COPY
DMEA
RECEIVED DEC 6 1957

DATE	INITIALS	CODE

November 8, 1957

United States Department of the Interior
Executive Officer
Defense Minerals Exploration Administration
College Park, Maryland

DMEA Contract No. Idm-E-1100
Docket No. DMEA 4746

Gentlemen:

We enclose herewith five (5) copies each of the following reports, covering diamond drilling for the Month of September 1957 under the above contract:

(a) Form MF 104, Operator's Monthly Report and Voucher.

(b) Form MF 104A, Operator's Unit Cost and Progress Report, including Supporting Detail Schedule Re Contract Drilling.

The diamond drilling narrative report, summary, hole logs and cross sections have been furnished previously, under date of October 11, 1957.

Very truly yours,

John F. Cowley

John F. Cowley
General Manager

JFC/th
Encl.

ELIZABETH MINE — APPALACHIAN SULPHIDES, INC. — SOUTH STR

Supporting Details - Re: DMEA Form MT-104
Cost Item (1) - Independent Contracts
Period - September 1 - 30, 1957

CONTRACT DRILLING - September 1 - 30, 1957, Both dates inclusive
Per E. J. Longyear Company Invoice Nos. 105707 and 105708, Dated October 31, 1957

				DMEA Rates-Per Contract No. Idm-E-1100			Actual Rates Charged By Longyear-Per Final Drilling Agreement Dated 5/10/57		
Hole No.	From	To	Footage	Size Core	Rate	Amount	Size Core	Rate	Amount
SURFACE									
1025 S	750	1000	250	EX	2.65	$ 662.50	EX	2.65	$ 662.50
	1000	1135	135	EX	3.15	425.25	EX	3.15	425.25
1029 S	0	9	9	Ovb.	4.00	36.00	Ovb.	4.00	36.00
	9	20	11	EX-AX	2.40	26.40	EX-AX	2.65	29.15
	20	500	480	EX	2.40	1,152.00	EX	2.40	1,152.00
	500	800	300	EX	2.65	795.00	EX	2.65	795.00
Total-Surface			1,185			$3,097.15			$3,099.90
UNDERGROUND									
1028 U	130	302	172	EX	2.40	$ 412.80	EX	2.40	$ 412.80
1009 U	174	250	76	EX	2.40	182.40	EX	2.40	182.40
1031 U	0	250	250	EX	2.40	600.00	EX	3.40	850.00
1032 U	0	298	298	EX	2.40	715.20	EX	2.40	715.20
1030 U	0	349	349	EX	2.40	837.60	EX	2.40	837.60
1033 U	0	348	348	EX	2.40	835.20	EX	2.40	835.20
Totals-Underground			1,493			$3,583.20			$3,333.20
Totals-Surface & Ugrnd.			2,678			$6,680.35			$6,933.10

HOLE SURVEYS

Hole No.	Dates	Hours	Rate	Amount
SURFACE				
1025 S	9/19	3	$6.00	$ 18.00
1029 S	9/3-4-6-9-10-12	8	6.00	48.00
Total Surface Surveys		11		$ 66.00
UNDERGROUND				
1028 U	9/6	3	$6.00	$ 18.00
1009 U	9/4	2	6.00	12.00
1031 U	9/10	3	6.00	18.00
1032 U	9/19	4	6.00	24.00
1030 U	9/10-18	4	6.00	24.00
1033 U	9/25	4	6.00	24.00
Total Underground Surveys		20		$ 120.00
Total Surveys		31		$ 186.00

DELAYS No Delay Time Allowable under Contract for September.

OFFICIAL FILE COPY
DMEA
RECEIVED DEC 6 1957

DATE	INITIALS	CODE

INVOICE

E. J. LONGYEAR COMPANY

Diamond Core Drilling Contractors

1700 FOSHAY TOWER
MINNEAPOLIS 2, MINNESOTA

ORIGINAL FILE COPY
DMEA
RECEIVED DEC 6 1957

DATE	INITIALS	CODE

11/8/57

October 31, 1957

Appalachian Sulphides, Inc.
South Strafford, Vermont

Attn: Mr. C. D. Hanson

INVOICE NO. 105707

FORM 408 3M 6-55

Exploratory surface drilling during the month of September, 1957, carried out at South Strafford, Vermont, as per the terms of our agreement dated May 10, 1957, and your letter dated May 16, 1957.

Total surface footage drilled during the month of September, 1957, 1,155.0 feet.

Hole No.		From	To	Footage	Rate	Amount
✓1027	Overburden Drilling	0.0	7.0	7.0	2.65	18.55
✓1027	BX Diamond Drilling	9.0	10.0	1.0	2.65	2.65
✓1027	AX Diamond Drilling	10.0	20.0	10.0	2.65	26.50
✓1027	BX Diamond Drilling	20.0	520.0	400.0	2.65	1,152.00
✓1027	BX Diamond Drilling	500.0	800.0	300.0	2.65	795.00
✓1025	BX Diamond Drilling	750.0	1,000.0	250.0	2.65	662.50
✓1025	BX Diamond Drilling	1,[illegible]	1,155.0	155.0	2.15	405.25
						3,099.70

	Angle and Directional Testing				
✓1029	September 3	1 hour			
✓1029	September 4	1 hour			
✓1029	September 6	1 hour			
✓1029	September 9	1 hour			
✓1029	September 10	1 hour			
✓1027	September 12	3 hours			
✓1025	September 19	3 hours			
		11 hours	0	6.00	66.00

	Delays - Beginning of Drill Hole				
✓1025	September 17	11 hours			
✓1025	September 19	12 hours			
		23 hours	0	6.00	138.00

	Casing Left in Drill Holes				
✓1029	20 feet BX Casing		0	1.62	32.40
					3,336.10

Note: This is our final invoice

INVOICE

E. J. LONGYEAR COMPANY

Diamond Core Drilling Contractors

1700 FOSHAY TOWER
MINNEAPOLIS 2, MINNESOTA

FILE COPY
DMEA
RECEIVED DEC 6 1957

DATE		CODE

October 31, 1957

Appalachian Sulphides, Inc.
South Strafford, Vermont

Attn: Mr. C. D. Simon

INVOICE NO. 10670B

FORM 408 3M 8-55

Exploratory underground drilling during the month of September, 1957, carried out at South Strafford, Vermont, as per the terms of our agreement dated May 10, 1957, and your letter dated May 16, 1957

Total underground footage drilled during the month of September, 1957 1,493.0 feet.

Hole No.		From	To	Footage	Rate	Amount
1028	BX Diamond Drilling	130.0	302.0	172.0	2.40	412.80
1031	BX Diamond Drilling	0.0	320.0	320.0	2.40	768.00
1032	BX Diamond Drilling	0.0	298.0	298.0	2.40	715.20
1069	BX Diamond Drilling	174.0	250.0	76.0	2.40	182.40
1030	BX Diamond Drilling	0.0	349.0	349.0	2.40	837.60
1033	BX Diamond Drilling	0.0	245.0	245.0	2.40	588.00
						3,503.20

Drill Hole Surveys

1028	September 6	3 hours			
1031	September 10	3 hours			
1032	September 19	4 hours			
1069	September 4	2 hours			
1030	September 10	3 hours			
1033	September 18	1 hour			
1033	September 23	4 hours			
		20 hours	@	6.00	120.00

Extraordinary Moving and Standing Expense

1030 to 1033					
	September 18	7 hours			
	September 19	0 hours			
	September 20	0 hours			
	September 21	4 hours			
		27 hours			
	less:	0 hours			
		17 hours	@	6.00	114.00

Repairs of Six-Point Survey Instrument 12.00

4,949.20

Note: This is our final invoice

APPALACHIAN SULPHIDES, INC.
SOUTH STRAFFORD
VERMONT

Telephone - South Strafford 5-2411

OFFICIAL FILE COPY
DMEA
RECEIVED DEC 6 1957

DATE	INITIALS	CODE

To: Defense Minerals Exploration Administration
From: Appalachian Sulphides, Incorporated
Subject: Diamond Drilling, DMEA Contract No. Idm-E 1100
Docket No. 4746

September 1 - 30, 1957

GENERAL

Drilling under this program has been suspended pending completion of electromagnetic surveys of some of the holes. Unless promising anomalies are found, consideration should be given to terminating the drilling.

A hole at 14200N checked the locale of mineralization found west of the mine at 12100N, 12400N and 13100N. Nothing significant was intersected.

The drill hole E. M. indicated a conductor north of the main ore zone, and a hole was drilled at 18000N to check this anomaly. No significant mineralization was found.

To the far west of the mine, the structural picture remains uncertain. Further drilling which might outline the amphibolite horizons to the west seems unwarranted in view of the very poor mineralization encountered by the holes already drilled in this area.

Drilling for September is summarized below by sections, and a tabular summary of holes and footages is included with this report as are cross sections and brief logs of holes.

7442N

No drilling in this section during September. A breakdown of the drill hole F. M survey equipment has delayed completion of surveys in holes 1000S and 1002S.

8800N

No drilling or changes in this section during September.

10100N

No drilling or changes in this section during September.

APPALACHIAN SULPHIDES, INC.
SOUTH STRAFFORD
VERMONT

Telephone • South Strafford 5-2411

FILE COPY
DMEA
RECEIVED DEC 6 1957
DATE | INITIALS

To: Defense Minerals Exploration Administration
From: Appalachian Sulphides, Incorporated
Subject: Diamond Drilling, DMEA Contract No. Idm-E 1100
Docket No. 4746

September 1 - 30, 1957

10900N

As no significant mineralization was enoountered, DDH 1009U was drilled only to 250 ft. A lower hole, DDH 1030U was drilled to check the favorable area for mineralization 150 ft. west of the mine workings. No mineralization was found, and the results of drilling here and at 11600N, combined with information gained from old drilling at 10100N show that the mineralization west of the mine becomes weaker as followed south from 12100N. Further work does not seem adviseable on this zone.

Drilling of hole 1025S was continued to 1135 ft. No mineralization or amphibolites were encountered, and further extension of the hole seems unwarranted without some indication of mineralization or structure favorable to mineralization. The hole will be surveyed with the E. M. equipment.

11600N

Drilling in this section, which was not included in the July 1st proposal, totaled 850 ft. in three holes. DDH 1028U was completed to 302 ft. and intersected 66.2 ft. of mineralization from 74.8 ft. to 141.0 ft., of which 11.8 ft. (129.2 ft. to 141.0 ft.) ran 0.96% Cu. Holes 1031U and 1032U were drilled above and below No. 1028U to check this mineralization, and both were disappointing in extent and grade of sulphides encountered.

12100N

No drilling in this section during September. Minor changes in iferred structure will be noted on the October 1st cross section. New information being obtained has been plotted on a glass three dimensional model to a scale of 1 in. equals 40 ft., and structure has been worked out on this model.

12400N

No drilling or changes in this section during September.

13100N

No drilling or changes in this section during September. We do not now intend to complete holes 1014U and 1015U to the full depths proposed because of disappointing mineralization found in similar structural positions checked at 10900N and 14000N.

APPALACHIAN SULPHIDES, INC.
SOUTH STRAFFORD
VERMONT

Telephone - South Strafford 5-2411

DMEA
RECEIVED DEC 6 1957
DATE | INITIALS | CODE

To: Defense Minerals Exploration Administration
From: Appalachian Sulphides, Incorporated
Subject: Diamond Drilling, DMEA Contract No. Idm-E 1100
Docket No. 4746

September 1-30, 1957

14000N

DDH 1033U was drilled at 14200N to check the mineralized zone 150 ft. west of the mine, and is plotted on the 14000N cross section. This hole apparently ran right up the footwall amphibolite contact. Mineralization encountered was of very low grade, and no further drilling seems warranted.

15100N

No drilling or changes in this section during September.

18000N

Work with the drill hole E. M. survey unit in previously drilled holes at 17700N (plotted on the 18000N cross section as dotted lines) indicated a conductor approximately on strike from the main ore zone and north of 17700N. To check this anomaly, hole 1029S was drilled at 18000N. The hole did not flatten as much as have previous holes drilled by the present drilling contractor, and passed slightly below the projected location of the inferred conductor. No significant mineralization was encountered in hole 1029S, and no indication of any conductor was found when the hole was surveyed with the E. M. unit. Apparently the anomaly at 17700N was caused by the last remnants of the pinching main ore shoot, and not by a sizeable mineralized zone extending to the north.

Respectfully submitted,

Calvert Smith

Calvert Smith
Geologist

maps for September '57
MF104
operator's Report

EXPLORATION ADMINISTRATION
WASHINGTON 25, D. C.

OFFICIAL BUSINESS

COLLAR LOCATION
LATITUDE 11623 N
DEPARTURE 9798 W
ELEV. 775.0
DIP -60°
BEARING N 90° W

APPALACHIAN SULPHIDES INC.

DIAMOND DRILL RECORD

PROPERTY Elizabeth LOCATION 770 - 168

CORE
SAVED yes
LOCATION Core Shack
SAMPLED yes HOW split core
LOGGED BY C.S.
DATE Sept. 1957

D.D.H. #1032 U STARTED 9-11-57 COMPLETED 9-18-57 LENGTH 298.0 Ft.

FOOTAGE	SUB UNIT	ROCK TYPE	DESCRIPTION	SAMPLED	SAMPLE NO.	W	% CU	% FE
0 - 2.0		Casing						
2.0 - 5.0		Schist	Quartz, sericite, biotite, garnet schist. Weakly carbonated. At. 4.7' a 2" stringer of pyrrhotite. Garnets 2-4 mm.					
5.0 - 36.0		Amphib.	Medium grain, quartz, hornblende, weak biotite amphibolite. Heavily carbonated.					
36.0 - 45.0		Schist	Quartz biotite schist. Heavily carbonated with traces of sulphides.					
	36.0 - 37.3	Mlz'd		36.0 - 37.3	34099	1.3	0.68	9.20
	37.3 - 38.3	Zone		37.3 - 38.3	34100	1.0	1.66	17.20
	38.3 - 42.0	"		38.3 - 42.0	32901	3.7	0.37	20.20
	42.0 - 44.2	"	Semi-massive pyrrhotite	42.0 - 44.2	32902	2.2	0.26	49.20
	44.2 - 45.0	Quartz	Weak sulphides	44.2 - 45.0	32903	0.8	0.32	16.20
			Weighted Average	36.0 - 45.0		9.0	0.53	25.01
45.0 - 50.0		Quartz	Milky quartz, no sulphides					
50.0 - 61.0		Schist	Similar to 36.0 - 42.0					
	50.0 - 54.8	Mlz'd Zone		50.0 - 54.8	32904	4.8	0.29	12.60
	54.8 - 57.6	Quartz	Quartz with remnants of biotite schist.	54.8 - 57.6	32905	2.8	0.47	7.00
	57.6 - 61.0	Mlz'd Zone		57.6 - 61.0	32906	3.4	0.37	14.80
			Weighted Average	50.0 - 61.0		11.0	0.36	11.85
61.0 - 65.5		Amphib.	"Muddled" quartz, biotite, hornblende, amphibolite. Moderately carbonated. Traces of sulphides					
65.5 - 71.5		Schist	Quartz, biotite, sericite schist. Moderately carbonated. Trace of sulphides.					
71.5 - 79.2		Amphib.	"Fresh" medium grain hornblende amphibolite					

FOOTAGE	SUB UNIT	ROCK TYPE	DESCRIPTION	SAMPLED	SAMPLE NO.	W	% CU	% FE
79.2 - 80.7		Schist	Quartz, sericite, biotite, garnet schist. Garnets pin point to 2 mm.					
80.7 - 82.0		Amphib.	Like 71.5 - 79.2					
82.0 - 98.4		Schist	Quartz, sericite, biotite, garnet schist. Trace of sulphides @ 87.6 to 88.4. Garnets 2 - 12 mm.					
98.4 - 134.6		Amphib.	"Muddled" biotite, hornblende amphibolite. Heavily carbonated, with very weak scattered sulphides.					
134.6 - 144.6		Schist	Quartz, sericite, biotite, garnet schist. Weakly carbonated. Garnets pin point to 4 mm.					
144.6 - 147.9		Amphib.	"Muddled" coarse grain, quartz, biotite, hornblende amphibolite.					
147.9 - 149.3		Mlz'd Zone	Quartz, biotite, sericite, skarn, with scattered sulphides.	147.9 - 149.3	32907	1.4	0.32	11.80
149.3 - 150.5		Amphib.	Similar to 144.6 - 147.9					
150.5 - 162.0		Schist	Quartz, biotite, sericite schist					
	155.5 - 162.0		Scattered sulphides	155.5 - 162.0	32908	6.5	0.50	13.80
162.0 - 176.3		Skarn	Quartz, biotite, akarn with scattered pyrrhotite.	162.0 - 167.0	32909	5.0	0.31	13.20
	167.5 - 168.7	Amphib.	Coarse grain, hornblende amphibolite.	167.0 - 171.8	32910	4.8	0.26	11.20
	171.8 - 176.3	Skarn?	Bleached with weak sulphides	171.8 - 176.3	32911	4.5	0.19	14.20
			Weighted Average	155.5 - 176.3		20.8	0.38	13.14
176.3 - 185.0		Amphib.?	Bleached, quartz, hornblende amphibolite with weak scattered sulphides.					
185.0 - 193.3		Skarn	Similar to 162.0 - 176.3	185.0 - 189.0	32912	4.0	0.36	14.00
				189.0 - 193.0	32913	4.0	0.18	10.80
193.3 - 197.8		Altered Amphib.	Quartz, sericite, biotite garnet amphibolite with scattered sulphides.	193.0 - 196.3	32914	3.3	0.27	10.20
			Weighted Average	185.0 - 196.3		11.3	0.27	11.76

APPALACHIAN SULPHIDES INC.

HOLE NO. 1032 U

FOOTAGE	SUB UNIT	ROCK TYPE	DESCRIPTION	SAMPLED	SAMPLE NO.	W	% CU	% FE
196.3 - 197.8		Amphib.	Coarse grain, biotite, hornblende amphibolite					
197.8 - 201.0		Schist	Quartz, sericite, biotite, garnet schist. Weakly carbonated. Garnets 2 - 4 mm.					
201.0 - 210.0		Amphib.	"Muddled" medium grain biotite, hornblende amphibolite.					
210.0 - 215.4		Schist	Quartz, sericite, biotite, garnet schist. Garnets 2-4 mm.					
125.4 - 219.0		Altered Amphib.	Similar to 193.3 - 197.8 Garnets 8 - 18 mm.					
219.0 - 238.0		Schist	Quartz, sericite, biotite, garnet schist with a few traces of sulphides.					
238.0 - 245.4		Amphib.	"Muddled" coarse grain hornblende amphibolite. Garnets 8 - 18 mm.					
245.4 - 253.5		Schist	Similar to 219.0 - 238.0					
253.5 - 286.3		Amphib.	"Muddled" medium grain hornblende amphibolite. Heavily carbonated. Garnets pin point - 18 mm.					
286.3 - 298.0		Schist	Quartz, sericite, biotite, garnet schist. Garnets 2 - 4 mm.					

COLLAR LOCATION
LATITUDE 14186.91 N
DEPARTURE 9951.01 W
ELEV. 521.18
DIP 30°
BEARING N 90° W

APPALACHIAN SULPHIDES INC.

DIAMOND DRILL RECORD

PROPERTY Elizabeth LOCATION 418 #3 Zone

CORE
SAVED yes
LOCATION Core Shack
SAMPLED yes HOW split core
LOGGED BY C.S.
DATE September 1957

D.D.H. #1033 U STARTED 9-21-57 COMPLETED 9-25-57 LENGTH 348.0 Ft.

FOOTAGE	SUB UNIT	ROCK TYPE	DESCRIPTION	SAMPLED	SAMPLE NO.	W	% CU	% FE
0. - 2.0		Shist	Quartz, biotite, sericite, schist, with scattered sulphides.	0.0 - 2.0	32915	2.0	0.58	13.20
2.0 - 5.3		Amphib.?	Quartz, biotite, sericite, hornblende, coarse garnet amphibolite. Garnets 8 - 12 mm					
5.3 - 26.3		Schist	Quartz, sericite, biotite, schist, with scattered sulphides.	5.3 - 10.3	32916	5.0	0.48	15.60
				10.3 - 15.3	32917	5.0	0.40	20.60
				15.3 - 20.3	32918	5.0	0.32	15.40
				20.3 - 26.3	32919	6.0	0.74	13.00
			Weighted Average	5.3 - 26.3		21.0	0.50	16.00
26.3 - 151.7		Amphib.	"Muddled" medium grain Quartz, biotite, hornblende amphibolite.					
	53.3 - 53.8	Schist	Carbonated biotite schist.					
	65.0 - 67.2	Quartz	Milky quartz stringer.					
151.7 - 167.1		Schist	Quartz, sericite, biotite, garnet schist. Weakly to moderately carbonated. Garnets pin point to 4 mm.					
167.1 - 170.5		Amphib.	Coarse grain, hornblende amphibolite. Garnets pin point.					
170.5 - 174.0		Schist	Quartz, sericite, biotite, schist. Heavily carbonated. Garnets up to 2 mm.					
174.0 - 177.7		Amphib.	Similar to 167.1 - 170.5					
177.7 - 180.2		Schist	Quartz, sericite, biotite, garnet schist. Weakly carbonated. Garnets 2 - 4 mm.					
180.2 - 184.6		Amphib.	Similar to 167.1 - 170.5					
184.6 - 187.4		Schist	Similar to 177.7 - 180.2					

SHEET NO. 2 APPALACHIAN SULPHIDES INC. HOLE NO. 1033 U

FOOTAGE	SUB UNIT	ROCK TYPE	DESCRIPTION	SAMPLED	SAMPLE NO.	W	% CU	% FE
187.4 - 208.2		Amphib.	Fine to coarse grain hornblende amphibolite. Moderately carbonated with weak scattered sulphides.	188.6 - 191.9	32920	3.3	0.18	13.20
208.2 - 209.8		Schist	Similar to 177.7 - 180.2					
209.8 - 212.4		Amphib.	Similar to 187.4 - 208.2 with trace of sulphides.					
212.4 - 217.5		Schist	Similar to 177.7 - 180.2					
217.5 - 226.0		Amphib.	"Muddled" medium grain, hornblende amphibolite.					
226.0 - 277.0		Schist	Quartz, sericite, biotite, schist, with a few weak scattered sulphides.					
277.0 - 281.0		Amphib.	"Muddled" fine grain, hornblende amphibolite.					
281.0 - 348.0		Schist	Similar to 226.0 - 277.0					

APPALACHIAN SULPHIDES, INC.

Summary of Diamond Drilling for the month of September, 1957; DMEA Contract No. Idm-E 1100

Docket No. DMEA-4746

Dated: October 1, 1957

Hole No.	Surface or Underground	Coordinates North	Coordinates West	Collar Elev.	Bearing	Dip at Collar	Drilling, 1957 from	Drilling, 1957 to	Drilling, 1957 footage	Proposed length	Notes
1009 U	Underground	10898	9857	861	N 90° W	-30°	174	250	76	300 *	Hole Completed
1025 S	Surface	10900	10728	1426	N 90° W	-65°	750	1135	385	1500 *	Hole Completed
1028 U	Underground	11623	9800	775	N 90° W	-35°	130	302	172	300	Hole Completed
1029 S	Surface	18000	9690	1090	N 90° W	-90°	0	800	800	800 *	Hole Completed
1030 U	Underground	10898	9854	861	N 90° W	-65°	0	349	349	350 *	Hole Completed
1031 U	Underground	11623	9800	777	N 90° W	-10°	0	250	250	250 *	Hole Completed
1032 U	Underground	11623	9798	775	N 90° W	-60°	0	298	298	300 *	Hole Completed
1033 U	Underground	14187	9951	521	N 90° W	+30°	0	348	348	350 *	Hole Completed
								Total:	2678		

Summary of Drilling to Date

Footage authorized for drilling under DMEA Contract as signed June 13, 1957		19,200
Footage drilled under DMEA Contract prior to month reported above	12,267	
Footage drilled under DMEA Contract during month reported above	2,678	
Total footage drilled under DMEA Contract to date	14,945	14,945
Total footage remaining to be drilled under DMEA Contract authorization of June 13, 1957		4,255
Footage drilled on this program by Appalachian Sulphides, Inc. prior to June 13, 1957	3,602	
Footage drilled on pertinent holes 708 and 796 prior to this program by Appalachian Sulphides, Inc.	559	
Total of above footages drilled to date	19,106	
Total footage proposed for this program in revision of July 1, 1957 (subject to review as drilling progresses)	26,942	
Less total footage drilled to date (from above)	19,106	
Total footage remaining to be drilled in this program per revision of July 1, 1957	7,836 *	

* See narrative for changes or additions.

COLLAR LOCATION
LATITUDE 10,898.3 N
DEPARTURE 9857 W
ELEV. 860.6
DIP -30°
BEARING N 90°W

APPALACHIAN SULPHIDES INC.

DIAMOND DRILL RECORD

PROPERTY ELIZABETH LOCATION 575 L - 090 Rse.

CORE
SAVED Yes
LOCATION Core Shack
SAMPLED No HOW --
LOGGED BY R.C.D. & C.S.
DATE August 1957 - Sept. 1957

DDH 1009U STARTED 8-28-57 COMPLETED 9 - 4 - 57 LENGTH 250.0 Ft.

FOOTAGE	SUB UNIT	ROCK TYPE	DESCRIPTION	SAMPLED	SAMPLE NO.	W	% CU	% FE
0.0 - 2.0		Schist	Quartz sericite, biotite, schist.					
2.0 - 43.5		Altered Amphib.	Biotite coarse garnet altered amphibolite with Hornblende, Garnets 10 - 30 mm.					
435 - 58.0		Amphib.	Medium grained, carbonated hornblende Amphibolite					
58.0 - 61.0		Schist	Quartz sericite biotite schist					
61.0 - 101.5		Amphib.	Amphibolite with "pelleted" feldspar and carbonates.					
101.5 - 104.0		Skarn	"Pelleted" feldspar, biotite skarn.					
104.0 - 140.0		Amphib.	Medium grained hornblende Amphibolite					
140.0 - 158.0		Amphib.	Chlorite, hornblende, skarny Amphilbolite.					
158.0 - 165.0		Schist	Sericite, brown biotite skarny, schist.					
165.0 - 167.0		Amphib.	Medium grained hornblende amphibolite.					
167.0 - 171.0		Skarn?	Fine grain, weak bleached, brown biotite skarn or amphibolite with traces of sulphides.					
171.0 - 172.5		Amphib.	Medium grain hornblende amphibolite					
172.5 - 174.0		Skarn	Weak brown, biotite, sericite skarn with traces of sulphides.					
174.0 - 175.0		Schist	Sericite quartz brown biotite schist. almost skarny with traces of sulphides.					
176.0 - 198.0		Amphib.	Fine grain too needle hornblende amphib. Heavily carbonated					

APPALACHIAN SULPHIDES INC.

HOLE NO. 1009U

FOOTAGE	SUB UNIT	ROCK TYPE	DESCRIPTION	SAMPLED	SAMPLE NO.	W	% CU	% FE
198.0 - 200.0		Altered Amphib.	Bleached, sericite, quartz, coarse garnet altered amphib. Garnets 8 - 18 mm.					
200.0 - 226.0		Schist	Bleached, sericite, quartz, biotite, garnet schist. Moderately carbonated Garnets pinpoint - 4 mm.					
226.0 - 230.0		Altered Amphib.	Sericite, quartz, biotite coarse altered amphibolite, Moderately carbonated. Garnets 10 - 25 mm.					
230.0 - 250.0		Schist	Quartz, sericite, biotite, garnet schist. Weakly carbonated.					
	230.0 - 231.0	Mlz'd	Weak traces of sulphides scattered					
	248.0 - 250.0	"	in skarny brown biotite.					

COLLAR LOCATION
LATITUDE 10,899.6 N
DEPARTURE 10,728.2 W
ELEV. 1425 - 75
DIP -65
BEARING N 90°W

APPALACHIAN SULPHIDES INC.

DIAMOND DRILL RECORD

PROPERTY ELIZABETH LOCATION West of No. 1 O.C.

STARTED 8 - 19 - 57 COMPLETED 9-18-57 LENGTH 1135.0 Ft.

DDH# 1025 S

CORE
SAVED Yes
LOCATION Core Shack
SAMPLED _____ HOW _____
LOGGED BY C.S., R.C.D.
DATE August 1957 Sept. 1957

FOOTAGE	SUB UNIT	ROCK TYPE	DESCRIPTION	SAMPLED	SAMPLE NO.	W	% CU	% FE
0 - 750		Schist	Quartz, sericite, biotite, garnet schist Weakly carbonated throughout. Garnets 2 - 4 mm carbonated quartzite bands containing Hornblende					
	110 - 129.7		Heavily carbonated, very weak traces of sulphides					
	134.2 - 134.6		Scattered pyrite					
	@ 492.0		Traces of Sulphides.					
750.0 - 1135.0		Schist	Quartz, sericite, biotite, garnet schist. Garnets 2 - 4 mm.					

COLLAR LOCATION
LATITUDE 11623 N
DEPARTURE 9800.3 W
ELEV. 774.8
DIP -35°
BEARING N 90° W

APPALACHIAN SULPHIDES INC.

DIAMOND DRILL RECORD

PROPERTY ELIZABETH LOCATION 770 L - 168 Rse.

CORE
SAVED yes
LOCATION Core Shack
SAMPLED yes NOW split core
LOGGED BY R.C.D.
DATE September 1957

DDH #1028 U STARTED 8-30-57 COMPLETED 9-6-57 LENGTH 302.0 Ft.

FOOTAGE	SUB UNIT	ROCK TYPE	DESCRIPTION	SAMPLED	SAMPLE NO.	W	% CU	% FE
0.0 - 4.7		Schist	Coarse, Sericite, brown biotite Schist with traces of Sulphides	0.0 - 4.7	32501	4.7	0.21	8.40
4.7 - 19.8		Amphib.	Medium and fine grain Amphibolite					
19.8 - 36.0		Skarn	Brown biotite, sericite Skarn with quartz bands some pin point garnets Sulphides	19.8 - 25.5	32502	5.7	0.69	13.80
				25.5 - 28.0	None	2.5	0.0	0.0
	25.5 - 28.0	Skarn	No Sulphides	28.0 - 32.0	32503	4.0	0.29	10.80
				32.0 - 36.0	32504	4.0	0.15	9.20
			Weighted Average	19.8 - 36.0		16.2	0.35	9.79
36.0 - 46.0		Altered Amphib.	Coarse grain Altered Hornblende, garnet Chlorite amphibolite, Garnets to 35 mm					
46.0 - 61.5		Schist	Coarse, garnet, sericite biotite Schist. Garnets to 10 mm					
61.5 - 68.5		Altered Amphib.	Very altered, corase, biotite, sericite, garnet Amphibolite, Garnets to 20 mm					
68.5 - 74.8		Schist	Garnet, Sericite Schist. Garnets pin point to 6 mm					
74.8 - 130.9	74.8 - 88.6	Schist	Skarny, Sericite, weak brown biotite, carbonated Schist with weak to heavy sulphides	74.8 - 82.7	34078	7.9	0.44	12.00
				82.7 - 88.6	34079	5.9	0.27	13.20
				88.6 - 93.2	34080	4.6	0.21	26.00
				93.2 - 98.5	34081	5.3	0.24	12.60
	88.6 - 92.4	Min.Zone	Heavy Sulphides	98.5 - 114.0	34082	15.5	0.23	9.20
	92.4 - 93.0	" "	Pin point garnet Schist	114.0 - 119.3	34083	5.3	0.53	13.00
	93.0 - 97.0	" "	Carbonate, biotite, Sericite Skarn	119.3 - 121.5	34084	2.2	0.27	34.00
	97.0 - 98.0	" "	Sulphides and pin point garnets	121.5 - 126.0	34085	4.5	0.18	9.20

FOOTAGE	SUB UNIT	ROCK TYPE	DESCRIPTION	SAMPLED	SAMPLE NO.	W	% CU	% FE
	98.0 - 99.7	Min Zone	Medium grain amphibolite	126.0 - 126.5	# 34086	0.5	0.40	25.20
	99.0 - 102.1	"	Pinpoint garnet Schist, Skarn, trace of Sulphides	126.5 - 129.2	# 34087	2.7	0.24	10.60
	102.1 - 106.0	"	Altered amphibolite with bands of very heavy pinpoint garnets and scattered Sulphides					
	106.0 - 119	"	Brown, biotite, carbonate Skann with scattered bands of Sulphides					
	119.0 - 130.9	"	Pinpoint garnet, Skarny Schist with bands of Massive Sulphides.					
			Weighted Average	74.8 - 129.2		54.4	0.29	13.38
				129.2 - 120.9	# 34088	1.7	1.13	24.40
130.9 - 141.0		Min Zone						
	130.9 - 134.0	"	Sericite schist with scattered sulphides	130.9 - 134.0	# 34089	3.1	0.26	10.60
			Weighted Average	129.2 - 134.0		4.8	0.56	15.49
	134.0 - 136.0	"	Same as 103.9 - 134.0	134.0 - 136.0	# 34090	2.0	1.83	30.20
	136.0 - 140.0	"	Almost massive pyrrhotite	136.0 - 140.0	# 34091	4.0	0.87	34.80
	140.0 - 141.0	"	Same as 134.0 - 136.0	140.0 - 141.0	# 34092	1.0	1.42	22.60
			Weighted Average	134.0 - 141.0		7.0	1.22	31.74
			Weighted Average	74.8 - 141.0		66.2	0.41	15.48
141.0 - 142.0		Schist	Quartz, biotite, sericite schist					
142.0 - 146.0		Amphib.	Fresh, medium grain, quartz hornblende amphibolite. Moderately carbonated.					
146.0 - 160.0		Schist	Bleached quartz, sericite, biotite garnet schist. Heavily carbonated. Garnets pinpoint - 2 mm.					
	150.9 - 151.6		plus scattered sulphides	150.9 - 151.6	# 34093	0.7	0.27	16.20

SHEET NO. 3 APPALACHIAN SULPHIDES INC. HOLE NO. 1028 U

FOOTAGE	SUB UNIT	ROCK TYPE	DESCRIPTION	SAMPLED	SAMPLE NO.	W	% CU	% FE
160.0 - 214.0		Amphib.	"Muddled" quartz, biotite hornblende amphibolite. Garnets 4 - 18 mm.					
232.6 - 237.0		Amphib?	Quartz, biotite, hornblende garnet amphibolite. Garnets pinpoint to 8 mm.					
237.0 - 294.4		Schist	Quartz, sericite biotite garnet schist Weakly carbonated. Garnets pinpoint to 4 mm.					
294.4 - 302.0		Amphib.	"Muddled" quartz, biotite hornblende amphibolite. Weakly carbonated.					

COLLAR LOCATION
LATITUDE 18000 N
DEPARTURE 9690.4 W
ELEV. 1089.5
DIP -90°
BEARING N 90° W

APPALACHIAN SULPHIDES INC.

DIAMOND DRILL RECORD

PROPERTY Elizabeth LOCATION N. of River

CORE
SAVED yes
LOCATION Core Shack
SAMPLED no HOW
LOGGED BY C.S.
DATE September 1957

D.D.H. #1029 STARTED 9-1-57 COMPLETED 9-11-57 LENGTH 800.0 Ft.

FOOTAGE	SUB UNIT	ROCK TYPE	DESCRIPTION	SAMPLED	SAMPLE NO.	W	% CU	% FE
0 - 10.0		Overburden						
10.0 - 497.0		Schist	Quartz, sericite, biotite, garnet schist. Weakly carbonated. Garnets 2 - 4 mm.					
497.0 - 538.2		Altered Amphib.	Quartz, biotite, sericite, coarse garnet altered amphibolite. Garnets 10 - 25 mm.					
538.2 - 545.5		Amphib.	"Muddled" hornblende, biotite, coarse garnet amphibolite. Garnets none - 20 mm.					
	539.0 - 540.0	Altered Amphib.	Weak hornblende					
545.5 - 547.7		Schist	Quartz, biotite, sericite, garnet schist. Weakly carbonated. Garnets 2 - 6 mm.					
547.7 - 552.0		Altered Amphib.	Similar to 497.0 - 538.2					
552.0 - 567.0		Amphib.	"Fresh" medium grain hornblende amphibolite. Heavily carbonated. Garnets none - 30 mm.					
567.0 - 571.2		Schist	Quartz, sericite, biotite, garnet schist. Weakly carbonated.					
571.2 - 581.0		Altered Amphib.	Quartz, biotite, sericite, coarse garnet altered amphibolite. Weakly carbonated. Garnets 2 - 30 mm.					
581.0 - 606.0		Amphib.	Quartz, biotite, hornblende amphibolite.					
	590.3 - 592.0	Quartz	Milky quartz stringer.					
606.0 - 627.7		Altered Amphib.	Similar to 571.2 - 581.0. Weak trace of sulphides.					
627.7 - 800.0		Schist	Quartz, sericite, biotite, garnet schist. Weakly carbonated. Garnets 2 - 4 mm.					

COLLAR LOCATION
LATITUDE 10898 N
DEPARTURE 9853.5 W
ELEV. 860.6
DIP -65°
BEARING N 90° W

APPALACHIAN SULPHIDES INC.

DIAMOND DRILL RECORD

PROPERTY Elizabeth LOCATION 575 - 090 Rse.

CORE
SAVED yes
LOCATION Core shack
SAMPLED No. HOW
LOGGED BY C.S.
DATE Sept. 1957

D.D.H. #1030 U STARTED 9-4-57 COMPLETED 9-17-57 LENGTH 349.0 Ft.

FOOTAGE	SUB UNIT	ROCK TYPE	DESCRIPTION	SAMPLED	SAMPLE NO.	W	% CU	% FE
0 - 3.0		Casing						
3.0 - 6.0		Schist	Quartz, sericite, biotite, garnet schist. Garnets 2-4 mm.					
6.0 - 8.3		Amphib.	"Muddled" quartz, biotite, hornblende amphibolite.					
8.3 - 11.0		Schist	Quartz, biotite, sericite schist. Moderately carbonated.					
11.0 - 11.8		Amphib.	Similar to 6.0 - 8.3					
11.8 - 17.3		Altered Amphib.	Coarse garnet, altered amphibolite. garnets 8 - 18 mm.					
17.3 - 28.2		Amphib.	Fine grain, hornblende amphibolite. Heavily carbonated.					
28.2 - 32.0		Altered Amphib.	Similar to 11.8 - 17.3					
32.0 - 52.3		Amphib.	Medium grain, hornblende amphibolite.					
52.3 - 55.3		Altered Amphib.	Similar to 11.8 - 17.3					
55.3 - 58.0		Amphib.	Similar to 32.0 - 52.3					
58.0 - 122.0		Schiat	Quartz, sericite, biotite, garnet schist. Weakly to moderately carbonated. Granets 2 - 4 mm.					
122.0 - 149.8		Amphib.	"Muddled" medium to coarse grain amphibolite.					
149.8 - 155.5		Schist	Quartz, sericite, biotite, garnet schist. Weakly carbonated. Garnets pin point to 4 mm.					
155.5 - 158.0		Amphib.	"Muddled" coarse grain, hornblende amphibolite.					
158.0 - 158.6		Schist	Similar to 149.8 - 155.5					
158.6 - 169.0		Amphibl.	Similar to 155.5 - 158.0					
169.0 - 264.8		Schist	Quartz, sericite, biotite, garnet schist. Moderately carbonated. Garnets 2 - 4 mm.					

SHEET NO. 2 APPALACHIAN SULPHIDES INC. HOLE NO. 1030 U

FOOTAGE	SUB UNIT	ROCK TYPE	DESCRIPTION	SAMPLED	SAMPLE NO.	W	% CU	% FE
264.8 - 284.8		Amphib.	"Muddled" medium to coarse grain hornblende amphibolite. Moderately carbonated.					
284.8 - 287.0		Altered Amphib.	Coarse garnet altered amphibolite. Garnets 8 - 18 mm.					
287.0 - 291.0		Amphib.	Coarse garnet amphibolite. Garnets 8 - 18 mm.					
291.0 - 296.0		Altered Amphib.	Similar to 284.8 - 287.0					
296.0 - 303.6		Amphib.	Similar to 287.0 - 291.0					
303.6 - 311.5		Altered Amphib.	Quartz, biotite, sericite, coarse Garnet altered amphibolite. Garnets 1 - 10 mm.					
311.5 - 319.3		Schist	Quartz, sericite, biotite, garnet schist. Garnets pin point.					
319.3 - 320.6		Amphib.	Coarse grain, hornblende, garnet amphibolite. Garnets 6 mm.					
320.6 - 328.0		Schist	Quartz, sericite, biotite, garnet schist. Garnets 2-8 mm.					
328.0 - 330.0		Altered Amphib.	Coarse g arnet altered amphibolite. Weakly carbonated. Garnets 10 - 25 mm.					
330.0 - 333.0		Amphib.	"Muddled", hornblende, garnet amphibolite. Moderately Carbonated. Garnets 4 - 8 mm.					
333.0 349.0		Schist	Quartz, sericite, biotite, garnet schist. Weakly carbonated. Garnets 2 - 4 mm.					
	333.0 - 335.0	Quartz	Milky quartz, stringer					
	341.0 - 342.0	Quartz	Milky quartz stringer.					

COLLAR LOCATION
LATITUDE 11622.9 N
DEPARTURE 9800.4 W
ELEV. 776.7
DIP -10°
BEARING N 90° W

APPALACHIAN SULPHIDES INC.

DIAMOND DRILL RECORD

PROPERTY Elizabeth LOCATION 770 - 168

CORE
SAVED yes
LOCATION Core Shack
SAMPLED yes HOW split core
LOGGED BY C.S.
DATE Sept. 1957

D.D.H. # 1031 U STARTED 9-6-57 COMPLETED 9-10-57 LENGTH 250.0 Ft.

FOOTAGE	SUB UNIT	ROCK TYPE	DESCRIPTION	SAMPLED	SAMPLE NO.	W	% CU	% FE
0 - 19.3		Schist	Quartz, sericite, biotite garnet schist. Weakly carbonated. garnets 2 - 5 mm					
	11.0 - 12.3	Mlz'd Zone	Scattered Pyrrhotite	11.0 - 12.3	34094	1.3	0.40	23.20
	17.3 - 19.3	"	Scattered Sulphides	17.3 - 19.3	34095	2.0	0.66	9.20
19.3 - 19.8		Amphib.	Medium grain, fresh hornblende amphibolite with scattered sulphides.	19.3 - 20.5	34096	1.2	0.47	10.20
19.8 - 32.6		Schist	Quartz, biotite, sericite, schist. Heavily carbonated.	20.5 - 21.6	34097	1.1	1.26	30.60
	21.6 - 27.7	Quartz	Milky quartz stringer with no sulphides					
	27.7 - 30.7	Schist	Weak scattered sulphides	27.7 - 30.7	34098	3.0	0.36	12.60
			Weighted Average	17.3 - 30.7		13.4	0.32	7.62
32.6 - 47.7		Schist	Quartz, biotite, garnet schist. Heavily carbonated. Garnets 2 - 10 mm.					
	@ 44.6		Trace of sulphides.					
	@ 47.3		Trace of sulphides.					
47.7 - 80.7		Amphib.	"Muddled" medium to fine grain hornblende amphibolite. Garnets 2 - 20 mm.					
80.7 - 154.2		Schist	Quartz, sericite, biotite schist. Garnets pinpoint to 4 mm.					
154.2 - 166.7		Amphib.	Similar to 47.7 - 80.7					
166.7 - 250.0		Schist	Quartz, sericite, biotite schist. Garnets pin point to 3 mm.					

OFFICIAL FILE COPY
DMEA
RECEIVED OCT 9 1957

DATE	INITIALS	CODE
10/9	B	220
9	Cam	100
10/11	WPW	500

INTERIM INSPECTION REPORT
DMEA Docket No. 4746, Contract Idm-E1100
Appalachian Sulphides, Inc., Elizabeth Mine
Orange County, Vermont
(copper)
by

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

W. P. Williams
U. S. Geological Survey

The Elizabeth mine was visited on September 25, 1957, by a DMEA inspection team composed of H. L. Burmeister, U. S. Bureau of Mines, and W. P. Williams, U. S. Geological Survey. The inspectors were conducted on a tour of underground workings and DMEA work sites in the Elizabeth mine by Mr. Calvert Smith, geologist for the Operator. The project was discussed in the mine offices with Mr. J. F. Cowley, general manager, and with Mr. Smith.

At the time of visit the surface drilling may be considered as completed unless the electro-magnetic drill hole surveys indicates that further surface drilling would be of benefit to the project. One core drill was operating underground at the time of visit, but no drilling under the contract was being done on surface.

From the beginning of the contract to September 25, 1957, there has been drilled a total of 7,818 feet of core drill hole from the surface and 6,041 feet from underground stations. To the date of visit no significant sulphide mineralization had been found. The Operator is not inclined to do further drilling either underground or from the surface after September 25, unless encouraging results are obtained through use of electromagnetic equipment in holes previously drilled.

DRILLING COMPLETED FROM SEPTEMBER 1 TO SEPTEMBER 25, 1957

Section 10,900 N:- Drill hole U-1009 was drilled on a -30° inclination from the 575 level and was drilled from 174 feet to bottom at 250 feet. No sulphide mineralization was encountered. Drill hole U-1030 was drilled on a -60° inclination from 0 feet to bottom at 349 feet. No sulphide mineralization was encountered. Drill hole S-1025 was drilled on a -65° inclination from 750 feet to bottom at 1,135 feet without finding sulphide mineralization. No more work is planned by the Operator on this section.

Section 11,600 N:- Drill hole U-1028 was drilled on a -35° inclination from the 770 sub-level. During this period it was advanced from 130 feet to bottom at 302 feet. This hole intercepted approximately 7 feet of mineralization from 134 feet to 141 feet which

averaged about 1.5 percent copper. Hole U-1031 was drilled from the same level on a -10½ inclination from 0 feet to bottom at 250 feet. From 20½ feet to 21½ feet an assay of 1.26 percent copper was obtained. The mineralization found in hole U-1028 was not found in hole U-1031. Drill hole U-1032 was drilled on a -60° inclination from 0 feet to bottom at 298 feet from the same set-up as hole U-1031. From 36 feet to 61 feet the core assays averaged 0.3 percent copper and from 148 feet to 196 feet contained sulphides are estimated by the Operator as 'scattered' to 'poor-scattered'. No more work is planned by the Operator on this section.

Section 14,000 N:- The work reported on this section was actually done on coordinate 14,200 N and plotted on 14,000 N. Drill hole U-1033 was drilled from 0 feet to 305 feet on a +30° inclination. At the time of visit the hole was drilling at 305 feet and as no visible mineralization had been encountered the Operator intended to bottom the hole at 350 feet. Further work on this section is not planned by the Operator.

Section 18,000 N:- Drilling on this section was not outlined or anticipated in either the application or the requested revision of hole locations, which was made by the Operator under date of July 1, 1957. In September drill hole S-1029 was drilled at -90°. This hole was drilled to check and explore EM anomalies found in two old holes, U-565 and U-568, not drilled under this contract. Hole S-1029 was drilled from 0 feet to bottom at 800 feet in September without encountering sulphide mineralization. It is interesting to note that this vertical hole did not develop the large variations in inclination experienced in all other surface holes drilled under this contract. An EM survey was conducted on hole S-1029 without getting anomalous results. No more drilling is planned on this section unless encouraging results are obtained by EM surveys on DMEA hole S-1025 on section 10,900 N or DMEA holes S-1002 or S-1000 on section 7,442 N.

The Operator plans to conduct EM surveys on all holes in which the equipment can be used before drilling further or requesting a termination of the contract. The possible request for termination will depend upon the results obtained from the electromagnetic surveys.

CONCLUSIONS AND RECOMMENDATIONS

Mr. Cowley states that he does not expect mining operations at the Elizabeth mine to continue beyond approximately six weeks under present circumstances. At the time of the inspection visit principal activity in the mine was the robbing of relatively

high-grade pillars below the 975 level.

The Operator's monthly report and vouchers for August on forms MF-104 and MF-104-A had not been available before this visit but had been submitted on September 20, 1957. During the visit, the Operator's copy was reviewed to be certain that the units and costs reflected the corrections which had been made on the July report. The report was found to be correct except for one item, namely the fourth item down under "Units This Month" which is recorded as 1671 but upon checking was found to be a transposition and should be 1617. The cost figures involved were found, however, to be correct.

Payment for holes Nos. S-1007, S-1003, and S-1001 has been disallowed by the Government. The Operator stated that he did not believe such a disallowance should have been made. He further stated that the Appalachian Sulphides Company was negotiating with E. J. Longyear Company, the drilling contractor, in the attempt to obtain an adjustment on the drilling charges for the disallowed holes. Grounds for adjustment might be faulty drilling technique by the drilling contractor.

After inspection of the project it appeared that the Operator has used good technical judgment in the direction of the exploration project. Any changes by the Operator from the original agreement as to hole locations, inclinations, bearings, or depths appear to have been desirable and dictated by sound analysis of prior drilling results. All the work appears to have been done efficiently and competently.

October, 1957

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

Budget Bureau No. 42-R1036.3.
Approval expires 6-30-53.

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION

PAID ON VOUCHER & SCHEDULE OF PAYMENTS K-42

OPERATOR'S MONTHLY REPORT AND VOUCHER

August 1957 Disallowance - Allowable Under Amendment No. 13

Month of August, 1957 Docket No. DMEA 4746 Contract No. Idm-E 1100

Operator's Name Appalachian Sulphides, Inc. Minerals Copper

Address South Strafford, Vermont

Contract Amount, $ 62,860.00 Government Participation: 50 % Amount, $ 31,430.00

RECEIVED FEB 2 1958

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 Contracts: Short Form						
Drilling Surface	160.65	20,852.85	21,013.50			
Bulldozing Drilling Undrground		14,641.60	14,641.60			
Crosscutting						
Drifting Hole Surveys		912.00	912.00			
Delays		384.00	384.00			
(2) Labor and Supervision:						
Labor						
Supervision						
Technical Services						
(3) Operating Mat'ls. and Supplies:						
Timber						
Explosives						
Pipe						
Track						
Core Boxes @ 2.00		1,068.00	1,068.00			
(4) Operating Equipment:						
Rental Dozer @ 8.50		463.25	463.25			
Purchase						
Depreciation						
(5) Initial Rehabilitation and Repairs						
(6) New Bldgs., Improvements, etc.						
(7) Miscellaneous:						
Repairs to Equipment						
Sampling and Analysis		144.00	144.00			
Payroll Taxes						
Liability Insurance						
Incidental Allowances						
(8) Contingencies (specify):						
Surface @ 0.37	18.87	2,783.79	2,892.66			
Underground @ 0.69		4,197.96	4,197.96			
TOTALS	179.52	45,537.45	45,716.97	179.52	45,537.45	45,716.97

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

Date Jan. 13, 1958 *Payee Appalachian Sulphides, Inc.

By C B Benson Title Assistant Treasurer

*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:

$ 89.76

Signature Helen R. Mellin
(Authorized Certifying Officer)

Date FEB 25 1958 Vou. No. 134

(See other side)

89.76

(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-1100 in accordance with the terms of the contract.

Signature V. J. Lynch Title MINING ENGINEER U. S. BUREAU OF MINES Date FEB 18 1958

APPROVAL BY DMEA EXECUTIVE OFFICER OR ALTERNATE:

Signature Robert A. Lawrence Title EXECUTIVE OFFICER DMEA FIELD TEAM Date FEB 18 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.

GPO 83-38476

Form MF-104A
(April 1952)

Budget Bureau No. 42-R1151
Approval expires 6-30-53.

RECEIVED FEB 27 1953 D.M.E.A.

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION

OPERATOR'S UNIT COST AND PROGRESS REPORT

August 1957 Disallowance - Allowable under Amendment No. 1

Month of August 1957 Docket No. DMEA 4746 Contract No. Idm-E 1100

Operator's Name Appalachian Sulphides, Inc. Minerals Copper

Address South Strafford, Vermont

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 D.D. Overburden	foot			92.00	23	4.00	280	4.00
Crosscutting D.D. Surface	"			7,144.80	2,977	2.40	6220	2.40
Raising D.D. Surface	"			7,420.00	2,800	2.65	3900	2.65
Shafts D.D. Surface	"	160.65	51	6,356.70	2,018	3.15	1000	3.15
Winzes D.D. Underground	"			14,121.60	5,884	2.40	7500	2.40
Drilling: Core D.D. Undrgrd.	"			520.00	200	2.60	300	2.60
Churn Survey	Hour			912.00	152	6.00	192	6.00
Auger Delays	"			384.00	64	6.00	64	6.00
Stripping Surface Incid.	Foot	18.87	51	2,892.66	7,818	0.37	11400	0.37
Trenching Ugrd. Incid.	"			4,197.96	6,084	0.69	7800	0.69
Test Pits Bulldozing				463.25	54½	8.50	208	8.50
Roads and Trails Assays	1			144.00	144	1.00	203	1.00
Core Boxes	1			1,068.00	534	2.00	720	2.00
TOTAL DISTRIBUTED COSTS		179.52		45,716.97				TOTAL COSTS AUTHORIZED BY CONTRACT
Operating Equipment Purchased								
Initial Rehabilitation and Repairs								
New Buildings, Improvements, etc.								62,860.00
TOTAL COSTS		179.52		45,716.97				

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 Jan. 13, 1958 Operator Appalachian Sulphides, Inc.

Per C.B. Benson Title Assistant Treasurer

REMARKS:

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)

W. J. Lynch
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 83-38475

APPALACHIAN SULPHIDES, INC.
SOUTH STRAFFORD
VERMONT

Telephone - South Strafford 5-2411

January 13, 1958

United States Department of the Interior
Executive Officer
Defense Minerals Exploration Administration
College Park, Maryland

DMEA Contract No. Idm-E 1100
Docket No. DMEA 4746

Gentlemen:

We enclose herewith five copies each of our FINAL Operator's Unit Cost and Progress Report and Monthly Report and Voucher, Forms MF 104 and MF 104 A, under the above contract.

Also endlosed are five (5) copies each of REVISED MF 104 and MF 104A forms for the Month of August 1957, amended to include the $179.52 which was disallowed on our original August Voucher and which we understand is now allowable under Amendment No. 1 to the contract.

The final report also includes the disallowed $179.52 on which we expect to receive the DMEA portion in due time.

Our FINAL Narrative Report, Diamond Drilling Summary, Hole Logs and Cross Sections were furnished some time ago.

Anything you can do to expedite payment to us of the Government's 50% participation in the $179.52 for August and $8,590.97 covered by our September Voucher will be appreciated, so that we can have our records complete for our annual audit.

Very truly yours,

Clarence B. Benson

Clarence B. Benson
Assistant General Manager

CBB:hw

Enclosure

EXTRA COPY DMEA		
RECEIVED OCT 1957		
DATE		CODE
10/9	B	220
"		110
10/9	~~[illegible]~~	500

October 7, 1957

Memorandum

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

From: Personal Assistant, Electrotechinical Laboratory, Morris, Tennessee

Subject: Monthly reports and vouchers

We are enclosing two copies of the following monthly report and voucher:

Idm-E1100 Appalachian Sulphides, Incorporated
Docket No. DMEA-476
3rd payment - month of August
Amount $7190.64

Helen M. Miller

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

EXTRA COPY
DMEA
RECEIVED OCT 9 1957
DATE | INITIALS | CODE

October 7, 1957

Appalachian Sulphides, Incorporated

South Strafford, Vermont

Re: Contract Idm-F1100
Docket No. DMRA-1746
Commodity: Copper

Gentlemen:

The following deductions are being made on your August Voucher:

1. Surface Drilling - 51 feet being disallowed (Hole No. 1008) - Contract calls for drill holes, "ranging in depth from 300 to 1500 feet".
   51 feet at $3.15/ft. - $160.65

2. Incidental Allowances, surface - 51 feet being disallowed (hole No. 1008) (See above)
   51 feet at $0.37/ft. 18.87

Total Disallowances . . . . . $ 179.52

Your August Voucher is being processed in the amount of $7,190.64, which is 50% of the approved monthly total of $14,381.28.

Very truly yours,

Helen R. Miller
Personal Assistant

/hbm
Copies to R. A. Laurence
V. J. Lynch
Jay L. Chambers
Norris files
Day files

Form MF 110 (Rev.) (April 1953)

RECEIVED OCT 9 1957 D.M.E.A.

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION

Budget Bureau No. 42-R1036.5

PAID ON VOUCHER & SCHEDULE OF PAYMENTS K- 18

OPERATOR'S MONTHLY REPORT AND VOUCHER

Month of August, 1957 Docket No. DMEA 4746 Contract No. Idm-E 1100

Operator's Name Appalachian Sulphides, Incorporated Minerals Copper

Address South Strafford, Vermont

Contract Amount, $ 62,860.00 Government Participation: 50% Amount, $ 31,430.00

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: E.J. Longyear Co.						
Drilling Surface	6,987.90	10,928.45	17,916.35	11/14/57		
Drilling Underground	4,400.80	6,657.60	11,058.40			
Crosscutting						
Hole Surveys	282.00	444.00	726.00			
Delays	120.00	264.00	384.00			
(2) Labor and Supervision:						
Labor						
Supervision						
Technical Services						
(3) Operating Mat'ls. and Supplies:						
Timber						
Explosives						
Pipe						
Track						
Core Boxes 156 @ $2.00	312.00	566.00	878.00			
(4) Operating Equipment:						
Dozer Rental 25 Hrs. @ $8.50	212.50	233.75	446.25			
Purchase						
Depreciation						
(5) Initial Rehabilitation and Repairs						
(6) New Bldgs., Improvements, etc.						
(7) Miscellaneous:						
Repairs to Equipment						
Sampling and Analysis	48.00	47.00	95.00			
Payroll Taxes						
Liability Insurance						
Incidental Allowances:						
(8) Contingencies (specify):						
2,551' Surface @ 37¢	943.87	1,510.34	2,454.21			
1,817' Undergrnd @ 69¢	1,253.73	1,914.06	3,167.79			
				14,381.28		36,946.48
TOTALS	14,560.80	22,565.20	37,126.00	~~14,560.80~~	22,565.20	~~37,126.00~~

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

Date Sept. 20, 1957 Payee Appalachian Sulphides, Inc.

Per John Hawley Title General Manager

*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:

$ 7190.64 ~~7280.40~~

Signature Helen R. Mullin (Authorized Certifying Officer)

Date OCT 7 1957 Vou. No. 04

(See other side)

7280.40

(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 1100 in accordance with the terms of the contract.

Signature R. L. Burmeister Title Mining Engr. Date 9/30/57

APPROVAL BY DMEA EXECUTIVE OFFICER OR ALTERNATE:

Signature Robert A. Lawrence Title EXECUTIVE OFFICER DMEA REGION V Date OCT 3 1957

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 1962)

Budget Bureau No. 42-R1151.2

RECEIVED

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

Month of August 1957 Docket No. DMEA 4746 Contract No. Idm-E 1100
Operator's Name Appalachian Sulphides, Incorporated Minerals Copper
Address South Strafford, Vermont

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 D.D. Overburden	foot			56.00	14	4.00	280	4.00
Crosscutting D.D. Surface	"	1,418.40	591	5,966.40	2,486	2.40	6220	2.40
Raising D.D. Surface	"	3,203.85	1,209	5,962.50	2,250	2.65	3900	2.65
Shafts D.D. Surface	"	2,365.65	751	5,931.45	1,883	3.15	1000	3.15
Winzes D.D. Underground	"	3,880.80	1,671	10,538.40	4,391	2.40	7500	2.40
Drilling: Core D.D. Undrgrd.	"	520.00	200	520.00	200	2.60	300	2.60
Churn Survey	Hour	282.00	47	726.00	121	6.00	192	6.00
Auger Delays	"	120.00	20	384.00	64	6.00	64	6.00
Stripping Surface Incid.	Foot	943.87	2,551	2,454.21	6,633	0.37	11400	0.37
Trenching Under. Incid.	"	1,253.73	1,817	3,167.79	4,591	0.69	7800	0.69
Test Pits Bulldozing	Hour	212.50	25	446.25	52½	8.50	208	8.50
Roads and Trails Assays	1	48.00	48	95.00	95	1.00	203	1.00
Core Boxes	1	312.00	156	878.00	439	2.00	720	2.00
Total Distributed Costs		14,560.80		37,126.00				Total Costs Authorized by Contract
Operating Equipment Purchased								
Initial Rehabilitation and Repairs								
New Buildings, Improvements, etc.								
Total Costs		14,560.80		37,126.00				62,860.00

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 Sept. 20, 1957 Operator Appalachian Sulphides, Inc.

Per John H Cowley Title General Manager

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:

(Instructions on reverse)

(For Government use only)

The 4th figure under "Units this month" should be 1617 (X)
H T Burmeister 9/30/57

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

APPALACHIAN SULPHIDES, INC.
SOUTH STRAFFORD
VERMONT

Telephone - South Strafford 5-2411

September 20, 1957

EXTRA COPY
D M E A
RECEIVED OCT 9 1957

DATE	INITIALS	CODE

United States Department of the Interior
Executive Officer
Defense Minerals Exploration Administration
College Park, Maryland

DMEA Contract No. Idm-E-1100
Docket No. DMEA 4746

Gentlemen:

We enclose herewith five (5) copies each of the following reports, covering diamond drilling for the Month of August 1957 under the above contract:

(a) Form MF 104, Operator's Monthly Report and Voucher.

(b) Form MF 104A, Operator's Unit Cost and Progress Report, including Supporting Detail Schedule Re Contract Drilling.

The diamond drilling narrative report, summary, hole logs and cross sections have been furnished previously, under date of September 13, 1957.

Very truly yours,

John F. Cowley

John F. Cowley
General Manager

JFC:hw
Encl.

ELIZABETH MINE — APPALACHIAN SULPHIDES, INC. — SOUTH STRAFFORD, VERMONT

Supporting Details - Re: DMEA Form MF-104
Cost Item (1) - Independent Contracts
Period - August 1 - 31, 1957

CONTRACT DRILLING - August 1-31, 1957, Both Dates Inclusive
Per E. J. Longyear Company Invoice Nos. 85767 & 85768 - Dated Aug. 31, 1957

				DMEA Rates - Per Contract No. Idm-E-1100			Actual Rates Charged By Longyear-Per Final Drilling Agreement Dated 5/10/57		
Hole No.	From	To	Footage	Size Core	Rate	Amount	Size Core	Rate	Amount
SURFACE									
1008	541	1000	459	EX	2.65	$ 1,216.35	EX	2.65	$ 1,216.35
	1000	1500	500	EX	3.15	1,575.00	EX	3.15	1,575.00
	1500	1551	51	EX	3.15	160.65	EX	3.15	160.65
1019	409	500	91	EX	2.40	218.40	EX	2.40	218.40
	500	1000	500	EX	2.65	1,325.00	EX	2.65	1,325.00
	1000	1200	200	EX	3.15	630.00	EX	3.15	630.00
1025	0	20	20	EX	2.40	48.00	BX & AX	2.65	53.00
	20	500	480	EX	2.40	1,152.00	EX	2.40	1,152.00
	500	750	250	EX	2.65	662.50	EX	2.65	662.50
Total-Surface			2551			$ 6,987.90			$ 6,992.90
UNDERGROUND									
1010	390	750	360	EX	2.40	$ 864.00	EX(Flat Hole)	3.40	$ 1,224.00
	750	950	200	EX	2.60	520.00	EX (Flat Hole)	3.60	720.00
1009	0	174	174	EX	2.40	417.60	EX	2.40	417.60
1013	0	401	401	EX	2.40	962.40	EX	2.40	962.40
1027	0	552	552	EX	2.40	1,324.80	EX	2.40	1,324.80
1028	0	130	130	EX	2.40	312.00	EX	2.40	312.00
Total-Underground			1817			$ 4,400.80			$ 4,960.80
Totals - Surf. & Ugrd.			4368			$11,388.70			$11,953.70

HOLE SURVEYS

Hole No.	Dates	Hours	Rate	Amount
SURFACE				
1008	8/3-6-8-12-24-30	17	$6.00	$ 102.00
1019	8/1-3-6-15	7	6.00	42.00
1025	8/21-23-28	3	6.00	18.00
Total Surface Surveys		27		$ 162.00
UNDERGROUND				
1010	8/2-21	7	$6.00	$ 42.00
1013	8/7-10	7	6.00	42.00
1027	8/13-21	6	6.00	36.00
Total Underground Surveys		20		$ 120.00
Total Surveys		47		$ 282.00

HOLE DELAYS

Hole No.	Dates	Hours	Rate	Amount
SURFACE				
1008	8/1 - 2	18	$6.00	$ 108.00
UNDERGROUND				
1010	8/6 - 12	4	$6.00	$ 24.00
1027	8/14	2	6.00	12.00
		6		$ 36.00
Underground Moving				
1010 To 1009	8/24 - 26 - 27	13	$6.00	$ 78.00
1027 To 1028	8/28 - 29	4	6.00	24.00
		17		$ 102.00
Total Delays and Moving		41		$ 246.00
Less - Delays in Excess of Contract		21		126.00
Allowable Delays		20		$ 120.00

EXHIBIT NO.

7

KAROLT[illegible]
THE A[illegible]
W[illegible]

APPALACHIAN SULPHIDES, INC.
SOUTH STRAFFORD
VERMONT

Telephone - South Strafford 5-2411

September 12, 1957

United States Department of the Interior
Executive Officer
Defense Minerals Exploration Administration
College Park, Maryland

Re: DMEA Contract No. Idm-E 1100
Docket No. DMEA-4746

Gentlemen:

We enclose herewith five (5) complete sets of the following reports and maps relative to our Diamond Drilling Program for the MONTH OF AUGUST 1957:

Narrative Report on Diamond Drilling

Summary of Diamond Drilling

Diamond Drilling Record by Holes (Logs - showing assays, etc.)

100 Scale Diamond Drill Cross Sections (10 sections each)

The Operator's Monthly Report and Voucher Report will be forwarded later, as soon as we receive the drilling contractor's (E. J. Longyear Company) invoice covering August drilling.

Sincerely yours,

Clarence B. Benson

Clarence B. Benson
Assistant General Manager

CBB:hw
Encl.

EXTRA COPY
DMEA
RECEIVED OCT 9 1957

DATE	INITIALS	CODE

APPALACHIAN SULPHIDES, INC.
SOUTH STRAFFORD
VERMONT

Telephone - South Strafford 5-2411

EXTRA COPY
DMEA
RECEIVED OCT 9 1957

DATE	INITIALS	CODE

To: Defense Minerals Exploration Administration
From: Appalachian Sulphides, Incorporated
Subject: Diamond Drilling, DMEA Contract No. Idm-E 1100
Docket No. 4746
August 1 - 31, 1957

GENERAL

Surface drilling was completed at 14000 N and is continuing at 10900 N. Structure near the mine has been found as expected, but to the far west, amphibolites have not been located to fit the inferred structural picture.

Underground drilling continues to check the mineralized area 150' west of the mine workings. Drilling for this purpose has been completed at 12400 N, and has begun at 11600 N. New structural interpretations have been made from results obtained. At 10900 N, underground drilling to complete the structural picture continues.

Drilling for August is summarized below by sections, and a tabular summary of holes and footages is included with this report as are brief logs of holes and cross sections.

7442 N

No drilling in this section during August. Work with the drill hole electromagnetic survey unit was begun, and will be completed during September.

8800 N

No drilling in this section during August. It is felt that drilling proposed for this section in July will probably not be done because the areas to be checked were so poorly mineralized when encountered at 7442 N and 10900 N.

10100 N

No drilling in this section during August. Drilling outlined in the July 1st proposal will probably not be done, as information being found at 10900 N adequately fills in the structural picture.

10900 N

Completion of DDH 1008 S showed that the most easterly or "Mine" syncline does not extend below 500 ft. elevation at 10900 N. The two emphibolites intersected at 9950 W and 10100 W are inferred to be the east and west limbs of a deeper syncline to the west, as shown on the section. No significant mineralization was found within this syncline. Underground, DDH 1009 U has been started, and to date has passed through four amphibolites. By comparison with other sections, these amphibolites are interpreted as drags in one band as shown. Hole 1009 U was originally proposed for 1000 ft. in length, but will probably be drilled only to 300 ft. because poor mineralization found in the drilling west of 10200 W in other sections makes the possibility of finding ore in extended hole 1009 U remote.

Telephone - South Strafford 5-2411

To: Defense Minerals Exploration Administration
From: Appalachian Sulphides, Incorporated
Subject: Diamond Drilling, DMEA Contract No. Idm-E 1100
Docket No. 4746
August 1 - 31, 1957

10900 N - Continued

Farther to the west a surface hole, No. 1025 S is being drilled to explore structure. It was felt that this hole would pass through an amphibolite anticline at 1100 ft. elevation, and a syncline to the west of this anticline, possibly favorable to mineralization. However, to date, no amphibolites have been found, and we are forced to conclude that the anticline (the same anticline found at 11300 W in the 14000 N section) has a south plunge and is below hole 1025 S.

11600 N

It was felt that mineralization found 150 ft. west of the mine at elevation 700 ft. should be traced to the south from 12100 N, accordingly, two or three holes are now planned at 11600 N which holes were not included in the revised proposal of July 1, 1957. During August, D.D.H. 1028 U was begun, and, to date, has intersected 68 ft. of scattered sulphides as shown on the attached cross section. In September, this hole will be completed to approximately 300 ft., a hole will be drilled above it, and possibly one will check below 1028 U.

12100 N

Completion of D.D.H. 1010 U inferred structure as shown on the cross section. A 6.5 ft. mineralized zone was encountered within the syncline to the west, but was low in grade of contained copper, 0.61% Cu. Within this zone was a bit of poorly defined amphibolite, possibly representing one of the two bands above the major band.

Comparison of the 12100 N section dated Sept. 1 with that dated Aug. 1 will show a change in the inferred structure, which change was based on information derived from the drilling at 12400 N. (See below for discussion)

12400 N

D.D.H. 1013 U was drilled as planned, and intersected 20.4 ft. assaying 1.59% Cu just below the 12.1 ft. of 1.74% Cu found in D.D.H. 708 U. The zone continues for another 27.6 ft. in hole 1013 U, but grades only 0.35% Cu.

To further check this zone, D.D.H. 1027 U was laid out at a -55° dip and drilled through the zone and on down to 552 ft. to also investigate the possibility that mineralization might be "leaking" down the west limb of the anticline (see cross section).

In trying to relate all the amphibolites intersected at 12400 N, it was found that structure became more logical with the addition of a third weak band of amphibolite. This third band has occasionally been seen in the main ore zone between the hanging and west wall amphibolites. It will also be noted that this structural interpretation reduces the mineralized intersections into four major

APPALACHIAN SULPHIDES, INC.
SOUTH STRAFFORD
VERMONT

Telephone - South Strafford 5-2411

To: Defense Minerals Exploration Administration
From: Appalachian Sulphides, Incorporated
Subject: Diamond Drilling, DMEA Contract No. Idm-E 1100
Docket No. 4746
August 1 - 31, 1957

12400 N - Continued

horizons, one above the lowest amphibolite band on the west limb of the anticline, one underneath the middle band in the crest of the anticline, one above the middle band up the east limb and just over the crest of the anticline, and one just under the upper band on the east limb of the anticline.

This structural picture also seems to fit at 12100 N, and old drilling at this north coordinate is being replotted in order to confirm or rule out the third band. Results of this further work will be forthcoming in next month's report.

13100 N

No drilling in this section during August. Note that the third band of amphibolite has been added into the inferred structure for Sept. 1, and that the mineralized zones are again reduced to four horizons maintaining the same structural positions as at 12400 N.

14000 N

D.D.H. 1019 S was drilled beyond the originally proposed 1000 ft. depth in the effort to locate the west limb of the inferred syncline. This limb was not found, and it is impossible on the basis of existing information to make a very good guess as to what the structural picture is west of 11400 W. It is hoped that completion of D.D.H. 1025 S will help in filling in the picture at 10900 N, and, by projection, elsewhere. D.D.H.s 1022 S and 1019 S were run with the drill hole electromagnetic survey equipment, and no anomalies were found.

15100 N

No drilling or changes in this section during August.

Respectfully submitted,

Calvert Smith

Calvert Smith
Geologist

CS:hw

APPALACHIAN SULPHIDES, INC.

Summary of Diamond Drilling for the month of AUGUST, 1957; DMEA Contract No. Idm-E 1100

Docket No. DMEA-4746

Dated: September 1, 1957

Hole No.	Surface or Underground	Coordinates North	Coordinates West	Collar Elev.	Bearing	Dip at Collar	Drilling, 1957 from	Drilling, 1957 to	Drilling, 1957 footage	Proposed length	Notes
1008 S	Surface	10901	9224	1146	N 90° W	-80°	541	1551	1010	1550	Hole Completed
1009 U	Underground	10898	9857	861	N 90° W	-30°	0	174	174	300 *	Hole Drilling
1010 U	Underground	12072	9691	506	N 90° W	-15°	390	950	560	950	Hole Completed
1013 U	Underground	12371	9834	751	N 90° W	-40°	0	401	401	400	Hole Completed
1019 S	Surface	14000	11144	1172	N 90° W	-40°	409	1200	791	1000 *	Hole Completed
1025 S	Surface	10900	10728	1426	N 90° W	-65°	0	750	750	1500	Hole Drilling
1027 U	Underground	12371	9833	751	N 90° W	-55°	0	552	552	550 *	Hole Completed Added
1028 U	Underground	11623	9800	775	N 90° W	-35°	0	130	130	300 *	Hole Drilling Added
								Total:	4368		

Summary of Drilling to Date

Footage authorized for drilling under DMEA Contract as signed June 13, 1957		19,200
Footage drilled under DMEA Contract prior to month reported above	7,899	
Footage drilled under DMEA Contract during month reported above	4,368	
Total footage drilled under DMEA Contract to date	12,267	12,267
Total footage remaining to be drilled under DMEA Contract authorization of June 13, 1957		6,933
Footage drilled on this program by Appalachian Sulphides, Inc. prior to June 13, 1957	3,602	
Footage drilled on pertinent holes 708 and 796 prior to this program by Appalachian Sulphides, Inc.	559	
Total of above footages drilled to date	16,428	
Total footage proposed for this program in revision of July 1, 1957 (subject to review as drilling progresses)	26,942	
Less total footage drilled to date (from above)	16,428	
Total footage remaining to be drilled in this program per revision of July 1, 1957	10,514	

* See Narrative for proposed changes and additions.

EXTRA COPY
D M E A
RECEIVED OCT 9 1957

DATE	INITIALS	CODE

COLLAR LOCATION
LATITUDE 10901 N
DEPARTURE 9224 W
ELEV. 1146.0'
DIP -80°
BEARING N 90° W

APPALACHIAN SULPHIDES INC.

DIAMOND DRILL RECORD

PROPERTY Elizabeth LOCATION So. Strafford, Vt.

CORE
SAVED yes
LOCATION Core Shack
SAMPLED No. HOW
LOGGED BY C. S., R.C.D.
DATE June 1957

D.D.H. #1008 S STARTED 6-21-57 COMPLETED 8-30-57 LENGTH 1551 Ft.

FOOTAGE	SUB UNIT	ROCK TYPE	DESCRIPTION	SAMPLED	SAMPLE NO.	W	% CU	% FE
0 - 525.0		Schist	Quartz, Sericite, Biotite, Garnet, Schist. Garnets 2-4 mm.					
525.0 - 541.0			Same as 0 - 525.0					
541.0 - 1053.3		Schist	"Typical"					
1053.3 - 1054.1		Amphib.	"Muddled" coarse grained, quartz, hornblende, biotite heavily carbonated amphibolite					
1054.1 - 1177.0		Schist	"Muddled quartz, sericite, biotite, garnet Schist, Garnets pinpoint to 6 mm.					
1177.0 - 1185.3		Amphib.	Fine grained amphibolite					
1185.3 - 1194.7		Schist	Carbonated with pinpoint garnets and traces of Sulphides.					
1194.7 - 1205		Amphib.	Like 1177.0 - 1185.3					
1205 - 1206		Schist	Quartz, sericite, biotite schist with massive pinpoint garnets					
1206 - 1248		Altered Amphib.	Biotite coarse garnet altered amphibolite					
1248 - 1330		Schist	Coarse quartz, biotite sericite schist with carbonated bands.					
1330 - 1373		Amphib.						
	1330 - 1332	Alt.Amphib.	Altered coarse Amphibolite with 30 mm. garnets					
	1332 - 1373.0	"	Medium to coarse grained hornblende with scattered 30 mm. garnets					
	1362 - 1373	"	Trace of Sulphide in amphibolite					

SHEET NO. 2

APPALACHIAN SULPHIDES INC.

HOLE NO. 1008 S

FOOTAGE	SUB UNIT	ROCK TYPE	DESCRIPTION	SAMPLED	SAMPLE NO.	W	% CU	% FE
1373.0 - 1551		Schist	Quartz sericite biotite schist with fairly coarse garnets 4 - 8 mm.					

COLLAR LOCATION
LATITUDE 10,898.3 N
DEPARTURE 9857 W
ELEV. 860.6
DIP -30°
BEARING N 90°W

APPALACHIAN SULPHIDES INC.

DIAMOND DRILL RECORD

PROPERTY ELIZABETH LOCATION 575 L - 090 Rse.

CORE
SAVED Yes
LOCATION Core Shack
SAMPLED _____ HOW _____
LOGGED BY R.C.D.
DATE August 1957

DDH 1009U STARTED 8-28-57 COMPLETED _____ LENGTH _____

FOOTAGE	SUB UNIT	ROCK TYPE	DESCRIPTION	SAMPLED	SAMPLE NO.	W	% CU	% FE
0.0 - 2.0		Schist	Quartz sericite, biotite, schist.					
2.0 - 43.5		Altered Amphib.	Biotite coarse garnet altered amphibolite with Hornblende, Garnets 10 - 30 mm.					
435 - 58.0		Amphib.	Medium grained, carbonated hornblende Amphibolite					
58.0 - 61.0		Schist	Quartz sericite biotite schist					
61.0 - 101.5		Amphib.	Amphibolite with "pelleted" feldspar and carbonates.					
101.5 - 104.0		Skarn	"Pelleted" feldspar, biotite skarn.					
104.0 - 140.0		Amphib.	Medium grained hornblende Amphibolite					
140.0 - 158.0		Amphib.	Chlorite, hornblende, skarny Amphilbolite.					
158.0 - 165.0		Schist	Sericite, brown biotite skarny, schist.					
165.0 - 167.0		Amphib.	Medium grained hornblende amphibolite.					
167.0 - 171.0		Skarn?	Fine grain, weak belached, brown biotite skarn or amphibolite with traces of sulphides.					
171.0 - 172.5		Amphib.	Medium grain hornblende amphibolite					
172.5 - 174.0		Skarn	Weak brown, biotite, sericite skarn with traces of sulphides.					

COLLAR LOCATION
LATITUDE 12072.4 N
DEPARTURE 9690.8 W
ELEV. 505.62
DIP -15°
BEARING N 90° W

APPALACHIAN SULPHIDES INC.

DIAMOND DRILL RECORD

PROPERTY Elizabeth LOCATION 975 L. 210 Rse.

CORE
SAVED yes
LOCATION Core Shack
SAMPLED yes HOW split
LOGGED BY C.S.
DATE August 1957

D.D.H. #1010 U STARTED 7-12-57 COMPLETED 8-23-57 LENGTH 950 Feet

FOOTAGE	SUB UNIT	ROCK TYPE	DESCRIPTION	SAMPLED	SAMPLE NO.	W	% CU	% FE
0 - 33.3		Amphib.	Heavily carbonated medium-grained hornblende biotite Amphibolite					
	8.2 - 10.8		Band of coarse Garnet altered Amphibolite					
	10.8 - 13.7		Band of greenish Sericite Schist					
	13.7 - 17.0		Band of coarse garnet altered Amphibolite.					
	27.6 - 28.6		Band of Sericite Schist with Sulphides	27.6 - 28.6	34037	1.0'	0.18	24.20
33.3 - 250.8		Schist	almost typical Quartz Sericite biotite Schist with Quartz stringers. not carbonated, but with a few small limey bands.					
250.8 - 255.4		Amphib.	Quartz Sericite biotite, coarse garnet altered Amphibolite.					
255.4 - 259.7		Skarn?	Greasy brown biotite Chlorite(?) Schist with scattered sulphides.	255.4 - 259.7	34038	4.3'	0.13	13.80
259.7 - 275.0		Amphib.	Like 250.8 - 255.4					
275.0 - 279.5		Schist	"Typical" Sericite Schist except for occasional thin bands of greenish Sericite					
279.5 - 285.1		Skarn?	Like 255.4 - 259.7	279.5 - 285.1	34039	5.6'	0.10	9.80
285.1 - 386.0		Schist	Quartz Sericite biotite Schist with many pinpoint to 8 mm. garnets					
	286.0 - 287.0		band of medium-grained hornblende Amphibolite					
	296.0 - 302.5		Altered Amphibolite? Some coarse garnets, rock is heavily carbonated.					
	314.0 - 324.3		Like 296.0 - 302.5 altered amphibolite?					

FOOTAGE	SUB UNIT	ROCK TYPE	DESCRIPTION	SAMPLED	SAMPLE NO.	W	% CU	% FE
386.0 - 390.0		Amphib.	"Muddled", hornblende biotite amphibolite, moderately carbonated					
390.0 - 399.0		Amphib.	"Muddled", to fresh, moderately carbonated medium to coarse grained quartz, hornblende, biotite amphibolite. A few pinpoint garnets.					
399.0 - 524.4	524.3 - 524.4	Schist	Very quartzitic, sericite, biotite garnet schist. Not carbonated to very carbonared, bleached to skarny in bands plus scattered sulphides					
524.4 - 525.2		Amphib.	"Muddled" hornblende, biotite, garnet Amphibolite Garnets 4 - 10 mm.					
525.2 - 525.7		Altered Amphib.	Coarse garnet, biotite, hornblende altered Amphibolite, garnets 4 - 10 mm.					
525.7 - 574.5		Schist	Quartz, sericite, biotite, garnet, schist weakly to moderately carbonated, garnets 2 - 6 mm.					
574.5 - 575.5		Schist	Scattered Sulphides in Schist	574.5 - 575.5	# 34058	1.0	0.52	7.40
575.5 - 579.6		Amphib.	Very "muddled", skarny, biotite, hornblende, chlorite coarse garnet Amphibolite, not carbonated but with weak scattered sulphides Garnets 6-25 mm.	575.5 - 579.6	# 34059	4.1	0.53	9.20
579.6 - 605.0		Amphib.	Much like 525.7 - 575.2 but with one inch skarny biotite sericite bands with traces of sulphides.	579.6 - 581.0	# 34060	1.4	0.89	10.80
			Weighted Average	574.5 - 581.0		6.5	0.61	4.26
605.0 - 630.0		Amphib.	Very "muddled", very coarse grainded quartz, biotite hornblende garnet amphibolite. Weak traces of sulphides					
630.0 - 638.6		Altered Amphib.	Carbonated, biotite, coarse garnet altered amphibolite. Garnets 4 - 16 mm.					

APPALACHIAN SULPHIDES INC.

HOLE NO. 1010 II

FOOTAGE	SUB UNIT	ROCK TYPE	DESCRIPTION	SAMPLED	SAMPLE NO.	W	% CU	% FE
638.6 - 68.8		Schist	Dark, quartz, sericite, biotite, garnet schist. Weakly to moderately carbonated.					
688.0 - 692.6		Altered Amphib.	Quartz, sericite, biotite, coarse garnet altered amphibolite. Very carbonated. Garnets 8 - 20 mm.					
692.6 - 694.0		Amphib.	Coarse, hornblende, biotite, garnet Amphibolite, Garnets 8 - 20 mm.					
694.0 - 696.0		Altered Amphib.	Bleached altered Amphibolite Garnets 8 - 20 mm.					
702.6 - 719.4		Amphib.	Fresh, medium grained, "muddled", quartz hornblende, biotite, very carbonated Amphibolite,					
719.4 - 950		Schist	"Typical" quartz, sericite, biotite, garnet schist, weakly carbonated. Garnets 2 - 4 mm.					

COLLAR LOCATION
LATITUDE 12371 N
DEPARTURE 9834 W
ELEV. 751
DIP -40°
BEARING N 90°W

APPALACHIAN SULPHIDES INC.

DIAMOND DRILL RECORD

PROPERTY ELIZABETH LOCATION 750 L 240 Rse.

CORE
SAVED Yes
LOCATION Core Shack
SAMPLED Yes HOW Split Core
LOGGED BY C.S.
DATE August 1957

DDH# 1013 U STARTED 8 - 1 - 57 COMPLETED 8 - 10 - 57 LENGTH 401.0 Ft.

FOOTAGE	SUB UNIT	ROCK TYPE	DESCRIPTION	SAMPLED	SAMPLE NO.	W	%CU	% FE
0.0 - 5.6		Amphib.	"Muddled", medium grained, quartz, hornblende, biotite moderately carbonated, amphibolite. No garnets.					
5.6 - 22.6		Altered Amphib.	Quartz, black biotite, weak sericite, coarse garnet, moderately carbonated altered amphibolite. Garnets 10 - 20 mm.					
22.6 - 26.3		Schist	Bleached, quartz, sericite, biotite, schist. Moderately carbonated with scattered sulphides. Very siliceous, no garnets.	22.6 - 26.3	# 34061	3.7	0.27	10.60
26.3 - 48.0		Altered Amphib.	Like 5.6 - 22.6					
48.0 - 52.0		Amphib.	Very skarny, biotite, hornblende garnet Moderately carbonated amphibolite with Traces of sulphides. Garnets 4 mm.					
52.0 - 89.0		Schist	Unusual, rather skarny, quartz, sericite, biotite schist. Garnets 2 - 6 mm.					
	61.5 - 62.5		Traces of sulphides					
	3 63.8		One inch pyrrhotite					
	88.0 - 89.0		Traces of sulphides.					
89.0 - 95.5		Skarn	Quartz, brown **biotite skarn,** Moderately carbonated with Scattered sulphides.	89.0 - 90.7	# 34062	1.7	1.40	15.80
				90.7 - 93.2	# 34063	3.5	2.08	16.80
				93.2 - 94.8	# 34064	1.6	0.82	12.40
			Weighted Average	89.0 - 94.8		5.8	1.53	15.29

FOOTAGE	SUB UNIT	ROCK TYPE	DESCRIPTION	SAMPLED	SAMPLE NO.	W	% CU	% FE
95.5 - 98.3		Amphib.	"Blotchy", quartz, hornblende, cholrite, biotite, moderately carbonated amphibolite with traces of sulphides. No garnets.					
98.3 - 101.0		Skarn	Heavy brown biotite chlorite skarn. Not carbonated but with traces of sulphides. No garnets.					
101.0 - 115.4		Amphib.	Fresh, medium grained, heavily carbonated, hornblende Amphibolite. No garnets					
115.4 - 116.9		Schist	Not typical quartz, sericite, biotite garnet Schist. Heavy garnets pinpoint to 2 mm.					
116.9 - 117.2		Massv. Sulfs.	Massive pyrrhotite with weak Chalcopyrite.	116.9 - 117.2	# 34065		0.23	51.20
117.2 - 121.6		Schist	Schist with trace of sulphides					
121.6 - 124.8		Amphib.	Muddled, carbonated, hornblende biotite with massive pinpoint garnets. Carbonated Garnets pinpoint to 2 mm.					
124.8 - 139.0		Schist	Sericite schist with some quartz and hornblende					
139.0 - 181.2		Schist	Weak scattered sulphides to massive Sulphides in sericite schist (Note: 5 Ft. lost core in Run 149 - 159)	139.0 - 146.1	# 34040	7.1	1.94	34.80
				146.1 - 148.9	# 34041	2.8	0.66	16.20
				148.9 - 159.4	# 34042	10.5	1.60	31.40
			Weighted Average	159.0 - 159.4		20.4	1.59	22.98
				159.4 - 160.4	# 34043	1.0	0.21	11.20
				160.4 - 161.0	# 34044	0.6	0.68	25.60
				161.0 - 162.0	# 34045	1.0	0.52	13.60
				162.0 - 163.4	# 34046	1.4	0.37	48.80
				163.4 - 169.9	# 34054	6.5	0.18	11.60
				169.9 - 171.6	# 34047	1.7	0.61	19.80
				171.6 - 174.0	# 34048	2.4	0.16	9.20
				174.0 - 174.7	# 34049	0.7	0.36	37.00
				174.7 - 176.1	# 34050	1.4	0.26	10.40

FOOTAGE	SUB UNIT	ROCK TYPE	DESCRIPTION	SAMPLED	SAMPLE NO.	W	% CU	% FE
				176.1 - 178.9	# 34051	2.8	0.90	35.40
				178.9 - 183.7	# 34052	4.8	0.16	9.60
181.2 - 191.3		Amphib.	Quartz, biotite, hornblende Amphibolite with Skarny zones of brownbiotite, weak chlorite, hornblende, Moderately carbonated, some sulphides few garnets. 4 - 6 mm.	183.7 - 187.0	# 34053	3.3	0.47	12.40
			Weighted Average	159.4 - 187.0		27.6	0.35	15.95
			Weighted Average	139.0 - 187.0		48.0	0.88	16.86
191.3 - 213.7		Schist	Not typical sericite schist heavily carbonated					
213.7 - 224.6		Amphib.	"Muddled", very carbonated, quartz, biotite, hornblende, garnet amphibolite. Garnets 10 - 15 mm					
224.6 - 227.0		Schist	Quartz, sericite, biotite, garnet schist. Garnets pinpoint to 4 mm.					
227.0 - 236.4		Amphib.	Quartz, biotite, sericite hornblende, very carbonated Amphibolite ocassional 6 mm. garnets.					
236.4 - 256.0		Schist	Blotchy, quartz, sericite, biotite, garnet schist. Weakly to moderately carbonated. Garnets 1 - 6 mm.					
256.0 - 260.0		Amphib.	"Muddled", very carbonated, quartz, biotite hornblende, garnet Amphibolite. Garnets 6 mm.					
260.0 - 355.0		Schist	Blotchy, Quartz, sericite, biotite, garnet, weakly carbonated schist. Garnets pinpoint to 4 mm.					
355.0 - 366.5		Amphib.	Huddled, very carbonated, quartz, hornblende, biotite, garnet Amphibolite garnets 10 - 16 mm.					
366.5 - 373.0		Altered Amphib.	Quartz biotite, sericite coarse garnet altered amphibolite. Very carbonated. Garnets 10 - 25 mm.					

APPALACHIAN SULPHIDES INC.

HOLE NO. 1013 U

FOOTAGE	SUB UNIT	ROCK TYPE	DESCRIPTION	SAMPLED	SAMPLE NO.	W	% CU	% FE
373.0 - 401.0		Schist	Slightly blotchy, quartz, sericite, biotite, garnet schist Weakly carbonated, garnets 1 - 2 mm.					

COLLAR LOCATION
LATITUDE 13999.6 N
DEPARTURE 11143.8 W
ELEV. 1171.56
DIP -40°
BEARING N 90° W

APPALACHIAN SULPHIDES INC.

DIAMOND DRILL RECORD

PROPERTY ELIZABETH LOCATION Rosa's Hill

CORE
SAVED yes
LOCATION Core shack
SAMPLED yes HOW split core
LOGGED BY C.S.
DATE August 1957

D.D.H. #1019 STARTED 7-26-57 COMPLETED 8 - 15 - 57 LENGTH 1200 Feet

FOOTAGE	SUB UNIT	ROCK TYPE	DESCRIPTION	SAMPLED	SAMPLE NO.	W	% CU	% FE
0 - 3.0			Overburden					
3.0 - 102.0		Schist	lightish quartz sericite biotite Schist with some granular limey bands.					
	63.0 - 66.0		greenish color with traces of sulphides	63.0 - 66.0	34055	3.0'	0.03	8.20
102.0 - 361.5		Altered Amphib.	Quartz biotite sericite hornblende, coarse garnet Amphibolite to altered amphibolite. Traces of sulphides, weakly to moderately carbonated.					
	265.0 - 268.2		Very weak scattered sulphides	265.0 - 268.2	34056	3.2'	0.05	10.00
	297.3 - 300.0		Very weak scattered sulphides	297.3 - 300.0	34057	2.7'	0.03	10.60
361.5 - 367.0		Schist	Quartzitic dark sericite biotite garnet Schist, garnets 2 - 4 mm.					
367.0 - 371.0		Altered Amphib.	Quartz, biotite, sericite, weakly carbonated coarse garnet (10 - 25 mm.) amphibolite					
371.0 - 932.2		Schist	Almost "typical" quartz, sericite biotite schist Garnets 2 - 4 mm. weakly carbonated to heavily carbonated bands.					
	793.0 - 795.0		Traces of pyrite in fractures					
932.2 - 932.7		Amphib.	"Muddled", weakly carbonated, hornblende Amphibolite					
932.7 - 1200		Schist	Like 371.0 - 932.2					

COLLAR LOCATION
LATITUDE 10,899.6 N
DEPARTURE 10,728.2 W
ELEV. 1425 - 75
DIP -65
BEARING N 90°W

APPALACHIAN SULPHIDES INC.

DIAMOND DRILL RECORD

PROPERTY ELIZABETH LOCATION West of No. 1 O.C.

STARTED 8 - 19 - 57 COMPLETED _____ LENGTH _____

DDH# 1025 S

CORE
SAVED Yes
LOCATION ~~Core Shack~~
SAMPLED _____ HOW _____
LOGGED BY C.S., R.C.D.
DATE August 1957

FOOTAGE	SUB UNIT	ROCK TYPE	DESCRIPTION	SAMPLED	SAMPLE NO.	W	% CU	% FE
0 - 750		Schist	Quartz, sericite, biotite, garnet schist Weakly carbonated throughout. Garnets 2 - 4 mm carbonated quartzite bands containing Hornblende					
	110 - 129.7		Heavily carbonated, very weak traces of sulphides					
	134.2 - 134.6		Scattered pyrite					
	@ 492.0		Traces of Sulphides.					

COLLAR LOCATION
LATITUDE 12371 N
DEPARTURE 9833 W
ELEV. 751
DIP -55°
BEARING N. 90° W

APPALACHIAN SULPHIDES INC.

DIAMOND DRILL RECORD

PROPERTY ELIZABETH LOCATION 750 - 240

CORE
SAVED Yes
LOCATION Core Shack
SAMPLED Yes HOW Split Core
LOGGED BY C.S., R.C.D.
DATE August 1957

DDH# 1027 U

STARTED 8 - 12 - 57 COMPLETED 8 - 23- 57 LENGTH 552 Feet

FOOTAGE	SUB UNIT	ROCK TYPE	DESCRIPTION	SAMPLED	SAMPLE NO.	W	% CU	% FE
0 - 18.0		Amphib.	"Muddled" medium grained, quartz, hornblende, biotite amphibolite, weakly to moderately Carbonated Garnets 2 - 6 mm					
18.0 - 20.0		Schist	Quartz, biotite, sericite Schist with occasional hornblende, weak scattered Sulphides.	18.0 - 20.0	# 34066	2.0	0.40	9.20
20.0 - 48.5		Amphib.	"Muddled", quartz, hornblende, biotite, very carbonated amphibolite, Garnets 2 - 8 mm					
48.5 - 80.8		Schist	Light greenish, quartz, sericite, biotite, garnet Schist, Moderately carbonated, occasional trace sulphides.					
	55.6 - 57.9	Mineralized Zone	plus Scattered Sulphides.	55.6 - 57.9	# 34067	2.3	0.73	16.80
80.8 - 89.2		Skarn	Quartz, biotite, sericite, chlorite Skarn, sulphides throughout	80.8 - 85.0	# 34068	4.2	0.26	17.00
				85.0 - 89.2	# 34069	4.2	0.26	8.80
			Weighted Average	80.8 - 89.2		8.4	0.26	12.90
89.2 - 104.2		Amphib.	Fine grain - coarse grain "muddled" hornblende, biotite, amphibolite very carbonated garnets 4 - 8 mm					
104.2 - 106.5		Schist	"Marble Cake" quartz, biotite, sericite schist with sulphides. Very carbonated	104.2 - 106.5	# 34070	2.3	0.58	18.00
106.5 - 109.8		Amphib.	Heavily carbonated quartz, biotite, hornblende amphibolite.					
109.8 - 125.4		Schist	Moderately carbonated, quartz, sericite biotite, garnet schist, garnets pinpoint to 2 mm					
125.4 - 127.7		Amphib.	"Muddled", moderately carbonated, quartz biotite, hornblende amphibolite - almost skarny in places.					

FOOTAGE	SUB UNIT	ROCK TYPE	DESCRIPTION	SAMPLED	SAMPLE NO.	W	% CU	% FE
127.7 - 132.0		Altered Amphib.	Heavily caronated quartz biotite, sericite coarse garnet, altered amphibolite, garnets 6 - 10 mm					
132.0-152.2		Amphib.	Similar to 127.7 - 132.0					
152.2 - 158.5		Schist	Skarny weakly caronated, greenish quartz, sericite biotite schist, garnets in bands, pinpoint to 3 mm					
	153.0-153.3		Tourmaline with trace sulphides.					
158.5 - 160.6		Amphib.	"Muddled", very carbonated, quartz, hornblende biotite amphibolite, no garnets					
160.6 - 200.3		Schist	Moderately carbonated, dark, quartz, sericite biotite garnet schist, garnets in bunches, pinpoint to 2 mm					
	173.0 - 173.3	Mineralized Zone	Scattered sulphides	173.0 - 173.3	# 34071	0.3	1.75	16.40
	173.3 - 174.8	"	Massive pyrrhotite, good chalcopyrite	173.3 - 174.8	# 34072	1.5	2.05	54.80
	174.8 - 176.3	"	Very weak scattered sulphides	174.8 - 176.3	# 34073	1.5	0.31	10.00
			Weighted Averege	173.0 - 176.3		3.3	1.23	31.08
200.3 - 207.0		Mineralized Zones	"Marble Cake", quartz, biotite, sericite skarn with sulphides.	200.3 - 203.3	# 34074	3.0	0.45	15.40
				203.3 - 207.0	# 34075		0.29	17.20
			Weighted Average	200.3 - 207.0		6.7	0.36	16.39
207.0 - 218.8		Amphib.	Very "Muddled", moderately carbonated, occasionally skarny, quartz, biotite, hornblende amphibolite					
218.8 - 225.8		Altered Amphib.	Coarse grained, quartz, biotite, sericite, altered amphibolite with occasional coarse hornblende, few coarse garnets 6 - 12 mm					
225.8 - 253.8		Amphib.	Like 207.0 - 218.8					
	251.0 - 253.8		Weak scattered sulphides. No garnets	215.0 - 253.8	# 34076	2.8	0.16	10.00
253.8 - 256.0		Skarn	Quartz, biotite, sericite skarn with sulphides. No garnets.	253.8 - 256.0	# 34077	2.2	0.18	15.60
			Weighted Average	251.0 - 256.0		5.0	0.17	12.46
256.0 - 266.3		Amphib.	Like 207.0 - 218.8 with occasional traces of sulphides.					

FOOTAGE	SUB UNIT	ROCK TYPE	DESCRIPTION	SAMPLED	SAMPLE NO.	W	% CU	% FE
266.3 - 290.0		Altered Amphib.	Like 218.8 - 225.8					
290.0 - 294.8		Schist	Quartz, sericite, biotite, garnet, weakly carbonated schist					
294.8 - 310.7		Amphib.	"Muddled", very carbonated, medium to coarse grained, quartz, biotite, hornblende amphibolite.					
310.7 - 316.2		Schist	Dark, quartz, sericite, biotite, garnet schist weakly carbonated. Garnets 1 - 3 mm in bunches.					
316.2 - 317.7		Amphib.	Heavily carbonated, quartz, biotite hornblende amphibolite, no garnets.					
317.7 - 423.0		Schist	Quartz, sericite, biotite garnet schist, weakly to heavily carbonated garnets, few pinpoint to 6 mm					
423.0 - 429.8		Amphib.	Fresh, carbonated, Medium grained, quartz, hornblende, biotite, amphibolite. No garnets.					
429.8 - 430.8		Schist	Carbonated, quartz, sericite, biotite schist with 1 to 6 mm garnets.					
430.8 - 448.0		Amphib.	"Muddled", carbonated coarse grained, quartz hornblende, biotite, garnet amphibolite, garnets 4 - 16 mm					
448.0 - 452.0		Altered Amphib.	Carbonated, quartz, biotite, sericite, garnet altered amphibolite, garnets 4 - 12 mm					
452.0 - 466.0	@ 465.1	Amphib.	Muddled, weakly to heavily carbonated, quartz, biotite, sericite, garnet amphibolite, garnets pinpoint to 30 mm 1/2 inch chalcopyrite.					
466.0 - 469.2		Schist	Biotite, pinpoint garnet schist - heavy garnets.					
469.2 - 471.0		Amphib.						
471.0 - 471.5		Schist	Biotite schist with heavy pinpoint garnets					

SHEET NO. 4

APPALACHIAN SULPHIDES INC.

HOLE NO. 1027 U

FOOTAGE	SUB UNIT	ROCK TYPE	DESCRIPTION	SAMPLED	SAMPLE NO.	W	% CU	% FE
471.5 - 473.0		Amphib.	Medium grained muddled amphibolite					
473.0 - 473.5		Schist	Biotite schist with heavy pinpoint garnets					
473.5 - 475.5		Amphib.	Medium grained "Muddled" amphibolite					
475.5 - 476.5		Schist	Biotite schist with heavy pinpoint garnets.					
476.5 - 478.6		Altered Amphib.	Altered Amphibolite with coarse garnets 30 mm					
478.6 - 479.1		Schist	Schist with very heavy pinpoint garnets.					
479.1 - 541.3		Schist	Garnet, biotite, sericite, garnet schist garnets 2 - 6 mm					
541.3 - 552		Mineralized Schist	Fine grain, sericite, biotite, carbonate schist Very carbonated. Traces of Sulphides. Pinpoint garnets.					

COLLAR LOCATION
LATITUDE 11623 N
DEPARTURE 9800.3 W
ELEV. 774.8
DIP -35
BEARING N. 90°W

APPALACHIAN SULPHIDES INC.

DIAMOND DRILL RECORD

PROPERTY ELIZABETH LOCATION 770 L - 168 Rse.

CORE
SAVED Yes
LOCATION Core Shack
SAMPLED Yes HOW Split Core
LOGGED BY R.C.D.
DATE September 1957

STARTED 8 - 30 - 27 COMPLETED _____ LENGTH _____

DDH# 1028 U

FOOTAGE	SUB UNIT	ROCK TYPE	DESCRIPTION	SAMPLED	SAMPLE NO.	W	%CU	% FE
0.0 - 4.7		Schist	Coarse, Sericite, brown biotite Schist with traces of Sulphides	0.0 - 4.7	# 32501	4.7	0.21	8.40
4.7 - 19.8		Amphib.	Medium and fine grain Amphibolite					
19.8 - 36.0		Skarn	Brown biotite, sericite Skarn with quartz bands some pinpoint garnets Sulphides	19.8 - 25.5	# 32502	5.7	0.69	13.80
				28.0 - 32.0	# 32503	4.0	0.29	10.80
				32.0 - 36.0	# 32504	4.0	0.15	9.20
			Weighted Average	19.8 - 36.0		13.7	0.42	11.58
36.0 - 46.0		Altered Amphib.	Coarse grain Altered Hornblende, garnet Chlorite amphibolite, Garnets to 35 mm					
46.0 - 61.5		Schist	Coarse, garnet, sericite biotite Schist Garnets to 10 mm					
61.5 - 68.5		Altered Amphib.	Very altered, coarse, biotite, sericite, garnet Amphibolite, Garnets to 20 mm					
68.5 - 74.8		Schist	Garnet Sericite Schist, Garnets pinpoint to 6 mm					
74.8 - 130.9	74.8 - 88.6	Schist	Skarny, Sericite, weak brown biotite, carbonated Schist with weak to heavy sulphides.	74.8 - 82.7	# 34078	7.9	0.44	12.00
				82.7 - 88.6	# 34079	5.9	0.27	13.20
				88.6 - 93.2	# 34080	4.6	0.21	26.00
				93.2 - 98.5	# 34081	5.3	0.24	12.60
	88.6 - 92.4	Min. Zone	Heavy Sulphides	98.5 - 114.0	# 34082	15.5	0.23	9.20
	92.4 - 93.0	"	Pinpoint garnet Schist	114.0 - 119.3	# 34083	5.3	0.53	13.00
	93.0 - 97.0	"	Carbonate, biotite, Sericite Skarn.	119.3 - 121.5	# 34084	2.2	0.27	34.00
	97.0 - 98.0	"	Sulphides and pinpoint garnets	121.5 - 126.0	# 34085	4.5	0.18	9.20

SHEET NO. 2 APPALACHIAN SULPHIDES INC. HOLE NO. 1028 U

FOOTAGE	SUB UNIT	ROCK TYPE	DESCRIPTION	SAMPLED	SAMPLE NO.	W	% CU	% FE
	98.0 - 99.7	Min Zone	Medium grain amphibolite	126.0 - 126.5	# 34086	0.5	0.40	25.20
	99.0 - 102.1	"	Pinpoint garnet Schist, Skarn, trace of Sulphides	126.5 - 129.2	# 34087	2.7	0.24	10.60
	102.1 - 106.0	"	Altered amphibolite with bands of very heavy pinpoint garnets and scattered Sulphides					
	106.0 - 119	"	Brown, biotite, carbonate Skarn with scattered bands of Sulphides					
	119.0 - 130.9	"	Pinpoint garnet, Skarny Schist with bands of Massive Sulphides.					
			Weighted Average	74.8 - 129.2		54.4	0.29	13.38

EXTRA COPY
D M E A
RECEIVED OCT 9 1957

DATE	INITIALS	CODE

EXTRA COPY
D M E A
RECEIVED OCT 9 1957

DATE	INITIALS	CODE

OFFICE FILE COPY
DMEA
RECEIVED SEP 3 1957
9/3 C 220
9/3 Ebm 100
9/4 WRY 500

IN REPLY REFER TO:

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

Memorandum

August 28, 1957

To: DMEA Field Team, Region V

From: T. H. Kiilsgaard, Geologist, U. S. Geological Survey

Subject: Interim inspection report, Appalachian Sulphides, Inc., Elizabeth mine, Orange County, Vermont, Docket No. DMEA 4746 (copper).

I visited the cited property on Aug. 16, 1957, accompanied by Harry Burmeister, U. S. Bureau of Mines. At the mine we met Mr. John Cowley, General Manager, Mr. C. B. Benson, Ass't. General Manager, and Mr. Calvert Smith, Geologist. Mr. Smith accompanied us on our inspection tour and briefed us on exploration accomplishments as of that date.

Four diamond drills were on the property, two on the surface and two underground, although on the day of our visit only two drills were active. One surface drill had just completed hole 1019, on coordinate 14,000N, and was in the process of tearing down. This hole had been drilled 1200 feet into the footwall of the ore body at an EX core size but did not find the amphibolite rock that is used as a structural marker, nor did it find any ore. Underground, we visited a drill on the 975 level, drilling hole 1010 on the 12,100N Coordinate from a drift south of the No. 3 shaft. The hole was down 810 feet in barren schist, in the footwall of the ore body. They planned to continue the hole to 950 feet, hoping to find the Westwall Amphibolite member. Core size of the hole was EX, and core recovery was excellent, being more than 90 percent. We watched them remove one piece of continuous core almost 5 feet in length. The hole was making a lot of water which was exerting sufficient pressure to lift over 200 feet of rods in the inclined hole .

Mr. Smith said they had been having trouble with the drillers (Longyear) trying to get them to drill straight holes. He said the drillers were inclined to push the rods too hard, thereby causing the inclined holes to flatten and to reach the target area above the planned elevation. To convince the drillers of their mistake, the company had done some underground drilling with their own drill and had proved to Longyear that fairly straight holes could be drilled. They had also convinced the Longyear people that straighter holes needed bits having finer-sized diamonds than had been used. Mr. Smith

said Longyear had changed to the suggested bits and had stopped crowding the rods and that the recent drilling consequently had been straighter.

Drilling results to date have been disappointing; very little mineralized core has been obtained and interpretation of the controlling structure by use of the amphibolite marker beds has been frustrating. The syncline in the footwall of the Elizabeth ore body, that was believed to parallel the syncline controlling the location of the Elizabeth ore body, has not proved to be as continuous as had been hoped for. To the north, this projected syncline apparently reverses its northerly plunge, the trough passing above the area that was drilled. It is also believed that the syncline in the northern part of the area has opened, thereby presenting a less likely site for ore deposition. Drilling completed under the Elizabeth ore body has proved that the ore does not extend downward beneath the controlling structural syncline.

The only mineralization found to date has been in holes drilled on coordinate 12,400N. Drilling in this plane has found the amphibolite to be so intricately folded that interpretation of the structure is questionable. It has also found scattered showings of copper ore, but the lengths of mineralized core are short and the grade low, as shown on the company monthly report. Mr. Cowley said it was doubtful if the company would crosscut to test these showings.

In addition to diamond drilling, the Operator is exploring the property by ground geophysics, using an in-hole EM method. The work is being done by the Sharps Instrument Co., Toronto, Canada. In this process a cable is laid on the ground in a square, 700 feet on each side, the hole to be studied being located at the center of the square. An electric current is then induced into the ground through the cable setting up a magnetic field in the ground. The magnitude of the field is then measured by two detection coils let down the hole by a cable. These two coils are 50 feet apart. Test runs have been made in the mine, in holes passing through known ore bodies, and excellent anomalies have been obtained. Mr. Smith said that the effective distance of these EM measurements would depend on several factors but that it was hoped they would be effective up to 200 feet. He said they planned to test all of the pertinent holes and that further drilling would be influenced by the findings of the EM work.

I believe the Operator is doing as good a job as can be expected and have no suggestions for any changes in the project. The company geologists are keeping very careful watch of the project and are carefully studying and storing all core. As the program progresses, the drilling will very probably have to be changed from the holes set up on definite coordinates in the contract; however, the

target and objective will remain the same. I therefore do not believe an amendment authorizing these changes will be needed. All drilling done to date has certainly been properly directed even though some of the holes have not followed the pattern set up in the contract. I do not believe an amendment is needed to pay for these holes. I therefore recommend that all holes be paid for, with the possible exception of those holes that were stopped short of the target area. Of these, I understand the company plans to extend two of them, holes 1014 and 1015 on coordinate 13,100N, so the Operator might be instructed to resubmit the voucher when these holes are completed.

T. H. Kiilsgaard

T. H. Kiilsgaard
Geologist

RECEIVED
AUG 30 1957
Knoxville, Tenn.

OFFICIAL FILE COPY
DMEA
RECEIVED SEP 3 1957
DATE | INITIALS | CODE
9/4 | upy | 500

INTERIM REPORT ON VISIT TO OPERATING CONTRACT

DMEA 4746, Contract Idm-E 1100
Appalachian Sulphides, Inc., Elizabeth Mine,
Orange County, Vermont

This property was visited on August 16, 1957 by H. L. Burmeister, Bureau of Mines and Thor Killsgaard, Geological Survey. This report is by the engineer.

Drilling operations were visited both underground and on the surface in company with Mr. Smith, a staff geologist. Two drills were operating at the time of visit, one underground and one on the surface. One surface drill and one underground drill were temporarily idle awaiting small parts for the equipment.

The Operator's Monthly Report for July had been sent to College Park the day previous to this visit. The Operator's copy of this report was reviewed and the following error was found on page two (2) in the second sentence under Section 13,100 N. The drill hole refered to as 1026 should have been 1021. The Operator's records of drilling for the period June 13 to 30 were also reviewed with the following findings. The total footages reported in drill holes 1000, 1006, 1015 and 1018 were correct, the error in starting point having been clerical. The correct total footage drilled is therefore 2,824 and the total cost for the period $9,057.46 as reported by the Operator.

Following is a report of work done under this contract during the period August 1 to the date of visit, August 16, 1957. Equipment for making drill hole EM surveys is being employed at Operator's expense and is operated by employes of Sharpe Company. It is estimated that the EM will show influence by significant mineralization within a radius of 200 feet of the drill hole.

Section 7,442 N

No drilling has been done on this section. A drill hole EM survey will shortly be run on surface holes 1000 and 1002. After this survey a decision will be made regarding drilling another hole on this section.

Section 8,800 N

There has been no drilling on this section during this period and plans are pending for no drilling due to the belief that drilling would add nothing to information available from other holes in the area.

Section 10,100 N

No drilling was done August 1 to 16. Drill hole U-796 will probably not be deepened as proposed as S-1008 will probably give the information desired.

Section 10,900 N

Drill hole S-1008 was drilling at the time of visit. From August 1 to August 16 the hole was advanced from 541 feet to 1150 feet, a distance of 609 feet. No mineralization was encountered to 1150 feet

but it is planned to continue drilling to 1550 feet. At the time of visit one surface drill was moving to set up for hole S-1025. EM drill hole surveys will be conducted on each hole as completed.

Drill hole U-1009 will be drilled as proposed in the July report as soon as U-1010 is completed which should be about August 30.

Section 12,100 N

On August 16, drill hole U-1010 was drilling at 810 feet and had advanced 420 feet since July 30. The hole encountered 3 small sections of weak mineralization, 2 in the 255' - 285' interval and the other between 575' and 580'. No assays were available at the time of visit. It is now planned to not drill hole U-1011 as it is considered to be of less importance than U-1009.

Section 11,600

It is planned to drill hole U-1028 to check mineralization found in the footwall on Sections 12,100 N, ~~400N~~ 12,400N and 13,100 N. Other holes may be drilled on Section 11,600 depending upon results obtained in hole U-1028.

Section 12,400

From August 1 to August 16, drill hole U-1013 was advanced from 0' to 401' and encountered four (4) mineralized zones; (1) weak from 22' to 26', (2) weak, from 89' to 95', (3) 1' at 117' which was weak in copper but heavy in pyrrhotite, (4) from 139' to 183' (from 139' to 154' approximately 1.7% copper). Drill hole U-1027 started on a minus 55° inclination was advanced from 0' to 305' from August 1 to August 16. This hole encountered 5 very narrow and scattered areas

of copper mineralization not yet assayed but each of which is estimated to contain less than 1% copper. This hole is planned to bottom at 450 feet. Drill hole U-1027 was not reported on either plan for DMEA drilling but was drilled because of results obtained in U-1013.

Section 13,100 N

It is still planned to extend drill holes U-1014 and U-1015 to lengths of 850' and 900' respectively. Proposed U-1017 will probably not be drilled as U-1009 will probably furnish better information. An EM drill hole survey will be run on both U-1014 and U-1015.

Section 14,000 N

From August 1 to August 16 drill hole S-1019 advanced from 409' to 1200' a distance of 791 feet. The hole bottomed at 1200' without intercepting either amphibolite or mineralization. It appears that a new structural theory will have to be evolved to explain this. An EM drill hole survey will be attempted although the hole is very flat. It is now planned to not drill hole S-1020 because the target now appears too small.

Section 15,100 N

No drilling was done in August and none is planned for the future. Drill hole U-1023 on this section was bottomed at 702' in July, and intercepted only one small band of amphibolite. This section is considered to have been sufficiently drilled to give all necessary information.

Advance planning on drill hole specifications under this contract is extremely difficult if not impossible in detail. It is the opinion of the engineer that the Operator has used and is using good judgment in the entire exploration to date and should be allowed considerable freedom in deleting, adding and changing hole specifications as long as he stays within the limits of the contract in units and costs.

August, 1957

H. L. Burmeister
Mine Examination and Exploration Engineer

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

Budget Bureau No. 42-R1036.5

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION

PAID ON VOUCHER & SCHEDULE OF PAYMENTS K-11

OPERATOR'S MONTHLY REPORT AND VOUCHER

RECEIVED SEP 9 1957 D.M.E.A.

Month of July, 1957 Docket No. DMEA 4746 Contract No. Idm-E 1100

Operator's Name Appalachian Sulphides, Incorporated Minerals Copper

Address South Strafford, Vermont

Contract Amount, $ 62,860.00 Government Participation: 50 % Amount, $ 31,430.00

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 Contractors: E. J. Longyear Co.				11/14/57 W.P.K.		Summary
Drilling Surface	8,734.30	4,742.40	13,476.70	7,357.25	3,571.20	10,928.25
Drilling-Underground	4,212.00	2,445.60	6,657.60	4,212.00	2,445.60	6,657.60
Crosscutting						
Hole Surveys	270.00	234.00	504.00	246.00	198.00	444.00
Delays	246.00	18.00	264.00	246.00	18.00	264.00
(2) Labor and Supervision:						
Labor						
Supervision						
Technical Services						
(3) Operating Mat'ls. and Supplies:						
Timber						
Explosives						
Pipe						
Track						
Core Boxes 181@2.00	362.00	204.00	566.00	362.00	204.00	566.00
(4) Operating Equipment:						
Dozer Rental 22½ Hrs. @8.50	191.25	42.50	233.75	191.25	42.50	233.75
Purchase						
Depreciation						
(5) Initial Rehabilitation and Repairs						
(6) New Bldgs., Improvements, etc.						
(7) Miscellaneous:						
Repairs to Equipment						
Sampling and Analysis	47.00	-0-	47.00	47.00	—	47.00
Payroll Taxes						
Liability Insurance						
Incidental Allowances 3,320' Surface @ 37¢	1,228.40	667.85	1,896.25	1,019.35	490.99	1,510.34
(8) Contingencies (Specify): 1,755' Underground @ 69¢	1,210.95	703.11	1,914.06	1,210.95	703.11	1,914.06
TOTALS	16,501.90	9,057.46	25,559.36	14,891.80	7,673.40	22,565.20

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

Date Aug. 20, 1957 *Payee Appalachian Sulphides, Inc.

Per C B Benson Title Asst. Treasurer

*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)

7,445.90

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

$ 7,445.90

Signature Helen R. Miller (Authorized Certifying Officer)

Date SEP 6 1957 Vou. No. 43

(See other side)

(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 1100 in accordance with the terms of the contract. See MF-104-A

Signature [illegible] Title Mining Engr. Date 8/29/57

APPROVAL BY DMEA EXECUTIVE OFFICER OR ALTERNATE:

Signature Robert A. Lawrence Title EXECUTIVE OFFICER DMEA FIELD TEAM REGION V Date SEP 5 1957

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

OPERATOR'S UNIT COST AND PROGRESS REPORT

Month of July 195 7 Docket No. DMEA 4746 Contract No. Idm-R 1100

Operator's Name Appalachian Sulphides, Incorporated Minerals Copper

Address South Strafford, Vermont

OPERATION	UNIT	COSTS THIS MONTH	UNITS THIS MONTH	COSTS TO DATE	UNITS TO DATE	UNIT COSTS TO DATE	AUTHORIZED BY CONTRACT	
							Units	Unit Costs
~~Sinking~~ Drifting D.D. Overburden	foot	12.00	3	128.00	32	4.00	280	4.00
~~Crosscutting~~ D.D. Surface	"	3724.40	1501	6052.00	2855	2.40	6220	2.40
~~Raising~~ D.D. Surface	"	2864.65	1081	2930.90	1106	2.65	3200	2.65
~~Shafts~~ D.D. Surface	"	2063.25	655	3565.00	1132	3.15	1000	3.15
~~Winze~~ D.D. Underg'rd.	"	4212.00	1755	6657.60	2774	2.40	7500	2.40
~~Diamond~~ D.D. Undg'rd.		-	-	-	-		300	2.60
Hole ~~Chart~~ Survey	hour	270.00	45	504.00	84	6.00	192	6.00
Drilling ~~Auger~~ Pelogo	"	246.00	41	264.00	44	6.00	64	6.00
~~Stripping~~ Surf. Incid.	foot	1220.40	3320	1896.25	5125	0.37	11400	0.37
~~Trenching~~ Undg'd. Incid.	"	1210.95	1755	1914.06	2774	0.69	7000	0.69
~~Misc.~~ Buildings	hour	191.25	225	293.75	275	0.50	200	0.50
~~Misc.~~ Assays	1	47.00	47	47.00	47	1.00	203	1.00
Core Boxes	1	362.00	181	566.00	283	2.00	720	2.00
TOTAL DISTRIBUTED COSTS		16,501.90		25,559.36				TOTAL COSTS AUTHORIZED BY CONTRACT
Operating Equipment Purchased								
Initial Rehabilitation and Repairs								
New Buildings, Improvements, etc.								
TOTAL COSTS								62,560.00

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 August 26, 1957 Operator Appalachian Sulphides, Inc.

Per C B Benson Title Asst. Treasurer

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:

(Instructions on reverse)

(For Government use only)

Correct before possible adjustment for 3 abandoned holes and 132 feet of overdrilling @ $3.15 per ft.. See transmitted letter.

W. J. Burmeister

See copy of letter to operator dated 9/5/57

W A Beck

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

APPALACHIAN SULPHIDES, INC.
SOUTH STRAFFORD
VERMONT

Telephone - South Strafford 5-2411

August 26, 1957

U. S. Department of the Interior
Defense Minerals Exploration Administration
College Park, Maryland

Att: Mr. H. L. Burmeister

Re: DMEA 4746, Contract Idm-E 1100
Appalachian Sulphides, Inc.
Elizabeth Mine, Orange County, Vt.

Gentlemen:

We enclose herewith the five (5) copies of Form MF-104, which you returned to us for signature with your letter of August 23rd, together with five (5) copies of a revised Form MF-104A, showing the distribution of the total amount as you request.

We are embarrassed that the MF-104's were sent unsigned in our haste to get the reports in the mail. In checking with the accountant, I find that he assumed that only the total is required on the Form MF-104A, since that was the procedure followed in reporting on our previous DMEA contract.

In checking over again the enclosed MF-104A for July, I observe that the total surface hole footage (1132) at the $3.15 rate exceeds the 1,000 feet specified in our original application at that rate. As I assume you realize, we have eliminated some surface footage at the $2.65 rate at the expense of more footage than originally planned in the deeper holes.

Also enclosed are one copy each of the drill contractor's (Longyear) invoices for June and July drilling, which you requested.

Sincerely,

John F. Cowley

John F. Cowley
General Manager

JFC:hw
Encl.

College Park, Maryland

August 29, 1957

Memorandum

To: V. J. Lynch, Bureau Member, DMEA Field Team, Region V

From: Mine Examination and Exploration Engineer

Subject: DMEA 4746, Contract Idm-E 1109, Appalachian Sulphides Elizabeth Mine, Orange County, Vermont

Enclosed are the original and three (3) copies of forms MF-104 and MF-104A for the Operator's July report together with attached copies of a letter from the Operator dated August 26, 1957. One copy of the F. J. Longyear invoices for June and July 1957 are attached to the original of the two forms.

This report required three partial transmittals to complete by the Operator and covered a transmittal period from August 15 to 28. The second section consisted for forms MF-104 and MF-104A but did not include the drilling contractor's invoice as requested by the engineer. None of these forms were signed and no distribution of the items made on MF-104A. All forms were returned to the Operator for signature and distribution of the 13 cost categories. A partially completed form was sent the Operator for guidance. One copy of MF-104A which was again returned unsigned is being retained for the College Park files.

It has previously been noted that surface hole S-1001 was abandoned at 295 feet and hole S-1007 was abandoned at 183 feet in June. In July hole S-1003 was abandoned at 565 feet and the contract maximum of 1000 feet at $3.15 per foot was exceeded by 132 feet. If the costs for drilling the 3 abandoned holes and the 132 feet of overdrilling are

disallowed, the total disallowance would be $2,964.05. Forms MF-104 and MF-104A have been reviewed and found to be correct if the above items are not disallowed.

Extra copies of this memorandum are enclosed for explanation purposes if you wish to use them.

H. L. Darmeister

Enclosures

1. PMAMbrose 2/ Station Files
   Mining
   DMEA

APPALACHIAN SULPHIDES, INC.
SOUTH STRAFFORD
VERMONT

Telephone - South Strafford 5-2411

August 16, 1957

United States Department of the Interior
Executive Officer
Defense Minerals Exploration Administration
College Park, Maryland

DMEA Contract No. Idm-E-1100
Docket No. DMEA-4746

Gentlemen:

Referring to the Form MF-104 which we have filed for the period June 13 - 30, 1957, we wish to call attention to certain minor clerical errors in the Supporting Detail schedule Re Contract Drilling attached thereto.

The footages drilled during the period are correctly shown in the schedule. However, the starting footage on four (4) holes is shown incorrectly.

Hole No.	Reads	Should Read	Feet Drilled
SURFACE			
1000	From 1001' to 1200'	From 1000' to & including 1200'	200
1006	From 1226' to 1502'	From 1225' to & including 1502'	277
UNDERGROUND			
1015	From 266' to 685'	From 265' to & including 685'	420
1018	From 561' to 662'	From 560' to & including 662'	102

The above was discussed with and checked by Mr. Harry Burmeister on his visit here today.

Very truly yours,

Clarence B. Benson

Clarence B. Benson
Assistant Treasurer

CBB:hw

APPALACHIAN SULPHIDES, INC.
SOUTH STRAFFORD
VERMONT

Telephone - South Strafford 5-2411

August 20, 1957

United States Department of the Interior
Executive Officer
Defense Minerals Exploration Administration
College Park, Maryland

DMEA Contract No. Idm-E 1100
Docket No. DMEA 4746

Gentlemen:

We enclose herewith five (5) copies each of the following reports, covering diamond drilling for the Month of July 1957 under the above contract:

(a) Form MF 104, Operator's Monthly Report and Voucher.

(b) Form MF 104A, Operator's Unit Cost and Progress Report, including Supporting Detail Schedule Re Contract Drilling.

The diamond drilling narrative report, summary, hole logs and cross sections have been furnished previously, under date of August 15, 1957.

Very truly yours,

John F. Cowley

John F. Cowley
General Manager

JFC:hw
Encl.

APPALACHIAN SULPHIDES, INCORPORATED

ELIZABETH MINE — SOUTH STRAFFORD, VERMONT

Supporting Details - Re DMEA Form MF-104
Cost Item (1) - Independent Contracts
Period - July 1 - 31, 1957

CONTRACT DRILLING - JULY 1 - 31, 1957, Both Dates Inclusive
Per E. J. Longyear Company Invoice No. 75749 & 75750 - Dated July 31, 1957

				DMEA Rates - Per Contract No. Idm-E-1100			Actual Rates Charged by Longyear-Per Final Drilling Agreement Dated 5/10/57		
Hole No.	From	To	Footage	Size Core	Rate	Amount	Size Core	Rate	Amount
SURFACE									
1002	325'	500'	175	EX	$2.40	$420.00	EX	$2.40	$420.00
	500'	1000'	500	EX	2.65	1,325.00	EX	2.65	1,325.00
	1000'	1450'	450	EX	3.15	1,417.50	EX	2.65	1,417.50
1008	525'	541'	16	EX	2.65	42.40	EX	2.65	42.40
1003	0'	3'	3	Ovb.	4.00	12.00	Ovb.	4.00	12.00
	3'	20'	17	EX	2.40	40.80	BX & AX	2.65	45.05
	20'	500'	480	EX	2.40	1,152.00	EX	2.40	1,152.00
	500'	565'	65	EX	2.65	172.25	EX	2.65	172.25
1022	0'	20'	20	EX	2.40	48.00	NX-BX-AX	2.65	53.00
	20'	500'	480	EX	2.40	1,152.00	EX	2.40	1,152.00
	500'	1000'	500	EX	2.65	1,325.00	EX	2.65	1,325.00
	1000'	1205'	205	EX	3.15	645.75	EX	3.15	645.75
1019	0'	17'	17	EX	2.40	40.80	BX & AX	2.65	45.05
	17'	409'	392	EX	2.40	940.80	EX	2.40	940.80
Total - Surface			3,320			$8,734.30			$8,747.80
UNDERGROUND									
1023	497'	702'	205	EX	2.40	$ 492.00	EX(Flat Hole)	3.40	$ 697.00
1010	0'	390'	390	EX	2.40	936.00	EX(Flat Hole)	3.40	1,326.00
1016	0'	300'	300	EX	2.40	720.00	EX	2.40	720.00
1026	0'	200'	200	EX	2.40	480.00	EX	2.40	480.00
708	120'	430'	310	EX	2.40	744.00	EX	2.40	744.00
1012	0'	350'	350	EX	2.40	840.00	EX(Flat Hole)	3.40	1,190.00
Total - Underground			1,755			$4,212.00			$5,157.00
Totals - Surf. & Ug.			5,075			$12,946.30			$13,904.80

HOLE SURVEYS

Hole No.	Dates	Hours	Rate	Amount
SURFACE				
1002	7/1-3-8-20-23	12	$6.00	$ 72.00
1003	7/27 & 31	4	6.00	24.00
1008	7/1	1	6.00	6.00
1022	7/3-5-7-10-19-23	9	6.00	54.00
Total Surface Surveys		26		$156.00
UNDERGROUND				
1015	7/1	4	$6.00	$ 24.00
1016	7/11	4	6.00	24.00
1026	7/15	1	6.00	6.00
708	7/25	2	6.00	12.00
1012	7/31	5	6.00	30.00
1023	7/10	3	6.00	18.00
Total Underground Surveys		19		$ 114.00
Total Surveys		45		$ 270.00
Drilling Delays - Underground				
Moving				
1026 to 708	7/16 - 19	21	$6.00	$ 126.00
1015 to 1016	7/1 - 2	8	6.00	48.00
1023 to 1010	7/11 - 12	6	6.00	36.00
Total Moving Delays		35		$ 210.00
Other Delays				
1016	7/3 - 10	4	$6.00	$ 24.00
708	7/20	2	6.00	12.00
Total Delays		41		$ 246.00

APPALACHIAN SULPHIDES, INC.
SOUTH STRAFFORD
VERMONT

Telephone - South Strafford 5-2411

August 15, 1957

United States Department of the Interior
Executive Officer
Defense Minerals Exploration Administration
College Park, Maryland

Re: DMEA Contract No. Idm-E-1100
Docket No. DMEA-4746

Gentlemen:

We enclose herewith five (5) copies each of the following reports and maps relative to our Diamond Drilling Program for the MONTH OF JULY 1957:

Narrative Report on Diamond Drilling

Summary of Diamond Drilling

Diamond Drilling Record by Holes (Logs - showing assays, etc.)

100 Scale Diamond Drill Cross Sections (9 sections each)

The Operator's Monthly Report and Voucher Report will be forwarded later, being delayed until we receive the Diamond Drilling Contractor's invoice covering July drilling.

Sincerely yours,

Clarence B. Benson

Clarence B. Benson
Assistant General Manager

CBB:hw
Encl.

APPALACHIAN SULPHIDES, INC.
SOUTH STRAFFORD
VERMONT

Telephone - South Strafford 5-2411

To: Defense Minerals Exploration Administration
From: Appalachian Sulphides Inc.
Subject: Diamond Drilling, DMEA Contract No. Idm - E - 1100
Docket No. 4746

July 1 - 31, 1957

GENERAL

We are still troubled by excessive flattening of holes despite considerable research by both the drilling contractor and ourselves. During this month, one hole, DDH 1003, has had to be abandoned because of undue flattening. In this connection, it should be noted that DDH 1022, drilled at a steep initial dip, did not flatten excessively despite conditions apparently similar to those found where holes have flattened. No positive explanation for these occurrences is known at this time.

Significant mineralization has been found in only one location to date, that is, approximately 150 ft. west of the present mine workings at an approximate elevation of 650 ft. This mineralization was first encountered by two holes drilled at north coordinate 12100 in 1954, and was checked in this section by three additional holes in 1956.

In the current program, this favorable area has been checked by four holes at 13100 N and by two holes at 12400 N. The best intersection to date was in the extension of DDH 708 where 12.1 ft. assaying 1.74% Cu. was found from 156.5 to 168.6 ft.

The structure in this area is complex and difficult to interpret, but the mineralization apparently overlies the crumpled top of an anticline in the footwall amphibolite, and is in turn, overlain by the westwall band of amphibolite. Most of the intersections obtained have been of low copper content, and the few good intersections have been disconnected and small.

Drilling for July is summarized below by sections, and a tabular summary of holes is included with this report, as are cross sections and brief logs of holes.

7442 N

DDH 1002 was completed to a depth of 1450 ft., and found the amphibolites much as anticipated, except that intersections were very broad. This, it is felt, indicates that the west limb of the major syncline may be rising rather flatly, and hole 1002 probably passed rather near the bottom of the structure.

Hole 1003 would have checked this, but because of extreme flattening between 200 and 400 ft., (11° per 100 ft.), it had to be abandoned.

It has not been decided whether another hole should be drilled in the effort to reach the target intended for No. 1003.

APPALACHIAN SULPHIDES, INC.
SOUTH STRAFFORD
VERMONT
Telephone - South Strafford 5-2411

To: Defense Minerals Exploration Administration
From: Appalachian Sulphides, Inc.
Subject: Diamond Drilling, DMEA Contract No. Idm - E -1100
Docket No. 4746
July 1 - 31, 1957

8800 N

No drilling in this section during July.

10100 N

No drilling in this section during July.

10900 N

Drilling in this section was limited to 16 ft. in DDH 1008. This hole was suspended as noted in last month's report.

12100 N

DDH 1010 has been partially completed, and intersected amphibolite as expected. Mineralization found was insignificant. Minor changes in the interpretation of structure were made by comparison of this section with structure currently being outlined by drilling at 12400 N and 13100 N.

12400 N

Hole No. 708 was deepened as planned, and gave us our best intersection to date as mentioned earlier.

DDH 1012 passed through the same mineralized zone 30 ft. higher, and showed only 10.1 ft. of 0.34% Cu.

Hole No. 1013, to be drilled in August, will check the zone 20 to 30 ft. below DDH 708.

13100 N

Of the three holes intended to check mineralization found during June in DDH 1015, two were completed in July; DDH's 1016 and 1026. Proposed hole No. ~~1026~~ 1021 was not drilled because of the very low grade of mineralization encountered in hole 1016. Hole 1016 intersected 97 ft. of mineralization and 27 assays were taken. Of these, only 2, totalling 2.7 ft. gave 1% Cu. or better. (except within the main ore zone: note that 1016 and 1026 were drilled through a shaft pillar and both cross cut the main ore zone approximately 10 ft. from the collars)

Mineralization found in hole 1026 was of slightly better grade but in narrower intersections.

APPALACHIAN SULPHIDES, INC.
SOUTH STRAFFORD
VERMONT
Telephone - South Strafford 5-2411

(3)

To: Defense Minerals Exploration Administration
From: Appalachian Sulphides, Inc.
Subject: Diamond Drilling, DMEA Contract No. Idm - E - 1100
Docket No. 4746

July 1 - 31, 1957

14000 N

On the surface, DDH 1022 was drilled to a length of 1205 ft., and the rising west limb of the major amphibolite syncline was found. The inferred syncline to the west, shown on the cross sections dated July 1st, was not encountered, which would indicate that this syncline is not deep. Accordingly, DDH 1019 was changed in dip from -70° to -40° so as to be sure to intersect the west limb of the syncline to the west.

In drilling DDH 1019, a 270 ft. intersection of amphibolite has been encountered which should be the crest of an anticline, as shown. A 3 ft. zone of weak mineralization was encountered 35 ft. above the amphibolite, and this, plus weak mineralization in the amphibolite, was probably the cause of the broad magnetic anomaly found from 11100 to 11400 west. DDH 1019 will be continued to 1000 ft. in length.

A change in interpretation of amphibolite intersections in DDH 1018 will be noted on this month's cross section. This new interpretation places the mineralized zones more logically, and the structure fits more closely than indicated at 13100 N, 12400 N, and 12100 N, while still matching structure inferred at 15100 N.

The logical outcome of this comparison of sections would be to check the top of the footwall anticline, which is the locale of mineralization at 12100 N, 12400 N, and 13100 N, for mineralization at 14000 N. Probably proposed surface hole 1020 will be moved east and directed towards this target.

15100 N

Hole 1023 intersected only one band of amphibolite out to the west. This is inferred to be the bottom of the syncline of which both limbs were found at 14000 N in DDH 1018. No further drilling is planned in this section.

Respectfully submitted,

Calvert Smith

Calvert Smith
Geologist

COLLAR LOCATION
LATITUDE 12386 N
DEPARTURE 9828 W
ELEV. 752'
DIP -30°
BEARING N 90° W

APPALACHIAN SULPHIDES INC.

DIAMOND DRILL RECORD

PROPERTY ELIZABETH LOCATION 750 L. 240 Rse.

CORE
SAVED yes 120 - 430 Ft.
LOCATION Core shack
SAMPLED yes HOW split core
LOGGED BY R.C.D. & C.S.
DATE Jan. '54, July '57

D.D.H. #708 STARTED 12 - 24 - 53 COMPLETED 12 - 28 - 53 LENGTH 120.0
Extension 7 - 16 - 57 7 - 25 - 57 430.00

FOOTAGE	SUB UNIT	ROCK TYPE	DESCRIPTION	SAMPLED	SAMPLE NO.	W	% CU	% FE
0 - 65.8		Amphib.	Quartz sericite biotite coarse garnet altered amphibolite with occasional hornblende crystals					
	7.0 - 8.8		band of Quartz sericite biotite Schist					
65.8 - 112.0		Schist	Quartz sericite biotite garnet Schist					
	75.0 - 76.6		amphibolite?					
	76.6 - 80.7		biotite predominates, plus scattered sulphides	78.4 - 80.7	23822	2.3'	0.26	32.80
	108.0 - 112.0		Schist plus heavy scattered sulphides	108.0 - 112.0	23823	4.0'	1.70	23.60
112.0 - 120.0		Amphib.	Quartz hornblende biotite heavily carbonated amphibolite					
120.0 - 152.5			Same as 112.0 - 120.0					
	124.8 - 126.0		Plus sulphides	124.8 - 126.0	34022	1.2'	0.37	29.40
	149.3 - 152.5		plus sulphides, biotite	149.3 - 152.5	34023	3.2'	0.24	9.40
152.5 - 169.5		Schist	quartz biotite sericite heavily carbonated Schist with scattered to massive sulphides	152.5 - 156.5	34024	4.0'	0.18	9.20
			Weighted average	149.3 - 156.5		7.2'	0.21	9.29
	156.5 - 159.5		massive pyrrhotite	156.5 - 159.5	34025	3.0'	1.52	43.40
				159.5 - 163.5	34026	4.0'	1.61	26.60
				163.5 - 167.3	34027	3.8'	1.29	20.60
	167.3 - 168.6		massive pyrrhotite	167.3 - 168.6	34028	1.0'	3.97	40.60
			Weighted Average	156.5 - 168.6		12.1	1.74	30.39
169.5 - 183.5		Amphib.	Quartz biotite weak hornblende amphibolite with Schist bands					

SHEET NO. 2 APPALACHIAN SULPHIDES INC. HOLE NO. 708

FOOTAGE	SUB UNIT	ROCK TYPE	DESCRIPTION	SAMPLED	SAMPLE NO.	W	% CU	% FE
	175.3 - 176.7		quartz biotite sericite Schist					
	178.8 - 180.9		quartz sericite biotite Schist					
183.5 - 192.4		Schist	quartz sericite biotite Schist with many quartz stringers					
192.4 - 200.4		Amphib.	quartz biotite sericite coarse garnet altered amphibolite					
200.4 - 291.6		Schist	light colored quartz sericite biotite garnet Schist					
291.6 - 347.7		Amphib.	bands of hornblende amphibolite alternating with bands of quartz biotite sericite coarse garnet altered amphibolite.					
347.7 - 430.0			lightish color, becoming "typical" quartz sericite biotite garnet Schist					

COLLAR LOCATION
LATITUDE 7441 N
DEPARTURE 9398 W
ELEV. 1363.4
DIP - 90°
BEARING N 90° W

APPALACHIAN SULPHIDES INC.

DIAMOND DRILL RECORD

PROPERTY Elizabeth LOCATION So. Strafford, Vt.

CORE
SAVED yes
LOCATION Core Shack
SAMPLED _____ NOW _____
LOGGED BY _____
DATE June 1957 - July 1957

D.D.H. #1002 STARTED 6-26-57 COMPLETED 7-23-57 LENGTH 1450 Feet

FOOTAGE	SUB UNIT	ROCK TYPE	DESCRIPTION	SAMPLED	SAMPLE NO.	W	% CU	% FE
0 - 325.0		Schist	Quartz, Sericite, Biotite Schist, with occasional Quartz stringers. Garnets 2 - 4 mm.					
325.0 - 776.5		Schist	Same as 0 - 325.0					
776.5 - 785.7		Amphib.	"Very dark green" moderately carbonated, weak Hornblende Amphibolite.					
785.7 - 791.0		Schist	Pink, Heavily carbonated Sericite Schist.					
791.0 - 799.8		Amphib.	like 776.5 - 785.7					
799.8 - 815.5		Schist	Dark, Quartz, Sericite, Biotite Schist, moderately carbonated with 2 - 4 mm Garnets					
815.5 - 822.3		Amphib.	Coarse-grained, Hornblende Amphibolite mixed with Sericite coarse Garnet altered Amphibolite.					
822.3 - 879.4		Schist	Quartz, Sericite, Biotite Schist with abundant pin point to 10 mm Garnets, heavily carbonated.					
879.4 - 958.3		Amphib.	"Muddled" hornblende amphibolite mixed with altered amphibolite Band is heavily carbonated, contains Garnets throughout.					
	902.3 - 958.3		"Muddled" amphibolite only, with no more Garnets.					
958.3 - 1023.0		Amphib?	Heavily carbonated Biotite Schist with Biotite after Hornblende and a few coarse hornblende Crystals. A few coarse Garnets.					

SHEET NO. 2 APPALACHIAN SULPHIDES INC. HOLE NO. 1002

FOOTAGE	SUB UNIT	ROCK TYPE	DESCRIPTION	SAMPLED	SAMPLE NO.	W	% CU	% FE
1023.0 - 1111.0		Amphib.	Similar to 902.3 - 958.3					
1111.0 - 1126.4		Amphib?	Like 958.3 - 1023.0					
1126.4 -1132.0		LS	Limestone with pin point Garnets					
1132.0 - 1145.0		Amphib.	Heavily carbonated Biotite , coarse Garnet altered Amphibolite					
	1138.6 - 1140.3		Band of Sericite Schist					
1145.0 - 1194.0		Amphib.	Heavily carbonated hornblende amphibolite					
	1192.7 - 1194.0		Coarse Garnet altered amphibolite					
1194.0 - 1450.0		Schist	Rather Quartzitic Sericite Biotite Garnet Schist, dark in color weakly carbonated with occasional thin limey bands.					

COLLAR LOCATION
LATITUDE 741.8 N
DEPARTURE 9172.3 W
ELEV. 1348.27
DIP -86°
BEARING N 90° W

APPALACHIAN SULPHIDES INC.

DIAMOND DRILL RECORD

PROPERTY ELIZABETH LOCATION South Mine

CORE
SAVED yes
LOCATION Core shack
SAMPLED no HOW
LOGGED BY C.S.
DATE August 1957

D.D.H. #1003 STARTED 7-25-57 COMPLETED 7-31-57 LENGTH 565.0

FOOTAGE	SUB UNIT	ROCK TYPE	DESCRIPTION	SAMPLED	SAMPLE NO.	W	% CU	% FE
0 - 3.0			Overburden					
3.0 - 565.0			"Typical", Quartz, Sericite, biotite garnet Schist with Quartz stringers, very weakly carbonated, garnets 2 - 4 mm.					

COLLAR LOCATION
LATITUDE 10901 N
DEPARTURE 9224 W
ELEV. 1146.0'
DIP -80°
BEARING N 90° W

APPALACHIAN SULPHIDES INC.

DIAMOND DRILL RECORD

PROPERTY Elizabeth LOCATION So. Strafford, Vt.

CORE
SAVED yes
LOCATION
SAMPLED HOW
LOGGED BY C. S.
DATE June 1957

D.D.H. #1008 STARTED 6-21-57 COMPLETED LENGTH

FOOTAGE	SUB UNIT	ROCK TYPE	DESCRIPTION	SAMPLED	SAMPLE NO.	W	% CU	% FE
0 - 525.0		Schist	Quartz, Sericite, Biotite, Garnet, Schist. Garnets 2-4 mm.					
525.0 - 541.0			Same as 0 - 525.0					

COLLAR LOCATION
LATITUDE 12072.4 N
DEPARTURE 9690.8 W
ELEV. 505.62
DIP -15°
BEARING N 90° W

APPALACHIAN SULPHIDES INC.

DIAMOND DRILL RECORD

PROPERTY Elizabeth LOCATION 975 L. 210 Rse.

CORE
SAVED yes
LOCATION
SAMPLED yes HOW split
LOGGED BY C.S.
DATE August 1957

D.D.H. #1010 STARTED 7-12-57 COMPLETED LENGTH

FOOTAGE	SUB UNIT	ROCK TYPE	DESCRIPTION	SAMPLED	SAMPLE NO.	W	% CU	% FE
0 - 33.3		Amphib.	Heavily carbonated medium-grained hornblende biotite Amphibolite					
	8.2 - 10.8		Band of coarse Garnet altered Amphibolite					
	10.8 - 13.7		Band of greenish Sericite Schist					
	13.7 - 17.0		Band of coarse garnet altered Amphibolite.					
	27.6 - 28.6		Band of Sericite Schist with Sulphides	27.6 - 28.6	34037	1.0'	0.18	24.20
33.3 - 250.8		Schist	almost typical Quartz Sericite biotite Schist with Quartz stringers. not carbonated, but with a few small limey bands.					
250.8 - 255.4		Amphib.	Quartz Sericite biotite, coarse garnet altered Amphibolite.					
255.4 - 259.7		Skarn?	Greasy brown biotite Chlorite(?) Schist with scattered sulphides.	255.4 - 259.7	34038	4.3'	0.13	13.80
259.7 - 275.0		Amphib.	Like 250.8 - 255.4					
275.0 - 279.5		Schist	"Typical" Sericite Schist except for occasional thin bands of greenish Sericite					
279.5 - 285.1		Skarn?	Like 255.4 - 259.7	279.5 - 285.1	34039	5.6'	0.10	9.80
285.1 - 386.0		Schist	Quartz Sericite biotite Schist with many pinpoint to 8 mm. garnets					
	286.0 - 287.0		band of medium-grained hornblende Amphibolite					
	296.0 - 302.5		Altered Amphibolite? Some coarse garnets, rock is heavily carbonated.					
	314.0 - 324.3		Like 296.0 - 302.5 altered amphibolite?					

SHEET NO. 2 APPALACHIAN SULPHIDES INC. HOLE NO. 1010

FOOTAGE	SUB UNIT	ROCK TYPE	DESCRIPTION	SAMPLED	SAMPLE NO.	W	% CU	% FE
386.0 - 390.0		Amphib.	"Muddled", hornblende biotite amphibolite, moderately carbonated					

COLLAR LOCATION
LATITUDE 12371 N
DEPARTURE 9835 W
ELEV. 752
DIP -15°
BEARING N 90° W

APPALACHIAN SULPHIDES INC.

DIAMOND DRILL RECORD

PROPERTY ELIZABETH LOCATION 750 L. 240 Rse.

CORE
SAVED yes
LOCATION
SAMPLED yes HOW split core
LOGGED BY C.S.
DATE August 1957

D.D.H. #1012 STARTED 7-25-57 COMPLETED 7-31-57 LENGTH 350.0 Ft.

FOOTAGE	SUB UNIT	ROCK TYPE	DESCRIPTION	SAMPLED	SAMPLE NO.	W	% CU	% FE
0 - 82.6		Amphib.	Quartz biotite sericite, coarse garnet altered Amphibolite, weakly carbonated with 10-25 mm. garnets.					
82.6 - 136.5		Schist	Lightish colored quartz sericite biotite Schist with traces of sulphides, thin sulphides from 84.4 - 89.6	84.4 - 89.0	34030	4.6'	0.76	19.20
	89.0 - 89.6		Massive pyrrhotite	89.0 - 89.6	34031	0.6'	0.48	52.00
			Weighted Average	84.4 - 89.6		5.2'	0.73	22.99
				130.0 -132.2	34032	2.2'	0.53	14.20
				132.2 -136.5	34033	4.3'	1.15	28.40
			Weighted Average	130.0 -132.2		6.5'	0.94	23.59
			(Note: Core disarranged in boxes from 137' to 180'; log not fully reliable between these footages)					
136.5 - 150.3		Amphib.	"Muddled", biotite weak hornblende Amphibolite					
150.3 - 160.5		Schist	Moderately limey quartz sericite biotite Schist with scattered sulphides.	150.3 - 154.7	34034	4.4'	0.40	9.20
	154.7 - 157.3		Quartz stringer with no sulphides	157.3-160.4	34035	3.1'	0.53	14.00
			Weighted Average	150.3-160.4		10.1'	0.34	8.30
160.5 - 167.5		Amphib.	"Muddled" hornblende biotite Amphibolite					
167.5 - 238.0		Schist	like 82.6 - 136.5 but with pin point to 2 mm garnets sulphides from 167.5 - 168.8	167.5 - 168.8	34036	1.3'	3.10	20.00
			(Note: from 170' to 210', lost 13' of core)					

FOOTAGE	SUB UNIT	ROCK TYPE	DESCRIPTION	SAMPLED	SAMPLE NO.	W	% CU	% FE
238.0 - 269.0		Amphib.	Quartz hornblende biotite Amphibolite, heavily carbonated					
	252.0 - 255.0		band of coarse garnet altered amphibolite					
	263.2 - 269.0		band of coarse garnet altered amphibolite					
269.0 - 272.0		Quartz						
272.0-350.0		Schist	Quartz sericite biotite Schist, light in color becoming darker and more "typical" down hole.					

COLLAR LOCATION
LATITUDE 13131 N
DEPARTURE 9820 W
ELEV. 721 Ft.
DIP -30°
BEARING N 90° W

APPALACHIAN SULPHIDES INC.

DIAMOND DRILL RECORD

PROPERTY Elizabeth LOCATION 725 #2 Winze Sta.

CORE
SAVED Yes
LOCATION Core Shack
SAMPLED Yes HOW Split core
LOGGED BY C. S.
DATE July 18, 1957

D.D.H. # 1016 STARTED 7-2-57 COMPLETED 7-11-57 LENGTH 300.0 Ft.

FOOTAGE	SUB UNIT	ROCK TYPE	DESCRIPTION	SAMPLED	SAMPLE NO.	W	%CU	% FE
0 - 68.0		Schist	Quartz, Sericite, Biotite, Garnet Schist with 2 - 4 mm. Garnets.					
	10.0 - 27.0	Min. Zone	Plus Sulphides, Weakly scattered to almost massive. (Main Ore Zone)	10.0' - 12.2'	34595	2.2'	0.16	6.80
				12.2' - 16.0'	34596	3.8'	1.39	39.60
				16.0' - 20.0'	34597	4.0'	3.58	17.60
				20.0' - 23.0'	34598	3.0'	0.58	28.40
				23.0 - 27.0'	34599	4.0'	0.16	8.00
			Weighted Average	10.0' - 27.0'		17.0'	1.31	20.80
68.0 - 119.0		Schist	Alternating bands of Quartz, Sericite biotite Schist and Quartz biotite Sericite Schist. Garnets are pin point to 10 mm. in size.					
	76.0 - 119.0	Min. Zone	Plus weakly scattered Sulphides, massive Pyrrhotite from 116.8 to 117.5	76.0' - 80.0'	34600	4.0'	0.18	8.40
				80.0' - 83.7'	34014	3.7'	0.10	7.20
				83.7' - 89.0'	34001	5.3'	0.36	10.80
				89.0' - 91.3'	34002	2.3'	0.18	8.20
				91.3' - 93.3'	34003	2.0'	1.78	22.20
				93.3' - 97.0'	34004	3.7'	0.19	10.00
				97.0' - 101.0'	34005	4.0'	0.13	6.40
				101.0'-105.0'	34006	4.0'	0.40	22.00
				105.0'-109.8'	34007	4.8'	0.08	6.00
				109.8'-116.8'	34008	7.0'	0.08	6.60
				116.8'-117.5'	34009	0.7'	1.03	45.40
				117.5'-119.0'	34010	1.5'	0.24	7.60
			Weighted Average	76.0' - 119.0'		43.0'	0.27	10.5

SHEET NO. 2 APPALACHIAN SULPHIDES INC. HOLE NO. 1016

FOOTAGE	SUB UNIT	ROCK TYPE	DESCRIPTION	SAMPLED	SAMPLE NO.	W	% CU	% FE
119.0 - 131.4		Biotite Skarn	Mineralized brown Biotite Skarn with a few clusters of Tourmalines.	119.0'-124.0'	34011	5.0'	0.42	13.40
				124.0'-128.6'	34012	4.6'	0.27	11.10
				128.6'-131.4'	34013	2.8'	0.92	16.40
			Weighted Averages	119.0'-131.4'		12.4'	0.48	13.2
131.4 - 141.5		Amphib.	Medium grained to slightly "muddled" Quartz, Hornblende Biotite Amphibolite, heavily carbonated.					
141.5 - 150.6		Schist	Quartz, Sericite, Biotite Schist heavily carbonated, weakly scattered Sulphides throughout with massive Pyrrhotite from 144.1' to 147.9'.	141.5'-144.1'	34015	2.6'	0.18	7.40
				144.1'-147.9'	34016	3.8'	0.31	49.60
				147.9'-150.6'	34017	2.7'	0.65	10.60
			Weighted Average	141.5'-150.6'		9.1'	0.37	25.97
150.6 - 181.3		Amphib.	"Fresh" medium grained, Quartz, Hornblende, weak Biotite Amphibolite, heavily carbonated					
181.3 - 191.6		Schist	Quartz, Biotite Schist moderately carbonated, occasional Hornblende Crystals, scattered sulphides.	181.3'-186.3'	34018	5.0'	0.27	10.60
				186.3'-191.6'	34019	5.3'	0.82	18.60
191.6 - 195.0		Amphib.	Very muddled Quartzitic Biotite Hornblende Amphibolite, weakly scattered sulphides.	191.6'-195.0'	34020	3.4'	0.39	11.80
195.0 - 196.9		Skarn	Quartz and Biotite with Tourmalines, Sulphides.	195.0'-196.9'	34021	1.9'	0.57	11.80
			Weighted Average	181.3'-196.9'		15.6'	0.52	13.73
196.9 - 210.8		Schist	Quartz, Sericite, Biotite Schist moderately carbonated, weak traces of sulphides, 2 - 3 mm. Garnets.					
210.8 - 221.6		Amphib.	Heavily carbonated "Muddled" Coarse grained, Hornblende Amphibolite					
221.6 - 225.0		Schist	Quartz, Sericite, Biotite Schist					

APPALACHIAN SULPHIDES INC.

FOOTAGE	SUB UNIT	ROCK TYPE	DESCRIPTION	SAMPLED	SAMPLE NO.	W	% CU	% FE
225.0 - 234.0		Amphib.	"Muddled", heavily carbonated Quartz, Biotite, weak Hornblende Amphibolite.					
234.0 - 300.0			Dark to "typical", Quartz, Sericite, Biotite Schist with 2 - 4 mm. Garnets.					

COLLAR LOCATION
LATITUDE 13999.6 N
DEPARTURE 11143.8 W
ELEV. 1171.56
DIP -40°
BEARING N 90° W

APPALACHIAN SULPHIDES INC.

DIAMOND DRILL RECORD

PROPERTY ELIZABETH LOCATION Rosa's Hill

CORE
SAVED yes
LOCATION Core shack
SAMPLED yes HOW split core
LOGGED BY C.S.
DATE August 1957

D.D.H. #1019 STARTED 7-26-57 COMPLETED _____ LENGTH _____

FOOTAGE	SUB UNIT	ROCK TYPE	DESCRIPTION	SAMPLED	SAMPLE NO.	W	% CU	% FE
0 - 3.0			Overburden					
3.0 - 102.0			lightish quartz sericite biotite Schist with some granular limey bands.					
	63.0 - 66.0		greenish color with traces of sulphides	63.0 - 66.0	34055	3.0	0.03	8.20
102.0 - 361.5		Amphib.	Quartz biotite sericite hornblende, coarse garnet Amphibolite to altered amphibolite. Traces of sulphides, weakly to moderately carbonated.					
	265.0 - 268.2		Very weak scattered sulphides	265.0 - 268.2	34056	3.2	0.05	10.00
	297.3 - 300.0		Very weak scattered sulphides	297.3 - 300.0	34057	2.7	0.03	10.60
361.5 - 409.0			Quartzitic dark sericite biotite garnet Schist, garnets 2 - 4 mm.					

COLLAR LOCATION
LATITUDE 14000 N
DEPARTURE 10824 W
ELEV. 1172'
DIP -30°
BEARING N90°W

APPALACHIAN SULPHIDES INC.

DIAMOND DRILL RECORD

PROPERTY Elizabeth LOCATION Rosa's Hill

DDH #1022 STARTED 7-1-57 COMPLETED 7-25-57 LENGTH 1205'

CORE
SAVED yes
LOCATION core shack
SAMPLED no HOW
LOGGED BY C. S.
DATE July, 1957

FOOTAGE	SUB UNIT	ROCK TYPE	DESCRIPTION	SAMPLED	SAMPLE NO.	W	% CU	% FE
0 - 4.0			Overburden					
4.0 - 207.0		Schist	Mostly typical weakly carbonated Quartz, Sericite, Biotite, Garnet, Schist					
	4.0 - 20.0		Heavily carbonated with traces of pyrrhotite					
207.0 - 366.6		Amphib.	Quartz, Hornblende, Biotite, Amphibolite, Hornblende is medium grained to needle in size.					
366.6 - 389.3		Schist	Quartz, Sericite, Biotite, Garnet, Schist, Lightish color, weakly carbonated.					
389.3 - 398.7		Amphib.	Quartz, Sericite, Biotite, coarse Garnet, altered Amphibolite.					
398.7 - 423.0		Schist	Light greenish Quartz, Sericite, Biotite, Garnet, Schist, with Garnets pinpoint to 3 mm in size.					
423.0 - 428.8		Amphib?	"Bleached" coarse Garnet altered amphibolite					
428.8 - 1205.0		Schist	Fairly typical Quartz, Sericite, Biotite, Garnet, Schist with Quartz stringers, thin granular very limey bands.					

COLLAR LOCATION
LATITUDE 15,044.4 N
DEPARTURE 9963.5 W
ELEV. 509.77
DIP -20°
BEARING N 90° W

APPALACHIAN SULPHIDES INC.

DIAMOND DRILL RECORD

PROPERTY Elizabeth LOCATION So. Strafford, Vt.

CORE
SAVED yes
LOCATION
SAMPLED HOW
LOGGED BY C. S.
DATE June 1957

D.D.H. #1023 STARTED 6-19-57 COMPLETED 7-10-57 LENGTH 702.0 Ft.

FOOTAGE	SUB UNIT	ROCK TYPE	DESCRIPTION	SAMPLED	SAMPLE NO.	W	% CU	% FE
0 -11.0		Casing						
11.0 - 63.0		Amphib.	"Muddled", Medium grain, Amphibolite with a few traces of Sulphides @ 56.0'					
63.0 - 218.0		Schist	Quartz, Sericite, Biotite, Schist with a few traces of Sulphides @ 210.0'.					
218.0 - 220.0		Amphib.	"Muddled", Biotite, Hornblende, Amphibolite with a trace of Sulphides.					
220.0 - 485.0		Schist	Quartz, Sericite, Biotite, Schist with scattered Hornblende.					
485.0 - 492.0		Lost Core						
492.0 - 497.0		Amphib.	"Muddled", Medium grain, Hornblende, Biotite, Amphibolite					
497.0 - 556.5			Same as 492.0 - 497.0					
556.5 - 702.0			Typical Quartz, Sericite, Biotite, Garnet, Schist					

COLLAR LOCATION
LATITUDE 13131 N
DEPARTURE 9820 W
ELEV. 721'
DIP -50°
BEARING N 90° W

APPALACHIAN SULPHIDES INC.

DIAMOND DRILL RECORD

PROPERTY ELIZABETH LOCATION 725 L. #2 Winze

CORE
SAVED yes
LOCATION Core Shack
SAMPLED yes HOW split core
LOGGED BY C.S.
DATE July, 1957

D.D.H. #1026 STARTED 7 - 12 - 57 COMPLETED 7 - 15 - 57 LENGTH 200.0 Feet

FOOTAGE	SUB UNIT	ROCK TYPE	DESCRIPTION	SAMPLED	SAMPLE NO.	W	%CU	% FE
0 - 113.0		Schist	lightish quartz sericite biotite Schist					
	10.0 - 24.7		mineralized, Main Ore Zone in shaft pillar	10.0 - 12.4	34578	2.4'	0.78	7.60
				12.4 - 14.0	34579	1.6'	2.16	46.00
				14.0 - 16.0	34580	2.0'	1.61	18.00
				16.0 - 20.0	34581	4.0'	0.80	6.00
				20.0 - 24.7	34582	4.7'	2.55	16.80
			Weighted Average	10.0 - 24.7		14.7'	1.61	15.70
	65.1 - 72.0		quartz biotite sericite garnet Schist, heavily carbonated	72.0 - 73.0	34583	1.0'	0.31	10.00
	72.0 - 93.7		plus scattered sulphides with massive pyrrhotite from	73.0 - 73.6	34584	0.6'	0.32	32.00
			91.2 - 93.7	73.6 - 77.2	34585	3.6'	0.21	9.60
				77.2 - 77.4	34586	0.2	0.69	31.40
				77.4 - 80.6	34587	3.2'	0.23	7.00
				80.6 - 84.3	34588	3.7'	0.44	10.40
				84.3 - 91.2	34589	6.9'	0.18	15.00
				91.2 - 93.7	34590	2.5'	4.76	29.20
			Weighted Average	72.0 - 93.7		21.7	0.78	14.20
	110.5 - 113.0		plus scattered sulphides	110.5 - 111.9	34591	1.4'	1.21	37.80
				111.9 - 113.0	34592	1.1'	0.44	9.40
113.0 - 117.2		Skarn	Sericite biotite skarn with sulphides.	113.0 - 117.2	34593	4.2'	0.76	18.60
			Weighted Average	110.5 - 117.2		6.7'	0.80	21.10
117.2 - 200.0		Amphib.	"Muddled" quartz hornblende biotite Amphibolite with bands of carbonated quartz sericite biotite garnet Schist. 1 - 7 ft. in intersected width.					

APPALACHIAN SULPHIDES, INC.

Summary of Diamond Drilling for the month of July, 1957; DMEA Contract No. Idm-E 1100
Docket No. DMEA-4746

Dated: August 1, 1957

Hole No.	Surface or Underground	Coordinates North	Coordinates West	Collar Elev.	Bearing	Dip at Collar	Drilling July, 1957 from	to	footage	Proposed length	Notes
708	Underground	12386	9828	752	N 90° W	-30°	120'	430'	310'	430'	Hole Completed
1002	Surface	7441	9398	1363	N 90° W	-90°	325'	1450'	1125'	1450'	Hole Completed
1003	Surface	7442	9172	1348	N 90° W	-86°	0	565'	565'	1550'	Hole Abandoned
1008	Surface	10901	9224	1146	N 90° W	-80°	525'	541'	16'	1550'	Hole temporarily suspended
1010	Underground	12072	9691	506	N 90° W	-15°	0	390'	390'	950'	Hole Drilling
1012	Underground	12371	9835	752	N 90° W	-15°	0	350'	350'	350'	Hole Completed
1016	Underground	13131	9820	721	N 90° W	-30°	0	300'	300'	300'	Hole Completed
1019	Surface	14000	11144	1172	N 90° W	-40°	0	409'	409'	1000'	Hole Drilling
1022	Surface	14000	10824	1172	N 90° W	-80°	0	1205'	1205'	1200'	Hole Completed
1023	Underground	15044	9964	510	N 90° W	-20°	497'	702'	205'	700'	Hole Completed
1026	Underground	13131	9820	721	N 90° W	-50°	0	200'	200'	200'	Hole Completed
								Total:	5075'		

Summary of Drilling to Date

Footage authorized for drilling under DMEA Contract as signed June 13, 1957		19,200
Footage drilled under DMEA Contract prior to month reported above	2,824	
Footage drilled under DMEA Contract during month reported above	5,075	
Total footage drilled under DMEA Contract to date	7,899	7,899
Total footage remaining to be drilled under DMEA Contract authorization of June 13, 1957		11,301
Footage drilled on this program by Appalachian Sulphides, Inc. prior to June 13, 1957	3,602	
Footage drilled on pertinent holes 708 and 796 prior to this program by Appalachian Sulphides, Inc.	559	
Total of above footages drilled to date	12,060	
Total footage proposed for this program in revision of July 1, 1957 (subject to review as drilling progresses)	26,942	
Less total footage drilled to date (from above)	12,060	
Total footage remaining to be drilled in this program per revision of July 1, 1957	14,882	14,882

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

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION

Budget Bureau No. 42-R1036.3.
Approval expires 6-30-53.

PAID ON VOUCHER & SCHEDU
OF PAYMENTS K- 8

OPERATOR'S MONTHLY REPORT AND VOUCHER

Month of June 13 - 30, 1957 Docket No. DMEA -4746 (Copper) Contract No. Idm-E 1100
Operator's Name Appalachian Sulphides, Incorporated Minerals Copper
Address South Strafford, Vermont
Contract Amount, $ 62,860.00 Government Participation: 50% Amount, $ 31,430.00

RECEIVED AUG 30 1957 D.M.E.A.

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 Contracts:						
~~Shotholes~~		None -		6016.80	9/4/57	6016.80
Drilling By Longyear	7,188.00	This is	7,188.00	~~6640.80~~	—	~~6640.80~~
~~Bulldozing~~ 5 Hrs.@$8.50	42.50	initial	42.50	42.50	—	42.50
Crosscutting		report.				
Drifting				216.00		216.00
Hole Surveys &Drill.Delays	252.00		252.00	~~252.00~~		~~252.00~~
(2) Labor and Supervision:						
Labor						
Supervision						
Technical Services						
(3) Operating Mat'ls. and Supplies:						
Timber						
Explosives						
Pipe						
Track						
Core Boxes-Surf.65 @$2.00	130.00		130.00	130.00		130.00
-Und. 37 @$2.00	74.00		74.00	74.00		74.00
(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						
Incid. Allowances						
1805' Surface @ 37¢	667.85		667.85	490.99		490.99
~~(8) Consumables (specify)~~						
1019' Undergr. @ 69¢	703.11		703.11	703.11		703.11
TOTALS	$9,057.46		$9,057.46	~~7733.40~~ 7673.40	—	~~7733.40~~ 7673.40

Betty

I certify that the above bill is correct and just and that payment therefor has not been received.
Date 7/23/57 *Payee Appalachian Sulphides, Inc.
Per C.B. Benson Title Asst. Treasurer

*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: 3836.70
$ ~~3866.70~~
Signature Helen R Melin
(Authorized Certifying Officer)
Date AUG 28 1957 Vou. No. 38
(See other side)

3866.70

(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 1100 in accordance with the terms of the contract.

Signature K. L. Burmeister Title Mining Eng'r. Date 8/7/57

APPROVAL BY DMEA EXECUTIVE OFFICER OR ALTERNATE:

Signature V. J. Lynch Title ACTING EXECUTIVE OFFICER DMEA - REGION V Date AUG 21 1957

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.

GPO 83-38476

Form MF-104A
(April 1952)

Budget Bureau No. 42-R1151
Approval expires 6-30-53.

UNITED STATES
DEPARTMENT OF THE INTERIOR

DEFENSE MINERALS EXPLORATION ADMINISTRATION

OPERATOR'S UNIT COST AND PROGRESS REPORT

Month of June 13-30, 1957 Docket No. DMEA-4746 (Copper) Contract No. Idm-E 1100
Operator's Name Appalachian Sulphides, Incorporated Minerals Copper
Address South Strafford, Vermont

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	Var.	7,188.00	2,824	7,188.00	2,824		19,200	Various
Surveys & Delays Churn	$6/Hr.	252.00	42	252.00	42		256	$6/Hr.
Incid. Allowances Auger	Var.	1,370.96	2,824	1,370.96	2,824		19,200	Various
Stripping								
Trenching								
Test Pits								
Roads and Trails								
Bulldozing	8.50/Hr.	42.50	5 Hrs.	42.50	5 Hrs.		208	$8.50/Hr.
TOTAL DISTRIBUTED COSTS		$ 8,853.46		$8,853.46				TOTAL COSTS AUTHORIZED BY CONTRACT
Operating Equipment Purchased								
Initial Rehabilitation and Repairs								
New Buildings, Improvements, etc.								
Core Boxes		204.00	102	204.00				720.00
TOTAL COSTS		$ 9,057.46		$ 9,057.46				$ 62,860.00

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 7/23/57 Operator Appalachian Sulphides, Inc.

Per C.B. Benson Title Asst. Treasurer

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:

(Instructions on reverse)

(For Government use only)

H. L. Burmeister 8/7/57

478.0 feet of drilling @ $2.40/ft. was deducted because holes Nos. 1001 and 1007 were not completed.

VPR.

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 83-38475

ELIZABETH MINE

APPALACHIAN SULPHIDES, INC.

SOUTH STRAFFORD, VERMONT

Supporting Details - Re DMEA Form MF-104
Cost Item (1) - Independent Contracts
Period June 13 - 30, 1957

CONTRACT DRILLING - JUNE 13 - 30, 1957, Both Dates Inclusive
Per E. J. Longyear Company Invoice No. 65754 - Dated June 30, 1957

				DMEA Rates - Per Contract No. Idm-E 1100			Actual Rates Charged by Longyear-Per Final Drilling Agreement Dated 5/10/57		
Hole No.	From	To	Footage	Size Core	Rate	Amount	Size Core	Rate	Amount
SURFACE									
1000	1001'	1200'	200	EX	$3.15	$630.00	EX	$3.15	$630.00
1001	0'	2'	2	Ovb.	4.00	$ 8.00	Ovb.	4.00	$ 8.00
	3'	50'	48	EX	2.40	$115.20	BX & AX	2.65	$127.20
	51'	295'	245	EX	2.40	$588.00	EX	2.40	$588.00
1002	0'	2'	2	Ovb.	4.00	$ 8.00	Ovb.	4.00	$ 8.00
	3'	30'	28	EX	2.40	$ 67.20	BX & AX	2.65	$ 74.20
	31'	325'	295	EX	2.40	$708.00	EX	2.40	$708.00
1006	1226'	1502'	277	EX	3.15	$872.55	EX	3.15	$872.55
1007	0'	13'	13	Ovb.	4.00	$ 52.00	Ovb.	4.00	$ 52.00
	14'	165'	152	EX	2.40	$364.80	BX & AX	2.65	$402.80
	166'	183'	18	EX	2.40	$ 43.20	EX	2.40	$ 43.20
1008	0'	12'	12	Ovb.	4.00	$ 48.00	Ovb.	4.00	$ 48.00
	13'	95'	83	EX	2.40	$199.20	BX & AX	2.65	$219.95
	96'	500'	405	EX	2.40	$972.00	EX	2.40	$972.00
	501'	525'	25	EX	2.65	$ 66.25	EX	2.65	$ 66.25
Totals - Surface			1,805			$4,742.40			$4,820.15
UNDERGROUND									
1015	266'	685'	420	EX	2.40	$1,008.00	EX	2.40	$1,008.00
1018	561'	662'	102	EX	2.40	$ 244.80	EX(Flat Hole)	3.40	$ 346.80
1023	0'	11'	11	EX	2.40	$ 26.40	AX(Flat Hole)	3.65	$ 40.15
	12'	497'	486	EX	2.40	$1,166.40	EX(Flat Hole)	3.40	$1,652.40
Totals - Underground			1,019			$2,445.60			$3,047.35
Totals - Surf. & Ug.			2,824			$7,188.00			$7,867.50

HOLE SURVEYS

Hole No.	Dates	Hours	Rate	Amount
Surface				
1000	6/20	6	$6.00	$36.00
1001	6/25 & 6/26	4	$6.00	$24.00
1002	6/27-6/29	2	$6.00	$12.00
1006	6/19	6	$6.00	$36.00
1007	6/21	2	$6.00	$12.00
1008	6/22-6/27	6	$6.00	$36.00
Underground				
1015	6/14	6	$6.00	$36.00
1018	6/17	4	$6.00	$24.00
1023	6/28	3	$6.00	$18.00
	Totals	39		$234.00
Drilling Delays - Underground				
From 1018 to 1023	6/17 & 6/18	3	$6.00	$18.00
Total Surveys & Delays		42		$252.00

August 27, 1957

Mr. E. S. Benson
Assistant Treasurer
Appalachian Sulphides, Inc.
South Strafford, Vermont

Re: Docket No. DMA-4746 (Copper)
Appalachian Sulphides, Inc.
Elizabeth Mine
Orange County, Vermont
Contract Idn-K1100

Dear Mr. Benson:

The Operator's Monthly Report and Voucher and Operator's Unit Cost and Progress Report (Forms MF-104 and MF-104A) for June 1957 have been reviewed in this office.

Deductions amounting to $1324.06 have been made from the total costs claimed. This was done because diamond drill holes Nos. 1001 and 1007 were abandoned. Payment is based only on completed holes.

The deductions are as follows:

Diamond drilling			
D. D. Hole No. 1001	295 feet @ $2.40/ft	=	$708.00
D. D. Hole No. 1007	183 feet @ $2.40/ft	=	439.20
Incidentals			
Diamond drilling	478 feet @ $0.37/ft	=	176.86
Total deductions			$1,324.06

All deductions or disallowances are reviewed in the final audit which is made after completion of the contract.

A copy of the voucher as forwarded to our Finance Office is enclosed.

Very truly yours,

W. J. Lynch
Acting Executive Officer

VJL/mg

cc - Operating Committee (2)
Finance Office
Lynch
Laurence

APPALACHIAN SULPHIDES, INC.
SOUTH STRAFFORD
VERMONT

Telephone - South Strafford 5-2411

July 23, 1957

United States Department of the Interior
Executive Officer
Defense Minerals Exploration Administration
College Park, Maryland

DMEA Contract Idm-E 1100
Docket No. DMEA - 4746

Gentlemen:

Attached are five copies of:

(a) Form MF-104, Operators Monthly Report and Voucher.

(b) Form MF-104-A, Operators Unit Cost and Progress Report.

(c) Narrative - Includes general information, results of 4171 feet of diamond drilling on the project for Appalachian's account prior to execution of subject contract, revision of Exhibit A of contract based upon information not available when original Exhibit A was prepared.

(d) Summary of drilling completed and proposed, together with diamond drill logs and revised cross sections.

It will be noted that the total footage included in these revisions is in excess of the original total of 19,200 feet; however, it is quite probable that further revisions will be necessary and it is not our intent at the present time to request any additional footage over the total provided in the Contract.

Revisions of hole locations were of course expected and actually are described in the Contract as "tentative".

You will also note that the Longyear Company revised its drilling prices upward after we had submitted tentative rates in our original application to you. However, we are submitting our MF-104-A Operators Unit Cost and Progress Report on the basis of the Contract as executed.

Very truly yours,

John F Cowley

John F. Cowley
General Manager

JFC:hw
Encl.

APPALACHIAN SULPHIDES, INC.
SOUTH STRAFFORD
VERMONT

Telephone - South Strafford 5-2411

To: Defense Minerals Exploration Administration
From: Appalachian Sulphides, Incorporated
Subject: Diamond Drilling, DMEA Contract No. Idm-E 1100
May 15 - June 30, 1957

GENERAL

Considerable difficulty has been experienced by the contractor with excessive flattening of holes. Reference to the sections will show this flattening, which has been found to be as much as 12° per 100 feet, in holes No. 1000, 1001, 1006, 1007 and 1008. Holes 1000 and 1006 were surveyed by the hydrofluoric acid etch method, while holes 1001 and 1007 were surveyed with the Tro-Pari Bore Hole Instrument. Future surveys in holes will be done with the Tro-Pari Instrument.

Holes 1006 and 1000, being the first holes drilled in their respective sections were allowed to continue despite the flattening, but Nos. 1001 and 1007, which were intended to check structure at least 300 feet below Nos. 1000 and 1006 respectively had to be abandoned as their courses were coming too close to the already drilled holes.

A tabular summary of holes, giving pertinent information and footages drilled is included with this report.

Brief logs of completed holes, including assays, are also enclosed.

Cross sections to a scale 1" = 100' are enclosed and show all holes drilled, drilling, or proposed, as well as mineralized zones and amphibolites.

Geologic results of drilling to date are summarized below by sections.

7442 N

Hole No. 1000 intersected several recognizable amphibolite horizons which are inferred to be two bands in folds as shown on the cross section. Favorable locales for mineralization were found to be only very weakly mineralized and intersections were narrow. The best zone at 978 Ft. gave only 2.1 Ft. of 0.21% Cu.

Hole No. 1001 was abandoned, as explained earlier.

Hole No. 1002 will be continued down to check the indicated synclines as shown.

10900 N

Hole No. 1006 intersected the foot and hanging wall amphibolites at approximately 650' Elevation, and two mineralized zones were found between the amphibolites. One, from 732.3 - 746.0 Ft. gave 13.7 Ft. averaging 0.28% Cu and included two stringers of massive Sulphides of intersected width 2.4' and 0.5' respectively, and running 0.40% and 1.08% Cu respectively. The second zone from 768.0 Ft. to 780.0 Ft. yielded 12 Ft. of 0.36% Cu.

Other amphibolite intersections in the hole are presently inferred to represent a structure as shown on the section.

It is fully expected that this interpretation of structure will have to be changed as information comes in from the drilling.

APPALACHIAN SULPHIDES, INC.
SOUTH STRAFFORD
VERMONT

Telephone - South Strafford 5-2411

To: Defense Minerals Exploration Administration
From: Appalachian Sulphides, Inc.
Subject: Diamond Drilling, DMEA Contract No. Idm-E 1100
May 15, 1957 - June 30, 1957

10900 N - Continued

In this connection, it might be noted that all drilling, known geology and inferred structure is being continuously plotted on a three-dimensional glass model made to a scale of 1" = 100'. By doing this, sections can be compared with one another to aid in interpretation, and it is found that the inferred structures at 7442 N and at 10900 N are similar in major details.

At 10900 N, it is proposed that DDH 1008 be continued at a later date to check the depth of the indicated synclines and possible mineralization therein.

13100 N

Drilling at holes No. 1014 and 1015 has shown the footwall to be roughly 50 to 100 Ft. to the west of where it was previously thought to be at elevation 650', and a mineralized horizon at perhaps 10 Ft. in width apparently lies on the footwall amphibolite here. Grade is low across the 37 Ft. intersection obtained in DDH 1015 giving only 0.54% Cu with individual assays up to 1.71% Cu. (1.2Ft.). This hole apparently intersected the ore near the top of this horizon and the dip of the horizon appears to be rather flat, so that the 37 Ft. intersected may be far from a true width. The amphibolite intersections in the upper hole, No. 1014 are interpreted to be the westwall band which would overlie any mineralization.

Three holes are proposed to check the mineralized horizon at 50, 100, and 150 Ft. down dip. These are DDHs 1021, 1016, and 1026 respectively.

Holes No. 1014 and 1015 are scheduled for deepening as soon as the contractor makes available a heavier machine. The CP-55 machine presently in use has difficulty drilling beyond 500 Ft., and could not finish the holes. The extensions of these holes will check the position and possible mineralization on the west limb of the indicated syncline, which is believed to be the same syncline being checked by holes No. 1018 at 14,000 N and No. 1023 at 15,100 N.

14000 N and 15100 N

As no good drilling site was available at 14000 N, a site was picked at 14162 N and the hole directed to the southwest to intersect the indicated syncline between 14000 N and 14080 N. The hole as shown is projected into section.

No significant mineralization was found in DDH 1018, and mineralized zones do not fit the indicated structure well. At 15100 N, DDH 1023, which is still drilling, has intersected a very weak amphibolite horizon at 218 Ft. apparently coinciding with the amphibolite occuring in DDH 1018 from 151.5 Ft. to 174.5 Ft.

In Hole 1018, the broad intersection of amphibolite from 563 Ft. to 638 Ft. contained many repeating horizons, and is inferred to be the dragging east limb of a major syncline as shown. No mineralization was encountered within the syncline.

Respectfully submitted, July 1, 1957

Calvert Smith

Calvert Smith, Geologist

EXPLORATION PROJECT CONTRACT

APPALACHIAN SULPHIDES, INCORPORATED

DOCKET NO. DMEA 4746

REVISION, as of July 1, 1957

of

EXIBIT A

Description of the Work

The purpose of the project is to explore for ores of copper by diamond core drilling, from both surface and underground locations, with such overburden drilling as may be necessary.

It is estimated that twenty-nine drill holes will be drilled, ranging in depths from 183 to 1600 ft. the total combined footage for DMEA account not to exceed 19,200 ft. of hole. Drilling shall be done with EX size, or larger, coring bits.

The drilling shall be done along certain cross-sectional east-west planes related to the mine coordinate system, as follows:

North	Latitude	7442
"	"	8800
"	"	10084
"	"	10900
"	"	12100
"	"	12400
"	"	13100
"	"	14000
"	"	15100

Drill holes shall be reamed and cased or cemented and redrilled as necessary.

The tentative locations of the holes are shown on the attached "cross sections of the Elizabeth Mine, South Strafford, Vt., July 1, 1957" said cross sections representing the east-west planes along which drilling is to be done. The holes are tentatively delineated as shown on the attached "Summary of Diamond Drilling Completed and proposed for approval under DMEA Contract No. Idm-E 1100", and further explanations follow below.

Brief

In this revision of proposed Diamond Drilling under DMEA Contract No. Idm-E 1100, changes have been made from the original proposal for various reasons summarized below.

1. Geologic and geophysical work done after the date of original proposal has indicated new possible structure favorable to mineralization. This has made desireable the deepening of some holes, and the drilling of more holes to the west.

Brief - continued

2. Difficulty experienced with the extreme flattening of holes has necessitated the abandonment of two holes.

3. Detailed investigation done after date of original proposal showed the desireability of moving some drill sites in order to more cheaply or conveniently achieve the same ends. This meant changing some holes, leaving out others, and adding some new holes.

4. Some structural positions have been found to be further west than anticipated, requiring extension of some holes beyond their original proposed depths.

5. Holes have been left out to allow more footage for necessary changes noted above, and because structural positions they were to check are adequately checked by other drilling.

Changes are noted below in detail. The hole numbers referred to as "originally proposed" or appearing in the column under "original proposal" are those included in "Exhibit A", Docket No. DMEA - 4746, pages 1 and 2 and are here recorded as they appear in said "Exhibit A". These originally proposed holes are marked in red on the accompanying cross sections.

Hole Number	Location		Length	Dip
Plane N. 742				
Original Proposal				
1002	Surface	9155W	1,200	-65°
1001	"	9390W	900	-65°
1000	"	9630W	600	-65°
Revision				
1000	Surface	9642W	1,200	-65°
1001	(Flattened abandoned)	9399W	295	-80°
1002	"	9398W	1,450	-90°
1003	"	9170W	1,550	-86°
1024	(Additional Hole)	Surface 10700W	1,500	-75°

DDH 1000 was extended in length from 600 ft. to 1200 ft. because of geologic and geophysical work done west of the mine after the date of originally proposed drilling (1000 feet for Appalachian's account prior to date of Contract). Said work indicated the possibility of a syncline and anticline of amphibolites west of then known structures; this indicated structure was found in the extension of the hole.

Hole Number	Location	Length	Dip

DDH 1001 was begun as planned except for steepening the dip from -65° to -75° at the collar to allow for the flattening experienced in hole 1000. Despite this allowance, flattening was too great in hole 1001, and said hole was abandoned at a depth of 295 ft.

A second hole from the same site, DDH 1002, was collared at 90° in the attempt to hit the same target area intended for 1001, this hole (1002) is continuing and replaces the originally proposed DDH 1001. It is proposed to be drilled to 1450 ft. to check the indicated structure found in DDH 1000.

Originally proposed Hole No. 1002, the most easterly hole, is replaced in this revision by DDH 1003 which will be collared steeply enough to allow the hole to reach the target area despite flattening.

Hole No. 1024 is proposed to further check indicated structure to the west for mineralization.

Plane N. 8800

Original Proposal

1004	Surface	9275W	1,100 ft.	-65°
1003	"	9600W	700 ft.	-65°

Revision

1004	Surface	9600W	1,400	-72°
1005	"	9275W	1,600	-79°

DDH's 1004 and 1005 are proposed in this revision to replace originally proposed holes No. 1003 and 1004 respectively. Both holes are changed in dip at collar to allow for flattening; both holes are lengthened to check indicated structure to the west.

Plane No. 10084

796 Deepen existing hole 300 ft.

No change in this section.

Plane N. 10900

Original Proposal

1006	Surface	9250W	1,500 ft.	-65°
1005	Underground	9855W	600 ft.	-65°

Revision

1006	Surface	9225W	1,502 ft.	-65°
1007	"	9224W	183 ft.	-70°
1008	"	9224W	1,550 ft.	-80°
1009	Underground	9855W	1,000 ft.	-20°
1025	Surface	10700W	1,500 ft.	-75°

Hole No. 1006 was drilled as planned to 1502' (1225' for Appalachian's account prior to date of contract) but undue flattening caused it to check the area intended for originally proposed No. 1005. Thus originally proposed No. 1005 has been abandoned in this revision.

Hole Number	Location	Length	Dips

The flattening of hole 1006 also caused it to miss it's intended target, and this, coupled with the finding of mineralization in the hole, necessitated another hole to check the indicated structure at lower elevation. Accordingly DDH 1007 was begun to fulfill this purpose, but it too flattened unduly and had to be abandoned. DDH 1008 was begun with a dip at collar of -80°, and was drilled to 525 ft. It is proposed that this hole be continued at a later date when the drilling company perfects it's technique of drilling without undue flattening of the holes.

It is proposed to drill an underground hole DDH 1009 to check indicated structure to the west.

DDH 1025 is also proposed to check amphibolites and possible mineralization to the west of the mine area.

Plane N. 12100

Original Proposal

1008	Underground	9695W	650 ft.	-40°
1007	"	9695W	450 ft.	-13°

Revision

1010	Underground	9695W	950 ft.	-15°
1011	"	9695W	1,050 ft.	-40°

DDH's 1010 and 1011 are proposed in this revision to take the place of DDH's 1007 and 1008 respectively. Both holes are extended in depth to check further to the west.

Plane N. 12500

Original Proposal

1013	Underground	9730W	500 ft.	-17°
1012	"	9840W	450 ft.	-34°
1011	"	9840W	500 ft.	- 0°
1010	"	9840W	400 ft.	-30°
1009	"	9840W	300 ft.	- 0°

Subsequent to date of the original proposal it was found that suitable drilling sites were not available underground at coordinate 12500N, but that the section could be conveniently drilled at 12400N from two stations instead of three, and furthermore past drilling can take the place of at least one of the originally proposed holes.

Plane N. 12400

Revision

708	deepen existing hole 300 ft.			
1012	underground	9834W	350 ft.	-15°
1013	"	9834W	400 ft.	-40°

Original hole 1009 at 12400N is already drilled at 12400N; DDH 709 drilled in Dec. - Jan. 1953 - '54 by Vermont Copper Co..

Original hole 1010 at 12500N is already partially drilled at 12400N; DDH 708 drilled in Dec. 1953 by Vermont Copper Co.. If the collar is clear, it is proposed in this revision that hole 708 be deepened to 430 ft. thus fulfilling the purpose of originally proposed hole No. 1010.

Hole Number	Location	Length	Dip

Original hole 1011 at 12500N is replaced at 12400N by proposed hole No. 1012, which intersects the same structural target area intended for original No. 1011.

Original hole 1012 at 12500N is replaced at 12400N by DDH 1013 in this revision.

Original hole 1013 at 12500N is not proposed for drilling at 12400N in this revision.

Plane N. 13100

Original Holes

1017	Underground	9695	500 ft.	-68°
1016	"	9695	750 ft.	-36°
1015	"	9895	700 ft.	-53°
1014	"	9895	600 ft.	-40°

Revision

1014	Underground	9890W	850 ft.	-40°
1015	"	9889W	900 ft.	-60°
1016	"	9820W	300 ft.	-30°
1017	"	9695W	950 ft.	-35°
1021	"	9820W	230 ft.	-20°
1026	"	9820W	200 ft.	-50°

Original holes No. 1014 and 1015 were drilled as planned to depths of 552 ft. and 685 ft. respectively, with a small air operated machine. This machine was unable to finish the holes, and they are to be completed. as soon as the drilling contractor supplies a heavier machine. As neither hole intersected the inferred west limb of the major syncline to the west, it is proposed in this revision that holes 1014 and 1015 be extended by 150 ft. and 200 ft. respectively to check this limb.

Fair mineralization found in DDH 1015 at approximately 200 ft. requires further testing at lower elevation, hence, holes 1016, 1021 and 1026 are proposed in this revision to accomplish this purpose.

Original hole No. 1017 is not proposed for drilling in this revision.

Plane N. 14000

Original Holes

1018	Underground	9845W	550 ft.	-15°
1020	Surface	9980W	600 ft.	-62°
1019	"	10160W	800 ft.	-63°
1021	"	10480W	800 ft.	-63°
1022	"	10740W	600 ft.	-63°

Revision

1018	Underground	9933W	662 ft.	-15°
1019	Surface	11140W	1,000 ft.	-70°
1020	"	10480W	1,300 ft.	-80°
1022	"	10820W	1,200 ft.	-80°

Hole Number	Location	Leng	Dip

DDH 1018 was drilled as planned, except that it had to be drilled from 14162N and in a southwesterly direction to intersect the target area near 14000N. It had to be extended in depth as the west limb of the inferred syncline had not been intersected by 550 ft.

Original holes 1019 and 1020 are not proposed for drilling in this revision.

Original hole 1021 is replaced in this revision by DDH 1020, and it is proposed that DDH 1020 be drilled 500 ft. deeper that originally planned, to check possible downward extension of the indicated syncline shown on the cross section. .

Collar location of hole 1022 had to be changed as the site was inaccessible. It, like DDH 1020, should be extended beyond it's originally planned depth to check the indicated syncline.

Hole 1019 in this revision is proposed to check geologic and geophysical work recently completed. Said work indicates amphibolites, sulphides, and a fair magnetic anomaly between west coordinates 11100W and 11400W. It is proposed that this hole be extended to 1000 ft. in depth to check the indicated syncline.

It is the further intention that holes 1019 and 1022 in this revision will check structural positions at 14000N which we intended to check at 15100N with original holes 1024, 1025, and 1026. This would obviate the necessity for drilling these holes at 15100N.

Plane N. 15100

Original Holes

1023	Underground	9985W	700 ft.	-20°
1026	Surface	10450W	1,200 ft.	-45°
1025	"	10950W	800 ft.	-45°
1024	"	11305W	600 ft.	-45°

Revision

1023	Underground	9964W	700 ft.	-20°

DDH 1023 is being drilled as planned.

As previously noted, holes planned for the section 14000N adequately check structural positions which were to be intersected by original DDH's 1024, 1025, and 1026. Accordingly, these holes, original Nos. 1024, 1025, and 1026 are not proposed for drilling in this revision.

APPALACHIAN SULPHIDES, INC.

Summary of Diamond Drilling completed and proposed for approval under DMEA Contract No. Idm-E-1100

Dated July 1, 1957

A	B	C	D	E	F	G	H	I	J	K	L
1000	S	7442N	9642W	1381	N90W	-65	1200	1000	1200	200	-
1001	S	7441N	9399W	1363	N90W	-80	295	-	295	295	-
1002	S	7441N	9398W	1363	N90W	-90	1450	-	325	325	1125
1003	S	7442N	9170W	1357	N90W	-86	1550	-	-	-	1550
1004	S	8800N	9600W	1390	N90W	-72	1400	-	-	-	1400
1005	S	8800N	9275W	1325	N90W	-79	1600	-	-	-	1600
1006	S	10901N	9225W	1146	N90W	-65	1502	1225	1502	277	-
1007	S	10901N	9224W	1146	N90W	-70	183	-	183	183	-
1008	S	10901N	9224W	1146	N90W	-80	1550	-	525	525	1025
1009	U	10900N	9855W	867	N90W	-20	1000	-	-	-	1000
1010	U	12100N	9695W	505	N90W	-15	950	-	-	-	950
1011	U	12100N	9695W	505	N90W	-40	1050	-	-	-	1050
1012	U	12374N	9834W	750	N90W	-15	350	-	-	-	350
1013	U	12374N	9834W	750	N90W	-40	400	-	-	-	400
1014	U	13105N	9890W	829	N90W	-40	850	552	552	-	298
1015	U	13105N	9889W	829	N90W	-60	900	265	685	420	215
1016	U	13132N	9820W	720	N90W	-30	300	-	-	-	300
1017	U	13100N	9695W	500	N90W	-35	950	-	-	-	950
1018	U	14162N	9933W	510	S75W	-15	662	560	662	102	-
1019	S	14000N	11140W	1170	N90W	-70	1000	-	-	-	1000
1020	S	14000N	10480W	1120	N90W	-80	1300	-	-	-	1300
1021	U	13132N	9820W	720	N90W	-20	230	-	-	-	230
1022	S	14000N	10820W	1175	N90W	-80	1200	-	-	-	1200
1023	U	15044N	9964W	510	N90W	-20	700	-	497	497	203
1024	S	7442N	10700W	1500	N90W	-75	1500	-	-	-	1500
1025	S	10900N	10700W	1500	N90W	-75	1500	-	-	-	1500
1026	U	13132N	9820W	720	N90W	-50	200	-	-	-	200
*708	U	12386N	9828W	752	N90W	-30	430	(130)	130	-	300
*796	U	10088N	9779W	868	N90W	-75	740	(439)	439	-	301
					TOTALS		26,942	4171	6995	2824	19,947

Explanation of Columns

A - Hole No.
B - Surface or Underground
C - North Coordinate
D - West Coordinate
E - Elevation of collar, feet
F - Bearing of hole
G - Dip of hole, degrees
H - Completed or proposed depth
I - Depth, June 12, 1957
J - Depth, June 30, 1957
K - Footage, June 12 - June 30, 1957
L - Footage proposed after June 30, 1957

*Holes 708 and 796 drilled prior to May 15, 1957. All other holes drilled since that date.

NOTES

1.) Column I represents drilling done by Appalachian Sulphides, Inc. prior to June 13th 1957 and not included in DMEA Contract.

2.) Column K represents footage drilled from June 13th 1957 to June 30th 1957; this footage is proposed for inclusion in DMEA Contract.

3.) Column L represents footage proposed for drilling starting at date of this summary, and hence proposed for inclusion in DMEA Contract.

COLLAR LOCATION
LATITUDE 7442 N
DEPARTURE 9642 W
ELEV. 1381.09
DIP -65°
BEARING N90°W

APPALACHIAN SULPHIDES INC.

DIAMOND DRILL RECORD

PROPERTY Elizabeth LOCATION South Strafford South Mine

CORE
SAVED yes
LOCATION
SAMPLED HOW
LOGGED BY C.S.
DATE June 1957

D.D.H. #1000 STARTED 5/16/57 COMPLETED 7/3/57 LENGTH 1200 Ft.

FOOTAGE	SUB UNIT	ROCK TYPE	DESCRIPTION	SAMPLED	SAMPLE NO.	W	% CU	% FE
0 - 10.0		Over-Burden						
10.0 - 372.3		Schist	"Typical" Dark - Quartz, Sericite, Biotite, Garnet, Schist. Garnets 2-4 mm.					
372.3 - 374.0		Altered Amphib.	"Bluish" - Quartz, Sericite, Biotite, Garnet, Carbonated, Altered Amphibolite, with Biotite Rosettes. Garnets 6-18 mm.					
374.0 - 377.0		Amphib.	"Muddled" - Quartz, Hornblende, Biotite, Carbonated, Amphibolite. No Garnets.					
377.0 - 380.0		Altered Amphib.	Same as 372.3 - 374.0 Garnets 6-18 mm.					
380.0 - 394.0		Amphib.	"Muddled" - Quartz, Hornblende, Biotite. Amphibolite with some carbonates, and scattered Garnets. Skarny in places. Garnets 1-2 mm.					
394.0 - 396.5		Schist	Quartz, Sericite, Biotite, Schist. Moderately carbonated, with weak traces of Sulphides. Garnets 2-4 mm.					
396.5 - 409.0		Amphib.	"Muddled" - Quartz, Hornblende, Biotite, Amphibolite with some carbonates. Pinpoint Garnets scattered and heavy in bands.					
409.0 - 413.6		Schist	Quartz, Sericite, Biotite, Garnet, Schist. Scattered pinpoint Garnets.					

FOOTAGE	SUB UNIT	ROCK TYPE	DESCRIPTION	SAMPLED	SAMPLE NO.	W	% CU	% FE
413.6 - 426.4		Amphib.	"Muddled" - Quartz, Biotite, Hornblende, Sericite Amphibolite. Moderately carbonated. Occassional Garnets 4-6 mm.					
426.4 - 429.0		Schist	Quartz, Sericite, Biotite, Schist. Moderately carbonated with weak scattered Sulphides. Garnets 4-6 mm.					
429.0 - 439.5		Amphib.	"Muddled" to fresh medium grained. Quartz, Hornblende, Biotite Amphibolite. Moderately carbonated with weak scattered Sulphides. Garnets 2-6 mm.					
439.5 - 441.0		Altered Amphib.	Quartz, Sericite, Biotite, Coarse Garnet, Altered Amphibolite. Weakly carbonated. Garnets 10-20-mm.					
441.0 - 808.0		Schist	Quartz, Sericite, Biotite, Garnet Schist. Carbonated to weakly carbonated and bleached in places. Few scattered Garnets. Garnets 2-4 mm.					
808.0 - 813.0		Altered Amphib.	"Dark" - Quartz, Greenish Sericite, Biotite, coarse Garnets altering to Biotite. Carbonated to weakly carbonated Schist with traces of Sulphides. Garnets 8-12 mm.					
813.0 - 901.0		Schist	Quartz, Sericite, Biotite Schist. (Not Typical) weakly carbonated and bleached. Garnets pinpoint to 2-4 mm.					
901.0 - 938.2		Altered Amphib.	"Dark" - Quartz, Sericite, Biotite altered Amphibolite. Occasional Hornblende. Garnets altering to Biotite. Garnets pinpoint to 20 mm.					
938.2 - 948.6		Amphib.	"Muddled" Fresh Medium Grain. Quartz, Hornblende, Biotite Amphibolite. Heavily carbonated. No Garnets.					
948.6 - 958.0		Altered Amphib.	Quartz, Sericite, Biotite, some coarse Hornblende, altered Amphibolite. Weakly carbonated Biotite Lathes and Rosettes. Garnets 6-25 mm.					

FOOTAGE	SUB UNIT	ROCK TYPE	DESCRIPTION	SAMPLED	SAMPLE NO.	W	% CU	% FE
958.0 - 977.4		Schist	Quartz, Sericite, Biotite, Garnet Schist. Moderately carbonated. Heavy Tourmaline and scattered Sulphides. Garnets 2-4 mm.					
977.4 - 979.5		Mlz'd Zone		977.4-979.5'	34577	2.1'	0.21	[illegible]
979.5 - 1014.5		Amphib.	"Muddled" - Quartz, Biotite, Hornblende Amphibolite, moderately carbonated. Bleached in places. Few scattered Garnets 2-6 mm.					
1014.5 - 1019.0		Altered Amphib.	Quartz, Sericite, Biotite, coarse Garnet altered Amphibolite. Weakly carbonated. Garnets 4-20 mm.					
1019.0 - 1029.0		Amphib.	"Muddled" Fine grain. Quartz, Heavy Hornblende, Biotite Amphibolite. Moderately carbonated with traces of Sulphides. No Garnets.					
1029.0 - 1034.0		Altered Amphib.	Quartz, Greenish Sericite, Biotite, coarse Garnet altered Amphibolite. Weakly carbonated. Garnets 6-20 mm.					
1034.0 - 1051.3		Schist	Quartz, Sericite, Biotite Schist with scattered Garnets. Garnets 2-4 mm.					
1051.3 - 1055.0		Altered Amphib.	Quartz, Green Sericite, Biotite, coarse Garnet altered Amphibolite. Moderately carbonated. Garnets pinpoint to 20 mm.					
1055.0 - 1079.5		Schist	Quartz, Sericite, Biotite Schist. (Not Typical) Garnets 2-4 mm.					
1079.5 - 1080.7		Altered	Quartz, green Sericite, Biotite, Garnet Schist. Moderately carbonated. Garnets 4-18 mm.					

APPALACHIAN SULPHIDES INC.

FOOTAGE	SUB UNIT	ROCK TYPE	DESCRIPTION	SAMPLED	SAMPLE NO.	W	% CU	% FE
1080.7 - 1088.0		Schist	Quartz, Sericite, Biotite, Garnet Schist. Moderately carbonated. Garnets 2-4 mm.					
1088.0 - 1089.0		Altered Amphibolite	Same as 1079.5' - 1080.7'					
1089.0 - 1141.4		Schist	Same as 1080.7' - 1088.0'					
1141.4 - 1142.6		Altered Amphib.	Quartz, green Sericite, Biotite, coarse Garnet altered Amphibolite. Garnets 4-18 mm.					
1142.6 - 1145.4		Schist	Same as 1080.7' - 1088.0'					
1145.4 - 1148.0		Altered Amphib.	Green Sericite, Quartz, Biotite, Garnet Schist. Moderately carbonated . Garnets 4-18 mm.					
1148.0 - 1200.0		Schist	Quartz, Sericite, Biotite, Garnet Schist. Weakly carbonated. Garnets 2-4 mm.					

COLLAR LOCATION
LATITUDE 7441 N
DEPARTURE 9399 W
ELEV. 1363.0
DIP - 79°
BEARING N 90° W

APPALACHIAN SULPHIDES INC.

DIAMOND DRILL RECORD

PROPERTY Elizabeth LOCATION So. Strafford, Vt.

CORE
SAVED yes
LOCATION
SAMPLED HOW
LOGGED BY C. S.
DATE June 1957

D.D.H. #1001 STARTED 6-21-57 COMPLETED 6-26-57 LENGTH 295 Ft.

FOOTAGE	SUB UNIT	ROCK TYPE	DESCRIPTION	SAMPLED	SAMPLE NO.	W	% CU	% FE
0 - 295.0		Schist	Quartz, Sericite, Biotite Schist. Hole abandoned @ 295 Ft. due to excessive flattening.					

COLLAR LOCATION
LATITUDE 7441 N
DEPARTURE 9398 W
ELEV. 1363.4
DIP - 90°
BEARING N 90° W

APPALACHIAN SULPHIDES INC.

DIAMOND DRILL RECORD

PROPERTY Elizabeth LOCATION So. Strafford, Vt.

CORE
SAVED yes
LOCATION
SAMPLED HOW
LOGGED BY
DATE June 1957

D.D.H. #1002 STARTED 6-26-57 COMPLETED LENGTH

FOOTAGE	SUB UNIT	ROCK TYPE	DESCRIPTION	SAMPLED	SAMPLE NO.	W	% CU	% FE
0 - 325.0		Schist	Quartz, Sericite, Biotite Schist.					

COLLAR LOCATION
LATITUDE 10901 N
DEPARTURE 9225 W
ELEV. 1145.9
DIP -65°
BEARING N 90° W

APPALACHIAN SULPHIDES INC.

DIAMOND DRILL RECORD

PROPERTY Elizabeth LOCATION So. Strafford, Vt.

CORE
SAVED yes
LOCATION
SAMPLED yes HOW split
LOGGED BY C. S.
DATE June 1957

D.D.H. #1006 STARTED 5-16-57 COMPLETED 6-18-57 LENGTH 1502 Ft.

FOOTAGE	SUB UNIT	ROCK TYPE	DESCRIPTION	SAMPLED	SAMPLE NO.	W	% CU	% FE
0 - 657.0		Schist	Quartz, Sericite, Biotite, Garnet Schist. Bleached and carbonated in places, with occasional Quartz stringers and bands of Hornblende. Garnets 2-4 mm.					
657.0 - 676.5		Altered Amphib.	Quartz, Biotite, Sericite, Garnet, Schist. Moderately carbonated altered amphibolite with occasional Hornblende. Garnets 10-30 mm.					
676.5 - 684.5		Schist	"Typical", Quartz, Sericite, Biotite, Garnet, Schist. Weakly carbonated. Garnets 2-4 mm.					
684.5 - 686.0		Amphib.	"Muddled" to skarny coarse Hornblende, Biotite, Quartz, Garnet Amphibolite. Trace of scattered Sulphides. Garnets 2-10 mm.					
686.0 - 686.7		Schist	Quartz, Sericite, Biotite, Garnet, Schist. Weakly carbonated. Garnets 2-10 mm.					
686.7 - 690.3		Amphib.	Quartz, medium grained, Hornblende, somewhat bleached Amphibolite. Garnets 2-10 mm.					
690.3 - 700.0			Light, Quartzitic, Quartz, Sericite, Biotite, Garnet Schist. Garnets pin point to 4 mm.					
700.0 - 732.3		Amphib.	Fresh, Medium Grain, Quartz, Hornblende, Amphibolite. Some disseminated Biotite and traces of Sulphides.					
732.3 - 734.0		Schist	Quartzitic, Sericite, Biotite, Schist. Moderately carbonated with traces of scattered Sulphides.	732.3-734.2'	34566	1.9	0.36	14.00

FOOTAGE	SUB UNIT	ROCK TYPE	DESCRIPTION	SAMPLED	SAMPLE NO.	W	% CU	% FE
734.0 - 734.8		Amphib.	Fresh, Quartz, Hornblende, weak Biotite Amphibolite with scattered Sulphides.	732.3'-734.2'	34567	1.9'	0.36	14.00
734.8 - 740.9		Schist	Weak Chalcopyrite and Pyrrhotite in fractures.	734.9'-740.9'	34568	0.7'	0.16	5.00
740.9 - 743.3	74	Mlzd. Zone	Massive Pyrrhotite, weak Chalcopyrite.	740.9'-743.3'	34569	6.0'	0.16	5.80
743.3 - 745.6		Schist	Scattered Sulphides.	743.3'-745.6'	34570	2.3'	0.32	8.60
745.6 - 746.0		Mlzd. Zone	Massive Pyrrhotite, fair Chalcopyrite.	745.6'-746.0'	34571	0.4'	1.08	33.00
			Weighted Average	732.3'-746.0'		13.7'	0.28	15.79
746.0 - 766.7		Schist	Sericite, Biotite, Schist.					
766.7 - 768.0		Amphib.	"Muddled", Quartz, Hornblende, carbonated Amphibolite with pinpoint Garnets.					
768.0 - 775.2		Skarn	Quartz, Biotite, Sericite, Skarn with scattered Sulphides.	768.0'-775.2'	34572	7.2'	0.31	11.80
775.2 - 780.0		Amphib.	Quartz, Hornblende, Actinolite, Biotite, almost skarny Amphibolite with scattered Sulphides.	775.2'-780.0'	34573	4.8'	0.44	9.00
			Weighted Average	768.0'-780.0'		12.0'	0.36	10.68
780.0 - 789.2		Altered Amphib.	"Muddled", altered Amphibolite. Garnets 6-15 mm.					
789.2 - 831.9		Schist	Quartz, Sericite, Biotite, Garnet Schist. Garnets 2-15 mm.					
831.9 - 843.6		Amphib.	Quartz, Biotite, Hornblende, heavily carbonated Amphibolite Garnets up to 6 mm.					

SHEET NO. 3 APPALACHIAN SULPHIDES INC. HOLE NO. 1006

FOOTAGE	SUB UNIT	ROCK TYPE	DESCRIPTION	SAMPLED	SAMPLE NO.	W	% CU	% FE
843.6 - 846.8		Skarn	Biotite, Sericite, Skarn with scattered traces of Sulphides.	843.6'-846.8'	34574	3.2'	0.11	7.20
846.8 - 856.4		Amphib.	Quartz, Biotite, Hornblende, Garnet Amphibolite. Garnets up to 6 mm.					
856.4 - 859.8		Schist	Quartz, Sericite, Biotite, Schist. Garnets up to 2 mm.					
859.8 - 861.5		Amphib.	Same as 831.9 - 843.6.					
861.5 - 982.6		Schist	Quartz, Sericite, Biotite, Schist. Carbonated and weakly bleached. Garnets pin point to 4 mm.					
982.6 - 993.0		Amphib.	"Muddled", Fine Grain, Quartz, Hornblende, Biotite Amphibolite. Garnets up to 6 mm.					
993.0 - 996.0		Schist	Quartz, Biotite, Schist. Heavy pin point Garnets.					
996.0 - 1001.0		Amphib.	Quartz, Biotite, Hornblende, Amphibolite. Garnets up to 6 mm.					
1001.0 - 1003.0		Altered Amphib.	Quartz, Biotite, Sericite, coarse Garnet, Amphibolite. Garnets up to 20 mm.					
1003.0 - 1010.4		Amphib.	Same as 996.0' - 1001.0'					
1010.4 - 1221.0		Schist	Quartz, Sericite, Biotite, Garnet Schist. Moderately carbonated, bleached in places. Garnets pin point to 6 mm.					
1221.0 - 1224.7		Altered Amphib.	Quartz, Biotite, Sericite, coarse Garnet Schist. Garnets up to 12 mm.					
1224.7 - 1226.0		Schist	Quartz, Sericite, Biotite, weakly carbonated Schist. Garnets pin point to 4 mm.					

SHEET NO. 4 APPALACHIAN SULPHIDES INC. HOLE NO. 1006

FOOTAGE	SUB UNIT	ROCK TYPE	DESCRIPTION	SAMPLED	SAMPLE NO.	W	% CU	% FE
1226.0 - 1227.7		Altered Amphib.	Same as 1221.0 - 1224.7					
1227.7 - 1229.0		Amphib.	"Muddled", Quartz, Hornblende, Biotite, Garnet Amphibolite. Garnets up to 12 mm.					
1229.0 - 1237.7		Schist	Quartz, Sericite, Biotite, Garnet Schist. weakly carbonated. Garnets pin point to 4 mm.					
1237.7 - 1250.3		Amphib.	"Muddled", Quartz, Hornblende, Biotite Amphibolite. Moderately carbonated with a few scattered 10mm. Garnets.					
1250.3 - 1255.5		Schist	Quartz, Biotite, Schist. Heavy to massive pin point Garnets.					
1255.5 - 1314.0		Amphib.	Fresh, Medium Grain, weakly carbonated, weak Biotite, Needle Hornblende, Garnet, Amphibolite. Garnets pinpoint to 6 mm.					
1314.0 - 1372.0		Schist	Quartz, Sericite, Biotite, Schist. Moderately to heavily carbonated with weak traces of Sulphides. Garnets pin-point to 4 mm.					
1372.0 - 1377.0		Altered Amphib.	Quartz, Biotite, Sericite, Garnet altered Amphibolite. Moderately carbonated with some Hornblende. Garnets 4-18 mm.					
1377.0 - 1436.8		Amphib.	Quartz, Hornblende, Biotite, Garnet Amphibolite. Garnets 6-10 mm.					
1436.8 - 1437.5		Schist	Quartz, Biotite, Sericite, Schist with scattered Sulphides.					
1437.5 - 1440.2		Amphib.	"Muddled", Heavy Biotite Amphibolite with traces of Sulphides. Garnets up to 10 mm.					
1440.2 - 1502.0		Schist	Quartz, Sericite, Biotite, Garnet Schist. Weakly carbonated.					

COLLAR LOCATION
LATITUDE 10901 N
DEPARTURE 9224 W
ELEV. 1145.9
DIP -70°
BEARING N 90° W

APPALACHIAN SULPHIDES INC.

DIAMOND DRILL RECORD

PROPERTY Elizabeth LOCATION So. Strafford, Vt.

CORE
SAVED yes
LOCATION
SAMPLED HOW
LOGGED BY C. S.
DATE June 1957

D.D.H. #1007 STARTED 6-19-57 COMPLETED 6-21-57 LENGTH 183 Ft.

FOOTAGE	SUB UNIT	ROCK TYPE	DESCRIPTION	SAMPLED	SAMPLE NO.	W	% CU	% FE
C - 183.0		Schist	Quartz, Sericite, Biotite, Garnet, Schist. Garnets 2-4 mm.					

COLLAR LOCATION
LATITUDE 10901 N
DEPARTURE 9224 W
ELEV. 1146.0'
DIP -80°
BEARING N 90° W

APPALACHIAN SULPHIDES INC.

DIAMOND DRILL RECORD

PROPERTY Elizabeth LOCATION So. Strafford, Vt.

CORE
SAVED yes
LOCATION
SAMPLED HOW
LOGGED BY C. S.
DATE June 1957

D.D.H. #1008 STARTED 6-21-57 COMPLETED LENGTH

FOOTAGE	SUB UNIT	ROCK TYPE	DESCRIPTION	SAMPLED	SAMPLE NO.	W	% CU	% FE
0 - 525.0		Schist	Quartz, Sericite, Biotite, Garnet, Schist. Garnets 2-4 mm.					

COLLAR LOCATION
LATITUDE 13105.1 N
DEPARTURE 9889.9 W
ELEV. 828.5'
DIP -40°
BEARING N 90° W

APPALACHIAN SULPHIDES INC.

DIAMOND DRILL RECORD

PROPERTY Elizabeth LOCATION So. Strafford, Vt.

CORE
SAVED yes
LOCATION
SAMPLED yes HOW split core
LOGGED BY C. S.
DATE June 1957

D.D.H. #1014 STARTED ~~5-24-57~~ COMPLETED LENGTH

FOOTAGE	SUB UNIT	ROCK TYPE	DESCRIPTION	SAMPLED	SAMPLE NO.	W	%CU	% FE
0 - 80.8		Schist	Quartz, Sericite, Garnet, Schist. Weakly carbonated. Garnets pin point to 4 mm.					
80.8 - 93.0		Altered Amphib.	Quartz, Biotite, Sericite, Garnet, Schist. Moderately carbonated. Black Biotite occuring in Lathes. Garnets 4-18 mm.					
93.0 - 107.5		Amphib.	"Muddled", Quartz, Biotite, Hornblende, Amphibolite. Heavily carbonated and bleached with traces of Sulphides. Garnets 2-12 mm.					
107.5 - 109.8		Schist	Bleached, Quartz, Sericite, Schist with weak scattered Sulphides.	107.5'-109.8'	34545	2.3'	0.13	7.00
109.8 - 111.0		Schist	Same as 107.5 - 109.8. No Sulphides.					
111.0 - 125.0		Altered Amphib.	Quartz, Biotite, Sericite, Schist. Moderately carbonated with scattered Hornblende. Garnets 4-18 mm.					
125.0 - 128.0		Altered Amphib.	Same as 111.0 - 125.0 except with scattered Sulphides	125.0'-127.0' 127.0'-128.0'	34546 34547	2.0' 1.0'	0.36 0.18	7.40 9.40
128.0 - 128.3		Mlzd. Zone	Massive Pyrrhotite, weak Chalcopyrite stringers.	128.0'-128.3'	34548	0.3'	0.11	32.60
128.3 - 129.5		Altered Amphib.	Same as 125.0 - 128.0	128.3'-129.5'	34549	1.2'	0.16	9.40
			Weighted Average	125.0'-129.5'		4.5'	0.25	10.28

SHEET NO. 2

APPALACHIAN SULPHIDES INC.

HOLE NO. 1014

FOOTAGE	SUB UNIT	ROCK TYPE	DESCRIPTION	SAMPLED	SAMPLE NO.	W	% CU	% FE
129.5 - 143.5		Schist	Quartz, Sericite, Biotite, Garnet, Schist. Weakly carbonated. Garnets 2-4 mm.					
143.5 - 151.0		Amphib.	"Muddled", Quartz, Biotite, weak Hornblende, Amphibolite. Moderately carbonated. Garnets 3-10 mm.					
151.0 - 163.5		Altered Amphib.	Quartz, Biotite, Sericite, Garnet Schist. Moderately carbonated. Heavy Biotite and coarse Hornblende. Garnets 4-18 mm.					
163.5 - 172.0		Amphib.	Same as 143.5 - 151.0 except Garnets 3-6 mm.					
172.0 - 221.5		Schist	Quartz, Sericite, weak Biotite, Schist. Bleached and weakly carbonated. Garnets pin point to 4 mm.					
221.5 - 226.0		Amphib.	"Muddled", Quartz, Biotite, Hornblende, Amphibolite. Heavily carbonated.					
226.0 - 228.0		Schist	Biotite, Garnet, Schist. Garnets 4-8 mm.					
228.0 - 236.5		Altered Amphib.	Quartzitic, Sericite, Biotite, Schist. Weakly carbonated and a few scattered Sulphides. Garnets 2-25 mm.					
236.5 - 552.0		Schist	Quartz, Sericite, Biotite, Garnet Schist. Bleached and skarny in places with occasional Quartz stringers. Moderately carbonated. Garnets pin point to 4 mm.					

COLLAR LOCATION
LATITUDE 13105.1 N
DEPARTURE 9888.9 W
ELEV. 828.5'
DIP -60°
BEARING N 90° W

APPALACHIAN SULPHIDES INC.

DIAMOND DRILL RECORD

PROPERTY Elizabeth LOCATION So. Strafford, Vt.

CORE
SAVED yes
LOCATION
SAMPLED yes NOW split core
LOGGED BY C. S.
DATE June 1957

D.D.H. #1015 STARTED 6-10-57 COMPLETED LENGTH

FOOTAGE	SUB UNIT	ROCK TYPE	DESCRIPTION	SAMPLED	SAMPLE NO.	W	%CU	% FE
0 - 813.		Schist	Quartz, Sericite, Biotite, Garnet Schist. Occasional Quartz stringers with a few scattered Sulphides, Garnets pin point to 4 mm.					
81.3 - 84.0		Altered Amphib.	Quartz, Biotite, Sericite, Garnet Schist. Garnets altered to Biotite in places. Moderately carbonated. Garnets 4-18 mm.					
84.0 - 88.0		Amphib.	"Muddled", Quartz, Biotite, Hornblende Amphibolite. Moderately carbonated. Scattered Garnets 4-10 mm.					
88.0 - 96.0		Altered Amphib.	Quartz, Biotite, Sericite, Garnet Schist. Moderately carbonated and weak scattered Sulphides. Garnets 10-30 mm.					
96.0 - 102.0		Amphib.	Quartz, Biotite, Hornblende Amphibolite. Weak trace of scattered Sulphides.					
102.0 - 108.5		Amphib.	Moderately to strongly bleached with scattered Sulphides.	102.0'-105.5'	34551	3.5'	0.16	7.60
				105.5' -108.5'	34552	3.0'	0.11	7.20
			Weighted Average	102.0'-108.5'		6.5'	0.14	7.42
108.5 - 186.5		Schist	Quartz, Sericite, Biotite, Schist. Bleached and occasional Quartz stringers. A few traces of Sulphides.					
186.5 - 187.7		Schist	Quartz, Biotite, Schist with some fair Chalcopyrite.	186.5-187.7'	34553	1.2'	1.65	13.80
187.7 - 193.0		Mlzd. Zone	Massive Pyrrhotite and some Chalcopyrite	187.7'-190.0'	34554	2.3'	0.65	40.60
				190.0'-191.2'	34555	1.2'	1.71	43.80
				191.2'-193.4'	34556	2.2'	0.71	45.00

FOOTAGE	SUB UNIT	ROCK TYPE	DESCRIPTION	SAMPLED	SAMPLE NO.	W	% CU	% FE
193.0 - 197.5		Mlzd. Zone	Schist with scattered Sulphides.	193.4'-194.7'	34557	1.3'	0.95	25.60
				194.7'-197.5'	34558	2.8'	1.08	19.00
197.5 - 200.4		Mlzd. Zone	Massive Pyrrhotite	197.5'-200.4'	34559	2.9'	0.39	47.40
204.0 - 223.5		Mlzd. Zone	Weak scattered Sulphides,	200.4'-206.0'	34560	5.6'	0.27	7.20
				206.0'-211.0'	34561	5.0'	0.21	6.20
				211.0'-214.3'	34562	3.3'	0.19	6.00
				214.3'-216.3'	34563	2.0'	0.53	16.60
				216.3'-221.3'	34564	5.0'	0.55	12.20
				221.3'-223.5'	34565	2.2'	0.53	17.60
			Weighted Average	186.5'-223.5'		37.0'	0.56	19.18
223.5 - 224.3		Schist	Biotite, Quartz, Sericite, Schist.					
224.3 - 228.0		Altered Amphib.	Quartz, Biotite, Sericite, Garnet, Schist. Garnets altering to Biotite. Garnets 15-30 mm.					
228.0 - 251.6		Schist	Quartz, Sericite, Biotite, Schist. Weakly carbonated. Occasional Quartz stringer. Garnets 2-6 mm.					
251.6 - 302.6		Amphib.	"Muddled", Quartz, Biotite, Hornblende, Garnet, Amphibolite Garnets pin point - 30 mm.					
302.6 - 319.0		Schist	Quartz, Sericite, Biotite Schist. Garnets pin point to 4 mm.					
319.0 - 320.5		Altered Amphib.	Quartz, Sericite, Biotite, Garnet altered Amphibolite. Garnets 10-20 mm.					
320.5 - 359.5		Amphib.	"Muddled", Quartz, Biotite, Hornblende, Garnet, Amphibolite. Moderately carbonated. Garnets pin point to 20 mm.					

SHEET NO. 3 APPALACHIAN SULPHIDES INC. HOLE NO. 1015

FOOTAGE	SUB UNIT	ROCK TYPE	DESCRIPTION	SAMPLED	SAMPLE NO.	W	% CU	% FE
359.5 - 414.5		Schist	Quartz, Sericite, Biotite, Garnet Schist. Weakly carbonated with occasional Quartz stringers. Garnets pin point to 4 mm.					
414.5 - 442.0		Amphib.	"Muddled", Quartz, Biotite, Hornblende, Amphibolite. Garnets to pin point.					
442.0 - 454.3		Altered Amphib.	Quartz, Sericite, Biotite, Garnet, Schist with some Hornblende. Garnets 10-20 mm.					
454.3 - 470.0		Schist	Quartz, Sericite, Biotite, Garnet Schist with occasional Quartz stringers. Garnets pin point to 4 mm.					
470.0 - 492.8		Amphib.	Quartz, Fine to medium Grain, Hornblende, Biotite, Amphibolite.					
492.8 - 685.0		Schist	Quartz, Sericite, Biotite, Garnet Schist. Garnets 2-6 mm.					

COLLAR LOCATION
LATITUDE 14,162.4 N
DEPARTURE 9933 W
ELEV. 510.39
DIP -15°
BEARING S 74°30' W

APPALACHIAN SULPHIDES INC.

DIAMOND DRILL RECORD

PROPERTY Elizabeth LOCATION So. Strafford, Vt.

CORE
SAVED yes
LOCATION
SAMPLED yes NOW
LOGGED BY R. C. D.
DATE June 1957

D.D.H. #1018 STARTED 5-22-57 COMPLETED 6-16-57 LENGTH 662 Ft.

FOOTAGE	SUB UNIT	ROCK TYPE	DESCRIPTION	SAMPLED	SAMPLE NO.	W	% CU	% FE
0 - 17.3		Amphib.	Medium to coarse grained Amphibolite. Weakly carbonated					
17.3 - 20.4		Ml'zd. Zone	Fine grain, Quartz, Biotite, Sericite Schist with weak Sulphides.	17.3'-20.4'	34575	3.1'	0.26	9.80
20.4 - 66.5		Amphib.	Same as 0 - 17.3					
66.5 - 74.0		Ml'zd. Zone	Sericite Schist with trace of Sulphides.					
74.0 - 83.6		Amphib.	Coarse, Garnet, Biotite, Sericite, Hornblende Amphibolite. Garnets up to 40 mm.					
83.6 - 151.5		Schist	Quartz, Sericite, Biotite Schist. Bleached in places with traces of Sulphides. Garnets 2-10 mm.					
	132.0 - 138.5	Ml'zd. Zone						
	149.0 - 150.5	Ml'zd. Zone						
151.5 - 193.0		Amphib.	Biotite, Chlorite, Hornblende and Tourmaline, Amphibolite with weak traces of Sulphides.					
	174.5 - 182.8	Ml'zd. Zone		174.5'-182.8'	34576	8.3'	0.18	10.80
193.0 - 307.5		Schist	Medium grain, Quartz, Sericite, Biotite, Schist. Garnets 2-15 mm.					
307.5 - 317.4		Ml'zd. Zone	Sericite, Carbonated, Schist with Quartz veinlets and traces of Sulphides.					

SHEET NO. 2 APPALACHIAN SULPHIDES INC. HOLE NO. 1018

FOOTAGE	SUB UNIT	ROCK TYPE	DESCRIPTION	SAMPLED	SAMPLE NO.	W	% CU	% FE
317.4 - 327.2		Altered Amphib.	Fine grain, Biotite, Garnet altered Amphibolite. Garnets 2-25 mm.					
327.2 - 328.4		Ml'zd. Zone	Same as 307.5 - 317.4					
328.4 - 336.0		Schist	Coarse, Garnet, Sericite, Biotite, Schist. Garnets 6-8 mm.					
336.0 - 452.0		Amphib.	Medium to fine grain, Biotite, Hornblende, bleached and carbonated in places, Amphibolite. Garnets 6-30 mm.					
452.0 - 453.5		Ml'zd. Zone	Same as 307.5 - 317.4					
453.5 - 485.5		Amphib.	Same as 336.0 452.0					
485.5 - 563.0		Schist	Garnet, Sericite, Biotite, Schist. Garnets 4-10 mm.					
563.0 - 638.5		Amphib.	Medium grain, weak altered Hornblende with Biotite Rosettes. Bleached in places. Garnets 1-40 mm.					
638.5 - 644.8		Schist	Garnet, Sericite, Biotite, Schist. Weakly carbonated. Garnets 2-4 mm.					
644.8 - 652.0		Altered Amphib.	Coarse, Garnet, Sericite, Biotite, altered Amphibolite. Garnets 30-40 mm.					
652.0 - 662.0		Schist	Same as 638.5 - 644.8					

COLLAR LOCATION
LATITUDE 15,044.4 N
DEPARTURE 9963.5 W
ELEV. 509.77
DIP -20°
BEARING N 90° W

APPALACHIAN SULPHIDES INC.

DIAMOND DRILL RECORD

PROPERTY Elizabeth LOCATION So. Strafford, Vt.

CORE
SAVED yes
LOCATION
SAMPLED HOW
LOGGED BY C. S.
DATE June 1957

D.D.H. #1023 STARTED 6-19-57 COMPLETED LENGTH

FOOTAGE	SUB UNIT	ROCK TYPE	DESCRIPTION	SAMPLED	SAMPLE NO.	W	% CU	% FE
0 -11.0		Casing						
11.0 - 63.0		Amphib.	"Muddled", Medium grain, Amphibolite with a few traces of Sulphides @ 56.0'					
63.0 - 218.0		Schist	Quartz, Sericite, Biotite, Schist with a few traces of Sulphides @ 210.0'.					
218.0 - 220.0		Amphib.	"Muddled", Biotite, Hornblende, Amphibolite with a trace of Sulphides.					
220.0 - 485.0		Schist	Quartz, Sericite, Biotite, Schist with scattered Hornblende.					
485.0 - 492.0		Lost Core						
492.0 - 497.0		Amphib.	"Muddled", Medium grain, Hornblende, Biotite, Amphibolite					

INSPECTION REPORT

by

W. T. Millar, Supervising Mining Engineer

July 25, 1957

OFFICIAL FILE COPY
DMEA
RECEIVED JUL 31 1957

DATE	INITIALS	CODE
8/2	~~WPM~~	500

Operator: Appalachian Sulphides, Inc.
Location: South Stratford, Vermont
Docket: No. DMEA 4746 (Copper)
Contract: Idm-E 1100
Authorized expenditure $62,860
Government contribution, 50% 31,430
Effective date, June 13, 1957

This contract was effective June 13, 1957. Actually, the Operator started exploration for his own account on May 13 and will charge only that portion of the exploration which was conducted after June 12, to the contract.

The project was visited on June 27. Mr. J. F. Cowley, Manager, was on vacation, therefore the Government engineer conferred with Mr. Benson, Secretary and Treasurer and Mr. Richard Dwelley, Chief Geologist. Terms of the contract and the operation were discussed.

A tabulation of drilling from May 16 to June 27 was obtained. This tabulation shows 5,789 feet drilled from 10 different locations.

In checking the tabulated record with sections supplied with the application, it was found that there are a number of variations. To verify the condition, a second visit to the project was made on July 11. Mr. Cowley was in and the project work was discussed further with him. It was learned that drilling on the company's account supplied pertinent information which changed the interpretation of the

geologic structure. It was necessary to lengthen some proposed drill holes, abandoning others and in general required remapping all sections and revising the drilling program. After June 13 part of the drilling had been on a revised program without regard to the original location numbering of the drill holes as indicated in sections accompanying the applications.

The revised mapping was completed at the time of the second visit. The new sections show the geology, the comparison of the original exploration proposed and the revised program for drilling. A tabulation from drilling records was being prepared to show the starting date, depth on June 12 and depth on completion of the hole and date of completion.

The recent exploration indicates that the folds shown in the original sections are much wider and probably a deeper trough than anticipated from previous geologic data.

At the time of the second visit approximately 7,000 feet of core from the new area being explored was stored in the core library, logged and sampled by the Operator. Assay results on the most recent core were not available at the time of the inspection but half of one percent copper was the highest assay on previous core sampled.

The increased size of the folded sections with heavy sulfide mineralization, tend to increase the possibility of discovering new ore bodies. The results of exploration so far are encouraging.

It was requested that written requests for amendments to the contract to cover the revisions in exploration be prepared and submitted

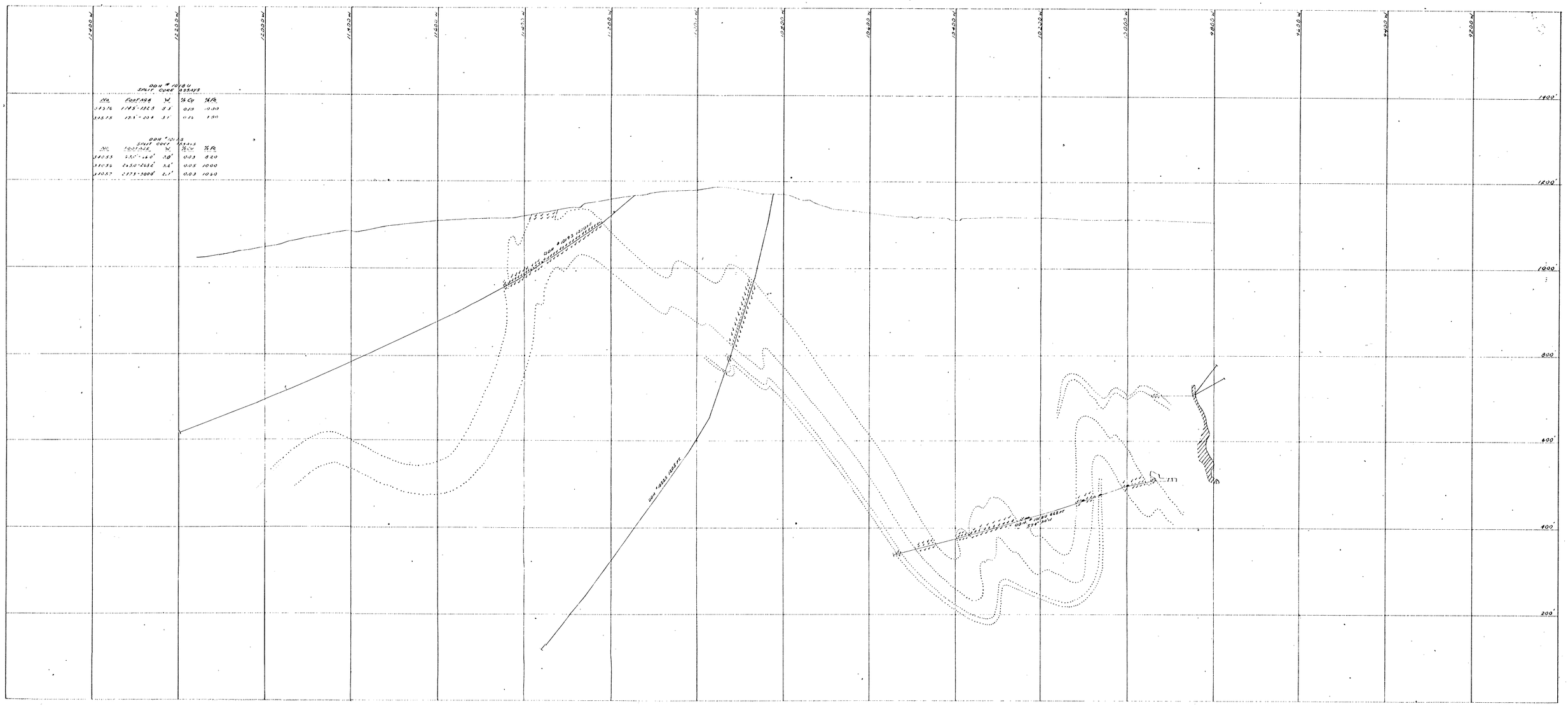
for approval by the Executive Officer and that any revision of the drilling program be kept within the 19,200 feet of drilling authorized under the contract.

Drilling under the sub-contract with E. J. Longyear is conducted with EX tools which are authorized under the contract. However, surveys of the drill holes show that the holes are deflecting upward as much as 12 degrees per 100 feet in the first 300 feet of drilling. In the long holes 1,000 to 1,500 feet the deflection causes the hole to bottom several hundred feet above the desired target. The next larger size drill tools, AX, were tried without improving the situation. Other methods to alleviate excessive deflection of the drill bit will be tried. My personal thought and suggestion is that excessive pressure is being applied on the bit to gain footage.

The Operator will supply as soon as possible a complete set of new geologic sections, a tabulation of drilling to date, revisions in the exploration program and requests for amendments to the contract for approval of the revision.

W. T. Millar

W. T. Millar
Supervising Mining Engineer



SURFACE OUTLINE, UNDERGROUND WORKINGS

EXISTING DIAMOND DRILL HOLES TEST NEAR TO STRUCTURAL INTERPRETATION

MINED OUT AREA

KNOWN ORE, MINERALIZED HORIZON

KNOWN AMPHIBOLITE HORIZON

PROJECTED OR INFERRED ORE OR MINERALIZED HORIZON

PROJECTED OR INFERRED AMPHIBOLITE HORIZON

PROPOSED DIAMOND DRILL HOLE

APPALACHIAN SULPHIDES INC.
ELIZABETH MINE SOUTH STRAFFORD, VT.

CROSS SECTION 14,000 NORTH

SCALE 1" = 100 SEPTEMBER 4, 1957

11500 W | 11400 W | 11300 W | 11000 W | 10800 W | 10600 W | 10400 W | 10200 W | 10000 W | 9800 W | 9600 W | 9400 W | 9200 W

1400' | 1200' | 1000' | 800' | 600' | 400' | 200'

DDH #1010 U
SPLIT CORE ASSAYS

NO.	FOOTAGE	W.	% CU	% FE
34545	1075'-1078'	2.5'	0.13	1.00
34546	1250'-1270'	20'	0.36	2.40
34547	1270'-1280'	10'	0.13	8.40
34548	1280'-1283'	03'	0.11	32.60
34549	1283'-1285'	1.2'	0.16	7.40

DDH #1015 U
SPLIT CORE ASSAYS

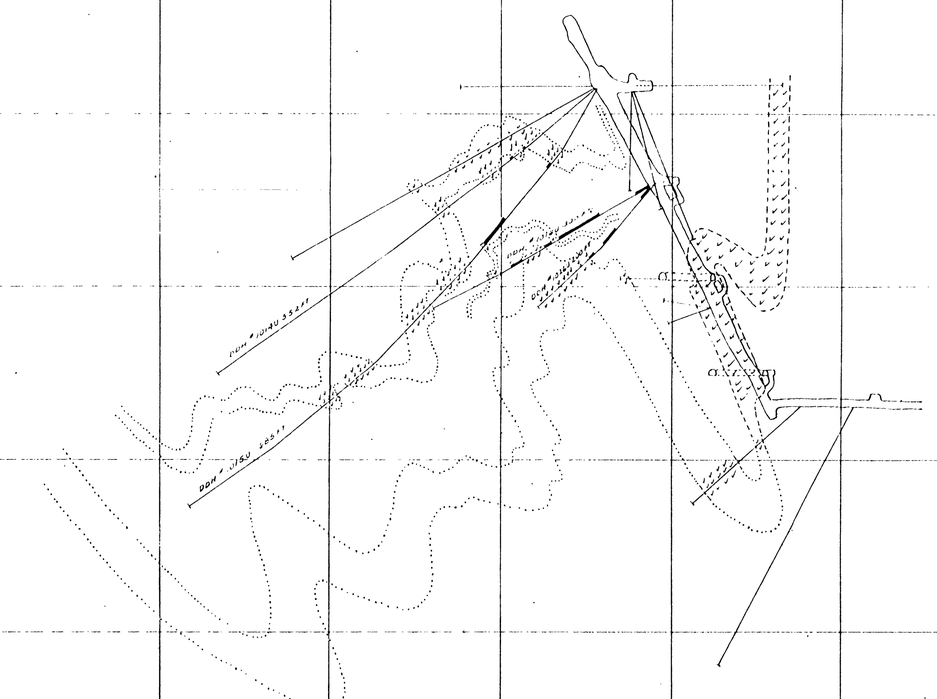
NO.	FOOTAGE	W.	% CU	% FE
34553	1865'-1877	12'	1.65	13.80
34554	1877'-1901'	24'	0.65	20.20
34555	1900'-1912'	12'	1.11	13.80
34556	1912'-1933'	23'	0.11	25.00
34557	1933'-1947'	13'	0.35	25.60
34558	1947'-1975	28'	1.08	17.00
34559	1975'-2000'	25'	0.37	17.40
34560	2000'-2040	54'	0.27	7.20
34561	2040'-2110	30'	0.21	5.20
34562	2110'-2143'	33'	0.17	5.00
34563	2143'-2173'	30'	0.33	12.60
34564	2173'-2203'	30'	0.33	12.20
34565	2203'-2225'	22'	0.34	17.20
34571	1020'-1035'	15'	0.16	7.60
34572	1035'-1065'	30'	0.11	7.20

DDH #1016 U
SPLIT CORE ASSAYS

NO.	FOOTAGE	W.	% CU	% FE
34575	160'-162'	22'	0.5	6.80
34576	162'-180'	38'	1.37	37.60
34577	180'-200'	40'	1.38	27.60
34578	200'-230'	30'	0.58	28.40
34579	230'-270'	40'	0.16	8.00
34600	760'-800'	10'	1.18	8.40
34004	800'-837'	37'	0.10	7.20
34001	837'-870'	33'	0.16	10.80
34002	870'-913'	23'	0.18	8.20
34003	913'-933'	20'	1.78	12.20
34004	933'-970'	37'	0.19	10.00
34005	970'-1010'	40'	0.13	5.40
34006	1010'-1030'	33'	0.30	12.00
34007	1030'-1073	43'	0.08	6.00
34008	1078'-1101'	20'	0.08	6.60
34009	1165'-1175	07'	1.03	15.40
34010	1175'-1190	15'	0.24	7.20
34011	1190'-1240	50'	0.42	5.40
34012	1240'-1285	45'	0.27	11.60
34013	1285'-1313'	28'	0.72	15.40
34015	1415'-1441'	25'	0.18	7.40
34016	1441'-1494'	53'	0.21	17.20
34017	1494'-1506'	27'	0.65	10.20
34018	1813'-1863'	50'	0.27	10.60
34019	1863'-1914'	53'	0.82	18.60
34020	1916'-1950'	34'	0.33	11.80
34021	1950'-1976'	27'	0.57	11.80

DDH #1020 U
Split Core Assays

NO.	FOOTAGE	W.	% CU	% FE
34573	100'-124	24	0.78	7.60
34574	124'-140'	15'	2.15	16.00
34580	140'-160'	20'	1.61	18.00
34581	160'-200	40'	0.80	6.00
34582	200'-241	41'	2.55	15.80
34583	120'-130	10'	0.31	10.00
34584	130'-135	05	0.32	32.00
34585	135'-172	34	0.21	7.60
34586	172'-174	02	0.57	11.10
34587	174'-176	02	0.23	7.00
34588	304'-313	09	0.18	10.40
34589	313'-317'	04	0.18	15.00
34590	317'-337	25	1.16	29.00
34511	1105'-1113'	10'	0.21	37.80
34512	1113'-1130'	17	0.34	7.40
34513	1130'-1172	42'	0.76	18.60
34514	1300'-1310'	10'	0.31	15.10



SURFACE OUTLINE, UNDERGROUND WORKINGS

EXISTING DIAMOND DRILL HOLES PERTINENT TO STRUCTURAL INTERPRETATION

" " MINED OUT AREA

KNOWN ORE, MINERALIZED HORIZON

KNOWN AMPHIBOLITE HORIZON

PROJECTED OR INFERRED ORE OR MINERALIZED HORIZON

PROJECTED OR INFERRED AMPHIBOLITE HORIZON

PROPOSED DIAMOND DRILL HOLE

APPALACHIAN SULPHIDES INC.
ELIZABETH MINE SOUTH STRAFFORD, VT.

CROSS SECTION 13,100 NORTH

SCALE: 1" = 100'

SEPTEMBER 4, 1957

11200 W | 11400 W | 11200 W | 11000 W | 10800 W | 10600 W | 10400 W | 10200 W | 10000 W | 9800 W | 9600 W | 9400 W | 9200 W

1400'

DDH #1034U
SPLIT CORE ASSAYS

No.	Footage	W	%Cu	%Fe
34022	394'-407'	23'	0.26	32.80
23923	1080-1120'	40'	1.70	23.60
34022	1248'-1260'	12'	0.31	27.40
34023	1293'-1325'	32'	0.29	9.40
34024	1525'-1555'	30'	0.18	7.20
34025	1565'-1595'	30'	1.52	23.90
34026	1595'-1625'	30'	1.57	26.50
34027	1623'-1673'	38'	1.27	20.50
34028	1673'-1683'	13'	3.97	40.60
34031	1755'-1767'	12'	0.31	10.60

1200'

DDH #1012U
SPLIT CORE ASSAYS

No.	Footage	W	%Cu	%Fe
34030	884'-890'	16'	0.75	19.20
34031	890'-896'	06'	0.93	32.00
34032	1300'-1325'	25'	0.53	14.20
34033	1325'-1362'	43'	1.13	23.90
34034	1503'-1511'	33'	0.40	9.20
34035	1523'-1604'	31'	0.53	14.00
34036	1675'-1688'	13'	3.10	20.00

1000'

DDH #1013U
SPLIT CORE ASSAYS

No.	Footage	W	%Cu	%Fe
34061	22.6'-46.3	37'	0.27	10.60
34062	89.0'-90.7'	17'	1.40	15.80
34063	90.7'-93.2'	35'	2.08	16.00
34064	93.2'-98.8'	16'	0.82	12.90
34065	115.9'-117.2'	03'	0.23	31.20
34090	139.0'-146.1'	71'	1.98	34.80
34091	146.1'-148.1'	24'	0.66	16.20
34092	148.1'-159.4'	113'	1.60	31.40
34093	159.4'-160.0'	10'	0.27	11.20
34094	160.0'-162.0'	04'	0.68	25.00
34095	162.0'-162.5'	10'	0.33	18.60
34096	162.5'-163.9'	17'	0.32	16.30
34097	163.9'-164.9'	63'	0.16	17.60
34098	164.9'-167.6'	17'	0.32	19.30
34099	167.6'-169.0'	24'	0.16	7.40

800'

DDH #1027U
SPLIT CORE ASSAYS

No.	Footage	W	%Cu	%Fe
34031	174.0'-174.1'	01'	0.33	37.00
34030	174.1'-176.1'	19'	0.22	10.40
34031	176.1'-178.1'	28'	0.10	35.40
34032	178.1'-183.1'	38'	0.16	9.60
34033	183.1'-187.0'	33'	0.37	12.40

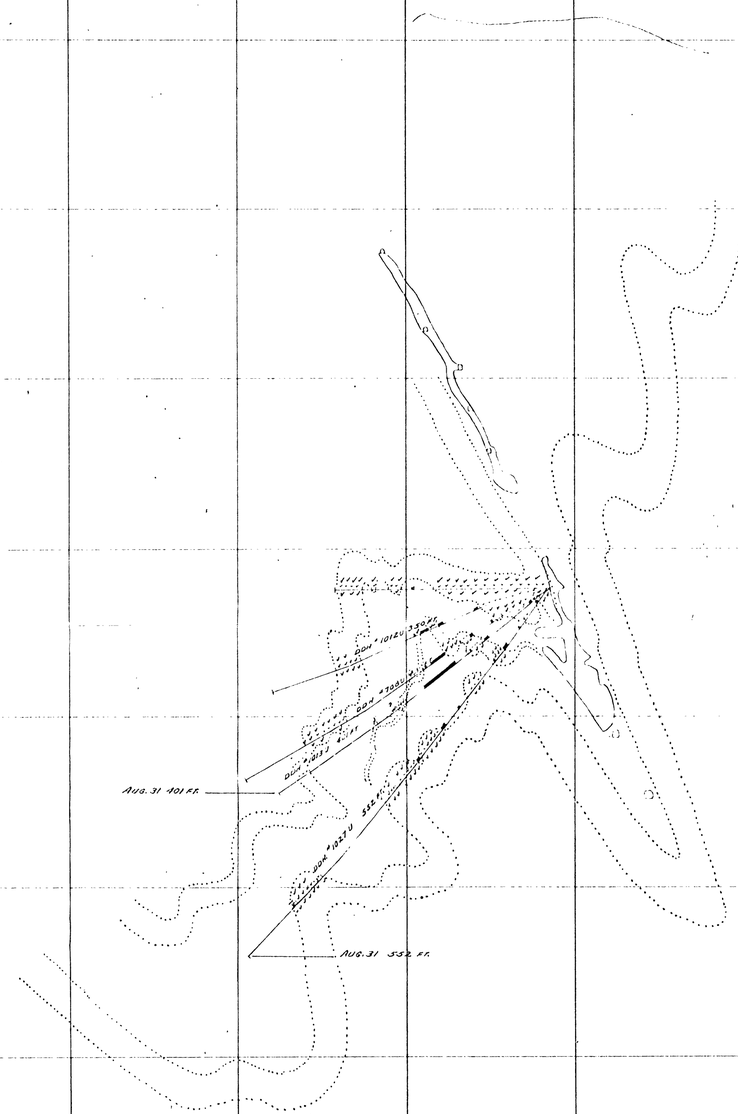
600'

DDH #1021U
SPLIT CORE ASSAYS

No.	Footage	W	%Cu	%Fe
34066	18.0'-20.0'	20'	0.30	9.20
34067	35.6'-37.9'	23'	0.73	16.80
34068	88.8'-90.0'	12	0.26	11.00
34069	90.0'-92.2'	12	0.26	9.30
34070	109.2'-112.5'	23'	0.53	18.00
34071	173.0'-173.3'	03'	1.73	16.40
34072	173.3'-174.8'	15	2.03	33.00
34073	174.8'-175.3'	15	0.31	10.00
34074	200.3'-203.3'	30'	0.75	15.10
34075	203.3'-207.0'	37	0.27	17.10
34076	251.0'-253.8'	28.	0.16	10.00
34077	253.8'-256.0'	22'	0.18	13.60

400'

200'



SURFACE OUTLINE; UNDERGROUND WORKINGS

EXISTING DIAMOND DRILL HOLES PERTINENT TO STRUCTURAL INTERPRETATION

MINED OUT AREA

KNOWN ORE; MINERALIZED HORIZON

KNOWN AMPHIBOLITE HORIZON

PROJECTED OR INFERRED ORE OR MINERALIZED HORIZON

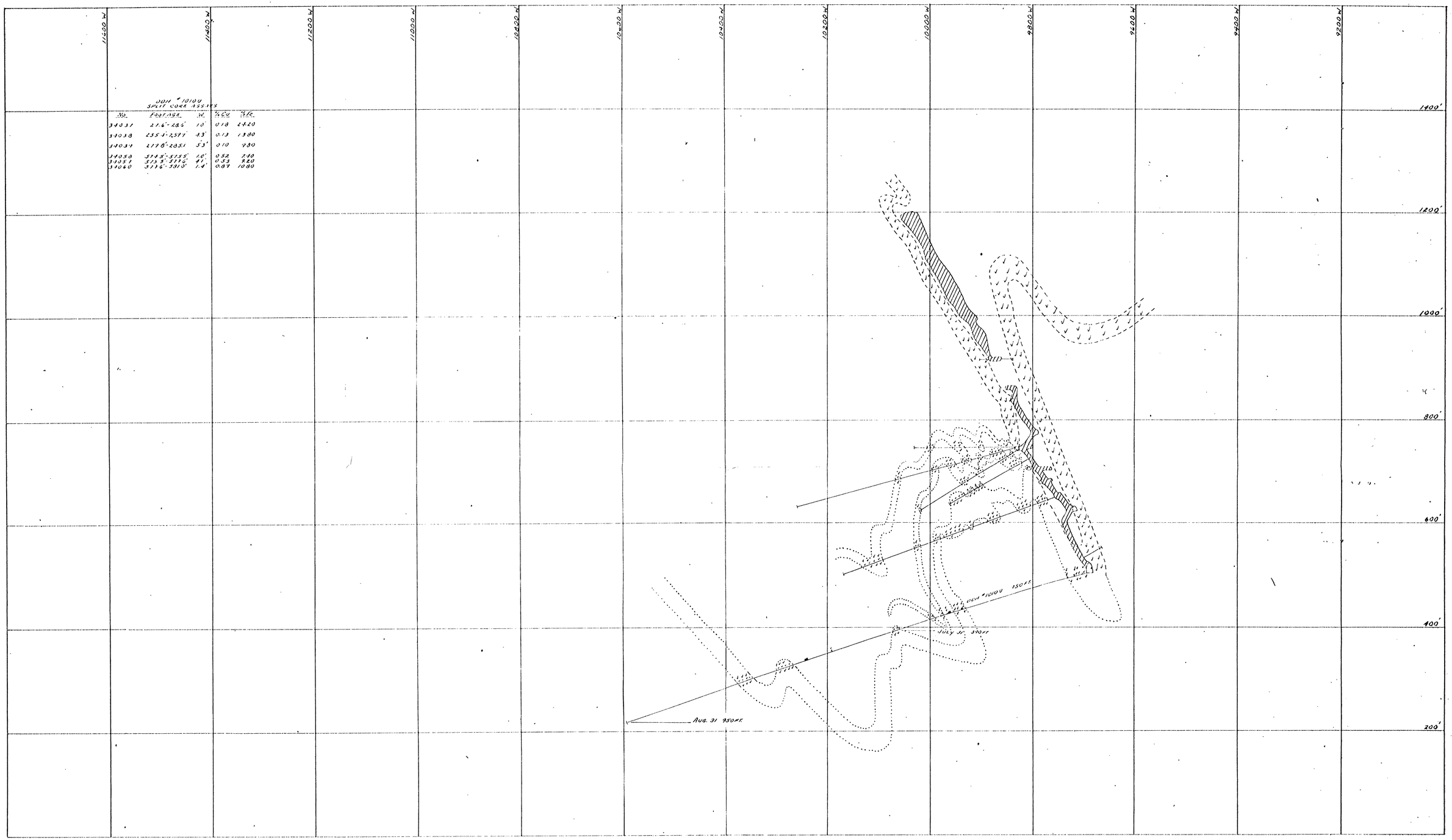
PROJECTED OR INFERRED AMPHIBOLITE HORIZON

PROPOSED DIAMOND DRILL HOLE

APPALACHIAN SULPHIDES INC.
ELIZABETH MINE SOUTH STRAFFORD, VT.

CROSS SECTION 12400 NORTH

SCALE: 1" = 100' SEPTEMBER 1, 1957



SURFACE OUTLINE, UNDERGROUND WORKINGS

EXISTING DIAMOND DRILL HOLES PERTINENT TO STRUCTURAL INTERPRETATION

MINED OUT AREA

KNOWN ORE, MINERALIZED HORIZON

KNOWN AMPHIBOLITE HORIZON

PROJECTED OR INFERRED ORE OR MINERALIZED HORIZON

PROJECTED OR INFERRED AMPHIBOLITE HORIZON

PROPOSED DIAMOND DRILL HOLE

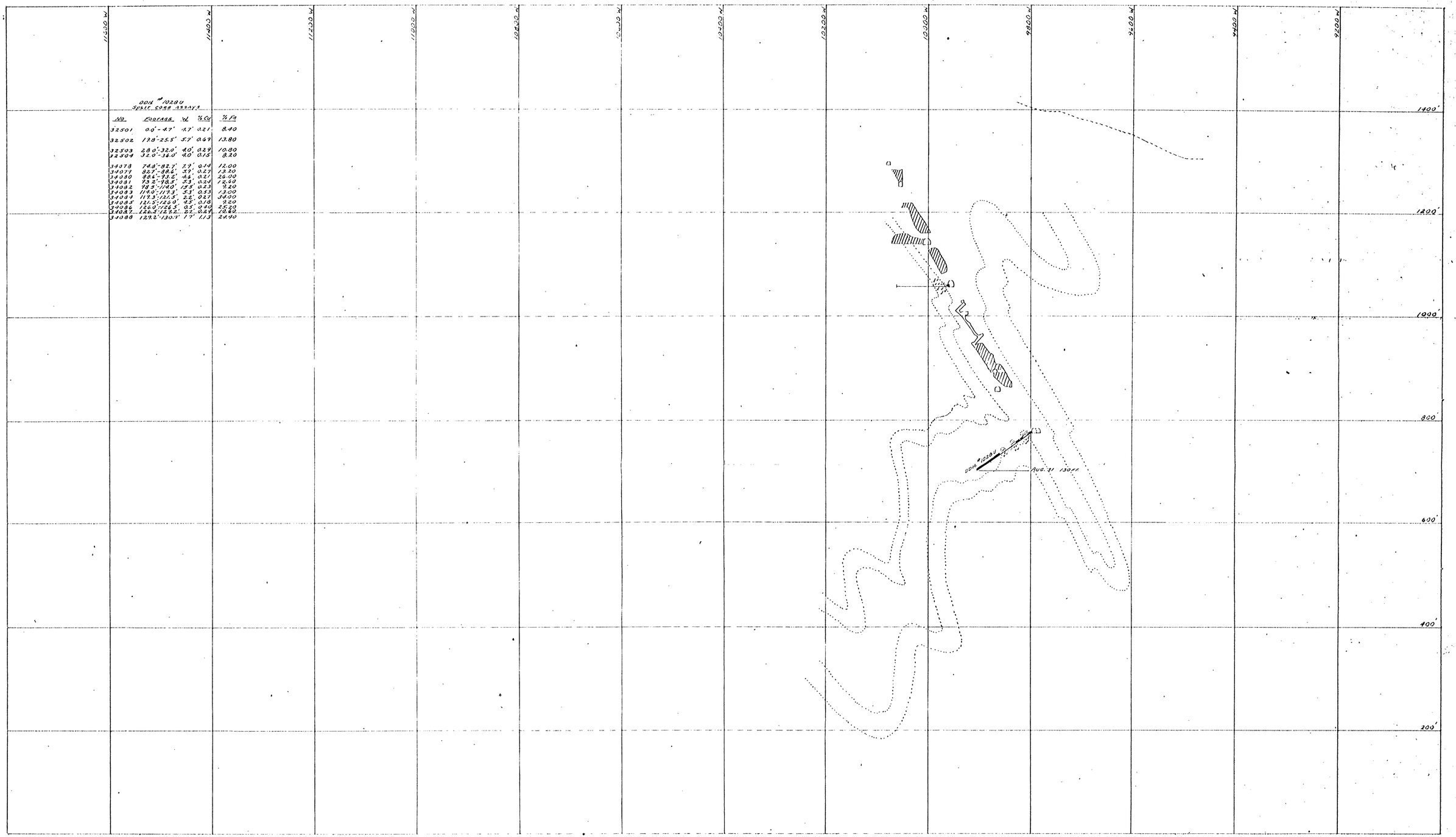
APPALACHIAN SULPHIDES INC.
ELIZABETH MINE SOUTH STRAFFORD, VT.

CROSS SECTION 12,100 NORTH

SCALE: 1" = 100' SEPTEMBER 1, 1957

DDH #10280
SPLIT CORE ASSAYS

NO.	FOOTAGE	W	% CU	% FE
32501	0.0'-4.7'	4.7'	0.21	8.40
32502	17.8'-25.5'	5.7'	0.69	13.80
32503	28.0'-32.0'	4.0'	0.29	10.80
32504	32.0'-36.0'	4.0'	0.15	8.20
34078	79.9'-82.7'	2.7'	0.14	12.00
34077	82.7'-85.4'	2.7'	0.27	13.20
34080	85.4'-93.2'	4.8'	0.21	26.00
34081	93.2'-98.5'	5.3'	0.24	12.40
34082	98.5'-111.0'	12.5'	0.23	9.20
34083	111.0'-117.3'	6.3'	0.53	13.00
34084	117.3'-121.5'	2.2'	0.27	34.00
34085	121.5'-126.0'	4.5'	0.18	8.20
34086	126.0'-128.2'	2.2'	0.49	15.20
34087	128.2'-129.5'	1.3'	0.49	10.80
34088	129.2'-130.9'	1.7'	1.13	24.90



SURFACE OUTLINE, UNDERGROUND WORKINGS

EXISTING DIAMOND DRILL HOLES PERTINENT TO STRUCTURAL INTERPRETATION

MINED OUT AREA

KNOWN ORE; MINERALIZED HORIZON

KNOWN AMPHIBOLITE HORIZON

PROJECTED OR INFERRED ORE OR MINERALIZED HORIZON

PROJECTED OR INFERRED AMPHIBOLITE HORIZON

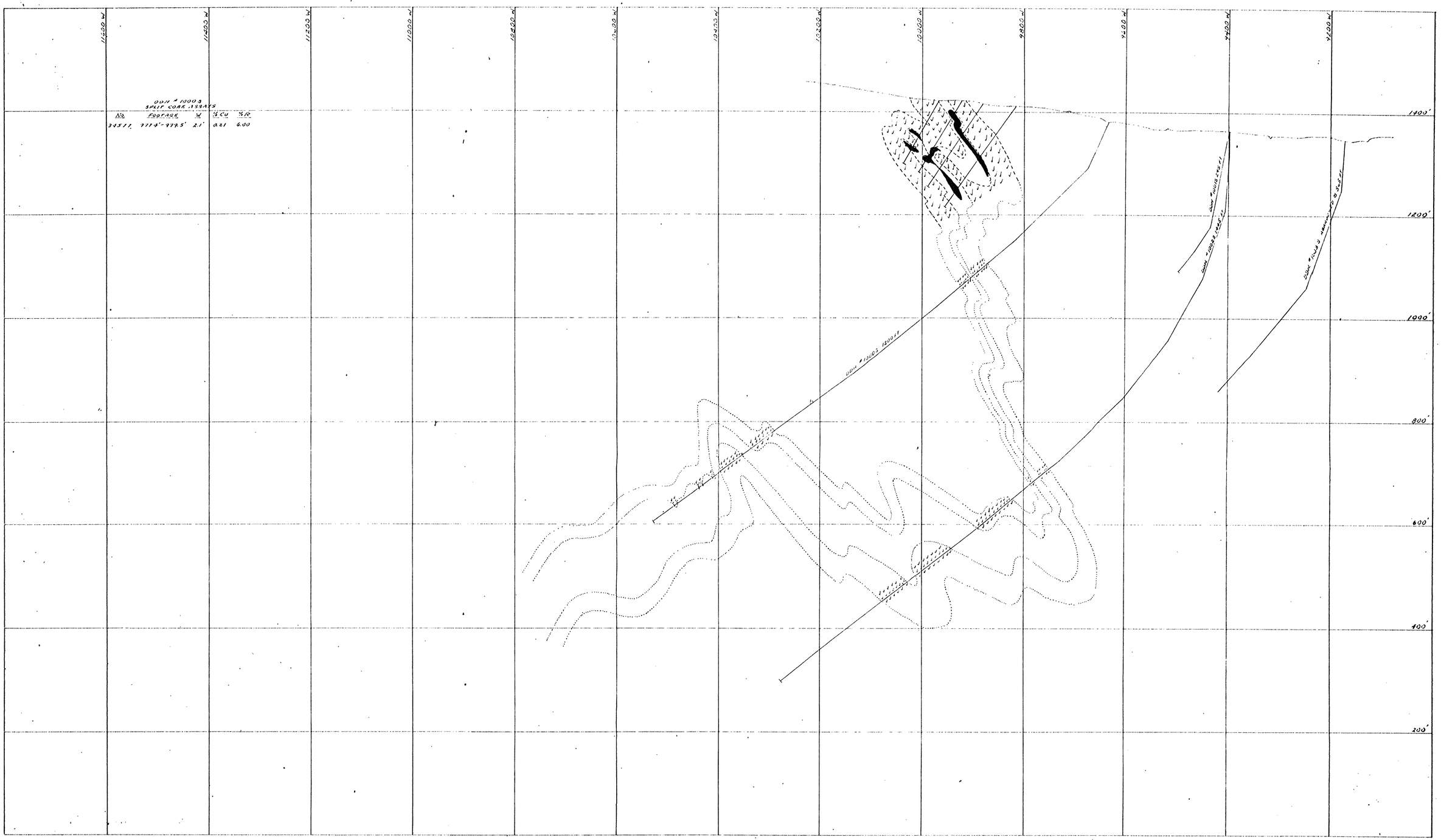
PROPOSED DIAMOND DRILL HOLE

APPALACHIAN SULPHIDES INC.
ELIZABETH MINE SOUTH STRAFFORD, VT.

CROSS SECTION 11600 NORTH

SCALE 1" = 100'

SEPTEMBER 1, 1957



SURFACE OUTLINE, UNDERGROUND WORKINGS

EXISTING DIAMOND DRILL HOLES PERTINENT TO STRUCTURAL INTERPRETATION

MINED OUT AREA

KNOWN ORE; MINERALIZED HORIZON

KNOWN AMPHIBOLITE HORIZON

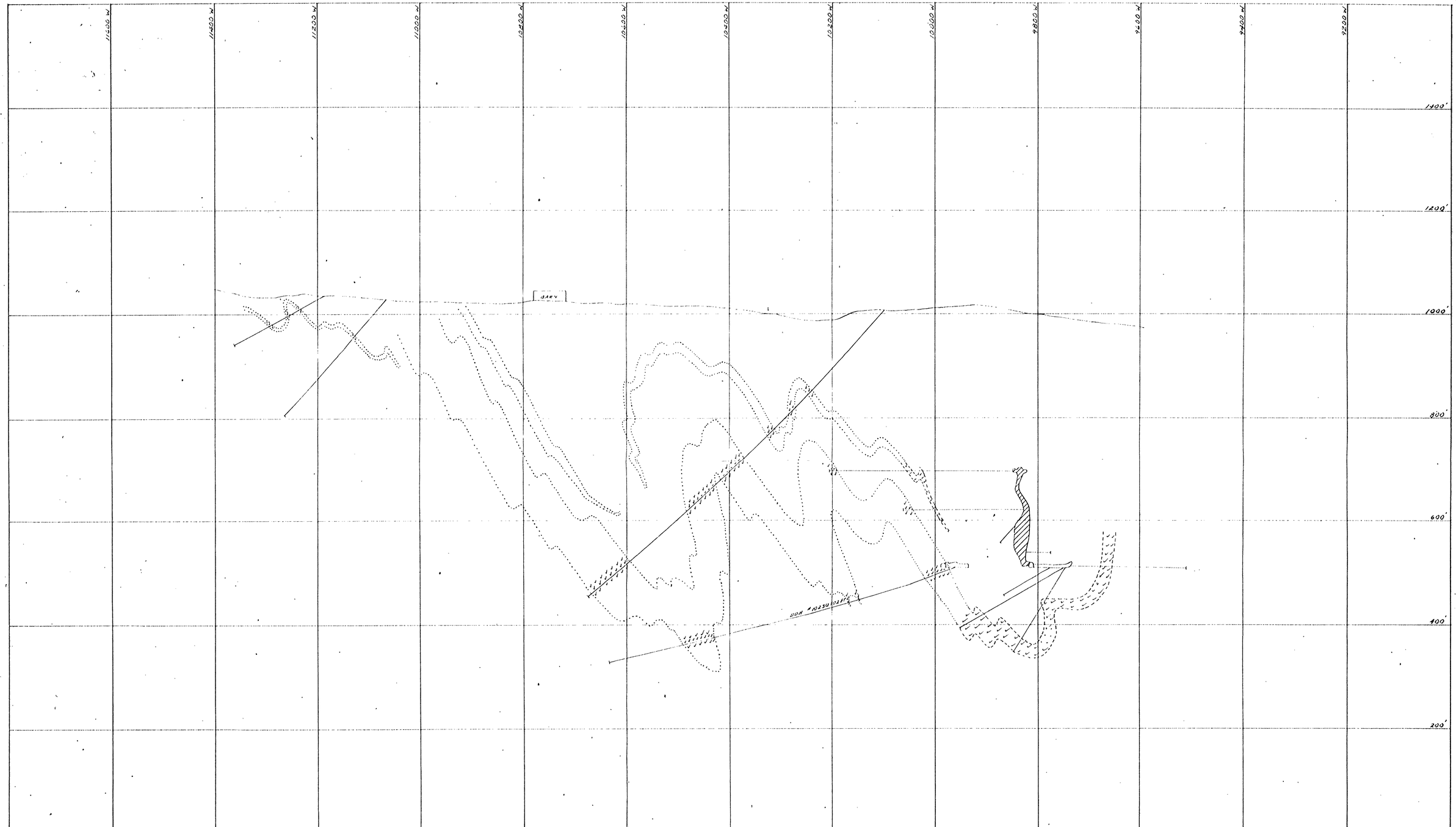
PROJECTED OR INFERRED ORE OR MINERALIZED HORIZON

PROJECTED OR INFERRED AMPHIBOLITE HORIZON

PROPOSED DIAMOND DRILL HOLE

APPALACHIAN SULPHIDES INC.
ELIZABETH MINE SOUTH STRAFFORD, VT.
CROSS SECTION 7442 NORTH

SCALE: 1" = 100' October 4, 1957



SURFACE OUTLINE, UNDERGROUND WORKINGS

EXISTING DIAMOND DRILL HOLES PERTINENT TO STRUCTURAL INTERPRETATION

MINED OUT AREA

KNOWN ORE, MINERALIZED HORIZON

KNOWN AMPHIBOLITE HORIZON

PROJECTED OR INFERRED ORE OR MINERALIZED HORIZON

PROJECTED OR INFERRED AMPHIBOLITE HORIZON

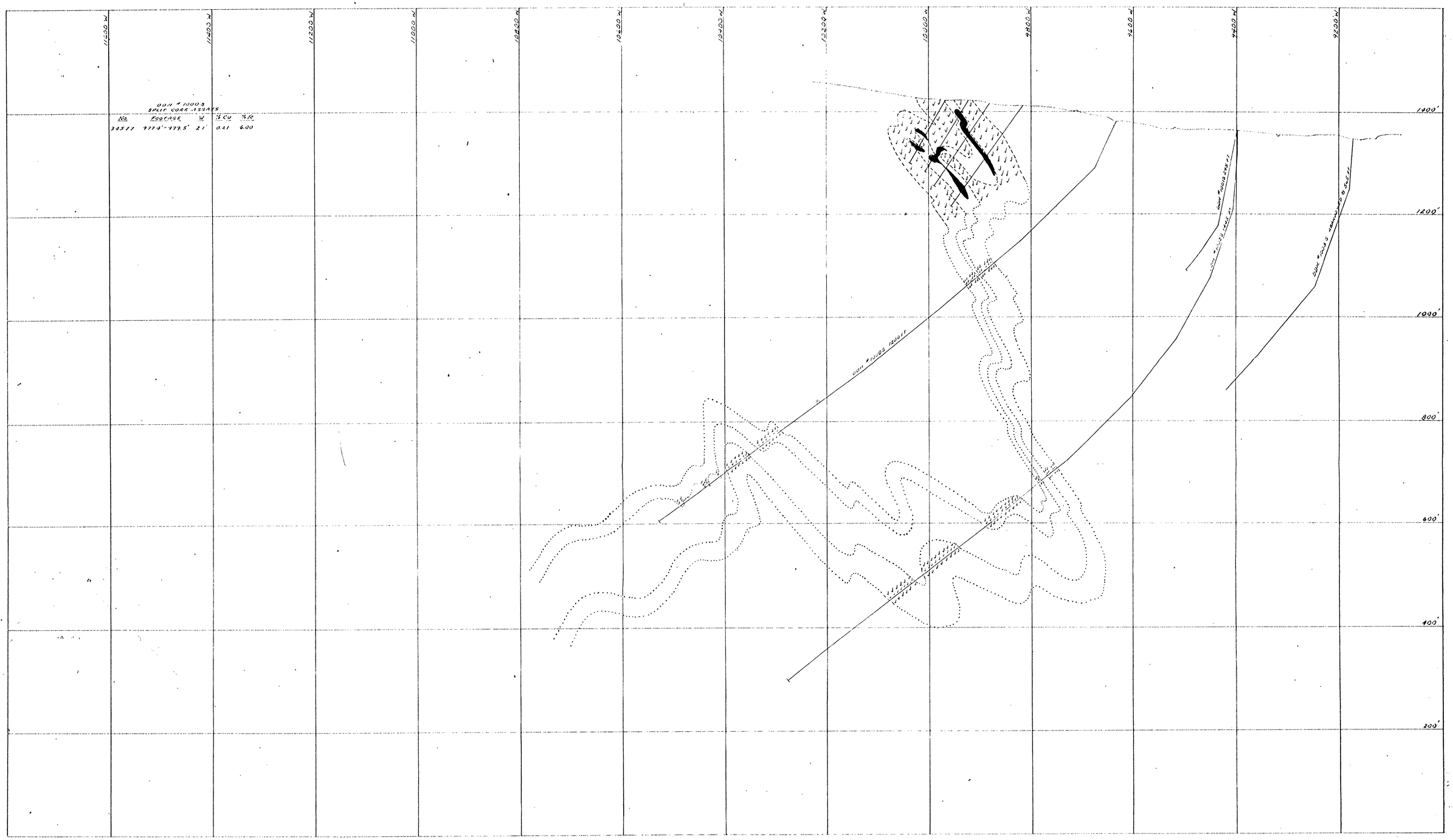
PROPOSED DIAMOND DRILL HOLE

APPALACHIAN SULPHIDES INC.
ELIZABETH MINE SOUTH STRAFFORD, VT.

CROSS SECTION 15,100 NORTH

SCALE: 1" = 100'

SEPTEMBER 1, 1951



SURFACE OUTLINE, UNDERGROUND WORKINGS

EXISTING DIAMOND DRILL HOLES PERTINENT TO STRUCTURAL INTERPRETATION

MINED OUT AREA

KNOWN ORE, MINERALIZED HORIZON

KNOWN AMPHIBOLITE HORIZON

PROJECTED OR INFERRED ORE OR MINERALIZED HORIZON

PROJECTED OR INFERRED AMPHIBOLITE HORIZON

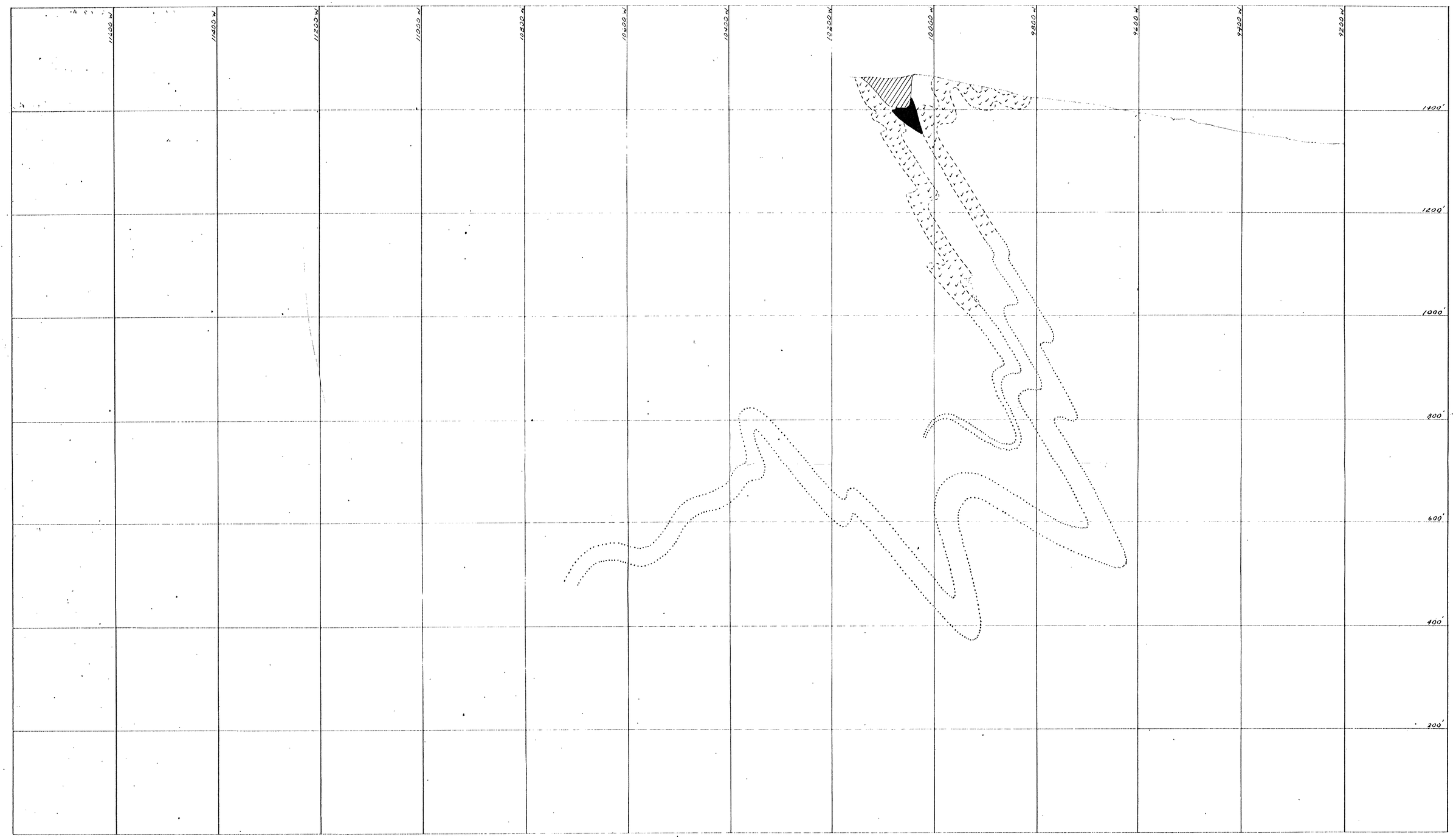
PROPOSED DIAMOND DRILL HOLE

APPALACHIAN SULPHIDES INC.
ELIZABETH MINE SOUTH STRAFFORD, VT.

CROSS SECTION 7442 NORTH

SCALE: 1" = 100'

SEPTEMBER 1, 1957



SURFACE OUTLINE; UNDERGROUND WORKINGS

EXISTING DIAMOND DRILL HOLES PERTINENT TO STRUCTURAL INTERPRETATION

MINED OUT AREA

KNOWN ORE; MINERALIZED HORIZON

KNOWN AMPHIBOLITE HORIZON

PROJECTED OR INFERRED ORE OR MINERALIZED HORIZON

PROJECTED OR INFERRED AMPHIBOLITE HORIZON

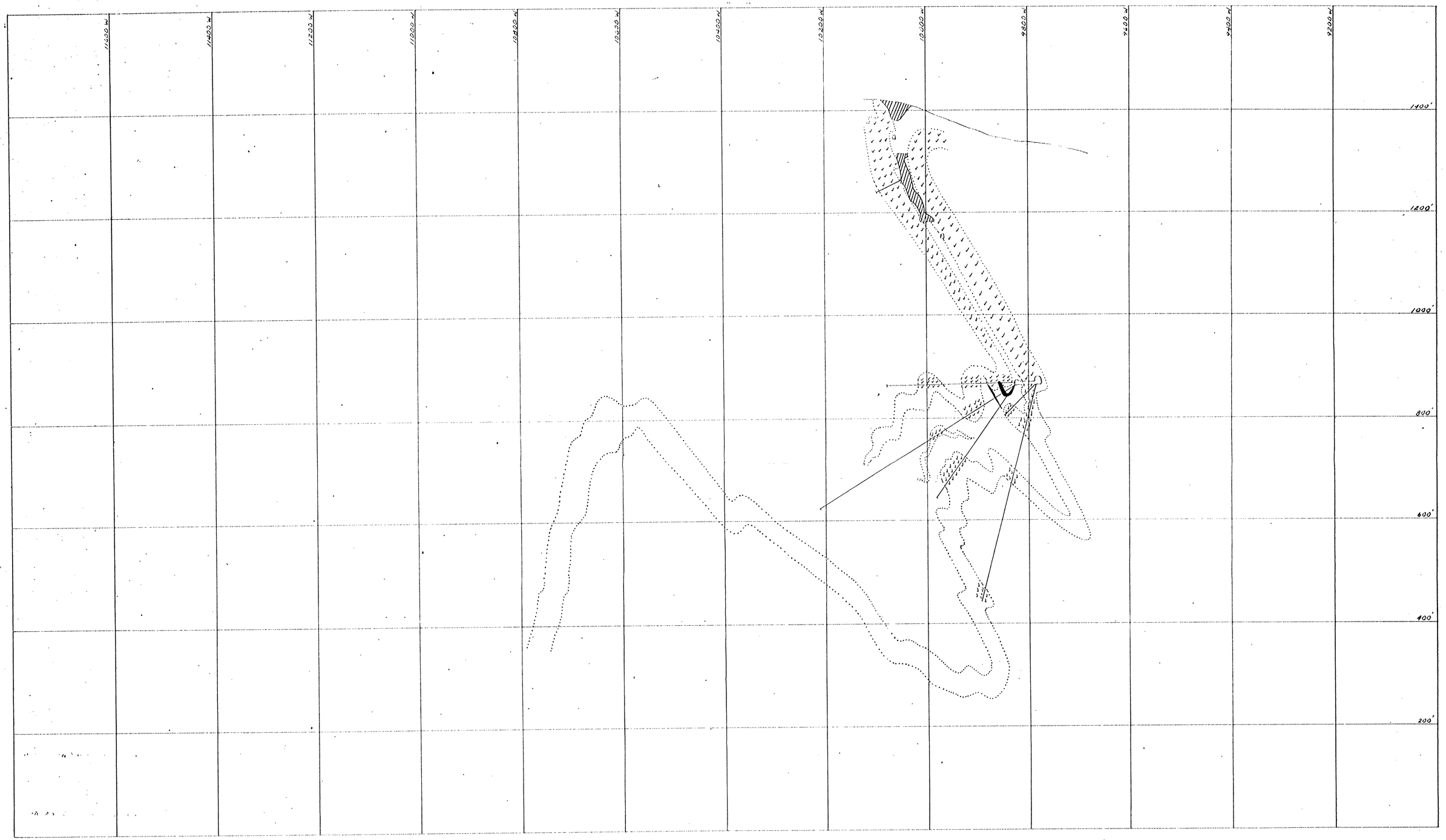
PROPOSED DIAMOND DRILL HOLE

APPALACHIAN SULPHIDES INC.
ELIZABETH MINE SOUTH STRAFFORD, VT.

CROSS SECTION 8800 NORTH

SCALE: 1" = 100'

SEPTEMBER 1, 1957



SURFACE OUTLINE, UNDERGROUND WORKINGS

EXISTING DIAMOND DRILL HOLES PERTINENT TO STRUCTURAL INTERPRETATION

MINED OUT AREA

KNOWN ORE, MINERALIZED HORIZON

KNOWN AMPHIBOLITE HORIZON

PROJECTED OR INFERRED ORE OR MINERALIZED HORIZON

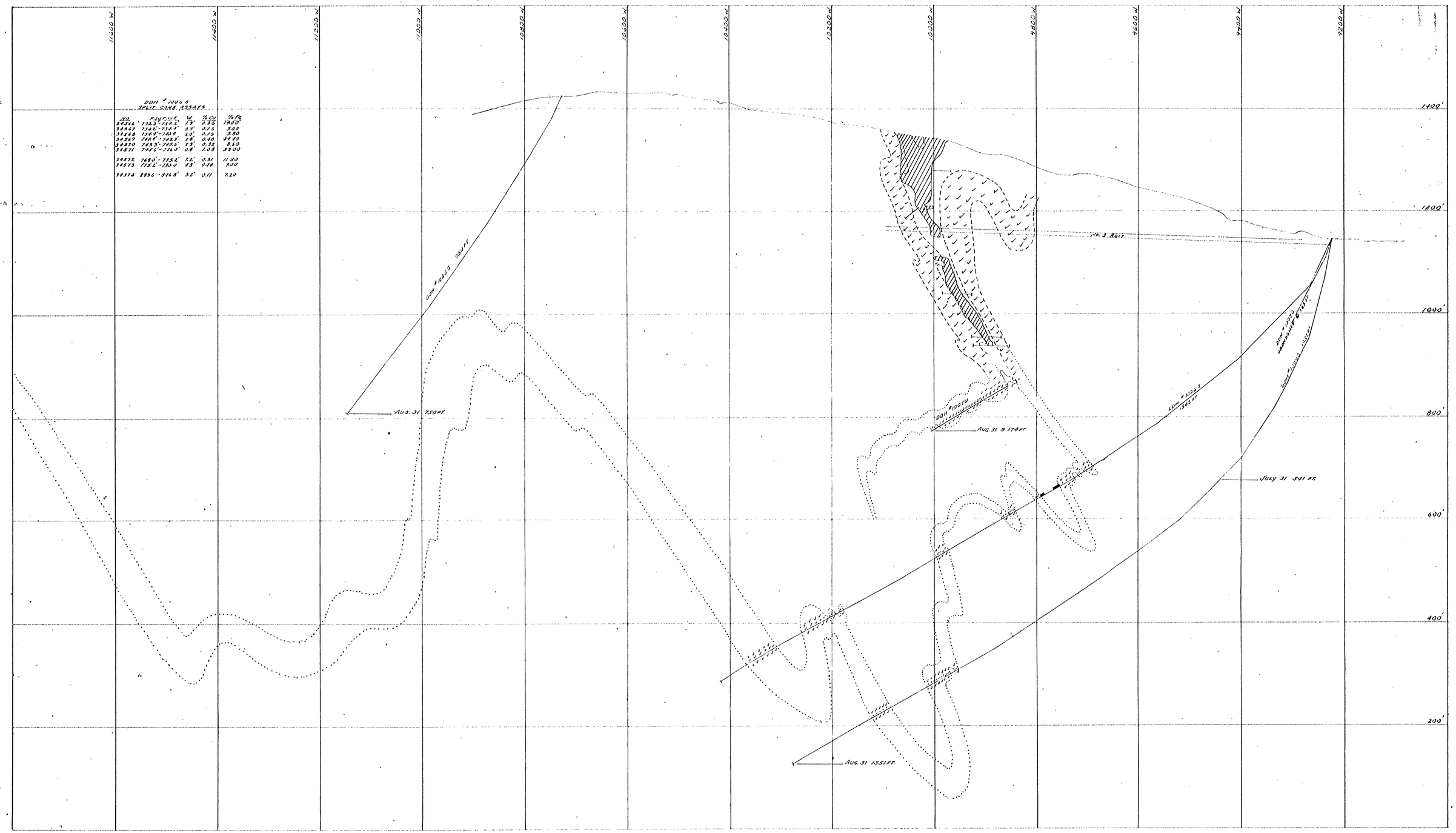
PROJECTED OR INFERRED AMPHIBOLITE HORIZON

PROPOSED DIAMOND DRILL HOLE

APPALACHIAN SULPHIDES INC.
ELIZABETH MINE SOUTH STRAFFORD, VT.

CROSS SECTION 10,100 NORTH

SCALE: 1" = 100' SEPTEMBER 1, 1957



SURFACE OUTLINE, UNDERGROUND WORKINGS

EXISTING DIAMOND DRILL HOLES PERTINENT TO STRUCTURAL INTERPRETATION

MINED OUT AREA

KNOWN ORE, MINERALIZED HORIZON

KNOWN AMPHIBOLITE HORIZON

PROJECTED OR INFERRED ORE OR MINERALIZED HORIZON

PROJECTED OR INFERRED AMPHIBOLITE HORIZON

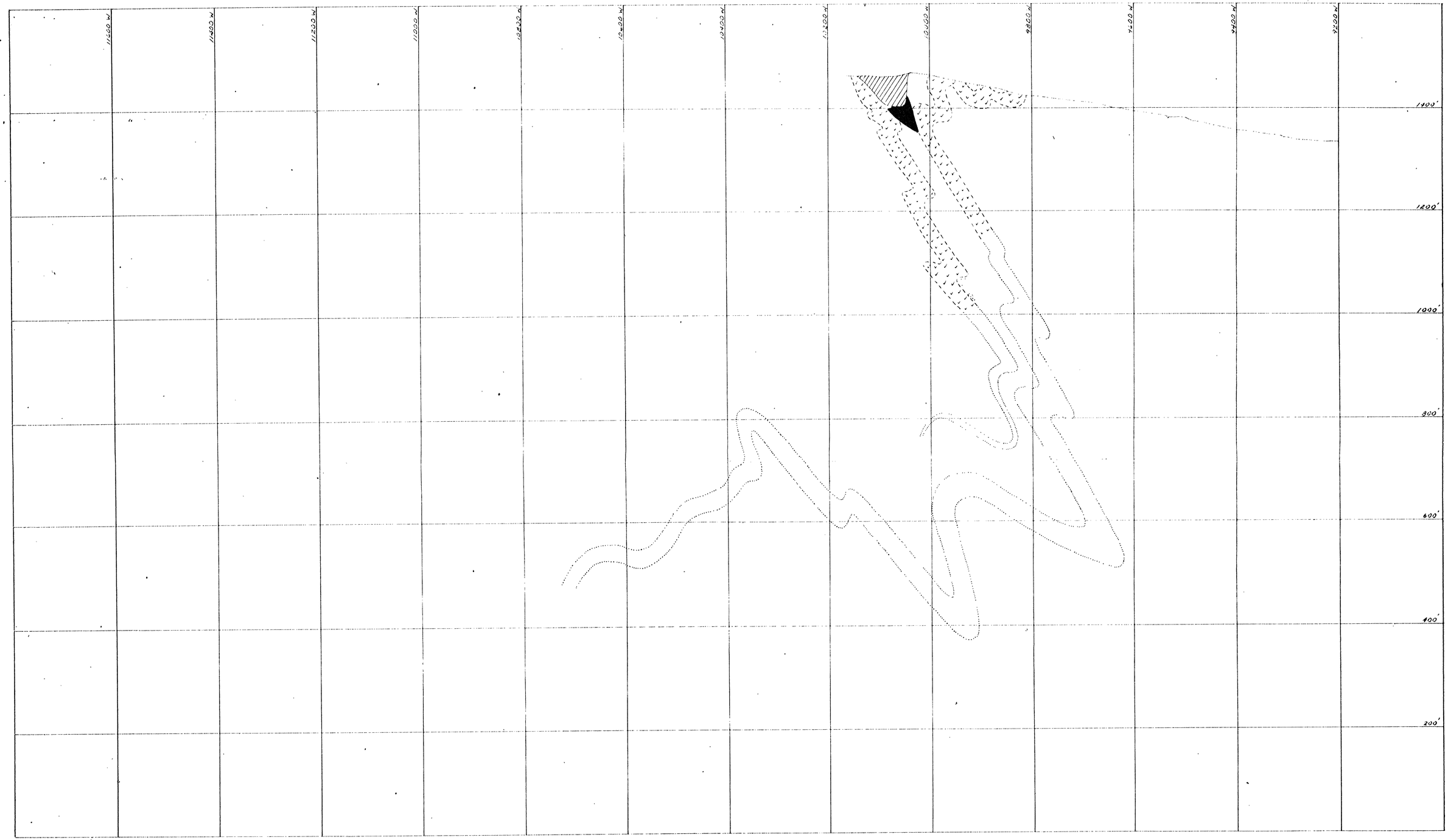
PROPOSED DIAMOND DRILL HOLE

APPALACHIAN SULPHIDES INC.
ELIZABETH MINE SOUTH STRAFFORD, VT.

CROSS SECTION 10,900 NORTH

SCALE: 1" = 100'

SEPTEMBER 1, 1957



SURFACE OUTLINE, UNDERGROUND WORKINGS

EXISTING DIAMOND DRILL HOLES PERTINENT TO STRUCTURAL INTERPRETATION

MINED OUT AREA

KNOWN ORE, MINERALIZED HORIZON

KNOWN AMPHIBOLITE HORIZON

PROJECTED OR INFERRED ORE OR MINERALIZED HORIZON

PROJECTED OR INFERRED AMPHIBOLITE HORIZON

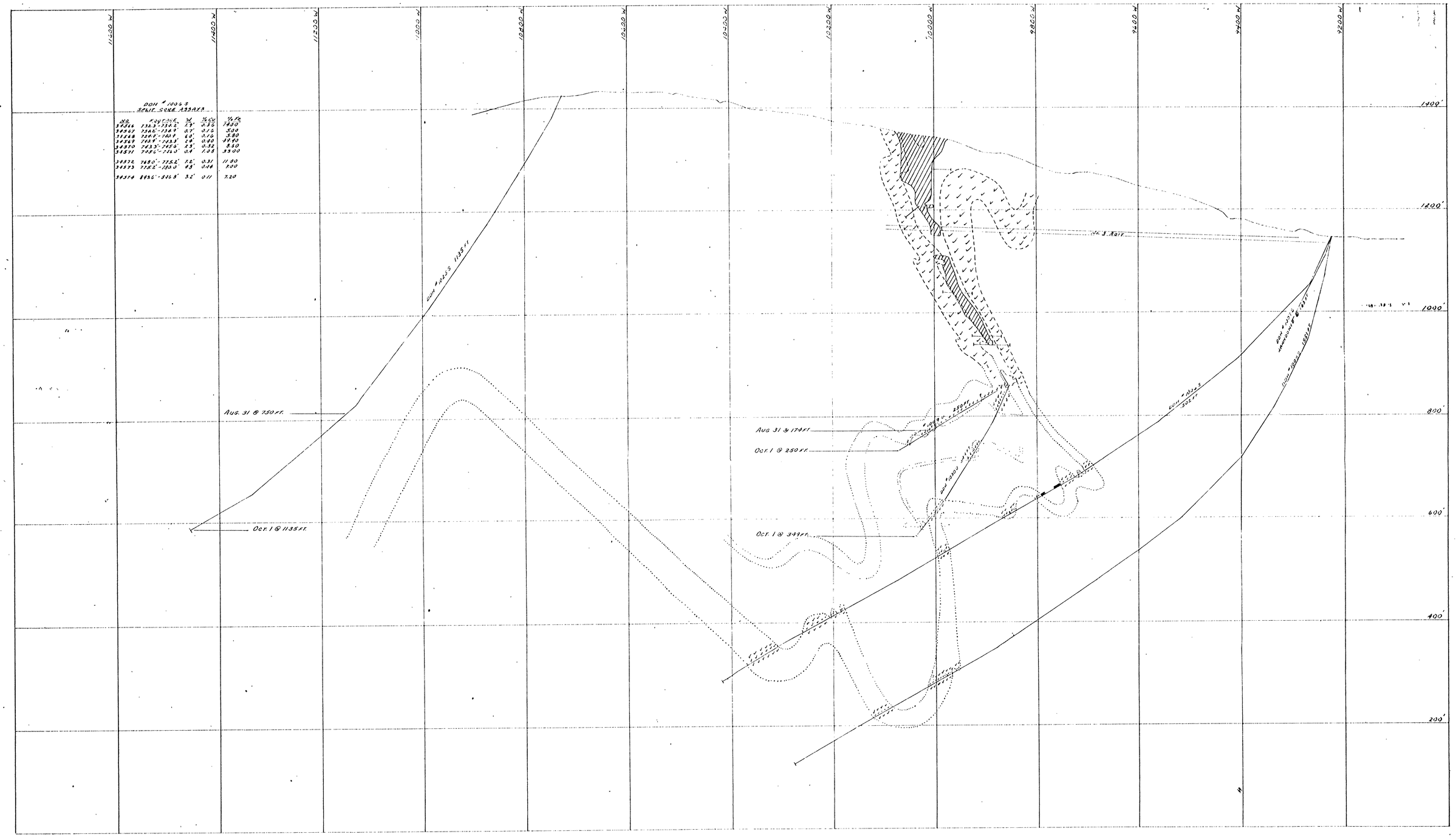
PROPOSED DIAMOND DRILL HOLE

APPALACHIAN SULPHIDES INC.
ELIZABETH MINE SOUTH STRAFFORD, VT.

CROSS SECTION 8800 NORTH

SCALE: 1" = 100'

OCTOBER 4, 1957



SURFACE OUTLINE, UNDERGROUND WORKINGS

EXISTING DIAMOND DRILL HOLES PERTINENT TO STRUCTURAL INTERPRETATION

MINED OUT AREA

KNOWN ORE, MINERALIZED HORIZON

KNOWN AMPHIBOLITE HORIZON

PROJECTED OR INFERRED ORE OR MINERALIZED HORIZON

PROJECTED OR INFERRED AMPHIBOLITE HORIZON

PROPOSED DIAMOND DRILL HOLE

APPALACHIAN SULPHIDES INC.
ELIZABETH MINE SOUTH STRAFFORD, VT.

CROSS SECTION 10,900 NORTH

SCALE: 1" = 100' October 4, 1957

11400 W | 11300 W | 11200 W | 11100 W | 11000 W | 10900 W | 10800 W | 10700 W | 10600 W | 10500 W | 10400 W | 10300 W | 10200 W

1400'
1200'
1000'
800'
600'
400'
200'

DDH #1029U
SPLIT CORE 1353.75

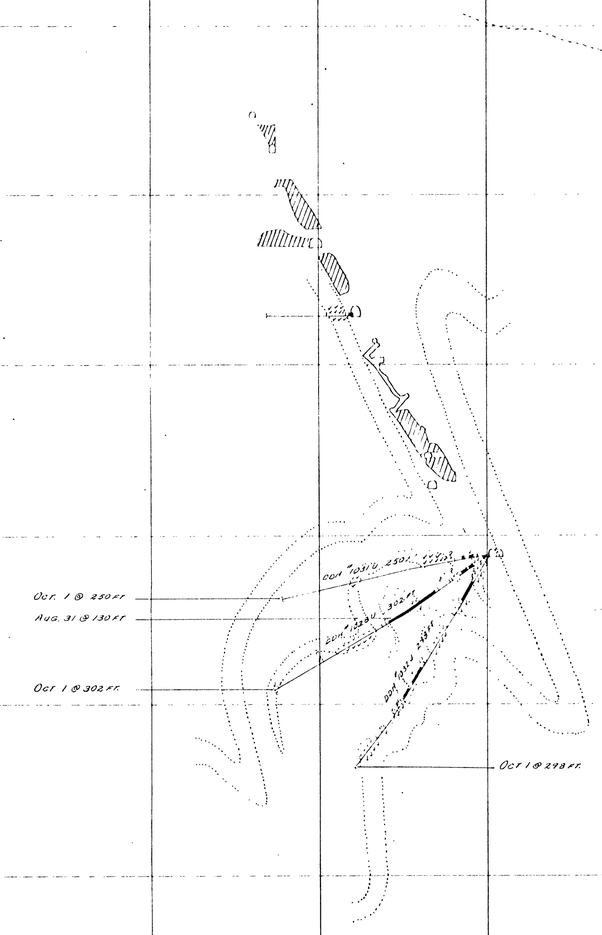
No.	Footage	W.	%Cu	%Fe
32501	0.0' - 41.4'	41.4'	0.21	8.40
32502	198' - 255'	57'	0.69	13.90
32503	280' - 320'	40'	0.27	10.80
32504	320' - 360'	40'	0.15	9.20
34018	149' - 217'	17'	0.44	12.00
34019	847' - 885'	38'	0.27	13.20
34020	885' - 931'	46'	0.21	14.00
34021	932' - 985'	53'	0.29	12.60
34022	1015' - 1030'	15'	0.23	9.60
34023	1140' - 1193'	53'	0.53	13.00
34024	1193' - 1215'	22'	0.27	9.00
34025	1215' - 1260'	45'	0.10	9.20
34026	1260' - 1305'	45'	0.40	23.20
34027	1345' - 1362'	17'	0.22	10.60
34028	1372' - 1389'	17'	1.13	24.40
34029	1391' - 1394'	3'	0.26	10.40
34030	1394' - 1396'	2'	1.83	30.20
34031	1396' - 1400'	4'	0.87	34.60
34032	1400' - 1410'	10'	1.42	22.80
34033	1503' - 1516'	13'	0.27	16.20

DDH #1031U
SPLIT CORE 1433.175

No.	Footage	W.	%Cu	%Fe
34034	110' - 123'	13'	0.10	23.20
34035	123' - 183'	60'	0.66	7.20
34036	193' - 203'	10'	0.47	10.60
34037	203' - 214'	11'	1.26	30.30
34038	277' - 307'	30'	0.36	12.60

DDH #1032U
SPLIT CORE 1339.75

No.	Footage	W.	%Cu	%Fe
34039	320' - 333'	13'	0.50	9.20
34040	373' - 383'	10'	[illegible]	17.20
32701	393' - 420'	27'	0.57	20.20
32702	420' - 442'	22'	[illegible]	17.20
32703	442' - 450'	08'	0.52	15.20
32704	500' - 548'	48'	0.27	13.50
32705	548' - 576'	28'	0.47	7.90
32706	576' - 615'	39'	0.37	14.50
32707	1473' - 1493'	14'	0.30	11.80
32708	1555' - 1620'	65'	0.50	13.60
32709	1620' - 1670'	50'	0.31	13.20
32710	1670' - 1719'	49'	0.25	11.20
32711	1719' - 1763'	44'	0.17	14.20
32712	1850' - 1870'	20'	0.35	14.00
32713	1870' - 1930'	60'	0.18	10.80
32714	1930' - 1963'	33'	0.27	10.20



SURFACE OUTLINE, UNDERGROUND WORKINGS

EXISTING DIAMOND DRILL HOLES (RELEVANT TO STRUCTURAL INTERPRETATION

MINED OUT AREA

KNOWN ORE, MINERALIZED HORIZON

KNOWN AMPHIBOLITE HORIZON

PROJECTED OR INFERRED ORE OR MINERALIZED HORIZON

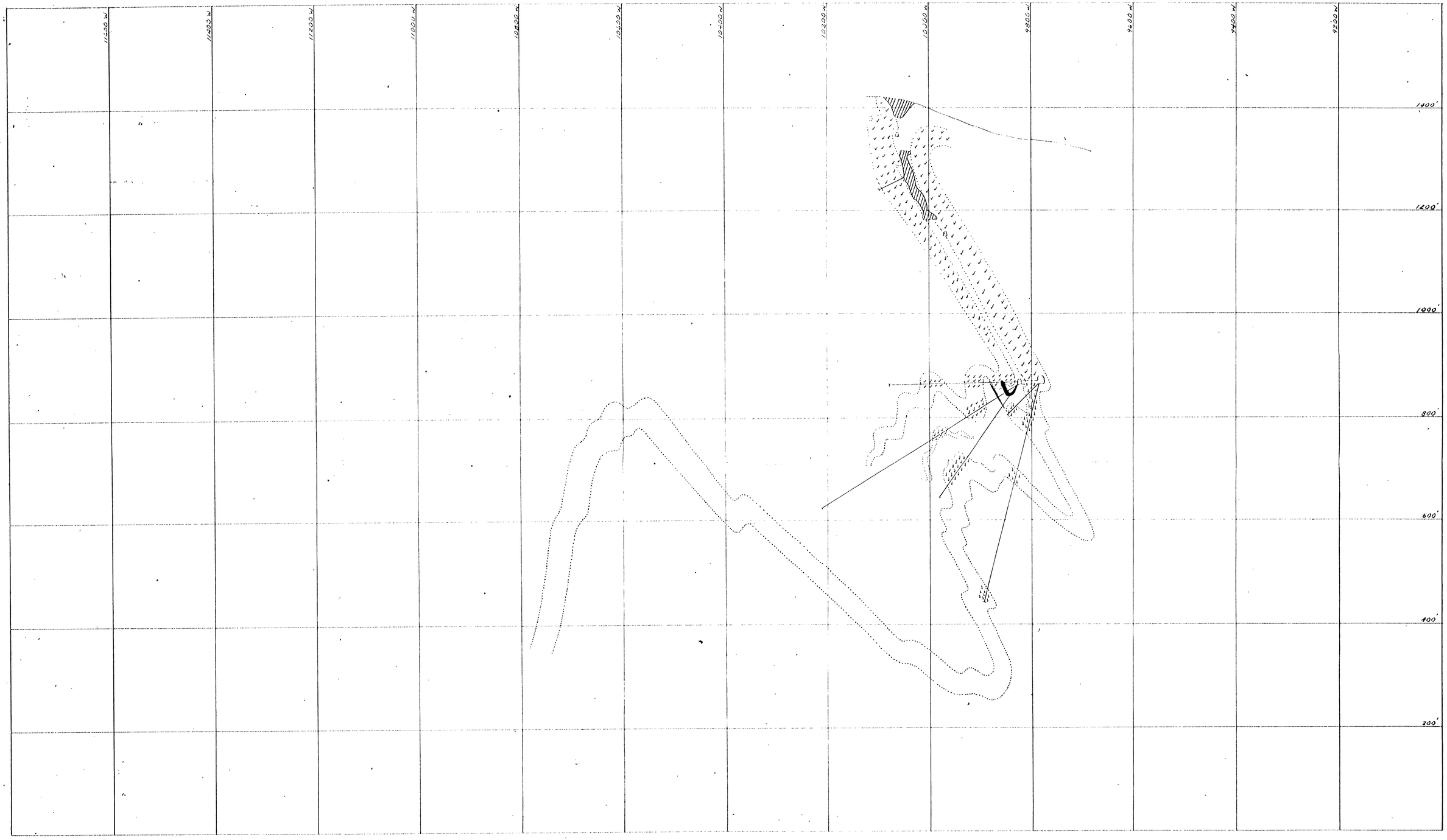
PROJECTED OR INFERRED AMPHIBOLITE HORIZON

PROPOSED DIAMOND DRILL HOLE

APPALACHIAN SULPHIDES INC
ELIZABETH MINE SOUTH STRAFFORD, VT.

CROSS SECTION 11600 NORTH

SCALE 1" = 100' OCTOBER 4, 1957



SURFACE OUTLINE, UNDERGROUND WORKINGS

EXISTING DIAMOND DRILL HOLES, PERTINENT TO STRUCTURAL INTERPRETATION

MINED OUT AREA

KNOWN ORE; MINERALIZED HORIZON

KNOWN AMPHIBOLITE HORIZON

PROJECTED OR INFERRED ORE OR MINERALIZED HORIZON

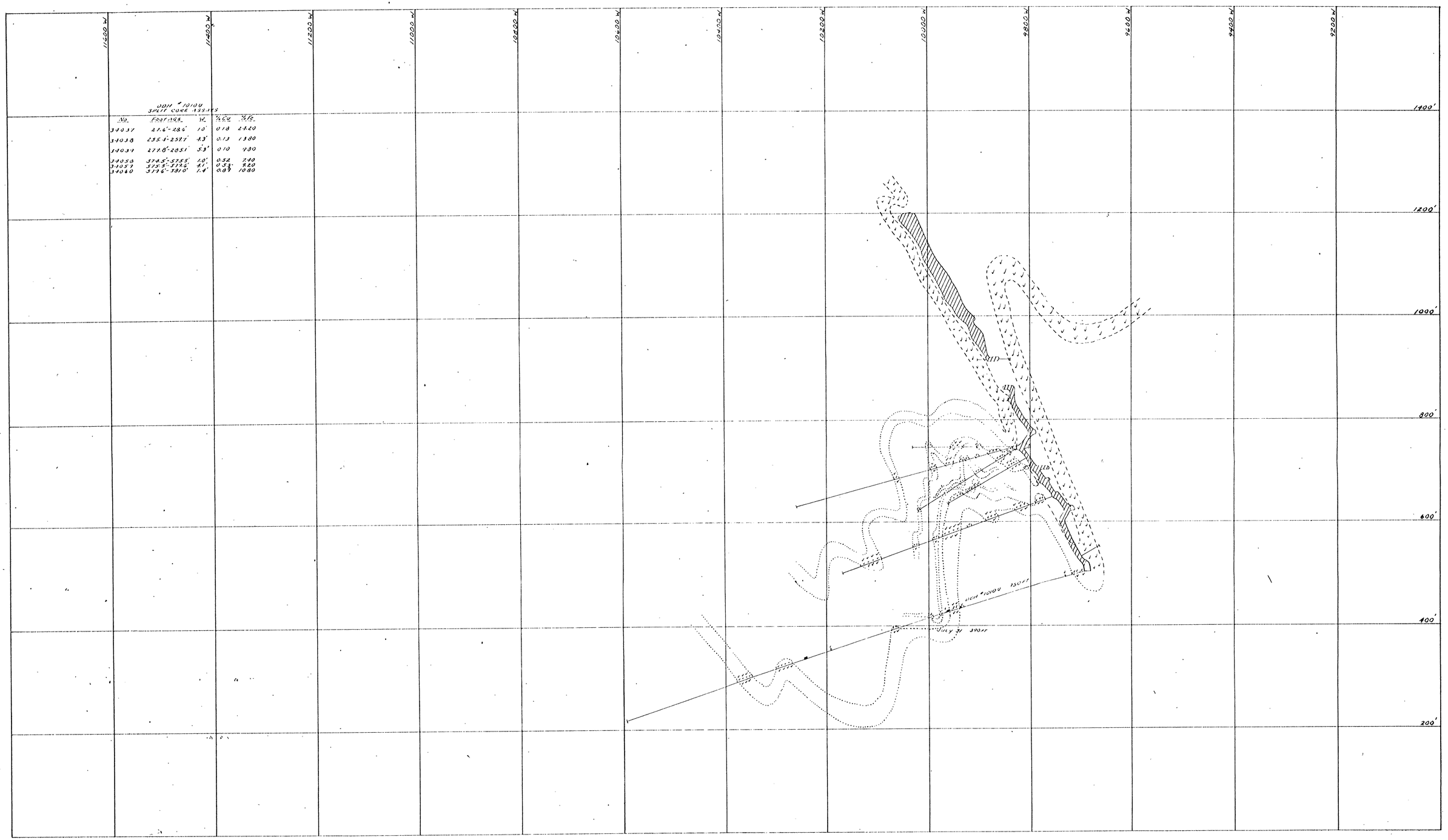
PROJECTED OR INFERRED AMPHIBOLITE HORIZON

PROPOSED DIAMOND DRILL HOLE

APPALACHIAN SULPHIDES INC.
ELIZABETH MINE SOUTH STRAFFORD, VT.

CROSS SECTION 10,100 NORTH

SCALE: 1" = 100' OCTOBER 1, 1957



SURFACE OUTLINE; UNDERGROUND WORKINGS

EXISTING DIAMOND DRILL HOLES PERTINENT TO STRUCTURAL INTERPRETATION

MINED OUT AREA

KNOWN ORE; MINERALIZED HORIZON

KNOWN AMPHIBOLITE HORIZON

PROJECTED OR INFERRED ORE OR MINERALIZED HORIZON

PROJECTED OR INFERRED AMPHIBOLITE HORIZON

PROPOSED DIAMOND DRILL HOLE

APPALACHIAN SULPHIDES INC.
ELIZABETH MINE SOUTH STRAFFORD, VT.

CROSS SECTION 12,100 NORTH

SCALE: 1" = 100' OCTOBER 1, 1957

11200 W | 11400 W | 11200 W | 11000 W | 10800 W | 10600 W | 10400 W | 10200 W | 10000 W | 9800 W | 9600 W | 9400 W | 9200 W

1400'
1200'
1000'
800'
600'
400'
200'

DDH #1030
SPLIT CORE ASSAYS

NO.	FOOTAGE	W.	%Cu	%Fe
34022	79.4'-80.7'	2.3'	0.26	32.80
34023	108.0'-112.0'	4.0'	1.70	23.40
34024	124.8'-126.0'	1.2'	0.31	27.40
34025	149.3'-152.5'	3.2'	0.24	9.40
34026	152.5'-155.3'	4.0'	0.18	7.60
34027	156.5'-161.5'	5.0'	1.52	43.40
34028	161.5'-165.5'	4.0'	1.67	28.60
34029	165.5'-169.3'	3.8'	1.29	20.60
34030	169.3'-173.0'	3.7'	3.97	30.60
34031	173.3'-176.7'	3.4'	0.39	10.60

DDH #1020
SPLIT CORE ASSAYS

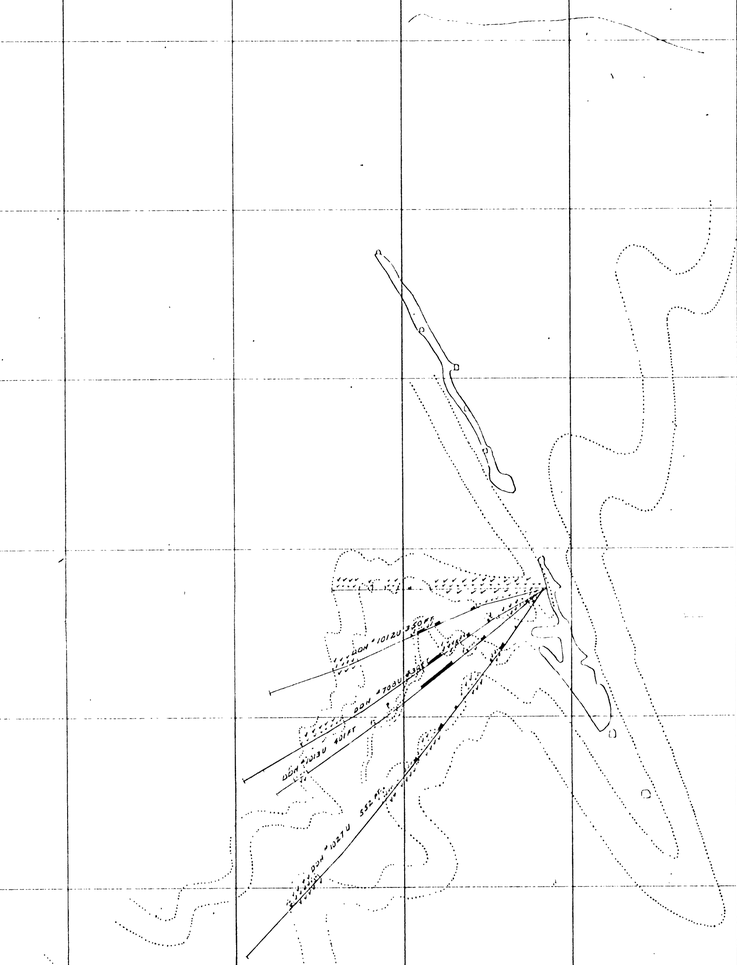
NO.	FOOTAGE	W.	%Cu	%Fe
34032	84.4'-89.0'	4.6'	0.75	17.20
34033	89.0'-89.6'	0.6'	0.93	52.00
34034	130.0'-132.2'	2.2'	0.53	14.20
34035	132.2'-136.5'	4.3'	7.13	29.40
34036	150.3'-151.1'	0.8'	0.40	7.20
34037	157.3'-160.4'	3.1'	0.53	14.00
34038	167.5'-168.8'	1.3'	3.10	20.00

DDH #1030
SPLIT CORE ASSAYS

NO.	FOOTAGE	W.	%Cu	%Fe
34061	22.6'-26.3'	3.7'	0.27	10.60
34062	89.0'-90.7'	1.7'	1.40	15.80
34063	90.7'-93.2'	2.5'	2.08	16.80
34064	93.2'-94.8'	1.6'	2.82	12.40
34065	116.9'-117.2'	0.3'	0.23	51.20
34040	139.0'-140.1'	1.1'	1.94	34.80
34041	140.1'-140.7'	0.6'	0.66	16.20
34042	148.9'-154.4'	5.5'	1.60	37.40
34043	159.4'-160.4'	1.0'	0.27	11.20
34044	160.4'-161.0'	0.6'	2.68	25.60
34045	161.0'-162.0'	1.0'	0.52	13.60
34046	162.0'-163.4'	1.4'	0.37	18.80
34047	163.4'-165.9'	2.5'	0.78	17.60
34048	165.9'-170.6'	4.7'	0.34	19.80
34049	172.6'-174.8'	2.2'	0.26	7.20
34049	174.0'-174.1'	0.1'	0.36	37.00
34050	174.1'-176.1'	2.0'	0.36	10.40
34051	176.1'-178.7'	2.6'	0.70	33.40
34052	178.7'-183.1'	4.4'	0.16	9.60
34053	183.1'-187.0'	3.9'	0.41	12.40

DDH #1021U
SPLIT CORE ASSAYS

No	FOOTAGE	W.	%Cu	%Fe
34066	180'-200'	20'	0.10	9.20
34067	356'-379'	23'	0.13	16.80
34068	809'-850'	41'	0.26	17.00
34069	850'-892'	42'	0.25	8.80
34070	1042'-1055'	2.3'	0.39	13.00
34071	1730'-1733'	0.3'	1.73	16.40
34072	1733'-1745'	1.2'	2.03	39.80
34073	1759'-1761'	1.2'	0.31	10.00
34074	2003.3'-2033'	30'	0.45	15.40
34075	2033.3'-2070'	37'	0.27	17.20
34076	2231.0'-2253'	2.2'	0.16	10.00
34077	2253.8'-2256.0'	2.2'	0.18	13.60



SURFACE OUTLINE; UNDERGROUND WORKINGS

EXISTING DIAMOND DRILL HOLES (PERTINENT TO STRUCTURAL INTERPRETATION

MINED OUT AREA

KNOWN ORE; MINERALIZED HORIZON

KNOWN AMPHIBOLITE HORIZON

PROJECTED OR INFERRED ORE OR MINERALIZED HORIZON

PROJECTED OR INFERRED AMPHIBOLITE HORIZON

PROPOSED DIAMOND DRILL HOLE

APPALACHIAN SULPHIDES INC.
ELIZABETH MINE SOUTH STRAFFORD, VT.

CROSS SECTION 12400 NORTH

SCALE: 1" = 100' OCTOBER 1, 1957

11500 W | 11400 W | 11300 W | 11200 W | 11100 W | 11000 W | 10900 W | 10800 W | 10700 W | 10600 W | 10500 W | 10400 W | 10300 W | 10200 W

1400'

1200'

1000'

800'

600'

400'

200'

DDH #1014U
SPLIT CORE ASSAYS

NO.	FOOTAGE	W.	%Cu	%Fe
34545	1075'-1098'	23'	0.13	1.00
34546	1190'-1210'	20'	0.32	1.40
34547	1270'-1280'	10'	0.13	9.40
34548	1280'-1283'	03'	0.11	32.60
34549	1283'-1295'	12'	0.15	7.40

DDH #1015U
SPLIT CORE ASSAYS

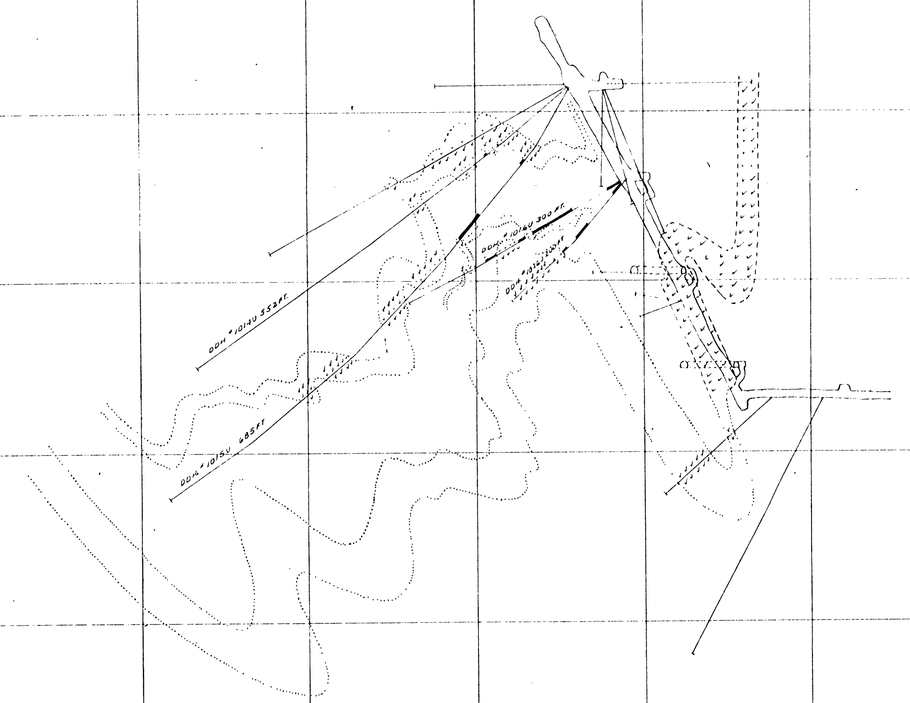
NO.	FOOTAGE	W.	%Cu	%Fe
34553	1855'-1877'	12'	1.65	13.80
34554	1877'-1900'	23'	0.65	10.60
34555	1900'-1912'	12'	0.71	13.80
34556	1912'-1934'	22'	0.71	13.00
34557	1934'-1947'	13'	0.95	13.60
34558	1947'-1975'	28'	1.08	17.00
34559	1975'-2003'	28'	0.37	12.40
34560	2003'-2040	35'	0.27	7.20
34561	2040'-2070	30'	0.21	5.20
34562	2070'-2103'	33'	0.17	5.00
34563	2103'-2123'	20'	0.53	12.60
34564	2123'-2173'	50'	0.33	12.20
34565	2173-2223'	50'	0.33	11.60
34551	1020'-1055'	35'	0.16	7.60
34552	1055'-1085'	30'	0.11	1.20

DDH #1016U
SPLIT CORE ASSAYS

NO.	FOOTAGE	W.	%Cu	%Fe
34535	100'-122'	22'	0.16	6.80
34536	122'-160'	38'	0.37	37.60
34537	160'-200'	40'	0.58	17.60
34538	200'-230'	30'	0.38	28.40
34539	230'-270'	40'	0.16	8.00
34600	760'-880'	10'	1.18	4.40
34601	880'-897'	17'	0.10	7.20
34602	897'-919'	23'	0.36	10.80
34603	919'-943'	23'	0.08	8.20
34604	943'-970'	27'	1.78	22.40
34605	970'-1010'	40'	0.71	10.00
34606	1010'-1030'	20'	0.40	7.40
34607	1030'-1048	18'	0.08	22.00
34608	1048'-1161	10'	0.08	6.00
34609	1168'-1175'	07'	1.03	5.60
34610	1175'-1190'	15'	0.54	15.20
34611	1190'-1240	50'	0.42	7.50
34612	1240'-1280'	40'	0.37	3.40
34613	1280'-1315'	35'	0.72	11.00
34615	1815'-1837'	22'	0.18	15.40
34616	1837'-1877'	38'	0.31	7.40
34617	1877'-1906'	27'	0.65	9.20
34618	1863'-1863'	50'	0.67	10.60
34619	1863'-1913'	50'	0.82	10.60
34620	1912'-1950'	38'	0.47	10.80
34621	1950'-1969'	19'	0.57	11.80

DDH #1025U
SPLIT CORE ASSAYS

NO.	FOOTAGE	W.	%Cu	%Fe
34573	100'-124'	24'	0.18	7.50
34574	124'-140'	16'	2.16	46.00
34580	140'-160'	20'	1.51	19.00
34581	160'-200'	40'	0.80	6.00
34582	200'-240'	40'	1.33	16.00
34583	720'-730	10'	0.31	10.30
34584	730'-736'	06	0.32	32.00
34585	736'-772	36	0.27	7.00
34586	772'-824	52	0.57	31.40
34587	824'-856	32	0.23	3.00
34588	856'-893	37	0.48	10.40
34589	893'-912'	19	0.18	15.00
34590	912'-937'	25	4.76	29.20
34591	1105'-1117'	12	0.21	37.00
34592	1117'-1130'	13'	0.48	1.40
34593	1130'-1172	42'	0.76	10.50
34594	1300'-1310'	10'	0.31	15.10



SURFACE OUTLINE, UNDERGROUND WORKINGS

EXISTING DIAMOND DRILL HOLES PERTINENT TO STRUCTURAL INTERPRETATION

MINED OUT AREA

KNOWN ORE, MINERALIZED HORIZON

KNOWN AMPHIBOLITE HORIZON

PROJECTED OR INFERRED ORE OR MINERALIZED HORIZON

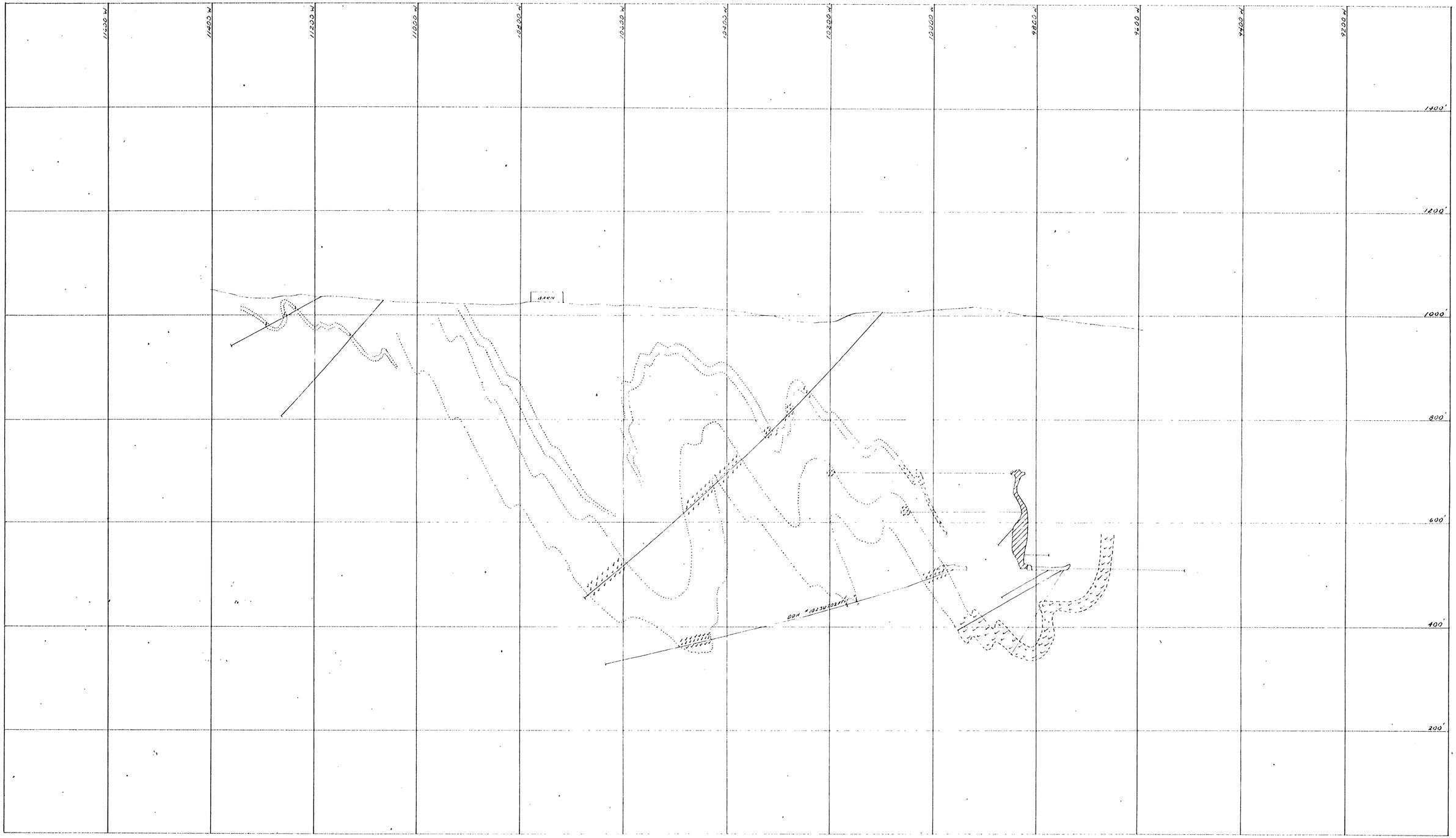
PROJECTED OR INFERRED AMPHIBOLITE HORIZON

PROPOSED DIAMOND DRILL HOLE

APPALACHIAN SULPHIDES INC.
ELIZABETH MINE SOUTH STRAFFORD, VT.

CROSS SECTION 13,100 NORTH

SCALE. 1" = 100' OCTOBER 1, 1957



SURFACE OUTLINE; UNDERGROUND WORKINGS

EXISTING DIAMOND DRILL HOLES PERTINENT TO STRUCTURAL INTERPRETATION

MINED OUT AREA

KNOWN ORE; MINERALIZED HORIZON

KNOWN AMPHIBOLITE HORIZON

PROJECTED OR INFERRED ORE OR MINERALIZED HORIZON

PROJECTED OR INFERRED AMPHIBOLITE HORIZON

PROPOSED DIAMOND DRILL HOLE

APPALACHIAN SULPHIDES INC.
ELIZABETH MINE SOUTH STRAFFORD, VT.

CROSS SECTION 15,100 NORTH

SCALE: 1" = 100'

October 1, 1957

SURFACE OUTLINE, UNDERGROUND WORKINGS

EXISTING DIAMOND DRILL HOLES PERTINENT TO STRUCTURAL INTERPRETATION

MINED OUT AREA

KNOWN ORE, MINERALIZED HORIZON

KNOWN AMPHIBOLITE HORIZON

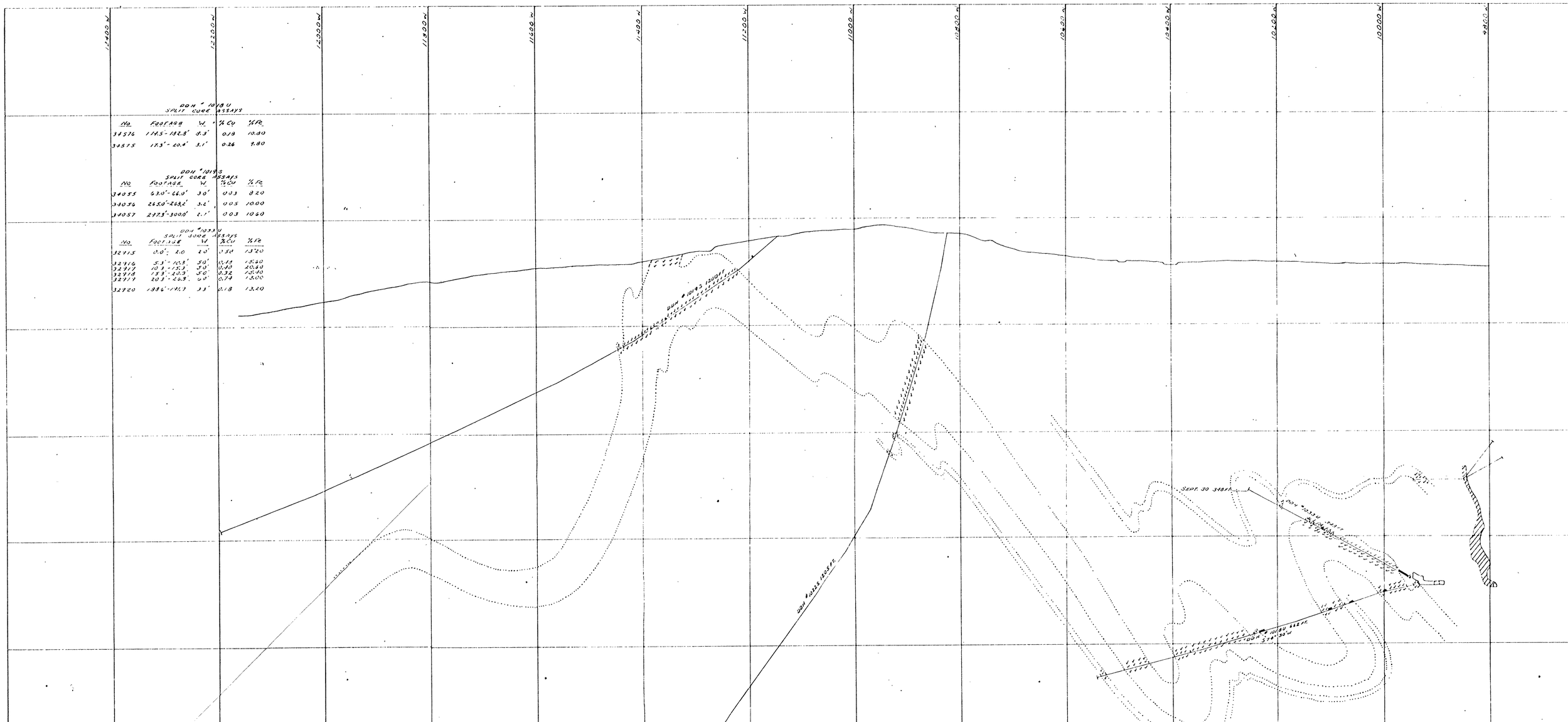
PROJECTED OR INFERRED ORE OR MINERALIZED HORIZON

PROJECTED OR INFERRED AMPHIBOLITE HORIZON

PROPOSED DIAMOND DRILL HOLE

APPALACHIAN SULPHIDES INC.
ELIZABETH MINE SOUTH STRAFFORD, VT.
CROSS SECTION 18000 NORTH

SCALE 1" = 100' OCTOBER 1, 1957



DDH # 10193U
SPLIT CORE ASSAYS

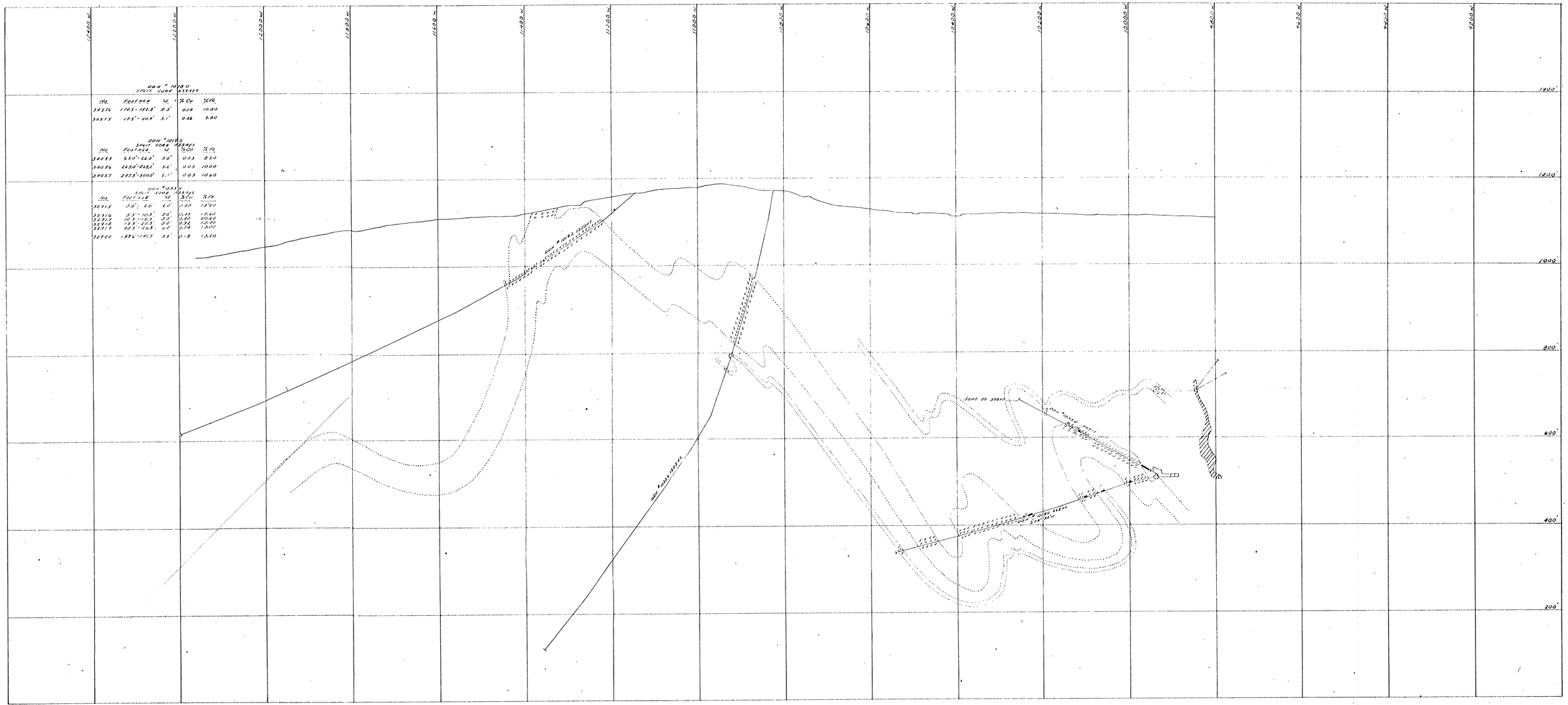
No	FOOTAGE	W.	% Cu	% Fe
34576	174.5'-192.8'	8.3'	0.19	10.80
34575	17.3'-20.4'	3.1'	0.26	9.80

DDH # 10195
SPLIT CORE ASSAYS

No	FOOTAGE	W.	% Cu	% Fe
34055	63.0'-66.0'	3.0'	0.03	8.20
34056	265.0'-268.2'	3.2'	0.05	10.00
34057	297.3'-300.0'	2.7'	0.03	10.60

DDH # 10330
SPLIT CORE ASSAYS

No	FOOTAGE	W	% Cu	% Fe
32715	0.0'-2.0'	2.0'	0.50	13.20
32716	5.3'-10.3'	5.0'	0.19	15.60
32717	10.3'-15.3'	5.0'	0.18	20.60
32718	15.3'-20.3'	5.0'	0.32	15.40
32719	20.3'-26.3'	6.0'	0.74	13.00
32720	1886'-1911'	3.3'	0.18	13.20



SURFACE OUTLINE, UNDERGROUND WORKINGS

EXISTING DIAMOND DRILL HOLES PERTINENT TO STRUCTURAL INTERPRETATION

MINED OUT AREA

KNOWN ORE, MINERALIZED HORIZON

KNOWN AMPHIBOLITE HORIZON

PROJECTED OR INFERRED ORE OR MINERALIZED HORIZON

PROJECTED OR INFERRED AMPHIBOLITE HORIZON

PROPOSED DIAMOND DRILL HOLE

APPALACHIAN SULPHIDES INC.
ELIZABETH MINE SOUTH STRAFFORD, VT.

CROSS SECTION 14,000 NORTH

SCALE: 1" = 100' OCTOBER 4, 1957