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DEFENSE MINERALS ADMINISTRATION WASHINGTON, D. C.

OCT 15 9 06 AM '51

UNITED STATES VANADIUM COMPANY
A Division of Union Carbide and Carbon Corporation

ORE SETTLEMENT

Receiving Station Uravan, Colorado Grand Junction, Colorado Dec. 5, 1950
Liquidation No. 1437 Lot No. 20704 Shippers Lot No. 1
Bought of John C. Ukele A.E.C. License No. Applied for
Address Gateway, Colorado
Type of Ore Carnotite Date received 11/28/50
Mining Claim La Sal #2 Mining District Gateway Pile No. 9

Lot No.	Net Weight Pounds	% H_2O	Dry Weight Pounds	SETTLEMENT ASSAYS U_3O_8	V_2O_5	$CaCO_3$	CONTENTS POUNDS U_3O_8	V_2O_5	$CaCO_3$
	14720	5.7	13880.96	0.12	1.23		16.66	170.74	

	PRICED PER A.E.C. CIRCULAR NO. 5 POUNDS	PER LB.	DRY SHORT TONS	PER TON	VALUE	TOTAL VALUE
U_3O_8 Payment	16.66	.90	6.94	2.16	14.99	
Development Allowance	16.66	.50	6.94	1.20	8.33	
Total U_3O_8 Payment						23.32
V_2O_5 Payment	170.74	.31	6.94	7.63	52.93	
Total V_2O_5 Payment						52.93
Haulage Allowance 53 Miles @ .06 per wet ton mile 9.36 wet tons Wet Tons						23.40
Total U_3O_8, V_2O_5 Payment and haulage						99.65

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UNITED STATES VANADIUM COMPANY
A Division of Union Carbide and Carbon Corporation

ORE SETTLEMENT

Receiving Station Uravan, Colorado Grand Junction, Colorado Dec. 21, 1950
Liquidation No. 1492 Lot No. 19942 Shippers Lot No. 2
Bought of John C. Ukele A.E.C. License No. P-840
Address Gateway, Colorado
Type of Ore Carnotite Date received 12/13/50
Mining Claim La Sal #2 Mining District Gateway Pile No.

Lot No.	Net Weight Pounds	% H_2O	Dry Weight Pounds	SETTLEMENT ASSAYS U_3O_8	V_2O_5	$CaCO_3$	CONTENTS POUNDS U_3O_8	V_2O_5	$CaCO_3$
	14660	3.2	14190.88	0.39	3.22		55.34	456.95	

PRICED PER A.E.C. CIRCULAR NO. 5

	POUNDS	PER LB.	DRY SHORT TONS	PER TON	VALUE	TOTAL VALUE
U_3O_8 Payment	55.34	2.00	7.10	15.60	110.68	
Development Allowance	55.34	.50	7.10	3.90	27.68	
Excess 4 lbs. per ton 3.80 (Premium)	26.98	.25	7.10	.95	6.75	
Total U_3O_8 Payment						145.10
V_2O_5 Payment	456.95	.31	7.10	19.95	141.65	
Total V_2O_5 Payment						141.65
Haulage Allowance 53 Miles @ .06 per wet ton mile 7.33 wet tons Wet Tons						23.31
Total U308, V205 Payment and haulage						310.06

Icertify that I am the lawful owner or authorized Representative of the Lawful Owner, of the Ore described in this Settlement Sheet and have legal right to deliver the same to the United States Vanadium Company, a Division of Union Carbide and Carbon Corporation.

I certify that I hold the A.E.C. Source Material License numbered above.

I hereby transfer to the United States Vanadium Company, a Division of Union Carbide and Carbon Corporation, effective as of the date of delivery of the ore, all my right, title and interest in and to said ore.

The amount set opposite "Total U308, V205, Payment" shown above constitutes the entire amount payable to me in respect of ore deliveries described herein and is accepted by me in full payment thereof.

I request that payment be made on the basis of the average of moisture contents, of U308 contents and of V205 contents of the several loads delivered and covered by this settlement.

Voucher Number 12-306	Date 12/21/50
Check Number 9240	Date 12/21/50
Approved for Payment	

Seller or Agent

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UNITED STATES VANADIUM COMPANY
A Division of Union Carbide and Carbon Corporation

O R E S E T T L E M E N T

Receiving Station [illegible], Colorado Grand Junction, Colorado January [illegible], 19[illegible]
Liquidation No. 1503 Lot No. see detail sheet Shippers Lot No. [illegible]
Bought of [illegible] A.E.C. License No. [illegible]
Address Gateway, Colorado
Type of Ore [illegible] Date received 12/[illegible]/50-12/31/50
Mining Claim [illegible] Mining District Gateway Pile No. Bin

Lot No.	Net Weight Pounds	% H_2O	Dry Weight Pounds	SETTLEMENT ASSAYS U_3O_8	V_2O_5	$CaCO_3$	CONTENTS POUNDS U_3O_8	V_2O_5	$CaCO_3$
	31000	5.6	30100.12	0.14	2.36		42.26	712.44	

PRICED PER A.E.C. CIRCULAR NO. 5

	POUNDS	PER LB.	DRY SHORT TONS	PER TON	VALUE	TOTAL VALUE
U_3O_8 Payment	42.26	1.80	15.05	3.60	54.18	
Development Allowance	42.26	.50	15.05	1.40	21.15	
Total U_3O_8 Payment						75.37
V_2O_5 Payment	712.44	.31	15.05	14.64	220.56	
Total V_2O_5 Payment						220.56
Haulage Allowance 100 Miles [illegible] .06 Wet Tons 16.90 per wet ton mile						[illegible]
Total U308, V205 Payment and Haulage						[illegible]

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ELECTRO METALLURGICAL DIVISION - MINING DEPARTMENT
~~UNITED STATES VANADIUM CORPORATION~~
A Division of Union Carbide and Carbon Corporation

ORE SETTLEMENT

Receiving Station Uravan, Colorado Grand Junction, Colorado January 10, 1951
Liquidation No. 1363 Lot No. 25003 Shippers Lot No. 5
Bought of John C. Wolo A.E.C. License No. [illegible]
Address Gateway, Colorado
Type of Ore Carnotite Date received January 6, 1951
Mining Claim Lo Sol #2 Mining District Gateway Pile No. 6

Lot No.	Net Weight Pounds	% H_2O	Dry Weight Pounds	SETTLEMENT ASSAYS U_3O_8	V_2O_5	$CaCO_3$	CONTENTS POUNDS U_3O_8	V_2O_5	$CaCO_3$
	15100	3.3	14612.78	0.10	1.54		14.61	225.04	

PRICED PER A.E.C. CIRCULAR NO. 5

	POUNDS	PER LB.	DRY SHORT TONS	PER TON	VALUE	TOTAL VALUE
U_3O_8 Payment	14.61	.50	7.31	1.00	7.31	
Development Allowance	14.61	.50	7.31	1.00	7.31	
Total U_3O_8 Payment						14.62
V_2O_5 Payment	225.04	.51	7.31	0.54	62.76	
Total V_2O_5 Payment						62.76
Haulage Allowance 53 Miles 7.00 Wet Tons @ .06 per wet ton mile						24.17
Total U308, V205 Payment and Haulage						103.55

ELECTRO METALLURGICAL DIVISION-MINING DEPARTMENT

UNION CARBIDE AND CARBON CORPORATION

ORE SETTLEMENT

Receiving Station Rifle, Colorado Grand Junction, Colorado, February 5, 1951.

Liquidation No. 1665 Lot No. see detail sheet Shippers Lot no. 6 & 7

Bought of John Okele A.E.C. License No. IP-840

Address Gateway, Colorado

Type of Ore Carnotite Date Received Date 1/18/51 thru 1/31/51

Mining Claim La Salle #2 Mining District Gateway File No. Bin

Lot No.	Net Weight Pounds	% H_2O	Dry Weight Pounds	SETTLEMENT ASSAYS			CONTENTS POUNDS		
				U_3O_8	V_2O_5	$CaCO_3$	U_3O_8	V_2O_5	$CaCO_3$
	31100	7.2	28860.80	0.68	3.20		196.25	923.55	

PRICED PER A.E.C. CIRCULAR NO. 5

	Pounds	Per Lb.	Dry Short Tons	Per Ton	Value	Total Value
U_3O_8 Payment	196.25	2.00	14.43	27.20	392.50	
Development Allowance	196.25	.50	14.43	7.10	98.13	
Excess 4 lbs. per ton 3.00 (from)	138.55	.25	14.43	2.40	34.63	
Excess 10 lbs. per ton 3.00 (from)	51.95	.25	14.43	.90	12.99	
Total U_3O_8 Payment						533.25
V_2O_5 Payment	923.55	.31	14.43	18.34	264.30	264.30
Total V_2O_5 Payment						264.30
Haulage Allowance 131 Miles 15.05 Wet Tons @ .06 per wet ton mile						122.22
Total U_3O_8 V_2O_5 and Haulage Payment						646.77

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UNITED STATES VANADIUM COMPANY
A Division of Union Carbide and Carbon Corporation

ORE SETTLEMENT

Receiving Station Uravan, Colorado Grand Junction, Colorado Feb. 22, 19 51
Liquidation No. 1643 Lot No. 25966 Shippers Lot No. 8
Bought of John Ukele A.E.C. License No. P-840
Address Gateway, Colorado
Type of Ore Carnotite Date received 2/14/51
Mining Claim La Sal #2 Mining District Gateway Pile No.

Lot No.	Net Weight Pounds	% H_2O	Dry Weight Pounds	SETTLEMENT ASSAYS U_3O_8	V_2O_5	$CaCO_3$	CONTENTS POUNDS U_3O_8	V_2O_5	$CaCO_3$
	16470	7.6	15218.28	0.39	2.48		59.35	377.41	

PRICED PER A.E.C. CIRCULAR NO. 5

	POUNDS	PER LB.	DRY SHORT TONS	PER TON	VALUE	TOTAL VALUE
U_3O_8 Payment	59.35	3.00	7.61	15.60	118.70	
Development Allowance	59.35	.50	7.61	3.00	29.68	
Excess 4 lbs. per ton 3.80 (Premium)	28.92	.25	7.61	.95	7.23	
Total U_3O_8 Payment						155.61
V_2O_5 Payment	377.41	.31	7.61	15.37	117.00	
Total V_2O_5 Payment						117.00
Haulage Allowance 53 Miles 8.24 Wet Tons A .06 per wet ton mile						
Total U_3O_8, V_2O_5 Payment and Haulage						298.81

THE [illegible] MINERAL CO.

Radium
Molybdenum
Uranium
Vanadium
Tungsten

Manufacturers of Rare Mineral Salts

Denver 10, Colorado

OFFICE and WORKS
1005 South Hancock Street
Phone PEarl 7960

February 23, 1951

SETTLEMENT OF CARNOTITE ORE - 100 M. 3[illegible]6

PURCHASED FROM: [illegible]
CATEGORY, [illegible]

LICENSE NO. [illegible]-340

2,000 lbs. ore, as received (10.3% moisture)
10.3%
215.27 lbs. water

2,000
Less 215
1,075 lbs. ore, net weight, dry
11.3% U_3O_8, dry basis
[illegible] lbs. U_3O_8
5.80 per lb U_3O_8

$1,137.43
Less 227.50 20% royalty to Gateway [illegible] development Co.
$911.93

$1,137.43
20% Royalty
$ 227.50

Amount of check to [illegible] Co.

[illegible] Amount of check to Gateway [illegible]
Development Co.,
P. O. Box 107,
Gateway, Colorado

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UNITED STATES VANADIUM COMPANY
A Division of Union Carbide and Carbon Corporation

ORE SETTLEMENT

Receiving Station Rifle, Colorado Grand Junction, Colorado March 6, 1951
Liquidation No. 1674 Lot No. 12764 Shippers Lot No. 9
Bought of John Ukele A.E.C. License No. P-840
Address Gateway, Colorado
Type of Ore Carnotite Date received 2/26/51
Mining Claim La Sal #2 Mining District Gateway Pile No.

Lot No.	Net Weight Pounds	% H_2O	Dry Weight Pounds	SETTLEMENT ASSAYS U_3O_8	V_2O_5	$CaCO_3$	CONTENTS POUNDS U_3O_8	V_2O_5	$CaCO_3$
	15040	6.9	14002.24	1.01	2.36		141.42	330.45	

	PRICED PER A.E.C. CIRCULAR NO. 5					
	POUNDS	PER LB.	DRY SHORT TONS	PER TON	VALUE	TOTAL VALUE
U_3O_8 Payment	141.42	2.00	7.00	40.40	282.84	
Development Allowance	141.42	.50	7.00	10.00	70.71	
Excess 10 lbs. per ton 10.20 (Premium)	71.40	.25	7.00	2.55	17.85	
Excess 4 lbs. per ton 10.20 (Premium)	113.40	.25	7.00	4.05	28.35	
Total U_3O_8 Payment						399.75
V_2O_5 Payment	330.45	.31	7.00	14.63	102.44	
Total V_2O_5 Payment						102.44
Haulage Allowance 131 Miles 7.52 Wet Tons A .06 per wet ton mile						59.11
Total U308, V205 Payment and Haulage						561.30

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UNITED STATES VANADIUM COMPANY
A Division of Union Carbide and Carbon Corporation

ORE SETTLEMENT

Receiving Station Rifle, Colorado Grand Junction, Colorado March 19, 1951
Liquidation No. 1708 Lot No. 13092 Shippers Lot No. 10
Bought of John Ukele A.E.C. License No. P-340
Address Gateway, Colorado
Type of Ore Carnotite Date received 3/13/50
Mining Claim La Sal #2 Mining District Gateway Pile No.

Lot No.	Net Weight Pounds	% H_2O	Dry Weight Pounds	SETTLEMENT ASSAYS U_3O_8	V_2O_5	$CaCO_3$	CONTENTS POUNDS U_3O_8	V_2O_5	$CaCO_3$
	14250	5.6	13458.00	1.26	6.57	169.50	883.80		

PRICED PER A.E.C. CIRCULAR NO. 5 (Revised)

	POUNDS	PER LB.	DRY SHORT TONS	PER TON	VALUE	TOTAL VALUE
U_3O_8 Payment	169.50	3.50	6.73	88.15	593.25	
Development Allowance	169.50	.50	6.73	12.60	84.75	
Excess 4 lbs. per ton 21.20 (Prem)	142.68	.75	6.73	15.90	107.01	
Excess 10 lbs. per ton 15.70 (Prem)	102.30	.25	6.73	3.80	25.58	
Total U_3O_8 Payment						810.59
V_2O_5 Payment	883.80	.31	6.73	40.71	273.98	
Total V_2O_5 Payment						273.98
Haulage Allowance 131 Miles 7.13 Wet Tons @ .06 per wet ton mile						56.04
Total U308, V205/Payment and Haulage						1140.61

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UNITED STATES VANADIUM COMPANY
A Division of Union Carbide and Carbon Corporation

O R E S E T T L E M E N T

Receiving Station Rifle, Colorado Grand Junction, Colorado April 6, 1951
Liquidation No. 1727 Lot No. see detail sheet Shippers Lot No. 11,12,&13
Bought of John Ukele A.E.C. License No. P-840
Address Gateway, Colorado
Type of Ore Carnotite Date received 3/16/51 - 3/31/51
Mining Claim La Sal #2 Mining District Gateway Pile No.

Lot No.	Net Weight Pounds	% H_2O	Dry Weight Pounds	SETTLEMENT ASSAYS U_3O_8	V_2O_5	$CaCO_3$	CONTENTS POUNDS U_3O_8	V_2O_5	$CaCO_3$
	46100	6.2	43241.80	0.95	3.81		410.80	1647.51	

PRICED PER A.E.C. CIRCULAR NO. 5 (Revised)

	POUNDS	PER LB.	DRY SHORT TONS	PER TON	VALUE	TOTAL VALUE
U_3O_8 Payment	410.80	3.50	21.62	66.50	1437.80	
Development Allowance	410.80	.50	21.62	9.50	205.40	
Excess 4 lbs. per ton 15.00 (Premium)	324.30	.75	21.62	11.25	243.23	
Excess 10 lbs. per ton 9.00 (Premium)	194.58	.25	21.62	2.25	48.65	
Total U_3O_8 Payment						1935.08
V_2O_5 Payment	1647.51	.31	21.62	23.62	510.73	
Total V_2O_5 Payment						510.73
Haulage Allowance Miles Wet Tons per wet ton mile Purchased F.O.B. Mine						
Total U308, V205 Payment						2445.81

CLIMAX URANIUM COMPANY
Grand Junction, Colo.

Receiving Station Climax Uranium Company Grand Junction, Colorado. April 11, 1951
Liquidation No. [illegible] Lot No. [illegible] Shipper [illegible]
Bought of John [illegible] Okelo [illegible] License No. [illegible]
Address Gateway, Colorado
Type of Ore Carnotite Date received 3/1/51 - 3/31/51
Mining Claim In file [illegible] Mill Intake Gateway File No. [illegible]

Lot No.	Net Weight Pounds	H_2O	Dry Weight Pounds	Contents Pounds U_3O_8	V_2O_5	[illegible]	Contents Pounds U_3O_8	V_2O_5	$CaCO_3$
	15,772	8.3	14,[illegible]52	8.0[illegible]	21.11		1,2[illegible]3.52		3,142.15

U_3O_8		Per Lb.	Per Ton	Short Tons	Total Value
8.0[illegible]% = 1,20[illegible].12 lbs. at		[illegible]	[illegible]	[illegible]	$ 6,114.98
Development allowance 1,2[illegible].52 lbs. at		.10	[illegible]	7.47	801.76
Premium in excess of [illegible] per ton					
Total lbs. U_3O_8	1,2[illegible]				
Less: 7.47 tons [illegible]	[illegible]				
Premium lbs.	1,1[illegible] at	.75	117.34	7.47	880.23
Premium in excess of 10 per ton					
Total lbs. U_3O_8	1,2[illegible]				
Less: 7.47 tons [illegible] 10%	74.[illegible]				
Premium lbs.	1,1[illegible] at	.25	37.78	7.47	282.21
Total [illegible] payment					$ 6,[illegible].16
V_2O_5					
21.11 = 3,1[illegible] lbs. at		.31	100.1	7.47	977.16
Total gross price					$ 7,[illegible].32
Deductions:					
Royalty - stream [illegible]					
20% of 7,[illegible].32					1,571.26
Net Proceeds					$ 6,235.06

I certify that I am the lawful owner and authorized representative of the Mill Owner, of the Ore described in this settlement sheet and have the right to sell the same to Climax Uranium Company.

I hereby transfer to Climax Uranium Company, effective [illegible] date of delivery of the ore, all my right, title and interest in and to said ore.

I will accept the amount shown as the total price [illegible] settlement, for sums due to me on account of the ore delivered described herein.

[illegible] Seller or Agent.

Buyers assays [illegible] seller [illegible] payment.
All rates paid are based on [illegible] Colorado Mining [illegible].

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UNITED STATES VANADIUM COMPANY
A Division of Union Carbide and Carbon Corporation

ORE SETTLEMENT

Receiving Station Rifle, Colorado Grand Junction, Colorado April 23, 1951
Liquidation No. 1775 Lot No. see detail sheet Shippers Lot No. 16 thru 23
Bought of John Ukele A.E.C. License No. P-840
Address Gateway, Colorado
Type of Ore Carnotite Date received 4/1/51 thru 4/15/51
Mining Claim La Sal #2 Mining District Gateway Pile No.

Lot No.	Net Weight Pounds	% H_2O	Dry Weight Pounds	SETTLEMENT ASSAYS U_3O_8	V_2O_5	$CaCO_3$	CONTENTS POUNDS U_3O_8	V_2O_5	$CaCO_3$
	124820	6.4	116831.52	0.89	2.63		1039.80	3072.67	

	PRICED PER A.E.C. CIRCULAR NO. 5 (Revised) POUNDS	PER LB.	DRY SHORT TONS	PER TON	VALUE	TOTAL VALUE
U_3O_8 Payment	1039.80	3.50	58.42	62.30	3639.30	
Development Allowance	1039.80	.50	58.42	8.90	519.90	
Excess 4 lbs. per ton 13.80 (Premium)	806.20	.75	58.42	10.35	604.65	
Excess 10 lbs. per ton 7.80 (Premium)	455.68	.25	58.42	1.05	113.92	
Total U_3O_8 Payment						4877.77
V_2O_5 Payment	3072.67	.31	58.42	16.30	952.53	
Total V_2O_5 Payment						952.53
Haulage Allowance						
Miles Wet Tons						
per wet ton mile purchased						
F.O.B. Mine						
Total U308, V205 Payment						5830.30

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UNITED STATES VANADIUM COMPANY
A Division of Union Carbide and Carbon Corporation

ORE SETTLEMENT

Receiving Station Rifle, Colorado Grand Junction, Colorado May 5 ,1951
Liquidation No. 1802 Lot No. see detailsheet Shippers Lot No. 24,25,& 26
Bought of John Ukele A.E.C. License No. P-840
Address Gateway, Colorado
Type of Ore Carnotite Date received 4/16/51 - 14/30/51
Mining Claim La Sal #2 Mining District Gateway Pile No.

Lot No.	Net Weight Pounds	% H_2O	Dry Weight Pounds	SETTLEMENT ASSAYS U_3O_8	V_2O_5	$CaCO_3$	CONTENTS POUNDS U_3O_8	V_2O_5	$CaCO_3$
	60280	6.0	56663.20	0.37	1.91		209.65	1082.27	

PRICED PER A.E.C. CIRCULAR NO. 5 Revised

	POUNDS	PER LB.	DRY SHORT TONS	PER TON	VALUE	TOTAL VALUE
U_3O_8 Payment	209.65	3.50	28.33	25.90	733.78	
Development Allowance	209.65	.50	28.33	3.70	104.83	
Excess 4 lbs. per ton 3.40 (Prem)	96.32	.75	28.33	2.55	72.24	
Total U_3O_8 Payment						910.85
V_2O_5 Payment	1082.27	.31	28.33	11.84	355.50	
Total V_2O_5 Payment						335.50
Haulage Allowance Miles Wet Tons per wet ton mile Purchased F.O.B. Mine						
Total U308, V205 Payment						1246.35

CLIMAX URANIUM COMPANY

Grand Junction, Colo.

Receiving Station [illegible] Grand Junction, Colo. [illegible] 3, 19 51

Liquidation No. [illegible] Lot No. [illegible] Year [illegible]

Sought of [illegible] License No. [illegible]

Address [illegible], Colorado

Type of Ore [illegible] Date Received 4/18/51

Mining Claim [illegible] Mining District [illegible] Ore No.

Lot No.	Net Weight Pounds	H_2O	Dry Weight Pounds	Analysis As Rec'd U_3O_8	V_2O_5	$CaCO_3$		Dry Basis U_3O_8	V_2O_5	$CaCO_3$	
	18,870	7.5	17,[illegible]	[illegible]	1.97			[illegible].30	330.47		

U_3O_8	Per lb.	Per Ton	Tons	Total Value
0.50% = 95.30 lbs. at	$ 3.50	$ 3.[illegible]	8.51	$333.76
Development Allowance [illegible] lbs. at	.50	[illegible]	[illegible].51	47.62
Premium in excess of 4 per ton Total lbs. [illegible] [illegible] Less: 8.91 tons @ 4[illegible] [illegible] PREMIUM LB. [illegible] at	.75	6.60	[illegible].51	45.90
Premium in excess of 1 per ton Total lbs. U_3O_8 [illegible] Less: 8.91 tons @ 1[illegible] [illegible] PREMIUM LB. [illegible] at	.26	[illegible]	[illegible].51	2.52
Total U_3O_8 proceeds				$433.00
V_2O_5				
1.97% = 330.47 lbs. at	.31	17.[illegible]	.51	104.00
Total ROM proceeds				$534.00
Deductions:				
Royalty - [illegible]		[illegible]		
- Development Allowance		[illegible]		144.94
Net Proceeds				$389.06

I certify that I am the lawful owner or authorized representative of the lawful owner, of the Ore described in this additional sheet and have legal right to deliver the same to Climax Uranium Company.

I hereby transfer to all ore [illegible] delivery of the ore, all my right, title and interest in the ore.

I will accept the [illegible] total proceeds [illegible], for sum due to me on account of the ore described herein.

Seller or Agent.

Buyers assays covers [illegible] lbs. [illegible] assays prior to acceptance of [illegible]. [illegible] on U. S. Atomic Energy Commission published schedules.

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UNITED STATES VANADIUM COMPANY
A Division of Union Carbide and Carbon Corporation

ORE SETTLEMENT

Receiving Station Rifle, Colorado Grand Junction, Colorado May 22, 1951
Liquidation No. 1864 Lot No. see detailsheet Shippers Lot No. 1 & 2
Bought of Gateway Mining & Development Company A.E.C. License No. P 878
Address Gateway, Colorado
Type of Ore Carnotite Date received 4/15/51 - 5/15/51
Mining Claim Gilmore Lode Mining District Gateway Pile No.

Lot No.	Net Weight Pounds	% H_2O	Dry Weight Pounds	SETTLEMENT ASSAYS U_3O_8	V_2O_5	$CaCO_3$	CONTENTS POUNDS U_3O_8	V_2O_5	$CaCO_3$
	39610	3.7	38144.43	0.17	1.28		64.85	488.25	

	PRICED PER A.E.C. CIRCULAR NO. 5 (Revised) POUNDS	PER LB.	DRY SHORT TONS	PER TON	VALUE	TOTAL VALUE
U_3O_8 Payment	64.85	2.90	17.07	9.86	188.07	
Development Allowance	64.85	.50	17.07	1.70	32.43	
Total U_3O_8 Payment						220.50
V_2O_5 Payment	488.25	.31	17.07	7.94	151.36	
Total V_2O_5 Payment						151.36
Haulage Allowance Miles Wet Tons per wet ton mile Purchased F.O.B. Mine						
Total U308, V205 Payment						371.86

Icertify that I am the lawful owner or authorized Representative of the Lawful Owner, of the Ore described in this Settlement Sheet and have legal right to deliver the same to the United States Vanadium Company, a Division of Union Carbide and Carbon Corporation.

I certify that I hold the A.E.C. Source Material License numbered above.

I hereby transfer to the United States Vanadium Company, a Division of Union Carbide and Carbon Corporation, effective as of the date of delivery of the ore, all my right, title and interest in and to said ore.

The amount set opposite "Total U308, V205, Payment" shown above constitutes the entire amount payable to me in respect of ore deliveries described herein and is accepted by me in full payment thereof.

I request that payment be made on the basis of the average of moisture contents, of U308 contents and of V205 contents of the several loads delivered and covered by this settlement.

Voucher Number 5-385	Date 5-22-51
Check Number 11874	Date 5-28-51
Approved for Payment	

Seller or Agent

COPY

UNITED STATES VANADIUM COMPANY
A Division of Union Carbide and Carbon Corporation

ORE SETTLEMENT

Receiving Station Rifle, Colorado Grand Junction, Colorado May 22, 1951
Liquidation No. 1862 Lot No. see detail sheet Shippers Lot No. 28 & 29
Bought of John Ukele A.E.C. License No. P-840
Address Gateway, Colorado
Type of Ore Carnotite Date received 5/1/51 - 5/15/51
Mining Claim La Sal #2 Mining District Gateway Pile No.

Lot No.	Net Weight Pounds	% H_2O	Dry Weight Pounds	SETTLEMENT ASSAYS U_3O_8	V_2O_5	$CaCO_3$	CONTENTS POUNDS U_3O_8	V_2O_5	$CaCO_3$
	38310	4.7	36509.43	0.62	2.43		226.36	887.18	

	PRICED PER A.E.C. CIRCULAR NO. 5 (Revised) POUNDS	PER LB.	DRY SHORT TONS	PER TON	VALUE	TOTAL VALUE
U_3O_8 Payment	226.36	3.50	18.25	43.41	792.26	
Development Allowance	226.36	.50	18.25	6.20	113.18	
Excess 4 lbs. per ton 8.40 (Premium)	153.30	.75	18.25	6.30	114.98	
Excess 10 lbs. per ton 2.40 (Premium)	43.80	.25	18.25	.60	10.95	
Total U_3O_8 Payment						1031.37
V_2O_5 Payment	887.18	.31	18.25	15.07	275.03	
Total V_2O_5 Payment						275.03
Haulage Allowance						
Miles Wet Tons						
per wet ton mile Purchased						
F.O.B. Mine						
Total U308, V205 Payment						1306.40

COPY

UNITED STATES VANADIUM COMPANY
A Division of Union Carbide and Carbon Corporation

ORE SETTLEMENT

Receiving Station Rifle, Colorado Grand Junction, Colorado June 6, 1951
Liquidation No. 1903 Lot No. see detail sheet Shippers Lot No. 3 - 7
Bought of Gateway Mining & Development Company A.E.C. License No. P - 878
Address Gateway, Colorado
Type of Ore Carnotite Date received 5-16-51 - 5 -31-51
Mining Claim Gilmore Lode Mining District Gateway Pile No. Bin

Lot No.	Net Weight Pounds	% H_2O	Dry Weight Pounds	SETTLEMENT ASSAYS U_3O_8	V_2O_5	$CaCO_3$	CONTENTS POUNDS U_3O_8	V_2O_5	$CaCO_3$
	98430	4.4	94099.08	0.33	1.49		310.53	1402.08	

	PRICED PER A.E.C. CIRCULAR NO. 5 (Revised) POUNDS	PER LB.	DRY SHORT TONS	PER TON	VALUE	TOTAL VALUE
U_3O_8 Payment	310.53	3.50	47.05	23.10	1086.86	
Development Allowance	310.53	.50	47.05	3.30	155.27	
Excess 4 lbs. per ton 2.60(Pre)	122.33	.75	47.05	1.95	91.75	
Total U_3O_8 Payment						1333.88
V_2O_5 Payment	1402.08	.81	47.05	9.24	434.64	
Total V_2O_5 Payment						434.64
Haulage Allowance Miles Wet Tons per wet ton mile purchased F.O.B. Mine						
Total U308, V205 Payment						1768.52

I certify that I am the lawful owner or authorized Representative of the Lawful Owner, of the Ore described in this Settlement Sheet and have legal right to deliver the same to the United States Vanadium Company, a Division of Union Carbide and Carbon Corporation.

I certify that I hold the A.E.C. Source Material License numbered above.

I hereby transfer to the United States Vanadium Company, a Division of Union Carbide and Carbon Corporation, effective as of the date of delivery of the ore, all my right, title and interest in and to said ore.

The amount set opposite "Total U308, V205, Payment" shown above constitutes the entire amount payable to me in respect of ore deliveries described herein and is accepted by me in full payment thereof.

I request that payment be made on the basis of the average of moisture contents, of U308 contents and of V205 contents of the several loads delivered and covered by this settlement.

Voucher Number 6-149	Date 6-6-51
Check Number 9473	Date 6-7-51
Approved for Payment	

Seller or Agent

COPY

UNITED STATES VANADIUM COMPANY
A Division of Union Carbide and Carbon Corporation

ORE SETTLEMENT

Receiving Station Rifle, Colorado Grand Junction, Colorado June 6, 1951
Liquidation No. 1904 Lot No. Shippers Lot No. 30431
Bought of John Ukele A.E.C. License No. P-840
Address Gateway, Colorado
Type of Ore Carnotite Date received 5/16/51 - 5/31/51
Mining Claim La Sall #2 Mining District Gateway Pile No. Bin & 5

Lot No.	Net Weight Pounds	% H_2O	Dry Weight Pounds	SETTLEMENT ASSAYS U_3O_8	V_2O_5	$CaCO_3$	CONTENTS POUNDS U_3O_8	V_2O_5	$CaCO_3$
	20040	3.7	19298.52	0.84	3.74		162.11	721.76	

PRICED PER A.E.C. CIRCULAR NO. 5 Revised

	POUNDS	PER LB.	DRY SHORT TONS	PER TON	VALUE	TOTAL VALUE
U_3O_8 Payment	162.11	3.50	9.65	58.90	567.39	
Development Allowance	162.11	.50	9.65	8.40	81.06	
Excess 4 lbs. per ton 12.80 (Premium)	123.52	.75	9.65	9.60	92.64	
Excess 10 lbs. per ton 6.80 (Premium)	65.62	.25	9.65	1.70	16.41	
Total U_3O_8 Payment						157.50
V_2O_5 Payment	721.76	.31	9.65	23.19	223.75	
Total V_2O_5 Payment						223.75
Haulage Allowance Miles Wet Tons per wet ton mile Purchased F.O.B. Mine						
Total U308, V205 Payment						981.25

CLIMAX URANIUM COMPANY

GRAND JUNCTION, COLO.

Receiving Station Climax Uranium Company Grand Junction, Colorado, June 26, 19 51
Liquidation No. 207 Lot No. Shippers Lot No.
Bought of Gateway Mining & Develop. Co. A.E.C. License No. [illegible]
Address Gateway, Colorado
Type of Ore Carnotite Date Received 6/1/51 - 6/15/51
Mining Claim La Salle #2 Mining District Gateway Mile No.

Lot No.	Net Weight Pounds	H_2O	Dry Weight Pounds	SETTLEMENT ASSAYS U_3O_8	V_2O_5	$CaCO_3$	SETTLEMENT POUNDS U_3O_8	V_2O_5	$CaCO_3$
	80,460	5.7	75,813	0.25	1.34		174.60	1,017.23	

U_3O_8		Per Lb.	Per Ton	Short Tons	Total Value
0.23% = 174.60 lbs. at		$3.50	$ 16.10	37.96	$ 611.10
Development allowance 174.60 lbs. at		.50	2.30	37.96	87.30
Premium in excess of 4% per ton					
Total lbs. U_3O_8	174.60				
Less: 37.96 tons @ 4#	151.84				
PREMIUM LBS.	22.76 at	.75	.45	37.96	17.07
Total U_3O_8 payment					$ 715.47
V_2O_5					
1.34% = 1,017.23 lbs. at		.21	8.31	37.96	315.34
Total Gross Price					$ 1,030.81
Deductions:					
Royalty - Corvusite Mining and Exploration Company 10% of 1,945.51					94.35
Net Proceeds					$ 936.46

I certify that I am the lawful owner or authorized Representative of the lawful owner, of the ore described in this Settlement Sheet and have legal right to deliver the same to Climax Uranium Company.

I hereby transfer to Climax Uranium Company, effective as of the date of delivery of the ore, all my right, title and interest in and to said ore.

I will accept the amount as shown above as "Total Gross Price" in full settlement, for sums due to me on account of the ore deliveries described herein

Seller or Agent.

Buyers assays govern if seller fails to submit his assays prior to acceptance of payment.
All rates paid are based on U. S. Atomic Energy Commission Published Schedules.

COPY

UNITED STATES VANADIUM COMPANY
A Division of Union Carbide and Carbon Corporation

ORE SETTLEMENT

Receiving Station Rifle, Colorado Grand Junction, Colorado June 27, 1951
Liquidation No. 1992 Lot No. See detail sheet Shippers Lot No. 8 - 17
Bought of Gateway Mining & Development Company A.E.C. License No. P-878
Address Gateway, Colorado
Type of Ore Carnotite Date received 6/1/51 - 6/15/51
Mining Claim Gilmore Lode Mining District Gateway Pile No.

Lot No.	Net Weight Pounds	% H_2O	Dry Weight Pounds	SETTLEMENT ASSAYS U_3O_8	V_2O_5	$CaCO_3$	CONTENTS POUNDS U_3O_8	V_2O_5	$CaCO_3$
	206450	4.6	196901.77	0.25	1.50		498.77	2952.80	

	PRICED PER A.E.C. CIRCULAR NO. 5 (Revised) POUNDS	PER LB.	DRY SHORT TONS	PER TON	VALUE	TOTAL VALUE
U_3O_8 Payment	498.77	3.50	98.45	17.73	1745.70	
Development Allowance	498.77	.50	98.45	2.53	249.39	
Excess 4 lbs. per ton Premium	104.97	.75	98.45	.80	78.75	
Total U_3O_8 Payment						2073.82
V_2O_5 Payment	2952.80	.31	98.45	9.30	915.37	
Total V_2O_5 Payment						915.37
Haulage Allowance Miles Wet Tons per wet ton mile Purchased F.O.B. Mine						
Total U308, V205 Payment						2989.19

Icertify that I am the lawful owner or authorized Representative of the Lawful Owner, of the Ore described in this Settlement Sheet and have legal right to deliver the same to the United States Vanadium Company, a Division of Union Carbide and Carbon Corporation.

I certify that I hold the A.E.C. Source Material License numbered above.

I hereby transfer to the United States Vanadium Company, a Division of Union Carbide and Carbon Corporation, effective as of the date of delivery of the ore, all my right, title and interest in and to said ore.

The amount set opposite "Total U308, V205, Payment" shown above constitutes the entire amount payable to me in respect of ore deliveries described herein and is accepted by me in full payment thereof.

I request that payment be made on the basis of the average of moisture contents, of U308 contents and of V205 contents of the several loads delivered and covered by this settlement.

Voucher Number 6-478	Date 6/27/51
Check Number 9814	Date 6/27/51
Approved for Payment	

Seller or Agent

COPY

UNITED STATES VANADIUM COMPANY
A Division of Union Carbide and Carbon Corporation

ORE SETTLEMENT

Receiving Station Rifle, Colorado Grand Junction, Colorado July 5 ,1951
Liquidation No. 2027 Lot No. 15277 Shippers Lot No. 32
Bought of John Ukele A.E.C. License No. P-840
Address Gateway, Colorado
Type of Ore Carnotite Date received 6/23/51
Mining Claim La Sal #2 Mining District Gateway Pile No.

Lot No.	Net Weight Pounds	% H_2O	Dry Weight Pounds	SETTLEMENT ASSAYS U_3O_8	V_2O_5	$CaCO_3$	CONTENTS POUNDS U_3O_8	V_2O_5	$CaCO_3$
	16670	3.6	16069.88	0.86	1.09		138.20	175.16	

PRICED PER A.E.C. CIRCULAR NO. 5 (Revised)

	POUNDS	PER LB.	DRY SHORT TONS	PER TON	VALUE	TOTAL VALUE
U_3O_8 Payment	138.20	3.50	8.03	60.24	483.70	
Development Allowance	138.20	.50	8.03	8.61	69.10	
Excess 4 lbs. per ton prem.	106.08	.75	8.03	9.91	79.56	
Excess 10 lbs. per ton prem.	57.90	.25	8.03	1.80	14.48	
Total U_3O_8 Payment						646.84
V_2O_5 Payment	175.16	.31	8.03	6.76	54.30	
Total V_2O_5 Payment						54.30
Haulage Allowance						
Miles Wet Tons						
per wet ton mile Purchased						
F.O.B. Mine						
Total U308, V205 Payment						701.14

COPY

UNITED STATES VANADIUM COMPANY
A Division of Union Carbide and Carbon Corporation

ORE SETTLEMENT

Receiving Station Rifle, Colorado Grand Junction, Colorado July 6, 1951
Liquidation No. 2644 Lot No. see detail sheet Shippers Lot No. 1 & 2
Bought of John Ukele A.E.C. License No. P-840
Address Gateway, Colorado
Type of Ore Carnotite Date received 6/16/51 - 6/30/51
Mining Claim Gilmore Lode Mining District Gateway Pile No. Bin

Lot No.	Net Weight Pounds	% H_2O	Dry Weight Pounds	SETTLEMENT ASSAYS U_3O_8	V_2O_5	$CaCO_3$	CONTENTS POUNDS U_3O_8	V_2O_5	$CaCO_3$
	32820	4.3	31408.74	0.32	1.40		101.89	439.84	

PRICED PER A.E.C. CIRCULAR NO. 5 Revised

	POUNDS	PER LB.	DRY SHORT TONS	PER TON	VALUE	TOTAL VALUE
U_3O_8 Payment	101.89	3.50	15.70	22.71	356.62	
Development Allowance	101.89	.50	15.70	3.25	50.95	
Excess 4lbs. per ton (Prem)	31.09	.75	15.70	1.87	29.32	
Total U_3O_8 Payment						436.89
V_2O_5 Payment	439.84	.31	15.70	8.68	136.35	
Total V_2O_5 Payment						136.35
Haulage Allowance						
Miles Wet Tons						
per wet ton mile Purchased						
F.O.B. Mine						
Total U308, V205 Payment						573.24

COPY

UNITED STATES VANADIUM COMPANY
A Division of Union Carbide and Carbon Corporation

ORE SETTLEMENT

Receiving Station Rifle, Colorado Grand Junction, Colorado July 25, 1951
Liquidation No. 2090 Lot No. Shippers Lot No. 3 thru 5
Bought of John Ukele A.E.C. License No. P-840
Address Gateway, Colorado
Type of Ore Carnotite Date received 7/1/51 thru 7/15/51
Mining Claim Gilmore Lode Mining District Gateway Pile No.

Lot No.	Net Weight Pounds	% H_2O	Dry Weight Pounds	SETTLEMENT ASSAYS U_3O_8	V_2O_5	$CaCO_3$	CONTENTS POUNDS U_3O_8	V_2O_5	$CaCO_3$
	62520	4.9	59464.86	0.37	1.40		220.54	831.42	

PRICED PER A.E.C. CIRCULAR NO. 5 Revised

	POUNDS	PER LB.	DRY SHORT TONS	PER TON	VALUE	TOTAL VALUE
U_3O_8 Payment	220.54	3.50	29.73	25.96	771.89	
Development Allowance	220.54	.50	29.73	3.71	110.27	
Excess 4 lbs. per ton prem.	101.62	.75	29.73	2.56	76.22	
Total U_3O_8 Payment						958.38
V_2O_5 Payment	831.42	.31	29.73	8.67	257.74	
Total V_2O_5 Payment						257.74
Haulage Allowance						
Miles Wet Tons						
per wet ton mile Purchased						
F.O.B. Mine						
Total U308, V205 Payment						1216.12

COPY

UNITED STATES VANADIUM COMPANY
A Division of Union Carbide and Carbon Corporation

ORE SETTLEMENT

Receiving Station Rifle, Colorado Grand Junction, Colorado August 2, 1951
Liquidation No. 2113 Lot No. See sheet Shippers Lot No. 18-29
Bought of Gateway Mining and Development Company A.E.C. License No. P-878
Address Gateway, Colorado
Type of Ore Carnotite Date received 6/1/51 - 7/31/51
Mining Claim La Sal #2 Mining District Gateway Pile No. Bin

Lot No.	Net Weight Pounds	% H_2O	Dry Weight Pounds	SETTLEMENT ASSAYS U_3O_8	V_2O_5	$CaCO_3$	CONTENTS POUNDS U_3O_8	V_2O_5	$CaCO_3$
	235840	3.6	227241.22	Approx. 0.15	Average 1.37		351.74	3120.71	

PRICED PER A.E.C. CIRCULAR NO. 5 Revised

	POUNDS	PER LB.	DRY SHORT TONS	PER TON	VALUE	TOTAL VALUE
U_3O_8 Payment	351.74	2.50	113.62	7.74	879.35	
Development Allowance	351.74	.50	113.62	1.55	175.87	
Total U_3O_8 Payment						1055.22
V_2O_5 Payment	3120.71	.31	113.62	8.51	967.42	
Total V205 Payment						967.42
Haulage Allowance Miles Wet Tons per wet ton mile Purchased F.O.D. Mine						
Total U308, V205 Payment						2022.64

Icertify that I am the lawful owner or authorized Representative of the Lawful Owner, of the Ore described in this Settlement Sheet and have legal right to deliver the same to the United States Vanadium Company, a Division of Union Carbide and Carbon Corporation.

I certify that I hold the A.E.C. Source Material License numbered above.

I hereby transfer to the United States Vanadium Company, a Division of Union Carbide and Carbon Corporation, effective as of the date of delivery of the ore, all my right, title and interest in and to said ore.

The amount set opposite "Total U308, V205, Payment" shown above constitutes the entire amount payable to me in respect of ore deliveries described herein and is accepted by me in full payment thereof.

I request that payment be made on the basis of the average of moisture contents, of U308 contents and of V205 contents of the several loads delivered and covered by this settlement.

Voucher Number 8-24	Date 8-2-51
Check Number 12367	Date 8-2-51
Approved for Payment	

Seller or Agent

COPY

UNITED STATES VANADIUM COMPANY
A Division of Union Carbide and Carbon Corporation

ORE SETTLEMENT

Receiving Station Rifle, Colorado Grand Junction, Colorado August 6 ,1951
Liquidation No. 2135 Lot No. Shippers Lot No. 7
Bought of John Ukele A.E.C. License No. P-840
Address Gateway, Colorado
Type of Ore Carnotite Date received 7/28/51
Mining Claim Gilmore Lode Mining District Gateway Pile No. Bin

Lot No.	Net Weight Pounds	% H_2O	Dry Weight Pounds	SETTLEMENT ASSAYS U_3O_8	V_2O_5	$CaCO_3$	CONTENTS POUNDS U_3O_8	V_2O_5	$CaCO_3$
	17210	4.0	16521.60	0.69	2.07		114.00	342.00	

PRICED PER A.E.C. CIRCULAR NO. 5 Revised

	POUNDS	PER LB.	DRY SHORT TONS	PER TON	VALUE	TOTAL VALUE
U_3O_8 Payment	114.00	3.50	8.26	48.30	399.00	
Development Allowance	114.00	.50	8.26	6.90	57.00	
Excess 4 lbs. per ton prem.	89.96	.75	8.26	7.35	60.72	
Excess 10 lbs. per ton Prem.	31.40	.25	8.26	.95	7.85	
Total U_3O_8 Payment						524.57
V_2O_5 Payment	342.00	.31	8.26	12.83	106.02	
Total V_2O_5 Payment						106.02
Haulage Allowance						
Miles Wet Tons						
per wet ton mile Purchased						
F.O.B. Mine						
Total U308, V205 Payment						630.59

COPY

UNITED STATES VANADIUM COMPANY
A Division of Union Carbide and Carbon Corporation

ORE SETTLEMENT

Receiving Station Rifle, Colorado Grand Junction, Colorado August 24, 1951
Liquidation No. 2225 Lot No. Shippers Lot No. 8 thru 13
Bought of John Ukele A.E.C. License No. P-840
Address Gateway, Colorado
Type of Ore Carnotite Date received 8/1/51 thru 8/15/51
Mining Claim Gilmore Lode Mining District Gateway Pile No.

Lot No.	Net Weight Pounds	% H_2O	Dry Weight Pounds	SETTLEMENT ASSAYS U_3O_8	V_2O_5	$CaCO_3$	CONTENTS POUNDS U_3O_8	V_2O_5	$CaCO_3$
				Approximate Average					
	102110	3.7	98326.84	0.32	1.10		313.43	1077.29	

	PRICED PER A.E.C. CIRCULAR NO. 5 Revised					
	POUNDS	PER LB.	DRY SHORT TONS	PER TON	VALUE	TOTAL VALUE
U_3O_8 Payment	313.43	3.50	49.16	22.32	1097.01	
Development Allowance	313.43	.50	49.16	3.19	156.72	
Excess 4 lbs. per ton prem.	116.79	.75	49.16	1.78	87.59	
Total U_3O_8 Payment						1341.32
V_2O_5 Payment	1077.29	.31	49.16	6.79	333.96	
Total V_2O_5 Payment						333.96
Haulage Allowance						
Miles Wet Tons						
per wet ton mile Purchased						
F.O.B. Mine						
Total U308, V205 Payment						1675.28

copy

UNITED STATES VANADIUM COMPANY
A Division of Union Carbide and Carbon Corporation

ORE SETTLEMENT

Receiving Station Rifle, Colorado Grand Junction, Colorado Sept. 13, 1951
Liquidation No. 2299 Lot No. See Detail Sheet Shippers Lot No.
Bought of Gateway Mining and Development Company A.E.C. License No. P-878
Address Gateway, Colorado
Type of Ore Carnotite Date received 6/16/51 - 9/15/51
Mining Claim Gilmore Lode Mining District Gateway Pile No.

Lot No.	Net Weight Pounds	% H_2O	Dry Weight Pounds	SETTLEMENT ASSAYS U_3O_8	V_2O_5	$CaCO_3$	CONTENTS POUNDS U_3O_8	V_2O_5	$CaCO_3$
				Approx. averages					
	111460	4.5	106488.15	0.20	1.18		216.02	1261.18	

	PRICED PER A.E.C. CIRCULAR NO. S (Revised) POUNDS	PER LB.	DRY SHORT TONS	PER TON	VALUE	TOTAL VALUE
U_3O_8 Payment	216.02	3.50	53.24	14.20	756.07	
Development Allowance	216.02	.50	53.24	2.03	108.01	
Excess 4 lbs. per ton Premium	3.06	.75	53.24	.04	2.30	
Total U_2O_5 Payment						866.38
V_2O_5 Payment	1261.18	.31	53.24	7.34	390.97	
Total V_2O_5 Payment						390.97
Haulage Allowance Miles Wet Tons per wet ton mile Purchased V.O.A. Mine						
Total U308, V205 Payment						1257.35

Icertify that I am the lawful owner or authorized Representative of the Lawful Owner, of the Ore described in this Settlement Sheet and have legal right to deliver the same to the United States Vanadium Company, a Division of Union Carbide and Carbon Corporation.

I certify that I hold the A.E.C. Source Material License numbered above.

I hereby transfer to the United States Vanadium Company, a Division of Union Carbide and Carbon Corporation, effective as of the date of delivery of the ore, all my right, title and interest in and to said ore.

The amount set opposite "Total U308, V205, Payment" shown above constitutes the entire amount payable to me in respect of ore deliveries described herein and is accepted by me in full payment thereof.

I request that payment be made on the basis of the average of moisture contents, of U308 contents and of V205 contents of the several loads delivered and covered by this settlement.

Voucher Number	Date
Check Number 13065	Date 9-14-51
Approved for Payment J. W. Hill	

Seller or Agent

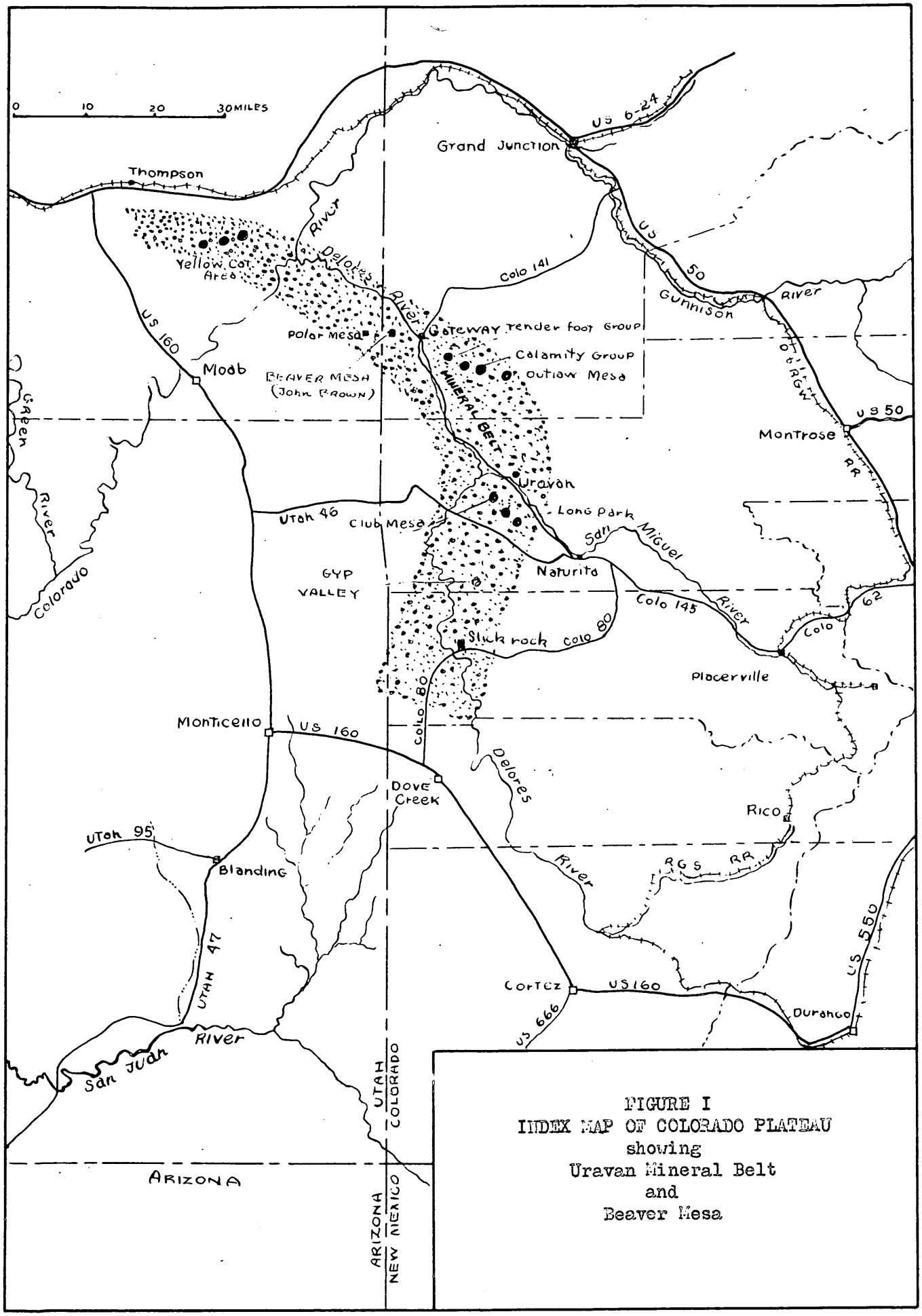


FIGURE I
INDEX MAP OF COLORADO PLATEAU
showing
Uravan Mineral Belt
and
Beaver Mesa

REPORT OF EXAMINATION OF THE LUMSDEN AREA CLAIMS OWNED BY THE GATEWAY MINING AND DEVELOPMENT COMPANY

INTRODUCTION

This report covers the examination of the following claims of the Gateway Mining and Development Company made at the request of the company to be included as part of the application for a government exploration loan under the D.M.E.A. Program. The claims are: Gilmore Lode, Tetzloff, John Thornton, owned and located by the company; the LaSal No. 1, LaSal No. 2, LaSal No. 3, LaSal No. 4, LaSal No. 5, LaSal No. 6, LaSal No. 7 and the John Brown controlled by the Gateway Mining and Development Company under purchase agreement dated October 15, 1950 from the Corvusite Mining Company and the LaSalle Claim leased to the Gateway Mining and Development Company by the owners Jake Lewis and Ray Lewis.

The Gateway Mining and Development Company also controls one hundred and twenty-eight additional claims in the Beaver Mesa Area by location and purchase agreement. The claims listed above, however, have been chosen as being most favorable for immediate production with a minimum of exploration work on the basis of geological criteria and past production.

LOCATION AND PHYSIOGRAPHY

The claims listed above comprising approximately 235 acres lie on Beaver Mesa in the West Gateway or Beaver Creek Mining District (unorganized) and are 15 miles west of the town of Gateway. These claims cover parts of Section 36, T 51 N, R 20 W, New Mexico Principal Meredian and part of Section 31, T 51 N, R 19 W, New Mexico Principal Meredian.

Beaver Mesa is typical of the vanadium and uranium region of southwestern Colorado and southeastern Utah. It lies on the extreme northeastern flank of the LaSal Mountains and it ranges in altitude from 6000 to 7000 feet. The LaSal uplift and a series of folds have tilted the sedimentary formations 3 degrees to 5 degrees toward the Dolores River, the main drainage for this area. Early erosion has carved the relatively flat sediments into isolated plateaus and steep walled canyons, commonly called "rim rock formations".

Although the precipitation averages less than 10 inches, streams from the higher elevations flow the entire year and numerous springs furnish an adequate water supply for drilling and domestic purposes.

The temperature varies from 10 below zero in winter to 90 above zero in summer. Snowfall may reach a maximum accumulated depth of three feet in bad winters to a minimum of six inches in moderate winters but even in the more severe winters such as this year snow has not appreciably slowed the production of ore from the area.

Pinon and Juniper trees grow in abundance throughout the mesa and Ponderosa Pine grow in most of the drainages above 6000 feet. Several lumber mills in the area supply the mines with rough native timber suitable for mine timbers and some camp construction.

The West Gateway Area is adequately serviced by a chain of roads and truck trails that make hauling possible through most of the year. Spring thaws in some sections delay shipment of ore for short periods, however, the area in John Brown Canyon which is most difficult in spring is on the schedule of the road improvement program being recommended by the Atomic Energy Commission and financed by State and Federal funds. This program will begin in early spring of 1952.

The claims lie on the northeastern side of Beaver Mesa overlooking Lumsden Canyon about 15 road miles west of Gateway, Colorado and 66 miles southwest of Grand Junction, Colorado. A graded dirt road from the mines past the Gateway Mining and Development Company Camp (5 miles) through John Brown Canyon to Highway 141, a length of 15 miles is maintained by the operators in the area.

The John Brown Canyon road connects with Highway 141 one half mile from Gateway. Gateway is 51 miles from Grand Junction and 39 miles from Uravan over all-weather roads.

GEOLOGY

Regional

Beaver Mesa lies between Polar Mesa and Tenderfoot Mesa in the central part of the Uravan Mineral Belt, a zone of mineralization extending through the most productive carnotite areas from Yellow Cat District on the northwest to Slickrock District on the south. (Figure 1).

This mesa is on the northeast dipping flank of the Sinbad Valley-Fischer Valley Anticline. This anticline is one of a series of parallel folds with salt cores of the Paradox member of the Hermosa formation which intruded the Pennsylvanian, Permian and Triassic sediments.

Sedimentary formations which are exposed in the immediate area of Beaver Mesa dip from 3 degrees to 5 degrees to the northeast and range from Chinle of the Triassic Age to the predominate Dakota sandstone capping of Cretaceous Age. The Dakota is underlain by the productive Morrison formation of Jurassic Age. (Figure 2).

Igneous intrusives of late Tertiary Age are found in the LaSal Mountains a short distance to the southwest.

Although it is difficult to determine the exact effect of the regional structures on ore deposition, more and more reliance is being placed on it to determine the favorability of an area as a unit. The most productive areas are on the flank of major anticlines and neither in the trough nor crest. This was first suggested by R.C. Coffin in 1921 in "Vanadium and Uranium Deposits of Colorado" when he recommended the prospecting of canyons that cut into the flanks of the anticlines. He suggested the possibility that the mineralizing solutions flowed laterally along these flanks.

Beaver Mesa is favorably situated lying in about the same relative position as Long Park and Club Mesa lie in respect to the Paradox Valley Anticline.

Ore Deposits

The Morrison formation is devided into two units, the upper Brushy Basin composed predominately of bentonitic clays and shales and thin sandstone lenses. Because of its soft plastic nature it usually forms concave slopes which rise more steeply as they approach the upper resistant Dakota. The productive Saltwash member which underlies the Brushy Basin is predominately sandstone lenses, 10 to 50 feet thick, inter-bedded with clays and shales. The sandstone lenses form steps or benches which extend for considerable length along the canyons. The major production from Beaver Mesa has been from the upper lense of this member.

Mineralized zones or channels in which the sandstones have been altered to a light gray to white color and the underlying red shales altered to a light blue-green are fairly conspicuous where exposed. The most predominate of these zones which was recognized as early as 1943 by the U.S.

Geological Survey and Union Mines Development Corporation extends from the Stone Mine (Corvusite Area) to the Lumsden Area Claims of the Gateway Mining and Development Company.

The ore within this mineralized zone occurs as follows:

1. Deposits in cross-bedded sandstones.
2. Along sandstone-mudstone contacts.
3. As rolls in the sandstones.

The individual ore deposits range in size from the stoped deposits as shown in Figure 4 which covers approximately 1000 square feet to small pods of high grade containing one ton or less. The long axis of the ore bodies in this area appear to cut the long axis of the mineralized zone at about right angles. Some of the larger deposits appear to be controlled by a joint pattern whose strike is roughly N 45 W to N 60 W. The pattern of any exploration drilling should be formulated with these criteria as a guide.

HISTORY AND PRODUCTION

Little is known of the early history of Beaver Mesa. George Knunkles was first reported to have mined high grade in 1916 and 1917 which was packed from the mesa on burros. The low grade which was mined at this time was stockpiled and shipped at a later date after a road was put into the area. The first road by way of Sinbad Valley was constructed in 1939 and the present road through John Brown Canyon was constructed in 1943 under the Access Road Program.

From 1941 to 1944 the two main producing areas, the Corvusite Mine on the southwest side and the Lumsden Area on the northeast side of the mesa produced a total of 1906 tons of ore averaging 2% V_2O_5 and 0.21% U_3O_8.

Since the renewed activity which started in 1948, these areas have each produced more than 10,000 pounds of uranium oxide and about ten times that amount in vanadium. The vanadium-uranium ratio for this area is approximately 10 to 1 although some mines as the Ukele and Gilmore have had a higher ratio of uranium.

Exact production figures are not released by private companies or the Atomic Energy Commission for security reasons. Reported production from the Corvusite Mine (Stone Mine) over the past year has averaged 200 tons per month of ore averaging 0.40 U_3O_8 and 2.2 V_2O_5. The Lumsden Area which includes several mines owned by U.S. Vanadium Company and a Mr. Crowley and Mr. Ward, along with the Gilmore Mine, LaSal Mine and Ukele Mine owned by the Gateway Mining and Development Company produced ore in excess of 200 tons per month of about the same grade. Production record from the Gateway Mining and Development Company's property is attached.

RECAP OF ORE SETTLEMENT SHEETS FROM
THE UKELE, GILMORE AND LASAL MINE

GATEWAY MINING AND DEVELOPMENT CO.

DATE	NAME OF OPERATOR	MINE	TONS	Grade U_3O_8	Grade V_2O_5	Pounds U_3O_8	Pounds V_2O_5
12/21/50	J. Ukele	Ukele	7	0.39	3.22	55.34	456.90
1/4/51	J. Ukele	Ukele	16	0.14	2.36	42.26	712.46
12/6/50	J. Ukele	Ukele	7	0.12	1.23	16.66	170.74
1/18/51	J. Ukele	Ukele	7	0.10	1.54	14.61	225.04
2/5/51	J. Ukele	Ukele	15	0.68	3.20	196.25	923.55
2/22/51	J. Ukele	Ukele	8	0.39	2.48	59.35	377.41
2/23/51	J. Ukele	Ukele	1	11.05		207.18	
3/6/51	J. Ukele	Ukele	7	1.01	2.36	141.42	330.45
3/19/51	J. Ukele	Ukele	7	1.26	6.57	169.50	883.80
4/6/51	J. Ukele	Ukele	23	0.95	3.81	410.80	1647.51
4/23/51	J. Ukele	Ukele	6	0.89	2.63	1039.80	3072.67
4/23/51	J. Ukele	Ukele	16	0.42	1.74	126.57	524.38
5/5/51	J. Ukele	Ukele	30	0.37	1.91	209.65	1082.27
5/9/51	J. Ukele	Ukele	9	0.56	1.97	95.36	335.47
5/22/51	J. Ukele	Ukele	19	0.62	2.43	226.36	887.18
5/22/51	J. Ukele	Ukele	10	0.37	1.79	70.46	340.89
5/22/51	J. Ukele	Ukele	20	0.17	1.28	64.88	488.25
6/6/51	J. Ukele	Ukele	20	0.84	3.74	162.11	721.76
6/6/51	Gat. Min. & Dev. Co.	Gilmore	48	0.33	1.49	310.53	1402.08
6/26/51	Gat. Min. & Dev. Co.	Gilmore	40	0.23	1.34	174.60	1017.23
6/27/51	Gat. Min. & Dev. Co.	Gilmore	103	0.25	1.50	498.77	2952.80
7/5/51	J. Ukele	Gilmore	8	0.86	1.09	138.20	175.16
7/5/51	J. Ukele	Gilmore	9	0.35	1.41	59.71	240.53
7/6/51	J. Ukele	Gilmore	16	0.32	1.40	101.89	439.84
7/25/51	J. Ukele	Gilmore	31	0.37	1.40	220.54	831.42

RECAP OF ORE SETTLEMENT SHEETS (Continued)

DATE	NAME OF OPERATOR	MINE	TONS	Grade U_3O_8	Grade V_2O_5	Pounds U_3O_8	Pounds V_2O_5
7/6/51	J. Ukele	Gilmore	9	0.48	1.67	77.54	269.76
7/6/51	J. Ukele	Gilmore	9	0.69	2.07	114.00	342.00
7/2/51	Gat. Min. & Dev. Co.	Gilmore	12	0.15	1.37	351.74	3120.71
7/24/51	J. Ukele	Gilmore	5	0.32	1.10	313.43	1077.29
8/6/51	J. Ukele	Gilmore	17	0.52	1.98	173.48	668.14
8/6/51	J. Ukele	Gilmore	25	0.31	1.24	146.66	595.73
8/6/51	J. Ukele	Gilmore	8	0.19	0.83	30.62	133.77
8/6/51	Gat. Min. & Dev. Co.	Gilmore	55	0.20	1.18	216.02	1261.18
10/4/51	J. Ukele	Gilmore	9	0.48	1.39	82.08	237.68
10/4/51	J. Ukele	Gilmore	8	0.19	1.12	29.88	176.13
9/24/51	J. Ukele	Gilmore	26	0.63	1.60	316.54	799.32
9/24/51	J. Ukele	Gilmore	26	0.34	1.27	171.13	650.05
10/4/51	J. Ukele	Gilmore	17	0.48	1.47	161.10	493.49
12/7/51	J. Ukele	Gilmore	16	0.15	1.14	45.82	359.64
12/21/51	J. Ukele	Gilmore	7	0.28	1.37	39.01	190.89
2/6/52	M. Ukele	LaSal	5	0.31	1.18	31.16	118.60
2/25/52	L. Hetzel	Ukele	16	0.15	1.03	44.36	305.85
2/25/52	M. Ukele	LaSal	12	0.28	1.04	64.18	233.31
2/25/52	J. Ukele	Gilmore	8	0.30	1.52	46.01	233.10
2/25/52	L. Hetzel	Ukele	16	0.23	1.18	69.46	363.01
3/3/52	J. Ukele	Gilmore	16	0.96	3.39	293.31	1039.08
3/3/52	J. Ukele	Gilmore	15	0.42	2.12	118.09	601.97

TOTALS

Ukele Mine	260 Tons	3422.38 Lbs. U_3O_8	13849.59 Lbs. V_2O_5
Gilmore "	534 Tons	4230.60 Lbs. U_3O_8	19308.99 Lbs. V_2O_5
LaSal Mine	17 Tons	95.34 Lbs. U_3O_8	351.91 Lbs. V_2O_5
Total	811	7748.32	33510.49

PREVIOUS EXPLORATION

The Gateway Mining and Development Company drilled 27 wagon drill holes averaging 40.1 feet in depth; a total of 1082.3 feet. Twenty-one diamond drill holes averaging 69.5 feet in depth were drilled making a total of 1459.3 feet of diamond drilling. Of the 48 holes drilled 7 penetrated ore and 18 found mineralization. Some of the ore holes have been mined since this drilling; those remaining are isolated holes and need further drilling.

It should be mentioned, however, that core recovery in diamond drilling was poor and inadequate records were kept of both the diamond drilling and the wagon drilling. In wagon drilling only mineralized and ore footages were kept with any accuracy. Samples were estimated by eye and only those appearing to be ore were assayed. Core from drill holes remain in the drilling area and should be re-examined for favorability after the snow melts and the holes which remain open should be probed with a Geiger counter with a cable extension.

The ratio of mineralized holes and ore holes to the total number of holes drilled is favorable and above average. And it is possible that some of the mineralized holes may after re-checking be considered ore holes. It is felt that with good geologic guidance and proper hole logging some of the favorable areas as shown by past drilling will yield ore within reasonably short distances.

Other previous exploration in the Corvusite-Lumsden Area has been limited to a few drill holes by private companies and the U.S. Bureau of Mines. Company exploration particularly the U.S. Vanadium Company drilling on their property in the Lumsden Area, has reportedly been very successful.

(Mr. Paris, Superintendent of Mines, U.S. Vanadium Corporation). The U.S. Bureau of Mines in drilling on the Corvusite Claims (Stone Mine) on the southwest end of the mineralized zone drilled 4 holes in ore and 5 in mineralization out of a total of 14 holes drilled.

Attached is a recap of the available information on previous drilling on the claims included in this report owned by Gateway Mining and Development Company.

RECAP OF DRILL HOLE LOGS

HOLE NO.	DEPTH OF HOLE	DEPTH OF MINERALIZATION	REMARKS
WD 1	56.9	Blank	Bottomed in green clay
WD 2	57.5	Blank	Bottomed in green clay
WD 3	57.3	50-55	Mineralization
WD 4	55.8	Blank	Bottomed in green clay
WD 5	54.6	Blank	Bottomed in green clay
WD 6	57.2	Blank	Bottomed in green clay
WD 7	60.7	55-58	Ore 0.30 U_3O_8
WD 8	30.0	Not recorded	2 feet mined
WD 9	25.6	Blank	Bottomed in green clay
WD 10	24.9	Blank	Bottomed in green clay
WD 11	26.8	Blank	Bottomed in green clay
WD 12	27.0	Blank	Bottomed in green clay
WD 13	28.2	Blank	Bottomed in green clay
WD 14	45.0	No footage recorded	Checked with D.D. hole Nos. 16 and 17
WD 15	48.2	45-48	Mineralized
DDH 16	46.0	44.6-49	Check wagon drill hole
DDH 17	45.2	44-50	Check wagon drill hole
DDH 18	46.0	Blank	Bottomed in green clay
DDH 19	50.7	48-50	Mineralized
DDH 20	60.5	55-60	Mineralized
DDH 21	66.0	60-65	Mineralized
DDH 22	78.5	Mineralized	No footage record
DDH 23	91.0	Mineralized	No footage record
DDH 24	98.0	70-72	Mineralized
DDH 25	104.0	75-80	Mineralized
DDH 26	84.2	Blank	Bottomed in green clay
DDH 27	82.4	65-70	Mineralized
DDH 28	83.2	65-67	Mineralized
DDH 29	96.0	Blank	Bottomed in green clay
DDH 30	90.5	80-85	Mineralized
DDH 31	91.2	80-85	Mineralized
DDH 32	89.4	80-85	Mineralized
DDH 33	91.0	80-85	Mineralized
DDH 34	101.0	97-98	Mineralized
DDH 35	103.0	97-100	Mineralized
DDH 36	104.2	98-100	Ore 0.26 U_3O_8
WD 37	27.2	Blank	
WD 38	28.3	Blank	
WD 39	35.6	No footage recorded	Low grade mineralization
WD 40	36.7	No footage recorded	Low grade mineralization
WD 41	40.4	35-38	Ore-small pieces in barrel, too soft to core
WD 42	40.5	35-38	Mineralization
WD 43	40.9	35-38	Mineralization
WD 44	40.0	34-36	Ore

RECAP OF DRILL HOLE LOGS (continued)

HOLE NO.	DEPTH OF HOLE	DEPTH OF MINERALIZATION	REMARKS
WD 45	35.6	Blank	
WD 46	33.5	Blank	
WD 47	30.2	Blank	
WD 48	38.7	Blank	

Total Wagon drilling	1082.3 Feet	27 Holes
Total diamond drilling	1459.3 Feet	21 Holes
TOTAL	2541.6 Feet	48 Holes

Mineralized holes	18
Ore holes	7

DEVELOPMENT

Development of the claims which are included in this report has been rapid considering the comparatively short time which the present owners have had them. The Gateway Mining and Development Company acquired these claims under a purchase agreement on October 15, 1950. Prior to this time about one ton of ore was shipped from these claims. After purchasing these claims, shipments of ore were made regularly by the company and leasers. A total of eight hundred and eleven tons of ore containing 7748.32 pounds of U_3O_8 and 33510.49 pounds of V_2O_5 for an average grade of 0.48% U_3O_8 and 2.03% V_2O_5 was shipped in 15 months of operation. Figures 4, 5 and 6 show the extent of the development work. Below is listed a description of each of the main workings:

Gilmore Mine - The open cut and portal of the Gilmore Mine lie on the Gilmore Lode but the most extensive workings are on the LaSal No. 2 Claim. The mine consists of about 700 feet of tunnel and cross drifts at various directions; a 40 foot untimbered air shaft, 150 foot by 12 foot open cut and approximately 2000 square feet of flat lying stope averaging 6 feet in height.

Samples taken in the mine included in this report are not representative of any amount of ore left to be mined but more nearly represent the 534 tons of ore that has been mined. Several "leads" remain in the mine but represent no appreciable tonnage as they are on the thinning edge rather than the thickening edge of ore bodies.

Ukele Mine - The portal of the Ukele Mine also lies on the Gilmore Lode but the major part of the workings lie on the LaSal No. 2 Claim. It consists of 350 feet of tunnel roughly in a triangular shape and 700 square feet of stope averaging about 5 feet in height.

This mine is particularly characteristic of all three type ore deposits found in this area. Section B-B' represents a typical cross-bedded sandstone deposit which fades into a thin bedding deposit to the northeast. Sample No. 2 (17.70 V_2O_5, 5.10 U_3O_8) was taken from the high grade corvusite pocket found scattered irregularly through the mine and Section A-A' shows the remains of a roll formation. (Figure 5).

Joint fractures trending in a northwesterly direction appear to have had a definite influence on the deposition of the ore. This should be considered in exploration and development work.

LaSal Mine - This mine is located on the Gilmore Lode Claim approximately 360 feet northeast of the Gilmore Mine portal and is the newest of the workings. This mine is at present being leased by Mark Ukele who is driving a tunnel toward ore holes Nos. 41 and 44. Sample No. 11 was taken in the end of a cross-cut which is approaching the mineralized zone. The mine consists of 140 feet of tunnel and cross-cuts as shown on Figure No. 6.

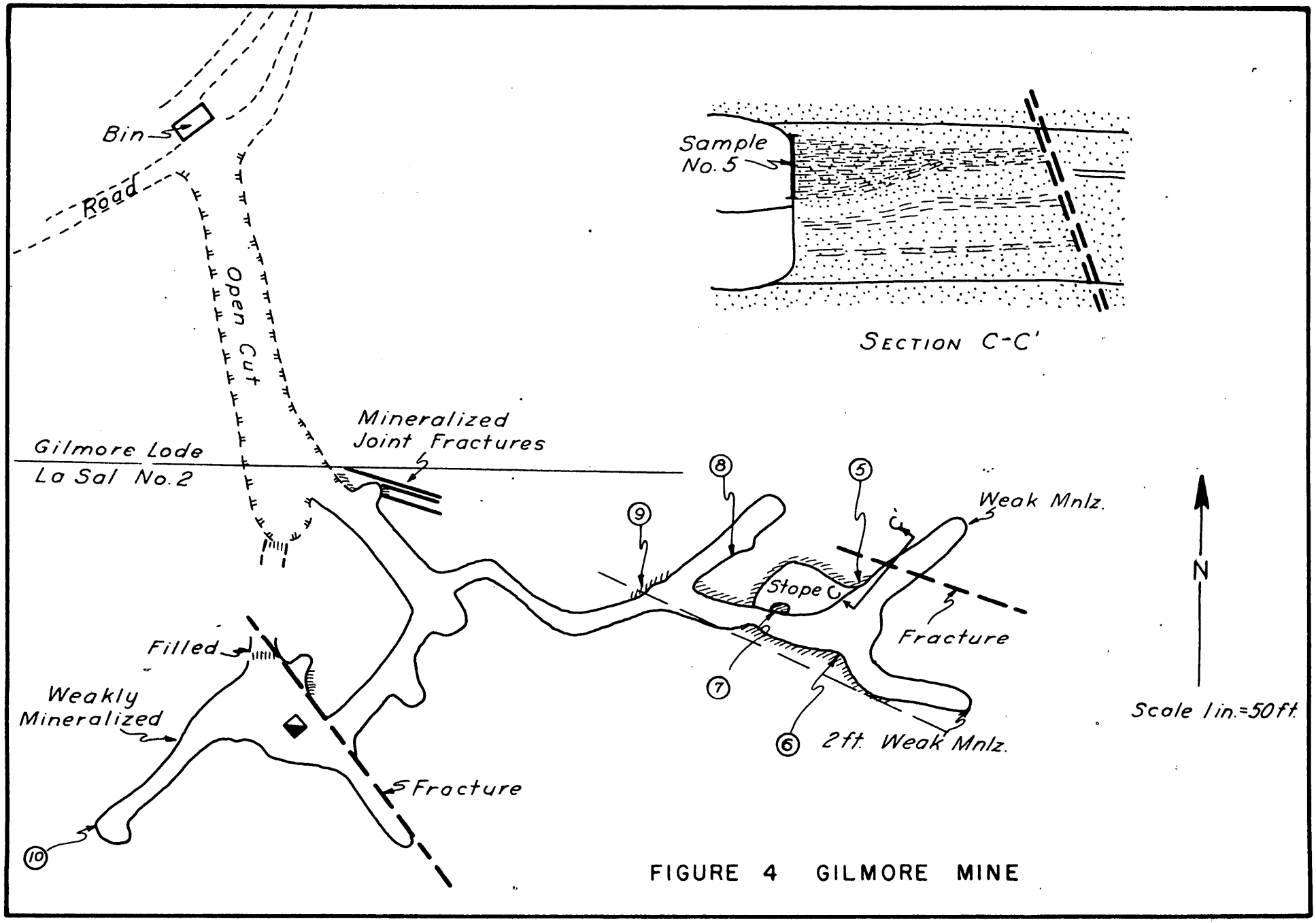


FIGURE 4 GILMORE MINE

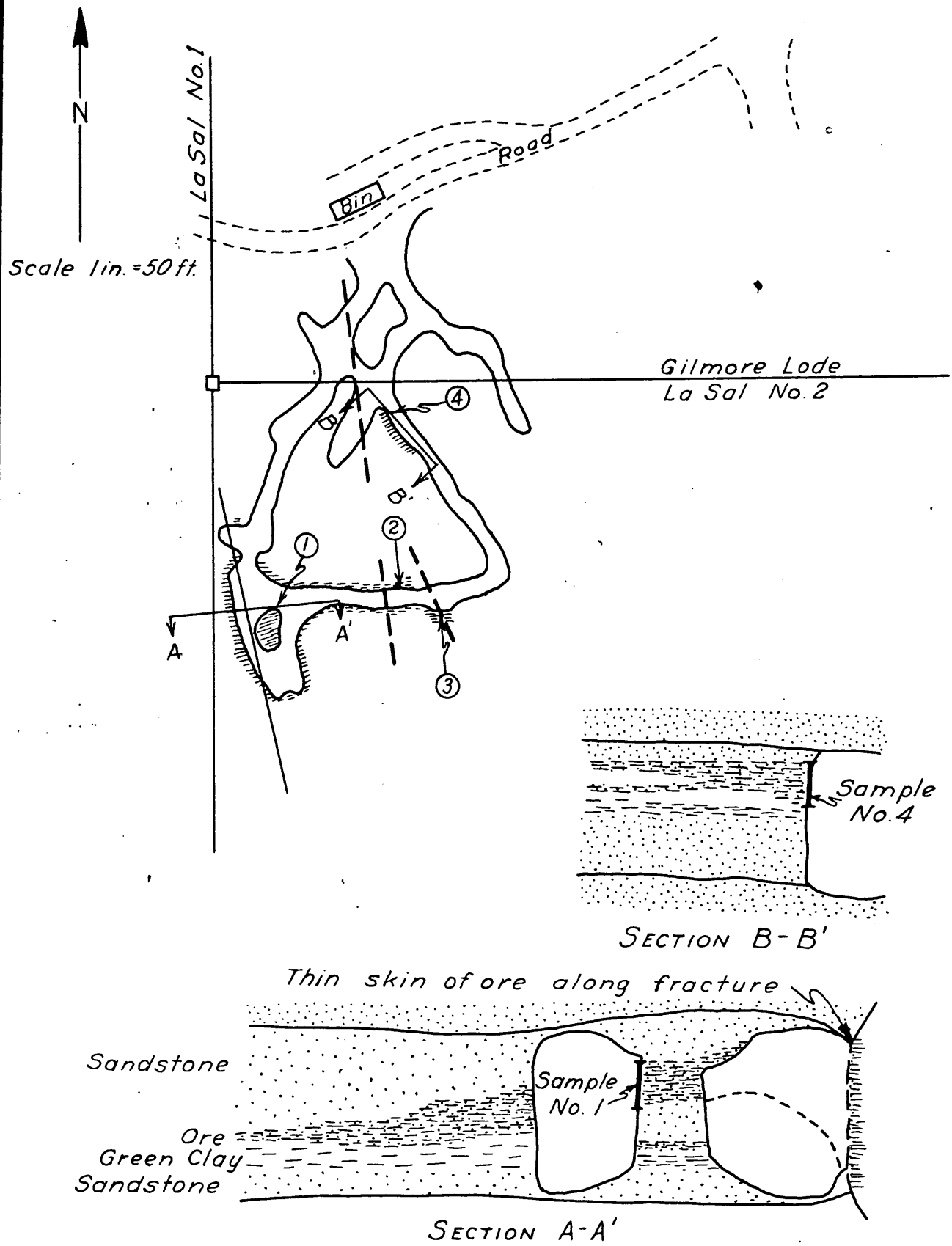


FIGURE 5 UKELE MINE

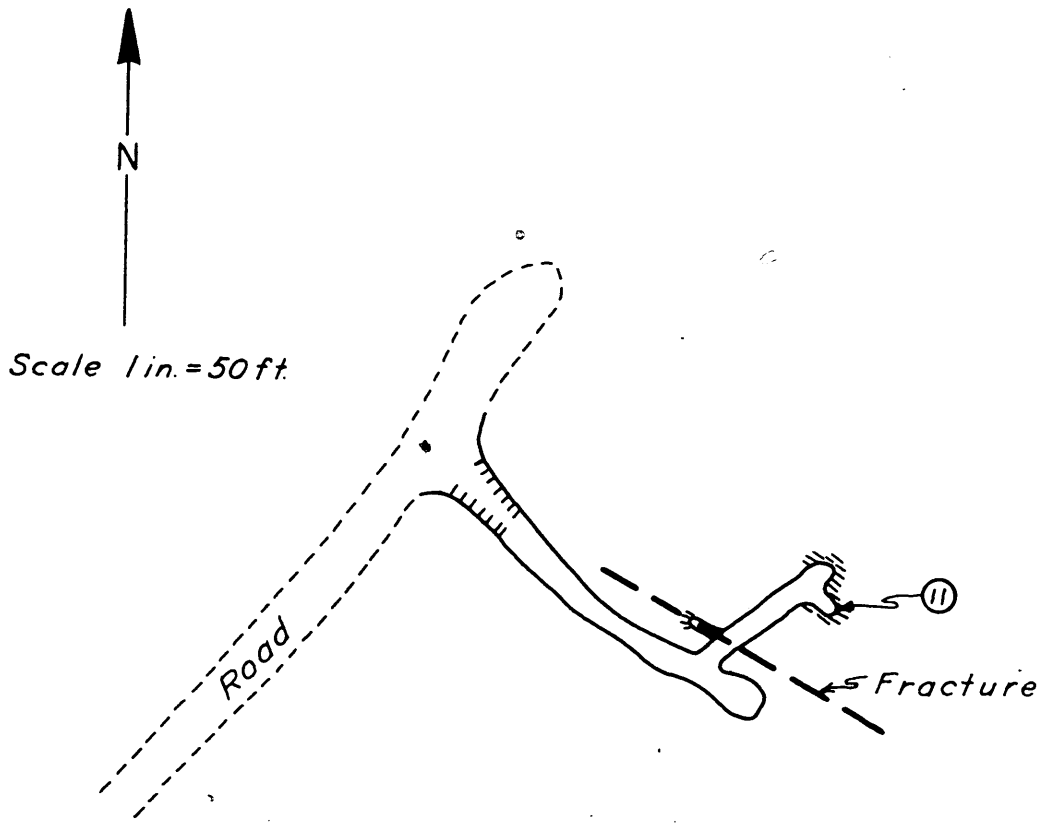


FIGURE 6 LA SAL MINE

SAMPLE DATA

The following tables give the analysis and description of the samples:

SAMPLE NUMBER	MINE	U_3O_8	V_2O_5	DESCRIPTION
1	Ukele Mine	3.80	0.39	11 inch sample taken from pillar across ore zone
2	Ukele Mine	17.70	5.10	8 inch cut across flat lying high grade bedded zone
3	Ukele Mine	38.30	2.52	6 inch cut taken across high grade pocket of corvusite
4	Ukele Mine	7.62	0.33	18 inch cut across mineralized cross-bedded sandstone
5	Gilmore Mine	1.17	0.32	30 inch cut across strong carnotite mineralization in north wall of stope
6	Gilmore Mine	2.83	0.06	21 inch cut across V_2O_5 mineralized zone on south side of stope
7	Gilmore Mine	3.26	1.18	24 inch cut from pillar on west end of stope
8	Gilmore Mine	2.00	1.37	10 inch sample. 2 inches of ore and 8 inches of ore separated by 30 inch barren rock (not included)
9	Gilmore Mine	0.99	0.45	26 inch cut along drift western extremity of ore body
10	Gilmore Mine	4.49	0.02	30 inch cut in face V_2O_5 mineralization
11	LaSal Mine	4.02	3.06	18 inch cut in face across newly opened mineralized zone

GEOLOGIC GUIDES AND EXPLORATION PLANS

Geologic Guides

A geologic appraisal made of the area indicates that enough favorable criteria is present to guide an exploration program of considerable size. An alteration zone extending about 800 feet across the general trend of mineralization lying on the Gilmore Lode, LaSal No. 2, and the LaSalle, is evident from mine and rim exposures. In this zone the sandstone has the characteristic light gray color with limonite spotting. Inter-bedded shales and clays have been altered to a blue green. Carbon, a favorable guide, was found on bedding planes at innumerable points and one hole on previous drilling reportedly penetrated 12 feet of carbonaceous shales.

The true width and length of the mineralized zone as shown on Figure 2 is not definitely known but all indications clearly point to a channel extending from the Stone Mine in the Corvusite Area to the Lumsden Area. This has been generally recognized by (1) The Union Mines Development Corporation, a government operated exploration unit, in 1943, (2) Mr. Elmer Reinhardt, Chief Geologist, A.E.C. Exploration Branch, (3) Individual geologists in the U.S.G.S. and the author. The Union Mines' geologists estimated 126,000 tons of ore averaging 1.66 V_2O_5 and 0.188 U_3O_8 in the block of ground. They estimated its width as 2500 feet.

Structural lows within the sand lenses expressed on surface in some cases as basins, sage brush flats, or the upper end of canyons that have not been eroded to the ore horizons have proven to be favorable areas in exploration when these lows lie within a mineralized belt. This structural relation of ore deposition has been used successively on government

drilling projects particularly in the Long Park and Club Mesa Areas.

Beaver Mesa is similar to these areas and has evidence of at least two structurally low areas between the Corvusite and Lumsden Areas within the mineralized channel. Structural contour maps from information obtained from close-spaced drilling will undoubtedly outline more of these lows.

Exploration Plans

Exploration should be carried out on a pattern which would make the most effective use of the known guides and then endeavor to develop other guides that might be used in localizing the ore. It should first find ore for immediate production plus a substantial reserve. The drilling should be started near the know ore bodies and work progressively to wider-spaced drilling.

Drilling is considered the most practical means of exploration because of the nature of the ore and high cost of other types of exploration. Wagon drilling is the most economical on a per foot basis up to 80 feet deep, however, a qualified man is necessary to log cuttings. Some rim stripping would be feasible but is not considered as a major item in exploration. The bulldozer used to clear drilling sites can be readily utilized in slack periods for this work.

Below is listed a pattern widely accepted on the Colorado Plateau which combines both closed-spaced and wide-spaced drilling:

Initial Phase

Hole drilled in an arc approximately 25 feet from present working faces or worked out stopes and spaced 25 feet apart. (Some company operation space holes as close as 10 feet). Since, in this case

all drilling in this category would be between 25 and 50 feet in depth, 25 feet spacing is considered most practical. Spacing should be adjusted to take advantage of the possible extensions of ore along the long axis of ore bodies and jointing as is shown from underground workings. Footage estimated in this category is 1600 feet in 40 holes. See hole location on Figure 7.

Close-spaced Drilling (Wagon Drilling)

Holes in this category should be at 50 foot intervals on a regular grid pattern and include footages between 20 and 80 feet of depth. This drilling would help to establish trends of ore and furnish basic information for preparation of a structural contour map of the contact between the ore sandstone and underlying clay which would guide the location of holes in deeper drilling. Two-hundred and seventy wagon drill holes averaging 50 feet deep or 13,500 feet would include holes drilled on the pattern and offset holes.

Moderate-spaced Drilling (Diamond Drilling)

Holes in this class would be drilled with a diamond drill and should be spaced at 100 foot intervals to locate ore bodies, favorable areas, and give additional information for structural contour mapping. It is estimated that 174 holes of an average depth of 120 feet or a total footage of 20,880 feet would be included in this category.

Wide-spaced Drilling (Diamond Drilling)

Holes spaced at 400 foot intervals averaging 260 feet in depth would be drilled extending from the 1220 contour (Figure 7) to the upper side lines of LaSal No. 5, LaSal No. 6 and LaSal No. 7. This wide-spaced drilling would be used to pick favorable areas within the

mineral zone on the basis of alteration of the sandstones and clays and other criteria. Favorable areas within this wide-spaced drilling would be drilled on a closer spacing.

It is estimated that 44 holes or a total of 11,440 feet would be required this phase.

RESERVES

From the sample data included in this report it might be inferred that considerable reserves remain in the mines. This, however, is incorrect since the samples more nearly represent the ore that has been mined rather than the ore that remains. The samples were cut on the pinching edges of ore bodies and from pillars.

A negligible tonnage remains in the Gilmore Mine and in the Ukele Mine (estimated 10 tons), however, this will be mined in the near future by leasers and would not affect future commitments.

OTHER AREAS FAVORABLE FOR EXPLORATION

In addition to the claims included in this report other claims on Beaver Mesa controlled by the Gateway Mining and Development Company appear to be favorable for exploration. These areas, with a considerable number of mineralized outcrops, have at present no production and favorable criteria is not as apparent, but structurally they are similar to the area included in this report. These areas are listed below by claims and sections in their order of importance and should be considered under separate exploration applications or as alternate areas.

(1) Section 17, T 25 S, R 26 E, Salt Lake Principal Meredian, Uranta Claims 9, 10, 11, 12, 13, 14, 16 and Hartman Lode. These claims lie in the same mineralized zone between the Stone Mine and the Lumsden Area. Drilling depths would be 200 to 300 feet.

(2) Section 19 and 20, T 25 S, R 26 E, Salt Lake Principal Meredian, Bonanza Claims 8, 9, 10, and 11. These claims are favorable because of their close proximity to the Stone Mine and the possibility that they lie in the extension of the same mineralized zone.

(3) Sections 20 and 21, T 25 S, R 26 E, Salt Lake Principal Meredian and Sections 11 and 12, T 51 N, R 20 W, covered by the following claims: Big Jake 1 to 10, Utah 1 to 17, John Brown 1 to 29 and the Karns Lode. The favorability of these claims is based on the probability that a mineralized zone lies parallel to the Corvusite-Lumsden Area. Not enough evidence is present to preclude such a zone although structurally it is the same as the known zone.

LABOR AND LIVING CONDITIONS

Labor, both skilled and semi-skilled, with the exception of diamond drillers is in adequate supply. Prevailing wages of various types of labor is listed below:

Labor and muckers ----------	$1.20 per hour
Miners ----------	1.50 per hour
Drillers, core and wagon -----	1.75 per hour

The above figures do not include living allowances which are being provided by many mining and drilling companies in the more remote areas.

This living allowance averages $2.00 per day where board and room are not furnished.

Living conditions vary considerably depending on the distance from towns. Most mining operations and drilling projects provide bunk houses and boarding houses for single men while married men provide their own accomodations, usually portable trailers. The Gateway Mining and Development Company has at present the following housing and boarding facilities to accomodate a maximum of eight men:

1 Boarding House 14' x 20'
2 Bunk Houses 14' x 30'

Additional boarding and bunk houses would, however, be necessary to accomodate additional drilling personnel for an exploration program as outlined in a previous paragraph. The possiblity of the personnel living in Gateway is not practical considering the difficult road condition and lack of suitable facilities

ACCESS ROADS

An adequate network of roads service the area included in this report. A graded dirt road from the mine passes the Gateway Mining and Development Company camp and joins Colorado State Highway 141, one-half mile south of Gateway. Highway 141 is an all-weather gravel road used to haul supplies and ore to Uravan and Grand Junction. Gateway is 51 miles from Grand Junction and 39 miles from Uravan.

The road from the mine through John Brown Canyon to Highway 141 is passable throughout most of the year and shipments of ore are delayed only a few days during the spring thaws in normal winters. This road, however, is scheduled for improvement as recommended by the Atomic Energy Commission and work will start in spring of 1952.

GENERAL SUPPLIES

Gasoline, oil and groceries can be purchased in Gateway but large quantities of these same supplies for camp operation would be purchased in Grand Junction. Powder, fuse and hand tools can be purchased in Uravan while heavy mining equipment as compressors, can be purchased in Grand Junction.

Grand Junction is the nearest railhead.

Gateway has phone service and R.E.A. power, however, electric power is not being used at present by mine operators because the lack of large proven tonnages of reserves do not warrant a high initial cost of equipment. Should a large tonnage of ore be found in the exploration program as outlined, electric power should be considered in the mine development.

Ore processing plants are located at Uravan and Grand Junction and a receiving station is located in Gateway.

WATER SUPPLY

An adequate water supply is available for drilling and domestic purposes from the three springs and one continuous stream near the drilling area and camp. There are also several large reservoirs which catch water from the spring run-off and seasonal thunder showers. The estimated capacity of these reservoirs is one-hundred thousand gallons. The springs and their estimated flow are listed below:

NAME	FLOW	LOCATION
D.P. Spring	500 gal/hr	1 mile northwest of drilling area
Twin Springs	500 gal/hr	1/4 mile east of Gateway Mining & Development Company Camp
Willow Spring	300 gal/hr	At the Gateway Mining & Development Camp

A suitable storage reservoir with a capacity of ten thousand gallons retains the excess water from Willow Spring at the camp and a storage tank with a capacity of one thousand gallons retains a portion of the excess supply at D.P. Spring.

With an assured supply of 1300 gallons per hour, the area could supply enough water for at least 10 drills on an 8 hour basis since the water used per day, per drill on contracts on the plateau averages near 1000 gallons.

CONCLUSION

Enough favorable geologic criteria is present and mining has progressed far enough as to verify the zone of mineralization that lies between the Lumsden Area and the Corvusite Area. It is felt that the claims owned by the Gateway Mining and Development Company which have produced 811 tons of ore which is more than twice as high as the average grade of ore produced on the Colorado Plateau, warrants a drilling program of considerable size. The area outline is within one of the best potential unexplored areas as recognized by leading geologists of the Colorado Plateau. And it is felt that the size of program outlined herein is not out of line with the amount of drilling done by the government in the more favorable areas of equivalent size.

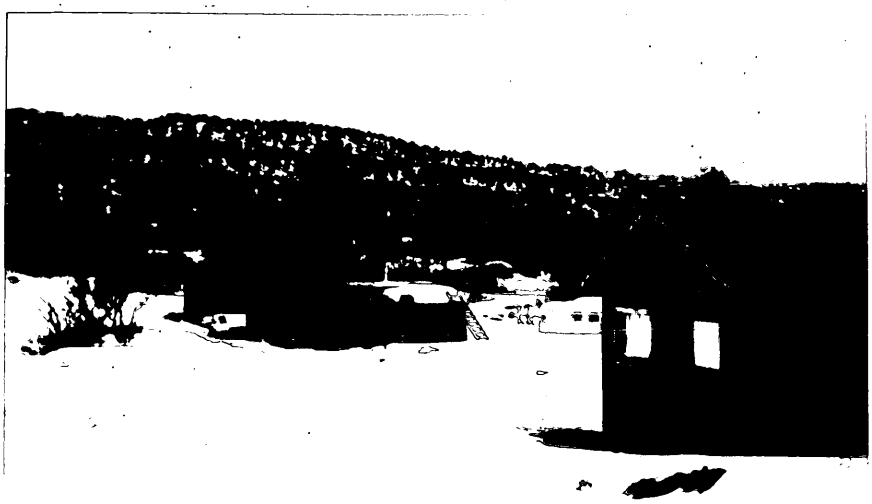
The total footage expended, of course, would vary depending on the success of the two initial stages of drilling and the footage included here is the total footage required to thoroughly explore these claims.

John I. Schumacher

JOHN I. SCHUMACHER
Registered Mining Engineer

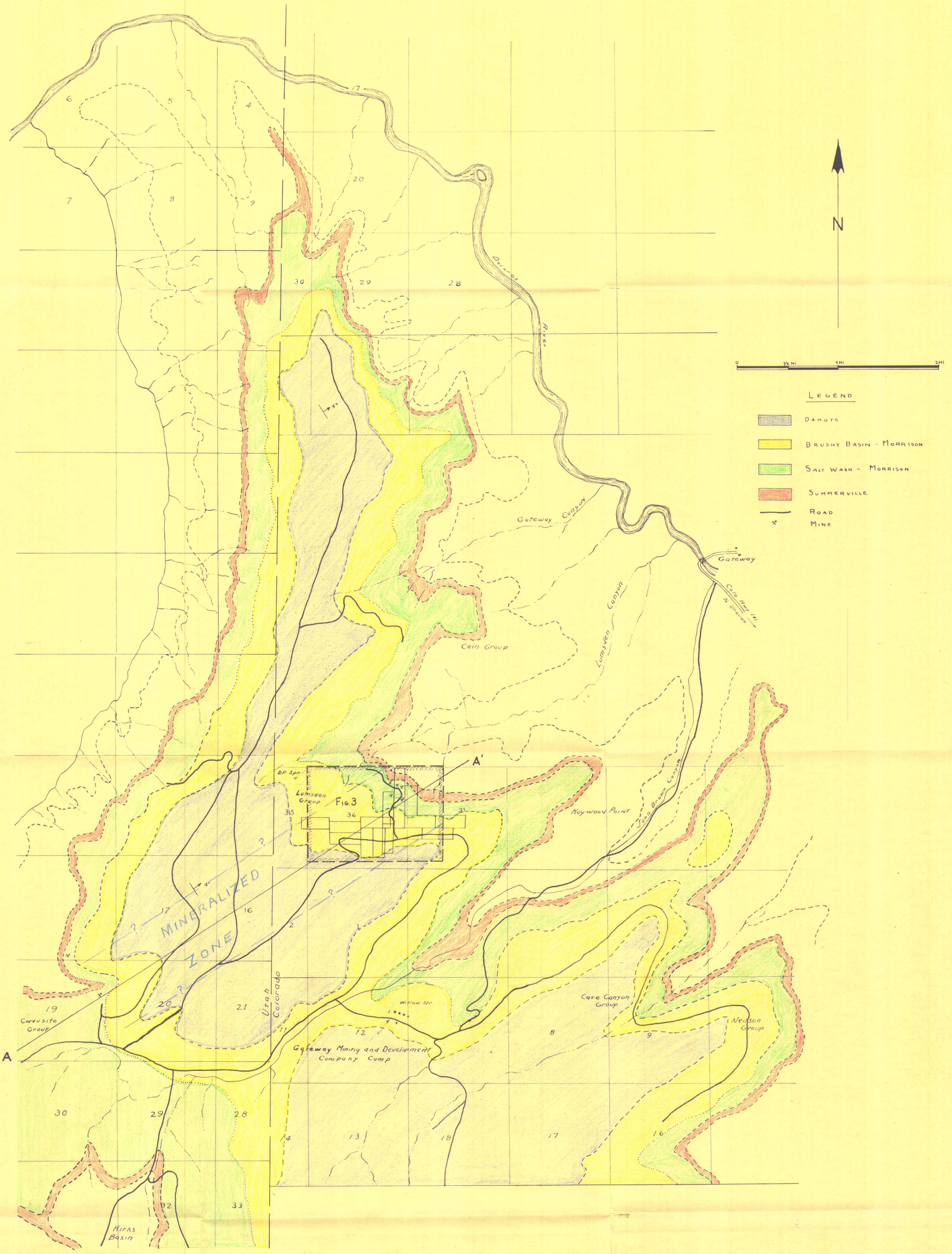
GILMORE MINE

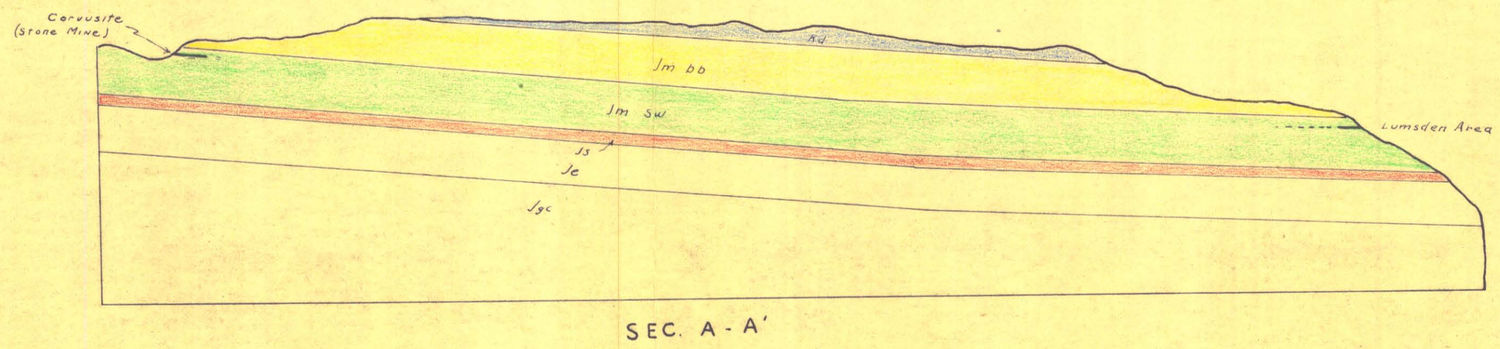
UKELE MINE



GATEWAY MINING & DEVELOPMENT COMPANY CAMP

FIGURE 3

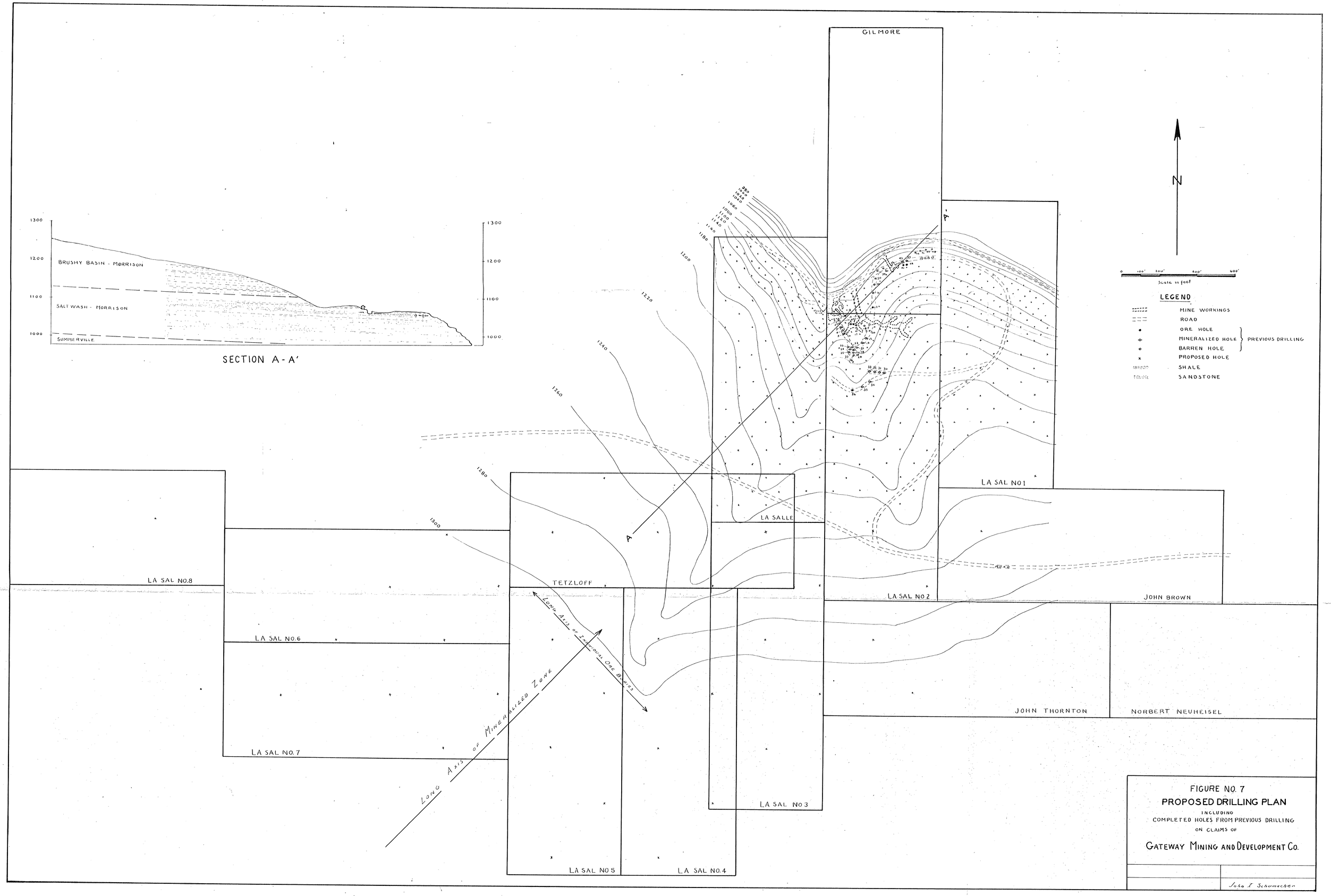




SEC. A - A'

FIGURE NO. 2
GEOLOGY OF BEAVER MESA
INCLUDING
GATEWAY MINING AND DEVELOPMENT CO.
CLAIMS

John I. Schumacher


SECTION A-A'
1300
1200
1100
1000
BRUSHY BASIN - MORRISON
SALT WASH - MORRISON
SUMMERVILLE
GILMORE
LA SALLE
LA SAL NO 1
LA SAL NO 2
LA SAL NO 3
LA SAL NO 4
LA SAL NO 5
LA SAL NO 6
LA SAL NO 7
LA SAL NO 8
TETZLOFF
JOHN BROWN
JOHN THORNTON
NORBERT NEUHEISEL
LONG AXIS OF MINERALIZED ZONE
LONG AXIS OF PREVIOUS ORE BODIES
A
A'
N
0 100' 200' 400' 600'
Scale in feet
LEGEND
MINE WORKINGS
ROAD
ORE HOLE
MINERALIZED HOLE
BARREN HOLE
PREVIOUS DRILLING
PROPOSED HOLE
SHALE
SANDSTONE
FIGURE NO. 7
PROPOSED DRILLING PLAN
INCLUDING
COMPLETED HOLES FROM PREVIOUS DRILLING
ON CLAIMS OF
GATEWAY MINING AND DEVELOPMENT CO.
John L. Schumacher

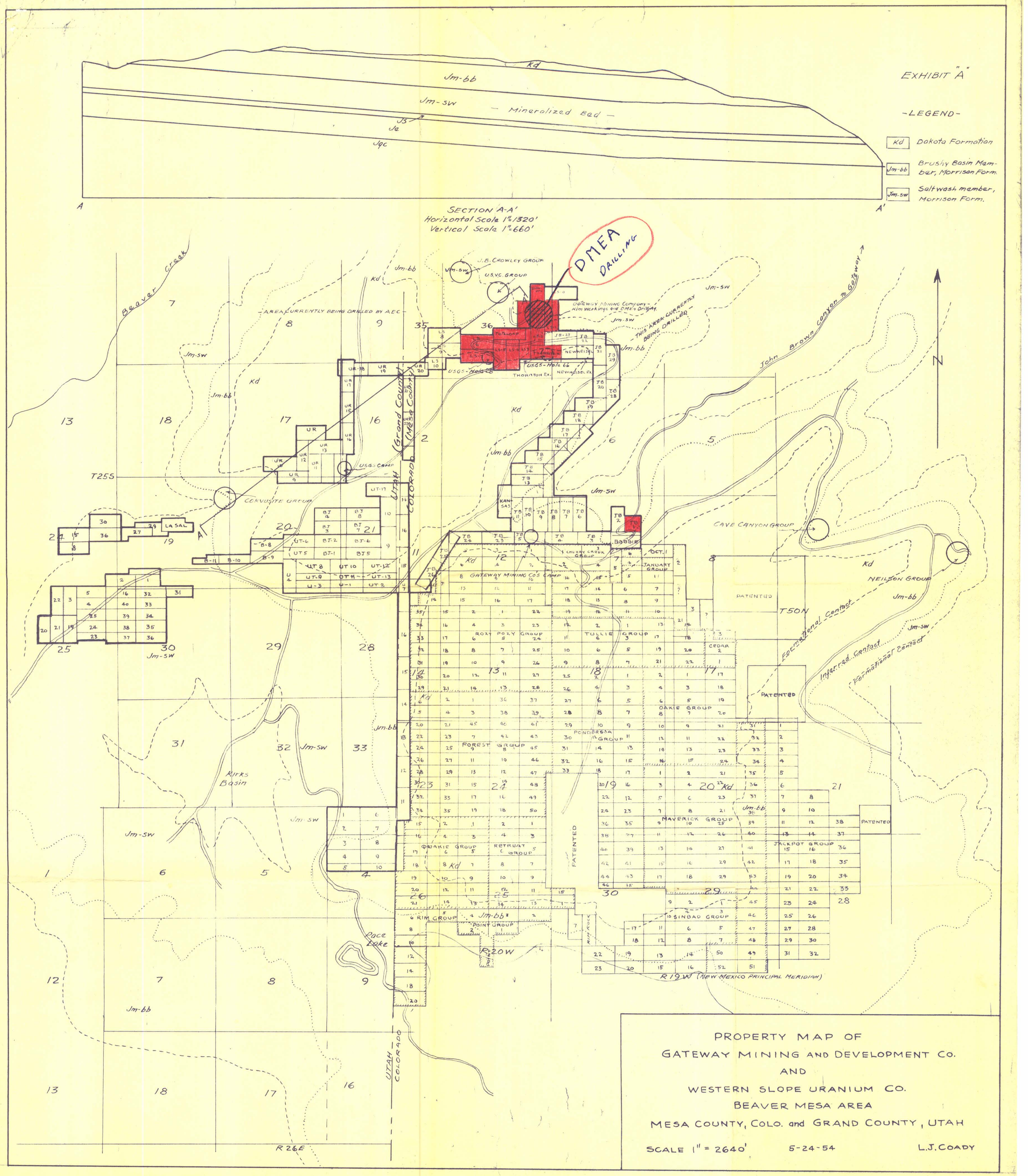
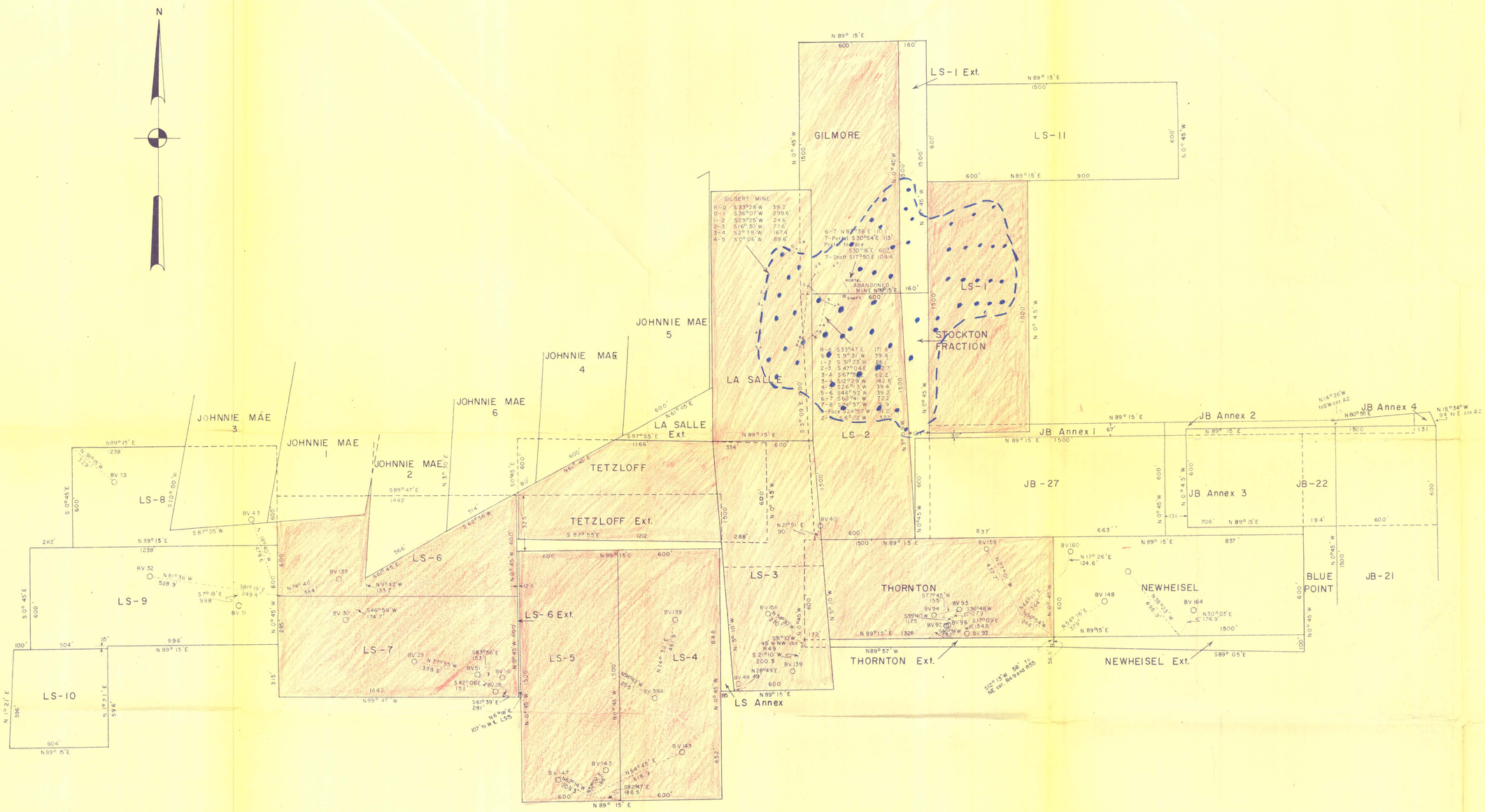


EXHIBIT "A"
-LEGEND-
Kd Dakota Formation
Jm-bb Brushy Basin Member, Morrison Form.
Jm-sw Saltwash member, Morrison Form.
Kd
Jm-bb
Jm-sw
Mineralized Bed
Js
Ja
Jqc
A
A'
SECTION A-A'
Horizontal Scale 1"=1320'
Vertical Scale 1"=660'
DMEA DRILLING
J.B. CROWLEY GROUP
U.S.V.C. GROUP
GATEWAY MINING COMPANY - Kim workings and DMEA Drilling
THIS AREA CURRENTLY BEING DRILLED
AREA CURRENTLY BEING DRILLED BY AEC
Beaver Creek
John Brown Canyon to Gateway
USGS-Hole 66
USGS-Hole 68
THORNTON EX.
NEWHEISEL EX.
USGS CAMP
CORVUSITE GROUP
CAVE CANYON GROUP
NEILSON GROUP
GATEWAY MINING CO'S CAMP
CHERRY CREEK GROUP
JANUARY GROUP
OCT. 1
ROZY POZY GROUP
TULLIE GROUP
CEDAR
OAKIE GROUP
PONDEROSA GROUP
FOREST GROUP
MAVERICK GROUP
JACKPOT GROUP
QUAKIE GROUP
RETREAT GROUP
RIM GROUP
POINT GROUP
SINBAD GROUP
RIM ROCK
PATENTED
Formational Contact
Inferred Contact
Kirks Basin
Pace Lake
UTAH
COLORADO
Grand County
Mesa County
T25S
T50N
R20W
R19W (New Mexico Principal Meridian)
R26E
LA SAL
KANSAS
BOBBIE
N
PROPERTY MAP OF
GATEWAY MINING AND DEVELOPMENT CO.
AND
WESTERN SLOPE URANIUM CO.
BEAVER MESA AREA
MESA COUNTY, COLO. and GRAND COUNTY, UTAH
SCALE 1" = 2640'
5-24-54
L.J. COADY



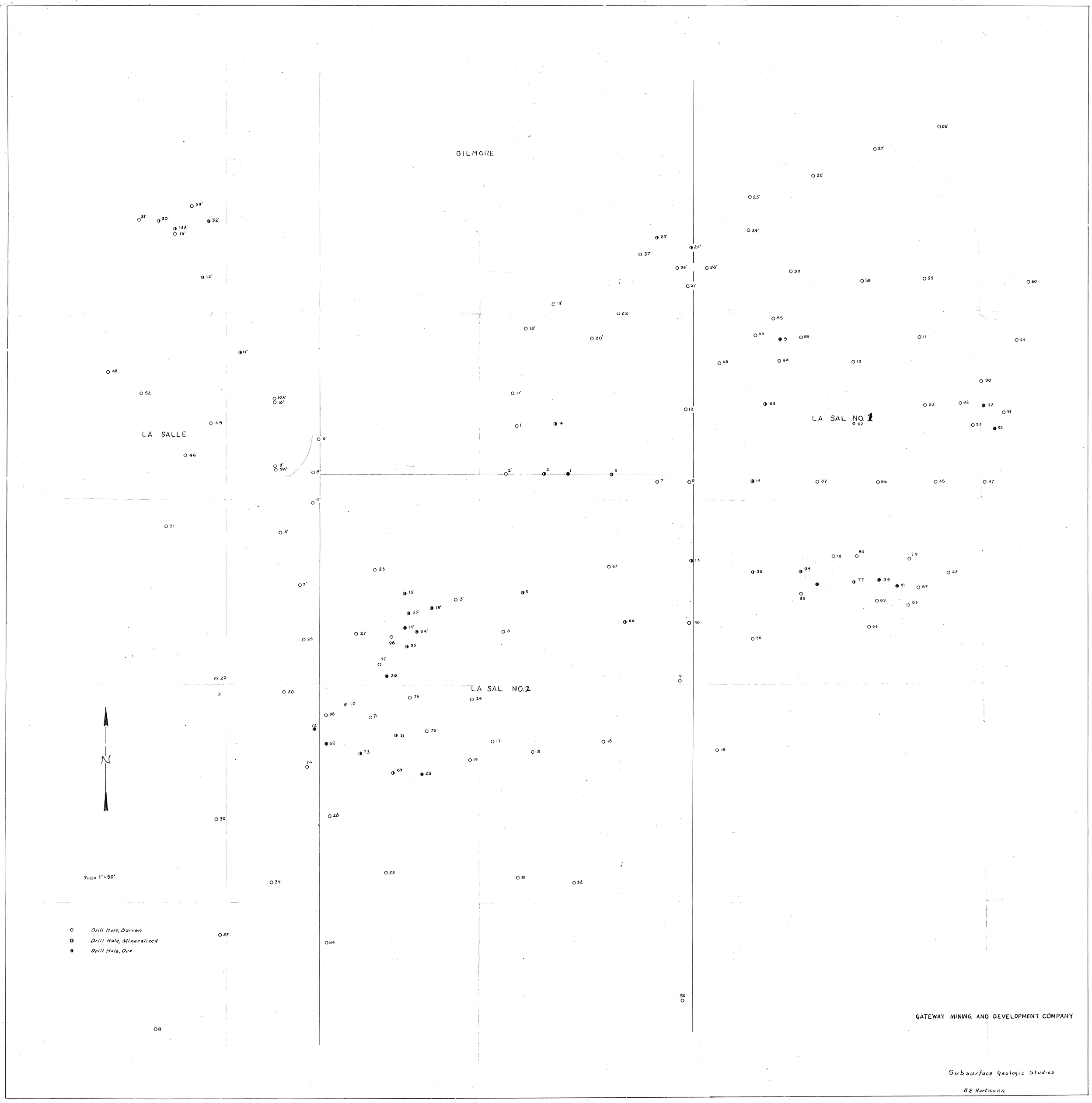
FLANDERS MINING CO.

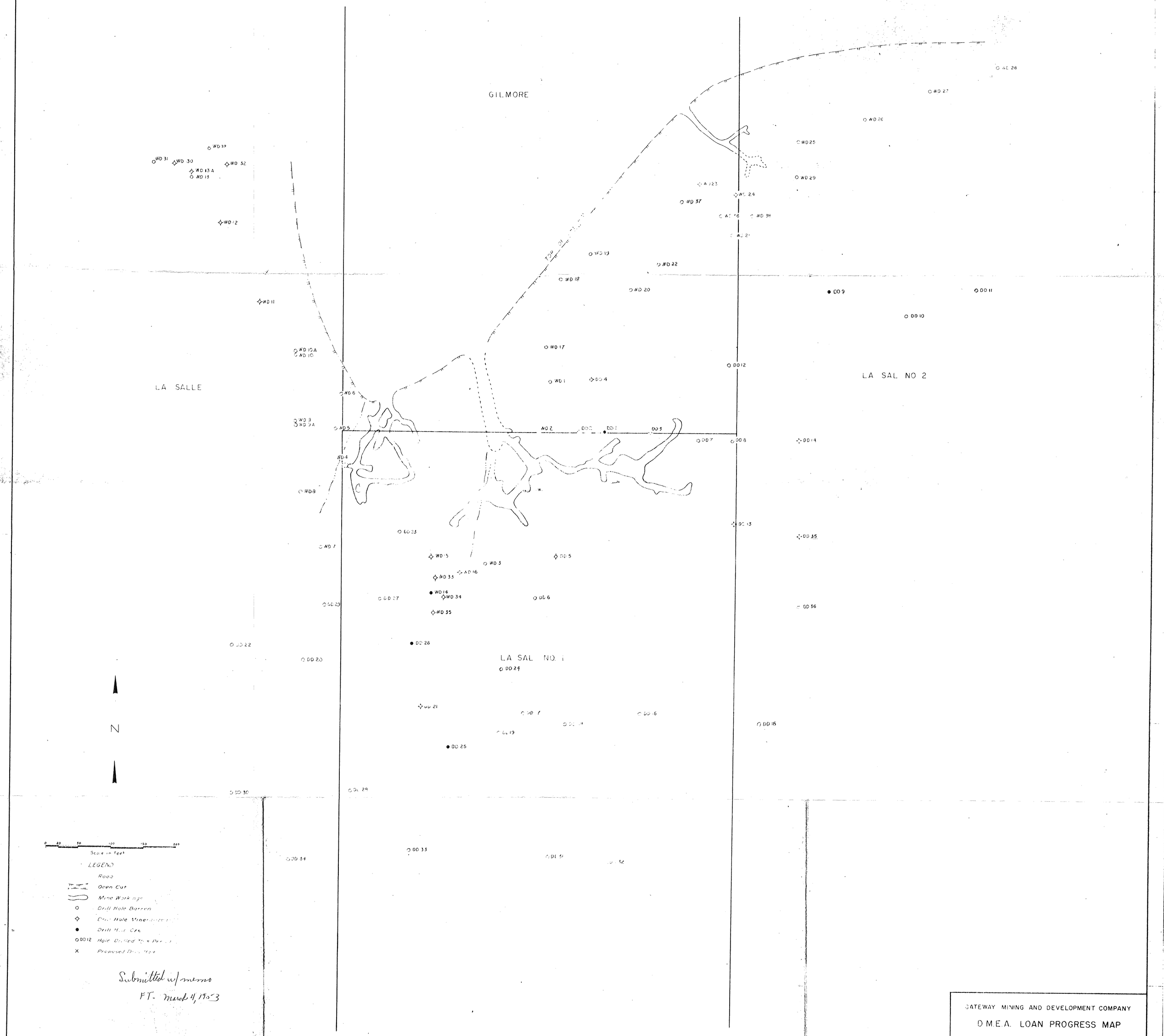
BEAVER MESA

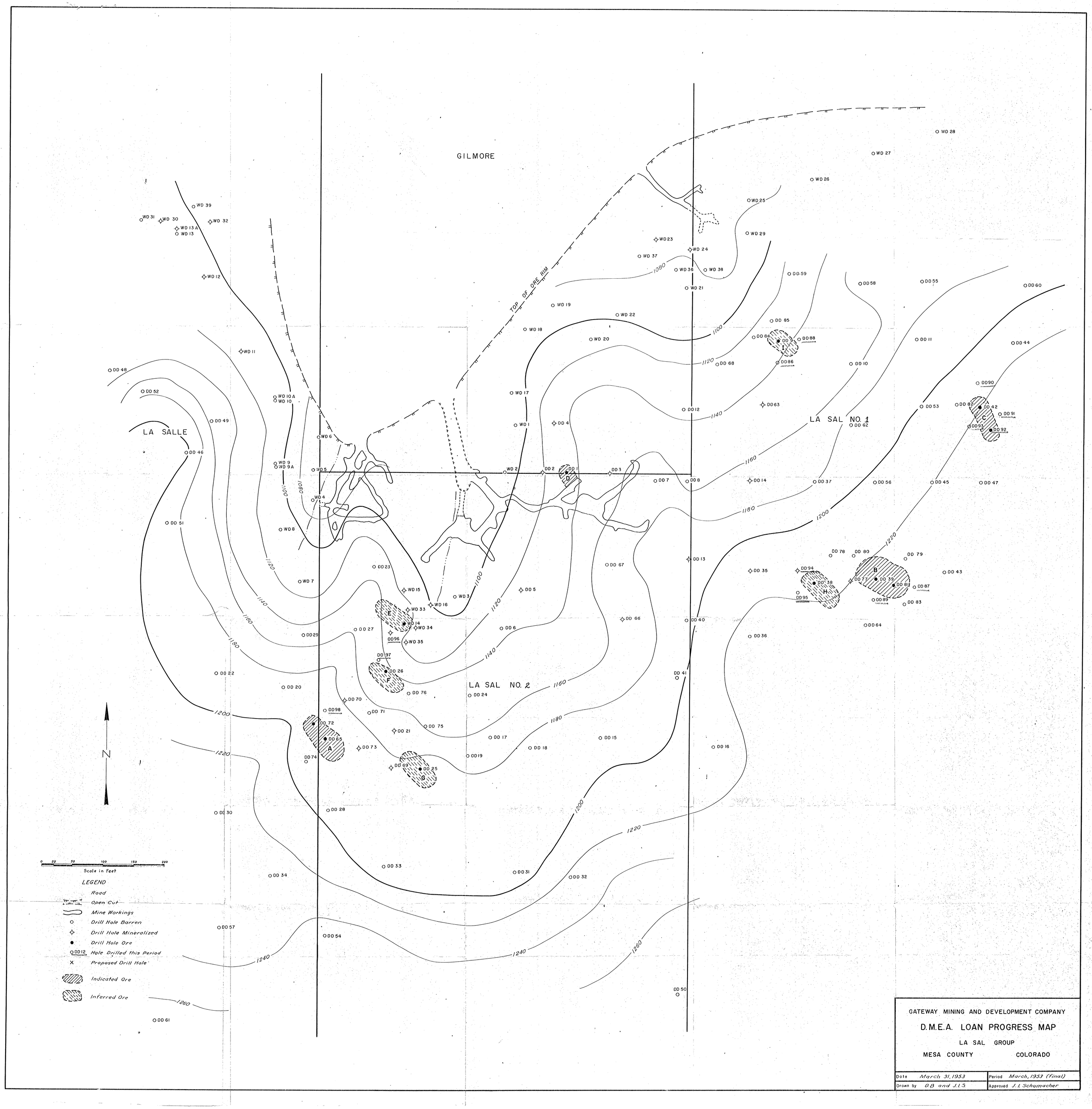
MESA CO., COLORADO

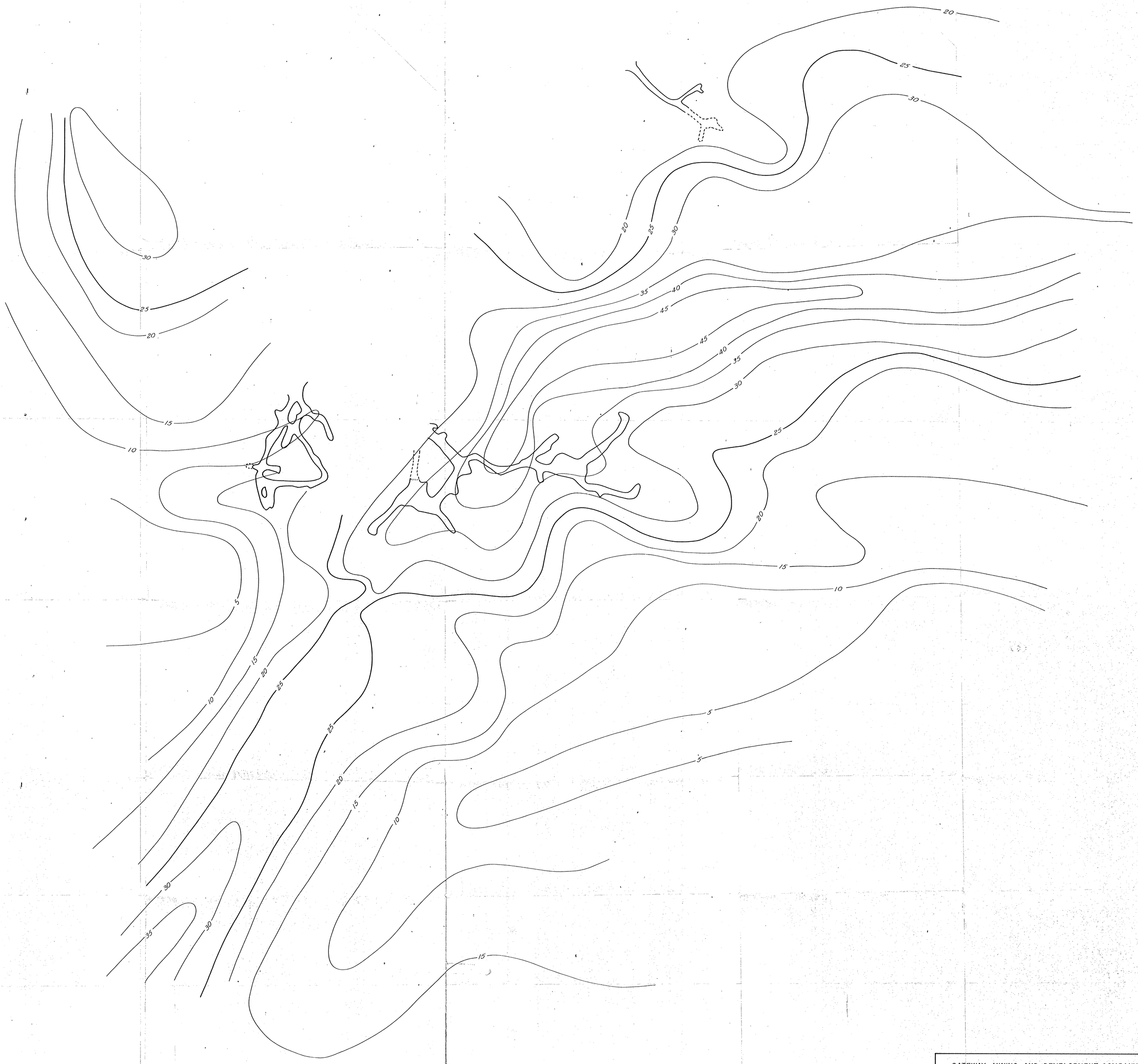
SCALE: 1" = 300' OCT. 10, 1954

Drafting by: Ray M. Green


GILMORE
LA SALLE
LA SAL NO. 1
LA SAL NO. 2
N
Scale 1" = 50'
Drill Hole, Barren
Drill Hole, Mineralized
Drill Hole, Ore
GATEWAY MINING AND DEVELOPMENT COMPANY
Subsurface Geologic Studies
B E Hartmann


GILMORE
LA SALLE
LA SAL NO 2
LA SAL NO. 1
N
0 20 50 100 150 200
Scale in Feet
LEGEND
Road
Open Cut
Mine Workings
Drill Hole Barren
Drill Hole Mineralized
Drill Hole Ore
Hole Drilled This Period
Proposed Drill Hole
Submitted w/ memo
FT. March 4, 1983
GATEWAY MINING AND DEVELOPMENT COMPANY
D.M.E.A. LOAN PROGRESS MAP
LA SAL GROUP
MESA COUNTY COLORADO
Date: Jan. 3 1983
Period: December 1982
Approved: JJS


GILMORE
LA SALLE
LA SAL NO. 1
LA SAL NO. 2
TOP OF ORE RIM
N
Scale in Feet
0 20 50 100 150 200
LEGEND
Road
Open Cut
Mine Workings
Drill Hole Barren
Drill Hole Mineralized
Drill Hole Ore
Hole Drilled this Period
Proposed Drill Hole
Indicated Ore
Inferred Ore
GATEWAY MINING AND DEVELOPMENT COMPANY
D.M.E.A. LOAN PROGRESS MAP
LA SAL GROUP
MESA COUNTY COLORADO
Date March 31, 1953
Period March, 1953 (Final)
Drawn by D.B and J.I.S
Approved J. I. Schumacher



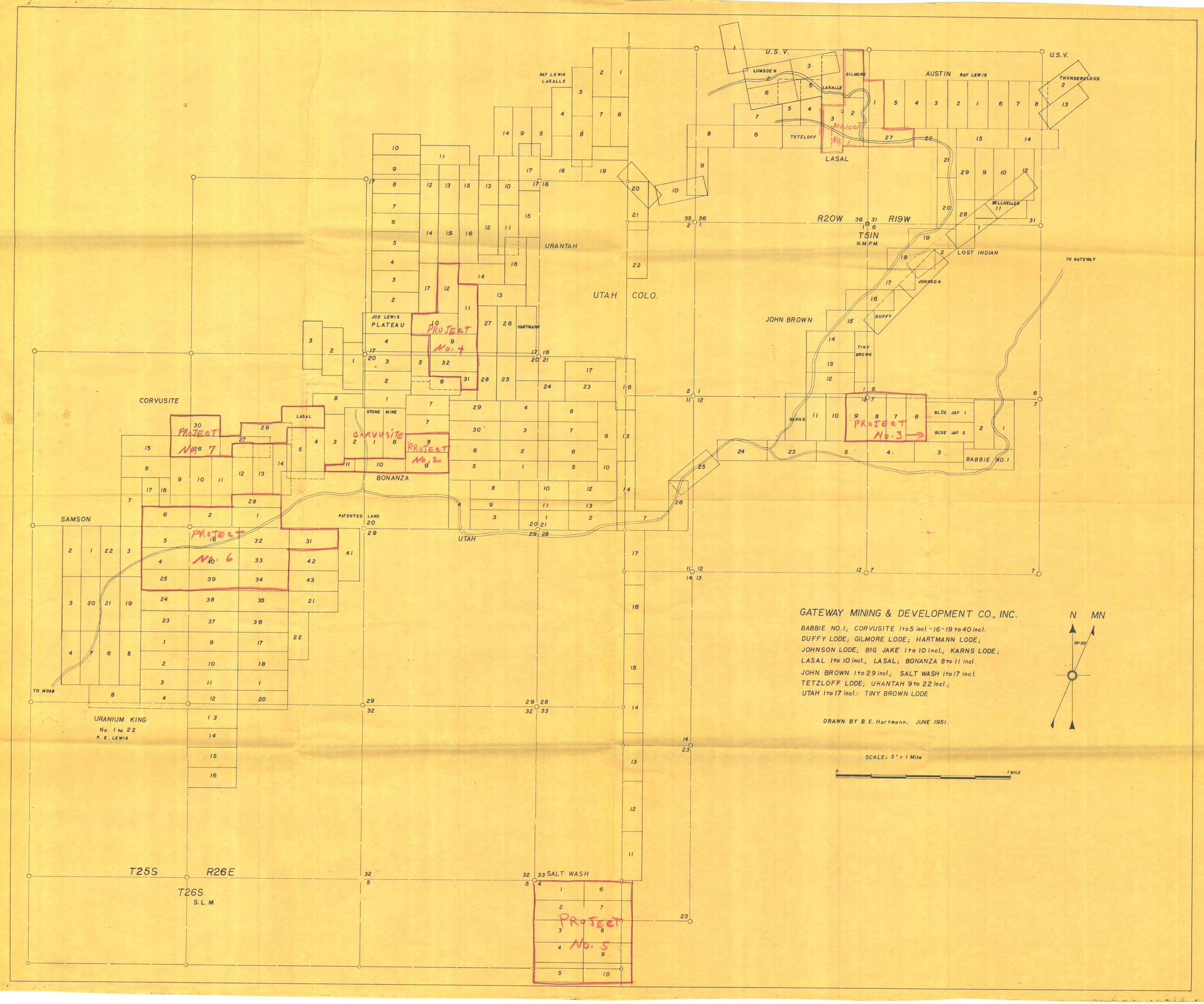
GATEWAY MINING AND DEVELOPMENT COMPANY

SANDSTONE THICKNESS CONTOUR MAP

LA SAL GROUP

MESA COUNTY COLORADO

Date	Period
Drawn by	Approved



GATEWAY MINING & DEVELOPMENT CO., INC.

BABBIE NO. 1; CORVUSITE 1 to 5 incl. - 16 - 19 to 40 incl.
DUFFY LODE; GILMORE LODE; HARTMANN LODE;
JOHNSON LODE; BIG JAKE 1 to 10 incl.; KARNS LODE;
LASAL 1 to 10 incl.; LASAL; BONANZA 8 to 11 incl.
JOHN BROWN 1 to 29 incl.; SALT WASH 1 to 17 incl.
TETZLOFF LODE; URANTAH 9 to 22 incl.;
UTAH 1 to 17 incl.; TINY BROWN LODE

DRAWN BY B. E. Hartmann, JUNE 1951.

N MN

15°30'

SCALE: 5" = 1 Mile

0 1 MILE

Exhibit #3

UNITED STATES DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

STRATEGIC MINERALS INVESTIGATIONS
PRELIMINARY MAP

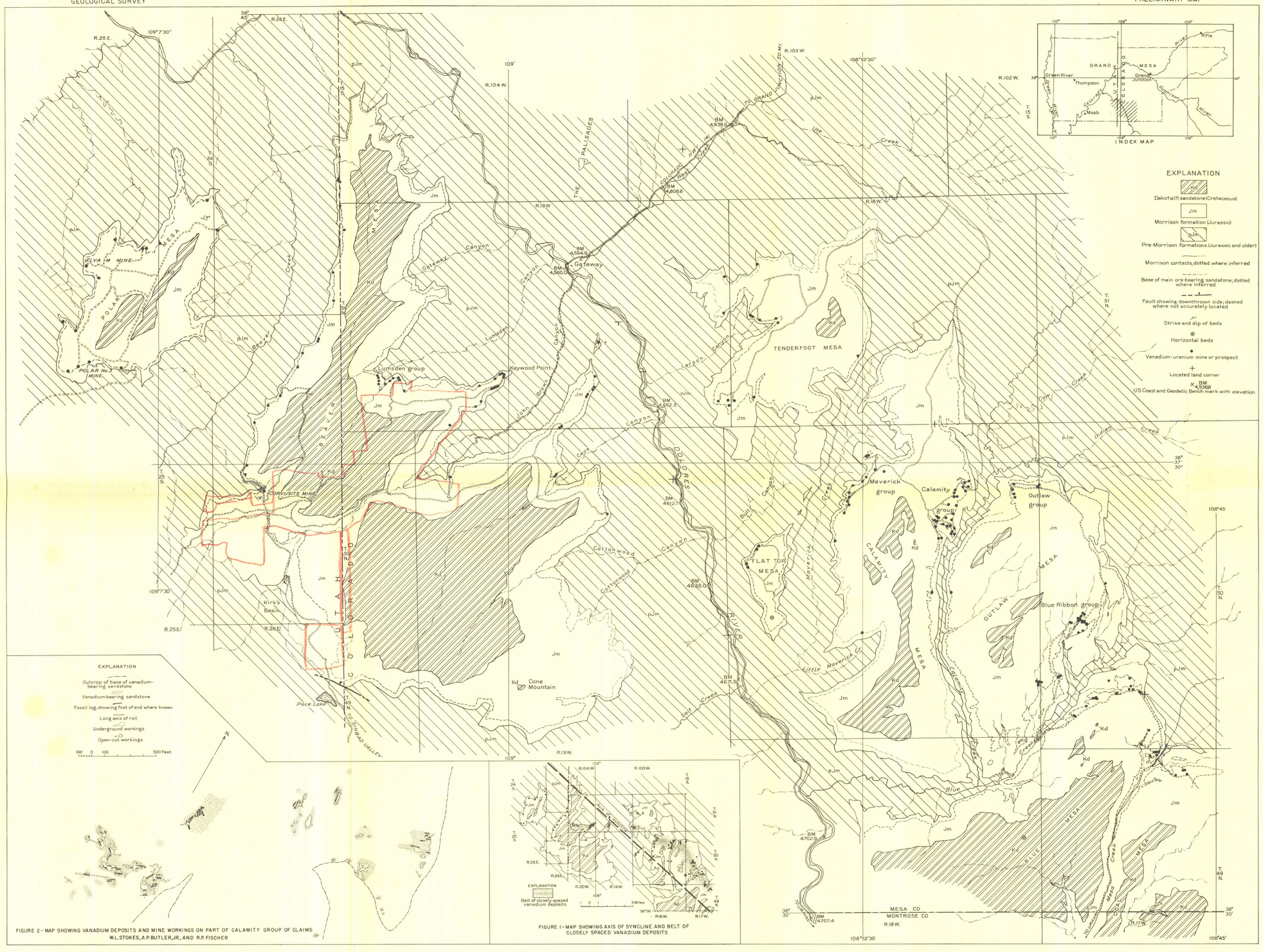


FIGURE 2 - MAP SHOWING VANADIUM DEPOSITS AND MINE WORKINGS ON PART OF CALAMITY GROUP OF CLAIMS
W.L. STOKES, A.P. BUTLER, JR., AND R.P. FISCHER

FIGURE 1 - MAP SHOWING AXIS OF SYNCLINE AND BELT OF CLOSELY SPACED VANADIUM DEPOSITS

Base from aerial photographs, land survey divisions from General Land Office plats adjusted to observed land corners as plotted on photographic base.

1 0 1 5 Miles

Geology by W.L. Stokes, R.T. Russell, R.P. Fischer, and A.P. Butler, Jr.
1945

GEOLOGIC MAP OF THE GATEWAY AREA, MESA COUNTY, COLORADO, AND THE ADJOINING PART OF GRAND COUNTY, UTAH

VANADIUM DEPOSITS IN THE GATEWAY AREA, MESA COUNTY, COLORADO, AND THE ADJOINING PART OF GRAND COUNTY, UTAH

By W. L. Stokes and R. P. Fischer

In the course of investigation of the domestic vanadium resources by the Geological Survey, United States Department of the Interior, the vanadium ("carnotite") deposits in the Gateway area, Mesa County, Colo., and in the adjoining part of Grand County, Utah, were examined and mapped during parts of 1942, 1943, and 1944. The work in 1943 was in cooperation with the Bureau of Mines, as part of a Federal prospecting project for vanadium. In addition to the writers, A. P. Butler, Jr., and R. T. Russell participated part-time in the field work, which was under the direct supervision of R. P. Fischer. Thanks are due to Mr. W. S. Burbank for helpful suggestions concerning the map and text. The accompanying map shows the distribution of the known vanadium deposits and the outcrop of the ore-bearing Morrison formation. The map base was compiled from aerial mosaics, which were prepared by the Soil Conservation Service.

The area is part of a ruggedly dissected plateau. Most of the canyons are steep-walled, and in many places vertical cliffs a hundred or more feet high extend continuously for several miles. Altitudes range from about 4,500 feet along the Dolores River to about 8,000 feet on the plateau surface a few miles away.

Mining in the area began as early as 1914, but all individual deposits have been worked in a desultory manner, and in some years in the late twenties and early thirties no production is recorded for the entire area. Before 1924 the ore was mined principally as a source of radium, and since then principally for vanadium. A small mill at Gateway has operated intermittently since it was built in 1938, but except for the ore treated there, all of the ore mined has been shipped from the area for treatment. The ore production data summarized below was compiled from the files of the Bureau of Mines, individual operators, and Metals Reserve Co., and it is believed to be nearly complete.

Production of "carnotite" ore in the Gateway area, Mesa County, Colo., and the adjoining part of Grand County, Utah

Period	Short tons (rounded figures)	Approximate average grade (percent V_2O_5)
1914-23	3,500	4
1924-39	3,500	4½
1940-44	30,000	2-2½

Geology.—The rock formations in the area consist mainly of continental sediments of late Paleozoic and Mesozoic age. A broad northwest-trending syncline, into which the rocks dip at low angles from the Uncompahgre Plateau uplift on the northeast and from the Sinbad Valley anticline and the La Sal Mountains on the southwest, extends through the central part of the area (see fig. 1).

The Morrison formation of Jurassic age, which contains all the known vanadium deposits in the area, is 600 to 700 feet thick, and it consists of two easily distinguished parts. The lower and upper parts of the formation are 260 and 410 feet thick, respectively, at the Calamity group of claims on Calamity Creek in the east-central part of the area, and at the Corvusite mine on Beaver Mesa 12 to 14 miles to the west they are 220 and 280 feet thick, respectively. The lower part is composed of lenticular beds of gray, medium-grained, current-bedded sandstone, alternating with and replacing red and gray, sandy clay and mudstone; these beds are regarded as channel, mud-flat, and flood-plain deposits of fluvial origin. A zone of widespread, bench-forming sandstone beds at the top of the lower part contains most of the important vanadium deposits, but sandstone beds as much as 50 feet above and 50 feet below this zone also contain deposits in places. The upper part of the Morrison is composed of light-colored, soft, bentonitic clay and mudstone with a few sandstone lenses.

The Dakota (?) sandstone of Cretaceous age overlies the Morrison formation, and it consists of 100 feet or more of sandstone, shale, and conglomerate, all dominantly gray or brown. It is cliff-forming and caps the high mesas. The Entrada sandstone of Jurassic age crops out in a light-colored, smooth-weathering cliff, called the "slick rim" by the miners, and is a distinctive datum about a hundred feet below the Morrison formation. The formations below the Entrada are dominantly reddish and consist of sandstone and shale.

Ore deposits.—The vanadium ("carnotite") deposits in the area shown on the map are similar in mineralogy and occurrence to those in the neighboring parts of Colorado and Utah. The ore consists principally of a fine-grained, gray, micaceous mineral that coats the sand grains and partly or entirely fills the pore spaces of the sandstone, but generally some bright-yellow carnotite is mixed with this mineral. In a few places the ore minerals are chiefly dark-colored vanadium oxides. Run-of-mine ore of these types contains from 1 to about 5 percent V_2O_5. Fossil plant remains—logs and branches—are relatively abundant in the ore-bearing sandstone, and they show various states of preservation or alteration to coaly matter. Some of this plant material is richly mineralized, notably with carnotite, which either replaces the woody remains or partly fills cavities left by the decay of the wood. Commonly the sandstone surrounding the plant remains is well mineralized. Fossil logs in the Gateway area have yielded valuable amounts of high-grade carnotite ore. Clay pebbles and sandy shale beds within and underlying mineralized sandstone commonly contain some vanadium.

The ore bodies range from small masses only a few feet across and irregular in shape, containing only a few tons of ore each, to large tabular bodies of irregular outline and a couple hundred feet across, containing several thousand tons of ore. Deposits of average size in the area contain perhaps 100 tons each. The tabular bodies consist of one or more layers of ore that lie essentially parallel to the enclosing beds but do not follow the beds in detail. These layers are too thin to mine in parts of many deposits, but they may connect ore masses of minable thickness, and thus are followed as leads in prospecting and mining. Many masses of minable ore, including some of those in the tabular bodies as well as some that individually make small ore bodies, crudely resemble cylinders. They are elongate essentially parallel to the sandstone bedding. Wherever the lateral boundaries are well defined, the edge of the ore crosses the bedding planes in a smooth curve. These cylindrical ore masses are called "rolls" by the miners.

As has been observed in other carnotite-producing areas,1/ neighboring rolls generally are oriented in about the same direction, and this direction corresponds closely to the common orientation of fossil logs in the ore-bearing sandstone, whether or not the rolls actually enclose the fossil logs. Most of the fossil logs and rolls in the Gateway area trend northeasterly, and the average direction is about N. 60° E.

Most of the fossil logs are thought to have drifted into place, and their orientation probably was controlled by stream conditions at the time the enclosing sands were deposited. The localization and trend of the ore rolls, on the other hand, must have been influenced in some manner by structural conditions of sedimentary origin that controlled the flow of solutions through the sandstone beds, for the ore minerals in their present form were deposited from solutions after the sands were deposited. In places, as in part of the Calamity group of claims (see fig. 2), the clusters of fossil logs and rolls in the ore deposits show a curving arrangement, suggestive of a meandering stream, even though the channels of sedimentation are not clearly defined.

The general distribution of the ore deposits in the eastern part of the area suggests a belt of relatively closely spaced deposits extending from the north end of the Blue Mesa northwestward to Calamity Mesa, and perhaps from there westward to Beaver Mesa (see fig. 1). Continued prospecting may show a less well defined extension of this belt westward to Polar Mesa. This belt is flanked by areas in which few deposits are exposed. It seems unlikely that the evident concentration of deposits along this belt is an accident of exposure. On the other hand, the trend of the belt is not obviously related to any known stage in the physiographic development of the area; it does not correspond with the general northeast orientation of the ore rolls or fossil logs; and in part at least it is divergent from the axis of the syncline (see fig. 1) and from the regional fractures, which mostly strike about parallel to the synclinal axis. Hence the localization of the belt seemingly cannot be rationalized by a simple explanation.

Suggestions for prospecting.—The genesis of the deposits and the controls that localized the ore are not definitely determined, and all of the evidence concerning them cannot be presented in a brief statement. Nevertheless, certain observed facts regarding the distribution and character of the deposits may be useful as guides in prospecting. Most of the deposits are in a zone of bench-forming sandstone beds near the middle of the Morrison formation, and prospecting should be largely restricted to this zone. A belt, in which the known deposits are relatively closely spaced at the outcrop, trends northwestward through the middle of the area. In many places the ore rolls and fossil logs have a common orientation locally, and they show trends useful in prospecting for extensions of known deposits as well as for new deposits. Within reasonable limits, exposures at the outcrop are considered to be representative samples of what may be expected in adjacent concealed parts of a bed, so that covered areas near closely spaced deposits at the outcrop are considered most favorable for subsurface prospecting. Considering all known factors, the ground between the Maverick and Calamity groups of claims seems to be relatively favorable for the discovery of deposits by subsurface prospecting, and the ore-bearing sandstone is no more than 50 to 100 feet beneath the surface in much of this area. Likewise the ground between the Outlaw and Blue Ribbon groups might be favorable, although the ore-bearing sandstone is mostly under thicker cover and the larger deposits may average lower in grade.

Although most discoveries in the future will probably be made by subsurface prospecting, surface prospecting along the rims and on the benches will probably still yield some results. A few parts of the area, notably east and north of Cone Mountain, have been relatively inaccessible and probably not thoroughly prospected.

1/ Fischer, R. P., Vanadium deposits of Colorado and Utah: U. S. Geol. Survey Bull. 936-P, pl. 57, 1942.