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James Doyle Sell Mining Collection

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J. H. C.

DEC 17 1969

AMERICAN SMELTING AND REFINING COMPANY
Tucson Arizona

December 15, 1969

W.E.S.
JAN 7 1969

TO: J. H. Courtright

FROM: S. R. Davis

Swisshelm Mtns. Prospect
Swisshelm Mining District
Cochise County, Arizona

The Swisshelm Mtns. prospect is a 20 acre state mineral lease located in the NW 1/4 of section 2, T20S, R27E. Mr. M. C. Thompson of Elfrida, Arizona, and his son, Dave, are Lessee's of the subject property and brought it to the attention of ASARCO.

The prospect was visited November 25, at which time seven rock chip samples were taken and a geologic sketch map with sample locations was made (see attachment "A").

The area is one of northeasterly dipping, conformable sediments, with little or no evidence of fault displacement. The base of the geologic section is a chloritized Pre-Cambrian granite which is overlain by Cambrian Bolsa quartzite and Abrigo limestone. Although the lower contact of the Devonian Martin limestone was not identified in the field, it is probably gradational and about as indicated on the geologic sketch. The Carboniferous Escabrosa limestone forms the top of the geologic section and along with the Bolsa quartzite is a prominent ridge forming unit, resulting in rather steep topography.

No crosscutting structures with displacement were seen in the field, and the only dip-slip movements appeared to be pre-consolidation bedding plane slips with considerable compression folding at the Bolsa-Abrigo contact. The predominant joint set was perpendicular to the bedding and rather wide spaced.

Mineralization is limited to a 2" N50°E trending joint exposed in the bottom of the drainage near the Bolsa-Abrigo contact. A hematite-limonite matrix filling the joint contains visible free gold. A shallow prospect pit exposes the joint to a 12 foot depth and indicates that the

JHCourtright
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December 15, 1969

Swisshelm Mtns. Prospect
Swisshelm Mining District
Cochise County, Arizona

mineralization may very well be of placer rather than hydrothermal origin. Small nuggets and flakes of gold occur with decreasing frequency to a depth of approximately six feet, where even the hematite and limonite tend to pinch out.

Considerable hematite and limonite of probable syngenetic origin occurs near the base of the Abrigo limestone in thin shaly and quartzitic units. Lateral migration of these iron oxides could account for the limonite-hematite matrix in the mineralized joint. The source of the gold may well have been erosion of the mineralized zones of the Swisshelm Mining District two miles to the southeast.

Assay and geochem results of the seven samples are given on attachment "B"; sample descriptions are as follows:

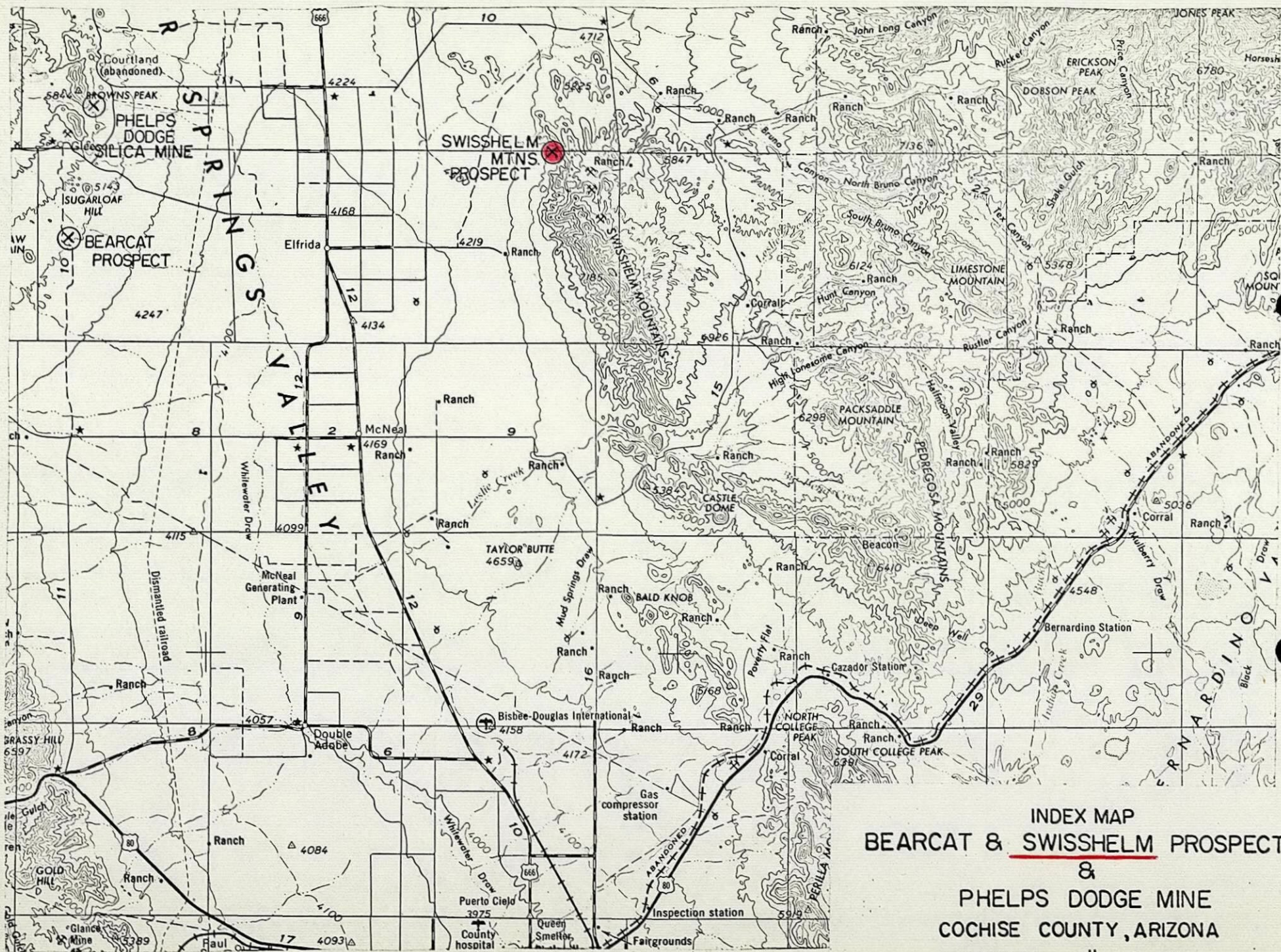
<u>Sample Number</u>	<u>Description</u>
SM-1	Silty shale, weak hematite and limonite
SM-2	Shale, minor quartzite stringers, weak to moderate hematite and limonite
SM-3	Quartzite, mottled with moderate to strong hematite and limonite
SM-4	Quartzite, strong hematite
SM-5	Pebble conglomerate, quartzitic
SM-6	Pre-Cambrian granite, moderate to strong chlorite
SM-7	Limonite-hematite, vein material with free gold.

The prospect contains no significant alteration or mineralization and is of no further interest.

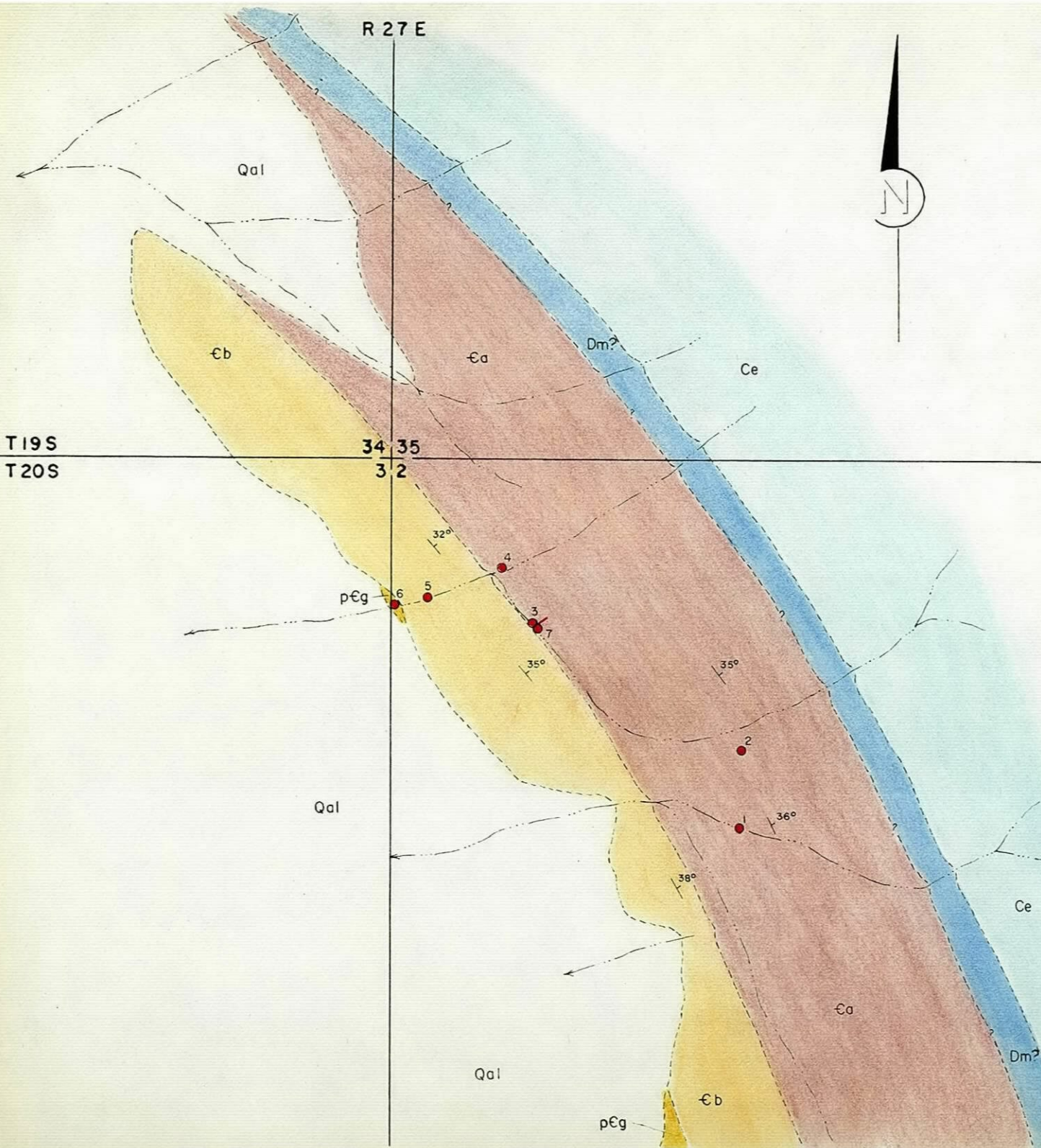

S. R. Davis

SRD/kvs
Attachments

cc: WESaegart



INDEX MAP
 BEARCAT & SWISHELM PROSPECTS
 &
 PHELPS DODGE MINE
 COCHISE COUNTY, ARIZONA
 SCALE 1" = 4 miles



EXPLANATION

- Quat. { Qal Alluvium
- Carb. { Ce Escabrosa limestone
- Dev. { Dm Martin limestone
- € { €a Abrigo formation
- €b Bolsa Quartzite
- Pre-€ { p€g Granite
- 5 Sample SM-5
- Mineralized fissure

SWISSELM MTNS PROSPECT

State Mineral Lease (20 A.)

M.C. Thompson, Lessee

Cochise Co., Ariz.

T20S, R27E

SCALE: 1"=500'

Dec. 8, 1969

SRD

AMERICAN ANALYTICAL and RESEARCH LABORATORIES

ASSAYERS - CHEMISTS - METALLURGISTS

TUCSON, ARIZONA 85713

SAMPLE SUBMITTED BY American Smelting & Refining Company
Mr. S. R. Davis

DATE Dec. 3, 1969

[illegible]

Note: Au, Ag in oz per ton.

CHARGES \$

76.50

