



REPORT ON

WARMAN CLAIMS

CALLAGHAN CREEK, B. C.

VANCOUVER M.D.

SEPTEMBER 1, 1971

A. H. MANIFOLD, P.ENG. CONSULTING GEOLOGIST, BURNABY, B.C.

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Location and Access

The Warman group is made up of thirteen claims located about one mile east of Callaghan Creek and thirty miles north of Squamish. Approximate latitude and longitude are $50^{\circ}07'N$ and $123^{\circ}06'W$. (see map 1)

Access to the property from the paved Pemberton Highway is by eight miles of logging road and one mile of cat road and trail. The Pacific Great Eastern Railway passes within a few hundred feet of the junction of the logging road and the Pemberton Highway.

General Geology

Volcanic rocks mainly of andesitic composition underlie the complete claim area. One small exposure of lighter colored dacite occurs several hundred feet east of the northwest corner of Warman 1. No intrusive rocks have been noted but the area is heavily wooded and the total amount of outcrop is small.

Mineralization

The mineralization investigated lies close to the western border of Warman 1 claim. Mineralization of pyrite with sparse sphalerite, galena and chalcopyrite in silicified and carbonatized andesite has been exposed in several trenches. Total width of mineralization is about eight feet. One hundred feet to the south are two well-defined narrow quartz carbonate veins with a general strike $S 55^{\circ}E$ and dip NE. The larger of these veins is up to one foot in width and has been exposed for thirty-one feet. In these veins mineralization consists of pyrite with abundant galena and smaller amounts of sphalerite, chalcopyrite and appreciable values in gold and silver. The veins and walls are heavily oxidized making it difficult to obtain fresh samples. In the vicinity of the main mineralization quartz veinlets down to one-eighth of an inch contain some galena sphalerite and chalcopyrite.

Some areas of andesite are quite heavily mineralized with pyrite but no lead, zinc or copper minerals were present.

Trenching and assay results are shown on map 2.

Structure

The claim area is marked by a number of ridges and depressions with a strike N 10°E. In one of these depressions along the west boundary of Warman 1 is the creek with the positive silt samples. The mineralization is located near the crest of the steep bank on the east side of the creek. Heavy pyrite is present in the andesite on the west side of the creek near the eastern border of Warman 5. It is difficult to determine if the depression indicates faulting but along the continuation of some depressions shearing can be seen in andesite exposed in cross-cutting creek beds.

Geochemical Investigation

Stream silt sampling was done in the field using the dithizone-geosol method of testing for total heavy metal content as described in the "Jens Mogensen" kits. Results were noted as positive or negative and used just an indication of mineralized areas.

The immediate area around the trenches was tested by soil sampling to check the presence of other mineralized zones. Surveying was done with Brunton compass and tape and samples taken at one hundred foot intervals. Pits were dug with a war surplus Army entrenching tool to a depth well below the humus into the orange-brown "B" soil horizon. Samples were taken from the bottom of the pits with a plastic scoop. Several ounces of soil were collected and transferred to labelled polyethylene sample bags. Two samples were taken from each pit. One set of samples was sent to "Acme Analytical Laboratories Ltd., Assaying and Trace Analysis, 6455 Laurel St., Burnaby 2, B. C." to be tested for copper and lead content.

The second set of samples was tested in the laboratory by M. P. Warshawski and A. H. Manifold. This was done by the dithizone-geosol cold extraction method for total heavy metal content as outlined in the "Jens Mogensen" laboratory kits. The procedure is as follows:

The samples were placed in aluminum foil and put into aluminum trays. These were placed in an oven at medium heat and thoroughly dried. Then each sample was screened in a minus eighty mesh screen and the oversize rejected. The screenings were analyzed by colorimetric means. A pelletizer

was used to measure a one hundred milligram sample. Five millilitres of Total Heavy Metal buffer (Jens Mogensen Laboratory) were added and shaken for fifteen seconds. Then five millilitres of dithizone (geosol) were added and shaken for fifteen seconds. The layers were allowed to separate and the results were recorded according to the following table for cold extraction when using geosol solvent:

Color obtained with 5 ml. dithizone in geosol.

<u>Sample Size</u>	<u>Green</u>	<u>Colorless</u>	<u>Baby Pink</u>	<u>Strong Pink</u>
100 mg.	nil	1	5	10 or more

(parts per million of metal extracted)

Following are the results obtained:

<u>Sample</u>	<u>Reading</u>	<u>Sample</u>	<u>Reading</u>	<u>Sample</u>	<u>Reading</u>
A 1	- 1				
2	- 1				
3	- 1	B 3	1	C 3	0
4	- 1	4	- 1	4	0
5	2	5	1	5	0
6	+10	6	1	6	0
7	1	7	1	7	0
8	+ 5	8	- 1	8	0
9	1	9	1	9	0
10	+ 1	10	0	10	1
11	+ 1	11	1	11	- 1
12	1	12	1	12	- 1
13	1	13	1	13	+ 5
14	+ 2	14	0	14	1

The procedures used by Acme Analytical Laboratories Ltd. and the results are as follows:

A .50 gram of - 80 mesh sample is digested with mixed concentrated nitric acid and perchloric acid until all the organics are decomposed. This solution is diluted with water to 10.0 mls. and determined by Perkin-Elmer 305 Atomic Absorption Spectrophotometer for molybdenum, copper, nickel, and zinc in parts per million, iron and manganese in percent. Silver is determined with a Deuterium Background Corrector to .1 parts per million

Tungsten, tin, and arsenic are determined colorimetric techniques.

Fluorine is determined by Specific Ion electrode.

All samples are determined with internal or U.S.G.S. standards.

Standard deviations for Atomic Absorption for geochemical assay are between 5 to 10%.

Standard deviations for ore assay are between .2 to 2%.

TO Mr. A. H. Manifold,
1620 Howard Ave.,
Burnaby 2, B. C.

ACME ANALYTICAL LABORATORIES LTD.

Assaying & Trace Analysis
 6455 Laurel St., Burnaby 2, B.C.

Tel: 299-5242

File No. 172

Type of Samples Soils

Disposition 6 months

ANALYSES CERTIFICATE

No.	Sample	Cu	Pb	Ag								No.
01	A- 1	30	30	.1								01
02	2	16	22	.5								02
03	3	16	28	.2								03
04	4	30	32	.3								04
05	5	24	28	.2								05
06	6	270	190	.6								06
07	7	60	200	.5								07
08	8	40	50	1.8								08
09	9	50	62	.7								09
10	10 (2)	18	86	.8								10
11	11 (2)	60	430	1.0								11
12	12	36	260	.3								12
13	13	30	170	.6								13
14	A-14	32	100	.9								14
15												15
16												16
17												17
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35												35
36												36
37												37
38												38
39												39
40												40

All reports are the confidential property of clients.

Results are in parts per million

DATE SAMPLES RECEIVED Aug. 23/71

DATE REPORTS MAILED Aug. 25/71

ANALYST *D. Jeff*

TO Mr. A. H. Manifold
1620 Howard Ave.,
Burnaby 2, B. C.

ACME ANALYTICAL LABORATORIES LTD.

Assaying & Trace Analysis
 6455 Laurel St., Burnaby 2, B.C.

Tel: 299-5242

File No. 172

Type of Samples Soils

Disposition 6 months

ANALYSES CERTIFICATE

No.	Sample	Cu	Pb	Ag								No.
01	B- 3	22	16	.3								01
02	4	22	32	.4								02
03	5	22	54	.3								03
04	6	36	50	.5								04
05	8	28	62	.4								05
06	9	22	42	1.4								06
07	10	18	54	1.2								07
08	11	18	70	1.3								08
09	12	14	130	.7								09
10	13	44	170	.7								10
11	14	86	380	.7								11
12	B-17	34	150	1.0								12
13												13
14												14
15												15
16												16
17												17
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40												40

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ANALYST D. Taylor

TO Mr. A. H. Manifold,
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Burnaby 2, B. C.

ACME ANALYTICAL LABORATORIES LTD.

Assaying & Trace Analysis
 6455 Laurel St., Burnaby 2, B.C.

Tel: 299-5242

File No. 172

Type of Samples Soils

Disposition 6 months

ANALYSES CERTIFICATE

No.	Sample	Cu	Pb	Ag								No.
01	C- 3	76	68	1.4								01
02	4	30	56	.7								02
03	5	28	32	.8								03
04	6	40	30	.4								04
05	7	42	130	1.4								05
06	8	40	120	1.5								06
07	9	8	14	.5								07
08	10	72	90	1.0								08
09	11	28	36	1.2								09
10	12	34	350	2.8								10
11	13	260	780	2.3								11
12	C-14	58	540	1.0								12
13												13
14												14
15												15
16												16
17												17
18												18
19												19
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35												35
36												36
37												37
38												38
39												39
40												40

All reports are the confidential property of clients.
 Results are in parts per million

DATE SAMPLES RECEIVED Aug. 23/71
 DATE REPORTS MAILED Aug. 24/71
 ANALYST R. J. J. J.

Results and Recommendations

The assay values in zones and veins exposed by trenching show high grade mineralization occurs in the area. More trenching is warranted to test the extension of the veins.

Soil sampling results indicate the presence of other mineralized zones particularly in the area of samples A, B and C 11, 12 13 and 14. In view of the favorable results a much more extensive soil sampling program should be carried out and anomalous areas tested by trenching and diamond drilling.

Respectfully submitted,



A. H. Manifold, P. Eng.
Consulting Geological Engineer

Burnaby, B. C.
September 1, 1971





CERTIFICATE

I, Albert Hedley Manifold, of the Municipality of Burnaby, British Columbia do hereby certify that:

1. I am a registered Professional Engineer of the Province of British Columbia.
2. I am a graduate of the University of Alberta, (B.Sc. in Mining Engineering, 1945), and of the University of British Columbia, (M.A.Sc. in Geological Engineering, 1947).
3. The attached report is based on personal examination of the property June 20, July 18, August 2, 3, 4, 5, 6, 7, 8, 23.
4. The following is an accurate assessment of the time and value of work done on the Warman claims 1 to 13.

<u>Date</u>	<u>Personnel</u>	<u>Type of Work</u>	<u>Value</u>
June 20/71	A. H. Manifold, P.Eng.	geological mapping	\$ 100
July 18/71	A. H. Manifold, P.Eng. M. P. Warshawski	trenching } "	\$ 100
Aug. 2,3/71	A. H. Manifold, P.Eng. M. P. Warshawski	geological mapping trenching	\$ 200 \$ 100
Aug. 4,5/71	A. H. Manifold, P.Eng. M. P. Warshawski	trenching } "	\$ 100
Aug. 6,7/71	A. H. Manifold, P.Eng. M. P. Warshawski	surveying, line cutting } soil sampling	\$ 200
Aug. 8/71	A. H. Manifold, P.Eng. M. P. Warshawski	geological mapping soil sampling & trenching	\$ 100 \$ 50
Aug. 23/71	A. H. Manifold, P.Eng. M. P. Warshawski	cold extrac- tion, laboratory } testing	\$ 50
Aug. 30,31, Sept. 1/71	A. H. Manifold, P.Eng.	Making Geolo- gical and Geo- chemical Report	\$ 300
Total			\$1300

Burnaby, B. C.
September 1, 1971

A. H. Manifold, P.Eng.
Consulting Geological Engineer

Mr. A. H. Manifold,
 1620 Howard Ave.,
 Burnaby 2, B. C.

ACME ANALYTICAL LABORATORIES LTD.

Assaying & Trace Analysis
 6455 Laurel St., Burnaby 2, B.C.

Tel: 299-5242

File No. 142

Type of Samples P. Core

Disposition Return

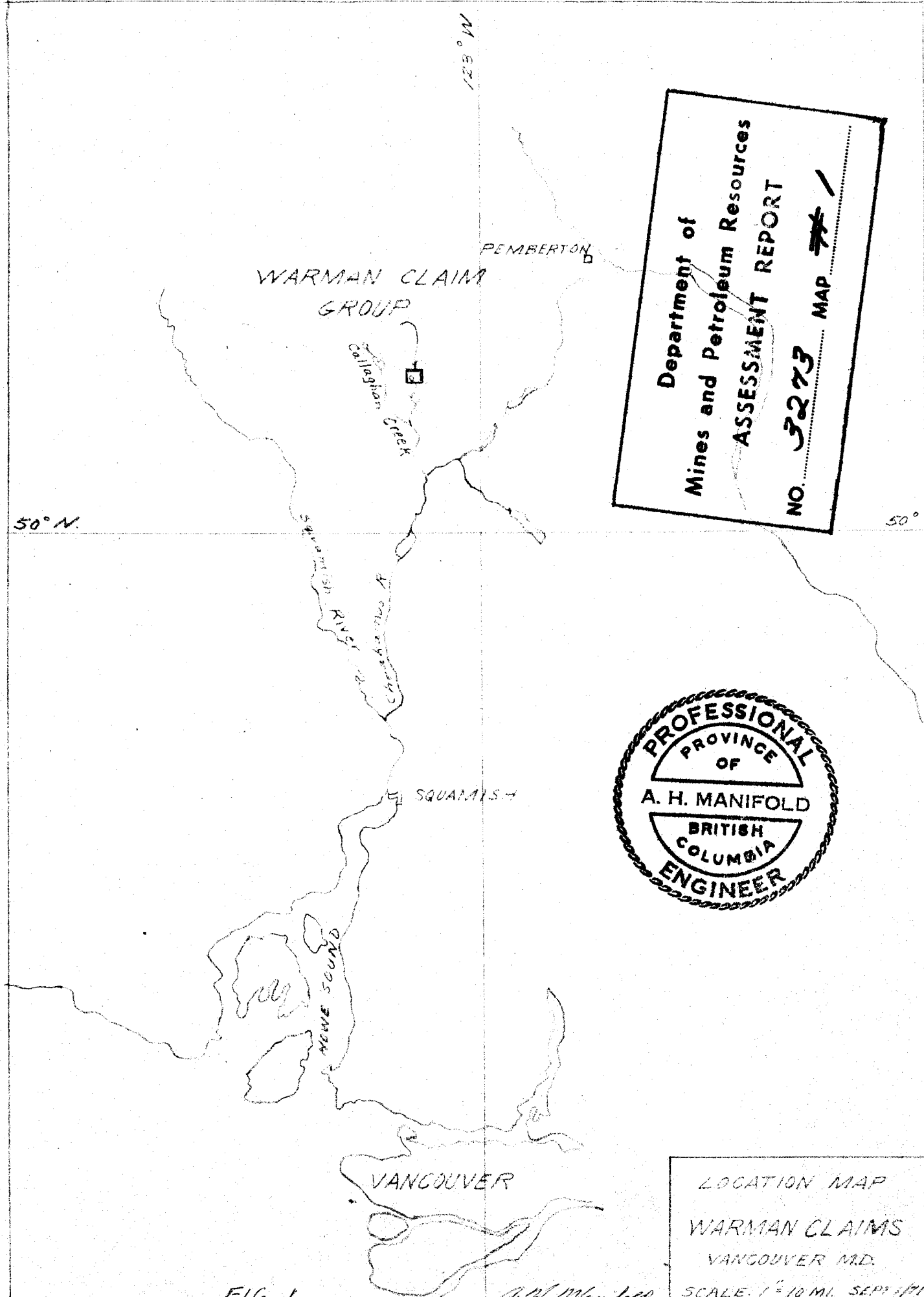
ANALYSES CERTIFICATE

No.	Sample	Cu%	Pb%	Zn%	oz/ton Ag	oz/ton Au		No.
1	#1	.11	.58	1.30	.24	.001		1
2	#2	.14	.63	1.25	.32	.008		2
3	#3	.09	.79	1.25	.32	.001		3
4	#5	1.14	20.00	1.32	2.98	.220		4
5	#6	.05	.18	.19	.22	.002		5
6	#7	.63	50.20	5.97	5.24	.026		6
7	#8	.05	.33	.55	.40	.172		7
8	#9	.01	.12	.10	.10	.001		8
9								9
10								10
11								11
12								12
13								13
14								14
15								15
16								16
17								17
18								18
19								19
20								20

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DATE SAMPLES RECEIVED Aug. 9/71
 DATE REPORTS MAILED Aug. 11/71

Helen Tana
 CERTIFIED B.C. ASSAYER



Department of
 Mines and Petroleum Resources
 ASSESSMENT REPORT
 NO. 3273 MAP # 1



LOCATION MAP
 WARMAN CLAIMS
 VANCOUVER M.D.
 SCALE: 1" = 10 MI. SEPT 1971

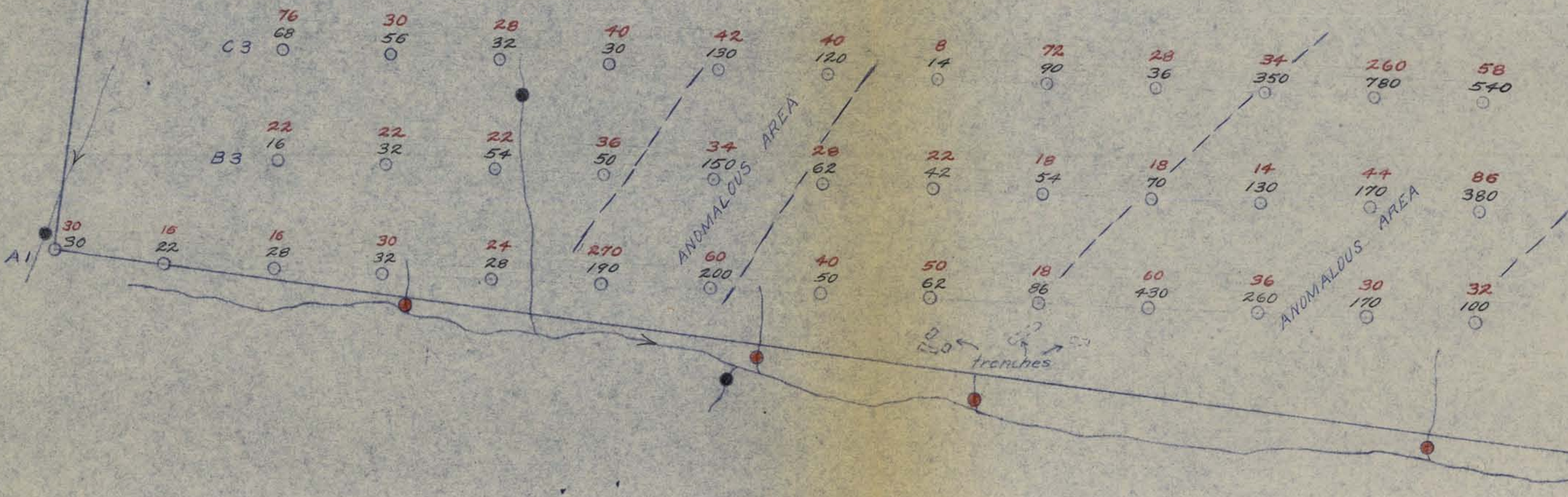
FIG 1

A. H. Manifold

WARMAN I



Department of
Mines and Petroleum Resources
ASSESSMENT REPORT
NO. 3273 MAP # 3



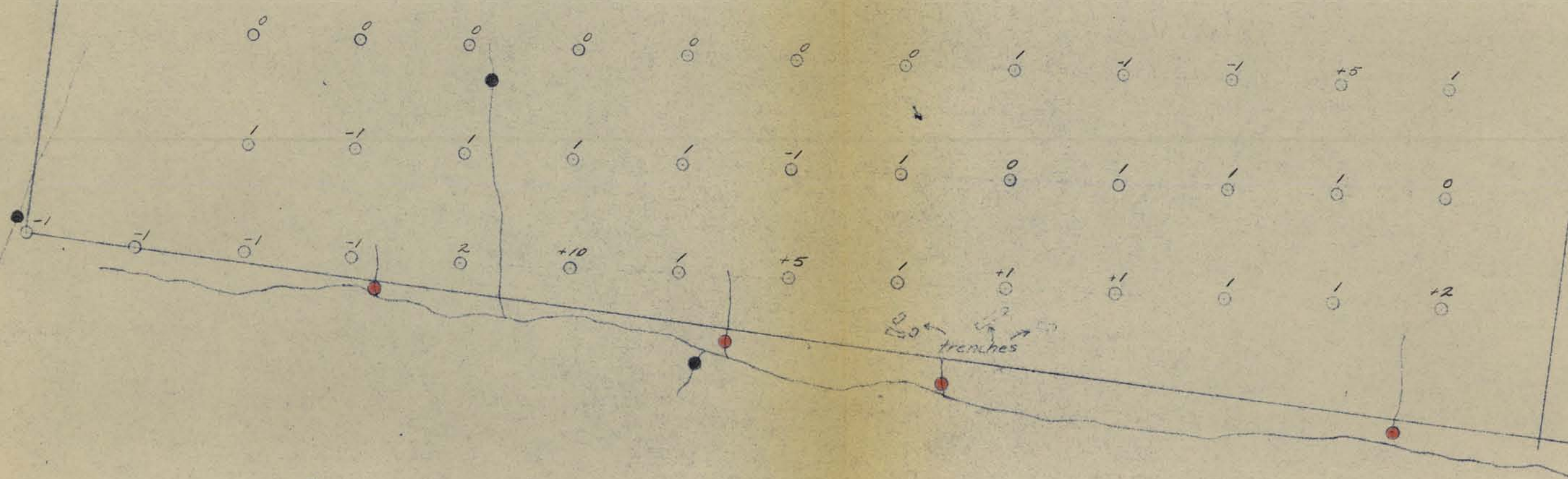
SOIL SAMPLES
RPM C6-28 RPM P6-14
STREAM SILT SAMPLES T.H.M.
POSITIVE ● NEGATIVE ●
Scale: 1"=100' Date: Sept 1/71
A. H. Manifold

FIG. 3

WARMAN 1

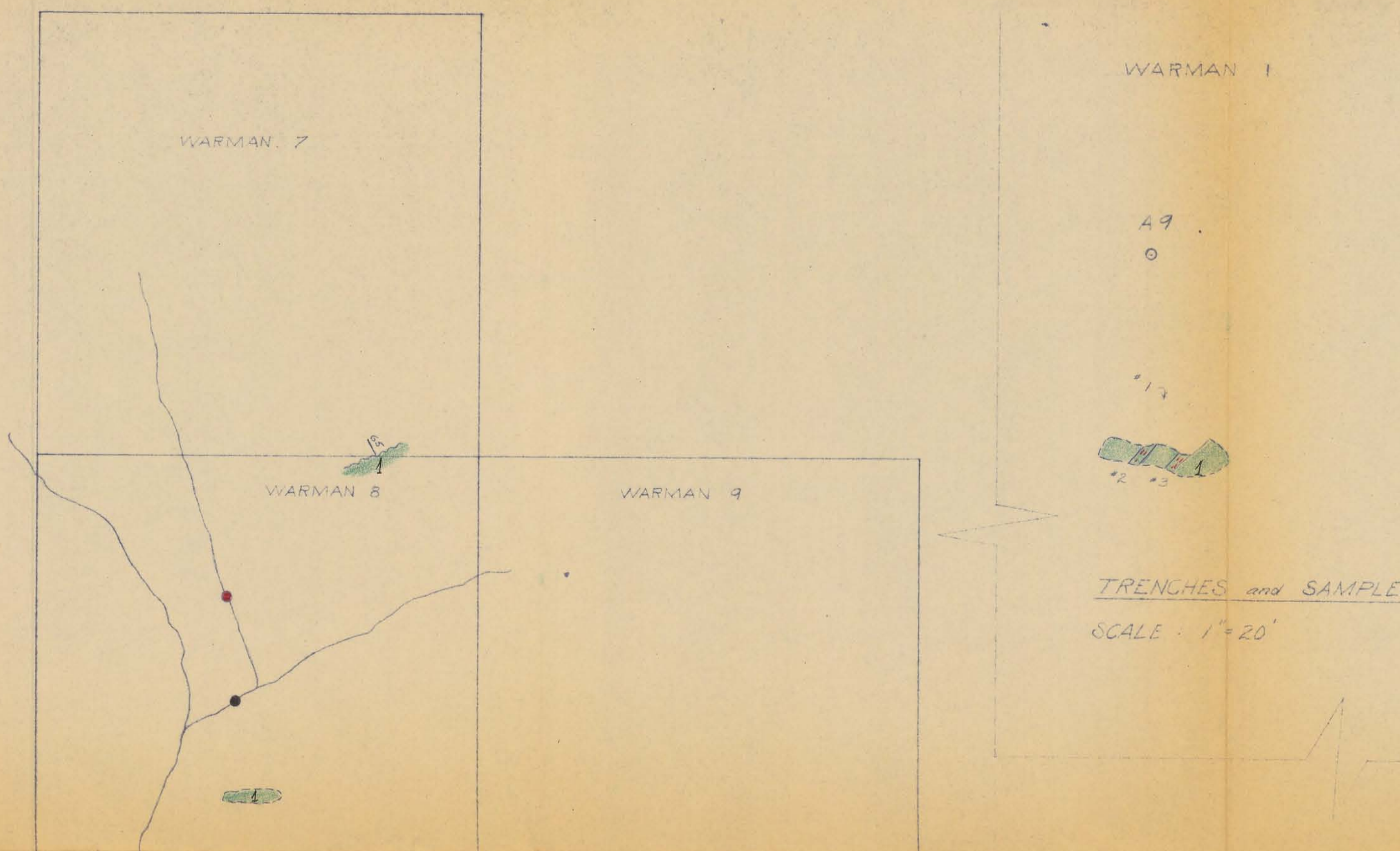


Department of
Mines and Petroleum Resources
ASSESSMENT REPORT
No. 3273 MAP #



SOIL SAMPLES (cold extraction)
PPM Cu - PPM Pb - (T.H.M. - 1)
STREAM SILT SAMPLES T.H.M.
POSITIVE ● NEGATIVE ●
Scale: 1" = 100' Date: Sept 1/71
A.H. Manifold

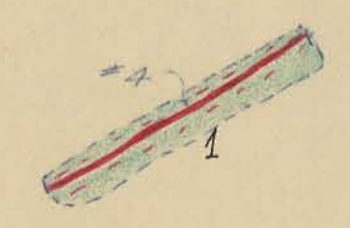
FIG. 4



WARMAN 1

A9
0

A0
0

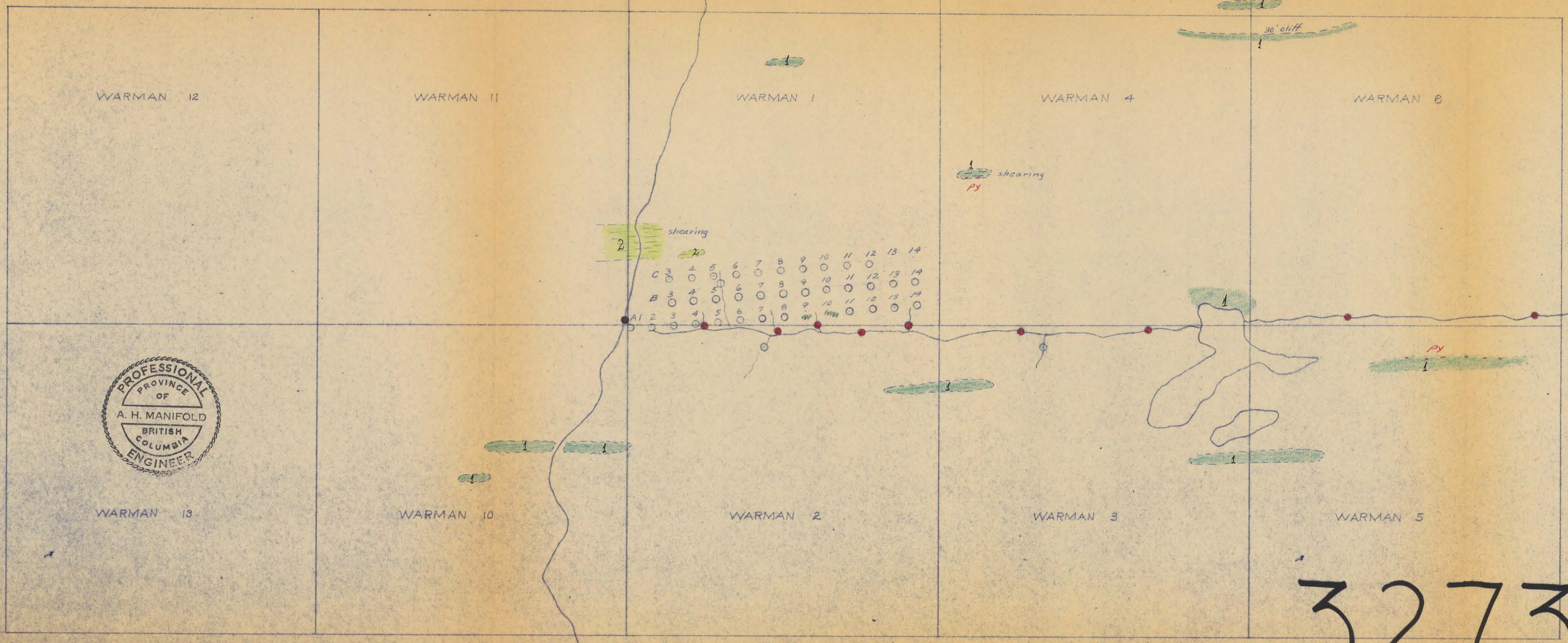


TRENCHES and SAMPLES

SCALE: 1" = 20'

ASSAYS

SAMPLE NO.	Cu %	Pb %	Zn %	Ag	Au
1 - width 0'	0.11	0.58	1.30	0.24	0.00
2 - 1.5'	0.14	0.63	1.25	0.32	0.01
3 - 2.0'	0.09	0.79	1.25	0.32	0.00
4 - 0.8'	1.14	20.00	1.32	2.98	0.22
5 - 1.5'	0.05	0.18	0.19	0.22	0.00
6 - 0.6'	0.63	50.20	5.97	5.24	0.02
7 - 2.0'	0.05	0.33	0.55	0.40	0.17
8 - 1.5'	0.01	0.12	0.10	0.01	0.01



LEGEND

- 1 ANDESITE
- 2 DACITE
- FAULT
- MINERALIZATION
- SILT SAMPLING - POSITIVE ● NEGATIVE ○
- SOIL SAMPLE ○



Department of
 Mines and Petroleum Resources
 ASSESSMENT REPORT
 No. 3273 MAP # 2

WARMAN CLAIMS

GENERAL GEOLOGY
 TRENCHING
 and
 SOIL and SILT SAMPLING

3273 M-2

SCALE: 1" = 300' DATE: AUG 20/71
 A.H. Manifold

FIG. 2