GEOLOGY AND GEOCHEMISTRY

OF THE

WOX CLAIMS

Claim Sheet 105F/ 1 & 2

Lat.: 61°10'N
Long.: 132°30'W

Claims:

WOX: Claims 1 - 72

Watson Lake Mining District
Yukon Territory

090 630

by:

Eric James Sacks, M.Sc.

Work Completed July 25th and 31st, 1979

The report has been examined by the Geological Evaluation Unit and is recommended to the Commissioner to be considered for representation work in the amount of $ 7 100

Geologist or
Mining Engineer

considered as representation work under Section 56 (4) Yukon Quartz Mining Act.

Commissioner of Yukon Territory

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SUMMARY

The WOX Claim group is located at 61°10'N, 132°30'W, and comprises 72 individual claims within N.T.S. map sheet 105F/1 & 2, Watson Lake Mining District, Yukon Territory. The claims were staked on June 21st, 1979 to cover a multi-site, Geological Survey of Canada - Uranium Reconnaissance Program stream sediment U-Mo-W anomaly released in Open File Report 564 on June 15th, 1979.

The WOX Claims are adjacent to a known Mo-skarn occurrence (MOLLY showing). This occurrence and probably the ground now staked as the WOX Claims, have been examined several times since 1962 and the showing itself has been drilled. Historically the emphasis has been upon Mo, however, potential for U and W also exists.

The WOX Claims are underlain by Silurian dolomitic quartzite which has been intruded and thermally metamorphosed by Cretaceous hybrid quartz monzonite and muscovite quartz-monzonite. In the western half of the claims, Carboniferous to Permian greenstone has been thrust from the southwest over both the quartzite and the intrusives.

Rock geochemistry reveals anomalous U, Mo and W, accompanied by high radioactivity within the muscovite-quartz monzonite and dolomitic quartzite. Stream and soil geochemistry reveal strong W, U, Cu, Pb, Zn and Mo anomalies originating from the skarnified quartzite and quartz-monzonite units, this suggests that in the entire southeast quarter of the claim group there is potential for mineralization.

Systematic geological mapping, soil, rock geochemistry and soil geochemistry is recommended. Optioning of the MIJ and JOA

claims, which now cover the "MOLLY" showing, is recommended. Approaching Conwest Exploration Ltd., and Archer, Cathro and Associates, to obtain the results of their previous surveys is also recommended along with examination of all available assessment material prior to further work. It is the author's opinion that while the Mo potential of the property may have been considered by others, the tungsten and uranium potential appears to have been neglected.

I. INTRODUCTION

The WOX 1-72 Claims were staked on June 21st, 1979 to cover the headwaters of a multi-site Geological Survey of Canada stream sediment U-W-Mo anomaly, released on June 15th, 1979 in Open File Report 564. On July 25th, 1979, CanadianOxy conducted reconnaissance geological mapping, prospecting and geochemical surveys over the WOX Claim Group. This report presents the results of those surveys.

II. LOCATION AND ACCESS

The WOX Claim group, which comprises 72 individual claims, is located at 132°30'W, 61°10'N, within N.T.S. map sheets 105F/1 and 105F/2, Watson Lake Mining District, Yukon Territory. The claim group covers an area of 5.8 $mi.^2$ (14.9 km^2). (Figure 1, 2).

The claim group is situated approximately 18 mi. (30 km) due east of the Canol Road at Quiet Lake, and south of Nisutlin river at the head of Wolf Creek. Access to the claims is via helicopter, approximately 20 to 30 minutes from Quiet Lake.

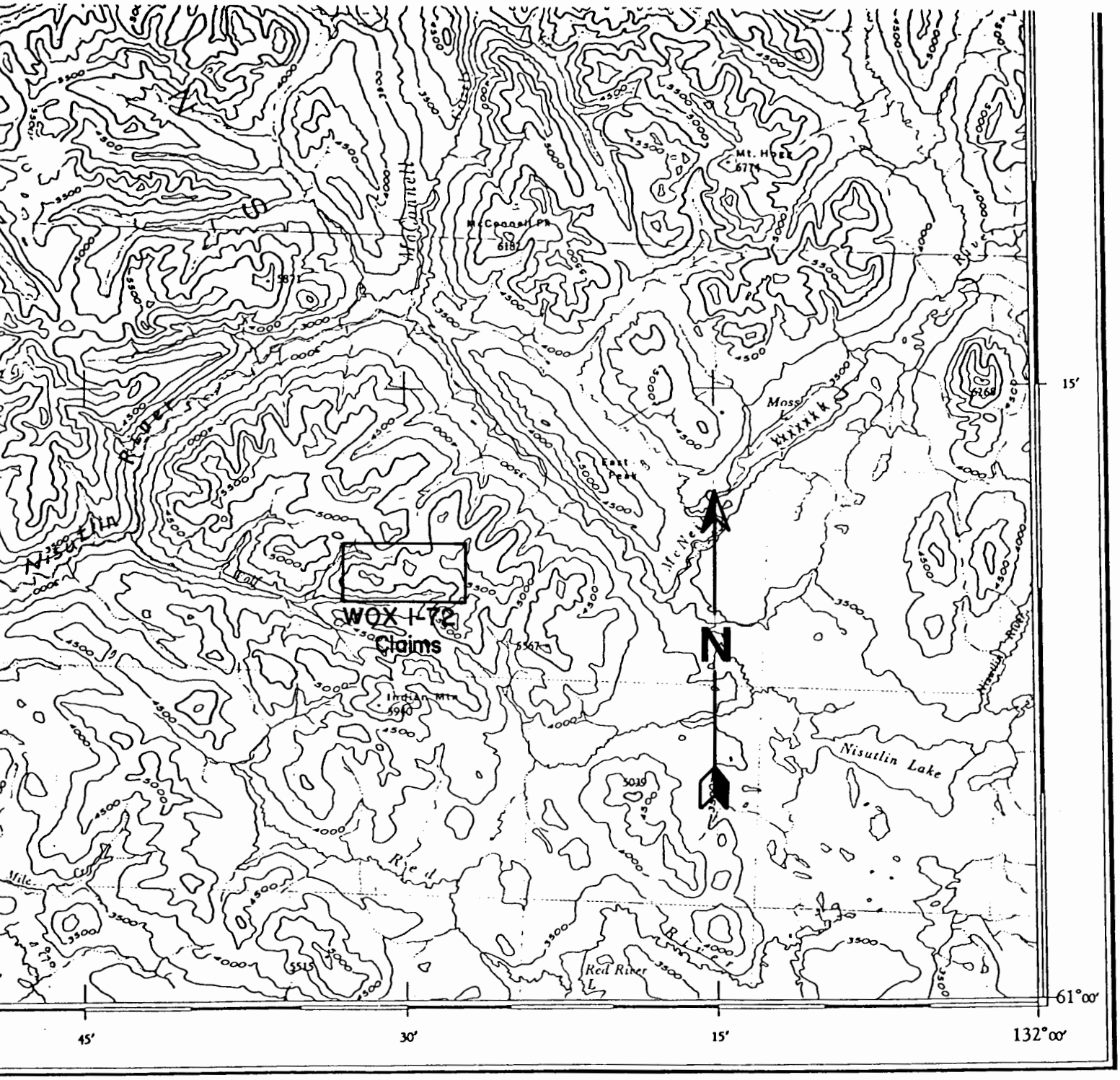


Figure 1

Location and Access of WOX 1-72 Claims

N.T.S. 105F/1 & 2

Scale: 1: 250,000

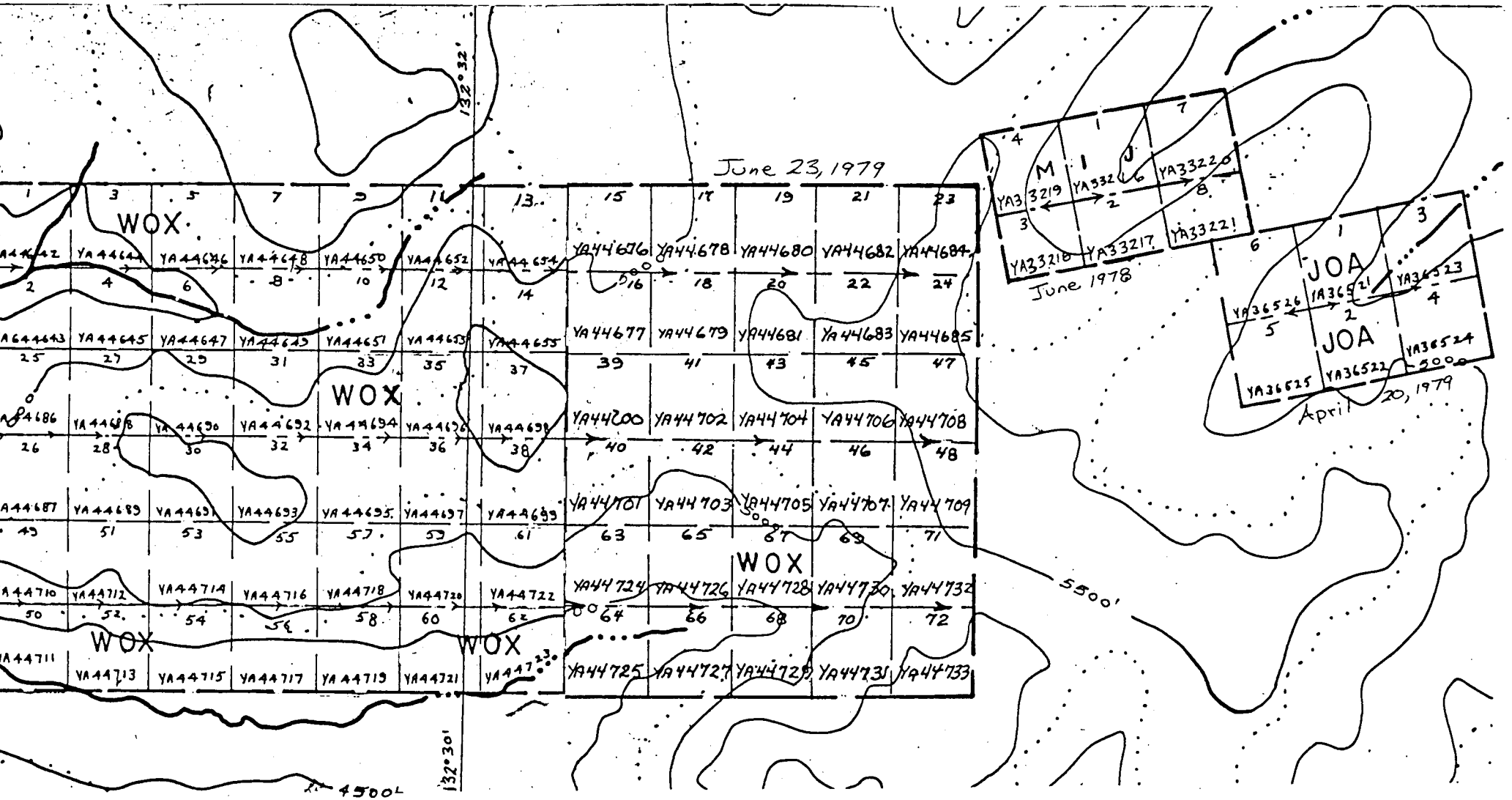


Figure 2

Staking Sketch Showing WOX 1-72 Mineral Claims

Scale: 1" = 2640'

III. PHYSIOGRAPHY AND VEGETATION

Relief over the WOX Claims is approximately 1500' (460 m) between elevations of 5700 ft. and 4200 ft. (1740 m and 1280 m) above sea level. Topography consists of a relatively flat-topped, central, east-west trending ridge descending gently into stream valleys on both the north and south sides. Both valleys rise from west to east. The entire claim group lies above the tree line and is grass covered with buck brush covering the lower portions of the valley floors. The claims are open and topography presents no problem to systematic surface coverage.

IV. PREVIOUS WORK

Old claim posts were found in the central portion of the WOX Claims. These posts probably belong to the now defunct MOLLY Claims. These claims were originally staked by Conwest Explorations Ltd., in September 1962, to cover a molybdenite showing. Conwest subsequently carried out detailed mapping, trenching and diamond drilling over the showing, plus prospecting over a wider area (see Appendix VI.). The best intersection returned 1.08% MoS_2 over 13.3 ft. The claims were restaked in various parts several times, the last being by Archer, Cathro and Associates in 1975, who carried out reconnaissance radiometric and geochemical surveys and subsequently dropped the claims. The showing itself is now staked as the MIJ Claims held by J. Irwin of Kelowna, B.C., and lies adjacent to the northeast corner of the WOX Claims (Figure 2).

The MOLLY showing comprises a 50 ft. (15 m) thick garnetiferous skarn at a granodiorite contact, and contains visible

molybdenite, pyrrhotite, garnet, chalcopyrite and fluorite, as well as vesuvianite and powellite and/or scheelite. Complete descriptions of the results of the Conwest and Archer, Cathro examinations, as well as an examination by M.P. Henrick of CanadianOxy are listed in Appendices V and VI.

The Quiet Lake (105F) map sheet was geologically mapped by numerous Geological Survey of Canada geologists from 1956 to 1977 (Tempelman - Kluit, 1977). In 1978 the G.S.C. conducted reconnaissance stream sediment and water sampling over the Quiet Lake sheet. The results of the G.S.C. survey were released on June 15th, 1979 as Open File Report 564 and the WOX Claims were staked on June 21st, 1979 to cover a multi-site U-W-Mo anomaly (24.9 to 47.7 ppm U, 22 to 80 ppm W, 4 to 6 ppm Mo).

V. WORK COMPLETED - 1979

5.1 Staking

The WOX Claims were staked on June 21st, 1979 by MBW Surveys of Whitehorse, Yukon Territory, for CanadianOxy. A total of 72 claims covering an area of 5.8 $mi.^2$ (14.9 km^2) were staked. The claims were recorded at Watson Lake District Mining Recorder on June 23rd, 1979.

5.2 Geological Mapping

Sacks and Hooper carried out geological mapping and prospecting on July 25th, 1979. On July 31st, 1979 Wallis, Sacks and Hooper paid a further visit to the claims. A total of 2.6 man-days of work was performed.

M.P. Henrick of CanadianOxy, visited the MIJ Claims

adjacent to the WOX Claims, on November 11th, 1979 at the invitation of the owner for the purposes of property examination. The results of that examination are presented in Appendix V.

5.3 Geochemistry

Pelletier, Jermakowicz and Zayachivsky, all of CanadianOxy, collected a total of 2 heavy mineral, 32 stream sediment, 29 stream water and 16 soil samples over the WOX Claims on July 25th, 1979. As well, 10 rock samples were collected during the mapping survey. All samples were sent to Chemex Labs Ltd., Vancouver, B.C., for geochemical analysis. One stream sediment sample was subsequently assayed for U. Analytical results are listed in Appendix I. A total of 3 man-days of work was performed.

5.4 Summary of Work Completed - 1979

Type of Work	Man Days	No. Samples	No. Analyses Cu	Mo	Pb	Zn	Ag	U	Th	Sn	W	F	As	Total
Geological Mapping	2.6													
Geochemistry	3.0													
i) Rock		10	10	10	10	10	10	10	10	10	10	-	-	90
ii) Heavy Min.		2	2	2	2	2	2	2	2	2	2	-	-	18
iii) Sediment		32	32	32	32	32	32	32	32	-	32	-	-	256
iv) Water		29	-	-	-	-	-	29	-	-	-	29	29	87
v) Soil		16	16	16	16	16	16	16	16	-	16	-	-	128
Helicopter (Bell 206-B)	(2.8 hrs)													
TOTAL:	5.6 M/D (2.8 hrs)	89												579

5.5 Names and Addresses of Personnel

Dr. R.H. Wallis Canadian Occidental Petroleum Ltd., Minerals Division, 311-215 Carlingview Drive, Rexdale, Ontario M9W 5X8	Chief Geologist
E.J. Sacks, M.Sc. Same address as above.	Project Geologist
J. Hooper Same address as above.	Senior Assistant
E. Jermakowicz Same address as above.	Junior Assistant
C. Pelletier Same address as above.	Junior Assistant
B. Zayachivsky Same address as above.	Junior Assistant
Dr. C.F. Gleeson C.F. Gleeson and Associates Ottawa, Ontario	Consulting Geochemist

VI. GEOLOGY

6.1 General Geology

Tempelman-Kluit (1977) shows the WOX Claims to be underlain by easterly trending and shallowly south-dipping Silurian dolomitic siltstone, silty dolomite and orthoquartzite with dolomitic cement and their thermally metamorphased equivalents which have been intruded by Cretaceous porphyritic, biotite quartz-monzonite of the Nisutlin Batholith. The Nisutlin intrusive is responsible for the contact metamorphism. Carboniferous and Permian greenstones and amphibolites were thrust over the hornfels and intrusives from the

southwest sometime during the Mesozoic era, possibly during the Cretaceous period.

Mapping by CanadianOxy geologists has confirmed most of the above, but has yet to define the thrust fault. Mineralized skarn has also been found in the eastern portion of the claim group.

6.2 Table of Formations

Unit	Description
QM	Quartz-monzonite, medium to coarse-grained, locally perthite megacrystic, locally quartz megacrystic.
Gst	Greenstone, phyllite.
Qtz	Quartzite, meta semi-pelite (meta-siltstone).
S	Skarn, siliceous hornfels.

6.3 Description of Rock Units (Plan 1)

All granitic rock samples were stained with Sodium Cobaltinitrate after immersion in concentrated HF. K-feldspar was thus stained a bright yellow and could easily be distinguished from plagioclase, allowing identification of the rock type. The Colorado School of Mines, Classification of Rocks system was used. (Travis, 1955). Rock descriptions and trace element contents are listed in Appendix II.

Unit S - Skarn; hornfels

This unit, which is confined to the far eastern portion of the claim group, comprises very fine-grained, banded green and white, highly siliceous material (ES-WOX-1, 2b) and biotite-quartz-feldspar augen gneiss (ES-WOX-2a). The green banding is probably due to development of diopside. The skarn-hornfels material is

often thinly bedded and fissile (ES-WOX-2b). Abundant, but local, molybdenite, pyrrhotite and somewhat more ubiquitous pyrite was noted. Scintillometer response ranges from 100 to 150 c.p.s. (BGS-1SL) versus the up to 3000 c.p.s. reading noted at the MOLLY showing.

Unit Qtz - Quartzite, meta semi-pelite.

This unit, which occurs in the eastern and east-central portion of the claims, comprises a fine-grained, dark grey, thinly bedded impure quartz sandstone. Abundant pyrite was noted along bedding surfaces and weathered pyrite pods are locally visible. Bedding and fracture surfaces are coated with limonite (ES-WOX-4). Scintillometer response is 150 c.p.s. (BGS-1SL).

Unit Gst - Greenstone, phyllite

This unit, occurring in the western portion of the claims, comprises fine-grained, schistose, chloritic meta-volcanics and phyllites (ES-WOX-6). Foliation is generally crenulated and minor folding was noted. Scintillometer response is very low (45 c.p.s. - BGS-1SL).

Unit QM - Quartz-monzonite

This unit, which occurs in the north-central to northeastern portions of the claim group, comprises several phases including medium to coarse-grained, leucocratic quartz-monzonite (JH-WOX-1, 2), (ES-WOX-3, 5). The relations of the various phases are complex, however, it appears that the finer-grained, muscovite bearing, more leucocratic and more granitic material cross-cuts the coarser, muscovite deficient variety as dykes, veins and pods. In the northeastern corner of the claims, disseminated molybdenite was noted (JH-WOX-1) near the skarn contact.

Scintillometer response ranges from 180 to 500 c.p.s. with the highest readings in muscovite bearing varieties nearer the skarn contact. It should be stressed that the absolute abundance of muscovite and biotite in any sample is very low (< 2%). Smokey quartz in these samples gives the misleading appearance of higher biotite contents.

6.4 Structure

1. The interrelations of the various phases of the intrusive are complex. Muscovite-bearing varieties appear to cross-cut the coarser, muscovite deficient varieties and may represent more highly differentiated late cooling phase of the intrusive.

2. Bedding within the quartzite unit varies from 130T/30°SW to 110 to 120T/10°SW. No folding can be interpreted at this time.

3. Skarn material appears to be intercalated with both quartzite and quartz-monzonite. Bedding (banding) varies from 030T/30°SE to 160T/30°SW.

4. Foliation within the greenstone - phyllite unit occurs at 130T/40° to 60°SW, which roughly parallels Tempelman-Kluit's (1977) thrust in both strike and dip. Tempelman-Kluit (1977) also notes "a penetrative flaser fabric is developed above the basal thrust and in places within the mass (thrust slice)." The material is schistose, however, the flaser texture was not observed during the quick examination. Minor drag folding with axes at 090T/45°E was noted and foliation is crenulated with crenulation axes trending at 040T to 060T.

5. Jointing is most noteable within the intrusive and resolves into sets at 00T to 020T/45°E to 90° and 060T to 080T/80°NW.

6.5 Metamorphism

1. Regional, and probably greenschist facies, metamorphism has affected the Gst and probably also the Qtz units, and has developed a penetrative foliation in the Gst unit which has been subsequently crenulated. Tempelman-Kluit (1977) also suggests a cataclastic effect (flaser fabric-shearing) overprinting the regional effect above the basal thrust. If the Qtz unit was affected by the regional metamorphism along with the Gst unit, then the event (S) would have continued from Silurian through Permian times, ceasing before the intrusion of Cretaceous quartz-monzonite, but not necessarily before thrusting.

2. Intrusion of the Cretaceous Nisutlin Batholith (QM unit) resulted in thermal metamorphism which developed skarn and hornfels within the Qtz metasediments. Localization of skarn appears to be controlled by several factors, including the presence of dolomitic horizons within the metasediments (see Appendix VI.), the geometry of the intrusive contact and the presence or absence of differentiated (muscovite-bearing) phases of the intrusive. In the later case it appears that there is an increase in differentiated intrusive material closer to the skarn contact.

6.6 Alteration

Alteration appears to be confined to that associated with

thermal metamorphism. Diopside has developed within the hornfels material. At the MOLLY showing adjacent to the WOX Claims, wollastonite, garnet, diopside and vesuvianite (idocrase) have developed. Outside of the hornfels development, alteration is confined to limonite alteration after pyrite, due to weathering.

6.7 Economic Geology

Visible pyrite, pyrrhotite and molybdenite were noted in the vicinity of the skarn contact. Molybdenite mineralization occurs both within hornfels and intrusive material. Skarn-sulphide development reaches a climax at the MOLLY showing with the development of spectacular rosettes of molybdenite as well as pyrite, chalcopyrite and pyrrhotite, plus garnet, idocrase, hematite and powellite or scheelite and high radioactivity.

Skarn mineralization on the WOX Claims appears to be confined to the eastern part of the claims. This is supported by the G.S.C. survey in which stream sediment U and W contents increased from west to east over the claims. (Plan 12) The potential for mineralization within the Gst unit and within the QM unit removed from the skarn contact area is minimal unless there is substantial Qtz unit material included within the intrusive.

VII. GEOCHEMISTRY

Mean, possibly anomalous and probably anomalous levels for each element in stream sediment, stream water and heavy mineral samples were determined at the 50th, 84th and 97th percentile levels of cumulative frequency distributions constructed from the combined Project WATSU regional follow-up data. In the case of soil samples,

the combined data from all claim groups examined during Project WATSU were used. In the case of rock samples, data pertaining to trace element contents for various rock types published by Levinson (1974 - Table 2-1) was used. Analytical results are listed in Appendix I. Sampling and laboratory procedures are listed in Appendix III.

7.1 Rock Geochemistry (Plan 2, 3)

A total of 10 rock samples were collected and analysed for Cu, Mo, Pb, Zn, Ag, U, Th, Sn and W. Data are listed along with sample descriptions in Appendix II.

1. 2 to 7 ppm Mo occurs in three samples of hornfels and augen gneiss (ES-WOX-1, 2a, 2b) in the far eastern part of the claims. Visible pyrrhotite and molybdenite occurs in the sample containing 7 ppm Mo (ES-WOX-2b).

2. 90 ppm Cu, 3 ppm Mo and 5 ppm U occur in one sample of impure quartzite in the eastern part of the claims (ES-WOX-4).

3. 22 ppm U, 44 ppm Th and 10 ppm W occur in a sample of leucocratic quartz-monzonite in the NE corner of the claims (JH-WOX-3). The sample also contains dark, smokey quartz and shows a scintillometer response of 400 c.p.s. U/Th ratio is 0.5.

4. 3.5 ppm U, 32 ppm Th and 6 ppm W occur in quartz-megacrystic, muscovite bearing quartz-monzonite in the NE corner of the claims (JH-WOX-2). Scintillometer response is 280 c.p.s. U/Th ratio is 0.1.

5. 23.5 ppm U, 29 ppm Th, 12 ppm W and 47 ppm Mo occur in a sample of muscovite-bearing, leucocratic quartz-monzonite in the east-central part of the claims. The sample contains visible molybdenite and has a scintillometer response of 500 c.p.s. (JH-WOX-1). U/Th ratio is 0.8.

6. 9.5 ppm U, 21 ppm Th, 10 ppm W and 15 ppm Mo occur in muscovite-bearing, leucocratic quartz-monzonite in the east-central portion of the claim group. Scintillometer response is 180 c.p.s. and U/Th ratio is 0.5. (ES-WOX-3).

7. 12.5 ppm U, 43 ppm Th, 3 ppm W occur in muscovite-bearing, leucocratic quartz-monzonite in the central portion of the claims. Scintillometer response is 300 c.p.s. and U/Th ratio is 0.3.

In summary, increased contents of U, Mo and W, and high radioactivity within the QM unit accompany both the appearance of muscovite and quartz-megacrysts and/or proximity to the skarn contact. Where the QM is removed from the skarn contact, as in ES-WOX-5 and JH-WOX-3, the Mo content is low. Increased radioactivity accompanies increased U and Th contents, but the contribution of muscovite to total count responses would appear to be low due to the extremely small mica content of these rocks ($< 2\%$ combined biotite and muscovite). Radiometric prospecting might be an aid in defining muscovite-bearing intrusive phases.

7.2 Heavy Mineral Geochemistry (Plan 4, 5, 6)

Two heavy mineral samples were obtained from the streams draining the northwest and southern areas of the claims. Samples were geochemically analysed for Cu, Mo, Pb, Zn, Ag, U, Th, Sn and W.

1. 7 ppm Mo (possibly anomalous) occurs in the northwest corner of the claims. This stream drains the Gst unit and possibly the area of the thrust fault.

2. 16 ppm Mo, 400 ppm W, 0.8 ppm Ag occur in the southern part of the claims. This stream drains Qtz south of the known occurrences of skarn and hornfels. The Mo and W values are highly anomalous.

7.3 Stream Sediment Geochemistry (Plan 4, 7, 8)

A total of 32 stream sediment samples were collected from streams draining the northwestern and southern portions of the claims. All samples were analysed for Cu, Mo, Pb, Zn, Ag, U, Th and W.

1. 3.5 to 250 ppm U, 4 to 70 ppm W occur in sediments from the northwest corner of the claims. Spotty highs of up to 15 ppm Mo, 108 ppm Cu, 44 ppm Pb, 192 ppm Zn occur throughout the drainage. U and W are anomalous over a sampled length of 9200 ft. (2820 m.). One sample of quartz-monzonite from the central ridge paralleling the stream was anomalous in U and W. The stream drains Gst and QM on both sides of the thrust fault.

2. 17 to 165 ppm U, 14 to 95 ppm W occur over a sampled length of 10,500 ft. (3220 m.) in the lower portions of the

of the southern stream. A U-W soil anomaly overlying QM and the thrust zone on the north side of the stream, appears to be the source. (See Plan 12)

3. 28 to 58 ppm Cu, 106 to 400 ppm Pb, 152 to 420 ppm Zn, 10 to 14 ppm W occur over a sampled length of 4000 ft. (1200 m.) in the upper portion of the southern stream. Weakly anomalous Pb and Zn continue downstream through the U-W anomaly. A broad Cu-Pb-Zn-Mo-W soil anomaly at the head of the stream appears to be the source. High pH (8.2 to 8.5) in waters from the upper reaches of the stream, which drains dolomitic quartzite and hornfels, appears to restrict base metal solution and transport to this area.

7.4 Stream Water Geochemistry (Plan 4, 9)

A total of 29 stream water samples were collected at the stream sediment sites and analysed in the field for pH and specific conductivity (S.C.) and for U, F and As in the laboratory.

1. 0.2 to 3.8 ppb U occurs in the northwest corner of the claims. pH ranges from 7.9 to 8.0, reflecting drainage from greenstone and quartz-monzonite.

2. 0.4 to 3.6 ppb U occurs over the entire sampled length of the southern stream. Anomalous S.C. (100 to 135 m. mohs/cm) accompanies high pH (8.2 to 8.5) in the upper portions which drain dolomitic quartzite and restricts base metal movement. to this area (hence stream sediment Cu-Pb-Zn anomaly). The lower portion of the stream has lower pH (7.9 to 8.0) and lesser anomalous S.C. (maximum 78 m. mohs/cm). The pH-S.C. drop coincides with the postulated position of the thrust

and the change in lithology from dolomitic quartzite to greenstone.

7.5 Soil Geochemistry (Plan 4, 10, 11)

A total of 16 soils were collected from talus fines and frost boils around the headwater of the southern stream. The -80 mesh fractions were analysed geochemically for Cu, Mo, Pb, Zn, Ag, U, Th and W.

1. 2 to 9 ppm Mo, 22 to 38 ppm Cu, 42 to 66 ppm Pb, 142 to 310 ppm Zn, 14 to 65 ppm W occur as one and two station anomalies around the headwater of the stream in the south-east corner of the claims. There is little correlation between Cu, Mo, Pb and Zn contents; however, this broadly anomalous area, which is approximately 2,500 ft. X 2,500 ft. (760 m. X 760 m.) in size, forms the source for strong stream sediment Cu, Pb, and Zn anomalies in the upper portion of the stream.

2. 7.5 to 43 ppm U occurs over a length of 3500 ft. (1070 m.) in the south-central portion of the claims and is the source for strong stream sediment U anomalies in the lower portion of the southern stream. One sample contains 20 ppm W as well.

TABLE 1

Mean, Possibly Anomalous and Probably Anomalous Levels - Soils, Sediments, Waters, Heavies.

Note: levels chosen from cumulative frequency curves at 50th, 84th and 97th percentiles, respectively.

A. Heavy Minerals

	ppm Cu	ppm Pb	ppm Zn	ppm Ag	ppm Mo	ppb Au	ppm Sn	ppm W	ppm U	ppm Th
Mean	24	17	75	.05	1.5	<10	2.3	15	3.8	44
Poss. Anom.	63	89	200	.38	3.5	19	38	60	26	330
Prob. Anom.	165	280	440	.95	8.5	3150	300	160	120	1200

B. Stream Sediments

	ppm Cu	ppm Pb	ppm Zn	ppm Ag	ppm Mo	ppm Sn	ppm W	ppm U	ppm Th
Mean	11	5	58	<.1	<1	<1	<1	2.5	13
Poss. Anom.	28	21	115	<.1	3	2	5	17	29
Prob. Anom.	54	59	320	1	11	5	16	38	50

C. Soils

	ppm Cu	ppm Pb	ppm Zn	ppm Ag	ppm Mo	ppm Sn	ppm W	ppm U	ppm Th
Mean	8	8	48	<.1	<1	<1	<1	2	14
Poss. Anom.	22	32	115	.1	2.5	1	7.5	7	36
Prob. Anom.	120	150	270	.8	5	2	40	30	75

D. Stream Waters

	ppb U	ppb F	m.mhos/cm S.C.
Mean	.25	19	18
Poss. Anom.	.85	100	46
Prob. Anom.	2.5	210	100

VIII. CONCLUSIONS

1. The WOX Claims are underlain by Silurian dolomitic quartzite and siltstone which have been intruded and thermally metamorphosed by Cretaceous quartz-monzonite of the Nisutlin Batholith. Carboniferous to Permian greenstones have been thrust over this assemblage from the southwest. The intrusive is hybrid, consisting of coarse-grained, leucocratic quartz-monzonite which is cut by a later, differentiated phase consisting of muscovite-bearing, quartz megacrystic, leucocratic quartz-monzonite to granite. Quartzite near the intrusive contact has been skarnified and contains visible molybdenite and pyrrhotite. The intrusive adjacent to the skarn contact is dominated by the later, differentiated phase which also contains visible molybdenite. The MOLLY showing, adjacent to the northeast corner of the WOX claims consists of skarnified dolomite and contains abundant molybdenite, pyrrhotite, chalcopyrite, idocrase, garnet, fluorite and is highly radioactive. Powellite and/or scheelite are also present.

2. Samples of muscovite-bearing quartz-monzonite contain anomalous U, Mo and W, and are significantly more radioactive than the coarser variety. Radioactivity appears to result from higher U and Th contents rather than the presence of muscovite.

3. Stream sediments from the northwest corner of the WOX claims contain anomalous U, Cu, Mo and W. This stream drains

quartz-monzonite and greenstone. The source appears to be the intrusive due to the presence of anomalous U and W in a sample of quartz-monzonite near the headwater.

4. A broad but spotty Cu-Pb-Zn-Mo-W soil anomaly contributes to a strong Cu-Pb-Zn stream sediment anomaly in the upper reaches of the stream draining the southern part of the claims. The soil and stream anomalies are underlain by dolomitic quartzite and the resulting high pH (8.2 to 8.5) restricts the solution and transport of the base metals to the upper portion of the stream. Weakly anomalous Pb and Zn occur in sediments downstream over the next 5000 ft.

5. A U-W soil anomaly, adjacent to the southern stream, approximately 4000 ft. west of the Cu-Pb-Zn-Mo soil anomaly (above), contributes to a strong stream sediment U-W anomaly over the lower 7000 ft. of the stream which overprints the weakly anomalous Cu-Pb-Zn tail. It is not felt that the drop in pH from the Cu-Pb-Zn to U stream sediment anomalies is the reason for the change in element associations, but rather reflects the change in lithology from dolomitic quartzite to greenstone across the thrust fault.

6. Heavy minerals from the southern stream contain anomalous Mo and W which are probably derived from skarnified dolomitic quartzite upstream.

7. There is excellent replication of original G.S.C. - U.R.P. stream sediment results.

8. Potential mineralization on the WOX Claims would be Mo-W-U skarn within the metamorphosed quartzite. Mineralization would thus be confined to the eastern portion of the claims

and geochemistry suggests that the entire southeastern quarter of the claim group is potentially favourable. Potential for any mineralization in the greenstone unit is limited. Strong U- Mo - Cu - W anomalies in the stream in the northwest of the claims, suggest the possibilities for the presence of included skarn material within the intrusive, Mo - W mineralization within the intrusive itself (Mo within hybrid intrusives was noted by Conwest, roughly within this area - See Appendix VI.) and/or that the thrust fault may lie somewhat to the west of its assumed position.

IX. RECOMMENDATIONS

1. Systematic, 1" = 400 ft. scale geological mapping and prospecting with a scintillometer should be conducted over the claim group. The establishment of an east-west base line along the central ridge would present little difficulty. Airphoto bases should be used for all future work.

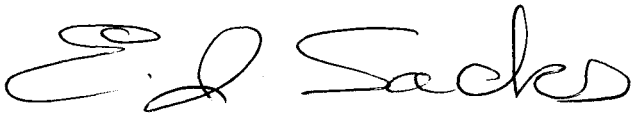
2. Systematic soil and radiometric surveys at 200 ft. X 400 ft. centers should accompany mapping. Systematic lithogeochemical surveys at 400 ft. X 800 ft. centers should also be conducted. All samples should be analysed for Cu, Pb, Zn, Ag, Mo, U, Th and W.

3. Sediment, water and heavy mineral samples should be collected from all streams not previously sampled.

4. Options should be taken on the MIJ and JOA claims adjacent to the WOX Claims.

5. Both Conwest Exploration and Archer, Cathro & Associates should be approached regarding the results of their previous surveys over the claims. All assessment data should be examined prior to further work on the claim group.

Respectfully submitted,



Eric James Sacks, M.Sc.

Toronto, Ontario

December 1979.

APPENDIX I

ANALYTICAL RESULTS

212 BROOKSBANK AVE.
NORTH VANCOUVER, B.C.
CANADA V7J 2C1
TELEPHONE: [redacted] 984-0221
AREA CODE: 604
TELEX: 043-52597

CHEMEX LABS LTD.

• ANALYTICAL CHEMISTS • GEOCHEMISTS • REGISTERED ASSAYERS

CERTIFICATE OF ANALYSIS

CERTIFICATE NO. 49362

INVOICE NO. 31943

RECEIVED Th-32440 Aug. 3/79

ANALYSED Aug. 16/79

TO: Canadian Occidental Petroleum Ltd.,
Minerals Division,
Ste. 311 - 215 Carlingview Dr.,
Rexdale, Ont.

ATTN: Watsu-Rock CC. E. Sacks

SAMPLE NO. :	PPM Cu	PPM Mo	PPM Pb	PPM Zn	PPM Ag	PPM U	PPM Th	PPM Sn	PPM W
ES-Bigox-2c	2	2	8	16	0.1	7.5	9	1	12
3	2	2	18	2	0.1	4.5	43	1	4
4	2	1	12	2	0.1	4.0	41	1	15
4a	4	6	6	10	0.2	5.5	17	1	1
5	2	3	2	8	0.2	3.0	6	1	1
ES-Bigox-6	4	1	6	24	0.2	7.5	43	2	1
JH-Wox-1	12	47	16	6	0.4	23.5	29	1	12
2	6	1	6	18	0.2	3.5	32	2	6
JH-Wox-3	2	1	4	10	0.1	22.0	44	1	10
ES-Wox-1	10	2	4	8	0.2	1.5	15	1	1
2a	12	1	2	26	0.4	1.5	15	1	1
2b	32	7	2	8	0.4	1.5	17	2	1
3	4	15	8	14	0.1	9.5	21	1	10
4	90	3	2	10	0.2	5.0	10	1	1
5	2	1	6	12	0.1	12.5	43	1	3
ES-Wox-6	40	1	1	72	0.1	< 0.5	1	1	1
ES-Sal-1	2	1	4	42	0.1	4.5	10	1	1
2	2	1	4	48	0.1	3.5	14	2	1
3	26	2	4	76	0.2	1.0	5	2	1
4	4	1	6	44	0.1	2.5	13	1	1
5a	8	1	10	24	0.1	15.5	4	1	20
5b	2	1	10	40	0.1	3.0	6	1	10
ES-Sal-6	8	1	6	56	0.1	3.5	20	1	2
JH-Pisa-1	8	1	4	44	0.1	1.5	16	1	2
2	4	1	4	104	0.1	1.0	7	1	1
3	8	1	2	58	0.1	2.5	15	1	1
4a	16	1	2	54	0.2	3.5	13	1	2
4b	2	1	4	4	0.1	2.0	3	1	8
5	6	1	22	16	0.1	23.0	2	1	1
6	6	1	74	290	0.1	7.5	34	1	5
JH-Pisa-7	2	1	6	50	0.1	6.5	22	1	3
ES-Mox-1	4	1	10	52	0.4	4.0	25	1	2
2	6	1	38	14	0.1	1.0	4	1	2
3	16	1	18	270	0.2	2.0	20	1	1
4	12	2	4	98	0.4	0.5	15	1	3
5	4	1	12	22	0.2	2.0	23	1	2
6	12	1	14	48	0.1	1.0	16	1	3
7a	4	1	12	42	0.1	0.5	21	1	1
7b	24	1	8	82	0.1	2.0	26	1	1
ES-Mox-7c	38	2	6	90	0.4	0.5	14	1	3

CERTIFIED BY: Hart Biddle

CTA MEMBER CANADIAN TESTING ASSOCIATION

212 BROOKSBANK AVE.
NORTH VANCOUVER, B.C.
CANADA V7J 2C1
TELEPHONE: [redacted] 984-0221
AREA CODE: 604
TELEX: 043-52597

CHEMEX LABS LTD.

• ANALYTICAL CHEMISTS • GEOCHEMISTS • REGISTERED ASSAYERS

CERTIFICATE OF ANALYSIS

CERTIFICATE NO. 49347

TO: Canadian Occidental Petroleum Ltd.,
Minerals Division,
Ste. 311 - 215 Carlingview Dr.,
Rexdale, Ont.

INVOICE NO. 32463
Th - 32606

RECEIVED Aug. 3/79

ANALYSED Sept. 7/79

ATTN: WATSU-WOX-Heavy Minerals E. Sacks

SAMPLE NO. :	PPM Cu	PPM Mo	PPM Pb	PPM Zn	PPM Ag	PPM Sn	PPM W	PPM U	PPM Th (N.A.)
79 WT 1254	18	16	44	108	0.8	32	400	22.5	37
79 WT 1055	44	7	24	130	0.4	1	20	18.0	8

	Total	-10 fraction	-10 magnetic	-10 Non mag.
79 WT 1254	496	240	1.71	29.81
79 WT 1055	604	368	0.30	33.68

CTA MEMBER CANADIAN TESTING ASSOCIATION

CERTIFIED BY: Hart Biddle

212 BROOKSBANK AVE.
NORTH VANCOUVER, B.C.
CANADA V7J 2C1
TELEPHONE: [redacted] 984-0221
AREA CODE: 604
TELEX: 043-52597

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CERTIFICATE OF ANALYSIS

CERTIFICATE NO. 49331

TO: Canadian Occidental Petroleum Ltd.
Minerals Division
Ste. 311 - 215 Carlingview Dr.
Rexdale, Ont. M9W 5X8

INVOICE NO. 31900

RECEIVED Th-32440 Aug. 3/79

ANALYSED Aug. 15/79

ATTN:

PROJECT: Watsu-Wox-Soils CC: E. Sacks

STREAM SEDS.

SAMPLE NO. :	PPM Cu	PPM Mo	PPM Pb	PPM Zn	PPM Ag	PPM U	PPM Th
79WT1041	2	1	8	8	0.1	3.5	37
1042	4	2	44	44	0.1	21.0	<1
1043	4	2	18	28	0.1	14.5	<1
1183	6	2	1	16	0.1	16.0	5
1184	38	5	42	136	0.2	2.0	13
1185	20	2	14	310	0.1	1.0	10
1186	20	3	24	142	0.1	2.0	9
1188	22	3	24	88	0.1	2.5	14
1189	34	2	10	162	0.1	4.0	15
1190	28	2	66	215	0.4	5.5	15
1191	12	3	4	48	0.1	3.0	17
1192	10	9	4	44	0.1	6.0	13
1193	12	2	4	34	0.1	3.5	2
1194	2	1	2	12	0.1	43	7
1195	4	1	1	12	0.1	13.0	9
1196	8	1	20	28	0.1	12.5	25
1197	10	1	14	38	0.1	7.5	35
1198	14	1	10	96	0.1	1.5	11
79WT1199	32	3	2	44	0.1	1.0	9

CTA MEMBER CANADIAN TESTING ASSOCIATION

CERTIFIED BY: Hank Biddle

212 BROOKSBANK AVE.
NORTH VANCOUVER, B.C.
CANADA V7J 2C1
TELEPHONE: [redacted] 984-0221
AREA CODE: 604
TELEX: 043-52597

CHEMEX LABS LTD.

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CERTIFICATE OF ANALYSIS

CERTIFICATE NO. 51820

INVOICE NO. 34384

RECEIVED Dec. 13/79

ANALYSED Dec. 19/79

TO: Canadian Occidental Petroleum Ltd.
Minerals Division
Ste. 311 - 215 Carlingview Dr.
RExdale, Ont. M9W 5X8

ATTN: E. Sacks PROJECT: Watsu-Wox-Soils

SAMPLE NO. :	PPM W
79WT1041	14
1042	17
1043	2
1183	1
1184	65
1185	30
1186	14
1188	12
1189	1
1190	17
1191	1
1192	1
1193	20
1194	1
1195	1
1196	1
1197	1
1198	1
79WT1199	1

CTA MEMBER CANADIAN TESTING ASSOCIATION

CERTIFIED BY: D. Wadsworth

212 BROOKSBANK AVE.
NORTH VANCOUVER, B.C.
CANADA V7J 2C1
TELEPHONE: [redacted] 984-0221
AREA CODE: 604
TELEX: 043-52597

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CERTIFICATE OF ANALYSIS

CERTIFICATE NO. 49339
INVOICE NO. 31900
RECEIVED Aug. 3/79
ANALYSED Aug. 15/79

TO: Canadian Occidental Petroleum Ltd.
Minerals Division
Ste. 311 - 215 Carlingview Dr.
Rexdale, Ont. M9W 5X8

ATTN: PROJECT: Watsu-Wox-Stream Silts CC: E. Sacks

SAMPLE NO. :	PPM Cu	PPM Mo	PPM Pb	PPM Zn	PPM Ag	PPM U	PPM Th
79WT1044	10	2	26	154	0.4	250	35
1045	14	5	26	158	0.2	>400	12
1046	60	14	40	156	0.4	8.5	15
1047	46	9	26	166	0.2	93	19
1048	28	1	10	72	0.1	3.0	27
1049	36	15	38	210	0.4	273	19
1050	42	11	32	192	0.2	108	14
1051	4	2	44	118	0.6	32	47
1052	26	5	26	199	0.4	102	19
1053	6	1	16	62	0.2	36	81
1054	4	1	14	88	0.2	60	78
1055	26	7	24	184	0.1	105	28
1056	108	1	8	68	0.6	48	7
1057	50	1	12	112	0.1	3.5	6
1058	24	6	20	114	0.4	40	32
1187	58	2	20	152	0.4	7.5	12
1247	38	1	132	380	0.2	10.5	7
1248	32	1	400	420	0.8	6.5	9
1249	28	1	106	310	0.1	17.0	12
1250	30	4	52	260	0.2	38	24
1251	10	1	20	128	0.2	165	32
1252	12	2	26	164	0.4	119	37
1253	16	2	24	220	0.1	57	39
1254	14	1	22	136	0.1	47	45
1255	18	2	24	230	0.2	54	33
1256	24	2	24	210	0.2	63	29
1257	24	1	16	128	0.1	23.0	35
1258	40	2	24	255	0.4	76	43
79WT1259	34	2	18	182	0.1	43	43

CTA MEMBER CANADIAN TESTING ASSOCIATION

CERTIFIED BY: Hank Biddle

212 BROOKSBANK AVE.
NORTH VANCOUVER, B.C.
CANADA V7J 2C1
TELEPHONE: 9[redacted] 984-0221
AREA CODE: 604
TELEX: 043-52597

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CERTIFICATE OF ANALYSIS

CERTIFICATE NO. 51819
INVOICE NO. 34407
RECEIVED Dec. 17/79
ANALYSED Dec. 21/79

TO: Canadian Occidental Petroleum Ltd.
Minerals Division
Ste. 311 - 215 Carlingview Dr.
Rexdale, Ont. M9W 5X8

ATTN:
PROJECT: WATSU-WOX-STREAM SILTS Mr. E. Sacks

SAMPLE NO. :	PPM W	From 49339. Also on 66171.
79WT 1044	14	
1045	14	
1046	70	
1047	45	
1048	17	
1049	45	
1050	40	
1051	12	
1052	12	
1053	40	
1054	30	
1055	35	
1056	1	
1057	4	
1058	55	
1187	14	
1247	12	
1248	15	
1249	10	
1250	14	
1251	12	
1252	14	
1253	60	
1254	~~95~~ 95	
1255	45	
1256	35	
1257	35	
1258	25	
79WT 1259	75	

CTA MEMBER CANADIAN TESTING ASSOCIATION

CERTIFIED BY: [signature]

CERTIFICATE OF ANALYSIS

CHEMEX LABS LTD.
212 BROOKSBANK AVENUE
NORTH VANCOUVER B.C. CANADA

CLIENT : CAN-OXY

ATTN. : E. SACKS

SAMPLES RECEIVED : 07-SEP-79
ANALYSIS COMPLETED : 16-SEP-79
NOVATRACK CERT. NO. : B90074.
CHEMEX CERT. NO. : ASSAY 66171
INVOICE NO. : 32701

SAMPLE ID	U3O8 PERCENT
79 WT 207	0.063
79 WT 1025	0.109
79 WT 1045	0.045
79 WT 1068	0.105
79 WT 1261	0.082
79 WT 1262	0.087
79 WT 1263	0.086
79 WT 1279	0.047
HM 712	0.322
HM 713	0.522

212 BROOKSBANK AVE.
NORTH VANCOUVER, B.C.
CANADA V7J 2C1
TELEPHONE: 985-0648 984-0221
AREA CODE: 604
TELEX: 043-52597

CHEMEX LABS LTD.

• ANALYTICAL CHEMISTS • GEOCHEMISTS • REGISTERED ASSAYERS

CERTIFICATE OF ANALYSIS

CERTIFICATE NO. 49358

TO: Canadian Occidental Petroleum Ltd.,
Minerals Division
311 - 215 Carlingview Dr.,
Rexdale, Ont.
ATTN: M9W 5X8

INVOICE NO. 31746

RECEIVED August 3, 1979

ANALYSED August 10, 1979

WATSU - WOX - WATERS
c.c. Penticton

SAMPLE NO. :	PPB U	PPB F	PPB As
79 WT 1044	2.2	20	<2
1045	1.6	20	<2
1046	1.0	20	<2
1047	3.0	20	<2
1048	0.4	20	3
1049	2.8	20	<2
1050	2.2	20	<2
1051	3.0	10	<2
1052	2.8	20	<2
1053	3.8	10	<2
1054	2.0	10	<2
1055	2.2	10	<2
1056	0.4	10	<2
1057	0.2	10	<2
1058	2.0	10	<2
1187	0.4	30	<2
1247	1.4	45	<2
1248	2.4	35	<2
1249	1.2	30	<2
1250	1.6	45	<2
1251	3.6	10	<2
1252	3.2	20	<2
1253	2.6	40	<2
1254	2.0	45	<2
1255	1.4	45	<2
1256	1.4	45	<2
1257	1.0	40	<2
1258	1.4	40	<2
79 WT 1259	1.0	35	<2

CTA MEMBER CANADIAN TESTING ASSOCIATION

CERTIFIED BY: Hart Biddle

APPENDIX II - DESCRIPTION OF ROCK SAMPLES, TRACE ELEMENT CONTENTS

Sample No. (cint BGS-ISL cps)	Name	Description	Analyses (ppm) Cu	Mo	Pb	Zn	Ag	U	Th	Sn	W	U/Th
S-WOX-1 (100 max.)	Siliceous Skarn	Very fine-grained cherty, banded green and white due to chlorite-diopside (?), trace disseminated anhedral pyrite, up to 50% K-feldspar, balance qtz, plag.	10	2	4	8	0.2	1.5	15	1	1	0.1
S-WOX-2a (.50)	Biotite-quartz-feldspar augen gneiss schist	V. fine gr. bi-fsp-qtz with augens of quartzo-feldspathic material; well foliated, abundant pyrite disseminated probably a meta semi-pelite.	12	1	2	26	0.4	1.5	15	1	1	0.1
S-WOX-2b (.50)	Cherty hornfels (skarn)	Highly siliceous, slight banding, disseminated Pyrrhotite, Molybdenite; limonite coating, similar to ES-WOX-1; dense, schistose, fractured material.	32	7	2	8	0.4	1.5	17	2	1	0.1
-WOX-3 (80)	Leucocratic megacrystic Bi-ms qtz-monz. to granite	Perthite megacrystic; K-spar (60%), plag (20%) qtz (20%), muscovite (1%), biotite (<1%); fine-grained megacrysts to 1/2"; dark smokey quartz.	4	15	8	14	0.1	9.5	21	1	10	0.5

APPENDIX II - DESCRIPTION OF ROCK SAMPLES, TRACE ELEMENT CONTENTS

Sample No. (Scint BGS-ISL cps)	Name	Description	Analyses (ppm) Cu	Mo	Pb	Zn	Ag	U	Th	Sn	W	U/Th
S-WOX-4 (150)	Impure Quartzite	Dark grey, fine-grained, trace pyrite; limonite stain on fractures, weathered pyrite pods, thinly bedded.	90	3	2	10	0.2	5	10	1	1	0.5
S-WOX-5 (300)	Leucocratic qtz-monz. (muscovite)	Med. grained, few perthite meg. up to 1/4" in size; Ksp (40%), plag (40%), quartz (15%), biotite (5%), trace muscovite; dark smokey quartz.	2	1	6	12	0.1	12.5	43	1	3	0.3
S-WOX-6 (45)	Phyllite	V. f. grained meta semi-pelite, chloritic, crenulation of thin laminae.	40	1	1	72	0.1	6.5	1	1	1	.5
H-WOX-1 (500)	Leucocratic mus-qtz-monz. to granite	Med. to f. gr., massive; K-spar (60%), plag (20%), quartz (20%), muscovite (Trace), disseminated Molybdenite.	12	47	16	6	0.4	23.5	29	1	12	0.8
H-WOX-2 (280)	Quartz megacrystic Quartz-monz.	Med. grained with anhedral smokey quartz grain to 1/4", euhedral plag to 1/8"; Ksp (40%), plag (30%), Quartz (20%), muscovite (trace), biotite (trace).	6	1	6	18	0.2	3.5	32	2	6	0.1

APPENDIX II - DESCRIPTION OF ROCK SAMPLES, TRACE ELEMENT CONTENTS

Sample No. Scint BGS-ISL cps)	Name	Description	Analyses (ppm) Cu	Mo	Pb	Zn	Ag	U	Th	Sn	W	U/Th
TH-WOX-3 400)	Leucocratic Quartz-monz.	Med to coarse-grained, massive; Ksp (30%), plag (40%), quartz (30%), quartz slightly smokey.	2	1	4	10	0.1	22	44	1	10	0.5

Appendix III - Sampling and Laboratory Procedures

I. SAMPLING PROCEDURES

A) Heavy Minerals

1. A sample site is selcted which exhibits maximum sorting of stream bed material. Active (below water) or previously active (dry now but previously below water) sites may be chosen. Leading edges or sides of gravel bars with large boulders are most attractive. In practice, the ideal case is rare and one chooses the best possible site.

2. Gravel and cobble material is shoveled into a large (18" to 24") gold pan into which 1/4" holes have been drilled. The material is vigourously shaken in still water so that - 1/4 in. material passes the screen into a second, matching pan. Enough -1/4 in. material is collected to fill an 18" x 24" poly bag (usually one large pan or two smaller ones). The -1/4" material is returned to camp.

3. The - 1/4 in. material is panned to achieve a concentrate of heavy minerals and aggregates containing heavy minerals. Approximately 80% of the original material (20 - 25 lbs) is discarded while a 1 - 2 lb. concentrate is obtained. The concentrate is sealed in a plastic or cloth bag (cloth is preferred as it allows

the sample to dry, thus reducing shipping weight) and then sent to the laboratory for geochemical analysis.

B) Stream Sediment

1. A presently or previously active stream site is selected which exhibits minimum sorting ie. quiet water, and accumulation of fine sandy and silty material. If the stream is too active, material can be obtained from bank-moss which acts as a trap, or by digging out the lee of large boulders.

2. Three to four handfuls of material is collected and after squeezing to remove excess water is placed in high wet-strength, heavy duty, prenumbered kraft envelopes. The samples are dried in the field and then sent to the laboratory for geochemical analysis.

C) Stream Water

1. A 4 oz. poly bottle is rinsed with the sample site water at least three times then filled fully and tightly capped. The sample is tested in the field for pH and specific conductivity, then sent to the laboratory for geochemical analysis.

2. Care should be taken to avoid contamination by always collecting waters up-stream from a heavy mineral or sediment sample site.

D) Soil

1. 'B' horizon or talus fine material is sampled.

2. Three to four handfuls of material are collected into heavy duty, high wet-strength kraft envelopes which are dried in the field and then sent to the laboratory for analysis.

E) Sample Site Information Card

1. At each soil or stream sample site, an 80 column field data card is completed. The sampler records such information as sample number, location and type, depth of stream, sample composition, vegetation, drainage, etc. Separate cards are used for stream and soil samples in order to record pertinent information.

II. Laboratory Procedures

A. Sample Preparation

i) Heavy Minerals

1. Samples dried and weighed.

2. Screen - 10 mesh material from sample and weigh; weigh and retain +10 mesh material left on screen.

3. Use -10 mesh fraction for heavy liquid separation.

4. Transfer -10 mesh (fine) fraction into a 1000 ml. separatory funnel containing 200 mls. of tetrabromoethane (S.G. 2.96).

5. Shake sample gently in heavy liquid. Particles of fines adhering to sides of the separatory funnel can be washed into the heavy liquid by slowly rotating the funnel at an oblique angle. The "heavies" (S.G. $\geq$2.96) will slowly settle to the bottom of the heavy liquid.

6. Drain the "heavies" into a small filter funnel. Drain excess heavy liquid and light materials into a separate filter funnel. Collect all heavy liquid into a waste receiving bottle.

7. Save light minerals (S.G. $<$2.96). Wash "heavies" fraction with methanol to remove residual tetrabromoethane. Use the same procedure on light minerals fraction. Dry both fractions and weigh. Retain the "lights" in a suitable sealed container. Save 0.5 gm of "heavies" in a plastic vial for visual examination.

8. Pulverize the remaining "heavies" in an agate mortar and pestle and homogenize before weighing for analyses.

9. Analyse the "heavies" powder for appropriate elements. The number of elements analysed for is determined by the amount of "heavy" material obtained in separation.

ii) Stream Sediments

1. Samples are sorted and dried at 50°c for 12 to 16 hours.

2. Dried material is then screened to obtain the -80 mesh (177 micron) fraction. The rest of the material is discarded.

3. -80 mesh fraction material is weighed and analysed for appropriate elements.

iii) Soils

Same procedure as for stream sediments.

iv) Rocks

1. Entire sample is crushed.

2. If necessary (>250 gms.). The sample is split on a Jones splitter, the reject is retained for a short period.

3. The split fraction is pulverized in a ring grinder such that 90% passes a 200 mesh (74 micron) sieve.

4. The -200 mesh material is weighed and analysed for the appropriate elements.

v) Waters

See individual element descriptions for U and F.

B. Elemental Analyses

i) ppm Copper, Lead, Zinc, Silver, Molybdenum (Atomic Absorption)

1. A 1.0 gm portion of -80 mesh soil or stream sediment or -200 mesh rock flour or pulverized "heavies" is digested in concentrated, hot, perchloric - nitric acid ($HClO_4$-HNO_3) for 2 hours.

2. Digested sample is cooled and made up to 25 mls. with distilled water.

3. Solution is mixed and solids allowed to settle.

4. Cu, Pb, Zn Ag and Mo are determined by atomic absorption, using background correction for Pb and Ag analyses.

Element	Bkgd. Corr.	Flame Type	Wave Length hm	Detection Limit	Chemex Standard	± 1 Std. Deviation
Cu	No	A	324.7	1 ppm	71 ppm	± 3
Pb	Yes	A	217.0	1 ppm	59 ppm	± 1
Zn	No	A	213.8	1 ppm	52 ppm	± 3
Ag	Yes	A	328.1	0.2 ppm	8.5 ppm	± 0.5
Mo	No	N	313.3	1 ppm	25 ppm	± 1

A = Air acetylene flame.

N = Nitrous oxide - acetylene flame.

ii) ppm Tin (Sn) (Atomic Absorption)

1. A 1.0 gm sample of -80 mesh soil or stream sediment, -200 mesh rock flour or pulverized "heavies" is scintered with ammonium iodide.

2. The resulting tin-iodide is leached with a dilute HCl - ascorbic acid solution.

3. The TOPO complex is then extracted into MIBIC (Methyl isobutyl ketone) and anaylsed via atomic absorption.

4. Detection limit: 1 ppm Sn

iii) ppm Tungsten (W) (Colourimetric)

1. 0.5 gm of -80 mesh soil or stream sediment, -200 mesh rock flour or pulverized "heavies" is fused with potassium bisulfate and leached with HCl.

2. The reduced form of W is complexed with toluene 3, 4 dithiol and extracted into an organic phase.

3. The resulting colour is visually compared to similarly prepared standards. (Colourimetric method)

4. Detection limit: 2 ppm W

iv) ppb Gold (Au) (Atomic Absorption)

1. A 5 gm sample of -200 mesh rock flour or pulverized "heavies" is ashed at 800^{o}c for 1 hour.

2. Ashed material is digested with aqua regia twice to dryness.

3. Digested material is taken up in 25% HCl.

4. Au is extracted as the bromide into MIBK and analysed via atomic absorption.

5. Detection limit: 10 ppb Au

v) ppm Thorium (Th) (Neutron Activation)

1. 1 gm of -80 mesh soil or stream sediment, -200 mesh rock flour or pulverized "heavies" is weighed into a polyethelene vial and heat sealed.

2. Samples, along with standards, are then irradiated

for sufficient periods to receive a neutron dose of 1-3 X 10^{10} to $10^{15}/cm^2$.

3. Following irradiation, samples are cooled for at least one week and thorium determined by the measurement of its characteristic gamma ray, using a semiconductor (Ge (Li)) detector.

4. Detection limit: 1 ppm Th

vi) Uranium (U) (Fluorimetry)

A) Uranium in soils, stream sediments, "heavies", rocks.

1. 1 gm of -80 mesh soil or stream sediment, -200 mesh rock flour or pulverized "heavies" is digested with hot, $HClO_4$-HNO_3 to strong fumes of $HClO_4$ for approximately 2 hours.

2. The digest is diluted to volume and mixed.

3. An aliquot is extracted into MIBK with the acid of an aluminum nitrate-tetrapropyl ammonium hydroxide salting solution. (TPAN)

4. Uranium in the MIBK is determined by evaporating a portion of the MIBK in a platinum dish and fusing with a mixture of $Na2CO_3$-K_2CO_3-NaF.

5. The fluorescence of the fused flux is measured to determine the uranium content.

6. Detection limit: 0.5 ppm U

B) Uranium in Water

1. A portion of the sample is filtered to remove sediment (if necessary), is acidified and then evaporated to dryness.

2. Residue is leached with a small volume of HCO_3.

3. Uranium in the leachate is extracted into MIBK, with the aid of TPAN salting solution.

4. Uranium is determined as for solid materials, above by fluorimetry.

5. Detection limit: 0.2 ppb U

vii) Fluorine (F) (Specific Ion Electrode)

A) F in soils, stream sediments, rocks, "heavies".

1. 0.25 gm of -80 mesh soil or stream sediment, -200 mesh rock flour or pulverized "heavies" is fused with a 2:1 $NaCO_3$-KNO_3 mixture.

2. The melt is leached with water and citric acid, adjusted to pH 5.5 and the activity measured with a fluoride specific ion electrode.

3. Detection limit: 10 ppm F

B) F in Waters (Potentiometric)

1. An aliquot of the sample is filtered and treated with an equal volume of Total Ionic Strength Adjustment Buffer (TISAB) consisting of glacial acetic acid, sodium chloride and cyclohexanediamine tetraacetic acid.

2. The resulting solution is stirred for 3 minutes to allow the fluoride electrode to stabilize.

3. The F concentration is read from a specific ion meter which is calibrated frequently with freshly prepared standard fluoride solutions.

4. Detection limit: 0.02 ppb F

viii) ppb Arsenic (As) (Atomic Absorption)

a) As in waters

1. An aliquot of water is acidified with HCl and then reduced with potassium iodine to reduce As (V) to As (III).

2. A portion of this solution is further reduced with sodium borohydride to arsine, AsH_3.

3. The volatile arsine is swept into a heated cell in an atomic absorption spectrophotometer and decomposed to free arsenic to determine the arsenic concentration.

4. Detection limit: 2 ppb As

ix) pH

1. pH in waters was determined in the field, using a portable pH meter.

2. The meter was standardized by means of buffer solutions, every 10th sample to minimize meter drift.

x) Specific Conductivity (S.C.)

1. S.C. in waters was determined in the field, using a portable S.C. meter.

2. The electrode was washed in a standard water, after each determination, to minimize and standardize contamination.

APPENDIX IV

Comments of R.H. Wallis - Visit to WOX Claims

WOX Claims (1-72) 105F 1W1/2 and 2E1/2 July 31, 1979

Commodity (U-W-Mo (Zn-Pb)) RHW, EJS, JH

Ties on to previous claims - the MOLLY Showing, now the MIJ Claims, July 1978, see details below.

WOX Claims completely above tree line but buckbrush in big western valleys, open, undulating area, gentle to moderate slopes, plus talus and a fair amount of outcrop. Relief 2000+ feet. No need for picketed lines, blow-up airphotos will do as a base for soil and scint traverses (as with PISA and SAL, no 1:50,000 topo available, and in a many cirque area like WOX, 1:250,000 blow-ups are very confusing).

Geology, at least as complicated as suggested by Tempelman-Kluit 1977, GSC O.F.486, a complex intrusive contact of various phases (at least three according to E.J.S.) of the Nisutlin Batholith into a wide variety of metasediments.

In the east, metasediments are Sshf below and Sqhf above, these are in thrust contact with CPav to the west, all are intruded by Kpqm. CPav = "Carboniferous and Permian, resistant, dark grey weathering, dark green, fine-grained, amphibolite and greenstone, mainly massive but foliated near the basal thrust". Ss = Silurian, tan weathering, thin bedded to platy dolomitic siltstone and silty dolomite, Sshf = white weathering, thin laminated, white and green hornfels, thermally metamorphosed Ss, + Sdq + Sq". Sq, Silurian, silvery white, resistant medium bedded, mature orthoquartzite, with dolomitic cement".

Metasediments well foliated, interlayered, quartzites, marbles biotite schists; intruded (in the locality visited) by a recessive weathering, pale coloured, pinkish, non-porphyritic biotite leuco quartz-monzonite; this is Kpqm of Tempelman-Kluit (1977). Kpqm = "moderately resistant, light grey weathering, homogeneous, porphyritic (pinkish K-feldspar-Medium-grained biotite quartz-monzonite: locally large screens of metamorphic rocks". Thus, abnormality at WOX is the heterogeneity, e.g. pink and grey, leucocratic or biotitic, equigranular or megacrystic varieties.

In the contact zone there are innumerable late, crosscutting, quartz-muscovite-pyrite-limonite veins.

The MOLLY Showing; to the East of the WOX Claims lie the MOLLY Showing. On Tempelman-Kluit's 1977 map this is shown as a single showing on a ridge crest (this was visited by RHW, EJS, JH);

however, across the cirque to the south, at least 6 very large, fairly recent trenches have been excavated on low ground along the Nisutlin Batholith-contact, this area was not visited.

The MOLLY Showing is a spectacular gossan; with equally spectacular deep red garnet-diopside skarn against biotite quartz-monzonite with six-foot wide zone of disseminated to massive molybdenite, with 25 foot exposed strike length. All sorts of colourful skarn rocks, contaminated quartz-monzonite present; e.g. vesuvianite-rhodocrosite skarns, giant garnet quartz-monzonite, etc., etc.

E.J.S. found a zone running 3000 cps (BGS-4) in a fracture in the intrusive, but at the skarn contact. This would be the highest count found at WATSU (?): Tempelman-Kluit mentions the presence of "uraniferous minerals" at the MOLLY Showing.

APPENDIX V.

Property Assessment of MIJ and JOA Claims - Adjacent to WOX Claims

November 11, 1979

Property Assessment MIJ 1-6 and JOA 1-6 Claims situated near the East Peak and Nisutlin River in the Yukon Territory on N.T.S. map sheet 105F-1.

On October 13, 1979 in the company of Jim Irwin, the MIJ 1-6 and JOA 1-6 were visited. A Buffalo Airways Bell Jet-ranger was used to gain access to the property from Whitehorse.

The claims are situated near the head of a relatively flat broad valley.

The mineralization occurs within a skarnified unit as large quite spectacular rosettes of Molybdenite along some fractures but mainly randomly throughout. Sections noted may run as high as 1-2% Mo. Samples were checked with an ultra violet lamp and scheelite and possibly powellite were noted. All samples taken were spectacular and well mineralized. One of these samples was sent for analysis for Molybedenum and Tungsten. (see Analytical Results attached).

The bedded sandstones, siltstones and limestones had been locally intruded by a coarse-grained granodiorite causing a localized skarn. The sandstone and siltstones had been highly silicified and did carry a bit of mineralization. The best grades occurred at the contact in the skarnified limestones. The skarn had a true width of probably 25 feet in the areas examined. Grossular garnet was abundant and noted throughout the skarn areas.

The showing, though small, was spectacular and erratic and confined to within 25 feet of the granodiorite sedimentary contact.

Recommendation

If Canadian Occidental Petroleum Ltd. is going to do work on the adjoining WOX Claims, I would suggest we also option the MIJ and JOA claims. A geochemical soil and rock survey and geological mapping and prospecting may help to determine the extent on the skarn. Jim Irwin is quite reasonable and would probably offer a reasonable option. One of his requests is that he be hired to prospect the property. This would probably be to our benefit as he is an experienced prospector and this is exactly what the property needs.

Tungsten is definitely associated and its potential according to Irwin has not been assessed. Irwin feels that the property has only molybdenum with only slight tungsten values. Some of the samples that I later lamped displayed abundant scheelite.

Michael P. Henrick

212 BROOKSBANK AVE.
NORTH VANCOUVER, B.C.
CANADA V7J 2C1
TELEPHONE: [redacted] 984-0221
AREA CODE: 604
TELEX: 043-52597

CHEMEX LABS LTD.

•ANALYTICAL CHEMISTS •GEOCHEMISTS •REGISTERED ASSAYERS

CERTIFICATE OF ANALYSIS

CERTIFICATE NO. 51412

TO: Canadian Occidental Petroleum Ltd.,
Minerals Division
311 - 215 Carlingview Dr.,
Rexdale, Ont.
ATTN: M9W 5X8 c.c. O.K. Falls ROCK

INVOICE NO. 33864

RECEIVED November 5, 1979

ANALYSED November 16, 1979

SAMPLE NO. :	PPM Mo	PPM W
IRY #1	620	400

CTA MEMBER CANADIAN TESTING

CERTIFIED BY: D. F. Watson D.

APPENDIX VI.

DESCRIPTION OF MOLLY CLAIMS

N.T.S. 105F/1

Conwest Exploration Company Limited (Molly Group) (61°10'N, 132°25'W)

References: Wheeler, Green, and Roddick (1960a); Skinner (1961, pp. 41-42); Green and Godwin (1963, p. 30).

Late in the 1962 field season, the company staked the Molly group of 72 claims covering a molybdenite showing. Work carried out during the summer of 1963 consisted of trenching, diamond drilling, and detailed mapping of the prospect. A crew of about 20 men was employed. Results proved discouraging and work was suspended early in August, 1963. The main showing is at an altitude of about 5,500 feet and is on the south side of a small valley tributary to McNeil River. The camp, located on a small bench in this valley, was supplied by a helicopter based at Quiet Lake on the Canol Road, about 22 miles to the west.

The main showing occurs near the contact of metamorphic rocks of unknown age (unit A, Wheeler, Green, and Roddick, 1960a) with granodiorite (unit 9). The metamorphic rocks consist of a limestone, perhaps 50 feet thick, which has been irregularly altered to: (i) diopside-garnet skarn, (ii) wollastonite-garnet skarn, and which contains thin bands of finely banded green diopside hornfels and purplish brown biotite hornfels probably formed from siliceous limestone and argillite respectively. This band is overlain by a finely banded unit, probably more than 1,000 feet thick, composed of green diopside hornfels, purplish brown biotite hornfels, and irregular stringers of limestone. This unit probably formed from a limy argillite and appears similar in original lithology to unit 2 of Middle and Late Cambrian age as mapped by Wheeler, Green, and Roddick (1960a). Molybdenite occurs mainly in the diopside-garnet and the wollastonite-garnet skarns formed from the limestone band. These have been traced for about 800 feet trending northeast and dipping moderately to the southeast beneath the finely banded overlying rocks. The overall structures of the metamorphic rocks appear simple, but complex crumpling on a minor scale was observed in outcrops of the finely banded hornfels unit. Seventeen diamond drill holes with a total length of 2,500 feet were drilled to test the showing at depth.

The north showing occurs on a ridge about 3,400 feet northwest of the main showing. There, trenching exposed disseminated molybdenite in a thin band of "hybrid granite" or "meta-diorite", composed of plagioclase feldspar and diopside, developed at the contact between the granodiorite and the overlying diopside skarn and hornfels. The altered limestone band of the main showing is not present. Specimens from this showing contain considerable cream-coloured powellite, formed through the alteration of molybdenite.

The north showing is similar in type to the molybdenite showing about 25 miles to the northwest, which was explored by Canol Metal Mines Limited in 1959 and 1960 (Skinner, 1961, pp. 41-42).

From: Green and Godwin (1964); p 45-46

Property Name: Common MOLLY Other

Location: Lat. 61°11' Long. 132°25' NTS 105F/1

Metals: Major Molybdenum Minor Copper, Fluorite, Uranium

Type of Mineral Deposit: Skarn

History and Previous Work:

Staked as Molly cl (79713) in Sept/62 by O. Haug for Conwest EL, which mapped, hand trenched in rock and drilled 15 holes (1482 ft) in 1963. Restaked as Skarn cl (Y29242)in June/69 by A. Racicot, as MO cl (Y54546) in Sept/70 by O. Haug and as Weasel cl (Y84197) in June/75 by Archer, Cathro & Assoc. Ltd, which performed reconnaissance radiometric and geochem surveys later in the year.
* J. Irwin tied on MIJ cl (YA33216) in June/78. and JOA Cl in Apr 20/79.

Description:

A 50 ft thick band of Silurian silty dolomite has altered to diopside-garnet and wollastonite-garnet skarn at the contact of a granodiorite stock. The skarn is weakly mineralized with coarse grained molybdenite, pyrrhotite, chalcopyrite and fluorite for surface length of 800 feet. Drilling returned a number of narrow intersections grading in excess of 1% MoS_2, of which the best assayed 1.08% MoS_2 across 13.3 ft. A second occurrence of disseminated molybdenite found about a mile to the west in hybrid granite at the intrusive contact was also explored by hand trenching. The 1975 surveys located several anomalous areas assaying up to 77 ppm uranium geochemically. A specimen of skarn float assayed 0.025% U_3O_8.

References:

P64-36, pp 45-46
ER, Sept/63 by A.S. Ashton for Conwest ECL - FFAC

APPENDIX VII. - REFERENCES

1. Archer, Cathro & Associates Ltd. (1979): Northern Cordillera Mineral Inventory - 1972-1979 update; Whitehorse, Y.T.

2. Green, L.H. and Godwin, C.I. (1964): The Mineral Industry of Yukon Territory and Southwestern District of Mackenzie, Northwest Territories, 1963; G.S.C. P- 64-36, pp. 45-46.

3. Levinson, A. (1974): Introduction to Exploration Geochemistry; Applied Publishing, Calgary; Table 2-1.

4. Tempelman-Kluit, D.J. (1977); Geology of Quite Lake (105F) and Finlayson Lake (105G) Map Areas; G.S.C. O.F.R. 486.

5. Travis, R.B. (1955): Classification of Rocks; Quarterly of The Colorado School of Mines, V. 50, No. 1, January 1955.

6. Wheeler, J.O., Green, L.H. and Roddick, J.A. (1960): Geology - Quiet Lake, Yukon Territory; G.S.C. Map 7-1960, Preliminary Series, Sheet 105F.

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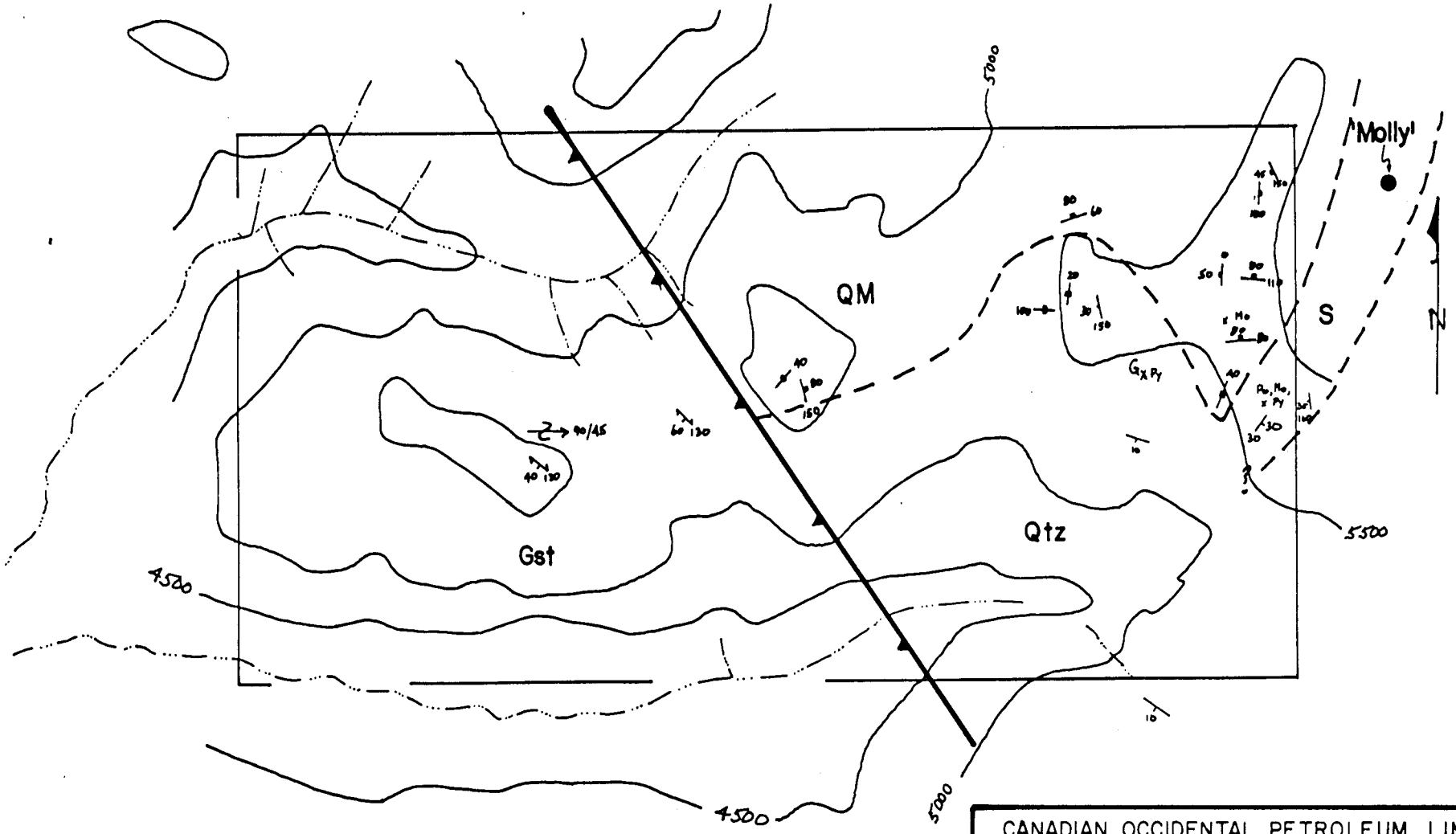


Legend

- **QM** : Quartz monzonite
- **Gst** : Greenstone, phyllite
- **Qtz** : Quartzite, meta semi-pelite
- **S** : Skarn, hornfels

* Geology in part after Templeman - Kluit (1977)

- ——— : Geological Contact (assumed)
- ▲▲▲ : Thrust (assumed) (inclined)
- +, — : Bedding (vertical, inclined)
- ⊕, ⊕ : Foliation (vertical, inclined)
- ⊕, ⊕ : Jointing (vertical, inclined)
- —2→ : Fold (plunging)

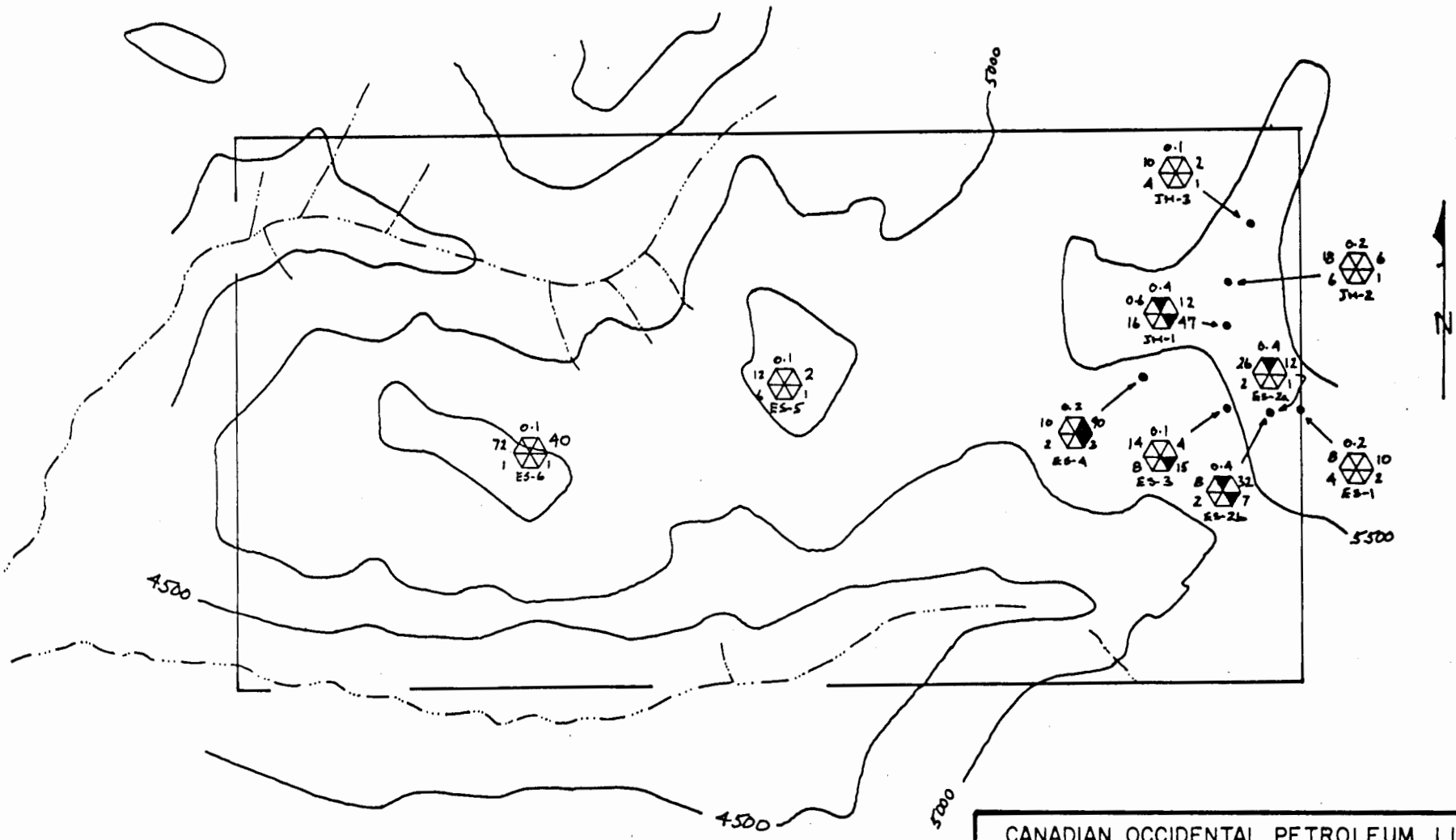
Mo : Molybdenite Py : Pyrite
Po : Pyrrhotite G : Gossan

CANADIAN OCCIDENTAL PETROLEUM LIMITED
MINERALS DIVISION

PROJECT WATSU
WOX 1-72 CLAIMS
YUKON TERRITORY

GEOLOGY

Scale: 1"=2640' (1/2 mile) PLAN I September, 1979



	Cu	Mo	Pb	Zn	Ag	
Poss. Anomalous	—	—	—	—	—	
Prob. Anomalous	50	3	30	80	.4	

LEGEND

PPm Ag
ppm Zn / ppm Pb — ppm Cu / ppm Mo
Sample No.

PLAN 2

CANADIAN OCCIDENTAL PETROLEUM LIMITED
MINERALS DIVISION

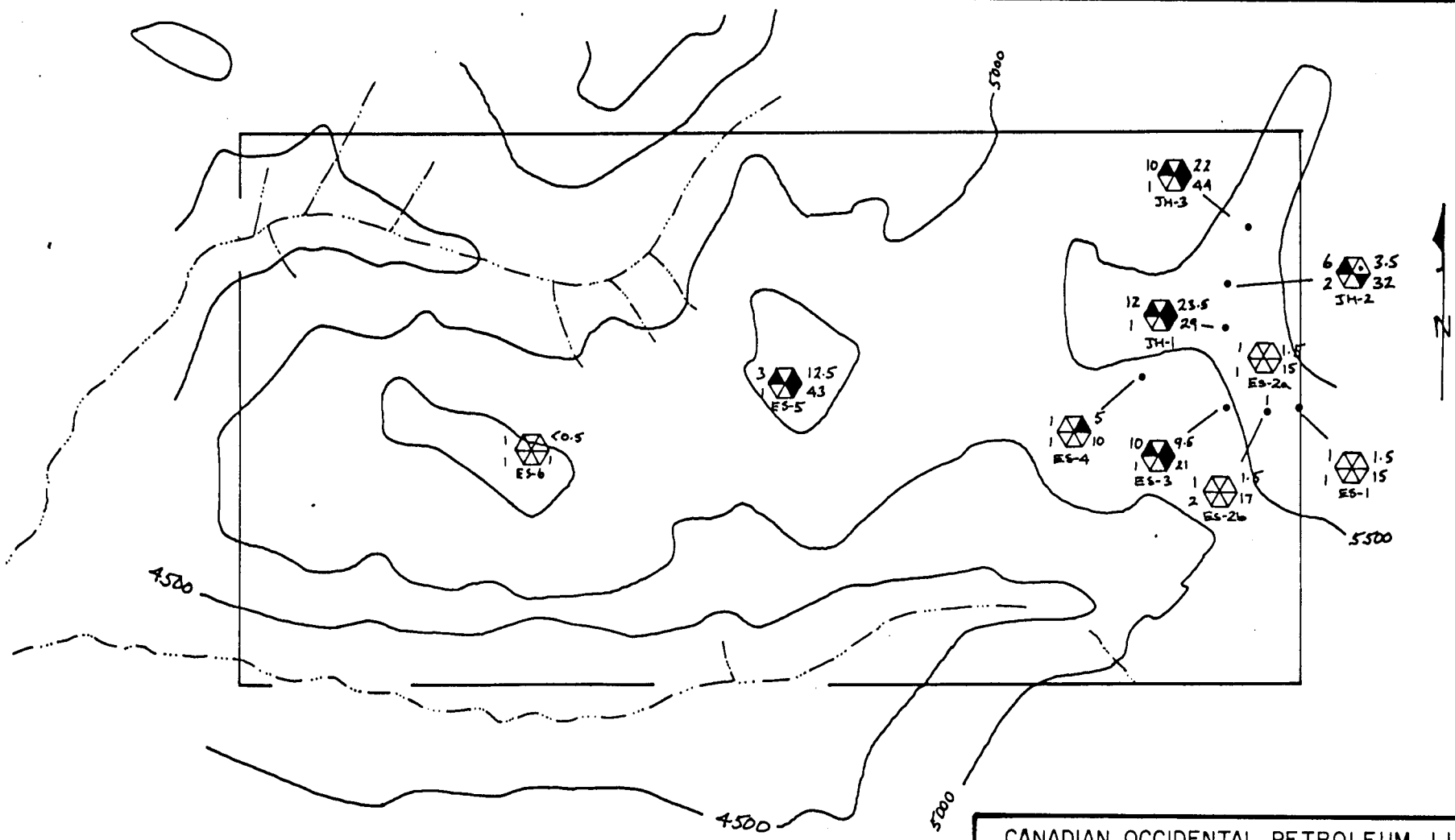
PROJECT WATSU
WOX 1-72 CLAIMS
YUKON TERRITORY

ROCK GEOCHEMISTRY

Cu - Mo - Pb - Zn - Ag

Scale: 1"=2640' (1/2 mile)

September, 1979



	U	Th	Sn	W
Poss. Anomalous	—	—	—	—
Prob. Anomalous	4	20	3	3

PLAN 3

LEGEND

ppm W / ppm Sn — ppm U / ppm Th

Sample No.

CANADIAN OCCIDENTAL PETROLEUM LIMITED

MINERALS DIVISION

PROJECT WATSU

WOX 1-72 CLAIMS

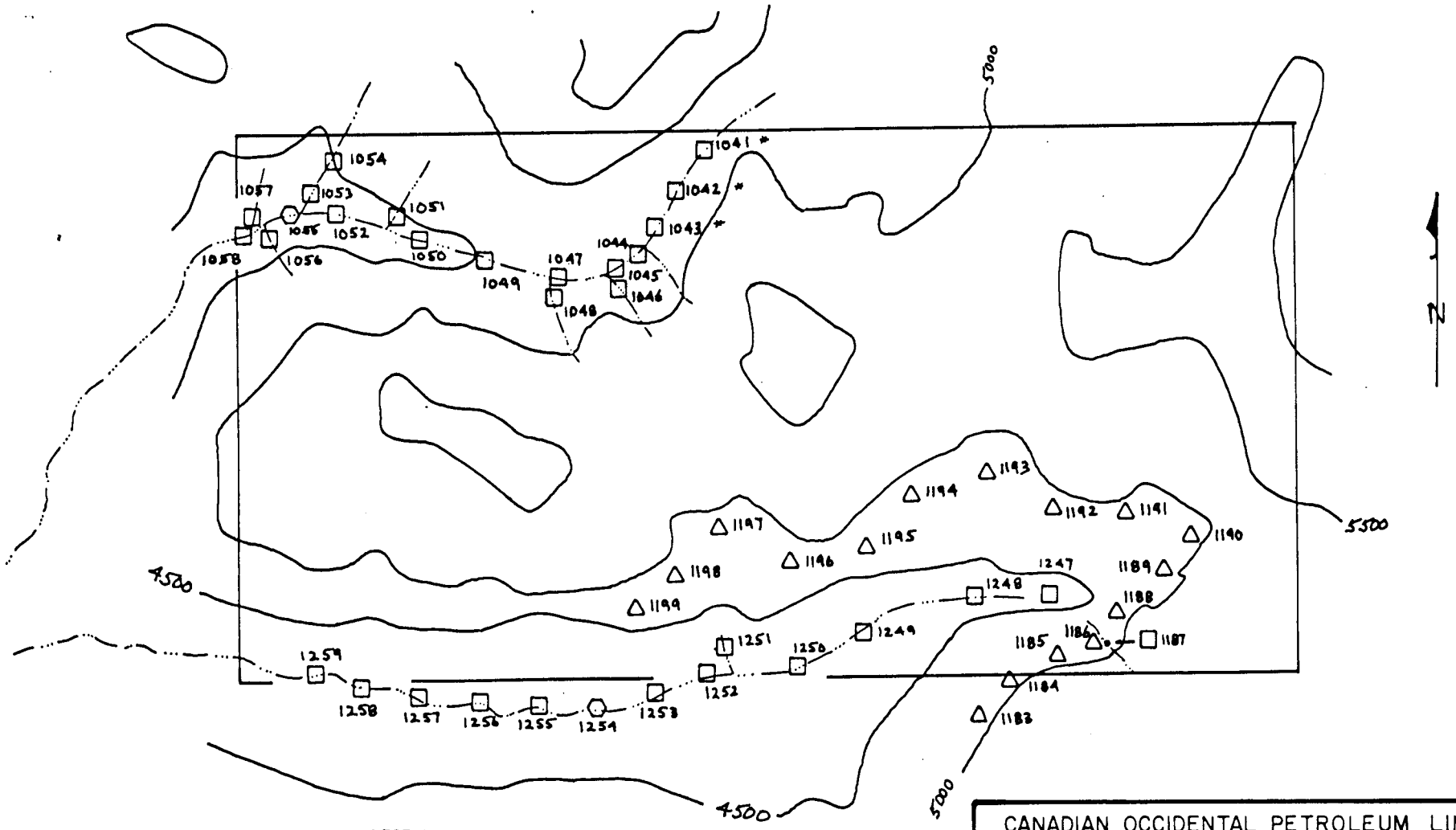
YUKON TERRITORY

ROCK GEOCHEMISTRY

U - Th - Sn - W

Scale: 1"=2640' (1/2 mile)

September, 1979



LEGEND

□ Silt & Water

△ Soil

⬡ Heavy mineral & Silt & Water

All sample numbers prefixed 79-WT: eg. 79-WT-1046

* No water taken

CANADIAN OCCIDENTAL PETROLEUM LIMITED
MINERALS DIVISION

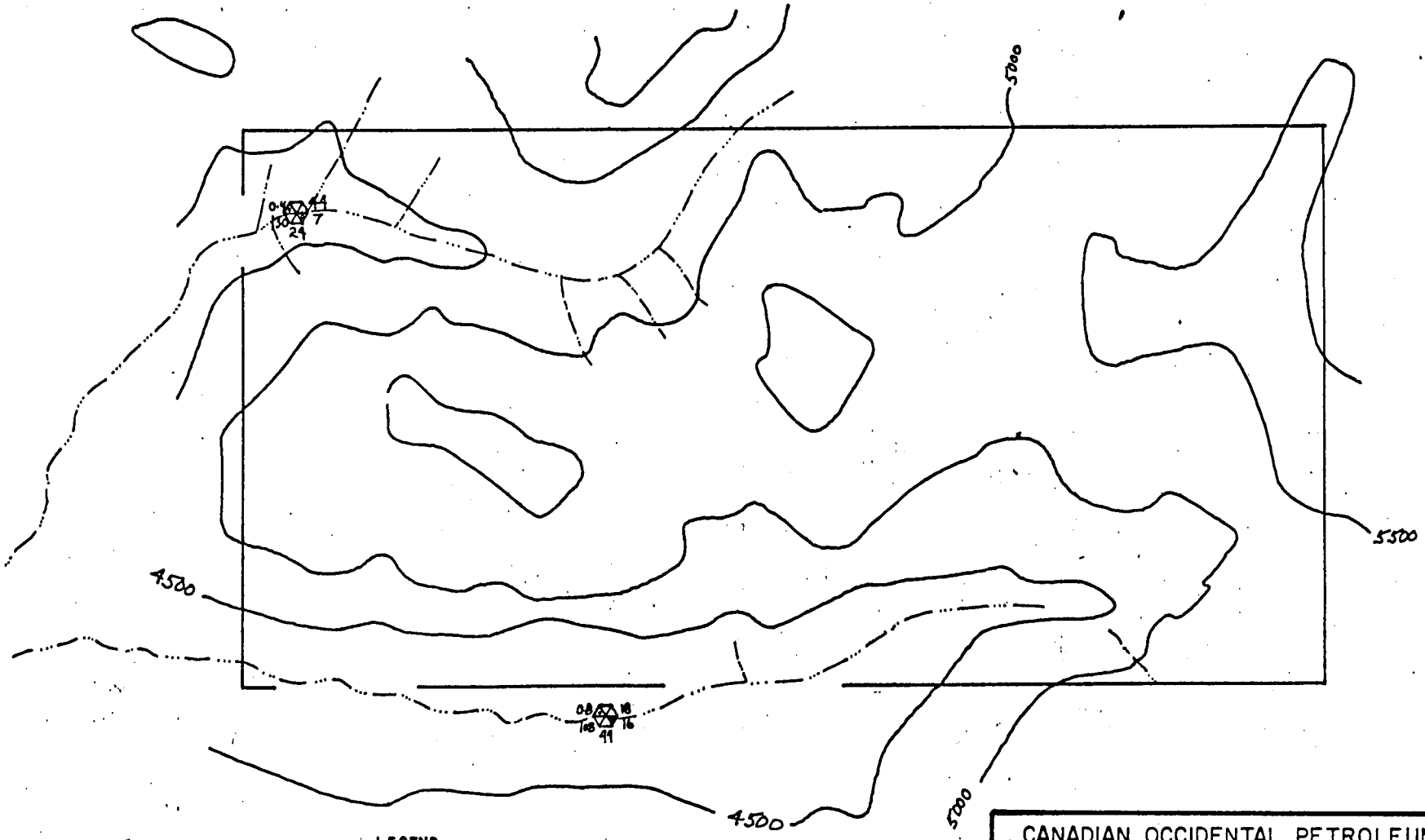
PROJECT WATSU
WOX 1-72 CLAIMS
YUKON TERRITORY

SAMPLE LOCATIONS

Scale: 1"=2640' (1/2 mile)

September, 1979

PLAN 4



LEGEND

ppm Ag / ppm Zn — ppm Cu / ppm Mo / ppm Pb

	Cu	Mo	Pb	Zn	Ag
Poss. Anomalous	63	3.5	89	200	.38
Prob. Anomalous	165	8.5	280	495	.95

PLAN 5

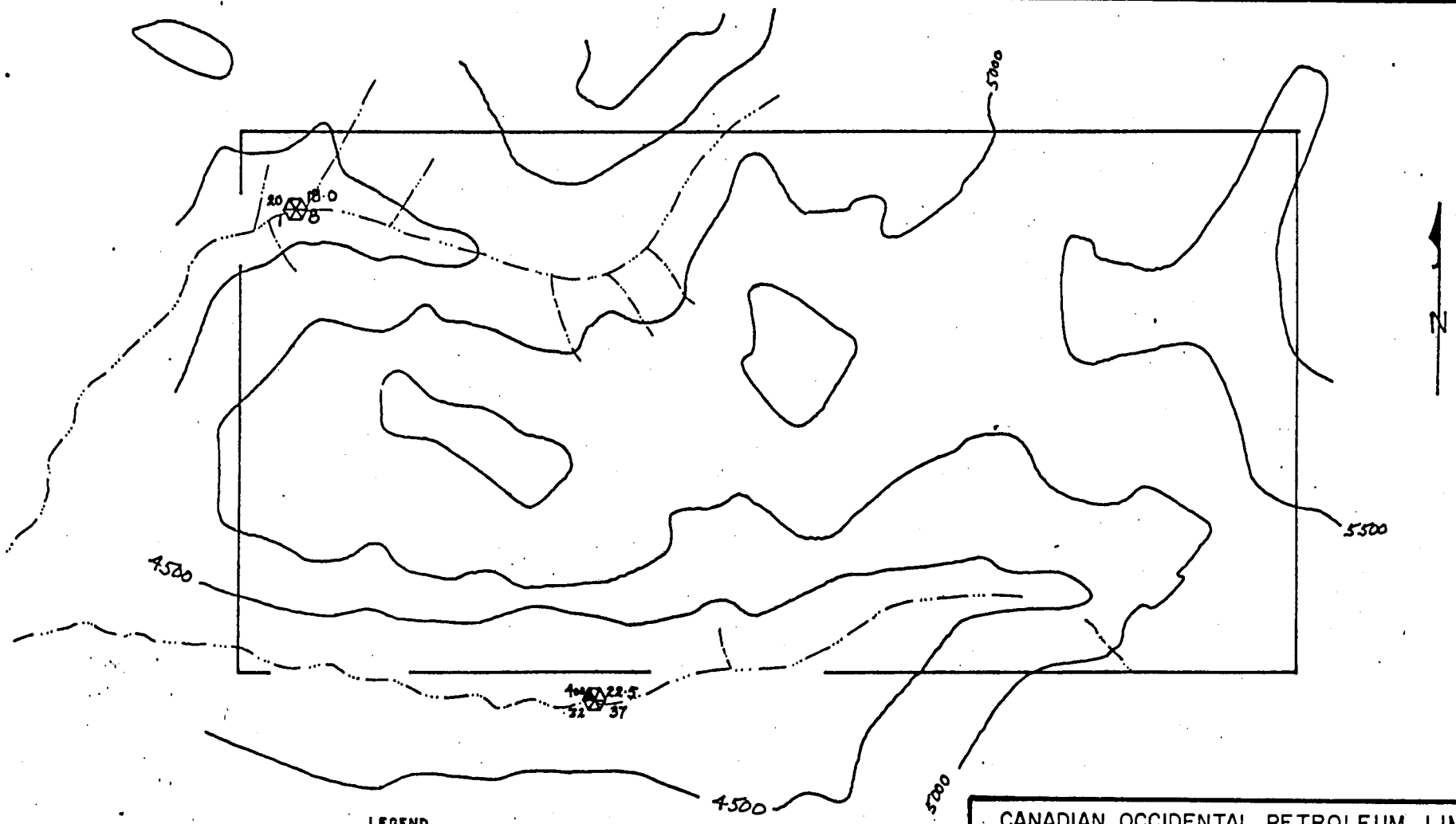
CANADIAN OCCIDENTAL PETROLEUM LIMITED
MINERALS DIVISION

PROJECT WATSU
WOX 1-72 CLAIMS
YUKON TERRITORY

HEAVY MINERAL GEOCHEMISTRY
Cu - Mo - Pb - Zn - Ag

Scale: 1"=2640' (1/2 mile)

September, 1979



LEGEND

ppm W ppm Sn ppm U ppm Th

	U	Th	Sn	W		
Poss. Anomalous	26	33c	38	60		
Prob. Anomalous	120	1200	300	A0		

PLAN 6

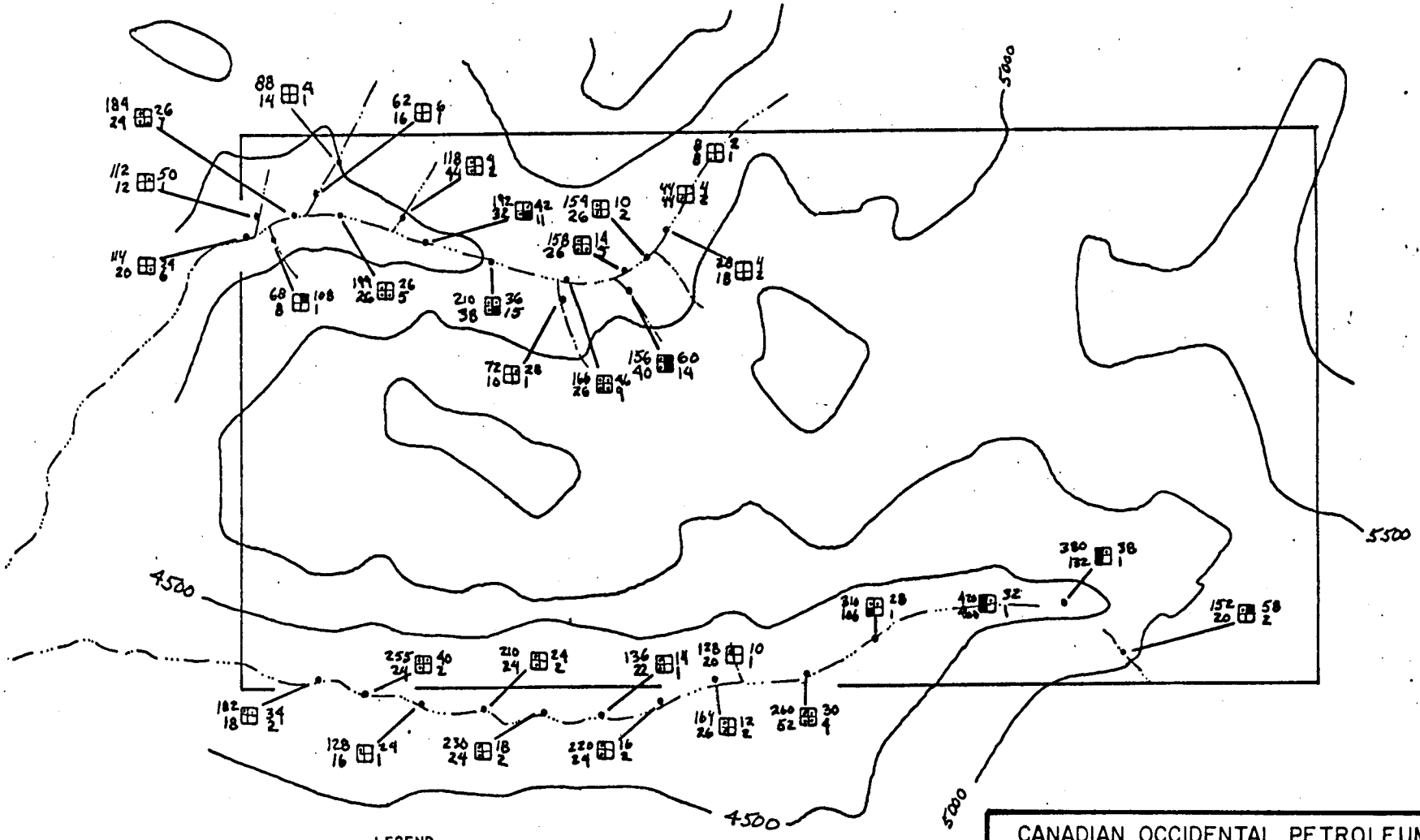
CANADIAN OCCIDENTAL PETROLEUM LIMITED
MINERALS DIVISION

PROJECT WATSU
WOX 1-72 CLAIMS
YUKON TERRITORY

HEAVY MINERAL GEOCHEMISTRY
U - Th - Sn - W

Scale: 1"=2640' (1/2 mile)

September, 1979



	Cu	Mo	Pb	Zn
Poss. Anomalous	28	3	21	115
Prob. Anomalous	54	11	59	320

PLAN 7

CANADIAN OCCIDENTAL PETROLEUM LIMITED
MINERALS DIVISION

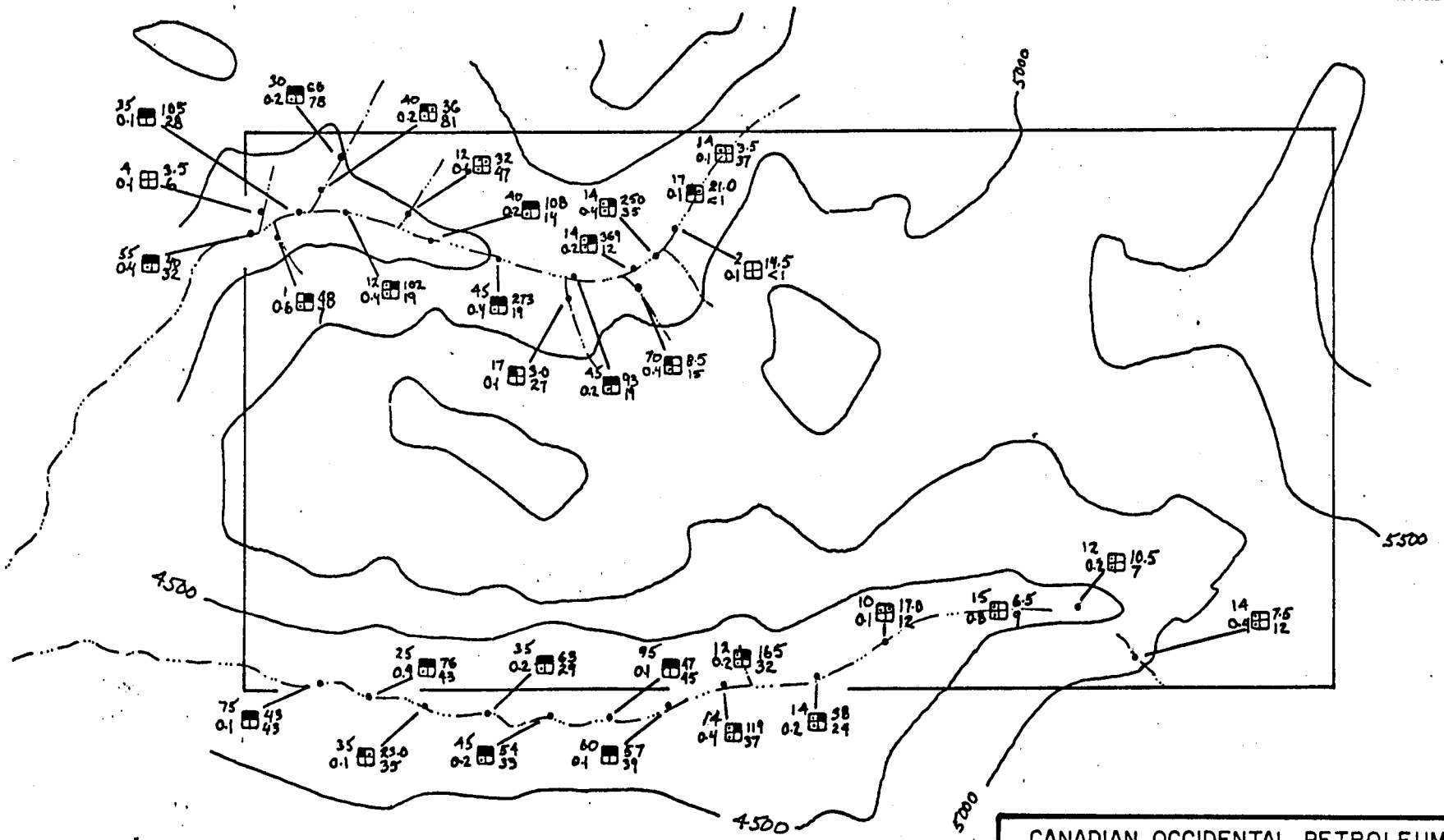
PROJECT WATSU
WOX 1-72 CLAIMS
YUKON TERRITORY

STREAM SEDIMENT GEOCHEMISTRY

Cu - Mo - Pb - Zn

Scale: 1"=2640' (1/2 mile)

September, 1979



LEGEND

ppm W / ppm Ag ⊞ ppm U / ppm Th

	U	Th	Ag	W		
Poss. Anomalous	17	29	<.1	5		
Prob. Anomalous	38	50	1	16		

PLAN 8

CANADIAN OCCIDENTAL PETROLEUM LIMITED
MINERALS DIVISION

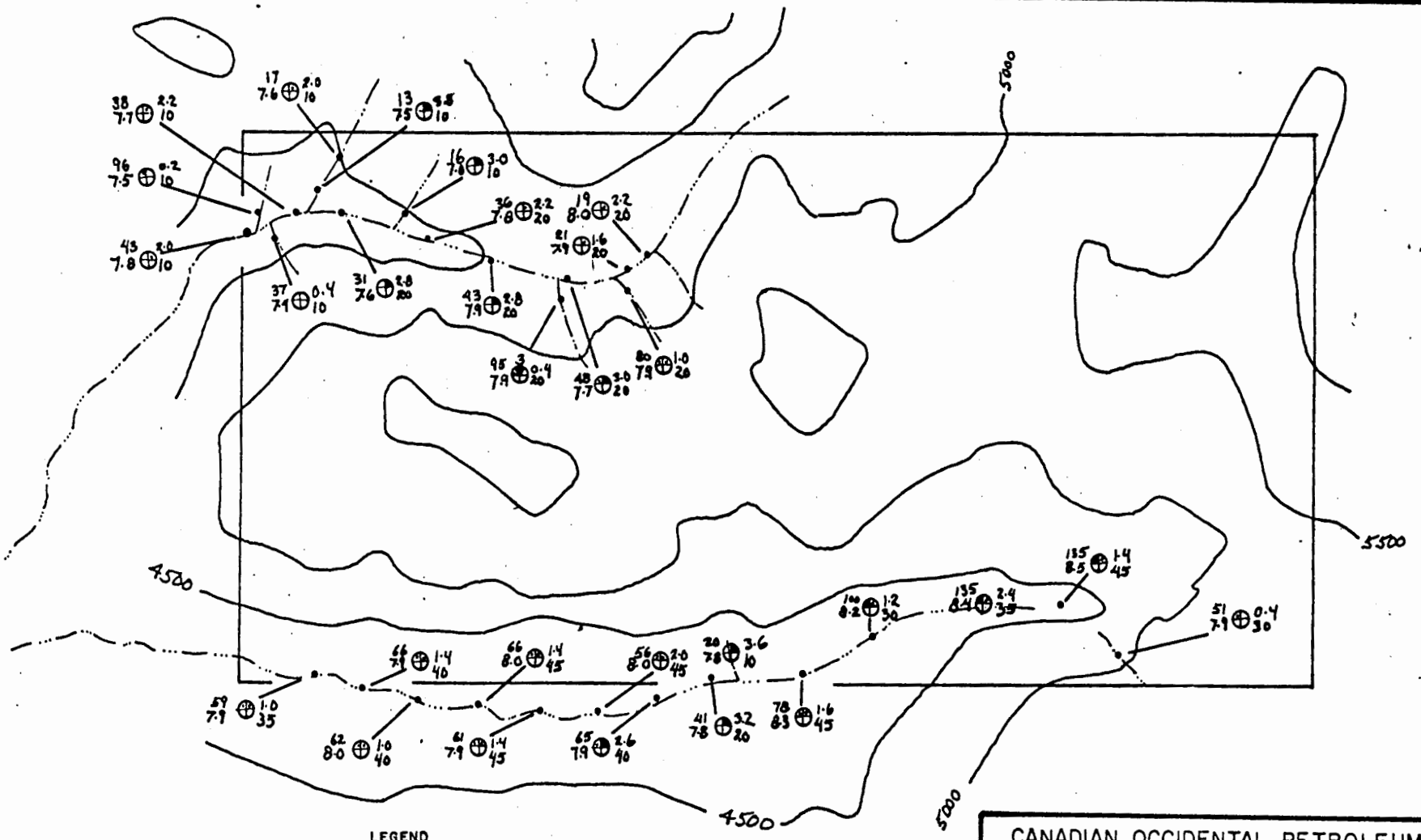
PROJECT WATSU
WOX 1-72 CLAIMS
YUKON TERRITORY

STREAM SEDIMENT GEOCHEMISTRY

Th - Ag - U - W

Scale: 1"=2640' (1/2 mile)

September, 1979



LEGEND

S.C. / pH ⊕ ppb U / ppb F ; As < 2ppb

ppb As
S.C. / pH ⊕ ppb U / ppb F

	U	F	As	S.C.		
Poss. Anomalous	.85	100	-	46		
Prob. Anomalous	2.5	210	2	100		

PLAN 9

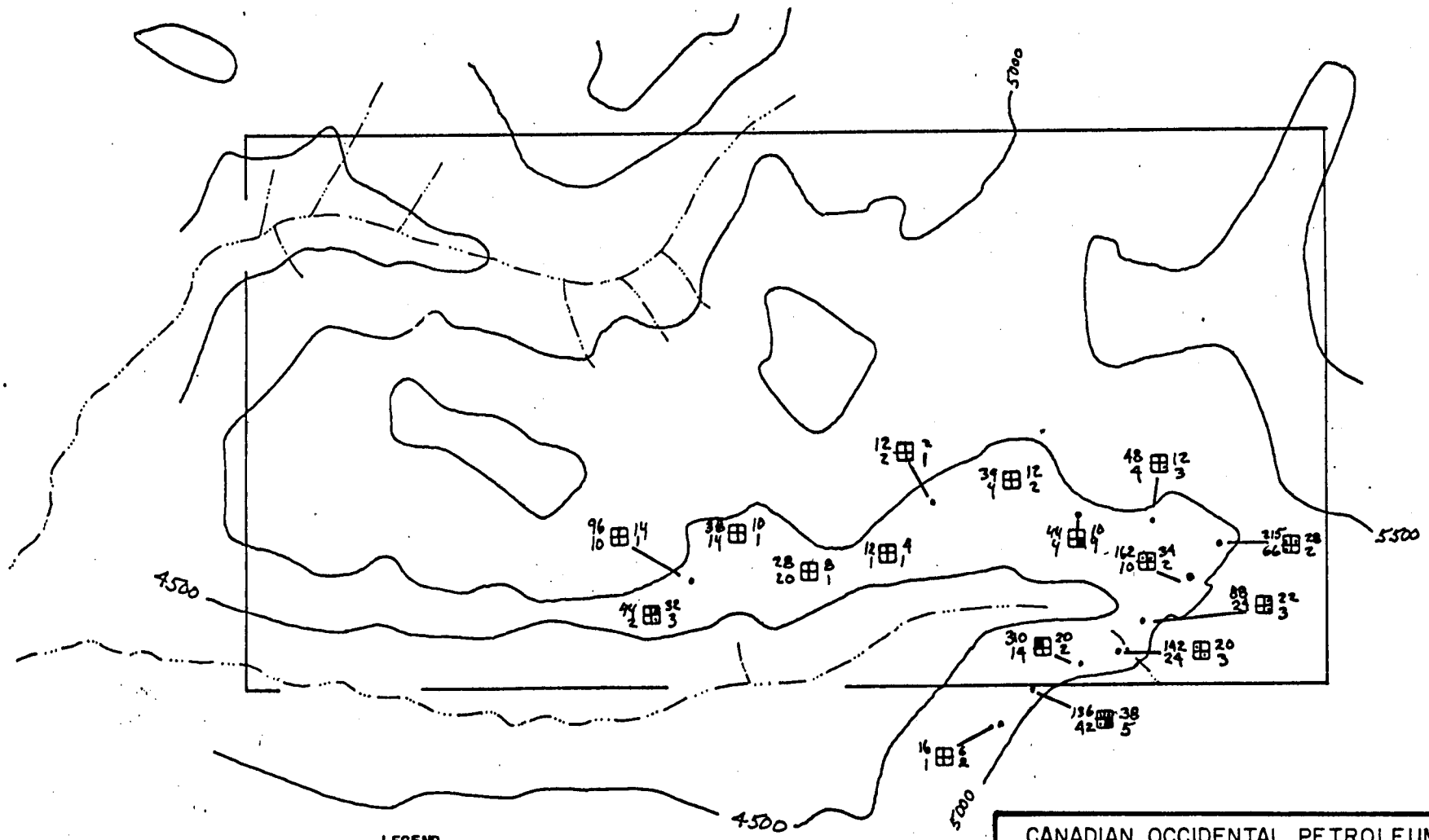
CANADIAN OCCIDENTAL PETROLEUM LIMITED
MINERALS DIVISION

PROJECT WATSU
WOX 1-72 CLAIMS
YUKON TERRITORY

STREAM WATER GEOCHEMISTRY

Scale: 1"=2640' (1/2 mile)

September, 1979



LEGEND

ppm Zn ⊞ ppm Cu
ppm Pb ppm Mo

	Cu	Mo	Pb	Zn		
Poss. Anomalous	22	2.5	32	115		
Prob. Anomalous	120	5	150	270		

PLAN 10

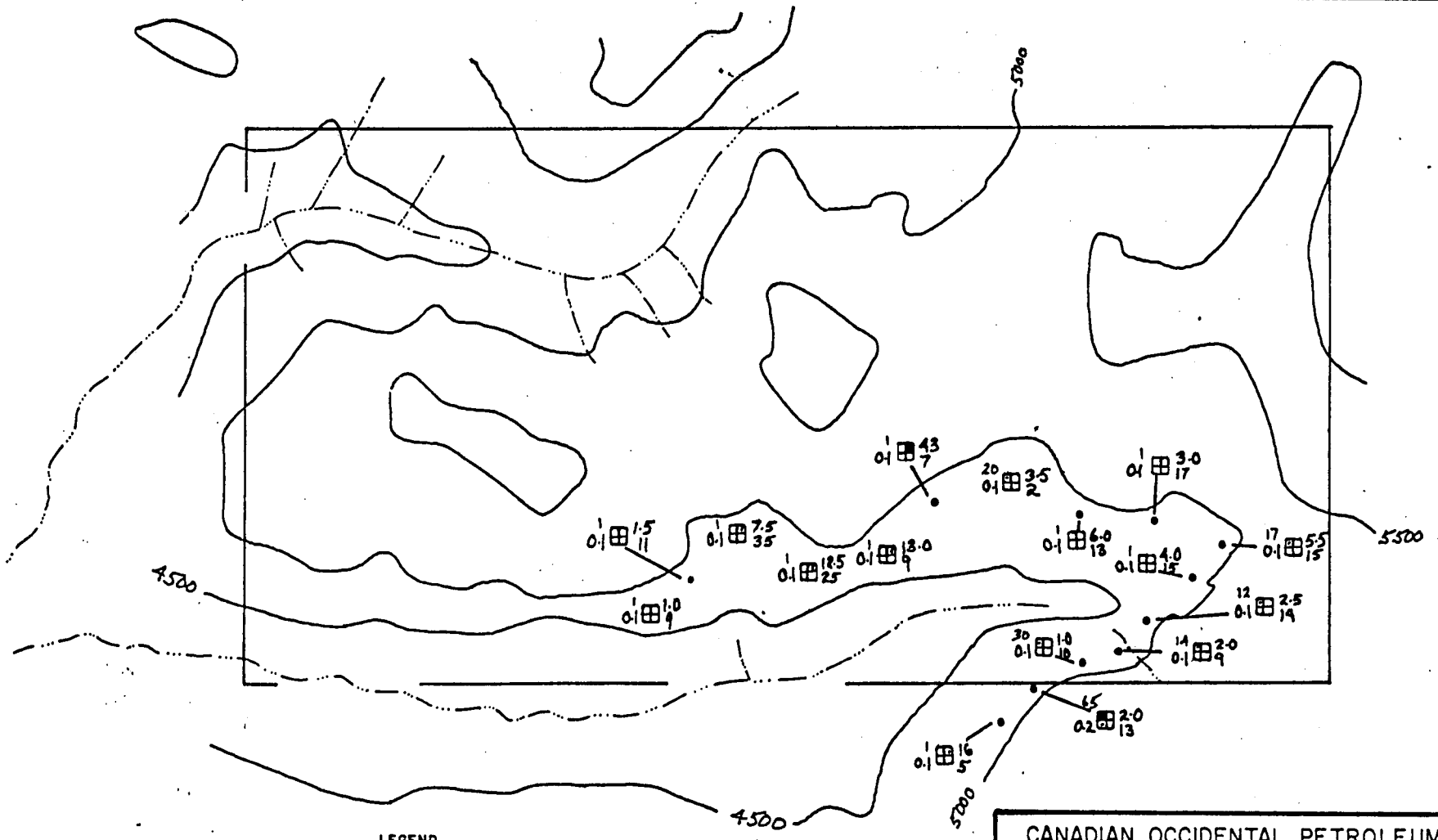
CANADIAN OCCIDENTAL PETROLEUM LIMITED
MINERALS DIVISION

PROJECT WATSU
WOX 1-72 CLAIMS
YUKON TERRITORY

SOIL GEOCHEMISTRY

Cu - Mo - Pb - Zn

Scale: 1"=2640' (1/2 mile) September, 1979



LEGEND

ppm W / ppm Ag ⊞ ppm U / ppm Th

		U	Th	Ag	W		
Poss. Anomalous	◔	7	36	0.1	7.5		
Prob. Anomalous	◕	30	75	0.8	40		

PLAN II

CANADIAN OCCIDENTAL PETROLEUM LIMITED
MINERALS DIVISION

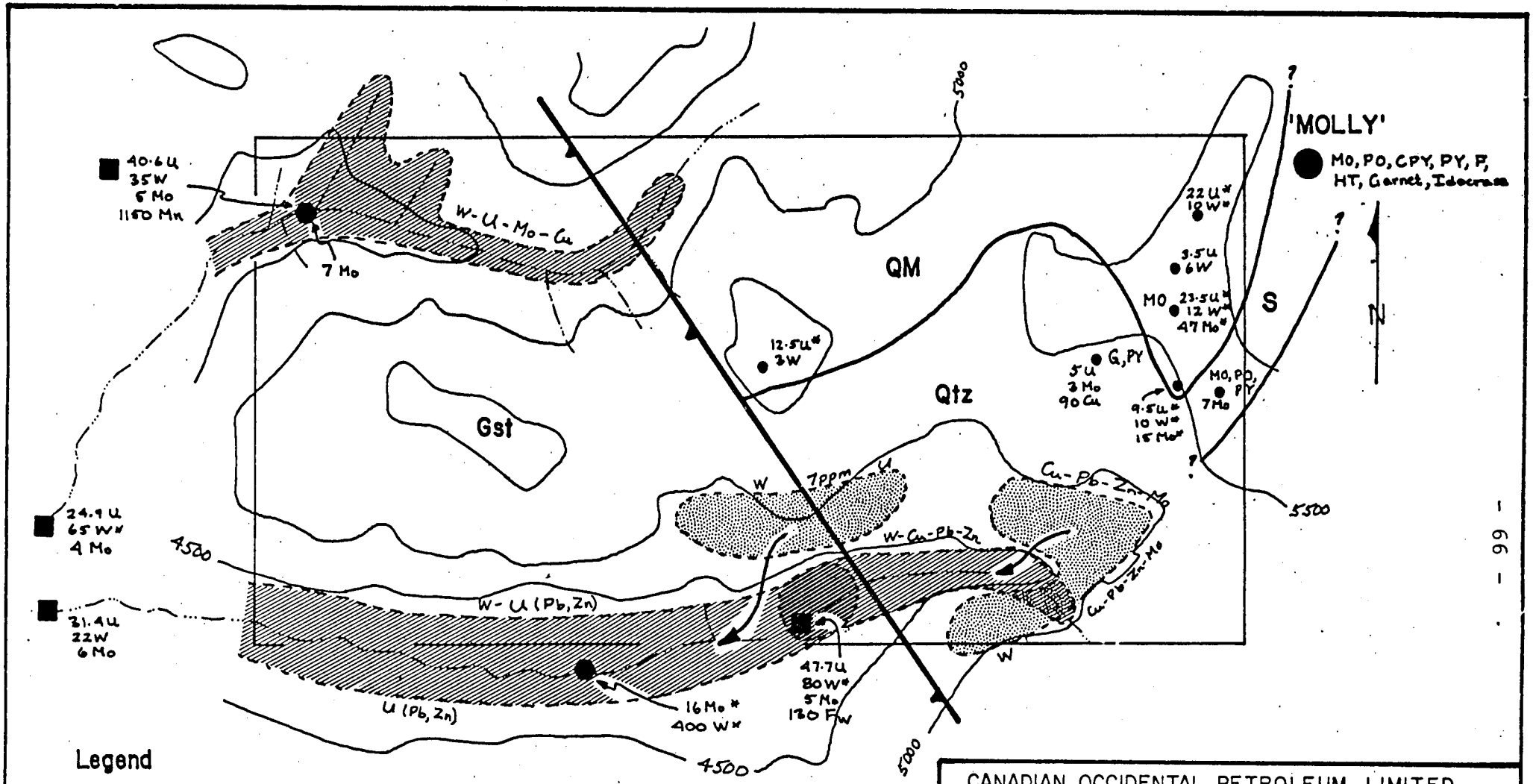
PROJECT WATSU
WOX 1-72 CLAIMS
YUKON TERRITORY

SOIL GEOCHEMISTRY

U-Th-Ag-W

Scale: 1"=2640' (1/2 mile)

September, 1979



Legend

QM : Quartz monzonite
Gst : Greenstone, phyllite
Qtz : Dolomitic quartzite, meta-semi pelite
S : Skarn, hornfels
Geological contact (assumed)
Thrust fault (inclined- position approximate)

GEOCHEMISTRY

Stream sediment anomaly: U > 17ppm; Mo 7 3ppm Cu > 28ppm; Pb > 21ppm Zn > 115ppm

Soil anomaly: U > 7ppm; Cu > 22ppm; Pb > 32ppm; Zn > 115ppm; Mo > 2.5ppm

Rock geochemistry
Heavy mineral geochemistry
1978 G.S.C.-U.R.P. (site approximate)

All values are ppm except Fw which is ppb

PLAN 12

CANADIAN OCCIDENTAL PETROLEUM LIMITED
MINERALS DIVISION

PROJECT WATSU
WOX 1-72 CLAIMS
YUKON TERRITORY

COMPILATION OF GEOLOGY & GEOCHEMISTRY

Scale: 1"=2640' (1/2 mile)

September, 1979

- 99 -

Author's Qualifications

Eric J. Sacks

Education - Graduated Queen's University,
Kingston, Ontario
M.Sc. in Geology, 1978
- Graduated University of Toronto,
Toronto, Ontario
B.Sc. in Geology, 1977

Work Experience - Employed as field exploration geolgist with Canadian Occidental Petroleum Ltd., Minerals Division, Toronto, Ontario since 1978. Carried out and supervised mineral exploration programs in B.C. and Yukon.

Statement of Expenditures

Claims WOX 1-72

Record Numbers YA 44662 - YA 44733

		Pro-rated[1] Costs
Salaries and Benefits		$1,650.21
Travel and Accommodation		1,005.87
Drafting and Reproduction		353.39
Consultant		495.86
Camp costs and Supplies		1,132.74
Rental of Equipment		188.78
Other Work		482.69
	Sub-total	$5,309.54
Helicopter 2.8 hr. at $340/hr.[2]	$ 952.00	
Geochemical 579 analyses[3]	841.08	$1,793.08
	Total	$7,102.62

Notes

[1] Pro-rated on basis of 5.6 man-days worked on claims conducting geological/geochemical/geophysical surveys out of a total of 115.6 man-days spent on these surveys during Project Watsu (see attached breakdown on following sheet).

[2] Helicopter flying completed by Associated Helicopters Ltd.

[3] Geochemical analyses completed by Chemex Labs, Vancouver,.B.C. (see attached Cost Breakdown).

PROJECT

BC CLAIM GROUPS	TOTAL NO. OF MAN DAYS	PRO-RATED COSTS							SUB-TOTAL "A"	REAL COSTS				SUB-TOTAL "B"	TOTAL "A" + "B"
		SALARIES & BENEFITS	TRAVEL & ACCOMMODATION	DRAFTING & REPRODUCTION	CONSULTANTS	CAMP COSTS & SUPPLIES	EQUIPMENT RENTAL	OTHER WORK		HELICOPTER at $310/hr	hrs.	GEOCHEMISTRY cost	# ana		
ALLEN	4.3	1267.12	772.36	271.35	380.75	869.78	144.96	370.63	4076.95	620.00	2.0	617.80	385	1237.80	5314.75
ASP	5.0	1473.40	898.10	315.53	442.73	1011.38	168.56	430.97	4740.67	682.00	2.2	627.28	396	1309.28	6049.95
COT	3.0	884.04	538.86	189.32	265.64	606.83	101.13	258.58	2844.40	620.00	2.0	378.24	201	998.24	3842.64
KAZ	5.0	1473.40	898.10	315.53	442.73	1011.38	168.56	430.97	4740.67	527.00	1.7	854.64	454	1381.64	6122.31
MAR	1.0	294.68	179.62	63.11	88.55	202.28	33.71	86.20	948.15	310.00	1.0	62.40	18	372.40	1320.55
NEED	5.0	1473.40	898.10	315.53	442.73	1011.38	168.56	430.97	4740.67	837.00	2.7	966.36	560	1803.36	6544.03
PLATE	5.4	1591.27	969.94	340.77	478.15	1092.29	182.04	465.45	5119.91	961.00	3.1	793.24	464	1754.24	6874.15
RAN	5.4	1591.27	969.94	340.77	478.15	1092.29	182.04	465.45	5119.91	1209.00	3.9	775.28	524	1984.28	7104.19
SHAR 1&2	5.4	1591.27	969.94	340.77	478.15	1092.29	182.04	465.45	5119.91	1023.00	3.3	639.36	402	1662.36	6782.27
SHAR 3&4, 9	5.4	1591.27	969.94	340.77	478.15	1092.29	182.04	465.45	5119.91	1488.00	4.8	480.04	619	2268.04	7387.95
SHAR 5&6	5.4	1591.27	969.94	340.77	478.15	1092.29	182.04	465.45	5119.91	899.00	2.9	750.36	469	1649.36	6769.27
SHAR 7&8	5.4	1591.27	969.94	340.77	478.15	1092.29	182.04	465.45	5119.91	837.00	2.7	749.28	460	1586.28	6706.19
SUB-TOTAL (1)	55.7	16413.66	10004.78	3514.99	4932.03	11266.77	1877.72	4801.02	52810.97	10013.00	32.3	7994.28	4952	18007.28	70818.25
YUKON CLAIM GROUPS										at $340/hr					
BIG OX	5.6	1650.21	1005.87	353.39	495.86	1132.74	188.78	482.69	5309.54	1020.00	3.0	879.76	541	1899.76	7209.30
BORDER	1.1	324.15	197.58	69.42	97.40	222.50	37.08	94.81	1042.94	204.00	0.6	165.16	101	369.16	1412.10
CLO	3.9	1149.25	400.52	246.11	345.33	788.87	131.47	336.16	3697.71	1224.00	3.6	316.96	185	1540.96	5238.67
CO	2.2	648.30	395.16	138.83	194.80	445.01	74.16	189.63	2085.89	918.00	2.7	535.24	372	1453.24	3539.13
GOAT	5.5	1620.74	987.91	347.08	487.01	1112.51	185.41	474.07	5214.73	782.00	2.3	1266.48	807	2048.48	7263.21
ICE	4.2	1237.66	754.40	265.04	371.90	848.56	141.59	362.32	3982.47	782.00	2.3	798.64	351	1280.64	5263.11
LICK	5.2	1532.34	934.02	328.15	460.44	1051.83	175.30	448.21	4930.29	748.00	2.2	920.36	546	1668.36	6598.65
MOX	5.9	1738.61	1059.75	372.32	522.43	1193.42	198.90	508.54	5593.97	1292.00	3.8	1205.04	705	2497.04	8091.01
OXY	4.6	1355.53	826.25	290.29	407.31	930.47	155.07	396.49	4361.41	884.00	2.6	732.44	449	1616.44	5977.85
PISA	5.6	1650.21	1005.87	353.39	495.86	1132.74	188.78	482.68	5309.54	714.00	2.1	757.96	512	1471.96	6781.50
SAL	5.6	1650.21	1005.87	353.39	495.86	1132.74	188,78	482.78	5309.54	1190.00	3.5	497.12	411	1687.12	6996.66
TIER	4.9	1443.93	880.15	309.21	433.91	991.10	165.18	422.71	4645.46	1156.00	3.4	750.76	438	1906.76	6552.60
WOX	5.6	1650.21	1005.87	353.39	495.86	1132.74	188.78	482.69	5309.54	952.00	2.8	841.08	579	1793.08	7102.62
SUB-TOTAL (2)	59.9	17651.35	10759.22	3780.01	5303.97	12116.23	2019.28	5162.98	56793.41	11866.00	34.9	9367.00	5997	21233.00	78026.41
TOTALS (1+2)	115.6	34065.00	20764.00	7295.00	10236.00	23383.00	3897.00	9964.00	109604.00	21879.00	67.2	17361.28	10949	39240.28	148844.66

THE WOX CLAIM GROUP

GEOCHEMICAL COST BREAKDOWN

INVOICE #[1]	# OF SAMPLES	DESCRIPTION	COST[2]
31943	10	Cu, Mo, Pb, Zn, Ag, U, Sn, W	$143.50
32440	29	Th	145.00
32463	2	Cu, Mo, Pb, Zn, Ag, Sn, W, U	51.20
32606	2	Th	10.00
31900	48	Cu, Mo, Pb, Zn, Ag, U	338.40
34384	19	W	5.25
34407	29	W	79.75
32701	1	$\%U_3O_8$ assay	10.00
31746	29	U, F, As	268.25
		SUB-TOTAL	$1051.35
		less 20%	
		TOTAL	$ 841.08

1 - all invoices from Chemex Labs unless otherwise noted
2 - cost includes preparation of samples

Department of Indian Affairs and Northern Development

YUKON QUARTZ MINING ACT

FORM "C" - APPLICATION FOR A CERTIFICATE OF WORK

(This form required in duplicate with sketch showing location of work.)

RECEIVED
30 JUN 1980
MINING RECORDER
WATSON LAKE, Y.T.
I.A. & N.D.

OFFICE DATE STAMP

I (Name) Roger H. Wallis Occupation Chief Geologist

(Postal Address) 311 - 215 Carlingview Dr., Rexdale, Ont. M9W5X8

MAKE OATH AND SAY, THAT:-

1. I am the ~~XXXXXX~~ agent of the owner, of the mineral claim(s) to which reference is made herein.

2. I have done, or caused to be done, wotk on the following mineral claim(s):
(Here list claims on which work was actually done by number and name)

WOX 1-72

YA 44662-YA 44733

situated at 61°10'N 132°30'W Claim Sheet No. 105F/1 & 2

in the Watson Lake Mining District, to the value of at least 7,102.62

dollars, since the 25th day of July 19 79,

to represent the following mineral claims under the authority of Grouping Certificate No. _____
(Here list claims to be renewed in numerical order, by grant number and claim name, showing renewal period requested).

YA 44662-YA 447~~33~~ 32 WOX 1-~~72~~ 71

Each claim to be renewed for a period of 1 year.

6 x $80

Pay in Lieu - WOX 72

3. The following is a detailed statement of such work: (Set out full particulars of the work done indicating dates work commenced and ended in the twelve months in which such work is required to be done as shown by Section 53.)

Geological survey, geochemical surveys.

See report by E.J. Sacks referring to the claim group.

See accompanying Statement of Expenditures and cost breakdowns.

Sworn before me at Toronto

this 18 day of JUNE 19 80

R H Wallis

Applicant.

Notary Public

ROBERT J. EVANS
Notary Public, Province of Ontario, for
Canadian Occidental Petroleum Ltd
Expires February 7, 1981