Prospecties; Olympic

**521513** 92N



# SAWYER CONSULTANTS INC.

REPORT ON THE PIN 1-4 CLAIMS

Cariboo Mining Division

British Columbia

for OLYMPIC OIL & GAS LTD.

NOVEMBER 23rd, 1979

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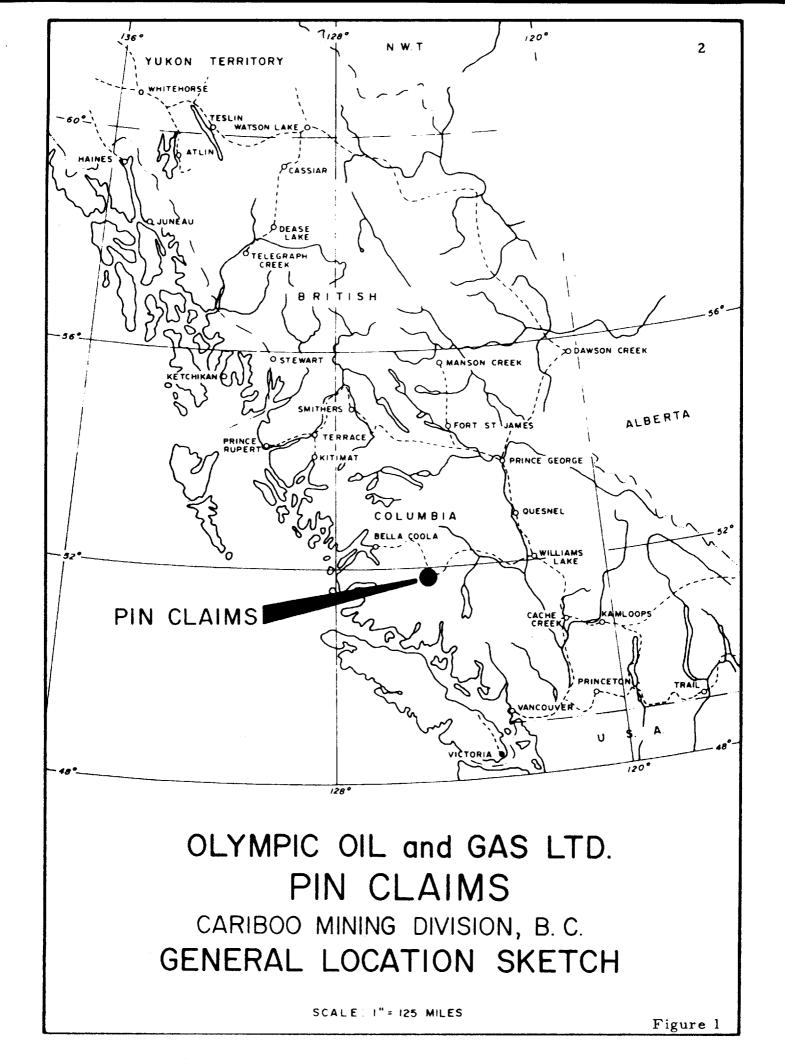
### INTRODUCTION

This report, which is prepared at the request of Mr. Ross Fitzpatrick, President of Olympic Oil & Gas Ltd., is based on a visit to the Pin 1-4 mineral claims carried out by the writer on October 20th, 1979. It describes the general geological setting of the claims, the previous exploration work carried out, and recommends a program of further exploration more completely to investigate the mineralization and geophysical target areas presently known.

## SUMMARY

The Pin 1-4 mineral claims staked on the new British Columbia modified grid system in October 1979 cover part of the area formerly staked by the Pin 1 to 106 mineral claims staked in 1973 on the two post staking system. These earlier claims, owned by Cities Service Minerals Corporation, were staked to cover an area of copper and iron sulphide mineralization discovered during a prospecting program designed to investigate a gossan zone along Chromium Creek. Mapping, geochemical surveys, and induced polarization work by Cities Service Minerals Corporation defined an area of anomalous concentration of sulphides associated with silicified and altered volcanic rocks, including some copper sulphide mineralization, scattered copper soil and rock geochemical anomalies, and an induced polarization frequency effect anomaly partly along and to the southwest of Chromium Creek. Correlation between geochemical anomalies from rocks and from soils and between induced polarization anomalies and geochemical anomalies was rather poor.

Observations by Sawyer Consultants Inc. on these claims on October 19th 1979, confirmed anomalous amounts of sulphides in altered and silicified rocks along Chromium Creek but, in the short time available failed to recognize significant copper mineralization. The style of alteration and mineralization is considered interesting and is thought to be, at least in part, the source of the induced polarization anomaly detected by the Cities Service Minerals Corporation work in 1973 and 1974. Some further investigation of this style of mineralization is considered warranted in the light of the fact that earlier reports describe significant values in gold both from quartz veins and from base metal sulphide zones. A first stage exploration program more fully to investigate this mineralization, consisting of data compilation, geological mapping and sampling is recommended at an estimated cost of \$28,900.00. A second stage program, dependent upon positive results from initial work, would consist essentially of diamond drill testing of these same zones.



## PROPERTY AND OWNERSHIP

The property consists of four claims, named Pin 1-4 inclusive, each consisting of 12 units, staked under the British Columbia modified grid system. The claims have a common legal corner post at the centre of the four claims and each claim has a configuration of 3 units in a north-south direction and 4 units in an east-west direction. The northern corner of the Pin 2 claim overlaps existing Apex group claims which pre-date the Pin claims. The Pin 1, 2, and 3 claims were recorded on October 5th, 1979 in Vancouver. The Pin 4 claim was recorded on October 26th, 1979, also at Vancouver. All are recorded in the name of the staker, R. M. Durfeld, from whom they have been purchased by Olympic Oil & Gas Ltd.

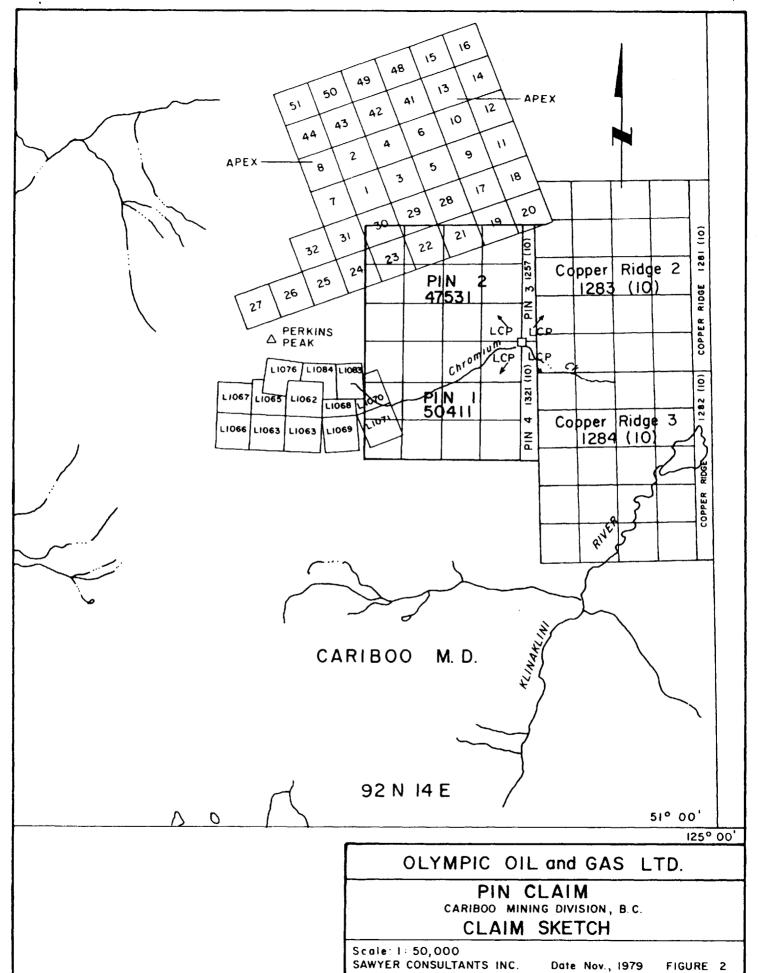
The following table summarizes the pertinent facts relating to these claims.

Claim	Tag No.	Recorded	Expiry Date
PIN 1	50411	October 5th, 1979	October 5th, 1980
PIN 2	47531	October 5th, 1979	October 5th, 1980
PIN 3	47532	October 5th, 1979	October 5th, 1980
PIN 4	50412	October 26th, 1979	October 26th, 1980

The claims are in the Cariboo Mining Division and are shown on British Columbia Department of Mines claim map M92/14E, part of which is reproduced as Figure 2 accompanying this report. During the course of the field examination on October 19th the writer inspected the legal corner post which appears to be accurately located as plotted and to have the legal corner post tags properly affixed. Because of topography it was not possible to run all of the lines around the boundary of the claims and the tags for corner posts not put in have been attached to the legal corner post also. The claims would appear to be adequately staked complying in general with the Regulations. However, checking with more recent claim maps and records, subsequently to the field examination has revealed that Copper Ridge 2 and 3 claims staked prior to the Pin claims but not recorded until after the Pin claims were recorded, cove. most of the area of Pin 3 and 4 claims and because of their earlier staking date take precedence over the Pin claims. No evidence of the Copper Ridge claims staking was seen by the writer during the field examination. R.M. Durfeld has recently advised that the boundaries of the Copper Ridge claims were not run and that virtually the whole Copper Ridge property was witness staked, a single Legal Corner Post only, having been emplaced on the ground.

#### LOCATION AND ACCESS

The Pin claims are immediately east of Perkins Peak, a prominent peak rising to over 9000 feet located 8 air miles south of the village of Kleena Kleene which is approximately 160 miles by road west-southwest from the town of Williams Lake. Chromium Creek, a tributary of the Klinaklini River, flows from



west to east across the property and the legal corner posts for the Pin claims are on the north bank of this creek. Access to the property can be had via a road, now used as a logging road and formerly a private road to Kleena Kleene Gold Mine, which leaves the main Williams Lake-Bella Coola road approximately 16 miles west of the village of Tatla Lake and leads south towards Perkins Peak. Travel by four-wheel drive vehicle is possible along this road for a distance of approximately 18 miles, i.e. to within one mile or less of the claims. From this point access must be had on foot to the actual claims and showings. The area is in the northern part of map area 92N, Mount Waddington, on a scale of 1:250,000; the equivalent map sheet in the 1:50,000 series is not yet published. The coordinates of a point approximately at the centre of the claims are 125°2'30"W, 51°47'N.

## **PHYSIOGRAPHY**

The property lies at an elevation of about 6100 feet near the eastern base of Perkins Peak, thus it is above tree line and characterized by only a few sparse and very small, scrubby, spruce or pine trees. Locally relief can be quite marked although along the valley of Chromium Creek it is only moderate. Immediately southwest of the legal corner post the ground rises quite steeply, and extensive scree slopes are developed. At lower elevations in the valley of the Klinaklini River and to the north towards the village of Kleena Kleene the growth in the area is predominantly of pine which, however, over the past several years has become infested with bark beetle so that large tracts of forest are being killed.

#### PREVIOUS WORK

The area of the current Pin claims was formerly held by a group of 106 mineral claims, staked on the old two post system in July of 1973 by Cities Service Minerals Corporation to cover an area of copper staining and copper mineralization in float which had been discovered during a reconnaissance prospecting program investigating a large gossan area in the valley of Chromium Creek. Work carried out by Cities Service Mi erals Corporation included geological mapping, geochemical sampling, and a ground magnetometer survey in 1973 followed by induced polarization surveys in 1973 and 1974. The geochemical sampling included soils and rock chip samples, and possibly also some silt samples which appear to have been analysed only for copper and arsenic. The descriptive reports by Cities Service Minerals Corporation comment that there appears not to have been good correlation between anomalous copper values obtained from rock chips and from soils and that there is no strong geochemical anomaly in soils coincident with the area of induced polarization anomalies. Referring to copies of work filed by Cities Service Minerals Corporation in the B. C. Department of Mines assessment files, a number of scattered but quite distinct areas of higher copper values in soils occur but these do not provide any consistent pattern except along Chromium Creek, to the east of the location of the legal corner post for the current Pin claims, where a long linear anomaly along the creek, suggesting that it might be hydromorphic, is shown.

The plots of frequency effect data from the IP survey indicates an elongate zone of higher frequency effects along the north bank of the creek with more isolated areas of higher frequency effect immediately south of the creek. The maps themselves are somewhat confusing in their present form and the conclusions drawn in the Cities Service report appear somewhat at odds with the data presented on the plans. The IP anomaly appears to be valid in that it was originally detected in 1973 and redefined by more detailed surveying in 1974. The Cities Service report on the IP work suggests a source of 3-5% polarizable material for the frequency effect anomalies. Resistivity values in this same area are high suggesting a possibly silicified or very hard host rock. Our observations on the ground indicate an area of limonitic staining along Chromium Creek in some of the more schistose rocks which carry a fairly high percentage of sulphides, predominantly pyrite. It would seem to us that the source of the IP anomalies detected by the Cities Service work is probably this type of mineralization. The fact that the IP anomalies indicate some depth to the source, suggests that this mineralization might improve at depth and would be worth confirming.

Prior to the work by Cities Service Minerals Corporation in the early 1970's other work in the Perkins Peak area dates back at least to 1935. The Report of the Minister of Mines of British Columbia for 1938 noted that, "Beginning with the 1935 season there has been a revival of interest in prospecting for gold bearing quartz on Perkins Peak. Most of the activity is centred on the northwesterly slope of the mountain where the Mountain Boss group was staked covering ground containing some old surface workings." Following the staking of the Mountain Boss group of eight claims in 1935, the Mountain City group of six claims was staked in 1937 and in 1938 two Mountain Chief claims were also staked by the same owners. Descriptions of access and location of these several groups of claims indicates that they covered at least part of the area now covered by the Pin claims and/or the adjacent Apex group of claims. The principal group of workings on these several claims is described as consisting of eight open cuts and an adit at elevations ranging from 6925 feet to 7050 feet, so that these were obviously on the higher parts of the western flank of Perkins Peak. In 1938 apparently some 230 feet of horizontal workings and an 18 foot raise were driven on an adit level. Assays reported from several of these cuts include the following:

a sample across 6 feet including veins and 2 feet of quartzite lying between them returned 0.24 oz. gold per ton.

selected sulphides from the same area assayed 0.74 oz. gold per ton and 1 oz. of silver per ton.

Apparently samples taken across wider quartz lenses in the shear zones in these areas yielded nil or only trace assays in gold and silver.

## **GEOLOGY**

## Regional Geology

The geology of the Perkins Peak area has been described by H.W. Tipper in GSC Paper 68-33 of which map 5-1968, geology of Mount Waddington map-area (92N) forms a part. A part of this map is reproduced as Figure 3 of this report. From Tipper's mapping it is apparent that the Perkins Peak area, including the southern two-thirds of the Pin claims group, are underlain by rocks of his map unit 13 which is described as a thick sequence, probably in excess of 5000 feet, of volcanic rocks including andesitic and basaltic breccias and tuffs with minor sedimentary bands including shale, greywacke, and conglomerate, of early Cretaceous age. The rocks underlying the area immediately to the north, including the northern one-third of the Pin claims group, are predominantly sediments - siltstone, greywacke, and conglomerate - of similar age. The rocks of these two map units, 12 and 13, are apparently conformable. To the south, south of the southern boundary of the Pin claims, the volcanic rocks of map unit 13 are in fault contact with granodiorite and quartz diorite, etc. of the Coast Range plutonic rocks of late Cretaceous or early Tertiary age. Along the contact zone these intrusives have caused induration and silicification. It is not clear whether the fairly strong alteration and silicification observed in the volcanic rocks on the Pin claim results from this effect, since no intrusive rocks are mapped in the immediate vicinity, however they may underlie thein, in whole or in part, and the volcanic rocks observed on surface may be part of a pendant within the younger intrusions.

The Perkins Peak area is structurally quite complex having been affected by numerous faults. The area is cut by a series of generally northwest-erly-southeasterly trending major faults of which the Yalakom fault and the Tchaikazan fault to the southwest of it are the major transcurrent faults. Numerous subsidiary faults off these main faults have had the effect of dissecting the area into several blocks with, apparently, a considerable degree of vertical movement in places. The Tchaikazan fault lies to the northeast of the Pin claims. Evidence of faulting and shearing on the Pin claims is related to more minor structures subsidiary to the main faults.

#### Local Geology

Observations made on the Pin claims, in the area of Chromium Creek and in the traverses from the end of the road to Chromium Creek, verify that the claims are underlain predominantly by the volcanic rocks of map unit 13. Within this sequence there are numerous variations including some volcanic breccias and tuffaceous members as well as several zones of more acid appearance, possibly dacitic or rhyolitic in composition. Many of the rocks, particularly along Chromium Creek with which the major sulphide mineralization appears to be associated, are strongly silicified and baked, an effect, which, as discussed above, may result from induration by the younger intrusives which possibly

# QUATERNARY PLEISTOCENE AND RECENT Till, gravel, sand, and alluvium CRETACEOUS TAYLOR CREEK GROUP Shale, siltstone, greywacke and pebble conglomerate HAUTERIVIAN AND (?) YOUNGER Andesitic and basaltic breccia and tuff; minor shale, greywacke, and conglomerate; 13a, metasediments, migmatite; 13b, may be older Siltstone, greywacke, and conglomerate TRIASSIC LATE NORIAN AND/OR RHAETIAN Shale, siltstone, greywacke, conglomerate, volcanic breccia, and tuff; 6a, conglomerate, limestone, greywacke; 6b, may be Cretaceous LATE NORLAN Limestone, shale, and greywacke; 5a, may include some rocks of 6 NORIAN Basalt, andesite, greywacke, siltstone, and conglomerate; 4a. may include some rocks of 1 METAMORPHIC AND PLUTONIC ROCKS CRETACEOUS OR TERTIARY LATE CRETACEOUS AND/OR EARLY TERTIARY COAST PLUTONIC ROCKS: quartz diorite, granodiorite, and diorite; B<sub>1</sub> possibly older granediorite

(Part of GSC Map 5-1968) by H.W. Tipper

Scale: 1 inch = 2 miles

REGIONAL GEOLOGY OF PERKINS PEAK AREA

B 22 8

Figure 3

underlie the volcanic members in the claims area. The degree of silicification and the amount of disseminated sulphides, predominantly pyrite, are the most striking features of the rocks on the Pin claims area. Structurally, the most obvious feature seen on the claims is a fairly strong shear zone which runs along part of Chromium Creek immediately south and west of the legal corner post and can be traced in outcrop up the hill into the area southeast of the small pond in which Cities Service Minerals Corporation maps indicate a magnetic high and an area of malachite staining. The trend of this shear as we observed in the field appears to be about N40°E and to be roughly parallel to this section of the creek rather than to have a more easterly direction (about N80°E), as shown on the Cities Service maps. The contact between highly sheared and sericitized rocks immediately northwest of this shear zone and more massive, much less silicified andesitic volcanics to the southeast of it is quite marked and the amount of mineralization in the more sheared rocks is much greater than in the less altered andesitic rocks.

Although strong silicification and heavy sulphide mineralization was observed in this area, only very minor amounts of chalcopyrite were seen during our examination. An effort was made to locate the chalcopyrite float marked on the earlier Cities Service maps however the amount of copper mineralization seen was only very minor and little or no malachite staining, also noted on the Cities Service maps, was seen. A grab sample of highly silicified volcanic material carrying abundant pyrite and one or two specks of chalcopyrite was collected from this area and submitted for assay to Bondar-Clegg & Co. Ltd. in Vancouver. It returned an assay of less than 0.002 oz. /ton gold, 0.04 oz. /ton silver, 0.01% copper. These rocks are not part of the area of the IP response which lies to the west and southwest along Chromium Creek and is on much higher ground which was snow-covered at the time of the field examination. No distinct quartz veins as such were observed such as those described in the earlier literature from which impressive gold values were obtained, however the amount of sulphide mineralization is obviously anomalous and the fact that earlier workers obtained very significant gold values from rocks carrying good sulphide content suggests that more careful investigation of these zones, which are probably the same zones defined by the Cities Service IP work, is worthwhile.

Clearly the amount of time available during the field examination, which was made in rather adverse weather conditions did not permit of detailed examination of all of the geological features of the area. The observations made were, however, sufficient to verify the existence of silicic alteration in many of the volcanics, and the occurrence of more siliceous members within the volcanic sequence characterized by higher sulphide content, and to indicate that the IP anomalies outlined by work done by Cities Service Minerals Corporation in the early 1970's is probably defining a valid zone of anomalous sulphide concentration within these rocks. In our opinion therefore more careful investigation of these zones is warranted.

## CONCLUSIONS

Based on the information described above, the following conclusions are drawn with regard to the mineralization on part of the Pin 1-4 claim group.

- (1) The area is underlain predominantly by volcanic rocks which have been affected by locally quite intense faulting and shearing and have been altered and mineralized.
- (2) The intensity of silicification and the concentration of sulphides in these altered zones appears to be anomalous and has been at least in part defined by IP surveys carried out by Cities Service Minerals Corporation in the early 1970's.
- (3) These anomalies and the mineralization in general does not appear to have been adequately tested in the past and no drilling appears to have been done.
- (4) During our field examination no significant amounts of copper mineralization were observed at surface although, due to adverse weather conditions, the extent of the area which it was possible to examine was restricted.
- (5) From references to earlier work and two reports of the work by Cities Service Minerals Corporation it is apparent that significant gold values do occur in quartz veins and in association with sulphide mineralization in these rocks in the Perkins Peak area.
- (6) On the basis of these observations some further investigation of this mineralization is warranted.
- (7) The mineralization and alteration extends through the area along and to the north of Chromium Creek on Pin 1 and 2 claims eastwards, through the common corner of the four claims, onto Pin 3 and 4, and the earlier Copper Ridge 2 and 3 claims. The stronger part of the IP anomaly defined by Cities Service Minerals Corporation work appears to lie within the boundaries of the Copper Ridge claims. The magnetic "high" and the area of strong copper staining is west-northwest of the legal corner post, on Pin 1 claim.

## RECOMMENDATIONS

Accepting that some further investigation of this mineralization is warranted, a modest first stage program of further exploration is recommended. A suitable program would include the following:

(a) All of the previous data should be reviewed in more detail and compiled and plotted in relation to the current Pin claims. In order to do this properly, it will be necessary to obtain the original maps and reports of work done by Cities Service Minerals Corporation.

- (b) The old grid should be relocated and re-marked to provide control for further work and to establish with some accuracy the location of previously defined anomalies.
- (c) The area should be geologically mapped with more detailed attention being paid to the altered and mineralized zones along Chror tium Creek and in the areas of the IP anomalies. A general reconnaissance of the entire claim group should be made to locate possible old workings, trenches, etc., and any quartz veins which might be carrying gold values.
- (d) The best mineralized zones should be investigated by some more detailed sampling, including, if necessary, rock trenching and blasting.
- (e) If results of the above work are encouraging, the IP anomalies and/or other structural mineralized zones should be investigated by diamond drilling, which would, perhaps, properly form part of a second stage program.

#### COST ESTIMATES

The estimated costs of the recommended first stage program, and for a suggested drilling program which, contingent upon results of the first stage work, would constitute a second stage program are given below.

## Stage I

Data compilation and re-plotting, etc.		\$ 1,200.00
Preparation of control grid by re-locate-marking old lines, etc est. 20	ating and	3,000.00
Geological mapping Detail - 14 days @ \$250.00 General reconnaissance and pro Field assistant - 24 days @ \$125		3,500.00 2,500.00 3,000.00
Trenching and sampling  Labour  Rock drill rental and explosive,	\$2,100.00 supplies, etc. 500.00 \$2,600.00	2,600.00
Assaying - estimate 75 samples @ \$14	4.50	1,100.00
Transportation, travel, etc.		2,000.00
Camp and supplies		4,000.00
Engineering, supervision and consulti	ng	3,500.00
Contingency		2,500.00
	Total Stage I	\$28,900.00

## Stage II

Contingent upon favourable results from the work described in Stage I above, a second stage program to investigate the mineralized zones and area of IP anomalies defined by work completed by Cities Service Minerals Corporation in 1973-74, would logically consist of diamond drilling. The exact location of drill holes would be determined by the work completed in Stage I. Provision is made below for 1500 feet of BQ core drilling.

Diamond drilling - 1500 ft. of BQ @ \$22.00/ft.	\$33,000.00
Mob-demob	5,000.00
Assaying, estimate 30 samples @ \$14.50	435.00
Transportation and travel	1,200.00
Camp, equipment, supplies	1,800.00
Engineering and supervision	2,500.00
Contingency	4,000.00
Total Stage II	\$47,935.00

Respectfully submitted,

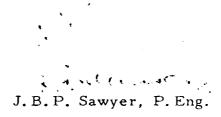
SAWYER CONSULTANTS INC.

J.B.P. Sawyer, P. Eng.

## CERTIFICATE

I, J.B.P. Sawyer, DO HEREBY CERTIFY:

- (1) That I am a consulting geologist with business office at 1 425 Howe Street, Vancouver, B. C., V6C 2A9, and President of Sawyer Consultants Inc.
- (2) That I am a graduate in geology of Manchester University (B. Sc. 1953) and of the University of Western Ontario (M. Sc. 1957).
- (3) That I am a Registered Professional Engineer (geological) in the Association of Professional Engineers of the Province of British Columbia.
- (4) That I am a Fellow of the Geological Association of Canada (1965), a Member of the Canadian Institute of Mining and Metallurgy (1960), a Fellow of the Geological Society of London (1978), and Fellow of the Institution of Mining & Metallurgy, London (1979).
- (5) That I have practised my profession as a geologist for the past twenty-four years.
- (6) That the information, opinions, and recommendations in the attached report are based on personal observations on the Pin claim made on October 19th, 1979, and on personal research of published maps and reports, and of pertinent assessment reports in the files of the British Columbia Department of Mines.
- (7) That I own no interest in the Pin claims, nor in the shares or securities of Olympic Oil & Gas Ltd., nor do I expect to receive any such interest.



Dated at Vancouver, British Columbia, this 23rd day of November, 1979.

## SELECTED REFERENCES

Hretchka, Michael, 1974: Apex-Summit group of mineral claims - assessment

filing submission for Kleena Kleene Gold Mines Ltd.;

B.C. Dept. Mines & Pet. Resour. Assessment

Report No. 5301.

Murton, J.W., 1973: Geological, geochemical and geophysical report,

PIN Claims, Cariboo Mining Division, B.C.; Assessment report for Cities Service Minerals Corporation - B.C. Dept. Mines & Pet. Resour.

Assessment Report No. 4729.

Murton, J.W., 1974: Geophysical report on the PIN Claim Group (Pin 1-

106) located near Tatla Lake, British Columbia in the Cariboo Mining Division; Assessment report for Cities Service Minerals Corporation - B. C. Dept.

Mines & Pet. Resour. Assessment Report No. 5522.

Sargent, H., 1938: Perkins Peak Section, in Annual Report of the

Minister of Mines for the Province of British Columbia for the year ended 31st December 1938.

Part F, pp. F38-F41.

Tipper, H. W., 1969: Mesozoic and cenozoic geology of the northeast part

of Mount Waddington map area (92N), Coast District,

British Columbia; Geol. Surv. Can. Paper 68-33

(includes GSC Map 5-1968).

APPENDIX	
Copy of Bondar-Clegg & Co.	Ltd. Assay Certificate
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 	SAWYER CONSULTANTS INC

To: Dawy	oonoultanto,	THE.
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PAGE No. \_\_\_\_

BONDAR-CLEGG & COMPANY LTD.

REPORT	NO	n 4	10/4

DATE: November 5, 1979

#1 - 425 Howe Street Vancouver, B.C. V6C 2A9

CERTIFICATE OF ASSAY

Samples submitted: October 24, 1979 Results completed: November 5, 1979

PROJECT: PIN

I hereby certify that the following are the results of assays made by us upon the herein described ore samples.

MARKED	GC	LD	SILV	√ER	Cu							
	Ounces per Ton	Grams per Metric Ton	Ounces per Ton	Grams per Metric Ton	Percent							
17120	<0.002		0.04		0.01							
17130	<0.002	:	0.04		0.01							
<b>V</b>												
										]		
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NOTE:

Rejects retained three weeks Pulps retained three months unless otherwise arranged. Reguleren resaver/Frofince of British Columbia