GREAT WESTERN PETROLEUM CORPORATION

GEOLOGICAL AND GEOCHEMICAL REPORT

SILVER POND GROUP

OMINECA MINING DIVISION

BRITISH COLUMBIA

NTS: 94E/6W

LOCATION: $57^{o}18'$N, $127^{o}12'$W

OWNER: GREAT WESTERN PETROLEUM CORPORATION

AUTHOR: N.M. CAIRA
Nadia Caira

DATE: JANUARY 1982

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INTRODUCTION

The Silver Pond Group includes the following mineral claims: Silver Pond, Silver Sun, Silver Creek, Silver Grizzly Fr., Silver Bullett Fr. and the Silver Peak Fr. These claims and fractions are situated south of Toodoggone River, 20 kilometres northwest of Toodoggone Lake and 300 kilometres by air, north of Smithers. Access is by fixed wing aircraft to the Sturdee River airstrip and by helicopter from there to the claims. Refer to Figure T-81-17 for the location of the Silver Pond group.

The property is located east of Lawyers Pass and the claims adjoin the Lawyers Prospect on the west.

The claims cover valleys and broad uplands at elevations ranging from 1080 to 1140 metres. The south end of the property extends above timberline where alpine grasses and mosses are found. Vegetation in major stream valleys is characterized by muskeg, grass, willow buckbrush and patches of spruce trees.

Work done on the claims in July and August consisted of geological mapping and geochemical grid sampling to cover an area of gold and silver anomalies which were originally found by Kennco Exploration in the early 1970's.

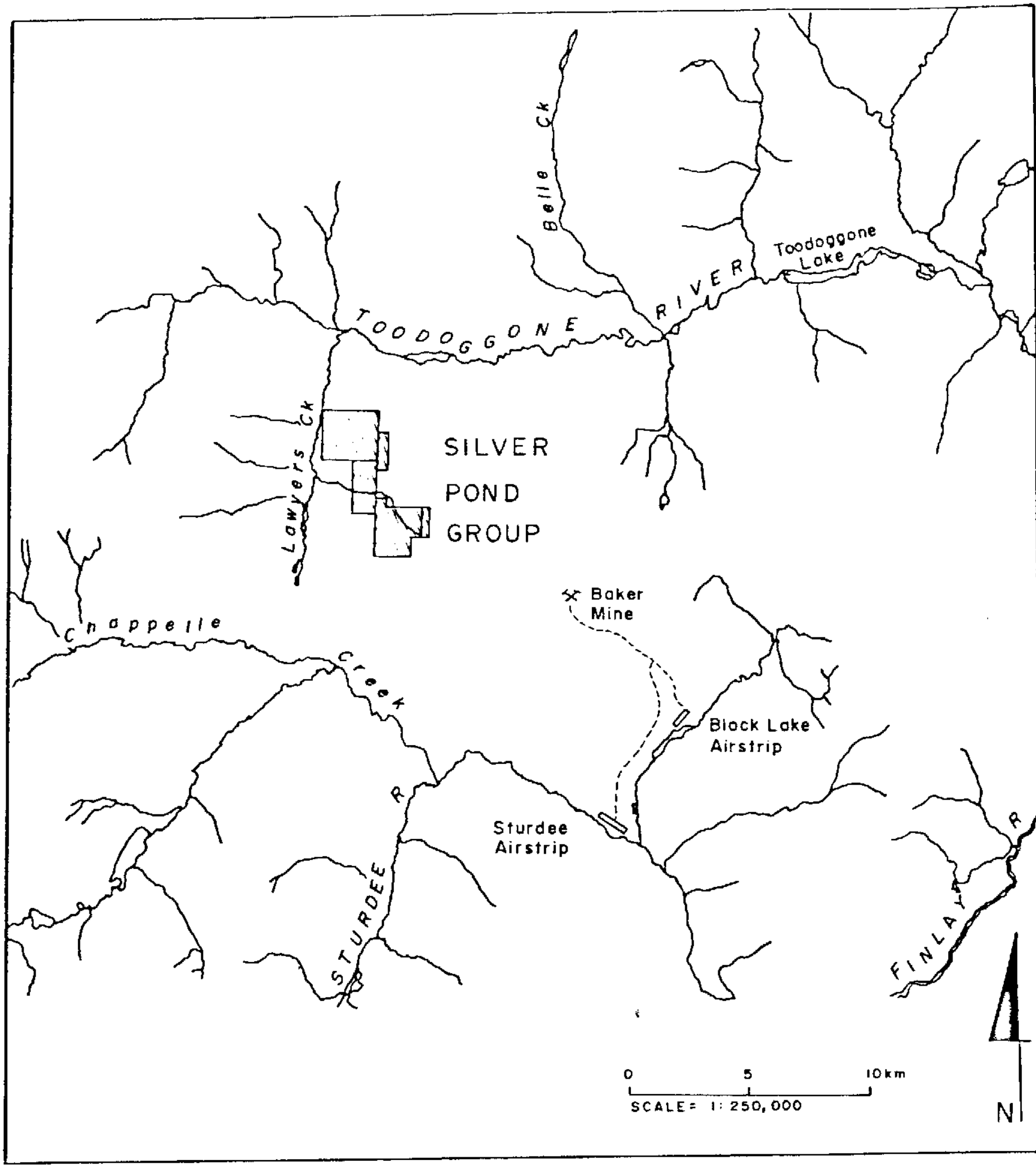


Figure. T-81-17 LOCATION OF SILVER POND GROUP

PROPERTY DEFINITION

History

The area north of the Toodoggone River received attention involving gold placer mining dating back to the 1930's. In the 1960's interest in porphyry copper and molybdenum deposits spurred companies to explore the widespread gossan zones that exist over much of the region.

The Silver Pond group of claims were originally staked in the Spring of 1979 to cover two gold/silver geochemical anomalies. These claims adjoin the Lawyers and Kodah Prospects owned by S.E.R.E.M. Ltd. The Kodah claim has a large gold and silver geochemical anomaly found by Kennco as a result of a grid sampling program. This anomaly strikes approximately north-south.

In July 1981, the Silver Pond prospect was optioned from C.F. Kowall, a prospector who had worked on the claims the previous year. In 1981, detailed soil and rock chip sampling and geological mapping was done by Great Western Petroleum Corporation to determine the precious metal potential of the Silver Pond Group.

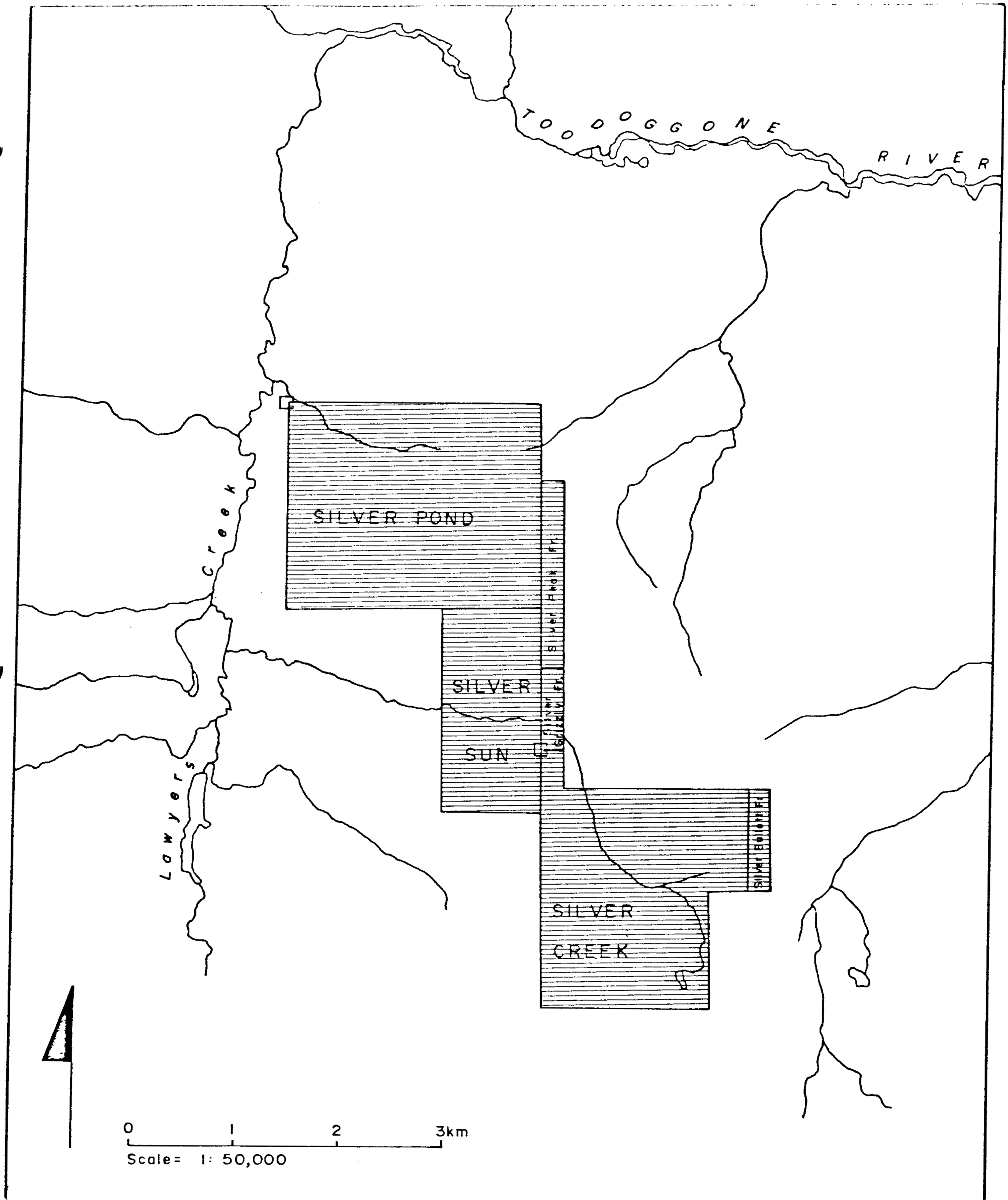
List of Claims

CLAIM NAME	RECORD NO.	UNITS	DATE RECORDED
Silver Pond	1771	20	May 16, 1979
Silver Creek	1772	20	May 16, 1979
Silver Sun	2288	8	Nov. 20, 1980
Silver Grizzly Fr.	2879	-	July 9, 1980
Silver Bullett Fr.	2880	-	July 9, 1980
Silver Peak Fr.	2881	-	July 9, 1980

Refer to Figure T-81-18 for the configuration of the Silver Pond group of claims.

Owner and Operator

The claims are currently owned and operated by Great Western Petroleum Corporation.



NTS 94E / 6W

Figure. T-81-18 LOCATION OF SILVER POND GROUP CLAIMS

Economic Assessment of the Property

A showing on the Silver Creek claim has very high gold and silver values in a silicified zone which is highly irregular and can be traced intermittently for approximately 40 metres along Silver (or Cloud) Creek. Overburden covers any possible extensions to this zone. The high gold and silver values can be correlated with the projected strike of the Cliff Creek gold-silver breccia zone which about 1200 metres to the north. The patches of silicified rock occasionally are characterized by a chalcedonic stockwork with disseminated pyrite.

GEOCHEMICAL SURVEY

Sample Collection and Preparation

A total of 385 soil, 16 silt and 122 rock samples were collected from the Silver Pond Group. For control, surveyed grids measuring 100 metres by 100 metres were run on both the Silver Pond and Silver Creek claims.

Soil samples were collected using stone mason hammers and placed into high strength, gussetted brown paper bags. Hip chains, compasses and 1:10,000 scale topographic maps aided in the surveying of the grids.

Soil and silt samples were oven dried and seived to minus 80 mesh before being sent to Min-En Laboratories in North Vancouver to be analyzed for gold, silver, lead, zinc and copper.

Refer to Appendix 'A' for analytical procedure for gold, silver, lead, zinc and copper.

Sample locations and results are plotted on Figures T-81-19 to 24 located in the pocket of this report.

Interpretation

The most impressive surface showing within the claim group is found in silicified, pyritic rocks on Silver Creek. Geochemical values for gold and silver from this area range up to 880 ppb and 19.5 ppm respectively. Due to thick overburden however, the soil and rock geochemistry was only of limited use in extending the system.

In the vicinity of the Silver Creek showing there are numerous rhyolite dykes or sills which may be related to local occurrences of silicified, pyritized volcanic rocks.

Statistical Interpretation

The background values for this set of data were obtained by calculating the median value for each element of the data distribution. The median is defined as "the value for which one half the values in the distribution are less and one half are greater". The median was obtained by ranking the results for each element in order of increasing magnitude. By counting along the ranked line of numbers until half the total sample numbers was arrived at, the median or background population was obtained.

Values for gold, silver, copper, lead and zinc are plotted on Figures T-81-20 to T-81-24, located in the back pocket of this report.

The following tabulation indicates background, weakly, moderately and highly anomalous values for the soil sample results obtained from the Silver Pond Prospect.

Element	Median Or Background	Threshold 2 x B.G.	Weak 2-4 x B.G.	Moderate 4-8 x B.G.	Strong 8-16 x B.G.	Extreme 16 x B.G.
Cu	14 ppm	28 ppm	29-56 ppm	57-112 ppm	113-224 ppm	> 225 ppm
Pb	16 ppm	32 ppm	33-64 ppm	65-128 ppm	129-256 ppm	> 257 ppm
Zn	47 ppm	94 ppm	95-188 ppm	189-376 ppm	377-752 ppm	> 753 ppm
Ag	0.9 ppm	1.8 ppm	2.8-3.6 ppm	4.6-7.2 ppm	8.2-14.4 ppm	>15.4 ppm
Au	5 ppb	10 ppb	11-20 ppb	21-40 ppb	41-80 ppb	> 81 ppb

GEOLOGICAL FIELD WORK

Geological mapping was done in conjunction with soil geochemistry. The geochemical grids, airphoto mosaics and topographic maps at a scale of 1:10,000 served as controls for the mapping. Geology was plotted at a scale of 1:10,000 and is shown on Figure T-81-25 in the pocket of this report. About 8 square kilometres were covered by the geological mapping.

GENERAL GEOLOGY

The Silver Pond Group, lying within the eastern margin of the Intermontane Belt is underlain by the Middle Unit of the Toodoggone Volcanic Assemblage, of early Jurassic age.

Three distinct rock types have been mapped. Ferricrete deposits of recent age also occur in various locations around the claims.

The Silver Creek Claim is almost entirely covered by overburden. Frost heaved angular fragments are believed to be representative of bedrock and were used as prospecting guides to some extent.

DETAILED GEOLOGY

Toodoggone Assemblage

MIDDLE UNIT

The Middle Toodoggone Volcanic unit is composed of Green Feldspar Porphyry and its altered equivalents, namely Silicified Pyritic Volcanic Rocks and Quartz-Breccia. Rhyolites are also believed to be related to the Middle Toodoggone Volcanit Unit.

Green Feldspar Porphyry - These rocks have an aphanitic, dark-green to grey groundmass composed dominantly of chlorite, with pink hematized and/or epidotized plagioclase phenocrysts up to 0.5 cm. The feldspar phenocrysts are often altered to clay minerals. Other phenocrysts include quartz, acicular hornblende and chloritized biotite. The rock has major amounts of carbonate alteration with fine-grained, platey calcite disseminated throughout as well as fracture fillings. Other alteration minerals include magnetite and hematite as fine disseminations with manganese and limonite.

Areas of intense fracturing in these rocks are overprinted by silicification and locally alurite.

Silicified, Pyritic Volcanic Rocks - These rocks have an aphanitic, siliceous, blue-grey groundmass which weather to an orange-brown colour. The rocks have both manganese and limonite staining and contain traces of finely disseminated sulfides.

The alteration products include goethite, jarosite and possibly some scorodite. The rocks display concoidal fracturing due to the intense silicification and often contain quartz stringers up to half an inch wide. Occasionally the groundmass is greenish-grey with "ghosts" of orange, hematized feldspar phenocrysts still visible. The rock appears to have been a feldspar porphyry which has been brecciated, silicified, and mineralized with sulfides. Minor calcite veining was seen with local reddish areas due to hematite.

Patches of silicified Green Feldspar Porphyry with quartz stockwork can been seen in frost heaved felsenmeer and possibly is representative of outcrop below the surface. These areas have been labelled as "Quartz Breccia" on geology map T-81-25.

Rhyolite - This rock has an aphanitic pink, siliceous groundmass with quartz eyes measuring up to 5 mm. across. The rock exhibits a pink to orange colour on fresh surface and a yellow/orange to bleached white weathered surface. Remanent boxwork textures, both lined and filled with limonite are common with traces of fine disseminated sulfides. The sulfides are more common in the quartz stringers that measure up to 0.5 cm. across. The only mafic mineral in this rock is biotite which occurs as felted books measuring up to 4 mm. in diameter. The rock has moderate fracturing with dendritic manganese oxide coatings along the fractures in the more weathered areas. The rhyolite appears to occur as sills or dykes.

FERRICRETE

At various locations within the claims, patches of orange/red transported gossans occur. These gossans are composed of bedrock and felsenmeer material cemented together by limonite.

STRUCTURE

Stratification is not easily distinguishable in the volcanic rocks. The original bedding structures have been complicated by strong faulting and brecciation, however the volcanic units have an apparent dip of 15-20^{o} to the west.

There are two major fault systems in the area with attitudes of 320-330/90^{o} and 030-040^{o}/90^{o}. The overall fracturing system has the same general orientation as the faulting and increases in intensity marginal to the faults. The mineralization seems to occur in the more north-south trending fault system.

ALTERATION AND MINERALIZATION

The Silver Pond Claims cover a mineralized area bearing interesting values in gold and silver. A detailed study of this area discloses a fault zone in which the surrounding rocks have been intensely silicified and altered, with major amounts of quartz stockworks and veins throughout the rock units. These silicified zones are locally mineralized with a blue-grey matrix caused by fine disseminations of arsenopyrite and pyrite.

The faulted areas that cut the volcanic units have been somewhat altered to a white clay. In these kaolinized areas there are irregular patches of silicified rock, especially noted on the Silver Grizzly and Silver Sun claims. These patches are characterized by quartz flooding and occasionally vuggy quartz stringers with disseminated pyrite. In places there is chlorite and sericite alteration of hornblende, biotite and feldspars.

The degree of silicification increases towards the major quartz veining as does the frequency of quartz veinlets. The quartz veins vary in size and colour with some composed of banded greyish, chalcedonic quartz and some occuring with epidote giving them a pistachio green colour. Minor hematite gives a reddish purple tinge to the groundmass.

Silicification can be directly correlated with high silver and gold values on these claims. Pyrite and arsenopyrite are the only sulfides encountered.

CONCLUSIONS AND RECOMMENDATIONS

Extensive overburden on the Silver Pond Group greatly hampered geochemical exploration and mapping efforts.

This area requires further prospecting and trenching to better delineate the areas of mineralization. The mineralization appears to be both stratigraphically and structurally controlled by faulting.

The alteration and structure on this property is reflected in the epithermal vein zoning model developed by Larry Buchanan. See Appendix 'B' - Vein Zoning Model.
If surface work fails to produce substantial evidence of gold and silver mineralization, diamond drilling is recommended to test this 'vein zoning model'.

COST STATEMENT - Silver Pond, Silver Bullet Fr., Silver Grizzley, Fr., Silver Creek, Silver Peak, Fr., Silver Sun - (Silver Pond Group)

Geochemical Surveys and Mapping

1. WAGES

Name	Per Diem Rate	Specific Dates	No. Days	Amount
N. Carter (geologist)	$200.00	June 10, July 19	2	$400.00
L. Eccles (geologist)	116.58	June 10	1	116.58
D. Forster (geologist)	93.73	June 10, July 14, 16 17, 19, 21, Aug. 23	7	656.11
N. Caira (geologist)	83.51	July 14, 19-23	6	501.06
K. Hudson	52.85	July 17, 21	2	105.70
C. Leupold	57.96	July 17, 21, Aug. 7, 12, 13	5	289.80
L. Tamaki	63.06	July 17, 23	2	126.12
I. Hribar (cook)	66.38	(Proportioned amongst other claims: 7.21% x 61 days)	4.39	291.94
C. Carter (Lab. Techn.)	52.85	(Proportioned amongst other claims: 7.21% x 38 days)	2.74	144.80
(Proportion of General Camp Days allocated to this Group: 7.21% x 256 days @ $87.43/day)			18.46	1613.96
		TOTAL -	50.59	$4246.07

2. TRANSPORTATION

A. Mobilization

Charter Aircraft Smithers-Sturdee Strip (Total cost of $6970.60 split between other properties) (Part of Invoice #4723B - Kelowna Flightcraft Aircharter - May 31/81)	$379.24
Invoice #67308 - Trans Provincial	123.33
	$502.57

B. Demobilization

(Split between other properties) Charter Aircraft Sturdee Strip-Smithers Aviair Aviation Ltd. Invoice #0450 - Sept. 8/81 (Total $744.00)	$53.64
Airfares (5 crew only - Smithers-Vancouver) PWA (Total $510.26)	36.79
	$90.43

C. Helicopter Support

(Split between properties) Total 95.25 hrs. - Viking Helicopter June 10, July 14, 16, 17, 19-23, Aug. 7, 12, 13, 23 @ $428.00/hr. including fuel -	$2939.30
Total 12.18 hrs. - ALC Airlift Corp. July 30 - August 1 @ $415.00/hr. including fuel -	364.44
	$3303.74

3. CAMP COSTS

A. Room and Board

50.59 man days @ $50.00/day (including all or parts of June 10, July 14, 16, 17, 19-23, Aug. 7, 12, 13, 23	$2529.50

3. B. Expediting

(Split between properties)
Total $1411.13 Bema Industries
Invoice Nos. 0990 - July 15/81
0934 - June 30/81
0852 - June 15/81
0805 - May 31/81 — $101.74

4. GEOCHEMICAL ANALYSIS

385 soil and 16 silt samples analyzed for Cu, Pb, Zn, Ag and Au @ 10.55 per sample (Part of Invoice #8532, 8675 - Min En Laboratories)	$4230.55
122 rock samples analyzed for Cu, Pb, Zn, Ag, and Au @ 11.95 (Part of Invoice #8532, 8675 - Min En Labs.)	$1457.90
Sample Shipping Costs and Supplies (Part of Invoice Nos. 8714, 8570, 8558, 8656, 8658, 8355, 8256, 8190, 8207) - Total $1431.45	$103.21
	$5791.66

5. REPORT PREPARATION

A. Writing and Drafting	$400.00
B. Airphoto Mosaic and Maps - Burnett Resource Surveys Ltd. - Total $4242.11 (proportioned)	$305.85
	$705.85

SUMMARY OF COSTS

1. Wages	$4246.07
2. Transportation:	
A. Mobilization	502.57
B. Demobilization	90.43
C. Helicopter Support	3303.74
3. Camp Costs:	
A. Room and Board	2529.50
B. Expediting	101.74
4. Geochemical Analysis	5791.66
5. Report Preparation	705.85
	$17,271.56

APPENDIX 'A'

Analytical Procedures for gold, silver, lead, zinc and copper.

APPENDIX 'A'

ANALYTICAL PROCEDURES

Samples are processed by Min-En Laboratories Ltd. in North Vancouver employing the following procedures:

After drying the samples at 95°C soil and stream sediment samples are screened by 80 mesh sieve to obtain the minus 80 mesh fraction for analysis. The rock samples are crushed by a jaw crusher and pulverized by ceramic plated pulverizer.

1.0 gram of the samples are digested for six hours with HNO_3 and $HClO_4$ mixture.

After cooling samples are diluted to standard volume. The solutions are analyzed by Atomic Absorption Spectrophotometers.

Copper, Lead, Zinc and Silver are analyzed using the CH_2H_2 - Air flame combination on these sample solutions.

For gold geochemical samples, a suitable weight 5.0 or 10.0 grams are pretreated with HNO_3 and $HClO_4$ mixture.

After pretreatments the samples are digested with Agua Regia solution, and after digestion the samples are taken up with 25% HCI to suitable volume.

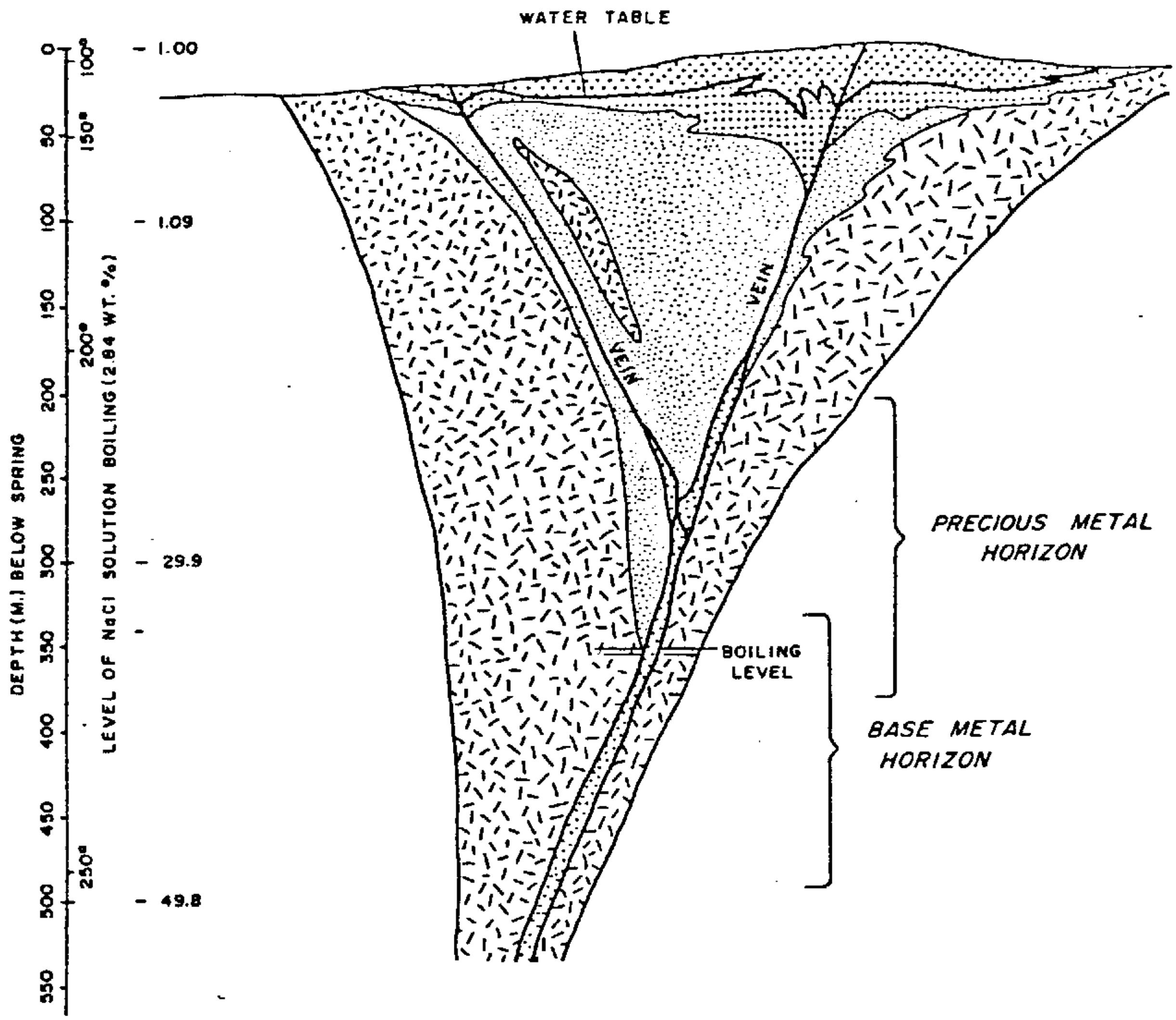
At this stage of the procedure copper, silver and zinc can be analyzed from suitable aliquot, by Atomic Absorption Spectrophotometric procedure.

Further oxidation and treatment of a least 75% of the original sample solutions are made suitable for extraction of gold with Methyl Iso-Butyl Ketone.

With a set of suitable standard solutions, gold is analyzed by Atomic Absorption instruments. The obtained detection limit is 5 ppb.

APPENDIX 'B'

Vein Zoning Model



Siliceous Residue'Opal, Cristobalite, Anatase, HgS, Rare Pyrite

Alunite, Kaolin, Pyrite; often extends downward along vein as Kaolin Halo around and above ore

Propylitization' Chlorite, Illite, Carbonate, Pyrite, Montmorillonite; Epidote increases with depth

Illite, Celadonite in higher levels, may pass with depth to Sericite, Adularia

Silicification usually with Adularia and/or minor Albite

Adularization, with no to minor Albite above boiling level, minor to major Albite below

FIGURE 2

BIBLIOGRAPHY

Buchanan, L.J., 1980, Precious Metal Deposits Associated With Volcanic Environments in the Southwest: Paper, Geoscience Forum, Whitehorse, Y.T. 1980.

Eimon, Paul, 1981, Exploration For Epithermal Gold and Silver Deposits - The Epithermal Model. Gold Symposium, Vancouver, April 1981.

QUALIFICATIONS

I, Nadia M. Caira, do hereby certify that:

1. I am a graduate of the University of British Columbia (B.Sc. geology).

2. I have worked, for the past three field seasons, doing geological fieldwork in British Columbia and the Yukon.

3. Between July - August, 1981 I assisted in a field program on the Silver Pond claims on behalf of Great Western Petroleum Corporation.

Nadia Caira

Nadia M. Caira

ATTESTATION

I, Nicholas C. Carter of Victoria, British Columbia, do hereby certify that:

1. I am a practising geologist, registered with the Association of Professional Engineers of British Columbia since 1966.

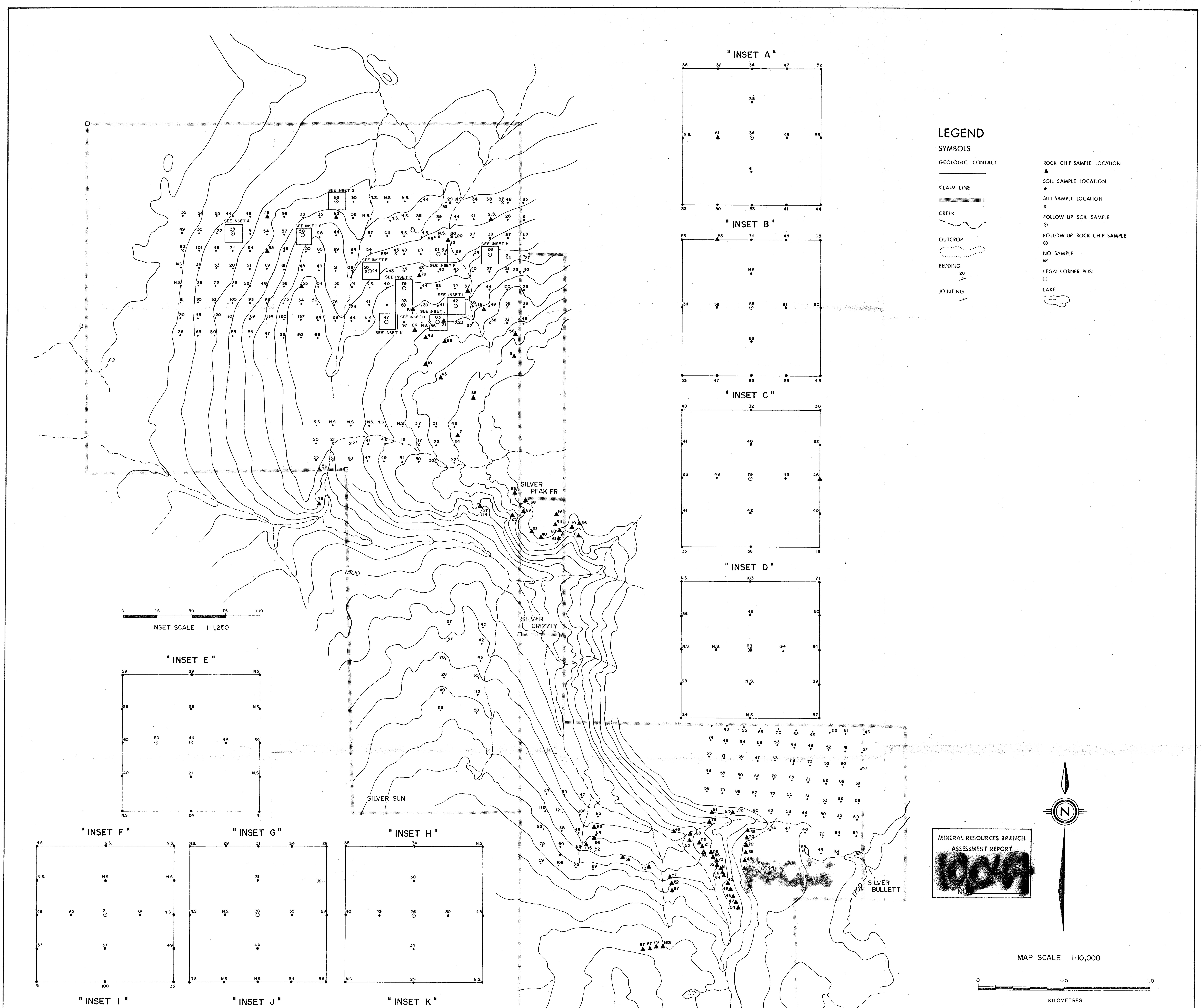
2. I am a graduate of the University of New Brunswick with B.Sc. (1960; Michigan Technological University with M.S. (1962) and the University of British Columbia with Ph.D. (1974).

3. I have practised my profession in British Columbia and Eastern Canada and the Western United States for the past 21 years.

4. I personally oversaw the geological and geochemical program carried out on the Silver Pond Group of Claims and will attest to the authenticity of data contained in this report.

N.C. Carter Ph.D. P.Eng

N.C. Carter
Ph.D., P.Eng.



GREAT WESTERN PETROLEUM CORPORATION

SILVER POND GROUP
SOIL and ROCK
ZINC (ppm)

GEOCHEMISTRY

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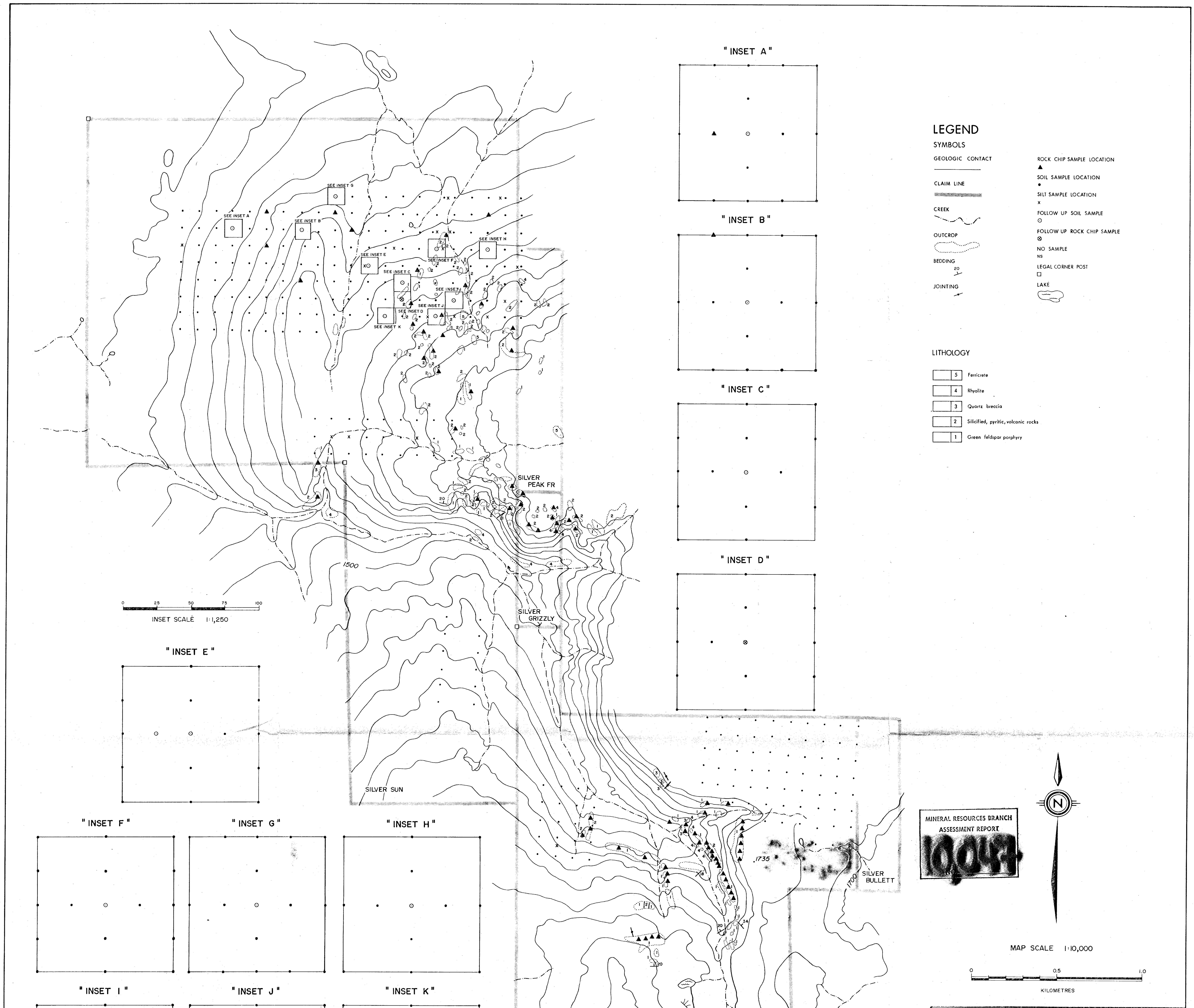

GREAT WESTERN PETROLEUM CORPORATION

SILVER POND GROUP

GEOLOGY

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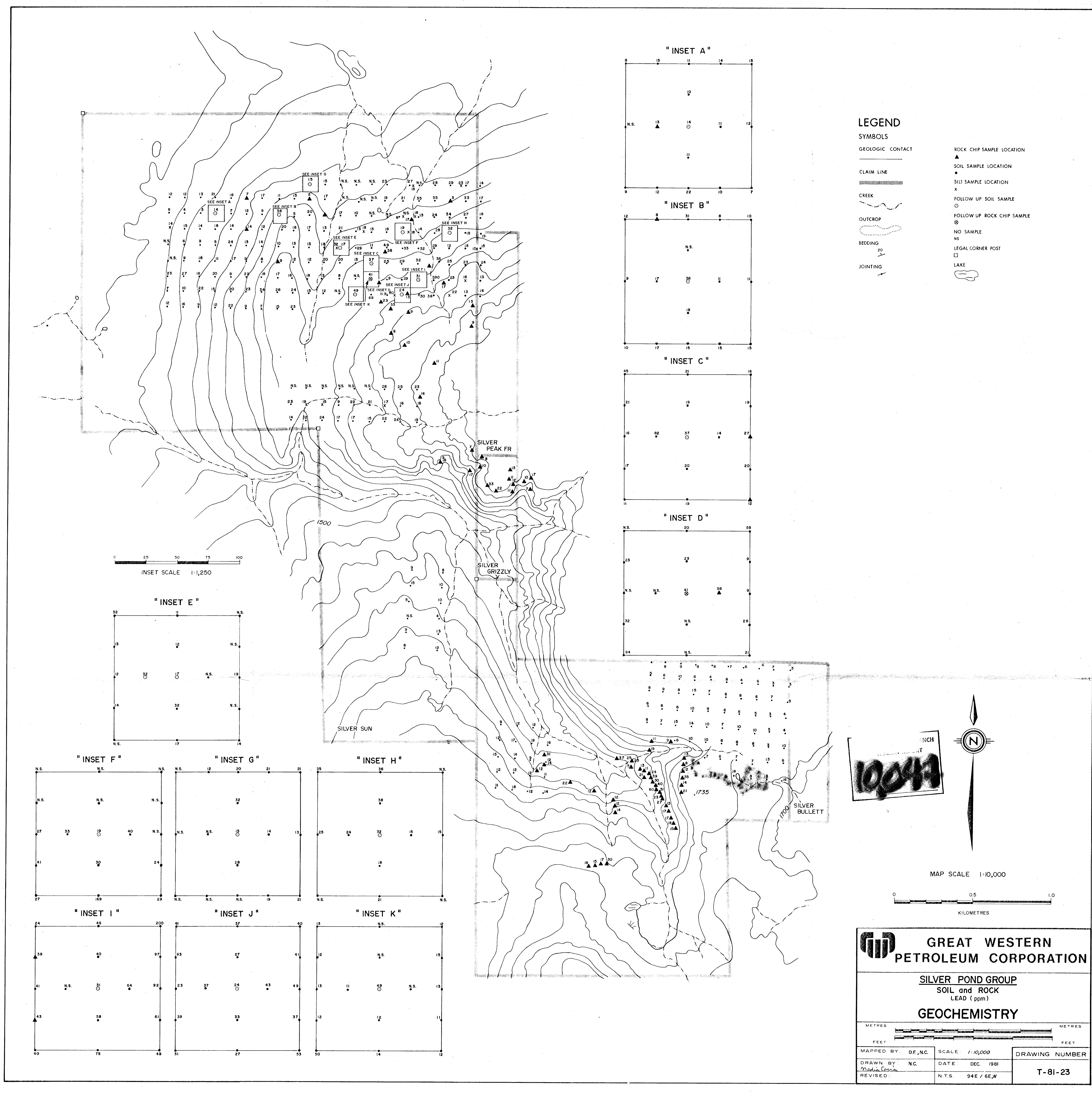
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JOINTING
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LEGAL CORNER POST
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SILVER GRIZZLY
SILVER SUN
SILVER BULLETT
1500
1735
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KILOMETRES
GREAT WESTERN PETROLEUM CORPORATION
SILVER POND GROUP
SOIL and ROCK
LEAD (ppm)
GEOCHEMISTRY
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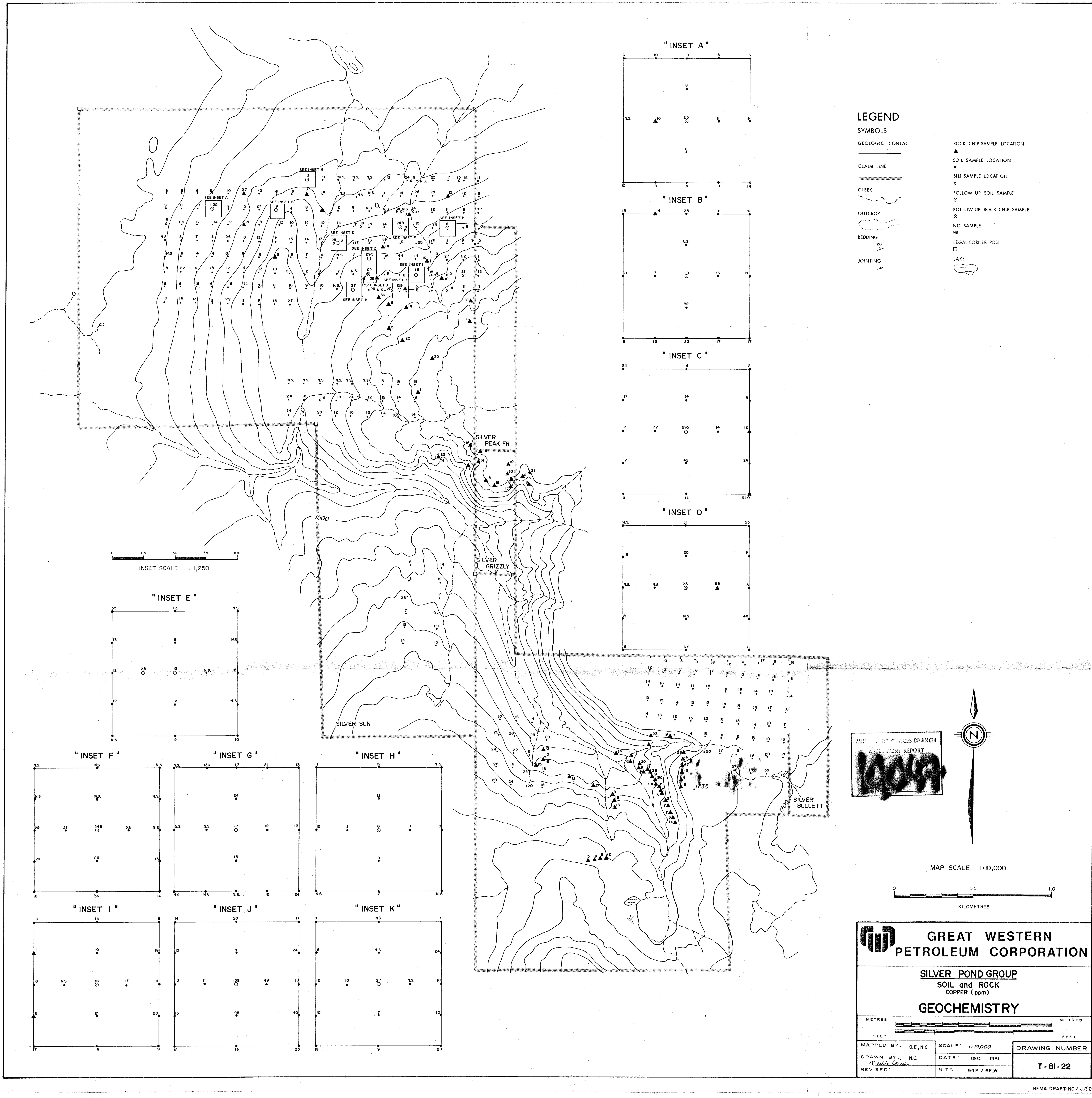

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KILOMETRES
GREAT WESTERN PETROLEUM CORPORATION
SILVER POND GROUP
SOIL and ROCK
COPPER (ppm)
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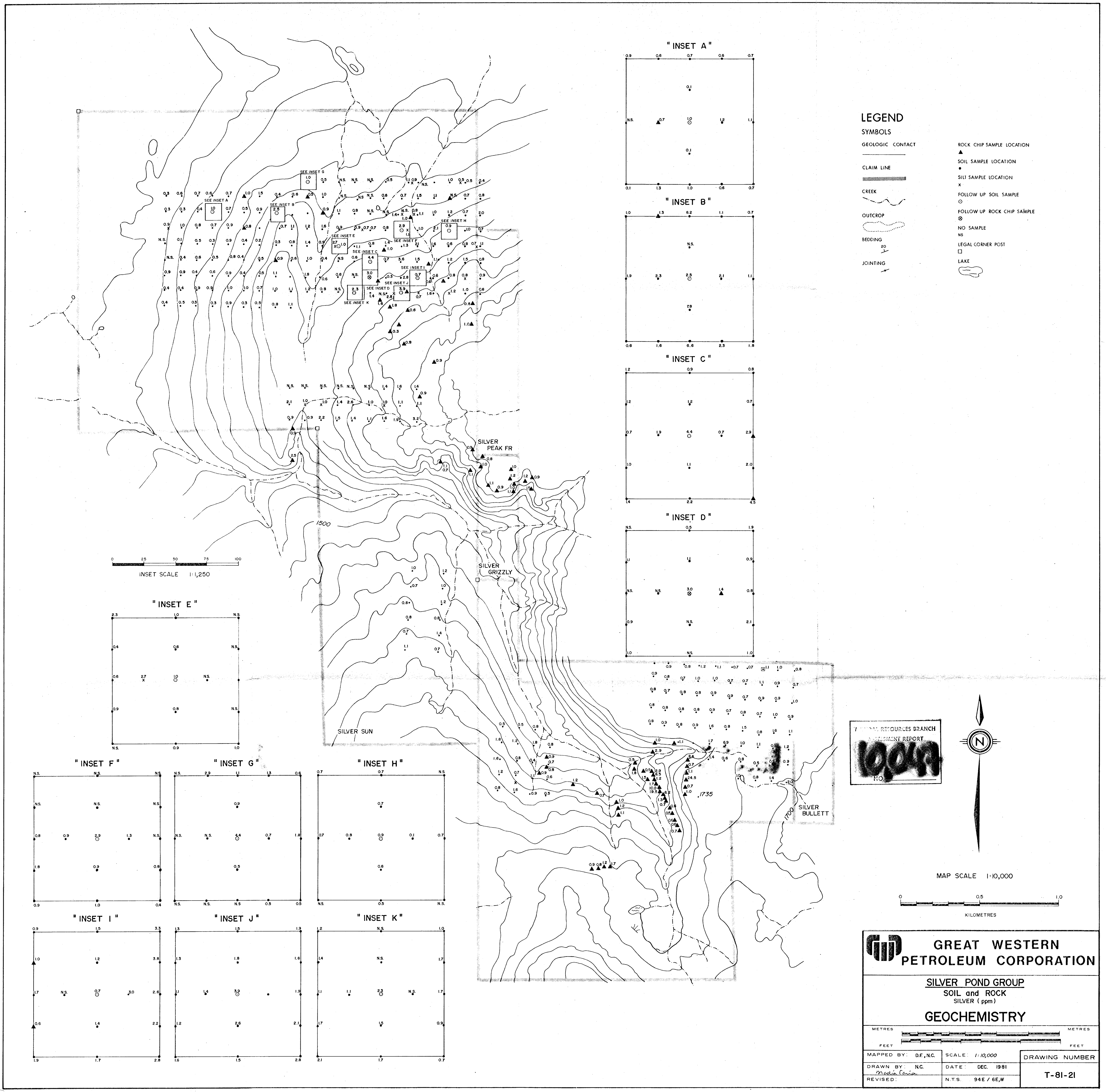
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GREAT WESTERN PETROLEUM CORPORATION
SILVER POND GROUP
SOIL and ROCK
SILVER (ppm)
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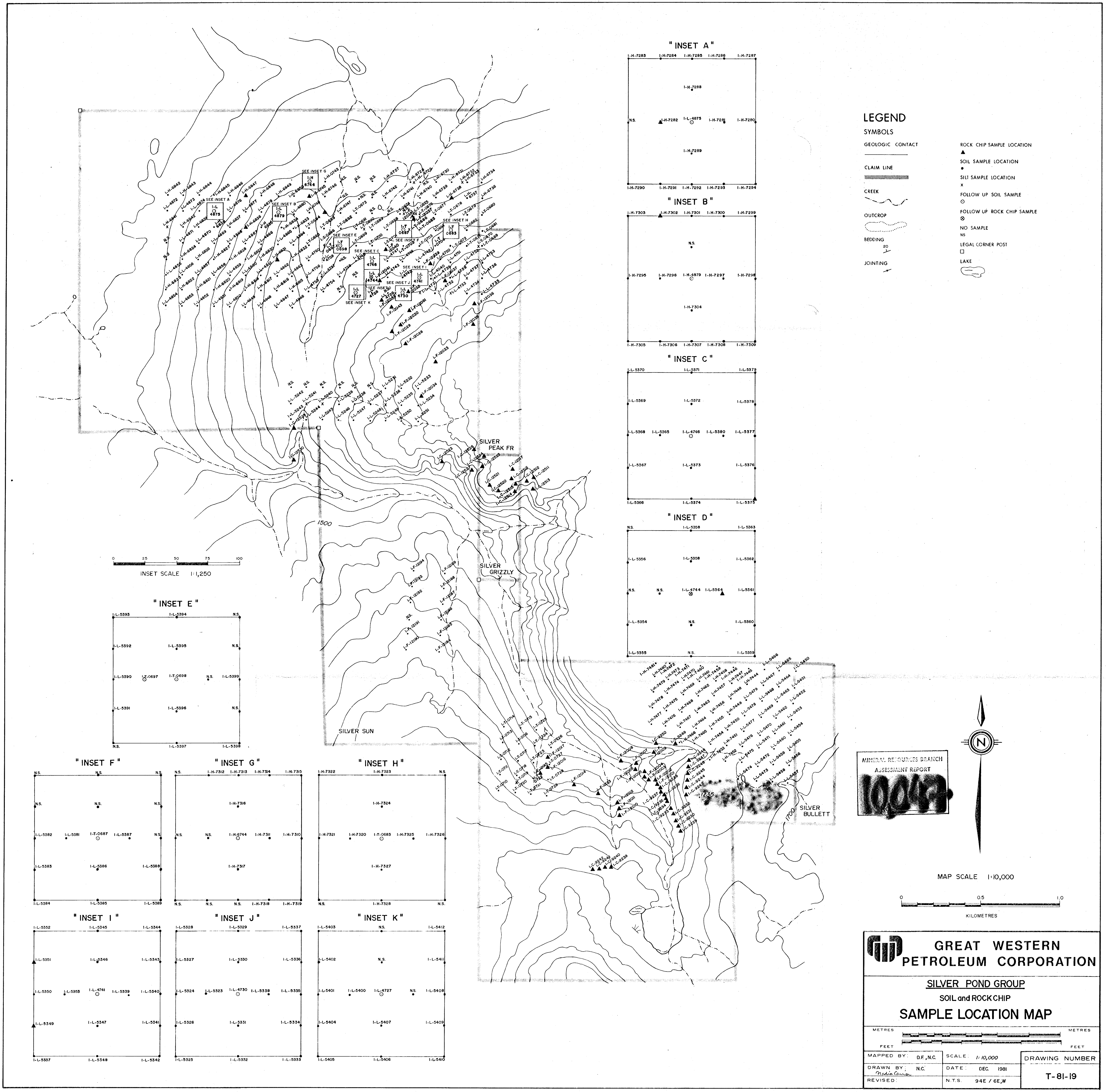

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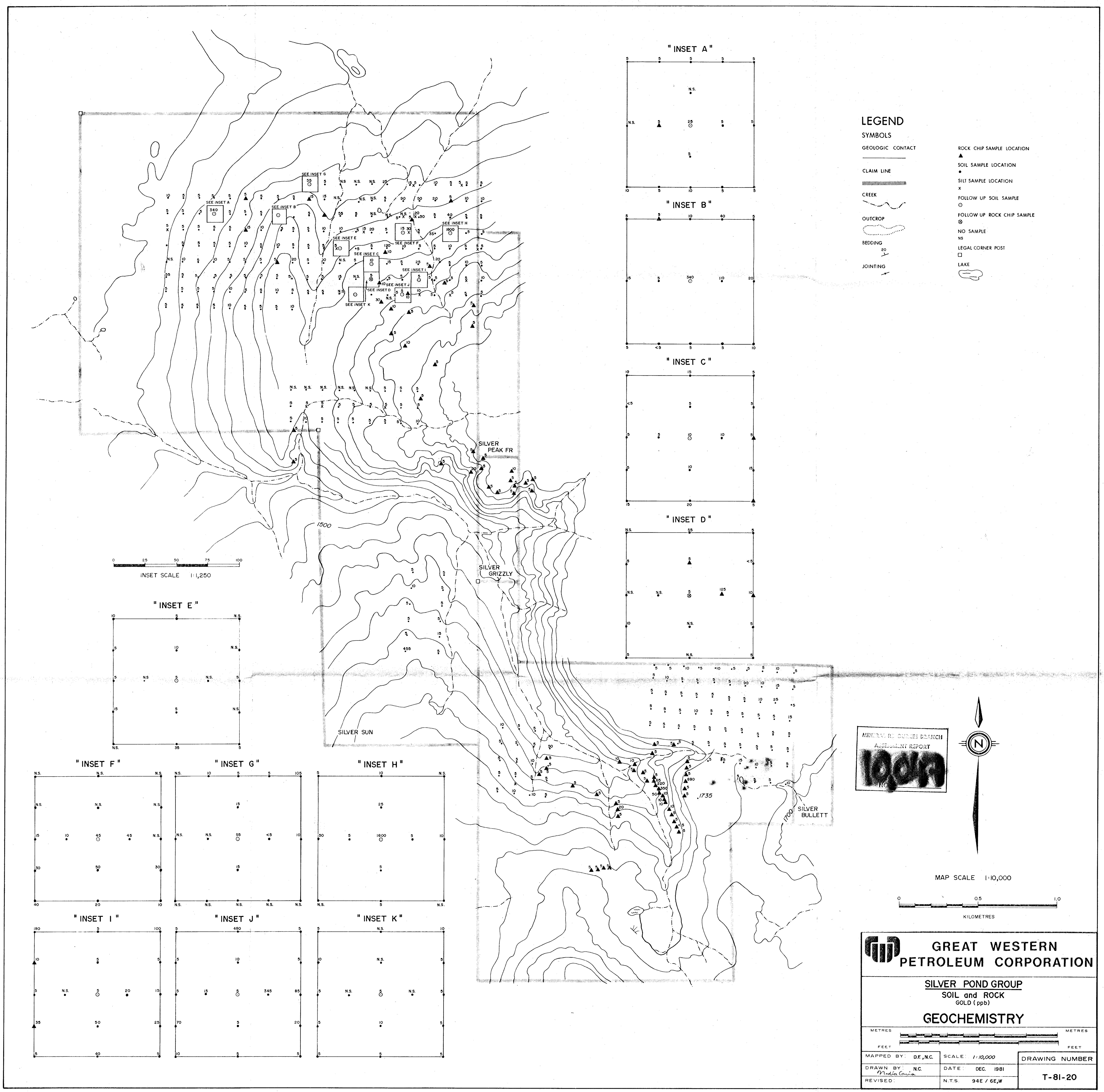

GREAT WESTERN PETROLEUM CORPORATION

SILVER POND GROUP

SOIL and ROCK

GOLD (ppb)

GEOCHEMISTRY

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