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LOTUS RESOURCES LTD.

Blockhouse Property

Blockhouse, Lunenburg County,

Nova Scotia

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March 24, 1988.

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#### JAMES E. TILSLEY & ASSOCIATES LTD.

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#### SUMMARY AND CONCLUSIONS

The Blockhouse Gold Prospect claim group in Lunenburg County, Nova Scotia, consists of nineteen 40-acre mineral claims held under Exploration Licence # 6642, presently held by Lotus Resources Ltd.

Exploration Licence No. 6642 covers the area in which all previous underground work was done, including mining of portions of the Prest Vein to a depth of 90m (300') below surface.

The gold-bearing structures of primary interest are formed at the intersection of fault zones and certain favourable stratigraphic horizons in the basal part of the Halifax Formation sequence of metamorphosed shales. These "fissure veins" are noted for continuity of mineralization and some, in other districts, have been mined to depths of 300 meters (1000').

In the order of 3 500 ounces of gold have been recovered in milling 6 200 tons of material taken from the Prest Vein between surface and the 90 meter level. The greater part of the gold recovered from the Prest Vein came from the portion of the vein that lies within the green arenaceous slate horizon and is referred to herein as the "Prest Shoot".

Available data suggest that the Prest Shoot has a potential for an additional 10 000 to 14 000 ounces of gold to a depth of 300 meters.

The Prest Shoot produced 2 043 tons of mill feed between 1896 and 1935. 3 259 ounces of gold were recovered. Assuming

this material included no wall rock dilution, the average grade of the vein quartz in the Prest Shoot is 1.595 oz/ton (49.61 gms/tonne).

The width of the vein is reported to vary from 0.15m to 0.61m (6 to 24 inches) and to average 0.25m. The wall rock, where sampled, carries an average of 0.085 oz Au/ton (2.9 gms/tonne). Ignoring metal contribution from this source, the computed diluted grade across a stoping width of 1.2m (4.0') would be 0.33 oz Au/ton or 11.31 gms/tonne.

In addition to the Prest Shoot as defined above, 138m (455') of the north drift on the 60m (200') level was sampled during operations in 1937 and 1938. The quartz vein was shown to carry 0.37 ounces of gold per ton across an average thickness of 0.35m (1.15'). Including 0.60m of wall rock which contains, on average, 0.085 oz/ton, this section of the vein lying to the north of the Prest Shoot, averages 0.19 oz/ton across a mean sampled width of 0.95m (3.12') or 0.15 oz/ton if diluted to 1.2m stoping width, assuming the additional 0.25m of wall rock contains no recoverable gold. There are presently inadequate data to permit determination of the extent of dilution of the vein material during mining. The average grades computed above include only the dilution stated and may be less in cases where more wall rock becomes included with the mineralized material during mining. There is a potential for approximately 8 000 ounces of gold recoverable in the section for which assays are available, providing the zone extends to surface and to 60m

below the level without change in character. The mineral potential along the strike of the vein to the north has not been tested, although the vein appears to extend in that direction for an additional 350m.

Other mineralized bodies similar to the Prest Shoot or the north extension of the Prest Vein through Goldenville Formation rocks may exist in adjacent known structures (e.g. Centre and East veins) or in as yet undiscovered fissure zones. Exploration for mineralization of both types in the area near the Prest Vein, and along the strike of the favorable stratigraphic horizon, is recommended.

Results of the diamond drilling program completed in 1983 indicate that grade information must be collected by face and bulk sampling since segregation of values is such that NQ core cannot be expected to provide optimum field sample size. While the drilling has traced the vein 260m (-850 ft.) north of the shaft and 64m (210 ft.) to the south, grade data does not appear to provide an adequate base for resource estimation.

Further evaluation of the Prest Vein will require face and bulk sampling of the mineralized zone underground. The shaft and underground openings must be dewatered and rehabilitated to permit the sampling to be done. The estimated cost of the dewatering and sampling program is \$250 000.00.

Additional diamond drilling, sampling studies, prospecting activity, and associated expenses, are estimated to amount to \$218 020.00, for a program total of \$468 020.00

#### INTRODUCTION

The Blockhouse Gold Prospect is located immediately west of the village of Blockhouse, Lunenburg County, Nova Scotia. 3 588 ounces of gold were produced by milling of 6 210 tons of quartz recovered from workings on the Prest Vein that lie between surface and a depth of 90 meters.

Much of the information available on the property comes from historical records in the files of the Nova Scotia Department of Mines & Energy, and dates from the turn of the century and the last period of physical mining activity between 1935 and 1940.

Data compilation, geophysical surveys, and diamond drilling were done during a program that began in the fall of 1982 and was completed in May of 1983. There has been no other exploration since the 1983 diamond drilling.

The best known auriferous zone is controlled by the intersection of a fault structure with a twenty-five meter thick series of pyrite-bearing green arenaceous slate beds on the south limb of the Blockhoude Anticline, that strike northeast and dip at forty-five degrees to the south.

The intersections of other fault zones with this stratigraphic horizon would appear to be equally favourable for gold deposition. In addition to the Prest Vein, there are three known, quartz-filled, fault zones within the boundaries of the claim group. All are exposed on surface and the East, or Laxer

Vein, was also found on the 90 meter level in underground workings 45 meters east of the Prest Vein.

The Thompson and East Veins are ten to thirty centimeters wide where prospected. The Center Vein has been intersected by several pits through the overburden and was reported to be more than two meters wide. The zone was intersected in 1983 drill hole #10. The computed true thickness is -0.76m (2.5 feet). The geophysical surveys completed in February 1983, indicated two previously unprospected fault zones within 300m of the Prest Vein. Both zones lie under continuous overburden cover and there is no information to confirm the presence of quartz. However, the intersection of these faults with the favourable stratigraphic horizon will be examined in the course of the evaluation program.

The favourable horizon appears to be an extensive stratigraphic unit near the base of the Halifax Formation black shale sequence (Halifax slates). The unit sub-crops in the claim group along both limbs, and on the east and west plunges of the Blockhouse anticlinal fold, for a total distance of approximately 4.6 kilometers.

A program of 2 000 feet (610m) of diamond drilling was completed in May 1983. Eight holes were drilled on the northern extension of the Prest Vein and two intersections of the vein were obtained in drilling to the south of the shaft. Free gold was observed in three intersections and values in excess of 0.10

oz/ton Au were found in four of the eight intersections on the Prest Vein, and the previously unexposed "Office Vein" was also cut in these holes. Intersections of these other veins returned low values that indicate some degree of mineralization, particularly in the Office Vein.

Segregation or "spottiness" of gold values in the Prest Vein presents a sampling problem even when using large-diameter diamond drill cores. The NQ cores appear to be too small to include the number of gold grains representative of the average vein material. The grade information obtained by diamond drilling of this structure to date is inappropriate for mineral resource estimation.

The nature of the metal distribution in the veins on the property is such that it is unlikely the true grade can be determined from the assay results obtained from treating sections of diamond drill cores. Therefore, further evaluation should rely principally upon face and bulk sampling of the vein rather than extensive diamond drilling.

The cost of the exploration recommended is estimated to be \$468 020.00.

Further exploration and development work will depend on the results obtained in the program proposed herein.

#### LOCATION AND ACCESS

The property lies immediately to the west of the village of Blockhouse, in Lunenburg County, Nova Scotia. The nearest major town is Bridgewater, eight miles to the west. Halifax is sixty miles to the east. All parts of the claim group are easily reached via a network of paved and gravel roads. The Halifax-Bridgewater limited access highway, No. 103 passes through tracts 57 and 64.

The Prest Vein lies about 90m east of a good gravel road and all other known veins are equally accessible.

Approximate co-ordinates of the center of the claim group are:
44 26' 25'N; 64 25' 40"W.

#### PROPERTY

The property consists of 19 mineral claims held in the name of Lotus Resources Ltd. under Exploration License # 6642, which was transferred from Trafalgar Resource Limited, the transfer being ratified by the Minister of Mines on the 17th day of December, 1987.

The License covers claims ABCD EFGH JKLM NOPQ in tract 57 and claims BCD in Tract 64, Reference Map 21 A 8 C.

#### TOPOGRAPHY

Maximum relief in the claim group is about 40 meters over a base elevation of 50 meters above sea level. The central

portion of the property is low and swampy. The hills appear to be composed of glacial debris (drumlins) deposited on a gently undulating bedrock surface.

#### SURFACE RIGHTS

There is no official plan of the Blockhouse area. The ownership of surface rights and the boundaries of individual holdings are not known precisely, even to the County taxation authorities.

Most of the properties are building lots of less than one acre each, situated along the highway and secondary roads that cross the claim group. The lands that lie farther from the roads generally have not been partitioned. Larger, one-owner blocks are the rule. Some are original land grants dating from the 1750s, still held in the same family.

On-site determinations of boundaries were made and permission to enter was obtained for the areas in which work was done during the 1982 and 1983 programs. Property ownership would have to be reviewed and new permissions to enter obtained before further work is undertaken.

#### HISTORY

Gold-bearing quartz had been reported found in glacial deposits southeast of the Blockhouse anticline as early as 1870. There had been some prospecting but without success until Walter Prest developed an understanding of the glacial geology and

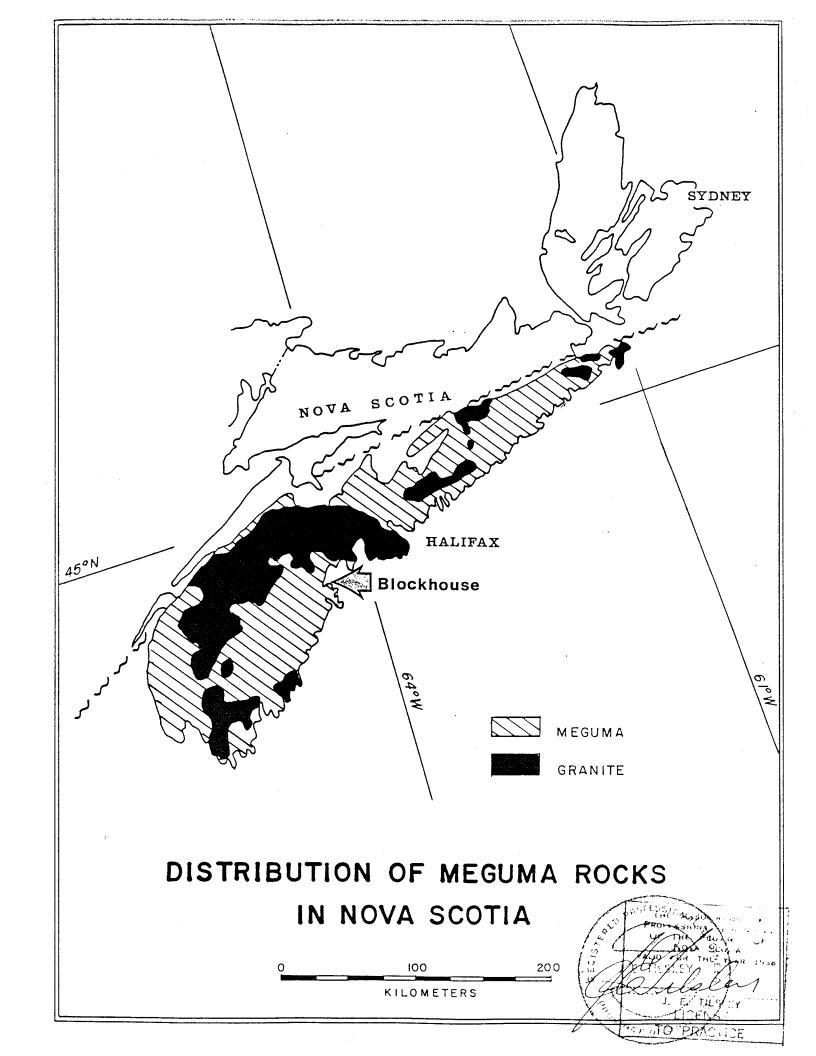
traced the mineralized material back to its source during fourteen days of prospecting in January 1896.

Development by the Blockhouse Mining Company began later that year and continued somewhat irregularly until 1898 when a ten stamp mill was erected. Production of gold was reported in 1899, 1900 and 1901 but in 1902 operations were discontinued due to disagreements within the company.

Following the increase in the price of gold to \$35.00 US per ounce in 1934, there was an attempt to reopen the operation. Nugold Mining Corporation began work in the fall of 1935. A ten stamp mill was erected and a new headframe on the main (inclined) shaft was built. The shaft was deepened to the 90m (300') level and preparations made for mining. Recovery of gold presented some problems, probably due to the presence of arsenic in the concentrates and inclusion of some part of the precious metal in sulphide grains. The mill last operated for three months in the fall of 1938 but closed at the year end. There is no reported activity during 1939 or 1940.

The property has been held under exploration licence at various times by several individual and corporate interests but, with the exception of self-potential surveying near the Prest Vein in 1961, there was very little systematic work done from 1938 until the surveys and diamond drilling done in 1982 - 1983.

There has been no additional exploration work on the property since completion of diamond drilling in May of 1983.



#### GEOLOGY OF GOLD DEPOSITS IN MEGUMA ROCKS

#### **GENERAL**

More than 90% of the gold produced in Nova Scotia has come from rocks of the Meguma Series. These metasediments are divided into the Goldenville Formation of quartzites and minor slates, and the younger Halifax Formation which is composed predominantly of shales and black shales (slates) with occasional quartzite beds.

#### GEOLOGICAL HISTORY

Meguma rocks were deposited during Early Paleozoic time (Cambrian-Silurian) in the Magog Geosyncline, an elongated trough between the African/European plate and the North American plate. This geosyncline reached its maximum development in Late Proterozoic time. It was essentially destroyed during Caledonian-Acadian Orogeny. However, the belt remained somewhat mobile through Carboniferous time when incipient separation of the two plates produced graben structures and basins in which coarse clastic followed by fine clastic and chemical sedimentation took place. The African plate moved against the North American plate in Late Carboniferous time (Hercynian Orogeny) terminating marine sedimentation in the mobile belt. Separation of the plates began again in Triassic time development of the Labrador, Biscay and South Atlantic rift systems and the Greenland-Europe rift during the Cretaceous.

The Meguma rocks that had been deposited on the African side of the geosyncline were sutured to the North American plate during the Acadian Orogeny and became left behind when rifting began during the Triassic. Subsequently there was transform adjustment along the Cobequid fault during which the Meguma block moved to the east relative to the North American rocks.

#### ENVIRONMENT OF DEPOSITION OF MEGUMA ROCKS

Meguma Series rocks, although deposited in a relatively narrow geosyncline between two continental plates, appear to be entirely of African derivation. The sequence of deposition, which is a cyclical sandstone to sandstone plus shale succession for the Goldenville Formation, suggests late tectonic conditions of decreasingly energetic uplift followed by relative structural quiescence during deposition of Halifax Formation shale. The boundary between the two formations appears to be diachronous. This suggests that the low-energy conditions characteristic of Halifax Formation deposition were attained progressively along the basin.

The Halifax shales (slates) are generally thinly bedded, less than 1mm to 10mm, and usually show evidence of fining upward so as to suggest response to seasonal variation in precipitation. The distribution of carbonaceous (graphitic) material in individual beds and sequences of beds indicates local as well as general biological activity. Such activity in

turn points to a relatively shallow depth of water during sedimentation, since most plants require sunlight for vigorous growth.

The shales in both the Halifax and Goldenville Formations are frequently sulphide-rich and the intensity of sulphide mineralization correlates fairly well with organic content. Pyrite and pyrrhotite, the latter assumed to be produced from pyrite during greenschist metamorphism, are the most common sulphides. Minor marcasite, arsenopyrite, chalcopyrite and galena are present locally. Development of these sulphides appears to have been coincident with sedimentation and indicates low Eh and anoxic conditions.

The lower units of the Halifax Formation are carbonate-rich locally. Both calcite and magnesite are identified in veinlets that appear to be secondary and in nodules and bands that are obviously syngenetic. Both carbonates are formed under conditions of salinity developed during evaporation of sea water in basins of restricted circulation.

#### FORMATION OF AURIFEROUS QUARTZ VEINS

There are several hypotheses regarding the formation of auriferous quartz veins in folded Meguma Series rocks. It was believed for many years that the gold and quartz were derived from granitic intrusions into the Goldenville and Halifax Formations. However, evidence supports derivation of the metal

from the shale units during greenschist metamorphism followed by deposition with quartz in structural dilations during folding. Recent work by Keppie (1976) among others, attempts to quantify the relationship between the geometry of folds and gold concentration. Although not entirely conclusive, these studies serve to illustrate the application of this relatively simple model.

We believe that it can be assumed safely that the most important ore controls for bedded veins are structural rather than chemical and that, given appropriate fold geometry, the development of auriferous quartz took place throughout the Meguma Series rocks as they are known in Nova Scotia. An additional factor in the formation of gold deposits may be the chemistry of the sediments, which appears to vary on a regional basis.

While the geometry of the folds may be an important control for the bedded veins, "fissure veins" appear to require only that a fault or a dilation zone develop cross-cutting the strike at some high angle. Certain carbonate-rich beds near to the base of the Halifax Formation may exert a chemical (source bed?) influence on mineralization of the "fissure vein" type.

The most important types of gold-bearing quartz veins in Meguma rocks are described briefly in the following pages.

#### SADDLE VEINS or BEDDED VEINS

These are the most common. They are bedded in the sense that they form in the less competent slate beds, often along the upper or lower contacts with the more competent enclosing

Maximum vein thickness is observed near the quartzites. anticlinal axes and widths tend to diminish down the limbs of Most veins are between one and twenty-five the folds. centimeters thick. Sometimes a hanging wall and a foot wall vein will be present in a single less competent bed. Usually the hanging wall vein will be the thicker of the two. veining between the walls of the slate band is also possible especially in the more deformed sections of the folds. Dilation along the crests and noses of folds may be sufficient for as much as 1 to 2.5 meters of quartz vein to accumulate. Drag folds or "rolls" may develop in slate bands on the limbs of folds and produce dilatant structures in which quartz thickness may be two to ten times the average vein thickness up and down dip from the Dilation relates to the shape of the fold, and the geometry of the fold changes obviously along strike of the axial plane. Therefore, the quartz veins pinch and swell along strike as well as along the dip.

It should be noted that not all anticlinal axes show dilation. Often, as in the Holman Mine workings at Caribou, the hinge line is in strong compression, with the result that saddle veins pinch as they pass over the crest of the fold and show

maximum development on the limbs.

In addition, it appears that stress conditions that are not indicated by any visible change in vein thickness or character, also exert control on mineralization. These "pay zones" or ore shoots usually plunge at 20 to 45 degrees, either to the southwest as at Caribou or to the northeast as observed in other areas of the province. There are usually no recognized indicators of ore shoot limits excepting gold content.

#### FISSURE VEINS

Any strong vein developed in a fault zone that strikes across the strata at some angle is considered to be a "fissure vein". While auriferous fissure veins are less common than saddle or bedded veins, significant production has been realized from this sort of structure at Caribou and in other Gold Districts. At Caribou, the Lake Lode, Truro and Elk veins are fissure veins developed in Halifax slates adjacent to, or relatively near, the Goldenville contact. The Dixon vein is a fissure vein that cuts the Goldenville quartzites near the western nose of the Caribou "dome".

The most important veins in the Blockhouse area are fissure veins. The Prest Vein is the largest producer of gold. The most productive section of the Prest fissure vein known from actual mining is a 'shoot' that is developed on the south limb of the anticline at the intersection of the 'fissure' and a 'green arenaceous shale' that lies near the base of the Halifax Formation just above the uppermost quartzites of the Goldenville

Formation rocks that make up the 'core' of the fold.

The Libby Vein at Brookfield contained ore shoots that formed at the intersection of a fissure vein with slate belts in Goldenville rocks. These zones have been mined to 900 feet below surface. Mining on the Lake Lode, located at the east end of Burkner Lake at Caribou, reached a depth of 1000 feet below surface in 1905. The fissure veins in Halifax slates have greater tonnage potential than those in the more competent Goldenville Formation sequences.

#### **ANGULARS**

These quartz veins or veinlets occupy fractures that are related to folding and cut the fold axes at angles of about 60 degrees. While most angulars fall in the above class, any narrow vein that cuts the strata at some angle will be termed an "angular" in the literature. Angulars are usually less than 3cm thick and do not account for significant tonnages of ore in themselves, although they are frequently very high grade. Often there appears to be notable enrichment of bedded veins and slate belts where they are intersected by angulars.

#### DRAG FOLDS or 'CRUMPLES'

This sort of structure is not well described in the literature. The best documentation is found in internal geological and mining reports of the Consolidated Mining and Smelting Company of Canada that deal with operations at Caribou Mines. There is no specific recognition of this type of mineralized zone in descriptions of other mining areas in Nova Scotia, excepting perhaps at Isaac's Harbour, Guysborough County. While descriptive information recognizing this sort of structure is sparce, re-interpretation of data from all areas of the Meguma suggests that many of the most productive stopes were in fact developed in structures which are typified by the Holman Mine 'Main Ore Zone'. These zones are relatively small in vertical extent (100 feet; 30m) but the length measured along the plunge axis may exceed 1200 feet (365m). The thickness of the minable zone may reach 25 feet (7.6m). Drag folds or 'crumples' are prime exploration targets in both Goldenville and Halifax Formation settings.

There are no data from the Blockhouse area that suggest drag folds, 'crumples' or stressed zones have been recognized at surface or in underground workings. However, the possible development of this important type of gold-hosting structure in the claim group should not be overlooked.

#### GENERAL GEOLOGY

The claim group is underlain by metasedimentary rocks of the Meguma Series. The Goldenville Formation is composed of arkosic quarzites with interbedded shales (slates). These are the older rocks that make up the lower portion of the series. The Halifax Formation overlies the quartzites more or less conformably. The most common rock type is slate (metamorphosed, usually graphitic, shales). Quartzite beds are present, particularly near the base of the Halifax section but account for less than twenty percent of the total stratigraphic thickness.

These bedded rocks have been folded into a series of anticlines and synclines with axes trending northeast-southwest in Lunenburg County.

A major fold, known as the Blockhouse Anticline, passes through the property. The fold axis plunges to the northeast near the village of Blockhouse and to the southwest about 1.5 km to the west. Strata on the limbs of the fold dip at about 45 degrees, and because of the plunges noted above, individual beds and the Goldenville/Halifax contact can be traced from the south limb around both plunges to the north limb of the anticline.

The fold is relatively uncomplicated in the northeastern part of the property. To the southwest, however, there is evidence that a second anticlinal axis develops.

Metamorphism has not been greater than greenschist grade,

and deformation of the shales is generally limited to development of slatey cleavage. The quartzites are not notably affected beyond development of axial plane cleavage and moderate tectonic jointing.

Faults cut the fold axis at between 50 and 70 degrees. Displacement is less than 10 meters and the maximum width of brecciation reported is about 2.8m.

Quartz veins may develop in these cross-faults. The Prest Shoot in the Prest Vein lies within such a fault structure at the intersection with a 25m thick sequence of pyrite-bearing arenaceous shales near to the base of the Halifax Formation.

Bedded quartz veins often develop along the contacts between slates and quartzites, but have not received much attention in the Blockhouse District.

#### OVERBURDEN

The bedrock within the claim group is almost completely obscured by glacial deposits. Locally-derived tills vary in thickness from about one meter to six meters. Drumlins oriented with their long axes at N 45 W are superimposed on the till sheet. These form hills of unconsolidated material ten to thirty or more meters thick. There is little recent alluvium since the streams that cross the property are small. However, organic deposits in meadows and swamps are extensive in some areas.

#### MINERALIZED ZONES

Mineralization known within the claim group is associated with quartz veins of either the bedded or cross-cutting fault-controlled type. The cross-cutting, fault-controlled veins are referred to locally as "fissure veins". Fissure veins have produced a significant part of the gold ores mined from Meguma rocks. For example, the Libby Mine at Brookfield, and the Lake Mine at Caribou, recovered gold from fissure veins to depths of 300m (1000'). The only significant recovery of gold in the Blockhouse District was from the Prest Vein which is a "fissure vein" developed in a fault structure that cuts across the fold axis at an angle of about 66 degrees, and dips to the west at 70 to 77 degrees.

Mining was directed to recovering that portion of the vein lying along the intersection of the Prest Fault with the 'pyrite-bearing green arenaceous shale' mentioned earlier.

This zone contained quartz, quartz stringers in slate, and brecciated slate (shale). Pyrite, pyrrhotite, arsenopyrite, and sometimes small quantities of other sulphides, are present in concentrations generally less than 10%. The zone is also notably auriferous. Available data suggest that, in the Prest Shoot, the vein material milled had an average gold content of 1.50 oz. Au per ton. Production records of the Department of Mines and Energy, Province of Nova Scotia, show 3 259 ounces recovered from crushing of 2 043 tons of mill feed between the

time of discovery in 1896 to September 1935. The 1940 Annual Report of the Department of Mines shows a cumulated total production of gold for the Blockhouse District of 3 588.48 ounces recovered from 6 210.2 tons of mill feed.

There are few data available for the Thompson, East (Laxer) and Center fissure veins. However, the first two have yielded samples that assayed 0.02 to 0.50 oz. Au/ton.

Samples from the Center Vein did not show significant gold values, but there was no sampling at the intersection of the fault structure with the favourable host rock horizon.

#### UNDERGROUND DEVELOPMENT

The main shaft was deepened to the 90m (300') level during Nugold Mining Corporation operations and drifts were extended along the vein on the 60m (200') and 90m (300')levels. The vein was developed from the south end of the bottom level in 1937. The most recent survey plan of the underground available is dated June 30, 1937.

Drifting on the vein structure extends about 180m (600ft) north of the main shaft and 120m (400') south on the 60m level. The 90m level drift extends 60m to the north and 65m to the south of the main shaft. In addition, a 65m drive was extended to the east of the Prest Vein on the 89m level to intersect the downward extension of the East Vein exposed on surface about 45m east of the main shaft. An incline in the mineralized zone extends from the bottom of the north shaft to the 60m level.

Most of the mineralized zone above the 60m level south of the Main Shaft has been stoped out and, although the plan and sections do not show this information, the Mines Inspector reports filed in Halifax suggest that part of the vein developed by the 90m level has also been removed. There has been no mining below the 90m level. There is no record of stoping on the 60m level north of the north stope, although assay records indicate that the vein is auriferous along the full 455' length sampled.

#### MILLING

Mill tests were done on samples of the vein material taken from the 60m level during the 1935-1939 operations. In general, the gold in the zone appears to be mostly free milling. Tests done by the Federal Mineral Dressing Laboratories in Ottawa indicate that amalgamation of mill feed ground to 94% minus 200 mesh gave about 85% recovery of gold. Cyanidation of the same material gave a recovery of 90.5%.

Further tests showed that about 12% of the gold in the mill feed was contained in sulphides and that this portion of the metal was difficult or impossible to recover by either amalgamation or cyanidation. Coarser grinding such as was characteristic of stamp milling generally gave only about 70% recovery of values by gravity concentration and barrel amalgamation. Fine grinding and cyanidation using current technology would appear to give acceptable recovery of metal.

#### MINERAL RESOURCES

Although there have been several attempts to calculate the size of the mineral resource, the existing information is not considered adequate for ore reserve estimation at this time. However, available data indicate that there is potential for mineable reserves in both the Prest Shoot and in the vein north of the shoot, at least to the end of sampling at 137m (455') north of the shaft on the 60m (200') level.

Production during the first period of operation between 1896 and 1903 came from the Prest Shoot. Sworn returns show 3 259 ounces of gold recovered from 2 043 ton of quartz crushed. This is equivalent to 1.59 ounces per ton, on average.

The official record shows a total of 6 210.2 tons of mill feed treated between 1896 and 1940 at an average grade of 0.58 ounces/ton. That average grade suggests the gold content of the estimated 4 167 tons processed between 1934 and 1940 amounted to only 0.08 ounces per ton. However, results of sampling on the 60m (200') level indicate a grade of 12.89 grams per tonne (0.386 oz/ton) for the first 138m (455') of vein exposed in the north drift. The wall rocks were sampled along the same section of the level. The grade indicated by analyses of these samples is 0.07 oz/ton in the foot wall and 0.09 oz/ton in the hanging wall. The average thickness sampled was 0.35m (1.15') for the vein, 0.23m (0.75') in the hanging wall and 0.36m (1.2') in the foot wall. The total sampled thickness is 0.95m (3.12') and the

weighted average grade is calculated to be 0.19 oz/ton.

Assuming a stoping width of 1.2m and no gold in the additional material (0.25m dilution) taken to give this width, the stope grade would be 5.14 gms/tonne (0.15 oz/ton).

A 1.5 ton mill test sample, made up mostly of quartz from the vein on the 60m (200') level, was taken under the supervision of the Inspector of Mines in August 1936. Based on metal recovered in test work done at the Nova Scotia Technical College, the average grade was calculated to be 0.923 ounces of gold per ton. The 277kg (6 510 lb.) cut of the bulk sample sent to the Metallurgical Laboratory of the Department of Mines in Ottawa gave a mill head assay of 0.90 ounces of gold per ton. Two-thirds of the bulk sample was obtained from the drift face at 34m (113') north. The remaining one third was taken from the vein exposed at 27m (90') in the south drift.

Both locations were indicated by subsequent face sampling to be relatively higher in grade than other parts of the vein. Therefore, the assay and calculated grades of this material should not be taken as properly representative of the average grade of the vein.

There are no definitive data in regard to the amount of dilution that can be expected during mining of this vein. The vein cuts across the strata at a high angle and overbreak in both the hanging and foot walls is reported to have been rare. Available information suggests that dilution will be confined to that necessary to provide working space, and that the wall rock

is not totally barren. However, the influence of dilution cannot be determined accurately at this time.

While there is still not enough information that can be considered sufficiently reliable to permit computation of an ore reserve, it is appropriate to consider what sort of exploration potential exists on the property.

The Prest Vein is the only one for which any amount of data are available. Records of production relative to the turn-of-the-century operation indicate the grade of the mill-feed, which may be assumed to have been vein material only, and to have come almost exclusively from the Prest Shoot, give a computed recovered grade of 1.59 oz. Au/ton of quartz. If the Prest Shoot extends to 300m below surface and there is no change in thickness or grade, the potential could be 10 to 14 000 ounces, and if the vein zone exposed by the 60m (200') level extends to surface and an equal distance below the level, there is a potential for an additional 8 000 ounces in this block.

There is evidence that the Prest Vein continues north of the limit of drifting and has been exposed in a pit near to the contact between Goldenville and Halifax rocks on the north limb of the anticline. If this is so, at least 350m (1150') of unexplored vein structure lies north of the mine workings. Furthermore, the stratigraphic horizon believed to control the Prest Shoot lies within 50 meters of the north contact. Repetition of the Prest Shoot on the north limb is possible.

In addition to the Prest Vein, there are three other fault zones in the central part of the property that have been shown to contain quartz. Two, the Laxer or East Vein, and the Thompson Vein, are known to be auriferous. The Center Vein, which lies about 120m west of the Prest Vein, is reported to occur in a breccia zone 2 to 2.5 meters wide. Available records show only low gold values where the zone was exposed north of its intersection with the favourable stratigraphic horizon on the south limb of the fold.

Geophysical surveys done in 1982 - 1983 have indicated two conductive zones roughly parallel to the Prest structure. These conductive zones lie within 300 meters of the Prest Vein and may host quartz veins of the fissure type.

Considering only those faults/veins that have been discovered thus far, there are three or four exploration targets on the South limb and may be as many on the north limb that have not been investigated.

The favourable stratigraphic horizon which appears to localize mineralization in the fissure veins can be traced for a total of about 4.6km in the claim group. There is very little outcrop and other fault structures, in addition to those mentioned, could exist and host auriferous mineralization.

#### EXPLORATION PROGRAM

Definition of the grade of the Prest Vein will require underground sampling of all exposures on the 60m and 90m levels.

The results of sampling done in the late 1930s indicate a mineral potential adequate to justify dewatering and rehabilitation of the shaft and underground workings. This approach is recommended prior to undertaking extensive diamond drilling.

Detailed sampling studies should also be part of the evaluation program, in order that a sound data base can be generated for resource estimations. In addition, these studies may provide the information necessary for accurate interpretation of assays from diamond drill core samples, and extend the usefulness of diamond drilling as an exploration tool.

Exploratory diamond drilling will be useful in testing for other structures on the property, however, grade information from drilling will have to be considered with due regard to results of sampling studies before being accepted as properly reliable.

Trenching through the glacial deposits and study of tills and heavy mineral concentrates from the tills should be done in areas where geophysical surveys have suggested that vein structures may exist. In addition, mineralized material exposed at the surface of the tills south of the main shaft may be traced to source using these techniques.

#### JAMES E. TILSLEY & ASSOCIATES LTD.

#### ESTIMATED COSTS

	DOTINATED GOOTS		
Undergrou	nd Program		
and drift removal o (includin	g and rehabilitation of Main Shaft s on 30m and 60m levels, and f bulk and face samples g materials, labour, supervision, e, equipment, land use, et cetera)	250	000.00
		3	\$250,000.00
Other Exp	loration		
	g treatment of samples erground)		
Sampling	studies	52	000.00
Additiona 1500	l Diamond Drilling- ' @ \$25.00/ft.	37	500.00
Assaying		12	500.00
Trenching		15	000.00
Till Stud	ies	9	500.00
Supervisi	on	15	000.00
Reporting	, secretarial, et cetera	. 7	000.00
Communica	tions	2	800.00
Travel		6	500.00
Room & bo	ard days @ 42.50)	20	400.00
	es @ \$2 500/month nths, including fuel	20	000.00

Sub Total	\$198 200.00
Contingency 10%	19 820.00
Total Other Exploration Work	\$218 020.00
Total Program	\$468 020.00

#### CERTIFICATE

I, James E. Tilsley, of the town of Aurora, Province of Ontario, hereby certify:

- I am a Consulting Geologist and reside at 5 Steeplechase Avenue, Aurora, Ontario.
- I am a graduate of Acadia University, 1959, B.A., Geology.
- I am a member of the Association of Professional Engineers of Ontario, The Association of Professional Engineers of Manitoba, The Association of Professional Engineers of Nova Scotia, Chartered Engineers (Great Britian), and designated Consulting Engineer, Ontario Association of Professional Engineers, 1975.
- 4. I have been employed as a geologist since graduation, with consulting groups since 1964 and in private practice since 1980.
- 5. This report is based on study of records relating to the property as available from the files of the Department of Mines & Energy, province of Nova Scotia, reports of the Geological Survey of Canada, current technical literature, review of activities on the claims during the past six years, and observations made in the course of carrying out the exploration program on the property during 1983 1984.
- 6. I have no interest, direct or indirect, in the properties or securities of Lotus Resources Ltd., or any affiliates, nor do I expect to receive any such interest.

Dated at Aurora, Ontario this 24 day of March 1988.

Effilsley, P.Eng., J.E.

Appendix I
Summary of Diamond Drilling Results
1983 Program

#### DIAMOND DRILLING:

Diamond drilling was done to trace the Prest Vein to the north of the main shaft and to test the Prest Shoot at about the 90m level.

In addition, two holes were drilled to test the Center Vein. All holes drilled on the Prest Vein were steeply inclined to give the longest possible intersection of the vein.

The vein north of the shaft dips steeply to the west (70 - 77 degrees) and is off-set to the east by strike-slip faults that appear to run parallel to the bedding but are not bedding plane faults. Displacement is approximately 5 to 6 meters on each fault.

South of the shaft, two holes were spotted to test the down-dip extension of the Prest Shoot. The first hole in this area, BH #7, cut the vein at about the 60 meter level and indicated a discrepancy between the grid system as shown on the mine plan and the north survey monument located in the field. The vein, on line 0+64 S, appears to lie some 15 meters to the west of where indicated on the mine plan.

Drill hole BH #8 cut the vein just below the 90m level and exposed banded quartz with a true thickness of 0.32m (0.75') that returned an average grade of 0.292 oz Au/ton. Drilling results are summarized in Table I.

NQ wireline equipment was used throughout the program. The core weighs, on average, 900gms per 20cm length as compared to BQ core at 525gms for the same length.

TABLE I

Drill Hole	Location*	Dir.	Incl.	Length m	Vein @	Thickness m	Grade	Remarks
BH- 1	L1+00 N 0+00m E	Grid East	-70°E	26.52	20.05	0.31	0.622	V.G.
BH- 2	L1+00 N 0+00m E	11	-87°W	66.14	60.41	0.25	0.059	
вн- 3	L1+40 N 0+00m E	ff .	-65°E	50.90	37.53	0.13	0.09	
.BH- 4	L1+80 N O+12m E	11	-70°E	33.52	29.85	0.38	0.12	V.G.
вн- 5	L2+20 N O+14m E	911	-60°E	44.20	29.78	0.19	0.247	V.G.
вн- 6	L2+60 N O+18m E	##	-60°E	56.70	53.20	<b>~</b> 0.40	0.05	
вн- 7	L0+64 S 0+44m W	ŧŧ	-80°E	99.67	65.81	~0.10	0.094	
вн- 8	L0+64 S 0+59m W	. 11	-80°E	97.54	92.65	0.23	0.292	
ВН- 9	L0+58 S 0+88m W	Grid West	-45°W	77.72	40.00	0.75	Tr	Centre Vein
вн-10	L S 0+ m W	11	-45°W	56.39	16.60	0.05	0.052	Office Vein

<sup>\*</sup> All locations reference to arbitrary grid zero on south side of main shaft.

<sup>\*\*</sup> Variation in assay values can be attributed in part to the "spottiness" or segregation of gold values in the quartz vein. The size of sample possible with NQ core appears to be too small to include consistently the expected average number of gold grains and groups of grains.

#### SAMPLING AND ASSAYING

Core recovery was almost 100% with only a few very short, 2-8cm, lengths ground or lost from the core barrel.

The entire quartz vein was sampled as were the hanging wall and footwall rocks of the vein. Twenty centimeter samples were taken in the vein with shorter lengths collected in cases where geological conditions dictated. Some wall-rock sections were sampled in 30cm lengths.

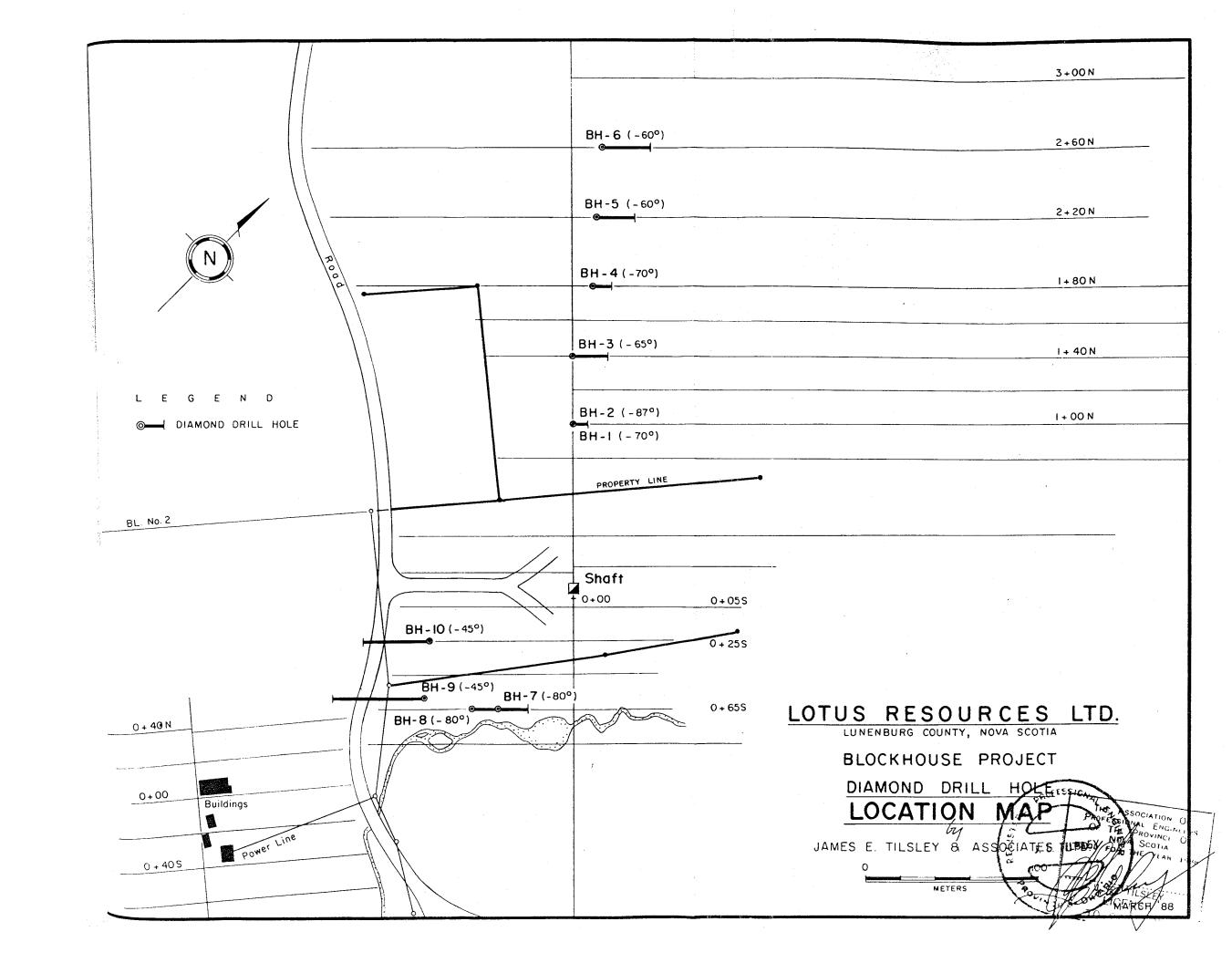
The core sampled was placed in a jig and photographed to record as much visual detail as possible before it was cut into sample lengths.

The entire core was pulverized at the assay laboratory to 80% minus 200 mesh. 20-gram sub-samples were fire-assayed. The bead was dissolved in organic solvent and the gold content determined by Atomic Absorption spectrometry at the Caledonia Assay Office. Samples sent to X-Ray Assay Laboratories in Don Mills were treated in the same manner except that the final gold determination was made by fire assay, aqua regia attack and weighing of the gold bead. Each pulp was assayed a minimum of two times. All samples that returned more than 0.10 oz Au/ton were assayed at least four times and the grade computed by simple averaging of individual assay results.

This sampling and assaying approach has been found adequate to establish reliably the grade of the core sample.

The relationship of the grade of the core sample to the grade of the vein is another matter which relates to factors

such as size of gold grains, degree of segregation of values, size of segregations within the vein and the weight of samples taken. The number of samples of less than optimum size required to establish the grade of the vein cannot be determined from the results of the diamond drilling done to date. Neither can the optimum field sample size be defined. Possibly twenty to thirty additional intersections would be necessary to permit estimation of the accuracy of the grades suggested by the sampling plan of the 90m level.



# Province of Nov Assertion Department of Mini Response License II

### Report of Work

I, the undersigned, holder of/agent for, Exploration License No. 6642 issued on the 20th day of October 19 79, hereby report work as follows:
I have, under said License, and in conformity with the provisions of The Mineral Resources Act, performed or caused to be performed on the licensed area 194 days' work (eight-hour days) not reported before, totalling \$ 3,880.00 as per the attached list of expenditures. (Rate is one day's work for each \$20.00 spent.)
Expenditures relating to office overhead, transportation, lodging, freight, express, construction of roads, erection of buildings, etc., will be accepted up to a maximum of ten percent (10%) of the <b>required</b> work.
The said work consisted of engaged James E. Tilsley & Associates Ltd., consulting
geologists and mining engineers, to review exploration data obtained during the
1982-1983 field season and to recommend upon further development of the Property.
( see report on the Blockhouse Property by James E. Tilsley & Associates Ltd.
dated March 24, 1988).  Attached is a geological report with applicable maps, sample results, drill logs, etc., which is submitted as evidence and initialed by me.  My Post Office address is P. O. Box 10, Dartmouth, Nova Scotia, B2Y 3Y2  Tel. No. 462 - 2445
Dated this 13th day of March 19 89
Lotus Resources Ltd.  Per: Mayor welch.  Signature of Licensee Agent/
I hereby make oath and say that the above statement is true and correct.
Millanon Infinis
Signature of Licensee/Agent
for Lotus Resputces Ltd.
Sworn to
at Halifax
in the County of Halifai  Province Nova Scotea  > 3
this 13th day of Arech A.D. 19 Pa

The NAMES and ADDRESSES of the men who performed the said work and the DATES upon which each man worked in its performance are as follows:

NAME	ADDRESS	MONTH	DATES
James E. Ti	lsley & Associates Ltd.		<del></del>
G.P. Box 11 Aurora, Ont L4G 3G8	5, R.R. # 2 arío		
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#### LOTUS RESOURCES LTD.

List of Expenditures for Exploration License No. 6642

Report prepared by James E. Tilsley & Associates Ltd. consulting geologists and engineers, dated March 24, 1988, reviewing exploration data obtained during the 1982-1983 field season and recommending upon further development of the Property.

TOTAL EXPENSES CLAIMED

\$3,500.00

Office overhead, etc.

360.00

\$3,860.00

ACTURE NIME SOLVEN

Province Nova Scatea

#### JAMES E. TILSLEY & ASSOCIATES LTD.

#### CONSULTING GEOLOGISTS AND ENGINEERS

5 STEEPLECHASE AVE. GP BOX 115, AURORA, ONT.

(416) 727-6822

L4G 3G8 CANADA

Lotus Resources Ltd. 14 Delta Drive

Dartmouth, Nova Scotia B2V 1S8

Inv.

88 - 826 25 - 03 - 88 Blockhouse

Date Project

Re: Qualifying Report, Blockhouse Gold Property.

Expenses and Professional fees:

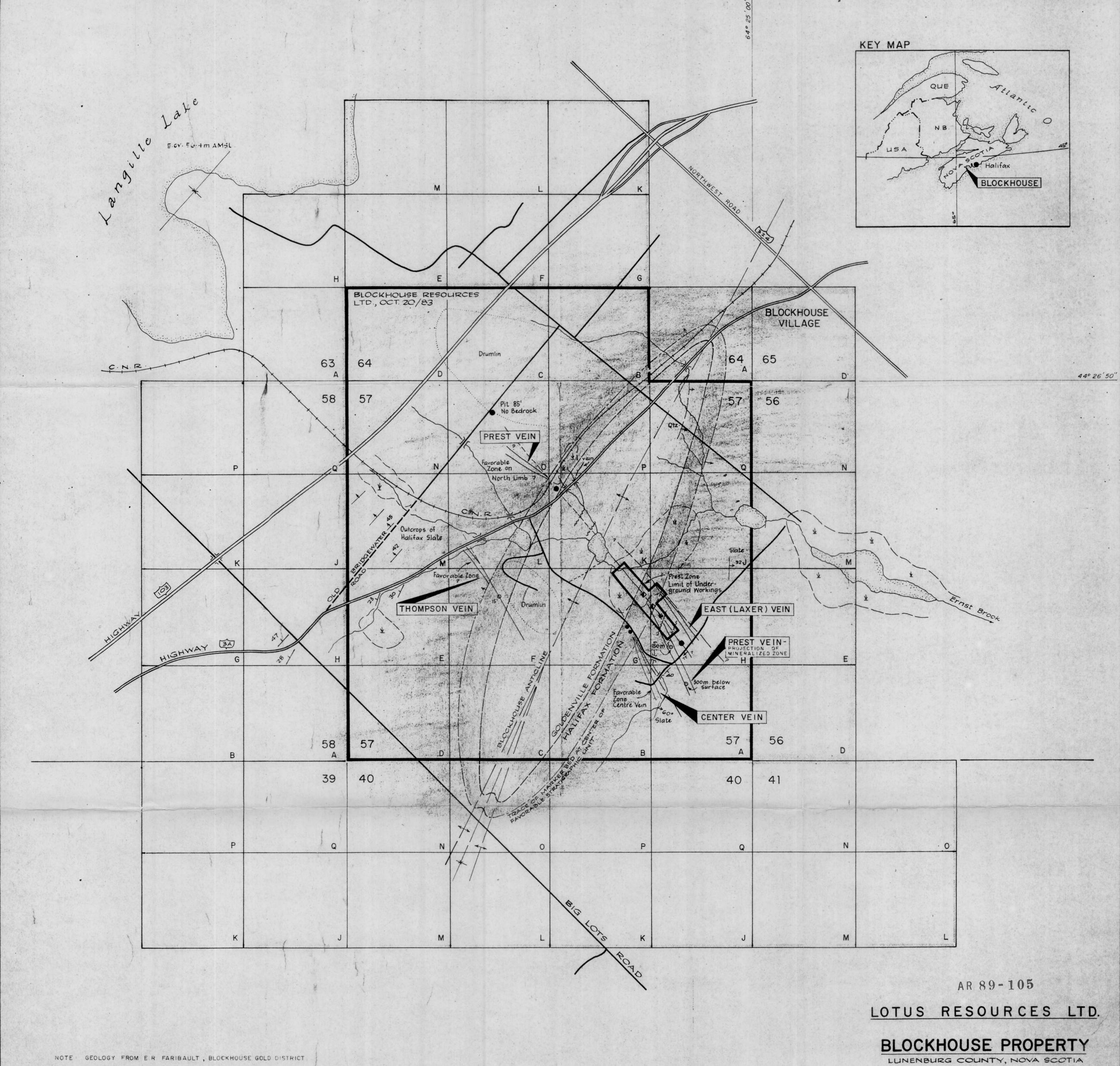
As per agreement

\$3 500.00

HEDENAED WINES WEDENAED

J. E. TILSLEY LICENSE TO PRACTICE

Province Nova Scotea



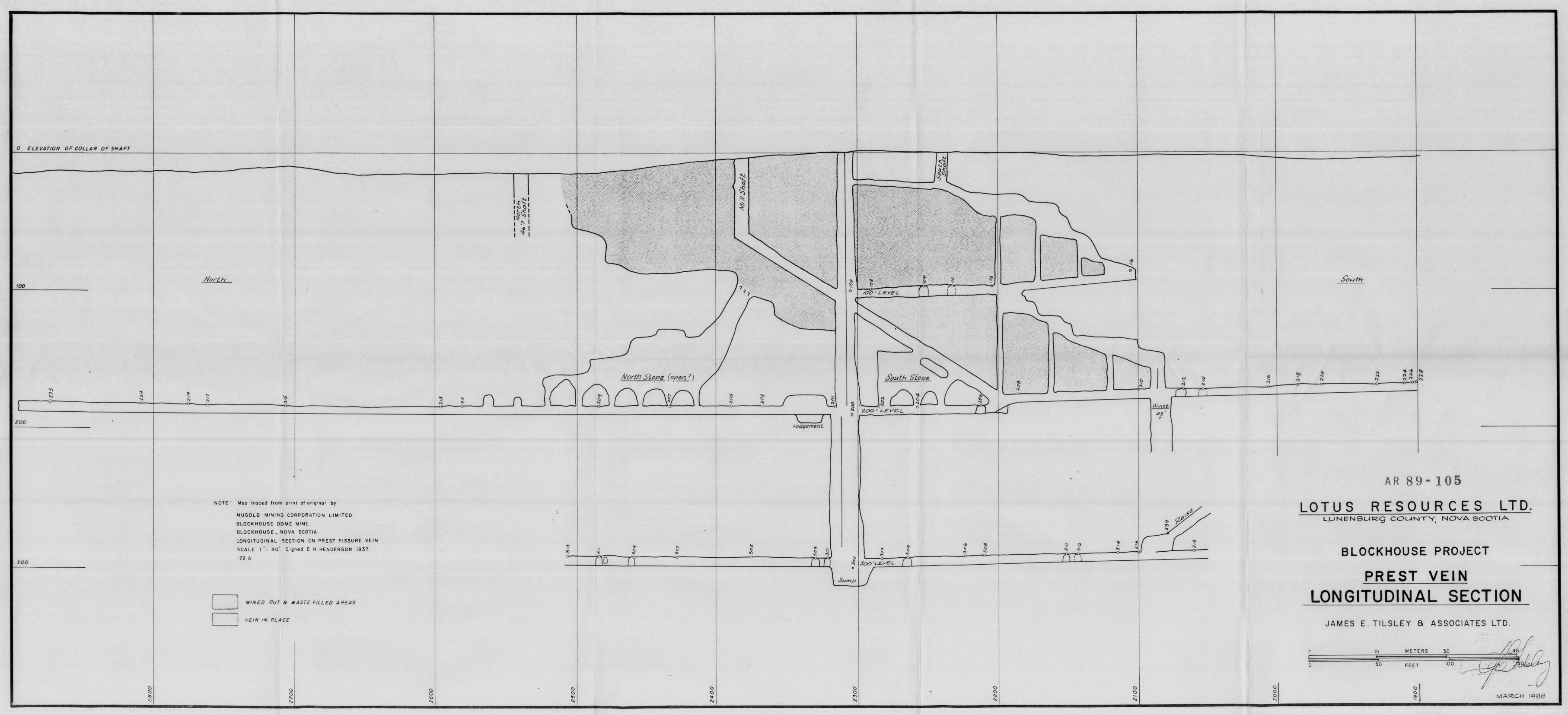
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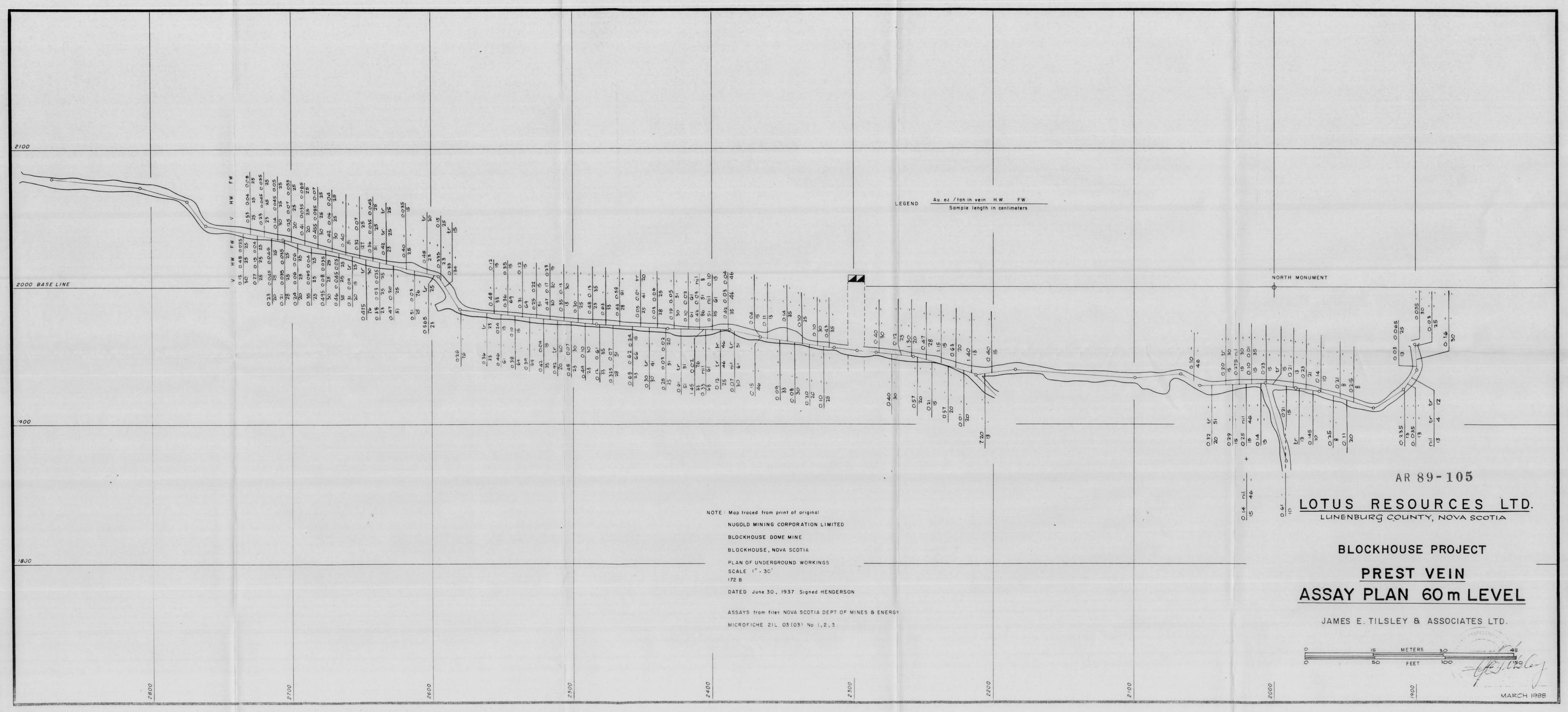
PUBLICATION No 2153 MAHONE BAY SHEET No 88 1:63,360 (1929)

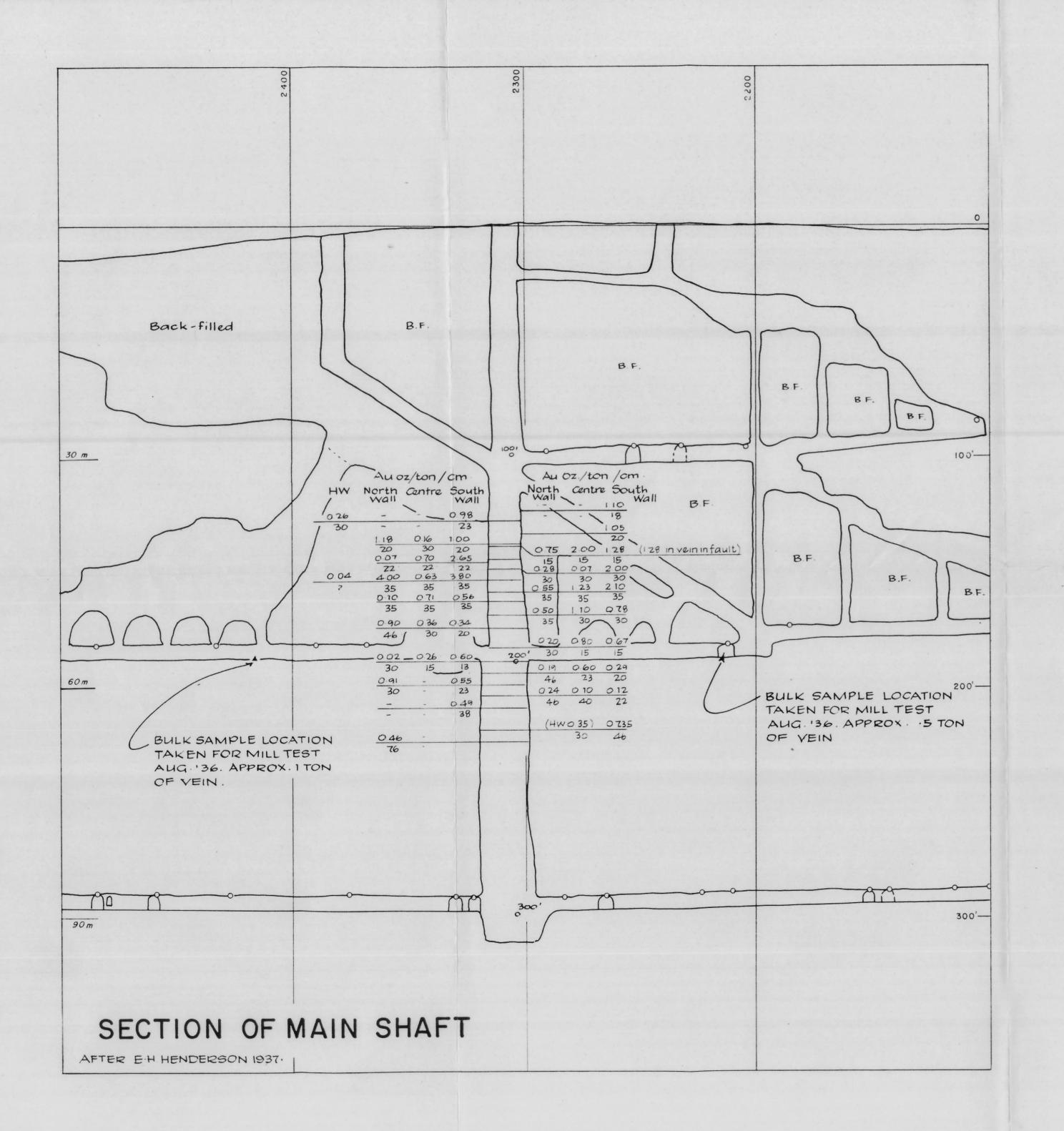
## AND CLAIM MAP

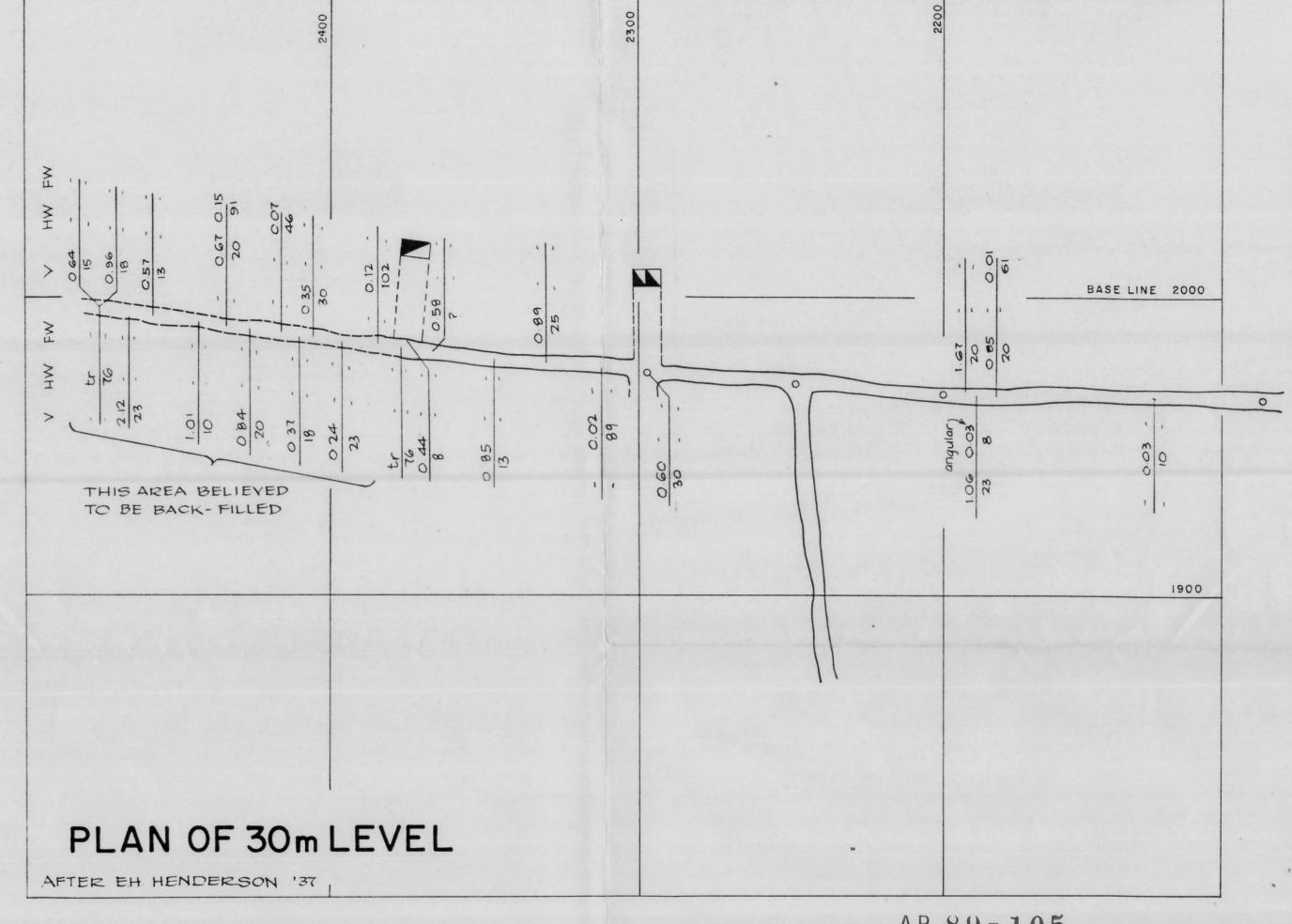
JAMES E. TILSLEY & ASSOCIATES LTD.

Scale 1: GOOD I. E. TILLEY DE ME YEAR









ALL ASSAY IN OZ PER TON IN VEIN, HANGING WALL OR FOOT WALL AS INDICATED

ASSAYS FROM FILES NOVA SCOTIA DEPT. OF MINES

AND ENERGY, MICROFICHE 21L 03 (03) NO 1,2,3.

SAMPLE LENGTH IN CENTIMETERS

AR 89-105

### LOTUS RESOURCES LTD.

LUNENBURG COUNTY, NOVA SCOTIA

BLOCKHOUSE PROJECT

## PREST VEIN ASSAYS SHAFT, & 30 m LEVEL

JAMES E. TILSLEY & ASSOCIATES LTD.

			8/200
C	15	Meters	3C 74 A5
C	50	Feet	100 100 159

MARCH 1988

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