GEOLOGICAL REPORT ON

THE COMSTOCK 2 CLAIM AND THE UPPER COMSTOCK WORKINGS

Comstock 1 to 4 R5395 to 8 (7)

Claims

Slocan Mining Division

N.T.S. 82 K/6E

50° 19.5' N., 117° 9' W.

Owner:

Ambergate Explorations Inc.

1016-470 Granville Street

Vancouver, B.C.

V6C 1V5

by

John Ostler; M.Sc., P.Geol.

Consulting Geologist

September 23, 1988

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SUMMARY

The writer was retained by Ambergate Explorations Inc. of Vancouver, B.C. through Cassiar East Yukon Expediting Ltd. to conduct a program of geological mapping and sampling on the Comstock 2 claim and on the Upper Comstock Workings.

This report is a record of exploration conducted on the Comstock Property from August 14 to 19, 1988. This exploration was conducted as part of a joint exploration project between the writer and Ambergate Explorations Inc. during which work was done on the Comstock 2 claim and adjoining Sunshine Property. Work conducted on the Sunshine Property is recorded in a separate assessment report.

The Comstock Property is located in the Slocan Range of the Selkirk Mountains of southeastern British Columbia. The property comprises the Comstock 1 to 4 claims with record numbers R5395 to 8 (7). These claims cover 38 claim-units; 950 ha (2280 A) including overlap. The property is centred on 50° 19.5' N., and 117° 9' W. in the Slocan Mining Division of B.C.

During the 1988 program, direct access to the eastern Comstock Property was by helicopter from the town of Nakusp to a camp site on the Sunshine Property near the eastern boundary of the Comstock 2 claim. The helicopter flight took 25 minutes one-way.

Nakusp is the nearest expediting centre to the property. It is located south of Revelstoke and is about 635 km (408 mi) from Vancouver, B.C.

The Comstock Property straddles a ridge between Cascade and Mat creeks; both of which drain eastward into the Lardeau River. Elevations on the property range from about 1204 m (3950 ft) to about 2667 m (8750 ft).

The property is covered by high alpine cliffs, bluffs and skree slopes above 2134 m (7000 ft) elevation on the northern side of Comstock Ridge and above 2591 m (8500 ft) on the southern side of the ridge. Alpine meadow with abundant rock outcrop cover slopes below 2591 m (8500 ft) on the Comstock 2 claim. Lower erosional slopes formed by the postglacial downcutting of Cascade Creek coversmost of the Comstock 3 and 4 claims below elevations of about 1829 m (6000 ft) on the northern side of Comstock Ridge. On these slopes, outcrop is confined to bluffs formed from comparatively resistant strata. Forest cover there varies from mature hemlock found at elevations below 1676 m (5500 ft) to spruce-pine forest at higher elevations.

The Comstock Property was staked by P.J. Shernan during 1919. That year work began on the upper tunnel at the Main Comstock Vein and trenching exposed the Upper Comstock Vein. During the mid-1920's, the Comstock Property was explored by the Juno Syndicate of Nelson, B.C. It was developed in conjunction with the Juno Property located 3 km west of the Comstock. The Juno workings are now on the Amber Property, also controlled by Ambergate Explorations Inc.

The 1987 exploration on the Comstock Property by Ambergate included geological mapping on the western part of the claims; location, exposure and sampling of the Main Comstock Vein, and location of the Main Workings, trails and cabin sites. During 1988, Ambergate's exploration included geological mapping of the Comstock 2 claim, and location and sampling of the Upper Comstock Trenches.

The northeastern part of the Comstock Property is underlain by andesitic tuffs and flows of the Index Formation. The southwestern part of

the property is underlain by turbidite sequences and associated pelites and carbonates of the Broadview Formation.

Together, these formations form part of an eugeosynclinal sequence deposited in a trough that formed within the Cordilleran Geosyncline during the Early Palaeozoic Eon.

On the Comstock 2 claim, the contact between these formations was found to have initially been gradational and conformible. During deformation, the main mass of the Index Formation Volcanics was decoupled from the Broadview Formation sediments near a facies change between them. The Broadview sediments were then thrust northeastward over the Index volcanics. Subsequently the contact underwent transverse movement.

The Main Comstock Workings were examined during Ambergate's 1987 exploration program. The Upper Comstock Trenches were examined during the current program.

The Upper Comstock Trenches are located on top of a rounded part of the crest of Comstock Ridge at an elevation of 2627 m (8620 ft) near the Comstock 2-3 claim line.

The Upper Comstock Vein and a conjugate vein are explored in six trenches in an area of about 0.25 ha.

The trenches were sloughed in so the veins could not be measured in place. However samples of massive and disseminated galena in quartz from the Upper Comstock Vein assayed up to 35.23 oz/ton silver and 36.5% lead. The conjugate vein was very poorly mineralized.

GEOLOGICAL REPORT ON

THE COMSTOCK 2 CLAIM AND THE UPPER COMSTOCK WORKINGS

1.0 INTRODUCTION

1.1 Terms of Reference

The writer was retained by Ambergate Explorations Inc. of Vancouver, British Columbia through Cassiar East Yukon Expediting Ltd. to conduct geological mapping on the Comstock 2 Claim, and locate, map and sample the Upper Comstock workings. Work was done on the Comstock and adjoining Sunshine Property from August 14 to 19, 1988 as a joint project between Ambergate Explorations Inc. and John Ostler. Data compilation continued part-time until September 7, 1988.

This report is a record of exploration conducted on the Comstock Property during August, 1988. Work conducted on the Sunshine Property is recorded in a separate report (Ostler, 1988).

Costs incurred during the exploration were apportioned to the Comstock and Sunshine properties according to the amount of time spent on each property.

1.2 Location and Access

The Comstock Property is located in the Slocan Range of the Selkirk Mountains of southeastern British Columbia (Figure 1). The property comprises 38 claim-units covering 950 ha (2280 A) centred on 50° 19.5' north latitude and 117° 9' west longitude in the Slocan Mining Division of B.C. (Figures 2 and 3).

It is about 635 km (408 mi) by road from Vancouver to Nakusp, B.C., the nearest supply centre to the property (Figure 2). Travel time from

Vancouver to Nakusp is about 10 hours via B.C. highways 5, 1 and 23.

Direct access to the Comstock Property from Nakusp is by helicopter; a 20 minute flight one way to the camp site at the Main Comstock workings (Figure 3).

The 1988 mapping on the Comstock 2 claim was conducted from a camp at the Maggie veins near the eastern boundary of the Comstock Property (Figure 3), a similar distance from Nakusp.

The camp-area at the Main Comstock workings is about 8 km (5 mi) from B.C. Highway 31. To mobilize a large camp on the Comstock Property, equipment and supplies could be trucked to an area on Highway 31 near the property and slung beneath a helicopter to the camp (Figure 2 and 3). This was successfully done during mobilization of the camp on the Amber Property at Blue Lake southwest of the Comstock Property during the 1987 and 1988 field seasons.

During the 1920's, access to the property and its workings-areas was by a steep switchback trail that connected the Comstock and Juno properties. The Comstock trail diverged from the main Cascade Creek horse trail near the lower Juno workings, now near the northwestern corner of the Amber 4 claim (Figure 3).

The main Cascade Creek horse trail was levelled to a width of 1.5 m It descended the Cascade Creek valley at a generally constant grade to the Lardeau River. There, it met a branch of the Canadian Pacific Railway. Subsequently, the railway was abandonded and B.C. Highway 31 was built on the road bed.

Logging was recently conducted in the lower part of the Cascade Creek

valley. During logging, a truck road was built along the northern side of Cascade Creek from the highway to the western boundary of the Amber Property (Figure 3).

Now, the truck road is abandoned and washed out in several places. An acceptable mine road could be built from B.C. Highway 31 to the workings on the Comstock Property by rebuilding the truck road up the valley to the Amber Property and extending it back along the side-hill across the Comstock 3 claim to the workings.

1.3 Terrain and Vegetation

The Comstock Property is located in the Slocan Range of the Selkirk Mountains, one of four subdivisions of the Columbia Mountains of southeastern British Columbia (Holland, 1976).

Holland's description of the terrain of the Slocan Range near the Comstock Property is as follows:

> South of Trout Lake the area is largely underlain by intrusive rocks, which Cairnes remarks in the Slocan Mountains " show the strong relief characteristic of a mountainous topography in a late adolescent stage of erosion. . . . The areas of Nelson granite and Kaslo series are normally more rugged and sharper in outline than those underlain by sediments of the Slocan series."* The Slocan Ranges are characterized by long, uniformly steep, heavily timbered slopes rising through about 5,000 feet to angular peaks and sharp narrow interconnecting ridges. Cirque glaciers have sculptured the peaks, and high ridges and valley glaciers have facetted the spurs.

The Comstock Property straddles a ridge between Cascade and Mat creeks; both of which drain eastward into the Lardeau River (Figure 3). Cascade Creek enters the Lardeau River about 8 km (5 mi) northeast of the centre of the property. Elevations on the Comstock Property range from about 1204 m (3950 ft) at Cascade Creek at the northwestern corner of the

Comstock 4 claim to about 2667 m (8750 ft) at the summit of Comstock Ridge on the Comstock 1 claim (Figure 3).

Slopes on the Comstock Property can be divided into three distinct types that are related to location and paragenesis. They are: high alpine bluffs, cliffs and skree slopes; glaciated alpine slopes and lower erosional slopes.

High alpine bluffs, cliffs and skree slopes occur at elevations above 2134 m (7000 ft) on the northern side of Comstock Ridge and above 2591 m (8500 ft) on the southern side of the ridge. These slopes are formed by predominantly mechanical weathering associated with alpine glaciation. There,outcrop is abundant and regolith is composed entirely of unsorted angular pieces of rock. Plant growth is minimal.

Glaciated alpine slopes are located above 1829 m (6000 ft) on the northern side of the ridge (Figure 3) and above 2286 m (7500 ft) on the southern side of the ridge. These slopes cover most of the Comstock 2 claim.

Their general shapes were carved by Pleistocene-age alpine glaciation. During ice retreat, a thin layer of ablation till was deposited on these slopes porviding initial regolith for soil development. Outcrop is common on these slopes. Soil in this area is covered with a carpet of grasses and alpine flowers.

On the Comstock Property, lower erosional slopes are located above Cascade Creek at elevations below 1829 m (6000 ft) (Figure 3). This includes an area covering most of the Comstock 3 and 4 claims. They are presumed to have been formed by the down-cutting of Cascade Creek during local post-glacial isostatic rebound.

On these slopes, outcrop is confined to bluffs composed of the rock strata that are most resistant to erosion. On the western part of the Comstock 4 claim, these slopes are covered by a stand of mature hemlock. Tree trunks in this forest are commonly over 1 m thick and there is very little underbrush except near streams and springs. There; willow, alder and devil's club grow in profusion. The hemlock extends upslope to an elevation of about 1676 m (5500 ft) where it is gradually replaced by spruce with an extremely thick undergrowth of berry bushes.

Spruce is the dominant tree species between 1676 m (5500 ft) and 2134 m (7000 ft) elevation. On the southwest facing slopes in this area, dry soil conditions prevent the development of thick undergrowth and pine becomes a significant species in the spruce forest.

The northern parts of the Comstock 1 and 4 claims have been burned over recently by a fire that burned much of the lower Cascade Creek valley. There, a community of bushes and immature trees is growing over the burn.

Average annual precipitation is moderate and has an even distribution throughout the year. Comstock Ridge is covered with snow from October until June. At lower elevations, the amount and annual duration of snow cover decreases perportionately.

1.4 Property

The Comstock Proeprty comprises the following mineral claims all located in the Slocan Mining Division of British Columbia:

Claim Name	Record No.	No. of Units	Record Date
Comstock 1	R5395 (7)	8	July 13, 1987
Comstock 2	R5396 (7)	6	July 13, 1987
Comstock 3	R5397 (7)	8	July 13, 1987
Comstock 4	R5398 (7)	16	July 13, 1987
		38	

The Comstock 1 to 4 claims are owned 100% by Ambergate Explorations Inc. (Figure 3).

1.5 Previous Work

The Comstock Property was owned by P.J. Shernan of Nelson, B.C. in 1919. That year, the property was developed by the Nelson Mining and Development Company of Spokane Washington. By the time the property was visited by a provincial geologist late that year, the Upper Comstock showings had been trenched and the upper tunnel at the Main Comstock Vein was being excavated. The provincial geologists comments on the 1919 work were as follow:

> **Comstock Group.** —This property, consisting of three claims—*Comstock*, *Silver Hill*, and *Noonday*—was originally located by P. J. Sheran, of Nelson, and recently bonded by him to the Nelson Mining and Development Company, of Spokane, and of which P. A. Starkey is president. The claims are situated on the southerly side of Cascade creek at an elevation ranging from 6,000 to 8,000 feet. Leaving the railway at a point two miles from Poplar, the trail follows an easy grade up the creek for a distance of about six miles to the lower cabin, and then climbs steeply to the mine cabin, situated on the timbered hillside at an elevation of 6,000 feet.
>
> The country-rock, which forms a series of more or less jagged bluffs at a short distance above the cabin, consists of schists and argillites with inclusions of aplite dyke-rock. The whole rock-mass has been subjected to much movement and the formation is broken and contorted. Evidence of uniformity of dip and strike is lacking, and judging by the contour of the hillside it would appear reasonable to come to the conclusion that the ground in this vicinity is not in-place, but has probably slid from a higher part of the mountain-side.
>
> In this formation a quartz vein, sparsely mineralized with galena, outcrops in a few places, but is broken and lacks continuity. A sample from a small pile of sorted ore from the surface ran: Gold, trace; silver, 12 oz.; lead, 22.6 per cent.; zinc, 2 per cent. Two crosscut tunnels have been driven to tap this vein: the upper is 90 feet and has a small showing of ore near the face. A sample of sorted ore from tunnel ran: Gold, trace; silver, 11.5 oz.; lead, 11 per cent.; zinc, 3 per cent. The lower tunnel is in 170 feet, but the vein has not yet been encountered. The vertical distance between this tunnel and the upper is 158 feet.
>
> At the time of examination the property could hardly be considered anything more than a prospect, with indications of ore, but not in commercial quantity, neither had sufficient been developed to encourage any operations on a larger scale at present.
>
> The *Comstock* claim is located on the summit of the rounded ridge above the *Noonday* and at an elevation of 8,000 feet. The surface of the ridge is covered to the depth of a few feet with broken fragments of the country-rock, but a number of open-cuts have exposed vein-matter. At a short distance from the summit, on the easterly slope of the mountain, an open-cut discloses a well-mineralized quartz vein, which unfortunately was covered at the time of examination; the large pieces of ore piled up in the cut would indicate the width of ore to be at least 12 inches. A sample of this ran: Gold, trace; silver, 15.2 oz.; lead, 25 per cent.; zinc, 4 per cent. The formation, consisting of schists and argillites, is cut by aplite dykes, along or near the contact of which quartz veins have been formed. General conditions appear to justify further prospecting-work on this claim, with a view of proving sufficient ore on or near the surface to warrant crosscutting at a depth.
>
> B.C. Min. Mines, Ann. Rept., 1919; pp. N122-N123

The bond held by the Nelson Mining and Development Company had expired by 1925 and Shernan was then developing the property through the Juno Syndicate, backed by associates of Shernan. During the mid-1920's the Comstock Property was being developed in conjunction with the Juno Property (Figure 3) located 3 km west of the Comstock.

The Juno workings are now on the Amber Property, also controlled by Ambergate Explorations Inc.

The Comstock workings were visited in 1925 by a provincial geologist who recorded work on the Main Comstock Vein as follows:

> **Comstock.**— This property, consisting of the *Comstock*, *Noonday*, and *Garrity* claims, and owned by P. J. Sheran, of Nelson, was being developed this summer with a small crew by the Juno Syndicate, composed of business-men of Nelson. The claims are situated on the steep mountain-slope on the south-eastern side of Cascade creek at elevations ranging from 6,000 to 7,500 feet. The trail leaves the railway at a point 2 miles below Poplar and follows an easy grade up the creek for a distance of about 6 miles to the lower cabin; then climbs steeply to the mine cabin situated on the timbered hillside at an elevation of about 6,000 feet.
>
> In the vicinity of the workings the formation consists of schists and argillites with intercalated aplite dykes. A few hundred feet above the mine cabin some open-cuts have been made along the outcrop of a quartz vein mineralized with bunches and disseminations of galena and small amounts of zinc-blende. The vein, the width of which was only partially exposed, apparently conforms to the stratification of the enclosing rocks, which have a general north-westerly strike and dip into the hill at about 40°. A sample from a small pile of ore from the surface assayed: Gold, trace; silver, 12 oz. to the ton; lead, 22.6 per cent.; zinc, 2 per cent.
>
> About 60 feet vertically below the open-cuts a tunnel 90 feet long cuts a few feet of mineralized quartz near the face. A sample of sorted ore from this tunnel assayed: Gold, 0.03 oz.; silver, 23.4 oz. to the ton; lead, 37.6 per cent.; zinc, *nil*. At a vertical distance of 97 feet below the upper tunnel a crosscut was being driven to intersect the vein. This tunnel was then in about 258 feet and the vein was expected to be cut in a short distance if its dip was maintained.
>
> The above workings are all on the *Noonday* claim, which is the lowest. The *Comstock* claim is situated on the summit of the ridge above the *Noonday* and *Garrity* claims. Just over the summit an open-cut has been made exposing a quartz vein the width of which, said to be 4 feet, could not be ascertained as it was partially covered with loose rock and drifted snow. A little digging disclosed a portion of the vein 12 inches wide well mineralized with galena, a sample of which assayed: Gold, 0.02 oz.; silver, 17.1 oz. to the ton; lead, 29.6 per cent.; zinc, 2 per cent. The strike of this vein is apparently easterly and westerly across the ridge.

B.C. Min. Mines, Ann. Rept., 1925; p. A237

Work continued sporadically until 1930. In 1928, a provincial geologist commented on work on the Main Comstock Vein as follows:

Comstock.* During the summer months a small crew was employed by P. J. Sheran on the *Comstock* and adjoining *Noonday* claim, which belong to a group of claims situated on the south-eastern side of Cascade creek. A steep switchback trail connects the cabin with the main trail at a point about 6 miles from the Lardeau Gerrard Railway. A small amount of development has been done at intervals since the property was described in the Annual Report for 1925. The principal work done during the current year was the continuation of the lower crosscut tunnel on the *Noonday*. The vein had not been reached when the property was visited in August, apparently due to its dip into the hill being flatter than at first supposed. The mineralization in the *Comstock* is chiefly silver-lead-zinc, but on the *Juno*, also owned by Sheran, situated farther up Cascade creek and to the west of the *Comstock*, appreciable gold values are associated with iron and lead sulphides. On the *Reco*, examined in 1925, the mineralization in open-cuts was similar to that of the *White Eagle*, also described in this report, and a sample of selected ore from an open-cut assayed: Gold, 0.32 oz. to the ton; silver, 18.6 oz. to the ton; lead, 32.2 per cent.; zinc, *nil*.

At the Bullock Gold Mines' property a long crosscut tunnel is being driven, to cut the vein system at depth, by J. J. McNamara, who installed a portable compressor and had a small crew steadily employed during the season. A description of the property may be seen in the Annual Report for 1927. There was about the usual amount of prospecting activity in this section of the district.

B.C. Min. Mines, Ann. Rept., 1928; pp. C308-C309

No work was done on the Comstock Property from 1930 until 1987. The trails to the Comstock workings were obliterated at lower elevations and consequently, knowledge of the location of the Comstock became in doubt. In B.C. mineral inventory files, the location of the the Comstock was known to an accuracy of 0 (location unknown) in 1987 and in Geological Survey of Canada, Open File 464, Read (1976B) guessed at the location of the Comstock only within 1.6 to 6 km^2.

During 1987, Ambergate Explorations Inc. found the Main Comstock workings and mapped a small part of the Comstock 3 claim (Figures 3, 4 and 6) (Spearing and Ostler, 1987B).

1.6 Summary of Present Work

The 1988 field program was conducted from August 14 to 19, 1988. The work was undertaken by:

John Ostler; M.Sc., P.Geol. West Vancouver, B.C.	Consulting Geologist President, Ambergate Expl. Inc.
W. Adam Foran Toronto, Ontario	Geological Assistant

Field work on the Comstock-Sunshine joint mapping project comprised geological mapping of the southeastern part of the Comstock Property and the southern part of the Sunshine Property; mapping and sampling of the Comstock and Maggie veins.

The work summarized hereinafter comprises surface exploration on the Comstock Property and that part of mobilization time attributable pro-rata to the surface exploration on the Comstock Property.

Surface exploration on the Sunshine Property from this project is contained in a separate assessment report (Ostler, 1988).

The 1988 work program on the Comstock Property included the following:

	Man-days
A. Geological Mapping	
the Comstock 2 claim and the southeast corner of the Comstock 1 claim were mapped at a scale of 1:10,000 (Figure 6); an area of 155 ha	3
B. Location, Mapping and Sampling of the Upper Comstock Workings;	
the Upper Comstock Workings were located and mapped at a scale of 1:500; an area of 1 ha. 5 samples were assayed for Cu, Pb, Zn, Ag, Au	1
C. Transport to Camp;	2
Total man-days on the Comstock Property	6

1.7 Claims Worked On

During 1988, work was done on the following claims:

Claim Name	Record No.	No. of Units	Current Expiry Date
Comstock 1	R5395 (7)	8	July 13, 1992
Comstock 2	R5396 (7)	6	July 13, 1991

2.0 GEOLOGY

2.1 Regional Geology

The area around the Comstock Property is underlain by rocks that range in age from Early Palaeozoic to Jurassic. These rocks can be divided into provenancal groups: the Lardeau Group, an eugeosynclinal assemblage; the Milford Group, a miogeosynclinal assemblage and Mesozoic-age granitic intrusives.

These rocks form part of the Kootenay Arc, which extends in south-eastern British Columbia from the U.S. border to northeast of Revelstoke (Douglas ed., 1970). Kootenay Arc sediments and volcanics were deposited at the western margin of proto-North America in the Cordilleran Geosyncline. The stratigraphy around the Comstock Property was deposited in one of several elongate sub-basins in the Cordilleran Geosyncline during the Early Palaeozoic Era.

Lithological mapping conducted by Read (1973) around the Comstock Property reveals that this region is underlain by a succession of rocks that record the gradual filling of a basin (Figure 4). He later interpreted the rocks across the Comstock Property (Figure 5) (Read, 1976A).

Extending across the northeastern part of the property is a thick sequence of mafic to intermediate volcanics of the Index Formation (Figures 4, 5 and 6). In the Cascade Creek area, these volcanics are accompanied by a minor amount of shale and phyllite. Farther north near Trout Lake, the Index Formation volcanics are accompanied by far more sediments. There, the Index Formation is interpreted to have been deposited from basin-floor vents in deep water (Fyles and Eastwood, 1962).

Read (1973) mapped a fault contact between the Index Formation volcanics and the basal grits of the overlying Broadview Formation across the northeastern part of the Comstock Property (Figure 4).

The writer disagrees with Read's placement of the Index-Broadview boundary fault. The writer places that fault across the centre of the property, crossing from the eastern part of the Comstock 4 claim, through the southwestern corner of the Comstock 1 claim and across the central part of the Comstock 2 claim (Figure 6).

Read (1973) mapped across the Broadview Formation northwest of Poplar Creek; about 8 km northwest of the Comstock Property. There, he found that the Broadview Formation clastics were overlain by a thin sequence of phyllites and phyllitic carbonates.

Two traverses into the upper Cascade Creek area from the north and the southwest (Figure 4) hinted that the area of distal basin sedimentation represented by phyllites and phyllitic carbonates increased significantly southwestward. No new data on the property-area was added to Read's 1976 interpretation (Figure 5). The Broadview Formation on the Comstock Property remained unmapped.

The 1987 and 1988 mapping by the writer on the Amber Property which adjoins the Comstock Property to the southwest (Spearing and Ostler, 1987A and 1988) confirmed that the Broadview Formation in that area comprised a fining-upward sequence of turbidites beneath phyllitic carbonates and phyllites (Figure 6).

The Broadview clastics lie in fault contact with the sandstones of the Milford Group about 2.5 km southwest of the Comstock Property (Figures 4 and 5).

The Milford Group comprises a series of micaceous sandstones, phyllite and calcite-bearing quartzite that form a miogeosynclinal sequence above the Broadview Formation sediments (Read, 1973 and 1976A) (Figures 4 and 5).

Rocks of the Milford Group and Broadview Formation were intruded during the Early Jurassic Period by leucoquartz monzonite and syenite of the Kuskanax Batholith. Batholithic intrusion was succeeded by the intrusion of small parasitic stocks of leucoquartz monzonite and syenite along the northeastern margin of the batholith (Read, 1973 and 1976A). Some of these parasitic intrusions were exposed about 3 km southwest of the Comstock Property (Figure 4).

Read (1973) recorded three generations of coaxial folding in the rocks northwest of the Comstock Property; and locally near intrusions, a fourth generation.

Regionally, the most important structures are second-generation folds which form northwest-southeasterly trending structures. First-generation folds are most commonly seen as isoclines within second-generation fold limbs. Third-generation structures are most commonly large open warps and minor folds.

The area near the property is regionally metamorphosed to the upper greenschist and lower amphibolite grades of metamorphism. Locally, near intrusive contacts, upper amphibolote and granulite grade metamorphism occurs.

The region is crossed by several long northwest-southeasterly trending faults which post-date ductile deformation.

2.2 Property Geology

The oldest rocks on the Comstock Property are andesitic volcanics of the Index Formation (Read, 1973) (Figures 4 and 6). These volcanics underlie the northeastern corner of the Comstock 4 claim, all but the southwestern corner of the Comstock 1 claim and the northeastern part of the Comstock 2 claim (Figure 6).

In the property-area, the Index Formation volcanics are generally green on fresh surfaces due to the development of iron-rich minerals during metamorphism. These rocks weather green to rusty brown. They comprise a series of andesitic tuffs, flows and very minor intercalated pelitic sediments that strike northwesterly across the property.

Volcanics near the northeastern corner of the Comstock 2 claim are mostly fine-grained tuffs and thinly bedded flows. On the central part of this claim, the andesites are more thickly bedded and coarser grained. There, porphyritic flows are commonly up to 2 m thick and contain plagioclase phenocrysts up to 4 mm in length. Tuffs include beds up to 4 m thick containing lapilli-sized fragments.

The Index Formation volcanics and Broadview Formation sediments were deposited as a continuous conformible sequence in the property-area. The true contact between these formations is a complex facies change where basin-floor volcanic extrusion is replaced by beds of volcanogenic sediments and turbidite beds.

During deformation, the Index Formation volcanics and Broadview Formation sediments decoupled beneath the facies change probably due to local weakness across a major ductility change between the formations. The

main mass of Index Formation volcanics is now in fault contact with the Broadview Formation. This boundary fault was mapped across the central part of the Comstock 2 claim (Figure 6) during the 1988 program.

Read (1973) mapped this boundary fault northwest of the writer's location (Figure 4). Read's location of the Index-Broadview contact across the Comstock Property differs from that of the writer probably because of the complexity of the facies change being mapped.

Above the Index Formation volcanics on the southwestern part of the Comstock Property is the Broadview Formation (Figure 6).

The metasediments of the Broadview Formation were interpreted by Read (1973) as an eugeosynclinal sequence recording the infilling of a northwest-southeasterly trending trough.

Rocks of the Broadview Formation in the Cascade-Mat Creek area are divided by the writer into five lithological units: andesitic volcanics; lithic sandstone and siltstone; siltstone, slate and phyllite; variably carbonaceous slate, phyllite and siltstone, and dolomitic siltstone and impure carbonate (Figure 6).

The andesitic volcanics of the basal Broadview Formation, unit Bav (Figure 6), are identical to and interpreted to have originally been part of the volcanic pile that now comprises the Index Formation. They were decoupled from the main mass of Index Formation volcanics during deformation.

The contact between this unit and the overlying arenaceous units in the Broadview Formation is gradational and very difficult to map. Its contact with pelitic and carbonate units is abrupt.

The lithic sandstones and siltstones, unit B1 (Figure 6), are a sequence of turbidites with individual beds ranging up to 2 m thick. They are light grey to buff and weather grey to rusty brown. Textural maturity defined by a decrease in micaceous layers and interclast matrix, seems to increase southwestward in the Cascade Creek area southwest of the Comstock Property (Spearing and Ostler, 1987A).

The contact between the lithic sandstones of unit B1 and the phyllitic siltstones of unit B2 is gradational. It can be defined generally by a rapid decrease in sandy strata compared with silty and pelitic strata.

The siltstone, phyllite and slate of unit B2 are the distal equivalents of the lithic sandstones of unit B1. They are far less resistant to erosion than the sandstones and tend to be crumbly and fissile in weathered outcrops. The rocks of this unit are generally grey, weathering to rusty brown. Micaceous development in the first- and second-phase cleavage planes form the most pervasive fabrics in these rocks.

Rocks of unit B2 have been mapped on the Comstock 2 and 4 claims (Figure 6). Mapping on the northeastern part of the Amber Property southwest of the Comstock Property indicates that these rocks are probably exposed on much of the Comstock 3 claim.

Variably carbonaceous pelites and siltstones form unit B3 (Figure 6). They are grey to black depending on free carbon content. The carbon in these rocks has been metamorphosed to graphite. Micaceous development in cleavage planes in this unit makes it very fissile causing it to weather regressively.

On the Comstock 2 claim, the contact between the variably carbonaceous pelites of unit B3 and the siltstones of unit B2 is comparatively

abrupt. On the Amber Property southwest of the Comstock Property (Spearing and Ostler, 1987A and 1988) the contacts between these units are gradational. The contact between units B2 and B3 is defined by the predominance of pelitic over silty layers and the appearance of a significant amount of graphite.

Rusty-weathering dolomitic siltstones and impure carbonates comprise unit B4 (Figure 6). They are blue-grey to grey and weather to light brown. Black chips of carbonaceous pelite are commonly obvious on pitted weathered surfaces of this unit. The amount of pelite in the carbonate is quite variable.

Contacts between the carbonates and other units are generally comparatively distinct, due in part to the differences in weathering surfaces.

Carbonates of unit B4 were mapped on the Comstock 2 claim (Figure 6).

Read's (1973) mapping around the Cascade Creek area revealed that the rocks of the Index and Broadview formations were folded by as many as four phases of deformation in that region. This deformation resulted in a series of northwest-southeasterly trending folds that were subsequently cut at oblique angles by long faults. Structures on the Comstock Property seem to conform to Read's regional interpretation.

The most important folds on the property seem to be southeasterly trending second-phase folds.

First-phase folds are most commonly exposed in pelitic and fine-grained volcanic rocks as minor isoclines. The extent to which first-phase folding has tectonically thickened the stratigraphy on the property is not known.

Folding intensity seems to be related to ductility in the Broadview

and Index Formation rocks across the property. Ductility is lowest in the andesitic volcanics of units lav and Bav and in the arenaceous rocks of unit B1. It is highest in the carbonaceous pelites and carbonates of units B3 and B4. Consequently, folding is most intense in the pelites and carbonates.

Cleavages associated with the first and second phases of folding are commonly sub-parallel. Commonly the second cleavage is indistinguishable from the first.

There seem to have been several episodes of faulting related to deformation in the property-area. Long northwesterly trending transverse faults were mapped in the area by Read (1973 and 1976A) (Figures 4 and 5). Displacement on these faults was reported to have postdated most ductile deformation.

One such fault defines the Index-Broadview contact on the Comstock Property.

Southwest of the Comstock Property on the Amber Property, northwest-trending and southwest-dipping thrust faults are very significant in disrupting Broadview Formation stratigraphy (Spearing and Ostler, 1988). The northeasterly trending tear faults mapped across the Sunshine 2 and 3 claims south of the Comstock 2 claim and associated deformation indicate that the Index-Broadview boundary fault may have been a thrust fault during the second phase of deformation (Figure 6) that translated the Broadview Formation rocks northeastward over the Index Formation. Transverse movement along this fault probably occured much later, after the completion of ductile deformation.

The rocks southeast of Cascade Creek were mapped by Read (1973) as belonging to the biotite zone of the upper greenschist facies of meta-' morphism. Mineral assemblages of this zone are typical of the quartz-albite-epidote-biotite sub-facies of the greenschist facies of metamorphism.

Micaceous mineral development during deformation is responsible for the development of pervasive cleavages in rocks across the property. The best-developed cleavage is from the first phase of deformation. It is commonly much more prevalent than bedding in pelitic strata. A cleavage from the second phase of deformation is normally less-well developed than the associated first-phase cleavage.

The third-phase cleavage mapped regionally by Read (1973) is not obvious on the Comstock Property. The fracture cleavage observed by the writer probably post-dates Read's third-phase cleavage.

Many aplite dykes and quartz veins were developed parallel with the dominant cleavage planes during or after deformation. The aplite dykes predate the quartz veins.

The most significant swarm of aplite dykes on the property occur in the upper part of the Index Formation near its contact with the Broadview Formation. They are seen from the northwest corner of the Comstock 2 claim to the southern boundary of the Sunshine 2 claim.

None of the aplite dykes contains economic mineralization. To avoid clutter, they were not mapped.

There are many veins of white milky quartz on the property. Veins in the Index Formation volcanics are generally unmineralized but may carry small amounts of pyrite and chalcopyrite. Veins in the Broadview Formation

sediments can contain massive and disseminated galena-sphalerite mineralization that carries a significant amount of silver.

The silver-lead potential of quartz veins was explored in two areas on the property during the early 20th century; the Main Comstock Workings (Spearing and Ostler, 1987B) and the Upper Comstock Trenches (Figure 7).

2.3 Interpretation of Property Geology

Fyles and Eastwood, (1962) interpreted the Index Formation volcanics near Trout Lake; several kilometers north of the Comstock Proeprty, to have been deposited in deep water in an open basin. Read (1973 and 1976A) interpreted the Broadview sediments to have been deposited as an eugeosynclinal sequence of turbidites on top of the Index Formation volcanics.

The writer believes these interpretations to be accurate for these rocks in the Comstock Property-area.

These rocks represent a single conformible sequence that was subsequently deformed by progressive deformation.

From east to west across the Comstock 2 claim, tuffs become generally predominant over flows in the volcanic stratigraphy, perhaps indicating a decrease in local volcanic activity over time. Locally, many pulses of volcanic activity are recorded in units lav and Bav.

The lithic sandstones and siltstones of unit B1 (Figure 6) were deposited mostly as turbidites. Near the Broadview-Index contact, the sediments in these beds were probably derived from local volcanics on the basin floor. As the basin-floor volcanics themselves were buried beneath the sediment surface, successive turbidite sedimentation was probably from a

source terrain northeast of the basin (Fyles and Eastwood, 1962).

As the source terrain northeast of the map-area was being denuded, increasingly mature sediments were being dumped into the basin. A general dominance of micaceous (lithic) clasts over feldspathic clasts in this unit indicated that the source terrain was probably composed mostly of volcanic and sedimentary rocks.

The siltstones and pelites of unit B2 (Figure 6) are a result of finer-grained material being dumped into the basin from a more severely eroded source terrain, or by deposition in a basin that was filling faster than it subsided.

The carbonaceous pelites of unit B3 attest to a period when comparatively little detrital sediment was being deposited into quiet deep water. The presence of free carbon in these rocks may be related to euxinic conditions in the water near the basin floor.

The silty carbonates of unit B4 also contain free carbon as graphite. These carbonates may have been deposited by turbidity currents sweeping basin-margin and reef detritus down into the central part of the basin.

The aplite dykes and sills exposed throughout the Index Formation andesites and in the Broadview Formation clastics above seem to have been formed by the local sweating out of material during the first two phases of deformation.

The quartz veins exposed on the Comstock Property appear to postdate the aplite dykes.

3.0 PROPERTY MINERLAIZATION

3.1 Main Comstock Workings

The Main Comstock Workings were examined during the 1987 field program (Spearing and Ostler, 1987B). They were not visited during 1988.

A brief description of the Main Comstock Workings is included for completeness.

The Main Comstock Vein is exposed in open cut CW3 on a steep forested hillside at an elevation of 2249 m (7380 ft) on the Comstock 3 claim. In this cut, the vein is 1.5 m thick, strikes 342° and dips 24° northeasterly (Figures 3 and 6).

This vein was intruded into fine-grained arenites of the Broadview Formation. Locally, it was emplaced beneath a metre thick aplite dyke which had cooled before vein deposition.

The Main Comstock Vein is composed of milky quartz with smokey grey bands. Within the quartz are bunches and disseminations of subhedral 2 mm wide crystals of galena and accessory sphalerite. The galena commonly encloses 1 to 2 cm long blebs of white quartz.

Selected grab samples from open cut CW3 assayed up to 19.36 oz/ton silver and 33.1% lead (Spearing and Ostler, 1987B).

Two other open cuts were made along the slope north of CW3 presumably to explore for lateral extensions. Nothing is exposed in open cut CW2 and an unmineralized quartz vein at least 2 m thick is exposed in open cut CW1, about 143 m northwest of CW3. Spearing and Ostler (1987B) felt that that the exposures in cuts CW1 and CW3 were not of the same vein.

Two exploration tunnels were driven southeast of open cut CW3 to

test for the extension of the mineralized vein down dip.

The upper adit; located about 13 m below cut CW3, reportedly intersected the mineralized vein 27.4 m (90 ft) in from the portal. This tunnel had caved near its entrance by 1987 and Spearing and Ostler (1987B) could not confirm the intersection underground. However; selected samples from the adit dump contained silver concentrations as high as 13.70 oz/ton.

The lower adit was driven 78.6 m (250 ft) in from the portal and reportedly missed the Main Comstock Vein which was encountered in the workings above. Apparently, the dip of the vein was flatter than expected.

3.2 Upper Comstock Trenches

The Upper Comstock Trenches are located on top of a rounded part of the crest of Comstock Ridge at an elevation of 2627 m (8620 ft) near the Comstock 2-3 claim line (Figure 6).

These workings were first visited by provincial government geologists in 1919 (Section 1.5, this report). Then a number of open cuts in deeply fragmented rock were found to be sloughed in during the inspection. It was estimated that the vein had a pay streak at least 30 cm (12 in) thick that ran: 15.2 oz/ton silver, 25% lead and 4% zinc.

Prior to a subsequent visit during 1925,the trenches were cleaned out. A little digging during that visit revealed the 30 cm pay streak in place. The rest of the alleged 1.3 m (4 ft)thickness of the vein was not all exposed. A sample from the pay streak ran 17.4 oz/ton silver, 20.6% lead and 2% zinc.

The Upper Comstock Trenches were located, mapped and partially

sampled by the writer (Figure 7) (Appendices A and B).

All of the trenches at the Upper Comstock Workings are sloughed in so the attitude of the veins is not established. Two veins are apparent by the alignment and configuration of trenches; a major mineralized vein (the Upper Comstock Vein) and a conjugate vein (Figure 7).

Both veins seem to be near vertically dipping. The Upper Comstock Vein probably strikes at about 275° and the conjugate vein probably strikes at about 295°.

Samples of massive and disseminated galena mineralization on the dump at trench UCT1 were up to 20 cm (8 in) across. The 30 cm (1 ft) width of massive galena mineralization seen in place during the 1925 property examination would require trenching to confirm.

The writer assayed samples from trench UCT1 that ran up to 35.23 oz/ton silver and 36.5% lead with trace amounts of zinc. Disseminated galena mineralization from this trench assayed 23.33 oz/ton silver and 26.7% lead (Figure 7, Appendix B).

Samples of disseminated galena mineralization from other trenches along the Upper Comstock Vein trend assayed up to 14.04 oz/ton silver and 14.7% lead (Figure 7, Appendix B).

The conjugate vein seems to be very sparsly mineralized.

Mapping near the northwestern corner of the Comstock 2 claim revealed that the veins of the Main and Upper Comstock workings-areas were completely unrelated vein systems (Figure 6).

4.0 CONCLUSIONS AND RECOMMENDATIONS

4.1 Conclusions

Geological mapping on the Comstock 2 claim revealed that it was underlain by a northwesterly striking and northeastward dipping sequence of andesitic volcanics of the Index Formation deposited below eugeosynclinal sediments of the Broadview Formation. The volcanics are mostly comprised of fine-grained tuffs and thin flows containing very few thin sedimentary interbeds. The sediments were mostly turbidite sequences with pelitic and carbonate associations.

The contact between the Index and Broadview formations was found to be gradational and conformible initially. During deformation, the main mass of the Index Formation volcanics was decoupled from the Broadview Formation sediments. The sediments were probably thrust northeastward over the volcanics during the first two phases of deformation. Subsequently, the Index-Broadview boundary fault underwent transverse movement.

The rocks on the Comstock Property-area have undergone three recognizable phases of deformation from which second-phase structures were regionally most important. Metamorphism proceeded to the upper greenschist facies of regional metamorphism.

The Upper Comstock Trenches were located, mapped and partially sampled. There were six trenches at the Upper Comstock, four of which were aligned along the Upper Comstock Vein and two of which were aligned along a conjugate vein.

Samples of massive galena mineralization up to 20 cm (8 in) across from the Upper Comstock Vein assayed up to 35.23 oz/ton silver and 36.5%

lead. The conjugate vein was found to be sparsly mineralized.

4.2 Recommendations

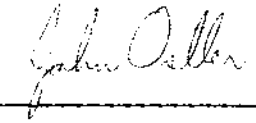
The writer recommends that future exploration on the Comstock Property include the following:

A. Trenching in both the Main and Upper Comstock workings-areas to test for extensions and width of mineralization

B. The rest of the Comstock Property should be mapped at a scale of 1:10,000

C. Areas around the workings-areas should be prospected and soil sampled to uncover other possible mineral showings on the property

West Vancouver, British Columbia
September 23, 1988



John Ostler; M.Sc., P.Geol.
Consulting Geologist

5.0 REFERENCES

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Spearing, C.G. and Ostler, John; 1987B: Geological and Geochemical Report on the Comstock Property; Assessment Report filed with the B.C. Ministry of Energy, Mines and Petr. Res.

_____; 1919: B.C. Minister of Mines', Ann. Rept., pp. N122-N123.

_____; 1925: B.C. Minister of Mines', Ann. Rept., p. A237.

_____; 1928: B.C. Minister of Mines', Ann. Rept., pp. C308-C309.

6.0 ITEMIZED COST STATEMENT OF THE 1988 PROGRAM

Wages:	Total		Sunshine Prop. Exploration		Comstock Prop. Exploration	
John Ostler; M.Sc., P.Geol.*						
10 days @ $250/day	$2500.00		$1250.00		$1250.00	
W. Adam Foran						
6 days @ $120/day	$ 720.00		$ 360.00		$ 360.00	
*includes data processing	$3220.00	$3220.00	$1610.00	$1610.00	$1610.00	$1610.00
Transport:						
Helicopter transport						
Highland Helicopters						
1.2 hours + fuel and oil	$ 924.40		$ 462.20		$ 462.20	
Truck transport						
1 3/4 ton pick-up 0.2 month						
@ $1800/month (milage inc)	$ 360.00		$ 180.00		$ 180.00	
Gasoline + oil	$ 196.96		$ 98.48		$ 98.48	
Highway toll	$ 10.00		$ 5.00		$ 5.00	
	$1491.36	$1491.36	$ 745.68	$ 745.68	$ 745.68	$ 745.68
Camp:						
2 man fly camp 0.2 month						
@ $200/month	$ 40.00		$ 20.00		$ 20.00	
Sample bags and camp supplies	$ 24.00		$ 12.00		$ 12.00	
	$ 64.00	$ 64.00	$ 32.00	$ 32.00	$ 32.00	$ 32.00
Balances carried forward		$4775.36		$2378.68		$2378.68

Balances carried forward	Total		Sunshine Prop. Exploration		Comstock Prop. Exploration	
Balances carried forward		$4775.36		$2378.68		$2378.68
Crew in Transit:						
Meals and camp food	$ 282.38		$ 141.19		$ 141.19	
Hotel	$ 41.04		$ 20.52		$ 20.52	
	$ 323.42	$ 323.42	$ 161.71	$ 161.71	$ 161.71	$ 161.71
Assay:	$ 157.50	$ 157.50	$ 00.00	$ 00.00	$ 157.50	$ 157.50
Report Production:						
Drafting; 1:10k geology maps and report figures	$1605.00		$ 705.00		$ 900.00	
Typing	$ 140.00		$ 60.00		$ 80.00	
Black line copy of large maps	$ 66.96		$ 29.20		$ 37.76	
Supplies	$ 36.00		$ 12.00		$ 24.00	
	$1847.96	$1847.96	$ 806.20	$ 806.20	$1041.76	$1041.76
Totals of 1988 Program		$7104.24		$3346.59		$3739.65

West Vancouver, British Columbia
September 30, 1988

John Ostler; M.Sc., P.Geol.

APPENDIX A

Chemex Labs Ltd.
Analytical Chemists • Geochemists • Registered Assayers
212 BROOKSBANK AVE., NORTH VANCOUVER,
BRITISH COLUMBIA, CANADA V7J-2C1
PHONE (604) 984-0221

To: CASSIAR EAST YUKON EXPEDITING LTD.

1016 - 470 GRANVILLE ST.
VANCOUVER, BC
V6C 1V5

A8821703

Comments: CC: AMBERGATE EXPLORATION INC

CERTIFICATE A8821703

CASSIAR EAST YUKON EXPEDITING LTD
PROJECT :
P O # : NONE

Samples submitted to our lab in Vancouver, BC.
This report was printed on 10-AUG-88.

SAMPLE PREPARATION

CHEMEX CODE	NUMBER SAMPLES	DESCRIPTION
208	5	Assay: Crush,split,ring

• NOTE 1:

The 32 element ICP package is suitable for trace metals in soil and rock samples. Elements for which the nitric-aqua regia digestion is possibly incomplete are: Al, Ba, Be, Ca, Cr, Ga, K, La, Mg, Na, Sr, Ti, Tl, W.

ANALYTICAL PROCEDURES

CHEMEX CODE	NUMBER SAMPLES	DESCRIPTION	METHOD	DETECTION LIMIT	UPPER LIMIT
396	5	Au oz/T: 1/2 assay ton	FA-GRAVIMETRIC	0.003	20.000
383	5	Ag oz/T	FA-GRAVIMETRIC	0.01	20.00
301	5	Cu %: HClO4-HNO3 digestion	AAS	0.01	100.0
312	5	Pb %: HClO4-HNO3 digestion	AAS	0.01	100.0
316	5	Zn %: HClO4-HNO3 digestion	AAS	0.01	100.0

APPENDIX B

Chemex Labs Ltd.

Analytical Chemists • Geochemists • Registered Assayers

212 BROOKSBANK AVE., NORTH VANCOUVER,
BRITISH COLUMBIA, CANADA V7J-2C1

PHONE (604) 984-0221

To: CASSIAR EAST YUKON EXPEDITING LTD.

1016 - 470 GRANVILLE ST.
VANCOUVER, BC
V6C 1V5

Project :
Comments: CC: AMBERGATE EXPLORATION INC

Date 30-AUG-88
Invoice # I-8821703
P.O # NONE

CERTIFICATE OF ANALYSIS A8821703

SAMPLE DESCRIPTION	PREP CODE		Au FA oz/T	Ag FA oz/T	Cu %	Pb %	Zn %
UCT 88-1-1	208	--	0.008	32.67	< 0.01	32.2	< 0.03
UCT 88-1-2	208	--	0.006	23.33	< 0.01	26.7	< 0.01
UCT 88-1-3	208	--	0.010	35.23	0.03	36.5	0.30
UCT 88-2-1	208	--	0.004	13.46	< 0.01	14.70	1.65
UCT 88-4-1	208	--	0.004	14.04	< 0.01	13.10	0.02

ALL ASSAY DETERMINATIONS ARE PERFORMED OR SUPERVISED BY BC CERTIFIED ASSAYERS

CERTIFICATION : B. Kwaite

APPENDIX C

CERTIFICATE OF QUALIFICATION

I, John Ostler, of 2224 Jefferson Avenue in the City of West Vancouver, Province of British Columbia do hereby certify:

That I am a consulting geologist with business address at 1016-470 Granville Street, Vancouver, British Columbia;

That I am a graduate of Carleton University of Ottawa, Ontario where I obtained my Master of Science degree in Geology in 1977;

That I am licenced to practice as a Professional Geologist by the Association of Professional Engineers, Geologists and Geophysicists of Alberta, and I am a Fellow of the Geological Association of Canada;

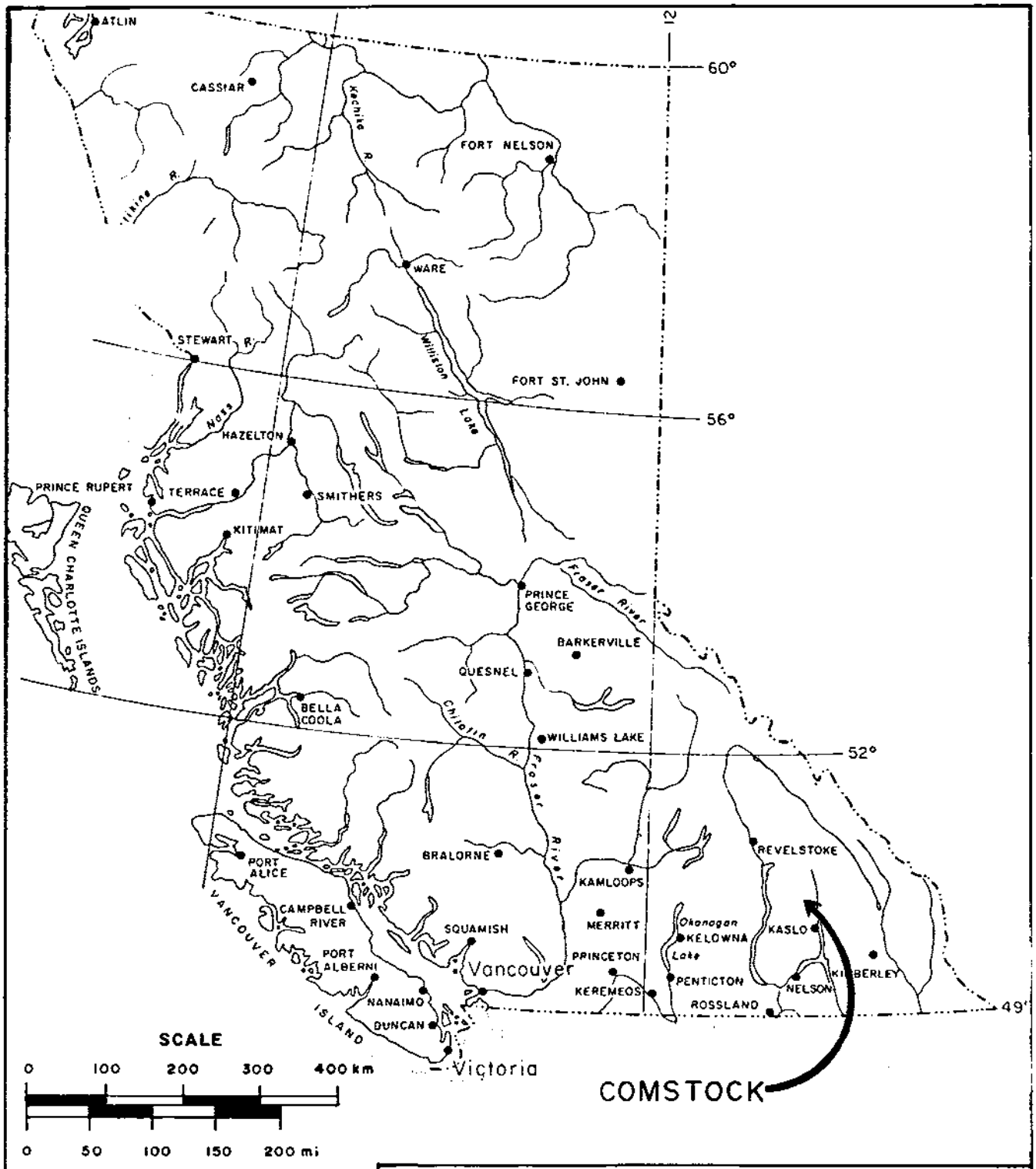
That I have been engaged in the study and practice of the geological profession for over 15 years;

That this report is based on data in literature available for public inspection; and on work conducted by me on the Comstock Property from August 14 to 19, 1988;

That I am President and a major shareholder of Ambergate Explorations Inc. which owns the Comstock 1-4 R5395-8 (7) claims.

Dated at West Vancouver, British Columbia this 23rd day of September, 1988.

John Ostler; M.Sc., P.Geol.
Consulting Geologist
President, Ambergate Explorations Inc.



AMBERGATE EXPLORATIONS INC.

GENERAL LOCATION

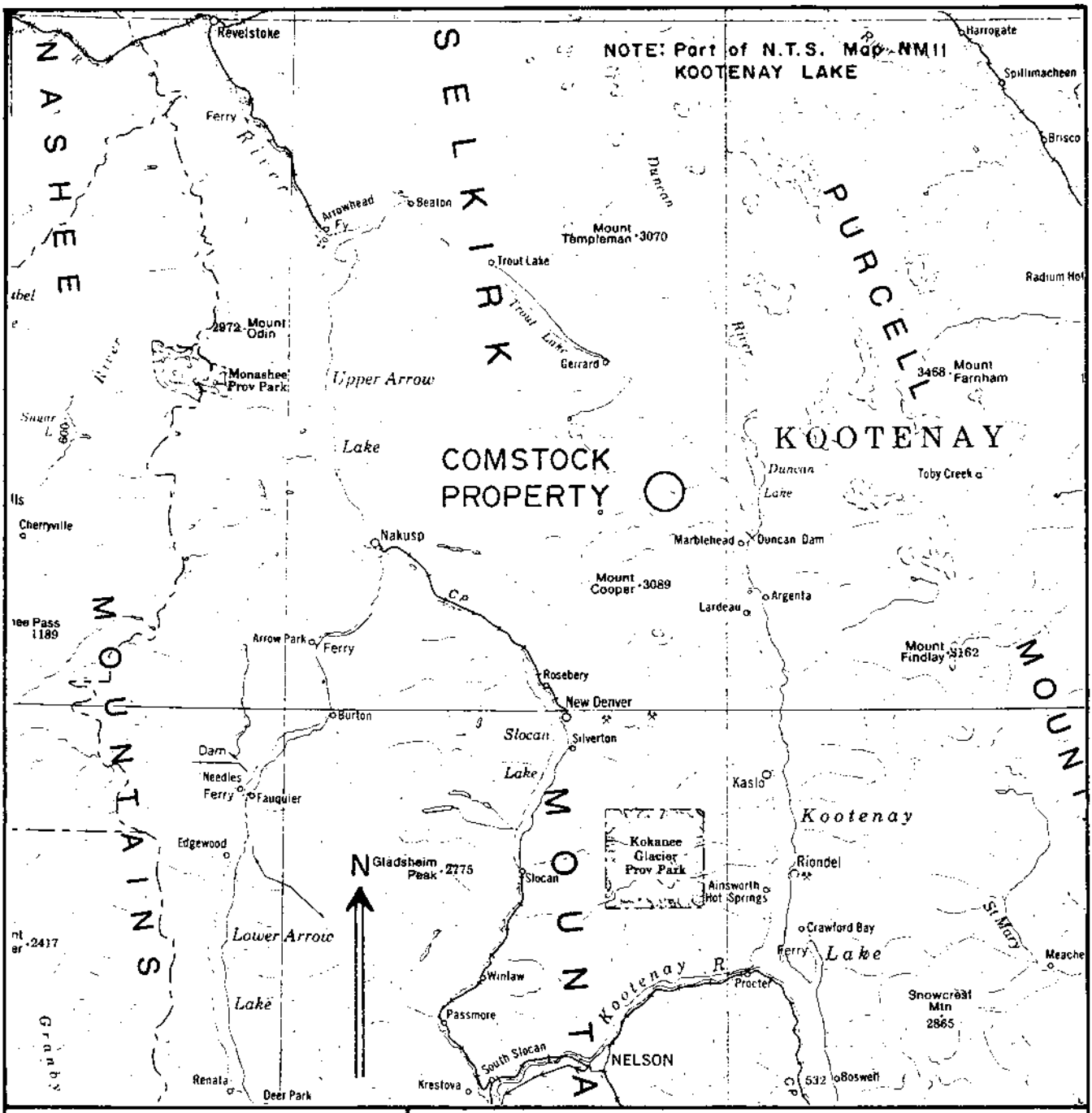
COMSTOCK PROPERTY
50°19.5'N., 117°09'W.

SLOCAN M.D. BRITISH COLUMBIA

JOHN OSTLER; M.Sc., P.Geol. SEPTEMBER, 1988

Figure 1

CASSIAR EAST YUKON EXP. LTD.



LOCATION

Figure 2

CASSIAR EAST YUKON EXP. LTD.

SCALE

0 10 20 30 40 50 60 km

0 10 20 30 40 mi

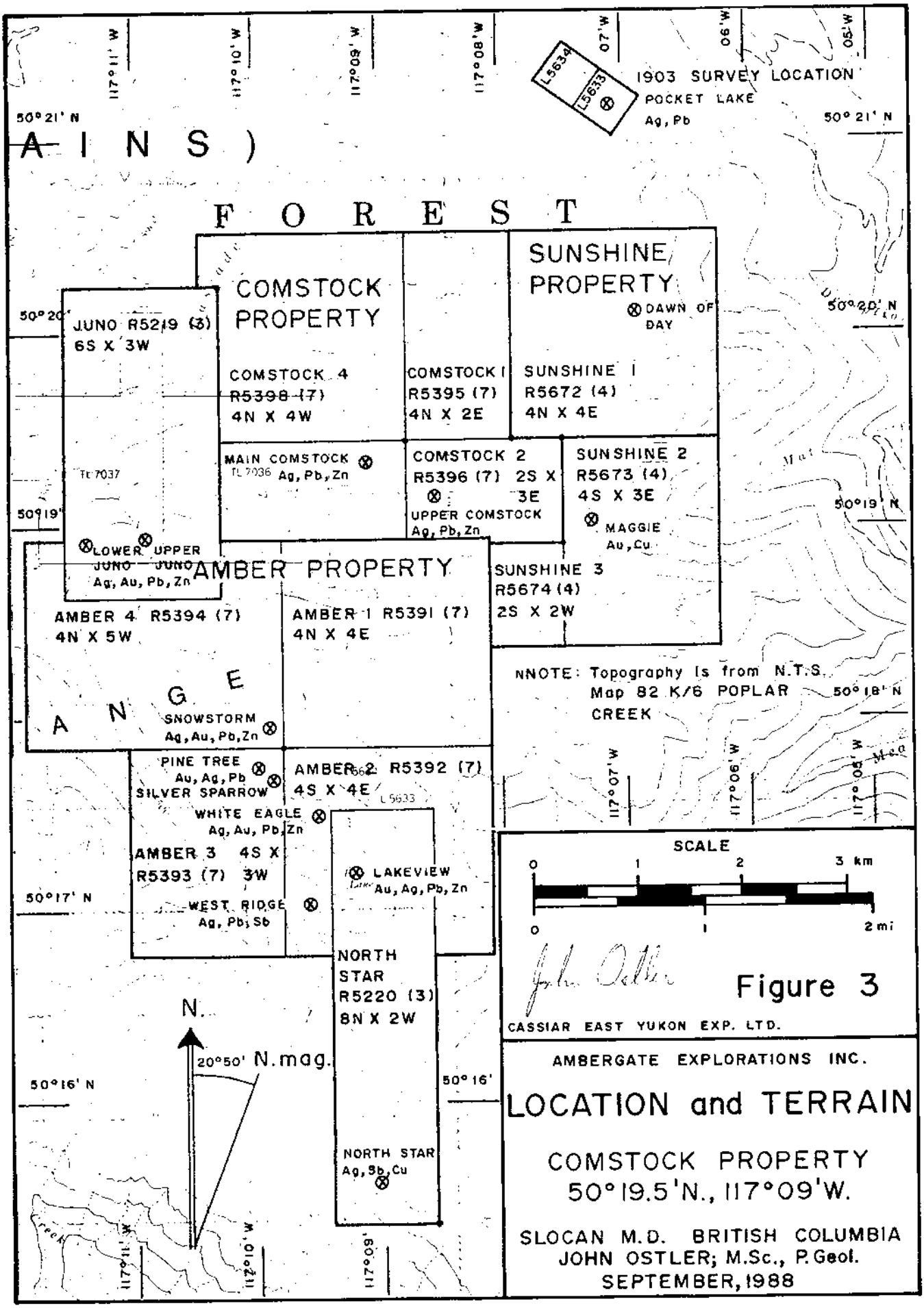
AMBERGATE EXPLORATIONS INC.

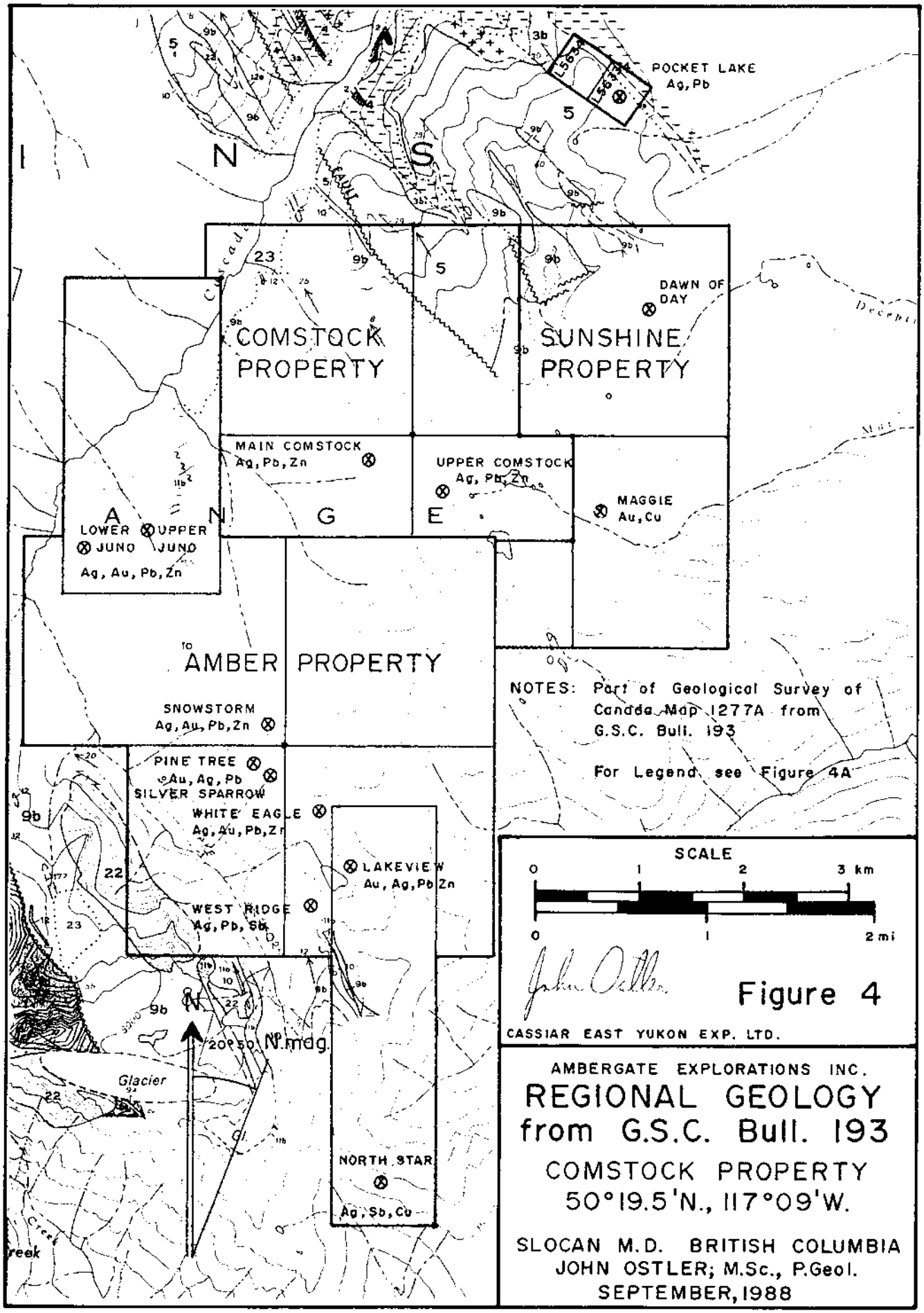
REGIONAL ACCESS

COMSTOCK PROPERTY
50°19.5'N., 117°09'W.

SLOCAN M.D. BRITISH COLUMBIA

JOHN OSTLER; M.Sc., P.Geol. SEPTEMBER, 1988


1903 SURVEY LOCATION
POCKET LAKE
Ag, Pb
L5634
L5633
50° 21' N
A I N S)
F O R E S T
COMSTOCK PROPERTY
COMSTOCK 4
R5398 (7)
4N X 4W
COMSTOCK 1
R5395 (7)
4N X 2E
SUNSHINE PROPERTY
DAWN OF DAY
SUNSHINE 1
R5672 (4)
4N X 4E
JUNO R5219 (3)
6S X 3W
TL 7037
MAIN COMSTOCK
TL 7036 Ag, Pb, Zn
COMSTOCK 2
R5396 (7) 2S X 3E
UPPER COMSTOCK
Ag, Pb, Zn
SUNSHINE 2
R5673 (4)
4S X 3E
MAGGIE
Au, Cu
50° 19' N
LOWER JUNO
UPPER JUNO
Ag, Au, Pb, Zn
AMBER PROPERTY
SUNSHINE 3
R5674 (4)
2S X 2W
AMBER 4 R5394 (7)
4N X 5W
AMBER 1 R5391 (7)
4N X 4E
A N G E
SNOWSTORM
Ag, Au, Pb, Zn
NNOTE: Topography is from N.T.S. Map 82 K/6 POPLAR CREEK
50° 18' N
PINE TREE
Au, Ag, Pb
SILVER SPARROW
AMBER 2 R5392 (7)
4S X 4E
WHITE EAGLE
Ag, Au, Pb, Zn
AMBER 3 4S X
R5393 (7) 3W
LAKEVIEW
Au, Ag, Pb, Zn
50° 17' N
WEST RIDGE
Ag, Pb, Sb
NORTH STAR
R5220 (3)
8N X 2W
N.
20°50' N.mag.
50° 16' N
50° 16'
NORTH STAR
Ag, Sb, Cu
117° 11' W
117° 10' W
117° 09' W
117° 08' W
117° 07' W
117° 06' W
SCALE
0 1 2 3 km
0 1 2 mi
Figure 3
CASSIAR EAST YUKON EXP. LTD.
AMBERGATE EXPLORATIONS INC.
LOCATION and TERRAIN
COMSTOCK PROPERTY
50° 19.5' N., 117° 09' W.
SLOCAN M.D. BRITISH COLUMBIA
JOHN OSTLER; M.Sc., P.Geol.
SEPTEMBER, 1988


POCKET LAKE
Ag, Pb
L.563
L.564
COMSTOCK PROPERTY
SUNSHINE PROPERTY
DAWN OF DAY
MAIN COMSTOCK
Ag, Pb, Zn
UPPER COMSTOCK
Ag, Pb, Zn
MAGGIE
Au, Cu
LOWER JUNO
UPPER JUNO
Ag, Au, Pb, Zn
AMBER PROPERTY
SNOWSTORM
Ag, Au, Pb, Zn
PINE TREE
Au, Ag, Pb
SILVER SPARROW
WHITE EAGLE
Ag, Au, Pb, Zn
LAKEVIEW
Au, Ag, Pb Zn
WEST RIDGE
Ag, Pb, Sb
NORTH STAR
Ag, Sb, Cu
20°50' N. mag.
Glacier
Creek
NOTES: Part of Geological Survey of Canada Map 1277A from G.S.C. Bull. 193
For Legend see Figure 4A
SCALE
0 1 2 3 km
0 1 2 mi
Figure 4
CASSIAR EAST YUKON EXP. LTD.
AMBERGATE EXPLORATIONS INC.
REGIONAL GEOLOGY
from G.S.C. Bull. 193
COMSTOCK PROPERTY
50°19.5'N., 117°09'W.
SLOCAN M.D. BRITISH COLUMBIA
JOHN OSTLER; M.Sc., P.Geol.
SEPTEMBER, 1988

Note: The generations of the coloured symbols below are indicated thus: first ', second '', third '''

Geological boundary (defined, approximate, assumed)

Bedding, tops unknown (inclined, vertical)

Foliation (inclined, vertical)

S_1 and S_{0-1} and S_{0-2}

S_2 to S_1

S_3 to S_2

Undifferentiated

Lineation

L_1 and L_1, L_2 and L_2, L_3 and L_3

L_4 and L_4

Approximate location of trace of axial plane of fold indicated by name of fold (colour indicates generation where known) ..... CAMPION FAULT SYN.

Fault (defined, approximate, assumed)

Geology by P.B. Read, 1962-64

To accompany G.S.C. Bulletin 193 by P.B. Read

Geological cartography by the Geological Survey of Canada

Base map assembled by the Geological Survey of Canada from maps published at the same scale by the Surveys and Mapping Branch, and the Army Survey Establishment, R.C.E., in 1961-62, 1966

Copies of the topographical edition of this map may be obtained from the Map Distribution Office, Department of Energy, Mines and Resources, Ottawa

Approximate magnetic declination 1970, 22° 18' East, decreasing 3.5' annually

Elevations in feet above mean sea-level

LEGEND

FIGURE 4A

CENOZOIC

QUATERNARY

PLEISTOCENE AND RECENT

23 — Glacial, lacustrine, and fluviatile gravel, sand, silt, and clay

MESOZOIC

POST-LOWER JURASSIC

22 — KUSKANAX-LIKE INTRUSIONS: massive feldspathic monzonite and feldspar porphyry

JURASSIC

LOWER JURASSIC

21 — KUSKANAX BATHOLITH: foliated leucocratic monzonite and leucosyenite

MESOZOIC AND (?) EARLIER

LOWER JURASSIC (?) AND OLDER

20 — POPLAR CREEK GREENSTONES: 20a, amphibolite and hornblende clinozoisite; 20b, meta-andesite and mesodiorite, sills and dykes (where colour is absent adjacent to unit 5, minor amounts of unit 5 exist)

PALEOZOIC AND (?) MESOZOIC

UPPER MISSISSIPPIAN TO TRIASSIC

MILFORD GROUP (14-19)

Coarse fragmental rocks

Calcite-bearing quartzite

17 — Grey phyllite and impure meta-sandstone

16 — Limy argillaceous meta-sandstone

Micaceous meta-sandstone

Crystalline limestone and calc-silicate marble

PRE-UPPER MISSISSIPPIAN (?) TO TRIASSIC

13a, hornblende-plagioclase schist; minor white crystalline limestone; 13b, grey to green amphibolite; 13c, limy to green argillaceous; 13d, hornblende-plagioclase schist; minor breccia (cross pattern indicates minor amounts of unit 30)

PALEOZOIC AND/OR (?) EARLIER

PRE-UPPER MISSISSIPPIAN

LARDEAU GROUP (1-12)

12 | 12a — Green mica-amphibole schist, minor volcanic breccia, pillow lava, and porphyritic flows; 12b, chloritic marble

11 — 11a, schistose limestone and limy schist; 11b, phyllitic quartzite and limy phyllite

10 — Dark grey phyllite

9 — 9a, grey to green quartz-mica schist and meta-grit; 9b, grey to green quartz-mica schist and meta-grit

STRATIGRAPHY OF LARDEAU GROUP (based on Fyles and Eastwood, 1962)

BROADVIEW FORMATION

SILVERCUP RIDGE

SHARON CREEK FORMATION: dark grey phyllite — SHARON CREEK FORMATION

AJAX FORMATION: light grey quartzite — AJAX FORMATION

TRUNK FORMATION: grey argillite, slate, and phyllite — TRUNK FORMATION

6 — Massive greenstone, pillow lava, volcanic breccia, and limy green phyllite (cross pattern indicates minor amounts of unit 30)

5 | 5a — Limy chlorite schist, 5a, chloritic marble

3 — 3a, medium to dark grey phyllite; minor limy phyllite; 3b, phyllitic quartzite; grey quartzose phyllite; minor metavolcanic rocks (cross pattern indicates minor amounts of unit 30)

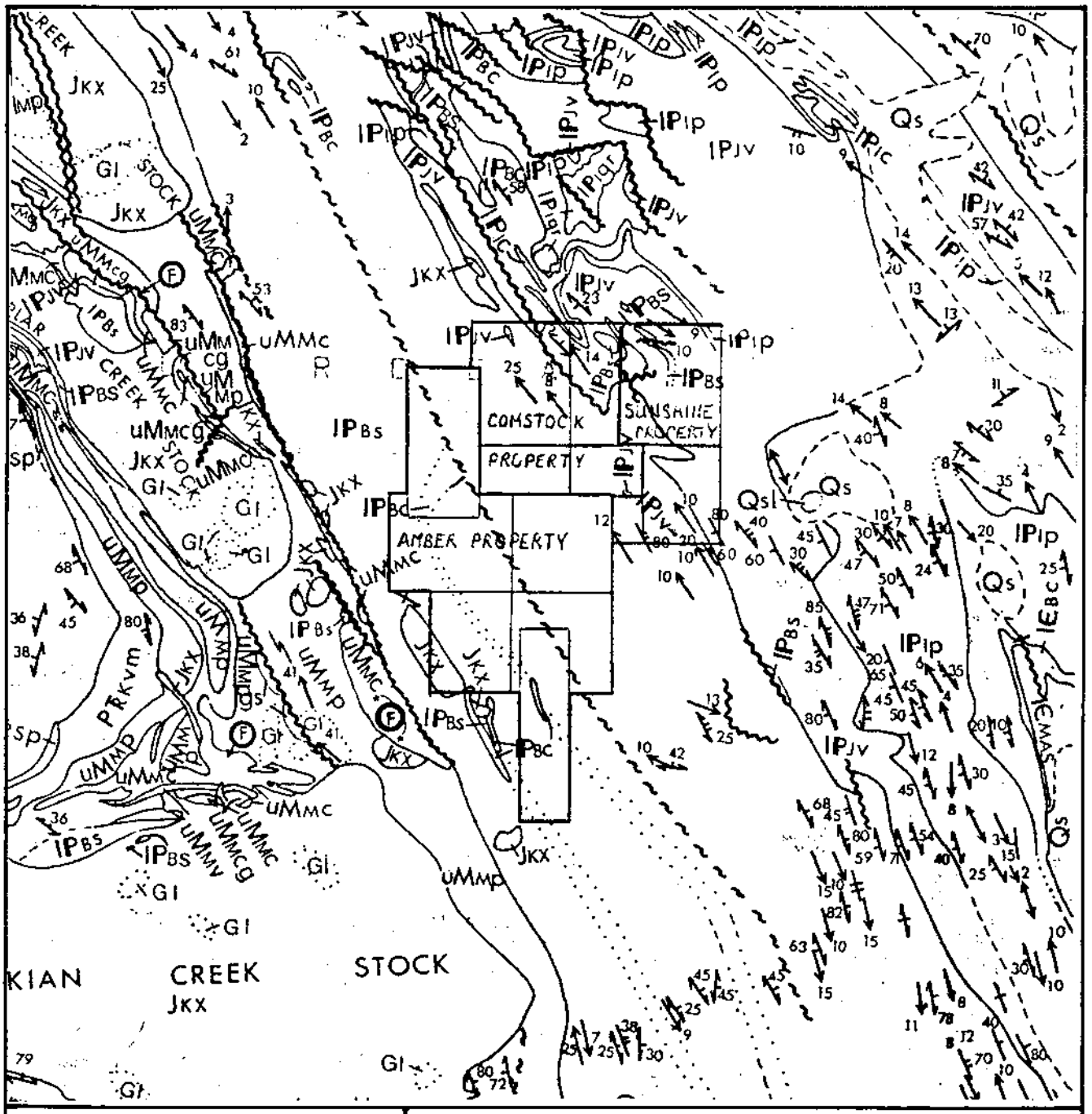
INDEX FORMATION

Phyllitic limestone

1 — Grey to green quartz-mica schist and meta-grit (cross pattern indicates minor amounts of unit 30)

LEGEND TO G.S.C. MAP 1277A

Part of G.S.C. Bull. 193



NOTE: Part of Geological Survey of Canada Open File 432

For Legend see Figure 5A

SCALE

0 1 2 3 4 5 6 7 8 9 10 km

0 1 2 3 4 5 6 mi

N.

20°30' N. mag.

Figure 5

CASSIAR EAST YUKON EXP. LTD.

AMBERGATE EXPLORATIONS INC.

REGIONAL GEOLOGY from G.S.C. O.F. 432

COMSTOCK PROPERTY

50°19.5'N., 117°09'W.

SLOCAN M.D. BRITISH COLUMBIA

JOHN OSTLER; M.Sc., P.Geol. SEPTEMBER, 1988

FIGURE 5A

LEGEND TO G.S.C. O.F. 432

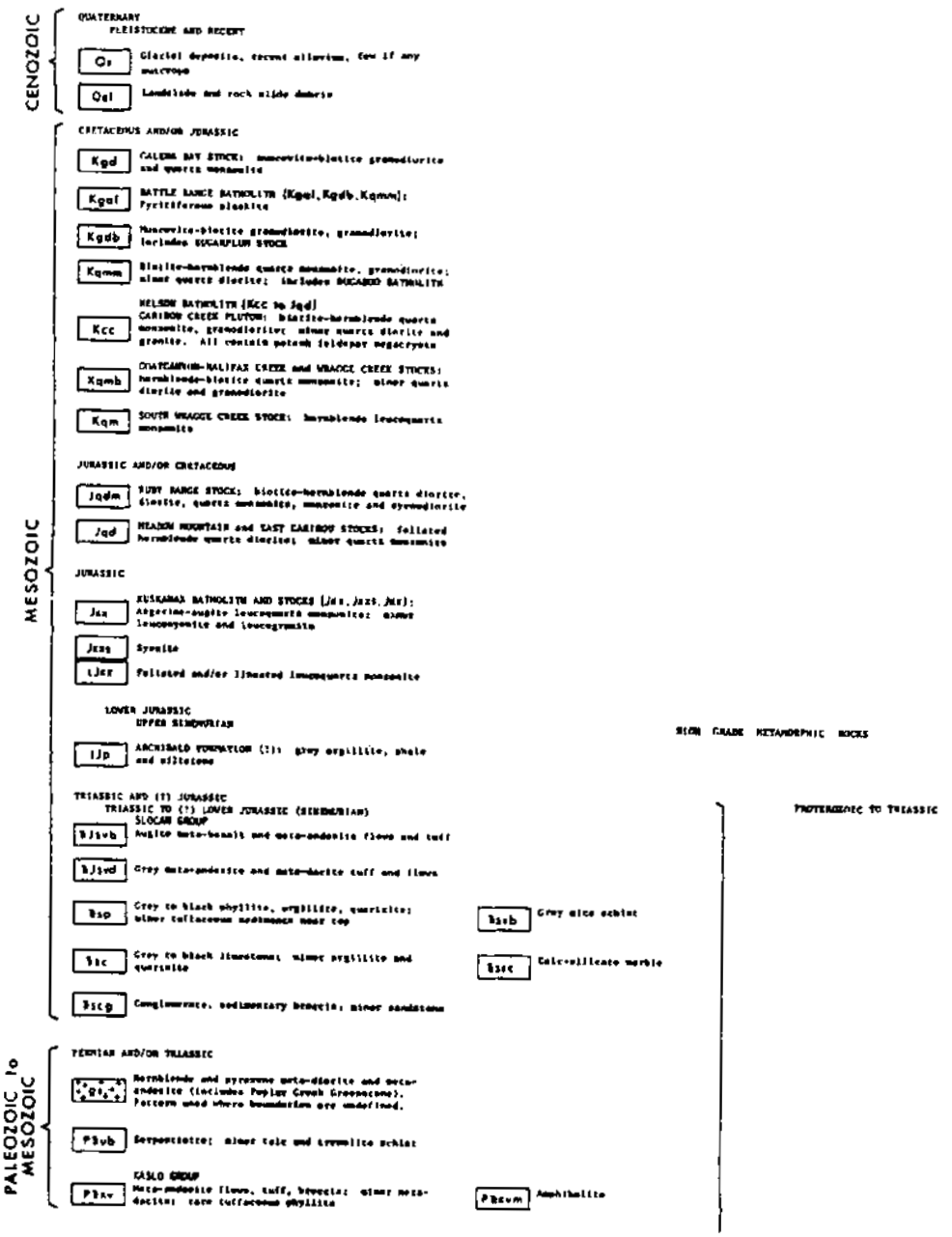


FIGURE 5A

LEGEND TO G.S.C. O.F. 432

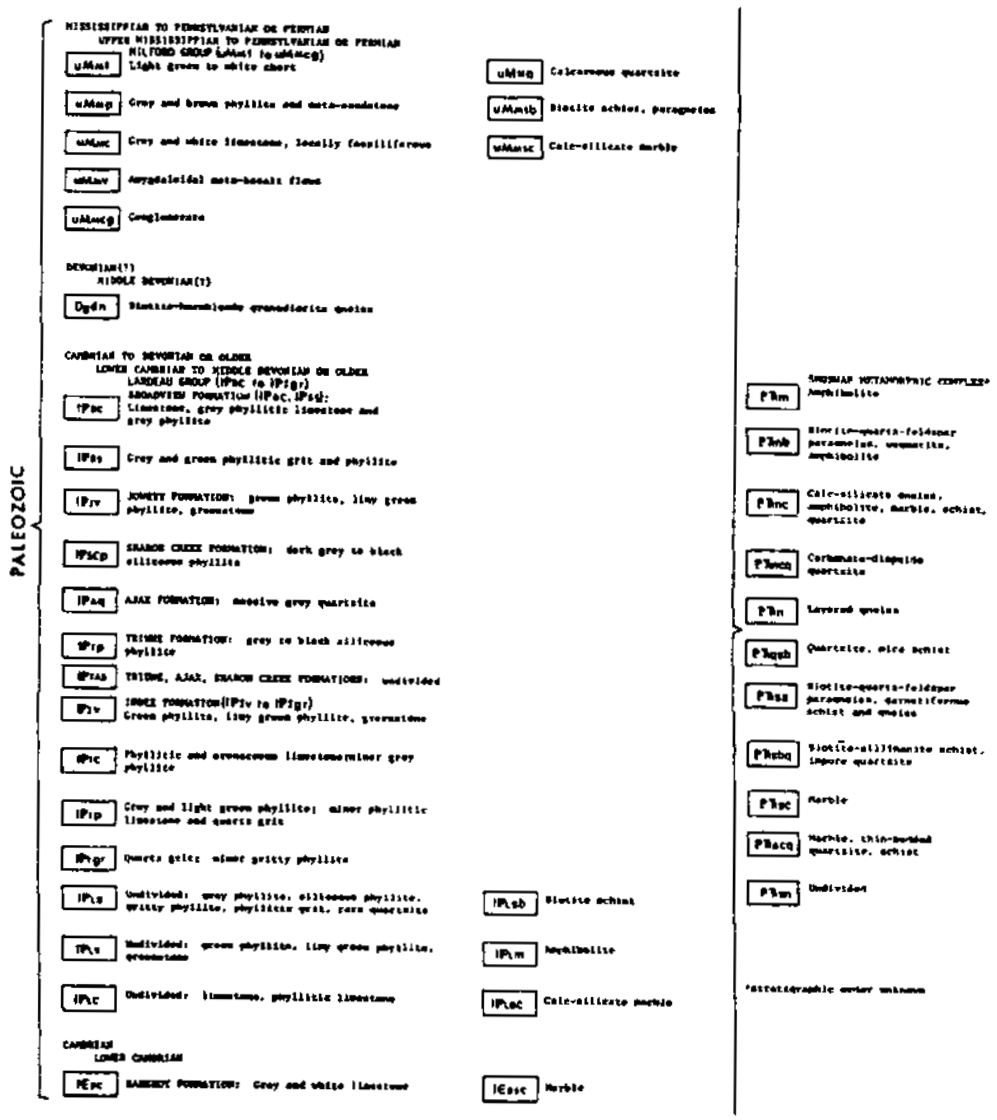
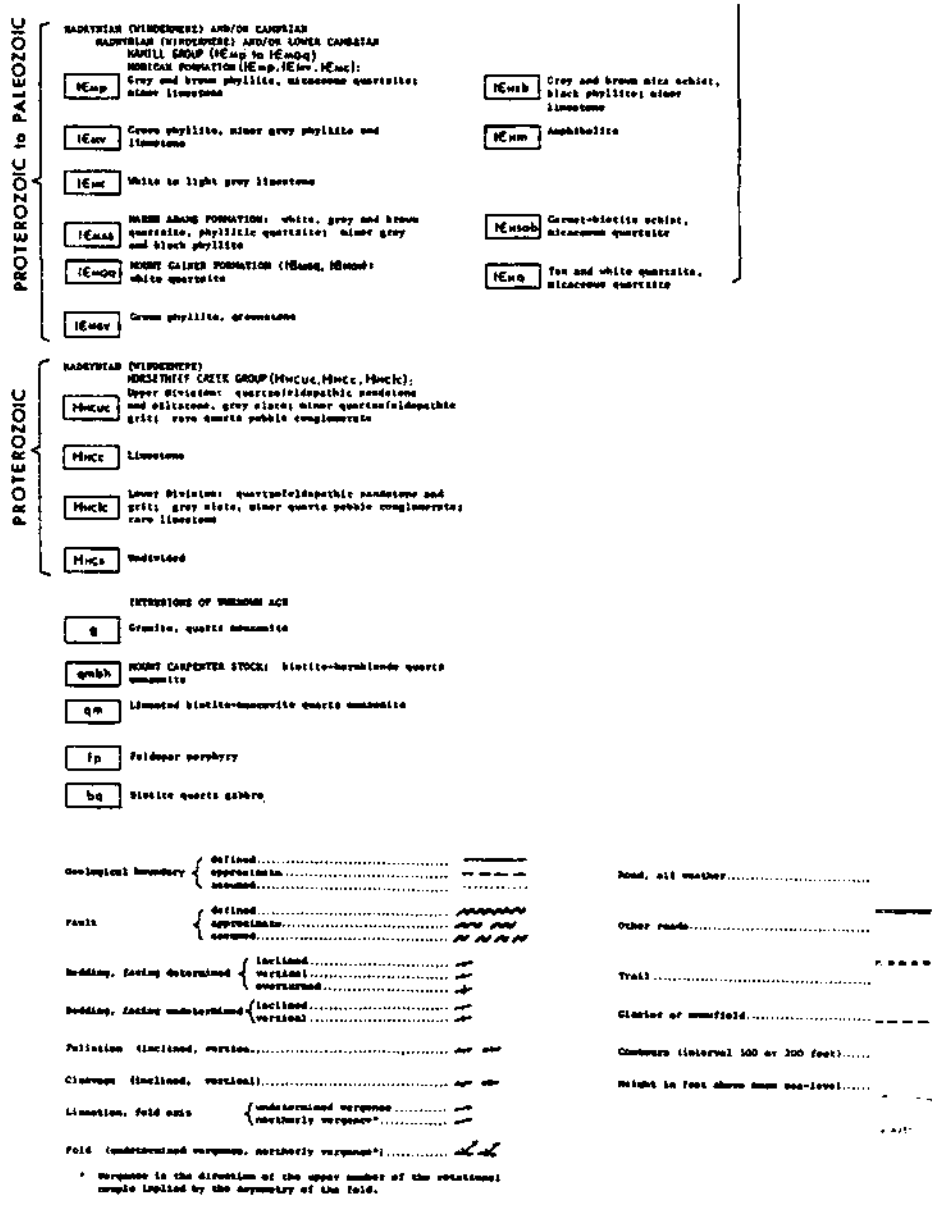


FIGURE 5A

LEGEND TO G.S.C. O.F. 432 Pg. 3 of 3



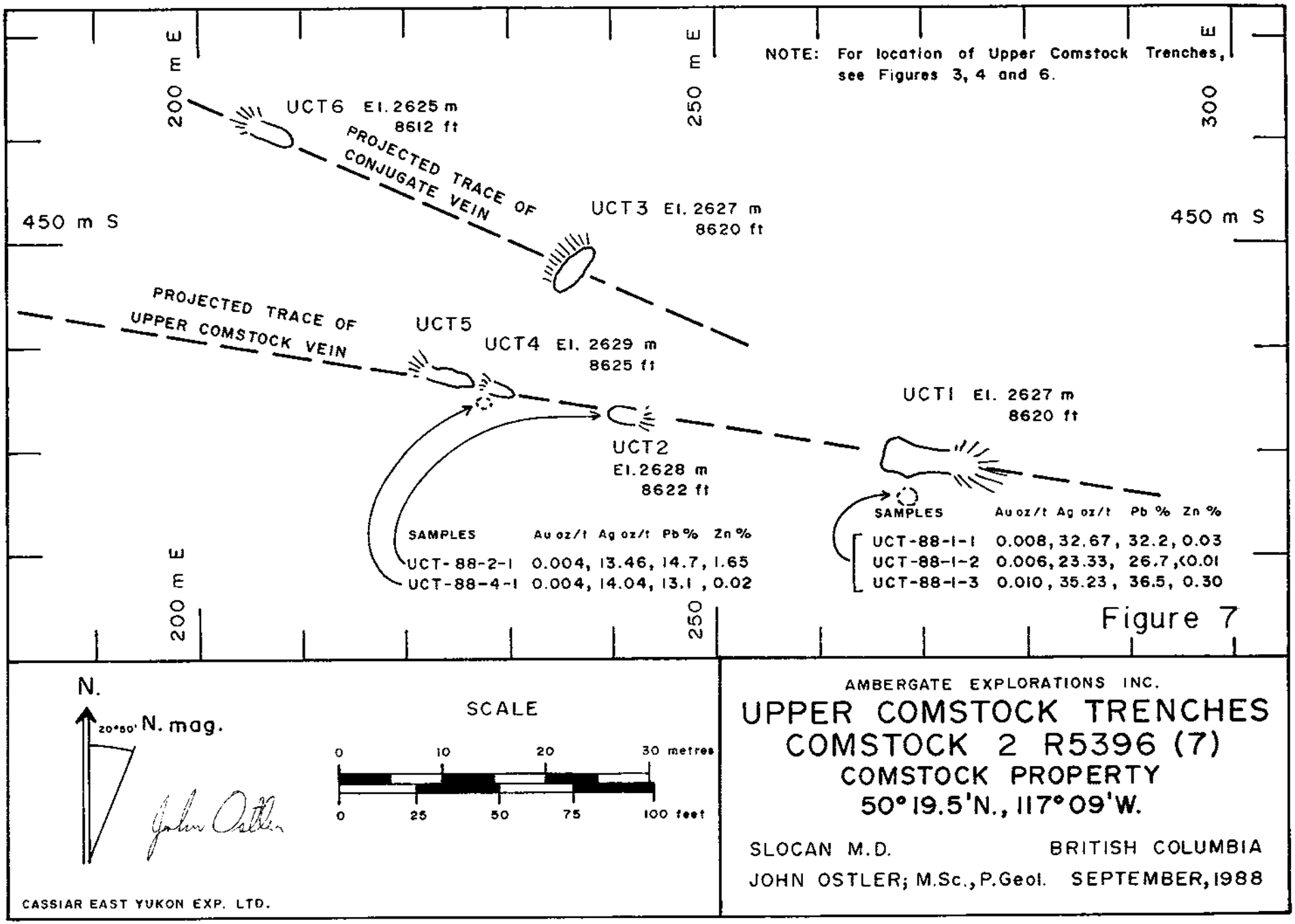

NOTE: For location of Upper Comstock Trenches, see Figures 3, 4 and 6.
200 m E
250 m E
300 m E
450 m S
UCT6 El. 2625 m 8612 ft
PROJECTED TRACE OF CONJUGATE VEIN
UCT3 El. 2627 m 8620 ft
PROJECTED TRACE OF UPPER COMSTOCK VEIN
UCT5
UCT4 El. 2629 m 8625 ft
UCT2 El. 2628 m 8622 ft
UCT1 El. 2627 m 8620 ft
SAMPLES Au oz/t Ag oz/t Pb % Zn %
UCT-88-2-1 0.004, 13.46, 14.7, 1.65
UCT-88-4-1 0.004, 14.04, 13.1 , 0.02
SAMPLES Au oz/t Ag oz/t Pb % Zn %
UCT-88-1-1 0.008, 32.67, 32.2, 0.03
UCT-88-1-2 0.006, 23.33, 26.7, <0.01
UCT-88-1-3 0.010 , 35.23 , 36.5, 0.30
N.
20°50' N. mag.
SCALE
0 10 20 30 metres
0 25 50 75 100 feet
CASSIAR EAST YUKON EXP. LTD.
AMBERGATE EXPLORATIONS INC.
UPPER COMSTOCK TRENCHES
COMSTOCK 2 R5396 (7)
COMSTOCK PROPERTY
50° 19.5'N., 117° 09'W.
SLOCAN M.D. BRITISH COLUMBIA
JOHN OSTLER; M.Sc., P.Geol. SEPTEMBER, 1988

Figure 7

JUNO R5219 (3)
6S X 3W

COMSTOCK 4 R5398 (7)
4N X 4W

COMSTOCK 1 R5395 (7)
4N X 2E

SUNSHINE 1 R5672 (4)
4N X 4E

8726
SURVEYED ELEVATION

DAWN OF DAY VEINS

COMSTOCK 3 R5397 (7)
2S X 4W

MAIN COMSTOCK WORKINGS
Ag, Pb, Zn

COMSTOCK 2 R5396 (7)
2S X 3E

SUNSHINE 2 R5673 (4)
4S X 3E

Ag, Pb, Zn
UPPER COMSTOCK

MAGGIE VEINS
Au, Cu

LOWER JUNO WORKINGS
Ag, Au, Pb, Zn

UPPER JUNO VEINS
Ag, Pb, Zn

AMBER 1 R5391 (7)
4N X 4E

AMBER 4 R5394 (7)
4N X 5W

SNOWSTORM TRENCHES
Ag, Au, Pb, Zn

SUNSHINE 3 R5674 (4)
2S X 2W

CASSIAR EAST YUKON EXP. LTD.

AMBER 3

AMBER 2

COMSTOCK RIDGE

CASCADE CREEK

KISS CREEK

MAY CREEK

WORRY FAULT (POST D3)

AMBER THRUST (D1-D2)

KISS CREEK THRUST (D1-D2)

GRADATIONAL CONTACT

QUARTZ VEIN

ICE

LEGEND

TABLE OF LITHOLOGIC UNITS

		LARDEAU GROUP, BROADVIEW FORMATION Palaeozoic, pre-Upper Mississippian age	EQUIVALENT UNITS Map 1277A O.F. 432	
B4		Dolomitic siltstone and impure carbonate commonly with graphitic segregations, grey-blue weathering brown with rough pitted surfaces	11b	IPsc
B3		Pelite and siltstone, variably carbonaceous black to grey weathering light grey to rusty brown, fissile	10	IPss
B2		Siltstone and pelite, grey weathering to rusty brown	9b	IPss
B1		Lithic sandstone and siltstone, grey-brown weathering light grey to rusty brown; contains minor aplite dykes and sills	9b	IPss
Bav		Andesitic flows, tuffs and lapilli tuffs with minor aplite dykes and sills	9b	IPss
		Gradational contact, subsequently faulted		
		LARDEAU GROUP, INDEX FORMATION Palaeozoic, pre-Upper Mississippian age		
lav		Andesitic flows, tuffs and lapilli tuffs with minor pelitic and siltstone interbeds, and aplite dykes and sills	5	IPlv

STRUCTURE
Bedding: Upright, Overturned, Tops unknown, Parallel with cleavage
Folding, probably second phase: Defined, Approximate, Assumed
Antiform
Synform
TOPOGRAPHY
Elevation from N.T.S. 82 K/6 in feet
Contour 7000
Lake, tarn or pond
Creek
Limit of ice
Limit of outcrop
Mineral showing area
Lithologic contact: Defined, Approximate, Assumed

Cleavage: First, Second, Third
Vein Attitude:
Fault: Defined, Approximate, Assumed
Thrust:
Mountain Peak 8050

SCALE

0 100 200 300 400 500 600 700 800 900 1000 metres
0 500 1000 1500 2000 2500 3000 3500 4000 4500 5000 feet
0 0.25 0.5 0.75 1 mile

N.
20°50' N. mag.
Magnetic declination for the centre of N.T.S. Map 82 K/6 as of July 1, 1988. Declination decreases 5.1' annually.

Figure 6

AMBERGATE EXPLORATIONS INC.

GEOLOGY:
COMSTOCK 1-4 R5395-8 (7)

COMSTOCK PROPERTY
50°19.5'N., 117°09'W.

SLOCAN MINING DIVISION BRITISH COLUMBIA

JOHN OSTLER; M.Sc., P.Geol. SEPTEMBER 1988

PROFESSIONAL GEOLOGIST ALBERTA JOHN OSTLER LICENSED TO PRACTICE

GEOLOGICAL BRANCH
ASSESSMENT REPORT

18,149