540 P02

Property Exam: 82m/5W

824245 Mc Lellan Prop

MINNOVA INC. SAMATOSUM DIVISION

To: Alex Davidson, Ian Pirie

From: Bob Friesen

Date: January 6, 1990

Subject: Property Visit--McLellan showing, N. Barriere Lake area, 3/1/90.

#### INTRODUCTION

On January 2nd, Mr. Al McLellan, of Ashcroft visited me and asked if I would look at a copper showing he had located and staked last month in the North Barriere Lake area. He brought in samples containing moderate amounts of disseminated blebs and veinlets of chalcopyrite in what appear to be sheared chloritepericite schist/phyllite. Arrangements were made to visit the property the following day. Ian Piwek also came along.

#### LOCATION AND ACCESS

The property is located at an elevation of 1100 meters about 50 kilometers by road east of Barriere-approximately between the eastern ends of North Barriere Lake and East Barriere Lake. Access is by road right to the only mineralized showing located so far, by turning southwards onto a logging road at kilometer 24 on the North Barriere Lake Road and following it to the top of the ridge for about another 6 kilometers. The showing occurs immediately west of Cozy Lake-the small unamed lake on the topographic maps on top of the ridge.

# PROPERTY HISTORY AND OWNERSHIP

Al McLellan discovered the showing while doing bulldozer work on a logging road construction project in the Cory Lake area last November-December. Two selected grab samples assayed 8.65% copper, 0.01% lead, 0.05% zinc, 1.00 opt silver and 0.005 opt gold; and 4.25% copper, <0.01% lead, <0.01% zinc, 0.58 opt silver, and 0.002 opt gold. During December, he contracted out the staking of 60 claims (named TANK) over the area. Al contacted us because of a prior acquaintance while working at the Samatosum Mine last Summer as a bulldozer operator for Ledcor. Al McLellan's address is:

111 Barnes Street, Box 565, Ashcroft, B.C., VØK 1A0

Phone: 453-9292

### GEOLOGY AND MINERALIZATION

On the day of the visit on the 3rd of January, it was snowing hard and there was about 2 feet of snow on the ground. The area is currently being logged and therefore the roads were open. Altook us to several locations where he had located what he thought to be gossanous bedrock; however all we could do was dig a few holes in the snow to ground level and look at the rocks. We rever did see certain cutcrop. At the one location where he claimed to have originally found the chalcopyrite mineralization, we dug around and also found several pieces of chlorite-sericite schist/phyllite containing blebs of about 1-3% chalcopyrite.

After reviewing Schiarizza and Preto's paper and map, it appears the geology and mineralization is very similar if not the same as the EBL Property, a large low-grade copper (0.2-0.44%) prospect hosted in schists comprised of quartz, feldspar, sericite, biotite and chlorite (unit EBQ), about 3 kilometers to the west of the McLellan showing. Schiarizza and Preto also liken the EBL Deposit to the Harper Creek Deposit (90 million tonnes inferred 0 0.4% copper) 20 kilometers to the north on the north side of the Baldy Batholith. Thus the greatest potential on McLellan's property is also for a large tonnage/low-grade copper Interestingly, the McLellan showing is located in an deposit. area which on Schiarizza and Freto's map should be intrusive granite (unit Kg) -- indicating there are more favourable schists in the area than actually shown.

#### RECOMMENDATIONS

I believe Minnova should option this property for the following reasons:

Although due to snow conditions we could not confirm the mineralized showing is outcrop. Ian and I have seen enough samples to be reasonably certain there is in fact an in-situ showing of chalcopyrite at the site.

Its similarity and proximity to the EBL Deposit--a large tonnage (no figure available)/low-grade (0.2-0.4%) copper deposit.

Our commitment to continue exploring in the Adams-Barriere area.

The presence of more favourable rocks in the area than indicated by Schiarizza and Preto's map (less granite and more EBQ-type schists).

Minnova could option this property with very little, if any, up-front commitment or expense.

On this latter item, Al McLellan seemed agreeable to a short term (4 months or ?) option which would give us the opportunity to confirm the nature of the showing and the overall potential of the property at little or no cost. My suggestion to him was to grant us this type of option prior to any financial commitment to him. If after a more thorough review of the property we wish to extend the option for a longer term, we could then enter into a financial and/or work commitment.

If Al balks at this type of arrangement, I'm almost certain he would grant us the option if we offered to trench the showing right away (\$2000-\$3000 max.).

Bob Friesen 5/1/90

encl:

-Claim Map of area -Schiarizza and Preto geology of area - """ property summaries of EBL and Harper Creek -Assay Report (2 sheets) located on the southwest slopes of upper Birk Creek at an elevation of approximately 1600 metres; similar mineralization is reported along the banks of Birk Creek 1200 metres to the northwest. The area has been staked and explored intermittently since the early 1920s. It is presently owned by Kam Creed Mines Ltd.

At the main showings, mineralization is exposed in a series of trenches, stripped areas and short adits along a northerly uending zone several hundred metres long by several tens of metres wide. It comprises a system of quartz veins and disconnected lenses containing pods of coarse-grained galena and pyrite with lesser sphalerite and chalcopyrite. Individual veins and lenses generally range from a few centimetres to 1 metre in width; they are variable in thickness and orientation, although northerly strikes and moderate (40 to 50 degrees) casterly dips predominate. Four and a half tonnes of ore shipped to Cominco Ltd. in September of 1972 contained 39.8 grams per tonne gold, 707.9 grams per tonne silver, 27.4 per cent lead, 13.3 per cent zinc and 0.25 per cent copper (George Cross Newsletter, January 5, 1983).

The steeply dipping host rocks, which in places display rusty carbonate alteration, range from Fennell Formation bedded chert in the west, through sheared and brecciated phyllite, to less sheared phyllite, sandstone and grit of Unit EBP, in the east. Mississippian limestone of Unit EBPI outcrops a short distance southeast of the showings, but is not known to be mineralized.

# 11, 12. FORTUNA 1 (82M-072), FORTUNA 2 (82M-070)

The Fortuna 1 and 2 showings are located on the slopes east of Birk Creek, 1 to 2 kilometres south of the Baldy batholith. They were discovered in the early 1920s and subsequently explored by a series of opencuts and at least one short adit. They have apparently received little recent attention. The showings comprise a series of steeply dipping, generally northerly striking quartz veins which contain pods of coarsegrained galena. Pyrite, chaicopyrite and sphalerite are locally present in minor quantities. At Fortuna I, the veins cut flatlying sericite quartz phyllites of Unit EBA; the host rock at Fortuna 2 is mainly brownish grey siltstone that is assigned to Unit EBQ.

# 13-18. COPPER CLIFF (82M-067), RAINBOW (82M-067), C-C (82M-067), MAY (82M-131), BROKEN RIDGE (82M-130), HARPER (82M-060)

These showings are mainly stratiform lenses of massive to disseminated sulphides within Unit EBA where it is exposed between the Barriere River fault and the Baldy batholith in the vicinity of Birk and Harper creeks. Mineralization was discovered in about 1920 and most of the showings had been explored by hand tunnelling and trenching prior to 1930. In 1938 and 1940 a total of 234 tonnes of ore shipped from lower Birk Creek yielded 6501 grams of gold, 13 499 grams of silver and 4800 kilograms of copper. Between 1950 and the late 1970s exploration activity has included geological and geochemical surveys, trenching and diamond drilling carried out by Northwestern Exploration Ltd., Mining Corporation of Canada Ltd., Ducanex Resources Limited, Kennco Explorations (Western) Limited, and Cominco Ltd.

The Copper Cliff, Rainbow and C-C showings occur along the lower reaches of Birk Creek. Together with the Lynx showing 400 metres north of the creek, they have over the years been variously included within the Anaconda, Lynx, OK, and Iron Cap claim groups as referred to in old assessment reports and annual reports of the Minister of Mines. The showings are marked by about a dozen old adits and trenches: most cannot be unequivocally assigned to a specific showing name. The host rock is mainly flat lying, light silvery grey chlorite-sericite-quartz schist of felsic volcanic origin. The schist is commonly pyritic, often contains prominent "eyes" of quartz and feldspar, and is locally fragmental. Lesser amounts of dark grey phyllite and siltstone, together with minor amounts of limestone, are intercalated with the schists.

At the C-C showing, a band of semimassive pyrite galenasphalerite-chalcopyrite mineralization, 10 to 20 centimetres wide, occurs within a 1 to 2-metre band of siliceous pyritic schist that is enclosed within typical silvery schists. The several adits farther upstream (Rainbow and Copper Cliff showings) expose similar mineralization as well as stratiform bands of massive pyrite that are locally in excess of 3 metres thick. The pyrite is locally brecciated and, at one place, pyrite clasts occur within a siliceous fragmental schist structurally beneath a massive pyrite horizon. In many places the pyrite is barren, but locally it is associated with pyrrhotite, chalcopyrite, galena and sphalerite. The sulphide lenses occur within relatively siliceous zones enclosed within chloritesericite-quartz schists, although a massive pyrite lens exposed at the Lynx showing is hosted by dark grey phyllite. Stratigraphic relationships between the exposed mineralized horizons are generally not clear, although Goutier et al. (1985) indicate that there are at least two zones of massive sulphide mineralization exposed along the creek. Mesoscopic, east-trending, early recumbent folds within the area point to the possibility that larger scale structures may effect the distribution of the mineralized zones.

The May, Broken Ridge and Harper showings occur along Harper Creek, a short distance south of the Baldy batholith. Mineralization in these areas is in part similar to that along Birk Creek, but also includes disseminated to massive pyritepyrrhotite-chalcopyrite-magnetite mineralization within dark green actinolitic (calc-silicate) schists that are intercalated with sericite quartz schists typical of Unit EBA.

# 19. EBL (82M-051)

The EBL property, owned in 1983 by George Moore and James Gourlay of Vancouver, is located between the northeast ends of North and East Barriere lakes, a short distance southwest of the Baldy batholith. Extensive diamond drilling carried out by various companies between 1969 and 1974 indicates the presence of a large tonnage of low-grade (0.20 to 0.44 per cent) copper mineralization. There are few outcrops on the property. The numerous drill holes intersect a succession of generally biotitic chlorite schists, accompanied by fine to medium-grained schists comprised of varying proportions of quartz, feldspar, sericite, biotite and chlorite, and minor amounts of grey phyllite and limestone. These rocks are tentatively included in Unit EBQ. Quartzofeldspathic

3 Km West of MI"LEWER SHOWING

orthogneiss occurs in some drill holes, and a large mass of Devonian orthogneiss is inferred to occur at depth, based on projection of the EBQ/Dgn contact northward from the south side of East Barriere Lake (Figure 4). Pyrite, pyrrhotite and lesser chalcopyrite occur as light to heavy disacminations (in part concentrated along foliation planes), as fracture fillings, as this stringers, and width quarz-carbonate venilets. This type of mineralization occurs in a variety of lithologies but appears to be most abundant in chloritic schists. Pyrrhotitepyrite-chalcopyrite-magnetite mineralization in garnet-epidote-chlorite-quartz skarn is also present, associated with amphibolite and limestone.

Mineralization on the EBL property is very similar to that at the Harper Creek deposit, located 20 kilometres to the north on the north side of the Baldy batholith. Both deposits occur within the third fault slice of the Eagle Bay Assemblage, but the EBL host rocks are tentatively assigned to Unit EBQ and thus inferred to be lower in the stratigraphic section than the Unit EBA rocks which host the Harper Creck mineralization (Figures 6 and 7). In each case, however, the mineralization occurs within rocks that are intruded and underlain by Devonian orthogneiss.

### 20. JUNE (KAJUN) (82M-058)

The June showing is 450 metres southeast of the East Barriere Lake shoreline, 4 kilometres east of the lake's outlet. It comprises sulphide-bearing quartz lenses within dark grey phyllite and siltstone, and within a siliccous lens in structurally overlying limestone. The host rock (FBGp) occurs in the upper part of Unit EBG. The showing has been known since at least 1960 and has been subjected to limited geological, geophysical and geochemical work, much of it by Western Mines Limited (now Westmin Resources Limited) in the early 1970a.

Outcrop at the June showing consists of a northerly trending limestone bluff. 15 to 20 metres high and about 100 metres long, that is underlain by dark grey phyllite and siltstone. The contact is a thrust (?) fault which dips 20 to 25 degrees to the east. The gently east-dipping grey laminated limestone above the fault contains a concordant lens of very fine-grained siliceous rock (silicified limestone ?) which is generally less than 1 metre thick, but thickens substantially where it passes through a recumbent fold pair exposed near the south end of the bluff. Mineralization occurs within the thickened siliceous zone in the fold hinges, and comprises mainly galena, sphalerite, chalcopyrite and pyrite in pods and lenses of quartz, calcite and dolomite. The phyllite and siltstone beneath the fault contain irregular lenses of vein quartz containing the same sulphide minerals. This mineralization appears to be most common adjacent to the fault.

#### 21. TWIN MOUNTAIN (82M-020)

The Twin Mountain showing is located approximately 5 kilometres south of the west end of Johnson Lake. It consists of sulphide-bearing quartz-carbonate-barite lenses within a conformable zone of relatively pyritic and calcareous chlorite-sericite-quartz schists of Unit EBG. The area was first staked in 1936, and the mineralized zone was traced for atmost 1400 metres through 12 trenches. Further work was carried out in the early 1950s when two exploration tunnels were driven, and also in the late 1960s when geochemical soil sampling outlined a zone anomalous in lead and zinc extending over 4.5 kilometres and coincident with the exposed mineralization. The ground was restaked in 1980 and pur chased by Apex Energy Corporation in 1982. In 1983 Apex entered into an option agreement with Austin Resources Inc.: the two companies subsequently optioned the property to Corporation Falconbridge Copper (now Minnova Inc.).

The mineralization occurs within a conformable, northeast-dipping zone of grey pyritic and calcareous chloritesericite-quartz schists enclosed within darker green chlorite schists of Unit EBG. The zone is several metres to more than 10 metres wide and has been traced, through intermittent exposure with variable mineralization, for a strike length of more than 4 kilometres (Graf, 1981, Assessment Report 8942). Galena-sphalerite-pyrite-chalcopyrite mineralization occurs in carbonate-quartz-barite lenses which are concordant, or nearly so, to foliation in the enclosing schists. The carbonate is largely dolomite, but also includes calcite and siderite. The lenses range up to several metres in thickness, and locally display considerable pinch and swell. Mineralization within the lenses is erratic and ranges from sparse disseminations to massive pods of mainly galena and sphalerite up to 10 centimetres wide. Precious metal values are generally low, although a 1936 sample apparently vielded 17 grams per tonne gold across 60 centimetres (0.5 ounce per ton across 2 feet) (Minister of Mines Annual Report, 1936. page D39).

The presence of barite of the Twin Mountain showing is of particular interest; elsewhere in the map area it is known only in association with volcanogenic massive sulphides at Homestake and Rea. This, together with the extensive conformable strike length of the mineralized zone, has promoted recent speculation that the mineralization, previously referred to as a vein system, may be the product of an exhalative system associated with the volcanic rocks of Unit EBG. Comparison with Homestake and Rea is tennous, however, since the Devono-Mississippian rocks which host these deposits are inferred to be separated by a thrust fault from overlying Unit EBG rocks, which are at least in part of Early Cambrian age.

#### 22. REA (82M-191)

The Roa massive sulphide showing is located on the slopes southeast of Johnson Creek, approximately 3.5 kilometres southwest of the west end of Johnson Lake (Plate 24). It was discovered in October 1983 by prospectors A. Hilton and R. Nicholl, both of Kamloops, optioned to Rea Gold Corporation, and in turn optioned to Corporation Falconbridge Copper (now Minnova Inc.). Drilling carried out by Corporation Falconbridge Copper in 1983 and 1984 indicated possible reserves of 136 080 tonnes grading 14.74 grams per tonne gold, 120 grams per tonne silver, 3.6 per cent zine, 3.1 per cent lead, and 0.7 per cent copper, in two massive sulphide lenses (Northern Miner, March 7, 1985). Additional reserves reportedly occur in another massive sulphide lens discovered by Falconbridge in 1985 (T. Höy, personal communication. January 1986). The following brief summary of the geology and mineralization is based on reports by White (1985) and Höy and Goutier (1986).

The Rea sulphides occur within an overturned panel of Unit EBF metavolcanic and metasedimentary rocks which dip at 13559). Quartz veins carrying pyrite and galena occur along the same general trend 1900 metres to the northwest (*ibid*).

#### 42. LYDIA (82M-008)

The Lydia showing lies on the west side of Foghorn Creek approximately 2.5 kilometres southeast of Foghorn Mountain. It comprises pyrite-pyrrhotite-chalcopyrite mineralization within chloritic phyllite, calcareous phyllite and quartzofeldspathic schist in the upper part of Unit EBQgn. The mineralization was discovered in the early 1900s and explored by two main adits, a number of short prospect adits, and several trenches prior to 1920. It received further attention in the early 1950s after uranium mineralization was discovered at Rexspar in 1949. The showing has been subjected to several geophysical, geochemical and diamonddrilling programs over the past 20 years; it is presently owned by MFC Mining Finance Corporation.

At the Lydia showing, pyrite, pyrrhotite and chalcopyrite are erratically distributed in quartz stringers, along fracture surfaces and as disseminations along foliation planes, across an interval of at least several tens of metres. Much of the mineralization, however, occurs within a more or less concordant zone, generally less than 2 metres thick, which has been traced for a strike length of about 350 metres (Dawson, 1979, Assessment Report 7758). Sulphides within this layer occur in disseminated to massive form, in layers and lenses aligned with the cleavage, in discordant quartz veins, and as steeply dipping, postcleavage fracture fillings.

The Shamrock showings, which are about 1 kilometre north of the Lydia, comprise several old adits that were driven along quartz veins containing variable amounts of pyrite.

## 43. HARPER CREEK (82M-007, 82M-009)

The Harper Creek prospect is a large, low-grade copper deposit located at the headwaters of Harper Creek, approximately 10 kilometres southwest of Vavenby (Plate 28). The western part of the deposit (Sue and Goof claims) was staked by Noranda Exploration Company Limited in April 1966 as a result of reconnaissance geochemical work. The eastern part (Hail claims) was staked by Quebec Cartier Mining Co. in June 1966. The two properties were explored independently until 1970, when a joint venture was formed with Noranda supervising the continued exploration and development. The exploration work included more than 22 000 metres of diamond drilling; geologically inferred reserves are 90 million tonnes grading 0.4 per cent copper. The deposit was studied by Belik (1973), and the brief summary that follows is taken largely from his work.

Mineralization occurs within Unit EBA, comprising a succession of light silvery grey quartz sericite phyllites intercalated with lesser amounts of green chloritic phyllite, dark grey carbonaceous phyllite and light grey sericitic quartzite. These rocks are locally intruded by minor amounts of quartzofeldspathic orthogneiss, which is also common in underlying rocks of Unit EBQgn. Mineralization consists mainly of pyrite with lesser amounts of chalcopyrite and pyrrhotite. Sphalerite, arsenopyrite, molybdenite, galena, tetrahedrite-tennantite, bornite and cubanite are present in very minor quantities. The sulphides occur as disseminations along schistosity surfaces; as bands of disseminated sulphides; as patches and disseminations within quartz and quartz-carbonate veins; and as thin coatings on steeply dipping, northerly striking fracture planes. Locally, the quartz



Plate 28. Drill roads and trenches at the Harper Creek copper deposit; view is to the northwest.

sericite phyllite contains lenses of massive pyrite-pyrrhotite with local concentrations of chalcopyrite; these lenses vary to several metres in thickness. Massive magnetite occurs locally within the sulphide lenses and also forms separate lenses containing minor amounts of chalcopyrite.

Copper mineralization occurs within tabular zones that dip to the north in approximate conformity with schistosity and lithological contacts of the host rocks. In detail, however, zones of copper mineralization transgress inhology and arc not stratigraphically controlled (Belik, 1973). Most of the mineralization occurs within light silvery grey quartz sericite phyllite. The largest mineralized zone has a continuous strike-length of more than 1800 metres, a thickness that locally exceeds 100 metres, and persists down dip for at least 600 metres.

#### 44. VM (82M-109)

The VM showings are located along a tributary of the Barriere River, 2 kilometres southwest of Avery Lake. The weakly disseminated copper mineralization was discovered in 1970, by Royal Canadian Ventures Ltd., during exploration for large tonnage, low-grade copper deposits similar to that at Harper Creek. Exploration by Cominco Ltd. in 1978 assessed the area's potential for volcanogenic polymetallic massive sulphide mineralization.

Mineralization is exposed in several old bulldozer trenches and along the bed of a small creek. It comprises pyrite and traces of chalcopyrite weakly and erratically disseminated along foliation and fracture planes within quartz-eye sericite schists and quartzofeldspathic schists and gneisses of Unit EBAgn. Grab camples typically assay 0.3 to 0.4 per cent copper with only traces of silver and gold (Naylor and White, 1971. Assessment Report 3525). Some of the host rocks are clearly of intrusive origin; more schistose varieties may be metavolcanic rocks but could be sheared intrusives.

#### 45. VAV (ESP) (82M-151)

The VAV showings occur along a tributary of Reg Christie Creek, approximately 7 kilometres east of Vavenby, Disseminated copper mineralization was first discovered on the north side of Cedar Creek by Nicanex Mines Ltd. in 1969; similar mineralization was discovered south of the creek by Barrier Reef Resources Ltd. in 1976 and 1977. The mineralization 540 P08

consists of fine-grained pyrite, chalcopyrite and rare molybdenite, sparsely disseminated along foliation and fracture planes within sericite quartz phyllite and sericite-chloritequartz phyllite of Unit EBAgn. Locally the phyllite includes medium-grained quartzofeldspathic orthogneiss. Both the north and south showings are west-trending zones comprising mineralized outcrops and mineralized float extending over areas 800 to 1000 metres long by about 150 metres wide (Dawson, 1978, 1979, Assessment Reports 6933 and 7119). The mineralized zones include outcrops of barren rock and are separated by about 400 metres of apparently unmineralized rock. A limited amount of drilling was carried out by Nicanex Mines Ltd. in 1970 on the north zone, and by Barrier Reef Resources Ltd. in 1979 on the south zone: neither program encountered significant mineralization.

# 46, 47. HILLTOP (82M-114), HILLTOP 9 (82M-115)

The Hilltop showings occur at the headwaters of Gollen Creek, approximately 12 kilometres southeast of Vavenby. Copper mineralization was discovered by Dynasty Explorations Ltd. in 1971, which optioned ground staked by J.A. Fennell of Barriere to cover an area of mineralized float. Fennell restaked the area in 1975 and further work, including two X-ray drill holes totalling 76.5 metres, was carried out in 1976 and 1977.

Mineralization occurs mainly within chlorite schist and greenstone of Unit EBG, just east of its faulted contact with Cretaceous granitic rocks of the Baldy batholith. The chlorite schist in this area is variably silicified, pyritized and potassium-teidspathized (Brock and Roberts, 1971, Assessment Report 3430). Disseminated pyrite and chalcopyrite, with local lenses of pyrrhotite, occur in fractured and brecciated schist at several localities within this alteration zone.

The Hilltop 9 showing, located 2 kilometres east of the main zone of copper mineralization, comprises a pod of skarn within massive crystalline limestone of Unit EBGI. The skarn zone consists of epidote, diopside, calcite, chlorite and garnet with minor amounts of pyrrhotite, pyrite and chalcopyrite. It measures about 10 metres wide by 20 metres long and is apparently truncated by a northwest-trending fault at its castern end (Brock and Roberts, 1971, Assessment Report 3430).





540 P11

ACME ANALYTICAL LABORATORIES LTD. DATE RECEIVED: DEC 14 1989 852 E. HASTINGS ST. VANCOUVER B.C. V6A 1R6 PHONE (604) 253-3158 FAX(604) 253-1716 DATE REPORT MAILED:

# **ASSAY CERTIFICATE**

SAMPLE#	Cu *	Pb %	Zn %	Ag 0Z/T	Au OZ/T
1	8.65	.01	.05	1.00	.005
2	.04	.01	.01	.01	.001
	.01	.01	.01	.01	.001

JAN 08 '90 09:08 MINNOVA INC

. .

540 P12

KAMLOOPS RESEARCH & ASSAY LABORATORY LTD.	B.C. CERTIFIED ASSAYERS 912 - 1 LAVAL CRESCENT, KAMLOOPS, B.C. V2C 5P5 PHONE (604) 3/2-2/84 FAX 372-1112 ** ASSAY CERTIFICATE **					
To: Leaverite Drilling & Box 784	Blasting Number K 9951					
Ashcroft, B.C. VOK 1V0	Date: Dec. 8, 1989					
	Proj.:					
Attn:						

No.	Description	Au ozs/ton	Ag ozs/ton	Cu percent	Pb percent	Zn percent	
- 1		.002	.58	4.25	<.01	<.01	

Deuk A Blundell

B.C. Certified Assayer