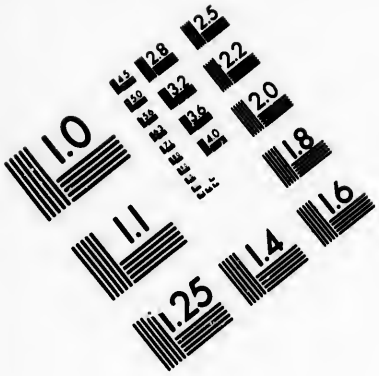


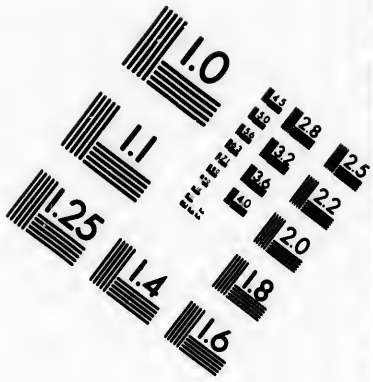
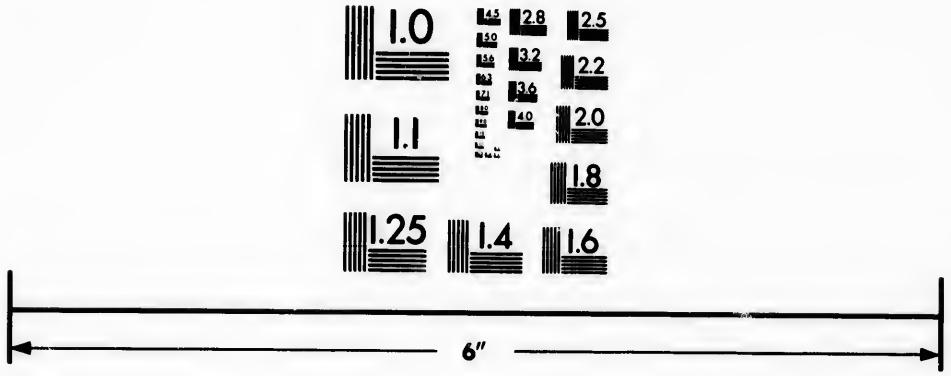
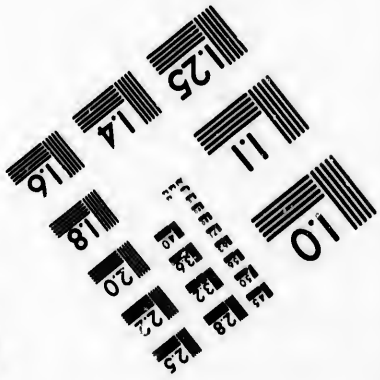


IMAGE EVALUATION TEST TARGET (MT-3)





Photographic Sciences Corporation

23 WEST MAIN STREET
WEBSTER, N.Y. 14580
(716) 872-4503

CIHM/ICMH
Microfiche
Series.

CIHM/ICMH
Collection de
microfiches.

Canadian Institute for Historical Microreproductions / Institut canadien de microreproductions historiques

Technical and Bibliographic Notes/Notes techniques et bibliographiques

The Institute has attempted to obtain the best original copy available for filming. Features of this copy which may be bibliographically unique, which may alter any of the images in the reproduction, or which may significantly change the usual method of filming, are checked below.

L'Institut a microfilmé le meilleur exemplaire qu'il lui a été possible de se procurer. Les détails de cet exemplaire qui sont peut-être uniques du point de vue bibliographique, qui peuvent modifier une image reproduite, ou qui peuvent exiger une modification dans la méthode normale de filmage sont indiqués ci-dessous.

- [x] Coloured covers/ Couverture de couleur
- [ ] Covers damaged/ Couverture endommagée
- [ ] Covers restored and/or laminated/ Couverture restaurée et/ou pelliculée
- [ ] Cover title missing/ Le titre de couverture manque
- [ ] Coloured maps/ Cartes géographiques en couleur
- [ ] Coloured ink (i.e. other than blue or black)/ Encre de couleur (i.e. autre que bleue ou noire)
- [ ] Coloured plates and/or illustrations/ Planches et/ou illustrations en couleur
- [ ] Bound with other material/ Relié avec d'autres documents
- [ ] Tight binding may cause shadows or distortion along interior margin/ La reliure serrée peut causer de l'ombre ou de la distortion le long de la marge intérieure
- [ ] Blank leaves added during restoration may appear within the text. Whenever possible, these have been omitted from filming/ Il se peut que certaines pages blanches ajoutées lors d'une restauration apparaissent dans le texte, mais, lorsque cela était possible, ces pages n'ont pas été filmées.
- [ ] Additional comments:/ Commentaires supplémentaires:

- [ ] Coloured pages/ Pages de couleur
- [ ] Pages damaged/ Pages endommagées
- [ ] Pages restored and/or laminated/ Pages restaurées et/ou pelliculées
- [x] Pages discoloured, stained or foxed/ Pages décolorées, tachetées ou piquées
- [ ] Pages detached/ Pages détachées
- [x] Showthrough/ Transparence
- [ ] Quality of print varies/ Qualité inégale de l'impression
- [ ] Includes supplementary material/ Comprend du matériel supplémentaire
- [ ] Only edition available/ Seule édition disponible
- [ ] Pages wholly or partially obscured by errata slips, tissues, etc., have been refilmed to ensure the best possible image/ Les pages totalement ou partiellement obscurcies par un feuillet d'errata, une pelure, etc., ont été filmées à nouveau de façon à obtenir la meilleure image possible.

This item is filmed at the reduction ratio checked below/
Ce document est filmé au taux de réduction indiqué ci-dessous.

10X	12X	14X	16X	18X	20X	22X	24X	26X	28X	30X	32X
					✓						

The copy filmed here has been reproduced thanks to the generosity of:

Library of the Public
Archives of Canada

The images appearing here are the best quality possible considering the condition and legibility of the original copy and in keeping with the filming contract specifications.

Original copies in printed paper covers are filmed beginning with the front cover and ending on the last page with a printed or illustrated impression, or the back cover when appropriate. All other original copies are filmed beginning on the first page with a printed or illustrated impression, and ending on the last page with a printed or illustrated impression.

The last recorded frame on each microfiche shall contain the symbol → (meaning "CONTINUED"), or the symbol ▽ (meaning "END"), whichever applies.

Maps, plates, charts, etc., may be filmed at different reduction ratios. Those too large to be entirely included in one exposure are filmed beginning in the upper left hand corner, left to right and top to bottom, as many frames as required. The following diagrams illustrate the method:

L'exemplaire filmé fut reproduit grâce à la générosité de:

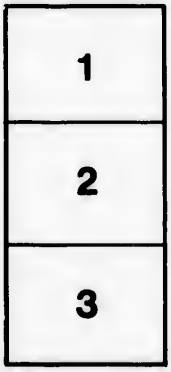
La bibliothèque des Archives
publiques du Canada

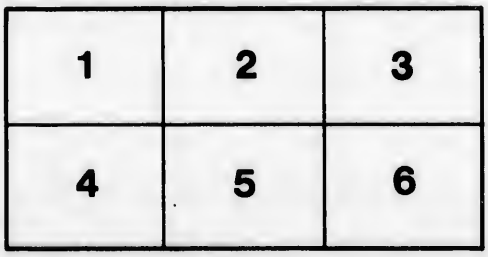
Les images suivantes ont été reproduites avec le plus grand soin, compte tenu de la condition et de la netteté de l'exemplaire filmé, et en conformité avec les conditions du contrat de filmage.

Les exemplaires originaux dont la couverture en papier est imprimée sont filmés en commençant par le premier plat et en terminant soit par la dernière page qui comporte une empreinte d'impression ou d'illustration, soit par le second plat, selon le cas. Tous les autres exemplaires originaux sont filmés en commençant par la première page qui comporte une empreinte d'impression ou d'illustration et en terminant par la dernière page qui comporte une telle empreinte.

Un des symboles suivants apparaîtra sur la dernière image de chaque microfiche, selon le cas: le symbole → signifie "A SUIVRE", le symbole ▽ signifie "FIN".

Les cartes, planches, tableaux, etc., peuvent être filmés à des taux de réduction différents. Lorsque le document est trop grand pour être reproduit en un seul cliché, il est filmé à partir de l'angle supérieur gauche, de gauche à droite, et de haut en bas, en prenant le nombre d'images nécessaire. Les diagrammes suivants illustrent la méthode.





32X

A STATEMENT

OF THE

PROPERTY, CONDITION AND RESOURCES

OF THE

RECIPROCITY MINING CO.

OF CANADA EAST,

INCLUDING THE STATEMENT OF THE TRUSTEES, EXTRACTS FROM OFFICIAL REPORTS AND CORRESPONDENCE, AFFECTING THE VALUE OF ITS PROPERTY.

Office, No. 71 Broadway.

NEW YORK CITY.

SEPTEMBER, 1854.

RECIPROCITY

MINING COMPANY,

OF CANADA EAST.

L. E. CHITTENDEN, - - - - President.

ORGANIZED UNDER THE GENERAL LAWS OF THE STATE OF NEW YORK.

TRUSTEES:

Ex-Gov. JAMES POLLOCK, Director U. S. Mint,	- -	Philadelphia.
WM. G. MOORHEAD, of JAY, COOKE & Co.	- -	"
CHAS. B. WRIGHT, " C. B. WRIGHT & Co.	- -	"
HENRY SHELDON, " STANTON, SHELDON & Co.	-	New York.
WM. B. HATCH, " FAIRBANKS & Co.	- - -	"
T. B. BUNTING, " T. B. BUNTING & Co.	- -	"
L. E. CHITTENDEN, (Late Register U. S. Treasury,)	-	"

THIS COMPANY IS FORMED FOR THE PURPOSE OF PURCHASING, WORKING, SELLING AND LEASING MINING LANDS AND RIGHTS, IN THE BRITISH PROVINCES AND NEIGHBORING LOCALITIES.

President,.....L. E. CHITTENDEN.

Bankers,.....FISK & HATCH.

Gen'l Sup't,.....ARTHUR RANKIN, Esq., M. P.

Secretary,.....JOHN M. HOOD.

RECIPROCITY

MINING COMPANY,

OF CANADA EAST.

Capital Stock, - - 100,000 Shares,

PAR VALUE, $50.

10,000 Shares Reserved in the Treasury for the Operations of the Company.

The present property of the Company consists of fourteen thousand seven hundred and seventy acres (14,770) of land, in Canada East. These lands have been selected by ARTHUR RANKIN, Esq., M. P., for the last twelve years member of the Provincial Parliament of Canada. Having been deeply interested in the geological survey of Canada from its commencement, he has devoted himself, with an able corps of assistants, during the last two years, to the examination of the Gold Lands of the Province, and the lands which he has selected undoubtedly comprise a greater part of the most valuable Gold fields of Canada.

Especial attention is invited to the character of the title to this property.

While the interest *usually* acquired by parties is simply a license from the government to conduct mining operations in a particular locality, which is not in any sense exclusive, *this title* is either in fee simple from the Crown, (which is the case with all but about 2,000 acres,) or, as in the case of these 2,000 acres, consists of the exclusive mining right, derived from the owners of the fee. This right is in some respects more desirable than the fee, as it is exempt from taxation.

The following is a general description of the Company's property :

4,200 acres in the TOWNSHIP OF WHITTON, fronting on the Chaudiere for upwards of *seven miles*. See Map C. Title, fee simple absolute.

2,200 acres in the TOWNSHIP OF SPAULDING, including the Rivers NEBUELLIS and KOKOMBIS *for five miles, both sides*. See Map D. Title, fee simple absolute.

3,200 acres in the TOWNSHIP OF MARSTON, including the River VICTORIA, for *five miles* and *upward* on *both sides* from its mouth. See Map E. Title, fee simple, as above.

2,000 acres in the TOWNSHIP OF WARE, including the south-east branch (*both sides*) of the River ETCHEMIN, for *seven miles*. See Map F. Title, fee simple, as above.

1,000 acres in the TOWNSHIP OF LANGEVIN, including a branch of the River FAMINE, for upwards of *two miles*. See Map G. Title, fee simple, as above.

2,070 acres in the TOWNSHIPS OF LINIERE AND MARLOW, upon the RIVIERE DU LOUP, the KEMPT stream, and the River LINDSAY.

Title in this embraces all mining rights, which are exclusive, perpetual, and free from all rental or tax. See Map H.

100 acres in the PARISH OF ST. FRANCIS, including the River GILBERT. See Map B. Title, fee simple absolute.

TOTAL, 14,770 ACRES, WITH OVER SIXTY MILES OF RIVER FRONTAGE.

REFERENCES TO ACCOMPANY MAPS AND DIAGRAMS.*

Map A shows the *Gold bearing districts of Canada*, as developed by actual geological survey under the direction of Sir WILLIAM E. LOGAN.

Map B shows 50 acres on the *River Gilbert*, divided into five hundred and fifty-three lots, 25x100 and 50x100.

There are 100 acres in this property, but 50 of which have been mapped, and are here exhibited.

Map C shows 4,200 acres in the *Township of Whitton*, fronting on the River Chaudiere for *upwards of seven miles*.

Map D shows 2,200 acres in the *Township of Spaulding* including Nebuellis and Kokombis Rivers *for five miles*.

Map E shows 3,200 acres in the *Township of Marston*, including the River Victoria, *for five miles and upwards*, from its mouth. The lots in red are the property of this Company.

Map F shows 2,000 acres in the *Township of Ware*, including the south east branch of the River Etchemin for *seven miles*. The lots in red are the property of this Company.

---

* Maps can be obtained at the office of the Company.

Map G shows 1,000 acres in the *Township of Langevin*, including a branch of the River *Famine* for *upwards* of *two miles.*

Map H shows 2,070 acres in the *Townships of Liniere and Marlow,* upon the Riviere du Loup, the Kempt stream and the River Lindsay. The lots in red are the property of this Company.

It is to be noted that all these lands are located upon the Chaudiere, or upon the streams and rivers forming the sources of the Chaudiere, or principal streams upon which Gold has already been discovered.

Mining operations hitherto have been generally carried on upon both sides of the Chaudiere River, at various points within fifty miles of its mouth. Geological explorations render it comparatively certain that these deposits have been derived from localities upon the streams forming the Chaudiere, and at a greater distance from its junction with the St. Lawrence. Actual survey has confirmed this fact, and has proved the lands in question to be richer in auriferous deposits than any which have been found below. The original quartz veins from which the Gold in these diluvial deposits has been washed down, have been found near the sources of these

streams, and these lands have been located keeping this fact carefully in view. They have been selected by persons who were entirely familiar, not only with the geological explorations of this section of Canada, but who have been able to avail themselves of the practical experience and observation of persons who have been engaged in the collection of Gold from the choicest localities. Not one of the numerous lots embraced in the foregoing list has been located until satisfactory evidence of the existence of Gold upon it has been first secured. Every one of these lots may, therefore, be regarded as careful and judicious selections from the best Gold bearing districts of Eastern Canada.

These lands embrace all that section referred to in the geological surveys of Canada, as containing the auriferous gravel of the river channels, and alluvial flats, averaging from *fifty to one hundred and fifty feet* in thickness. These deposits are only found to any extent upon the streams embraced in the lands of this Company.

Especial attention is invited to the reliable and conclusive geological and other reports embraced in the following condensed statement.

38 Wall Street, New York,
September 5th, 1864.

My Dear Sir—I am requested in behalf of several gentlemen interested, to procure the services of a thoroughly reliable geologist, for the purpose of making an examination, survey and report upon the mineral and other deposits upon their property in Canada East. As this report may exercise an important influence upon the future use and disposition of the property, I am very desirous of securing the services of a conscientious and competent man, who will personally conduct the examination in the field, and who will report to us such facts only, as result from his own explorations. As you are familiar with the qualifications and reputation of the geologists and mineralogists of the country, I would feel obliged if you would recommend some gentleman whom you would think best adapted to such a work. The question of reasonable expense will not be considered. What we want is the most reliable man. An early reply will oblige.

Yours very truly,

(Signed.) L. E. CHITTENDEN.

Professor John Torrey, U. S. Assay Office, New York.

A letter of the same tenor was addressed to Professor J. D. Dana, of Yale College, which it is not deemed necessary here to repeat.

PROFESSOR DANA'S REPLY.

New Haven, September 9, 1864.

My Dear Sir—Your letter of inquiry was received yesterday. I think that Professor Henry Wurtz would be

an excellent man for the investigation you require. He is an able chemist as well as a good mineralogist, and a person also of marked independence of thought and judgment, who would give, it appears to me, a faithful, unbiased opinion.

Very truly yours,

(Signed,) JAMES D. DANA.

Hon. L. E. CHITTENDEN.

PROFESSOR TORREY'S REPLY.

U. S. ASSAY OFFICE, NEW YORK,
September 8th, 1864.

MY DEAR SIR—Your communication dated the 5th inst. was laid on my table only this morning. You ask me to give the name of a gentleman who is qualified to make geological and metallurgical investigations in the field, and who is also reliable for conscientiousness. I am happy to point out one who possesses these qualifications in a high degree, viz., Professor H. WURTZ. I have known him for many years, and he has worked a great deal by my side in the laboratory. I have entire confidence in his integrity. At present I don't know where he is. He left town (I think on Monday last) to be gone several days. His residence is 108 Bleecker street, where his wife can be found, who will inform you how a letter can reach him.

Yours respectfully,

(Signed,) JOHN TORREY.

Hon. L. E. CHITTENDEN, 38 Wall street, N. Y.

No. 69 Beaver Street,
New York, Sept. 1, 1864.

Hon. James Pollock,

Director of U. S. Mint, Philadelphia.

Dear Sir:—Permit me to introduce to your favorable acquaintance, Hon. Arthur Rankin, Member of the Provincial Parliament of Canada.

Mr. Rankin is the proprietor of several large tracts of Gold bearing lands in Canada East, and has with him a few pounds of Gold (taken from these lands,) of which he desires to secure an accurate and reliable asssay.

No. 1 is a specimen from the River Gilbert.
No. 2 " " " Victoria.

I shall be obliged if you will aid Mr. Rankin in accomplishing his object, and will announce the results of the assay as soon as possible. Please communicate directly with me, as Mr. Rankin will probably return to Canada before the assay can be made.

Very respectfully,

Your obedient servant,

(Signed,) T. B. BUNTING.

Mint of the United States,
Philadelphia, Sept. 5, 1864.

T. B. Bunting, Esq.,
New York.

Dear Sir:—The result of the assay of the specimens of Canada Gold left by Colonel Arthur Rankin, M. P. P. of Canada, is as follows:

1st.—River Gilbert specimen,	Gold,	- -	867
" "	Silver,	-	128
" "	Iron,	- -	5

Value of Gold, per oz., $17,92.

2d.—Victoria River specimen	Gold,	- -	872
" "	Silver,	-	121
" "	Iron,	- -	7

Value of Gold, per oz., $18,02.

The specimens were both very rich, and the Gold of excellent quality.

Yours truly,

(Signed), JAMES POLLOCK.

By the foregoing letter of Ex-Gov. Pollock, it will be seen that the *Gold* from Victoria River is worth $18,02 per ounce *alone*, while the same contains $\frac{121}{1000}$ of Silver.

DIRECTIONS TO PROFESSOR H. WURTZ.

NEW YORK, September, 1864.

MY DEAR SIR—Learning from our personal interview that you are willing to undertake the examination and survey of the property proposed to be conveyed to the Reciprocity Mining Company, and located upon or near the Chaudiere River and its tributaries, I desire to make one or two suggestions to you in behalf of myself and the gentlemen for whom I am acting before you visit the property.

We desire you to take all the time that is necessary for you to make a preliminary survey, sparing no reasonable expense which it is necessary for you to incur in the course of your operations.

We want the results of *your own examination* of the property, and would be obliged for a report which will set forth your own opinion, based upon actual personal inspection of the character, extent and quantity of the gold and other mineral deposits upon these lands.

We prefer to have your survey made with such assistants as may be necessary, including none of the present owners of the property.

The ultimate conclusions of the gentlemen who are desired to take an interest in these lands will be governed to some extent by the results of your examination, and I am requested by them to ask you that your investigation and report made be as thorough and complete as possible.

Yours very truly,

(Signed,) L. E. CHITTENDEN.

Professor HENRY WURTZ, New York.

REPORT OF PROFESSOR HENRY WURTZ, GEOLOGIST.

NEW YORK, September 20th, 1864.

Hon. L. E. CHITTENDEN, New York:

DEAR SIR—Concisely, and as preliminary to a future report of a more comprehensive and elaborate character, I beg leave to present the following views, arrived at by visiting the gold fields of the Chaudiere and examining published documents relating thereto.

The Notre Dame range of mountains, which appears to have anciently constituted a water-shed of the Continent, though no longer such, is described in the Canada Geological Reports as representing in Canada the crest of those

great lines of upheaval of the eastern coast of North America which are known to us as the Alleghany or Appalachian chain of mountains. Those reports describe this predominant line of upheaval as passing from the Green Mountains of Vermont into Canada along a line of elevated peaks commencing about fifty miles from Montreal and ranging in a generally northeastern direction through Sutton, Orford, Ham, Coleraine and Buckland, which would make this crest of upheaval cross the Chaudiere somewhere about St. Marie.

It is on the southeastern flank of this crest of upheaval that the grand system of mineral lodes carrying gold and silver, together with lead, copper and other metals, is found ranging through Georgia, South and North Carolina, Virginia and Maryland. Through Pennsylvania, New Jersey and New York this same grand metalliferous zone is found, carrying in these States, almost solely, different *iron* minerals, such as magnetic iron, iron pyrites and magnetic pyrites, as in the Highlands of New Jersey and the Hudson or West Point Highlands, in all cases still, however, lying almost wholly on the southeastern flanks of the crest. In Massachusetts, Vermont and New Hampshire, still on the eastern flanks of the Green Mountains, come in again numerous lodes of metalliferous quartz, carrying chiefly sulphurets of iron, copper, lead and zinc, in which, both in Vermont and New Hampshire, gold and silver have been found at several points, all, however, I believe, on the eastern side of the Green Mountains.

It appears therefore that we have here clearly the generalization that the great Appalachian Zone of lode-bearing rocks ranges always on the eastern side of the crest-line, and in accordance therewith we find that the region in which the Canadian gold has been found lies on the southeastern side of the line above indicated, crossing the Chaudiere Valley somewhere at or above St. Marie.

The first great problem presented by this gold field, so long known, and yet so little known, is to determine whether the precious metal, as in all other known gold fields, has been derived from the remains or *debris* of decomposed and disintegrated veins or lodes traversing the rocks of the country; or, as some have supposed or suggested, from the ruins of other formations lying further to the northward, fragments of which are known to have been strewed copiously over this country, before its emersion from the ocean, by ice floating from the north. Singular as this latter supposition seems, much currency has been given to it by the fact that it seems to have been adopted in the earlier official Reports on the Geological Survey of Canada; and this circumstance may have tended to retard the development of the gold product of this section by discouraging the investment of capital therein.

In ascending the Valley of the Chaudiere I kept constantly on the watch therefore for those indications of the passage of the peculiar *stratoid* and *schistoid lodes* of the Appalachian Zone carrying metallic oxyds and sulphurets, which I have become familiar with during previous extensive explorations on the southerly prolongations of this metalliferous Zone throughout the States of North and South Carolina, Virginia, Maryland, Pennsylvania, New Jersey, New York, Vermont and New Hampshire. Such indications I first recognized unmistakably a short distance above St. Marie, probably at or shortly above the point of crossing of the great crest-line of upheaval indicated by the Canada Survey. The indications were those of lodes of quartz, highly impregnated with metallic sulphurets, running with the lines of outcrop of the upturned metamorphic schists of which the country is composed, a course which is parallel with the line of upheaval.

I observed that, as in the gold region of North Carolina and elsewhere, these lodes rarely occur alone, but are asso-

ciated together along certain belts of the schists, parallel outcrops appearing within a few rods, sometimes within a few yards, of each other. Such belts sometimes extend for many miles in the direction of the upturned edges of the schists, which direction is that of the line of upheaval, and in the Chaudiere country is generally about due northeast and southwest. Just above St. Francis, crossing the river near the point known as the "Devil's Rapids," a number of such lodes was observed, several of which were very large. The course of these lodes would take them across the bed of the Gilbert shortly above the points on the property of your company and others where "diggings" are now being carried on, so rich that 300 men are stated *officially* to be now taking out *at least* $1,200 per day. Another very numerous set of such lodes crosses just above St. George, their course taking them evidently to or near a point on one of the tributaries of the Famine where new diggings were stated to be in successful operation.

On high land on one of the company's tracts, lying between the Portage and Kempt streams, tributaries of the Riviere du Loup, two large lodes were observed. The severity of the weather prevented the actual tracing of these outcrops along their exact course, but the bed of the Kempt stream was explored for some distance along where those lodes were supposed to cross it. A very handsome specimen of quartz containing visible gold was here picked up by us in the water, which presented all the characteristics of having been broken out of a lode, and the first pan of gravel taken from the immediate surface of the bed of the stream, gave *four flat grains* of coarse gold dust. Out of four subsequent pans taken from further up the stream, two gave several similar grains.

The gold from the washings on the Gilbert presents to my eye no indication of having been rolled or transported, having irregular angular forms, and presenting under the

lens dull irregular surfaces, free from polish or scratches. Specimens were observed still inclosing portions of the quartz of the lode from which they were derived.

The grains of gold washed out by us in other places presented similar appearances under the magnifier. None of the polish or wear which would naturally result from its transportation to any considerable distance from its original matrix was apparent.

For the reasons stated and implied in the above, it is my conviction that no reason exists for supposing or imagining that any of the gold found in this section was derived from any other source than the lodes of quartz which traverse the country itself. Other pregnant reasons for this belief are the facts that no gold has, to my knowledge, been yet found in any rocks existing to the northward of this region, and that *gold has been found* in the quartz lodes of the region itself, both visible and in those invisible forms in which it can only be found by chemical tests.

Also the occurrence of any collection of materials containing nuggets and coarse gold in any one place or places in sufficient abundance to constitute the "pay dirt" of diggings, seems incomprehensible on the drift hypothesis. The gold contained in such drift would necessarily be spread quite uniformly throughout its whole mass, and to account for such diggings as those on the Gilbert would necessitate the belief that the small valley of this stream became mysteriously the recipient of a portion of this drift, which, equally mysteriously, happened to be enormously and unusually rich in boulders derived from auriferous quartz lodes extant in the far country whence they came.

It may be asked, however, why is it that these Canada quartz lodes show at their outcrop so little visible indication of the gold supposed to have been derived from them, while in a neighboring gold field, the rocks and lodes of which in important respects resemble these remarkably,

namely, that in Nova Scotia, we find the outcrops showing visible gold abundantly? I r .at the Nova Scotia region is in this respect a striking exception to the general rule, and that the cause of this peculiarity is fully explained to my mind by the remarks made by Professor Silliman in his Nova Scotia Report on "the extreme compactness and tightness of the rock strata, which, although turned up on edge, are so tight bound as to shut out almost completely the percolation of surface water." This is very far from being the case in Canada, and the chance, therefore, of the removal of the gold from the outcrop to greater depths in the lodes by the chemical and mechanical action of water percolating from the surface is far greater.

I therefore maintain that no more reason exists in the case of this gold field for regarding the quartz lodes as unworthy of exploration and leaving them untouched, as has heretofore been done, than existed for the same procedure in California, Australia or Colorado, in each of which the same course of incredulity had sway before actual mining developments in the quartz confounded the unbelievers.

In fact I judge from passages in the recent general report of the eminent gentlemen who do honor to the Canada Geological Survey, that their earlier view is now regarded by themselves as founded upon immature investigation, and that they have themselves modified their ideas upon this important subject. In illustration I will quote one or two passages.

On page 419, in speaking of the gold found by washing superficial deposits, it is said that "The occasional occurrence in these of pieces of gold, partially imbedded in quartz, shows that it was derived, in part at least, from beds or veins of this mineral which are common among the talcoid slates of the region."

On page 739, speaking of one of the quartz lodes I have mentioned above as crossing the Chaudiere near the Devil's

Rapids, it is said that "it is probable that this and similar quartz veins may be wrought with profit."

With regard to this same vein at the Devil's Rapids, some statements made on page 517 are of the highest import. It is stated that this vein contains in a gangue of quartz, silver-lead ore, sulphuret of zinc, arsenical pyrites, common and magnetic pyrites, with native gold. One sample of the silver-lead ore gave 32, another 37 and another not less than 256 ounces of silver, to the ton, from which last result the analyst (Professor Hunt) opines that, beside the silver-lead, either native silver or its sulphuret is present in the lode, an opinion which is probably correct. The pyrites gave about six ounces of an alloy of gold and silver per ton, but the proportion of gold in this does not appear to have been determined. The most remarkable result, however, was that with the blende, or sulphuret of zinc, of this lode, which yielded at the rate of over *nine ounces* to the ton of a pale yellow gold, containing a portion of silver left undetermined. These results I regard as amply sufficient to justify the belief that the gold found in the diggings on the Gilbert, situated as stated above, near where this and its associated lodes should cross its bed, was derived from these lodes without resorting to the Northern Ice Drift for any of it.

As regards one special mode of gold mining, the Canada Reports have, as I believe, set forth facts and views of great practical value. I refer to the mode known as "hydraulic mining." From the necessary conditions of the case, the immense beds of gravel and quartz *debris* which form large high terraces in most places along both banks of the Chaudiere and of its tributaries, must be gold-bearing, even on the supposition that their materials are wholly derived from the northern drift, supposed auriferous. The actual results of experiments cited in the Reports themselves, made with

much apparent care and without doubt fully trustworthy, prove these materials to be auriferous to a degree far beyond similar deposits which have proved profitable in countries where the cost of such operations is very much greater. Throughout the lower part of the Parish of St. Marie, along the main valley of the Chaudiere for several miles, is an immense river terrace, in some places extending back from the river for a mile or more, representing, as I believe, an ancient expansion in the bed of the river, produced by some obstruction below, before it had cut down to its present bed. This terrace is largely composed of small fragments and pebbles of quartz, derived from the ruins of rocks brought down by the Chaudiere and its tributaries. Its surface is a level plain, inhabited by a considerable population, and no doubt many wells have been sunk in it, which, with some ravines and small streams running down to the river and cutting down into it, will furnish many points at which its auriferous character can be tested at small expense. Important elements in the calculation as regards hydraulic mining, and indeed gold mining generally, in Canada, are the unfailing character of the streams, which will enable operations to be carried on in the driest weather, and the rapid fall of most of these streams, which will enable sufficient heads of water to be obtained within comparatively short distances, and therefore at comparatively small expense ; also the low prices of labor, of provisions, of wood for fuel and for timbering mines, and of iron and other materials, tools, etc. Lumber may also be produced very cheaply, as there is immense and never-failing water power for sawmills.

Finally, this district possesses an advantage almost peculiar to itself among gold fields, in being an old settled country, where labor and materials are obtainable to a considerable extent at short notice, and in being penetrated in many directions by ready made and practicable roads.

In conclusion, it gratifies me to be able to express my belief that the enterprise you have proposed to enter into should not fail, under reasonably proper management, to yield results profitable in the highest degree.

All of which is respectfully submitted.

(Signed.) HENRY WURTZ.

NEW YORK, Sept. 21, 1864.

STATEMENT OF THE TRUSTEES

OF THE

RECIPROCITY MINING COMPANY,

OF CANADA EAST.

In calling public attention to the development of the mining resources of a new section of country and in inviting the association of capital necessary for that purpose, it will be naturally expected that those having the subject in charge should use every exertion and spare no pains to collect and set in order the facts which parties should weigh and consider before connecting themselves with such an enterprise. The Board of Trustees of the RECIPROCITY MINING COMPANY fully appreciate their duty in this behalf, and they propose to state in concise terms the facts which have induced them to interest themselves in this undertaking, and to recommend it with a suitable degree of confidence to the attention of the capitalists of the country.

The members of the present board, within the last two years, have been repeatedly invited to connect themselves with various companies formed within that period for mining purposes. These applications they have generally declined. They were unwilling to become associated with projects in which they were indisposed to risk their own capital, or which they could not confidently recommend to others; and when they were requested to unite themselves with a Corporation having in view the development of the gold interests of Canada East, they were at first very

unwilling to consider the subject at all. Although many of the mining companies heretofore organized have achieved permanent success ; too many of them have been failures. Some of these failures have resulted from the inaccessibility of the mining property, and the large expenses necessarily incurred in the machinery and labor indispensable to the development of such property, but many more from the intrinsic worthlessness of the property itself. Such failures have become so common that when the present subject was first presented to us we were strongly disinclined to connect ourselves with it; but the examination of the geological and other official reports of the Province of Canada seemed to establish the fact that there was a considerable section of country in that province fully equaling in gold and other valuable mineral deposits the sections of California and the Territories which have contributed so largely to the material wealth of the United States and the world. In view of this fact we were induced to examine the subject, and to endeavor to ascertain, with all practicable certainty, whether the statements made in these reports were true.

It was claimed by the gentlemen who first called the subject to our notice, that the lands in question were as rich in metalliferous deposits as those of California or Colorado. It was also claimed that they had been selected with the utmost care, that they had been located along ancient and modern river beds, and that every lot, previous to its selection, had been ascertained by actual experiment to contain deposits of gold. Colonel RANKIN, under whose direction these lands have been located, is now and has been for many years a member of the Provincial Parliament of Canada. It was claimed that he had much practical experience in the location of mineral lands, that he was familiar with all the facts developed by the Geological Survey, conducted in Canada, under the auspices of the government, by Sir WILLIAM LOGAN and his able corps of asssistants,

and that a suitable trial and examination would establish the fact of the extreme richness of those lands in gold and other valuable deposits.

As a preliminary step to any connection on our part with this subject, we insisted that the truth of these facts should be ascertained to our satisfaction through agencies established by ourselves alone. This condition was readily acceded to, the owners of the land stating to us that they desired the most thorough examination possible to be made. We thought such an examination would be best conducted by a thoroughly practical geologist. One of our number accordingly addressed notes to Professor J. D. DANA, of *Yale College*, who at the present time undoubtedly stands at the head of American geologists, and Dr. JOHN TORREY, of National reputation and now connected with the New York Assay Office, desiring them to select one of the most competent and independent men to make an examination of, and report upon this property. Without consultation between themselves, they indicated Professor HENRY WURTZ, as a practical geologist, whose opinions in this respect would be entirely reliable. The correspondence with these gentlemen and the instructions to Professor WURTZ are appended hereto. Mr. WURTZ, with a party of gentlemen, visited and examined the land of the company, and his report is also presented herewith.

The report of Professor WURTZ fully confirms all the statements which have heretofore been made, officially or otherwise, in reference to the value of these lands.

The evidence derived from these sources, which are principally official, seems to the trustees to satisfactorily establish all the facts necessary to warrant them in recommending the stock and property of this company to the attention of the capitalists of the country. It is not practicable in such a statement as this to enter very fully into details. This will be done in a future publication, in which every

fact will be given bearing upon the value of this property, its accessibility and its resources. We will, however, here state a few of these facts. The property in question lies in a number of townships upon the *Chaudiere, its sources and other streams*. It has been so located as to embrace the gold-bearing lands of a very large section of country, probaby including at least TEN TIMES the number of acres the company own. It is well known that lands upon which *placer diggings* are found in California or elsewhere, are located along old or new river beds. The locations of this company have been made so as to embrace the valleys of the old and new streams, which contain the valuable deposits of, and the *quartz veins* from which Gold was originally derived. This general deposit varies according to official surveys from two feet to one hundred and fifty feet in thickness. The quantity of the deposit upon the lands now owned by the company we believe to be practically inexhaustable by machinery now used in the production of gold

The streams which intersect this property have that amount of water and degree of fall which is best adapted to what is termed *hydraulic mining*—the most economical and productive of mining operations. It is stated in the reports of Sir WM. LOGAN and other writers, and fully confirmed by the practical experience of miners, that loose earth, such as is universally found upon these lands, which contains only one-twenty-fifth of a grain of gold—equal to one-fifth of a cent—in value to the bushel may be profitably washed by this hydraulic method. Keeping this fact in view, we desire to make some other statements in this connection.

From the same reports of Sir WM. LOGAN, in actual experiments made or authenticated by him, the gravel from the tributaries of the Chaudiere produced from, not less than *three and one half* to *seven and one-third* grains to the bushel. This then is more than fifty times richer than earth that will pay for washing.

Numerous experiments have since been made and are now going on for the purpose of accurately testing the average amount of gold to the cubic foot or bushel in these deposits. None of them fall short—many of them largely exceed the results stated by Sir Wm. Logan.

By way of testing the practical value of these deposits for mining purposes, when worked by miners of average experience and skill, about fifty acres of these lands lying on the River Gilbert, were laid off in lots 25 x 100 feet. Sixteen of the lots, scattered indifferently over the whole, were leased for the past mining season for *fifty dollars* each. Many more, and probably the whole, could have been leased, but as the purpose was only one of experiment, other leases were declined. Although the miners are generally reticent and indisposed to give accurate information as to their success, certainly no dissatisfaction is now to be found among them, except such as manifests itself in complaints that the owners will not make terms by which these lots can be purchased by the lessees. From these lots and others in the vicinity, taken out during the present season, the company has now in its possession, and will soon place on exhibition, about *three hundred ounces of gold*. The particles of this gold vary in size, from nuggets weighing *nine ounces* to particles of the size of a pin head. Although public attention has been but little directed to this section, there are now at work something over three hundred persons, who now average, according to the statement of the Gold Commissioner of that district, Major De Belle-feuille, hereto appended, about twelve hundred dollars per day at coin rates. But it must not be forgotten in this connection that the mining machinery now in use there, is of the rudest and most imperfect character. No quicksilver or other material is used to collect and save the fine gold, which is all swept away in the washing; and it is highly probable that the earth that has once been washed by the

use of the present machinery could be profitably re-washed by using machinery and material properly adapted to the purpose.

The investigations made since this subject first attracted the attention of the Trustees have been of the most satisfactory character. Some specimens of quartz have been found not water-worn and evidently derived from the immediate vicinity, which would produce an immense yield, probably, at the rate of more than *twenty thousand dollars* to the ton; but the amount of material already pulverized, and which only requires washing to separate the gold, is so great that there will probably exist no immediate necessity for the use of the Quartz Rock, from which the gold can only be extracted by a much more expensive process.

Some trials made by one of the party that accompanied Professor WURTZ in the *Kempt* stream, where no mining operations have ever been attempted, are worthy of attention.

A single panning of the gravel taken indifferently from the bed of the stream yielded over four grains of gold, which would be at least an average of twenty-four grains to the cubic foot.

We are advised that a nugget has been taken from the Gilbert River Diggings weighing over *twenty ounces.*

The details of these experiments cannot be stated much more fully without improperly extending the length of this statement. The Trustees, however, after having taken every precaution which prudent and cautious men could take in order to ascertain the exact facts in this connection, feel perfectly justified in the belief that the lands of this company are fully as rich in gold deposits as the average of California, Australia, or our own western Territories. They are aware that this statement is a strong one, and that it will appear to many incredible that a gold deposit so rich, valuable and accessible should not have long ago been im-

proved. But the facts are clear. The evidences are in the hands of the company. A few hours time will enable any person desiring to examine the deposits for himself to do so That gold in large quantities and of great richness has been collected during the past season, any one can be satisfied by examining the quantity now in possession of the company.

It is also to be recollected that the deposits are located at a considerable distance from all lines of ordinary communication, and the entire population of the country consists of the smaller class of French farmers, whose attention would be rarely called to the subject of metalliferous deposits.

Enough is already known; and known thoroughly, of the lands of this Company, to authorize their being placed in market, to be leased for mining purposes, and also to authorize the Company itself, to erect the necessary machinery for separating the Gold. The trustees believe, that from the *leasing of portions of this property alone* when the attention of practical miners is properly directed to it, enough revenue may be derived during the coming season to return a large dividend upon the Capital Stock, and that when the mining advantages of this section of country are fully understood, all those who join with us in seeking to develope these resourses will reap a rich reward for the investment of their capital.

Like all other gold-bearing sections of the country, these lands appear to be rich in other mineral and natural sources of wealth—rubies, garnets, opals, emeralds, tourmalines, and even diamonds, have already been secured. Pearls, many of them of large value, the smaller ones in very considerable quantities, are secured almost daily. Specimens of these different productions may be seen in the possession of this Company, at rooms which will be hereafter designated.

In conclusion, the Trustees desire to remark, that they

have taken every practicable means to ascertain the facts which affect the merits of this enterprise, and the value of the property upon which it is predicated. They believe they have correctly set forth these facts in brief, in the preceding statement. They are satisfactory to us, and have induced us not only to permit our names to be used in connection with, but to invest our capital in, the undertaking. The development of the resources of a rich mining region which may, and probably hereafter will, become as important and valuable as those others which have contributed so much to the material wealth of the world, all which have been discovered and developed within the last twenty years, is a work well calculated to attract the attention of enterprising men. To such, we offer a portion of the stock property of the RECIPROCITY MINING COMPANY, and we say to them, that we desire them to examine the facts for themselves, and to form their own opinions, always assuring them that any information in the possession of the Trustees, or the other officers of the Company, may be had for the asking.

All of which is respectfully submitted.

NEW YORK, Sept. 26, 1864.

JAMES POLLOCK,
WM. G. MOORHEAD,
CHAS. B. WRIGHT,
HENRY SHELDON,
WM. B. HATCH,
T. B. BUNTING,
L. E. CHITTENDEN.
} *Trustees.*

St. Louis Hotel, Quebec,
Sept. 14, 1864.

Major C. J. De Bellefeuille, Gold Commissioner, St. Francis:

My Dear Sir—Since seeing you I have been through the Gold district on the Gilbert, Famine, du Loup, and Chaudiere Rivers, and also on the Kempt stream.

I have been deeply interested by what I have seen, and find the product of Gold much larger than I anticipated. It will undoubtedly be greatly increased within a year.

It is impossble to learn much from the miners as to the result of their labors. They all seem determined to keep their operations as quiet as possible. Some say, "we can't complain;" others, "we are making board, and something over;" and others again "don't care to tell;" but all are doing remarkably well, and at the same time work in a very crude and imperfect manner. I know of no one but yourself who can give *positive* and reliable information as to the yield, and shall feel much indebted if you will drop me a line per return post, giving the actual yield for the season of the mines on the Gilbert River.

Very truly yours,

(Signed,) T. B. BUNTING.

St. Francis, 16th September, 1864.

My Dear Sir—In reply to yours of the 14th, requesting to know what amount of Gold has been extracted on the River Gilbert for the last three months, I can give you

positive information from the 15th June to the 2d August *only*. I compute the gold taken out during the above time at $1,200 *per diem*. Previous to the 15th June—that is, from the beginning of the season—I consider that from $400 to $500 per day was a fair average. At the time the $1,200 *per diem* was extracted, there were about three hundred men working in the stream

The season has proved very remunerative; and I think, from the different reports arising out of the prospecting on the different other rivers, that next year will prove that there is a great abundance of the ore in the Chaudiere division.

Very truly yours,

(Signed,) C. J. DE BELLEFEUILLE,

Gold Commissioner.

To T. B. Bunting, Esq., Quebec.

ASSAYS.

With a view to ascertain, if possible, from the decomposed materials forming the outcrops of the lodes, whether the ores formerly borne by these lodes, from which these decomposed materials were derived, contained precious metals, samples of these materials were selected for assay. It was believed that if the ores of these lodes are auriferous or argentiferous, these products of their decomposition should

retain some traces of the precious metals sufficient to be detected by refined chemical analysis. These samples were submitted to Dr. TORREY, and the results obtained are reported by him as below:

U. S. ASSAY OFFICE,
NEW YORK, Sept. 21st, 1864.

Professor WURTZ:

DEAR SIR—I have assayed the samples of Canadian ore that you left with me, with the following results:

No. 1 contains $0 96 silver to the ton of ore, and a trace of gold.
" 2 contains $0 72 silver to the ton of ore—no gold.
" 3 " 0 24 " " " and trace of gold.
" 4 contains no gold nor silver.
" 5 " " "
" 6 A. Arsenical pyrites—$89 14 gold per ton, and 1 21 silver "
" 6 B. Mispickel—no gold nor silver.
" 6 C. Sand with pyrites—trace of silver.

The *black auriferous sand*, No. 7, yielded gold at the rate of - - - - $2,860 40 per ton 2,000 lbs.
And silver, - - - 29 50 " "

Total, - - - $2,889 90

Yours respectfully,

(Signed) JOHN TORREY.

Numbers 1, 2 and 3 were samples of decomposed materials from the outcrops of the lodes which cross the Kempt stream. No. 6 A, 6 B and 6 C are three different ores picked out from a mixture found in a crevice in the rocks at the Devil's Rapids, this mixture being obviously derived from the veins of lodes which cross the Chaudiere somewhere above the crevice. The rich result given by 6 A proves that one, at least, of these lodes, the course of which takes them across the Gilbert above and near the rich diggings located thereupon, is auriferous. This lode should be developed.

No. 7 is a sample of the *black sand* which accompanies the gold, and which is obtained in considerable quantity by the diggers, mixed with particles of gold too small to be picked out profitably by them on the grounds, but easily recoverable by amalgamation. Large quantities of this sand can be obtained, particularly by hydraulic mining.

HENRY WURTZ.

Public notice will be given of the time and place when and where subscriptions to the capital stock of the RECIPROCITY MINING COMPANY will be received. The Trustees have alredy taken the preliminary steps to place a suitable corps in the field, who, under the directions of the company's geologist, will rigorously prosecute the survey of our own property and all neighboring localities, for the purpose of developing all the mineral resources of the country. It is the intention of the trustees soon to place in the hands of their associates a publication which will embrace all the official, geological and metallurgical publications of the Canadian government having reference to these lands—a thorough and careful analysis of the yield of the quartz rock, gravel sand, and all the other deposits upon the

property which possess intrinsic value—a full description of the property itself and the means of access to it—a description of the best and most approved machinery now used in gold mining—with a general account of the resources of the country, so far as labor, provisions and other elements are concerned bearing upon the general subject.

riptiou
-a des-
ry now
of the
ns and
general