

NI43-101 Technical Report
on the
Puruni Project

Puruni River Area
Mazaruni Mining District No. 3
Guyana
N.T.S. Sheet- Puruni 26 SW

Prepared for
Otish Energy Inc. (Arrowhead Gold Corp.)
Suite 1123 - 409 Granville St.
Vancouver, BC, V6C 1T2

By

Ulrich Kretschmar PhD, P.Geo (APGO #1160)
408 Bay St. Orillia, ON
L3V 3X4 Canada

20 August 2010; revised 11 June 2012



TABLE OF CONTENTS

1. Summary.....	v
2. Introduction and Terms of Reference.	1
3. Reliance on Other Experts.	2
4. Property Description and Location.....	3
5. Accessibility, Climate, Local Resources, Infrastructure and Physiography..	5
6. History.	7
6.1 Peter’s Mine.	7
6.2 The Puruni Property.....	8
7.0 Geological Setting and Mineralization.....	9
7.1 Regional Geology.	9
7.2 Geology of the Property.	9
7.3 Mineralization.	11
8. Deposit Types.....	13
9. Exploration.	14
10. Drilling.....	14
11. Sample Preparation, Analyses and Security.	14
12. Data Verification.	15
20. Environmental studies, permitting and social or community impact. ..	15

23. Adjacent Properties.	15
23.1 Peter’s Mine.....	15
23.2 Million Mount.	15
24.0 Other Relevant Data and Information.	16
24.1 Background on Guyana.	16
24.2 Major Gold Occurrence of the Guiana Shield.	16
25. Interpretation and Conclusions.	19
26. Recommendations.	20
27. References Cited.	21

List of Figures

Fig. 1. Location of the Puruni Project area and regional Geology of Guyana.	6
Fig. 2: Location of Puruni Project permits and compilation of geology based on Peter’s Mine map of Cargill (2004)..	10

List of Tables

Table 1: List of Permits Comprising the Puruni Project Property. Middle Puruni River area. (1:50,000) NTS Sheet Puruni 26SW. Guyana.	3
Table 2: Analytical Results from Puruni Project Permits, Guyana..	12

List of Appendixes

APPENDIX A Sample Descriptions and photos.	24
APPENDIX B: Assay certificates.....	33

1. Summary

The Puruni Project area (Alphonso and Kayum Permits) consists of five (5) Mining Permits - Medium Scale (MP) and one (1) Prospecting Permit - Medium Scale (PPMS) totalling in area approximately 36 km² (approx. 9000 Acres). These Mining and Prospecting Permits were acquired from the Guyana Geology and Mines Commission -- the statutory body responsible for Exploration & Mining in Guyana, by Henry Alphonso and Salim Kayum of Georgetown in 2003. The Permits are traversed by the Puruni River in the middle Puruni River Area, Mazaruni Mining District No. 3, Guyana, N.T.S. Sheet Puruni -26 SW.

The northernmost boundary of Puruni Project property lies 2.5 km south of the Peter's Mine Concession (Guyana Goldfields Inc. TSX- GUY.T) who obtained a mining licence for this concession in 1996. The area has been subjected to a number of regional airborne and ground exploration surveys that focussed on the Peter's Mine Concession. The Peter's Mine was discovered in the 1890's by porknockers (local terminology for placer miners/prospectors) and underground development and mining was in operation between 1904 and 1909. During this period approximately 1,240 kg (40,000 oz) of gold was recovered from 63,000 tons of material mined (a recovery grade of 19.7 g Au/T). It is reported that the head grade was in excess of 41 g Au/T.

The Puruni Project area has a well documented history of alluvial mining in the active river channel and saprolite mining on land adjacent to the river bank. The author visited the area and observed evidence of sluicing and crude crushing operations on the saprolite and elevated gravel terraces adjacent to the river bank, from which it can be inferred that high grade quartz veins and gold were recovered by miners.

The author collected 11 samples of saprolite, alluvium, sluice box tailings, black sand and float quartz. Sluice box tailings returned 0.88 and 0.91 oz Au/t.

Geological relations indicate that gold on the property conforms to a model of syngenetic lode veins that were formed from hydrothermal sea-floor hot springs. The geology appears to be analogous to the Peter's Mine and other gold deposits in Guyana. The writer is of the opinion that the Puruni Project area has sufficient merit to justify a two Phase exploration program with a total budget of **US \$820,000.**

2. Introduction and Terms of Reference

The author of this report, Ulrich Kretschmar (the "Author"), was retained by Randy Singh, P.Eng (ON), P.Geol (ON) for Otish Energy Inc of Vancouver to:

- 1) visit and sample the Puruni Project area (Henry Alphonso and Salim Kayum Permits) in the middle Puruni River Area, Guyana (Figs. 1 and 2), and if warranted,
- 2) prepare a National Instrument 43-101 technical evaluation report on the geology and gold potential of the Puruni Project and
- 3) recommend a budget and exploration program for further evaluation and development of the property.

This report is written in compliance with requirements of National Instrument 43-101 and Form 43-101F1 and is in support of documentation to be filed with the British Columbia Securities Commission and the TSX Ventures Exchange in support of Otish Energy Inc. entering into a purchase agreement with Trevor Taylor on the Puruni Project area (Henry Alphonso and Salim Kayum Permits).

The author conducted a field visit to the Puruni Project area on July 7 and 8, 2010 for the purpose of examining the project site, collecting geological samples, assessing the geology and assessing the styles of mineralization and alteration on the property. A total of 11 surface samples were taken from the current mining operations (Samples 192401-411), and submitted to SGS Laboratories Ltd. in Toronto and Cattarello Assay Labs in Timmins for analysis. Four samples with visible gold (192412-415) collected by Henry Alphonso were also submitted to SGS Laboratories Ltd in Toronto and Cattarello Assay Labs in Timmins for analysis.

Sample descriptions and the analytical results are presented in Appendices "A" and "B" and discussed in Section 25.

In the current report, which is a revised version of Kretschmar (2010), the description of samples has been clarified and headings have been renumbered in keeping with current NI43-101 reporting guidelines.

3. Reliance on Other Experts

The Author has reviewed and analyzed the data obtained from the Guyana Geology and Mining Commission, published literature and company reports on adjacent and similar properties in Guyana. These sources of data contained information on the geology, mineralization, and exploration activities. Work on the immediately adjacent Peter's Mine property of Guyana Goldfields Inc is described in a report by George Cargill (Cargill, 2004). The other principal technical reports used are referenced in Section 27. These include NI43-101 reports on other nearby gold projects in Guyana namely: (1) Million Mount, (2) Tassawini, (3) Akaiwong, (4) Groete Creek and (5) Toroparu. The author is indebted to Randy Singh, P.Eng (ON), P.Geo (ON) for an earlier version of this report and his editorial skills, however the contents of this current report are entirely those of the present author. The author has checked on the status of the permits, but has not carried out due diligence on the agreements between the permit owners, Trevor Taylor and Otish Energy Inc.

4. Property Description and Location

Based on a letter, dated 2 July 2010 from the Guyana Geology and Mines Commission, the Puruni Project area consists of five (5) Mining Permits - Medium Scale (MP) and one (1) Prospecting Permit - Medium Scale (PPMS). They are registered in the name of Henry Alphonso and Salim Kayum and are listed in Table 1. The permits are in good standing with the Geology and Mines Commission of Guyana.

Table 1: List of Permits Comprising the Puruni Project Property. Middle Puruni River area. (1:50,000) NTS Sheet Puruni 26SW. Guyana.

Claim Number*	Map Designation	Type of Permit	Owner(s)**
1	A-14/MP/000	Mining Permit (MP)	HA
2	A-14/MP/001	Mining Permit	HA
3	A-14/MP/002	Mining Permit	HA
4	K-11/MP/000	Mining Permit	HA + SK
5	K-7/MP/000	Mining Permit	HA + SK
6	547/2003 ref. file no A 298/001	Prospecting Permit Medium Scale	HA

* for location, see [Fig. 2](#) and index figure.

**HA = Henry Alphonso; SK = Salim Kayum



The Puruni Project area is located in Amazonian tropical rain forest on the Puruni River about 160 km southwest of Georgetown, the capital of Guyana. The permits were initially mined by Henry Alphonso and Salim Kayum, small mine operators, recovering gold from the active river channel, the saprolite and the mineralized quartz veins. At the time of the original report, a Brazilian operator had a one year lease (to April 2011) to mine bedrock quartz veins from a 2 m wide shaft, which apparently extends to 15 m depth. At the time of the author's visit, an excavator was on site for filling in the previously mined alluvium in order to prevent water from running into the shaft and to facilitate underground operations.

There are no known environmental liabilities on these concessions. The small operators do not use mercury in their primary, open system recovery circuits. Typically, the material from the riffles is panned down to a concentrate and gold is recovered from these concentrates by amalgamation. The amalgam is retorted to recover the mercury and the gold, which is fused to bullion (see photos in Appendix A).

No specific permits are needed in order to drill the property. Typically, the Guyana Geology and Mines Commission only needs to be notified that drilling will begin.

5. Accessibility, Climate, Local Resources, Infrastructure and Physiography.

The Puruni Project area is located approximately 160 miles southwest of Georgetown and is traversed by the Puruni River (Figures 1,2). The property can be reached by road, helicopter or river boat. A gravel road from the mouth of the Mazaruni River passes within a few hundred meters of the property. The helicopter trip takes about 30 minutes from Cheddi Jagan International Airport at Timehri. The Puruni River Property can also be accessed from Georgetown by driving to Parika (approximately 50 minutes) and then by boat from Parika via the Essequibo River to Bartica (a 1 hr trip). From Bartica there is a 10 minute boat ride to Itiballi at the mouth of the Mazaruni River. The Itiballi-Puruni road is about 50 km long and takes from 2 hrs to 4 days to traverse, depending on its condition.

The Puruni Project camp (Guyana NTS Sheet 26 Southwest, Puruni; U.T.M. 21: 0238662 Northing/0681626 Easting; 06° 09'41.0" N latitude, 59° 21' 41.3" W longitude) is then reached by a 30 minute boat ride down the Puruni River.

The area is covered by dense rain forest and drained by the Puruni River, a tributary of the Mazaruni River. The climate is humid and tropical with annual rainfall averaging 2500 mm distributed mainly in two rainy seasons from May to July and October to December.

Porknockers and small scale miners are established at various camps along the Puruni River and there is a small settlement at Puruni Landing approximately 15 km north, upstream of the Puruni property.

The nearest developed settlement is Bartica (approximately 90 km), at the junction of the Essequibo, Mazaruni and Cuyuni Rivers.

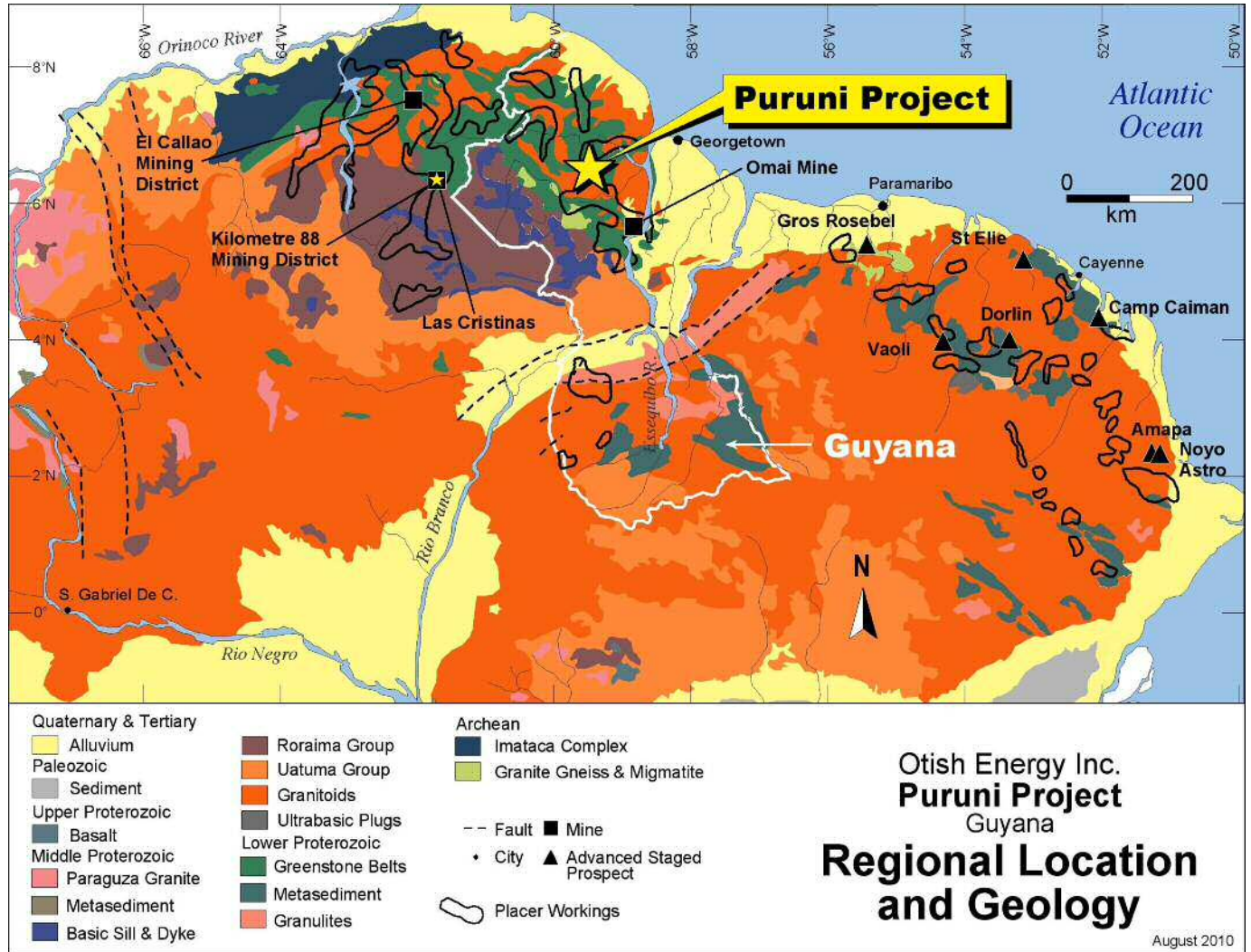


Fig. 1. Location of the Puruni Project area and regional Geology of Guyana.

6. History

6.1 Peter's Mine

The Gold Exploration history of this area is confined to the discovery and development of the Peter's Mine. Gold exploration in Guyana started with an unsuccessful expedition up the Berbice River in 1720. The principal gold rush was in the 1880s and was triggered by Venezuelan gold miners. The Omai Gold Mine was discovered in 1889 and was mines by hydraulicking between 1896 and 1907.

The Peter's Mine property was discovered by placer miners in the late 1890s. It was sold to a New York syndicate, which worked the property from 1904 to 1909. During this period, 1,240 kg of gold were reported recovered from 63,000 tonnes of ore milled (recovered grade of 19.7 g Au/T). It is also reported that the mill head was about 41 g Au/T and gold recovery was about 75%. Between 1915 and 1916, the mine was re-opened, additional development was done and 34 kg of gold were recovered. There was a brief attempt to recover gold from the old tailings in 1948. In the early 1960s, the United Nations flew aeromagnetic and electromagnetic (INPUT) surveys in parts of Guyana. The Peter's Mine Property was included in this work. In 1965, in conjunction with the United Nations Revolving Fund, the GGMC drilled seven diamond drill holes (1,311 m) at Peter's Mine. Results from this program were inconclusive but it suggested the quartz vein system extended to depth.

Lion Mines Limited of Vancouver acquired the Peter's Mine property in 1968. In 1968 and 1969, it dewatered the mine workings, mapped and sampled the underground workings and drilled six holes (441 m) from the 200 foot (61.5 m) level and seven holes (367 m) from the 300 foot (92.3 m) level. Lion Mines dropped the property when it was unable to obtain a mining lease from the government. Guyana Goldfields has been able to obtain only a part of the Lion Mines data. In 1987, South American Goldfields Ltd. acquired the Peter's Mine property and joint ventured it with the Homestake Mining Company (Homestake). The joint venture cut lines, conducted a geochemical sampling program using auger holes 1 m to 10 m deep as well as magnetic, IP and VLF-EM surveys. After drilling three diamond drill holes (552.15 m), the joint venture stopped work.

Guyana Goldfields acquired the property in 1996. The company established an exploration camp and conducted a program of prospecting, line cutting, rock and soil sampling and drilling. Work focussed on the Main Zone on the Peter's Mine Property, although some exploration was completed on targets along strike within the existing concession. Guyana Goldfields diamond drilling program, to 1998, consisted of 61 holes for 1,607 m. They also drilled 108 Vibra Core holes in a tailings deposit created by pork knockers (hand miners) who had sluiced saprolite ore from the hillsides.

6.2 The Puruni Property

Information regarding work on the property is limited to personal accounts by one of the property owners, Mr. Henry Alphonso of Georgetown and the author's own observations. The banks of the Puruni River have been worked on the sections of the permits that are traversed by the river as is shown on Fig. 2 and it is likely that the river bottom has been dredged repeatedly by suction operated dredges on barges. No outcrops were seen along the banks of the river. The water level was quite high. Apparently there is outcrop at the south end of the property at Stop Falls. This should be examined.

7.0 Geological Setting and Mineralization

7.1 Regional Geology

The Guiana Shield is the northern part of the Amazon Craton. It is one of the largest cratonic areas in the world covering an area of about 4.3×10^5 km². The craton is surrounded by Neo-Proterozoic orogenic belts: Tucavaca in Bolivia; Araguaia-Cuiabá in central Brazil; and Toncantins in northern Brazil. The Craton was the western part of the ancestral West African Craton until the opening of the Atlantic Ocean 115 My ago. The Craton has been divided into six major geochronological provinces based on age determinations (>3,000), structural trends, proportion of lithologies and geophysical trends. Recognized provinces include stable Archean nuclei, the Central Amazonian province, and Paleo-proterozoic and Meso-proterozoic provinces such as Maroni-Itacaiúnas (2.2-1.95 Ga); Ventuari-Tapajós (1.95-1.8 Ga); Rio Negro-Juruena (1.8-1.55 Ga); Rondonian-San Ignácio (1.55-1.30 Ga) and Sunsás (1.30-1.0 Ga).

The Maroni-Itacaiúnas Province contains the gold bearing greenstone belts of the Guinea Shield and is on the northeast side of the Guinea and Guraporé Shields. It consists principally of deformed metavolcanic and metasedimentary units, that typically have been metamorphosed to greenschist and amphibolite facies but there are granulite and gneissic-migmatite terrains.

7.2 Geology of the Property

The Puruni Property is underlain by Palaeoproterozoic greenstones of the Barama-Mazaruni group, dated at about 2.2 - 2.3 Ga. (Gibbs & Barron, 1993). The rocks are submarine volcanics and sediments which are correlative and progress upwards from dominantly mafic to more differentiated volcanics and sedimentary rocks. (Gibbs & Barron, 1993, p.21).

The geology of the Peter's Mine is discussed by Cargill (2007) and his geological map has been incorporated into Fig 2. Cargill (op. cit. p. 3) states: *"In the immediate area of the Peter's Mine, the foliation strikes northeast and dips steeply northwest. The zone developed in the underground openings includes five major veins, which parallel schistosity and dip about 70° NW. The main veins are up to 7.6 m wide and had reported grades of about 12 g Au/T"*.

Based on satellite images and Gibbs' geological map of the Barama-Mazaruni group, the author is of the opinion that the favourable contact, described as being between "andesitic volcanics and granodiorite to diorite intrusives" trends approximately north-south, as is shown on Fig 2.

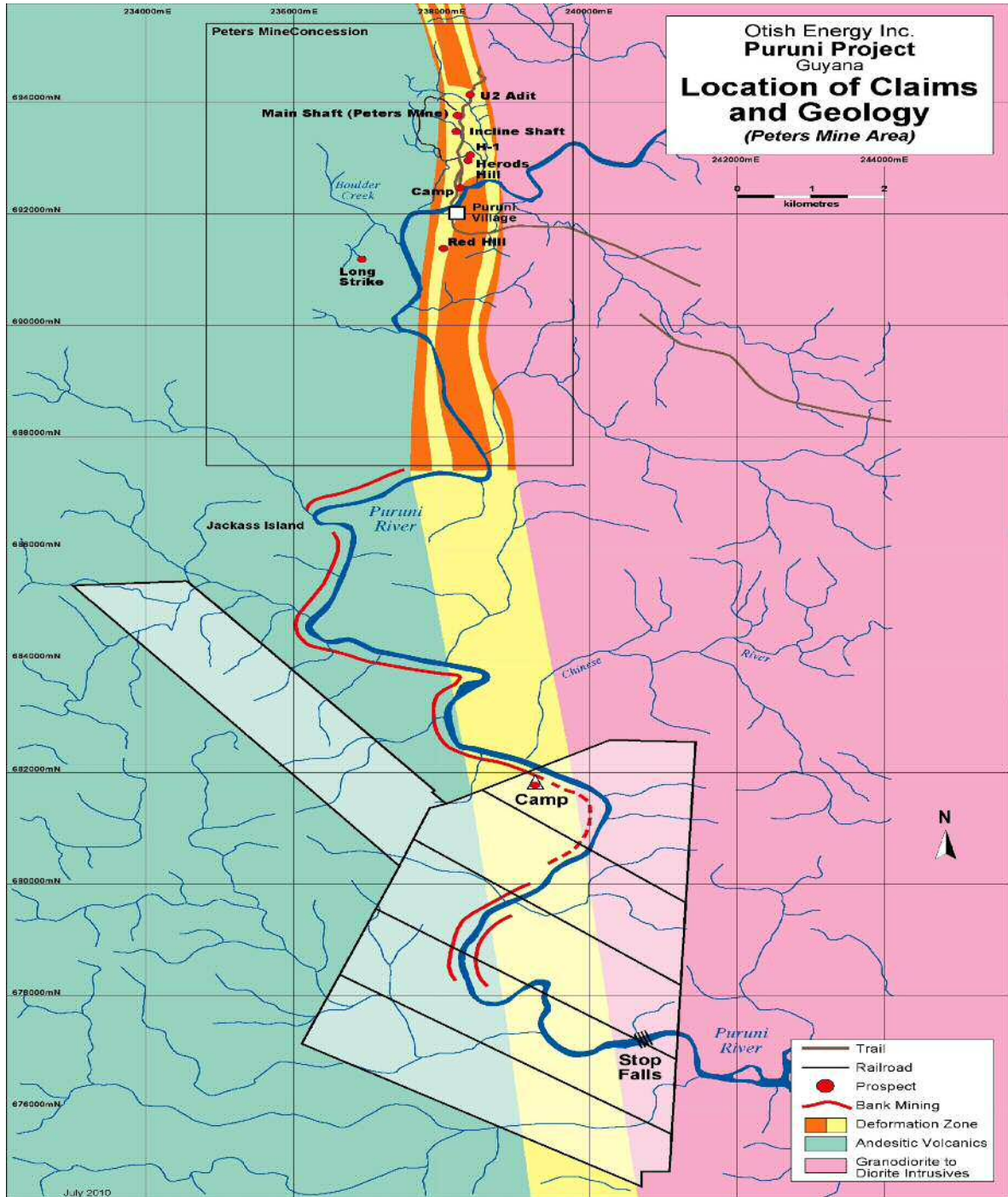


Fig. 2: Location of Puruni Project permits and compilation of geology based on Peter's Mine map of Cargill (2004). Land dredging shown as red line parallelling the Puruni River. Permit numbers are shown on the sketch to accompany Table 1, on page 3.

7.3 Mineralization

Mineralization on the property consists of alluvial and eluvial gold and reported quartz veins in bedrock, which were reportedly exposed in a pit, but were under water at the time of the author's visit.

During the visit to the Puruni property a total of 11 samples (Nos.192401 through 192411, Appendix "A") consisting of alluvial, subcrop and sluice box tailing samples from the main pit on the property where past mining occurred, were placed into a sample bag and sealed and subsequently hand-delivered to the SGS Laboratories Ltd. in Toronto. Their analytical procedure is shown on the assay certificates, included in Appendix "B".

Samples 192412, 192413, 192414 and 192415 are reportedly bedrock grab samples of the quartz veins collected by Henry Alphonso. These were submitted by the present author for assay. The area from which they were reportedly collected is at the north end of the pit (photo Puruni Pit A) shown in Appendix "A" which has as an inset, a photo taken by Henry Alphonso, of the purported sample location. The author was unable to verify that this is the location from which the samples were taken. Samples 192414 and 192415 were sent to Cattarello Assayers Inc. in Timmins and 192412 and 192413 were sent to SGS Laboratories Ltd. in Toronto for metallic sieve gold analysis.

The Middle Puruni River, the Peter's Mine and the section of the river below the Peter's Mine, where the Puruni Property is located, have seen both historical and recent recovery of significant amounts of gold from both alluvial and saprolite land mining operations. The pit on the Puruni property, is evidence that substantial gravel has been excavated in the main pit at the camp location on the Puruni Project permits. However, there is no certainty as to the amount of gold that was recovered.

Table 2: Analytical Results from Puruni Project Permits, Guyana.

Sample Number	Sample Weight (Kg)	Au	Au	Au **	Sample Provenance	Sample Description
METHOD	WGH79	FAI323				
DETECTION	0.001	5				
Lab*	UNITS	kg	ppb	g/T or ppm	oz/ton	
SGS	192401	0.236	66			pit, S. End massive pure white quartz
SGS	192402	0.21	27700	27.7	0.81	Sluice box heavies; sluice box tailings
SGS	192403	0.162	34200	34.2	0.99	Sluice box black sand (magnetite) sluice box tailings
SGS	192404	0.124	44			quartz with carbonaceous material
SGS	192405	0.676	49			pit, W. End white clay
SGS	192406	0.57	82			pit, NW area quartz with carbonaceous material
SGS	DUP-192406		111			
SGS	192407	0.48	43			pit, N area grey clay
SGS	192408	0.85	10			pit, bottom coarse sand
SGS	192409	0.842	131			pit, near crusher quartz vein in schistose felsic rock.
SGS	192410	0.466	19			pit, SE end white quartz
SGS	192411	0.68	255			pit, SE end quartz float
SGS	192412	0.15		1390	40.5	From Mike Gillis quartz vein with visible gold
SGS	192413	0.09		2090	61.1	From Mike Gillis quartz vein with visible gold
CAT	192414			7389	215.5	From Trevor Taylor quartz vein with visible gold
CAT	192415			13618	397.2	From Trevor Taylor quartz vein with visible gold
CAT	DUP-192415			14764	430.6	

* **SGS** SGS Minerals Services, Toronto. Fire assay, Method FAI323. For samples 192412 and 413 there was insufficient sample for metallic screen analysis. Analyses done by method FAI323. * **CAT** Cattarello Assayers Inc, Timmins. Gravimetric analysis with standard bullion finish. **Au conversions:** 10,000 ppb = 1 ppm; 34.3 ppm = 1 troy ounce.

8. Deposit Types

Hard-rock gold deposits of the Guiana Shield include several types of deposits. Gibbs (1993) and Gibbs & Barron (1993) divide gold deposits into:

- 1) Deposits consisting of large auriferous quartz veins in mafic and ultramafic metavolcanic rocks. Examples include El Callao in Venezuela, Wairie, Jubilee Creek and Baramita in Guyana and Lawa in Suriname. Most veins are in rocks metamorphosed to greenschist facies but near rocks of the amphibolite facies.
- 2) Deposits in auriferous quartz veins near the contacts of granitic porphyry dikes or stocks. Examples of this type are the Million Mount, Peter's Mine, Eagle Mountain, Aurora, Aranka, Yakishuru and Omai occurrences in Guyana.
- 3) Deposits associated with tuffaceous, pelitic, carbonaceous and cherty metasediments. These deposits have smaller quartz veins than other types and the quartz may be gray due to graphitic inclusions. Examples include the Eldorado, Kaburi, Honey Camp, Aremu, Tamakai, Tassawini and Marudi Mountain occurrences in Guyana.

Residual enrichment of gold by mechanical removal of the surrounding weathered matrix forms important alluvial zones at most gold deposits in the Guiana Shield. The gold in the surficial zones has been freed from the sulphides by oxidation, which permits the use of low cost recovery systems such as heap leaching.

The author considers the veins at the Peter's Mine and on the Puruni Project property to belong to a class of syngenetic lode veins that formed on the sea-floor at the same time as the enclosing rocks. The interested reader is referred to a more detailed discussion of a syngenetic model, presented at www.syngeneticgold.com and by Kretschmar (2011).

9. Exploration

The Puruni Project area is located just south of the Peter's Mine Concession, an area of influence for all regional airborne and ground exploration activities focussed on the Peter's Mine. Outside of this, the area has not been subjected to systematic exploration activity. The area has a history of alluvial mining activities in the active river channels and creeks and more recently land mining activities on the banks of the rivers and creeks.

Ongoing land mining operation(s) on the Puruni property, using pitting and hydraulicking has purportedly exposed gold-bearing quartz veins. However, while there was clear evidence that a significant amount of earth moving and crushing of quartz had taken place, no outcrop was in evidence during the author's visit to the property, since the area of the pit from which the veins were reported was filled with water.

10. Drilling

This item does not apply.

11. Sample Preparation, Analyses and Security

The samples taken by the author were collected in cloth bags, with the sample number marked with felt pen and were carried as hand luggage by the author. Eleven samples were delivered to SGS Laboratories in Toronto by the author, where the samples were dried and crushed to minus 1/8 inch in two stages with jaw and cone crushers. A 300 gram split obtained using a riffle splitter is reduced to minus 150 mesh. Clean sand is used to clean the pulveriser between all samples. Gold determinations are made using fire assay with a gravimetric or Atomic Absorption finish. A similar procedure is used by Cattarello Assayers in Timmins. Instructions were given to both labs to treat the high grade samples using the metallic sieve/screen gold analysis procedure. The instructions were either received after the analyses were done by standard procedures, or there was insufficient sample for metallic sieve/screen gold analysis.

The author did a reconnaissance traverse of the main pit on the property and sampled subcrop and saprolite. No outcropping mineralization was found since the open pit and was under water. Sample locations were photographed in the field and are shown in Appendix "A". Four hand specimens that had been reputedly been collected from outcropping quartz veins were given to the author by Trevor Taylor of Ajax Ontario and Mike Gillis of Otish Energy Inc in Vancouver. These samples were submitted along with the samples taken by the author, to the labs, as specified above. From

the nature of the quartz in the specimens and the close similarity to quartz in the material dug from the pit, the author is prepared to state that the high grade sample are most likely representative of high grade mineralization on the property. This however could not be independently verified for the reasons stated.

12. Data Verification

The details of the verification process are discussed in Section 11. The author visited the property, collected samples and personally delivered them to the laboratories for analysis. The author can vouch for the integrity of the analytical process. The author cannot verify that four high grade hand specimens were from the property, but the circumstantial evidence of their provenance is compelling. The author attests to the integrity of the processes, the data generated and therefore the adequacy of the data for this technical report.

20. Environmental studies, permitting and social or community impact

No environmental studies have been carried out. Social and community impact is minimal, as the area is in a remote area of the jungle, where only alluvial and dredging operations for gold are being carried out. Permitting is by the GGMC, and the status of permits was briefly described under Property Description and Location (Section 4).

23. Adjacent Properties

23.1 Peter's Mine

The reader is referred to Section 6.1.

23.2 Million Mount

In September 2008, Sacre Coeur Minerals reported an NI 43-101 compliant interim resource estimate which revealed Measured Resources of 12,119,285 tonnes grading 1.0 g Au/T and Indicated Resources of 2,175,278 tons grading 0.9 g Au/T. Total contained gold is 451,397 tr oz Au (388,456 tr oz Au Measured and 62,941 tr oz Au Indicated).

Quoting directly from this report, Zone 9 is located 20 km WSW of Zone 1 on the Million Mountain structural trend. It was originally discovered in the 1980's by small miners who developed numerous, shallow, underground and surface workings to exploit quartz veins hosted in Lower Proterozoic greenstones and various types of elluvial and alluvial deposits. In addition to the auriferous quartz veins, gold mineralization has been found in the silicified host rocks and potentially in zones of conjugate quartz veining found

near intrusive granitic stock contacts, which may have acted as the focussing mechanism for the mineralizing fluids conducted by E-W quartz veins. As reported previously, in 2009 the Company conducted a limited, shallow, test drilling program on Zone 9. Several holes intercepted gold mineralization in quartz veins, the best result being an intercept containing gold mineralization of 4.0 g Au/T over 13.6 meters apparent width, which included 0.55 meters containing 84.26 g Au/T.

24.0 Other Relevant Data and Information

24.1 Background on Guyana

Guyana is a Parliamentary style Democracy based on proportional representation with an Executive President and a unicameral National Assembly. Guyana has demonstrated itself to be a mining friendly and stable democratic country towards direct foreign investments in the mining sector. Land tenure act, legal statute and the legal system are based on the Roman Dutch Laws modified by British Common Laws with magistrates' court, a High Court and a Court of Appeal.

Guyana has well developed and uniformly administered tax, mining laws and general business systems, especially geared towards the mining sector that includes duty and tax free imports for mining and forestry equipment.

Several major and successful natural resource ventures have been commissioned by foreign investors including Omai Gold Mines, Guyana Goldfields Inc, Rusal, and Bonsai.

Georgetown, the Capital of Guyana has population of about 250,000, is the largest city in Guyana. Cheddi Jagan International Airport, Timehri offers daily flights to North America and Europe. Georgetown is both the centre of government and private business and also provides services to the mining and mineral exploration companies operating in Guyana. The Guyana Geology and Mines Commission (GGMC) is the statutory body responsible for all mineral exploration and mining activities in Guyana and is the repository of all topographic and geologic maps and information on all prospects and concessions in the country.

24.2 Major Gold Occurrence of the Guiana Shield

The following is a summary, from Cargill (2004, Table 3, p. 17) of major gold occurrences of the Guiana Shield, to which the reader is referred for original references.

Las Cristinas, Venezuela: The deposit is in a greenstone belt composed of a volcano- sedimentary assemblage metamorphosed to greenschist facies metamorphism. The greenstones are intruded by numerous granitic bodies and a significant proportion of the greenstones have been eroded and the remainder dismembered, metamorphosed and deformed by the intrusions. Primary Au-Cu mineralization consists of disseminated grains, stringers and veins of pyrite, and chalcopyrite with lesser chalcocite, covellite, molybdenite and specks of visible gold. Four distinct types of mineralization have been recognized, 1.) Tourmaline and Cu-rich breccia, 2.) Pyrite bearing lodes, 3.) Disseminations and stringers, and 4.) Quartz veins. Carbonate alteration, silicification, propylitization were superimposed on a greenschist facies mineral assemblage. Bernasconi (1998) 226 mt @ 1.1 g Au/T, 0.139 % Cu.

El Callao, Venezuela: Gold occurs in massive quartz veins, in pyrite in quartz veins, and in shear zones in metavolcanic rocks, metagabbros and metadiabases. There are over 250 veins in the district some as much as 4 km long. Alteration involves development of chlorite, calcite and epidote and swarms of quartz veinlets. They are traditionally associated with the intrusion of the surrounding granites Gibbs (1993) 1829 to 1980: 124 t of gold were produced. The Columbia Vein is estimated to contain 3.0 mt at 12 g Au/T.

Omai, Guyana: The Omai stock is a 400 m x 500 m, irregularly shaped intrusive body with a centre of quartz diorite and a border of hornblende porphyry. The intrusive and adjacent andesitic country rocks contain gold mineralization associated small but widespread quartz-carbonate veins. Significant amounts of gold are restricted to the quartz diorite zone of the intrusive. Gold is restricted to veins: 1.) Striking northeast and dipping shallowly to the west, 2.) Striking north and shallow west dipping and 3.) Northwest-striking and steeply northeast dipping to subvertical veins. Most gold is in the first two vein sets. Cambior (1998) 42.9 mt at 1.4 g Au/T

Gros Rosebel, Surinam: Proterozoic metasedimentary and metavolcanic greenstones intruded by a large tonalitic stock. Gold is associated with at least 5 generations of hydrothermal quartz veins over large areas in the south and north limbs of a westerly plunging syncline. Intense tropical weathering has developed a residual surface laterite and saprolite profile up to 50 m thick. Iamgold (2010) Saprolite Zone 20 mt at 1.6 g Au/T Hard-Rock 11.7 mt at 2.0 g Au/T.

Camp Caïman, French Guiana: Target is sedimentary-hosted gold. Original work tested Proterozoic conglomerates but the best gold occurrences were found in younger sediments. No grade or tonnage estimates are available.

Dorlin, French Guiana: Underlain by a volcano-sedimentary sequence, Paramaca Group, intruded by younger granitic rocks. The intrusive contact trends north south with local offsetting faults. Most mineralization is in quartz-veins but there is one tourmaline- Cambior AR (1997) 8.5 mt at 1.3 g Au/T quartz-pyrite breccia.

Yaou, French Guiana: Yaou has slightly higher grade zones than Dorlin, diorite dykes and laminated sediments are coeval with the Dorlin Volcanics. The geology is more complex and there is more deformation than at Dorlin. Cambiex AR (1998) 10.3 mt at 2.7 g Au/T.

St. Elie, French Guiana: High-grade quartz vein gold mineralization associated with granitic intrusions into Paramaca greenstones. No Estimate. Average grades are 2.5 g Au/T over 5 m intersections.

25. Interpretation and Conclusions

1. The Middle Puruni River, the Peter's Mine and the section of the river below the Peter's Mine, where the Puruni Property is located, have seen both historical and recent recovery of significant amounts of gold from alluvial and saprolite land mining operations. The size of the pit on the property (photos in Appendix "A") attests to a substantial operation. However, there is no certainty as to the amount of gold that was recovered.

2. Henry Alphoso, one of the owners of the Permits, stated to the author that about 3,000 oz were recovered from two bedrock quartz veins that were exposed during land mining and were being crushed and exploited by Brazilian miners (see photos in Appendix "A") before the pit was flooded. The quartz seen by the author resembles Archean lode quartz veins everywhere. Hand specimen submitted for assay by the author show visible gold as impregnations and it is reported that the exposed veins were similar to the hand specimens (samples 192412 to 192415 Appendix "A"). However, the veracity of these statements could not be independently verified by the author.

3. By analogy with granite-greenstone belts of the Canadian Shield, and descriptions of the geology of the Barama-Mazaruni Supergroup (Gibbs, 1980), the author's interpretation of the local geology of the property is that the granite-greenstone contact (Mango Trend Deformation Zone, so named by Cargill, 2003, p. 3) trends approximately north-south from its known location on the Peter's Mine onto the Puruni Project permits. The "Mango Trend" appears to represent a correlative conformity of the type described by Thurston et. al. (2008) and has the potential to host major gold deposits. These "trends" or "breaks" or "shear zones" are described by Kretschmar (2011).

4. The author is of the opinion that Puruni Project area (Henry Alphonso and Salim Kayum Permits) that is the subject of this report, has the potential to host gold in: 1) turbidite-hosted lode quartz veins similar to the Peter's Mine in a potential underground operation, 2) saprolite, 3) alluvials in the active river and creek channels, 4) paleo-alluvials on elevated terraces and 5) laterite cap that occur through the area.

5. The Puruni Project area is in an early stage project, has had no systematic exploration and as such does not have an identifiable and/or quantifiable gold resource.

26. Recommendations

1. The property should be expanded to by acquisition of additional Permits to the north of the present property to the boundary with the Peter's Mine concession.
2. A systematic exploration program to evaluate and develop the gold potential of the property should be conducted to include: line cutting, soil sampling, geological mapping and chip sampling, channel sampling of the quartz veins and the saprolite, trenching, a ground gradient magnetic survey followed by diamond drilling.
3. A Two phase program with an initial recommended budget totalling \$820,000 should be carried out.

PHASE I PROGRAM		\$US
Line cutting	35 km	\$50,000
Soil Sampling	1500 samples	\$75,000
Geological Mapping/Prospecting		\$100,000
Channel Sampling	200 samples	\$25,000
Magnetic Survey	35 km	\$35,000
Assaying		\$50,000
Travel & Accommodation		\$50,000
Reports/Supervision		\$25,000
Management Fee 15%		\$60,000
Subtotal		\$470,000
Contingency		\$50,000
TOTAL		\$520,000
PHASE II PROGRAM		
Drilling 2000 m	\$150/m	\$300,000

27. References Cited

Cargill G. (2004) Report on the **Peter's Mine**. Prepared for Guyana Goldfields Inc. Oct. 2003 and January 2004.

Ewert, W.E, E. Puritch, T. Armstrong, A. Yassa, (2008). Technical Report and Resource Estimate on the **Toroparu** Gold-Copper Prospect, Upper Puruni River area, Guyana. Prepared by P&E Mining Consultants for Sandspring Resources Ltd. January 2009.

Gibbs, A.K.(1980) Geology of the Barama-Mazaruni Supergroup of Guyana. Unpublished PhD. Thesis, Harvard University. 376 pages plus maps and photos.

Gibbs A.K. and C.N. Barron (1993) The Geology of the Guiana Shield. Oxford University Press. 247 pages.

Kretschmar, U. H. (2010) NI 43-101 Technical Report on the Puruni Project, prepared for Otish Energy Inc and dated 20 August 2010 as filed on SEDAR.

Kretschmar, U. H. (2011) Syngenetic Gold: Lode Vein Geology and Exploration Implications. in *World Gold 2011*. Proceedings of the 50th Annual Conference of Metallurgists of CIM, Montreal, QC, Canada. Ed. by G. Deschenes, R. Dimitrakopoulos, J. Bouchard. pp. 849-864.

Pelke, P.A. (2005). NI43-101 Technical Report on the **Akaiwong** Property, Guyana. Prepared for Gold Port Resources Ltd. February 1, 2005.

Pelke, P.A. (2009). NI43-101 Technical Report on the **Groete Creek** Property, Guyana. Prepared for Gold Port Resources Ltd. August 31, 2009.

Pincock, Allen & Holt (2008). NI43-101 Technical Report Interim Resource Estimate of Zone-1, **Million Mount Project**, Guyana. Prepared for Sacre-Coeur Minerals. Sept 29, 2008.

Singh, R.S. C., (2010) Draft report on the potential of the Alphonso permits. Prepared for Otish Energy Inc.

Thurston, et al. (2008). Deposition Gaps in Abitibi Belt Greenstone Sequences: A key to exploring for syngenetic mineralization. *Economic Geology* 103. p. 1097.

Website Reference

Website	Company
www.syngeneticgold.com	Golden Scarab Corporation
www.scm minerals.com	Sacre-Coeur Minerals Inc.
www.goldportresources.com	Goldport Resources Inc.
www.sandspringresources.com	Sandspring Resources Inc.
www.guygold.com	Guyana Goldfields Inc.

28. Certificate of Qualifications (Ulrich H. Kretschmar)

I, Ulrich H. Kretschmar, a mineral exploration geologist, reside at 408 Bay St. Orillia, Ontario L3V 3X4, Canada.

This certificate attached to the report, applies specifically to a report dated 20 August 2010 with revisions dated 8 June 2012, prepared for Otish Energy Inc. (since renamed Arrowhead Gold Corp.) and titled: "**NI43-101 Report on the Puruni Project Permits, Guyana for Otish Energy Inc. "**"

1. I am a Professional Geologist, registered as a member with the Association of Professional Geologists of the Province of Ontario, Canada (A.P.G.O. No. 1160). The membership is in good standing. I graduated from the University of Toronto in 1973 with the degree Doctor of Philosophy in Geology. I have been engaged in mineral exploration and related jobs for more than forty years.
2. As a result of my experience and education, I am a "Qualified Person" as defined in National Policy 43-101.
3. This report is based on the examination of available data and a site visit to the Puruni Property on July 7 and 8, 2010 for the purpose of this report.
4. The sources of all information are noted in the report, which information is correct to the best of my knowledge and I assume responsibility for the report in toto.
5. I am independent from Otish Energy Inc. (and Arrowhead Gold Corp.) in accordance with Section 1.4 of National Instrument 43-101.
6. I worked in Guyana intermittently during the period 1984 to 1995 and am familiar with its geology, mining regulations and rain forest saprolite weathering environments. I am familiar with lode vein geological environments and have no previous involvement with the subject property.
7. I have read National Instrument 43-101 and Forms 43-101F1 and this report has been prepared in compliance with these documents.
8. As of the date of this certificate, to the best of my knowledge, information and belief, this technical report contains all scientific and technical information that is required to be disclosed to make the technical report not misleading.
9. I consent to the filing of this report with any stock exchange or other regulatory authority and any publication by them, including electronic publication of this report, in the public company files or on their websites accessible to the public.



Ulrich H. Kretschmar PhD, PGeo.

Orillia, Ontario

20 August 2010, as revised on 11 June 2012.

APPENDIX A Sample Descriptions and Panoramic Photos of the Puruni Pit, N.T.S. 26 SW Guyana

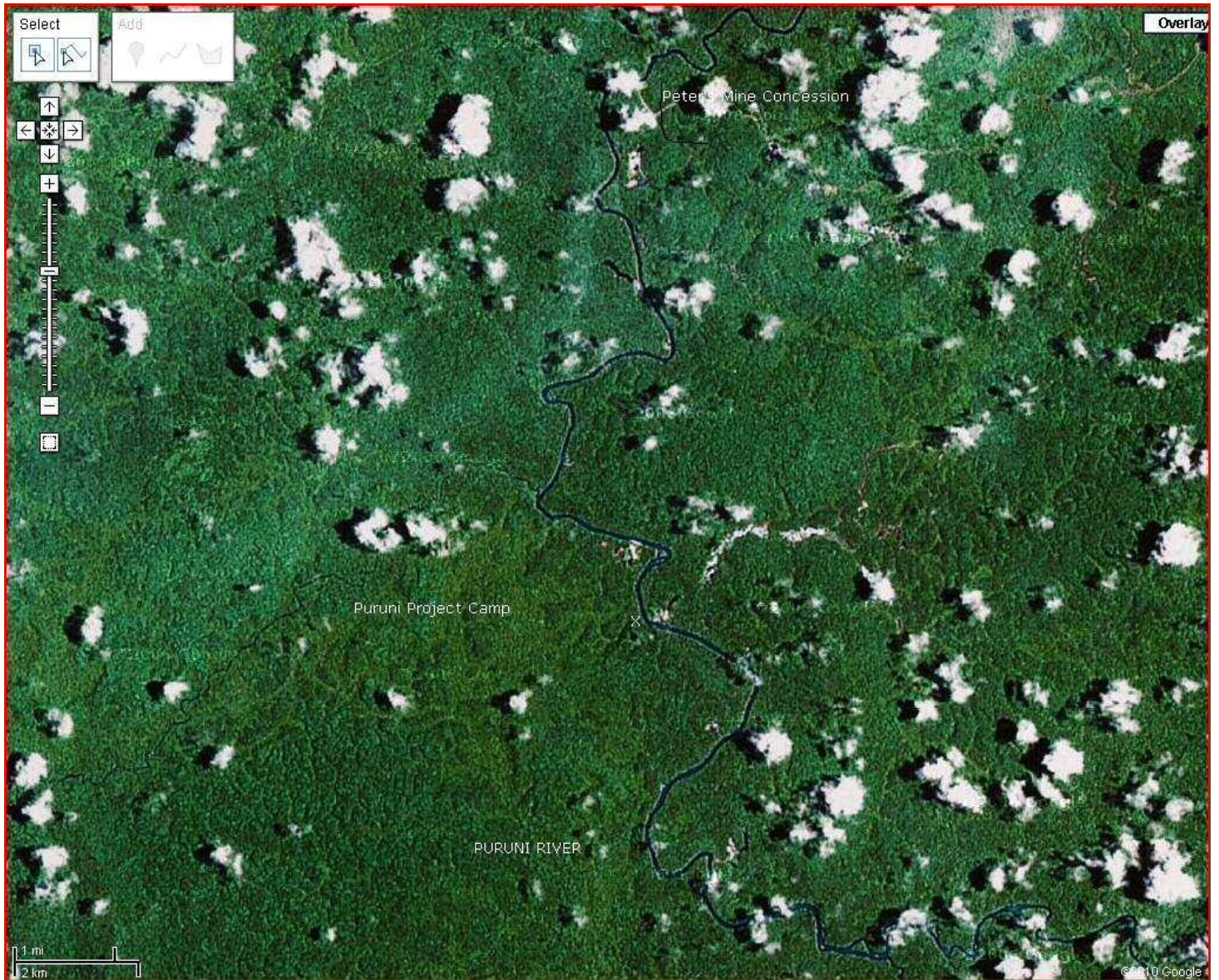
Puruni Pit A: 7 June 2010



**Henry Alphonso
photo
Spring 2010**



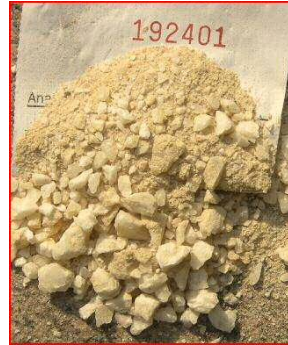
**Puruni Pit B: 7 June
2010**



Satellite Photo of Middle Puruni River showing terrain in area of the Puruni Project Camp (X on the photo).

THE SAMPLES AND DESCRIPTIONS

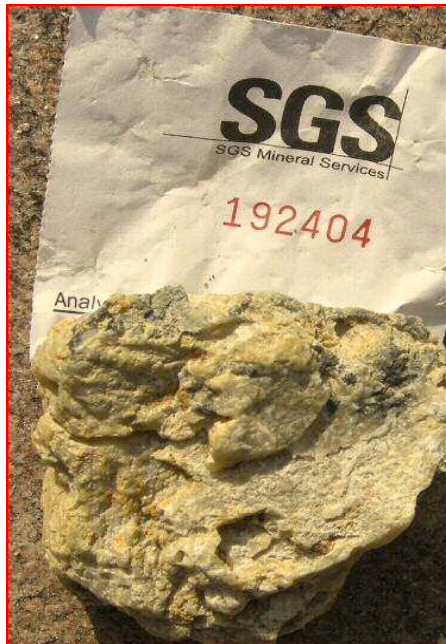
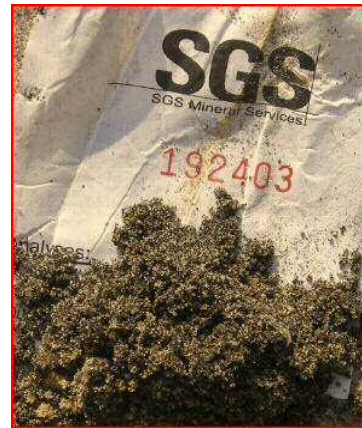
Sample 192401: massive pure white quartz



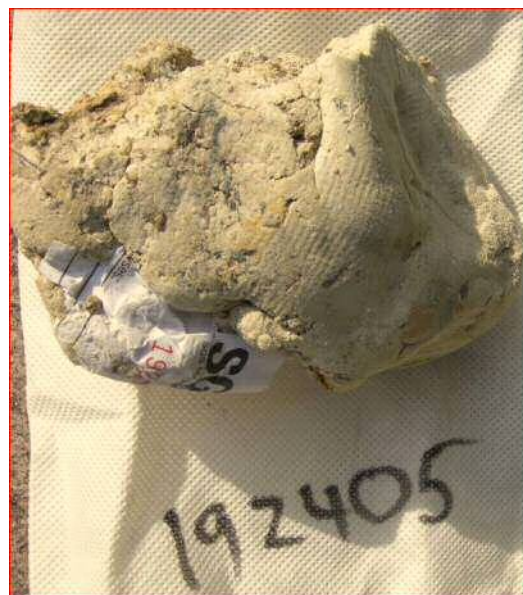
Sample 192402: heavies from end of sluice box.



Sample 192403: black sand (magnetite) from end of sluice box.



Sample 192404: Quartz with carbonaceous material.

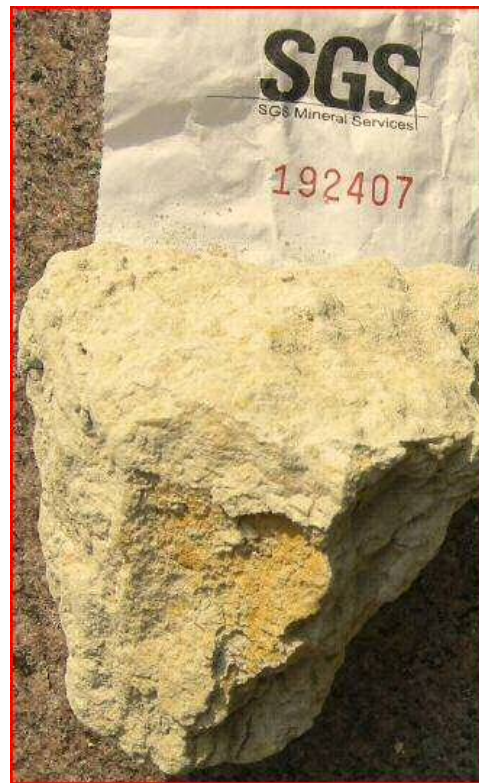


Sample 192405: white clay



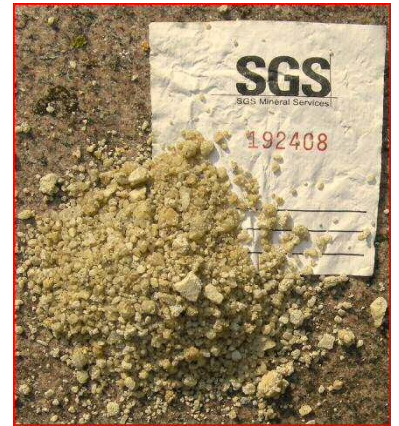
Sample 192406: Quartz with carbonaceous material

Sample 192407: grey clay





Sample 192408:
coarse sand from
pit



Sample 192409:
quartz vein in schistose
felsic rock.

Sample 192410:
white quartz

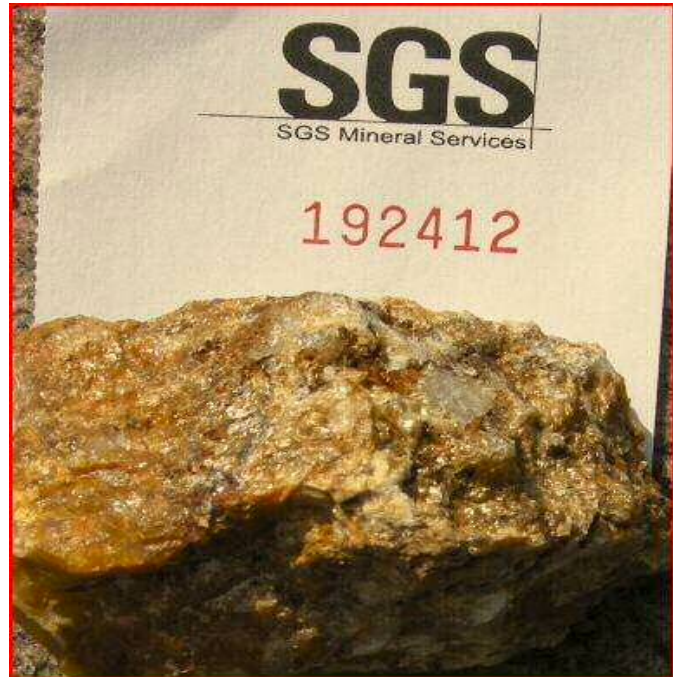


Sample 192411: quartz float

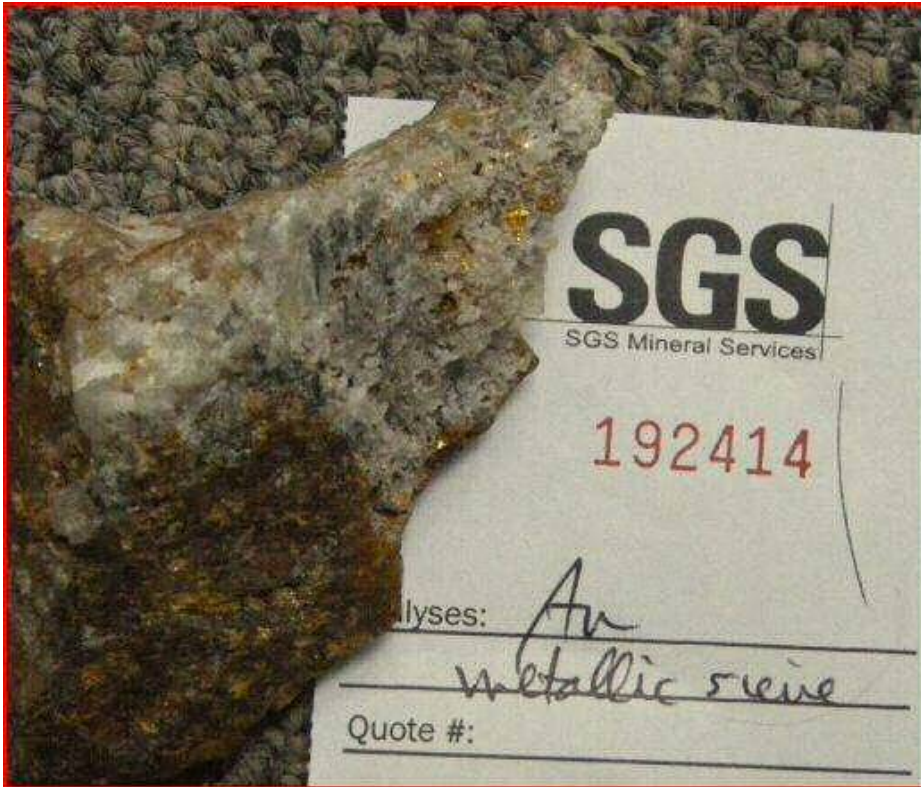


Sample 192412:

high grade quartz vein
with visible gold.

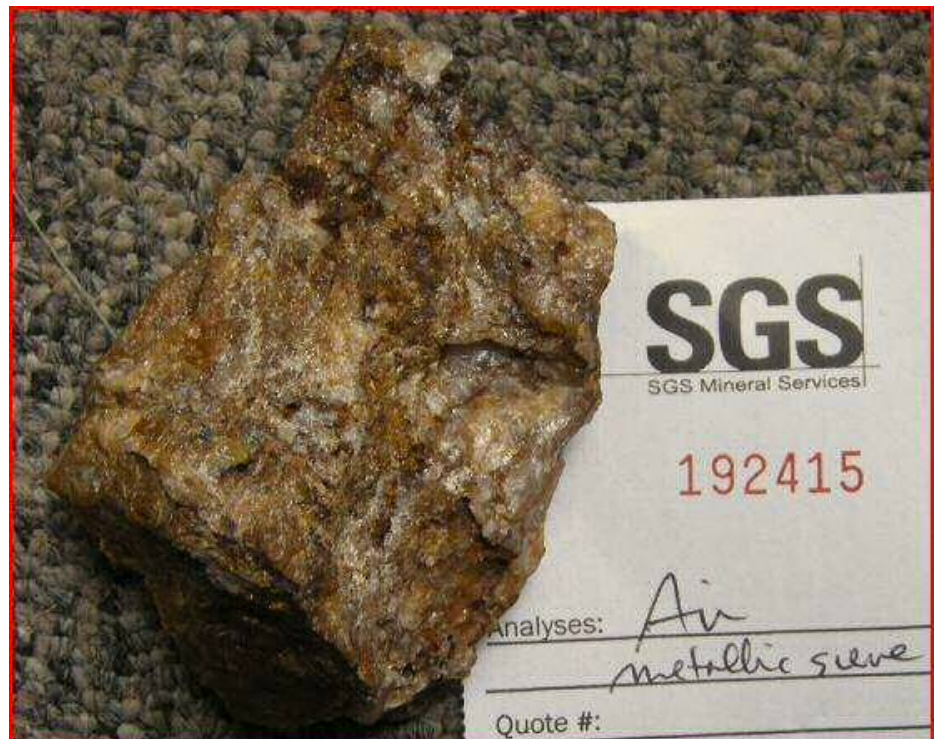


Sample 192413: high grade quartz vein with visible gold.



Sample 192414: high grade quartz vein with visible gold.

Sample 192415: high grade quartz vein with visible gold



APPENDIX B: Assay certificates

SGS

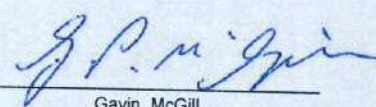
Certificate of Analysis
Work Order: TO110960

To: COD SGS Minerals
C/O P.O. Box 439
Whiffen Head Road
ARNOLD COVE
NF A0B 1A0

Date: Aug 19, 2010

P.O. No. : Puruni/ULRICH KRETSCHMAR
Project No. : -
No. Of Samples : 13
Date Submitted : Jul 15, 2010
Report Comprises : Pages 1 to 2
(Inclusive of Cover Sheet)

Distribution of unused material:
STORE:

Certified By : 
Gavin McGill
Operations Manager

SGS Minerals Services (Toronto) is accredited by Standards Council of Canada (SCC) and conforms to the requirements of ISO/IEC 17025 for specific tests as indicated on the scope of accreditation to be found at <http://www.scc.ca/en/programs/lab/mineral.shtml>

Report Footer: L.N.R. = Listed not received I.S. = Insufficient Sample
n.a. = Not applicable -- = No result

*INF = Composition of this sample makes detection impossible by this method
M after a result denotes ppb to ppm conversion, % denotes ppm to % conversion
Methods marked with an asterisk (e.g. *NAA08V) were subcontracted
Methods marked with the @ symbol (e.g. @AAS21E) denote accredited tests

This document is issued by the Company under its General Conditions of Service accessible at http://www.sgs.com/terms_and_conditions.htm. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein.

WARNING: The sample(s) to which the findings recorded herein (the "Findings") relate was (were) drawn and / or provided by the Client or by a third party acting at the Client's direction. The Findings constitute no warranty of the sample's representativity of the goods and strictly relate to the sample(s). The Company accepts no liability with regard to the origin or source from which the sample(s) is/are said to be extracted. The findings report on the samples provided by the client and are not intended for commercial or contractual settlement purposes. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

SGS Canada Inc. | Mineral Services 1885 Leslie Street Toronto t(416) 445-5755 f(416) 445-4152 www.ca.sgs.com

Member of the SGS Group (Société Générale de Surveillance)

NI43-101 REPORT ON THE PURUNI PROJECT PERMITS, GUYANA for OTISH ENERGY INC.



Final : TO110960 Order: Puruni/ULRICH KRETSCHMAR

Page 2 of 2

Element Method Det.Lim. Units	WtKg WSH79 0.001 kg	Au FAI323 5 ppb	Au @FAG303 3 g/t
192401	0.236	66	N.A.
192402	0.210	27700	N.A.
192403	0.162	34200	N.A.
192404	0.124	44	N.A.
192405	0.676	49	N.A.
192406	0.570	82	N.A.
192407	0.480	43	N.A.
192408	0.850	10	N.A.
192409	0.842	131	N.A.
192410	0.486	19	N.A.
192411	0.680	255	N.A.
192412	0.150	>100000	1390
192413	0.090	>100000	2090
*Rep 192406		111	

[Faint signature and stamp area]

This document is issued by the Company under its General Conditions of Service accessible at http://www.sgs.com/terms_and_conditions.htm. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein.

WARNING: The sample(s) to which the findings recorded herein (the "Findings") relate was (were) drawn and / or provided by the Client or by a third party acting at the Client's direction. The Findings constitute no warranty of the sample's representativity of the goods and strictly relate to the sample(s). The Company accepts no liability with regard to the origin or source from which the sample(s) is/are said to be extracted. The findings report on the samples provided by the client and are not intended for commercial or contractual settlement purposes. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

SGS Canada Inc. | Mineral Services 1885 Leslie Street Toronto t(416) 445-6755 f(416) 445-4152 www.ca.sgs.com

Member of the SGS Group (Société Générale de Surveillance)

Certificate Of Analysis



Cattarello Assayers Inc.

Number Of Samples: 2

Client: Syngenetic Gold

Job: 150

Type Of Sample: Rock Grab Samples

RUSH

Ulrich Kretschmar

Received Date: 2010-07-26

Processed Date: 2010-07-27

Report Date: 2010-07-28

Test Method:
Gravimetric with
standard bullion
finish

	Au FA-GEO ppm	Au-Dup FA-GEO ppm	Au FA-GEO oz/mt	Au-Dup FA-GEO oz/mt
Sample ID	=====	=====	=====	=====
192414	7389		215.521	
192415	13618	14764	397.200	430.610

Approved By Chief Analyst:

Issue Date	Revision Date	Rev #	Owner	Form ID	Page
18/02/2010	18/02/2010	1	Chris Hacquard	ANAL-002	1 Of 1