

TECHNICAL REPORT

ON THE

**RESOURCE ESTIMATE ON THE  
STURGEON RIVER MINE WASTE PILE AND TAILINGS,  
ISHKODAY PROPERTY**

Northern Ontario

NTS sheets 42E/12 and 42E/13  
Latitude 49°45'02" N, Longitude 87°46'27" W

for

**Laurion Mineral Exploration Inc.**  
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June 07, 2013  
Effective Date of the report, April 23<sup>rd</sup>, 2013



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## 1 SUMMARY

The Ishkoday property (the "Property"), formerly the Quebec Sturgeon Property, is located in the Geraldton-Beadmore Gold Camp, 220km northeast of Thunder Bay, Ontario and 28km northeast of the town of Beardmore. The Property land package totals 2,499 hectares and is 100% owned by Laurion Mineral Exploration Inc. ("Laurion").

GeoVector Management Inc. ("GeoVector") was contracted by Laurion to complete resource estimates for the Sturgeon River Mine Waste Pile and Tailings Area on the Property and to prepare a technical report on the resource estimates in compliance with the requirements of NI 43-101.

The Beardmore-Geraldton belt is dominated by iron-tholeiite metavolcanic flows and tuffs, wacke, conglomerate, siltstone, and prominent magnetite-hematite-chert iron formation rocks. The camp has reportedly produced more than 4.12 million ounces of gold from 19 mines since 1925 when gold was first discovered in the area.

Two main types of mineralization have been identified on the Property and include high grade lode gold style quartz veins within larger highly altered shear zones, and extensive precious metal polymetallic volcanogenic massive sulphide mineralization associated with felsic and intermediate fragmental volcanics.

The Property is host to the former producing Sturgeon River Mine, previously known as the Coniagas Mine, which produced 73,439 ounces of gold, and 15,922 ounces of silver between 1936 and 1942. The shaft was sunk to a depth of 2,108 ft with development on 14 levels, the lowest producing level being at 1,750 ft. Underground development included 20,239 ft of drifting and 3,149 ft of crosscutting. The ore was hand sorted on surface to up-grade the mill feed, and the recovered grade was reported to be 0.506 oz Au/ton. The mine was closed due to wartime shortages of skilled labour and vital materials. A 1942 ore reserve estimate yielded reserves of 130,680 tons with an average grade of 0.306 oz Au/ton.

The information concerning Sturgeon River Mine and Beardmore-Geraldton belt is not necessarily indicative of the nature of the mineralization on the Property and the Authors have not verified the production numbers or "ore reserve" estimates for the Sturgeon River Mine. The relevance of the Sturgeon River Mine information is simply to demonstrate that there are significant resources of gold in the Beardmore-Geraldton belt.

During mine life the mine development material was hand sorted at surface and lower grade material was stockpiled (Waste Pile) next to the mine shaft and mill locations. The higher grade quartz veins were milled with tailings (Tailings Area) placed in a natural depression next to the mill site.

Using the results of work commissioned by Laurion during the summer of 2010, GeoVector has estimated Indicated Resource numbers for the Mine Waste Pile and Tailings Area at the Sturgeon River Mine. Eighty seven bore holes were drilled into the tailings area, totalling 156.6 metres and 273 assay samples. Thirty pits were excavated in the waste pile, totalling 1.22 tonnes and 46 assay samples.

Inverse distances squared interpolation restricted to mineralized domains was used to estimate gold into the resource block model, using Gemcom GEMS 6.4.1 resource modelling software. The resource estimate for the Mine Waste Pile is 144,070 tonnes grading 1.59 g/t gold for 7,383 contained ounces of gold in the Indicated category. The resource estimate for the Tailings Area is 137,501 tonnes grading 0.67 g/t gold for 2,944 contained ounces of gold in the Indicated category. Total Indicated mineral resources for both deposits totals 281,571 tonnes grading 1.14 g/t gold for 10,327 contained ounces of gold.

Recent metallurgical tests indicates 87% Gold Recovery in Gravity test work from the Mine Waste Pile, and 96% Recovery of Gold in Cyanide Leach test work from the Tailings.

Based on the results of the resource modelling and metallurgical testing reported above GeoVector recommends that Laurion commence a preliminary economic assessment to determine whether the

reported gold can be economically extracted from the Sturgeon River Mine Waste Pile and Tailings Area. The results of the metallurgical testing indicate that a significant portion of the contained metals could be extracted using simple milling processes.

There is no further drilling or sampling recommended on the Waste Pile and Tailings Area.

## **2 INTRODUCTION**

GeoVector Management Inc. (“GeoVector”) was contracted by Laurion Mineral Exploration Inc. (“Laurion”) to complete resource estimates for the Sturgeon River Mine Waste Pile and Tailings Area on the The Ishkoday property (the “Property”), formerly the Quebec Sturgeon Property, prepare recommendations for future exploration, and to prepare a technical report on the in compliance with the requirements of NI 43-101. Allan Armitage, Ph.D., P.Geol. (“Armitage”) and Duncan Studd, M.Sc., P.Geol. (“Studd”) of GeoVector are independent Qualified Persons. Armitage and Studd are responsible for the preparation of this report (Armitage and Studd are collectively referred to as the “Authors”).

This report is based upon unpublished reports and property data provided by Laurion, as supplemented by publicly available government maps and publications. Parts of Sections 4 to 16 in this report have been copied or summarized from property reports which are referenced throughout the text. These sections have been updated to include information on recent exploration work by Laurion. The Property has been subject to numerous exploration programs conducted since 2007 by Laurion. Details of historical exploration activities on the Property are outlined in many exploration reports by Laurion. References to these activities are provided in the historical sections below and summarized in previous reports on the Property.

Armitage has visited the Property on March 7<sup>th</sup> to March 8<sup>th</sup>, 2013, accompanied by Joe Campbell (“Campbell”) of GeoVector and Director of Laurion. Campbell has extensive personal knowledge of the Property and regional geology from his management of exploration programs in the area since 2010. Campbell designed and supervised the Sturgeon River Mine Waste Pile and Tailings Area sampling programs. Studd was on the property for a 10 day period in April of 2011 and was involved in logging core during the diamond drill program.

## **3 RELIANCE ON OTHER EXPERTS**

Information concerning claim status, ownership, and assessment requirements which are presented in Section 4 below have been provided to the authors by John Brassard of The Claim Group Inc., by way of e-mail on June 7<sup>th</sup>, 2013, and have not been independently verified by the Authors. However, the Authors have no reason to doubt that the title situation is other than what is presented here.

## **4 PROPERTY DESCRIPTION AND LOCATION**

### **4.1 Property Location**

The Property is located in the Thunder Bay Mining Division in Irwin, Pifher, Walters, and Elmhirst townships. The Property is comprised of 2,499 ha land package covering six properties consisting of 69 mining leases, totalling 1,178 ha and 17 mining claims totalling 1,321 ha. On a 1:50,000 NTS map sheet the Property can be found in blocks 42E/12 and 42E/13.

### **4.2 Property Description**

The Property status is shown in Table 1 below and includes the dates in which the patented surface and mining rights and mining rights only claims and their anniversary date. The anniversary date is not an expiry date. Although some of the Sturgeon River leases have past due anniversaries, these leases were renewed by The Claim Group Inc., on behalf of Laurion prior to their respective anniversaries; however, final approval has yet to be issued by the Ministry of Northern Development and Mines.

The patented surface and mining rights and mining rights only claims are registered 100% to Laurion. And the land is in good standing.

On October 4<sup>th</sup>, 2007 Laurion announced in a press release that it had entered into and completed a purchase and sale agreement with St. Andrew Goldfields Ltd. (see press release posted on SEDAR: [www.sedar.com](http://www.sedar.com)). St. Andrew sold 100% of the legal and beneficial interests in the Sturgeon River Mine, comprised of thirty-five (35) patented mineral claims totalling 1,622.76 acres (656.72 ha), to Laurion in return for 500,000 common shares in the capital of Laurion, at a deemed issuance price of \$0.10 per share.

On September 8<sup>th</sup>, 2011 (completed on October 11, 2011) Laurion announce that it had entered into a definitive agreement with Prodigy Gold Inc. in which Laurion received the option to acquire up to a 100% interest three mineral claim comprising 21 claim units totalling 336 acres (136 hectares) (see press release posted on SEDAR). The Prodigy Gold Walter-Elmhirst Property is located in the Walter and Elmhirst Townships, 25 kilometres east of the Town of Beardmore, Ontario, and is contiguous to Laurion's Sturgeon River property. The objective of this transaction is to encompass the strike of southern parallel extensions south of the Tehya, Ahki, Loki and A2 Vein trends that are potential prospective horizons for precious metal rich VMS mineralization.

Pursuant to the terms of the Agreement, the Corporation has an Option to earn in an undivided 100% interest, subject to the issuance of 70,000 Laurion shares upon execution of the agreement, the issuance of 430,000 Laurion shares and incurring an aggregate of \$225,000 in exploration expenditures over three years. The Walter-Elmhirst Project is subject to a 3% net smelter return ("NSR") royalty in favour of Stephen M. Roach, Denis Laforest and Pierre Maillet.

On February 24<sup>th</sup>, 2011 Laurion and James E. Bond II and Russell P. Renner announced that they entered into a letter of intent (the "LOI") for Laurion to acquire an undivided 100% interest in 13 mining claims totalling 179 units and 1,159 hectares. The claims are primarily located in Pifher Township north of Laurion's 100% owned Sturgeon River Project and is known as the "Sturgeon Pifher North Claims". The purchase price payable by Laurion for the Property is \$68,000 payable by the issuance of 800,000 Laurion common shares at a deemed price of \$[0.085] per share to be divided equally between Bond and Renner.

On August 30<sup>th</sup>, 2011 - Laurion announce that it had entered into a definitive agreement with Jubilee Gold Inc. in which Laurion received the option to acquire up to a 100% interest in 4 mining leases totalling 64 hectares. The Jubilee Gold Elmhirst Project ("Elmhirst Project") is located in Elmhirst Township, 25 kilometres east of the Town of Beardmore, Ontario, and is contiguous to the Corporation's Sturgeon River

property. The objective of this transaction is to encompass the extensions along strike of the Tehya, Ahki, Loki and A2 Vein trends, prospective horizons for precious metal rich VMS mineralization.

Pursuant to the terms of the Agreement, the Corporation has an Option to earn in a 60% interest, subject to an initial cash payment in the amount of \$7,000 and issuance of 50,000 Laurion shares upon execution of the agreement, making cash payments in an aggregate amount of \$45,000, issuing 240,000 Laurion shares and incurring an aggregate of \$500,000 in exploration expenditures over five years.

The Corporation also has an Option to earn the remaining 40% interest in the Elmhirst Project subject to a 2% net smelter return ("NSR") royalty in favour of Jubilee Gold, at any time after the Corporation has earned in its 60% interest, to total a 100% interest. The additional 40% interest is subject to the cash payment in the aggregate amount of \$30,000, the issuance 160,000 Laurion shares and incurring an aggregate of \$333,333 in exploration expenditures. The Corporation may purchase 50% (1%) of the NSR royalty for \$1,000,000 at any time after the Option is exercised.

On November 22<sup>nd</sup>, 2011 Laurion (completed on May 07, 2012) announced that it had entered into a definitive agreement with Beauxox Mines Limited ("Beauxox"), in which the Laurion received the option to acquire up to a 100% interest in 30 mining leases covering an area of 447.35 hectares. The Beauxox property is contiguous to the Corporation's north eastern boundary, and is located in the south western quarter of Elmhirst Township. The lease was renewed on September 01, 2011 for 21 years. The 30 leases are listed under a single PIN number, 64202-0012.

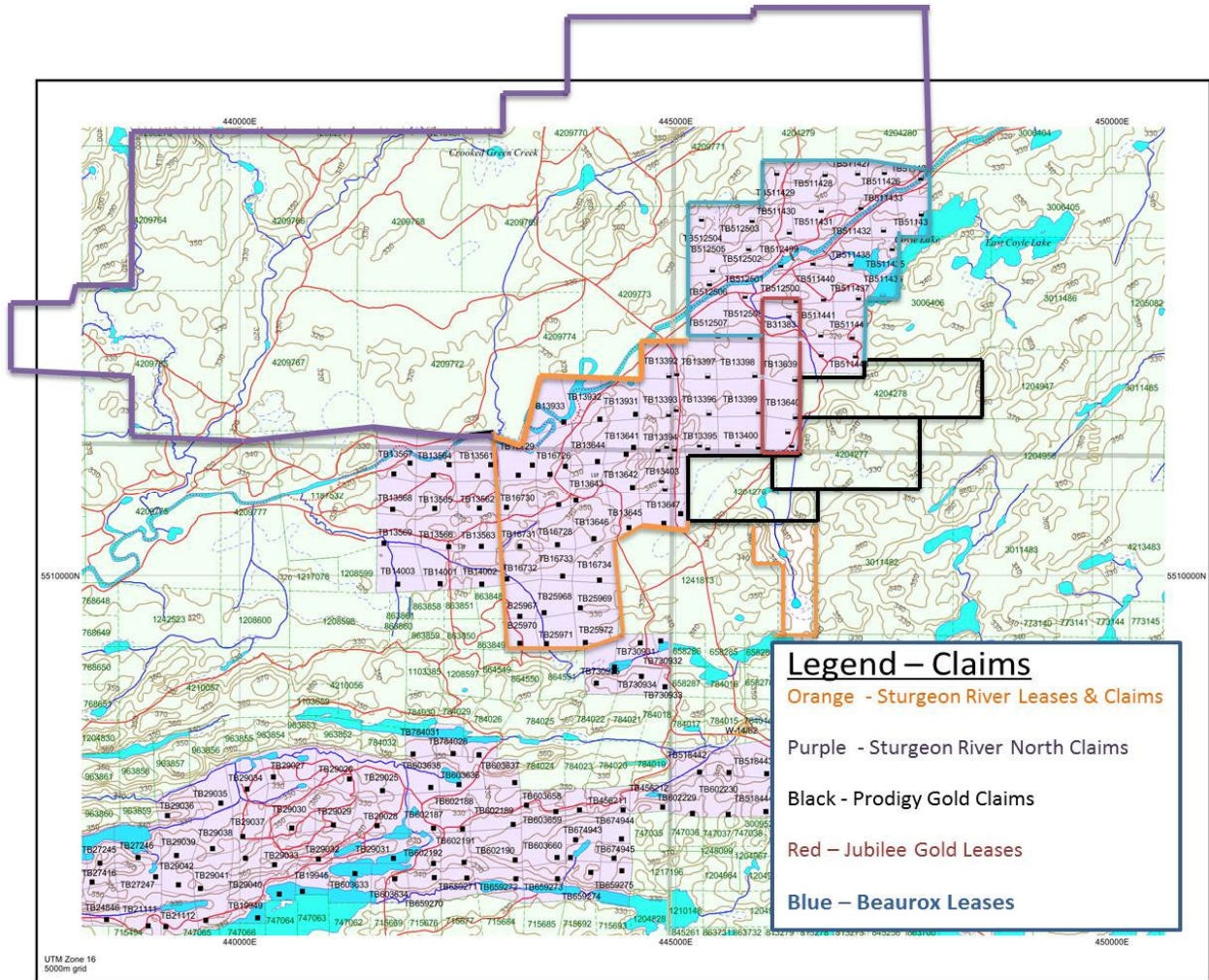
Pursuant to the terms of the Agreement, the Corporation has an Option to earn in an undivided 100% interest, subject to the issuance of an aggregate of 4,500,000 common shares in the capital of Laurion ("Common Shares") at a deemed price of \$0.05 per Common Share. 90% of the 4,500,000 Common Shares to be issued by Laurion shall be held pursuant to an escrow agreement and released in accordance with a structured schedule over a period of 36 months. The Beauxox Property is subject to a 3% net smelter return ("NSR") royalty (the "Royalty") in favour of Beauxox (0.5%), David Malouf (2%) and Orient Resources Inc. (0.5%). At any time, Laurion may purchase 1.5% of the Royalty for \$1,500,000 or 1% of the Royalty for \$1,000,000. The proposed transaction is subject to regulatory approval by the TSX Venture Exchange.



Figure 1 Property Location Map.



**Figure 2 Ishkoday Leases and Claims Location Map.**



**Table 1 Iskoday Property Information.**

**Mining Leases**

<u>Lease Patent</u>	<u>Claim No.</u>	<u>Parcel</u>	<u>Issued</u>	<u>Anniversary</u>	<u>Area (acres)</u>	<u>Township</u>	<u>Survey</u>
<b>Sturgeon River Leases</b>							
120243A	TB25967	2456TBL	01-Jun-74	31-May-16	38.04	Irwin	55R-6340
120243A	TB25968	2456TBL	01-Jun-74	31-May-16	39.25	Irwin	55R-6340
120243A	TB25969	2456TBL	01-Jun-74	31-May-16	41.77	Irwin	55R-6340
120243A	TB25970	2456TBL	01-Jun-74	31-May-16	34.5	Irwin	55R-6340
120243A	TB25971	2456TBL	01-Jun-74	31-May-16	45.5	Irwin	55R-6340
120243A	TB25972	2456TBL	01-Jun-74	31-May-16	47.46	Irwin	55R-6340
122146	TB13641	2475TBL	01-Apr-76	30-Mar-18	43.626	Pifher/Irwin	55R-6340
122146	TB13642	2475TBL	01-Apr-76	30-Mar-18	32.366	Irwin	55R-6340
122146	TB13643	2475TBL	01-Apr-76	30-Mar-18	37.845	Irwin	55R-6340
122146	TB13644	2475TBL	01-Apr-76	30-Mar-18	44.736	Pifher/Irwin	55R-6340
122146	TB13645	2475TBL	01-Apr-76	30-Mar-18	38.683	Irwin	55R-6340
122146	TB13646	2475TBL	01-Apr-76	30-Mar-18	58.426	Irwin	55R-6340
122146	TB13647	2475TBL	01-Apr-76	30-Mar-18	49.664	Irwin/Walters	55R-6340
3038	TB13392	99TBL	02-Jul-70	01-Jul-12	53.36	Pifher/Elmhirst	55R-6340
3038	TB13393	99TBL	02-Jul-70	01-Jul-12	52.91	Pifher/Elmhirst	55R-6340
3038	TB13394	99TBL	02-Jul-70	01-Jul-12	59.39	Elmhirst/Walters	55R-6340
3038	TB13395	99TBL	02-Jul-70	01-Jul-12	44.09	Elmhirst/Walters	55R-6340
3038	TB13396	99TBL	02-Jul-70	01-Jul-12	40.29	Elmhirst	55R-6340
3038	TB13397	99TBL	02-Jul-70	01-Jul-12	40.35	Elmhirst	55R-6340
3038	TB13398	99TBL	02-Jul-70	01-Jul-12	51.52	Elmhirst	55R-6340
3038	TB13399	99TBL	02-Jul-70	01-Jul-12	56.01	Elmhirst	55R-6340
3038	TB13400	99TBL	02-Jul-70	01-Jul-12	60.53	Elmhirst/Walters	55R-6340
3038	TB13403	99TBL	02-Jul-70	01-Jul-12	53.34	Irwin/Walters	55R-6340
1007	TB16730	965TBL	01-Jun-42	31-May-12	42.17	Irwin	55R-6340
1008	TB16729	966TBL	01-Jun-42	31-May-12	51.36	Pifher/Irwin	55R-6340
1009	TB16728	966TBL	01-Jun-42	31-May-12	42.89	Irwin	55R-6340
1010	TB16731	968TBL	01-Jun-42	31-May-12	43.94	Irwin	55R-6340
1011	TB16727	969TBL	01-Jun-42	31-May-12	33.51	Irwin	55R-6340
1012	TB16726	970TBL	01-Jun-42	31-May-12	50.84	Pifher/Irwin	55R-6340
1013	TB16732	971TBL	01-Jun-42	31-May-12	38.97	Irwin	55R-6340
1014	TB16734	972TBL	01-Jun-42	31-May-12	54.42	Irwin	55R-6340
1015	TB16733	973TBL	01-Jun-42	31-May-12	33.75	Irwin	55R-6340
1016	TB13933	974TBL	01-Jun-42	31-May-12	67.91	Pifher	55R-6340
1017	TB13932	975TBL	01-Jun-42	31-May-12	51.32	Pifher	55R-6340
1018	TB13931	976TBL	01-Jun-42	31-May-12	48.02	Pifher	55R-6340
				<b>Total:</b>	1,622.76 (656.72 ha)		
<b>Jubilee Gold Leases</b>							
	TB15056	41TBEL	01-Jan-12	31-Dec-32	52.35	Elmhirst	
	TB13639	39TBEL	01-Jan-12	31-Dec-32	47.50	Elmhirst	
	TB13640	40TBEL	01-Jan-12	31-Dec-32	43.34	Elmhirst	
	TB31383	2315TBL	16-Nov-95	16-Nov-16	39.96	Elmhirst	
				<b>Total:</b>	183.15 (74 ha)		
<b>Beaurox Leases</b>							
	TB511426 et. al. (total of 30 mining leases)		01-Sep-11	31-Aug-32	(447.35 hectares)	Elmhirst	

## Mining Claims

<u>Claim #</u>	<u>Township</u>	<u>Staked</u>	<u>Expiry</u>	<u>Units</u>	<u>Acres</u>	<u>Hectares</u>
<b>Sturgeon-Hercules (Prodigy)</b>						
4204276	Walters	20-Jul-06	20-Jul-14	7	128	51.8
4204277	Elmhirst	20-Jul-06	20-Jul-14	8	96	38.85
4204278	Elmhirst	20-Jul-06	20-Jul-14	6	112	45.325
	Total:				336	136
<b>Sturgeon Hercules South</b>						
4265764	Walters	2012-Jun-13	2014-Jun-13	4	64	25.9
<b>Sturgeon North</b>						
4209771	Elmhirst	2006-Feb-17	2014-Feb -17	15	240	97.13
4209773	Elmhirst	2006-Feb-17	2014-Feb -17	14	224	90.65
4209769	Pifher	2006-Feb-17	2014-Feb -17	15	240	97.13
4209770	Pifher	2006-Feb-17	2014-Feb -17	15	240	97.13
4209772	Pifher	2006-Feb-10	2014-Feb -17	15	240	97.13
4209774	Pifher	2006-Feb-17	2015-Feb-17	2	32	12.95
4213487	Pifher	2007-Jun-15	2014-Jun-15	15	240	97.13
4221538	Pifher	2009-Mar-11	2014-Mar-11	15	240	97.13
4242252	Pifher	2009-Mar-11	2014-Mar-11	16	256	103.60
4242290	Pifher	2009-Mar-11	2014-Mar-11	16	256	103.60
4245627	Pifher	2009-Mar-11	2014-Mar-11	9	144	58.28
4245628	Pifher	2009-Mar-11	2014-Mar-11	16	256	103.60
4245629	Pifher	2009-Mar-11	2014-Mar-11	16	256	103.60
	Total:				2,864	1,159.03

### 4.3 Other property interests

To the knowledge of the Author, there are no underlying interests, back-in rights, payments, or other agreements on the Property.

### 4.4 Environmental Liabilities

There are mine workings, tailing ponds, waste deposits and other significant natural and man-made features on the leases. However, the Property is not subject to any liabilities due to previous mining activities that may impact future development of the Property.

### 4.5 Permits for exploration

To the Authors knowledge, Laurion currently holds all necessary permits that are required to conduct exploration on the Property.

## **5 ACCESSIBILITY, CLIMATE, LOCAL RESOURCES, INFRASTRUCTURE AND PHYSIOGRAPHY**

### **5.1 Accessibility**

The Ishkoday Property is situated approximately 21 km northeast of the town of Beardmore, Ontario. Access to the property is off of Highway 11 by proceeding north for 12.0 km on Highway 801 located 22 km east of Beardmore. A secondary road on the south side of the Namewaminikan (Sturgeon) River trends southwest for 2.5 km to the property (deGagne, 2003).

### **5.2 Climate**

The climate is cold temperate to continental with a temperature range generally from  $-35^{\circ}\text{C}$  in January and February to  $+30^{\circ}\text{C}$  in July and August. Snowfall accumulates normally between December and April to depths in the order of 1 m to 2 m depending on the year. Work can generally be carried out yearlong on the property by a series of roads and trails.

### **5.3 Local Resources and Infrastructure**

Local resources on the property consist of an abundance of fresh water, and mixed deciduous and coniferous trees. Remnant footings and structures associated with the mill and mine workings, a timber-covered shaft, open raises, waste pile, and tailings are present on the property.

The Town of Beardmore is serviced by Highway 11, the Canadian National Railway, hydro, and the Trans-Canada natural gas pipeline. The town of Geraldton and the city of Thunder Bay both offer all types of social amenities, and is a source of skilled exploration and mining personnel, as well as mine related services.

### **5.4 Physiography**

Local relief on the property ranges from 270 to 300 m above mean sea level. Bedrock outcroppings are fairly common on the claim group as well as many stripped and trenched areas. Typical vegetation on the property consists of a boreal forest with a mixture of conifers and deciduous trees, including poplars, alders and birch. The Namewaminkan (Sturgeon) River crosses the northern part of the property.

## 6 HISTORY

Since 1925, the Beardmore-Geraldton Gold Camp has reportedly produced more than an estimated 4,373,300 ounces of gold and 300,000 ounces of silver from at least 24 operations in the Camp. (Resident Geologist's Files, Ontario Ministry of Northern Development and Mines, Thunder Bay).

Most of the production from the Beardmore-Geraldton Gold Camp originates from the southern part of the belt that is to say between Beardmore and Geraldton. Historically, the northern part of this belt has yielded only one noteworthy producer: the Sturgeon River Mine, which produced 73,438 ounces of Gold and 15,922 ounces of silver from 145,123 tons of ore, milled grading an average 0.51 ounces per ton gold (17.0 g/t). The ore was essentially mined from the narrow but high grade No. 3 quartz vein. The ore in No. 3 vein is associated with a dominant NNE trending shear zone with an average strike of N 13° E, a dip of 70°W and an average width of 22 cm. Vein minerals include calcite, pyrite, chalcopyrite, sphalerite, gold and gold tellurides. Gold is found only in the vein, in pyrite and between pyrite and gangue minerals, but also in fractures and most commonly associated with pyrite on the Ishkoday Property with alteration products, chlorite and sericite near the walls (Mackasey 1975).

Historical reports indicate that over 60 named quartz veins across the Iskoday Property have the potential for high grade gold values. In several cases these veins form sets of relatively closely spaced sub-parallel vein packages. These veins running NE-SW to NNE-SSW occur within a clearly defined tectonic - geologic formation which runs north easterly onto the Sturgeon River North Claims, of the Iskoday Property. While the veins in the Sturgeon River Mine workings consist simply of gold-silver bearing quartz, many of the veins on the Iskoday Property host a significant amount of sulphides mainly, sphalerite, chalcopyrite and pyrite. These zones of massive sulphide are possibly VMS (volcanic massive sulphide) related with some mobilization from the nearby gold bearing quartz veins.

The exploration on Iskoday Property is summarized individually below:

1934 Coniagas Mines Ltd. formed Sturgeon River Gold Mines Ltd. to operate the new mine.

1935-1942 Sturgeon River Gold Mines commenced shaft sinking and underground development in 1935, and proceeded to production at 50 tons per day in 1936. Operations were suspended in 1942 due to wartime restrictions of the labour supply and vital materials. By 1942, the shaft had reached 2,108 ft and lateral work below the bottom 1,750 ft production level showed an expanding picture for both ore veins and grade.

1972 Jupiter Minerals Inc. acquired the Sturgeon River holdings and completed geological mapping, magnetic and electromagnetic surveys, sub-humus soil sampling, and extensive prospecting of anomalous areas. A discontinuous, sheared zone with persistent sphalerite, chalcopyrite, and galena mineralization across widths of up to 50 ft was discovered, but no further was completed.

1973 Jupiter Minerals Inc. changed its name to Phoenix Gold Mines Ltd. in which Quebec Sturgeon River Gold Mines Ltd. held a 95% interest and Coniagas a 5% equity, which was subsequently purchased by Quebec Sturgeon in 1983.

1983-1987 Phoenix Gold Mines Ltd. completed an aggressive work program on the property. In 1983, Quebec Sturgeon purchased the outstanding 5% by Coniagas. As well, Phoenix sent an 8 ton sample of ore for testing which indicated the high-grade ore could be effectively sorted colorimetrically by mechanical means. During 1984 to 1986, Phoenix re-mapped parts of the property, completed geophysics, completed extensive trenching, minor bulk sampling of surface material, and diamond drilling. In 1984, Phoenix targeted a possible southwestward extension of vein systems developed in the former Sturgeon River Mine. Drilling yielded few encouraging results. Phoenix then targeted areas outside of the mine area, and discovered over 100 potentially auriferous quartz veins which were consequently trenched and sampled. At the conclusion of their program, Phoenix recommended follow up

diamond drilling on the 85-M1, A-9, A-11R, 85-A2, and A2, A4, and A5-A6 vein areas, all located in what is now known as the Ahki Zone.

1988 Placer Dome Ltd. optioned the Sturgeon River property and completed a program of re-evaluation, line cutting, and diamond drilling. A total of 13,821 ft of BQ core was drilled in 28 holes. The best results included 5 holes which graded 0.14 oz Au/t over 3 ft to 0.54 oz Au/t over 3 ft. Placer Dome subsequently returned the property to Phoenix. No historical data exists for the some of the collar locations of the Placer Dome Ltd drill holes. Reference was made to a grid in the Placer Dome report, but there was no data or reference map available.

1990 St. Andrew Goldfields Ltd. acquired the Sturgeon River property from Phoenix Gold Mines. In 1996, Watts Griffis and McQuat were retained to complete a valuation of the St. Andrew Goldfields Ltd.'s assets and a fair market value for the Sturgeon River Property was established.

2001 Roxmark Mines Ltd. processed 5000 tons from an existing waste rock stock pile on the property.

2002 St. Andrew Goldfields Ltd. completed an in house Valuation Report on the property.

## **7 GEOLOGICAL SETTING AND MINERALIZATION**

### **7.1 Regional Geology**

The property is located in the Beardmore-Geraldton gold camp situated in the Wabigoon Greenstone belt in the Superior Province.

The belt is dominated by an east-northeast trending, isoclinally folded sequence of mafic to felsic meta-volcanics and overlying meta-sedimentary rocks of Archean age. These rocks are cut by a series of felsic to intermediate dykes and plutons. Lower proterozoic diabase dykes cross cut all of the above units and felsic intrusives, and are interpreted to postdate mineralization.

The metavolcanic rocks consist of massive basaltic to dacitic lavas, amygdaloidal lavas, pillow lavas, and volcanic breccias.

The metasedimentary rocks consist of greywacke and argillite with thin beds of conglomerate and argillaceous hematite-jasper-chert iron formation.

Quartz veins hosted in shear zones postdate the felsic intrusives, and are host to gold mineralization. Sulphide mineralogy associated with the gold mineralization include pyrite, chalcopyrite, galena, and sphalerite.

As previously stated, the Beardmore-Geraldton camp has produced more than 4.12 million ounces of gold from 19 producing mines since 1925 when gold was first discovered in the area. Most of the gold that has been produced has come from narrow, high grade, vein environments (Walter, 2002).

### **7.2 Property Geology**

The property is underlain by Archean felsic to intermediate volcanics that are intruded by porphyritic granodioritic and dioritic intrusives. The volcanics consist of NE striking and SE dipping rhyolitic units overlying steeply dipping rhyodacities to dacites. Contacts between the flows are gradational. A large foliated granodiorite is located to north, and separated by a major shear zone from the volcanics.

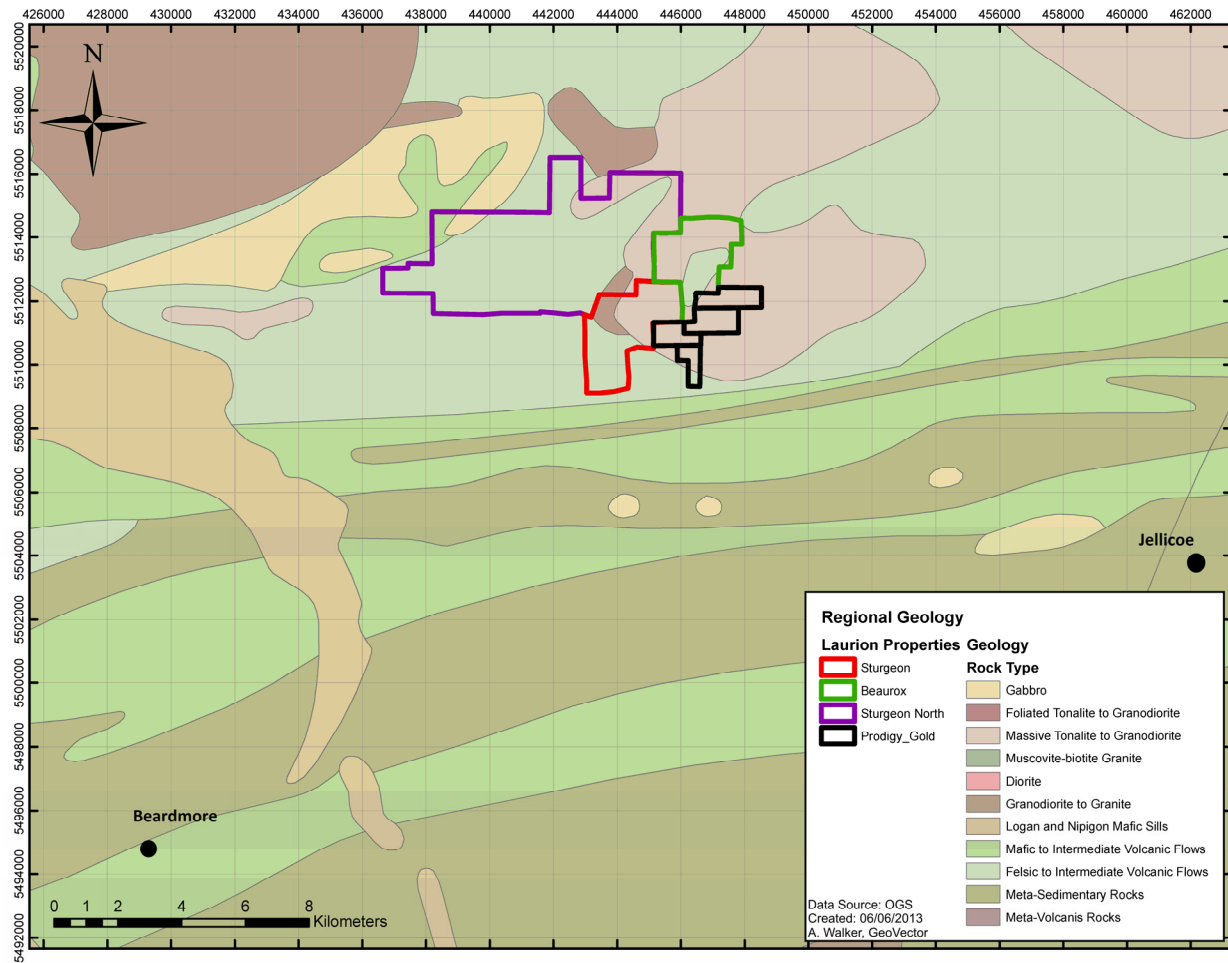
The property is cut by major NE-striking ductile shear zones which are best developed in the eastern part of the claim block. Rocks within this shear zone are carbonatized and contain auriferous quartz veins and stringers. Fine disseminated pyrite is also associated with these shear zones and quartz veins. Minor diabase, felsic to intermediate dykes, and quartz veins cross cut the volcanics. Local dacite porphyry

dykes also occur within the main shear zone and tend to be sheared, fractured, and host gold bearing quartz veins. The veins are locally offset by NNE trending faults and cut by ESE to SE striking faults (Laudrum, 1988).

Regional scale propylitic alteration has resulted in moderate, pervasive chlorite, epidote, sericite, and carbonate alteration affecting the volcanic and intrusive rocks on the property. Weak to moderate pervasive silicification is also present. Iron oxides are also present as hematite occurring along fractures, and limonite as cubic crystals in the felsic intrusives. Tourmaline-axinite occurs along fractures in jointed granodiorite. Weak pervasive carbonate and minor quartz-carbonate veinlets are also common (Laudrum, 1988).

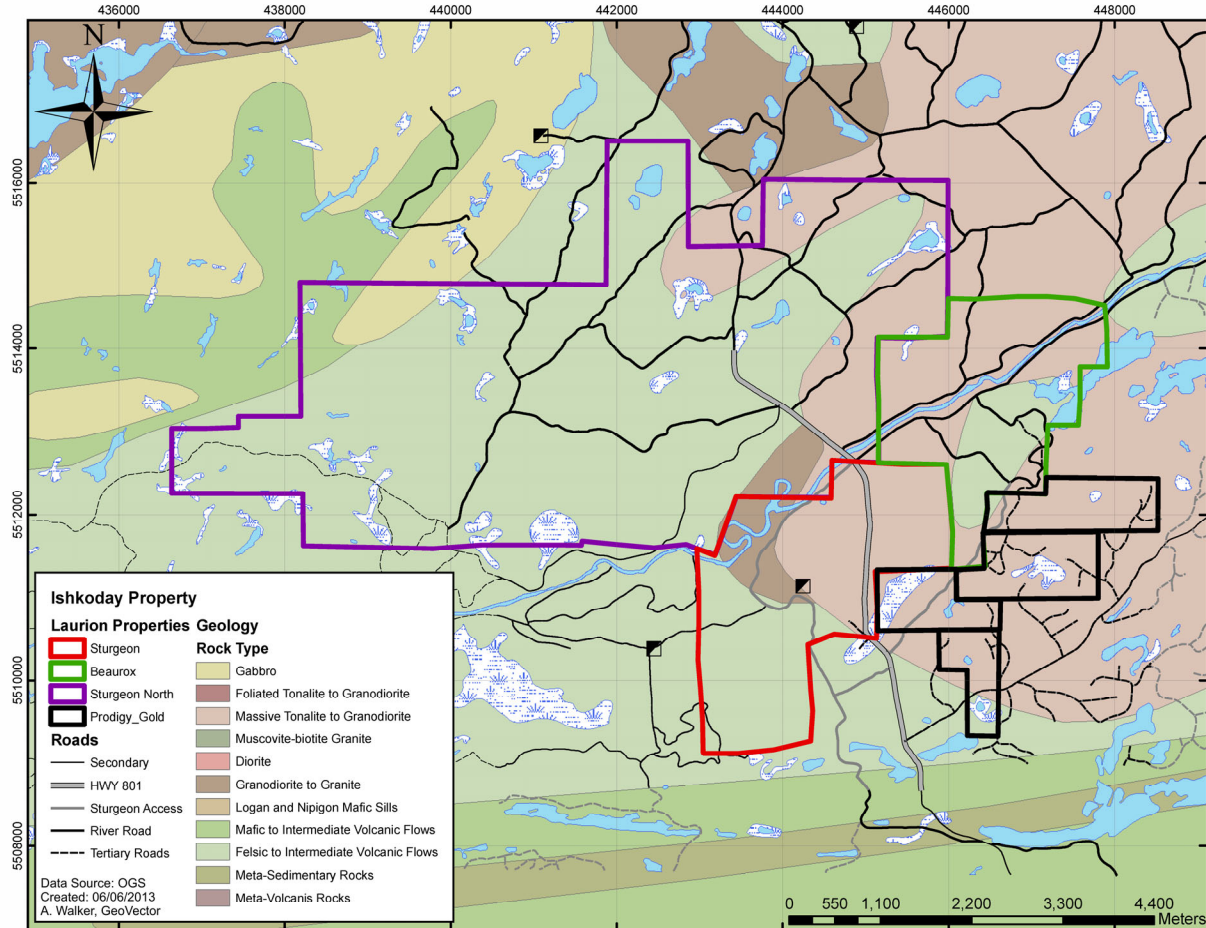
Three main structural trends exist on the property. These are NNE-trending quartz veining, NE-trending quartz veining and associated shearing, and E to ESE-trending faults. Most veins are oriented NE, and represent a dilatant crack-seal type veining with minor associated shearing. Dextral movements along the E to ESE-trending faults are thought to represent the mechanism with produced the NNE and NE dilatant features hosting the gold-bearing quartz veins (Laudrum, 1988).

**Figure 3 Geology of the Beardmore-Jellicoe area, Ontario.**





**Figure 4 Geology of the Ishkoday Property.**



### 7.3 Mineralization

Two main types of mineralization occur on the Ishkoday Property and are the main exploration targets: 1) shear-hosted lode gold, and 2) volcanogenic massive sulphide mineralization.

The property hosts the former producing Sturgeon River Mine, known previously as the Coniagas Mine, which produced 73,439 ounces of gold, and 15,922 ounces of silver between 1936 and 1942. The shaft was sunk to a depth of 2,108 ft with development on 14 levels, the lowest producing level being at 1,750 ft. Underground development included 20,239 ft of drifting and 3,149 ft of crosscutting (Walter, 2002).

Production was from narrow, high grade quartz veins between surface and the 1,750 ft level at a daily rate between 40 to 80 tons a day. The veins averaged 25 cm in width and were mined across widths up to 76 cm to produce a hoisted grade of 0.3 oz Au/ton. The main economic mineralization was confined to the No. 3, M and N. 10 veins. The ore was hand sorted on surface to up-grade the mill feed, and the recovered grade was 0.5 oz Au/ton, with approximately 45% of the material rejected by the sorting procedure. Milling of the ore was completed by using a combination of jig tables to recover coarse free gold from the circuit, while the balance was recovered by a conventional cyanide circuit with an average recovery was 98.5% (Seeber, 1983).

The mine was closed due to wartime shortages of skilled labour and vital materials. A 1942 “ore reserve” estimate yielded reserves of 130,680 tons with an average grade of 0.306 oz Au/ton.

A historical massive sulphide showing with anomalous base metal values is also situated in the north east corner of the property. Grab and chip samples have historically returned values ranging from 2 to 17% Zn, 0.05 to 0.65% Cu, 0.05 to 0.75% oz/ton Ag, and trace to 0.06 oz/ton Au (Seeber, 1983).

The Sturgeon River Mine quartz vein system is associated with very strong northeast to north northeast trending structures, which are host to massive to semi-massive sulphides which occur on multiple horizons within a kilometre wide corridor. In the last year, Laurion identified this corridor as having the potential to host a precious metal rich VMS ("Volcanic Massive Sulphide") deposit.

Two main target types of mineralization have emerged from exploration work on the Sturgeon property. These include:

- high grade lode gold style quartz veins within larger highly altered shear zones; and
- extensive precious metal polymetallic VMS deposits associated with felsic and intermediate fragmental volcanics.

The information concerning Sturgeon River Mine and Beardmore-Geraldton belt is not necessarily indicative of the nature of the mineralization on the Property and the Authors have not verified the production numbers or "ore reserve" estimates for the Sturgeon River Mine. The relevance of the Sturgeon River Mine information is simply to demonstrate that there are significant resources of gold in the Beardmore-Geraldton belt.

## 8 DEPOSIT TYPES

The Ishkoday Property has potential to host several deposit types. These include Archean shear zone hosted lode gold, and volcanogenic massive sulphides (VMS) (Cu-Zn-Pb-Au-Ag).

Archean shear zone hosted lode gold is the main focus on the property. Silver was also a by-product of the Sturgeon River Mine. Significant potential exists to expand on known gold-bearing quartz veins on the property.

Potential for volcanogenic massive sulphide base metals potential exists at or near the felsic-intermediate volcanic interface.

According to Franklin et. al. (2005), VMS deposits are stratabound accumulations of sulphide minerals that precipitated at or near the sea floor. All VMS deposits occur in terranes dominated by volcanic rocks, although individual deposits may be hosted by volcanic or sedimentary rocks that form part of the overall volcanic complex (Franklin, 1996). VMS deposits, as noted by Hart et. al. (2004), primarily occur in subaqueous, rift related environments (i.e. oceanic, fore-arc, back-arc, continental margins or continental) and are hosted by bi-modal mafic-felsic successions, where the felsic volcanic rocks have specific geochemical characteristics and are referred to as FI, FII, FIII, and FIV based on the REE classification scheme of Lesher et al. (1986).

As noted by Höy (1991) and Franklin et. al. (2005), a typical VMS deposit, illustrated on Figure 8-2, consists of a concordant synvolcanic lens or body of massive sulphides that stratigraphically overlies a cross cutting, discordant zone of intense alteration and stockwork veining. The discordant alteration and stockwork-veining zone is interpreted to be the channel-way or conduit for hydrothermal fluids that precipitated massive sulphides at or near the seafloor. A heat source such as a subvolcanic intrusion is required to induce the water-rock reactions that result in metal leaching from the surrounding rocks and create the hydrothermal convection system (Franklin et. al., 2005).

The massive sulphide body is generally in sharp contact with the overlying sedimentary or volcanic stratigraphy (hangingwall stratigraphy), while the massive sulphide body may be in sharp or gradational contact with the underlying stringer and alteration zone (footwall stratigraphy) (Höy, 1991).

Most VMS deposits, including Archean VMS deposits, are surrounded by alteration zones, which are spatially much larger than the deposits themselves. As noted by Höy, 1991, a number of zones of alteration are commonly recognized; the footwall alteration pipe, alteration within the ore zone, a large semi-conformable zone beneath the ore zone and alteration of the hangingwall. Figure 5, from Lydon (1990), is a synthesis of alteration zones associated with Zn-Cu-Pb (minor Au, Ag) deposits that formed in bimodal mafic-felsic volcanic sequences. The core of the alteration pipe, as seen on Figure 5 labelled "hydrothermal alteration pipe", can be up to 2 km in diameter and is reflected mineralogically by a strong chloritic core surrounded by sericitic and chloritic alteration. Chemically, the alteration pipe zone on Figure 5 is represented by additions of Si, K, Mg and Fe and depletions in Ca and Na. According to Franklin (1996), alteration zones adjacent to the main alteration pipe are not well defined. Franklin (1996) also noted that Na depletions are laterally extensive, but are confined only to a few hundred metres vertically in this type of deposit. As further noted by Franklin (1999b), virtually all alteration pipes are characterized by Na depletion and the resulting alkali depletion common to many alteration zones is manifested as abundant aluminosilicate minerals.

Archean lode gold deposits typically occur at, or near, lithospheric fault zones marking boundaries between lithologically contrasting domains within greenstone belts or along their margins. Although Archean lode gold deposits and their host districts share a number of recurring geological characteristics, there are major differences among deposits and certain groups of deposits. Most districts hosting Archean gold deposits have also experienced similar deformation histories recorded in at least three generations of structures and related fabrics.

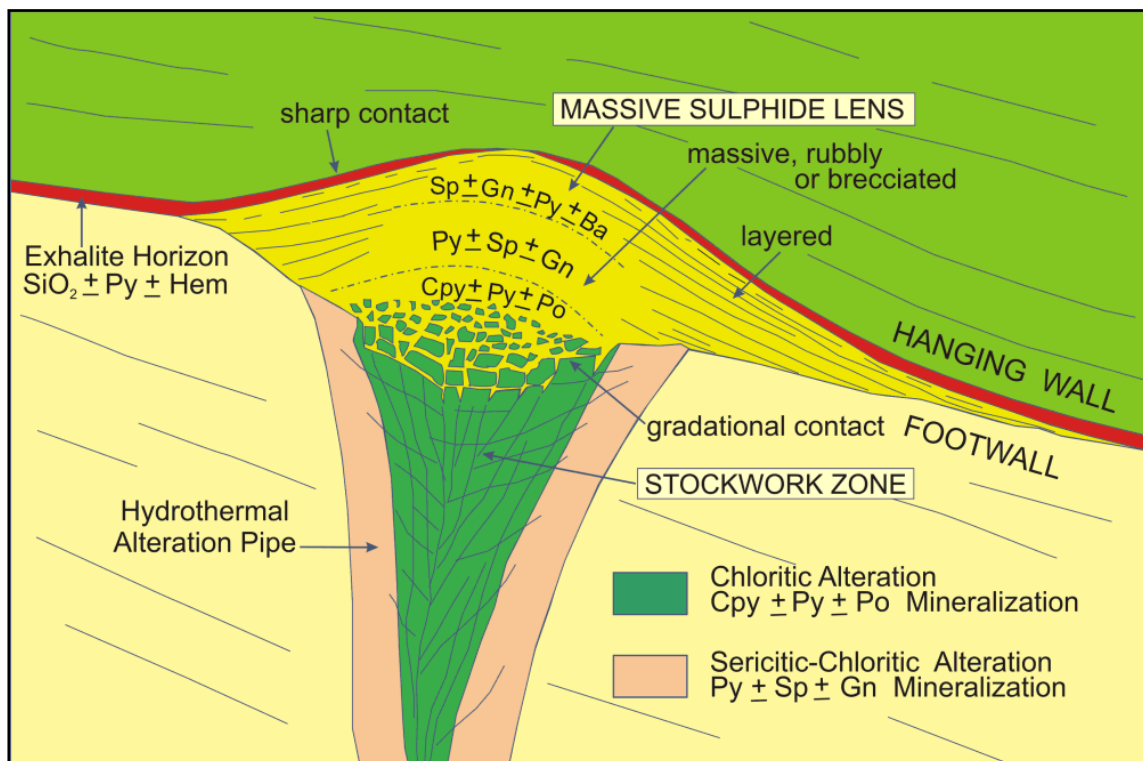
The most common types of deformation consist of an initial thin-skinned deformation followed by a thick-skinned shortening which evolves into transcurrent deformation. Commonly, there is an unconformable deposition of fluvial-alluvial and sedimentary rock sequences (i.e. conglomerate) in and around significant Archean gold deposits. The sedimentary units were deposited between the first and third deformation events.

The majority of larger Archean gold deposits occur in high-order splay faults in close proximity to regional faults, suggesting a close genetic correlation to the timing of these secondary structures. This appears to be due to the mineralized veins or disseminations requiring highly permeable channel ways to transport the volume of gold-bearing hydrothermal fluid required to deliver the concentration of gold that occurs in these deposit types.

In addition to the regional geological environment, Archean mesothermal-hydrothermal gold deposits show a number of common characteristics in that they are associated with reverse (oblique) shear zones, have a significant vertical extent with limited zoning, elevated gold-silver ratios and associated carbonate alteration in metamorphic rocks of greenschist facies.

The timing of epigenetic Archean gold mineralization is relatively late and in detail there appears to have been a number of different pulses of gold as mineralized and hydrothermally altered clasts can be found in conglomerates that sit unconformably on older volcanic assemblages but which are themselves cut by gold-bearing veins. In addition, there is a close spatial and temporal association with porphyry and alkalic intrusions which both pre- and post-date the late tectonic sediments.

**Figure 5 Idealized characteristics of a VMS deposit (after J.W. Lydon, GSC, 1990).**



## 9 EXPLORATION

The following is a description of surface exploration work completed on the Property by Laurion. Drilling completed on the Property is described below (see section 10.0).

**2007** - Laurion Mineral Exploration Inc. acquired the Sturgeon River Property from St. Andrew Goldfields Ltd and completed an independent environmental due diligence report in 2007. The report found the waste pile and tailings to be non-acid generating and fairly benign (Bednarz, 2007).

**2008** - Laurion collected a total of 14 grab samples were during a preliminary property visit in early June 2008. In late July /August 2008, Caracle Creek International Consulting Inc. ("CCIC") completed a channel sampling program composed of 50 channel samples over the north westerly steeply dipping Marge vein over an identified strike length of approximately 365m. A National Instrument 43-101 Technical Report was also completed for the Sturgeon River Property and was filed on SEDAR.

**2010** - Laurion Mineral Exploration Inc. retained GeoVector Management Inc. GeoVector managed a property wide mapping and sampling program simultaneous with a planned drill program designed with the goal of defining the character of felsic and intermediate volcanics (locally porphyritic and/or fragmental) with reported associated solution sediments (iron formations) that may host polymetallic precious metal style VMS deposits.

GeoVector completed an initial comprehensive prospecting program in September 2010, which resulted in the discovery of two new high grade gold mineralized zones. In total, 100 surface samples were collected at the Tala Zone and 92 samples on the Asha Zone. The first discovery zone, the Tala Zone, is located west of the Sturgeon River Mine area and appears to be on strike and east of Prodigy Gold's Brenbar Property. The second discovery zone, the Asha Zone, is located south of the Sturgeon River Mine area. Higher assay values were clustered along an east-northeast trend over 1.8 kilometre of strike length.

The Tehya Zone was then stripped of overburden to expose the mineralized zone for mapping and channel sampling in November 2010. Following promising DDH results in the area from September 2010.

Initial sampling in 2010 by GeoVector of the waste rock pile returned a range of 0.06 g/t to 10.2 g/t gold for an average grade of 2.83 g/t gold from eight random samples. It was reported in 1984, that a bulk sample extracted at that time by front end loader returned an average of 2.95 g/t gold which suggested the potential for approximately 11-12,000 ounces of gold in the 132,000 tons of the waste rock pile. This estimate of contained metal is historical and does not conform to the current National Instrument 43-101 standards, and should not be relied upon.

On the basis of these initial encouraging results, Laurion commissioned a comprehensive program to accurately determine the location and volume of the waste rock pile, and to sample the waste rock pile using an excavator to dig pits to acquire representative samples throughout the pile.

The survey of the waste rock pile was carried out by TBT Engineering Consulting Group ("TBTE") of Thunder Bay, using a Trimble R8 RTK GPS, with an accuracy of approximately 1 cm. The excavation was also carried out by TBTE with hole location determined using the Trimble GPS. Depth of the excavated pits was determined using a tape measure to 10 cm scale accuracy. A total of 30 pits were excavated and 46 samples were collected, with deeper pits (maximum 5.2 meters deep) providing 2 or 3 samples at successively deeper levels.

Sampling of the excavated material was carried out by GeoVector to acquire samples that were representative of rock type and broken rock size. Samples were collected in 20 litre pails and delivered to Overburden Drilling Management ("ODM") in Ottawa, Ontario. Individual sample weight was between 20.8-30.7 kg and total sample weight tested was 1.22 tonne. ODM sorted the individual samples into 4 fractions of >63mm, 63-16mm, 16-2mm and <2mm. This separation was to test the assumption that the

finer fraction material would contain more gold as the Sturgeon River Mine during its 1936-1942 production period had hand sorted coarse quartz vein material for milling at an average grade of 15.71 g/t gold and remaining finer high grade material and host rock would have been designated to the waste rock pile.

The size fractions from the samples were sent by ODM to Actlabs and they were analyzed by fire assay with AA finish. Any high grade samples over 3000 ppb gold were further treated to fire assay with gravimetric finish to determine a final gold grade.

As indicated by the above table the smallest size fraction (< 2mm) had the highest grade material (6.20 g/t gold average), and all samples in this size fraction had assays greater than 1.75 g/t gold. The coarsest fraction (> 63 mm) had highly erratic values, but also contained the highest grade sample (32 g/t gold).

**2011** – Laurion Mineral Exploration conducted a geophysical program on the Sturgeon-Hercules Project consisted of total magnetic intensity (TMI) and horizontal loop electromagnetic (HLEM) surveying on the South Grid. The grid was laid out to test a weak helicopter-borne EM anomaly detected in a competitor's VTEM survey over the area in 2010 (Orlowski et. al., 2010). Linecutting was completed in fall 2011 by Michael Goodman of Beardmore, Ontario, under contract with Laurion Mineral Exploration Inc.

The South Grid was cut using 100m line intervals and picketed at 20 m station intervals along the lines. A total of 2.2 line km were cut and chained. Geophysical surveying was carried out under contract by Exsics Exploration Limited (Exsics) of Timmins, Ontario, on September 24 and 25, 2011. TMI surveying was completed at 5 metre station intervals using field and base-station Scintrex ENVI proton precession magnetometers. In total, 2.2 line-km of TMI surveying was completed on the South Grid. An Apex Parametrics Max-Min II unit was used for HLEM surveying.

In-phase and out-of-phase readings were manually recorded for 1777Hz and 444Hz frequencies using a 100m coil separation. Data was read at 20m station intervals. In total, 1.4 line-km of HLEM surveying was completed. GeoVector Management Inc. completed all geophysical data plotting and interpretation. Ground magnetic surveying effectively mapped an East-West trending, remnantly magnetic anomaly that was shown by drilling to be due to massive and blebby porphyry. The HLEM survey did not detect the VTEM survey conductive anomaly.

**2012** – Laurion Mineral Exploration Inc. commenced a prospecting program covering the Tehya, Ahki, Loki and A-Zone precious metal rich volcanogenic massive sulphide (VMS) trends.

- **Loki Trend A-Zone Northeast Extension:** The sampling took place in trenches located on the Beauxox property approximately 250 metres northeast and along strike of drilling completed by Laurion in June 2012. A total of 14 samples were taken along 125 metres of strike length. Best assay results included 15.30 g/t Au, 77.8 g/t Ag and 27.50% Zn.
- **Loki Trend A-Zone Southwest Extension:** The sampling took place in trenches located on the Ishkoday property approximately 440 metres southwest and along strike of drilling completed by Laurion in 2011, which initially identified the Loki Trend. The Loki Trend is now projected to be the southwest strike extension of the A-Zone on the Beauxox property, and occurs approximately 400 metres south and parallel to the Tehya Zone. A total of 7 samples were taken along 220 metres of strike length. Best assay results included 42.30 g/t Au and 18.80% Zn.
- **A2 Zone:** The sampling took place in trenches located on the Ishkoday property approximately 300 metres south and parallel to the Tehya Zone. A total of 7 samples were taken along 820 metres of strike length. Best assay results included 53.00 g/t Au and 23.5 g/t Ag and 18.90% Zn.
- **85-A2 Zone:** The sampling took place in trenches located on the Ishkoday property approximately 150 metres south and parallel to the Tehya Zone. A total of 8 samples were taken along 350 metres of strike length. Best assay results included 2.53 g/t Au and 91.1 g/t Ag, 1.66% Cu and 15.00% Zn.

- Azurite Showing -- Loki Trend Sub Horizon: Additional prospecting and mapping was carried out in early November 2012 on a second copper showing designated the Azurite showing. While mapping this showing, a further zone of zinc and copper VMS style mineralization was discovered approximately 20 m north of the Azurite showing. Two grab samples were taken of the exposure and resulted in the following assays:

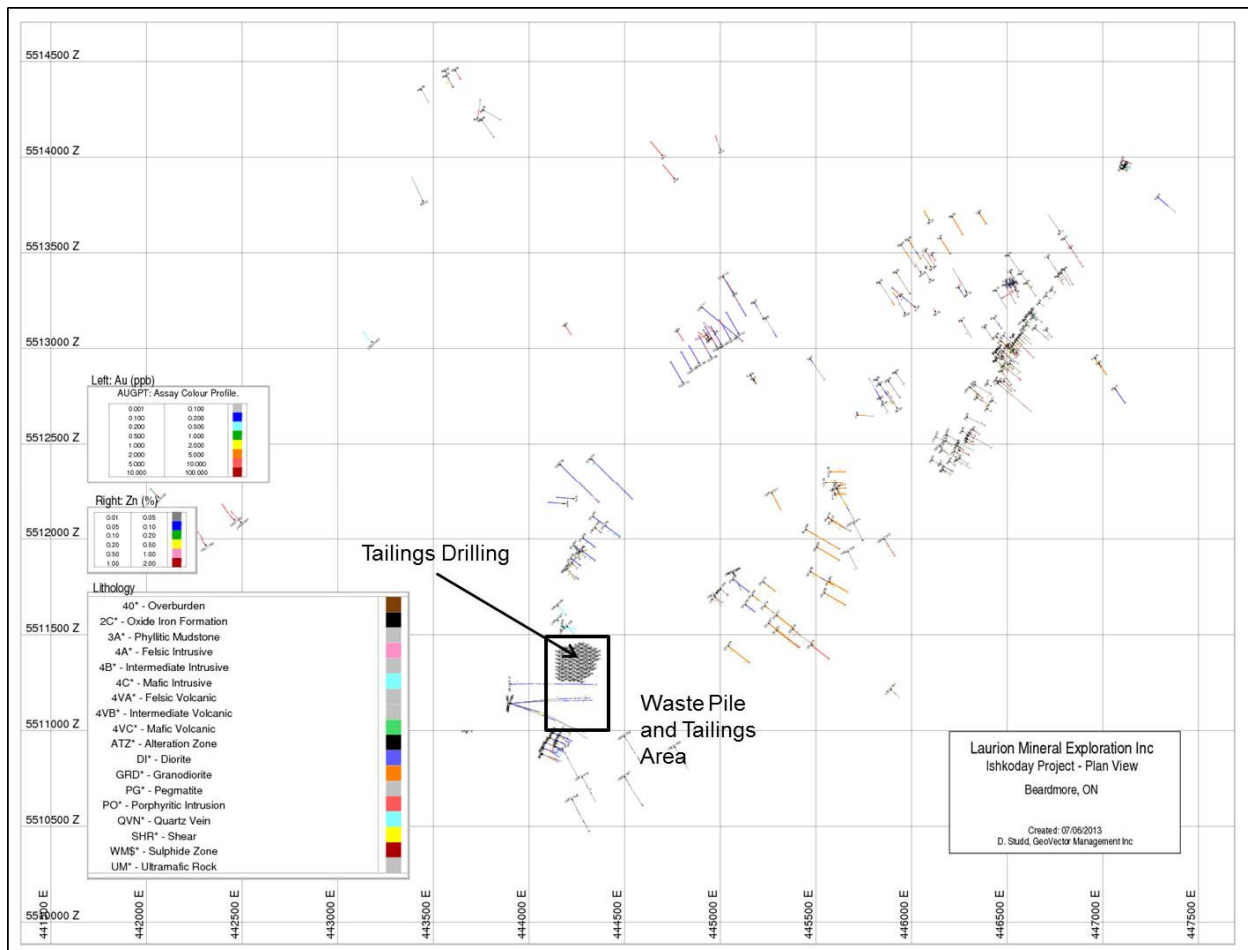
Sample #	Au ppb	Ag g/t	Cu %	Zn %
1384287	186	12.4	0.13	13.90
1384288	959	67.7	1.29	4.80

- A4 Zone: The sampling took place in trenches located on the Ishkoday property approximately 200 metres northeast of the 85-A2 sampling. The A-4 is possibly the extension of the 85-A2 zone. A total of 8 samples were taken along 260 metres of strike length. Best assay results included 1.96 g/t Au and 133.0 g/t Ag, 0.56% Cu, 2.95% Pb and 9.37% Zn.
- River Zone West: The sampling took place in trenches located on the Ishkoday North property. Two sub-parallel zones of mineralization were identified approximately 60-75 apart across strike. The northerly zone was sampled over 350 metres of strike and is a gold zone. The southerly zone is a copper, silver and gold zone. A total of 8 samples were taken along 260 metres of strike length. Best assay results included 6.86 g/t Au and 48.9 g/t Ag, and 1.86% Cu.
- River Zone East : The sampling took place in trenches located on the northern part of the Beaurox property. The zones of mineralization appear to be a strike extension of the copper, silver and gold zone on the River West south zone. Samples were taken over 860 metres of strike length. A total of 8 samples were taken along 260 metres of strike length. Assay results were generally low; the best assay results include 11.9g/t Ag and 0.9% Cu.

## 10 DRILLING

From June 2010 to September 2012 Laurion, under the management of GeoVector, underwent several diamond drilling campaigns. Fifty five Diamond Drill Holes were drilled, totalling 11,220.61m, targeting Gold and VMS targets across the property. In addition to the diamond drilling, Laurion completed an overburden drilling program on the Sturgeon Tailings Area (Figure 6).

**Figure 6 Plan map of drilling completed on the Sturgeon River Mine area (Sturgeon Leases).**



Initial grab sampling in early 2010 by GeoVector of the mill tailings returned a sample of 0.68 g/t gold. Historical sampling by Phoenix in 1984 returned 0.58 g/t from the edges of the tailings disposal area. At that time it was postulated that potential for higher grade gold values existed at the base of the tailings where gold would have accumulated from gravity settlement of the tailings. Based on reported production records, there is a potential of 125,000-135,000 tons of tailings that could possibly be processed to recover any contained gold. This estimate of tonnage is historical and does not conform to the current National Instrument 43-101 standards, and should not be relied upon.

On the basis of the above initial positive results, Laurion commissioned a comprehensive program to accurately determine the location and volume of the tailings and to sample the tailings pile using an overburden drill to acquire representative samples throughout the tailings containment area. This information will be used to calculate a National Instrument 43-101 compliant resource estimate.



The survey of the tailings area was carried out by TBT Engineering Consulting Group ("TBTE") of Thunder Bay, using a Trimble R8 RTK GPS with an accuracy of approximately 1 cm. The overburden drilling was also carried out by TBTE with hole locations determined using the Trimble R8 RTK GPS. Holes were planned on a diamond grid with 20 meter hole spacing. A total of 93 drill collars were spotted and 87 were drilled. Six holes were not drilled as they appeared to be off the tailing area, or were inaccessible. A total of 376 samples were collected, ranging from 0.10 meters to 1.10 meters, with an average thickness of 0.42 meters. Tailings thickness intersected in the drilling ranged from 0.60 meters to 3.90 meters. Most drill holes penetrated through the tailings into the underlying organics, which were also sampled.

Sampling of the overburden drilling was carried out by TBTE under the supervision of GeoVector. The samples were sent to Actlabs and were analyzed by fire assay with AA finish. Any high grade samples over 3000 ppb gold were further treated to fire assay with gravimetric finish to determine a final gold grade. Individual assay results ranged from below detection limit to 21.50 g/t gold. The gold grade was consistently higher in the lower intervals of the tailings intersections, thus confirming that percolation of the gold had indeed occurred. Drill intersections through the total mill tailings thickness ranged from a low of 0.13 g/t over 1.0 meter to 9.65 g/t over 0.90 meters.

In a press release on January 4, 2011, Laurion announced the completion of a comprehensive survey/sampling program of the waste rock pile in which assay values of up to 32 g/t gold were reported. The Sturgeon River Mine operated between the periods 1936 to 1942. The quartz vein material mined from the No. 3 main vein was reportedly hand sorted and milled at an average grade of 15.71 g/t gold, thus higher grade material of current economic value was either designated to the waste rock pile or to the tailings disposal area after milling.

In June 2010, a total of 343 metres in five holes were drilled over a 150 metres strike length of the Marge vein located to the north west of the Sturgeon River shaft. These holes were designed to intersect an area of the vein that had indications of high grade gold from the historical trenching and channel samples collected in 2008.

Two DDH campaigns totalling 4,195 metres were completed in September 2010 on the Tehya Zone, located approximately 1 kilometre northeast of the Sturgeon River Mine. In 2008, Laurion took a surface sample in the Tehya zone and reported an assay of 18.55% zinc, 0.90% copper, 62.11 g/t silver and 0.21 g/t gold. GeoVector re-sampled this zone on surface and discovering two parallel lenses of massive to semi-massive sulphides of 0.50 m (lens 1) and 1.0 m (lens 2) widths separated by 2.0 metres of sheared and brecciated volcanics with disseminated sulphides. This was followed up with two drill holes which intersected an approximate 4.58 metre shear zone hosting massive sulphides.

In the November 2010, Laurion completed 3,511 metres of diamond drilling in 6 holes below the Sturgeon River Mine workings resulting in the discovery of 7 new shear hosted gold zones considered as the first phase of drilling towards the delineation of the insitu mineralization.

In 2011 there were two separate diamond drill hole campaigns. Seven diamond drill holes totaling 1,024 metres were completed in the Ahki zone and a portion of the south western portion of the Loki Trend (A2 Zone). All 7 holes intersected Au, Ag, Cu, Zn mineralization. As a result of this drill program, Laurion has identified the potential for a precious metal rich VMS deposit. Several separate mineralized horizons were tested within a package of intermediate to felsic fragmental volcanics adjacent to diorite/granodiorite porphyry. The targets tested included two holes on the Ahki Zone (2010 grab sample of 6.76 g/t Au, 8.5 g/t Ag, 0.70% Cu and 10.2% Zn), one hole on the extension to the Tehya Zone (previously reported 0.45 g/t Au, 27.80 g/t Ag, 0.94% Cu and 3.91% Zn, over 4.08 m in drill hole LME10-07 located 600 metres southwest of the current drilling), one hole targeting a 450 metre long VLF anomaly (1984 survey), and three holes targeting IP anomalies defined from IP and Magnetic Surveys.

Highlights of the results on the Ahki Zone include:

- LME11-013 - 3.10 g/t Au, 27.5 g/t Ag, 0.38% Cu and 5.63% Zn over 3.10 metres

- Including 0.80 g/t Au, 10.40 Ag, 77.1 g/t Ag, 0.83% Cu and 14.30% Zn over 0.80 metres on the Ahki Zone

During the summer of 2012, Laurion completed a 15 hole drill program which was designed to confirm and expand the VMS mineralized northeastern end of the A-Zone of the 3 km long Loki Trend.

Based on its interpretation of the drilling to date, Laurion is beginning to successfully define the volcanic stratigraphy within these zones, and to place the mineralized horizons within specific packages of altered volcanics. Drill testing of the property has so far been restricted to the shallow vertical depth of approximately 150m. The drill programs continue to confirm the location, grade tenor and thicknesses of the A-Zone horizon as indicated by the historical drilling. Based on its recent work Laurion now believes it has two strong north-easterly trends of mineralization on which to carry out follow-up drilling (Tehya/Ahki and Loki/A-Zone) for developing a mineralized resource base.

The first four drill holes totaling 841 metres were designed to twin and confirm values recorded for historic holes 92-64, 92-65 on the A-Zone, and to test the lateral mineralization intersected in 90-47 and down dip of mineralization intersected in 90-37. These latter two historical holes had intersected horizons sub-parallel and in the hanging wall of the A-Zone.

Hole LBX12-002 was collared 50m west of LBX12-001 and 12m west along strike of historical hole 92-64 which had intersections of 4.40m @ 4.75 g/t Au, 0.97% Zn and 4.6m @ 0.35 g/t Au and 0.41% Zn.

The next two drill holes, LBX12-003 and 004, in the program intersected mineralized horizons that appear to be sub-parallel to the main A-Zone trend, and occur 50-100m north of the A-Zone. The holes were collared between 500m and 900m west of the two holes that tested the A-Zone (LBX12-001 and 002).

Hole LBX12-003 was collared 550m west of LBX12-002 and 30m west along strike of historical hole 90-47 which had intersections of 6.92m @ 0.12 g/t Au, 5.7 g/t Ag, 0.07% Cu and 0.48% Zn and 4.28m @ 1.00 g/t Au, 9.5 g/t Ag, 0.22% Cu and 1.11% Zn. This mineralized trend is 100m north of the A-Zone.

Hole LBX12-004 was collared 350m west of LBX12-003 and 25m north (down dip) of historical hole 90-37 which had an intersection of 4.86m @ 1.31 g/t Au, 8.0 g/t Ag, 0.07% Cu and 2.72% Zn. This mineralized trend is approximately 50m north of the A-Zone.

A-Zone Hole LBX12-005 targeted a trend north and parallel to the main mineralized trend and was collared 45m to the southeast of hole LBX12-003. This drill hole intersected a wide zone of anomalous gold and narrower zones within the intermediate to felsic volcanics containing discrete higher grade mineralization.

Hole LBX12-006 targeted the A-Zone main mineralized trend and was collared 95m southeast of hole LBX12-004. It intersected multiple zones of higher grade gold-zinc mineralization. Including 4.24 g/t Au, 30.6 g/t Ag and 10.5% Zn over 1.25m

Hole LBX12-007 was collared immediately next to LBX12-001, but drilled at a shallower dip to intersect the A-Zone main mineralization at dip. Hole LBX12-007 also revealed a wide zone of mineralization with multiple narrow zones of higher grade mineralization and a number of lower grade gold zones down in the silicified zone below the main horizon including 1m @ 7.38 g/t Au.

A-Zone Hole LBX12-008 was collared next to LBX12-002. Hole LBX12-008 was drilled at a shallower dip than LBX12-002 to intersect the A-Zone main mineralization up-dip of LBX12-002. LBX12-008 intersected 3.0m @ 1.88 g/t Au and 1.20% Zn and 3.50m @ 1.22 g/t Au and 1.04% Zn. Hole LBX12-008 intersected both mineralized horizons within a wide zone of alteration similar to LBX12-002.

Hole LBX12-009 was collared 25m west of LBX12-001 and 25m east of LBX12-002, and was targeted to map the continuity of the mineralized A-Zone between holes LBX12-001 and LBX12-002 at a shallow

depth. LBX12-009 intersected the broad zone of alteration and mineralization characteristic of the A-Zone, and intersected multiple zones of higher grade gold-zinc mineralization.

Hole LBX12-010 was collared immediately next to LBX12-009, but drilled at a steeper dip to intersect the main mineralization of the A-Zone at greater depth, similar to holes LBX12-001 and LBX12-001. Hole LBX12-010 revealed wider zones of the high grade mineralization seen in previous drill holes, giving rise to the potential that the A-zone is increasing in grade and width at depth. Assay results are as follows:

LBX12-010	From (m)	To (m)	Length (m)	Au g/t	Ag g/t	Cu %	Zn %	Pb %
	35.00	148.00	113.00	0.50	3.2	0.02	0.63	
Incl.	46.16	59.00	12.84	3.31	18.1	0.09	3.72	0.42
Incl.	46.16	50.20	4.04	5.26	40.1	0.29	8.38	1.24
Incl.	68.75	76.50	7.75	0.86	9.5	0.05	2.10	0.13
Incl.	68.75	71.00	2.25	2.58	30.3	0.14	6.72	0.43
Incl.	146.00	148.00	2.00	0.15	3.5	0.07	1.04	

Hole LBX12-011 was collared 65m along strike east of LBX12-010. The hole appeared to cross only part of wider altered and mineralized horizon seen in the previous drilling, and possibly located in a fault off-set.

The true thicknesses of the mineralized zones are currently unknown, but based on core angles observed in core they may range from 50-90%. As results continue to come in from the drill program, construction of cross sections and modeling of mineralized horizons will provide better control on zone orientation.

## **11 SAMPLE PREPARATION, ANALYSES AND SECURITY**

Sampling of the overburden drilling was carried out by TBTE under the supervision of GeoVector. All samples from the 2010 waste pile program were delivered by GeoVector Management Inc. personnel to the Activation Laboratories ("Actlabs") facility in Geraldton. Actlabs is an ISO/IEC 17025 accredited analytical laboratory and is independent of Laurion. At Actlabs samples were analyzed by fire assay with AA finish. Any high grade samples over 3000 ppb gold were further treated to fire assay with gravimetric finish to determine a final gold grade.

Sampling of the excavated material was carried out by GeoVector to acquire samples that were representative of rock type and broken rock size. Samples were collected in 20 litre pails and delivered to Overburden Drilling Management ("ODM") in Ottawa, Ontario. ODM sorted the individual samples into 4 fractions of >63mm, 63-16mm, 16-2mm and <2mm. The size fractions from the samples were sent by ODM to Actlabs and they were analyzed by fire assay with AA finish. Any high grade samples over 3000 ppb gold were further treated to fire assay with gravimetric finish to determine a final gold grade.

It is in the opinion of the Author's that adequate sample preparation, analysis and security for the Property have been implemented.

## **12 DATA VERIFICATION**

All geological data has been reviewed and verified by the Authors as being accurate to the extent possible and to the extent possible all geologic information was reviewed and confirmed. The Authors did not conduct check sampling of the core. The Authors feel that the samples taken by GeoVector provide adequate and good verification of the data and the Authors believe the work to have been done within the guidelines of NI 43-101.

### **13 MINERAL PROCESSING AND METALLURGICAL TESTING**

Following the assaying of the sample fractions from the low grade stockpile a composite sample was carefully selected from the remaining reject. The composite sample totalled 78.3 kilograms and was designed to be representative of the average grade of material within the stockpile block model. Assayed head grade for the sample was 1.75 g/t gold.

The tests included gravity concentration using a Knelson Concentrator and cyanidation. The results of the gravity recovery test indicate that at a fine grind of 97% passing -75µm 87.58% of the gold in the sample is able to be recovered by gravity concentration, which indicates an ore exceptionally amenable to Gravity Concentration methods. The cyanidation tests indicated that a grind of 97% -75 µm provided extractions of 92-93%. The combination of Knelson Concentration with cyanidation of the gravity tailings gave a combined recovery & extraction of 98.5%.

Following the assaying of the tailings samples composite samples were prepared from all remaining from the remaining sample reject. The composites formed two populations, the sand to silt size tailings, and the organic layer beneath the tailings. Averaged assayed head grade for the tailing sample was 0.42 g/t gold. The organics had an averaged assayed head grade of 1.57 g/t gold. The organics samples required ashing prior to metallurgical testing to reduce preg-robbing effects of the organic carbon and the ashed organics had an averaged assayed head grade of 3.31 g/t gold.

The tests included gravity concentration using a Knelson Concentrator and cyanidation. The gravity concentration tests indicated that the ash samples were not amenable to gravity concentration (less than 1% recovery). Likewise the gravity tests on the tailings sample using the Knelson Concentrator had relatively poor results with only recovered 22% of the gold.

The cyanidation tests indicated that a tailings/ash composite had dissolution of over 96% of the gold and required leaching time of less than 12 hours. The tailings alone required longer (48 hours) leaching times and the maximum dissolution achieved was 67-72%. Test results indicate that the low grade tailings resource would be amenable to gold recovery using cyanide. In all cases the cyanide and lime consumptions were fairly low.

## 14 MINERAL RESOURCE ESTIMATE

The resource estimates presented below represents the first NI 43-101 compliant Inferred Resource estimate for the Sturgeon River Mine Waste Pile and Tailings Area on Laurion Mineral Exploration's Ishkoday Project in Ontario. The resource estimates were commissioned by Laurion Mineral Exploration ("Laurion") and completed by GeoVector Management Inc. ("GeoVector") on the Property in 2013, the results of which were reported in a news release issued on April 23<sup>rd</sup>, 2013 (filed on SEDAR). For the Sturgeon River Mine Waste Pile, Laurion reported an Indicated Resource of 144,070 tonnes at 1.59 grams per tonne ("g/t") for a total of 7,383 ounces gold ("Au") using no cut-off grade. For the Sturgeon River Mine Tailings Area, Laurion reported an Indicated Resource of 137,501 tonnes at 0.67 grams per tonne ("g/t") for a total of 2,944 ounces gold ("Au") using no cut-off grade. To complete the Indicated resource GeoVector assessed drill and pit sampling data taken in 2010 by TBT Engineering Consulting Group ("TBTE") of Thunder Bay under GeoVector's direction.

The Sturgeon River Mine reported a historical production of 73,322 ounces of gold and 15,929 ounces of silver from 145,123 tons taken primarily from No. 3 Vein during 1936 to 1942, but also from the No. 10 Vein and the M Vein that were encountered at the lower depths of the mine in the later years of mine life. During mine life the mine development material was hand sorted at surface and lower grade material was stockpiled next to the mine shaft and mill locations. The higher grade quartz veins were milled with tailings placed in a natural depression next to the mill site.

The Indicated mineral resource was estimated by Allan Armitage, Ph.D., P. Geol., of GeoVector. Dr. Armitage is an independent Qualified Person as defined by NI 43-101. The reporting of the resource complies with all disclosure requirements for mineral resources set out in the National Instrument (NI) 43-101 Standards of Disclosure for Mineral Projects. The classification of the Sturgeon River Mine Waste Pile and Tailings Area mineral resource is consistent with CIM Definition Standards for Mineral Resources and Mineral Reserves (2010). There are no mineral reserves estimated for the Property at this time. Inverse distances squared interpolation restricted to mineralized domains was used to estimate gold into the resource block model. Indicated mineral resources are reported in summary tables in Section 14.9 below.

### 14.1 Drill File Preparation

The Sturgeon River Mine Waste Pile and Tailings Area mineral resource estimate is based on 87 boreholes in the Tailings Area totalling 156.6 metres, with 376 assays (0.1 up to 1.1 metres in length), and 30 excavated pits up to 5.2 metres deep in the Waste Pile, with 46 samples taken. Holes were drilled and excavated by TBTE in 2010 (Table 2, Figure 7). The 87 boreholes are spaced 20 metres apart in diamond grid pattern. The boreholes tested mineralization to a vertical depth up to 3.9 metres. The excavated pits provided a total of 1.22 tonnes of sample material. In order to complete the resource estimates, GeoVector was provided with a drill hole database which included collar locations, hole orientations, and assay data. TBTE surveyed the topographic surfaces of the Waste Pile and Tailings area using a Trimble R8 RTK GPS, with an accuracy of 1cm, and GeoVector was also provided with this data.

The database was checked for errors. The assay database was checked for sample overlaps and gapping in intervals. The database was checked for typographical errors in assay values and supporting information on source of assay values was completed. Generally the database was in good shape and was accepted by GeoVector as is. Verifications were also carried out on hole and pit locations and topography information.

A summary of a statistical analysis of assays from Sturgeon River Mine Waste Pile and Tailings Area is presented in Table 3. The statistical analysis of the assay data was completed in Gemcom GEMS 6.4.1 software.

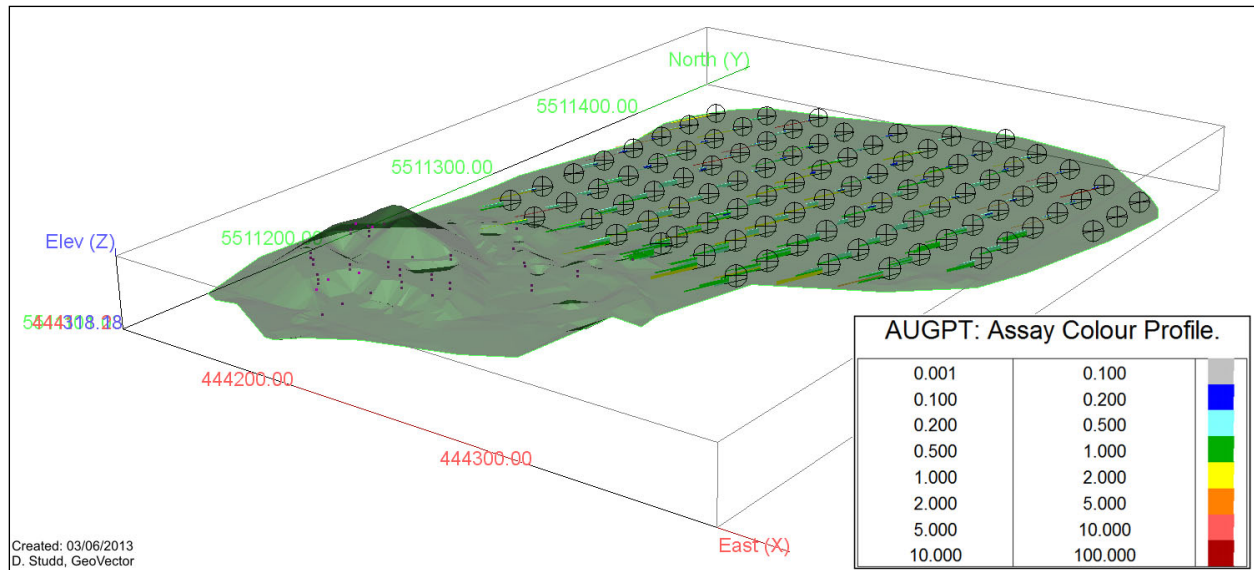
**Table 2 Summary of the drill hole data used in the resource modeling.**

Sturgeon River Mine Waste Pile and Tailings Area		
Tailings Area	Number of bore holes	87
	Total meters of drilling	156.6
	Total number of assay samples	376
Waste Pile	Number of pits excavated	30
	Total tonnes of rock excavated	1.22
	Total number of assay samples	46

**Table 3 Summary of all bore hole assay data from the drill database.**

Sturgeon River Mine Tailings Area	
Variable	Au (g/t)
Number of samples	376
Average Sample Length (m)	0.42
Total Length of Assay Samples (m)	156.6
Minimum value	0.00
Maximum value	21.5
Mean	0.69
Median	0.37
Variance	2.47
Standard Deviation	1.57
Coefficient of variation	2.27
99 Percentile	6.79

**Figure 7 Isometric view looking northwest showing the bore hole distribution, with topography for the Sturgeon River Mine Waste Pile and Tailings. Bore holes are shown with histograms for Au on the drill hole trace.**

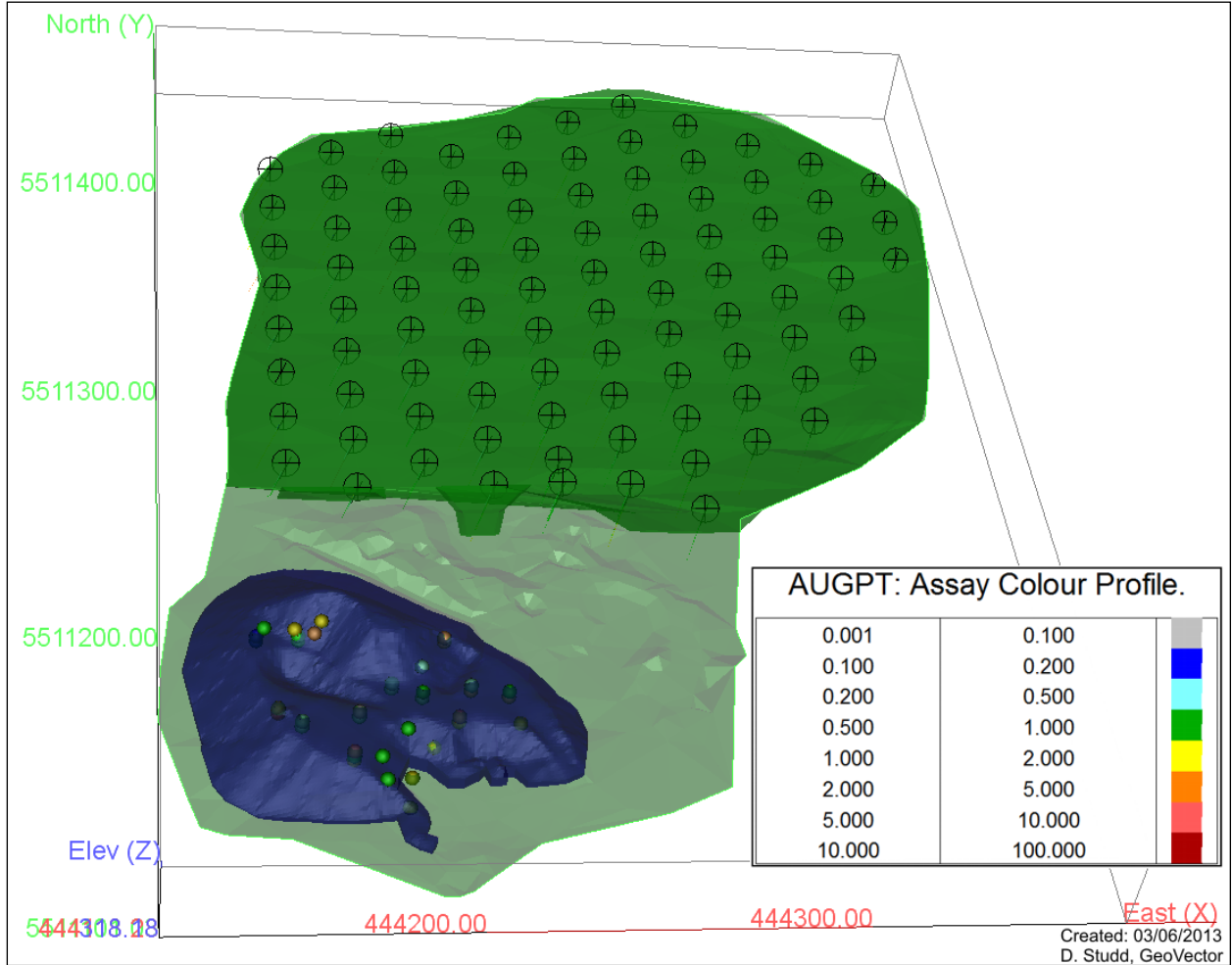


## 14.2 Resource Modelling and Wireframing

For the 2013 Ishkoday Waste Pile and Tailings Area, models were built for the two areas using provided topography and bases interpreted from borehole and pit depths. The two surfaces were intersected to create solids representing the Tailings Area and Waste Pile (Figure 8). The northern portion of the waste pile was clipped from the model, as sampling results indicated that it contained negligible amounts of Au. The modeling was completed in Gemcom GEMS 6.4.1 software.



**Figure 8** Isometric view looking north showing the Sturgeon River Mine Waste Pile (blue) and Tailings (green) resource model, surface topography and drill hole and sample locations.



### **14.3 Composites**

The assay sample database available for the Sturgeon River Mine Tailings Area resource totalled 376 samples representing 156.6 metres of drilling (Table 2). The average width of bore hole samples is 0.42 metres, within a range of 0.1 metres up to 1.1 metres. Of the total assay population 82% were between 0.2 and 0.6 metres, and only 1.6% of the assay samples were greater than 0.6 metres. As a result, 0.3 metre composites were used for the resource.

Composites for bore holes were generated starting from the collar of each hole and totalled 540. Composites created in un-sampled areas (gaps in the assay sample database) were assigned a gold grade value of 0.001. These composite values were used to interpolate grade into the Tailings Area resource model.

The assay sample database available for the Waste Pile totalled 46 samples, representing 1.22 tonnes of rock. The samples varied from 20.8-30.7 kilograms. Compositing was not applied. Nine of the samples were found to represent a portion of the Waste Pile that was unmineralized. As this portion of the Waste Pile was excluded from the resource model, these 9 samples were excluded from the resource calculation. Thus, 37 samples were used to interpolate grade into the Waste Pile resource model.

### **14.4 Grade Capping**

For the Sturgeon River Mine Waste Pile and Tailings Area resource estimates, the composites were domained into mineralization and waste based on whether they intersected the resource models. These values were used to interpolate grade into their respective resource blocks.

Based on a statistical analysis of the composite database from each resource model, it was decided that a 10 g/t Au cap was required on the composite populations to limit high values. Histograms of the data indicate a log normal distribution of the metals with very few outliers within the database. Analyses of the spatial location of these samples and the sample values proximal to them led GeoVector to believe that the high values were legitimate parts of the population, however, of including these high composite values uncut would have a significant impact to the overall resource estimate.

### **14.5 Specific Gravity**

As the resource contains broken and compacted rock piles, standard methods for measuring specific gravities of drill core can't be used. The specific gravity applied to the block model was 2.20 t/m<sup>3</sup>. This is a standard engineering estimate for broken and compacted rock.

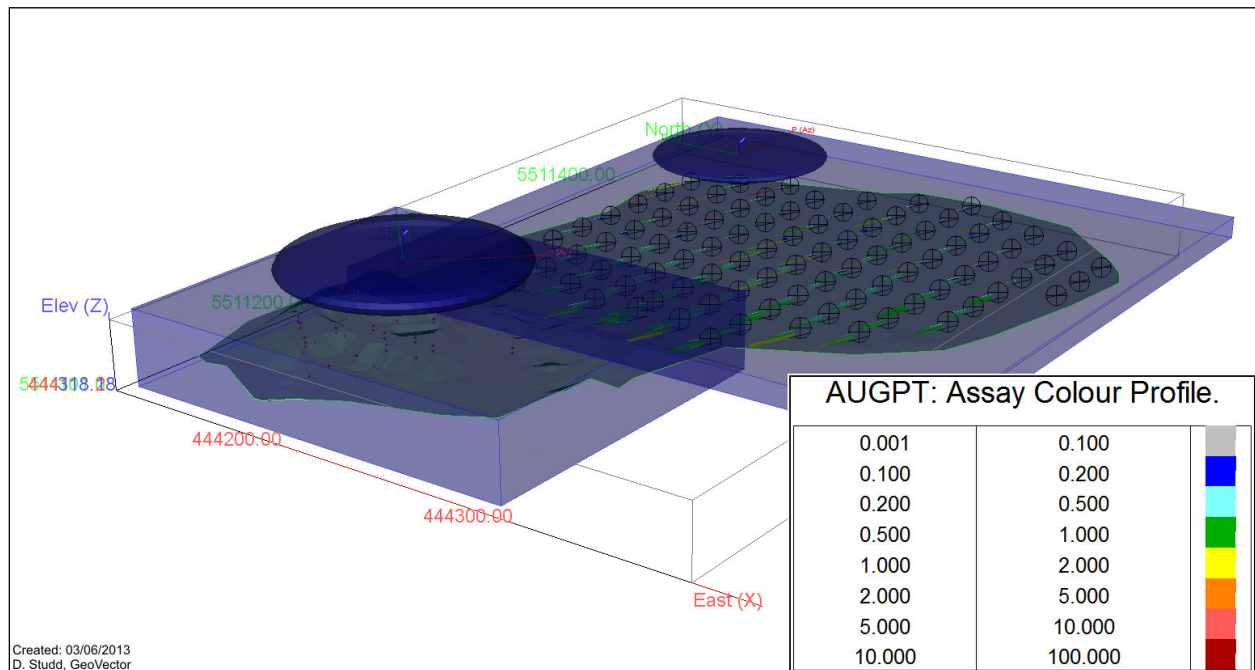
### **14.6 Block Model**

Separate block models were created for the Sturgeon River Mine Waste Pile and for the Tailings Area (Figure 9) within NAD 83 Zone16 space. Block model dimensions are listed in Table 4. Block model size was designed to reflect the spatial distribution of the raw data – i.e. the drill hole spacing within the mineralized zone. For the waste pile, it was decided to create resource blocks that were 4 x 4 x 0.5 metres in size in the X, Y, and Z directions, respectively. At this scale of the deposit this still provides a reasonable block size for discerning grade distribution, while still being large enough not to mislead when looking at higher cut-off grade distribution within the model. For the tailings area, it was decided to create resource blocks that were 4 x 4 x 0.3 metres in size in the X, Y, and Z directions, respectively. The model was intersected with the resource models to exclude blocks outside of the waste pile and the tailings area.

**Table 4 Sturgeon River Mine Waste Pile and Tailings resource block model geometries.**

Model Name	Waste Pile			Tailings Area		
	X	Y	Z	X	Y	Z
Origin (NAD83, Zone16)	444120	5511110	347	444120	5511220	330
Extent	42	35	60	65	65	30
Block Size	4	4	0.5	4	4	0.3
Rotation	0°			0°		

**Figure 9 Isometric view looking northwest shows the Sturgeon River Mine Waste Pile and for the Tailings Area drill holes, resource block model and search ellipse.**



## 14.7 Grade Interpolation

The primary aim of the interpolation was to fill all the blocks within the resource model with grade. Grades for Au were interpolated into the Sturgeon River Mine Waste Pile and Tailings Area resource blocks by the inverse distance squared (ID2) method using a minimum of 2 and maximum of 12 composites to generate block grades in the Inferred category. The Author notes that, for models well-constrained by wireframes and well-sampled, ID2 should yield a very similar result to other interpolation methods such as Ordinary Kriging (OK).

The size of the search ellipses, in the X, Y, and Z direction, used to interpolate grade into the resource blocks are based on the inferred structural composition of the waste pile and tailings area which are assumed to have been built from the base upwards, leading to a stratified distribution of gold similar to that which might be found in sedimentary rocks (Figures 8).

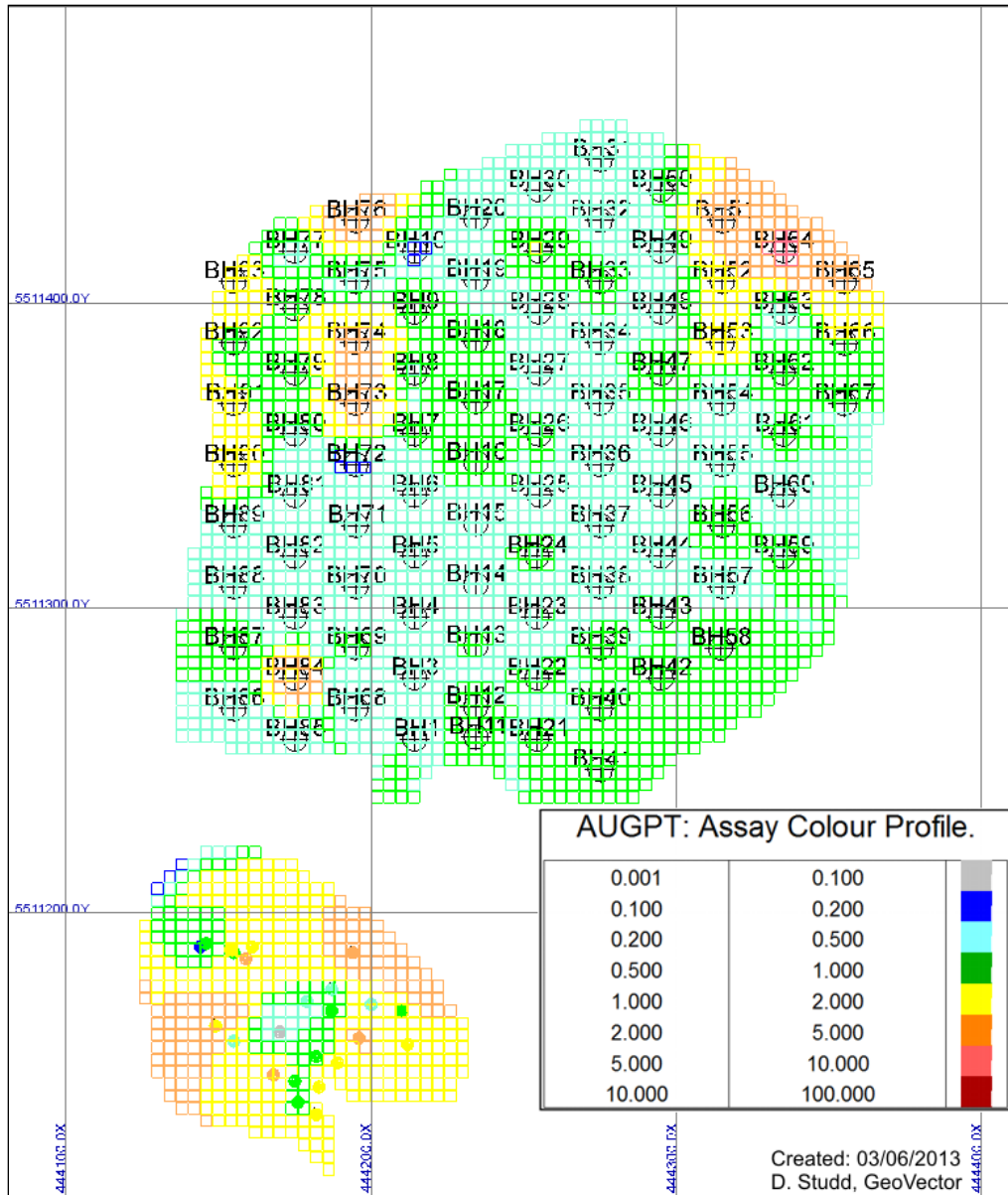
For the Sturgeon River Mine Waste Pile resource the size of the search ellipse was set at 50 x 50 x 10 metres in the X, Y, Z directions. For the Sturgeon River Mine Tailings Area resource the size of the search ellipse was set at 40 x 40 x 5 metres in the X, Y, Z directions. No rotations were applied to either search ellipse. The search ellipse shape was designed to reflect the shape of the Mine Waste Pile and Mine Tailings models and the distribution of the resource composite samples.

#### **14.8 Model Validation**

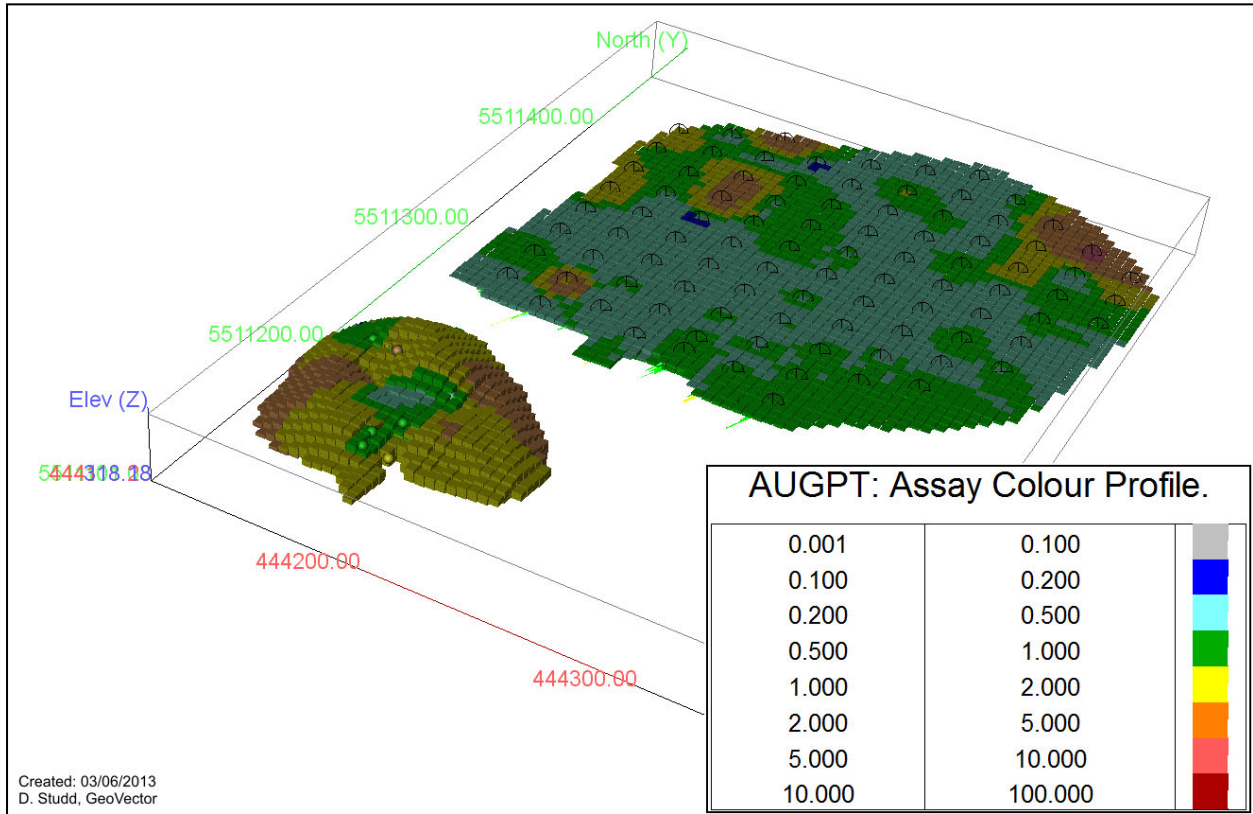
The total volume of the blocks in each resource model, at a 0 cut-off grade value compared to the volume of each wireframe model was essentially identical. The size of the search ellipse and the number of samples used to interpolate grade achieved the desired effect of filling the resource models and very few blocks had zero grade interpolated into them.

Because ID2 interpolation was used the sample grades would be expected to show good correlation with the modeled block grades. Visual checks of block grades of gold against the composite data used to interpolate grade was conducted in plan view (Figure 10), in 3D (Figure 11) and on vertical sections (Figure 12 A and B). The resource model showed excellent correlation between block grades and drill intersections. A statistical comparison of block grades with composite grades was also conducted. The Sturgeon River Mine Waste Pile and for the Tailings Area resource models are considered valid.

**Figure 10** Plan view shows the Sturgeon River Mine Waste Pile and Tailings Area resource blocks.

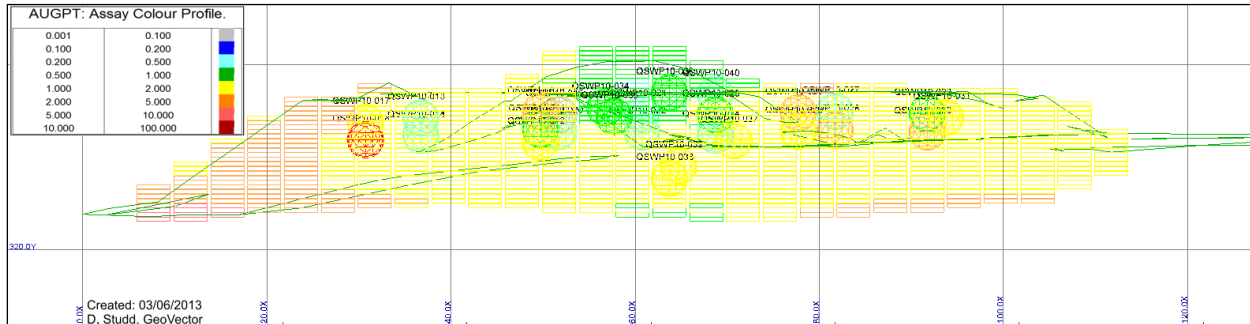


**Figure 11** Isometric view looking northwest shows the Sturgeon River Mine Waste Pile and Tailings Area resource blocks.

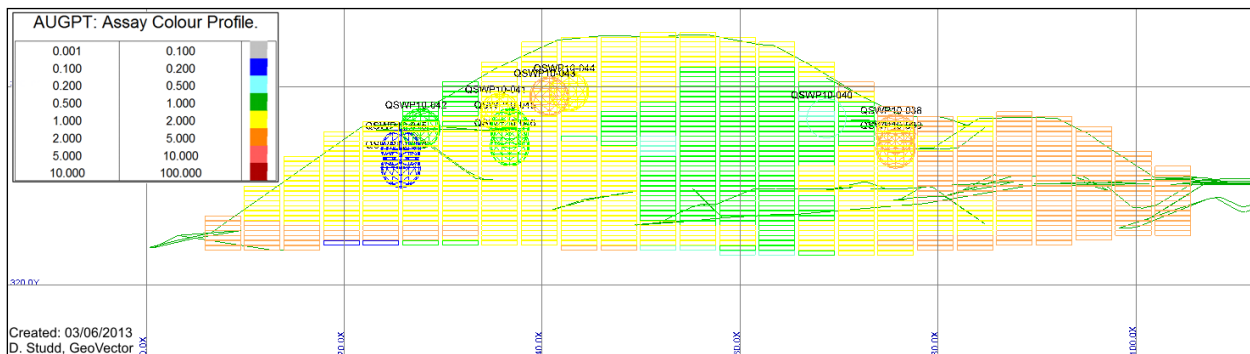


**Figure 12 Vertical sections A-B looking north and stepping south to north shows the Sturgeon River Mine Waste Pile resource blocks, resource model and drill holes. Sample locations are shown by spheres coloured according to Au assay value.**

(A)



(B)



## 14.9 Resource Classification

The Mineral Resource estimate is classified in accordance with the CIM Definition Standards for Mineral Resources and Mineral Reserves (2010). Based on the current drill sample database, it is considered that there is sufficient drill density and confidence in the distribution of gold within the resource models to classify the Sturgeon River Mine Waste Pile and for the Tailings Area mineralization as Inferred. Therefore, all material in the Resource estimates is classified as Inferred.

## 14.10 Resource Reporting

An 'Indicated Mineral Resource' is that part of a Mineral Resource for which quantity, grade or quality, densities, shape and physical characteristics can be estimated with a level of confidence sufficient to allow the appropriate application of technical and economic parameters, to support mine planning and evaluation of the economic viability of the deposit. The estimate is based on detailed and reliable exploration and testing information gathered through appropriate techniques from locations such as outcrops, trenches, pits, workings and drill holes that are spaced closely enough for geological and grade continuity to be reasonably assumed.

Mineralization may be classified as an Indicated Mineral Resource by the Qualified Person when the nature, quality, quantity and distribution of data are such as to allow confident interpretation of the

geological framework and to reasonably assume the continuity of mineralization. The Qualified Person must recognize the importance of the Indicated Mineral Resource category to the advancement of the feasibility of the project. An Indicated Mineral Resource estimate is of sufficient quality to support a Preliminary Feasibility Study which can serve as the basis for major development decisions.

GeoVector has estimated a range of Indicated resources at various gold (Au) cut-off grades for the Sturgeon River Mine Waste Pile (Table 4) and Tailings (Table 5). Using a 0.0 Au g/t cut-off grade, the Waste Pile is estimated to contain an Indicated Mineral Resource of 144,070 tonnes at 1.59 g/t for a total of 7,383 ounces Au. Using a 0.0 Au g/t cut-off grade, the Tailings Area is estimated to contain an Indicated Mineral Resource of 137,501 tonnes at 0.67 g/t for a total of 2,944 ounces Au

**Table 5 A range of Indicated Resource Estimates for the Sturgeon River Mine Waste Pile. The resource for the Sturgeon River Mine Waste Pile is reported at a gold cut-off grade of 0.0 g/t (red).**

Cut-off Grade (Au)	Tonnes	Gold	
		Grade	Ozs
<b>0.0 g/t</b>	<b>144,070</b>	<b>1.59</b>	<b>7,383</b>
0.1 g/t	140,688	1.63	7,383
0.2 g/t	139,821	1.64	7,378
0.3 g/t	138,555	1.65	7,367
0.4 g/t	133,684	1.70	7,313
0.5 g/t	128,603	1.75	7,239
1.0 g/t	96,518	2.08	6,456

**Table 6 A range of Indicated Resource Estimates for the Sturgeon River Mine Tailings Area. The resource for the Sturgeon River Mine Waste Pile is reported at a gold cut-off grade of 0.0 g/t (red).**

Cut-off Grade (Au)	Tonnes	Gold	
		Grade	Ozs
<b>0.0 g/t</b>	<b>137,501</b>	<b>0.67</b>	<b>2,944</b>
0.2 g/t	137,190	0.67	2,944
0.3 g/t	130,454	0.69	2,884
0.5 g/t	78,150	0.87	2,197

#### 14.11 Disclosure

GeoVector does not know of any environmental, permitting, legal, title, taxation, socio-economic, marketing or political issue that could materially affect the Mineral Resource Estimate. In addition GeoVector does not know of any mining, metallurgical, infrastructural or other relevant factors that could materially affect the Mineral Resource estimate.



## **15 ADJACENT PROPERTIES**

There is no information on properties adjacent to the Project necessary to make the technical report understandable and not misleading.

## **16 OTHER RELEVANT DATA AND INFORMATION**

All relevant data and information regarding the Property is included in other sections of this Technical Report. There is no other relevant data or information available that is necessary to make the technical report understandable and not misleading.

## **17 INTERPRETATION AND CONCLUSIONS**

The following information describes the interpretation and conclusions for the exploration completed on the Property to date. To the Author's knowledge, there are no significant risks and uncertainties that could reasonably be expected to affect the reliability or confidence in the exploration information. To the Author's knowledge, there are no reasonably foreseeable risks and uncertainties to the projects economic viability or continued viability.

The Sturgeon River Mine reported a historical production of 73,322 ounces of gold and 15,929 ounces of silver from 145,123 tons taken primarily from No. 3 Vein during 1936 to 1942, but also from the No. 10 Vein and the M Vein that were encountered at the lower depths of the mine in the later years of mine life. During mine life the mine development material was hand sorted at surface and lower grade material was stockpiled next to the mine shaft and mill locations. The higher grade quartz veins were milled with tailings placed in a natural depression next to the mill site.

Using the results of work commissioned by Laurion during the summer of 2010, GeoVector has estimated Indicated Resource numbers for the waste pile and tailings area at the Sturgeon River Mine. Eighty seven bore holes were drilled into the tailings area, totalling 156.6 metres and 273 assay samples. Thirty pits were excavated in the waste pile, totalling 1.22 tonnes and 46 assay samples.

Inverse distances squared interpolation restricted to mineralized domains was used to estimate gold into the resource block model, using Gemcom GEMS 6.4.1 resource modelling software. Using a 0.0 Au g/t cut-off grade, the Waste Pile is estimated to contain an Indicated Mineral Resource of 144,070 tonnes at 1.59 g/t for a total of 7,383 ounces Au. Using a 0.0 Au g/t cut-off grade, the Tailings Area is estimated to contain an Indicated Mineral Resource of 137,501 tonnes at 0.67 g/t for a total of 2,944 ounces Au.

## **18 RECOMMENDATIONS**

Following the results of the resource modelling and metallurgical testing reported above - with 7,383 ounces Au and 2,944 ounces Au reported in the Waste Pile and Tailings Area, respectively – GeoVector recommends that Laurion commence a study to determine whether the reported gold can be economically extracted from the Sturgeon River Mine Waste Pile and Tailings Area. The results of the metallurgical testing indicate that a significant portion of the contained metals could be extracted using simple milling processes.

There is no further drilling or sampling recommended on the Waste Pile and Tailings Area.

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## **20 CERTIFICATES OF AUTHORS - DATED AND SIGNATURES**

This report titled "Technical Report on the Resource Estimate on the Sturgeon River Mine Waste Pile and Tailings, Ishkoday Property, Northern Ontario", June 7<sup>th</sup>, 2013 (the "Technical Report") was prepared and signed by the following authors:

Dated effective April 23<sup>rd</sup>, 2013

Signed by:

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# APPENDIX 1

## Listing of Bore Holes Completed on the Tailings Pile

HOLE-ID	LOCATIONX	LOCATIONY	LOCATIONZ	LENGTH
BH1	444214.32	5511257.01	325.92	3.00
BH3	444214.29	5511277.03	325.27	2.70
BH4	444214.31	5511296.99	324.84	2.70
BH5	444214.32	5511316.99	324.63	1.80
BH6	444214.33	5511336.98	324.21	1.50
BH7	444214.32	5511356.98	323.92	0.70
BH8	444214.33	5511376.97	323.60	0.90
BH9	444214.34	5511396.94	323.35	1.10
BH10	444214.32	5511416.87	323.04	1.00
BH11	444234.35	5511257.66	326.73	4.50
BH12	444234.26	5511267.66	326.24	3.00
BH13	444234.31	5511287.63	325.61	2.80
BH14	444234.28	5511307.63	325.29	3.00
BH15	444234.32	5511327.62	324.83	2.40
BH16	444234.33	5511347.63	324.32	1.50
BH17	444234.30	5511367.56	324.14	1.50
BH18	444234.29	5511387.59	323.86	1.20
BH19	444234.34	5511407.59	323.68	1.10
BH20	444234.30	5511427.58	323.46	0.60
BH21	444254.30	5511257.01	326.86	4.50
BH22	444254.29	5511277.02	326.28	3.40
BH23	444254.27	5511297.00	325.76	2.80
BH24	444254.29	5511316.98	325.23	2.30
BH25	444255.01	5511337.00	324.85	2.40
BH26	444254.97	5511356.99	324.38	1.70
BH27	444254.97	5511377.04	323.96	1.20
BH28	444255.02	5511396.99	323.79	1.20
BH29	444255.02	5511416.96	323.60	1.10
BH30	444254.98	5511436.96	323.51	0.60
BH31	444275.03	5511447.01	323.62	0.90
BH32	444275.02	5511427.02	323.65	1.20
BH33	444274.97	5511406.98	323.71	1.20
BH34	444275.02	5511386.99	323.89	1.50
BH35	444274.99	5511367.02	324.26	1.80
BH36	444275.02	5511346.98	324.70	2.10
BH37	444274.99	5511327.02	325.05	1.80

HOLE-ID	LOCATIONX	LOCATIONY	LOCATIONZ	LENGTH
BH38	444274.99	5511306.97	325.46	2.90
BH39	444275.02	5511286.97	325.97	3.00
BH40	444274.98	5511267.01	326.13	2.90
BH41	444275.03	5511246.99	326.86	2.10
BH42	444295.02	5511276.94	326.10	2.90
BH43	444295.01	5511297.02	325.50	2.40
BH44	444295.00	5511317.00	325.12	2.40
BH45	444295.02	5511336.96	324.63	2.30
BH46	444295.03	5511356.97	324.23	1.80
BH47	444294.97	5511376.99	323.99	1.30
BH48	444294.98	5511396.96	323.90	1.50
BH49	444295.05	5511416.97	323.71	1.30
BH50	444295.03	5511437.01	323.60	1.20
BH51	444315.06	5511426.92	323.81	1.00
BH52	444315.04	5511406.97	323.85	0.90
BH53	444314.95	5511387.02	324.00	1.20
BH54	444315.02	5511366.98	324.21	2.10
BH55	444314.97	5511346.95	324.19	2.40
BH56	444314.95	5511327.03	324.43	2.10
BH57	444314.96	5511306.96	324.98	2.30
BH58	444314.42	5511286.88	325.80	2.80
BH59	444334.97	5511316.93	324.84	2.40
BH60	444334.99	5511336.96	324.62	2.10
BH61	444335.01	5511356.97	324.38	2.70
BH62	444334.99	5511377.04	324.26	1.50
BH63	444334.99	5511396.99	323.98	1.20
BH64	444335.05	5511417.05	324.12	0.90
BH68	444194.97	5511266.97	325.06	2.40
BH69	444194.98	5511287.03	324.86	2.30
BH70	444195.00	5511306.99	324.53	2.10
BH71	444194.96	5511327.05	324.38	2.20
BH72	444194.98	5511347.00	323.99	1.40
BH73	444195.06	5511367.01	323.76	1.20
BH74	444195.00	5511387.00	323.53	1.10
BH75	444195.00	5511406.98	323.37	1.10
BH76	444194.99	5511426.95	323.19	0.60
BH77	444174.96	5511416.93	322.98	0.90
BH78	444175.17	5511398.06	323.17	0.90
BH79	444174.99	5511377.03	323.32	1.10
BH80	444174.98	5511357.01	323.65	1.00

<b>HOLE-ID</b>	<b>LOCATIONX</b>	<b>LOCATIONY</b>	<b>LOCATIONZ</b>	<b>LENGTH</b>
BH81	444174.98	5511336.93	323.77	1.30
BH82	444174.99	5511316.96	324.07	1.60
BH83	444175.02	5511297.04	324.27	1.60
BH84	444174.95	5511276.95	324.53	1.70
BH85	444175.03	5511257.02	324.48	2.00
BH86	444155.01	5511266.97	324.22	1.80
BH87	444154.96	5511287.05	324.08	1.30
BH89	444155.01	5511326.99	323.72	1.60
BH90	444155.06	5511346.94	323.45	1.00
BH91	444154.97	5511367.00	323.26	0.80
BH92	444154.96	5511386.95	323.13	0.70
BH93	444155.02	5511407.04	322.96	0.60