



NI 43-101 TECHNICAL REPORT  
FOR THE  
HOPE BROOK GOLD PROJECT  
NEWFOUNDLAND AND LABRADOR  
CANADA

Prepared for: Big Ridge Gold Corp.

Prepared by Qualified Persons:

Michael Cullen, P. Geo.

Matthew Harrington, P. Geo.

Jeffrey Burke, P. Geo.

Effective Date: April 6<sup>th</sup>, 2021

Report Date: May 6<sup>th</sup>, 2021

**Date and Signature Page**

The effective date of the Hope Brook gold deposit mineral resource estimate described in this technical report prepared by Mercator Geological Services Limited for Big Ridge Gold Corp. is April 6<sup>th</sup>, 2021.

*“original signed and stamped by”*

Date: May 6<sup>th</sup>, 2021

---

Michael Cullen, P. Geo.  
Chief Geologist  
Mercator Geological Services Limited

*“original signed and stamped by”*

Date: May 6<sup>th</sup>, 2021

---

Matthew Harrington, P. Geo.  
Senior Resource Geologist  
Mercator Geological Services Limited

*“original signed and stamped by”*

Date: May 6<sup>th</sup>, 2021

---

Jeffrey Burke, P. Geo.  
Independent Consultant

## TABLE OF CONTENTS

<b>DATE AND SIGNATURE PAGE.....</b>	<b>I</b>
<b>1.0 SUMMARY .....</b>	<b>1</b>
1.1 Introduction.....	1
1.2 Reliance on Other Experts.....	1
1.3 Property Description .....	2
1.3.1 Mineral Exploration Holdings .....	2
1.3.2 Earn-In Agreement with First Mining .....	2
1.3.3 Site Visits by Authors .....	3
1.4 Accessibility, Climate, Local Resources, Infrastructure and Physiography .....	4
1.5 History .....	5
1.6 Geological Setting and Mineralization .....	7
1.6.1 Regional Setting .....	7
1.6.2 Property Geology .....	7
1.6.3 Mineralization .....	8
1.7 Deposit Type.....	10
1.8 Exploration .....	11
1.9 Drilling.....	11
1.10 Sample Preparation, Analysis and Security.....	12
1.11 Data Verification.....	13
1.11.1 Review and Validation of Project Data Sets .....	13
1.11.2 January 2021 Site Visit .....	13
1.11.3 Mercator Site Visits.....	14
1.12 Mineral Processing and Metallurgical Testing .....	14
1.12.1 Historical Production and Processing .....	14
1.12.2 Coastal Gold Programs.....	15
1.13 Mineral Resource Estimates.....	15
1.14 Environmental Studies, Permitting, and Social or Community Impact.....	16
1.15 Adjacent Properties.....	17
1.16 Other Relevant Data and Information.....	17
1.17 Interpretation and Conclusions.....	17
1.17.1 Mineral Resources and Future Exploration Potential .....	17
1.17.2 Project Risks .....	19
1.18 Recommendations.....	19
<b>2.0 INTRODUCTION.....</b>	<b>21</b>
2.1 Terms of Study.....	21

2.2	Earn-In Agreement with First Mining .....	21
2.3	Terms of Engagement .....	24
2.4	Qualified Person Responsibilities .....	24
2.5	Scope of Project.....	25
2.6	Site Visits by Authors.....	26
2.7	Abbreviations Used in this Report.....	27
<b>3.0</b>	<b>RELIANCE ON OTHER EXPERTS .....</b>	<b>29</b>
<b>4.0</b>	<b>PROPERTY DESCRIPTION AND LOCATION.....</b>	<b>30</b>
4.1	Exploration Licences and Claims .....	30
4.2	Earn-In Agreement Between Big Ridge and First Mining.....	34
4.3	Royalty Agreement.....	36
4.4	Mineral Tenure System in Newfoundland and Labrador .....	37
4.5	Permits Required for Recommended Future Exploration.....	39
4.6	Environmental Liabilities .....	40
4.7	Availability of Land for Potential Future Site Development.....	42
<b>5.0</b>	<b>ACCESSIBILITY, CLIMATE, LOCAL RESOURCES, INFRASTRUCTURE AND PHYSIOGRAPHY</b>	<b>43</b>
5.1	Accessibility, Local Resources and Infrastructure .....	43
5.2	Climate and Physiography .....	48
5.2.1	Climate .....	48
5.2.2	Physiography.....	48
5.2.3	Availability of Surface Rights, Power, Water and Personnel .....	51
<b>6.0</b>	<b>HISTORY.....</b>	<b>53</b>
6.1	Introduction.....	53
6.2	Summary of Exploration and Mining Histories .....	53
6.3	Government Reporting, University Theses and Recent Academic Work .....	59
6.4	Summary of Coastal Gold Exploration .....	60
6.5	Initial Review of High Grade Mining Potential by Coastal Gold .....	62
6.6	Mineral Resource Estimates – February 2012 to January 2015.....	63
6.7	Exploration Programs by First Mining.....	64
<b>7.0</b>	<b>GEOLOGICAL SETTING AND MINERALIZATION.....</b>	<b>66</b>
7.1	Geological Setting.....	66
7.1.1	Tectonic Framework Summary.....	66
7.1.2	Regional Geology .....	68
7.2	Mineralization .....	74
7.2.1	Introduction .....	74



---

7.2.2	Hope Brook Deposit .....	76
7.2.3	Structural Geology .....	80
7.2.4	Metal Zonation and Geometry of Gold Distribution .....	84
7.3	Other Gold Occurrences and Mineralization Styles .....	85
7.3.1	Introduction .....	85
7.3.2	Old Man’s Pond.....	88
7.3.3	Phillips Brook .....	88
7.3.4	Cross Gulch Area.....	89
<b>8.0</b>	<b>DEPOSIT TYPES.....</b>	<b>91</b>
8.1	Introduction.....	91
8.2	Summary Description of Hope Brook Deposit .....	92
8.3	Ironbound Hill Prospect.....	95
8.4	Summary Description of Other Gold Occurrences of the HBGP .....	96
8.5	Deposit Models and Classification .....	98
8.6	Other Appalachian Examples of Avalonian Gold Deposits.....	101
8.7	Ironbound Hill Prospect.....	101
<b>9.0</b>	<b>EXPLORATION .....</b>	<b>102</b>
<b>10.0</b>	<b>DRILLING.....</b>	<b>103</b>
10.1	Introduction.....	103
10.2	Coastal Gold Programs between September, 2010 and October, 2013.....	103
10.2.1	Coastal Gold Program I - September 2010 to January, 2011 .....	104
10.2.2	Coastal Gold Program II - February 2011 to December 2011.....	105
10.2.3	Coastal Gold Program III - February, 2012 to May, 2012 .....	110
10.3	Historical Drilling By BP and Royal Oak .....	116
10.3.1	Summary of Historical Drilling Programs.....	116
10.3.2	Summary of BP and Royal Oak Drilling Program Results.....	117
10.4	Mercator Comment on Diamond Drilling Program Results .....	117
10.5	Vibracore Tailings Drilling Program – September and October 2013.....	119
10.5.1	Description of Program and Results .....	119
<b>11.0</b>	<b>SAMPLE PREPARATION, ANALYSES AND SECURITY.....</b>	<b>121</b>
11.1	Introduction.....	121
11.2	Drill Core Sampling for Coastal Gold Programs.....	121
11.3	Drill Core Analysis for Coastal Gold Programs .....	122
11.4	Quality Control and Assurance for Coastal Gold Programs .....	123
11.4.1	Coastal Gold Programs: September 2010 through July 2012.....	123
11.4.2	Coastal Gold Programs: October 2012 through November 2013 .....	124
11.5	Sample Preparation and Security for BP and Royal Oak Programs.....	139

---

11.6	Drill Core Analysis for BP and Royal Oak Programs.....	139
11.7	Quality Control and Assurance for BP and Royal Oak Programs .....	139
11.8	Summary Comment on Sample Preparation, Analysis and Security Programs .....	140
<b>12.0</b>	<b>DATA VERIFICATION.....</b>	<b>141</b>
12.1	Review and Validation of Project Data Sets .....	141
12.2	Site Visit by Author J. Burke, P. Geo. - January 23 and 24, 2021 .....	142
12.2.1	Introduction .....	142
12.2.2	Site Visit Schedule and Logistics .....	143
12.2.3	Main Camp and Buildings .....	144
12.3	Roads, Airstrip and Fencing.....	145
12.3.1	Mine Portal, Tailings Dams and Pit Area .....	146
12.3.2	Drill Site Inspections .....	147
12.3.3	Core Facility.....	149
12.3.4	Drill Core Review.....	150
12.3.5	Check Sampling Program .....	153
12.3.6	Site Visits by Author M. Cullen, P. Geo. ....	154
12.4	Drill Hole Twinning Program .....	155
<b>13.0</b>	<b>MINERAL PROCESSING AND METALLURGICAL TESTING .....</b>	<b>157</b>
13.1	Post-Production Period Testing.....	157
13.2	Summary of Historical Processing Approaches.....	158
<b>14.0</b>	<b>MINERAL RESOURCE ESTIMATES .....</b>	<b>161</b>
14.1	General .....	161
14.2	Resource Estimation Rationale and Approach.....	161
14.3	Resource Model Data Set and Validation.....	162
14.4	Data Domains and Solid Modeling Spatial Constraints.....	163
14.4.1	Topographic Surface .....	163
14.4.2	High Grade Domain and Low Grade Domain Solid Models.....	164
14.4.3	Mafic Dike, Chetwynd Granite, Chetwynd Dike and Northeast Mafic Solid Models .....	166
14.4.4	Void Solid Models .....	170
14.5	Data Analysis .....	171
14.5.1	Raw Assays Samples .....	171
14.5.2	Capping of Raw Assay Values .....	173
14.6	Bulk Density.....	176
14.7	Variography and Analysis .....	177
14.8	Search Ellipsoid Dimensions and Orientation .....	178
14.9	Resource Estimation Parameters and Interpolation.....	179
14.10	Block Model Setup.....	179

---

14.10.1	Partial Percentage Estimation .....	180
14.10.2	Mafic Dike Probability Model .....	181
14.11	Silicic Percent, Percent Bedrock, and Void Model .....	183
14.11.1	Silicic Gold Grade Interpolation .....	184
14.11.2	Mafic Dike Gold Grade Interpolation.....	185
14.12	Mineral Resource Classification .....	185
14.13	Mineral Resource Estimate Gold Cut-off Grade.....	187
14.14	Mineral Resource Tabulation .....	187
14.15	Block Model Tonnage and Grade Sensitivity.....	188
14.16	Model Validation .....	189
14.16.1	Visual Inspection and Global Block Grade Statistics.....	189
14.16.2	Model Validation: Interpolation Check and Swath Plot Check.....	192
14.17	Comparison with Previous Resource Estimate .....	195
<b>15.0</b>	<b>MINERAL RESERVE ESTIMATES .....</b>	<b>197</b>
<b>16.0</b>	<b>MINING METHODS .....</b>	<b>197</b>
<b>17.0</b>	<b>RECOVERY METHODS .....</b>	<b>197</b>
<b>18.0</b>	<b>PROJECT INFRASTRUCTURE .....</b>	<b>197</b>
<b>19.0</b>	<b>MARKET STUDIES AND CONTRACTS .....</b>	<b>197</b>
<b>20.0</b>	<b>ENVIRONMENTAL STUDIES, PERMITTING AND SOCIAL OR COMMUNITY IMPACT .....</b>	<b>198</b>
20.1	Hope Brook Access Road Environmental Assessment Registration.....	198
<b>21.0</b>	<b>CAPITAL AND OPERATING COSTS.....</b>	<b>201</b>
<b>22.0</b>	<b>ECONOMIC ANALYSIS.....</b>	<b>201</b>
<b>23.0</b>	<b>ADJACENT PROPERTIES .....</b>	<b>201</b>
<b>24.0</b>	<b>OTHER RELEVANT DATA AND INFORMATION.....</b>	<b>201</b>
<b>25.0</b>	<b>INTERPRETATION AND CONCLUSIONS .....</b>	<b>202</b>
25.1	Project Scope and Overview.....	202
25.2	Mineral Resource Estimate .....	203
25.3	Future Deposit Assessment and Property Exploration Requirements .....	205
25.4	Project Risks.....	207
<b>26.0</b>	<b>RECOMMENDATIONS.....</b>	<b>208</b>
26.1	Introduction.....	208
26.2	Recommended Phase I Programs.....	208
26.3	Recommended Phase II Programs.....	209
<b>27.0</b>	<b>REFERENCES.....</b>	<b>211</b>

**28.0 STATEMENT OF QUALIFICATIONS .....223**  
**APPENDIX I .....230**  
**APPENDIX II .....231**  
**APPENDIX III .....270**

---

## List of Figures

Figure 4-1: Project location map.....	31
Figure 4-2: Project location map.....	32
Figure 5-1: Location of transportation infrastructure and local communities .....	44
Figure 5-2: View of docking facility at Couteau Bay .....	46
Figure 5-3: View of airstrip at Hope Brook site.....	46
Figure 5-4: Site roads available for use during exploration programs .....	47
Figure 5-5: Main tailings pond facility at Hope Brook site.....	47
Figure 5-6: Topographic break between Silurian and older sequences at Dinnerbox Hill .....	49
Figure 5-7: Tundra and forested river valley settings in Hope Brook area .....	50
Figure 7-1: Lithotectonic zone of Newfoundland .....	67
Figure 7-2: Geological map of the HBGP area .....	69
Figure 7-3: Geological map of the Ironbound Hill area .....	70
Figure 7-4: Summary of igneous activity and alteration in the HBGP area .....	73
Figure 7-5: Location plan for HBGP prospects and historic exploration areas .....	75
Figure 7-6: Mafic dike distribution on the 4960 Level of Hope Brook Mine .....	83
Figure 7-7: Longitudinal section of contoured gold (g/t) grades in Hope Brook deposit.....	86
Figure 7-8: Longitudinal section of gold (g/t) x silicified zone horizontal width(m) .....	87
Figure 8-1: Geology of the Hope Brook deposit area (after Stewart, 1992) .....	93
Figure 8-2: Hope Brook Project interpreted section 11850E (looking northeast) – taken from Coastal files .....	94
Figure 8-3: Ironbound Hill drill hole locations (from Coastal Gold files, 2017) .....	97
Figure 8-4: Schematic model for gold mineralization.....	100
Figure 10-1: Summary map of drill holes relative to the mineral resource estimate outline ....	104
Figure 10-2: Representative geological section at L1140E .....	107
Figure 11-1: Total 2012-2013 Certified Standard OREAS-50C results - Gold.....	127
Figure 11-2: Total 2012-2013 Certified Standard OREAS-66A results – Gold.....	127
Figure 11-3: Total 2012-2013 Certified Standard OREAS-67A results – Gold.....	128

---

Figure 11-4: Total 2012-2013 Certified Standard OREAS-68A Results – Gold.....	128
Figure 11-5: Total 2012-2013 Certified Standard OREAS-153A results – Gold.....	129
Figure 11-6: Total 2012-2013 Certified Standard OREAS-50C results – Copper.....	130
Figure 11-7: Total 2012-2013 Certified Standard OREAS-66A results – Copper .....	130
Figure 11-8: Total 2012-2013 Certified Standard OREAS-67A results – Copper .....	131
Figure 11-9: Total 2012-2013 Certified Standard OREAS-68A results - Copper .....	131
Figure 11-10: Total 2012-2013 Certified Standard OREAS-153A results - Copper .....	132
Figure 11-11: Total 2012-2013 blank sample results – Gold .....	133
Figure 11-12: Total 2010-2012 blank sample results – Copper .....	134
Figure 11-13: Total 2012-2013 pulp split check sample results - Gold.....	136
Figure 11-14: Total 2012-2013 pulp split check sample results – Copper.....	136
Figure 11-15: Total 2012-2013 reject split results – Gold.....	138
Figure 11-16: Total 2012-2013 reject split results – Copper .....	138
Figure 12-1: Aerial view of Hope Brook camp .....	144
Figure 12-2: Fencing along west side of open pit - view to north .....	145
Figure 12-3: Main tailings dam showing overflow area to right.....	146
Figure 12-4: 2015 satellite image of open pit and camp area (arrows identify failure zones)...	147
Figure 12-5: Drill hole casing with cap .....	148
Figure 12-6: General view of core logging facility.....	149
Figure 12-7: Weathered core boxes in outside storage racks .....	150
Figure 12-8: Hole HB-11-023 - grey, vuggy silicification and foliated alteration zone lithologies .....	152
Figure 12-9: Hole HB-11-046 tan to grey silicification and foliated alteration zone lithologies	152
Figure 12-10: 2021 Check Sample Results .....	153
Figure 14-1: Isometric view to the NW of the Hope Brook topographic surface DTM .....	164
Figure 14-2: Isometric view to NW of the High and Low Grade Domain Solid Models.....	165
Figure 14-3: Isometric view to NW of DTM's that show dip domains in solid models.....	166
Figure 14-4: Isometric view to NW of Mafic Dike Mapping Solid Models.....	168
Figure 14-5: Isometric view to NE of Chetwynd Granite and NE Mafic Solid Models .....	169

Figure 14-6: Isometric view of the void solid models .....	171
Figure 14-7: Resource category distribution at the 3.00 g/t Au grade threshold .....	186
Figure 14-8: Isometric view to NW showing gold grade distribution at 3.0 g/t Au cut-off .....	190
Figure 14-9: Isometric view to SE showing gold grade distribution at 3.0 g/t Au cut-off .....	191
Figure 14-10: Block Model Grade and Tonnage Plot: OK and ID2 methods.....	193
Figure 14-11: X Axis Swath Plot for High Grade Domain Interpolation Solid .....	194
Figure 14-12: Z Axis Swath Plot for High Grade Domain Interpolation Solid .....	195
Figure 20-1: Proposed Hope Brook access road route (red) .....	200

---

## List of Tables

Table 1.1: Summary of Core Drilling Programs by BP, Royal Oak and Coastal Gold .....	12
Table 1.2: Hope Brook Deposit Mineral Resource Estimate - Effective April 6 <sup>th</sup> , 2021.....	16
Table 2.1: Qualified Person Responsibilities for Report Sections.....	25
Table 2.2: List Of Abbreviations and Conversions .....	28
Table 4.1: List of Exploration Holdings at April 5 <sup>th</sup> , 2021.....	33
Table 4.2: Claim Renewal Fees And Work Requirements.....	39
Table 10.1: Summary of Coastal Gold Drill Programs 2010 to 2013 .....	104
Table 10.2: Location, Orientation and Depth Data for Program I Drill Holes .....	105
Table 10.3: Location, Orientation and Depth Data for Program II Drill Holes .....	108
Table 10.4: Location, Orientation and Depth Data for Program III Drill Holes .....	110
Table 10.5: Location, Orientation and Depth Data for Program IV Drill Holes.....	112
Table 10.6: Location, Orientation and Depth Data for Program V Drill Holes.....	114
Table 10.7: Summary of Core Drilling Programs by BP and Royal Oak.....	116
Table 11.1: Certified Reference Material Tabulation .....	126
Table 12.1: 2021 Site Visit Drill Collar Confirmation Coordinates .....	148
Table 12.2: Comparison of Twin Hole Weighted Averages .....	156
Table 14.1: Mercator Descriptive Statistics for Constrained Raw Au Assay Values (g/t) .....	173
Table 14.2: Assay Au (g/t) Capping Values Used in the Current Model .....	174
Table 14.3: Descriptive Statistics for Capped, Constrained Au Composite Values (g/t) .....	175
Table 14.4: Bulk Density Sampling .....	177
Table 14.5: Variography (*Surpac ZXY LRL Convention).....	178
Table 14.6: Search Ellipsoids (Surpac ZXY LRL Convention).....	179
Table 14.7: Mercator Block Model Matrix Definition .....	180
Table 14.8: Interpolation Parameters for Mafic Probability Model .....	182
Table 14.9: Interpolation Parameters for Silicic Gold Grade .....	184
Table 14.10: Interpolation Parameters for Mafic Gold Grade.....	185
Table 14.11: Hope Brook Deposit Mineral Resource Estimate - Effective April 6 <sup>th</sup> , 2021.....	188



Table 14.12: Comparative Tabulation of Block Model Tonnage and Gold Grade Values .....	188
Table 14.13: Descriptive Statistics for Resource Block Gold Grades: 0.00 g/t Au Cut-off.....	192
Table 25.1: Hope Brook Deposit Mineral Resource Estimate - Effective April 6 <sup>th</sup> , 2021.....	204
Table 25.2: Global Tonnage and Gold Grade Figures at Differing Gold Cut-off Values.....	204
Table 26.1: Phase I Program Budget Estimate.....	208
Table 26.2: Phase II Program Budget Estimate.....	210

## **1.0 Summary**

### **1.1 Introduction**

Big Ridge Gold Corp. (“Big Ridge” or “the Company”) retained Mercator Geological Services Limited (“Mercator”) on March 18<sup>th</sup>, 2021, to prepare an updated independent mineral resource estimate and technical report for the Hope Brook Gold Project (“HBGP”) in accordance with requirements of National Instrument 43-101 (“NI 43-101”). Big Ridge is a TSX Venture Exchange listed gold exploration company trading under the symbol BRAU. Extensive reference is made in this report to Coastal Gold Corp. (“Coastal Gold”), which is a wholly owned subsidiary of First Mining that was acquired in July of 2015.

The HBGP is located on the southwest coast of the island of Newfoundland, in the province of Newfoundland and Labrador, Canada and consists of 1,066 mineral exploration claims that cover 26,650 hectares of surface area. No new work pertinent to mineral resource estimation has been completed on the property since Mercator prepared an independent mineral resource estimate for First Mining which had an effective date of January 12<sup>th</sup>, 2015. The current mineral resource estimate directly reflects the results of the estimate reported for First Mining in 2015 and is focused on assessment of higher-grade mineral resources that could be amenable to exploitation using underground mining methods.

This technical report prepared for Big Ridge reviews and confirms the results of the 2015 First Mining mineral resource estimate prepared by Mercator, which incorporated upgraded modeling parameters and excluded assessment of open pit mining opportunities.

### **1.2 Reliance on Other Experts**

Mercator has relied upon Big Ridge for confirmation of mineral exploration title status, details of the option and royalty agreement, an opinion on site environmental liabilities, and details of required operating and exploration permits. This includes an expert title opinion from law firm

Stewart McKelvey that was used in the preparation of section 3.0 of this report. This information was supplied through written communication from Stewart McKelvey and verbal communication with Mr. Michael Bandrowski, President and CEO of Big Ridge.

### **1.3 Property Description**

#### **1.3.1 Mineral Exploration Holdings**

The HBGP is located on the southwest coast of the island of Newfoundland, in the province of Newfoundland and Labrador, Canada. At the effective date of this report, it was comprised of a core holding of 1003 contiguous exploration claims plus a satellite holding of 63 claims, all of which were acquired through map staking. This main property covers 25,075 ha of surface area and measures approximately 32 km by 12 km in maximum east-west and north-south dimensions, respectively. Constituent claims of the core holding are held by First Mining's wholly owned subsidiary, Coastal Gold, under 5 separate Licenses and are approximately centered on the past-producing Hope Brook gold mine, located at Latitude 47.738° north and Longitude 58.095° west. Coastal Gold also held at the effective date a satellite property of 63 claims (1575 ha) in the Ironbound Hill area, approximately 25 km northeast of the Hope Brook deposit. The Ironbound Hill property was referred to as the "Peter Snout" property in the 2015 technical report prepared by Mercator for First Mining.

A May 20, 2021, title opinion prepared by the law firm Stewart McKelvey for Big Ridge identifies all of the HBGP mineral exploration titles referred to above as being in good standing as represented in respective Certificate of Compliance documents dated April 8<sup>th</sup>, 2021 and March 24<sup>th</sup>, 2021 and issued by the provincial Minister of Industry, Energy and Technology.

#### **1.3.2 Earn-In Agreement with First Mining**

The Company entered into an earn-in agreement (the "Earn-In Agreement") with First Mining and Coastal Gold Corp. ("Coastal") effective April 5, 2021, pursuant to which the Company can

earn up to an 80% interest in the HBGP. At the closing of the Earn-In Agreement (the “Closing Date”), the Company agreed to pay CDN \$500,000 in cash and issue 11,500,000 common shares of the Company to First Mining, at which time the Company shall immediately become the operator of the Hope Brook Gold Project.

The earn-in is comprised of two stages. In order to exercise its first, earn-in right to acquire a 51% interest in the HBGP, the Company must incur and fund expenditures on the HBGP of no less than CDN \$10 million within the three-year period following the Closing Date. Upon achieving this expenditure threshold and issuing an additional 15 million common shares to First Mining, subject to the approval of the TSX Venture Exchange, the Company (51% interest) shall become party to a joint venture agreement for the HBGP with First Mining (49% interest), with the Company continuing as the operator. Following receipt of written notice to First Mining confirming the Company’s exercise of its first earn-in right, First Mining and Coastal will take all necessary steps to transfer legal ownership of a 51% undivided interest in and to the HBGP to the Company. Concurrently with the creation of the joint venture, the joint venture entity shall grant to First Mining a 1.5% net smelter returns royalty on the HBGP, subject to a right of the Company to buy back 0.5% for CDN \$2,000,000 in cash to First Mining. The joint venture shall also pay to First Mining a royalty of US \$1 per tonne of aggregate material sold from the property.

### **1.3.3 Site Visits by Authors**

Author Burke visited the HBGP property most recently on January 23<sup>rd</sup> and 24<sup>th</sup> of 2021 accompanied by Mr. Laird Tomalty of First Mining and representatives of another exploration firm. Author Cullen most recently visited the HBGP property on August 20<sup>th</sup> of 2020 accompanied by Mr. Tomalty plus representatives of the Wood Group engineering consultancy. Details of assessments carried out during the visits are included below in section 1.11.2.

#### **1.4 Accessibility, Climate, Local Resources, Infrastructure and Physiography**

The HBGP is located approximately 85 km by water east of the community of Port aux Basques (4,170 population - 2011 census) and is not accessible by any form of highway transportation at this time. Port aux Basques is the year-round terminus for the Marine Atlantic ferry service connecting the island of Newfoundland with mainland Canada at North Sydney, Nova Scotia and was used as the marine service center for Hope Brook mine operations. The communities of Corner Brook, Deer Lake, Pasadena, Stephenville and Port aux Basques in western Newfoundland combine to provide a wide range of support services and logistical capabilities.

Direct site access to the HBGP can be gained by chartered boat from either the Burgeo or Port aux Basques areas. The most efficient means of current access to the property is by charter fixed wing aircraft or helicopter from commercial bases in the Deer Lake-Pasadena area, approximately 120 km to the north. Various valuable elements of site infrastructure dating from the Hope Brook production period still exist on the HBGP property and include:

1. provincial electrical and telecommunications grids access
2. roll-on and roll-off docking facility
3. 4000 ft (~1220 m) gravel airstrip
4. intact tailings and polishing pond facilities
5. decline/ramp system at Hope Brook mine with access to ~350 m below surface.

The climate of southwestern coastal Newfoundland is strongly affected by proximity of the Atlantic Ocean, which exerts a moderating effect with respect to temperature extremes. However, dramatic seasonal variations occur, with winter conditions of freezing temperatures and moderate to heavy snowfall expected from late December through late March. Spring and fall seasons are cool, with frequent periods of rain and frequent heavy fog. Summer conditions typically prevail from July through early September and provide good working conditions for field parties.

Topographic relief across the property ranges from sea level to a maximum of approximately 400 m with a gradual increase in elevation occurring from south to north.

## 1.5 History

The large land holding comprising the HBGP has been explored in the past to varying degrees, with earliest efforts related to discovery of copper and gold in the Chetwynd Prospect area along Cinq Cerf Brook in 1923. Subsequent exploration in this area was carried out by Burgeo Mines Ltd., Buchans Mining Co. Ltd., O'Brien Gold Mines Limited, Noranda Exploration Ltd., Rio Tinto Exploration Ltd. and Hudson Bay Oil and Gas Limited, with primary interest in assessment of base metal sulphide potential.

The greatest focus of modern gold exploration efforts in this region began in the Cinq Cerf Brook area with discovery of the Hope Brook gold deposit in 1983 by the Selco Division of BP. Adjoining areas of intrusive igneous rocks or younger felsic volcanics were initially held and explored by various other interests such as Dolphin Exploration Ltd., South Coast Ventures Ltd., Long Range Resources Ltd. and Noranda Exploration Ltd. No major new gold discoveries other than the Hope Brook deposit were made during this period but several areas of interesting bedrock alteration were identified and initially assessed for gold potential.

Programs of deposit definition drilling, resource estimation, metallurgical assessment and feasibility assessment were completed for the Hope Brook deposit between 1984 and 1986 and a production decision was announced in 1986 by BP. That company's subsidiary, Hope Brook Gold Inc., subsequently developed and mined the deposit during the period 1987 through 1991. Initial open pit mining was followed by underground operations. The operation was subsequently sold to Royal Oak Mines Ltd. in 1991. as part of a broader corporate re-positioning initiative that saw BP exit the mining industry.

In 1991, Royal Oak Mines Ltd. (Royal Oak) purchased the Hope Brook operation plus associated exploration properties from BP and carried out underground mining at the site until mid-1997, when operations ceased. Provincial government records and Royal Oak annual reports document production of 447,431 ounces of gold by Royal Oak during the 1992-1997 period. In 1996, Royal

Oak announced its intention to close mining operations in 1997 due to depletion of reserves, and much of the onsite milling and mining equipment was removed during the following year. In April 1999 the company declared bankruptcy and its mineral title assets were awarded to the government of Newfoundland and Labrador. Royal Oak did not carry out site reclamation work.

During the period 2002 through 2007 the provincial government carried out environmental assessment and reclamation programs at the Hope Brook mine site. No mining activities have been carried out subsequent to those of Royal Oak.

In 2003 mine area exploration holdings were staked by related entities R. Quinlan and Quest Inc. and a subsequent agreement between these interests and Benton Resources Inc. (BRI) resulted in a large land position being assembled in 2008 by BRI. The company completed an airborne magnetometer and electromagnetic survey of the entire property, compiled past drilling results, carried out prospecting and completed an extensive bedrock sampling program. No substantial new discoveries resulted from any of this work.

In 2010, BRI terminated its option to acquire the Hope Brook project and transferred all of its associated exploration licences to R. Quinlan. Coastal Gold entered into an option to purchase agreement with the Quinlan interests in 2010 and 2012 disclosed that it had exercised its option to purchase a 100% interest in the Hope Brook property under terms of the Quinlan agreement. Coastal Gold carried out programs of drill core physical properties investigation, ground geophysics, environmental screening, data compilation, data validation, core drilling, vibracore tailings drilling, bedrock and tailings mineral resource estimation, metallurgical assessment and general property evaluation.

In July of 2015, First Mining acquired a 100% interest in of Coastal Gold, which became a wholly owned subsidiary. Between 2015 and 2021 First Mining carried out internal mineral resource assessments of the Hope Brook deposit, evaluated aggregate potential of waste rock in the deposit area and initiated environmental, planning and permitting studies related to

construction of a road linking the property with the provincial highway system. It also completed a small core drilling program on the Ironbound Hill mineral holding approximately 25 km east of the Hope Brook deposit.

In April of 2021, First Mining entered into an earn-in agreement with Big Ridge that allows that company to earn up to 80 percent interest in the Hope Brook Gold Project.

## **1.6 Geological Setting and Mineralization**

### **1.6.1 Regional Setting**

The HBGP property occurs within a tectonically complex zone that has been interpreted by some to occur within the Avalon Zone of the Appalachian Orogen (or a related Avalon Composite Terrane), near its generally east-west trending tectonic contact with adjacent rocks of the Dunnage Zone. Sequences of Avalonian affinity occur throughout much of the Appalachian Orogen, and extend from the Avalon Peninsula and southwest coast areas of Newfoundland, through Nova Scotia, New Brunswick and northern New England. From that point southward, more discontinuously distributed outcropping segments occur as far as northern Georgia.

### **1.6.2 Property Geology**

Late Proterozoic bedrock sequences predominate in the HBGP area. Sequences consist of deformed volcano-sedimentary rocks, amphibolite facies gneisses and variably foliated igneous intrusions.

Foliated, greenschist facies sedimentary and volcanic sequences of the Whittle Hill Sandstone and Third Pond Tuff units are the predominant stratified sequences within the HBGP. They trend east and northeast and represent the youngest Pre-Silurian basement sequence rocks defined to date in the area, they pre-date, along with quartzo-feldspathic gneisses of the Cinq Cerf Gneiss complex, emplacement of the Roti Intrusive Suite (578±10 Ma to 563±4 Ma (Dunning and



O'Brien, 1989), which is the oldest dated intrusive complex in the immediate area. These sequences were also intruded by the Wild Cove Granite (499±3-2 Ma) and younger Ernie Pond Gabbro (495±2 Ma) prior to accumulation of Silurian La Poile Group rocks and emplacement of later Silurian and Devonian intrusions. The Devonian Chetwynd Granite intrudes the stratified sequences as well as some of the older intrusions. It locally intruded and thermally metamorphosed rocks of the northeast striking Cinq Cerf Fault as well as the alteration and mineralization zones that comprise the Hope gold deposit.

Bedrock units within the HBGP record a multi-phase deformation history beginning with development of amphibolite facies mineral assemblages in paragneisses and intermediate to felsic orthogneisses of the Cinq Cerf Gneiss complex. These rocks are considered to reflect pre-Late Proterozoic evolution of basement sequences upon which the younger cover sequences, including the host rocks of the Hope Brook deposit, were deposited and subsequently deformed.

Late Silurian tectonism produced northeast trending, locally tight folds within structurally telescoped earlier sequences and also resulted in development of regional scale zones of ductile shear. The northeast trending Cinq Cerf Fault that penetratively deformed host rocks of the Hope Brook deposit is an example and separates Silurian La Poile Group sequences from earlier-deformed late Proterozoic cover sequences.

### **1.6.3 Mineralization**

#### **1.6.3.1 Hope Brook Deposit**

The Hope Brook gold deposit is a large, disseminated gold-chalcopyrite-pyrite deposit hosted by highly altered sedimentary and volcano-sedimentary rocks of the late Proterozoic Whittle Hill Sandstone and Third Pond Tuff successions, and similarly altered felsic porphyry dikes and sills related to the Roti Intrusive Suite. Zones hosting gold mineralization of economic interest typically bear evidence of intense silicification and occur within a broad envelope of advanced argillic alteration (AAZ) that can be traced for up to 8 km southwest of the deposit. The Devonian

Chetwynd Granite appears to truncate the alteration zone and associated gold-copper mineralization at its northeast limit. Intensity of the advanced argillic alteration and impact of superimposed Silurian ductile deformation along the Cinq Cerf Fault have obscured original rock fabrics in many areas of the deposit.

The main gold zone at Hope Brook is comprised of a group of tabular to lensoid silicified zones that show a continuously mineralized, northeast trending strike length of approximately 2 km. They define a mineralized corridor zone measuring about 100 m in width and have been defined by drilling and mine workings to have an aggregate dip extent that exceeds 400 m. The main gold zone is hosted by light grey, massively silicified rocks characterized by 1% to 5% vuggy porosity and <5% to 10% total sulphides occurring as either disseminated phases or as thin veinlets and aggregates that often parallel the dominant deformation fabric present in the rocks. Pyrite is the dominant sulphide present in the first 60 m to 80 m below surface in the main deposit area but below that level increasing amounts of chalcopyrite and bornite are present, often occurring as vug-filling phases. Quartz-chalcopyrite and quartz-pyrite veins and breccias locally cross-cut this silicification stage and in some instances carry strongly elevated gold values. Geochemically anomalous levels of silver, zinc, arsenic, antimony, mercury and tin characterize the subzone along with rutile and low levels of blue quartz eye fragments. Gold grades in this subzone typically exceed 1.5 g/t Au and highest grades tend to show spatial association above 2.5 g/t Au. Grade distribution tends to be spatially consistent and not subject to high spiking “nugget” effects that are commonly associated with other types of gold deposits.

The main gold bearing subzone described above is surrounded by grey silicified sections showing minor amounts of disseminated pyrite (<3%) that occur in large, spatially coherent lenses of silicified material separated by highly strained to mylonitic alteration zone rocks. Gold grades less than 1.0 to 1.5 g/t Au generally characterize this subzone and it typically lacks the vuggy character of the higher-grade subzone. Large bodies of beige to tan, commonly pyritic, silicified material occur in the structural footwall sequence to the main gold zones but typically do not

contain significant gold mineralization. This phase of silicification is locally overprinted by later grey, gold-bearing phases.

### **1.6.3.2 Other HBGP Mineralization Styles**

Sericitic alteration zones in variably foliated to sheared rocks associated with the Bay d'Est Fault or with possible northeast trending secondary splays that cross La Poile Group or Bay du Nord Group rocks occur within the HBGP and locally host gold mineralization. The most prominent examples of such occur at the Old Man's Pond, Phillips Brook and Cross Gulch gold occurrences. Gold mineralization in these settings is typically low grade (< 2 g /t Au), associated with quartz vein arrays and/or zones of silicification and accompanied by pyritic sulphide mineralization and carbonate alteration. Infrequent high grade gold values in quartz vein samples have also been returned. Mineralized zones are associated with altered La Poile Group volcanics and porphyries or Bay du Nord Group schists and meta-sedimentary rocks that locally show well developed strike and dip continuity. This stage of gold mineralization post-dates development of the main Hope Brook deposit and appears to be related to regionally significant zones of post-Silurian shear deformation.

## **1.7 Deposit Type**

Based on results of the various deposit studies completed to date, the Hope Brook deposit is considered for report purposes to have developed as a late Proterozoic, high sulphidation mineralizing system characterized by disseminated gold that shows deep epithermal affinity, possible original structural focus and genetic association with the Roti Intrusive Suite.

The younger style of gold mineralization present within the HBGP is associated with the Bay d'Est Fault (shear zone) system. This large shear zone and its various splays are interpreted to have controlled localization of the disseminated and vein hosted styles of gold mineralization identified to date, both of which are associated with generally well-developed carbonate

alteration zones. On this basis, these occurrences are classified for report purposes as examples of an orogenic gold setting.

## **1.8 Exploration**

Big Ridge has not yet carried out any HBGP exploration. It plans to initiate such work as soon as possible in the second quarter of 2021.

## **1.9 Drilling**

Core drilling programs carried out by past explorers provide the data upon which the current mineral resource estimate is based. Three main periods of drilling occurred. The first corresponds with the 1986 through 1991 BP era that began with discovery of the deposit and progressed through mine production to sale of the project in 1991. Programs carried out by Royal Oak between 1992 and 1997 form the second period and those carried out Coastal Gold and related firms between 2010 and 2015 account for the latest period. First Mining did not carry out any drilling on the main Hope Brook deposit but did complete a small program consisting of 4 holes in 2018 on the Ironbound Hill exploration property that is located approximately 25 m east of the main HBGP holding.

Validated core drilling program results from the BP, Royal Oak and Coastal programs support the mineral resource estimate described in this technical report. Tables 1-1 below summarizes core drilling information for all of these programs and identifies 874 holes drilled along the 8 km strike extent of the alteration zone that hosts the Hope Brook deposit. Of these, 680 validated holes accounting for 142,069 m of drilling define spatial limits of the current mineral resource estimate. Drill holes completed by previous explorers on surrounding prospects such as Old Man's Pond, Phillips Brook and Cross Gulch are not included in the current HBGP drilling database, nor are the holes completed by First Mining in 2018 on the Ironbound Hill prospect. Drill log records show that holes that recovered BQ (3.1 cm diameter) core were more prone to core loss than NQ (4.76 cm diameter core) holes but core loss in general was not identified as being problematic. Royal

Oak drilled 152 short grade control holes within the limits of the open pit but Mercator could not validate associated results. These holes were excluded from use in the current mineral resource estimate. In addition to conventional core drilling, Coastal completed a sonic drilling program in 2013 to support estimation of a tailings mineral resource estimate. Data from these holes has also been validated by Mercator.

Mercator is of the opinion that validated results for historical core drilling programs from the BP, Royal Oak and Coastal periods of exploration and/or mine operation are acceptable for use in the mineral resource estimation program described in this technical report. Validated results from the sonic drilling program by Coastal are also considered acceptable for use in a mineral resource estimation program.

**Table 1.1: Summary of Core Drilling Programs by BP, Royal Oak and Coastal Gold**

Operator	Period	Hole Type	*Number of Holes	Hole Series
BP	1983-1986	Surface	240	CW, CP, CT
BP	1987-1991	Surface	76	CW, CE,
BP	1987-1991	Underground	138	4960, 5015,5060
Royal Oak	1992-1997	Surface – Open Pit	152	OP
Royal Oak	1992-1997	Surface	9	CE
Royal Oak	1992-1997	Underground	120	4870, 4900, 4930
Coastal Gold	2010-2013	Surface	139	HB
Total			874	

### 1.10 Sample Preparation, Analysis and Security

Based on detailed review of project documentation, Mercator is of the opinion that drill core analysis methods and associated sample preparation, analysis and security techniques and programs employed by Coastal Gold during the period 2010 through 2015 and by BP and Royal Oak during the 1983 to 1997 period at the Hope Brook site were consistent with industry standards of their respective times and that validated data from associated programs are acceptable and sufficient for use in the current resource estimate. Coastal programs included

comprehensive QAQC programs based on systematic insertion of certified reference materials, blank samples, duplicate analyses and third-party check sampling protocols. Earlier programs relied primarily on QAQC procedures incorporated in respective commercial laboratory protocols but locally included check sampling and blank sample insertions.

## **1.11 Data Verification**

### **1.11.1 Review and Validation of Project Data Sets**

Core sample records, lithologic logs, laboratory reports and associated drill hole information for all drill programs completed by BP, Royal Oak and Coastal Gold were digitally compiled by Coastal Gold staff and made available to Mercator for validation and resource estimation use. Information pertaining to the exploration history in the property area had already been compiled by Mercator and was reviewed in conjunction with newly generated records to assess completeness, consistency and validity of compiled results. Cullen (2015a, b) and Desautels et al. (2012a, 2012b and 2014) had previously reported that the progressively compiled and validated drilling database information was acceptable for resource estimation purposes and Mercator has affirmed this assertion for present report purposes.

Based on results of the site visits noted above, Mercator deemed Coastal Gold's field operations and protocols to be acceptable and consistent with current industry standards. This assertion is affirmed by Mercator for current technical report purposes.

### **1.11.2 January 2021 Site Visit**

Author Burke visited the property most recently on January 23 and 24, 2021, at which time the following activities were undertaken:

- Inspection of the historical open pit, local quarry sources and general site conditions,
- Inspection of roads, airstrip and maintenance,
- Inspection of water control structures including tailings ponds, polishing pond, dams and outflows,

- Inspection of camp infrastructure, buildings, loading and containment areas,
- Note observations for any recent environmental liabilities of concern resulting from current operations,
- Inspect and record a minimum of 5 drill holes for ground-truthing,
- Review of 5 drill holes and collection of 3 representative interval samples for subsequent analysis at an accredited laboratory.

In addition to the above, a review of the 2018 Environmental Assessment Registration prepared on behalf of First Mining by Amec Foster Wheeler (Amec, 2018) was reviewed as pertinent to potential future development of the site.

### **1.11.3 Mercator Site Visits**

Author Cullen most recently visited the HBGP property on August 20 of 2019 accompanied by Mr. Tomalty and representatives of the Wood Group engineering consultancy. A core review and geological field assessments were carried out at that time. He also visited the site late in 2019 accompanied by Mr. Tomalty and Mr. Ken Engquist, Chief Operating Officer of First Mining. Mr. Cullen carried out several additional site visits during the 2010 through 2015 Coastal Gold exploration period in support of previous resource estimation programs. Programs of core review, core check sampling, drill collar coordinate checking and site inspections were carried out at those times

## **1.12 Mineral Processing and Metallurgical Testing**

### **1.12.1 Historical Production and Processing**

Mining and processing by BP and Royal Oak during the 1987-1997 production period resulted in reported recovery of 752,163 troy ounces of gold. Milling records indicate that gold recoveries during the mine life ranged from lows near 80% to highs of approximately 91%. With the exception of a period of heap leaching carried out during BP's production startup period, conventional crushing, grinding and flotation were used by that firm to process ore. Royal Oak

subsequently modified the BP flow sheet to recover copper as well as gold and improved overall recoveries.

### **1.12.2 Coastal Gold Programs**

Scoping level metallurgical test work on mineralized samples was first carried out for Coastal by G&T Metallurgical Services Ltd. in Kamloops, BC in 2012. The objectives of that program were to evaluate potential processing routes for maximizing gold recovery and to identify operating parameters for the preliminary circuit design. Flotation test work was successful at generating a concentrate grading 28% Cu from flotation of cyanidation residue in a process similar to the historical flowsheet at Hope Brook. Gravity concentration tests indicated that between 16 and 41% of the contained gold was recoverable to concentrate by this method. Combined gold recoveries of ~86% were achieved using a flowsheet consisting of gravity concentration followed by cyanidation of the gravity tailings. Direct cyanidation of tailings resulted in up to 49% extraction of contained gold.

Additional metallurgical testing was carried out by G&T Metallurgical Services Ltd. in the fall of 2013 to further advance the understanding of the metallurgy of the Hope Brook deposit. This included batch flotation test work focused on the opportunity to recover a saleable grade copper concentrate after the grinding and gravity recovery step. Scoping level test work was also carried out at Tomra Sorting Solutions in Surrey, BC to evaluate the potential of rejecting dilution material before the grinding area using sensor-based sorting. Sorting program results indicate that mafic material is highly amenable to rejection by sorting.

### **1.13 Mineral Resource Estimates**

Mineral resources presented in this report have been estimated in conformance with NI 43-101 and the Canadian Institute of Mining, Metallurgy and Petroleum Definition Standards for Mineral Resources and Mineral Reserves (2014). As defined under these standards, mineral resources that are not mineral reserves do not have demonstrated economic viability. Validated results for



689 drill holes totaling 141,862 m of drilling, including 138 holes totaling 39,250 m of drilling by Coastal Gold, support the mineral resource estimate that appears below in Table 1-2. The estimate reflects a 3.0 g/t gold cut-off value and includes 5.5 million tonnes of Indicated mineral resources at a gold grade of 4.77 g/t. Inferred resources total 836 thousand tonnes at a gold grade of 4.11 g/t.

**Table 1.2: Hope Brook Deposit Mineral Resource Estimate - Effective April 6th, 2021**

Gold Grade Cut-off (g/t)	Resource Category	Round Tonnes (Rounded)	Gold Grade (g/t)	Gold Ounces (Rounded)
3.00 g/t	Indicated	5,500,000	4.77	844,000
	Inferred	836,000	4.11	110,000

Notes:

1. Includes only Mine Zone and 240 Zone areas
2. The above mineral resource estimate is based on a partial percentage block model with dike material removed. Dike percent is estimated at 18% for the Mine Zone and 0% for the 240 Zone
3. Gold grades reflect application of domain-specific raw assay capping factors that range between 55 g/t Au and 3 g/t Au
4. Rounding of tonnes may result in apparent differences between tonnes, grade and contained ounces
5. Mineral resources that are not mineral reserves do not have demonstrated economic viability. The estimate of mineral resources may be materially affected by environmental permitting, legal, title, taxation, sociopolitical, metal pricing, marketing, or other relevant issues
6. The gold cut-off value of 3.00 g/t reflects reasonable prospects for eventual economic extraction based on application of conventional underground mining methods such as long hole stoping, historical gold recovery levels that range between 80% and 91% for past production (86% for Coastal Gold testing) and a long-term gold price of US\$1200 per ounce

Mineral resources tabulated above include both Mine Zone and 240 Zone tonnages. The Mine Zone incorporates the former Hope Brook mine and immediately adjacent areas, while the 240 Zone is located approximately 1.4 km southwest of the former mine. The majority of Indicated resources are in the Mine Zone, whereas the majority of Inferred resources occur in the 240 Zone. Copper is not included in the current resource estimate but was reported in the past by Coastal Gold as an exploration target defined under NI43-101 and the CIM Standards.

#### **1.14 Environmental Studies, Permitting, and Social or Community Impact**

In June of 2018, First Mining submitted an Environmental Assessment Registration for construction of an access road from the existing Burgeo Highway (Highway 480) to the Hope Brook site. Amec Foster Wheeler Environment & Infrastructure prepared the associated

Environmental Registration document pursuant to the Newfoundland and Labrador Environmental Protection Act. Fracflow Consultants Inc. provided route selection and technical design details for the proposed project. The estimated capital cost of the overall project, based on the 2018 engineering design and planning, is approximately \$11,000,000. First Mining was subsequently notified that an Environmental Impact Statement (EIS) must be prepared for this undertaking and Draft Guidelines for preparation of that study were made available in December of 2018. The EIS had not been filed with regulators at the effective date of this technical report.

### **1.15 Adjacent Properties**

There are no adjacent properties as defined under National Instrument 43-101 that are currently pertinent to the HBGP.

### **1.16 Other Relevant Data and Information**

No other relevant data was identified as being necessary to support the resource estimation program described in this report.

### **1.17 Interpretation and Conclusions**

#### **1.17.1 Mineral Resources and Future Exploration Potential**

The Hope Brook mine produced 752,163 ounces of gold between 1987 and 1997 at yearly calculated gold head grades ranging between a high of 4.3 g/t in 1987 and a low of 3.0 g/t in 1995. During this period, market pricing for gold ranged between a low of US\$331.29 in 1997, the year of mine closure, to a high of US\$446 per ounce in 1987, the first year of reported production statistics. Both open pit and underground mining methods were used, with the majority of production coming from underground operations. Conventional processing was used for beneficiation of most processed ore but much of the initial mined production from an open pit was processed by heap leaching.

Current market pricing for gold is substantially higher than that seen between 1987 and 1997 and the reference gold price of US\$1200 per troy ounce used in this report is nearly three times the maximum price seen during Hope Brook's operational period. It is also lower than the current (April 6th, 2021) three year trailing average gold price of approximately US\$1600 per troy ounce. Resource gold grades of the current estimate are comparable to those originally defined for the deposit prior to initiation of mining. However, the current resource statement gold cut-off grade of 3.0 g/t is higher than the 2.0 g /t gold cut-off used in original estimates generated prior to production.

The current resource estimation program was focused on higher grade mineralization defined by a 3.0 g/t gold cut-off value in the Mine Zone and 240 Zone areas. This reflects Big Ridge's interest in carrying out a future economic assessment of the deposit based entirely upon underground mining potential. This approach recognizes the potential value of existing underground ramp and ventilation infrastructure to any future project development. As a result, the current estimate for the deposit does not include definition of mineral resources having potential for open pit development.

Big Ridge is proposing to move the HBGP forward through upgrading and expanding existing mineral resources, completion of a PEA and, assuming positive PEA results, completion of a Pre-Feasibility study addressing the underground mining option. In addition, systematic evaluation of the large, contiguous exploration holding at Hope Brook, plus the satellite Ironbound Hill holding, is planned to run concurrently with other programs. A multi-year time frame is required for completion of all programs, with realized timing being subject to terms of the Earn-In agreement with First Mining and available project financing.

Based on project results reviewed to date, Mercator is of the opinion that this approach to project planning and scheduling is reasonable and warranted. On the technical level, the large

component of Indicated resource presently defined at Hope Brook may facilitate transitioning the project from a positive PEA stage through to Pre-Feasibility stage assessment.

### **1.17.2 Project Risks**

The HBGP is subject to various project risks. Prominent among these are: (1) metal price fluctuations, (2) potential regulatory challenges with respect to future environmental permitting of the operating site or proposed access road, and (3) identification of geotechnical issues that may significantly affect, or prevent, future underground production from any mineral reserves defined in close proximity to existing underground mine workings, and (4) inconsistency between actual bedrock tonnages and gold grades with respect to the mineral resource estimate and its supporting model. All of these factors must be progressively addressed on an ongoing basis to minimize and manage potential project impact.

### **1.18 Recommendations**

A two-phase exploration program totaling CDN \$3.69 million is recommended, details of which appear below. The program will provide Big Ridge with a PEA for the HBGP based on updated mineral resource estimates for both bedrock and tailings deposits. It will also provide a timely decision point with respect to commitment to a subsequent Pre-Feasibility Study and ensure that existing exploration holdings are maintained in good standing.

The recommended Phase I program includes data compilation and reconnaissance surface exploration for the Ironbound Hill, Phillips Brook, Oldman Pond and Cross Gulch prospects to assess their relative status as significant future exploration targets. In addition, a regional-scale Phase 1 exploration program on the main property consisting of a modern, high resolution airborne geophysical survey selected and designed by a professional geophysicist based on mineralized zone characteristics is recommended to generate additional exploration targets and to maintain the large Big Ridge land position in good standing. Continuation of mafic dike

material sorting studies is also recommended, along with continuation of baseline environmental studies. Phase I exploration expenditures are estimated to total CDN \$550,000.

The recommended Phase II work program consists of upgrading certain existing Inferred mineral resources in both bedrock and tailings deposit models to Indicated status, with this being accomplished through completion of additional in-fill core drilling (bedrock) and vibracore drilling (tailings) programs. The areas of bedrock resource upgrade drilling are located in the Mine Zone, 240 Zone and Connector Zone of the main deposit area. Tailings 1 and 2 deposits are the focus of recommended resource upgrade drilling.

The resource upgrade component of recommended Phase II work is followed by completion of updated mineral resource estimates for both the bedrock and tailings deposits. These would form the basis of the recommended subsequent PEA. A requirement for additional core drilling is anticipated at this stage to support geotechnical, engineering, and metallurgical studies. The Phase II program also includes continued assessment of exploration opportunities defined on the entire exploration holding through Phase I programs, with this being addressed through core drilling plus geophysical, geological and geochemical survey programs appropriate to the targets. Phase II program expenditures are estimated to total CDN \$3,140,000.

## **2.0 Introduction**

### **2.1 Terms of Study**

Big Ridge Gold Corp. (“Big Ridge” or the “Company”) retained Mercator Geological Services Limited (“Mercator”) on March 18<sup>th</sup>, 2021 to prepare an updated independent mineral resource estimate and technical report for the Hope Brook Gold Project (“HBGP”), in accordance with requirements of National Instrument 43-101 (NI 43-101) and the Canadian Institute of Mining, Metallurgy and Petroleum Definition Standards for Mineral Resources and Mineral Reserves (CIM Standards - 2014). The current mineral resource estimate directly reflects the estimate reported by Mercator for First Mining Gold Corp. (“First Mining”) in 2015 and is focused on assessment of higher-grade mineral resources that could be amenable to future extraction using underground mining methods. Big Ridge is a TSX Venture Exchange listed gold exploration company trading under the symbol BRAU. Its head office is located at Suite 1801, 1 Yonge Street, Toronto, Ontario M5E 1W7 and its registered and records office is located at Suite 1500, 1055 West Georgia Street, Vancouver, British Columbia V6E 4N7.

### **2.2 Earn-In Agreement with First Mining**

Big Ridge entered into an earn-in agreement (the “Earn-In Agreement”) with First Mining and Coastal Gold Corp. (“Coastal”) effective April 5, 2021 pursuant to which the Company can earn up to an 80% interest in First Mining’s Hope Brook Gold Project (“HBGP”), located in Newfoundland and Labrador.

At the closing of the Earn-In Agreement (the “Closing Date”), the Company agreed to pay CDN \$500,000 in cash and issue 11,500,000 common shares of the Company to First Mining, at which time the Company shall immediately become the operator of the Hope Brook Gold Project. The earn-in is comprised of two stages. In order to exercise its first, earn-in right to acquire a 51% interest in the Hope Brook Gold Project, the Company must incur and fund expenditures on the Hope Brook Gold Project of no less than CDN \$10 million within the three-year period following

the Closing Date. Upon achieving this expenditure threshold and issuing an additional 15 million common shares to First Mining, subject to the approval of the TSX Venture Exchange, the Company (51% interest) shall become party to a joint venture agreement for the Hope Brook Gold Project with First Mining (49% interest), with the Company continuing as the operator.

Promptly following receipt of written notice to First Mining confirming the Company's exercise of its first earn-in right, First Mining and Coastal will take all necessary steps to transfer legal ownership of a 51% undivided interest in and to the Hope Brook Gold Project to the Company.

Concurrently with the creation of the joint venture, the joint venture entity shall grant to First Mining a 1.5% net smelter returns royalty on the Hope Brook Gold Project, subject to a right of the Company to buy back 0.5% for CDN \$2,000,000 in cash to First Mining. The joint venture shall also pay to First Mining a royalty of US\$1 per tonne of aggregate material sold from the property.

To earn an additional 29% interest in the Hope Brook Gold Project, the Company must incur an additional CDN\$10 million in expenditures on the project by the end of the fifth anniversary of the Closing Date. Upon achieving this final expenditure threshold and issuing an additional 10 million common shares ("Stage 2 Shares") to First Mining, subject to the approval of the TSX Venture Exchange, the Company shall become the holder of an 80% interest in the Hope Brook Gold Project. The Company will solely fund all expenditures on the Project up to and including the date on which the Company announces the results of a feasibility study on the HBGP, at which time First Mining's free carry period terminates. If the issuance of the Stage 2 Shares would result in First Mining owning more than 19.9% of the total number of the Company common shares issued and outstanding following such share issuance, the number of Stage 2 Shares shall be reduced such that First Mining will own no more than 19.9% of the total number of the Company common shares issued and outstanding following the issuance of the Stage 2 Shares. Promptly following receipt of written notice to First Mining confirming the Company's exercise of its second earn-in right, First Mining and Coastal will take all necessary steps to transfer legal ownership of an additional 29% undivided interest in and to the Hope Brook Gold Project to the Company. Upon the commencement of commercial production at the project, the Company has agreed to pay CDN\$2,000,000 in cash to First Mining.

Under the terms of the Earn-In Agreement, First Mining shall be granted a number of rights so long as it holds at least 10% of the issued and outstanding common shares of the Company, including (i) the right to nominate one director to the Company's board, and (ii) a right to participate in financings by the Company in order for First Mining to maintain its percentage ownership in the Company. The Earn-In Agreement also includes various restrictions on the parties from transferring their respective interests in the Hope Brook Project and on First Mining's ability to resell its the Company shares.

The Earn-In Agreement provides that none of the parties thereto may, directly or indirectly, stake or otherwise acquire any interest or right of any nature whatsoever located wholly or in part in the area located within 5 km of the boundaries of the Hope Brook Gold Project (the "Area of Interest") provided however that this restriction would not prevent the Company from acquiring (i) an interest in any such property within the Area of Interest if such interest is acquired as a result of the Company acquiring an interest in a third party which holds an interest in such property, provided that the primary purpose of such acquisition is not to acquire an interest in such property (an "Unrelated Equity Interest"), or (ii) any pre-existing royalty interest on the Hope Brook Gold Project (an "Existing Royalty Interest"). If the Company, directly or indirectly, stakes or otherwise acquires an interest or right in its own name which is located wholly or in part in the Area of Interest, other than an Unrelated Equity Interest or an Existing Royalty Interest, then the Company shall provide notice thereof to First Mining and First Mining shall have 30 days to elect to require the Company to add such interest to the Hope Brook Gold Project, in which case the cost of such staking or acquisition shall be deemed to be expenditures for purposes of satisfying the Company's expenditure requirements under the Earn-In Agreement. If First Mining elects not to require the Company to add such interest to the Hope Brook Gold Project, then such interest shall not form part of the project, the cost of such staking or acquisition shall not be deemed to be expenditures for purposes of the Earn-In Agreement and the Company shall be solely entitled to such interest.



### **2.3 Terms of Engagement**

The terms of engagement with Big Ridge specify that Mercator will review the January 12<sup>th</sup>, 2015 resource estimate completed for Coastal Gold by Mercator, assess whether it can be retained by Big Ridge as a current mineral resource estimate, and if so, prepare a new NI43-101 technical report for the Hope Brook property on the Company's behalf. Mercator understands that the purpose of the technical report is to update technical disclosure for the HBGP to the current effective date and that the report will be used to support Big Rdige's project financing strategy. Mercator subsequently determined that no new work relevant to mineral resource estimation had been completed on the property since preparation of the January 12<sup>th</sup>, 2015 mineral resource estimate for First Mining.

The assigned responsibility for deposit modeling and resource estimation, validation of project databases and preparation of the required mineral resource technical report were defined in early March of 2021 through discussions between Big Ridge President and CEO, M. Bandrowski, M. Cullen, Chief Geologist at Mercator, and P. Webster, President of Mercator.

Independent consultant J. Burke, P. Geo., carried out a site visit to the HBGP in January of 2021 that applies to this technical report and is a co-author of the report.

### **2.4 Qualified Person Responsibilities**

Table 2-1 presents Qualified Person (QP) responsibilities with respect to content of this report. All QPs are independent of Big Ridge and First Mining, applying all of the tests in section 1.5 of National Instrument 43-101 and National Instrument 43-101 Companion Policy Section 3.5

**Table 2.1: Qualified Person Responsibilities for Report Sections**

<b>Responsible Person - QP</b>	<b>Company</b>	<b>Area of Responsibility</b>	<b>Relevant Sections (Items)</b>
Michael Cullen, P. Geo.	Mercator	<ul style="list-style-type: none"> <li>Site visits August 20, 2020, October 2 to 4, 2013; December 13 and 14, 2012; August 27 to 31, 2012; September 19 to 29, 2011; May 6, 2010</li> <li>Overall responsibility</li> </ul>	1 (except 1.11.1, 1.11.2, 1.13, 1.17), 2 (except 2.6), 3 to 13 (except 12.1 and 12.2), 15 to 19, 21 to 28 (except 25.2)
Mathew Harrington, P. Geo.	Mercator	<ul style="list-style-type: none"> <li>Resource estimation and database validation</li> </ul>	1.11.1, 1.13, 1.17, 12.1, 14, 25.2
Jeffrey Burke, P. Geo.	Consultant	<ul style="list-style-type: none"> <li>Site visit January 25 -26 and project permitting</li> </ul>	1.11.2, 2.6, 12.2, 20

## 2.5 Scope of Project

The bedrock mineral resource estimate presented in this report is based on validated results of 689 diamond drill holes totalling 141,863 m of historic and recent drilling, including 139 surface diamond drill holes totalling 39,250 m completed by Coastal Gold since September 2010 and re-sampling of 13 historic holes totalling 2,943 m by Coastal Gold since 2010. Coastal Gold provided complete digital and, where appropriate, hard copy records of all exploration completed on the property during this period. Historic aspects of property exploration and mining history were assembled through review of hard copy and digital records of historic data either provided by the companies or available through the Newfoundland and Labrador Department of Natural Resources (NLDNR). This included review of archived drill core at the NLDNR facility at Pasadena, plus review of assessment reports, drill logs, drill plans, assay records and laboratory records for historical exploration and mining programs carried out in the area that are publicly available in hard copy or digital format. Additional information was acquired through published research and archived government files that pertain to the area, plus various other non-catalogued digital files, hard copy maps, plans and reports available from the NLDNR. Many non-catalogued hard copy

documents were digitally scanned by Coastal Gold for project use and related image files were made available for project purposes. Much of the compiled historic information was originally summarized in a NI 43-101 property technical report prepared by Mercator for Coastal Gold (Cullen, 2010).

No new work was completed on the Hope brook property by First Mining for the purposes of this report. Additionally, Mercator is not aware of any new work carried out on the property by Coastal Gold, since disclosure of the previous resource estimate in January of 2015 that would be pertinent to resource estimation activities.

## **2.6 Site Visits by Authors**

Author Burke visited the HBGP property most recently on January 23<sup>rd</sup> and 24<sup>th</sup> of 2021 accompanied by Mr. Laird Tomalty of First Mining and representatives of another exploration firm. Mr. Burke had previously visited the site on many occasions during 2011 and 2014 while employed by either Mercator or Coastal Gold as a drilling program geologist. Core review, check sampling and drill collar coordinate checking programs were carried out during the visit, details of which appear below in section 12 – Data Verification.

Author Cullen most recently visited the HBGP property on August 20 of 2020 accompanied by Mr. Tomalty plus representatives of Wood Group engineering consultancy. He also visited the site late in 2019 accompanied by Mr. Tomalty and Mr. Ken Engquist, Chief Operating Officer of First Mining. Mr. Cullen carried out several additional site visits during the 2010 through 2015 period of exploration by Coastal Gold in support of previous resource estimation programs. These visits typically included core review, check sampling and drill collar coordinate checking programs and are summarized below in section 12 – Data Verification. Mr. Cullen was also employed by BP as an exploration geologist in the HBGP area during the 1984–1985 period.

## **2.7 Abbreviations Used in this Report**

Table 2-2 presents abbreviations and conversion factors that have been used in this report. All currency references in this report reflect Canadian funds, unless otherwise Indicated.

**Table 2.2: List Of Abbreviations and Conversions**

AGP	AGP Mining Consultants Inc.		
Big Ridge Gold Corp.	Big Ridge		
BP	BP Canada Limited and subsidiaries		
Canadian	CDN		
Castillian	Castillian Resources Corp.		
Coastal Gold	Coastal Gold Corp.		
CSA	Canadian Securities Administrators		
First Mining Gold Corp.	First Mining		
HBGP	Hope Brook Gold Project		
Mercator	Mercator Geological Services Limited		
NI43-101	Canadian Securities Regulators National Instrument 43-101		
NLDNR	Newfoundland and Labrador Department of Natural Resources		
ROM	Royal Oak Mines Inc. and subsidiaries		
C	Celsius		
SEDAR	System for Electronic Document Analysis and Retrieval		
cm	centimetre	Ag	Silver
g	gram (0.03215 troy oz)	Au	Gold
ha	hectare	As	Arsenic
kg	kilogram	Ba	Barium
km	kilometer	Cu	Copper
lb	pound	Fe	Iron
m	meter	K	Potassium
mil	millions	Mn	Manganese
mm	millimeter	Na	Sodium
oz	troy ounce (31.04 g)	O	Oxygen
Oz/T to g/t	1oz/T = 34.28 g/t	Sb	Antimony
T	ton (2000 lb or 907.2 kg)	Si	Silica
t	tonne (1000 kg or 2,204.6 lb)	Zn	Zinc

### **3.0 Reliance on Other Experts**

Mercator has relied upon Big Ridge for confirmation of mineral exploration title status, details of the earn-in agreement with First Mining, an opinion on site environmental liabilities, and details of required operating and exploration permits. This includes an expert title opinion from law firm Stewart McKelvey that was used in the preparation of section 4.1 of this report. The referenced title information was provided through written communication from Stewart McKelvey, verbal communication with Mr. M. Bandrowski, President and CEO of Big Ridge, and delivery of associated digital files from Big Ridge.

## 4.0 Property Description and Location

### 4.1 Exploration Licences and Claims

The HBGP is located on the southwest coast of the island of Newfoundland, in the province of Newfoundland and Labrador, Canada. At the effective date of this report, it was comprised of a core holding of 1003 contiguous exploration claims plus a satellite holding of 63 claims, all of which were acquired through map staking. This main property covers 25,075 ha of surface area and measures approximately 32 km by 12 km in maximum east-west and north-south dimensions, respectively. Constituent claims of the core holding are held under 5 separate Licenses and are approximately centered on the past-producing Hope Brook gold mine, located at Latitude 47.738° north and Longitude 58.095° west (Figures 4.1 and 4.2). Coastal Gold also held at the effective date a satellite property of 63 claims (1575 ha) in the Ironbound Hill area, approximately 25 km northeast of the Hope Brook deposit. The Ironbound Hill property was referred to as the “Peter Snout” property in the 2017 technical report prepared by Mercator for First Mining.

Claims of the main HBGP property were regrouped to their present configuration depicted in Figure 4.2 after filing of Coastal Gold’s 2014 assessment work. This resulted in issuance of several new licence numbers that appear in Figure 4.2 but do not appear in earlier technical reports.

Big Ridge has entered into an earn-in agreement with First Mining with respect to the HBGP, details of which are presented below in section 4.2. The mineral exploration titles that pertain to that agreement are listed below in Table 4-1 and are currently held by First Mining’s wholly owned subsidiary, Coastal Gold. They will be transferred to Big Ridge upon attainment of key agreement conditions. Coastal Gold holds a 100% interest in these titles, subject to third royalty interests described in section 4.2 below. Royalty interests do not apply to licence 21733M at Ironbound Hill.

Figure 4-1: Project location map

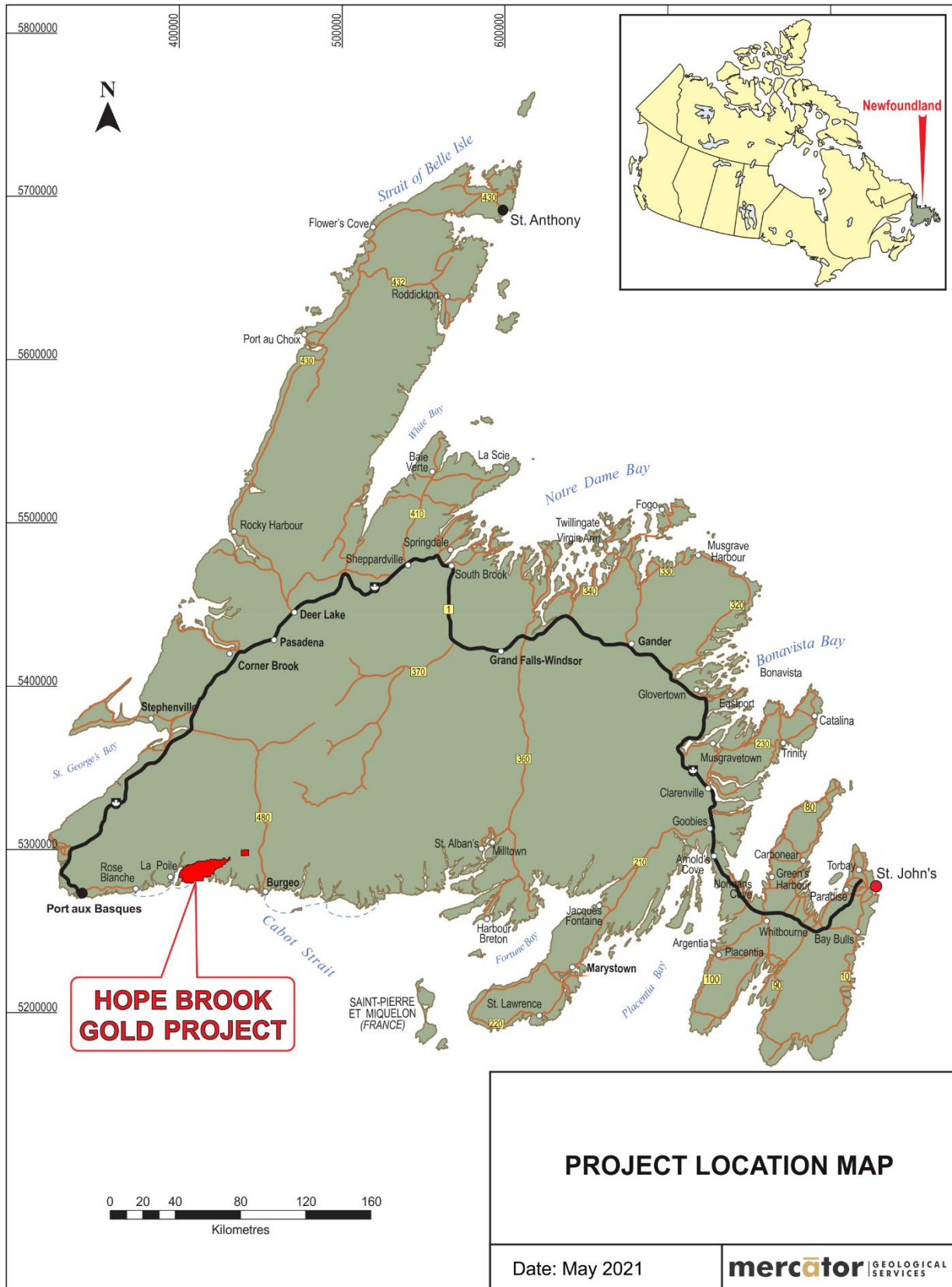
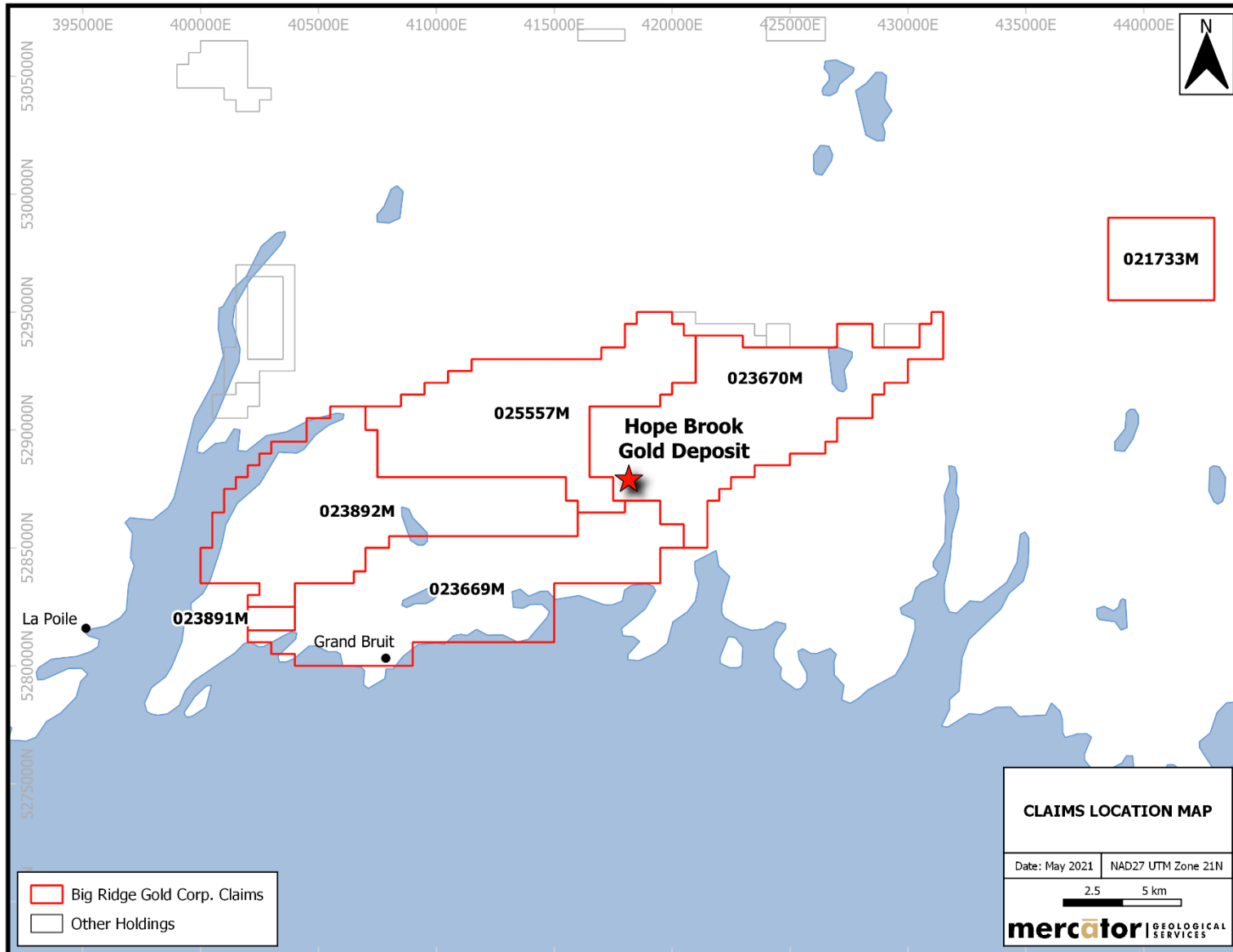




Figure 4-2: Project location map



**Table 4.1: List of Exploration Holdings at April 5<sup>th</sup>, 2021**

Licence	No. of Claims	Property Area	Held By	Issue Date	Renewal Date
25557M	227	Hope Brook	Coastal Gold Corp.	28-Mar-03	28-Mar-23
23892M	256	Hope Brook	Coastal Gold Corp.	28-Mar-03	28-Mar-23
23670M	256	Hope Brook	Coastal Gold Corp.	10-Apr-03	10-Apr-23
23669M	256	Hope Brook	Coastal Gold Corp.	10-Apr-03	10-Apr-23
23891M	8	Hope Brook	Coastal Gold Corp.	10-Apr-03	10-Apr-23
Subtotal	1003				
21733M	63	Ironbound Hill	Coastal Gold Corp.	19-Dec-13	19-Dec-23
Subtotal	63				
<b>Total</b>	<b>1,066</b>				

Big Ridge advised that the company is duly registered as an extra-provincial corporation with the Registry of Companies for Newfoundland and Labrador, is authorized to carry on undertakings in the Province of Newfoundland and Labrador and is in good standing in its filings with the Registry of Companies for Newfoundland and Labrador. This was confirmed by the law firm Stewart McKelvey in an opinion dated May 20, 2021. Stewart McKelvey also provided an opinion dated May 20, 2021 with respect to status of the mineral titles listed in Table 4-1. This states that all exploration titles were registered to First Mining and in good standing at the date of review. A copy of the Stewart McKelvey opinion is included in Appendix 1.

Mercator has reviewed the opinions and information provided by Big Ridge with respect to validity and currency of mineral exploration titles presented in Table 4-1 and has relied upon these opinions for purposes of current reporting. Mercator also independently reviewed the status of these titles through the on-line exploration title management system maintained by the province of Newfoundland and Labrador and noted consistency with the information provided by Big Ridge.

## 4.2 Earn-In Agreement Between Big Ridge and First Mining

Big Ridge entered into an earn-in agreement (the “Earn-In Agreement”) with First Mining and Coastal effective April 5, 2021 pursuant to which the Company can earn up to an 80% interest in First Mining’s HBGP, located in Newfoundland and Labrador.

At the closing of the Earn-In Agreement (the “Closing Date”), the Company agreed to pay C\$500,000 in cash and issue 11,500,000 common shares of the Company to First Mining, at which time the Company shall immediately become the operator of the Hope Brook Gold Project.

The earn-in is comprised of two stages. In order to exercise its first earn-in right to acquire a 51% interest in the Hope Brook Gold Project, the Company must incur and fund expenditures on the Hope Brook Gold Project of no less than CDN \$10 million within the three-year period following the Closing Date. Upon achieving this expenditure threshold and issuing an additional 15 million common shares to First Mining, subject to the approval of the TSX Venture Exchange, the Company (51% interest) shall become party to a joint venture agreement for the HBGP with First Mining (49% interest), with the Company continuing as the operator.

Promptly following receipt of written notice to First Mining confirming the Company’s exercise of its first earn-in right, First Mining and Coastal will take all necessary steps to transfer legal ownership of a 51% undivided interest in and to the Hope Brook Gold Project to the Company.

Concurrently with the creation of the joint venture, the joint venture entity shall grant to First Mining a 1.5% net smelter returns royalty on the Hope Brook Gold Project, subject to a right of the Company to buy back 0.5% for CDN \$2,000,000 in cash to First Mining. The joint venture shall also pay to First Mining a royalty of US\$1 per tonne of aggregate material sold from the property.

To earn an additional 29% interest in the Hope Brook Gold Project, the Company must incur an additional CDN \$10 million in expenditures on the project by the end of the fifth anniversary of

the Closing Date. Upon achieving this final expenditure threshold and issuing an additional 10 million common shares (“Stage 2 Shares”) to First Mining, subject to the approval of the TSX Venture Exchange, the Company shall become the holder of an 80% interest in the Hope Brook Gold Project. The Company will solely fund all expenditures on the Project up to and including the date on which the Company announces the results of a feasibility study on the Project, at which time First Mining’s free carry period terminates. If the issuance of the Stage 2 Shares would result in First Mining owning more than 19.9% of the total number of the Company common shares issued and outstanding following such share issuance, the number of Stage 2 Shares shall be reduced such that First Mining will own no more than 19.9% of the total number of the Company common shares issued and outstanding following the issuance of the Stage 2 Shares.

Promptly following receipt of written notice to First Mining confirming the Company’s exercise of its second earn-in right, First Mining and Coastal will take all necessary steps to transfer legal ownership of an additional 29% undivided interest in and to the Hope Brook Gold Project to the Company.

Upon the commencement of commercial production at the project, the Company has agreed to pay CDN \$2,000,000 in cash to First Mining.

Under the terms of the Earn-In Agreement, First Mining shall be granted a number of rights so long as it holds at least 10% of the issued and outstanding common shares of the Company, including (i) the right to nominate one director to the Company’s board, and (ii) a right to participate in financings by the Company in order for First Mining to maintain its percentage ownership in the Company. The Earn-In Agreement also includes various restrictions on the parties from transferring their respective interests in the Hope Brook Project and on First Mining’s ability to resell its the Company shares.

The Earn-In Agreement provides that none of the parties thereto may, directly or indirectly, stake or otherwise acquire any interest or right of any nature whatsoever located wholly or in part in

the area located within 5 km of the boundaries of the Hope Brook Gold Project (the “Area of Interest”) provided however that this restriction would not prevent the Company from acquiring (i) an interest in any such property within the Area of Interest if such interest is acquired as a result of the Company acquiring an interest in a third party which holds an interest in such property, provided that the primary purpose of such acquisition is not to acquire an interest in such property (an “Unrelated Equity Interest”), or (ii) any pre-existing royalty interest on the Hope Brook Gold Project (an “Existing Royalty Interest”). If the Company, directly or indirectly, stakes or otherwise acquires an interest or right in its own name which is located wholly or in part in the Area of Interest, other than an Unrelated Equity Interest or an Existing Royalty Interest, then the Company shall provide notice thereof to First Mining and First Mining shall have 30 days to elect to require the Company to add such interest to the Hope Brook Gold Project, in which case the cost of such staking or acquisition shall be deemed to be expenditures for purposes of satisfying the Company’s expenditure requirements under the Earn-In Agreement. If First Mining elects not to require the Company to add such interest to the Hope Brook Gold Project, then such interest shall not form part of the project, the cost of such staking or acquisition shall not be deemed to be expenditures for purposes of the Earn-In Agreement and the Company shall be solely entitled to such interest.

#### **4.3 Royalty Agreement**

Coastal Gold acquired an option to purchase a 100% interest in the original 993 constituent claims of the HBGP over a four-year period under terms of an agreement between Castillian Resources Corp. (“Castillian”) - a previous name of Coastal) with Roland Quinlan, Mervin Quinlan and Eddie Quinlan dated January 22, 2010. Coastal Gold disclosed by press release on November 1<sup>st</sup>, 2012 that it had exercised its option to purchase a 100% interest in the 993 claims that were subject to the option to purchase agreement. In 2012, Dr. William Pearson, then President and CEO of Coastal Gold, confirmed that the option to purchase the original 993 claims was exercised on October 27<sup>th</sup>, 2012 and that all cash payments and issuances of stock to the vendors required by the effective date of this report had been made.

After purchase of the 100% interest by Coastal Gold, a 2% net smelter return royalty payable to the vendors applies under terms of a royalty pre-payment schedule of \$20,000 per year that initiates after year four of the agreement.

All HBGP mineral exploration titles excepting 21733M (Ironbound Hill) are subject to the royalty terms provided for in the Letter Option Agreement dated January 22, 2010 between Castillian and Roland Quinlan, Mervin Quinlan and Eddie Quinlan, which is subject to an Amending Agreement (“Amended Letter Agreement”) dated February 17, 2012 made between Roland Quinlan, Mervin Quinlan and Eddie Quinlan and Castillian. The Amended Letter Agreement provides for a 2% net smelter return royalty in favour of Roland Quinlan, Mervin Quinlan and Eddie Quinlan (the “Quinlan NSR”) plus an annual advance royalty payment of CDN \$20,000.00 to Roland Quinlan, Mervin Quinlan and Eddie Quinlan payable in each year subsequent to the fourth year anniversary of the Amended Letter Agreement (the “Advance Royalty”), which Advance Royalty is to be deducted from any and all royalty payments due following commencement of production. The Amended Letter Agreement further provides that Castillian shall have the option to purchase 50% of the Quinlan NSR for CDN \$1,000,000.00 at any time during the term of the Amended Letter Agreement.

#### **4.4 Mineral Tenure System in Newfoundland and Labrador**

Mineral exploration claims in Newfoundland and Labrador are issued under the province’s Mineral Act (the Act) as Amended in 1991 c36 s74; 1992 cF-7.1 s20; 1992 c41; 1994 c14; 1995 c11; 1995 c12; 1997 c13 s44; 1998 c14; 1999 cM-15.1 s25; 2000 c10; 2002 cW-4.01 s101; 2004 c17; 2004 cL-3.1 s48. Any individual 19 years of age or more and registered with the provincial mineral claims on-line staking system, or a comparably registered corporation, can acquire mineral exploration claims in the province. Exploration licences are issued for a period of five years and can be renewed through application, payment of prescribed renewal fees and demonstration that required yearly assessment work has been performed.

Claim staking at this time is through the province's Mineral Rights Administration - MIRIAD - System, which is an on-line pass-worded system for registered users. Map staking covers all areas deemed open for staking at the time of title application. Restrictions exist in some areas where leases, grants or other legally binding instruments vest mineral rights with non-Crown entities. Such areas generally reflect land grants, concessions or other historical facilities and since July 12, 1977 many of these have been subject to legislation that limits their future continuance.

The current basic unit of exploration title accessible through the on-line system is the "claim" which measures 500 m by 500 m in size (25 ha) and represents one quarter of a one kilometer square Universal Transverse Mercator grid block, based on 1:50,000 scale reference maps using North American Datum 27 (NAD 27). Submission of a staking fee consisting of \$60 per claim is required at the time of licence application and this fee reflects a \$10 charge for staking combined with a \$50 security deposit. Annual work requirements for each claim are set out under the Act and these are presented in Table 4-2 below. Upon acceptance of submitted work reports at the end of the first year of issue, the \$50 security deposit is refunded to the licensee. Various detailed provisions covering termination, renewal, and other issues surrounding exploration title are covered by the Act and associated Regulations, copies of which are available on-line and through provincial government offices.

**Table 4.2: Claim Renewal Fees And Work Requirements**

Year of Issue	*Required Value	Work	Renewal Fee Required
1	\$200 per claim		\$25 per claim for Year 5
2	\$250 per claim		\$50 per claim for year 10
3	\$300 per claim		\$100 per year for year 15
4	\$350 per claim		\$200 per claim for years 20 and 25
5	\$400 per claim		
6 through 10	\$600 per claim		
11 through 15	\$900 per claim		
16 through 20	\$1,200 per claim		
21 through 25	\$2,000 per claim		
26 through 30	\$2500 per claim		

\*CDN\$

Written notice of initiation of exploration programs on licences must be submitted to the provincial government prior to commencement of the exploration work. Development work leading to mine production can only proceed under terms of a Mining Lease issued by the provincial government under terms of the Act. Legal surveying is required for any lands held under a Mining Lease and the Act specifies Royalties on mine production that are payable to the provincial government.

#### 4.5 Permits Required for Recommended Future Exploration

To carry out surface exploration programs recommended in this report Big Ridge requires permits to access Crown lands for intrusive mineral exploration activities such as core drilling and trenching and also for access to surface sites at which camp facilities are present. Additional permitting is required in instances where proposed intrusive work such as drilling, trenching or road making is planned to occur within 200 m of a recognized salmon stream or for such work as tailings deposit sampling programs.



Mercator understands that at the effective date of this report exploration permits originally obtained by Coastal Gold or First Mining to cover ongoing HBGP exploration programs had expired and that Big Ridge is currently in the process of preparing applications to cover the scope of new exploration programs recommended in this report. An exception exists with respect to the License to Occupy that applies to the Hope Brook exploration camp, which is understood to currently be in good standing. Coastal Gold did not encounter substantive difficulties in the past with respect to procurement of required Exploration Permits and camp occupancy permissions and it is reasonable to assume that this should continue to be the case.

#### **4.6 Environmental Liabilities**

The Hope Brook mine production period spanned the 1987-1997 period and was preceded by exploration and development programs carried out between 1983 and 1987. During the course of these activities substantial modifications to natural landscapes were made to accommodate site infrastructure required to support mining and milling activities. Included in such modifications were construction of open pit and underground mining facilities, milling facilities, heap leach pads, a site road system, a docking facility at Couteau Bay, an airstrip, and establishment of tailings pond, solid waste management and site drainage control facilities. All of this was carried out under terms of required environmental and other approvals of the day. Public records show that during the course of mining and milling activities BP encountered difficulty at times in maintaining acceptable metal and cyanide levels in site discharges which periodically impacted local receiving watersheds. Royal Oak subsequently modified processing methods and facilities to negate this problem and continued operation until closure in 1997.

Due to financial difficulties that led to bankruptcy of Royal Oak in April of 1999, environmental reclamation of the Hope Brook site was not completed by that company. After being awarded ownership of the site and remaining infrastructure, the Newfoundland government initiated a major reclamation effort with work programs spanning the period 2001 to 2004. Site programs included environmental assessment and monitoring, removal of remaining site infrastructure,

upgrading of tailings dams and other water control structures, placement of acid generating waste rock and remaining heap leach pad materials in the water-filled open pit, clean up and capping of landfill sites, de-commissioning of hydro and communication services, installation of fencing around the open pit, and establishment of on-going watershed and tailings dam structural monitoring programs.

Big Ridge confirmed that the Newfoundland and Labrador government had previously provided assurance that Coastal Gold's site liability during exploration programs carried out in this area will be limited to impacts of those exploration activities and that these will be appropriately addressed under terms of permits normally required for completion of exploration activities. He also confirmed that this assurance remains in effect at the present time. To date, Big Ridge has not carried out site exploration under this assurance but is preparing an exploration permit application to cover currently proposed exploration programs. The proposed programs will be designed to minimize site impacts.

As part of the 2011 work program, Fracflow Consultants Inc. (FracFlow) of St. John's NL was retained to carry out a screening level assessment of baseline environmental conditions at the Hope Brook site. Results of this study showed that a number of chemical impacts that are residual to the former mining operation are present locally. These include elevated metal levels in soil, sediment and water as well as elevated petroleum hydrocarbon levels in soil. The most significant liabilities were deemed to be associated with subsurface conditions where impairment to both soil and groundwater had occurred around existing landfill sites, the heap leach pad, and within the underground mine workings.

All of these conditions pre-date Big Ridge, First Mining and Coastal Gold site activities and the companies are excluded from associated liability. However, if a new mining venture is established at this site it will be necessary to fully quantify the potential impacts of such conditions on site development, mining and site decommissioning and reclamation plans for any new operation. All

such issues would be dealt with under the mine permitting and associated environmental approval processes.

In addition to programs described above, FracFlow carried out a baseline surface water monitoring program for the two tailings pond systems and also completed systematic water sampling during the 2013 vibracore drilling program conducted to assess economic potential of gold and copper occurring in the tailings deposits. Details of this program appear in report section 9.0 and the program is considered to have had no discernible effect on the surface water system.

During the January 2021 site visit by author Burke, field observations were made with respect to any obvious new environmental site liabilities such as massive failures of tailings containment structures. No evidence of such failures was noted.

With the exception of author Burke's observations, Mercator has relied upon Big Ridge for provision of information presented in the Environmental Liabilities section of this technical report.

#### **4.7 Availability of Land for Potential Future Site Development**

This is a brownfields site owned by the province of Newfoundland and Labrador. In Mercator's opinion, sufficient undeveloped land is present in this area to support a future underground mining operation of the type considered potentially applicable during development of the current resource estimate model. However, no agreements to secure such land access for future development purposes have been established to date by either Big Ridge or First Mining. There are no other significant factors that Mercator is aware of that would impede potential future land access.

## **5.0 Accessibility, Climate, Local Resources, Infrastructure and Physiography**

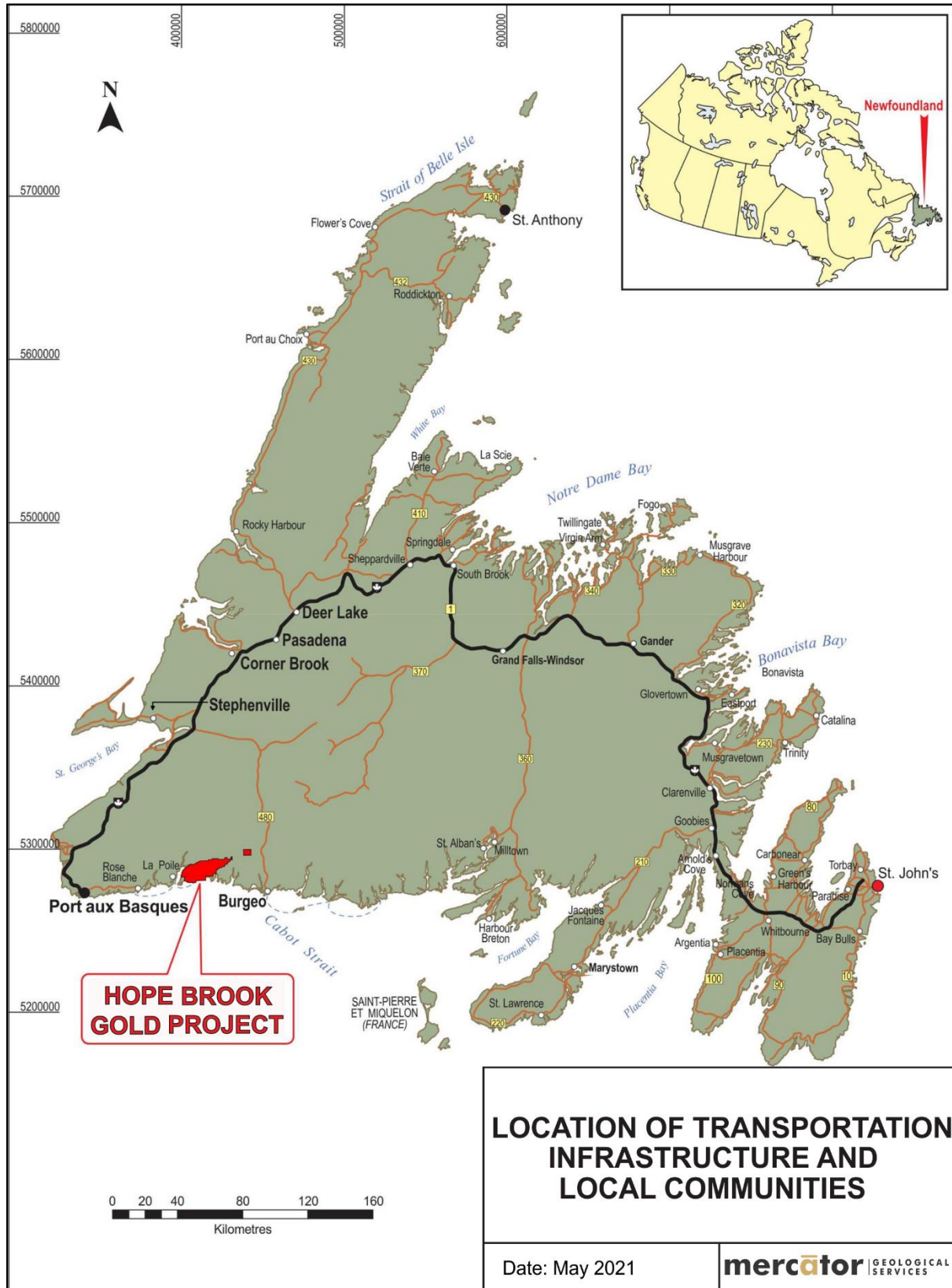
### **5.1 Accessibility, Local Resources and Infrastructure**

The HBGP is located approximately 85 km by water east of the community of Port aux Basques (4,170 population - 2011 census) and is not accessible by any form of highway transportation at this time. Port aux Basques is the year-round terminus for the Marine Atlantic ferry service connecting the island of Newfoundland with mainland Canada at North Sydney, Nova Scotia and was used as the marine service center for Hope Brook mine operations (Figure 5-1). The coastal community of Burgeo, located 50 km east of the mine site, has a population of 1,607 (2006 Census) and has access to the Trans-Canada Highway system via the Burgeo Road (Highway 480) that extends north and northwest from the community for a distance of 140 km to its junction with Highway 105 near Stephenville Crossing. The coastal outpost community of Grand Bruit is located approximately 12 km southwest of the mine site but at the report date was no longer classed as a permanent settlement. The closest permanently populated outpost community is La Poile (103 population - 2011 census), which is located on La Poile Bay, approximately 20 km west of the Hope Brook mine site. This community receives year-round Marine Atlantic coastal boat service from Port aux Basques.

Direct site access to the HBGP can be gained by chartered boat from either the Burgeo or Port aux Basques areas and could also be gained through small boat charter from La Poile, after travel to that community on the coastal service vessel. The most efficient means of current access to the property is by charter fixed wing aircraft or helicopter from commercial bases in the Deer Lake-Pasadena area, approximately 120 km to the north.

Various valuable site infrastructure features currently exist on the HBGP property, primarily in the form of facilities originally established to support mining activities that were not removed during site reclamation programs carried out by the provincial government. Prominent among these are: (1) access to the provincial electrical grid through the existing transmission line, (2) access to the provincial telephone land line communications system through lines originally

Figure 5-1: Location of transportation infrastructure and local communities



installed to service the mine plus the nearby communities of La Poile and Grand Bruit, (3) access to the roll-on and roll-off docking facility at nearby Couteau Bay, which has greater than 5 m of water depth alongside and appeared to be in good condition at the time of the 2020 site visit by author Cullen and the 2021 site visit by author Burke (Figure 5-2), (4) access to the 4000 ft (~1220 m) gravel airstrip near Couteau Bay that was also found to be in good condition at the site visit times noted above (Figure 5-3), (5) intact site roads over much of the area of past mining, including areas of current exploration interest (Figure 5-4), (6) intact tailings and polishing pond facilities with associated water control structures (Figure 5-5), and (7) a potentially accessible decline/ramp system that accesses the Hope Brook gold deposit to the 4800 m mine elevation level, approximately 350 m below surface.

On the broader geographic front, the communities of Corner Brook (20,083 population - 2006 census), Deer Lake (4,995 population - 2011 census) Pasadena (2,636 population – 2011 census) and Stephenville (6,615 population - 2011 census) in western Newfoundland combine to provide a wide range of services and logistical support capabilities. Prior to modifications to transportation services related to the current Covid 19 pandemic, daily scheduled flights by national air carriers from Deer Lake to transportation centers such as Halifax, NS, Toronto, ON and St. John's NL were available, as well as regional carrier service to smaller centers such as Goose Bay and Gander NL. These services have been reduced in frequency at present due to pandemic restrictions but air travel to the region is still possible. Charter fixed wing aircraft and helicopter services are available through local flight bases in Pasadena and Deer Lake and the Trans-Canada Highway (Highway 105) connects these communities with the rest of Canada via the Marine Atlantic ferry service between Port aux Basques NL and North Sydney, NS. Strict Covid-19 protocols also apply to all marine transportation accesses to the island of Newfoundland.

**Figure 5-2: View of docking facility at Couteau Bay**



**Figure 5-3: View of airstrip at Hope Brook site**





**Figure 5-4: Site roads available for use during exploration programs**



**Figure 5-5: Main tailings pond facility at Hope Brook site**





## **5.2 Climate and Physiography**

### **5.2.1 Climate**

The climate of southwestern coastal Newfoundland is strongly affected by proximity of the Atlantic Ocean, which exerts a moderating effect with respect to temperature extremes. However, dramatic seasonal variations occur, with winter conditions of freezing temperatures and moderate to heavy snowfall expected from late December through late March. Spring and fall seasons are cool, with frequent periods of rain and frequent heavy fog. Summer conditions typically prevail from July through early September and provide good working conditions for field parties. Environment Canada records for the 1971 to 2000 period for Burgeo, located on the coast approximately 50 km east of the Hope Brook mine site, show daily mean temperatures in August of 14.7 degrees C and an average maximum August daily temperature of 18.1 degrees C. Average daily winter maximum temperature in February is -2.6 degrees C and the corresponding average minimum is -10.4 degrees C. The extreme winter minimum is -25.9 degrees C. Average yearly precipitation totals 1708.6 mm which includes 276.7 cm of snowfall. Weather and site conditions during the spring breakup period can prevent some exploration activities from being carried out due to high water levels and remnant snow cover. Scheduling of field activities to avoid this period is advisable. Winter programs can be carried out with adequate consideration given to noted snowfall and cold temperature conditions as well as potentially high wind conditions that generally accompany storm events.

### **5.2.2 Physiography**

Topography of the HBGP defines two distinct physiographic elevation domains that correspond to differing underlying bedrock types. The first is characterised by a gently rolling land surface having predominantly tundra attributes that rises from sea level to an elevation of approximately 150 m above sea level. This area is generally underlain by rocks of the late Proterozoic stratified volcano-sedimentary sequences of the Whittle Hill Sandstone – Third Pond Tuff succession plus Lower Paleozoic and younger igneous intrusions. The second topographic domain rises abruptly

from the first and broadly corresponds with transition to areas underlain by Silurian rocks of the La Poile Group. This abrupt physiographic transition is well-illustrated in the Cinq Cerf River area, where Silurian rocks of the La Poile Group forming Dinnerbox Hill, west of the Hope Brook mine site, rise abruptly above older sequences that outcrop extensively in the river valley bottom (Figure 5-6). Topographic relief across the property ranges from sea level to a maximum of approximately 400 m with a gradual increase in elevation occurring from south to north across the property.

**Figure 5-6: Topographic break between Silurian and older sequences at Dinnerbox Hill**



Areas underlain by the large Silurian and Devonian intrusive complexes, such as those located southeast of the Hope Brook mine site, form rounded topographic highs with morphology reflecting well developed orthogonal jointing patterns. The Hope Brook mine area and the associated alteration zone adjoin the Cinq Cerf valley to the east and show elongate, well defined northeast trending ridges of 5 m to 15 m height that correspond with resistant bedrock lithologies such as silicified Whittle Hill Sandstone, porphyry dikes and other lithologies. Intervening topographic lows often mark zones of less resistant altered bedrock.

Barren land or tundra conditions characterize much of the HBGP, with irregularly developed coniferous forest cover consisting primarily of black spruce and fir being discontinuously present in river valley bottom areas and along protected side valleys or slopes (Figure 5-7). Substantial areas of boggy ground with associated peat development are also present, as are areas of stunted low growth tuckamore. Barren land expanses are characterised by lichen and moss cover interspersed with grasses and low bushes of various types. Outcropping bedrock is extensively developed in many areas, particularly at higher elevations and in barren land settings, and this

**Figure 5-7: Tundra and forested river valley settings in Hope Brook area**



facilitates prospecting and geological mapping activities. Well-developed soil profiles are present along valleys and where glacial overburden is comprised of thicker till sections, but limited development of only organic layers is also common.

The entire HBGP area has been glaciated and most low relief areas are now mantled with a thin to moderately thick layer of till and/or glacial fluvial deposits. In contrast, upland areas are characterized by abundance of angular bedrock outcroppings, including steep cliff and slope

exposures that locally account for more than 80 percent of surface area. Relatively youthful drainage systems characterize the region, with first order north-south river valleys showing high gradient transitions to surrounding uplands through short second and third order stream systems. Low relief areas in both upland and lowland settings are generally characterised by abundance of small lakes and ponds with poorly developed, if any, interconnecting drainage systems. Glacial modification of bedrock ridges and outcroppings is commonly evident through ridge morphology, rounding, polishing and presence of well-developed striation sets.

### **5.2.3 Availability of Surface Rights, Power, Water and Personnel**

All areas covered by the mineral resource estimate presented in this report occur on lands owned by the province of Newfoundland and Labrador and access to lands sufficient to support past mining operations was established under terms of agreement with the provincial government. Development of any future mining operation at this site would be expected to follow the same course, subject to possible local restrictions established on the basis of environmental permitting factors relevant to watershed issues, wildlife, historic contamination or other issues related to the 1987-1997 operating period. The deposit area is non-populated at present and is surrounded by an abundance of cleared and levelled site components that would favorably contribute to future development. Mercator is of the opinion that, based on the previous history of this site, access to government lands for the purpose of future mine development should reasonably be expected through negotiation with government. At the present time, it is Mercator's understanding that neither Big Ridge, First Mining or Coastal Gold owns any surface rights in the project area and that none of these firms has entered into negotiations with government to obtain such rights.

In addition, and as outlined previously, access to the provincial electrical grid is available at the Hope Brook site and could greatly benefit any future mining project. The current exploration camp is connected to the electrical grid. Similarly, the abundance of surface water resources at the site is a positive factor for future development, as is the presence of a tidewater wharf facility,

site road infrastructure, an operational airstrip, accessible mine workings and established tailings pond facilities with remaining capacity and water control structures.

Work forces in western Newfoundland have historical association with the natural resources sector through long-term presence of pulp and paper making, lumbering, fishing and mining industries. Much of the workforce employed during mining operations at the Hope Brook site was sourced in this area and it is reasonable to assume that a future new development at the Hope Brook site could benefit from the regional workforce pool.

## **6.0 History**

### **6.1 Introduction**

Documentation of HBGP area's history of exploration and mining spans the period between 1923 and the present day, but modern programs directed toward assessment of gold potential and related mining have only occurred since discovery of the Hope Brook gold deposit in 1983. With this in mind, the exploration and mining history of the HBGP was previously described by Mercator for technical report purposes in Cullen (2010) and also in Desautels et al. (2012a, 2012b and 2014) using the same two stage approach and content, with the first stage consisting of a summary of exploration and mining activities. The summary illustrates the broad flow of exploration and mining events but does not include detailed presentation of specific program results. The second stage consisted of a more detailed and chronologically ordered review of past exploration programs and associated results.

The reader is directed to content prepared by Mercator for Coastal Gold in the 2014 NI 43-101 technical report (Desautels et al. 2014) for more detailed historical exploration information that was previously disclosed under the more detailed second stage of reporting referred to above. The single stage summary reporting format originally used in the Cullen (2015b) NI 43-101 technical report prepared by Mercator for First Mining is applied below for current report purposes.

### **6.2 Summary of Exploration and Mining Histories**

The large land holding comprising the HBGP has been explored in the past to varying degrees, with earliest efforts related to discovery of copper and gold in the Chetwynd Prospect area along Cinq Cerf Brook in 1923. Subsequent exploration in this area was carried out by Burgeo Mines Ltd., Buchans Mining Co. Ltd., O'Brien Gold Mines Limited, Noranda Exploration Ltd., Rio Tinto Exploration Ltd. and Hudson Bay Oil and Gas Limited, with primary interest in assessment of base metal sulphide potential. None of these appears to have systematically assessed gold potential

of the region and no new base metal prospects of substantial economic significance were identified within the HBGP holding. However, the previously known Strickland zinc-lead-copper-barium deposit, located approximately 16 km west of the Hope Brook mine on the east side of La Poile Bay, and outside of the HGGP, was assessed through core drilling programs, the most recent being those by a joint venture of Falconbridge Nickel Mines Limited, Great Yellowknife Mines Limited and United Keno Hill Mines Limited during the 1977-1980 period. This stratiform deposit is hosted by Silurian volcano-sedimentary sequences of the La Poile Group's Carrot Brook Formation and the Main Zone was reported by Prince (1981) to contain 260,000 tonnes grading 5.25% combined Pb plus Zn and 195 g/t Au. These figures apply to a mineralized lens 300 m long, 2 m thick and extending 150 m down dip. This estimate is historical in nature, not compliant with NI 43-101, and should not be relied upon. A Qualified Person has not done sufficient work to classify the estimate as current mineral resources or mineral reserves and Big Ridge is not treating the historical estimate as current mineral resources or mineral reserves. At minimum, database validation, check sampling and drill hole twinning programs designed, supervised and assessed by a Qualified Person would be needed to provide a basis for updating of this historical estimate to NI 43-101 standards. Other smaller zones of mineralization are also present in the immediate area. This deposit does not occur within the HBGP area for which Big Ridge has current exploration title.

The greatest focus of modern gold exploration efforts in this region began in the Cinq Cerf Brook area with discovery of the Hope Brook gold deposit in 1983 by the Selco Division of BP. At that time, BP established a very large exploration holding. This was focused on rocks of the La Poile Group's Georges Brook Formation of Chorlton (1978) that extend east-northeasterly from the Roti Bay area, west of Grand Bruit, for a distance of at least 60 km. Adjoining areas of intrusive igneous rocks or younger felsic volcanics were initially held and explored by various other interests such as Dolphin Exploration Ltd., South Coast Ventures Ltd., Long Range Resources Ltd. and Noranda Exploration Ltd. No major new gold discoveries other than the Hope Brook deposit were made during this period but several areas of interesting bedrock alteration were identified and initially assessed for gold potential. Of these, the Old Mans Pond, Phillips Brook and Cross

Gulch areas received the greatest amount of exploration attention and this resulted in discovery of several new bedrock gold occurrences within the area now forming the HBGP. In contrast, the Ironbound Hill area (previously referred to as the Peter Snout area by BP and Costal Gold) east of the HBGP, where highly altered rocks hosting small amounts of base metal sulphides had been previously explored by Utah Mines Ltd., was also assessed in substantial detail by BP but did not result in discovery of significant bedrock gold occurrences.

Programs of deposit definition drilling, resource estimation, metallurgical assessment and feasibility assessment were completed for the Hope Brook deposit between 1984 and 1986 and a production decision was announced in 1986 by BP. That company's subsidiary, Hope Brook Gold Inc., subsequently developed and mined the deposit during the period 1987 through 1991. BP's production decision appears to have been supported by initial resources of 11.2 million tonnes grading 4.54 g/t Au above a 2.5 g/t Au cut-off (~1.6 million troy ounces) that were reported by McKenzie (1986). Yule et al. (1990) reported the same tonnage and gold grade for the deposit but additionally specified a 0.3% copper parameter. These estimates are now historical in nature, not compliant with NI 43-101 and should not be relied upon. A Qualified Person has not done sufficient work to classify them as current mineral resources or mineral reserves and Big Ridge is not treating the historical estimates as current mineral resources or mineral reserves. Substantial amounts of the mineralized material comprising these estimates was mined during the production period of the Hope Brook Mine and are no longer available to contribute to any current mineral resource estimate. However, these estimates provide useful information regarding mineralized zone characteristics and on that basis are relevant to current exploration programs by Big Ridge.

BP also carried out basic exploration in Big Ridge's current Ironbound Hill property area that included geological mapping, rock and soil geochemical sampling and analysis, ground geophysics and drilling of 9 core holes in the prospect area originally identified and drilled by Utah Mines Ltd. (2 holes) in the 1980 to 83 period. Results of this work confirmed presence of a large expanse of pyritic, aluminous alteration in this area that locally hosts minor amounts of predominantly



fracture-associated, low grade (<2.00%) Zn, Pb, and Cu mineralization. Anomalous Au and Ag values are also locally defined but Au values returned for extensive soil and rock sampling programs were typically very low. No gold-bearing zones of economic interest were defined by the BP exploration programs. The style of alteration present at Ironbound Hill is very similar to that seen in association with the Hope Brook deposit and is believed to be associated with emplacement of the late Proterozoic Roti Intrusive Suite.

Mining from both open pit and underground operations at Hope Brook was ultimately carried out between 1987 and 1997. Provincial government records document production of 304,732 ounces of gold by BP during the 1987-1991 period from all operations. BP encountered difficulties with elevated cyanide and copper levels in processing plant effluent during its operating period and this may have contributed to cessation of mining and milling in early 1991. The operation was subsequently sold as part of a broader corporate re-positioning initiative that saw BP exit the mining industry.

During the 1987-1991 BP mining period, detailed exploration focus was largely restricted to the mine area and adjoining advanced argillic alteration zone (AAZ) areas to the southwest, with particular attention paid to assessment of possible strike and dip extensions of the main deposit. This included discovery and initial assessment of the 240 Zone, located approximately 1.2 km southwest of the open pit. Discovery drill hole CW-240 returned an intercept grading 6.98 g/t Au over 5.6 m, beginning at a depth of 561.8 m, and the 240 Zone was considered to have potential for further extension. Earlier programs in the 1983 to 1987 period had addressed exploration potential on the more regional holdings of the company as well as on those immediately adjacent to the Hope Brook deposit along the mapped trend of the AAZ. Low grade (>0.10 g/t Au and < 0.50 g/t Au) drilling intercepts over widths ranging between a single 1.0 m sample and 10 m or more were typically returned and this generally confirmed the gold-bearing character of the AAZ. No substantial new discoveries other than the 240 Zone were recorded.

In late 1991, Royal Oak Mines Ltd. (Royal Oak) purchased the Hope Brook operation plus associated exploration properties from BP and carried out underground mining at the site until mid-1997, when operations ceased. Provincial government records and Royal Oak annual reports document production of 447,431 ounces of gold by Royal Oak during the 1992-1997 period. The company expanded exploration holdings in the area, carried out re-assessments of past exploration programs in both the mine area and surrounding district, and completed follow-up exploration on several promising areas not associated with the AAZ and the Hope Brook deposit trend. While no substantial new discoveries were made during this period, bedrock gold mineralization associated with structurally focused alteration zones, silicified zones and quartz vein arrays related to evolution of the Bay d' Est Fault system were investigated and shown to be of further exploration interest. The Old Mans Pond, Phillips Brook and Cross Gulch areas were identified as being the most significant, with respect to gold potential external to the Hope Brook trend.

In 1996, Royal Oak announced its intention to close mining operations in 1997 due to depletion of reserves, and much of the onsite milling and mining equipment was removed during the following year. In April 1999 the company declared bankruptcy and through subsequent legal proceedings remaining site and mineral title assets held by company were awarded to the government of Newfoundland and Labrador. Royal Oak did not carry out site reclamation work.

During the period 2002 through 2007 the provincial government carried out environmental assessment and reclamation programs at the Hope Brook mine site. Programs included removal of remaining infrastructure, disposal of associated waste, sealing of underground workings, decommissioning of electrical transmission and substation facilities, modifications to tailings and water control dams, placement of acid generating waste rock and heap leach residues in the water-filled open pit, fencing of the open pit area and establishment of ongoing monitoring programs with respect to both watershed environmental conditions and geotechnical conditions of remaining dams and water control facilities. Reclamation was completed in 2007 and

scheduled site monitoring programs by provincial government agencies remain in place at the current report date. No mining activities have been carried out subsequent to those of Royal Oak.

No drilling-based exploration programs were completed on the HBGP through the period 1997 through 2007. However, in 2003 mine area exploration holdings were staked by related entities R. Quinlan and Quest Inc. and a subsequent agreement between these interests and Benton Resources Inc. (BRI) resulted in a large land position being assembled in 2008 by BRI. This position is similar to the current main HBGP holding, exclusive of Ironbound Hill. The company completed an airborne magnetometer and electromagnetic survey of the entire property, compiled past drilling results, carried out prospecting and completed an extensive bedrock sampling program. Sampling was substantially focused in an area immediately northwest of the Hope Brook open pit where alteration zone and silicified zone units occurring structurally below the mined Hope Brook deposit had been exposed during removal of previously stockpiled acid generating waste rock during the site reclamation program. Programs of bedrock sampling were also carried out on known gold occurrences in the Old Mans Pond and Cross Gulch areas as well as in other areas of interest. No substantial new discoveries resulted from any of this work.

In January 2010, BRI terminated its option to acquire the Hope Brook property and transferred all of its associated exploration licences to R. Quinlan. As noted in report section 4.3, Coastal Gold entered into an option to purchase agreement with the Quinlan interests in January 2010 and on November 1<sup>st</sup>, 2012 disclosed that it had exercised its option to purchase a 100% interest in the Hope Brook property under terms of the Quinlan agreement. Since the start of exploration work in 2010, Coastal Gold carried out programs of drill core physical properties investigation, ground geophysics, environmental screening, data compilation, data validation, core drilling, vibracore tailings drilling, bedrock and tailings mineral resource estimation, metallurgical assessment and general property evaluation. Summaries of these programs appear below in section 6.4.

### 6.3 Government Reporting, University Theses and Recent Academic Work

The history of early, major geological mapping projects carried out by government agencies was summarized by Stewart (1992) who discussed evolution of associated nomenclature and importance of relative age relationships between various mapped units. Results of regional scale government mapping were reported by the Geological Survey of Canada for the La Poile – Cinq Cerf Map area by Cooper (1954) and this was followed by 1: 50,000 scale interpretations for the La Poile area by Chorlton (1978, 1980). O' Brien and O'Brien (1990), O'Brien et al. (1991) and Dubé et al. (1998) subsequently provided modified geological interpretations based on combined results of detailed mapping and geochronological studies carried out between Grand Bruit and Couteau Bay, with particular emphasis on the Hope Brook gold deposit and its associated alteration zone. The entire HBGP area was covered by regional lake sediment geochemistry surveys carried out in the 1970s by the provincial government and airborne magnetic, electromagnetic, and radiometric survey coverage by government is available through the NLDNR for the entire HBGP.

The first academic thesis focused specifically on the Hope Brook deposit was a B. Sc. project at the University of Western Ontario (Kilbourne, 1985) that addressed alteration zone mineralogy and provided first reporting of the mineral alunite within the main alteration zone. A M. Sc. project at Dalhousie University (Yule, 1989) followed and was focused on emplacement, timing and alteration of mafic dikes that occur within the Hope Brook alteration zone. A Ph.D. thesis was subsequently completed at the University of Western Ontario (Stewart, 1992) and addressed various aspects of deposit geology, mineralogy, alteration age, history and genetic association. Several publications addressing specific aspects of area geology, geochronology, structural geology and mineral deposit genesis were subsequently published and some of these are cited in this report. These include reporting by Dr. Francois Dubé on research carried out jointly by the GSC and provincial survey in the 1990's and other work carried out specifically by the provincial survey.

Between 2012 and 2014, Coastal Gold supported a comprehensive geochemical study of core samples from the Hope Brook deposit. In collaboration with the Hope Brook geological team and researchers at Memorial University, Western University conducted a study to investigate the mineralization style, alteration characteristics, and implications for deposit size and potential at Hope Brook. This study was based on over 270 samples selected from drill holes spaced across the property, including drill holes well outside the historic mine workings area. Research completed to date by the group includes mineral liberation analysis (MLA) conducted in the Micro Analysis Facility (MAF-IIC) at Memorial University using a FEI Quanta 400 Scanning Electron Microscope (SEM), and oxygen stable isotope analyses on a subset of more than 70 whole rock powders conducted in the Laboratory for Stable Isotope Science at Western University.

#### **6.4 Summary of Coastal Gold Exploration**

From April 2010 through December 2014, Coastal Gold completed systematic gold exploration programs, primarily focused in the area surrounding the past producing Hope Brook mine. Work completed includes:

- A review and validation of historical BP and Royal Oak drilling data,
- A drill core physical properties study and a re-sampling of historic core program,
- Reprocessing of 2008 airborne survey results,
- Re-establishment of the mine survey control ground grid,
- An environmental screening study,
- A prospecting and sampling program,
- A tailings sampling program,
- Titan-24 Induced Polarization (IP) surveying by Quantec Geoscience Ltd. (Quantec) plus additional IP surveying by Coastal Gold staff,
- 39,320.4 m of diamond drilling in 139 diamond drill holes,
- 155 m of vibracore drilling in 73 holes plus systematic bottom sampling to test tailings deposits,

- Three NI 43-101 mineral resource estimates for the Hope Brook gold deposit and one NI43-101 mineral resource estimate for the Hope Brook tailings deposit were prepared by AGP and Mercator during the 2012 through 2014 period,
- Additional mineral exploration lands in the Ironbound Hill (Peter Snout) prospect area, east of the main HBGP property, were acquired through staking to cover an area of aluminous alteration defined by historic work in that area,
- A comprehensive lithogeochemical study involving Coastal Gold staff plus researchers at Memorial University and Western University geochemical study was carried out between 2012 and 2014,
- Scoping level test work was carried out at Tomra Sorting Solutions in Surrey, BC to evaluate the potential of rejecting mill feed dilution material before the grinding area using sensor-based sorting. Core samples of mineralized rock, as well as mafic dyke, hanging wall, and footwall dilution, were submitted for qualitative evaluation using four industrially applied sensors: optical, x-ray, near infrared (NIR), and magnetic,
- An initial assessment of underground mining potential based on higher grade zones within the December 2013 NI 43-101 mineral resource model was carried out by AGP and Mercator in June of 2013;
- A NI 43-101 mineral resource estimate focused on underground mining potential was prepared by Mercator in early 2015,
- Additional mineral exploration lands in the Cross Gulch area 6 km north of the Hope Brook deposit were acquired through staking to cover an area of known alteration and low grade bedrock gold mineralization along the Bay d'Est fault zone in that area,
- In-house preparations for a Preliminary Economic Assessment (PEA) were initiated but placed on hold in early 2014 due to financial constraints.

Descriptions of the work programs completed by Coastal Gold from April 2010 through December 2014 were prepared by Mercator and are disclosed in previous mineral resource estimate NI 43-101 technical reports (Desautels et al., 2012a, b, 2013 and Cullen, 2015 a). The reader is directed to those sources for more detailed specific program results.

## 6.5 Initial Review of High Grade Mining Potential by Coastal Gold

On June 3<sup>rd</sup>, 2014 Coastal Gold disclosed by press release that after a detailed review of engineering options, the company had decided to focus on potential development of higher-grade gold mineralization defined within the then-current December 4<sup>th</sup>, 2013 mineral resource estimate described in the associated Desautels et al. (2014) NI 43-101 technical report. This approach incorporated use of the existing ramp that extends to a depth of 350 m below surface, which was envisioned as providing ready access for potential development of underground mineral resources. The high grade material that formed the focus of underground mining assessment was defined within the December 4<sup>th</sup>, 2013 mineral resource estimate block model by a 3 g/t Au cut-off value below a US\$900/oz constraining shell for potential open pit material. The pit shell defines a cut-off grade equal to 0.7 g/t Au at a gold price of US\$1250 per troy ounce. . Using these definition criteria, Coastal Gold determined that:

- High grade mineralized material available for potential underground development that occurs in Indicated category blocks of the December 4<sup>th</sup>, 2013 resource block model totals 2,284,000 tonnes grading 4.43 g/t Au and containing 326,000 ounces gold,
- High grade mineralized material available for potential open pit development that occurs in Indicated category blocks of the December 4, 2013 resource block model was identified as totaling 8,682,000 tonnes grading 2.69 g/t Au containing 751,000 ounces gold in the Indicated category,
- Overall high grade mineralized material that occurs in Inferred category blocks of the December 4, 2013 resource block model totals 812,000 tonnes grading 4.06 g/t Au containing 106,000 ounces gold.

Coastal Gold's conceptual production approach for high grade mineralization incorporated promising results from recent pre-sorting test work which Indicated good potential for rejection of the majority of the primarily barren mafic dyke material associated with mineralized zone material, prior to conventional milling.

## 6.6 Mineral Resource Estimates – February 2012 to January 2015

Four NI 43-101 compliant mineral resource estimates for the Hope Brook deposit have been reported prior to the current estimate. The first three were prepared for Coastal Gold by AGP and Mercator. The first estimate had an effective date of February 14<sup>th</sup>, 2012, was described by Desautels et al. (2012a), and was based on validated results of historical drilling programs plus validated results of Coastal Gold drilling programs completed between 2010 and the end of 2011. The second estimate had an effective date of October 1st, 2012, was described by Desautels et al. (2012b) and was based on validated results of historical drilling programs plus validated results of Coastal Gold drilling programs completed between 2010 and the end of July 2012. The third estimate had an effective date of December 4<sup>th</sup>, 2013, was described by Desautels et al. (2014), and was based on validated results of historical drilling programs plus validated results of Coastal Gold drilling programs completed between 2010 and the end of August 2013. This estimate also included an initial estimate of tailings deposit mineral resources. The fourth estimate was prepared by Mercator and had an effective date of January 12<sup>th</sup>, 2015. It was based on all validated drilling results available to that date. No new core drilling results were included in this estimate, but upgrading of various modeling parameters and elimination of assessment of open pit mining opportunities distinguish this resource model from those previously disclosed.

The January 12<sup>th</sup>, 2015 mineral resource estimate prepared for Coastal Gold was subsequently reviewed by Mercator and made current with respect to First Mining through filing of a new mineral resource estimate NI 43-101 technical report in December of 2015. This mineral resource estimate was current with respect to First Mining at the April 5<sup>th</sup>, 2021 effective date of the Earn-In Agreement between Big Ridge and First Mining.

All previous bedrock mineral resource estimates are superseded by the mineral resource estimate described in the current technical report. The 2013 tailings deposit mineral resource estimate has not yet been updated to currency by Mercator with respect to First Mining or Big Ridge.



## 6.7 Exploration Programs by First Mining

Since acquiring the HBGP in 2015 First Mining completed the following projects or activities associated with the HBGD:

- retained Mercator to update the Hope Brook deposit mineral resource estimate in accordance with NI 43-101,
- carried out an assessment of construction aggregate potential focused on the Chetwynd Granite,
- completed access road technical studies and filed an Environmental Registration in 2018 with the NL government for construction of a site access road linking Hope Brook with Highway 248 to the east (Burgeo Road),
- completed a 4-hole core drilling program on the Ironbound Hill prospect located 25 km northeast of the Hope Brook deposit.

The mineral resource estimate update carried out in 2015 forms the basis of the current mineral resource estimate provided for Big Ridge by Mercator. No new work of any sort that is material to the current mineral resource estimate was carried out by First Mining during the 2015-2021 period.

The construction aggregate assessment was carried out by Wood Engineering and was preliminary in nature. It concluded that high quality construction aggregate could be sourced from the Chetwynd Granite and that further investigation of this potential was warranted. The incentive to investigate aggregate potential is based on the fact that any future open pit development of the Hope Brook deposit would include mining of substantial volumes of Hope Brook Granite as waste material. If this waste could be processed and sold profitably it could reduce unit operating costs for the mining operation. No further work on the aggregate assessment has been carried out to date.

The access road route was developed for First Mining by FracFlow and totals 58 km in length. It follows a drainage divide route located primarily north of the Hope Brook site. The Environmental Registration for this project was prepared for First Mining by Amec-Foster Wheeler (Amec, 2018) and filed with the NL government in January of 2018. It was subsequently determined that preparation of an Environmental Impact Statement was required and draft guidelines for that project were made available late in 2018. The Environmental Impact Statement had not been filed at the effective date of this report.

Results of a four-hole core drilling program in 2017 at the Ironbound Hill property confirmed the nature of bedrock geology, alteration styles and metal distributions (Zn, Pb, Cu, Au, Ag) identified previously on the property, but no significant new discoveries were made.

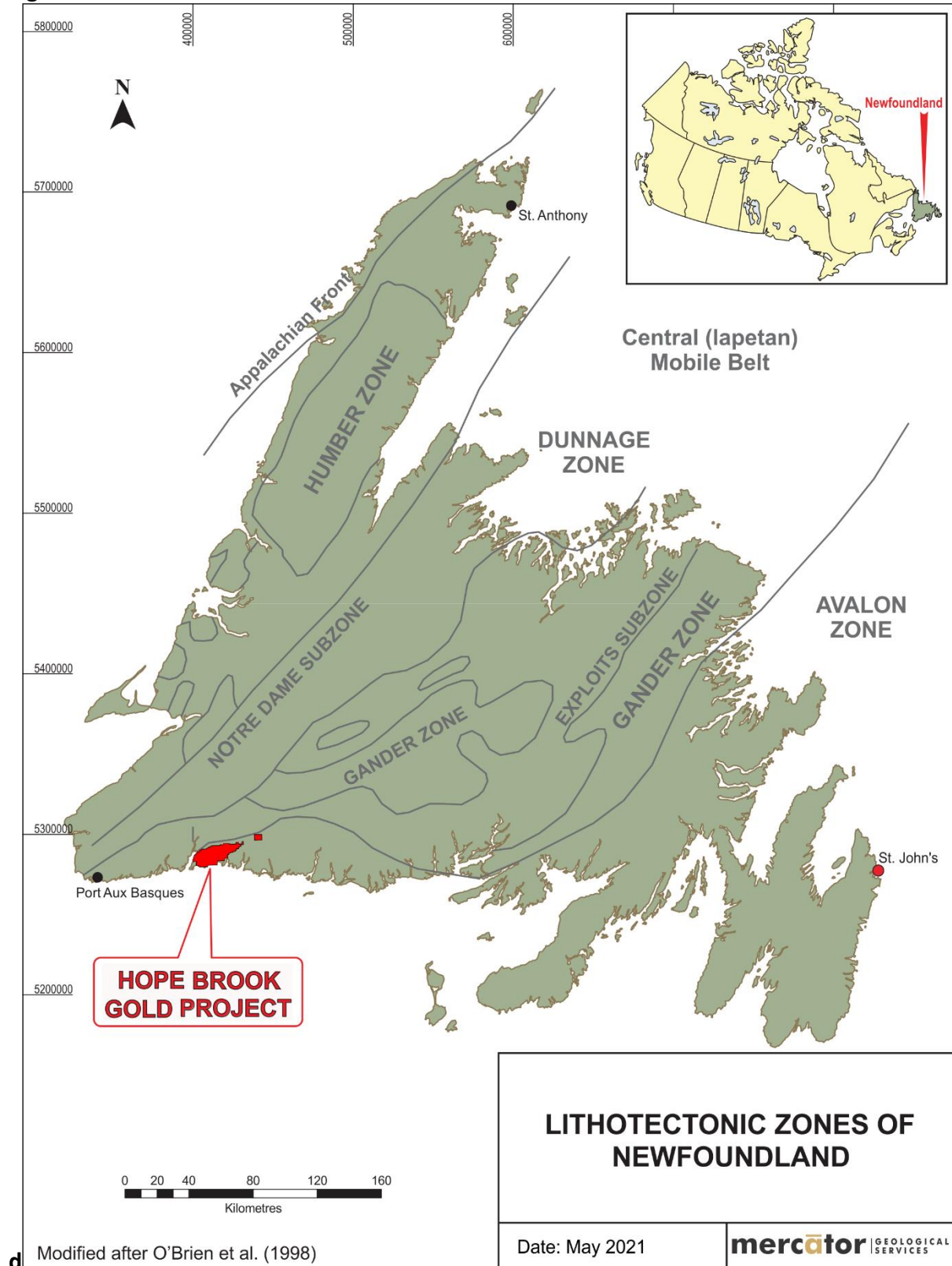
## **7.0 Geological Setting and Mineralization**

### **7.1 Geological Setting**

#### **7.1.1 Tectonic Framework Summary**

The HBGP property occurs within a tectonically complex zone that has been interpreted by some to occur within the Avalon Zone of the Appalachian Orogen (or a related Avalon Composite Terrane), near its generally east-west trending tectonic contact with adjacent rocks of the Dunnage Zone (Figure 7-1) However, earlier interpretations assigned this area to the Gander Zone. As discussed by O'Brien et al. (1998), the Avalon Zone represents a late Neo-Proterozoic (760-540 Ma) assemblage of active plate margin sequences that accumulated prior to development and closure of the Lower Paleozoic Iapetus Oceanic system. Sequences of Avalonian affinity occur throughout much of the Appalachian Orogen, and extend from the Avalon Peninsula and southwest coast areas of Newfoundland, through Nova Scotia, New Brunswick and northern New England. From that point southward, more discontinuously distributed outcropping segments occur as far as northern Georgia and subsurface extensions are interpreted to be present in Florida. Onshore exposures of confirmed Avalon Zone affinity are limited in comparison with its interpreted width of at least 600 km in the eastern offshore area of Newfoundland and Labrador.

Figure 7-1: Lithotectonic zone of Newfoundland



O' Brien et al. (1998) summarized geological aspects of the Avalon Zone, particularly in context of magmatic history represented in the Newfoundland, and described four major tectono-stratigraphic events, these being ca. 760 Ma, ca. 680-670 Ma, 640-600 Ma and 595-560 Ma. Most significant of these from the perspective of magmatic activity is the 640-560 Ma period when substantial volumes of volcanic and plutonic rocks evolved under back-arc or continental arc settings, sometimes in broad association with terrestrial or marine siliciclastic sequences. These are related in time with development of auriferous, high level hydrothermal alteration systems along the entire length of the Avalon Zone and the Hope Brook gold deposit may be an example of this metallogenic association.

While various plate tectonic models for the Avalonian system have been invoked, an evolving oceanic arc to back arc setting is favoured by O'Brien et al. (1998) after consideration of earlier work such as that presented by Nance and Thompson (1996). Similarity is also noted between Avalon successions and those present in current Pacific Rim settings.

## **7.1.2 Regional Geology**

### **7.1.2.1 Geological Units of Regional Extent**

Geological mapping in the HBGP area of southwest Newfoundland includes early work by the Geological Survey of Canada (Cooper, 1954) followed by 1:50,000 scale map sheet work by the Newfoundland government as presented by Chorlton (1978, 1980). Subsequent to discovery of the Hope Brook deposit, more detailed investigations of geology in the area between La Poile Bay in the west and Couteau Bay in the east were carried out by O'Brien (1988, 1989), with related discussions of metallogenic and structural evolution following (e.g. O'Brien et al., 1998). Stewart (1992) also contributed to regional geological understanding in addition to deposit scale issues. A detailed geological compilation that covers all of the main HBGP area was prepared by O'Brien et al. (1991) and a modified version appears in Figure 7-2. Figure 7-3 addresses the Ironbound Hill area further to the east. The Hope Brook gold deposit is identified in Figure 7-2 and occurs within a northeast striking zone of advanced argillic alteration (AAZ of this report)

**Figure 7-2: Geological map of the HBGP area**

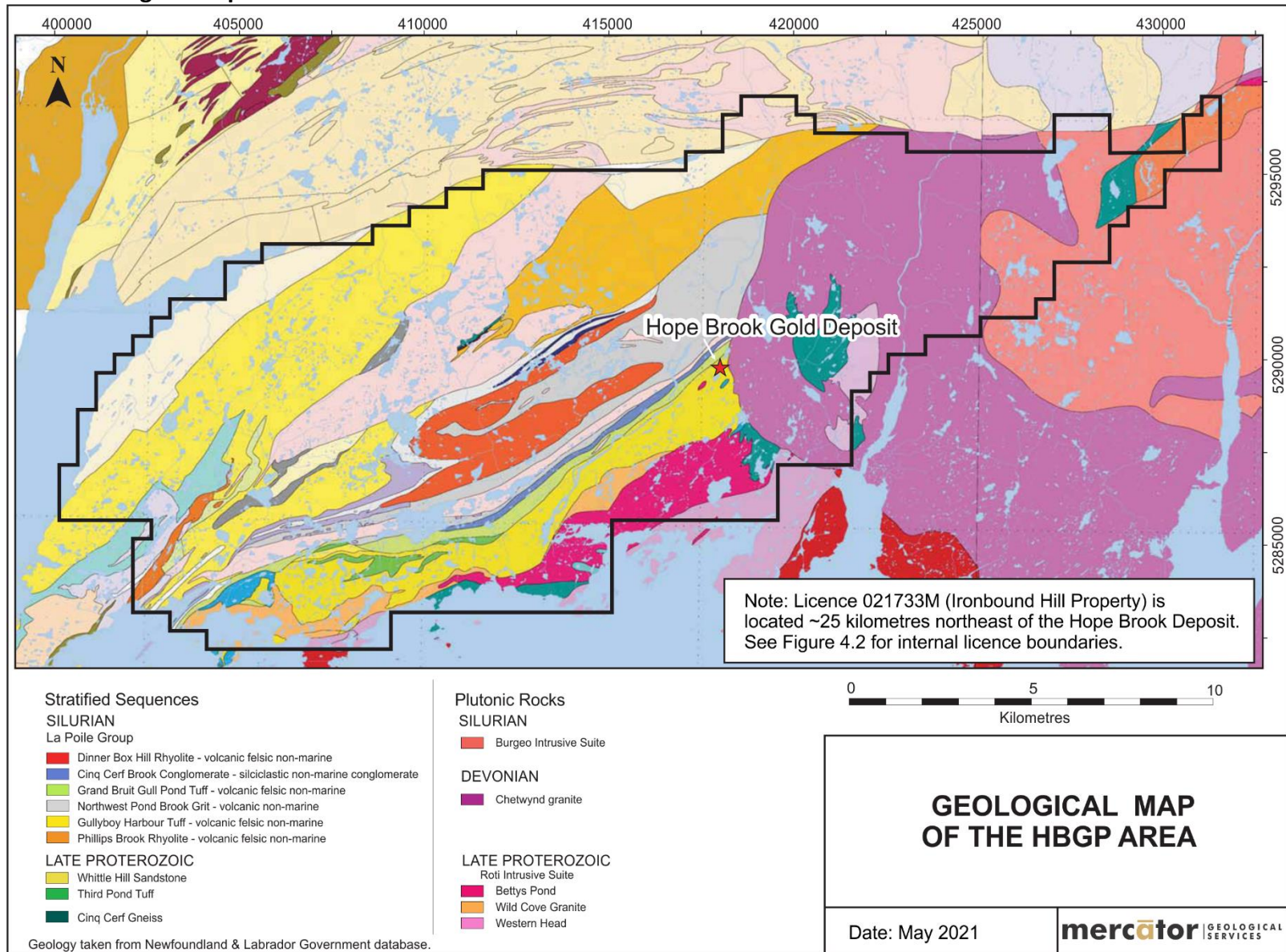
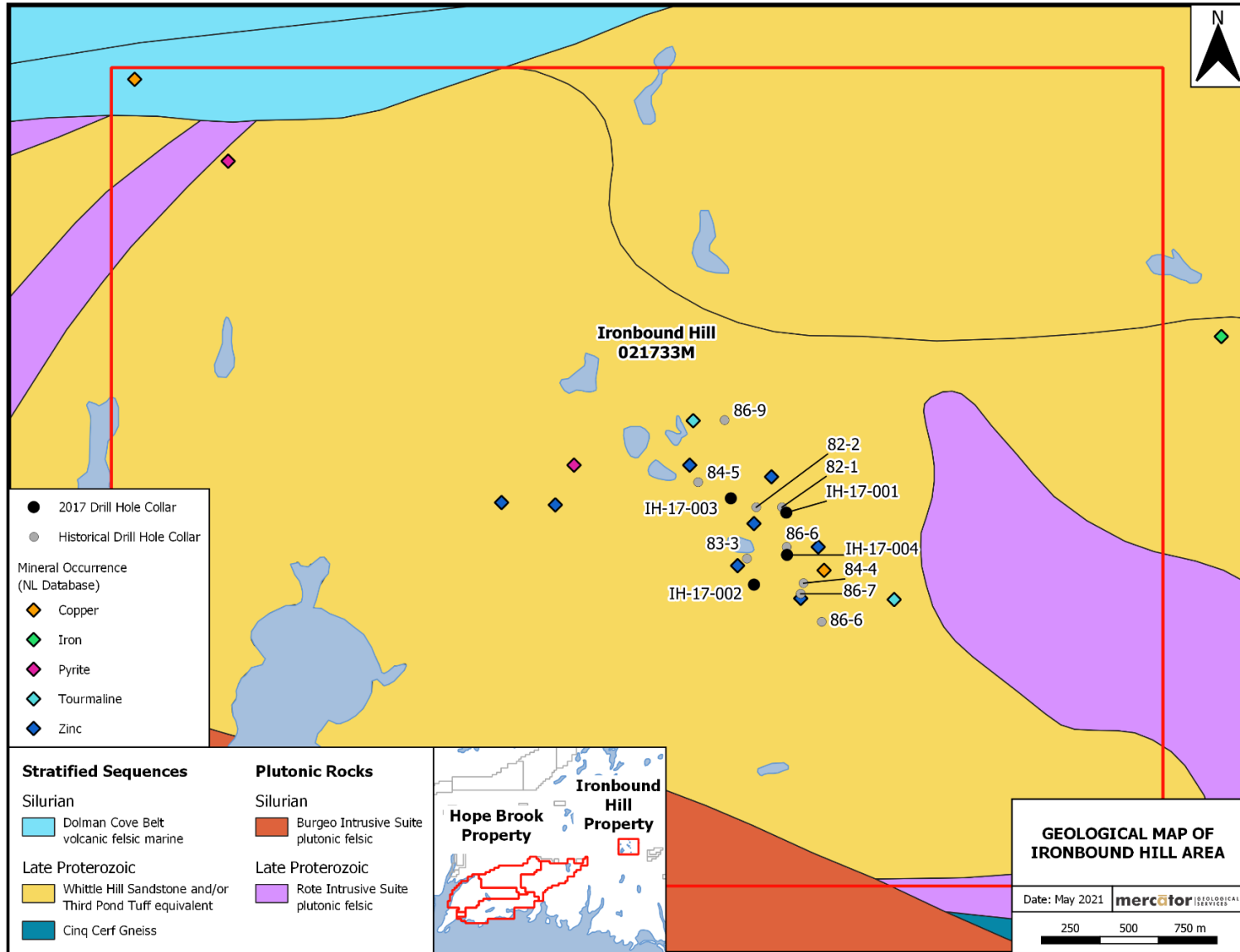


Figure 7-3: Geological map of the Ironbound Hill area





hosted predominantly by the late Proterozoic Whittle Hill Sandstone unit of the interpreted Avalonian sequence. The figure also provides spatial registration for the main late Proterozoic to Devonian bedrock units mapped in the area.

Late Proterozoic bedrock sequences in Figure 7.2 occur south of the Bay d'Est Fault and Bay du Nord Group metasedimentary rocks of the Dunnage Zone are located north of the fault. Chorlton (1978) interpreted all volcano-sedimentary sequences south of the Bay d'Est Fault to be part of the Silurian La Poile Group, but results of subsequent mapping and geochronological studies showed this to be incorrect (eg. O'Brien et al., 1991). Sequences of deformed volcano-sedimentary rocks, amphibolite facies gneisses and variably foliated igneous intrusions southeast of Cinq Cerf Brook are now interpreted as constituting an older basement complex to Silurian La Poile Group rocks in the area. Figure 7-3 includes re-assignment of units previously identified as La Plie Group to the Neo-Proterozoic Whittle Hill Sandstone and/or Third Pond Tuff successions.

Foliated, greenschist facies sedimentary and volcanic sequences of the Whittle Hill Sandstone and Third Pond Tuff units, respectively, are the youngest Pre-Silurian basement sequence rocks defined to date in the HBGP area and pre-date, along with quartzo-feldspathic gneisses of the Cinq Cerf Gneiss complex, emplacement of the Roti Intrusive Suite ( $578\pm 10$  Ma to  $563\pm 4$  Ma (Dunning and O'Brien, 1989), which is the oldest dated intrusive complex in the area. These sequences were also intruded by the Wild Cove Granite ( $499\pm 3-2$  Ma) and younger Ernie Pond Gabbro ( $495\pm 2$  Ma) prior to accumulation of Silurian La Poile Group rocks and emplacement of later Silurian and Devonian intrusions.

#### **7.1.2.2 Igneous Intrusions**

All pre-Silurian rocks were intruded by the multi-phase, calc-alkaline Roti Intrusive Suite that Dunning and O'Brien (1989) describe as having granodiorite, tonalite and quartz feldspar porphyry intrusive phases. Granodiorite of the suite was dated at  $578\pm 10$  Ma and the Betty's Pond Tonalite at  $563\pm 4$  Ma (O'Brien et al. 1991, Stewart, 1992). Silurian intrusions also occur in the HBGP area, and include the Wild Cove Granite ( $499\pm 3-2$  Ma), the Western Head Granite



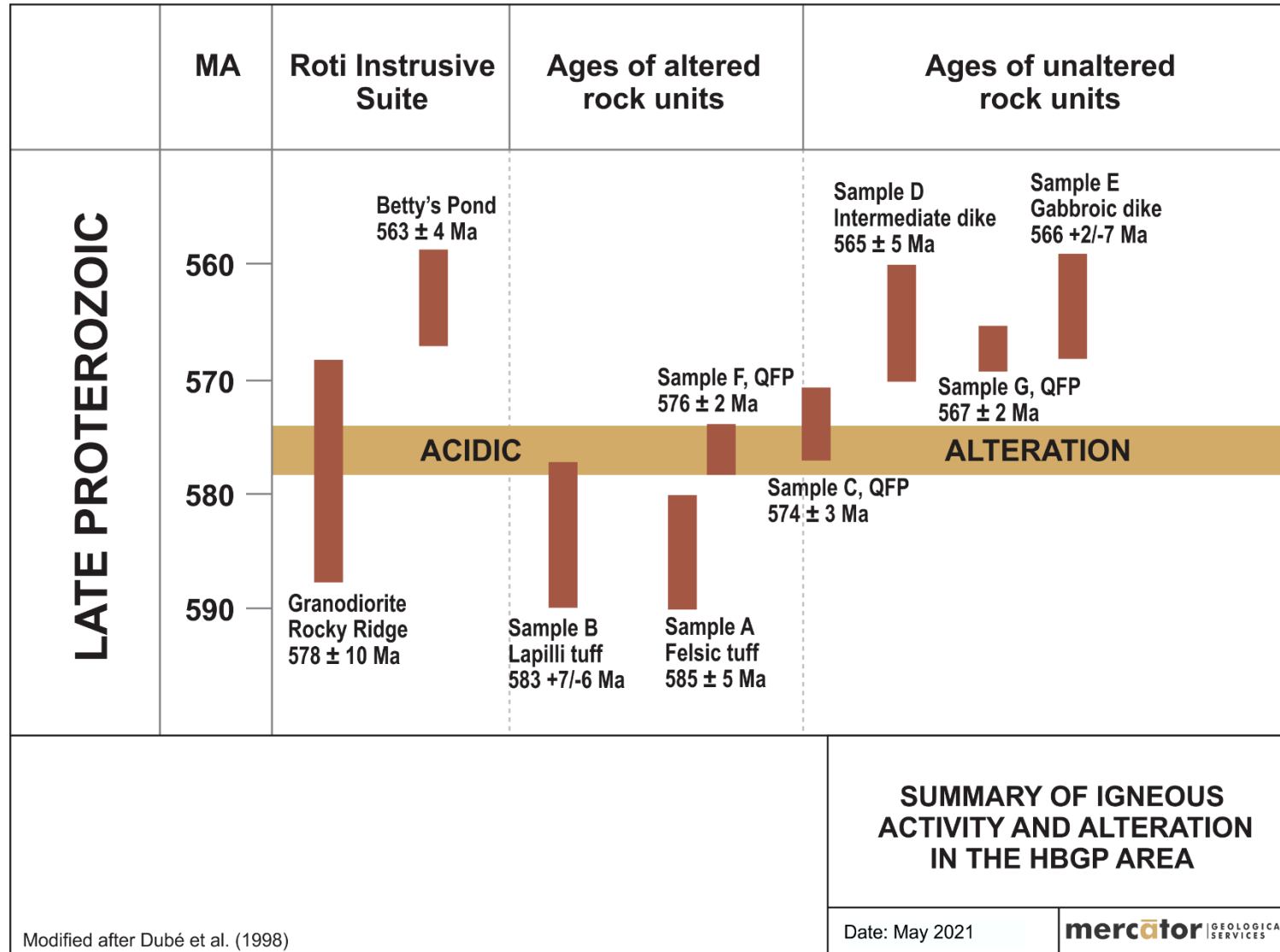
(429±2 Ma), Ernie Pond Gabbro (495±2) and Otter Point Granite (419±2 Ma), all of which show at least local evidence of syn-tectonic emplacement.

The youngest Silurian intrusive phases were in part preferentially emplaced along discrete ductile deformation zones such as the Grand Bruit, Cinq Cerf and Bay d'Est Faults, and predated emplacement of the generally undeformed Devonian Chetwynd Granite. The latter constitutes a large, post-orogenic intrusion that occurs northeast of the Hope Brook deposit and crosscuts both Proterozoic and Silurian successions as well as ductile deformation fabrics associated with the Cinq Cerf Fault (O'Brien et al., 1991; Stewart, 1992). This intrusion is important to assessment of exploration potential of the HBGP, since it at least locally intruded and thermally metamorphosed rocks of the northeast striking Cinq Cerf Fault, the Hope Brook AAZ and gold-bearing zones that constitute the Hope Brook deposit (Yule et al., 1990, Stewart, 1992). Relative age relationships between various igneous emplacement phases pertinent to the HBGP area are graphically summarized in Figure 7-4.

### **7.1.2.3 Regional Deformation and Metamorphism**

Bedrock units within the HBGP record a multi-phase deformation history beginning with development of amphibolite facies mineral assemblages in paragneisses and intermediate to felsic orthogneisses of the Cinq Cerf Gneiss complex. While not extensively exposed or studied, these rocks are considered to reflect pre-Late Proterozoic evolution of basement sequences upon which younger cover sequences were deposited and subsequently deformed. Dubé et al. (1998) note that late Proterozoic cover rocks of the Third Pond Tuff and Whittle Hill Sandstone units were affected by folding not seen in Silurian La Poile Group sequences and attributed related northeast trending folds and weak foliation to have developed prior to emplacement of the Wild Cove Granite and Ernie Pond Gabbro mentioned previously. This deformation appears to be correlative in time with development of the Grand Bruit Fault zone that substantially modified the originally unconformable contact between basement rocks of the Cinq Cerf Gneiss and subsequent Proterozoic cover rocks of the Third Pond Tuff and Whittle Hill Sandstone units.

Figure 7-4: Summary of igneous activity and alteration in the HBGP area



Mid-Silurian rifting resulted in accumulation of felsic and mafic volcanic, epiclastic and clastic sedimentary sequences of the La Poile Group. Closure of associated basins and structural telescoping of these sequences with late Proterozoic stratified sequences and intrusions are interpreted to have occurred during late Silurian tectonism. This produced northeast trending, locally tight folds within the telescoped sequences, as well as regionally important zones of ductile shear. The Grand Bruit Fault was probably re-activated at this time and the important Cinq Cerf Fault that separates La Poile Group sequences from earlier-deformed late Proterozoic cover sequences was developed. The Cinq Cerf Fault is marked by highly strained and locally mylonitized volcanic, sedimentary and intrusive rocks that occur immediately north of the main Hope Brook AAZ, strike northeast, and dip southeast at moderate to steep angles. Alteration zone lithologies are affected by the ductile high strain fabrics. Both O'Brien et al. (1991) and Dubé et al. (1998) interpreted the Cinq Cerf Fault to be a regionally significant thrust that developed during basin closure orogenic activity.

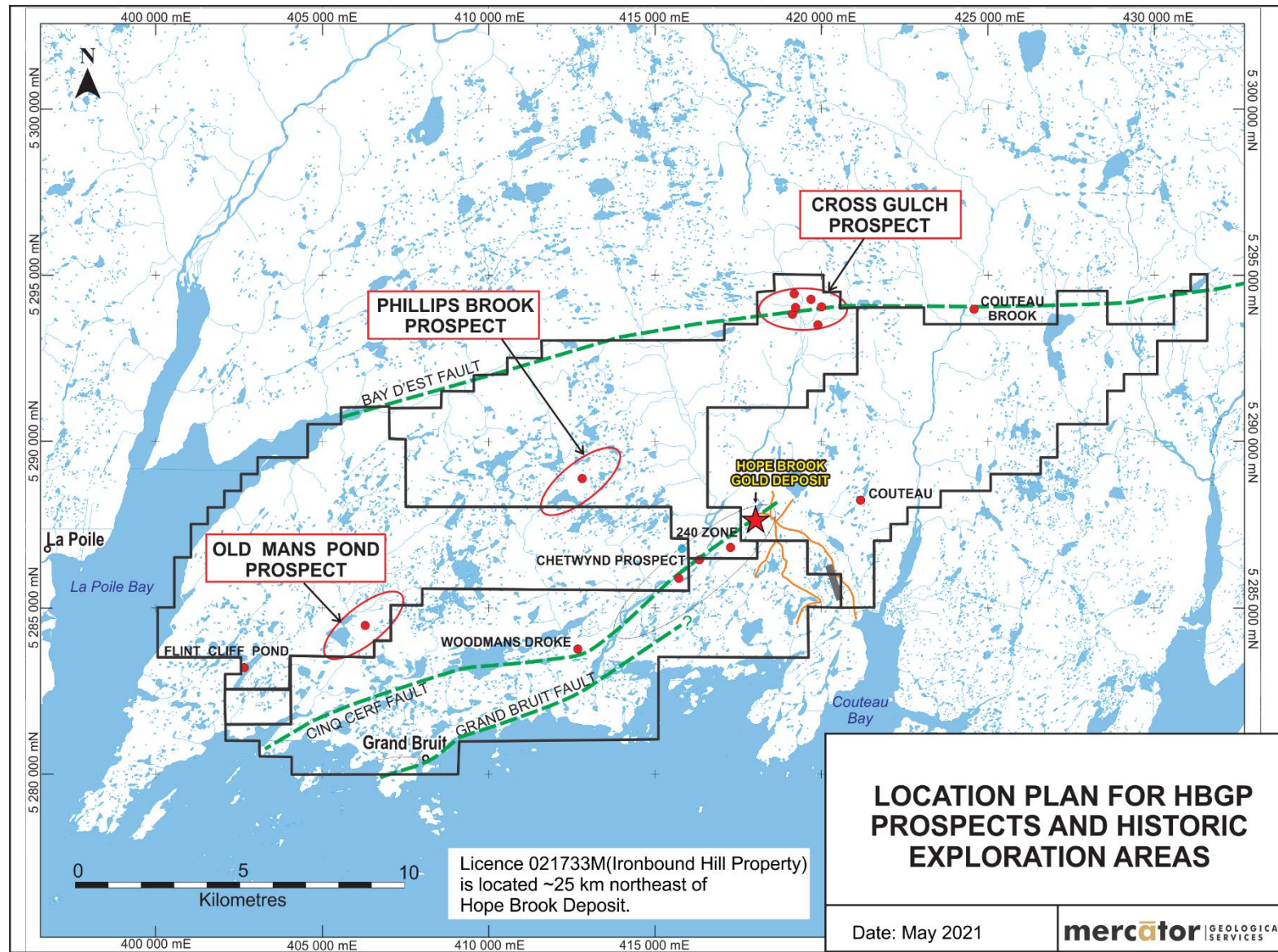
At the regional scale, the Cinq Cerf Fault is one of several east to northeast trending high strain zones that cut La Poile Group and older sequences and then merge with the Bay d'Est Fault zone. Some poorly defined northeast shears of this association may be related to gold - bearing veins and alteration zones within the La Poile Group such as those at Old Mans Pond and Phillips Brook. Additional consideration of deposit scale structural elements appears below in report section 8.

## **7.2 Mineralization**

### **7.2.1 Introduction**

The Hope Brook gold deposit and associated AAZ are of primary importance with respect to the HBGP. However, several other bedrock gold occurrences are present within the HBGP that differ from Hope Brook. The most prominent examples of such were noted previously as being those in the Old Mans Pond, Phillips Brook and Cross Gulch areas (Figure 7-5). Each of these areas has been investigated through historic exploration programs that typically included geological, geophysical and geochemical surveys, surface trenching and limited amounts of core drilling.

Figure 7-5: Location plan for HBGP prospects and historic exploration areas



Drilling has locally confirmed subsurface gold-bearing intervals in each area but mineralized zones of economically significant proportions have not been defined to date.

For completeness of HBGP exploration potential assessment, styles of gold mineralization seen at both the Hope Brook deposit and the above-named occurrences are described below. However, the Hope Brook style of mineralization is considered to be most important.

## **7.2.2 Hope Brook Deposit**

### **7.2.2.1 Introduction**

As summarized earlier, the Hope Brook gold deposit is a large, disseminated gold - chalcopyrite-pyrite deposit hosted by highly altered sedimentary and volcano-sedimentary rocks of the late Proterozoic Whittle Hill Sandstone and Third Pond Tuff successions, similarly altered felsic porphyry dikes and sills related to the Roti Intrusive Suite and variably altered later mafic dikes and sills. Zones hosting gold mineralization of economic interest typically bear evidence of intense silicification and occur within the AAZ, a broad envelope of advanced argillic alteration that can be traced for up to 8 km southwest of the deposit. The Devonian Chetwynd Granite appears to truncate the alteration zone and associated gold-copper mineralization at its northeast limit. Intensity of the advanced argillic alteration and impact of superimposed ductile deformation along the Cinq Cerf Fault have obscured original rock fabrics in many areas of the deposit, but sufficient information exists to provide a picture of mineralization history, timing and character. These aspects of the deposit are presented below in summary form using a descriptive framework based on nature of host rocks, alteration, structural geology and mineralogy.

### **7.2.2.2 Distribution of Deposit Area Lithologic Sequences**

Geology of the deposit area as summarized by O'Brien et al. (1998) was presented earlier in Figure 6-2. Progressing from the southeast to the northwest across the area presented, a late

Proterozoic mafic dike and sill complex occurring in the southeast shows a northeast striking contact with a 300 m to 400 m wide zone of quartz feldspar porphyry sills and dikes of the Roti Intrusive Suite that both intrude and show strike continuous transition to highly silicified rocks of the Whittle Hill Sandstone unit that comprise the main gold-bearing zones of the Hope Brook deposit. The northeast striking and steeply southeast dipping Cinq Cerf Fault marks a ductile shear zone structural transition from the late Proterozoic deposit sequences to deformed subaerial felsic tuffaceous, epiclastic and sedimentary rocks of the Silurian La Poile Group. Focus of the current deposit geology and mineralization discussion is restricted to the altered and mineralized section occurring on the southeast side of the Cinq Cerf Fault Zone.

#### **7.2.2.3 Deposit Area Alteration**

The deposit occurs within the AAZ, a large hydrothermal alteration envelope that is bounded to the northwest by highly strained, but apparently unaltered, rocks of the Whittle Hill Sandstone unit. Alteration to the southeast, within the Roti Intrusive Suite sill-dike complex, is present for up to 400 m across strike in the main deposit area where both advanced argillic and massive silicification stages of hydrothermal alteration are present, with the former being more spatially extensive than the latter (McKenzie, 1986). Field and laboratory evidence presented by Yule (1989) and also Stewart (1992) shows that major silicification stages predated development of the extensive advanced argillic alteration assemblage, but that both appear to have resulted from the same alteration system. Salient features of the main alteration stages associated with Hope Brook gold mineralization described by the previously referenced workers are presented below.

#### **7.2.2.4 Advanced Argillic Alteration (AAZ)**

The AAZ primarily affects rocks of the Roti Intrusive Suite's QFP sill-dike complex that adjoins the main gold zone to the southeast. Effects of this system define the AAZ that extends from the deposit area southwestward to its mapped limit west of the Cinq Cerf River. Presence of pyrophyllite, kaolinite, andalusite, sericite, paragonite, diaspore, alunite, quartz and rutile in varying proportions characterize the zone and the following three subzones were identified by

Stewart (1992) based on mineralogy and relative proportions of associated silicic alteration: (1) advanced argillic subzone lacking in significant silicification and showing 1-3% pyrite and minor rutile (2) advanced argillic subzone containing 1-5% pyrite and minor rutile, cm to m thick silicic lenses and mottled zones consisting of aggregates of randomly oriented andalusite, variably altered to kaolin or pyrophyllite, and (3) advanced argillic subzone with up to 5% pyrite, local rutile and 5 to 10% alunite. Subzones (1) and (2) were noted as typically consisting of rocks containing broadly distributed rutile and blue quartz eyes that reflect a Roti Intrusive Suite protolith. In contrast, subzone (3) lacks widely distributed rutile and blue quartz, indicating a Whittle Hill Sandstone protolith that was only locally intruded by rutile and porphyry dikes.

#### **7.2.2.5 Silicification**

Silicification associated with the mineralizing system at Hope Brook was extensive and three subzones have been defined on the basis of color, texture and associated pyrite, gold and copper contents. Lithogeochemical studies have shown that all stages of silicification are characterized by extensive leaching of Al<sub>2</sub>O<sub>3</sub>, MgO, CaO, Na<sub>2</sub>O and K<sub>2</sub>O. The summary descriptions of each subzone presented below are directly based on detailed descriptions reported by Stewart (1992).

**Stage 1 – Buff Silicification:** The first stage of massive silicification is characterized by buff to light grey color and is typically either barren or only weakly mineralized with respect to gold. This stage is regional in extent and occurs throughout the length of the mapped Hope Brook alteration zone. Disseminated pyrite is common at 2-3% levels as is minor disseminated rutile. Rocks affected by this stage of alteration frequently show original fragmental textures or fine-grained intervals that contain either sub-angular or sub-rounded blue quartz eyes. The geochemical signature of these rocks includes low levels of gold, copper, arsenic and antimony but they typically lack gold grades of economic interest.

**Stage 2 – Grey Silicification:** Most gold mineralization of economic interest occurs in zones characterized by massive grey silicification plus variable amounts of disseminated sulphides, primarily in the form of pyrite and lesser chalcopyrite and bornite. Traces of tennantite, galena,

mawsonite ( $\text{Cu}_6\text{Fe}_2\text{Sn}_8\text{S}_8$ ) and rucklidgeite ( $\text{BiPb}_3\text{Te}_4$ ) have also been reported. Three subzones of this stage are recognized, these being (a) a pyrite rich grey silicic subzone (the Pyrite Cap), (b) the main gold deposit subzone and (c) a low gold grade subzone.

**Pyrite Cap Subzone (pyritic silicified subzone of current report):** This grey silicic subzone contains 15 % to 30 % pyrite as a disseminated to locally sub-massive phase and occurs structurally below the main gold zone and immediately above the Cinq Cerf Fault. Multiple tabular lenses of silicified material comprise the zone and are separated by variably strained to mylonitic schists developed through deformation of non-silicified AAZ rocks. Strike and dip continuity of individual silicified lenses is substantial. The zone is up to 100 m in width but decreases in this dimension to the southwest. Dip continuity to at least 500 m below surface is shown by drilling results in the deposit area and a potentially correlative unit occurs at the Chetwynd Prospect to the southwest. However, mapping and limited drilling results indicate that the subzone transitions to the southwest into more isolated and smaller lenses occurring within Stage 1 - Buff Silicification and that it may show a shallow (20-25 degree) southwest plunge away from the main deposit area. This stage of silicification is geochemically anomalous in gold, copper, lead, antimony, barium, silver and mercury.

**Main Deposit Subzone:** The main gold zone at Hope Brook is hosted by light grey massively silicified rocks characterized by 1% to 5% vuggy porosity and <5% to 10% total sulphides occurring as either disseminated phases or as thin veinlets and aggregates that often parallel the dominant deformation fabric present in the rocks. Pyrite is the dominant sulphide present in the first 60 m to 80 m below surface in the main deposit area but below that level increasing amounts of chalcopyrite and bornite are present, often occurring as vug-filling phases. Quartz-chalcopyrite and quartz-pyrite veins and breccias locally cross-cut this silicification stage and in some instances carry strongly elevated gold values. Geochemically anomalous levels of silver, zinc, arsenic, antimony, mercury and tin characterize the subzone along with rutile and low levels of blue quartz eye fragments. Gold grades in this subzone typically exceed 1.5 g/t Au and highest grades tend to show spatial association above 2.5 g/t Au.



Lower Gold Grade Subzone: The main gold bearing subzone described above is surrounded by grey silicified sections showing minor amounts of disseminated pyrite (<3%) that occur in large, spatially coherent lenses of silicified material separated by highly strained to mylonitic rocks of the AAZ. Gold grades less than 1.0 to 1.5 g/t Au generally characterize this subzone and it typically lacks the vuggy character of the higher-grade subzone. A lower, natural cut-off value around 0.5g/t Au is also notable.

Stage 3 – Propylitic and Sericitic Alteration: The main AAZ defines the most obvious alteration imprint at Hope Brook. However, evidence of this alteration phase lessens to the southeast and is absent to northeast of the Cinq Cerf Fault. Evidence of a lower grade alteration assemblage consisting of chlorite, epidote, sericite, calcite and biotite that is marginal to the larger AAZ occurs southeast of the deposit area and may constitute a more distal propylitic-sericitic subzone related to the same system. However, significance of this poorly documented assemblage is not clear.

### **7.2.3 Structural Geology**

#### **7.2.3.1 Structural Summary**

Several stages of deformation have affected rocks in the HBGP area and regional aspects of these were discussed previously in report Section 7.1.2.3. Importantly, deformation of altered and gold-mineralized zones at Hope Brook was locally intense and contributed to the current spatial disposition of mineralized zones of economic interest. In review, the first deformation event (D1) resulted in development of northeast trending and southwest plunging folds and related S1 foliation in late Proterozoic Whittle Hill Sandstone and Third Pond Tuff sequences prior to emplacement of the 499 +3-2 Ma Wild Cove Granite, but potentially during or after development of the main advanced argillic stage alteration and associated gold mineralization.

D1 was followed by Silurian deformation (D2) that produced a heterogeneously developed S2 fabric and accommodated northwest directed structural imbrication of late Proterozoic

successions and older Cinq Cerf Gneiss northwestward over sedimentary and volcanic or volcanoclastic sequences of the Silurian La Poile Group. The Cinq Cerf Fault and Bay d'Est Fault systems played related and substantive roles in accommodating D2 strain and the dominant fabric seen in the deformed AAZ rocks at Hope Brook is S2. At the deposit scale, the Cinq Cerf Fault marks the northern limit of the AAZ and similar, but less extensively defined, faults occur in the structural hanging wall of the main silicified zones of the deposit. Fabric intensity associated with D2 ranged from weak foliation development in La Poile Group rocks and syn-tectonically emplaced Silurian intrusions, to mylonitic or ultra-mylonitic layering in the Cinq Cerf Fault, 51 Fault or Bay d'Est Fault systems. S2 fabrics typically wrap around large and small lenses of silicified material within the AAZ and also affect mafic dikes that were emplaced after both D1 and development of silicified zones of the main mineralizing stage (Stewart, 1992; Dubé et al., 1998).

Impacts of D2 deformation are important to assessment of HBGP exploration potential, particularly along the extensive AAZ that contains the main gold zones defined to date. Foremost among potential impacts of D2 deformation are (1) shape modification of mineralized zones to reflect ductile shear-zone related finite strain patterns within and across the Cinq Cerf Fault, (2) presence of tight to isoclinal folding within the AAZ, with attendant structural thickening of altered and silicified zone widths in hinge areas or development of detached fold closures within zones of highest shear strain, (3) down-dip termination or across-strike step over of gold-bearing silicified zones due to effects of (2) above, and (4) presence of large scale boudinage structuring of silicified zones, with associated thinning or termination of such zones along geometrically persistent pinching or neck-line trends.

### **7.2.3.2 Mafic Dikes in Mineralized Zone**

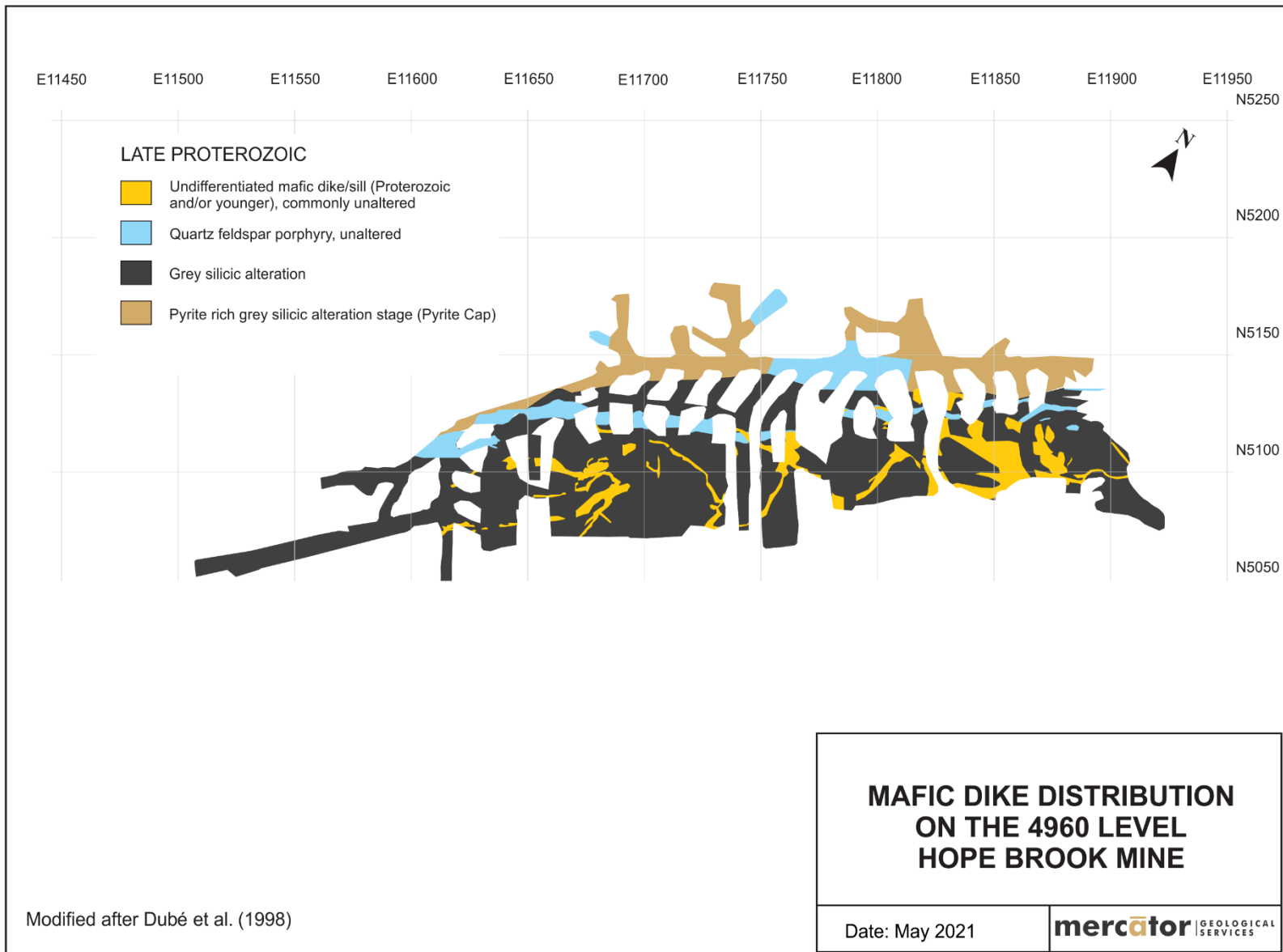
Multiple phases of mafic dikes occur in the deposit area and were emplaced at different stages of AAZ history (Yule, 1989, Yule et al., 1990). Mapping results from the 4960 m mining level presented by Dubé et al. (1998) show that mafic dikes extensively cross-cut gold-bearing silicified zones that had been developed for mining and Stewart (1992) presented comparable results based on surface mapping data. Three preferred dike strike orientations are apparent in Figure

7-6, these being (1) northeast, parallel to S2 and silicified zone margins, (2) east-west, at approximately 45 degrees to (1) above and (3) north-south, at approximately 45 degrees to (1) above. Stewart (1992), Yule (1989) and Dubé et al. (1998) all recognized that mafic dike emplacement was multi-phase, with a significant phase post-dating development of the AAZ and being syn-kinematic with D2 deformation. This phase of mafic emplacement introduced significant volumes of non-mineralized material into the gold bearing silicified zones of mining interest and presented a difficult to predict dilution factor with respect to estimation of mineral resources and reserves and subsequent mine planning (Deptuck, 1991). Earlier mafic dikes showing effects of the advanced argillic alteration system are also present, as are post D2 dikes that cross-cut all lithologies except the Devonian Chetwynd granite. Substantial volumes of mafic dike material occur southeast of the deposit in an intermediate to mafic dike-sill complex.

### **7.2.3.3 Mineralogy of Gold-Bearing Zones**

Deposit mineralogy and distribution of gold and trace elements within the advanced argillic alteration envelope at Hope Brook was discussed in detail by Stewart (1992) and was summarized earlier by McKenzie (1986) and Yule et al. (1990). Gold typically occurs as a very fine grained and broadly disseminated phase within the grey and vuggy grey silicification subzones of the deposit but also occurs at trace to low grade (< 1.5 g/t Au) levels in other altered and variably silicified rocks of the AAZ. The principal sulphide phase present at Hope Brook is pyrite, which occurs as disseminated grains to sub-massive aggregations that account for up to 30% of rock volume locally, as seen in the pyritic silicified subzone. Chalcopyrite is second in relative sulphide phase abundance and occurs within the major gold-bearing silicified zones as disseminations, irregular

Figure 7-6: Mafic dike distribution on the 4960 Level of Hope Brook Mine



patches or pervasive networks of veinlets superimposed on silicification. Bornite is also locally present and typically accompanies chalcopyrite. Gold occurs in its native form as sub-microscopic grains included in silicification stage quartz, pyrite or chalcopyrite as well as on surfaces of sulphide grains (Yule et al., 1990). The grey, vuggy silicification subzone that corresponds with areas of the deposit having gold grades typically exceeding 1.5 g/t Au shows up to 5% vugs measuring less than 3 mm in diameter which are locally filled by pyrite or chalcopyrite. Higher grades within this subzone show spatial association above about 2.5 g/t Au. Isolated high-grade quartz–sulphide veins and breccias locally cross-cut the main silicified zones of the deposit and show gold grades as high as 285 g/t Au. These occur as cm to m wide dikes containing native gold as well as telluride phases such as tellurobismuthite, calaverite and aikinite. Trace to minor amounts of tennantite, galena, mawsonite and rucklidgeite have also been described from the deposit in combination with previously mentioned phases, these account for geochemically elevated levels of silver, zinc, arsenic, antimony, mercury and tin in the deposit (NLDNR Mineral Occurrence Database Report 110/9/Au-003).

#### **7.2.4 Metal Zonation and Geometry of Gold Distribution**

Spatial zonation with respect to gold, copper and silver levels within the most densely drilled area of the Hope Brook deposit was documented by Dubé et al (1998) on the basis of analytical database results made available from Royal Oak. Figure 7-7 presents gold distribution results of this study within the densely sampled range of the deposit between Line 11400m E and Line 12000m E of the mine grid. Gold distribution shows a higher-grade core zone that plunges moderately grid west toward an area incompletely tested at that time by drilling. A secondary grade trend is also present that plunges to grid east at about 50 degrees within the vertical projection plane. Dubé et al (1998) also note that gold/silver ratios between 1:5 and 1:7 apply to the deposit area for which data were available.

Gold and copper grade patterns within the deposit were also evaluated by BP in the mineral resource study by Carter (1985). This was based on 75 drill holes and the gold grade x silicified

zone horizontal width parameter (Figure 7-8) defines trends similar to those developed from the larger data set accessed by Dubé et al. (1998). Evidence of the two plunge trends are apparent in both datasets and broadly correspond with at least some boudinage thinning trends recorded in field observations.

Lateral zonation of gold and copper along the strike of the AAZ could not be clearly assessed for this report due to lack of data. However, gold is associated with silicification, chalcopyrite and bornite at the Chetwynd Prospect, approximately 2 km to the southwest of Hope Brook deposit. This area does not show massive silicification at surface to the degree seen at the Hope Brook deposit but does show multiply interlayered thinner zones of silicified and AAZ rocks.

### **7.3 Other Gold Occurrences and Mineralization Styles**

#### **7.3.1 Introduction**

A younger style of gold mineralization distinct from that represented by the Hope Brook deposit and the Ironbound Hill occurrence also occurs within HBGP holdings. This consists of quartz or quartz-carbonate vein arrays that in some instances show associated low-grade, disseminated gold in strongly carbonate-altered immediate host rocks. This style of mineralization is primarily hosted by volcano-sedimentary sequences of Silurian age that were affected by deformation associated with the regionally significant Bay d'Est fault zone and related secondary shears. The most prominent examples of this mineralization are found in the Old Mans's Pond, Phillips Brook and Cross Gulch gold occurrences, all of which occur on the HCGP holdings (see previous Figure 7-5 for occurrence locations).

**Figure 7-7: Longitudinal section of contoured gold (g/t) grades in Hope Brook deposit.**

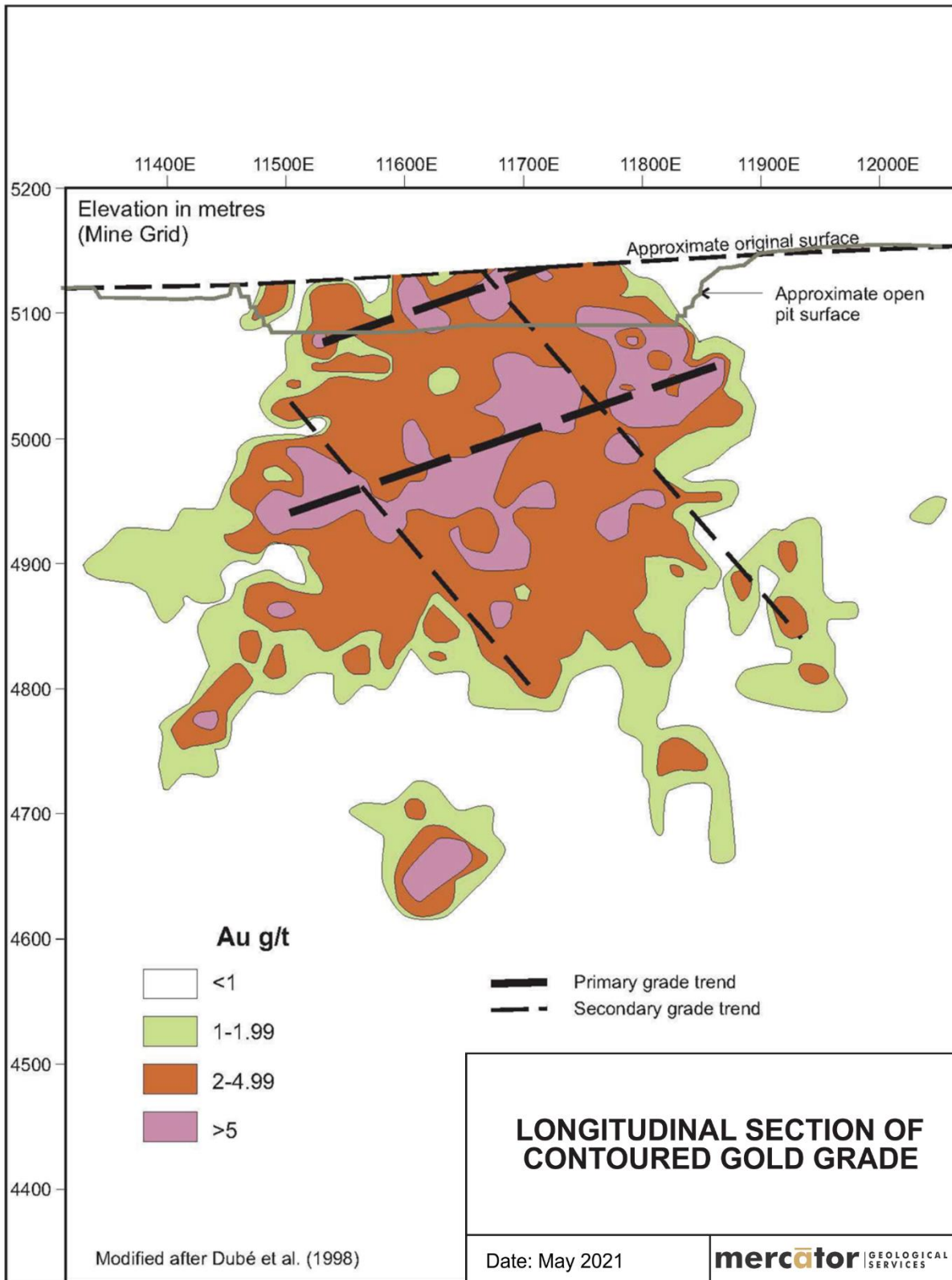
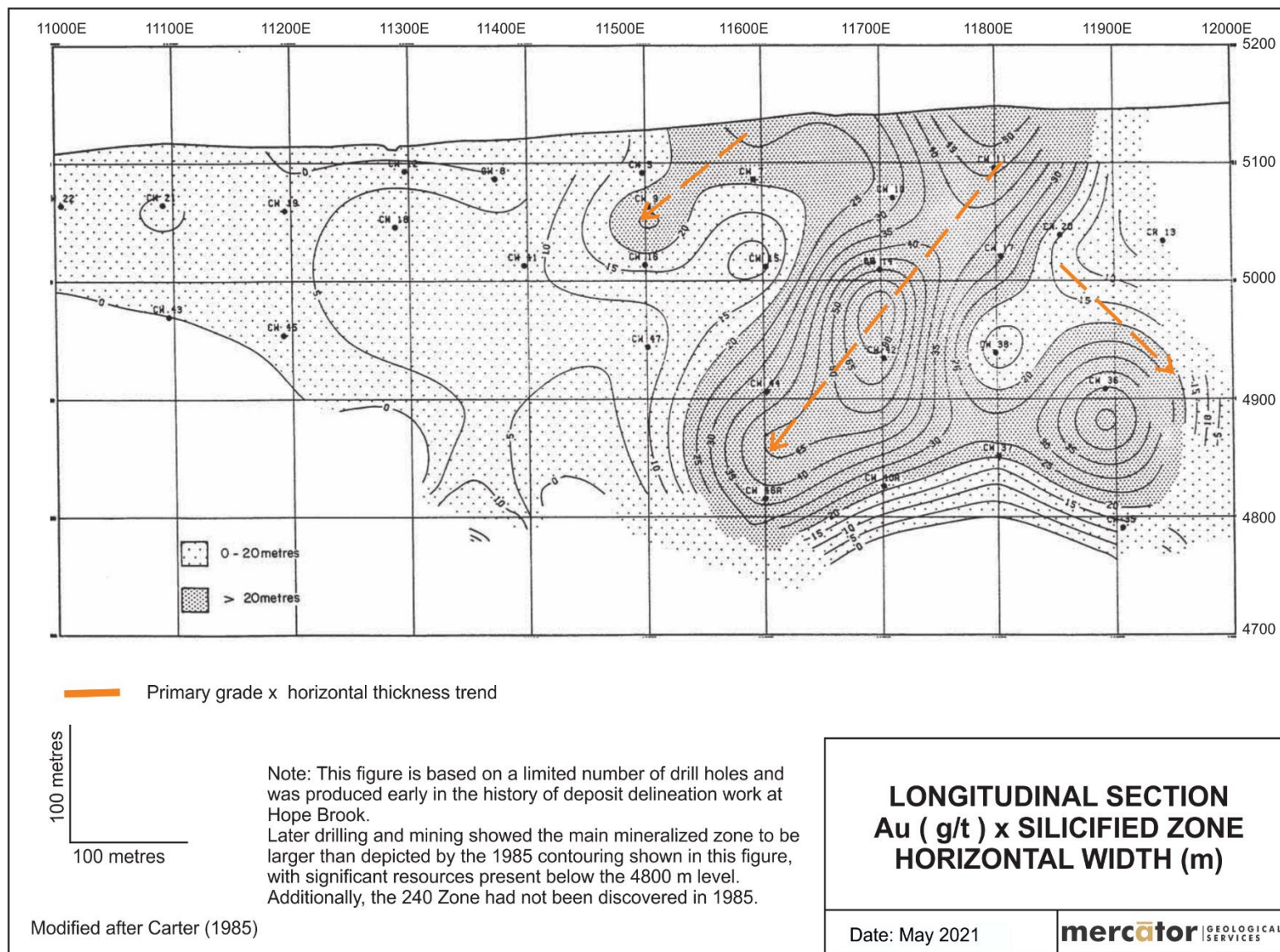


Figure 7-8: Longitudinal section of gold (g/t) x silicified zone horizontal width(m)





### **7.3.2 Old Man's Pond**

This gold occurrence is located 12 km west-southwest of the Hope Brook deposit and is hosted by subaerial tuffaceous and volcanoclastic rocks of the Silurian La Poile Group adjacent to their contact with the Silurian Hawk's Nest Pond Porphyry intrusion. Gold mineralization in this area occurs in quartz vein arrays with associated silicification, arsenopyrite, sphalerite, galena and chalcopyrite, hosted by a sericitic alteration zone developed in variably foliated rocks that measures up to 200 m in width and 1 km or more in length. Disseminated pyrite occurs within the alteration zone at low levels (<2 %) and visible gold has been reported from several samples collected in this area. The most prominent vein system defined to date is termed the "AT Vein" and has been tested by trenching and limited core drilling results over approximately 750 m of northeast trending strike length. The vein varies in width from a few cm to 0.80 m and locally shows quartz vein array stockwork zones 2m to 5m in width. Gold grades reported range from detection limit levels to greater than 30 g/t, with the best weighted average gold grade (uncut) from trench sampling by Long Range Resources Limited being 167.87 g Au/t (4.897 oz/ton) over a trench chip sample length of 0.80 m (Dearin, 1989). Initial testing of down-dip extensions and other alteration targets in the vicinity through 8 core BQ size holes did not return encouraging results. Gold mineralization and associated alteration at this occurrence post-dated the main stage of Hope Brook deposit mineralization and may be related to a subsidiary splay of the Bay d'Est Fault.

### **7.3.3 Phillips Brook**

This gold occurrence is located 7.5 km west-northwest of the Hope Brook deposit and is hosted by sheared and altered tuffaceous volcanic, volcanoclastic and sedimentary rocks occurring within the Silurian La Poile Group, adjacent to their contact with the Silurian Hawk's Nest Pond Porphyry intrusion. The prospect was discovered in 1984 by Dolphin Exploration Ltd. and subsequently assessed primarily by that company. In 1996 Royal Oak carried out a limited (2 hole) drilling program on the property that confirmed earlier exploration results. Gold mineralization as occurs in an altered and sheared zone parallel to the northeast striking and east dipping contact of

tuffaceous and rhyolitic rocks with the Hawks Nest Pond Porphyry. Alteration is characterized by presence of sericite, chlorite, pyrite and carbonate in the variably sheared and fractured host rocks. Gold mineralization occurs in three zones along the northeast contact zone, these being the East, Central and West Zones, and best gold grades correspond with areas of greatest alteration and highest disseminated pyrite content. The mineralized trend has been tested by eight diamond drill holes to date over a strike length of 2.2 km, with six of these completed by Dolphin and 2 by Royal Oak. Drilling results are most definitive in the West Zone, where results from six drill holes intercepted low grade gold mineralization (typically < 2.0 g/t Au) at various locations along a strike length of approximately 1.5 km. True sample thicknesses are not known but weighted average gold grades for selected mineralized intervals range between 2.36 g/t over 1.1 m Au in Dolphin hole 89-1, beginning at a depth of 13.6 m, and 0.75 g/t Au/48.5 m in Royal Oak hole 96-7 beginning at a depth of 86.5 m (Cormier, 1996).

As was the case at Old Man's Pond, gold mineralization and associated alteration at this occurrence post-date the main stage of Hope Brook deposit mineralization and may be related to a subsidiary splay of the Bay d'Est Fault.

#### **7.3.4 Cross Gulch Area**

This area of gold occurrence is located 12.5 km north of the Hope Brook deposit and is centered on the east-west trending Bay d'Est Fault that forms the boundary between Avalon Zone rocks south of the fault and Dunnage Zone rocks to the north. Noranda originally discovered bedrock gold occurrences in this area at Cindy's, Suzanne's, Lynda's and Gulch Brooks and Royal Oak subsequently carried out further assessment of the prospects. Two styles of gold mineralization are present in this area, the first, developed at Cindy's, Susanne's and Lynda's brooks is hosted by amphibolite grade metasedimentary rocks that form part of the Silurian Bay Du Nord Group. Gold in these locations generally occurs in alteration zones showing sericite, pyrite and variable degrees of carbonate alteration and silicification. In some instances, it is associated with complex quartz vein arrays showing brecciation textures. A second style of gold mineralization also occurs

south of the Bay d'Est Fault and is associated with quartz veining in variably sheared, carbonate altered, arsenopyrite-bearing slates or within sheared zones of pyritic, sericite schist that mark splays of the Bay d'Est Fault. The Gulch Brook occurrence is the most prominent example of this style tested to date. Not all occurrences in this area are on Castillian claims.

Weakly developed gold mineralization at grade levels typically less than 1.0 g /t Au has been defined to date at the various occurrences in this area. The Gulch Brook occurrence is the most thoroughly assessed to date and has been tested by 10 core drilling holes. Results from this area define two sub-parallel zones of gold bearing sericitic schist showing local silicification, pyrite and quartz veining that are tentatively correlated along approximately 225 m of strike length. Intercept thicknesses range between 1.5 m and 6 m down hole and merging of the two may occur locally. True thicknesses of mineralized intervals are narrow, but not currently well defined. Gold bearing character was confirmed to a depth of approximately 110 m below surface by the drilling and the alteration trend remains open in all directions.

Gold mineralization and associated alteration at this occurrence post-date the main stage of Hope Brook deposit mineralization and may be related to a subsidiary splay of the Bay d'Est Fault. development of the main stage Hope Brook gold deposit and similarity exists with alteration and gold occurrence styles described above for the Phillips Brook and Old Mans Pond areas.

## 8.0 Deposit Types

### 8.1 Introduction

The Hope Brook gold deposit is currently one of the largest gold deposits in the Canadian Appalachians, based on historical and current resources and past production. As noted earlier, it occurs within a zone of extensive advanced argillic alteration (AAZ) hosted by late Proterozoic sedimentary, volcanic, and intrusive rocks. Stewart (1992) described geological, geochemical, and geochronological aspects of the deposit which followed earlier focused discussions of alteration mineralogy by Kilbourne (1985), surface geology and mafic dike relationships by Yule (1989) and general lithologic attributes by McKenzie (1986) and Woods (1984). Subsequently, O'Brien et al. (1998) and Dubé et al. (1998) placed emphasis on structural history of the deposit and its placement within the broader metallogenic framework of the northern Appalachians. Recent work by Coastal has added to the technical documentation of alteration and mineralization that characterize the deposit. All workers clearly identified intense hydrothermal alteration and spatially associated silicification as key components of the mineralizing system that gave rise to the deposit. However, differences exist with respect to interpreted placement of the Hope Brook mineralizing system in the time/space context of the orogen and some of these bear directly on deposit classification. Important attributes of the deposit and their relevance to its classification are presented below in section 8.2.

In addition to the Hope Brook deposit, several gold occurrences associated with Silurian or younger sericitic alteration, quartz veining and carbonate alteration and silicification have also been documented within the HBGP area. None of these is substantial in size or gold grade as presently defined, but spatial association with the large Bay d'Est Fault or its secondary splays, and possibly with Silurian magmatic activity, indicates that potential for more significant mineralization is present. Classification of this style of occurrence is addressed below in section 8.3.

## 8.2 Summary Description of Hope Brook Deposit

The Hope Brook deposit and associated AAZ are situated in the structural hanging wall of the Cinq Cerf Fault that accommodated late Silurian reverse and strike-slip ductile shear. They are hosted by intensely to moderately deformed and altered sandstones and tuffaceous volcanic rocks of the Whittle Hill Sandstone and Third Pond Tuff units which are late Proterozoic in age. The AAZ is interpreted to have developed through structurally focused hydrothermal processes related to emplacement of the late Proterozoic Roti Intrusive Suite and was subsequently deformed during Silurian deformation related to structural stacking of Proterozoic sequences northwestward over sequences of the adjacent Dunnage Zone.

Widespread presence of pyrophyllite, kaolinite, sericite, quartz, diaspore, alunite and andalusite define the AAZ and surround multiple tabular zones of intense silicification that occur along its currently mapped length. These define a continuous northeast trending zone that measures approximately 8 km in length and reaches 400 m or more in width in the deposit area. The zone thins to the southwest along strike to widths of less than 50 m (Figure 8-1).

Two main stages of silicification have been documented in the AAZ, the first being a widely distributed buff stage that typically is barren, or at best poorly mineralized with respect to gold, and the second is a grey, slightly vuggy stage that post-dated buff silicification and hosts most of the gold and copper mineralization of economic interest. Gold typically occurs as very fine-grained disseminations within rocks affected by the grey silicification stage and is frequently accompanied by chalcopyrite, lesser bornite or minor amounts of tennantite or enargite that occur as disseminations or in fracture filling vein settings that cross-cut silicification. Finely distributed pyrite commonly occurs in silicified rocks of both stages and ranges in concentration from nil to as much as 30% or more locally. The latter case is generally restricted to a correlatable pyrite rich silicified fragmental unit termed the "Pyrite Cap" that occurs structurally below the main gold -bearing silicified zones. Figure 8-2 presents a typical cross section through the AAZ in the Hope Brook deposit area.

Figure 8-1: Geology of the Hope Brook deposit area (after Stewart, 1992)

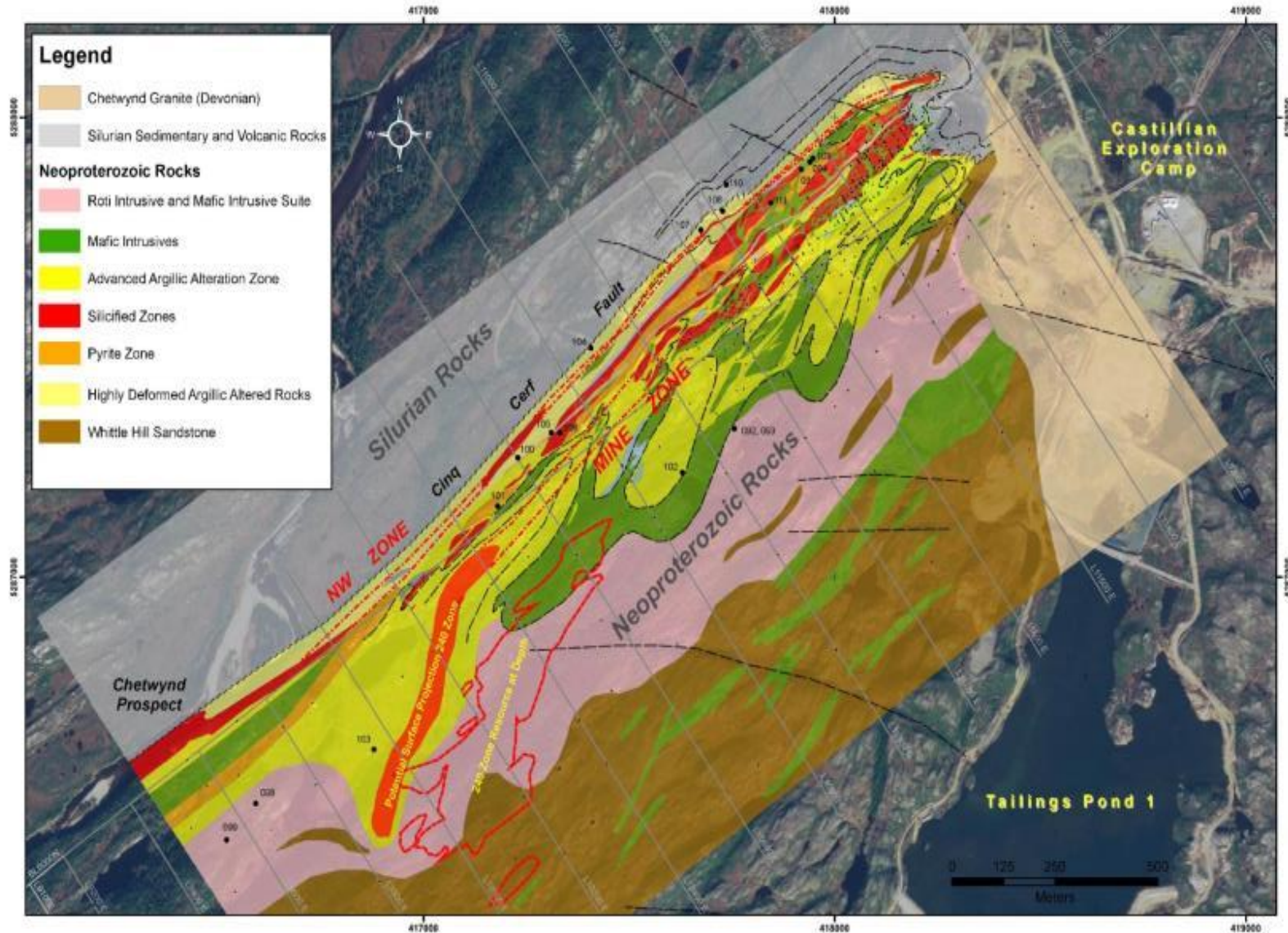
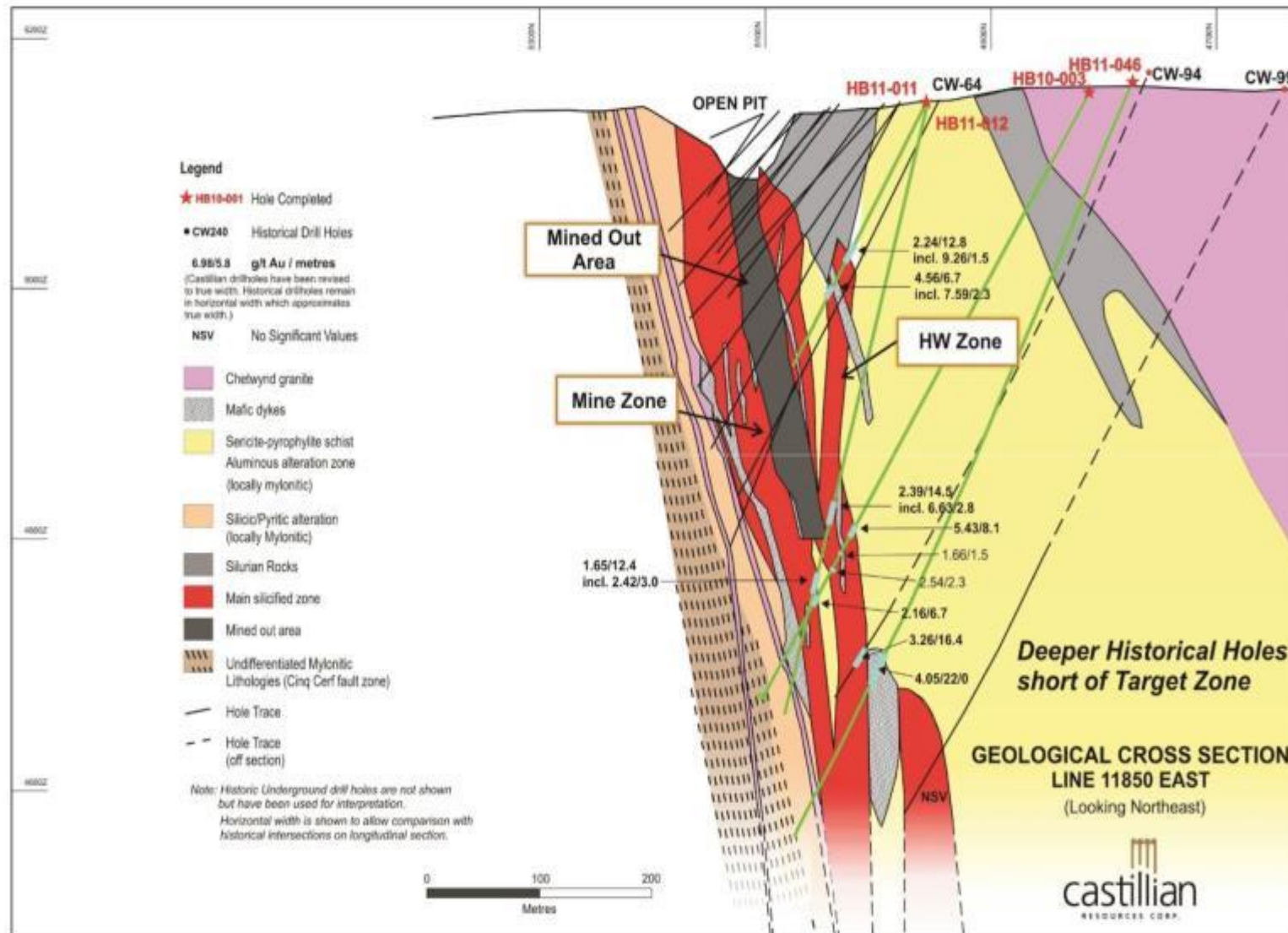




Figure 8-2: Hope Brook Project interpreted section 11850E (looking northeast) – taken from Coastal files



Study of timing and sequencing of hydrothermal alteration and associated gold mineralization has been focused on definition of relationships between various intrusive phases that occur in and around the alteration zone that hosts the deposit. These interpreted relationships show that the Roti Intrusive Suite and related porphyry dikes were emplaced during the hydrothermal alteration sequence and were affected to varying degrees by ongoing alteration and gold-mineralizing processes. Dated Silurian intrusions cross-cut AAZ zone rocks but are also affected by Silurian deformation associated with structural stacking of the assumed Avalon Zone sequences northwestward over those of the Dunnage Zone along east dipping ductile thrust zones such as the Cinq Cerf Fault and Bay d'Est Fault. These relationships constrain aluminous alteration and gold mineralization as being generally coeval with emplacement of the Roti-Intrusive Suite but clearly pre-dating the major Silurian deformation imprint seen in this area.

On the basis of immobile trace element data, Stewart (1992) argued that altered and silicified rocks within the AAZ were Roti Intrusive Suite sills and/or dikes that accompanied or pre-dated structurally focused main stage silicification and gold mineralization. However, he also invoked continued evolution of the mineralized zones during Silurian deformation and igneous activity with important upgrading of gold grades in earlier-mineralized silicified zones resulting from contact metamorphic effects of the Devonian Chetwynd Granite.

### **8.3 Ironbound Hill Prospect**

Big Ridge's Ironbound Hill prospect is located 25 km northeast of the Hope Brook deposit and locally shows similar styles of pyritic, aluminous and silicic alteration as seen at Hope Brook. Host rock sequences are considered to be of similar age and general lithology and to reflect the same style of mineralizing event.

There are several showings in the area that contain disseminated to stringer pyrite with minor base metal sulphides, barite and accessory silver and gold. The showings are hosted within altered felsic volcanics and sedimentary rocks that are considered for current purposes to belong



to the Neoproterozoic Third Pond Tuff and Whittle Hill Sandstone units present at the nearby Hope Brook deposit. The volcanic and sedimentary sequence in the area was described by BP staff as fine-grained, siliceous felsic volcanics and fine-grained volcanoclastic sedimentary rocks.

BP drilled 11 core holes in the area in the 1980's and hole 82-1 (Figure 8-3) is representative of the mineralization present. It encountered traces of disseminated galena and sphalerite over 60 meters with the best interval grading 4.35 % Pb, 11.2 % Zn, 1.13 oz/t Ag and 6.6% barite over 0.46 meters beginning at a downhole depth of 51.57 m.

Four core holes were completed by First Mining at Ironbound Hill in 2017 (Figure 8.4) and these returned results generally comparable to the earlier BP holes. Drill hole IH-17-004, drilled approximately 35 m south of BP drill hole 86-6, returned the best gold values, these being 0.33 g/t Au over 4 m from 82 m to 86 m and 0.50g/t Au over 4 m from 129 to 133 m. No significant sulphide mineralization was encountered in the drill hole.

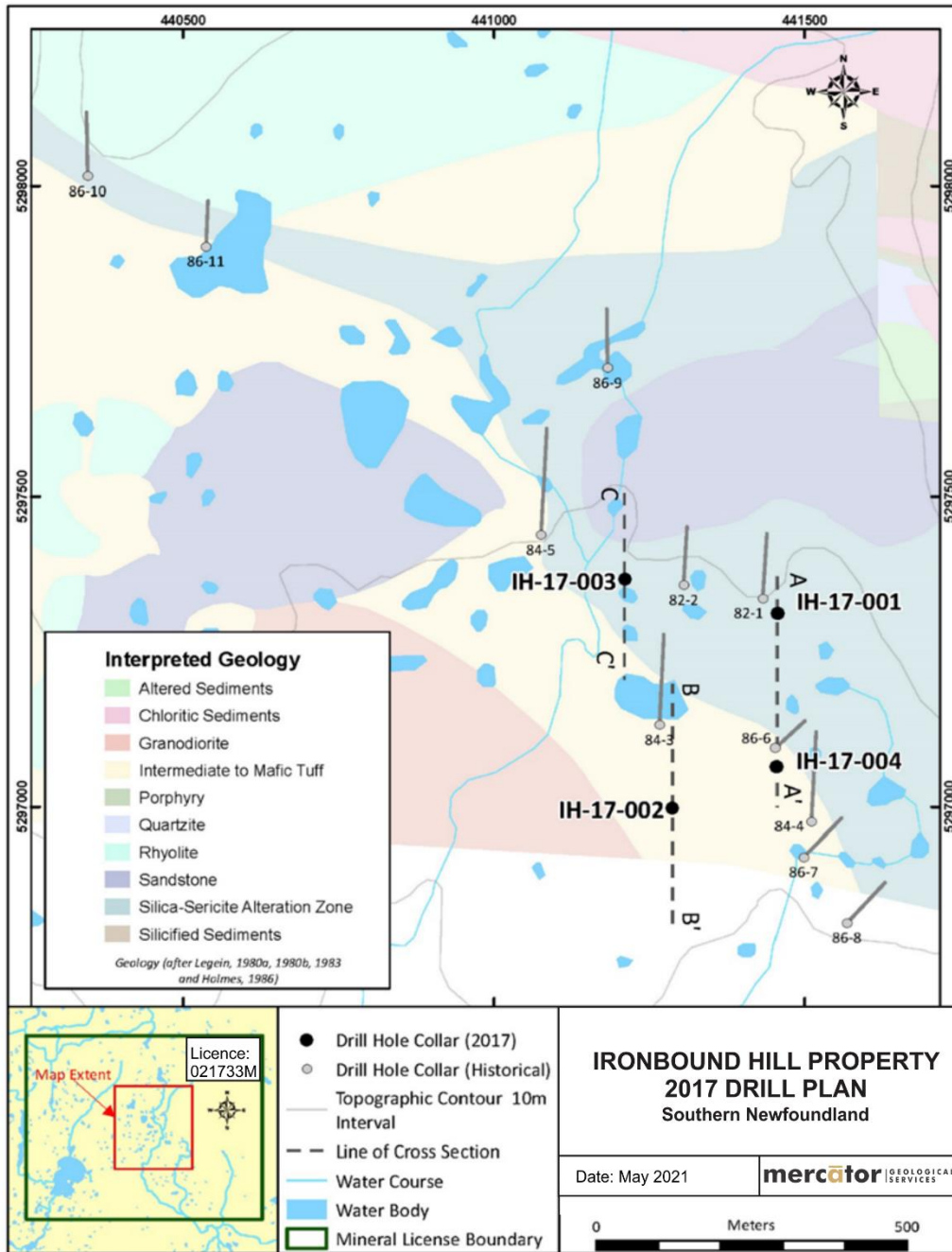
Trace element and REE patterns identified by Coastal at the site indicate that the Ironbound Hill intrusive rock and Roti Intrusive Suite rocks at Hope Brook have a common magmatic source.

#### **8.4 Summary Description of Other Gold Occurrences of the HBGP**

Sericitic alteration zones in variably foliated to sheared rocks associated with the Bay d'Est Fault or with possible northeast trending secondary splays that cross la Poile Group or Bay du Nord Group rocks occur within the HBGP and locally host gold mineralization. The most prominent examples of such occur at the Old Man's Pond, Phillips Brook and Cross Gulch gold occurrences. Gold mineralization in these settings is typically low grade (< 2 g /t Au), associated with quartz vein arrays and/or zones of silicification and accompanied by pyritic sulphide mineralization and extensive carbonate alteration. Infrequent high grade gold values in quartz vein samples have also been returned. Mineralized zones are associated with altered and sometimes sheared La Poile Group volcanics, sedimentary rocks and felsic porphyries. or Bay du Nord Group schists

and meta-sedimentary rocks that locally show well developed strike and dip continuity.

**Figure 8-3: Ironbound Hill drill hole locations (from Coastal Gold files, 2017)**



## 8.5 Deposit Models and Classification

O'Brien et al. (1998) reviewed Hope Brook deposit attributes in the context of other gold deposits within Avalonian sequences of the Appalachians and also with respect to the genetic models considered most applicable. They note that origin of the AAZ and associated gold mineralization within an epithermal system was originally proposed by BP staff during the 1983-1985 exploration period and described by Woods (1984). Stewart (1992) attributed initial, structurally focused development of mineralization to influence of the Roti-Intrusive Suite, with modification through Silurian tectonism and igneous activity. Emplacement of the Devonian Chetwynd Granite was interpreted as having imparted a contact aureole metamorphic effect of gold grade enhancement in the most northeasterly part of the AAZ. Subsequent to the above, Dubé et al. (1998) reported that U-Pb age dating of pre/early alteration and post alteration quartz feldspar porphyry dikes established the age of the main stage of gold mineralization as being between 578 and 574 Ma. In combination with other well documented attributes of the deposit, they further determined that the causative hydrothermal alteration system was of the high sulphidation type commonly seen in association with acid-sulphate type epithermal systems.

Evolving geological understanding with respect to the AAZ and associated gold mineralization shows that it is similar to high sulphidation type alteration systems commonly associated with epithermal systems. However, preserved textural features denoting a high crustal level, such as multi-stage or crustiform veining and complex hydrothermal breccias are lacking. In contrast, mineralized zones show widespread distribution of very fine grained, disseminated gold and sulphides associated with intense silicification that overprints an enigmatic pre-existing foliation that could be primary in origin or may in part be related to late Proterozoic deformation. This suggests a deeper level of AAZ development, possibly within or adjacent to an evolving structural zone that was exploited by Roti Intrusive Suite quartz feldspar porphyry and mafic dikes.

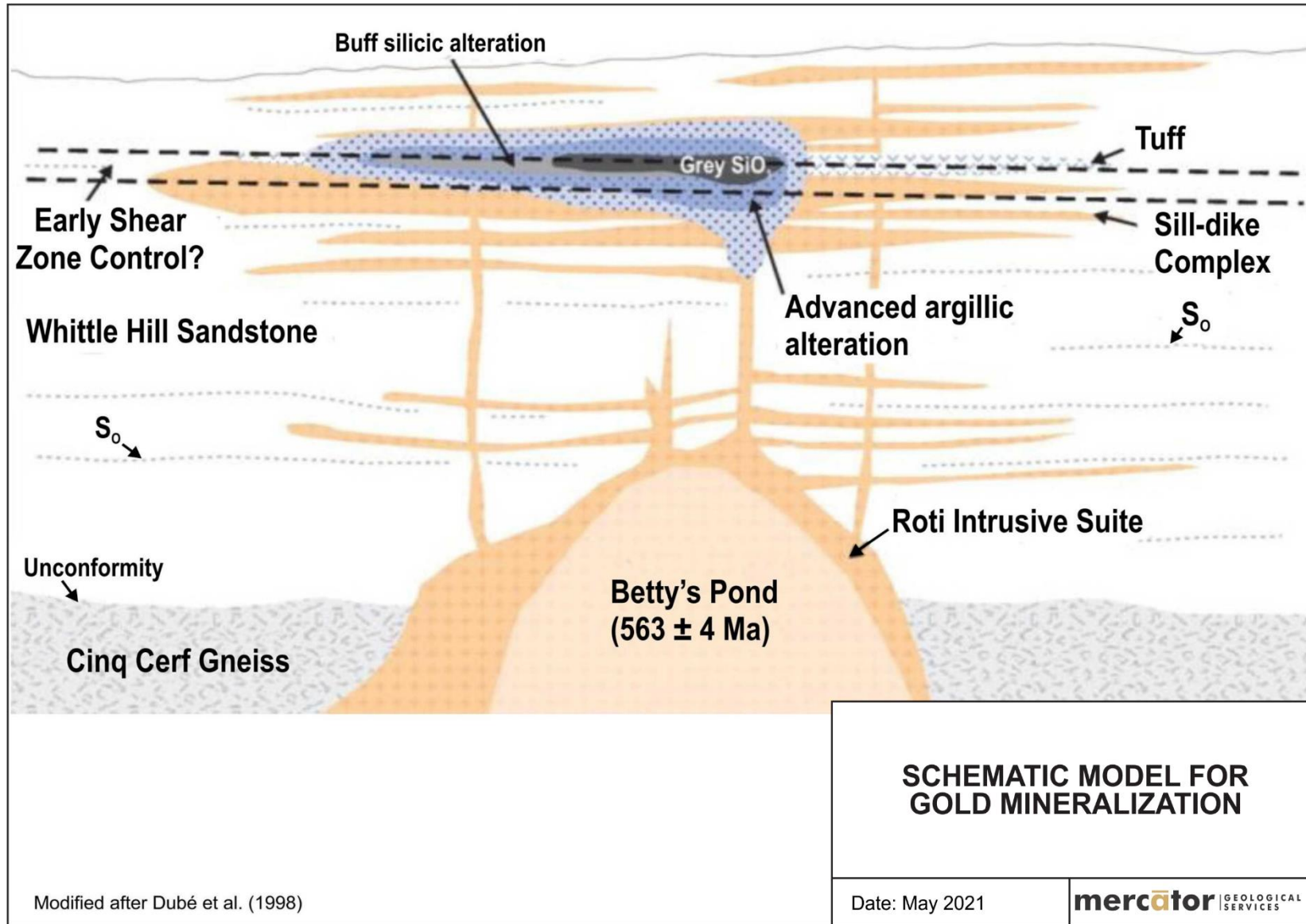
Collaborative research carried out over several years by Coastal Gold, Memorial University and Western University further supports earlier interpretation of deposit association. This work

includes mineral liberation analysis and oxygen stable isotope analysis of samples from the Hope Brook property. Results are interpreted as showing that gold mineralization across the entire Hope Brook property was likely deposited from a single fluid source. The oxygen stable isotope work suggests that fluids responsible for gold mineralization had a similar geochemical composition and are likely part of a single large event driven by a major magmatic-hydrothermal system at depth. Results have also been interpreted as possibly indicating that the Hope Brook deposit may represent a transition from mesothermal to epithermal style mineralization (Bannerjee, 2014).

Based on results of the various deposit studies completed to date, the Hope Brook deposit is considered for report purposes to be a late Proterozoic, high sulphidation mineralizing system characterized by disseminated gold that shows deep epithermal affinity, with a possible original structural focus and genetic association with the Roti Intrusive Suite. Figure 8.3 presents a schematic representation of this setting. The Bay d'Est Fault (shear zone) system is also interpreted to have exerted a substantial control on localization of the second style of orogenic gold mineralization that occurs within the HBGP. Presence of brittle-ductile bedrock textures in association with the sheared and altered gold bearing zones supports this contention.

Big Ridge's Ironbound Hill prospect located northeast of the Hope Brook deposit locally shows similar styles of pyritic, aluminous and silicic alteration as seen in the vicinity of the Hope Brook deposit, and host rock sequences of similar age and general lithology and present. Roti Intrusive Suite intrusive rocks are present in the prospect area and the style of style of alteration and mineralization identified to date at this location is similar to that seen at Hope Brook. The prospect is therefore classified in common with Hope Brook as having developed from a late Proterozoic, high sulphidation mineralizing system with deep epithermal or porphyry affinity.

Figure 8-4: Schematic model for gold mineralization



## **8.6 Other Appalachian Examples of Avalonian Gold Deposits**

Epithermal gold deposits associated with both high and low sulphidation hydrothermal systems have been described at several locations within the Avalon Zone of the Northern Appalachians. The most prominent of these in Canada, other than the Hope Brook deposit, occur in eastern Newfoundland, where low sulphidation systems of broadly similar age to Hope Brook occur in two separate belts, one on the Avalon Peninsula and one on the adjacent Burin Peninsula. The former trend is hosted primarily by 600-640 Ma subaerial pyroclastic sequences of the Harbor Main Group, and the latter by subaerial pyroclastics of the 600-560 Ma Marystown Group.

Prominent examples of Avalonian gold deposits having economic size and grade also occur in the southern portion of the Appalachian orogen in the Carolina Slate Belt. These include the Haile, Brewer, Ridgeway and Barite Hill gold deposits. Gold mineralization in these settings is hosted by late Proterozoic, subaerial, intermediate to felsic volcanic rocks and overlying epiclastic sedimentary sequences that were affected by advanced argillic alteration and silicification. While some deposits such as Brewer show metal associations indicative of high sulphidation epithermal systems, origin of others such as Haile and Ridgeway are less clear, with marine exhalative, syntectonic epithermal and structurally controlled/metamorphic models proposed through time (Spence et al., 1980; Gillon et al., 1995 and Hayward, 1992).

## **8.7 Ironbound Hill Prospect**

There are several mineralized showings in the Ironbound Hill area that typically comprise disseminated to stringer pyrite with minor base metal sulphides, barite and accessory silver and gold. The showings are hosted within altered felsic volcanics and sedimentary rocks that are considered for current purposes to belong to the Neoproterozoic Third Pond Tuff and Whittle Hill Sandstone units present at the nearby Hope Brook deposit. The volcanic and sedimentary sequence in the area was described by BP staff as fine-grained, siliceous felsic volcanics and fine-grained volcanoclastic sedimentary rocks.

## 9.0 Exploration

No exploration work has been undertaken to date by Big Ridge. The current report and associated mineral resource estimate review reflect the first NI43-101 technical reporting by Big Ridge for the HBGP.

## **10.0 Drilling**

### **10.1 Introduction**

This report section describes drilling programs carried out by the most prominent past explorers of the Hope Brook deposit and its associated tailings deposits. All core drilling that supports the current mineral resource estimate is included. Programs are described in chronological order, beginning with those most recently completed by Coastal Gold between 2010 and 2013 and followed by those completed by Royal Oak and BP between 1983 and 1997. Figure 10.1 presents a summary view of drill hole locations relative to the mineral resource outline and Map 2013-1 and Map 2012-2a (Appendix III) present more detailed views.

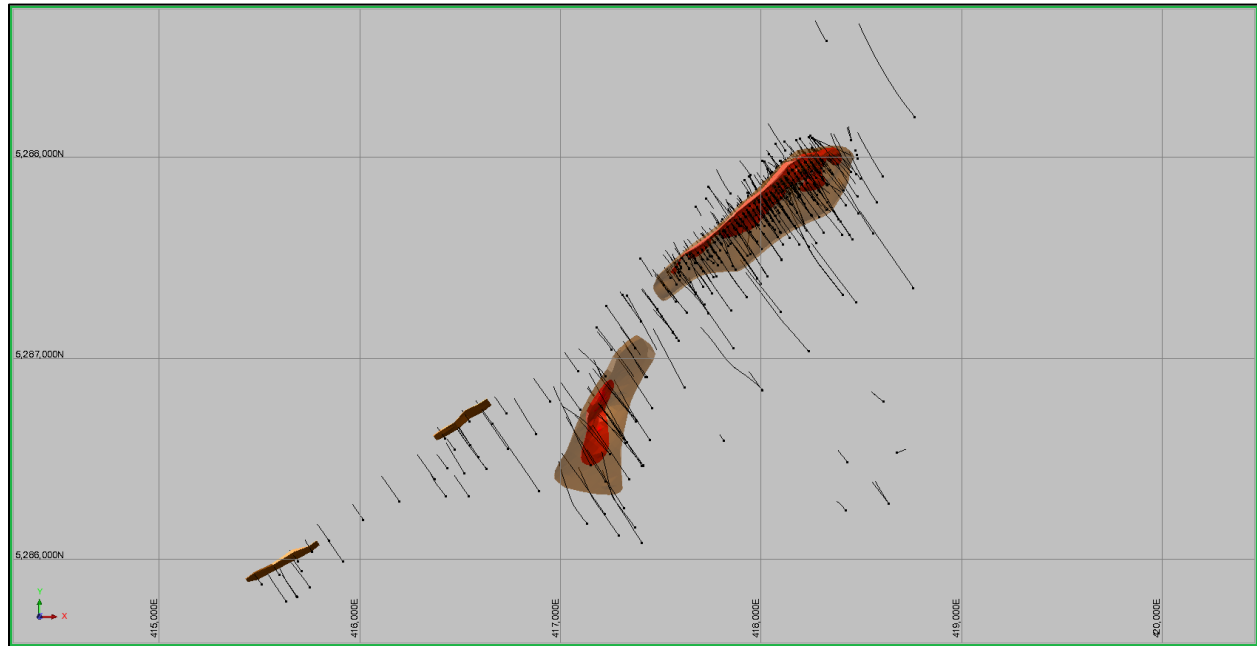
Neither Big Ridge or First Mining has carried out any drilling on the Hope Brook deposit to date. First Mining completed 4 core holes in 2017 at the Ironbound Hill prospect that is located 25 km northeast of the Hope Brook deposit. These holes do not form part of the current mineral resource estimate drilling database for the Hope Brook deposit but are separately mentioned below for completeness.

### **10.2 Coastal Gold Programs between September, 2010 and October, 2013**

During this period Coastal Gold completed 139 diamond drill holes and drill hole extensions on the property that total 39,320.4 m of drilling. Holes were completed in five separate drilling programs that include 10 diamond drill holes totalling 3,421.9m completed between September, 2010 and January, 2011, 67 diamond drill holes totalling 21,350.5 m completed between February, 2011 and December, 2011, 15 diamond drill holes, re-drills and hole extensions totalling 4,549.0 m completed between February 26, 2012 and May 13, 2012, 21 diamond drill holes totalling 5,923.9 m completed between September, 2012 and December, 2012, and 26 diamond drill holes totalling 4,075.2 m completed between August 2013 and October 2013. Table 10.1 tabulates the Coastal Gold programs and provides a Program I through IV reference



**Figure 10-1: Summary map of drill holes relative to the mineral resource estimate outline**  
(Tan solid is low grade domain and orange solid is high grade domain)



**Table 10.1: Summary of Coastal Gold Drill Programs 2010 to 2013**

Drill Program	Period	Target	No. Holes	Total Meters
Program I	Sept, 2010 to Jan, 2011	SW Pit, 240 Zone	10	3,421.9
Program II	Feb, 2011 to Dec, 2011	Mine Zone, SW Pit	67	21,350.5
Program III	Feb, 2012 to May, 2012	Mine Zone, SW Extension	15	4,549.0
Program IV	Nov, 2012 to Dec, 2012	240 Connector	21	5,923.9
Program V	Aug, 2013 to Oct, 2013	Footwall; SW Pit Extension	26	4,075.2

framework that is used in subsequent report sections. Details of the various drilling campaigns are discussed below and Map 2013-1 (Appendix III) presents Coastal drill hole locations.

### 10.2.1 Coastal Gold Program I - September 2010 to January, 2011

Coastal Gold completed 10 surface diamond holes totalling 3,421.9 m in length between September 2010 and January 2011 (HB10-001 to HB10-010). The objective of the program was first to confirm the presence of mineralization Indicated by historic drill results below the limits of historic mining and at surface to southwest of the open-pit and secondly to test the

mineralization potential of the 240 Zone to the southwest and the northeast extension of the mine at depth. This drilling was completed by New Valley Drilling Co. Ltd. using a Discovery EF50 drill rig and NQ core was recovered.

Drilling successfully confirmed the presence of disseminated gold-chalcopyrite-pyrite mineralization hosted by highly silicified sedimentary and volcano-sedimentary rocks both at depth, below the 4800 level of historic mining, and at surface to the southwest of the historic open-pit. Exploratory drill hole HB11-002 targeting mineralization along the northeast extension of the mine at depth returned no significant results and exploratory drill hole HB11-007 targeting the 240 Zone caved short of the target. Program I drill hole collar and orientation data are presented in Table 10.2 and selected significant drilling intercepts appear Table A-4, Appendix II.

**Table 10.2: Location, Orientation and Depth Data for Program I Drill Holes**

Hole Id	*Easting (m)	*Northing (m)	*Elevation (m)	Depth (m)	Azimuth (Deg)	Dip (Deg)
HB10-001	418479.85	5287804.14	5151.21	624.40	320.46	-65.00
HB10-002	418474.49	5287917.39	5147.39	498.40	325.00	-66.00
HB10-003	418423.22	5287762.56	5155.27	574.20	318.00	-62.00
HB10-004	417705.95	5287538.02	5117.88	50.00	325.00	-45.00
HB10-005	417645.82	5287518.20	5121.67	50.00	325.00	-44.00
HB10-006	417570.66	5287473.40	5107.20	40.80	160.00	-45.00
HB10-007	417329.79	5286583.71	5122.69	384.80	315.00	-64.00
HB10-008	418095.29	5287630.43	5121.39	493.20	325.00	-66.00
HB10-009	417733.84	5287492.81	5121.57	154.80	325.00	-54.00
HB10-010	417947.58	5287517.84	5117.44	551.30	325.00	-50.00

*Note: UTM Zone 21 NAD 83 coordination; elevation above sea level plus 5000 m*

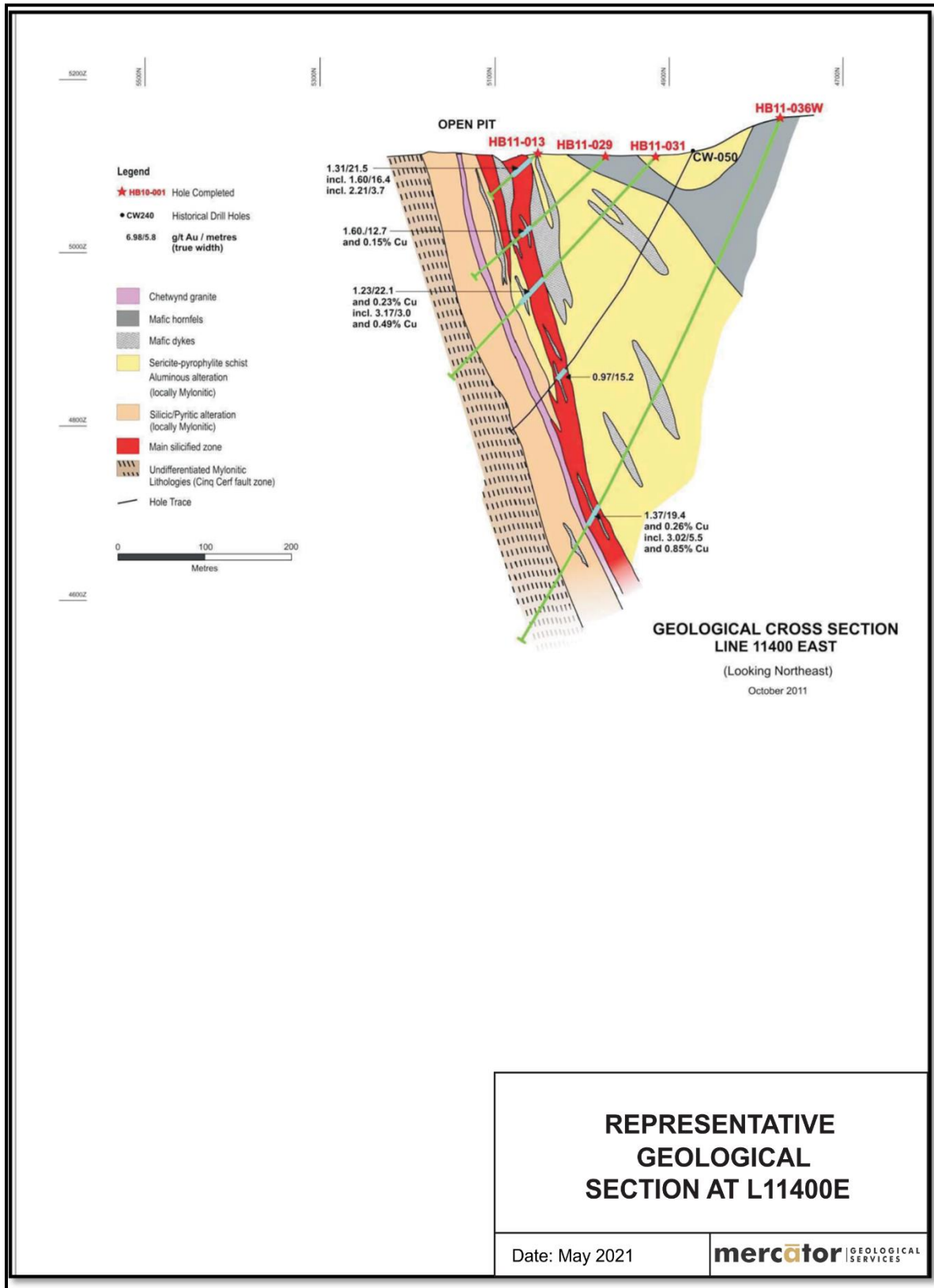
### 10.2.2 Coastal Gold Program II - February 2011 to December 2011

Following the 2010 HBGP drill program Coastal Gold completed another surface drilling campaign between February 2011 and December 2011 that consisted of 67 holes totalling 21,350.5 m (HB11-011 to HB11-077). The program's main objective was to delineate mineralization defined by the previous Coastal Gold drilling results below the past-producing underground mine and

southwest of the open-pit at a density sufficient for resource evaluation and estimation. In addition, several drill holes (HB11-011, HB11-012, HB11-025 to HB11-027, HB11-049, HB11-048, HB11-052 to HB11-055) targeted mineralization on the hanging wall and foot wall of the main deposit exploited by past mining operations. The drilling was completed by New Valley Drilling Co. Ltd. using a Discovery EF50 as the primary drill rig. In April 2011 a Boyles JKS-300 was added as second drill rig and in October 2011 a Boyles JKS-37 was added as a third drill rig. NQ core (47.6 mm diameter) was recovered by the Discovery and JKS-37 rigs and BQTK core (40.6 mm diameter) was recovered by the JKS-300 rig.

The program was successful in demonstrating continuity of disseminated gold-chalcopyrite-pyrite mineralization hosted by highly silicified volcano-sedimentary rocks in all three targeted areas of drilling and provided the drill hole density required for resource estimation. The representative geological section for L11400 E that appears in Figure 10.1 demonstrates this style of mineralization with relevant significant intercepts posted. Drill hole collars for Program II are presented in Table 10.3 and selected significant drill intercepts for the program appear in Table A-5, Appendix II.

Figure 10-2: Representative geological section at L1140E



**Table 10.3: Location, Orientation and Depth Data for Program II Drill Holes**

Hole Id	*Easting (m)	*Northing (m)	*Elevation (m)	Depth (m)	Azimuth (Deg)	Dip (Deg)
HB11-011	418325.14	5287866.27	5151.11	228.00	325.00	-63.00
HB11-012	418325.48	5287865.80	5151.13	502.30	325.00	-75.00
HB11-013	417897.34	5287690.66	5119.37	71.60	325.00	-44.00
HB11-014	417867.01	5287647.73	5120.88	69.20	325.00	-45.00
HB11-015	417812.03	5287632.06	5116.44	161.20	325.00	-45.00
HB11-016	417777.91	5287602.71	5116.85	65.80	325.00	-45.00
HB11-017	417735.26	5287578.38	5116.28	55.00	325.00	-45.00
HB11-018	417752.65	5287554.29	5116.48	108.20	325.00	-45.00
HB11-019	417790.16	5287498.27	5122.32	210.00	325.00	-45.00
HB11-020	417804.25	5287568.41	5111.63	69.50	325.00	-50.00
HB11-021	417804.30	5287566.68	5117.54	157.50	325.00	-50.00
HB11-022	417832.48	5287612.76	5118.96	192.90	325.00	-48.00
HB11-023	418227.67	5287636.17	5149.82	660.50	320.00	-65.00
HB11-024	417840.60	5287602.28	5116.27	178.00	318.00	-65.00
HB11-025	417892.80	5287613.56	5115.04	180.70	325.00	-47.00
HB11-026	418251.68	5287709.90	5148.12	476.70	322.00	-59.00
HB11-027	418251.94	5287709.54	5148.13	591.60	322.00	-67.00
HB11-028	418274.53	5287574.94	5173.54	794.90	325.00	-65.00
HB11-029	417945.26	5287627.01	5115.50	204.40	325.00	-45.00
HB11-030	417900.07	5287656.84	5116.58	214.30	325.00	-45.00
HB11-031	417979.48	5287580.09	5115.25	346.00	325.00	-48.00
HB11-032	417712.32	5287355.45	5120.99	279.00	325.00	-44.00
HB11-033	417669.10	5287497.57	5120.43	151.00	325.00	-45.00
HB11-034	417699.24	5287451.40	5122.40	197.30	325.00	-45.00
HB11-035	417647.76	5287376.92	5120.32	277.20	320.00	-45.00
HB11-036W	418102.42	5287490.29	5157.65	669.50	325.00	-66.00
HB11-037	417592.68	5287428.91	5112.80	130.00	322.00	-45.00
HB11-038	418057.64	5287649.91	5118.03	400.20	325.00	-66.00
HB11-039	417672.33	5287325.59	5116.93	351.00	325.00	-47.00
HB11-040	417986.76	5287662.09	5115.70	381.30	325.00	-66.00
HB11-041	418068.50	5287639.34	5118.97	471.80	325.00	-69.00
HB11-042	417640.59	5287447.47	5128.48	174.00	325.00	-45.00
HB11-043	417605.59	5287500.71	5113.75	120.50	325.00	-45.00
HB11-044	418191.84	5287566.82	5162.10	598.90	325.00	-62.00
HB11-045	417943.43	5287903.58	5130.42	131.20	145.00	-45.00
HB11-046	418386.65	5287690.44	5165.58	754.00	325.00	-67.00

Hole Id	*Easting (m)	*Northing (m)	*Elevation (m)	Depth (m)	Azimuth (Deg)	Dip (Deg)
HB11-047	418040.18	5288015.45	5142.06	148.10	145.00	-50.00
HB11-048	418193.11	5287813.14	5138.66	103.00	325.00	-45.00
HB11-049	418193.58	5287812.50	5138.62	257.00	325.00	-74.00
HB11-050	418292.63	5287922.84	5148.77	102.00	325.00	-47.00
HB11-051E	418407.19	5287314.80	5170.72	1192.60	322.00	-70.00
HB11-052	418265.34	5287867.28	5153.58	144.50	325.00	-48.00
HB11-053	418286.81	5287835.30	5151.47	187.00	325.00	-47.00
HB11-054	418105.08	5287753.64	5118.92	118.00	325.00	-45.00
HB11-055	418144.66	5287769.06	5126.14	152.00	325.00	-45.00
HB11-056	418032.51	5287406.86	5149.89	575.10	325.00	-55.00
HB11-057	418069.31	5287708.62	5117.85	138.00	325.00	-45.00
HB11-058	418121.75	5288034.22	5145.34	214.20	325.00	-45.00
HB11-059	418032.77	5287406.48	5149.88	651.10	325.00	-65.00
HB11-060	417573.37	5287283.06	5101.18	247.80	325.00	-50.00
HB11-061	417514.78	5287362.32	5099.37	135.70	325.00	-45.00
HB11-062	417482.82	5287244.51	5096.29	193.00	325.00	-66.00
HB11-063	417561.51	5287130.64	5120.34	346.10	325.00	-69.00
HB11-064	417928.33	5287303.74	5161.65	555.60	325.00	-51.00
HB11-065	417778.69	5287409.46	5122.61	410.00	325.00	-58.00
HB11-066	417928.33	5287303.74	5161.65	560.60	325.00	-62.00
HB11-067	417756.00	5287506.00	5117.00	230.00	325.00	-49.00
HB11-068	417796.00	5287536.00	5114.00	226.00	325.00	-49.00
HB11-069	418455.00	5287595.00	5158.00	685.40	325.00	-63.00
HB11-070	418324.00	5287740.00	5158.00	593.60	325.00	-69.00
HB11-071	417829.00	5287523.00	5112.00	259.80	325.00	-65.00
HB11-072	417785.00	5287463.00	5122.00	290.00	325.00	-60.00
HB11-073	418402.00	5287617.00	5158.00	692.00	321.00	-62.00
HB11-074	417876.00	5287444.00	5130.00	350.00	325.00	-62.00
HB11-075	418289.00	5287702.00	5154.00	586.60	325.00	-71.00
HB11-076	417928.00	5287507.00	5114.00	289.00	325.00	-44.00
HB11-077	417871.00	5287607.00	5118.00	177.50	322.00	-53.00

Note: \*UTM Zone 21 NAD 83 coordination; elevation above sea level plus 5000 m

### 10.2.3 Coastal Gold Program III - February, 2012 to May, 2012

Between February 2012 and May 2012 Coastal Gold completed a surface drill program that consisted of 15 holes, re-drills and hole extensions totalling 4,549 m in length (HB12-078 to HB12-090 and HB12-047E). The drilling was completed by New Valley Drilling Co. Ltd. using a Discovery EF50 as the primary drill rig. In March 2012, an Atlas Copco CS1000 drill rig was added as second drill rig and the Boyles JKS-37 and JKS-300 drill rigs were demobilised from site. NQ core (47.6 mm diameter) was recovered by new drills.

This program focused on confirming the locations of workings and major pillars in the mine area (HB12-080E, 087), further testing of the Southwest Extension target area (HB12-089, 090) and preliminary testing of the Northeast target area (HB12-078, 079). Collar information appears in Table 10.4 and highlights of the program are presented in Table A-6, Appendix II.

**Table 10.4: Location, Orientation and Depth Data for Program III Drill Holes**

Hole Id	*Easting (m)	*Northing (m)	*Elevation (m)	Length (m)	Azimuth (Deg)	Dip (Deg)
HB12-078	418765.59	5288201.64	5136.39	741.60	325.00	-45.00
HB12-079	418324.80	5288577.42	5156.84	156.20	324.00	-65.00
HB12-080	418096.00	5287764.23	5122.47	176.10	325.00	-58.00
HB12-081	417590.94	5287086.71	5123.74	463.90	323.00	-51.00
HB12-082	418278.73	5287812.26	5153.14	187.00	325.00	-71.00
HB12-083	418282.25	5287767.64	5156.46	326.00	324.00	-65.00
HB12-084	417642.32	5287445.60	5132.08	186.20	341.00	-65.00
HB12-047E	418040.18	5288015.45	5142.06	187.00	145.00	-50.00
HB12-085	417760.96	5287473.46	5124.59	218.30	325.00	-45.00
HB12-086	417859.16	5287460.40	5118.89	349.90	341.00	-65.00
HB12-087	418071.11	5288066.33	5145.79	464.70	144.00	-48.00
HB12-088	417717.19	5287266.60	5137.40	336.00	324.00	-48.00
HB12-089	417761.61	5287405.60	5126.88	307.80	325.00	-65.00
HB12-090	417628.41	5287227.85	5124.98	292.00	321.00	-53.00

Note: \*UTM Zone 21 NAD 83 coordination; elevation above sea level plus 5000 m

### **10.2.3.1 Coastal Gold Program IV - November 2012 to December 2012**

#### **10.2.3.2 Introduction**

The fourth Hope Brook drilling program by Coastal Gold began on November 3, 2012 and was completed on December 21, 2012. A total of 5,923.9 m of drilling in twenty-one drill holes (HB12-091 to HB12-111) were completed. Six separate targets areas, along a 3.4 km long mineralized trend, were drilled during the program including the Stope 4960-150, the 240 Zone-Mine Zone Connector Target, the Chetwynd Prospect and the Chetwynd South Prospects, the Chetwynd to 240 Connector Target and the NW Target Area. The drilling was completed in these areas in order to continue to expend on the area of known gold mineralization outside of the current Hope Brook Deposit area.

The drilling was completed by New Valley Drilling Co. Ltd. using a Discovery EF50, an Atlas Copco CS1000, a Nodwell-mounted JKS-300 and a Boyles 37. NQ core (47.6 mm diameter) was recovered by the Discovery, Atlas Copco and Boyles 37 rigs and BQTK core (40.6 mm diameter) was recovered by the JKS-300 rig. As necessitated by occasional poor ground conditions the drill diameter for certain holes was reduced to BQ size drill core (36.4 mm diameter) to allow the drill hole to proceed. Drill hole collars for Program IV are presented in Table 10.5 and selected drill intercepts for the program appear in Table A-7, Appendix II.



**Table 10.5: Location, Orientation and Depth Data for Program IV Drill Holes.**

Hole Id	Target	Easting (m)	*Northing (m)	*Elevation (m)	Length (m)	Azimuth (Deg)	Dip (Deg)
HB12-091	4960 Stope	417919	5287887	5135	279	145	-51
HB12-092	Connector Zone	417756	5287323	5135	367	325	-63
HB12-093	Connector Zone	417756	5287323	5135	446	325	-74
HB12-094	4960 Stope	417940	5287903	5132	223	145	-51
HB12-095	Chetwynd South	415631	5285792	5055	237	325	-47
HB12-096	Chetwynd South	415683	5285816	5054	320	325	-57
HB12-097	Chetwynd South	415752	5285860	5058	283	325	-57
HB12-098	Chetwynd	416592	5286508	5045	333	325	-53
HB12-099	Chetwynd	416521	5286429	5046	269	325	-51
HB12-100	Connector Zone	417229	5287260	5069	459	145	-51
HB12-101	Connector Zone	417180	5287155	5066	536	145	-52
HB12-102	Connector Zone	417630	5287228	5123	336	325	-65
HB12-103	Connector Zone	416879	5286625	5023	353	325	-59
HB12-104	Connector Zone	417407	5287498	5075	162	145	-49
HB12-105	Connector Zone	417311	5287314	5073	119	145	-49
HB12-106	Connector Zone	417332	5287315	5073	501	147	-55
HB12-107	NW Target	417675	5287755	5087	73	145	-43
HB12-108	NW Target	417727	5287796	5090	88	145	-43
HB12-109	NW Target	417947	5287911	5131	120	325	-45
HB12-110	NW Target	417736	5287854	5104	237	145	-49
HB12-111	NW Target	417844	5287814	5131	196	325	-45
Called Off	NA	NA	NA	NA	14	NA	NA
<b>Total</b>					<b>5,951.0</b>		

Note: UTM Zone 21 NAD 83 coordination; elevation above sea level plus 5000 m

### **10.2.3.3 Coastal Gold Program V – August 2013 to October 2013**

#### **10.2.3.4 Introduction**

Drilling Program V at Hope Brook began on August 9, 2013 and was completed on October 10, 2013. A total of 4,075.2 m of drilling in twenty-six drill holes (HB13-112 to HB13-137) were completed. The drill program was designed to test two major target areas; the Footwall Target and SW Pit Extension Target. The drilling was completed by New Valley Drilling Co. Ltd. using an Atlas Copco CS1000 and a Zinex Mining Corp. A5 drill. NQ core (47.6 mm diameter) was recovered by both the Atlas Copco and Zinex A5 drill rigs. As necessitated by occasional poor ground conditions the hole diameter for certain holes was reduced to BQ size drill core (36.4 mm diameter) to allow the drill hole to proceed. Drill hole collars for the August to October 2013 program are presented in Table 10.6 and selected drill intercepts for the program appear in Table A-8, Appendix II.

**Table 10.6: Location, Orientation and Depth Data for Program V Drill Holes.**

Hole Id	Target	*Easting (m)	*Northing (m)	*Elevation (m)	Length (m)	Azimuth (Deg)	Dip (Deg)
HB13-112	Footwall Target	418006	5287984	5142.07	159.0	145	-44
HB13-113	Footwall Target	418041	5288016	5145.96	163.6	145	-44
HB13-114	Footwall Target	418040	5288016	5146.01	172.0	145	-52
HB13-115	Footwall Target	418006	5287984	5141.88	215.0	145	-50
HB13-116	Footwall Target	418118	5288080	5148.06	166.4	145	-41
HB13-117	Footwall Target	418176	5288084	5148.64	138.0	145	-49
HB13-118	SW Pit Extension	417866	5287648	5124.98	213.0	325	-80
HB13-119	SW Pit Extension	417797	5287616	5121.28	73.0	325	-45
HB13-120	SW Pit Extension	417810	5287598	5121.24	136.0	325	-57
HB13-121	SW Pit Extension	417887	5287667	5125.46	232.8	325	-78
HB13-122	SW Pit Extension	417838	5287561	5120.19	199.0	325	-63
HB13-123	SW Pit Extension	417768	5287578	5179.9	86.8	325	-45
HB13-124	SW Pit Extension	417792	5287498	5126.1	182.2	325	-55
HB13-125	SW Pit Extension	417768	5287578	5179.9	109.3	325	-62
HB13-126	SW Pit Extension	417792	5287498	5126.1	238.8	325	-68
HB13-127	SW Pit Extension	417727	5287547	5118	93.9	325	-45
HB13-128	SW Pit Extension	417774	5287524	5123.82	134.0	325	-46
HB13-129	SW Pit Extension	417746	5287508	5125.61	193.3	325	-69
HB13-130	SW Pit Extension	417708	5287492	5122.78	153.0	325	-60
HB13-131	SW Pit Extension	417670	5287475	5127.48	167.9	325	-72
HB13-132	SW Pit Extension	417708	5287492	5122.78	222.0	325	-80
HB13-133	SW Pit Extension	417670	5287475	5127.48	120.3	325	-46
HB13-134	SW Pit Extension	417578	5287364	5127.48	136.8	325	-46
HB13-135	SW Pit Extension	417593	5287389	5113.29	115.8	325	-45
HB13-136	SW Pit Extension	417601	5287457	5117.96	89.0	325	-45
HB13-137	SW Pit Extension	417593	5287389	5113.52	164.0	325	-68
<b>Total</b>					<b>4,074.9</b>		

Note: \*UTM Zone 21 NAD 83 coordination; elevation above sea level plus 5000 m

### 10.2.3.5 Coastal Gold Drilling and Planning Logistics

Drill hole targets were planned utilizing all available datasets, including historical and current geophysics, historical and current drill holes, historical geochemical data and all sources of geological mapping. The Coastal Gold technical team and independent consultants as required integrated all available data into Gemcom (borehole), GeoSoft (geophysics) and ArcGIS (spatial data) to define drill targets. The drill programs were designed to be fluid and to accommodate new results as they were acquired.

Drill hole planning was developed in Gemcom software by representing drill hole targets in 3D space and designing intersecting drill holes that account for the expected deviation, topography and environmental controls. UTM coordinates of drill holes collars are sent to the onsite geologist and were then provided to the drill technicians to locate the potential site in the field. A Trimble GeoXT (Geoexplore 2008) was used to identify the collar location. This instrument operates with RTK and has sub-metre accuracy. The technicians would evaluate the proposed drill hole sites and notify the onsite geologist if a drill hole collar was required to be moved, when a revised location is updated in Gemcom and when any new collar information was adopted. The drill hole collars were typically located with a picket and foresight and back sights were established with a compass. The drill was moved onto the sight and aligned with respect to the pickets and the final sighting was fine-tuned again with a compass. The drill head was set using a digital level. The borehole deviation was determined using a digital Reflex Single Shot tool at approximately 100 metre intervals. Depending on the required accuracy and track of the drill hole trace down hole, deviation measurements were acquired at a greater or lesser increment. Severe deviation could be corrected using either a steel wedge or Clappison wedge that were available onsite.

### 10.3 Historical Drilling By BP and Royal Oak

#### 10.3.1 Summary of Historical Drilling Programs

Drilling records for programs carried out by BP and Royal Oak were available through the NLDNR assessment reporting archive system and these were accessed for use in the project drilling database used for resource estimation purposes. A total of 316 BP surface drill holes and 138 underground drill holes were originally accessed for such purposes by Coastal Gold and Mercator as well as a total of 4 Royal Oak surface holes and 118 underground holes. Data for 8 additional historic drill holes completed by either BP or Royal Oak were located in NLDNR archive files subsequent to the 2012 resource estimate and these were added to the project drill hole database. A total of 152 OP series short drill holes completed from the open pit floor by Royal Oak for local grade assessment were also discovered subsequent to the 2012 resource estimate. These have not been validated to date and were not used in the 2013 or current resource estimates.

Table 10-7 summarizes program information pertaining to historical drill holes and Tables A-1, A-2 and A-3 found in Appendix II present location, azimuth, inclination and depth data for all historical holes known to date. In all instances, Universal Transverse Mercator (UTM) coordinates based on North American Datum 83 (NAD83) are presented. Elevation values reflect sea level datum plus 5000 meters.

**Table 10.7: Summary of Core Drilling Programs by BP and Royal Oak**

Operator	Period	Hole Type	Number of Holes	Hole Series
BP	1983-1986	Surface	240	CW, CP, CT
BP	1987-1991	Surface	76	CW, CE,
BP	1987-1991	Underground	138	4960, 5015,5060
Royal Oak	1992-1997	Surface – Open Pit	152	OP
Royal Oak	1992-1997	Surface	9	CE
Royal Oak	1992-1997	Underground	120	4870, 4900, 4930

BP surface drilling programs prior to the CE series of 1987 recovered BQ size (36.4 mm diameter) drill core and subsequent programs recovered NQ size core (47.6 mm diameter). Royal Oak surface drilling programs also recovered NQ size core and underground drilling programs by both operators are believed to have predominantly recovered NQ core.

### **10.3.2 Summary of BP and Royal Oak Drilling Program Results**

The historical drilling programs dealt with in this report cover the entire period of exploration, development and mining at the Hope Brook site. BP surface drilling data from the 1983-1986 period supported initial resource estimates for the deposit as well as strike extension assessments along the main alteration zone trend. Deposit area holes subsequently supported estimation of mining reserves upon which BP initiated development and production. Later surface drilling by both BP and Royal Oak was primarily focused on assessment of exploration targets such as the 240 Zone and shallow mineralization occurring immediately southwest of the open pit, along the strike extension of the main deposit. Underground drilling by both companies was carried out to either explore for down-dip and strike extensions of the main deposit or to provide detailed definition of geology and grade characteristics within the areas planned for mining. Some holes in both groups were completed for geotechnical purposes and these are identified in the project database. Map 2012-2A included in Appendix III presents surface drill hole locations for the BP and Royal Oak programs, with the exception of OP series holes completed within the pit floor outline by Royal Oak. Table A-9 (Appendix II) presents examples of mineralized intercepts contained within the historic BP and Royal Oak datasets.

### **10.4 Mercator Comment on Diamond Drilling Program Results**

The compiled and validated datasets from Coastal Gold, BP and Royal Oak were used for current resource estimation purposes. During the related compilation and validation process no substantive issues with respect to core loss or other deleterious factors that could affect quality and completeness of sampling were identified from logging documentation. However, as noted earlier by Desautels et al (2012a, 2012b and 2014) and Cullen (2015a,b), much of the early

exploration drilling carried out by BP recovered BQ size drill core (36.4 mm diameter) and this would generally be expected to show greater loss in areas of broken or disrupted ground than the larger NQ (47.6 mm) core that was favoured later in the project's history. Review of original BP resource estimate documents showed that core loss through poor recovery was not identified as problematic to the estimation process. Use of NQ core in later programs provided increased certainty with respect to good core recovery and this was confirmed through core inspections carried out during various site visits by the authors.

Drill hole deviation measurements formed part of all drilling programs carried out to date on the property, with earliest BP holes using the Tropari system and later holes using downhole single shot or multi-shot systems. Limited testing of a gyroscopic system was also carried out by BP but did not result in its full incorporation in normal drilling procedures. Review of downhole survey data for the compiled drilling dataset shows that higher but systematic deviation rates characterise deeper BQ size holes completed by BP. Similarly, deeper NQ size holes completed by BP and Royal Oak on the 240 Zone were subject to greater deviation within the altered hanging wall rock package.

Coastal Gold data do not typically define problematic deviation issues, but relatively soft hanging wall lithologies of the alteration zone present potential for higher deviation rates in deep holes crossing this section. Notably, difficult drilling conditions in the hanging wall section of the 240 Zone prevented one Coastal Gold hole (HB10-07) from reaching the intended target interval. Modeling of historic deviation patterns and factoring these into the drill hole planning process has generally allowed Coastal Gold to complete drill holes with acceptable proximity to intended deeper target areas. While shallower holes do not present substantive risks with respect to hole deviation, some such holes collared adjacent to the southeast side of the open pit encountered difficulty due to open faults and joints that were generated as a result of mining-related hanging wall ground failures and subsidence during the BP and Royal Oak operational periods.

Based on results of the drilling data compilation and validation processes, plus visual core assessments and discussion with Coastal Gold staff and consultants, Mercator is of the opinion that core loss and drill hole deviation factors documented for Coastal Gold, BP and Royal Oak programs are within acceptable limits for use of associated data in resource estimation programs. Additionally, Mercator is of the opinion that documented drilling and related procedures such as drill hole location surveys, downhole orientation surveys, core logging, core sampling and sample handling carried out by Coastal Gold, BP and Royal Oak met industry standards of their respective periods and that associated results, as compiled and validated, are acceptable for resource estimation purposes. However, this does not preclude the possibility that individual holes within the database may be characterised by specific deficiencies such as insufficient or incomplete sampling or analytical record deficiencies.

## **10.5 Vibracore Tailings Drilling Program – September and October 2013**

### **10.5.1 Description of Program and Results**

FracFlow Consultants Ltd. (FracFlow) of St. Johns, NL were contracted to complete a systematic vibracore tailings drilling program on Tailings Ponds 1 and 2 at the Hope Brook site. The work was carried out during the September through October period of 2013 and a total of 73 vibracore drill holes totalling 155 m were completed on an approximate 100 m square grid over the two tailings ponds. The purpose of the program was to evaluate the thickness and gold grade of the tailings and to provide sufficient data to support a NI 43-101 compliant mineral resource estimate of the contained gold and copper. Of the holes completed, 51 successfully sampled tailings, with thicknesses of the tailings sections ranging from 0.3 to 6.0 m. Average thickness of cored tailings was 3.0 m. The remainder of the holes encountered bedrock or boulder material in areas where the tailings ponds were not filled. Assessment of vibracore program drilled depths against topographic models for the tailings pond areas generated after completion of the program has shown that the tailings section was not tested to its bottom contact in many cases where total deposit thickness exceeded 4 m.



**10.5.1.1 Mercator Comment on Vibracore Program**

Detailed descriptions of technical program components and results related to the tailings drilling project were disclosed by Coastal in a previous NI 43-101 resource estimate technical report by Desautels et al. (2014). The related NI 43-101 mineral resource estimate for the tailings deposits is also described in that report. The current report does not include an update to the earlier tailings deposit mineral resource estimate. No new work has been completed on assessment of the Hope Brook tailings deposits.

Based on results of the vibracore drilling data compilation and validation processes carried out by Mercator, results of the vibrecore drilling program, as compiled and validated by Mercator, are considered acceptable for resource estimation purposes.

## **11.0 Sample Preparation, Analyses And Security**

### **11.1 Introduction**

The following descriptions of sample preparation and core handling protocols apply to all drilling carried out by Coastal Gold to date on the Hope Brook property. This information was used to support the 2015 mineral resource estimate prepared by Mercator for Coastal Gold and remains current. Program details are described in chronological order, beginning with those most recently completed by Coastal Gold between 2013 and 2010 and followed by those completed by Royal Oak and BP.

Program details were discussed with Coastal Gold staff and/or consultants during the site visits by Mercator staff and their systematic application with respect to the respective drilling programs was confirmed. Tailings deposit bottom sampling and vibracore drilling program details were addressed in a previous resource estimate technical report and the current report does not include an update to the previous tailings deposit resource estimate. On this basis, details of associated tailings sampling programs have not been included below. The reader is directed to Desautels et al. (2014) for descriptions of the tailings program and results.

### **11.2 Drill Core Sampling for Coastal Gold Programs**

Coastal Gold staff members were responsible for arranging transport of core boxes from the drilling sites to the company's secure core storage and logging facility located at the Hope Brook camp. The core was initially examined by core technicians and all measurements are confirmed. Core was then aligned and repositioned in the core box where possible and individual depth marks are recorded to facilitate logging. Core technicians photographed all core, measured core recovery between core meterage blocks, carried out water immersion specific gravity measurements as required and recorded information on hard copy data record sheets that were then entered into the project drilling database.

All paper copy and digital information for each hole, including quick logs, sample record sheets and assay certificates were maintained in a secure filing system at the site to provide a complete archival record for each drill hole. Digital information was stored on a local server as well as on the company's secure off-site server that was accessible by satellite link from the camp facility. Subsequent to logging and processing, down hole lithocoded intervals, sample intervals and drill hole collar and survey information that were entered into the digital database were checked for completeness before being uploaded to the project database upon which drilling section generation and three-dimensional deposit modeling were based.

The secured plastic sample bags were grouped in batches 40 to which QA/QC program samples were added prior to final packing for shipment to the ALS preparation laboratory in Sudbury, ON. Samples were transported from the site by aircraft or chartered boat and then delivered to a commercial transport service for final delivery to the laboratory. Sample shipment change of custody forms were used to list all samples in each shipment and laboratory personnel crosschecked samples received against this list and reported any irregularities by fax or email to Coastal Gold. Mercator has been advised that no significant issues or concerns were encountered with respect to sample processing, delivery, security or chain of custody for Hope Brook drilling program samples.

Mercator is of the opinion that the core sampling and handling protocols employed by Coastal Gold at the HBGP were acceptable and sufficient for a project of this size and that chain of custody elements consistent with current industry standards were in place to ensure integrity of associated processes.

### **11.3 Drill Core Analysis for Coastal Gold Programs**

Company staff logged and sampled drill core but did not carry out any form of sample preparation or analytical work on project samples. Primary project analytical work was completed by ALS with preparation taking place at the company's Sudbury, ON facility and subsequent analysis at the

facility in Vancouver, BC. ALS is an internationally accredited laboratory with National Association of Testing Authorities (NATA) certification and also complies with standards of ISO 9001:2000 and ISO 17025:1999. The laboratory utilizes industry standard analytical methodologies and rigorous internal Quality Assurance and Quality Control (QAQC) procedures for self-testing.

All HBGP core samples were weighed upon receipt at the ALS preparation laboratory and prepared using ALS preparation procedure PREP-31B that consists of crushing the entire sample to >70% -2 mm, then splitting off 1 kg and pulverizing it to better than 85% passing 75 microns size. The coarse reject materials from this processing were stored for future use.

Gold concentrations for submitted core and rock samples were determined by ALS using a 50 g sample split and fire assay pre-concentration methods followed by atomic absorption spectroscopy finish (FA-AAS). This is reflected in ALS code Au-AA24. A 33-element analysis was also completed on selected samples by method code ME-ICP61 which denotes four acid digestion followed by inductively coupled plasma – atomic emission spectroscopy (ICP-AES) analysis.

Mercator is of the opinion that the core analysis protocols employed by Coastal at the HBGP are consistent with current industry standards. They are acceptable and sufficient for a project of this size and should provide definition of any irregularities in sample submissions or analytical results.

#### **11.4 Quality Control and Assurance for Coastal Gold Programs**

##### **11.4.1 Coastal Gold Programs: September 2010 through July 2012**

Drill core sampling carried out by Coastal Gold during the September 2010 through July, 2012 period on the Hope Brook property was subject to a QAQC program administered by the company. This included submission of blank samples, use of certified reference materials and analysis of pulp and coarse reject check sample splits at a third-party commercial laboratory. Results of both the in-house and laboratory quality control and assurance analyses were

monitored by Coastal Gold on an on-going basis during the course of the project. Associated results were previously described in detail and determined by Mercator to be acceptable for use in the NI 43-101 mineral resource estimation programs reported by Desautels et al. (2012a,2012b), and subsequently by Mercator (Cullen, 2015a,b). Mercator concurs with these earlier determinations and considers the results to be acceptable for use in the current review and updating of the Mercator 2015 resource estimate being undertaken on behalf of Big Ridge. The reader is directed to the previous Coastal Gold mineral resource estimate technical reports for details regarding the September 2010 through July, 2012 QAQC programs by Coastal Gold.

The 2012 piston sampling program and 2013 vibracore drilling program of Hope Brook mine tailings deposits were also subject to a systematic QAQC program carried out by Coastal Gold. Results of these programs were deemed to be consistent with modern industry standards by Desautels et al. (2012b, 2013) and Mercator concurs with this opinion at the current report date. The reader is directed to the cited previous Coastal Gold mineral resource estimate technical reports for details regarding the 2012 and 2013 tailings sampling and vibracore drilling programs. As noted earlier, the current report does not include a new mineral resource estimate for the tailings deposits and therefore does not present detailed supporting documentation for the earlier estimate reported by Coastal Gold.

#### **11.4.2 Coastal Gold Programs: October 2012 through November 2013**

##### **11.4.2.1 Introduction**

All of the drill core programs were subject to essentially the same QAQC protocols as had been applied to the earlier core drilling campaigns referred to above. This included systematic submission of blank samples, use of certified reference materials and analysis of pulp and, for core, coarse reject check sample splits at a third-party commercial laboratory. Results of both the in-house and laboratory quality control and assurance analyses were monitored by Coastal Gold on an on-going basis and were also made available for review by Mercator. A QAQC protocol was also established for the vibracore drilling program and this included systematic analysis of

certified reference materials, duplicate sample splits, blank sample materials and analysis of third party pulp split check samples. Report sections 11.4.2.2 through 11.4.3.1 present results and associated comments with regard to combined QA-QC programs for the last two core drilling programs. These are included in the current report for completeness but were previously presented in Desautels et al. (2014) and Cullen (2015a,b). Results and comments on earlier core drilling programs appear in Desautels et al. (2012a and 2012b), which Mercator co-authored, and in Cullen (2015a,b), and Mercator has accepted and takes responsibility for these results in preparation of the current report for Big Ridge.

Results for the 2013 vibracore drilling program, inclusive of QAQC components, were previously disclosed by Coastal. The current report does not include an updated tailings deposit mineral resource estimate.

#### **11.4.2.2 Scope of Drill Core QA-QC Programs**

The drill core samples were packaged in batches of 40 samples, which included one blank sample (10<sup>th</sup> sample), one pulp duplicate (20<sup>th</sup> sample), one certified reference material sample (30<sup>th</sup> sample) and one coarse reject duplicate sample (40<sup>th</sup> sample). ALS provided primary analytical services for the project while pulp duplicate (20<sup>th</sup> sample) and coarse reject duplicate (40<sup>th</sup> sample) splits were analyzed at SGS Canada Ltd. (SGS) to provide independent laboratory check sample data sets. SGS is a commercial, ISO certified laboratory independent of Coastal Gold. Details of the Coastal Gold QAQC protocol are as follows:

- Blank samples of a non-mineralized granite were sourced from the Hope Brook site and consisted of Chetwynd Granite. For this purpose only fresh and “unaltered” core material was used,
- Duplicate samples of both prepared pulp and coarse reject materials were exclusively generated by ALS and these were sent to SGS for analysis,
- Certified reference materials with differing grades were sourced from OREAS and were inserted on an alternating basis.

Details of the core drilling QAQC programs are discussed below under separate headings.

#### 11.4.2.3 Certified Reference Material Program – Drill Core

Coastal Gold used five certified reference materials during the 2012-2013 drilling programs, these being OREAS-50C, OREAS 66a, OREAS-67A, OREAS-68A and OREAS-153A. All were supplied by ORE Research & Exploration Pty. Ltd. (OREAS), based in Bayswater North, Victoria, Australia and were provided in individually packaged lots containing approximately 60 grams of material. Table 10.1 presents certified mean values for the materials. All materials provide certified values for both gold and copper.

**Table 11.1: Certified Reference Material Tabulation**

Reference Material	Certified Mean Value $\pm$ 2 Standard Deviations			Number Used
	Gold	Copper	Silver	
OREAS-50C	836 ppb	0.742%	NA	17
OREAS-66A	1.237 g/t	121 ppm	18.9 g/t	7
OREAS-67A	2.238 g/t	325 ppm	33,6 g/t	27
OREAS-68A	3.89 g/t	392 ppm	42.9 g/t	25
OREAS-153A	0.311 g/t	0.712 (%)	NA	23
Total				82

In total, results for 82 certified reference samples submitted for analysis were reviewed by Mercator with respect to the 2012 and 2013 core drilling programs by Coastal Gold that include, respectively, holes up to number HB12-90 in 2012 and holes up to HB13-38 in 2013.

Reference samples for the 2012 and 2013 programs were systematically inserted into the laboratory sample shipment sequence by Coastal Gold staff who ensured that at least one standard was submitted for every 40 samples. Records of reference standard insertion were maintained as part of the core sampling and logging digital records and protocols. Figures 11-1 through 11-5 present analytical results returned for the combined reference material datasets that apply to the 2012-2013 drilling programs being addressed in this report. Gold results for these materials consistently fall within mean  $\pm$  two standard deviations primary control limits for

Figure 11-1: Total 2012-2013 Certified Standard OREAS-50C results - Gold

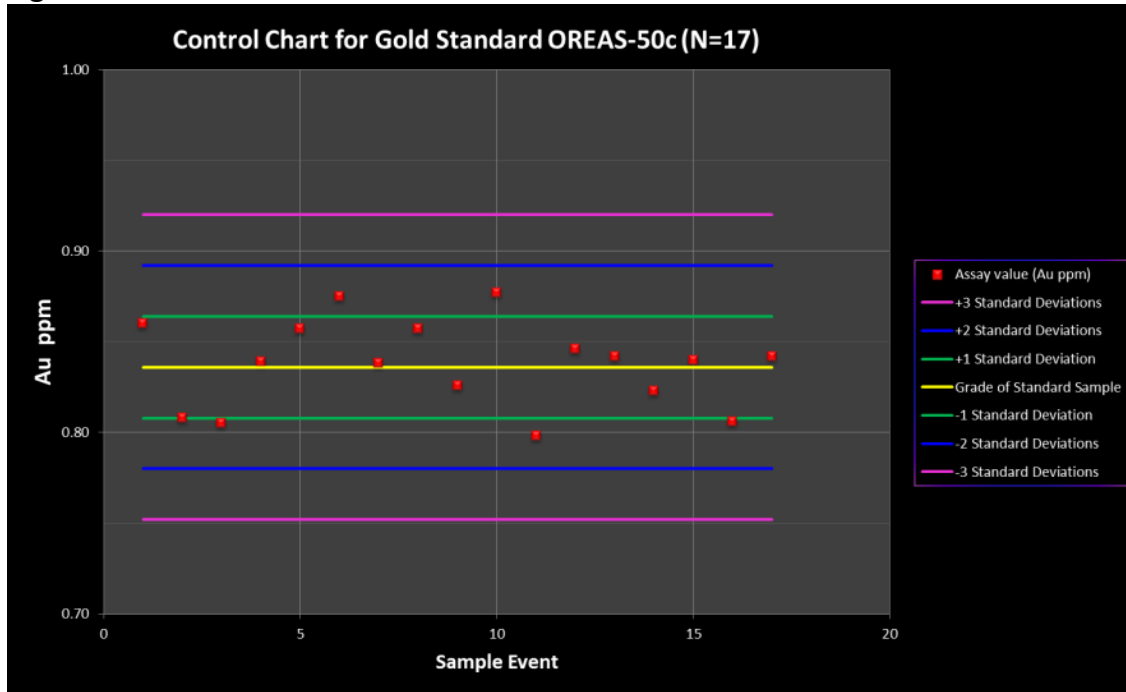


Figure 11-2: Total 2012-2013 Certified Standard OREAS-66A results – Gold

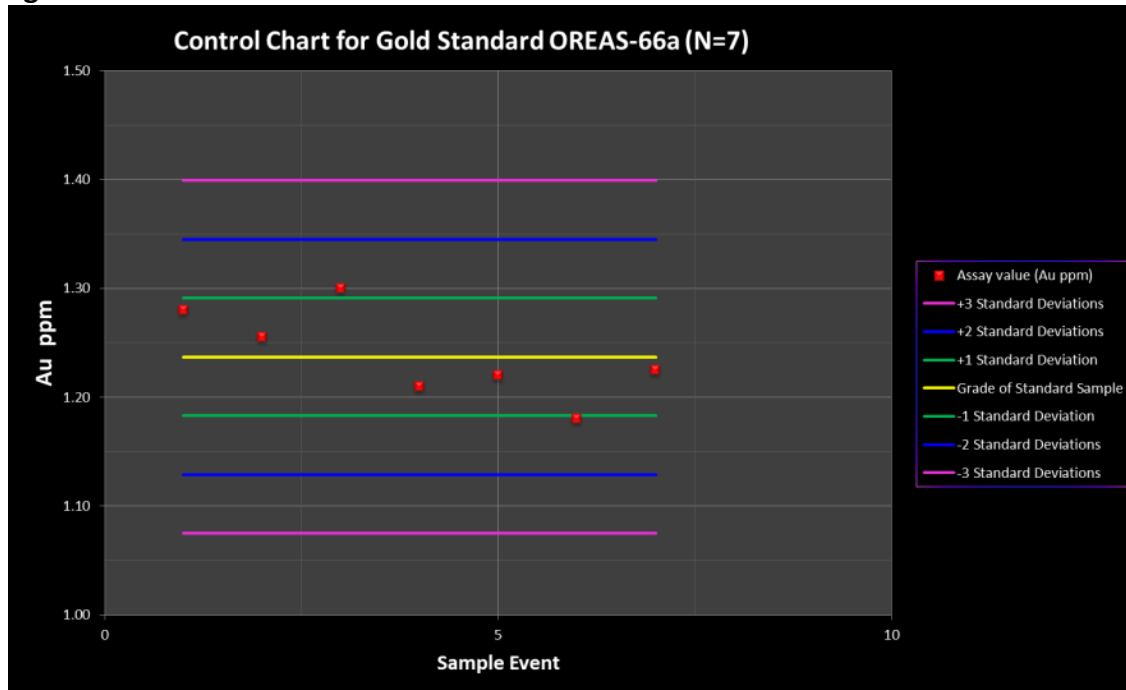




Figure 11-3: Total 2012-2013 Certified Standard OREAS-67A results – Gold

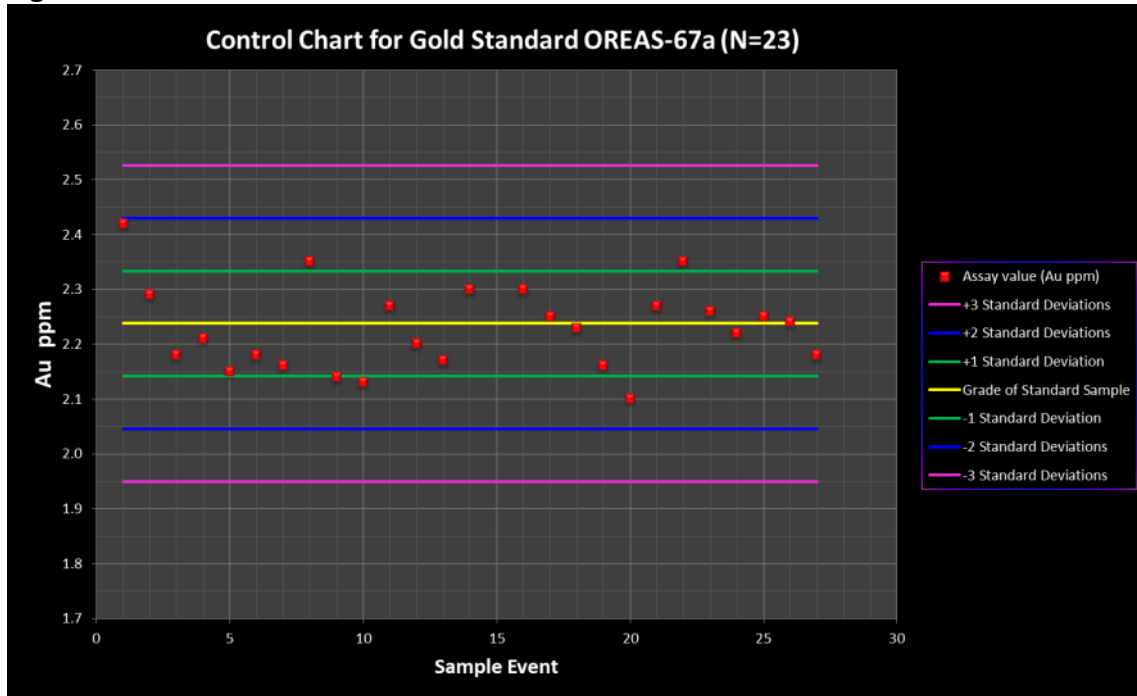
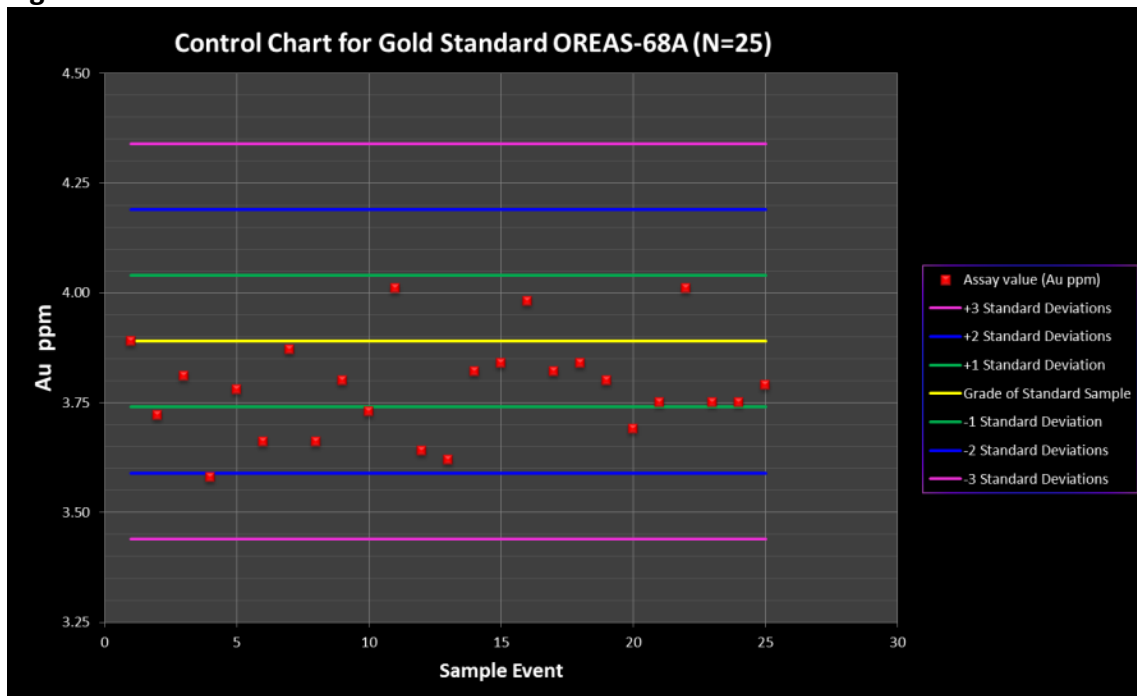
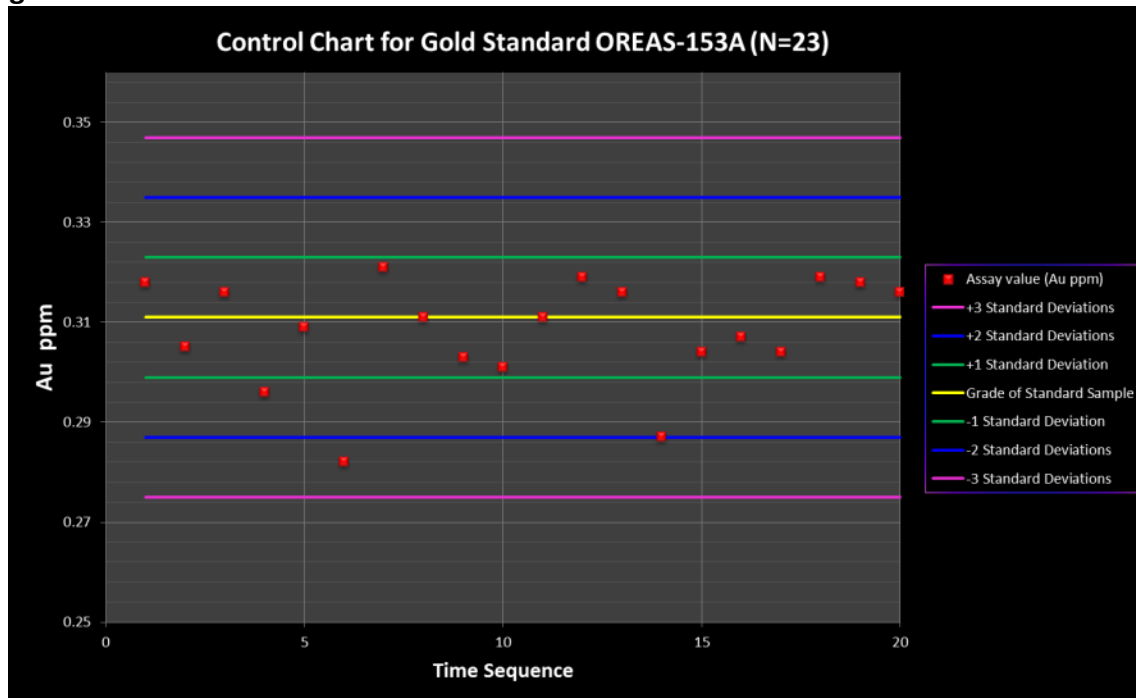


Figure 11-4: Total 2012-2013 Certified Standard OREAS-68A Results – Gold



**Figure 11-5: Total 2012-2013 Certified Standard OREAS-153A results – Gold**

the project. No samples returned gold values that exceeded the mean  $\pm$  three standard deviations levels used by Coastal Gold to trigger a laboratory review request and possible re-analysis of samples in the sequence between adjoining certified reference materials. In one instance, a blank sample was switched with OREAS67a and this result was excluded from plotting.

A similar approach was used for assessment of certified reference material copper levels and Figures 11-6 through 11-10 present related analytical results for the 2012-2013 drilling programs being addressed in this report. In total, copper results for 82 certified reference samples submitted for analysis were available for review. Copper values for these consistently fall within the mean  $\pm$  two standard deviations primary project control limits. A single sample of OREAS-50C returned a copper value that slightly exceeded the upper control limit. After review of all certified reference material results for the 2010-2013 Coastal Gold drilling programs, Mercator is of the opinion that these are sufficiently consistent to support use of associated datasets for current resource estimation purposes.

Figure 11-6: Total 2012-2013 Certified Standard OREAS-50C results – Copper

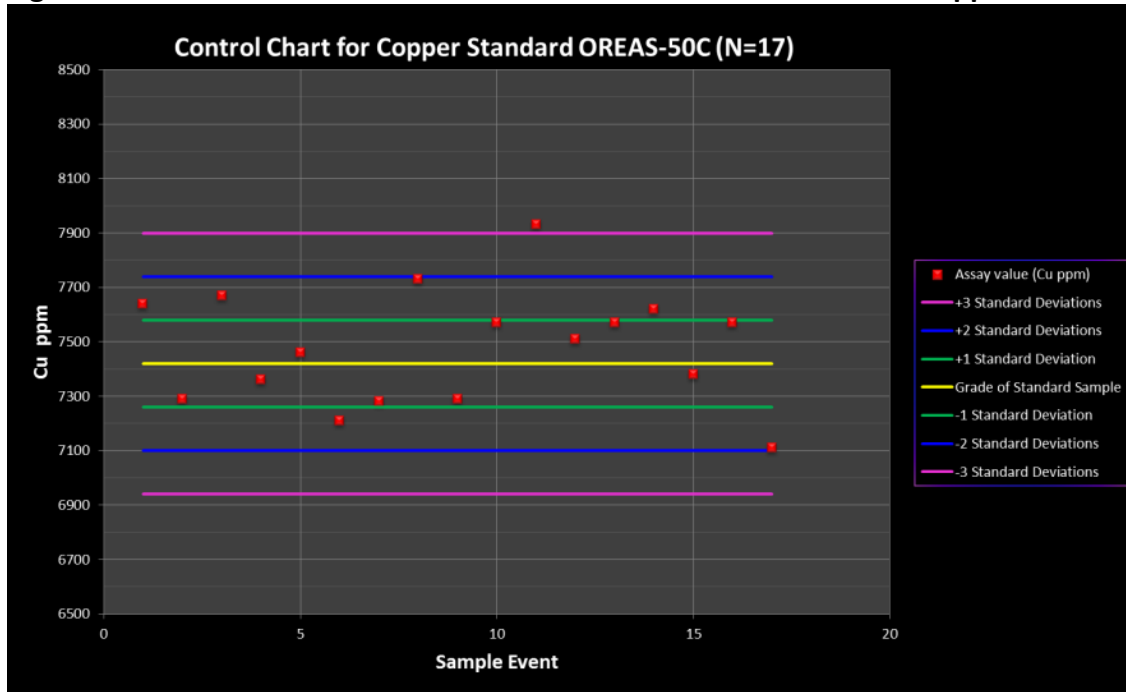


Figure 11-7: Total 2012-2013 Certified Standard OREAS-66A results – Copper

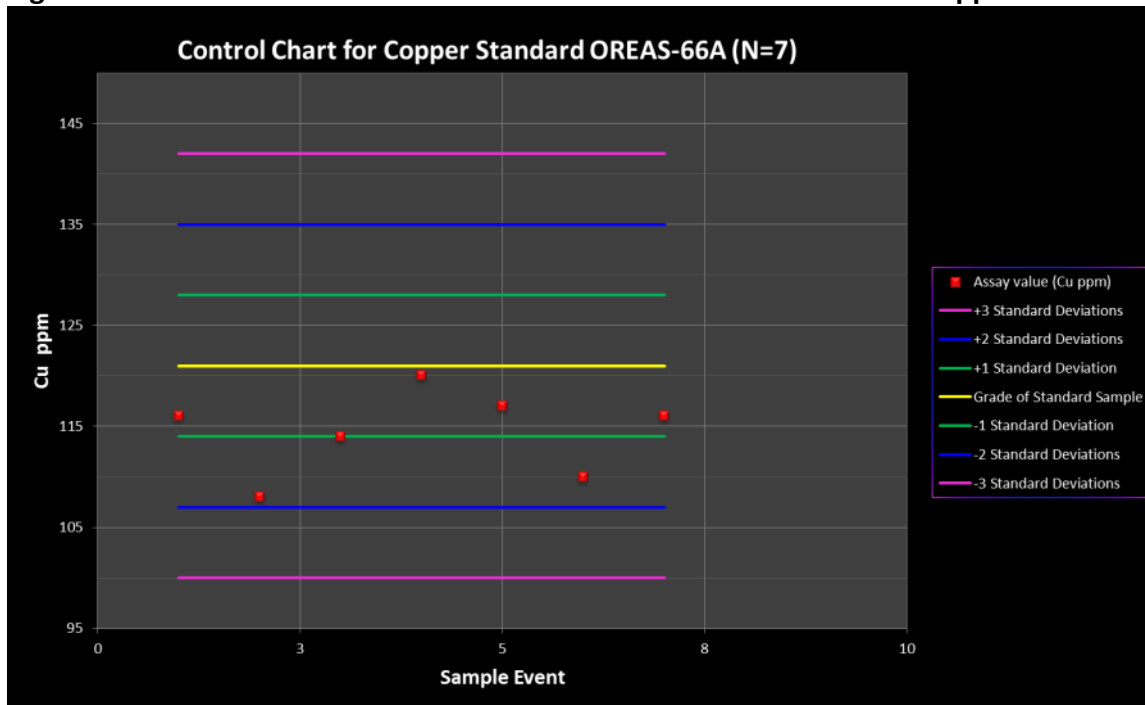


Figure 11-8: Total 2012-2013 Certified Standard OREAS-67A results – Copper

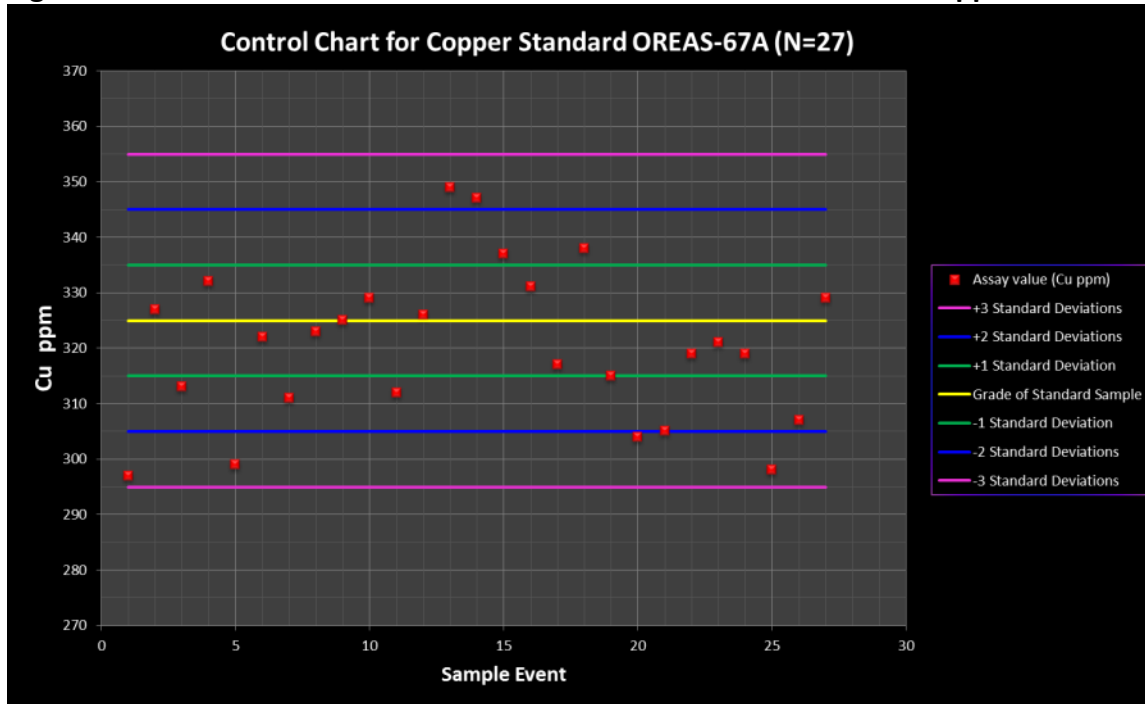
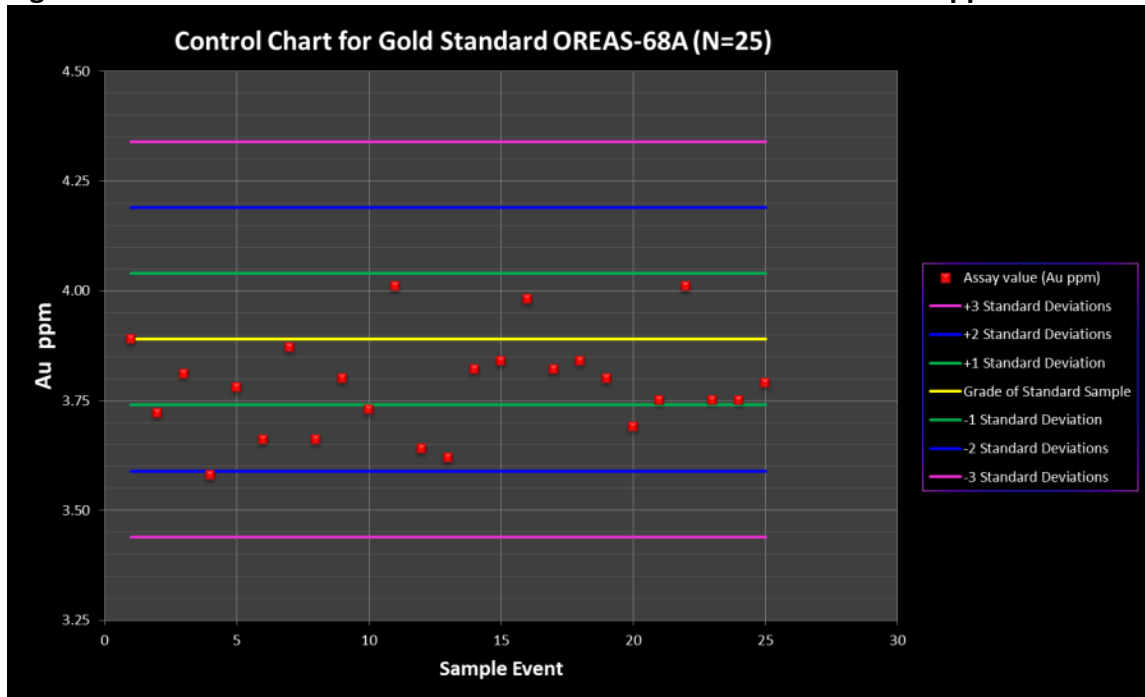
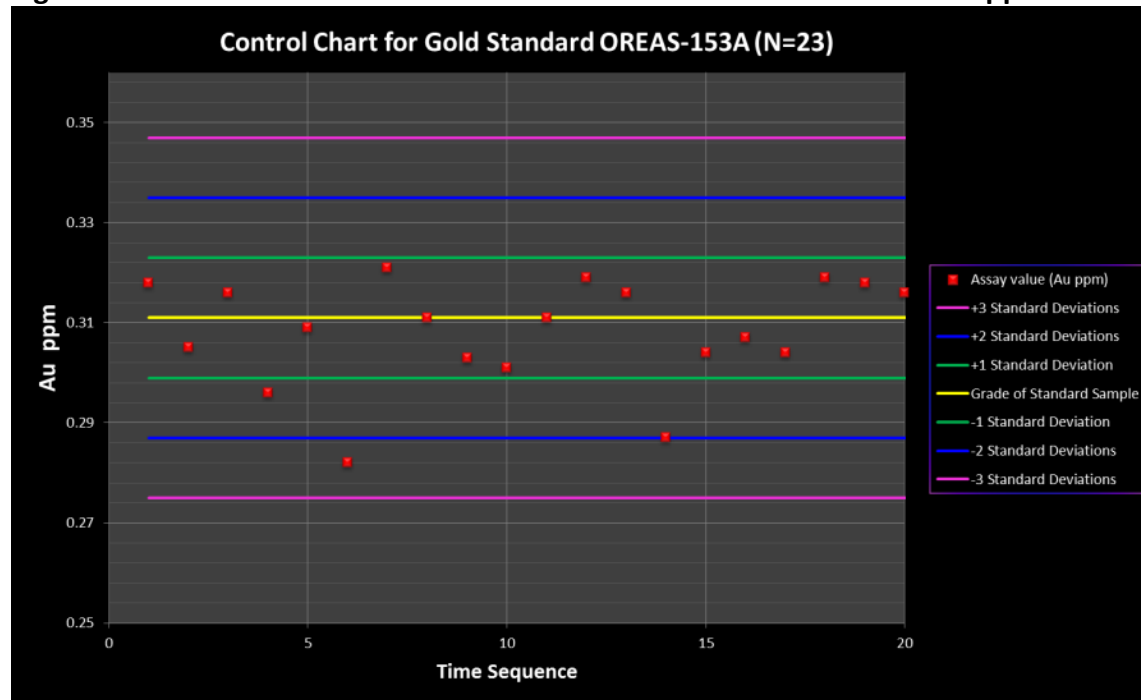


Figure 11-9: Total 2012-2013 Certified Standard OREAS-68A results - Copper



**Figure 11-10: Total 2012-2013 Certified Standard OREAS-153A results - Copper**

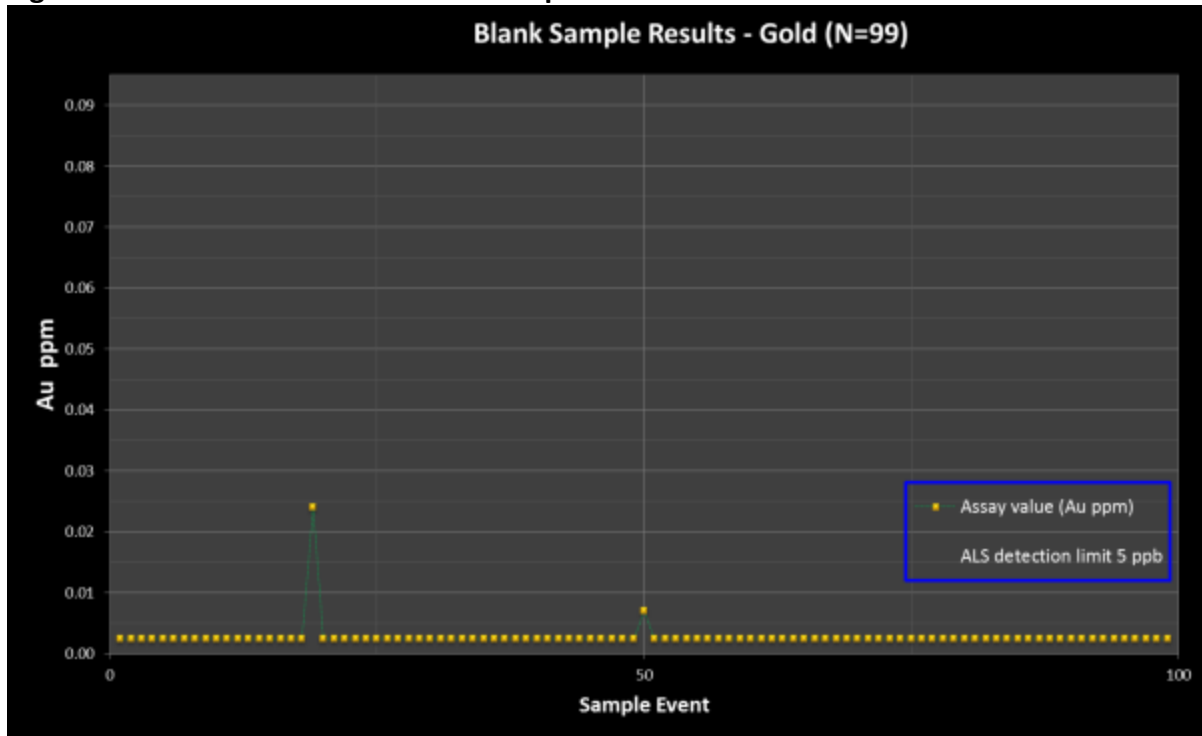
#### 11.4.2.4 Blank Sample Program – Drill Core

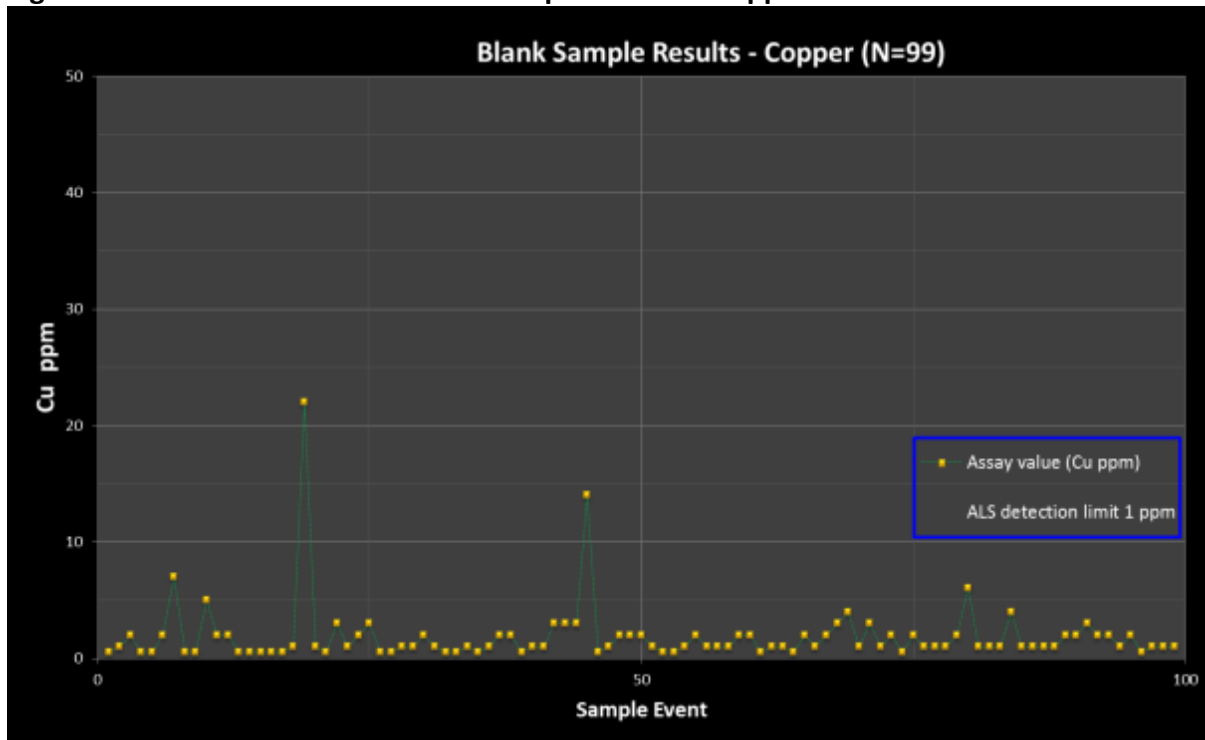
Blank sample materials were systematically inserted into the laboratory sample stream by Coastal Gold staff during the 2012-2013 exploration programs and analytical results for a total of 99 samples were reviewed for current report purposes. As noted earlier, blank sample data for previous drilling programs by Coastal Gold were presented in Desautels et al. (2012a and 2012b), which Mercator co-authored, and in Cullen (2015), and have been accepted and relied upon by Mercator for purposes of the current report for Big Ridge. The insertion rate for the 2012-2013 programs was at least 1 blank per 40 samples submitted and non-mineralized Chetwynd Granite drill core that was split and bagged by site staff was used for this purpose.

Gold and copper analytical results for blank samples comprising the combined late 2012-2013 drilling data sets are presented in Figures 11-11 and 11-12 respectively. Gold values predominantly registered below the 0.005 ppm detection limit and for calculation purposes these were assigned a value of 0.0025 ppm. The average gold value of the blank dataset is 0.0028 ppm

and only one sample exceeded the mean  $\pm$  three standard deviations project rejection limit, with a value of 0.024 ppm.

**Figure 11-11: Total 2012-2013 blank sample results – Gold**



**Figure 11-12: Total 2010-2012 blank sample results – Copper**

Review of the copper dataset showed that 2 samples exceeded the project rejection limit and one of these corresponds to the anomalous gold sample mentioned above. In this case, strongly anomalous values do not characterize the preceding sample in the analytical que. The second high copper sample is preceded by a sample that returned a value of 3840 ppm and therefore may be registering a preparation or analytical stage cross-contamination influence. The copper population mean is 1.84 ppm and the maximum value is 22 ppm. As noted by Desautels et al. (2012b) for the data pertaining to pre-2012 drilling by Coastal Gold, an explanation for elevated values cannot always be absolutely determined, but possible explanations include presence of very low-level mineralization in the sample material, contamination of the material during processing other than in the crushing and splitting sequence, or analytical/laboratory error.

Mercator is of the opinion that no significant or systematic cross-contamination effect is indicated by the Coastal Gold blank sample data set for the late 2012-2013 drilling programs. Use of associated copper and gold drill core sample datasets for resource estimation purposes is

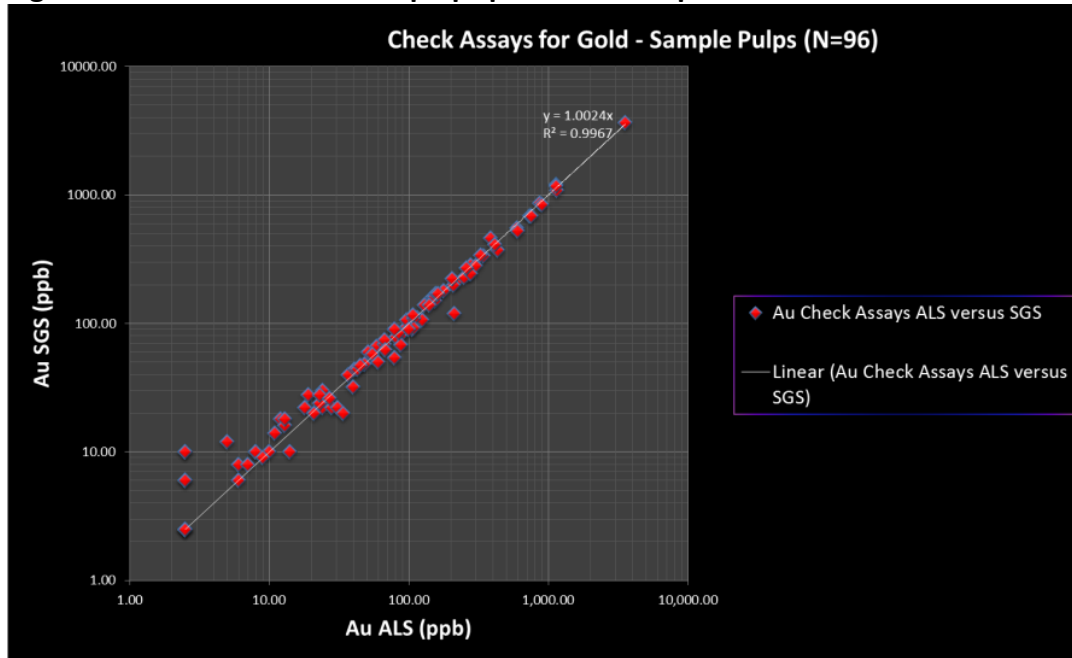
considered acceptable and continued real-time follow-up of blank sample data set anomalies is recommended.

#### **11.4.2.5 Pulp Split Check Sample Program – Drill Core**

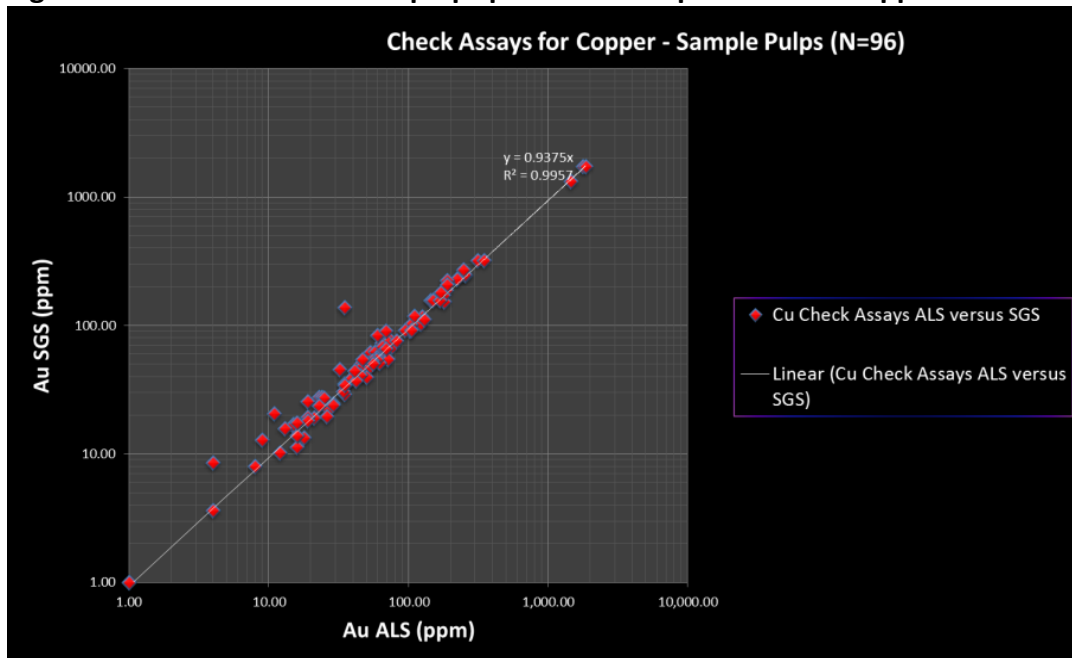
In addition to scheduled analysis of duplicate splits of core sample pulps by ALS, Coastal Gold carried out a program of prepared duplicate split and coarse reject material check sampling to assess sample variability and lab consistency. Results for pulp and reject check samples of earlier Coastal Gold drilling programs were reviewed by Mercator for use in previous resource estimate technical reports prepared by Desautels et al. (2012a, 2012b) and found to be acceptable for resource estimation purposes. Mercator concurs with and takes responsibility for this conclusion in regard to preparation of the current report for Big Ridge. Results for 96 additional pulp check samples associated with the late 2012 and 2013 drilling programs that were reviewed by Mercator for use in reporting by Desautels et al. (2014) and also presented in Cullen (2015a,b) are discussed below. All samples were first analysed by ALS and then corresponding duplicate pulp splits or reject splits were prepared by ALS and submitted to SGS for comparative analysis. Gold results for the late 2012-2013 data set are presented in Figure 11-13 and those for copper are presented in Figure 11-14.



**Figure 11-13: Total 2012-2013 pulp split check sample results - Gold**



**Figure 11-14: Total 2012-2013 pulp split check sample results – Copper**



Both gold and copper datasets show very good correlation between results from the two laboratories and plot closely along respective 1:1 correlation trends. Coastal Gold also routinely monitored internal laboratory duplicate pulp splits for assessment of program precision and these were found to consistently present acceptable results.

It is Mercator's opinion that results of the late 2012-2013 pulp split check sample program show that acceptable correlation exists between separate check sample splits analysed at the SGS and ALS laboratories at the nominal sample size represented in the Coastal Gold programs. On this basis, related drilling data sets are considered appropriately consistent for use in the current resource estimation program.

#### **11.4.2.6 2012-2013 Reject Split Program – Drill Core**

Coarse reject material splits from ALS were analyzed for gold and copper at SGS as part of the late 2012-2013 check sample program. As was the case for duplicate pulp splits, results for reject samples from earlier Coastal Gold drilling programs were reviewed by Mercator for use in the pre-2013 resource estimate technical reports (Desautels et al., 2012 and 2012b) and were considered to be acceptable. A total of 89 reject samples are associated with the subsequent, late 2012 and 2013 drilling programs and these were prepared by ALS and submitted to SGS for analysis. Gold results for this data set are presented in Figure 11-15 and those for copper are presented in Figure 11-16. Both gold and copper datasets correlate well between the two laboratories and plot closely along respective 1:1 correlation trends.

It is Mercator's opinion that results of the late 2012-2013 reject split check sample program show that acceptable correlation exists between separate reject sample splits analysed at the SGS and ALS laboratories at the nominal sample size represented in the Coastal Gold program. On this basis, related drilling data sets are considered appropriately consistent for use in the current resource estimation program.

Figure 11-15: Total 2012-2013 reject split results – Gold

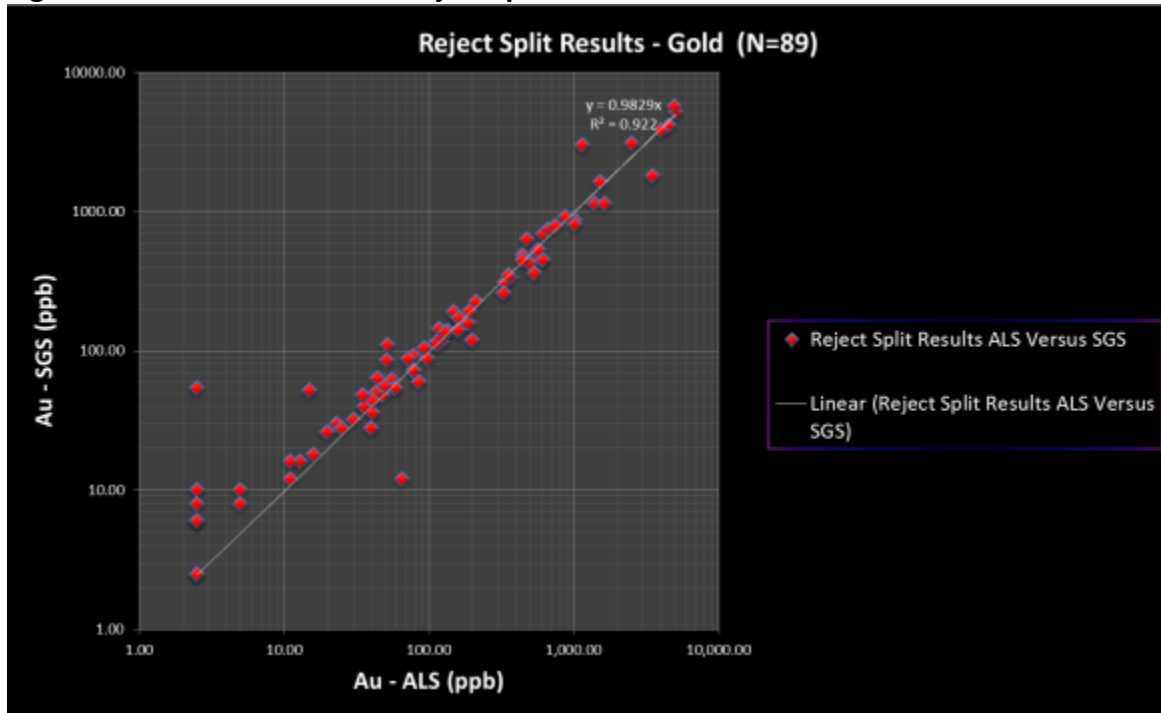
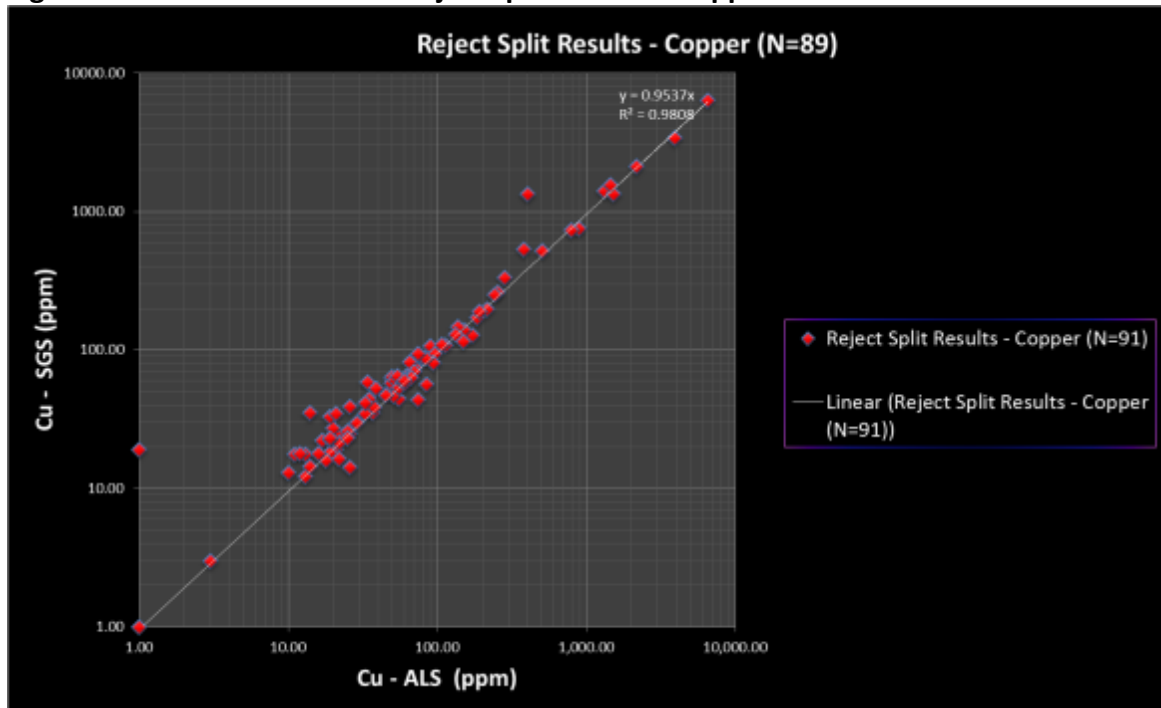


Figure 11-16: Total 2012-2013 reject split results – Copper



### **11.5 Sample Preparation and Security for BP and Royal Oak Programs**

Archived assessment reports filed with NLDNR were reviewed to determine sample preparation and security procedures employed by BP and Royal Oak. In both cases, basic approaches were identified from this review. These programs were previously discussed by Mercator in previous NI 43-101 technical reports by Desautels et al. (2012a, 2012b, 2014), and the reader is directed to these earlier references for further details. Mercator is of the opinion that sample preparation and security methodologies employed by both BP and Royal Oak during the 1983 to 1997 period at the Hope Brook site were consistent with industry standards at the time and that, when suitably validated, are acceptable and sufficient for use of associated data in the current resource estimate.

### **11.6 Drill Core Analysis for BP and Royal Oak Programs**

Drill core analysis information for BP and Royal Oak programs were previously discussed by Mercator in NI 43-101 technical reports by Desautels et al. (2012a, 2012b, 2014) and the reader is directed to these earlier references for further details. Mercator is of the opinion that drill core analysis methods and associated sample preparation techniques employed by both BP and Royal Oak during the 1983 to 1997 period at the Hope Brook site were consistent with industry standards at the time and that, when suitably validated, are acceptable and sufficient for use of associated data in the current resource estimate.

### **11.7 Quality Control and Assurance for BP and Royal Oak Programs**

Quality control and assurance for BP and Royal Oak programs were previously discussed by Mercator in NI 43-101 technical reports by Desautels et al (2012a, 2012b, 2014) and the reader is directed to these earlier references for further details. Mercator is of the opinion that drill core analysis methods and associated sample preparation techniques employed by both BP and Royal Oak during the 1983 to 1997 period at the Hope Brook site were consistent with industry

standards at the time and that, when suitably validated, are acceptable and sufficient for use of associated data in the current resource estimate.

### **11.8 Summary Comment on Sample Preparation, Analysis and Security Programs**

Mercator is of the opinion that Coastal Gold's sample preparation and security methodologies employed at the Hope Brook project during the 2012 through 2013 core drilling programs that are specifically addressed in this report are acceptable and sufficient for a project of this size and that suitable precautions were taken to identify and address any irregularities in these activities. Mercator is also of the opinion that drill core analysis methods and associated sample preparation, analysis and security techniques and programs employed by Coastal Gold during the period 2010 through 2012 and by BP and Royal Oak during the 1983 to 1997 period at the Hope Brook site were consistent with industry standards of their respective times and that, when validated, are acceptable and sufficient for use of associated data in the current resource estimate. Details of the Coastal Gold 2010 through 2012, BP and Royal Oak programs were reported previously in Desautels et al. (2012a, 2012b, 2014), which Mercator co-authored, and Mercator has relied upon and taken responsibility for the previously reported information and opinions.

## 12.0 Data Verification

### 12.1 Review and Validation of Project Data Sets

Core sample records, lithologic logs, laboratory reports and associated drill hole information for all drill programs completed by BP, Royal Oak and Coastal Gold were digitally compiled by Coastal Gold staff and made available to Mercator for previous resource estimation purposes. Information pertaining to the exploration history in the property area had already been compiled by Mercator and was reviewed in conjunction with newly generated records to assess completeness, consistency and validity of compiled results.

Database records for previously validated historic drill holes were modified by Coastal during 2013 through addition of copper analytical data recovered from archival records. All such amendments were checked against source documents by Mercator and through prior spot checks by AGP. No errors were detected in the new copper dataset.

In addition to the above, records for 47 new diamond drill holes completed by Coastal Gold during 2012 and 2013 were reviewed and validated by Mercator for addition to the project database and used in the previous and current resource estimation programs. Digital records were checked against original source documents provided by Coastal Gold and both consistency and accuracy of such records were assessed. Parameters reviewed in detail include collar coordinates, down hole survey values, hole depths, sample intervals, assay values and lithocodes. All 47 of the 2012 and 2013 holes completed by Coastal Gold were checked by Mercator for correlation of sample interval, assay value and lithocode information against source documents. This review showed consistently good agreement between original records and digital database values for all data sets.

In 2013, Coastal added 152 historical short core holes ("OP" series holes) to the project database. These were drilled from the open pit floor by Royal Oak as part of their definition drilling program.

These holes have not been validated by Mercator and were excluded from use in the previous and current resource estimates.

After completion of manual checking procedures, all drill hole database records were further assessed through digital error identification methods available through the Gemcom-Surpac Version 6.2.1<sup>®</sup> software. This provided a check on items such as sample record duplications, end of hole errors, survey and collar file inconsistencies and some potential lithocode file errors. The digital review and import of the manually checked datasets provided a validated drill hole database to support the resource estimation program described in this report.

## **12.2 Site Visit by Author J. Burke, P. Geo. - January 23 and 24, 2021**

### **12.2.1 Introduction**

Author Burke visited the HBGP property most recently on January 23 and 24, 2021, accompanied by Mr. Laird Tomalty of First Mining and one other industry representatives. Mr. Burke is an independent Qualified Person as defined under NI43-101. During the inspection, he visited the areas of Exploration Licenses 025557M (historical mine site), 023670M (roads, historical facilities and tailings ponds) and 020452M (airstrip, roads and camp area). These Licenses comprise the most western portions of the claim groups. Key elements of the site visit and associated preparation activities include:

- Inspection of the historical open-pit and water level,
- Inspection of roads, airstrip and local quarry sourcing and maintenance,
- Inspection of tailings ponds, polishing pond, dams and outflows for pH and estimated flow rates,
- Inspection of camp, buildings, loading and containment areas,
- Attempt to locate and inspect former mine portal and ground failure east of the open pit,
- Note observations on sedimentation control or potential acid rock drainage (ARD),
- Note observations of any potential petroleum hydrocarbon (PHC) storage, potential spills or other contamination sources associated with recent site activities.

- Review of the Environmental Assessment for proposed road from the Burgeo Highway,
- Review the 2015 NI 43-101 report completed by Mercator Geological Services for First Mining,
- Inspection of minimum of 5 drill holes, report conditions, capping or any outflow,
- Review 3-5 drill holes, collect representative interval samples (core saw unavailable during visit).

### 12.2.2 Site Visit Schedule and Logistics

The site was accessed by charter helicopter from Deer Lake, NL, that is located approximately 170 km to the north. Site activities were limited to two days and minor time was lost due to weather conditions on January 23rd. After completion of assessments on January 23rd, the inspection group travelled by helicopter to the community of Burgeo, located 35 km to the east, where overnight accommodations and meals were available. After completion of assessments on January 24th, the group returned to Deer Lake by helicopter. Overall, weather conditions were fair with little snow cover, which is unusual during the winter season at the project location. For the duration of the visit, much of the surface was easily visible to conduct inspections of infrastructure and general site conditions. The following daily activity summaries apply:

**Day 1** - Fly over and photo documentation of camp, open pit, ponds and dams; walk to open pit and inspect drill casings and to record drill collar locations and to inspect site fences, roads and camp buildings. Drill core from the high-grade hole HB-11-023 was inspected and checked against the drilling database and core logging records. One representative core interval was sampled for check purposes.

**Day 2** - Inspect airstrip and document rock quarries; attempt to locate historical mine portal and visit ground failure east of the open pit; inspect and document tailings dams; measure flow and pH levels; document local sedimentation issues and look for obvious water control structure breaches or other issues and inspect drill loading zones. Drill core from mid-grade drill holes HB-



11-036, HB-12-047E, HB-12-080 was inspected and checked against drilling database and core logging records. Two core intervals displaying representative mineralized lithologies were sampled for check purposes.

### 12.2.3 Main Camp and Buildings

The main camp located at Hope Brook includes a mess hall/kitchen (Figure 12-1), several sleeping cabins, dry building, core-shed and office. All buildings appeared to be in good condition and are well maintained including recent paint and maintenance. Health and Safety plans were observed, including covid-19 restriction signs posted around camp, additional hygiene stations and other measures. No major damages or concerns regarding the general camp conditions were observed. The camp has access to power from a local grid, running water (non-potable) and internet connection.

**Figure 12-1: Aerial view of Hope Brook camp**



### 12.3 Roads, Airstrip and Fencing

The roads and airstrip have been well maintained including recent grading along areas closest to the camp and south towards the dam areas. Quarry material for the roads appears to have been sourced from an area of granodiorite located just east-southeast of the airstrip. The main airstrip near Couteau Bay is not currently maintained but appears to be in good condition. The original airstrip located to the north of the camp and open pit has been modified and is no longer useable. The recently graded roads near the camp and around the west side of the tailing ponds appear to be covered with material sourced from a small excavation adjacent to the east side of the open pit. The altered country rock at that location displays iron staining and could potentially contribute to acid rock drainage (ARD) issues.

Site fencing has been maintained, however, two areas on the outer perimeter (Figure 12-2) appear damaged: one on the east side of the pit near the main gate and another to the west.

**Figure 12-2: Fencing along west side of open pit - view to north**



### 12.3.1 Mine Portal, Tailings Dams and Pit Area

An attempt to locate the backfilled, historical mine portal was made but lack of precise location coordinates prevented visual confirmation of this feature. The main tailings pond and dam (Figure 12-3), as well as the polishing pond were visited on January 24<sup>th</sup>. At that time, no major breaches, sink-holes or substantial cracking were observed. The water overflow to the east of the dam was generally inspected, pH was measured and evidence of overflow events was assessed. Low vegetation sited at the top of the dam for erosion control remains intact and no major disturbances of cribbing were noted.

**Figure 12-3: Main tailings dam showing overflow area to right**

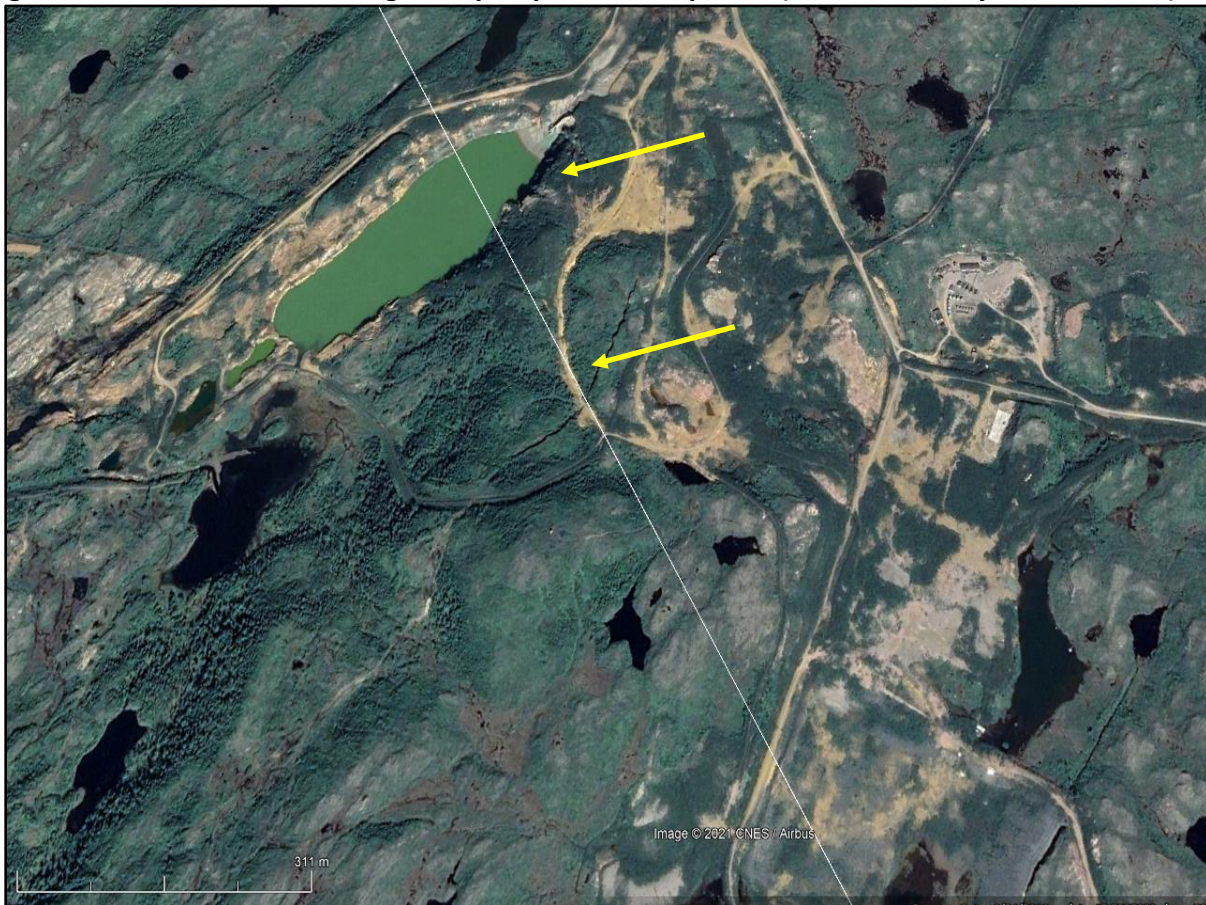


Based on communication with on-site personnel, the water level in the open pit has remained consistent within the period of First Mining site activities. No obvious, new pit wall failures have occurred but a well documented failure zone along the east pit wall remains clearly visible in



satellite imagery (Figure 12-4). An area of potential sedimentation concern was noted near the southwest end of the pit where a road crosses between the pit and a pond to the south.

**Figure 12-4: 2015 satellite image of open pit and camp area (arrows identify failure zones)**



### 12.3.2 Drill Site Inspections

Five core drilling sites were inspected around the open pit and mine areas. A Garmin model 64s hand-held GPS unit was used to collect UTM NAD 83 Zone 19 coordinates for these holes for comparison with drilling database values. Results appear below in Table 12-1 and all fall within a 5 m accuracy range with respect to the database entries. Drill holes completed since 2011 are cased and have been capped (Figure 12-5), though very few have been labelled. Historical holes prior to 2011 have typically not been capped. No drill holes were observed to be producing water and all drill sites visited were clean and free of refuse.

**Table 12.1: 2021 Site Visit Drill Collar Confirmation Coordinates**

Drill Hole	*Easting (2021)	*Northing (2021)	*Easting (Database)	*Northing (Database)
HB-11-014	417869	5287650	417867.01	5287647.73
HB-11-045	417942	5287904	417943.43	5287903.58
HB-12-094	417944	8287906	417940	5287903
HB-12-109	417951	5287910	417947	5287911
HB-13-114	0418041	5288016	418040	5288016

Note: \*UTM NAD 83 Zone 19 coordination

**Figure 12-5: Drill hole casing with cap**

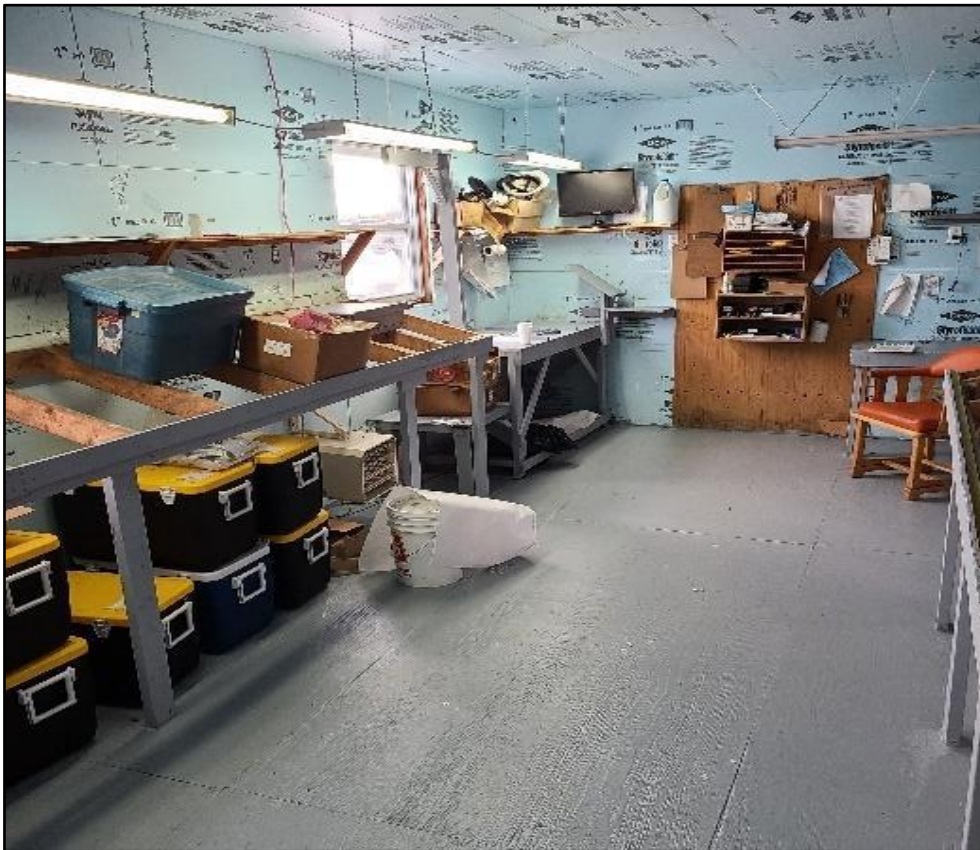




### 12.3.3 Core Facility

The core logging facility (Figure 12-6) has been well maintained and includes a ventilation system in the core-saw area. Most of the drill core is held on roofed, skid-mounted platforms in the main camp area and this has resulted in exposure of both core and the wood core boxes to weathering (Figure 12-7). In some cases, conditions of the core boxes are poor, preventing easy access for sampling and logging. This deterioration could be mitigated by relocation of core to a more protected area, such as within a building designed for that purpose, or by enclosing the current structures.

**Figure 12-6: General view of core logging facility**



**Figure 12-7: Weathered core boxes in outside storage racks**

#### 12.3.4 Drill Core Review

During the January 23 and 24 site visit, 5 holes were reviewed. Samples were taken and flagged from intervals representing average grades and lithologies of the deposit. At the time of the site visit a core saw was unavailable to produce quarter-core check samples. Three representative half core samples were collected for check sample purposes. The representative intervals reviewed and sampled include a high-grade interval in HB-11-23 which targeted moderate grade results below the past-producing underground mine and southwest of the open-pit and two representative moderate grade intervals ranging from 3-5 g/t Au from holes HB-11-036, HB-12-047E (extension) and HB-12-080 that focused on confirming the locations of historical workings and major pillars in the mine area. Hole HB-12-100 was also reviewed briefly within the connector zone which generally yielded low grades (<1.5 g/t Au).

Logged descriptions of the mineralization are consistent and reflect grey-buff silicified volcanic tuff to breccias with increasing micro-folding and deformation (mylonitic) towards fault/shear corridors. The higher-grade gold results correspond with darker bands of grey silicified breccia areas. Darkened silica replacement of clasts is common. Pale green mica is common locally, often accompanied by “sugary” silicification within mineralized zones. The increase of vuggy and porous space broadly correlates with increasing grade (Figure 12-7). A strong correlation between gold grade and the occurrence of chalcopyrite+-bornite(?), specularite, pale green clays and mica is apparent in drill logs and was confirmed during the site visit core review. Moderate grade intervals generally show a lighter grey silicification, less amounts of silicified breccia, increased pyrite, all of which may locally register strong foliation development. Iron oxide staining also increases in some mid to lower grade gold-bearing intervals (Figure 12-8).

Based upon observations made during the latest site visit with respect to several drill holes from 2011 to 2013, author Burke is of the opinion that associated core logging descriptions plus litho-coding in the project database accurately reflect the cored intervals reviewed during the site visit.



**Figure 12-8: Hole HB-11-023 - grey, vuggy silicification and foliated alteration zone lithologies**



**Figure 12-9: Hole HB-11-046 tan to grey silicification and foliated alteration zone lithologies**

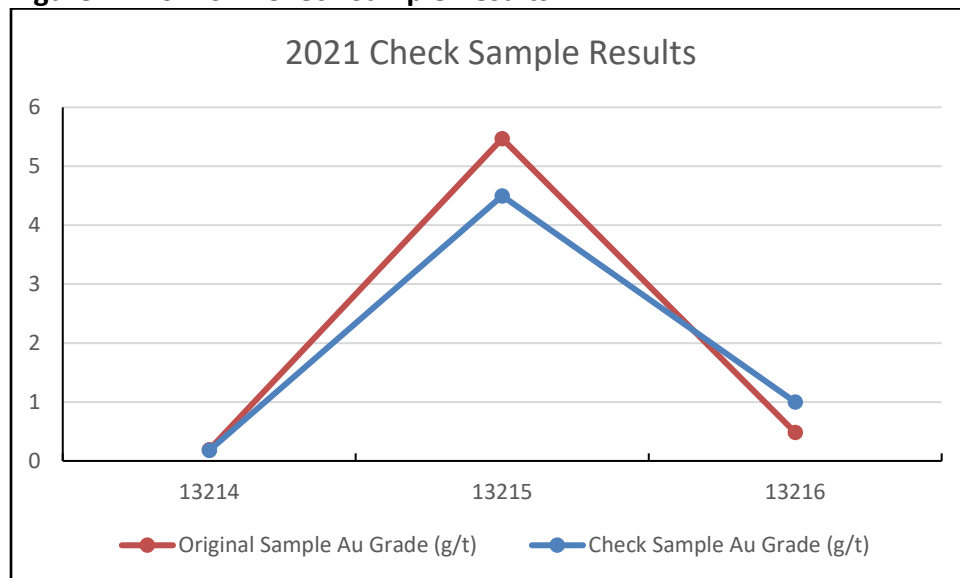


### 12.3.5 Check Sampling Program

Three samples of mineralized drill core were collected for check sample purposes during the 2021 site visit. Core cutting could not be carried out at the time and the collected samples reflect multiple, isolated sub-samples of half core remaining after original sampling of the specified core intervals. Original sample intervals and corresponding sample numbers are defined in project drill logs and associated sample records as well as in the project drilling database. In each case, sample tags and core meterage sample intervals seen in respective core boxes corresponded with drill log and drilling database records. Individual subsamples were collected at intervals of approximately 0.2 m within the original sample limits.

Figure 12-9 compares gold analytical results for the check samples against original gold results appearing in the project database. Notwithstanding the lack of exact correspondence between original and site visit sample lengths, author Burke is of the opinion that analytical results for the check samples compare acceptably well with those of the original samples.

**Figure 12-10: 2021 Check Sample Results**



### **12.3.6 Site Visits by Author M. Cullen, P. Geo.**

Author Cullen most recently visited the HBGP property on August 20<sup>th</sup>, 2019 accompanied by Mr. Laird Tomalty of First Mining and other consultants. The purpose of the visit was to support assessment of the property as a potential source of construction aggregate. He also visited the site late in 2019 accompanied by Mr. Tomalty and Mr. Ken Engquist, Chief Operating Officer of First Mining. At that time, general field reviews of site conditions and geology were carried out. These visits were not carried out to support preparation of a NI 43-101 technical report.

Mr. Cullen also visited the site several times during the 2010 through 2015 Coastal Gold exploration period to support preparation of previous NI 43-101 technical reports for the property. The most recent of such visits were carried out in support of mineral resource estimation programs during the October 4<sup>th</sup> through 6<sup>th</sup> period of 2013 and the December 12<sup>th</sup> through 14<sup>th</sup> period of 2012. Earlier site visits were carried out in support of Coastal Gold's 2012 and 2013 mineral resource estimation programs and for the 2010 NI 43-101 property technical report.

Reviews of Coastal Gold drill program components were carried out during the 2013 and 2012 Mercator site visits. This included discussions with site staff about protocols for lithologic logging, core storage and handling, core sampling, security of drill core and drilling data, sample chain of custody and transportation of samples to the laboratory. Mineralized and barren core sections were reviewed and checks carried out against litho-coded database entries for corresponding logged intervals. A drill collar coordinate check program plus a quarter core check sampling program were completed during each of the visits and site staff provided helpful technical assistance and professional insight. General observations regarding the character of the landscape, vegetation, site elevations, surface drainage, road/drill pad features, drill sites, site reclamation features, open pit configuration, surface geology, and physical facilities of the field operation were also made during the visits. Details of each site visit appear in respective NI 43-101 technical reports filed previously by Coastal Gold.

Based on results of the personal site visits noted above and further documented in the previous NI 43-101 technical reports, author Cullen considers Coastal Gold's field operations and protocols applicable to the HBGP as being consistent with current industry standards.

#### **12.4 Drill Hole Twinning Program**

Coastal Gold completed several core drilling holes during the 2010-2011 drilling programs to serve as twins to historical holes. These were typically planned to provide more complete lithological and assay information for associated historic holes and to provide a basis for comparison of the historic datasets with Coastal Gold data. For report purposes, 12 Coastal Gold holes that were completed in sufficiently close proximity to historical holes to provide such assessment were selected for comparison with the Coastal Gold data.

For assessment purposes, Mercator reviewed drill log lithocodes and gold assay entries for hole pairs to determine the level of consistency between the two datasets. Assessment of lithocodes focused primarily on identification of important silicified zone intervals associated with gold mineralization and secondarily on logged intervals of mafic dike material. Comparison of the assay data on a sample-by-sample basis was not typically possible due to either spatial separation of hole traces, differing sample lengths or presence of non-sampled intervals in some holes. Comparison of lithocoded intervals between hole pairs showed that good correlation between data sets exists. However, greater detail in silicic lithocoding characterises the historic dataset prior to re-coding by Coastal Gold.

As noted above, comparison of assay values between hole pairs was affected in some instances by presence of un-sampled intervals within the historic holes that contrast to continuously sampled Coastal Gold intervals, by differing mafic material percentages and by differing interpreted assay zone widths. Mercator focused on gold assay data within the gold-bearing silicified zone lithologic units and created weighted average intervals to support comparison. Results of this program for the 12 holes considered show that spatial definition of the gold zones

based on assay boundaries is typically consistent between hole pairs and this is reflected in generally comparable intercept lengths selected.

Weighted average assay results for all hole pairs appear in Table 12-2 and show that weighted average Coastal Gold data set results are typically higher than equivalent intervals in historical holes but the reverse is also seen in some cases. Mercator believes that several factors contribute to this result, including changes in mafic dike dilution between holes, higher overall core quality of the NQ and BQTK size Coastal Gold core relative to the historic BQ core, and higher overall core recovery for Coastal Gold holes in fractured intervals of the mineralized zone. Heterogeneity of primary gold distribution is also a potential contributor.

Based on results of the twin hole comparison originally carried out in support of earlier resource estimates, at the effective date of the current report Mercator remains of the opinion that acceptable consistency exists between these hole pairs with respect to gold assay value and lithocode data sets.

**Table 12.2: Comparison of Twin Hole Weighted Averages**

Hole Id	From (m)	Length (m)	Au g/t	Hole Id	From (m)	Length (m)	Au g/t
<b>CW-017</b>	113.50	25.70	<b>0.43</b>	<b>HB11-052</b>	117.10	27.40	<b>0.28</b>
<b>CW-094</b>	515.60	26.30	<b>2.39</b>	<b>HB11-046</b>	510.70	33.30	<b>3.64</b>
<b>CW-099</b>	598.70	17.50	<b>0.29</b>	<b>HB11-069</b>	613.40	13.60	<b>0.91</b>
<b>CW-064</b>	157.90	15.80	<b>1.51</b>	<b>HB11-011</b>	147.90	15.00	<b>2.13</b>
<b>CW-064</b>	185.30	6.10	<b>3.83</b>	<b>HB11-011</b>	175.00	8.90	<b>4.56</b>
<b>CW-040A</b>	330.00	59.80	<b>2.56</b>	<b>HB11-026</b>	326.70	53.90	<b>2.37</b>
<b>CW-081</b>	344.60	30.40	<b>2.12</b>	<b>HB10-008</b>	331.70	36.90	<b>1.60</b>
<b>CW-109</b>	471.90	27.10	<b>0.99</b>	<b>HB11-036W</b>	489.40	25.80	<b>1.37</b>
<b>CW-072</b>	11.30	19.50	<b>1.64</b>	<b>HB11-013</b>	11.00	21.70	<b>1.23</b>
<b>CW-230</b>	20.30	17.90	<b>0.27</b>	<b>HB11-015</b>	21.30	10.00	<b>0.65</b>
<b>CW-234</b>	0.00	13.50	<b>0.95</b>	<b>HB11-016</b>	7.30	11.00	<b>1.79</b>
<b>CW-238</b>	4.00	18.30	<b>1.06</b>	<b>HB11-017</b>	4.90	19.80	<b>2.78</b>
<b>CW-253</b>	37.50	14.30	<b>0.51</b>	<b>HB11-037</b>	42.00	16.20	<b>1.07</b>

## 13.0 Mineral Processing and Metallurgical Testing

### 13.1 Post-Production Period Testing

In 2012, Coastal Gold carried out a scoping level metallurgical program on samples from the Hope Brook deposit and results of this work were reported in the Desautels et al. (2012b) NI 43-101 technical report. This was followed by additional testing that targeted specific areas of the flowsheet as well as mafic material pre-sorting potential in 2013. Results of the 2013 programs were previously disclosed in the Desautels et al. (2014) NI 43-101 technical report supporting the associated mineral resource estimate. Brief descriptions of the Coastal program based on the previously disclosed summaries are presented below. Mercator understand that no further metallurgical work has been completed to date by Coastal Gold, First Mining or Big Ridge.

Scoping level metallurgical test work on mineralized samples was first carried out for Coastal by G&T Metallurgical Services Ltd. in Kamloops, BC in 2012. The objectives of that program were to evaluate potential processing routes for maximizing gold recovery and to identify operating parameters for the preliminary circuit design. Flotation test work was successful at generating a concentrate grading 28% Cu from flotation of cyanidation residue in a process similar to the historical flowsheet at Hope Brook. Gravity concentration tests indicated that between 16 and 41% of the contained gold was recoverable to concentrate by this method. Combined gold recoveries of ~86% were achieved using a flowsheet consisting of gravity concentration followed by cyanidation of the gravity tailings. Direct cyanidation of tailings resulted in up to 49% extraction of contained gold.

Additional metallurgical testing was carried out by G&T Metallurgical Services Ltd. in the fall of 2013 to further advance the understanding of the metallurgy of the Hope Brook deposit. This included batch flotation test work focused on the opportunity to recover a saleable grade copper concentrate after the grinding and gravity recovery step. Scoping level test work was also carried out at Tomra Sorting Solutions in Surrey, BC to evaluate the potential of rejecting dilution material before the grinding area using sensor-based sorting. Sorting program results indicated

that the mafic dyke dilution was readily distinguished from the mineralized rock using four separate detector systems, indicating that this material is highly amenable to rejection by sorting.

The success of the mafic sorting investigations was a key factor cited by Desautels et al. (2014) in support of reporting mineral resources after removal of mafic block model volumes. The same approach was applied in the Cullen (2015) estimate that forms the basis of the current resource review and update and has been retained for current resource reporting purposes. Mercator is of the opinion that further detailed technical assessment for the mafic sorting process, including comprehensive tests to assess its practical, production scale application, should be completed as part of future PEA and Pre-Feasibility study programs to better define limitations that may exist as far as application of test results to definition of future mineral resources and reserves for the project.

To the extent recognized in reporting associated with the testing programs summarized above, Mercator has assumed that representative samples of mineralization were collected for study. No deleterious elements are described in the context of produced gold but presence of copper in the processed mineralization samples was noted, as would be expected based on the operating period history of milling at this site.

### **13.2 Summary of Historical Processing Approaches**

The history of mining and milling of ore from the Hope Brook deposit has conclusively shown that Au and Cu recovery through commercially available and reliable methods of mineral processing and beneficiation is possible. More specifically, processing during the BP era included both heap leach and conventional milling approaches, each of which is briefly described below. BP's heap leach operations ran from August 1987 through mid-1990 and the conventional mill entered production in September, 1988.

Government records indicate that approximately 930,000 tonnes of ore were processed by heap leaching in 150,000 tonne, 4.6 m lifts that were typically subjected to active cyanide solution

spraying for a 60 day period. A small (~9000 tonne) demonstration heap leach had been successfully completed prior to initiation of commercial production at the mine. Pregnant solution recovered during the production phase was pumped through carbon columns where Au was adsorbed and subsequently recovered by batch stripping, electro-winning and on-site refining to dore bars.

The conventional milling circuit installed by BP incorporated semi-autogenous grinding to produce a slurry product of 80 percent passing 75 microns. This was thickened and agitated during cyanide exposure in tanks for 48 hours. The slurry was then filtered, Au adsorbed from pregnant solution in a series of carbon columns and then recovered using electro-winning onto steel wool for subsequent refining to dore bars. BP did not recover Cu from its milling operations. A Degussa hydrogen peroxide system was used for cyanide destruction and proved problematic, with this contributing to unacceptable cyanide and metal levels in effluent ponds. Government records indicate that Au recoveries from BP milling ranged between a low of 78.8% in 1987 and a high of 85.9% in 1989 (NLDNR Mineral Occurrence Report: 0110/09/Au 003).

After acquiring the operation in late 1991 Royal Oak modified the milling flow sheet to incorporate an SO<sub>2</sub> based cyanide destruction process that eliminated occurrence of high cyanide levels in effluent ponds. The company also installed a Cu flotation circuit that produced a concentrate at approximately 22% Cu and 34.28 g/t Au (NLDNR Mineral Occurrence Report: 0110/09/Au 003, Royal Oak Annual Report, 1992). Government and Royal Oak Annual Report records indicate that Au recoveries from Royal Oak milling ranged between a low of 82.1% in 1994 and a high of 89.83% in 1996 (NLDNR Mineral Occurrence Report: 0110/09/Au 003). Recovery data were not available for 1997.

The milling summaries presented above are important to current HBGP exploration potential assessment, since successful commercial beneficiation of Hope Brook ore was accomplished during both BP and Royal Oak production periods. On this basis, it is reasonable to conclude that comparable results can be anticipated for any future operation that produced ore from this



deposit or from other similar mineralized zones in the district. However, it may not apply to Au prospects in other property areas which have not been mined or milled to date.

## **14.0 MINERAL RESOURCE ESTIMATES**

### **14.1 General**

The definition of mineral resource and associated mineral resource categories used in this report are those recognized under National Instrument 43-101 and set out in the Canadian Institute of Mining, Metallurgy and Petroleum Standards on Mineral Resources and Reserves Definitions and Guidelines as amended in 2014 (the CIM Standards). Assumptions, metal threshold parameters and deposit modeling methodologies associated with the current Hope Brook deposit resource estimate are discussed below in report sections 14.2 through 14.18.

Certain mineral resource estimation information prepared by Mercator and AGP Mining Consultants Ltd. that appears in previously filed NI 43-101 mineral resource estimate technical reports prepared for First Mining's wholly-owned subsidiary, Coastal Gold, is included by reference in this report section. The main reference for such material is Desautels et al. (2014), The mineral resource estimate referred to in this section as the "previous estimate" refers to Desautels et al. (2014) because it directly pre-dates the NI 43-101 estimate prepared by Mercator for Coastal in January of 2015 that was subsequently reported by Mercator on behalf of First Mining in December of the same year. The December 2015 technical report prepared by Mercator for First Mining forms the basis of the current mineral resource estimate update and no changes from the 2015 estimate have been made. Mercator's current review showed that no new drilling or other information material to the mineral resource estimate has become available since original reporting in 2015.

### **14.2 Resource Estimation Rationale and Approach**

The purpose of the current mineral resource estimate update is to better define higher grade mineral resources potentially amenable to economic development using underground mining methods. For present purposes, these have been defined as resources meeting or exceeding a block model cut-off grade of 3.0 g/t Au. In contrast, the first three mineral resource estimates

completed for the deposit on behalf of Coastal Gold were primarily focused on definition of mineral resources potentially amenable to economic development using open pit mining methods.

Gold is the only metal represented in the current resource statement but a strong possibility exists for production of a copper by-product credit. Copper potential in the entire Hope Brook deposit was evaluated by Desautels et al. (2014) and, in keeping with NI 43-101 and CIM Standards reporting standards, was expressed as an exploration target. The current estimate does not include a re-assessment of the deposit's copper exploration target.

Mercator is of the opinion that the methods and modeling approaches applied in previous NI 43-101 resource estimates remain valid, appropriate and well suited to this deposit. On that basis, they have been incorporated wherever possible in development of the current block model and associated mineral resource estimate. Mercator's current modeling approach differs from pre-2015 approaches in three main aspects, these being (1) use of a smaller block size to better define spatial aspects of gold grade and lithologic modeling, (2) use of a shorter assay composite support length to match the reduced block size, and (3) use of a partial percentage modeling approach to better define attributed block model volumes.

### **14.3 Resource Model Data Set and Validation**

This mineral resource estimate is based on the same validated drill hole database used for the previous NI 43-101 mineral resource estimate prepared for First Mining. This database includes results of 689 diamond drill holes totaling 142,069 m of drilling. This total includes 99,719 m from 538 historic surface and underground diamond drill holes plus results from 4 surface drill programs completed by Coastal Gold. The latter include 3,422 m from 10 drill holes completed in 2010, 21,281 m from 68 drill holes completed in 2011, 10,473 m from 36 drill holes completed in 2012, and 4,075 m from 26 drill holes completed in 2013. In addition, Coastal re-sampled drill core over selected mineralized intervals from 13 historic drill holes. A total of 55,852 core

samples have been accepted for the mineral resource estimate database from the data sources mentioned. These results are a subset of data taken from a larger project database containing an additional 53 historic diamond drill holes that were not accepted for use in the mineral resource estimated. These were rejected due to results of re-sampling or re-drilling, data availability or validation issues.

Mercator performed drilling database validation checks on overlapping attribute intervals, inconsistent drill hole identifiers, improper lithological assignments, unreasonable assay value assignments and missing interval data. Spot checking of database analytical entries was also carried out against laboratory records for both Coastal and historic drill results.

For the earlier resource estimates, historical drill core intervals lacking assay data were classified as being either (1) not sampled, (2) sampled but with assays not recovered, or (3) as lost core. This template was retained for the current modeling exercise, with such intervals being flagged in the drilling database as either “Not Sampled”, “Not Entered”, or “Not Sampled – Lost Core”, respectively.

Four Coastal Gold drill holes intersected underground stopes (holes HB11-049, HB11-053, HB11-055 and HB12-047E) and the unconsolidated material recovered in these cases was systematically sampled by Coastal. Gold grades corresponding to the fill material were transferred in the assay database to a separate “fill” database field and the 47 original sampling intervals were flagged as "Not Sampled" for purposes of resource evaluation.

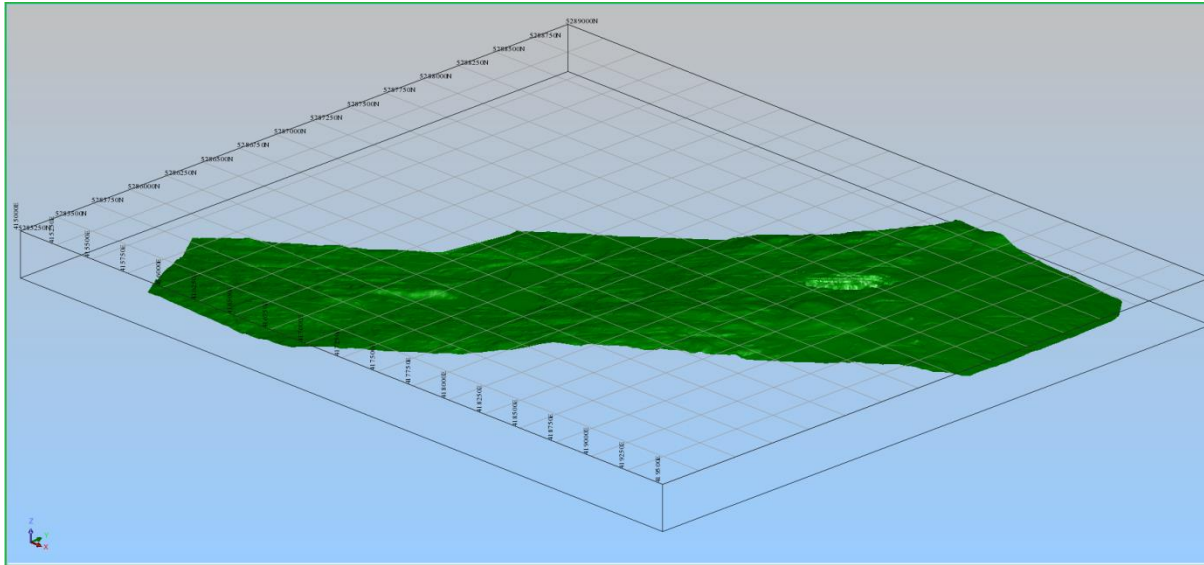
## **14.4 Data Domains and Solid Modeling Spatial Constraints**

### **14.4.1 Topographic Surface**

The LIDAR digital topography model (DTM) used for the previous resource estimate was retained for the current estimate (Figure 14-1). This surface was constructed using 1 m resolution data obtained from PhotoSat Information Ltd., a firm specializing in accurate stereo satellite elevation

mapping. The DTM was digitally modified to reflect the BP open pit surface defined by data generated from historical mine survey points. For modeling purposes, the overburden thickness in the deposit area was considered to be negligible.

**Figure 14-1: Isometric view to the NW of the Hope Brook topographic surface DTM**



#### 14.4.2 High Grade Domain and Low Grade Domain Solid Models

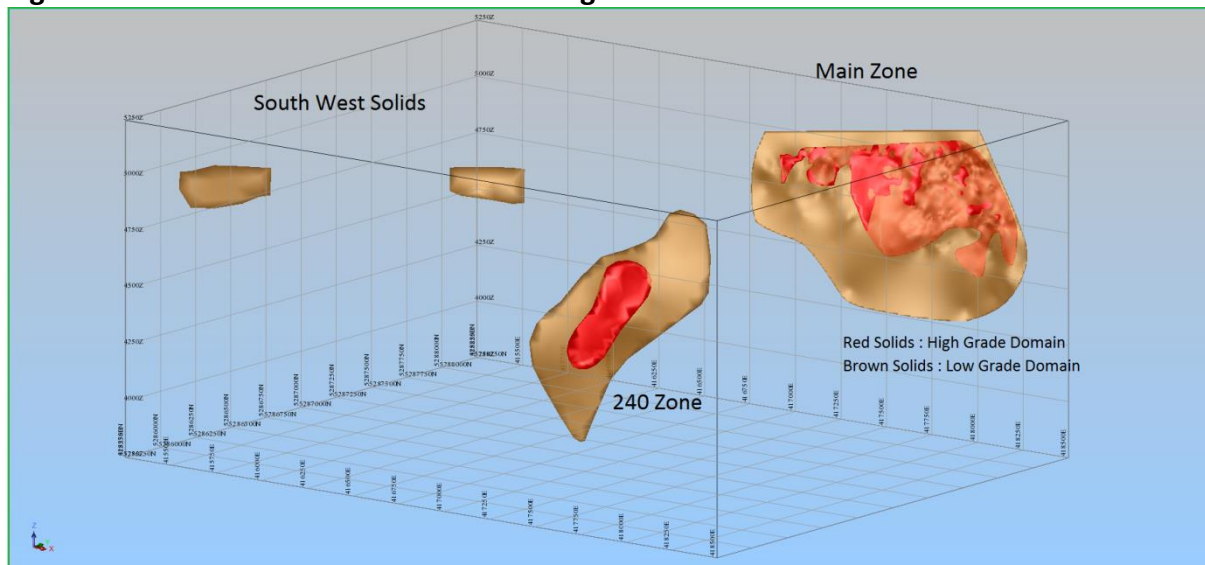
The mineral resource model uses three-dimensional wireframes to constrain grade interpolation and these are based upon lithological and grade envelope interpretations. The two interpolation domains used in the current resource estimate are the High Grade Domain and the Low Grade Domain, which are represented as separate digital solid models for the Main Zone, the 240 Zone, and two additional gold zones towards the southwest. These solid models were originally developed by Coastal Gold staff, with oversight by AGP, and were used in the earlier resource estimate models prepared for Coastal Gold that included definition of open pit mineral resources. Mercator reviewed all domain solids in detail and made various local modifications to correct for (1) effects of wireframe drill hole snapping issues, (2) excluded 2013 drilling program assay intervals and (3) triangulation errors imbedded in the files received from Coastal Gold.

Desautels et al. (2014) provided the following summary of the lithological and grade parameters that define the High Grade Domain and Low Grade Domain solid models that Mercator subsequently modified for use in the current resource model:

“A low grade envelope was modeled using all drill hole intercepts, preferentially within the silicic alteration unit, incorporating gold values above a 0.5 g/t threshold, with exceptions made for zonal continuity. Within this wireframe, a high grade wireframe was modeled to avoid smearing high grade intervals with the surrounding lower grade zone. This high grade envelope was modeled using a grade threshold of 2.0 g/t and exceptions were made for zonal continuity. The high grade threshold corresponded to a natural break in the gold population on the assay probability plots. The silicic alteration is cut by a series of mafic dikes at various angles and widths. No attempt was made to circumvent mafic dike intervals during the construction of the wireframe due to the irregular and discontinuous nature of dike distribution. A good correlation was observed between the high grade wireframe and the historical mined-out areas.”

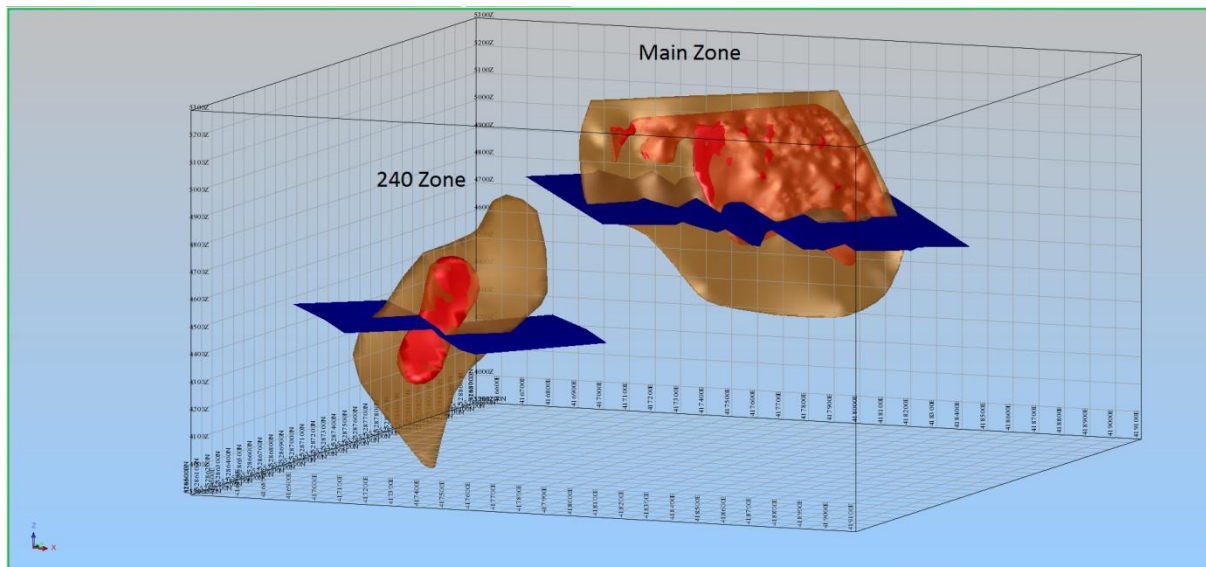
Total undiluted wireframe volumes for the various High Grade and Low Grade domain digital solid models, after introduction of modifications by Mercator, showed inconsequential variations in volume relative to volumes reported in previous estimates. Figure 14-2 below shows the relative spatial distribution of the grade domains within the block model space.

**Figure 14-2: Isometric view to NW of the High and Low Grade Domain Solid Models**



The southwest strike of grade domain solids in Figure 14.2 is consistent in both the Main Zone and 240 Zone, with very little local variation. Down-dip, the solids change orientation slightly from steeply dipping towards the southeast near surface to more shallowly dipping at depth. A digital terrain model was developed by Mercator to define where the model dip change generally occurs and this was used to develop spatial sub-domains for grade interpolation purposes. The blue DTMs in Figure 14-3 define the boundaries between the orientation sub-domains.

**Figure 14-3: Isometric view to NW of DTM's that show dip domains in solid models**  
(Low Grade Domain solids are tan and High Grade Domain solids are red)



### 14.4.3 Mafic Dike, Chetwynd Granite, Chetwynd Dike and Northeast Mafic Solid Models

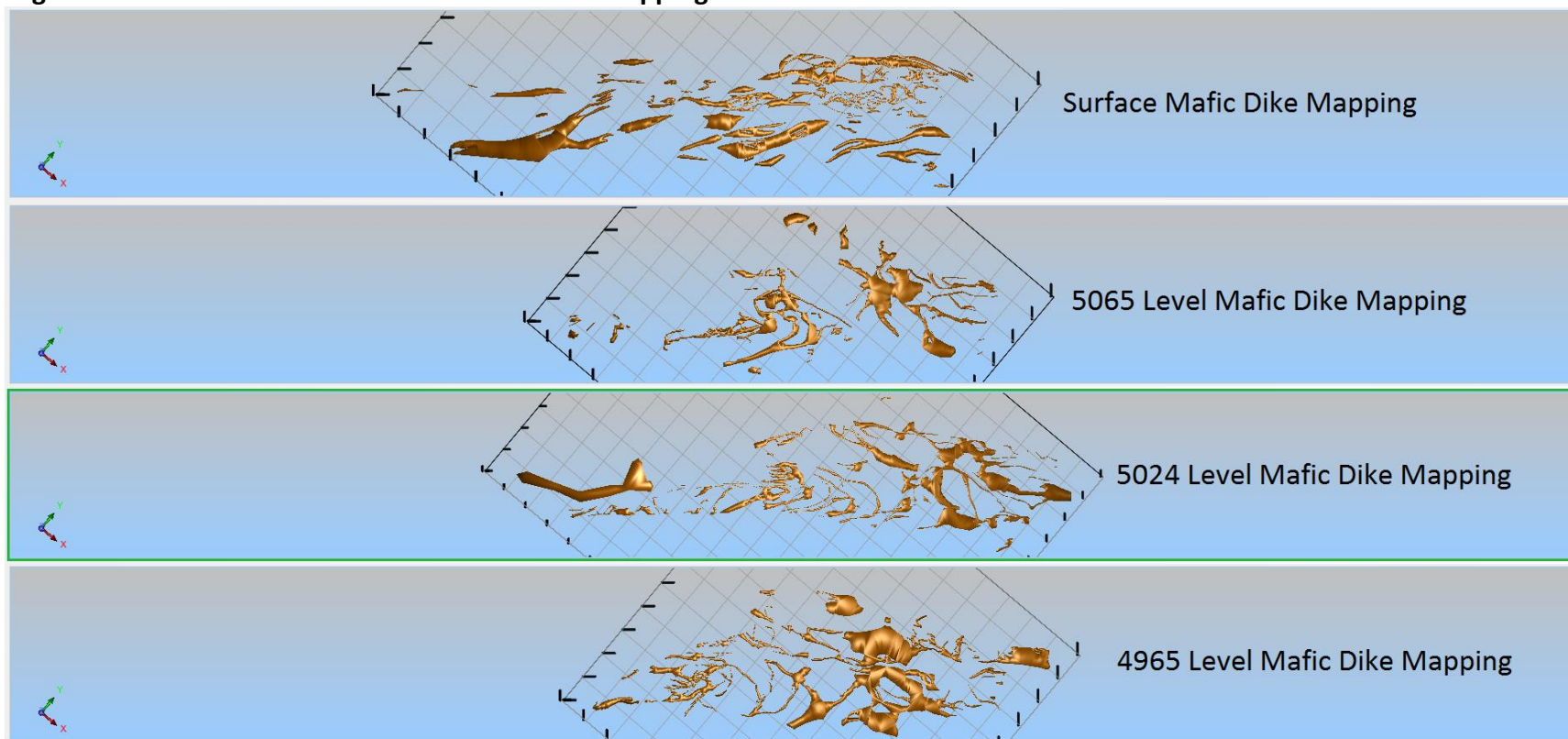
#### 14.4.3.1 Mafic Dike Solid Models

Limited availability of detailed mapping results from historical mining operations and the generally complex nature of mafic dike occurrence within the silicic alteration units prevented development of an accurate mafic dike wireframe model for the entire deposit. However, Coastal staff developed and provided Mercator with 4 separate three-dimensional wireframe solid models of interpreted mafic dike distribution that are based on historical, detailed geological mapping data from the 5065 m, 5024 m and 4965 m underground mine levels as well as from

surface exposures. These are illustrated in Figure 14-4 and collectively portray the relative complexity of mafic distribution within the block model space covered by the solids. Detailed correlation of multiple level plan solids has not been carried out to date by Mercator. Desautels et al. (2012a, 2012b, and 2014) recognized the complexity of mafic correlation within the previous resource block models and chose to develop a mafic dike content probability block model for the deposit calibrated against the multiple level plan mafic solid models in Figure 14-4. Details of how the mafic dike probability model was developed appear in section 14.12 of this report.



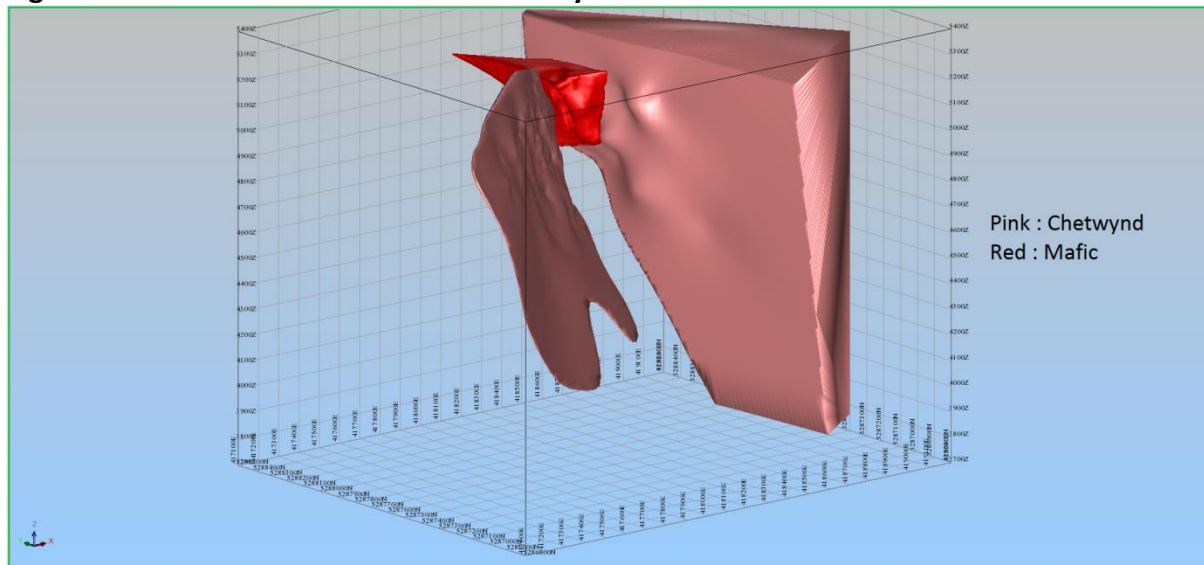
**Figure 14-4: Isometric view to NW of Mafic Dike Mapping Solid Models**



### 14.4.3.2 Chetwynd Granite, Chetwynd Dike and Northeast Mafic Solids

The silicic alteration unit at Hope Brook is interpreted to be truncated along its northeast limit by a fault as well as by the interpreted north-trending, east dipping contact of the Devonian Chetwynd Granite and an intervening metamorphosed mafic unit (“northeast mafic unit” for current report purposes) that is interpreted to be spatially distinct from the mafic dikes discussed above. Additionally, a narrow Chetwynd granite dike strikes northeast within the silicic alteration unit and broadly conforms with steep host sequence lithologic unit dips within the deposit. Both Chetwynd granite bodies are non-mineralized and appear to post-date gold introduction. Coastal staff developed wireframed, three-dimensional solid models for the two Chetwynd granite bodies and both were used in the previous and current resource model (Figure 14-5).

**Figure 14-5: Isometric view to NE of Chetwynd Granite and NE Mafic Solid Models**

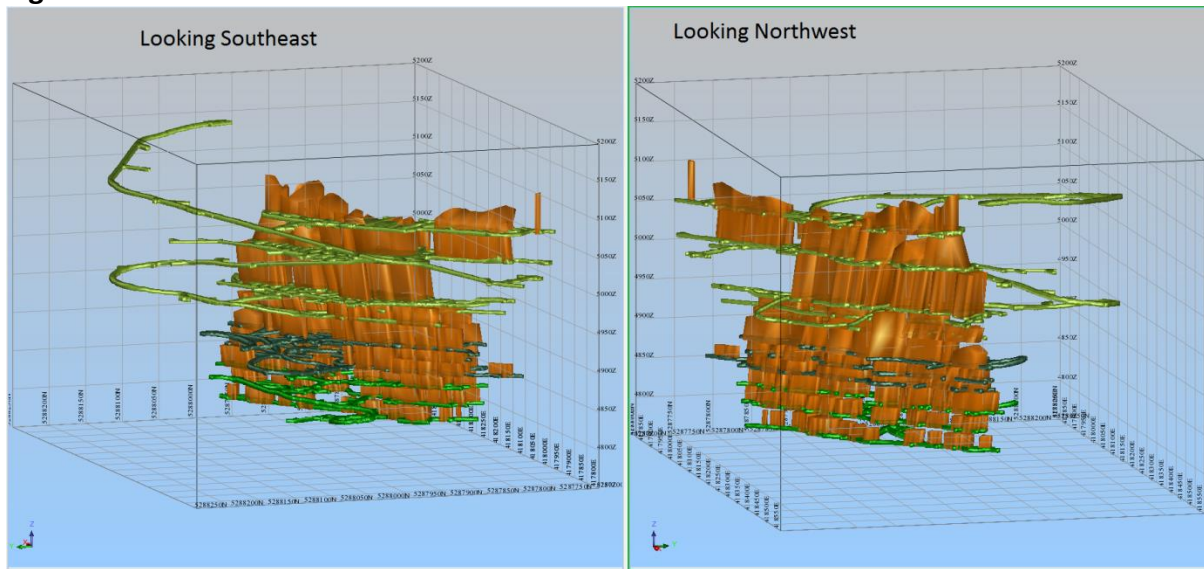


The solids received from Coastal were checked by Mercator and accepted for use in the current resource model. Similarly, a three-dimensional solid model of the northeast mafic unit located near the Chetwynd granite contact was developed by Mercator using sectional interpretations and results of the mafic dike distribution model created for use in the earlier resource estimate.

With specific reference to the current resource modeling program, the Chetwynd granite, Chetwynd dike and northeast mafic solid models were all used to locally contain gold grade interpolation passes. They each served a similar purpose in the previous resource model.

#### **14.4.4 Void Solid Models**

A three-dimensional void solid model depicting historical stopes and mine workings was originally developed by Mercator for Coastal Gold and progressively updated versions were used in the subsequent resource estimate models, including the current model. The void solid model incorporates both digital stope solids and digital solids that define mine workings such as drifts, crosscuts and raises (Figure 14-6). The void solids were created by digitizing historical mine survey drawings created by either BP or Royal Oak and merging these with historical mine survey point data. The historical survey level plans and sections show outlines of stopes, cross cuts, drifts, ramps and declines. Stope solids were created by joining surveyed stope outlines on consecutive working levels, through extension along local dip trends. Other workings were modeled by combining digitized level plan layouts with historic back and/or sill mine survey coordinate points. Historical survey plans for the main decline were not found for an interval of the main access ramp between the 4870 m and 4850 m working levels and this gap in information is still present in the model. With the exception of this ramp interval, the historical mine survey plans, survey point data and surveyed sections were accepted for current resource purposes as being accurate and complete with respect to their three-dimensional coordination.

**Figure 14-6: Isometric view of the void solid models**

The void solid model originally created by Mercator was updated as necessary to reflect results of Coastal Gold's ongoing exploration of the deposit area. As an example, historical information retrieved from government archives supported updating of spatial limits of individual stope solids in late 2012. In addition, stope intersections by Coastal Gold core drilling programs in 2012 were used to validate the digital stope and workings model and to confirm the accuracy of the model. Drill holes that intersected stoping solid outlines generally showed stope fill to be either broken mineralized zone material or waste rock fill. However, in-situ mineralized zone material was intersected in some instances, probably indicating that historical blasting had not broken ore to the planned stope limit in such areas. Where confirmed by Coastal Gold drilling results, the original stope solid was modified by Mercator to respect the new drilling data.

## 14.5 Data Analysis

### 14.5.1 Raw Assays Samples

Raw assay statistics for each assay domain population, including the High Grade Domain and Low Grade Domain were evaluated. In that exercise, the domains were treated exclusive of each other, with High Grade Domain intersections being removed from Low Grade Domain

intersections. The exercise demonstrated through probability plots and descriptive statistics that the population distribution for both the High Grade Domain and Low Grade Domain shows a natural break around 2.0 to 2.5 g/t Au. In addition, frequency distribution plots of gold assays show a near log normal distribution with a High Grade Domain gold value of 12.86 g/t Au and Low Grade Domain gold value of 2.25 g/t Au at the 95<sup>th</sup> percentile point. Mafic dike assays showed gold values of 2.06 g Au/t and 0.99 g Au/t in the High Grade Domain and Low Grade Domain, respectively, at the 95<sup>th</sup> percentile point. This may be attributable to minor intervals of silicic mineralized material that occur within larger intervals of logged mafic dike or to local re-mobilization of gold into fractured or sheared mafic host lithologies.

A domain-scale statistical analysis of gold assay results was also carried out by Mercator on the updated High Grade and Low Grade domain solids used in the current resource model. This was done to check on the impact of slight domain solid modifications made by Mercator since the 2014 estimate and to identify any potential issues arising from the difference in modeling software platforms used (Geovia-Gems Version 6.4<sup>®</sup> for the previous estimate and Surpac Version 6.1.1<sup>®</sup> for the current estimate).

Results of the Mercator raw assay analysis check for samples constrained by database attributes of mafic lithologies, High Grade Domain silicic lithologies, and Low Grade Domain silicic lithologies are comparable to those similarly generated for earlier resource estimates. Mercator values are presented below in Table 14.1. Gold values for mafic-coded material in the entire database are reflected in Table 14-1.

**Table 14.1: Mercator Descriptive Statistics for Constrained Raw Au Assay Values (g/t)**  
(Constrained within silicic lithologies in the High Grade Domain, silicic lithologies in the Low Grade Domain and total model space mafic lithologies)

Attribute	Silicic HG Domain	Silicic LG Domain	Mafic
Number of samples	10758	10407	12801
Minimum value	0	0	0
Maximum value	204.00	93.50	25.71
Mean	4.97	0.80	0.30
Median	3.53	0.49	0.06
Variance	34.71	1.94	1.10
Standard Deviation	5.89	1.39	1.05
Coefficient of variation	1.18	1.75	3.46
10.0 Percentile	0.90	0.10	0.00
20.0 Percentile	1.65	0.18	0.01
30.0 Percentile	2.30	0.27	0.02
40.0 Percentile	2.88	0.38	0.03
60.0 Percentile	4.32	0.67	0.10
70.0 Percentile	5.39	0.89	0.16
80.0 Percentile	7.02	1.21	0.27
90.0 Percentile	10.40	1.74	0.58
95.0 Percentile	13.81	2.26	1.15
97.5 Percentile	17.96	2.78	2.33

#### 14.5.2 Capping of Raw Assay Values

The 2013 resource estimate program by AGP evaluated the risks of high grade assays through decile analysis and review of probability plots. It was determined that a variable cap value in combination with an interpolation ellipsoid search restriction threshold value was warranted for each of the main interpolation domains, these being the High Grade Domain, Low Grade Domain and Mafic dikes. The search ellipsoid restriction threshold value was set at approximately the 99<sup>th</sup> percentile of the assay composite grade population with a maximum range of 50 m regardless of the search ellipsoid size. This process was assessed by Mercator and deemed acceptable for use in the current resource estimate. Capping values applied in the current estimate are the same as those applied in 2014 and are presented in Table 14-2.

**Table 14.2: Assay Au (g/t) Capping Values Used in the Current Model**

Domain	Cap Value Au (g/t)	Search Restriction Threshold Au (g/t)
High Grade Domain	50	20
Low Grade Domain	15	3
Mafic Dike	10	Not Applicable

In application, all block centroids in the current model within 50 m of a capped composite will see an assay composite dataset that includes capped assay composite values when applicable. All block centroids beyond 50 m of a capped composite will see an assay composite dataset value that reflects the lower grade search restriction threshold value for that composite.

#### 14.5.2.1 Drill Hole Assay Composites

A base composite length of 1.5 m was selected for the current resource estimate based on the block model matrix of 10X x 3Y x 5Z combined with drill hole database core sample length statistics. The average core length of drill core samples within the mineralized domains ranges between 1.12 m and 1.18 m, with a median value of 1.0 m. The selected 1.5 m composite length accommodates both the mean and median assay sample lengths and is one half of the block model cell width (Y dimension).

Composites were created from the capped raw assay values for three separate groups; (1) the silicic alteration lithologies occurring within the High Grade Domain, (2) the silicic alteration lithologies occurring within the Low Grade Domain, and (3) mafic lithologies without consideration of the other grade domain boundaries. Compositing in this manner helped prevent dilution between the silicic material of the two distinct silicic grade domains and between the silicic domains and mafic lithologies. Composites were created in a downhole fashion starting at the top interval of a selected domain/lithology and continued downhole. Resetting of the composite interval was carried out at interpolation domain boundaries. The composites were created at the base 1.5 m support length but allowed to “best fit” domain intervals to accommodate spatial variations in the grade domain and interpolation constraints. This method

produced composites of variable length within any specific drill hole zone but ensured that composite lengths were as close as possible to the nominated composite length. At least 14 % of a downhole assay sample interval was required to be included in a composite. Composites created that were less than 0.2 m in length were removed from the dataset. As in the 2014 resource estimate, a 0.00 g /t Au value was assigned to drill hole intervals that were implicitly un-sampled. Drill hole intervals flagged as lost core, un-readable assays, and underground openings were ignored.

Table 14-3 presents descriptive statistics for the capped composite dataset. In each grade domain the mean composite gold values are slightly lower than corresponding mean values for the raw assay population. Specifically, the High Grade Domain, Low Grade Domain and Mafic mean composite values are 0.21 g/t, 0.11 g/t and 0.26 g/t lower, respectively than the corresponding raw assay interval population. The lower values reflect impact of compositing as well as grade capping.

**Table 14.3: Descriptive Statistics for Capped, Constrained Au Composite Values (g/t)**

(Constrained within silicic lithologies for the High Grade Domain (HG), silicic lithologies in the Low Grade Domain (LG), and mafic lithologies)

Attribute	Silicic HG Domain	Silicic LG Domain	Mafic
Number of samples	8907	9974	19224
Minimum value	0	0	0
Maximum value	50.00	11.65	10.00
Mean	4.76	0.69	0.14
Median	3.53	0.44	0.00
Variance	21.22	0.77	0.31
Standard Deviation	4.61	0.88	0.55
Coefficient of variation	0.97	1.27	4.01
10.0 Percentile	0.97	0.00	0.00
20.0 Percentile	1.75	0.10	0.00
30.0 Percentile	2.41	0.21	0.00
40.0 Percentile	2.94	0.32	0.00
60.0 Percentile	4.27	0.61	0.01
70.0 Percentile	5.21	0.82	0.04
80.0 Percentile	6.70	1.12	0.11
90.0 Percentile	9.73	1.61	0.28
95.0 Percentile	13.00	2.06	0.58
97.5 Percentile	16.99	2.53	1.10



## 14.6 Bulk Density

Coastal Gold staff systematically collected core density values using a standardized water immersion method protocol to determine specific gravity relative to water. Measurements were determined during the logging and core processing sequence. A sensitive digital scale with a basket suspended below was utilized to allow immersion of selected core samples in water. The lab protocol requires that the core sample first be placed in the basket and the net weight of the sample be recorded. Subsequently, the basket is lowered into water and the net weight of the sample in water is recorded. The sample specific gravity relative to water is calculated by:

$$\text{net weight of sample in air} / (\text{net weight of sample in air} - \text{net weight of sample in water})$$

The scale is re-calibrated before each use and the weight of the basket holding the core is repeatedly measured. A granite sample of known density is used as a duplicate. Samples are not coated in paraffin wax as the porosity of core is considered to be a negligible factor. Coastal Gold collected a total of 3,650 determinations with an average density of 2.74 g/cm<sup>3</sup>.

Density was assigned in the resource model by setting the background value as the average of all determinations and then assigning the average for each grade interpolation domain. The High Grade Domain, Low Grade Domain, and Granite Domains (Chetwynd Dike and Chetwynd Granite) have average densities of 2.79 g/cm<sup>3</sup>, 2.73 g/cm<sup>3</sup>, and 2.66 g/cm<sup>3</sup> respectively (Table 14-4). Domain determination for density assignment was based on a block volume partial percentage value of 50 % or greater for the respective domain. Mercator used a density assignment of 1.7 g/cm<sup>3</sup> for filled stopes, and 0 g/cm<sup>3</sup> for drifts, ramps and other underground development space within the model.

**Table 14.4: Bulk Density Sampling**

Domain	Density (g/cm <sup>3</sup> )	Number of Determinations
Granite	2.66	52
High Grade Domain	2.79	343
Low Grade Domain	2.73	1249
Average of all values	2.74	3650

### 14.7 Variography and Analysis

The variography and spatial analysis assessments and conclusions presented by Desautels et al. (2014) for the 2013 resource estimate were reviewed in detail by Mercator. This showed that previously reported results and conclusions relate well to the current model and on this basis, Mercator elected to use the results of the previous spatial analysis in the current resource estimate model and to take responsibility for use of these parameters and conclusions.

The following summary of the earlier variography and analysis program is taken from Desautels et al. (2014):

“Variography was conducted for the combined high grade and low grade domains using the 2.5 m composite data bound between Easting 417,200 and Easting 418,573 using Sage 2001 software. Directional sample correlograms were calculated for gold and copper in this single statistical domain along horizontal azimuths of 0, 30, 60, 90, 120, 150, 180, 210, 240, 270, 300 and 330 degrees. For each azimuth, a series of sample correlograms were also calculated at 15° dip increments. Lastly, a correlogram was calculated in the vertical direction. A variable lag distance was used to optimize the variogram in the preferred drill direction. Using the complete suite of correlograms, an algorithm determined the best-fit model. This model is described by the nugget (C0) which was derived using down hole variograms; one or two nested structure variance contributions (C1, C2), ranges for the variance contributions, and the model type (spherical or exponential). After fitting the variance parameters, the algorithm then fits an ellipsoid to all ranges from the directional models for each structure. The lengths and orientations of the axis of the ellipsoids give the final models of anisotropy. Variograms were also constructed for the mafic dike data set. In general terms, the final correlogram models were excellent, due to the high numbers of composites available for the model (Table 14-5). The best gold correlogram for the main mineralized structure was obtained at azimuth 232 degree with a dip of -76° to the south east, which coincided with the overall orientation of the mineralization. The data seemed to indicate a steep 60° plunge toward the north east which is reflected in the grade distribution of assays. The correlogram indicated a maximum range between 220 m and 240 m on strike and in the

down dip direction. At 90% of the sill value the range is reduced to 120 m. Across the dip the correlogram range is much shorter indicating only a range of 40 m. The correlogram indicated a moderate nugget component of 50% of the sill value. Gold correlograms generated for the mafic dike composites indicated a high nugget component reaching 80% of the sill. Despite the high nugget, a maximum range of 180 m is present with a sharp drop to 80 m at 90% of the sill value.”

**Table 14.5: Variography (\*Surpac ZXY LRL Convention)**

Domain	Component	Increment	Major/Semi-Major/Minor Range (m)	Bearing (Deg)	Plunge (Deg)	Dip (Deg)
LG and HG	Nugget (C0)	0.464				
	Spherical (C1)	0.237	91.4/56.5/26.9	39.41	-32.72	-83.00
	Spherical (C2)	0.299	403.7/377.0/30.9	225.32	-25.93	74.25
Mafic Dike	Nugget (C0)	0.787				
	Spherical (C1)	0.213	311.2/154.7/57	86.05	-64.59	-50

\* Original values in Desautels et al. (2014) reflect the Gemcom® ZXZ RRR convention

#### 14.8 Search Ellipsoid Dimensions and Orientation

The three-pass interpolation methodology applied in the 2013 resource estimate was retained by Mercator for the 2015 and current resource estimates. Orientation and range selection was based on a combination of drill spacing and variography. Interpolation sub-domains were defined by a combination of mineralization zonation, grade solid domains, and local deposit geometry. A total of 10 interpolation sub-domains were defined by Mercator for the silicic gold grade estimation and a single domain was defined for the mafic gold grade estimation. All of the grade interpolation domains used by Mercator for the current estimate are identified below in Table 14.6, along with corresponding search ellipsoid orientation and range values. The Southwest Domain (SW) noted in Table 14-6 values were used for block model areas located southwest of the Mine Zone and 240 Zone but these are not included in the current resource estimate due to inadequate grade.

**Table 14.6: Search Ellipsoids (Surpac ZXY LRL Convention)**

Sub-domain	*ZONE/DOMAIN/AREA	Orientation (Deg) (Bearing/Plunge/ Dip )	Axis Range (Major/Semi-Major/Minor) (m)		
			Pass1	Pass 2	Pass 3
1	MINE/HG/TOP-CENTER	69.19/-55.12/-68.68	75/57/9	136/103/17	258/195/32
2	MINE/HG/BOTTOM	85.07/-48.35/-47.00	75/57/9	136/103/17	258/195/32
3	MINE/LG/TOP-CENTER	69.19/-55.12/-68.68	75/57/9	136/103/17	258/195/32
4	MINE/LG/BOTTOM	85.07/-48.35/-47.00	75/57/9	136/103/17	258/195/32
5	240/HG/TOP	191.31/-57.47/53.75	75/57/9	136/103/17	258/195/32
6	240/HG/BOTTOM	178.20/-45.19/35.25	75/57/9	136/103/17	258/195/32
7	240/LG/TOP	191.31/-57.47/53.75	75/57/9	136/103/17	258/195/32
8	240/LG/BOTTOM	178.20/-45.19/35.25	75/57/9	136/103/17	258/195/32
9	SW1/LG/ALL	55.28/0.00/-73.43	75/57/9	136/103/17	258/195/32
10	SW2/LG/ALL	64.49/0.00/-81.23	75/57/9	136/103/17	258/195/32
Mafic	All blocks	69.23/-55.12/-68.75	34/20/8	68/44/10	

\* HG = High Grade, LG=Low Grade, SW=Southwest

## 14.9 Resource Estimation Parameters and Interpolation

### 14.10 Block Model Setup

Two separate block models with identical setup parameters were constructed by Mercator for use in developing the 2015 and current resource estimates. One model was developed to evaluate mafic lithology and dike content distribution and associated grade. The second model was developed to evaluate non-mafic (silicic zone) gold grade and to function as the global resource block model for the deposit. The two block model approach was used to optimize processing time, prevent memory issues, and to facilitate block interpolation and block attribute organization.

The two block models were constructed using GEOVIA Surpac Version 6.1.1<sup>®</sup> software and details of the model limits appear in Table 14-7. A model matrix block size of 10 m X by 3 m Y by 5 m Z was selected and Mercator is of the opinion that this block size provides a reasonable basis for evaluation of the deposit's potential for economic development using underground mining methods. Both block models were defined on the UTM - NAD 83 ZONE 21 project coordinate system with a counter-clockwise rotation of 34.84241°. In accordance with historical practice established by BP, 5,000 m was added to all elevations (Z m) to avoid having below sea level elevation records in the project database.

**Table 14.7: Mercator Block Model Matrix Definition**

Type	Y	X	Z
Minimum Coordinates	5285194m	415791.2m	3860m
Maximum Coordinates	5286694m	420241.2m	5290m
User Block Size	3m	10m	5m
Min. Block Size	3m	10m	5m
Rotation (degrees)	-34.84241	0	0

#### 14.10.1 Partial Percentage Estimation

Partial percentage estimation was used for volume assignment of solid models. Partial percentages were estimated with the GEOVIA Surpac 6.1.1<sup>®</sup> module using a precision of 3, which denotes the number of times the parent block is sub-divided by 8 to calculate the percent of a block included inside the constraining solid. Partial percentage estimates were calculated for the two main grade domain solids (High Grade Domain and Low Grade Domain), the mafic solid models, the Chetwynd granite and Chetwynd dike solid models, the void solid models, and at the constraining topographic surface DTM. Partial percentage attributes are used in the current estimation scheme as volume adjustment factors for block resource reporting.

### 14.10.2 Mafic Dike Probability Model

Mafic dikes extensively cross-cut the gold-bearing silicified zones in this deposit and, in some instances, increase in intensity in areas of higher gold grades and thicker mineralized zone true widths. Drill results and historical underground mining records indicate that the frequency and intensity of mafic dikes are higher in the northeast portion of the deposit, near the old mine workings, and in the upper levels of the deposit. As referenced previously, three preferred dike strike orientations were recognized through underground level mapping; (1) north east, parallel to the silicified zone margins, (2) east-west at approximately 45° to (1), and (3) north-south. Review by Coastal Gold staff of the available underground mapping data resulted in an interpreted folded geometry for certain mafic dikes, with an axial trend plunging toward 075° azimuth at -63°. Coastal Gold staff also noted that the affected mafic dikes tend to be thicker at the nose of the fold and thinner along the south limb.

Despite such interpretations of mafic dike orientations and distributions, the local erratic nature of mafic dike occurrence has prevented development of a reliable distribution interpretation that is amenable to wireframing. This factor was recognized in all of the previous resource estimate models prepared for Coastal and was addressed by development of a mafic probability block model. This approach was originally created by AGP for the first Coastal resource estimate in 2012.

The model is based on spatial distribution of drilling database mafic interval lithocodes. These lithocoded intervals were transformed to a mafic indicator value by assigning a value of 1 to all mafic dike codes (code 45 or 50) and assigning a value of 0 to all other relevant codes. The mafic indicator value was subsequently composited down-hole at a 1.0 m support length. The 1.0 m down-hole mafic indicator value composite file was supplemented with 2m X x 2m Y grid patterns developed for each of four level plan mafic distribution maps provided by Coastal Gold. These maps reflect the basis for the mafic solids model described earlier in report section 14.4.3.1. Grid

points were coded with a mafic indicator value of 1 for points occurring within mapped mafic dikes and 0 for points occurring outside mapped mafic dikes.

A multi-pass approach using inverse distance to the power of 1 methodology was used by AGP to interpolate mafic probability. A total of four passes were performed using increasing search dimensions and decreasing sample restrictions for each pass (Table 14-8). All interpolation passes used an ellipsoid striking at azimuth of 33.37° with a 33° axial plunge and a 78° dip. No domain constraints were applied for the mafic probability interpolation.

**Table 14.8: Interpolation Parameters for Mafic Probability Model**

Pass Number	Number of Contributing Composites			Range (m)		
	Minimum	Maximum	Per DDH	Major	Semi-Major	Minor
1	13	30	4	15	15	5
2	9	30	4	30	30	10
3	5	30	4	50	50	20
4	3	30	4	75	75	30

Interpolated mafic probability was combined with the partial percentage estimates for the mafic dike level plan solid models and the northeast mafic solid model. The interpolated mafic probability attributes were subsequently calibrated so that the combined mafic attribute (interpolated + partial percentage) would compare favorably with mafic percent values estimated from the mapped level plans and mafic percent values noted during historical mining. The partial percentage estimates of the Chetwynd granite and the Chetwynd dike were also combined with the mafic probability attributes to produce a separate “dike percent” attribute. Using the AGP methodology described above, Mercator estimated the dike percentage of the model to be 18% in the Mine Zone and 0% in the 240 Zone at the 3.0 g/t Au resource reporting threshold used for the current estimate.

Results of the new mafic dike probability model created by Mercator using the methodology developed earlier by AGP were reviewed in three dimensions and also in systematically cut cross-

section and level plan views. In addition, Mercator reported the mafic dike percent of various model block subsets for comparison with model results reported for the previous resource block model. These checks showed good correlation of mafic block partial percentages between the two models.

Based on the above, Mercator is of the opinion that the newly created mafic probability block model provides a reasonable global estimate of total mafic and dike content for the deposit, as defined through modeling of drilling and mapping based lithocoding. However, at the block scale, local agreement between the model and actual dike presence varies according to the density of informing data intervals. Greatest agreement can be expected in areas immediately adjoining the mafic and dike solid models that were previously discussed. Conversely, lowest agreement can be expected in areas showing maximum distance from informing data intervals. Mercator believes that further improvement of the mafic probability model may be possible and that this should be addressed in future work programs.

#### **14.11 Silicic Percent, Percent Bedrock, and Void Model**

The transition of the open-pit concept used in the pre-2015 resource estimates to the underground concept for the 2015 and current resource estimates focuses on defining higher grade gold resources contained within silicic mineralized material. The selected approach includes exclusion of mafic, granitic, and void (stope fill) material that can be considered dilution. For this purpose, the percent of silicic material within each grade domain for each block was estimated through a combination of partial percentage estimates and the mafic dike probability model. Silicic percent was calculated for each block by subtracting the total dike percent from 100 percent. The silicic remaining volume of each block was then adjusted by the partial percentage factor of the High Grade Domain and Low Grade Domain to provide the estimated silicic percent value for each. All percentages were retained as block attributes.



Coastal Gold's pre-2015 mineral resource block models included grade assignments to stope fill to facilitate pit optimization modeling. None of the stope fill material would be expected to meet the 3 g/t Au resource estimate cutoff value used in the current estimate. To exclude fill material from the current resource estimate, a percent bedrock value was estimated by combining the partial percentage estimate below the topographic surface with the partial percentage estimate of the void model to create a calculated percent bedrock block attribute. The silicic percent estimates for grade interpolation domain blocks were then adjusted where necessary by the calculated percent bedrock block attribute. The final value was retained as a block attribute.

#### 14.11.1 Silicic Gold Grade Interpolation

Silicic gold grade (as Au g/t) was estimated with ordinary kriging interpolation methodology using a three-pass approach with increasing search dimensions and decreasing contributing composite restrictions for each pass (Table 14-9). Iterative passes interpolated grade only for blocks that were not interpolated in previous passes. Silicic gold grade was interpolated independently for the High Grade Domain and Low Grade Domain from respective 1.5 m capped silicic assay composite files and domain solid contact surfaces were established as hard boundaries. Interpolation sub-domain boundaries that define the dip change aspect seen in the deposit were treated as soft boundaries, allowing samples from one sub-domain to be used in interpolation of the adjacent up or down dip sub-domains. Silicic gold grade was interpolated for all blocks having a silicic percent value greater than 0. Validation interpolation checks were performed using inverse distance squared interpolation methodology and results of that process are described below in report section 14.18.2.

**Table 14.9: Interpolation Parameters for Silicic Gold Grade**

Pass Number	Contributing Composites			Range (m)		
	Minimum	Maximum	Per DDH	Major	Semi-Major	Minor
1	10	20	3	75	57	9
2	7	20	3	136	103	17
3	3	20	3	258	195	32

### 14.11.2 Mafic Dike Gold Grade Interpolation

Mafic dike gold grade (as Au g/t) was interpolated to provide a mafic dike gold value for dilution calculations and/or economic studies. This gold grade was estimated with ordinary kriging interpolation methodology using a two-pass approach with increasing search dimensions for each pass (Table 14-10). As in the case of the silicic gold interpolation, only blocks that were not interpolated in the first pass were addressed in the second. Dike gold grade was interpolated for all blocks with an estimated dike percent value greater than 0 using the capped mafic composite file. Gold grade domain solids and subdomains were not recognized as mafic model interpolation constraints. Gold mineralization associated with mafic lithologies is commonly sited in thin selvages along sheared margins with gold-mineralized silicic lithologies or in infrequent included fragments of siliceous material. These zones have a positive sampling bias due to proximity to silicic lithologies, while thicker internal intervals of mafic dikes are typically barren and commonly unsampled when not proximal to silicic units of interest. This distribution is important to employing sorting technology, since most internal dike material that will, presumably, be sorted out, should be very low grade or non-mineralized.

**Table 14.10: Interpolation Parameters for Mafic Gold Grade**

Pass Number	Contributing Composites			Range (m)		
	Minimum	Maximum	Per DDH	Major	Semi-Major	Minor
1	10	20	3	34	20	8
2	10	20	3	68	40	18

### 14.12 Mineral Resource Classification

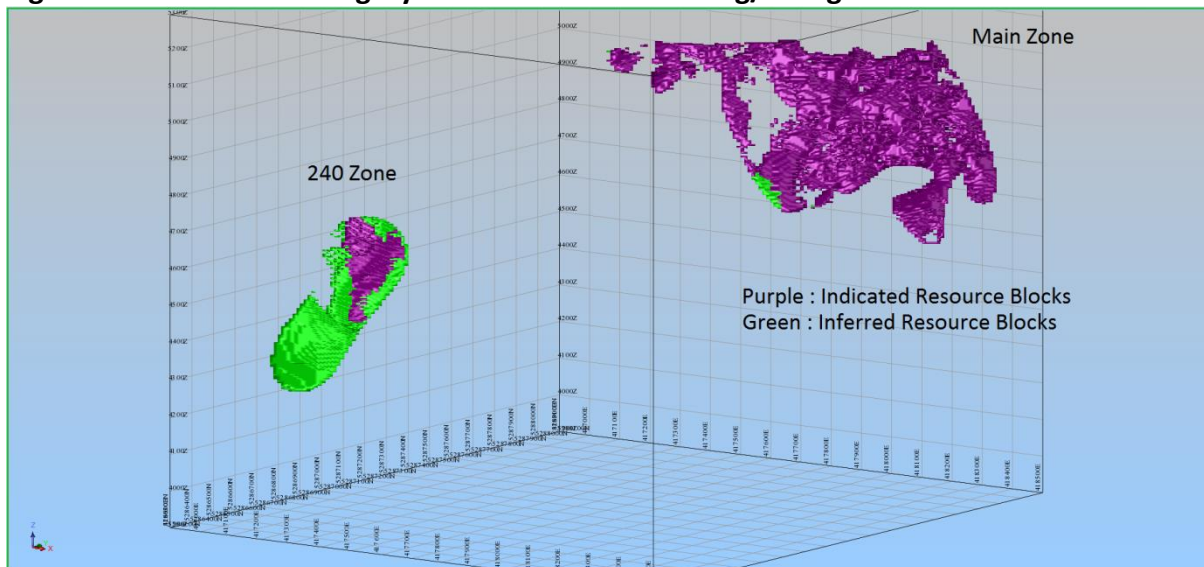
Definitions of mineral resources and associated mineral resource categories used in this report are those recognized under NI 43-101 and set out in the CIM Standards as amended in 2014.

Mineral resources presented in the current estimate have been assigned to Inferred and Indicated resource categories that reflect increasing levels of confidence with respect to spatial configuration of resources and corresponding grade assignment within the deposit. Resource

classification was primarily based on the interpolation pass number followed by an adjustment to the class model, based on the distance to the closest sample and kriged variance. Specific definition parameters for each resource category applied in the current estimate are set out below and Figure 14-7 illustrates spatial distribution of these categories within the block model. As shown in Figure 14-7, almost all Mine Zone blocks fall in the Indicated category and most Inferred category blocks occur in the 240 Zone.

The resource classification system used for the current mineral resource estimate is directly comparable to that used in the 2014 and 2015 estimates. After review, Mercator independently concluded that use of this system for the current resource estimate would be acceptable and that it would provide beneficial consistency with the previous estimation program and associated results.

**Figure 14-7: Resource category distribution at the 3.00 g/t Au grade threshold**



The resource categorization parameters applied to the current resource estimate block model are presented below.

**Measured Resources:** There are no interpolated resource blocks present in the current estimate with the certainty of definition required for classification in this category.

**Indicated Resources:** Indicated resources are defined as all interpolated blocks from interpolation pass 1, plus interpolated blocks from pass 2 having 7 or more contributing assay composites with the nearest composite within a 100 m range of the block centroid and a kriging variance of 0.60, plus interpolated blocks from pass 3 having 10 or more contributing assay composites with the nearest composite within a 100 m range of the block centroid and a kriging variance of 0.50.

**Inferred Resources:** Inferred resources are defined as all other interpolated blocks within the High Grade Domain and Low Grade Domain solids of the Main Zone and 240 Zone areas.

#### **14.13 Mineral Resource Estimate Gold Cut-off Grade**

The mineral resource statement cut-off grade selected for the current estimate is 3.0 g/t Au. This reflects consideration of comparable deposits, an estimated 86% gold recovery factor based on combined metallurgical testing results reported previously by Coastal Gold, historical Hope Brook deposit plant performance data, a long-term gold price of US\$1200 per troy ounce and the assumption that conventional, mechanized underground mining methods such as long hole stoping could be used for any future production scenario. Cost assumptions include underground mining at US\$80/tonne, processing at US\$15/tonne and general and administration cost at US\$5/tonne. The referenced gold price is less than the three year trailing average gold price of approximately US\$1,600 per troy ounce that applied at the effective date of this report.

#### **14.14 Mineral Resource Tabulation**

The mineral resource estimate prepared by Mercator in early 2015 for Coastal Gold's Hope Brook deposit is considered to be a current resource estimate for the purposes of this report and is presented below in Table 14-11. This estimate was developed in accordance with both the CIM Standards and disclosure requirements of NI 43-101.

**Table 14.11: Hope Brook Deposit Mineral Resource Estimate - Effective April 6<sup>th</sup>, 2021**

Gold Grade Cut-off (g/t)	Resource Category	Round Tonnes (Rounded)	Gold Grade (g/t)	Gold Ounces (Rounded)
3.00 g/t	Indicated	5,500,000	4.77	844,000
	Inferred	836,000	4.11	110,000

## Notes

1. Includes only Mine Zone and 240 Zone areas
2. The above mineral resource estimate is based on a partial percentage block model with dike material removed. Dike percent is estimated at 18% for the Mine Zone and 0 % for the 240 Zone
3. Gold grades reflect application of domain-specific raw assay capping factors that range between 55 g/t Au and 3 g/t Au
4. Rounding of tonnes as may result in apparent differences between tonnes, grade and contained ounces
5. Mineral resources that are not mineral reserves do not have demonstrated economic viability. The estimate of mineral resources may be materially affected by environmental permitting, legal, title, taxation, sociopolitical, metal pricing, marketing, or other relevant issues.
6. The gold cut-off value of 3.00 g/t reflects reasonable prospects for eventual economic extraction based on application of underground mining methods such as long hole stoping, historical gold recovery levels that range between 80% and 91% for past production (86% for Coastal Gold testing) and a long-term gold price of US\$1200 per ounce.

**14.15 Block Model Tonnage and Grade Sensitivity**

The effect of the gold cut-off grade on definition of deposit tonnages and grades within the current resource block model is illustrated in Table 14-12. This tabulation is provided for information purposes only and does not form part of the current resource statement.

**Table 14.12: Comparative Tabulation of Block Model Tonnage and Gold Grade Values**

Resource Category	Gold Grade Cut-off (g/t)	Tonnes (Rounded)	Gold Grade (g/t)	Gold (Oz.)
Indicated	2.0	8,086,000	4.06	1,055,000
Inferred	2.0	1,185,000	3.63	138,000
Indicated	2.5	6,919,000	4.37	971,000
Inferred	2.5	995,000	3.89	124,000
Indicated	3.0	5,500,000	4.77	844,000
Inferred	3.0	836,000	4.11	110,000

## **14.16 Model Validation**

### **14.16.1 Visual Inspection and Global Block Grade Statistics**

Results of block modeling were reviewed in three dimensions (Figures 14-8, 14-9) and compared on a section-by-section basis to the underlying interpolation constraint boundaries and local assay composite data. Representative level plans and cross sections illustrating interpolation domain limits, block grade ranges and assay composite values are included in Appendix 1. Where specifically checked, block gold grades showed expected changes across interpolation domain boundaries as well as general agreement with local assay composite data.

Block model descriptive statistics were also calculated for the global, 0.00 g/t gold grade cut-off value case within the Low Grade and High Grade domains, plus for associated mafics, exclusive of those blocks that fall within the void space and open pit areas. Results appear in Table 14-13 and show that mean gold grades of 3.97 g/t, 0.68 g/t and 0.35 g/t apply, respectively, to silicic High Grade Domain blocks, silicic Low Grade Domain blocks and mafic blocks. Variation coefficients of for block grades of 0.49, 0.54 and 1.01 apply to the respective domains and corresponding gold grades at the 95<sup>th</sup> percentile point are 7.44 g/t, 1.33 g/t and 1.05 g/t.

Figure 14-8: Isometric view to NW showing gold grade distribution at 3.0 g/t Au cut-off

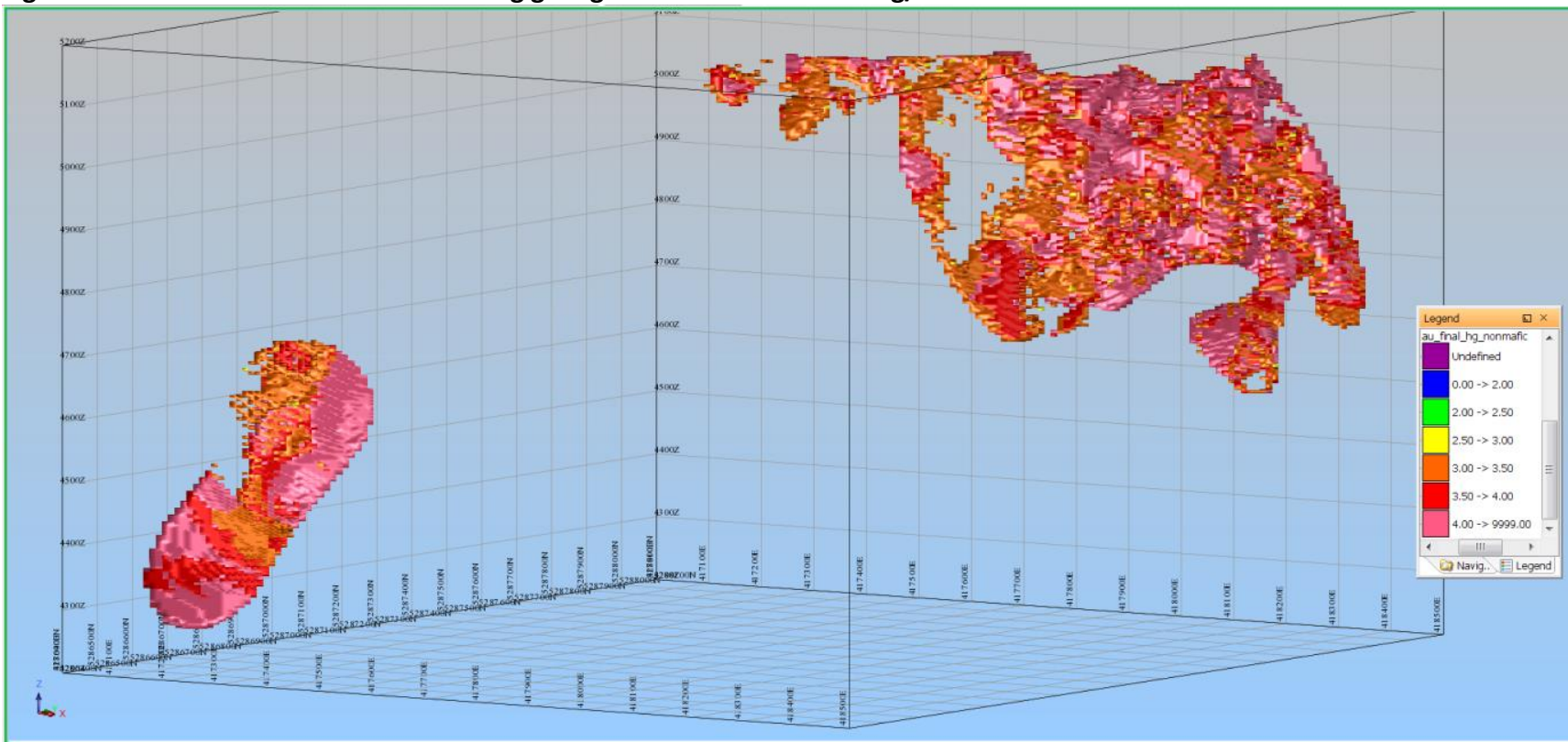
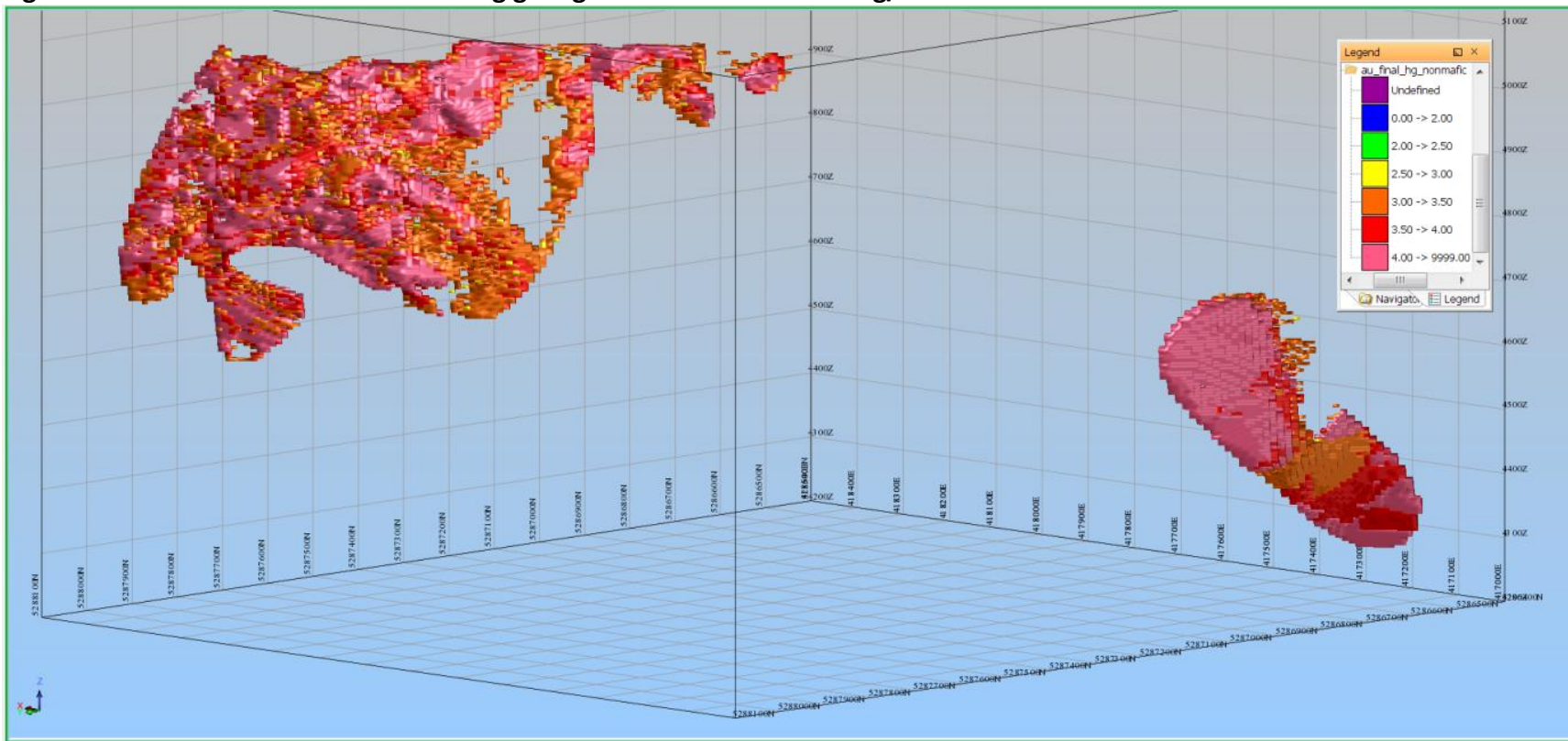


Figure 14-9: Isometric view to SE showing gold grade distribution at 3.0 g/t Au cut-off





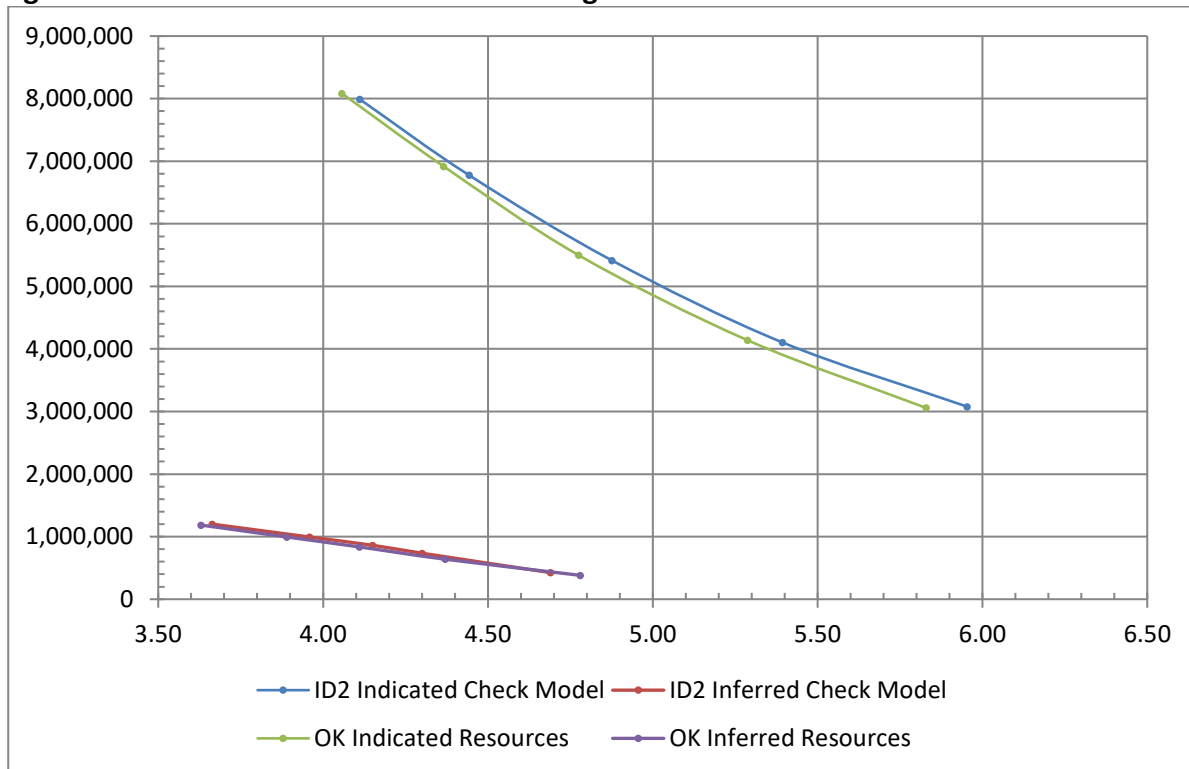
**Table 14.13: Descriptive Statistics for Resource Block Gold Grades: 0.00 g/t Au Cut-off**

Attribute	Silicic High Grade Domain	Silicic Low Grade Domain	Mafic
Number of samples	50,931	210,168	69,845
Minimum value	0.38	0.01	0.01
Maximum value	22.38	5.16	4.49
Mean	3.94	0.68	0.35
Median	3.53	0.62	0.24
Variance	3.69	0.13	0.13
Standard Deviation	1.92	0.36	0.35
Coefficient of variation	0.49	0.54	1.01
10.0 Percentile	2.18	0.28	0.09
20.0 Percentile	2.58	0.38	0.12
30.0 Percentile	2.89	0.46	0.16
40.0 Percentile	3.21	0.54	0.19
60.0 Percentile	3.89	0.71	0.30
70.0 Percentile	4.30	0.81	0.37
80.0 Percentile	4.98	0.93	0.49
90.0 Percentile	6.28	1.14	0.75
95.0 Percentile	7.44	1.33	1.05
97.5 Percentile	8.78	1.54	1.38

#### 14.16.2 Model Validation: Interpolation Check and Swath Plot Check

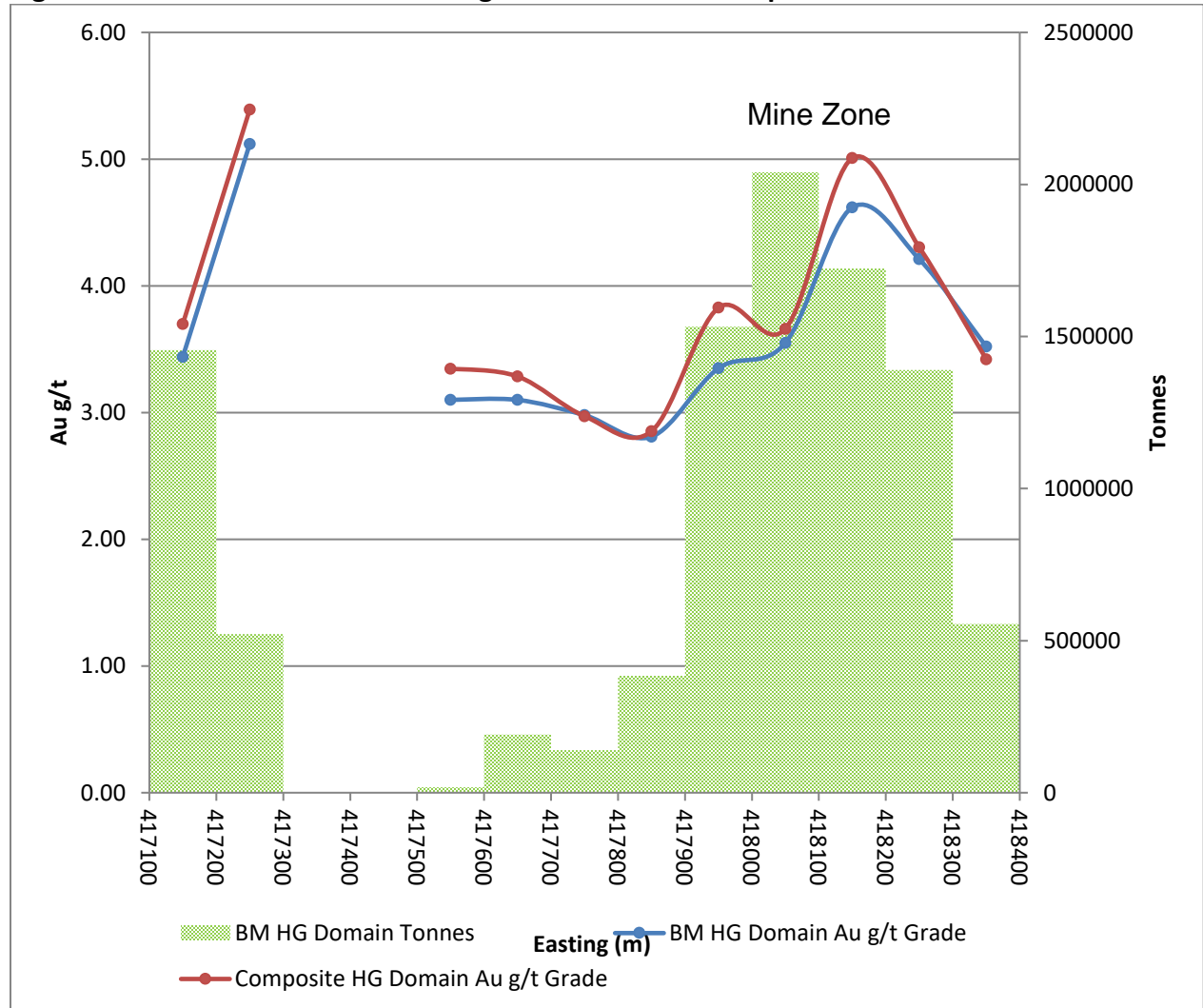
The OK resource model for the Hope Brook deposit was checked using inverse distance squared (ID2) interpolation methodology. Setup of the ID2 interpolation model was the same as that used for the OK model. Figure 14-10 compares ID2 and OK tonnage and gold grade plots for Indicated and Inferred category resources in the current block model. Results of the two interpolation methods are considered to be acceptably comparable, with the ID2 method consistently providing slightly higher gold grade estimates across the tonnage spectrum for Indicated resources. Both models produce highly comparable grade and tonnage values for Inferred resources, with the ID2 model locally showing slightly higher grades. Mercator considers the OK and ID2 comparison as providing a basic volume and interpolation check for the preferred OK block model.

**Figure 14-10: Block Model Grade and Tonnage Plot: OK and ID2 methods**



A further check on the OK block model was carried out through construction of gold grade, resource tonnage and assay composite swath plots for continuous X axis and Z axis coordinated slices of the High Grade Domain interpolation solid used for the current block model. Figure 14-11 presents the X swath plot results (100 m swaths) and these clearly identify both the 240 Zone and Mine Zone resource areas. Average block grade and assay composite trends show no clear cross-over intervals and composite values are consistently higher than corresponding weighted average block grade figures for individual swaths of easting. This relationship indicates that local assay composite density is sufficiently high to systematically support local block grade determinations. The composite and grade plots are nearly coincident between 417750mE and 417850mE, where block grades drop slightly below the 3 g Au/t resource statement cut-off value and a gap in resource continuity occurs. Highest swath tonnages and gold grades occur between 417900mE and 418400mE and define the spatial extent of highest gold inventory concentration within the block model.

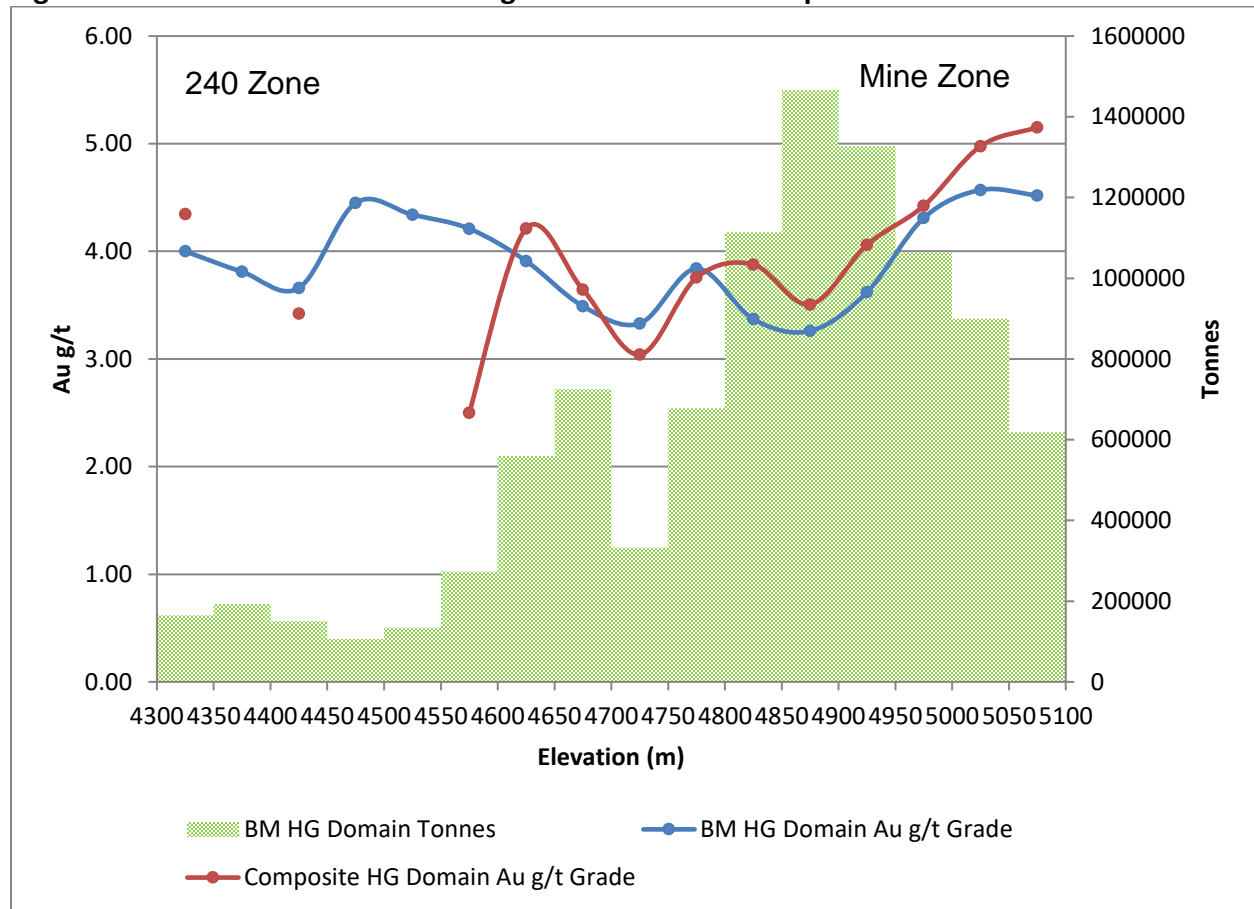
**Figure 14-11: X Axis Swath Plot for High Grade Domain Interpolation Solid**



Note: BM=Block Model, HG=High Grade

Figure 14-12 presents Z swath plot results (50 m swaths) and shows that a block grade to assay composite relationship similar to the X swath plot is present between the 4800 m elevation and surface which correlates with the highest concentration of drilling data and deposit tonnage as well as highest assay composite and block gold grades.

**Figure 14-12: Z Axis Swath Plot for High Grade Domain Interpolation Solid**



Note: BM=Block Model, HG=High Grade

**14.17 Comparison with Previous Resource Estimate**

No material differences exist between the current resource estimate and that reported for First Mining in December of 2015 and for Coastal Gold in January of 2015. The current estimate is therefore compared to the 2014 estimate and model described by Desautels et al. (2014). The two models differ in their approaches to resource reporting, with the earlier model being focused primarily on maximizing definition of resources potentially amenable to open pit development, with secondary emphasis on definition of deeper resources potentially amenable to development by underground mining methods. In contrast, the current resource is directed solely toward definition of higher-grade material that would potentially be amenable to underground mining. Due to the substantially different resource statement gold cut-off values

used in the current and earlier estimates, a direct comparison at those values is not sufficiently informative. However, Desautels et al. (2014) also provided a tabulation of block model grades and tonnages that apply to various additional cut-off values below the constraining pit shell used to define open pit resources. This tabulation includes a gold grade of 4.55 g/t at the 3g/t cut-off value for Indicated blocks and 4.24 g/t for Inferred blocks below the pit constraining shell. The resource statement gold cut-off value applied to this deeper part of the deposit was 2.0 g/t.

The current gold grade estimates by Mercator for the entire deposit at the 3 g/t gold cut-off value are 4.77 g/t for Indicated resources and 4.11 g/t for Inferred resources. These figures are similar to the Desautels et al. (2014) figures noted above but are based on substantially more deposit tonnage, since no open pit constraining shell is used in the estimate, and reflect a smaller block size and partial percentage volume assignment as opposed to full block assignment. Coastal Gold also subsequently disclosed an additional subset of the earlier resource estimate model having an assigned gold grade of 4.43 g/t at a 3.0 g/t cut-off for Indicated resources below a US\$900 constraining pit shell (see June 3, 2014 press release by Coastal).

Mercator is of the opinion that the current resource model gold grades are similar to other recent assessments of portions of the deposit at the same gold cut-off value that have been disclosed by Coastal Gold. The higher gold grades that characterize the current model are considered primarily due to (1) reduction in block size, (2) use of partial percentage block volume assignment methodology, and (3) modification of the High Grade domain solid to include 2013 drilling intercepts not included in the earlier High Grade domain solid. The 3 m block width used in the current model is also interpreted as being responsible for better high grade mineralization continuity at the gold cut-off grade of 3 g/t. The 5 m block width used in the previous model would have locally included dilution not seen in the new model and thereby resulted in lowering associated block grades below the 3 g/t gold cut-off grade. This would have affected spatial continuity at that cut-off.

**15.0 Mineral Reserve Estimates**

This section does not apply to current reporting.

**16.0 Mining Methods**

This section does not apply to current reporting.

**17.0 Recovery Methods**

This section does not apply to current reporting.

**18.0 Project Infrastructure**

This section does not apply to current reporting.

**19.0 Market Studies and Contracts**

This section does not apply to current reporting.

## **20.0 Environmental Studies, Permitting and Social or Community Impact**

### **20.1 Hope Brook Access Road Environmental Assessment Registration**

In June of 2018, First Mining submitted an Environmental Assessment Registration for construction of an access road from the existing Burgeo Highway (Highway 480) to the Hope Brook site. Amec Foster Wheeler Environment & Infrastructure, a Division of Amec Foster Wheeler Americas Limited (Amec), prepared the Environmental Registration pursuant to the Newfoundland and Labrador Environmental Protection Act. Fracflow Consultants Inc. provided route selection and technical design details for the proposed project. The estimated capital cost of the overall project, based on the 2018 engineering design and planning is approximately \$11,000,000 (Amec, 2018).

As described in the Environmental Assessment Registration (Amec, 2018), the project consists of a low-profile resource access road approximately 58 km in length with a 20 m cleared right of way and a 5 m wide gravel driving surface. The road is intended to permit light to intermediate size vehicle access to the Hope Brook property to support mineral exploration activities to be conducted by First Mining, and will be maintained as needed to provide such access when required. The road is not intended to be maintained for year-round, full time access. This Environmental Assessment Registration is intended to initiate the provincial environmental assessment process for the proposed access road, which will undergo review in accordance with applicable regulatory requirements.

Amec determined that the project is unlikely to result in adverse effects to socioeconomic, ecological or atmospheric environmental components in the area. Adverse environmental effects on wildlife species present in the immediate road right-of-way are to be minimized by the implementation of appropriate mitigative measures. The overall project would be planned and implemented as to avoid or reduce any potential adverse environmental effects. It would be undertaken in accordance with environmental protection and regulatory compliance practices to

help ensure that it is constructed and operated in a safe and environmentally responsible manner. Figure 20-1 presents the proposed road route.

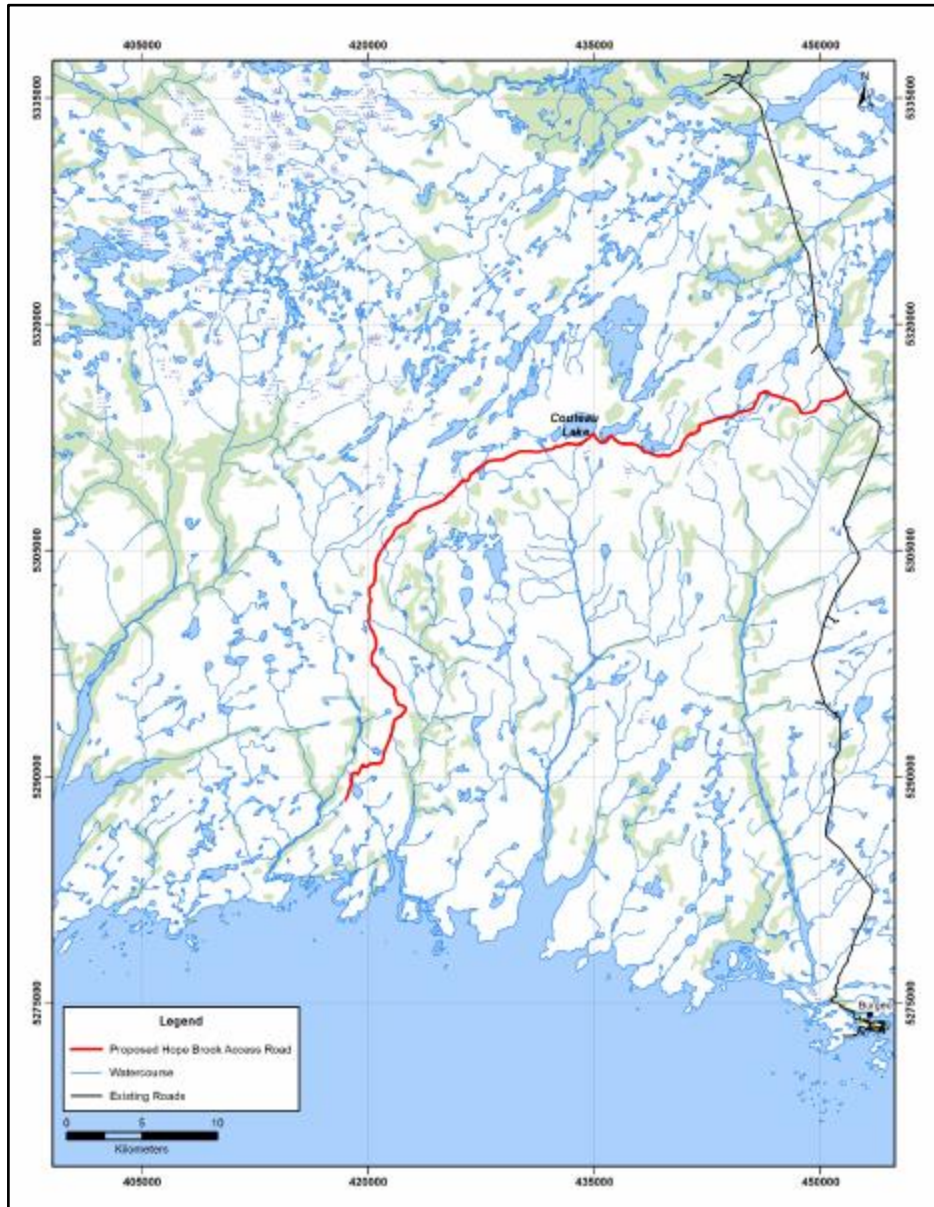
First Mining was advised in September of 2018 that an Environmental Impact Statement (EIS) is required to determine if the proposal may have significant environmental and socio-economic impacts. Draft EIS Guidelines for the project were subsequently filed on December 4, 2018 for a 40-day public review. On September 12, 2018 First Mining was advised that an Environmental Impact Statement (EIS) is required for the project. An environmental assessment committee (EAC) was subsequently appointed in October of 2018 to provide scientific and technical advice to the Minister and to prepare draft guidelines for conducting the EIS. In December of 2018, the draft EIS Guidelines were released for public review with responses required by January 14th, 2019. The EAC includes representation from the following provincial and federal government agencies:

- Department of Municipal Affairs and Environment
- Department of Fisheries and Land Resources
- Department of Tourism, Culture, Industry and Innovation
- Department of Natural Resources
- Environment and Climate Change Canada
- Fisheries and Oceans Canada

The environmental review process associated with the 2018 Environmental Assessment Registration has not yet progressed past the EIS Guidelines stage.



Figure 20-1: Proposed Hope Brook access road route (red)



## **21.0 Capital and Operating Costs**

This section does not apply to current reporting.

## **22.0 Economic Analysis**

This section does not apply to current reporting.

## **23.0 ADJACENT PROPERTIES**

There are no adjacent properties as defined under National Instrument 43-101 that are currently pertinent to the HBGP.

## **24.0 Other Relevant Data and Information**

No other relevant data was identified as being necessary to support the resource estimation program described in this report.

## 25.0 Interpretation and Conclusions

### 25.1 Project Scope and Overview

The Hope Brook mine produced 752,163 ounces of gold between 1987 and 1997 at yearly calculated gold head grades ranging between a high of 4.3 g/t in 1987 and a low of 3.0 g/t in 1995. During this period, market pricing for gold ranged between a low of US\$331.29 in 1997, the year of mine closure, to a high of US\$446 per ounce in 1987, the first year of reported production statistics. Both open pit and underground mining methods were used, with the majority of production coming from underground operations. Conventional processing was used for beneficiation of most processed ore but much of the initial mined production from an open pit was processed by heap leaching.

Current market pricing for gold is substantially higher than that seen between 1987 and 1997 and the reference gold price of US\$1200 per ounce used in this report is nearly three times the maximum price seen during Hope Brook's operational period. It is also lower than the current three year trailing average gold price of US\$1,600 per troy ounce. Resource gold grades of the current estimate are comparable to those originally defined for the deposit prior to initiation of mining. However, the current resource statement gold cut-off grade of 3.0 g/t is higher than the 2.0 g /t gold cut-off used in original estimates generated prior to production.

The current mineral resource estimation program was focused on higher grade mineralization defined by a 3.0 g/t gold cut-off value in the Mine Zone and 240 Zone areas. This reflects Big Ridge's interest in carrying out a future economic assessment of the deposit based entirely upon underground mining potential. This approach recognizes the potential value of existing underground ramp and ventilation infrastructure to any future project development. As a result, the current estimate for the deposit does not include definition of mineral resources having potential for open pit development.

Big Ridge is proposing to move the HBGP forward through upgrading and expanding existing mineral resources, completion of a PEA and, assuming positive PEA results, completion of a Pre-Feasibility study addressing the underground mining option. In addition, systematic evaluation of the large HBGP exploration holding is planned to run concurrently with other programs. A multi-year time frame is required for completion of all programs, with realized timing being subject to available project financing. Based on project results to date, Mercator has concluded that this general approach to project planning and scheduling is reasonable and warranted. On the technical level, the large component of Indicated mineral resource presently defined at Hope Brook may facilitate transitioning the project from a positive PEA stage through to Pre-Feasibility stage assessment.

## **25.2 Mineral Resource Estimate**

This technical report and associated mineral resource estimate were prepared for Big Ridge in accordance with the CIM Standards (2014) and disclosure requirements of NI 43-101. The report confirms and updates the previous resource estimate reported by First Mining for the Hope Brook deposit that has an effective date of January 12, 2015. Based on content of the current technical report, and recognizing that no subsequent work has been completed on the Hope Brook deposit that would be material to the mineral resource estimate, the resource estimate prepared for First Mining has been updated without change to an effective date of April 5<sup>th</sup>, 2021.

The mineral resource estimate reviewed and confirmed by Mercator for Big Ridge and supported by this technical report is tabulated below in Table 25-1. The estimate is based on a three-dimensional block model developed using Geovia – Surpac Version 6.1.1<sup>®</sup> deposit modeling software and a matrix size of 10m (X) by 5m (Z) by 3m (Y). Grade interpolation utilized multiple pass ordinary kriging methodology with an inverse distance squared check model used for validation. Classification of the resource followed the approach used in the previous NI 43-101 mineral resource estimate and was based primarily on interpolation pass number, distance to the closest informing assay composite and kriged variance. The 3 g/t gold cut-off value used is

substantially higher than cut off values of previous HBGP mineral resource estimates that were focused on optimization of open pit mining scenarios. Current mineral resources are considered to have reasonable prospects for eventual economic extraction based on application of underground mining methods such as long hole stoping, historical gold recovery levels that range between 80% and 91% percent for past production (86% for Coastal Gold testing) and a long-term gold price of US\$1200 per ounce. This estimate of mineral resources may be materially affected by environmental, permitting, legal, title, taxation, socio-political, metal pricing, marketing, or other relevant issues.

**Table 25.1: Hope Brook Deposit Mineral Resource Estimate - Effective April 6<sup>th</sup>, 2021**

Gold Grade Cut-off (g/t)	Resource Category	Round Tonnes (Rounded)	Gold Grade (g/t)	Gold Ounces (Rounded)
3.00 g/t	Indicated	5,500,000	4.77	844,000
	Inferred	836,000	4.11	110,000

Notes:

1. Includes only Mine Zone and 240 Zone areas
2. The above mineral resource estimate is based on a partial percentage block model with dike material removed. Dike percent is estimated at 18% for the Mine Zone and 0 % for the 240 Zone
3. Gold grades reflect application of domain-specific raw assay capping factors that range between 55g/t Au and 3 g/t Au
4. Rounding of tonnes may result in apparent differences between tonnes, grade and contained ounces
5. Mineral resources that are not mineral reserves do not have demonstrated economic viability. The estimate of mineral resources may be materially affected by environmental permitting, legal, title, taxation, sociopolitical, metal pricing, marketing, or other relevant issues
6. The gold cut-off value of 3.00 g/t reflects reasonable prospects for eventual economic extraction based on application of underground mining methods such as long hole stoping, historical gold recovery levels that range between 80% and 91% percent for past production (86% for Coastal Gold testing) and a long term gold price of US\$1200 per ounce

For comparative purposes, tonnage and gold grades at 2.0 g/t, 2.5 g/t and 3.0 g/t gold cut-off values are tabulated below in Table 25-2. This tabulation does not constitute part of the mineral resource statement presented above and is provided for purposes of sensitivity assessment only.

**Table 25.2: Global Tonnage and Gold Grade Figures at Differing Gold Cut-off Values**

Resource Category	Gold Grade Cut-off (g/t)	Tonnes (Rounded)	Gold Grade (g/t)	Gold (Oz) (Rounded)
Indicated	2.0	8,086,000	4.06	1,055,000
Inferred	2.0	1,185,000	3.63	138,000
Indicated	2.5	6,919,000	4.37	971,000
Inferred	2.5	995,000	3.89	124,000
Indicated	3.0	5,500,000	4.77	844,000
Inferred	3.0	836,000	4.11	110,000

There is a possible copper credit associated with the Hope Brook deposit. This was not quantified for Big Ridge or previously for First Mining because a sufficiently comprehensive database to support a mineral resource estimate for copper is not available at present. The possible copper credit assertion is based on historical government records showing that Royal Oak produced a saleable Cu concentrate.

### **25.3 Future Deposit Assessment and Property Exploration Requirements**

Current resource inventories of 844,000 gold ounces in the Indicated category and 110,000 gold ounces in the Inferred category are considered by the authors to be sufficient to warrant completion of a PEA of their potential to support an underground mining operation. However, definition of at least 200,000 additional resource inventory ounces that meet an underground mining cut-off value would add significantly to any future PEA process through extension of potential mine life. Mercator favors this approach for the project.

The desired increase in gold resource inventory can be addressed through upgrading of existing Inferred bedrock and tailings resources through infill drilling in some near-cut-off grade areas of the current bedrock resource model and through testing of existing resource expansion opportunities that have already been identified for existing bedrock and tailings deposit mineral resources. Where possible, Mercator has concluded that such work should be planned to maximize definition of Indicated category mineral resources available to support a PEA and, if warranted, a future Pre-Feasibility study. In addition to resource expansion work, further metallurgical, mafic sorting and geotechnical studies will be required to support a future Pre-Feasibility level project assessment. It is assumed that confirmation of applicability of mafic sorting technology and processing will significantly impact any PEA or Pre-Feasibility study. On this basis, it is concluded that a program addressing this aspect of the project should be undertaken prior to any detailed economic assessments.

Completion of systematic property exploration programs on the company's large exploration holding at Hope Brook is required but has not been addressed to a significant degree to date. Good exploration targets occur along strike from the Mine Zone and 240 Zone and also at depth within the main AAZ. In addition, limited exploration work to date by Coastal Gold has confirmed presence and character of historically documented gold occurrences elsewhere on the property. The most prominent historical gold occurrences are Old Man's Pond, Philips Brook and Cross Gulch prospects. In addition, exploration potential has been confirmed on the company's Ironbound Hill property, located approximately 25 km northeast of the Hope Brook deposit, where high sulphidation, aluminous alteration has been documented in bedrock sequences believed to be of the same age and association as those that host the Hope Brook deposit. Exposures of the Roti Intrusive Suite that is related to aluminous alteration and gold mineralization at Hope Brook have also been identified on the property. However, economically significant levels of bedrock gold mineralization have not been discovered to date at this location. This property requires further detailed assessment.

Based on review of exploration information available to date, the authors have concluded that First Mining's large exploration holding that comprises the HBGP away from the existing resource estimate areas warrants systematic future assessment of associated gold potential. This work should be phased to first make maximum use of compiled historical exploration results. It should be followed by a detailed assessment by a professional geophysicist of the geophysical characteristics of all mineralized settings to support selection of the best, modern, high resolution airborne geophysical survey system that could be deployed over the entire exploration holding. Consideration of magnetic, electromagnetic and radiometric options (possibly in combination) is recommended. The purpose of such surveying would be to identify exploration targets that are currently blind due to their depth below the bedrock surface or to overburden cover. Targets generated from these programs could be followed up by ground geophysical surveys designed by a professional geophysicist, such as Induced Polarization surveying, plus whole rock and till geochemistry programs, detailed geological mapping and prospecting. Highest

priority targets defined by combined results of these programs would form targets for core drilling follow-up.

#### **25.4 Project Risks**

The HBGP is subject to various project risks. Prominent among these are: (1) metal price fluctuations, (2) potential regulatory challenges with respect to future environmental permitting of the operating site or proposed access road, and (3) identification of geotechnical issues that may significantly affect, or prevent, future underground production from mineral reserves defined in close proximity to existing underground mine workings, and (4) inconsistency between actual bedrock tonnages and gold grades with respect to the mineral resource estimate and its supporting model. All of these factors must be progressively addressed on an ongoing basis to minimize and manage potential project impact.



## 26.0 Recommendations

### 26.1 Introduction

A two-phase exploration program totaling CDN \$3.69 million is recommended, details of which appear below. The program will provide Big Ridge with a PEA for the HBGP based on updated mineral resource estimates for both bedrock and tailings deposits. It will also provide a timely decision point with respect to commitment to a subsequent Pre-Feasibility Study and ensure that existing exploration holdings are maintained in good standing.

### 26.2 Recommended Phase I Programs

A Phase I program of data compilation and reconnaissance surface exploration is recommended for the Ironbound Hill, Phillips Brook, Oldman Pond and Cross Gulch Prospects to assess their relative status as significant future exploration targets. In addition, a property-scale exploration program consisting of a modern, high resolution airborne geophysical survey selected by a professional geophysicist based on mineralized zone characteristics is recommended to generate additional exploration targets and to maintain the large Big Ridge exploration holding in good standing. Continuation of mafic sorting studies is also recommended, along with continuation of baseline environmental studies. Phase I exploration expenditures are estimated to total CDN \$550,000 and are presented below in Table 26.1.

**Table 26.1: Phase I Program Budget Estimate.**

Phase I Program Component	Estimated Cost \$CDN
1. Desktop compilation followed by regional property exploration through high resolution airborne geophysical surveying and initial field follow up	\$400,000
2. Licence administration, renewal and advance royalty payments	\$75,000
3. Continuation of mafic sorting study and environmental baseline work	\$75,000
<b>Total</b>	<b>\$550,000</b>

### 26.3 Recommended Phase II Programs

The recommended Phase II work program consists of upgrading certain existing Inferred mineral resources in both bedrock and tailings deposit models to Indicated status, with this being accomplished through completion of additional in-fill core drilling (bedrock) and vibracore drilling (tailings) programs. The areas of bedrock resource upgrade drilling are located in the Mine Zone, 240 Zone and Connector Zone of the main deposit area. Tailings 1 and 2 deposits are the focus of recommended mineral resource upgrade drilling.

The resource upgrade component of recommended Phase II work is followed by completion of updated mineral resource estimates for both the bedrock and tailings deposits. These would form the basis of a recommended subsequent PEA. A requirement for additional core drilling is anticipated at this stage to support geotechnical, engineering, and metallurgical studies. The Phase II program also includes continued assessment of exploration opportunities defined on the entire exploration holding through Phase I programs, with this being addressed through core drilling plus geophysical, geological and geochemical survey programs appropriate to the targets.

Phase II program expenditures are estimated to total CDN \$3,140,000 and are presented below in Table 26-2. The cost estimate provided for the PEA is “order of magnitude” in nature only and recognizes the need for detailed geological, geotechnical, environmental, metallurgical and engineering program inputs. It includes assessment of bedrock deposits, tailings deposits and related construction aggregate potential. The PEA cost estimate in Table 26-2 does not reflect detailed scoping of costs specifically for the Hope Brook project.

**Table 26.2: Phase II Program Budget Estimate.**

<b>Phase II Program Component</b>	<b>Estimated Cost \$CDN</b>
1. Detailed data compilation plus pre-drilling Mine Zone and 240 Zone mapping and field support	\$120,000
2. 5250 meters Mine Zone core drilling and field support	\$1,350,000
3. 1850 meters 240 Zone core drilling and field support	\$481,000
4. 900 meters Connector Zone core drilling and field support	\$234,000
5. Tailings vibracore drilling and field support	\$125,000
6. Tailings metallurgical program	\$40,000
7. Mineral Resource estimate updates – bedrock and tailings deposits (including site visit)	\$140,000
8. Licence administration, legal fees, renewal and advance royalty payments	\$150,000
9. Preliminary Economic Assessment (including additional mafic sorting, metallurgical, environmental and preliminary engineering studies)	\$500,000
<b>Total</b>	<b>\$3,140,000</b>

## 27.0 References

**Amec (2018):** Hope Brook Access Road Environmental Assessment Registration Pursuant to the Newfoundland & Labrador Environmental Protection Act(Part X); registration report prepared for First Mining Gold Corp. by Amec Foster Wheeler Environment and Infrastructure, dated June 2018, 95 p.

**Arnold, R. W., and Rockel, E.R., 1986:** Second year assessment report on geological, geochemical and geophysical exploration, licence 2499 on claim blocks 3838-3840 in the Phillips Brook area, southern Newfoundland, NLDNR Assessment File110/208, 81 p.

**Arnold, R.W., 1986:** Geophysical and geochemical report on the Phillips Brook Project, Southwestern Newfoundland; claim block 3838, 3839 and 3840 by Mascot Gold Mines Limited on behalf of Dolphin Exploration Limited, NLDNR Assessment File 0110/208.

**Arribas, Jr. A., 1995:** Characteristics of high-sulfidation epithermal deposits, and their relation to magmatic fluid: *in* Magmas, fluids, and ore deposits, J.F.H. Thompson (editor). Mineralogical Association of Canada Short Course Volume 23. pp.419-454.

**Bannerjee, N. 2014:** Letter to Dr. B. Pearson, Coastal Gold Corp., from Dr. Neil Bannerjee, Associate Professor at Western University, dated July 10, 2013 and announcing results of a comprehensive geochemical study of Hope Brook gold deposit samples; 2 p.

**Burgeo Mines Limited, 1933:** NLDNR Assessment Report: 0110/02/1933 - Scanned image of Burgeo Mines Limited documents describing mining operations and project history; 11 p.

**Carter, C. J., 1985:** BP Resources Canada Limited, Selco Division, Chetwynd, Newfoundland Au deposit, ore reserve calculations, 1 and 2 g/tonne cut-off grades, unpublished internal BP Resources Canada Limited report prepared by Seltrust Engineering Limited, 128 p.

**Cavey, G and Kowalchuk, J., 1985:** First year assessment report on geological, geochemical and geophysical exploration for licence 2482 on claim blocks 3635-3638 and 3867-3870 in the La Poile Bay area, southwestern Newfoundland, NLDNR Assessment File 110/183, 58 p.

**Chorlton, L., 1978:** The Geology of the La Poile Map Area (110/9), Newfoundland, Newfoundland Department of Mines and Energy, Mineral Development Division, Report 78-5, 14 p.

**Chorlton, L., 1980:** The Geology of the La Poile River Area (110/16), Newfoundland, Newfoundland Department of Mines and Energy, Mineral Development Division, Report 80-3, 86 p.

**Cooper, J.R., 1954:** La Poile – Cinq Cerf Map Area, Newfoundland. Geological Survey of Canada Memoir 276, 62 p.

**Copeland, D., 2015:** Internal Coastal Gold Corporation Memorandum: Hope Brook Gold Project 2015-2016 Proposed Resource Definition Drilling and Exploration Program Regarding Peter Snout property geology and geochemistry, 10 p.

**Cormier, C., 1996a:** First year assessment report of prospecting and geochemistry on ground staked licences 4621, 4622, 4623, and 4624, Hope West Property, southwestern Newfoundland, NLDNR Assessment File 110/0338, 24 p.

**Cormier, C., 1996b:** Assessment report of Geology, Geochemistry, Geophysics and Diamond Drilling on the Cross Gulch Property, Licence 4216, (4<sup>th</sup> year), Licence 4481 (2<sup>nd</sup> year), NTS 110/16 and 11P13, for Royal Oak Mines Inc., NLDNR Assessment File 110/16 339, 117 p.

**Cormier, C., 1997:** Eleventh year assessment report on geological, geochemical and diamond drilling exploration for licence 2499 on claims 17633-17634 in the Phillips Brook area, on the southwest coast of Newfoundland, for Royal Oak Mines Inc, NLDNR Assessment File 110/0340, 1997, 59 p.

**Cullen, M. P., 2010:** Technical Report on the Hope Brook Gold Project, Newfoundland and Labrador, Canada; NI43-101 Technical Report prepared for Castillian Resources Corp., Effective August 11, 2010, by Mercator Geological Services Limited, 141p.

**Cullen, M. P., 2015a:** 2015 Mineral Resource Estimate Technical Report, Hope Brook Gold Project, Newfoundland and Labrador, Canada; NI43-101 Technical Report prepared for Coastal Gold Corp., Effective January 12<sup>th</sup>, 2015, by Mercator Geological Services Limited, 245p.

**Cullen, M. P., 2015b:** Mineral Resource Estimate Technical Report For The Hope Brook Gold Project, Newfoundland and Labrador, Canada; NI43-101 Technical Report prepared for First Mining Finance Corp., Effective January 12<sup>th</sup>, 2015, report date November 20<sup>th</sup>, 2015, by Mercator Geological Services Limited, 245p.

**Dearin, C., 1989:** Fifth year assessment report on geological and geochemical exploration for licence 2506 on claim block 3650 in the Old Man Pond Brook area, southern Newfoundland. Newfoundland and Labrador Geological Survey, NLDNR Assessment File 110/09/0267, 1989, 15 p.

**Deptuck, R., 1991:** Hope Brook block modeling process, unpublished internal Hope Brook Au Inc. memorandum dated September 30, 1991, 9 p.

**Desautels, P., Melnyk, J. and Cullen, M., 2012a:** Mineral Resource Estimate Technical Report, Hope Brook Gold Project, Newfoundland and Labrador, Canada” Effective Date: February 14<sup>th</sup>, 2012; NI43-101 Technical Report prepared for Castillian Resources Corp. by AGP Mining Consultants Inc. and Mercator Geological Services Limited, 248p.

**Desautels, P., Melnyk, J. and Cullen, M., 2012b: Updated** Mineral Resource Estimate Technical Report, Hope Brook Gold Project, Newfoundland and Labrador, Canada” Effective Date: October 1<sup>st</sup>, 2012; NI43-101 Technical Report prepared for Castillian Resources Corp. by AGP Mining Consultants Inc. and Mercator Geological Services Limited, 271p.

**Desautels, P., Melnyk, J. and Cullen, M., 2014: 2013 Mineral resource Estimate** Technical Report, Hope Brook Gold Project, Newfoundland and Labrador, Canada, Effective Date: December 4, 2013, report date January 20, 2014; NI43-101 Technical Report prepared for Castillian Resources Corp. by AGP Mining Consultants Inc. and Mercator Geological Services Limited, 259p.

**Dimmell, P., 1972:** Report on 1972 field work in the La Poile Concession area, Newfoundland for Noranda Exploration Company Limited; Newfoundland and Labrador Geological Survey, Assessment File 11O/0057, 1972; 39 p.

**Dimmell, P., 1973:** Report on 1972 field work in the La Poile Concession area, Newfoundland for Noranda Exploration Company Limited; Newfoundland and Labrador Geological Survey, Assessment File 11O/0052, 1973; 23 p.

**Dube, B, Dunning, G and Lauziere, K., 1998:** Geology of the Hope Brook mine, Newfoundland, Canada: a preserved late Proterozoic high-sulfidation epithermal Au deposit and its implications for exploration. *Economic Geology*, vol. 93, 1998, pp. 405-436.

**Dunning, G. and O'Brien, S.J., 1989:** Late Proterozoic to early Paleozoic crust in the Hermitage Flexure, Newfoundland, Appalachians: U-Pb ages and tectonic significance; *Geology*, v. 17 pp. 548-551.

**Feiss, P.G., Vance, R.K., and Wesolowski, D.J., 1993:** Volcanic rock-hosted gold and base-metal mineralization associated with Neoproterozoic-Early Paleozoic backarc extension in the Carolina terrane, southern Appalachian Piedmont: *Geology*, v. 21, pp. 439-442.

**Fracflow, 2011:** Final Report, Screening-Level Assessment of Baseline Environmental Conditions at the Hope Brook Project Site; unpublished report prepared by Fracflow Consultants Inc. for Castillian Resources Corp.

**Gaunt, D., 1987:** Geological and geophysical report on the Phillips Brook Project, southwestern Newfoundland; claim blocks 3838, 3839 and 3840; by Mascot Gold Mines Limited on behalf of Dolphin Explorations Limited. NLDNR Assessment File 0110/223.

**Gillon, K., A., Spence, W., H., Duckett, R., P., and Benson, C.J., 1995:** Geology of the Ridgeway deposits, Ridgeway, South Carolina, in Selected Mineral Deposits of the Gulf Coast and Southeastern United States, Part 2, Au Deposits of the Carolina Slate Belt; editor D.E. Crowe, Society of Economic Geologists, Guidebook Series, Volume 24,. Geological Society of America, pp. 53-87.

**Hayward, N., 1992:** Controls on syntectonic replacement mineralization on parasitic antiforms, Haile Gold Mine, Carolina Slate Belt, *Economic geology*, Vol. 87, pp.91-112.

**HBOG Mining Ltd., 1979:** Hudson Bay Oil and Gas Company report, NLDNR Assessment File Assessment File 110/09/0359, 1979, 7 p.



**House, S., 2009:** Assessment report on airborne geophysics, mapping, prospecting, and rock /channel sampling on Licences 10734m (6<sup>th</sup> year), 10735M (6<sup>th</sup> year), 1130M (6<sup>th</sup> year), 14439M (1<sup>st</sup> year), 14514M (1<sup>st</sup> year), 14520M, (1<sup>st</sup> year), 14549M to 14515559M (1<sup>st</sup> year), 14561M to 14564M (1<sup>st</sup> year), and 15372M (1<sup>st</sup> year), for the Hope Brook Property, southwest Newfoundland, for Benton Resources Corp. and Quinlan Prospecting, Quest Inc. and Stares Prospecting, NLDNR Assessment Report, 18 p.

**Hutchings, C. And Sheppard, B., 1988:** Fourth year assessment report on trenching and geochemical exploration for licence 2499 on claim blocks 3838-3840, in the Phillips Brook area, south coast of Newfoundland, NLDNR Assessment File 110/231, 41 p.

**Huard, A. 1990:** Epithermal alteration and Au mineralization late Precambrian volcanic rocks on the northern Burin Peninsula, southeast Newfoundland, Canada, unpublished M. Sc., thesis, Memorial University of Newfoundland, 273 p.

**Huard, A., and O'Driscoll, C.F., 1986:** Epithermal gold mineralization in late Precambrian volcanic rocks on the Burin Peninsula, in Current Research, Newfoundland Department of Mines and Energy, Mineral Development Division, Report 86-1, pp. 65-78.

**Jacobs, W and Dearin, C., 1990:** Geological Report on the Chetwynd Group One Claims, Grand Bruit, Newfoundland. Long Range Resources, NLDNR Assessment File, 12 p.

**Keppie, J. D., and Dallmeyer, R. D., 1989:** Tectonic map of Pre-Mesozoic terranes in Circum-Atlantic Phanerozoic orogens. Nova Scotia Department of Natural Resources, Halifax, scale 1:5000000.

**Kilbourne, M.W., 1985:** Nature and significance of the quartz-andalusite-pyrophyllite zone Chetwynd Gold prospect, southwestern Newfoundland. Unpublished B.Sc. thesis, University of Western Ontario, 73 p.

**Kowalchuk, J., 1985:** First Year assessment report on geological exploration for licence 248 on claim block 3641 in Phillips Brook area, southwestern Newfoundland; Orequest Consultants for Dolphin Explorations Limited, NLDNR Assessment File 0110/16/188.

**Lendrum, S., 1997:** Assessment Report of Diamond Drilling on The Cross Gulch Property, Licence 4216 (5<sup>th</sup> Year) NTS 110/16 for Royal Oak Mines Inc., NLDNR Assessment Report 0110/16/342, 46 p.

**MacGillivray, G. and Willet, B., 1988:** Sixth year assessment report on diamond drilling, Exploration Licence 3189 on claim block 2086, Hope Brook area, Newfoundland, for Hope Brook Gold Inc., NLDNR Assessment File 0110/09/146, 813 p.

**McWilliams, I., 1983a:** Assessment report on geological, geophysical and geochemical surveys for Licence 12306, on Claims 13822-13833, Cinq Cerf River area, Newfoundland, by Selco Incorporated and Ionex Ltd., NLDNR Assessment Report File 110/09/142, 23 p.

**McWilliams, I., 1983b:** Assessment report - Drilling Programs Licence 2400, Reference Map 1109, Selco- A Division of BP Exploration Canada Limited; NLDNR Assessment File 0110/09/146, 57 p.

**Mc Williams, I., and Harris, J., 1984:** Assessment report on drilling for the Chetwynd Project on Licence 2400, Hope Brook area, southern Newfoundland, for Selco Division –BP Resources Canada Limited, NLDNR Assessment File 0110/09/160, 598 p.

**McWilliams, I., 1986:** Assessment report on 1985 drilling for the Chetwynd Project, Licence 2650 on property in the Hope Brook area, southwestern Newfoundland for Selco Division-BP Resources Canada Limited, NLDNR Assessment File 0110/09/194, 318 p.

**McWilliams, I., 1987:** Hope Brook Gold Inc. 1986 Report on Diamond Drilling, Licence 2830 (1109), Hope Brook, NLDNR Assessment File 0110/09/215, 1437 p.

**McKenzie, C.B., 1985:** Selco-BP Resources Canada Ltd., Report on Diamond Drilling, Licence 2400, Chetwynd Property, Newfoundland; Department of Natural Resources Assessment File 01109 (170), 627 p.

**McKenzie, C.B., 1986:** Geology and Mineralization of the Chetwynd Deposit, Southwestern Newfoundland, Canada: In Proceedings of Gold 86, An International Symposium on the Geology of Gold, A.J. Macdonald, ed., pp. 137-148.

**Mirza, R. and Riaz, J. 2011:** Titan-24 DC & IP Survey Geophysical Report, Hope Brook Gold Project, Newfoundland, Canada; unpublished report prepared by Quantec Geoscience Ltd. for Castillian Resources Corp., 195p.

**Murphy, J.B., Keppie J.D., Dostal J., Waldron, J, and Cude, M.P., 1996:** Geochemical and isotopic characteristics of Early Silurian clastic sequences in Antigonish, Highlands, Nova Scotia, Canada: constraints on the accretion of Avalonia in the Appalachian-Caledonide Orogen. Canadian Journal of Earth Sciences, V. 33, pp. 379-388.

**Nance, R., and Thompson, M.D., 1996:** Avalonian and related terranes of the circum-Atlantic: an introduction, *in* Avalonian and Related Terranes of the Circum-North Atlantic, Nance, R., and Thompson, M., eds., Geological Society of America, Special Paper 304, pp.1-7.

**NLDNR Assessment File 0110/213 E:** 1986 BP Resources Canada Ltd. Environmental Registration Report for Hope Brook Project, 32 p.

**NLDNR Mineral Occurrence Report: 0110/09/Au 003):** Mineral occurrence report on Hope Brook Mineral occurrence by NLDNR, 26 p.

**O'Brien, S.J., Wardle, R.J., and King, A.F., 1983:** The Avalon Zone: A Pan African terrane in the Appalachian orogen of Canada; *Geological Journal*, Volume 18, pp. 195-222.

**O. Brien, B. H., 1988:** Relationship of phyllite, schist and gneiss in the La Poile Bay-Roti-Bay area (parts of 1109 and 11016), southwestern Newfoundland, Newfoundland Department of Mines and Energy Report 88-1, pp.109-125.

**O. Brien, B. H., 1989:** Summary of the geology between La Poile Bay and Couteau Bay, (1109 and 11016), southwestern Newfoundland,; Newfoundland Department of Mines and Energy Report 89-1, pp.105-119.

**O'Brien, B.H. and O'Brien, S.J., 1990:** Re-Investigation and re-interpretation of the Silurian La Poile Group of southwestern Newfoundland, in *Current Research*, Newfoundland Department of Mines and Energy, Geological Surveys Branch, Report 90-1, pp.305-316.

**O'Brien, B.H., O'Brien, S.J., and Dunning, G.R., 1991:** Silurian cover, Late Precambrian-Early Ordovician basement, and the chronology of Silurian orogenesis in the Hermitage Flexure Newfoundland Appalachians): *American Journal of Science*, v. 291, pp. 760-799.

**O'Brien, S.J., Dube, D, O'Driscoll, C.F., and J. Mills, 1998:** Geological setting of gold mineralization and related hydrothermal alteration in late Neo-Proterozoic (post-640 ma) Avalonian rocks of Newfoundland, with review of coeval gold deposits elsewhere in the Appalachian Avalonian belt, NL Department of Mines and Energy, Geological Survey, Report 98-1, pp. 93-124.

**Pouliot, G., 1957:** Geology and mineral deposits of the Cinq Cerf River area, Newfoundland, NL Department of NLDNR Assessment File NFLD/0158,1959, 46 p.

**Prior, J.W., 1968:** Geophysical report on the La Poile Bay area property, Newfoundland, by Hunttec Limited for O'Brien Gold Mines Limited; NL Department of Natural Resources Geofile 0110/0034, 65 p.

**Robert, F., Poulsen, K.H., and Dubé, B., 1997:** Gold deposits and their geological classification. *In* Gubins, A.G., (ed), Proceedings of Exploration 97: Fourth International Conference on Mineral Exploration, Toronto September 1997, pp. 209-219.

**Romberger, S.B., 1986:** Disseminated Gold Deposits: Geoscience Canada, v. 13, pp. 23-34.

**Roth, J., 1987:** Test IP/Resistivity Survey, Phillips Brook Project, Newfoundland, by MPH Consulting Limited on the behalf of Dolphin Explorations Limited, NLDNR Assessment File 0110/224.

**Saunders, P.D., 1989a:** Report on diamond drilling of the Butterfly Pond showing, Phillips Brook, Newfoundland; by J. Tuach Consultants Inc., on behalf of Dolphin Explorations Limited, NLDNR Assessment File 0110/263, 67 p.

**Saunders, P.D., 1989b:** Report on till and soil geochemistry and prospecting, Phillips Brook extension, southwest Newfoundland, by J. Tuach Consultants Inc., on behalf of Dolphin Explorations Limited, NLDNR Assessment File 0110/263, 23 p.

**Sillitoe, R.H., 1991:** Intrusion-related gold deposits, in Foster, R.P., ed., Gold Metallogeny and Exploration: London, Blackie, pp. 165-209.

**Sillitoe, R.H., 1989:** Au Deposits in Western Pacific Island Arcs: The Magmatic Connection, Economic Geology Monograph 6: The geology of gold deposits: the perspective in 1988", pp. 274-291.

**Snider, J., Marek, J., Finch, A., Gouchnour, L. and T. Drelick, 2012:** NI 43-101 Technical Report on the Haile Gold Mine Project, Lancaster County, South Carolina, Prepared for Romarco Minerals Inc. by Gustavson Associates, LLC, 151p.

**Spence, W. H., Worthington, J. E., Jones, E. M., and Kiff, L. T., 1980:** Origin of the Au mineralization at the Haile Au mine, Lancaster County, South Carolina, Mining Engineering, Vol. 32, pp.70-73.

**Stewart, P.W., 1992:** The origin of the Hope Brook Mine, Newfoundland, a Shear-Zone-Hosted Acid Sulphate Gold Deposit. Unpublished Ph. D. Thesis, University of Western Ontario, London, Ontario, 398 p.

**Swinden, H.S., 1984:** The Chetwynd Prospect, Southwestern Newfoundland. Mineral Development Division, Department of Mines and Energy, Government of Newfoundland and Labrador. Open File (110/09/148). 10 p.

**Thompson, J.F.H., Lessman, J., and Thompson, A.J.B., 1986:** The Temora gold-silver deposit: A newly recognized style of high sulfur mineralization in the lower Paleozoic of Australia: Economic Geology, v. 81, pp. 732-738.

**Thompson, J.P., 1985:** Geological Report on the Phillips Brook Project, Southwestern Newfoundland. Claim block 3838, 3839 and 3840; Mascot Gold Mines Limited on the behalf of Dolphin Explorations Limited. NLDNR Assessment File 0110/182, 63 p.

**Walker, S., 1985:** First Year Assessment Report, Airborne Survey, Prospecting, Geology, Geophysics, Geochemistry and Diamond Drilling on the Chetwynd Gold Group, Central Claims, Licences 2491 and 2532, NTS 11016 and 11P/13, NLDNR Assessment File 110/16/178, 204 p.

**Walker, S., 1986:** Second Year Assessment Report, Geology, Geophysics, and Prospecting on the Chetwynd Gold Group, Southwest Newfoundland, Licences 2491 and 2532, NTS 11O16 and 11P/13, NLDNR Assessment File NFLD-1535, 31 p.

**Walker, S., 1987:** Third year Assessment Report, Diamond Drilling, on the Chetwynd Gold Group, Southwest Newfoundland, Licence 2885, NTS 11O/16 and 11P/13, NLDNR Assessment File NFLD-1685, 68 p.

**Wells, S., 1988:** Fourth Year Assessment Report, 1988 Chetwynd Gold Project on Licence 2885, La Poile Region, Newfoundland, NLDNR Assessment File 11O/16/238, 35 p.

**Wallace, J., 1988:** Geological report on the Chetwynd Area Group 1 Claims, La Poile Bay, La Poile –Burgeo District, Newfoundland, Ground Staked Licences 2482, 3128, 2506, for Varna Gold Inc., NLDNR Assessment File 011O/182, 264 p.

**White, N.C., and Hedenquist, J.W., 1995:** Epithermal Gold deposits: styles, characteristics and exploration: Society of Economic Geologists Newsletter, No. 23, pp. 9-13.

**Woods, G., 1984:** Chetwynd Project, results of detailed mapping around the gold mineralization; unpublished BP-Selco internal report.

**Yule, A., 1989:** The Hope Brook deposit, Newfoundland, Canada: Surface geology, representative lithogeochemistry, and styles of hydrothermal alteration; unpublished M.Sc. thesis, Dalhousie University, 249 p.

**Yule, A., McKenzie, C.B., and Zentilli, M., 1990:** Hope Brook, a new Appalachian gold deposit in Newfoundland, Canada, and the significance of hydrothermally altered mafic dikes, *Chronique de la Recherche Minière*, no. 498, pp. 29-42.

## **28.0 Statement of Qualifications**



**CERTIFICATE OF AUTHOR**

I, Michael P. Cullen, P. Geo. do hereby certify that:

1. I reside in Halifax, Nova Scotia, Canada
2. I am currently employed as Chief Geologist with:  
  
Mercator Geological Services Limited  
65 Queen St Dartmouth,  
Nova Scotia, Canada B2Y 1G4
3. I received a Masters Degree in Science (Geology) from Dalhousie University in 1984 and a Bachelor of Science Degree (Honours, Geology) in 1980 from Mount Allison University.
4. I am a member in good standing of the Association of Professional Geoscientists of Nova Scotia (Registration Number 064), the Association of Professional Engineers and Geoscientists of Newfoundland and Labrador (Member Number 05058) and Association of Professional Engineers and Geoscientists of New Brunswick, (Registration Number L4333).
5. I have worked as a geologist in Canada and internationally since graduation.
6. I have read the definition of “qualified person” set out in National Instrument 43-101 (“NI 43-101”) and certify that by reason of my education, affiliation with a professional association (as defined in NI 43-101) and past relevant work experience, I fulfill the requirements to be a “qualified person” for the purposes of NI 43-101.
7. I am one of the qualified persons responsible for preparation of the Technical Report titled “NI 43-101 Technical Report For The Hope Brook Gold Project, Newfoundland and Labrador, Canada, Effective Date: April 6<sup>th</sup>, 2021” prepared for Big Ridge Gold Corp. by Mercator Geological Services Limited. I am responsible for report sections 1 (except 1.11.1, 1.11.2, 1.13, 1.17), 2 (except 2.6), 3 to 13 (except 12.1 and 12.2), 15 to 19, 21 to 28 (except 25.2) and take overall responsibility for the report.
8. My relevant experience with respect to this project includes extensive professional experience with respect to geology, mineral deposits and exploration activities in the Northern Appalachians and elsewhere. I have specific experience in assessment of epithermal style precious metal deposits in Canada, the western USA and in South America. I was also employed as a contract geologist in 1984-85 by BP Resources Canada Ltd. on the Hope Brook project and during that period participated in various exploration programs carried out on

the Hope Brook property and other exploration properties in the area. I have supervised all work carried out on the Hope Brook deposit by Mercator Geological Services Limited since 2010.

9. I have had recent involvement with the property that is the subject of the Technical Report as the author of the previous NI 43-101 technical report for the Hope Brook deposit prepared by Mercator Geological Services Limited for First Mining Gold Corp. that has an effective date of January 12<sup>th</sup>, 2015. I was also author of an earlier NI 43-101 Technical Report for the deposit prepared for Coastal Gold Corp. that has an effective date of January 12, 2015 and a co-author of three previous Technical Reports by AGP Mining Consultants Inc. that have effective dates of February 14<sup>th</sup>, 2012, October 1<sup>st</sup>, 2012 and December 4<sup>th</sup>, 2013. I authored an additional NI 43-101 property Technical Report on the property for Castillian Resources Corp. that has an effective date of August 11, 2010.
10. I last visited the Hope Brook property on August 20<sup>th</sup>, 2020 on behalf of First Mining but have not visited it on behalf of Big Ridge Gold Corp.
11. I am independent of the Issuer, applying all of the tests in section 1.5 of NI 43-101 and NI 43-101 Companion Policy Section 3.5
12. I have read NI 43-101 and the parts of this Technical Report for which I am responsible have been prepared in compliance with NI 43-101 and Form 43-101F1.
13. As of the date of this Certificate, to my knowledge, information and belief, the sections of this Technical Report for which I am responsible contain all scientific and technical information that is required to be disclosed to make this report not misleading.

Signed, sealed and dated this 6<sup>th</sup> day of May 2021.

*“original signed and stamped by”*

---

Michael P. Cullen, P. Geo.

---

**CERTIFICATE OF AUTHOR**

I, Matthew D. Harrington, P. Geo., do hereby certify that:

1. I reside in Halifax, Nova Scotia, Canada
2. I am currently employed as Senior Resource Geologist with:  
Mercator Geological Services Limited  
65 Queen St Dartmouth,  
Nova Scotia, Canada B2Y 1GA
3. I received a Bachelor of Science degree (Honours, Geology) in 2004 from Dalhousie University.
3. I am a member in good standing of the Association of Professional Geoscientists of Nova Scotia (Registration Number 0254) and the Association of Professional Engineers and Geoscientists of Newfoundland and Labrador (Member Number 09541).
4. I have worked as a geologist in Canada and internationally since graduation.
5. I have read the definition of “qualified person” set out in National Instrument 43-101 (“NI 43-101”) and certify that by reason of my education, affiliation with a professional association (as defined in NI 43-101) and past relevant work experience, I fulfill the requirements to be a “qualified person” for the purposes of NI 43-101.
6. I am one of the qualified persons responsible for preparation of the Technical Report titled “NI 43-101 Technical Report For The Hope Brook Gold Project, Newfoundland and Labrador, Canada, Effective Date: April 6<sup>th</sup>, 2021” prepared for Big Ridge Gold Corp by Mercator Geological Services Limited. I am responsible for report sections 1.11.1, 1.13, 1.17, 12.1, 14, and 25.2.
7. My relevant experience with respect to this project includes extensive professional experience with respect to geology, mineral deposits and exploration activities in the Northern Appalachians and elsewhere. I have specific experience in assessment of epithermal style precious metal deposits in eastern Canada, South America and Mexico. I have participated in numerous NI 43-101 mineral resource estimation programs carried out on the Hope Brook deposit since 2013.
8. I have had recent involvement with the property that is the subject of the Technical Report as a mineral resource modeller, supervised by Michael Cullen, P. Geo., contributing to the previous NI 43-101 Technical Report for the Hope Brook deposit prepared by Mercator Geological Services Limited for First Mining Gold Corp. that has an

effective date of January 12<sup>th</sup>, 2015. I performed a similar roles under the same supervision for an earlier NI 43-101 technical report for the deposit prepared for Coastal Gold Corp. that has an effective date of January 12, 2015 and also for three previous Technical Reports by AGP Mining Consultants Inc. that have effective dates of February 14<sup>th</sup>, 2012, October 1<sup>st</sup>, 2012 and December 4<sup>th</sup>, 2013.

9. I have not visited the Hope Brook property.
10. I am independent of the Issuer, applying all of the tests in section 1.5 of NI 43-101 and NI 43-101 Companion Policy Section 3.5
11. I have read NI 43-101 and the parts of this Technical Report for which I am responsible have been prepared in compliance with NI 43-101 and Form 43-101F1.
12. As of the date of this Certificate, to my knowledge, information and belief, the sections of this Technical Report for which I am responsible contain all scientific and technical information that is required to be disclosed to make this report not misleading.

Signed, sealed and dated this 6<sup>th</sup> day of May 2021.

*“original signed and stamped by”*

---

Matthew Harrington, P. Geo.

**CERTIFICATE OF AUTHOR**

I, Jeffrey T. Burke. do hereby certify that:

1. I reside in Dartmouth, Nova Scotia, Canada
2. I am an independent geological consultant and also owner of  
eGeo Geological and Environmental Consulting Services, Cole Harbour, Nova Scotia,  
Canada
3. I received a Bachelor of Science Degree (Geology) from St. Mary's University in 2011.
4. I am a member in good standing of the Association of Professional Geoscientists of Nova Scotia (Registration Number 0249) and the Association of Professional Engineers and Geoscientists of Newfoundland and Labrador (Member Number 09198). I am also a member of Eco Canada holding an Environmental professional (EP) designation specializing in water quality, environmental assessment and reclamation.
5. I have worked as a geologist in Canada and internationally since graduation.
6. I have read the definition of "qualified person" set out in National Instrument 43-101 ("NI 43-101") and certify that by reason of my education, affiliation with a professional association (as defined in NI 43-101) and past relevant work experience, I fulfill the requirements to be a "qualified person" for the purposes of NI 43-101.
7. I am one of the qualified persons responsible for preparation of the Technical Report titled "NI 43-101 Technical Report for The Hope Brook Gold Project, Newfoundland and Labrador, Canada, Effective Date: April 6<sup>th</sup>, 2021" prepared for Big Ridge Gold Corp by Mercator Geological Services Limited. I am responsible for report sections 1.11.2, 2.6, 12.2 and 20.
8. My relevant experience with respect to this project includes over 8 years professional experience with respect to geology, mineral deposits and exploration activities specific to the Northern Appalachians and elsewhere, particularly in the assessment of epithermal style precious metal deposits. I was also employed as a geologist by Mercator and Coastal Gold at the Hope Brook project from 2011 to 2014 participating in various exploration programs carried out on the property. I have several years experience in managing projects for various epithermal targets in the Avalon Terrane within Nova Scotia, New Brunswick and Newfoundland and Labrador.

9. My relevant experience with respect to assessing environmental liabilities at this project include 5 years participating in various baseline studies, environmental risk assessments, hydrogeological and water quality assessments, contaminated sites management, and reclamation planning and liability cost estimating programs for currently producing, historical and post mining operations in Northern and Atlantic Canada.
10. I last visited the Hope Brook property on January 23<sup>rd</sup> and 24<sup>th</sup>, 2021 on behalf of Big Ridge Gold Corp.
11. I am independent of the Issuer, applying all of the tests in section 1.5 of NI 43-101 and NI 43-101 Companion Policy Section 3.5
12. I have read NI 43-101 and the parts of this Technical Report for which I am responsible have been prepared in compliance with NI 43-101 and Form 43-101F1.
13. As of the date of this Certificate, to my knowledge, information and belief, the sections of this Technical Report for which I am responsible contain all scientific and technical information that is required to be disclosed to make this report not misleading.

Signed, sealed and dated this 6<sup>th</sup> day of May 2021.

*“original signed and stamped by”*

---

Jeffrey T. Burke, P. Geo.

## **Appendix I**

### **Support Documents**

#### **Stewart McKelvey Opinion On Mineral Titles**

May 20, 2021

Big Ridge Gold Corp.  
1 Yonge Street, Suite 1801  
Toronto, ON M5E 1W7

First Mining Gold Corp  
Suite 2070 - 1188 West Georgia Street  
Vancouver, BC  
Canada V6E 4A2

Robert K. Mason  
Mason Law  
106b Claremont Street  
Toronto, Ontario  
M6J 2M5

Dear Sirs/Mesdames:

**Re: Coastal Gold Corp.  
Proposed Earn-In by Big Ridge Gold Corp.  
Title Opinion**

This opinion is being delivered to you in connection with a proposed earn-in by Big Ridge Gold Corp. into certain Newfoundland and Labrador mineral licences owned by Coastal Gold Corp. (the "**Corporation**") and may not be relied upon by any other person or in connection with any other filing or transaction, or quoted or referred to in any other documents, without our prior written consent but may be relied upon by the addressees in respect of the purpose for which it has been provided.

We are qualified to practice law within the Province of Newfoundland and Labrador (the "**Province**") and have acted as Newfoundland and Labrador counsel to the Corporation in connection with the title to certain mineral rights and interests in the Province.

### **Examinations**

For the purposes of our opinions, we have examined originals or copies, certified or otherwise, identified to our satisfaction, of such public and corporate records, certificates, instruments and other documents and we have conducted such searches, including searches at:

- (a) the transfer and mortgage registry maintained by the Mineral Claims Recorder for the Province ("**MCR**");
- (b) the confidential agreements registry (the "**Confidential Register**") maintained by the MCR;
- (c) the Registry of Deeds and Companies for the Province;
- (d) the Registry of Mechanics' Liens for the Province;
- (e) the Judgment Enforcement Registry maintained by the Office of the High Sheriff of Newfoundland and Labrador;



- (f) the Personal Property Registry for the Province; and
- (g) the Department of Finance, Tax Administration Division for the Province.

These searches are effective to the dates outlined in Schedule "A" hereto and we have assumed such results continue to be accurate as of the date hereof. We have also considered such questions of law as we have deemed relevant and necessary as a basis for the opinions hereinafter expressed.

### **Assumptions and Reliances**

In such examinations, we have assumed and relied upon:

- (a) the genuineness of all signatures, the legal capacity of individuals signing any documents, the authenticity of all documents submitted to us as originals and the conformity to originals of all documents submitted to us as notarial, certified, photostatic or telecopied copies thereof;
- (b) that all documents registered in the MCR are duly authorized, executed and delivered and are binding upon the parties thereto and enforceable in accordance with their terms;
- (c) to the extent that any certificate or other document relied upon for the purposes of the opinions expressed herein has been dated prior to the date of this letter, that the information contained in the said certificate or other document continues to be valid, true and accurate as of the date of this letter;
- (d) the currency and accuracy of (i) any printed search result from public offices and (ii) the indices, filing, mapping and records maintained at the public offices where we have conducted searches or made enquiries or caused searches or enquiries to be made;
- (e) for the purposes of providing the opinions rendered in paragraph 1 hereof, we have relied exclusively on the Certificate of Good Standing dated May 20, 2021 in respect of the Corporation issued by the Registrar of Companies for Newfoundland and Labrador, a true copy of which is attached hereto as Schedule "B"; and
- (f) for the purposes of providing the opinions rendered in paragraph 4, we have relied upon:
  - (i) Certificate of Compliance dated May 18, 2021, issued by the Minister of Industry, Energy and Technology, certifying the Corporation's compliance, as at April 10, 2021 (the end of the 18th year), with all terms, provisions and conditions of Mineral Licences No. 23669M, 23670M and 23891M;
  - (ii) Certificate of Compliance dated May 18, 2021, issued by the Minister of Industry, Energy and Technology, certifying the Corporation's compliance, as at March 28, 2021 (the end of the 18<sup>th</sup> year), with all

terms, provisions and conditions of Mineral Licences No. 23892M and 25557M; and

- (iii) Certificate of Compliance dated May 18, 2021, issued by the Minister of Industry, Energy and Technology, certifying the Corporation's compliance, as at December 19, 2020 (the end of the 7th year), with all terms, provisions and conditions of Mineral Licence No. 21733M.

(collectively, the "**Certificates of Compliance**"), true copies of which are attached hereto as Schedule "C".

### **Opinion**

Based upon the foregoing and subject to the qualifications hereinafter expressed, we are of the opinion that:

1. The Corporation has been duly registered as an extra-provincial corporation and is in good standing under the laws of the Province and with respect to the filing of annual returns at the Registry of Companies for Newfoundland and Labrador.
2. The Corporation is the registered holder of a 100% interest in the following six (6) active mineral licences in the Province, namely those claims map staked under the *Mineral Act*, RSNL 1990 c. M-12 (NL) (the "**Mineral Act**") and bearing the following map staked licence numbers (collectively, the "**Coastal Gold Licences**"):

23669M	23892M
23670M	25557M
23891M	21733M

3. The Coastal Gold Licences are valid and subsisting map-staked mineral exploration licences issued pursuant to the Mineral Act and are duly registered as to a 100% interest in the name of the Corporation.
4. The Coastal Gold Licences are in good standing as of the dates in the Certificates of Compliance.
5. Excepting as to 21733M, the Coastal Gold Licences are held subject to the royalties provided for in a Letter Option Agreement dated January 22, 2010 made between Castillian Resources Corp. (a previous name of the Corporation) ("**Castillian**") and Roland Quinlan, Mervin Quinlan and Eddie Quinlan, which Letter Option Agreement is duly registered at Volume 30, Folio 10 of the Confidential Register, as amended by an Amending Agreement dated February 17, 2012 made between Roland Quinlan, Mervin Quinlan and Eddie Quinlan and Castillian, which Amending Agreement is duly registered at Volume 30, Folio 50 of the Confidential Register (the said Letter Option Agreement as amended by the said Amending Agreement being hereinafter referred to as the "**Amended Letter Agreement**"), which Amended Letter Agreement provides for:

- (a) a 2% net smelter return royalty in favour of Roland Quinlan, Mervin Quinlan and Eddie Quinlan (the "**Quinlan NSR**"); and
- (b) an annual advance royalty payment of \$20,000.00 to Roland Quinlan, Mervin Quinlan and Eddie Quinlan payable in each year subsequent to the fourth year anniversary of the Amended Letter Agreement (the "**Advance Royalty**"), which Advance Royalty is to be deducted from any and all royalty payments due following commencement of production.

The Amended Letter Agreement further provides that the Corporation shall have the option to purchase 50% of the Quinlan NSR for \$1,000,000.00 at any time during the term of the Amended Letter Agreement.

6. The Coastal Gold Licences are held subject to an Earn-In Agreement (the "**Earn-In Agreement**") dated April 5, 2021 among First Mining Cold Corp. ("**First Mining**"), Big Ridge Gold Corp. ("**Big Ridge**") and the Corporation which was submitted for registration in the Confidential Registry on April 12, 2021, which Earn-In Agreement provides for:
  - (a) a first earn-in right in favour of Big Ridge to acquire a 51% interest in the Property (as defined therein);
  - (b) a second earn-in right in favour of Big Ridge to increase its interest in the Property (as defined therein) to 80%;
  - (c) a 1.5% net smelter return royalty in favour of First Mining; and
  - (d) an aggregate royalty in favour of First Mining of US\$1.00 per tonne of aggregate material sold from the Property (as defined therein).
7. Excepting as to the Amended Letter Agreement, including the Quinlan NSR and Advance Royalty, and the Earn-in Agreement upon registration of same, the Coastal Gold Licences are free and clear of all liens, encumbrances or executions.
8. Other than as reported on herein, there are no other outstanding agreements recorded at the MCR granting to any other person, firm or corporation, any interest in, or right to acquire the Coastal Gold Licences.

### **Qualifications and Limitations**

The opinions stated herein are subject to the following qualifications:

1. The Coastal Gold Licences confer only mineral exploration rights and mining lease conversion rights under section 31 of the Mineral Act and no opinion is expressed with respect to surface rights in respect of the areas covered by the Coastal Gold Licences.
2. The validity and good standing of each of the Coastal Gold Licences is subject to compliance with the terms and conditions of each such licence and the provisions of the *Mining Act*, SNL 1999 c M-15.1 (the "**Mining Act**"), *Mineral Act*, RSNL 1990 c M-12 (the "**Mineral Act**"), and the *Mineral Regulations* under the Mineral Act.

3. No opinion is expressed in respect of environmental matters affecting the Coastal Gold Licences or any of the lands subject to the same.
4. No opinion is expressed with respect to any unregistered or unrecorded royalty interests in the Coastal Gold Licences or unrecorded transfers thereof.
5. We have not been party to any physical examination of the lands subject to the Coastal Gold Licences and consequently express no opinion as to the actual boundaries, acreages, any encroachments or the location of any buildings thereon.
6. No opinion is expressed with respect to the Government of the Province of Newfoundland and Labrador having granted any rights or made any orders or declarations under the *Forestry Act* (NL)<sup>1</sup>, as amended, or having declared any areas to be protected areas under the *Wilderness and Ecological Reserves Act* (NL)<sup>2</sup>, as amended, the *Provincial Parks Act* (NL)<sup>3</sup>, as amended, the *Historic Resources Act* (NL)<sup>4</sup>, as amended or the *Wildlife Act* (NL)<sup>5</sup>, as amended, respecting the areas covered by the Coastal Gold Licences.
7. No opinion is expressed with respect to any aboriginal rights, title or interest which may be claimed, presently or hereafter, by any other aboriginal or native group in, on or to the lands covered by the Coastal Gold Licences.
8. We express no opinion with respect to any statutory liens in favour of the Canada Revenue Agency under the *Excise Tax Act* (Canada) and/or the *Income Tax Act* (Canada) or in favour of the Government of Newfoundland and Labrador under the *Revenue Administration Act* (Newfoundland and Labrador), *Labour Standards Act* (Newfoundland and Labrador) or *Workplace, Health, Safety and Compensation Act* (Newfoundland and Labrador).

This opinion is limited to the laws of the Province and the laws of Canada applicable therein. No opinions are expressed herein with respect to the laws of any other jurisdiction.

This opinion is given as at the date hereof and we disclaim any obligation or undertaking to advise any person of any change in law or fact which may come to our attention after the date hereof.

Yours truly,

Stewart McKelvey



---

<sup>1</sup> *Forestry Act*, R.S.N.L. 1990, c. F-23

<sup>2</sup> *Wilderness and Ecological Reserves Act*, R.S.N.L. 1990, c. W-9

<sup>3</sup> *Provincial Parks Act*, R.S.N.L. 1990, c. P-32

<sup>4</sup> *Historic Resources Act*, R.S.N.L. 1990, c. H-4

<sup>5</sup> *Wildlife Act*, R.S.N.L. 1990, c. W-8

## **Schedule "A"**

### **Effective Date and Time of Searches**

Our searches at the registry (including the Confidential Registry) maintained by the Mineral Claims Recorder for Newfoundland and Labrador are effective as of May 19, 2021. As of the time of our searches, the public index for the Confidential Register was current to February 3, 2021 and the public index for the transfers and mortgages register was current to April 7, 2021. We have relied on the accuracy of the information provided to us by the Mineral Claims Recorder with respect to pending registrations and loose deeds.

Our searches at the Registry of Deeds and Companies for Newfoundland and Labrador as of May 19, 2021.

Our searches at the Registry of Mechanic's Liens for Newfoundland and Labrador are effective as of May 19, 2021.

Our searches at the Judgment Enforcement Registry maintained by the Office of the High Sheriff of Newfoundland and Labrador are effective as of 9:14 AM (NDT) on May 19, 2021.

Our searches at the Personal Property Registry of Newfoundland and Labrador are effective as of 8:47 AM (ADT) on May 19, 2021.

Our searches at the Department of Finance, Tax Administration Division for Newfoundland and Labrador are effective as of March 18, 2021.

**Schedule "B"**  
**Certificate of Good Standing**

*CORPORATIONS ACT*

**CERTIFICATE OF GOOD STANDING**

Corporation Name: **COASTAL GOLD CORP.**  
Corporation Number: **64701**  
Date of Registration: **April 1, 2011**

I certify that this Corporation has filed all documents required under the Corporations Act of Newfoundland and Labrador and is in Good Standing.



---

REGISTRAR OF COMPANIES  
For Province of Newfoundland and Labrador  
May 20, 2021

**Schedule "C"**  
**Certificates of Compliance**



## CERTIFICATE OF COMPLIANCE

*As per Section 29 of the Mineral Act RSN 1990*

This is to certify that **Coastal Gold Corp.** being the holder of **Mineral License 21733M** has fully complied with all terms, provisions and conditions of the said license for the **7th year** which ended **2020.12.19**.

Date: **May 18, 2021**



for **ANDREW PARSONS, QC**  
Minister of Industry, Energy and  
Technology  
Attorney General

## CERTIFICATE OF COMPLIANCE

*As per Section 29 of the Mineral Act RSN 1990*

This is to certify that **Coastal Gold Corp.** being the holder of **Mineral Licenses 23669M, 23670M, and 23891M** has fully complied with all terms, provisions and conditions of the said licenses for the **18th year** which ended **2021.04.10**.

Date: **May 18, 2021**



for **ANDREW PARSONS, QC**  
Minister of Industry, Energy and  
Technology  
Attorney General

## CERTIFICATE OF COMPLIANCE

*As per Section 29 of the Mineral Act RSN 1990*

This is to certify that **Coastal Gold Corp.** being the holder of **Mineral Licenses 23892M and 25557M** has fully complied with all terms, provisions and conditions of the said licenses for the **18th year** which ended **2021.03.28**.

Date: **May 18, 2021**



for **ANDREW PARSONS, QC**  
Minister of Industry, Energy and  
Technology  
Attorney General

## **Appendix II**

### **BP and Royal Oak Drilling Program Data**

**(Tables A-1, A-2 and A-3)**

### **Tabulations of Representative Drilling Results**

**(Tables A-4 through A-9)**

**Table A-1: Location, Orientation and Depth Data for 1983-1986 BP Holes**

Hole Id	*Easting (m)	*Northing (m)	**Elevation (m)	Depth (m)	Azimuth	Dip
CW-001	416424.70	5286602.33	5022.76	92.40	324.66	-45
CW-002	416472.71	5286545.61	5026.76	93.30	324.66	-45
CW-003	416546.95	5286687.43	5026.76	93.80	324.66	-45
CW-004	418014.95	5287703.94	5119.73	80.50	324.66	-45
CW-005	417978.42	5287752.37	5121.90	79.20	326.46	-48.33
CW-006	417955.75	5287804.34	5125.22	121.90	324.66	-45
CW-007	418066.18	5287803.86	5126.59	120.70	315.01	-44.25
CW-008	417879.47	5287672.09	5117.41	119.90	329.11	-45
CW-009	417978.85	5287752.04	5122.11	97.50	333.56	-63.92
CW-010	418152.32	5287873.46	5134.78	183.50	325.35	-45
CW-011	418205.25	5287951.81	5138.52	135.60	326.32	-43.17
CW-012	417817.51	5287630.94	5112.90	91.80	324.56	-45
CW-013	418381.29	5287964.40	5150.96	218.80	321.14	-46.03
CW-014	418188.04	5287802.77	5135.68	259.70	324.94	-44.67
CW-015	418109.34	5287740.26	5119.66	239.30	326.59	-45.58
CW-016	418040.49	5287664.17	5114.25	242.30	324.92	-47.17
CW-017	418266.40	5287864.95	5144.68	275.80	326.91	-44.33
CW-018	417846.19	5287568.87	5117.63	180.10	327.21	-45
CW-019	417764.98	5287528.38	5117.06	153.60	324.66	-45
CW-020	418302.59	5287900.34	5148.44	245.40	327.36	-45.68
CW-021	417681.09	5287473.71	5119.70	147.80	321.23	-45
CW-022	417598.54	5287412.54	5111.77	157.00	339.15	-46
CW-023	417537.23	5287333.24	5098.56	147.50	327.63	-45
CW-024	417483.45	5287240.68	5093.76	175.30	324.66	-45
CW-025	417401.97	5287182.74	5077.76	245.40	324.66	-45
CW-026	417254.44	5287044.72	5060.26	163.10	324.66	-45
CW-027	417087.48	5286934.59	5042.76	163.10	324.66	-45
CW-028	416948.51	5286784.26	5021.76	227.10	324.66	-45
CW-029	416659.53	5286674.45	5020.76	187.50	324.66	-45
CW-030	416549.88	5286569.49	5032.76	172.20	324.66	-45
CW-031	416372.16	5286400.10	5034.76	199.60	324.66	-45
CW-032	416198.08	5286287.45	5033.76	225.60	324.66	-45
CW-033	416017.13	5286197.42	5027.76	141.70	324.66	-45
CW-034	415845.32	5286094.26	5029.76	138.10	324.66	-45
CW-035	418412.61	5287834.82	5157.39	486.50	326.95	-65.67
CW-036	418354.33	5287914.95	5150.22	389.20	317.49	-65.48

Hole Id	*Easting (m)	*Northing (m)	**Elevation (m)	Depth (m)	Azimuth	Dip
CW-037	418328.75	5287776.05	5160.01	498.00	326.95	-64.47
CW-038	418272.41	5287856.64	5145.05	328.00	325.00	-63.25
CW-039	415691.00	5285990.49	5042.76	99.10	324.66	-45
CW-040	418249.10	5287712.27	5147.06	375.50	321.00	-65
CW-040A	418249.10	5287712.27	5147.06	415.80	329.46	-62.27
CW-041	417928.88	5287645.57	5112.95	222.50	325.16	-59.59
CW-042	418188.70	5287801.82	5135.74	324.90	327.92	-63.5
CW-043	417710.00	5287432.41	5116.68	251.50	325.30	-66.9
CW-044	418109.32	5287740.26	5119.73	326.40	333.43	-65
CW-045	417804.45	5287477.88	5114.58	272.50	324.66	-63.61
CW-046	418167.20	5287657.61	5134.26	385.90	324.21	-63.03
CW-046A	418167.20	5287657.61	5134.26	385.90	324.21	-63.03
CW-047	418041.41	5287663.07	5114.20	311.50	328.46	-65.67
CW-048	417916.52	5287489.96	5113.03	321.30	324.66	-55
CW-049	418001.87	5287543.62	5117.67	347.20	322.64	-49.04
CW-050	418001.44	5287544.22	5117.70	387.40	325.28	-65.17
CW-051	418496.51	5287893.63	5143.16	442.00	319.36	-64.8
CW-052	418081.90	5287604.38	5117.87	397.20	324.03	-65.27
CW-053	418250.19	5287976.61	5141.54	140.80	323.70	-45.35
CW-054	418167.75	5287832.88	5135.63	232.30	320.43	-45.92
CW-055	418202.77	5287867.47	5136.69	223.10	322.73	-45.13
CW-056	418304.36	5287985.24	5152.54	151.80	323.44	-46.17
CW-057	418229.85	5287903.53	5140.79	208.80	325.19	-46.5
CW-058	418340.37	5287934.46	5151.15	203.00	323.17	-45.42
CW-059	418203.65	5287866.19	5139.77	292.00	322.92	-66.97
CW-060	418270.06	5287859.89	5145.59	306.30	324.01	-51.83
CW-061	418340.60	5287934.11	5151.16	269.10	322.76	-55.57
CW-062	418309.44	5287890.39	5147.37	290.20	324.66	-53.5
CW-063	418251.39	5287800.76	5146.80	333.80	321.12	-56.37
CW-064	418329.08	5287860.37	5149.10	363.00	325.52	-61.34
CW-065	418309.82	5287889.74	5147.62	321.60	326.58	-61.25
CW-066	418023.27	5287775.50	5128.03	167.30	325.96	-48.33
CW-067	418048.51	5287824.96	5130.14	169.20	324.66	-44.33
CW-068	418292.26	5287828.37	5149.39	352.30	333.61	-61.08
CW-069	418151.84	5287763.85	5128.27	331.00	322.59	-62.5
CW-070	417926.95	5287738.86	5123.03	135.30	329.04	-52.17
CW-071	418262.07	5287785.48	5150.00	373.40	324.68	-59.59
CW-072	417897.12	5287693.87	5117.46	154.80	324.00	-45.7

Hole Id	*Easting (m)	*Northing (m)	**Elevation (m)	Depth (m)	Azimuth	Dip
CW-073	418130.68	5287801.73	5126.33	248.40	327.14	-62.7
CW-074	418215.31	5287767.28	5140.25	359.40	333.30	-66
CW-075	418129.66	5287803.02	5126.28	216.10	327.19	-44.92
CW-076	418178.08	5287725.35	5135.12	357.20	329.41	-63.5
CW-077	418352.05	5287918.62	5150.18	324.90	324.66	-62.08
CW-078	418127.59	5287714.39	5127.62	270.10	324.77	-47.67
CW-079	418029.40	5287766.61	5126.80	199.60	327.82	-58.83
CW-080	418276.10	5287939.79	5143.71	196.90	325.68	-45.67
CW-081	418090.35	5287680.63	5127.32	306.60	324.35	-58.17
CW-082	418057.48	5287726.54	5121.60	248.40	325.07	-56
CW-083	418168.75	5287918.16	5133.75	144.20	325.47	-44.67
CW-084	418080.45	5287782.34	5123.05	194.20	325.00	-48
CW-085	418126.10	5287893.21	5133.49	151.50	327.39	-47.83
CW-086	417979.01	5287666.40	5113.18	249.30	325.03	-58.92
CW-087	418013.24	5287704.62	5119.66	197.80	323.76	-46.42
CW-088	418091.68	5287853.82	5126.42	150.00	324.36	-44.17
CW-089	418013.06	5287618.95	5113.63	331.00	322.59	-61.58
CW-090	417946.77	5287712.01	5112.66	210.60	323.28	-61.17
CW-091	417928.53	5287651.09	5112.42	208.80	323.88	-45
CW-092	417673.47	5287318.02	5116.26	309.10	325.76	-66
CW-093	417505.15	5287209.50	5092.76	269.70	324.66	-60
CW-094	418395.32	5287681.91	5165.27	565.70	324.56	-65
CW-095	417373.04	5287049.32	5086.76	299.60	324.66	-64
CW-096	417099.10	5286742.91	5028.76	308.50	324.66	-60
CW-097	417226.07	5286910.48	5051.78	289.30	324.16	-60
CW-098	415762.70	5286037.97	5036.76	99.10	324.66	-45
CW-099	418442.22	5287614.44	5161.01	702.60	325.16	-65
CW-100	418312.26	5287626.67	5158.92	600.80	324.86	-65
CW-101	415709.21	5285939.83	5045.76	153.90	324.66	-45
CW-102	415598.60	5285923.74	5041.76	92.40	324.66	-45
CW-103	415510.84	5285874.83	5042.76	96.10	324.66	-45
CW-104	418239.02	5287554.85	5170.31	572.10	324.56	-65
CW-105	418483.87	5287722.46	5147.25	590.10	324.29	-65
CW-106	418576.58	5287776.57	5139.55	632.80	325.16	-65
CW-107	418559.22	5287620.18	5142.48	751.70	324.56	-67.5
CW-108	418052.51	5287999.64	5143.31	67.40	324.66	-48
CW-109	418102.59	5287492.11	5151.16	577.90	326.72	-67
CW-110	417967.70	5287783.21	5124.54	36.90	328.43	-45

Hole Id	*Easting (m)	*Northing (m)	**Elevation (m)	Depth (m)	Azimuth	Dip
CW-111	418003.06	5287804.61	5129.06	37.50	323.98	-35
CW-112	418080.52	5287873.70	5132.76	58.80	328.72	-35
CW-113	418117.48	5287905.87	5135.28	54.90	324.87	-25
CW-114	418153.25	5287938.41	5139.67	51.20	324.45	-25
CE-129	418447.70	5287928.60	5147.48	443.50	325.16	-65
CE-139	418607.48	5287904.48	5135.54	539.20	326.90	-65
CE-149	417979.75	5287397.51	5148.30	477.90	326.06	-56
CE-169	418097.03	5287232.42	5175.29	780.60	324.43	-66.01
CE-189	417736.54	5287225.02	5131.78	579.10	327.90	-68
CP-211	418469.34	5288033.31	5153.05	25.00	0.00	-90
CP-213	418482.90	5287993.00	5151.28	15.90	0.00	-90
CP-214	418477.03	5288011.03	5152.48	20.40	0.00	-90
CP-215	418449.98	5288086.88	5154.02	100.30	340.40	-45
CT-218	418636.48	5286277.89	5127.08	178.00	322.23	-40
CT-221	418420.69	5286245.29	5127.49	80.80	322.36	-45
CT-224	418677.80	5286530.26	5123.52	68.00	68.16	-45
CT-226	418430.15	5286484.41	5124.54	105.20	321.16	-45
CT-227	418609.19	5286783.71	5123.88	103.90	311.16	-45
CW-115	418189.22	5287976.03	5141.52	47.20	327.18	-45
CW-116A	418073.19	5287793.14	5124.01	125.00	325.16	-60
CW-117	418150.53	5287858.85	5135.38	147.20	325.16	-60
CW-118	418243.00	5287899.45	5141.25	180.70	325.16	-60
CW-119	417958.45	5287653.24	5113.23	171.60	328.46	-50
CW-120	417969.34	5287680.47	5113.81	178.30	325.16	-57
CW-121	418138.91	5287697.44	5130.21	329.70	329.44	-60
CW-122	417939.19	5287723.11	5117.84	112.80	334.45	-58
CW-123	417924.02	5287703.10	5114.02	155.40	327.71	-70
CW-124	417910.83	5287721.13	5120.71	85.60	324.37	-50
CW-125	417923.83	5287703.22	5114.21	111.60	326.66	-50
CW-126	418302.34	5287945.43	5149.90	173.70	324.39	-50
CW-127	418261.65	5287960.19	5141.15	107.30	323.60	-45
CW-128	418253.25	5287929.32	5141.58	150.00	328.47	-50
CW-130	418237.98	5287951.71	5140.03	121.90	324.91	-50
CW-131	418215.98	5287938.14	5138.84	121.90	327.34	-50
CW-132	418222.52	5287973.91	5138.57	85.30	325.31	-50
CW-133	418221.14	5287975.96	5138.64	55.30	325.46	-25
CW-134	418196.16	5287922.86	5137.52	117.60	325.45	-50
CW-135	418215.86	5287894.72	5138.57	160.00	324.26	-50



Hole Id	*Easting (m)	*Northing (m)	**Elevation (m)	Depth (m)	Azimuth	Dip
CW-136	418176.26	5287951.30	5138.78	64.00	325.16	-50
CW-137	418175.02	5287953.03	5139.06	56.10	325.16	-25
CW-138	418160.05	5287887.81	5135.36	125.00	326.38	-52
CW-140	418156.01	5287936.68	5138.88	64.30	323.43	-50
CW-141	418112.91	5287867.58	5127.90	119.80	328.03	-50
CW-142	418139.88	5287917.15	5135.67	81.40	326.90	-55
CW-143	418097.47	5287889.48	5135.43	68.90	326.01	-50
CW-144	418137.92	5287920.15	5135.60	62.50	326.90	-28
CW-145	418096.05	5287891.61	5135.49	56.70	326.01	-22.5
CW-146	418068.40	5287852.28	5130.03	75.00	325.16	-50
CW-147	418028.88	5287812.77	5131.10	77.10	325.16	-51
CW-148	418082.76	5287867.05	5131.67	71.60	325.16	-45
CW-150	418043.95	5287791.49	5130.59	106.10	327.13	-48
CW-151	418060.85	5287858.13	5130.48	47.90	325.39	-29
CW-152	418024.39	5287819.77	5131.11	53.60	324.14	-35
CW-153	418064.23	5287858.29	5131.59	42.70	325.39	-5
CW-154	418024.53	5287819.58	5132.27	47.50	324.00	-15
CW-155	418188.80	5287974.58	5142.31	53.60	324.30	-5
CW-156	418074.14	5287835.57	5125.75	126.50	326.49	-51
CW-157	417986.06	5287787.44	5125.79	59.70	324.62	-48
CW-158	418001.28	5287765.81	5124.43	100.60	328.16	-49
CW-159	418175.70	5287951.82	5140.29	65.20	324.56	-5
CW-160	417944.82	5287758.76	5123.02	56.70	326.76	-49
CW-161	418156.30	5287933.31	5138.43	58.20	325.96	-5
CW-162	417989.79	5287774.78	5124.56	51.90	323.96	-6
CW-163	417935.55	5287727.94	5118.63	62.50	322.36	-5
CW-164	417912.33	5287719.09	5119.92	62.20	325.36	-5
CW-165	418134.01	5287924.92	5136.13	48.20	325.16	-5
CW-166	418022.93	5287778.19	5129.23	76.80	324.46	-4
CW-167	418129.69	5287887.92	5131.18	71.00	325.46	-5
CW-168	417959.89	5287737.64	5119.66	65.50	325.26	-5
CW-170	417960.15	5287737.11	5118.15	104.20	325.26	-55
CW-171	418100.38	5287881.81	5134.14	56.70	321.76	-3
CW-172	418079.48	5287872.02	5132.70	54.30	325.76	-5
CW-173	417963.82	5287770.76	5124.94	40.80	328.64	-20
CW-174	417976.76	5287712.00	5113.14	137.80	328.40	-52
CW-175	418174.67	5287866.32	5135.22	137.50	327.26	-51
CW-176	418312.67	5287930.73	5148.95	199.90	328.68	-53

Hole Id	*Easting (m)	*Northing (m)	**Elevation (m)	Depth (m)	Azimuth	Dip
CW-177	417991.82	5287690.23	5114.78	175.30	330.24	-53
CW-178	418189.85	5287843.65	5136.03	201.10	327.91	-53.01
CW-179	418273.78	5287899.26	5143.80	191.70	330.07	-52
CW-180	418015.44	5287747.64	5121.45	139.00	329.28	-53.01
CW-181	418126.89	5287847.32	5124.44	160.30	320.57	-53.01
CW-182	418032.22	5287721.02	5123.21	173.70	328.02	-51
CW-183	418231.09	5287872.70	5140.09	190.50	327.35	-51
CW-184	418107.24	5287831.85	5122.70	151.80	324.16	-46
CW-185	418071.35	5287751.78	5123.87	165.20	323.04	-53.01
CW-186	418145.17	5287820.82	5133.27	181.70	328.76	-51
CW-187	418085.82	5287818.81	5123.49	139.00	324.41	-51
CW-188	418056.80	5287773.14	5124.14	135.60	326.84	-52
CW-190	418099.67	5287798.66	5120.06	175.60	326.26	-52
CW-191	418204.66	5287866.97	5137.00	172.50	326.62	-56
CW-192	418088.03	5287771.36	5120.24	154.20	319.69	-52
CW-193	418123.71	5287899.26	5133.61	71.90	327.66	-41.5
CW-194	418205.87	5287908.57	5137.51	116.70	316.81	-50.5
CW-195	418186.16	5287893.31	5136.76	120.70	322.03	-52
CW-196	418198.18	5287963.96	5137.83	64.00	324.41	-43
CW-197	418186.31	5287935.95	5137.43	102.40	324.59	-51
CW-198	417908.77	5287678.94	5113.55	70.20	321.56	-49.5
CW-199	418185.97	5287981.47	5143.37	33.50	324.76	-28
CW-200	417906.61	5287681.70	5114.24	54.90	320.28	-2
CW-201	418120.19	5287944.73	5140.20	45.40	128.26	-85.5
CW-202	417833.91	5287654.01	5114.54	45.70	324.86	-45
CW-203	418077.11	5287918.77	5136.85	60.00	145.16	-67
CW-204	417823.44	5287627.18	5111.00	70.10	324.44	-27
CW-205	417891.53	5287659.48	5114.40	59.40	319.68	-18
CW-206	418055.23	5287906.67	5136.87	61.60	148.42	-60.01
CW-207	417891.59	5287659.36	5114.62	38.10	319.67	-6
CW-208	417806.64	5287690.33	5113.16	45.70	142.26	-7
CW-209	418013.48	5287791.28	5129.65	70.70	323.14	-46.01
CW-210	417922.15	5287705.07	5114.63	30.50	326.17	-4
CW-211	418469.34	5288033.31	5123.05	25.00	0.00	-90
CW-212	417875.36	5287639.48	5113.45	87.20	324.82	-25
CW-213	418482.90	5287993.00	5151.28	15.90	0.00	-90
CW-214	418477.03	5288011.03	5152.48	20.40	0.00	-90
CW-215	418449.98	5288086.88	5154.02	100.30	347.36	-45

Hole Id	*Easting (m)	*Northing (m)	**Elevation (m)	Depth (m)	Azimuth	Dip
<b>CW-216</b>	417875.02	5287640.28	5113.50	35.70	324.82	-7
<b>CW-217</b>	417845.23	5287685.00	5115.99	25.00	326.96	-46
<b>CW-218</b>	418636.48	5286277.89	5127.08	178.00	326.96	-45
<b>CW-219</b>	418056.43	5287905.28	5136.50	37.60	144.12	-42
<b>CW-220</b>	418055.34	5287906.77	5137.37	35.70	0.00	-90
<b>CW-221</b>	418420.69	5286245.29	5127.49	80.80	322.36	-45
<b>CW-222</b>	418075.11	5287921.44	5137.71	11.90	0.00	-90
<b>CW-223</b>	418084.37	5287908.71	5137.36	15.50	0.00	-90
<b>CW-224</b>	418677.80	5286530.26	5123.52	68.00	68.16	-45
<b>CW-225</b>	418103.73	5287924.81	5137.70	18.90	0.00	-90
<b>CW-226</b>	418430.15	5286484.41	5124.54	105.20	321.16	-45
<b>CW-227</b>	418609.19	5286783.71	5123.88	103.90	311.16	-40
<b>CW-228</b>	418125.90	5287936.32	5138.84	15.80	0.00	-90
<b>CW-229</b>	418113.31	5287954.53	5140.57	15.20	0.00	-90

Notes: \* UTM NAD 83 Coordinates, \*\* elevation above sea level plus 5000 m

**Table A-2: Location, Orientation and Depth Data for 1987-1991 BP Holes**

Hole Id	Easting (m)	Northing (m)	Elevation (m)	Depth (m)	Azimuth	Dip
CE-230	417861.86	5287049.64	5181.65	836.10	325.16	-71
CE-231	418003.93	5286842.84	5182.94	351.40	325.16	-71
CE-231A	418004.47	5286842.07	5182.94	1062.20	326.16	-81
CE-238	417617.28	5286854.84	5150.39	755.60	332.16	-70
CE-239	418407.94	5287316.39	5164.21	914.70	321.96	-70
CE-240	417380.03	5286689.19	5127.03	725.40	320.16	-70
CE-241	418236.86	5287034.02	5162.19	1049.10	319.96	-70
CE-242	417149.73	5286470.00	5097.34	707.40	331.06	-65
CE-243	417380.10	5286689.21	5127.19	561.70	322.16	-55
CE-244	417457.30	5286753.45	5134.97	696.50	324.16	-72
CE-245	417446.38	5286593.72	5137.77	812.30	325.16	-70
CE-246	417332.43	5286582.83	5129.28	701.60	321.16	-68
CE-247	417223.81	5286388.78	5120.00	824.20	327.16	-71
CE-248	416893.13	5286338.87	5070.23	676.30	327.16	-60
CE-249	417406.77	5286463.67	5154.55	879.30	326.26	-75
CE-250	417370.50	5286157.91	5124.89	1005.80	328.66	-76
CE-251	416738.39	5286548.89	5018.38	334.10	325.16	-55
CE-252	418759.38	5287350.52	5136.28	1112.50	325.16	-70
CE-253	416729.74	5286726.34	5022.34	152.70	325.16	-48
CE-254	416434.88	5286454.77	5029.97	318.20	322.66	-80
CE-255	415915.29	5285989.50	5037.96	336.50	325.16	-73
CE-256	415688.26	5285813.38	5062.80	307.50	325.16	-71
CE-257	418473.71	5287277.36	5152.50	947.80	322.96	-73
CE-258	417330.73	5286584.72	5128.99	602.00	331.26	-60
CE-259	417342.34	5286398.23	5134.81	778.80	325.96	-69
CE-260	417813.77	5286591.17	5183.00	106.40	325.16	-71
CE-261	417245.56	5286522.41	5112.06	644.70	318.56	-71
CE-262	417411.48	5286469.24	5119.07	883.00	319.16	-70
CE-263	417316.84	5286253.39	5118.06	886.10	327.76	-71
CE-264	417245.56	5286522.41	5112.06	620.30	327.16	-61
CE-265	417289.74	5286119.69	5119.40	971.40	325.16	-76
CE-266	417221.90	5286224.52	5109.06	904.90	325.16	-75
CE-267	417133.85	5286177.13	5107.72	895.20	319.46	-76
CW-230	417816.73	5287638.22	5114.20	49.90	325.16	-45
CW-231	417798.14	5287664.88	5113.20	41.10	325.16	-45
CW-232	417806.81	5287608.28	5112.16	41.80	325.16	-45

Hole Id	Easting (m)	Northing (m)	Elevation (m)	Depth (m)	Azimuth	Dip
CW-233	417791.95	5287631.32	5112.92	40.20	325.16	-45
CW-234	417771.71	5287613.60	5113.08	41.80	325.16	-45
CW-235	417749.91	5287600.95	5112.62	41.10	325.16	-44
CW-236	417786.52	5287593.24	5113.52	48.80	325.16	-45
CW-237	417766.57	5287577.37	5114.11	45.70	325.16	-45
CW-238	417733.83	5287581.00	5113.34	42.70	325.16	-45
CW-239	417745.06	5287564.28	5114.12	44.80	325.16	-45
CW-240	417724.46	5287551.72	5114.11	45.10	325.16	-45
CW-241	417710.32	5287573.22	5113.78	42.70	325.16	-45
CW-242	417694.23	5287557.05	5115.97	49.70	325.16	-45
CW-243	417706.85	5287538.84	5114.74	45.70	325.16	-45
CW-244	417668.53	5287547.99	5114.08	45.70	325.16	-50
CW-245	417683.69	5287524.16	5116.49	45.70	325.16	-45
CW-246	417650.11	5287530.53	5114.68	44.80	325.16	-45
CW-247	417662.98	5287511.18	5117.62	45.70	325.16	-45
CW-248	417628.24	5287513.92	5117.88	44.80	325.16	-45
CW-249	417640.79	5287494.82	5119.10	45.70	325.16	-45
CW-250	417605.25	5287498.56	5110.65	39.60	325.16	-45
CW-251	417625.05	5287474.64	5119.58	45.70	325.16	-45
CW-252	417601.60	5287449.17	5112.15	44.80	325.16	-44
CW-253	417590.96	5287428.02	5109.73	51.80	325.16	-41
CW-254	417592.07	5287475.46	5110.52	41.60	325.16	-45
CW-255	417576.11	5287456.45	5105.74	39.60	325.16	-43
CW-256	417549.86	5287400.22	5101.53	48.80	325.16	-40
CW-257	417532.97	5287430.46	5098.55	39.60	325.16	-45
CW-268	418016.25	5287656.45	5113.18	192.00	326.46	-54.4
CW-269	418024.13	5287688.93	5118.29	170.70	323.26	-52.5
CW-270	418048.99	5287697.02	5117.29	182.90	325.36	-49.4
CW-271	418057.30	5287685.63	5116.81	210.30	326.16	-51.1
CW-272	418072.38	5287707.93	5115.90	190.80	328.46	-52.9
CW-273	418082.73	5287736.22	5118.75	189.00	325.66	-52.5
CW-274	418112.74	5287736.54	5120.29	175.60	328.16	-53
CW-274A	418111.21	5287735.47	5120.29	224.30	329.76	-53.8
CW-275	418090.46	5287724.71	5118.27	221.30	326.36	-54.9
CW-276	418047.76	5287742.12	5124.61	156.00	330.56	-54.7
CW-277	418173.89	5287647.36	5135.82	507.50	327.16	-68.1
CW-278	418141.96	5287599.55	5138.76	507.50	325.86	-64.0
CW-279	418141.83	5287599.90	5138.83	492.83	325.66	-53.88

Hole Id	Easting (m)	Northing (m)	Elevation (m)	Depth (m)	Azimuth	Dip
CW-280	418109.34	5287565.11	5136.66	509.00	327.76	-65.6
CW-281	418099.23	5287624.52	5119.82	461.20	327.76	-65.3
4960-091	418040.70	5287836.77	4962.05	64.00	178.46	-5.6
4960-092	418042.34	5287837.91	4961.56	45.70	143.86	-14.2
4960-093	418041.79	5287838.67	4960.95	51.80	141.26	-35.3
4960-094	418041.31	5287839.30	4960.95	89.90	145.76	-49.4
4960-095	418166.09	5287931.17	4965.14	67.10	89.06	-15.7
4960-096	418165.55	5287931.58	4964.75	70.10	74.36	-29.5
4960-097	418165.39	5287931.54	4964.35	91.40	75.01	-45
4960-098	418164.45	5287930.89	4964.22	91.40	75.01	-64.7
4960-099	418165.31	5287931.25	4964.59	64.90	64.08	-32.8
4960-100	418164.29	5287930.72	4963.91	89.90	66.16	-49.9
4960-101	418064.10	5287832.94	4961.37	106.70	323.56	-59.1
4960-102	418063.77	5287833.33	4961.40	77.70	322.16	-44.8
4960-103	418066.71	5287829.46	4962.83	15.20	143.15	1.38
4960-104	418080.85	5287858.99	4962.00	70.10	329.28	-59.5
4960-105	418080.07	5287860.11	4961.92	51.80	326.29	-35.0
4960-106	418079.82	5287860.57	4966.61	39.60	324.75	40.85
4960-107	418065.45	5287869.60	4960.90	89.90	143.39	-44.62
4960-108	418065.97	5287868.85	4961.67	75.30	143.91	-29.6
4960-109	418069.23	5287864.44	4964.25	50.30	144.36	35.4
4960-110	418051.45	5287824.09	4964.14	9.10	324.05	-0.62
4960-111	418052.12	5287823.11	4962.79	100.60	319.27	-65.4
4960-112	418055.23	5287820.43	4964.24	17.10	145.40	0.18
4960-113	418037.61	5287808.92	4966.66	10.10	323.26	-0.56
4960-114	418041.18	5287804.78	4966.76	17.10	145.35	-0.13
4960-115	418027.56	5287797.46	4968.75	10.10	324.10	0
4960-116	418028.01	5287796.73	4967.42	99.70	320.41	-64
4960-117	418030.39	5287792.55	4968.85	16.50	145.36	-0.3
4960-118	418017.17	5287786.51	4969.27	9.80	326.06	1
4960-119	418020.64	5287781.92	4969.26	16.80	142.66	-1.9
4960-120	418006.80	5287774.84	4969.15	9.10	324.86	0
4960-121	418009.97	5287770.62	4969.08	12.20	145.86	-0.9
4960-122	418051.82	5287824.14	4962.77	82.90	328.46	-38.8
4960-123	418051.76	5287850.60	4962.10	91.40	145.76	-49.1
4960-124	418052.28	5287849.95	4860.68	61.90	142.56	-35.8
4960-125	418052.04	5287850.01	4865.84	29.90	151.96	57.9
4960-126	418044.95	5287861.53	4960.56	61.60	325.56	-60.5

Hole Id	Easting (m)	Northing (m)	Elevation (m)	Depth (m)	Azimuth	Dip
4960-127	418044.63	5287862.02	4960.91	48.80	325.70	-44.09
4960-128	418043.69	5287863.33	4901.43	61.00	325.40	-0.44
4960-129	418043.33	5287863.73	4962.91	51.80	324.15	29.08
4960-130	418023.89	5287820.45	4960.87	91.40	148.16	-53.62
4960-131	418024.30	5287819.89	4960.97	54.90	146.49	-34.6
4960-132	418024.56	5287819.48	4961.67	44.80	146.76	-14.1
4960-133	418021.54	5287825.02	4962.30	54.90	328.26	0.7
4960-134	418021.61	5287824.91	4961.09	125.90	327.06	-34.9
4960-135	418022.26	5287823.96	4961.11	100.60	328.96	-64.3
4960-136	418037.94	5287844.64	4961.18	48.80	327.36	-31.1
4960-137	418192.94	5288092.83	4957.97	273.70	143.06	-38.9
4960-138	418193.14	5288092.55	4958.40	207.30	143.41	-25.31
4960-139	418187.74	5288028.98	4961.85	196.90	143.26	-44.7
4960-140	418169.58	5287963.07	4965.61	61.00	152.76	14.8
4960-141	418168.83	5287964.80	4968.28	28.30	150.26	57.4
4960-142	418077.73	5287944.71	4960.24	195.70	146.33	-41.67
5015-001	418032.07	5287941.72	5025.38	103.00	145.00	0
5015-002	418033.10	5287942.99	5025.40	109.70	157.00	0
5015-003	418030.12	5287940.61	5025.10	110.30	170.00	0
5015-004	418061.54	5287901.08	5025.80	75.60	115.00	0
5015-005	418099.24	5287941.58	5020.00	91.40	146.00	0
5015-006	418097.46	5287944.73	5018.57	136.20	145.00	-38
5015-007	418132.85	5287930.02	5020.39	61.00	145.00	0
5015-008	418169.02	5287984.56	5020.89	79.60	145.00	0
5015-009	418191.88	5288000.38	5021.21	74.40	155.00	0
5015-010	418122.52	5287945.82	5018.88	79.20	148.70	-25.1
5015-011	418120.49	5287948.94	5018.66	110.30	145.70	-40
5015-012	418178.33	5288009.64	5019.77	111.90	322.70	-57
5015-013	418182.13	5287991.56	5021.21	71.00	145.00	0
5015-014	418181.99	5287991.67	5020.22	92.70	145.00	-28
5015-015	418181.99	5287991.68	5020.20	106.40	145.00	-43
5015-016	418162.32	5287971.40	5020.84	54.90	145.00	0
5015-017	418162.03	5287971.65	5020.05	62.20	145.00	-26
5015-018	418158.45	5287976.01	5019.69	109.70	138.40	-39
5015-019	418193.06	5288001.63	5021.52	82.16	144.60	0
5015-020	418143.31	5287961.17	5020.55	73.80	144.50	0
5015-021	418143.06	5287961.66	5019.94	80.80	144.50	-22
5015-022	418135.92	5287967.85	5019.52	123.40	144.80	-37

Hole Id	Easting (m)	Northing (m)	Elevation (m)	Depth (m)	Azimuth	Dip
5015-023	418190.59	5288004.91	5020.66	134.40	144.00	-40
5015-024	418075.64	5287947.15	5018.93	117.70	305.00	-65
5015-025	418099.05	5287932.44	5019.60	76.90	143.90	-29
5015-026	418078.90	5287927.49	5020.36	86.90	145.00	0
5015-027	418213.43	5288001.39	5021.75	56.40	143.10	0
5015-028	418054.02	5287926.00	5019.11	100.20	325.00	-53
5015-029	418224.68	5288010.93	5022.06	104.90	145.00	0
5015-030	418224.69	5288010.89	5021.43	92.00	143.40	-31
5015-031	418219.06	5288019.03	5020.96	101.20	145.00	-44
5015-032	418215.80	5288022.81	5020.86	78.00	145.00	-60
5015-033	418079.25	5287927.89	5020.20	100.90	145.00	-15
5015-034	418198.95	5287993.93	5020.69	80.80	145.00	-29
5015-035	418209.92	5287985.26	5021.54	66.10	55.00	0
5015-036	418211.93	5287986.81	5020.07	108.80	55.00	-37
5015-037	418209.19	5287984.76	5023.55	65.20	55.00	31
5015-038	418223.16	5287982.42	5022.41	62.20	55.00	0
5015-039	418223.16	5287982.42	5024.46	62.20	55.00	30
5015-040	418216.08	5287977.45	5021.68	100.30	55.00	-27
5015-041	418219.87	5287967.88	5023.80	71.00	55.00	0
5015-042	418221.32	5287968.76	5022.77	72.20	55.00	30
5015-043	418220.72	5287968.38	5022.03	107.00	55.00	-26
5015-044	418226.40	5287960.17	5022.56	71.40	55.00	0
5015-045	418226.17	5287960.04	5025.93	72.50	55.00	30
5015-046	418226.44	5287960.17	5022.84	107.00	55.00	-28
5015-047	418175.48	5287973.92	5019.98	103.33	145.00	-22
5015-048	418172.65	5287979.58	5019.86	100.79	145.00	-40
5015-049	418197.02	5287996.47	5025.18	70.40	145.00	48
5015-050	418221.31	5288014.85	5025.25	61.00	145.00	57
5015-051	418217.39	5288011.65	5024.90	46.30	145.00	40
5015-052	418181.80	5287991.34	5023.88	64.76	145.00	40
5015-053	418135.23	5287995.55	5019.72	61.00	37.63	-61.6
5015-054	418133.83	5287923.93	5019.19	85.60	145.00	-41
5015-055	418118.03	5287901.20	5020.70	68.30	144.70	-79.3
5015-056	418154.69	5287951.70	5023.61	56.70	146.60	77.6
5015-057	418067.92	5287910.13	5022.63	61.00	143.00	0
5015-058	418074.17	5287910.38	5021.50	104.20	144.30	1.74
5015-059	418079.02	5287928.21	5020.15	106.70	149.50	-28
5015-060	418078.59	5287928.83	5020.00	98.10	145.90	-48.9



Hole Id	Easting (m)	Northing (m)	Elevation (m)	Depth (m)	Azimuth	Dip
5015-061	418079.63	5287927.47	5021.18	76.20	145.00	14
5015-062	418239.32	5288036.15	5022.45	46.30	142.60	0
5015-063	418238.93	5288036.76	5021.33	78.00	141.20	-40
5015-064	418239.02	5288036.72	5021.77	96.90	141.20	-25
5015-065	418057.38	5287905.84	5020.55	125.60	150.00	-38.5
5015-066	418059.68	5287903.57	5021.10	103.60	145.00	-24
5015-067	418078.17	5287912.68	5021.20	75.60	143.40	-11
5015-068	418109.79	5287904.20	5024.63	50.30	146.63	39
5015-069	418116.02	5287895.07	5025.22	36.60	145.30	37
5015-070	418162.01	5287970.66	5020.70	65.50	143.60	-9
5015-071	418189.11	5287958.87	5020.62	60.00	53.14	-45.6
5015-072	418188.49	5287958.75	5021.06	52.40	53.14	-30
5015-073	418253.79	5288046.00	5021.74	117.00	143.50	-42
5060-002	418123.67	5287970.81	5062.02	90.20	144.17	-19.81
5060-003	418124.49	5287970.95	5061.66	54.30	115.85	-19.61
5060-004	418179.47	5288005.15	5065.40	64.90	131.36	20.22
5060-005	418172.87	5288000.35	5065.47	69.50	143.06	18.4
5060-006	418152.91	5287986.46	5064.40	61.90	132.86	18.4
5060-007	418115.57	5287963.00	5064.21	73.20	150.96	15.3
5060-008	418039.03	5287894.30	5064.05	69.80	132.46	14.6
5060-009	418109.47	5287905.93	5061.24	39.90	144.16	-28.7
5060-010	418108.55	5287905.88	5065.27	30.50	147.06	35.9
5060-011	418071.97	5287923.32	5063.92	73.20	151.66	13.8
5060-012	418137.69	5287976.94	5063.92	64.00	145.26	15.3
5060-013	418082.23	5287925.86	5063.48	64.00	147.76	12.5
5060-014	418039.09	5287894.48	5062.34	73.20	141.16	-20.4
5060-013	418082.23	5287925.86	5063.48	64	147.76	12.5
5060-014	418039.09	5287894.48	5062.34	73.2	141.16	-20.4

Notes: \* UTM NAD 83 Coordinates, \*\* elevation above sea level plus 5000 m

**Table A-3: Location, Orientation and Depth Data for 1992-1997 Royal Oak Holes**

Hole Id	Easting (m)	Northing (m)	Elevation (m)	Depth (m)	Azimuth	Dip
CE-282	417374.54	5286684.94	5127.00	608.50	325.16	-62
CE-283A	417324.23	5286580.49	5129.00	671.00	325.16	-66
CE-284	417413.61	5286466.09	5140.00	794.30	325.16	-62
CE-285	417406.63	5286082.41	5120.00	1199.00	325.16	-80
4870-001	418096.63	5287983.86	4870.22	437.40	139.36	-48.3
4870-002	418096.36	5287984.04	4870.00	397.80	113.16	-33
4870-003	418093.33	5287983.15	4870.00	550.00	135.16	-52
4870-004	418096.93	5287983.22	4870.00	413.00	120.16	-47
4870-005	418096.93	5287983.22	4870.00	297.50	120.16	-62
4870-006	418095.29	5287827.44	4872.83	68.58	328.16	-28.7
4870-007	418095.33	5287827.16	4872.40	86.90	328.86	-49.1
4870-008	418106.61	5287837.21	4872.50	70.10	325.76	-45.3
4870-009	418051.45	5287807.09	4873.20	57.91	320.16	-32.6
4870-010	418065.90	5287830.07	4872.10	48.77	325.16	-60
4870-011	418082.76	5287872.94	4871.99	68.88	146.16	-23.7
4870-012	418107.49	5287889.93	4870.19	74.07	145.46	-40.1
4870-013	418107.54	5287890.11	4870.20	111.86	145.16	-53
4870-014	418096.93	5287983.22	4870.00	511.70	164.16	-47
4870-015	418096.93	5287983.22	4870.00	607.20	164.16	-56
4870-016	418118.98	5287893.81	4870.00	46.94	145.16	-30
4870-017	418117.86	5287895.93	4870.25	83.82	144.16	-34.9
4870-018	418117.44	5287896.43	4870.21	112.78	145.56	-53.4
4870-019	418244.76	5288106.83	4846.00	84.10	145.16	-52
4870-020	418244.76	5288106.83	4846.00	499.90	130.16	-53
4870-021	418244.76	5288106.83	4846.00	380.40	127.16	-45
4870-022	418132.88	5287904.61	4870.52	57.91	143.56	-27.5
4870-023	418132.59	5287904.87	4870.40	106.68	145.16	-47
4870-024	418082.11	5287872.41	4870.74	85.34	145.16	-31
4870-025	418082.11	5287872.41	4870.00	96.01	145.16	-49
4870-026	418141.53	5287913.92	4870.23	66.14	144.26	-29
4870-027	418151.84	5287877.22	4872.00	84.04	325.16	-62
4870-028	418161.87	5287884.69	4871.70	65.53	325.16	-76
4870-029	418141.27	5287914.44	4870.40	112.78	147.86	-44.2
4870-030	418096.57	5287878.82	4873.70	57.61	148.56	-26.2
4870-031	418117.02	5287849.42	4874.17	56.39	327.46	-26.6
4870-032	418117.40	5287848.93	4873.35	65.53	327.36	-57.7

Hole Id	Easting (m)	Northing (m)	Elevation (m)	Depth (m)	Azimuth	Dip
<b>4870-033</b>	418128.96	5287859.34	4872.80	64.01	325.16	-53
<b>4870-034</b>	418136.83	5287866.42	4873.13	63.40	326.86	-27.1
<b>4870-035</b>	418137.01	5287866.16	4877.60	64.31	325.16	-59
<b>4870-036</b>	418071.91	5287860.80	4871.40	75.00	145.16	-29.8
<b>4870-037</b>	418071.91	5287860.80	4871.40	116.74	145.56	-40.1
<b>4870-038</b>	418053.85	5287847.38	4872.50	88.70	148.86	-32.2
<b>4870-039</b>	418053.85	5287847.38	4872.50	119.18	150.56	-45.8
<b>4870-040</b>	418161.19	5287929.41	4869.20	65.53	131.46	-19.2
<b>4870-041</b>	418161.19	5287929.41	4869.20	63.10	134.16	-47
<b>4870-042</b>	418195.56	5287960.52	4876.50	92.05	158.06	-29.8
<b>4870-043</b>	418195.56	5287960.52	4876.50	102.11	159.46	-40.4
<b>4870-044</b>	418195.56	5287960.52	4876.50	120.09	155.86	-49
<b>4870-045</b>	418200.78	5287964.40	4876.20	75.59	149.46	-22
<b>4870-046</b>	418200.78	5287964.40	4876.20	99.06	150.56	-45
<b>4870-047</b>	418222.75	5287973.96	4875.20	90.83	138.16	-46
<b>4870-048</b>	418222.75	5287973.96	4875.20	117.04	152.96	-63.4
<b>4870-049</b>	418042.52	5287837.42	4872.50	74.98	145.16	-25
<b>4870-050</b>	418042.52	5287837.42	4872.50	99.04	143.56	-39.6
<b>4870-051</b>	418042.52	5287837.42	4872.50	123.75	145.16	-50
<b>4870-052</b>	418032.15	5287830.44	4872.50	69.19	145.16	-28
<b>4870-053</b>	418032.15	5287830.44	4872.50	89.87	145.16	-42
<b>4870-054</b>	418032.15	5287830.44	4872.50	116.13	145.16	-55
<b>4870-055</b>	418017.66	5287829.37	4873.00	79.86	145.16	-20
<b>4870-056</b>	418017.66	5287829.37	4873.00	100.58	145.16	-32
<b>4870-057</b>	418046.22	5287788.35	4873.00	121.92	145.16	-43
<b>4870-058</b>	418255.44	5288043.37	4843.20	101.50	145.66	-30
<b>4870-059</b>	418254.43	5288042.54	4845.30	86.56	156.46	7.9
<b>4870-060</b>	418254.43	5288042.54	4843.30	98.76	158.16	-19.7
<b>4870-061</b>	418257.44	5288044.52	4845.80	106.07	113.76	10.3
<b>4870-062</b>	418257.44	5288044.52	4843.00	111.58	116.16	-12
<b>4870-063</b>	418257.44	5288044.52	4843.00	138.38	117.16	-32
<b>4870-064</b>	418256.62	5288043.95	4844.80	96.32	124.46	7.3
<b>4870-065</b>	418256.50	5288044.11	4842.80	104.85	125.96	-7.7
<b>4870-066</b>	418256.62	5288043.95	4842.80	125.58	127.76	-24
<b>4870-067</b>	418256.02	5288043.41	4842.80	96.62	136.76	-8.6
<b>4870-068</b>	418256.02	5288043.41	4842.80	118.26	136.26	-27.4
<b>4870-069</b>	418216.01	5288023.72	4840.50	91.44	134.56	13.9
<b>4870-070</b>	418216.01	5288023.72	4838.50	104.55	136.06	-5.2

Hole Id	Easting (m)	Northing (m)	Elevation (m)	Depth (m)	Azimuth	Dip
<b>4870-071</b>	418216.01	5288023.72	4838.50	121.31	136.96	-21
<b>4870-072</b>	418214.40	5288023.58	4840.40	104.55	146.66	13.6
<b>4870-073</b>	418214.40	5288023.58	4838.50	107.59	144.86	-7.3
<b>4870-074</b>	418214.40	5288023.58	4838.50	131.06	147.26	-22
<b>4870-075</b>	418255.85	5288043.66	4842.80	142.04	108.16	-19
<b>4870-076</b>	418161.19	5287929.51	4869.20	87.48	116.56	-22
<b>4870-077</b>	418161.19	5287929.41	4869.20	105.46	115.26	-42.5
<b>4870-078</b>	418155.31	5287924.81	4869.23	67.97	142.86	-28.1
<b>4870-079</b>	418154.00	5287926.65	4869.34	130.45	145.76	-57.6
<b>4870-080</b>	418132.63	5287904.82	4870.40	110.03	147.16	-51.6
<b>4870-081</b>	418062.66	5287854.85	4872.10	79.00	145.16	-27
<b>4870-082</b>	418062.66	5287854.85	4872.10	102.10	145.16	-41
<b>4870-083</b>	418062.66	5287854.85	4872.10	127.94	145.16	-49
<b>4870-084</b>	418040.17	5287785.84	4874.20	73.50	2.16	-51
<b>4870-085</b>	418087.22	5287819.57	4872.40	73.66	325.16	-54
<b>4870-086</b>	418095.22	5287827.33	4872.80	84.12	325.16	-74
<b>4870-087</b>	418161.87	5287884.69	4871.70	75.29	325.16	-58
<b>4870-088</b>	418306.14	5287991.73	4876.60	37.51	149.16	-56
<b>4870-089</b>	418188.66	5287994.94	4834.90	119.48	139.66	-24
<b>4870-090</b>	418095.05	5287983.19	4870.27	240.00	128.06	-36.4
<b>4870-091</b>	418095.09	5287983.14	4870.34	255.12	151.16	-34.6
<b>4870-092</b>	418095.11	5287983.12	4870.33	250.87	165.66	-33.4
<b>4870-093</b>	418237.25	5288099.70	4848.81	269.75	144.76	-32.2
<b>4870-094</b>	417935.55	5287825.08	4910.72	146.91	132.76	-31.4
<b>4870-095</b>	417933.32	5287823.84	4910.59	142.22	162.96	-27.7
<b>4870-096</b>	417933.20	5287824.22	4910.40	266.77	166.76	-45.2
<b>4900-001</b>	418254.99	5288095.58	4905.88	221.00	140.73	-36.32
<b>4900-002</b>	418254.97	5288095.59	4906.22	164.60	145.86	-26.1
<b>4900-003</b>	418255.01	5288095.56	4906.63	271.00	144.06	-14.2
<b>4900-004</b>	418254.94	5288095.76	4905.94	243.20	142.6	-48.26
<b>4900-005</b>	418255.14	5288097.29	4905.70	281.90	114.44	-44.39
<b>4900-006</b>	418254.44	5288097.59	4906.39	204.20	129.26	-28.75
<b>4900-007</b>	418254.98	5288096.91	4906.25	219.50	130.26	-45.11
<b>4900-008</b>	418255.05	5288042.84	4901.14	97.50	145.16	0.6
<b>4900-009</b>	418255.12	5288043.03	4900.68	118.60	146.36	-13.7
<b>4900-010</b>	418254.85	5288043.16	4900.14	126.50	145.96	-29.6
<b>4900-011</b>	418254.62	5288043.54	4899.95	166.10	145.26	-45.1
<b>4900-012</b>	418255.17	5288042.62	4901.95	122.80	146.92	20.12

Hole Id	Easting (m)	Northing (m)	Elevation (m)	Depth (m)	Azimuth	Dip
4930-001	418057.78	5287923.91	4931.87	152.40	143.56	-23.98
4930-002	418056.95	5287925.09	4931.80	203.60	142.86	-39.5
4930-003	418061.98	5287921.97	4933.01	110.30	147.06	-4.8
4930-004	418017.23	5287979.24	4937.41	254.50	144.96	-38.3
4930-005	418185.66	5288023.64	4920.51	248.40	151.05	-44.19
4930-006	418186.04	5288022.99	4920.41	210.30	150.65	-35.12
4930-007	418185.91	5288023.17	4921.00	167.60	151.44	-22.9
4930-008	418186.21	5288023.04	4921.33	118.90	151.16	-12.2
4930-009	418115.96	5287980.00	4924.07	211.20	146.89	-45.1
4930-010	418116.59	5287978.94	4923.95	158.80	147.46	-32.5
OP-001	418085.19	5287881.72	5126.54	6.20	325.00	-45.00
OP-002	418015.20	5287850.99	5122.50	14.30	325.00	-45.00
OP-003	418126.19	5287910.41	5127.50	15.20	325.00	-45.00
OP-004	418059.31	5287875.17	5127.50	13.70	325.00	-45.00
OP-005	418046.98	5287892.78	5127.50	13.10	325.00	-45.00
OP-006	418068.26	5287862.08	5127.70	14.00	325.00	-45.00
OP-007	418010.43	5287814.21	5128.06	14.00	325.00	-45.00
OP-008	417957.76	5287803.29	5124.83	14.00	325.00	-45.00
OP-009	417989.50	5287800.52	5127.50	14.00	325.00	-45.00
OP-010	418014.51	5287808.39	5127.50	14.00	325.00	-45.00
OP-011	418046.88	5287849.33	5124.99	14.00	325.00	-45.00
OP-012	418033.73	5287868.12	5126.00	14.00	325.00	-45.00
OP-013	418028.39	5287875.74	5126.70	7.90	325.00	-45.00
OP-014	418033.84	5287824.37	5127.00	14.00	325.00	-45.00
OP-015	418064.18	5287868.21	5127.50	13.70	325.00	-45.00
OP-016	417990.70	5287842.39	5127.50	24.10	325.00	-45.00
OP-017	418076.63	5287894.01	5127.50	16.10	325.00	-45.00
OP-018	418053.29	5287883.77	5127.50	14.00	325.00	-45.00
OP-019	418088.69	5287877.07	5126.65	14.00	325.00	-45.00
OP-020	418082.01	5287886.27	5126.68	14.00	325.00	-45.00
OP-021	418071.18	5287901.80	5127.00	14.00	325.00	-45.00
OP-022	418066.02	5287909.17	5127.50	14.00	325.00	-45.00
OP-023	418143.23	5287929.66	5127.50	14.00	325.00	-45.00
OP-024	418162.28	5287946.05	5127.50	16.80	325.00	-45.00
OP-025	418101.41	5287902.21	5127.50	13.80	325.00	-45.00
OP-026	418107.15	5287894.02	5127.50	14.00	325.00	-45.00
OP-027	418084.49	5287926.38	5127.50	14.00	325.00	-45.00
OP-028	417948.89	5287770.99	5117.50	14.00	325.00	-45.00

Hole Id	Easting (m)	Northing (m)	Elevation (m)	Depth (m)	Azimuth	Dip
OP-029	417940.23	5287783.36	5117.50	14.00	325.00	-45.00
OP-030	417929.48	5287754.96	5117.50	14.20	325.00	-45.00
OP-031	417921.19	5287766.61	5117.30	14.00	325.00	-45.00
OP-032	417969.04	5287783.88	5116.80	14.20	325.00	-45.00
OP-033	418180.46	5287963.67	5131.10	9.10	325.00	-45.00
OP-034	417934.31	5287748.58	5116.30	10.70	325.00	-45.00
OP-035	417958.88	5287799.96	5117.24	14.00	325.00	-45.00
OP-036	417978.95	5287815.24	5117.10	14.00	325.00	-45.00
OP-037	417990.34	5287798.80	5117.30	14.00	325.00	-45.00
OP-038	418009.21	5287816.65	5116.90	29.70	325.00	-45.00
OP-039	417996.73	5287833.79	5117.50	14.00	325.00	-45.00
OP-040	418014.59	5287809.67	5117.20	14.00	325.00	-45.00
OP-041	418037.95	5287820.42	5117.40	14.00	325.00	-45.00
OP-042	418029.20	5287830.65	5117.50	14.00	325.00	-45.00
OP-043	418013.09	5287849.64	5117.18	13.00	325.00	-45.00
OP-044	418024.09	5287909.00	5127.08	145.10	325.00	-65.00
OP-045	418100.93	5287947.37	5127.20	188.70	325.00	-45.00
OP-046	418051.47	5287845.40	5117.97	7.60	325.00	-45.00
OP-047	418104.68	5287941.13	5127.50	14.00	325.00	-55.00
OP-048	418266.95	5288055.11	5144.44	255.90	325.00	-45.00
OP-049	418037.11	5287863.29	5117.50	28.00	325.00	-45.00
OP-050	418157.69	5287952.60	5129.50	16.50	325.00	-45.00
OP-051	418025.72	5287857.75	5117.50	14.00	325.00	-45.00
OP-052	418029.74	5287852.02	5117.50	14.00	325.00	-45.00
OP-053	418054.32	5287838.71	5117.50	14.00	325.00	-45.00
OP-054	418032.81	5287869.43	5117.50	14.00	325.00	-45.00
OP-055	418145.64	5287969.81	5127.50	14.00	325.00	-45.00
OP-056	418140.48	5287977.18	5127.50	14.00	325.00	-45.00
OP-057	418071.36	5287857.86	5118.26	13.90	325.00	-45.00
OP-058	418066.23	5287865.17	5118.12	14.60	325.00	-45.00
OP-059	418047.65	5287891.76	5117.25	14.60	325.00	-45.00
OP-060	418027.25	5287877.57	5117.35	14.30	325.00	-45.00
OP-061	418091.26	5287873.63	5118.33	20.10	325.00	-45.00
OP-062	418086.49	5287880.03	5117.90	14.00	325.00	-45.00
OP-063	418108.84	5287891.54	5118.24	28.30	325.00	-45.00
OP-064	418104.07	5287898.69	5118.28	14.00	325.00	-45.00
OP-065	418196.83	5287997.47	5127.50	12.80	235.00	-45.00
OP-066	418156.53	5287997.57	5127.02	18.30	325.00	-45.00

Hole Id	Easting (m)	Northing (m)	Elevation (m)	Depth (m)	Azimuth	Dip
OP-067	418156.91	5287996.80	5127.04	17.50	145.00	-45.00
OP-068	418112.80	5287891.48	5118.45	28.30	325.00	-45.00
OP-069	418174.73	5288002.50	5128.13	14.00	145.00	-45.00
OP-070	418140.94	5287932.94	5118.50	8.50	325.00	-45.00
OP-071	418085.93	5287924.33	5117.50	21.00	325.00	-45.00
OP-072	418161.70	5287946.87	5117.50	14.00	325.00	-45.00
OP-073	418019.50	5287844.85	5117.50	14.00	325.00	-45.00
OP-074	418052.02	5287885.57	5117.80	14.00	325.00	-45.00
OP-075	418067.77	5287906.49	5117.20	14.30	325.00	-45.00
OP-076	418081.48	5287930.86	5117.40	14.30	325.00	-45.00
OP-077	417999.28	5287721.22	5118.36	131.40	325.00	-45.00
OP-078	418098.29	5287888.18	5118.50	14.00	325.00	-45.00
OP-079	418106.41	5287938.67	5117.50	14.00	325.00	-45.00
OP-080	418074.63	5287896.88	5117.50	30.80	325.00	-45.00
OP-081	418074.71	5287896.94	5117.60	20.10	145.00	-45.00
OP-082	418050.33	5287898.79	5117.70	21.10	145.00	-30.00
OP-083	418129.50	5287905.52	5118.10	28.00	325.00	-45.00
OP-084	418145.08	5287927.54	5118.00	28.00	325.00	-45.00
OP-085	418122.30	5287959.56	5117.50	14.00	325.00	-45.00
OP-086	418181.76	5287961.64	5118.30	18.60	325.00	-45.00
OP-087	418194.96	5287990.91	5117.50	15.50	235.00	-40.00
OP-088	418190.10	5287997.53	5117.44	15.50	235.00	-40.00
OP-089	418185.78	5288004.02	5117.40	15.50	235.00	-40.00
OP-090	418175.98	5287969.91	5117.62	14.00	325.00	-45.00
OP-091	418103.54	5287942.76	5117.50	14.10	325.00	-45.00
OP-092	418143.92	5287972.26	5117.50	14.00	325.00	-45.00
OP-093	418163.83	5287987.42	5117.50	14.00	325.00	-45.00
OP-094	418017.55	5287694.91	5118.70	180.10	322.00	-47.00
OP-095	417951.59	5287767.14	5108.70	36.00	325.00	-40.00
OP-096	417970.78	5287783.15	5108.50	37.20	325.00	-33.00
OP-097	417959.50	5287799.78	5107.50	14.00	325.00	-45.00
OP-098	418019.21	5287845.26	5107.50	14.00	325.00	-45.00
OP-099	417991.45	5287797.74	5107.50	36.60	325.00	-35.00
OP-100	418009.89	5287814.47	5108.30	32.00	325.00	-40.00
OP-101	417979.95	5287812.76	5107.20	14.00	325.00	-45.00
OP-102	418023.78	5287839.43	5107.80	23.20	325.00	-55.00
OP-103	418041.55	5287857.12	5107.20	34.70	325.00	-45.00
OP-104	418041.94	5287856.91	5107.20	35.10	145.00	-40.00

Hole Id	Easting (m)	Northing (m)	Elevation (m)	Depth (m)	Azimuth	Dip
OP-105	418074.80	5287853.05	5107.80	26.30	325.00	-55.00
OP-106	418071.93	5287857.15	5107.10	15.20	325.00	-30.00
OP-107	418088.27	5287877.75	5106.90	14.00	325.00	-45.00
OP-108	418095.70	5287867.65	5107.60	28.00	325.00	-45.00
OP-109	418110.02	5287889.92	5107.30	26.20	325.00	-55.00
OP-110	418050.47	5287888.14	5106.60	20.40	325.00	-45.00
OP-111	418162.85	5287945.23	5107.50	14.00	145.00	-45.00
OP-112	418154.25	5287957.52	5106.00	30.50	145.00	-50.00
OP-113	418149.08	5287964.89	5106.40	27.40	325.00	-45.00
OP-114	418182.76	5287960.39	5107.50	40.00	325.00	-45.00
OP-115	418164.00	5287985.96	5106.80	14.30	325.00	-45.00
OP-116	418133.08	5287944.16	5106.70	36.90	145.00	-45.00
OP-117	418170.85	5287976.43	5107.21	32.00	325.00	-40.00
OP-118	418202.91	5287974.72	5109.92	21.60	325.00	-60.00
OP-119	418145.24	5287926.80	5107.50	14.00	325.00	-45.00
OP-120	417981.28	5287812.26	5107.48	29.80	145.00	-50.00
OP-121	417961.14	5287797.43	5108.01	29.90	145.00	-50.00
OP-122	418026.96	5287834.20	5099.10	20.10	145.00	-45.00
OP-123	418042.44	5287855.67	5098.50	30.50	145.00	-45.00
OP-124	418122.30	5287959.56	5107.00	14.00	325.00	-45.00
OP-125	418129.47	5287949.32	5107.50	28.00	145.00	-45.00
OP-126	418146.22	5287968.99	5107.50	6.40	145.00	-30.00
OP-127	418146.22	5287968.99	5107.50	17.10	325.00	-30.00
OP-128	418171.86	5287975.95	5107.50	30.50	145.00	-45.00
OP-129	418198.07	5287982.10	5107.50	40.20	325.00	-35.00
OP-130	418200.53	5287989.93	5107.50	28.00	235.00	-39.00
OP-131	418207.90	5287995.09	5107.50	33.00	235.00	-41.00
OP-132	418213.63	5287999.10	5107.50	34.10	235.00	-51.00
OP-133	417943.32	5287779.30	5107.50	17.10	325.00	-45.00
OP-134	417938.73	5287785.85	5107.50	14.00	325.00	-45.00
OP-135	417940.87	5287783.32	5108.30	30.50	145.00	-45.00
OP-136	418054.66	5287881.80	5099.30	25.00	325.00	-45.00
OP-137	418070.60	5287901.76	5098.50	25.30	325.00	-45.00
OP-138	418087.83	5287921.26	5098.30	21.60	325.00	-45.00
OP-139	418082.26	5287929.21	5098.00	10.40	325.00	-45.00
OP-140	418104.38	5287941.04	5098.00	16.50	325.00	-45.00
OP-141	418125.16	5287955.47	5098.00	20.10	325.00	-45.00
OP-142	418200.55	5288002.27	5100.10	20.10	235.00	-51.00



Hole Id	Easting (m)	Northing (m)	Elevation (m)	Depth (m)	Azimuth	Dip
<b>OP-143</b>	418207.83	5288007.29	5099.92	20.10	235.00	-60.00
<b>OP-144</b>	418189.84	5287995.28	5099.68	21.90	235.00	-46.00
<b>OP-145</b>	418179.23	5287999.43	5099.50	21.30	235.00	-50.00
<b>OP-146</b>	418189.88	5288006.88	5099.50	21.30	235.00	-55.00
<b>OP-147</b>	418189.88	5288006.88	5099.50	21.30	55.00	-50.00
<b>OP-148</b>	417971.46	5287717.32	5112.17	87.50	322.00	-45.00
<b>OP-149</b>	417995.88	5287682.24	5114.61	152.40	328.30	-57.00
<b>OP-150</b>	418028.41	5287680.27	5114.94	230.40	326.50	-55.00
<b>OP-151</b>	417952.68	5287700.56	5113.91	125.00	325.00	-60.00
<b>OP-152</b>	417952.29	5287701.10	5113.80	98.40	325.00	-44.00
<b>CEO-286</b>	416542.00	5286316.00	5050.00	412.32	325.00	-72.00
<b>CEO-287</b>	416630.00	5286451.00	5020.00	352.51	325.00	-52.00
<b>CEO-288</b>	418000.00	5287371.00	5155.00	573.94	325.00	-66.00
<b>CEO-289</b>	417432.00	5286906.00	5097.00	446.44	325.00	-64.00
<b>CEO-290</b>	417578.00	5287102.00	5117.00	409.52	325.00	-63.00
<b>CEO-291</b>	417850.00	5287238.00	5152.00	539.12	325.00	-61.00

Notes: \* UTM Zone 21 NAD 83 Coordinates, \*\* elevation above sea level plus 5000 m

**Table A-4: Significant Intercepts for Coastal Gold Program I Drill Holes**

Hole Id	From (m)	To (m)	Core Length (m)	*True Width (m)	Au (g/t)	Cu (%)
<b>HB10-001</b>	459.70	484.70	25.00	19.00	1.07	-
incl.	459.70	470.40	10.70	8.10	1.48	-
incl.	477.70	484.70	7.00	5.30	1.17	-
and	494.70	497.90	3.20	2.40	1.82	-
and	503.60	504.60	1.00	0.80	1.75	-
<b>HB10-002</b>	no significant values					
<b>HB10-003</b>	404.00	414.70	10.70	8.10	5.43	-
and	426.00	428.00	2.00	1.50	1.66	-
and	445.00	448.00	3.00	2.30	2.54	-
and	473.00	481.80	8.80	6.70	2.16	-
<b>HB10-004</b>	15.80	31.10	15.30	11.60	2.08	-
incl.	23.70	29.00	5.30	4.00	3.36	-
<b>HB10-005</b>	0.00	25.60	25.60	19.50	2.41	-
incl.	13.10	21.10	8.00	6.10	4.65	-
<b>HB10-006</b>	14.50	23.50	9.00	6.80	1.05	-
incl.	14.50	17.70	3.20	2.40	2.07	-
<b>HB10-007</b>	hole abandoned					
<b>HB10-008</b>	313	382.1	69.1	41.6	1.08	0.22
incl.	331.7	382.1	50.4	30.3	1.33	0.3
incl.	347.9	357.8	9.9	6	3.17	0.91
incl.	359.7	361.1	1.4	0.8	4.03	0.87
incl.	379.8	381.4	1.6	1	3.27	1.04
<b>HB10-009</b>	61.9	110.8	48.9	36.9	1.07	tr
incl.	61.9	89.9	28	21.1	1.44	tr
incl.	73.1	79	5.9	4.5	3.56	tr
incl.	102.1	110.8	8.7	6.6	1.2	tr
<b>HB10-010</b>	243.7	261.5	17.8	13.4	0.53	tr
incl.	243.7	246.2	2.5	1.9	1.47	tr

Notes: (1) \*Estimated, (2) tr = trace

**Table A-5: Significant Intercepts for Coastal Gold Program II Drill Holes**

Hole Id	From (m)	To (m)	Core Length (m)	True Width (m)	Au (g/t)	Cu (%)
<b>HB11-011</b>	145.9	162.9	17	12.8	2.24	tr
incl.	152.9	161.9	9	6.8	3.12	tr
incl.	159.9	161.9	2	1.5	9.26	tr
and	175	193.3	18.3	13.7	2.37	tr
incl.	175	183.9	8.9	6.7	4.56	tr
<b>HB11-012</b>	311	330.3	19.3	14.5	2.39	0.16
incl.	323.3	327	3.7	2.8	6.63	0.46
and	358.5	361	2.5	1.9	5.92	0.28
and	392.5	409.5	16.5	12.4	1.65	tr
incl.	400	404	4	3	2.42	tr
incl.	406	409	3	2.3	2.62	tr
<b>HB11-013</b>	11	39.7	28.7	21.5	1.31	tr
incl.	16	37.8	21.8	16.4	1.6	tr
incl.	22.1	27	4.9	3.7	2.21	tr
incl.	29.2	37.8	8.6	6.5	2.03	tr
incl.	35.4	37.8	2.4	1.8	3.8	tr
<b>HB11-014</b>	38.1	49.4	11.3	8.5	1.83	0.13
incl.	39.8	46.6	6.8	5.1	2.74	0.19
incl.	43	46	3	2.3	4.12	0.2
<b>HB11-015</b>	9.9	12.7	2.8	2.1	0.72	tr
and	21.3	31.3	10	7.5	0.65	tr
incl.	25.6	29	3.4	2.6	1.19	tr
and	42.6	43.4	0.8	0.6	1.34	tr
and	49.9	63.5	13.6	10.2	0.58	tr
incl.	59.3	62.5	3.2	2.4	1.19	tr
<b>HB11-016</b>	7.3	18.3	11	8.2	1.79	0.3
incl.	9.7	14.6	4.9	3.7	2.07	0.31
incl.	14.9	17.2	2.3	1.7	1.85	0.47
incl.	17.4	18.3	0.9	0.7	4	0.59
and	21.4	22.3	0.9	0.7	0.66	0.35
and	39.1	42.1	3	2.4	0.32	tr

Hole Id	From (m)	To (m)	Core Length (m)	True Width (m)	Au (g/t)	Cu (%)
incl.	14.5	24.7	10.2	7.7	2.82	tr
incl.	14.5	18.8	4.3	3.2	5.36	0.09
<b>HB11-018</b>	9.3	24.4	15.1	11.3	0.5	tr
incl.	19.3	22.3	3	2.3	1	tr
and	38.7	57.3	18.6	14	1.26	0.1
incl.	41	47.1	6.1	4.6	2.59	0.27
<b>HB11-019</b>	104	127.7	23.7	17.8	0.87	0.07
incl.	112.4	120	7.6	5.7	1.03	0.18
incl.	125	127.7	2.7	2	3.4	0.09
and	136	137.4	1.4	1	0.82	tr
and	144.4	146	1.6	1.2	0.68	tr
<b>HB11-020</b>	hole abandoned					
<b>HB11-021</b>	58.7	66.6	7.9	5.9	0.41	tr
and	76.5	77.8	1.3	1	3.52	0.17
and	89	95.9	6.9	5.2	0.68	tr
and	99	106	7	5.3	0.58	tr
<b>HB11-022</b>	47.5	69.7	22.2	16.7	0.54	tr
incl.	49	50.2	1.2	0.9	3.36	0.08
incl.	63.6	65.1	1.5	1.1	1.59	tr
and	80	97.2	17.2	12.9	0.44	tr
incl.	80	81.9	1.9	1.4	1.39	tr
<b>HB11-023</b>	417	446.2	29.2	21.9	11.44	0.52
incl.	440.3	446.2	5.9	4.4	54.26	2.35
<b>HB11-024</b>	59.2	60.7	1.5	1.1	0.99	0.07
and	79.7	84.1	4.4	3.3	2.3	0.2
and	90.3	121.8	31.5	23.6	1.03	tr
incl.	113.4	121.8	8.4	6.3	2.49	tr
<b>HB11-025</b>	96	129	33	24.8	0.48	tr
incl.	98.8	103.2	4.4	3.3	1.11	0.11
incl.	121.5	124.5	3	2.3	1.13	tr
<b>HB11-026</b>	281.1	284.1	3	2.3	1.22	tr
and	298.9	318	19.1	14.3	2.05	0.27
incl.	304.4	314	9.6	7.2	3.67	0.47
and	326.7	330.4	3.7	2.8	3.07	0.14

Hole Id	From (m)	To (m)	Core Length (m)	True Width (m)	Au (g/t)	Cu (%)
and	334.8	337.8	3	2.3	2.15	0.28
and	346.6	380.6	34	25.5	3.07	0.2
incl.	352.9	360.3	7.4	5.6	4.5	0.39
<b>HB11-027</b>	365.6	369.7	4.1	3.07	2.21	tr
incl.	366.6	368.7	2.1	1.57	3.27	tr
incl.	376	380.6	4.6	3.45	1.45	0.13
and	377.6	379.6	2	1.5	2.52	0.26
<b>HB11-028</b>	523.8	528.8	5	3.75	0.57	tr
<b>HB11-029</b>	118	134.9	16.9	12.7	1.6	0.15
incl.	124.7	130.9	6.2	4.7	3.48	0.37
and	144.9	161.7	16.8	12.6	0.54	tr
incl.	153.9	157.3	3.4	2.6	1.2	tr
<b>HB11-030</b>	57.4	59.5	2.1	1.6	0.88	tr
and	64.8	69.4	4.6	3.5	0.82	tr
incl.	64.8	66.5	1.7	1.3	1.29	tr
<b>HB11-031</b>	190.9	220.3	29.4	22.1	1.23	0.23
incl.	190.9	200.9	10	7.5	1.57	0.5
incl.	203.9	207.9	4	3	3.17	0.49
and	231.4	238.9	7.5	5.6	0.64	tr
incl.	235.9	238.9	3	2.3	1.13	tr
<b>HB11-032</b>	53	54.5	1.5	1.1	0.44	tr
and	197.5	200.5	3	2.3	0.59	tr
and	210.6	211.8	1.2	0.9	0.73	tr
<b>HB11-033</b>	35.2	60.5	25.3	19	1.94	tr
incl.	36.6	47	10.4	7.8	2.15	tr
incl.	47	56	9	6.8	2.61	0.1
and	63.6	68.8	5.2	3.9	0.4	tr
and	74.5	76.7	2.2	1.7	0.46	tr
<b>HB11-034</b>	106.5	125.5	19	14.3	2.08	0.1
incl.	108.4	114.7	6.3	4.7	2.58	0.28
incl.	116.6	121	4.4	3.3	4.44	tr
<b>HB11-035</b>	123.3	140.7	17.4	13.1	0.5	tr
incl.	126.6	128.6	2	1.5	1.03	tr
<b>HB11-36W</b>	489.4	515.2	25.8	19.4	1.37	0.26
incl.	501.6	515.2	13.6	10.2	2.14	0.49

Hole Id	From (m)	To (m)	Core Length (m)	True Width (m)	Au (g/t)	Cu (%)
<b>HB11-037</b>	42	57.7	15.7	11.8	1.1	tr
incl.	55.2	57.7	2.5	1.9	4.32	tr
<b>HB11-038</b>	210.3	216.7	6.4	4.8	1.02	tr
and	219.5	236.2	16.7	12.5	1.51	0.12
incl.	219.5	222	2.5	1.9	3.5	0.09
and	231	236.2	5.2	3.9	1.06	0.28
and	241	247.1	6.1	4.6	0.66	0.25
and	253.7	257.8	4.1	3.1	2.03	0.16
and	265.3	295.7	30.4	22.8	1.57	0.11
incl.	265.3	273.6	8.3	6.2	3.37	0.37
and	288.2	290.4	2.2	1.6	2.52	tr
and	375.4	378.7	3.3	2.5	0.82	0.2
incl.	376.4	377.4	1	0.8	2.32	tr
<b>HB11-039</b>	181.8	195.4	13.6	10.2	0.4	tr
<b>HB11-40</b>	167.6	174.8	7.2	5.4	0.84	0.19
incl.	167.6	170.4	2.8	2.1	1.38	0.27
and	189.4	201.5	12.1	9.1	0.65	tr
incl.	193.4	195.4	2	1.5	0.64	0.13
and	206.3	224.5	18.2	13.7	1.37	tr
incl.	216.4	220	3.6	2.7	3.5	0.12
<b>HB11-041</b>	328.5	334	5.5	4.1	2.74	tr
incl.	330.4	334	3.6	2.7	4.01	0.11
<b>HB11-042</b>	75.3	95.7	20.4	15.3	0.3	tr
incl.	80.2	81.2	1	0.8	1.44	tr
<b>HB11-043</b>	4.5	9	4.5	3.4	1.21	tr
<b>HB11-044</b>	452.7	456.4	3.7	2.8	0.77	tr
and	488.4	490.6	2.2	1.7	2.54	0.96
<b>HB11-045</b>	no significant values					
<b>HB11-046</b>	470.9	472.9	2	1.5	0.84	0.12
and	514.7	544	29.3	22	4.05	tr
incl.	522.7	536.2	13.5	10.1	6.91	tr
<b>HB11-047</b>	96.6	142.2	45.6	34.2	0.42	tr
and	146	148	2	1.5	2.77	tr
<b>HB11-048</b>	no significant values					
<b>HB11-049</b>	203.9	227.5	23.6	17.7	0.74	0.12

Hole Id	From (m)	To (m)	Core Length (m)	True Width (m)	Au (g/t)	Cu (%)
and	237.7	257	19.3	14.5	2.86	0.51
incl.	237.7	247.1	9.4	7.1	5.05	0.98
<b>HB11-050</b>	no significant values					
<b>HB11-051</b>	extension of HB11-050 for geophysical testing					
<b>HB11-052</b>	128	142.4	14.4	10.8	0.42	tr
incl.	129	131	2	1.5	1.38	0.12
<b>HB11-053</b>	151.3	156.5	5.2	3.9	0.31	tr
and	174.7	187	12.3	9.2	0.54	tr
<b>HB11-054</b>	84.5	87.5	3	2.3	1.04	tr
and	103	107.2	4.2	3.2	0.45	tr
<b>HB11-055</b>	111	113	2	1.5	0.49	tr
and	124.7	138.3	13.6	10.2	0.32	tr
and	145.3	152	6.7	5	0.58	tr
incl.	145.3	147.3	2	1.5	1.16	tr
<b>HB11-056</b>	412	424	12	9	0.81	tr
incl.	420	423	3	2.3	2.23	tr
<b>HB11-057</b>	100	111.7	11.7	8.8	0.45	tr
incl.	108.7	109.7	1	0.8	2.41	tr
<b>HB11-058</b>	no significant values					
<b>HB11-059</b>	485.5	504	18.5	13.9	0.53	tr
incl.	494.1	495.7	1.6	1.2	1.14	0.11
<b>HB11-060</b>	120.9	132	11.1	8.3	1.09	tr
incl.	123	124	1	0.8	3.23	tr
incl.	129	131	2	1.5	1.41	0.11
<b>HB11-061</b>	36.8	38.8	2	1.5	0.5	tr
<b>HB11-062</b>	113.6	124.9	11.3	8.5	0.54	tr
incl.	118.9	119.9	1	0.8	2.15	tr
<b>HB11-063</b>	256.3	262.3	6	4.5	0.36	tr
and	272.3	274	1.7	1.3	0.54	tr
<b>HB11-064</b>	404	420	16	12	1.57	tr
incl.	410.7	418	7.3	5.5	3.01	tr
<b>HB11-065</b>	199	207	8	6	0.29	tr
incl.	199	201	2	1.5	0.34	tr
incl.	205	207	2	1.5	0.41	tr
and	235	237	2	1.5	0.52	tr

Hole Id	From (m)	To (m)	Core Length (m)	True Width (m)	Au (g/t)	Cu (%)
incl.	472.2	475.8	3.6	2.7	1.02	tr
<b>HB11-067</b>	61.9	102.1	40.2	30.15	1.6	0.07
incl.	85.6	96.5	10.9	8.18	4.53	0.2
incl.	86.5	89.5	3	2.25	8.56	0.2
<b>HB11-068</b>	88.6	95	6.4	4.8	0.78	0.27
incl.	93.4	95	1.6	1.2	1.63	0.76
and	110.9	121	10.1	7.58	0.59	tr
<b>HB11-069</b>	617	627	10	7.5	1.29	tr
and	617	621	4	3	2.3	tr
<b>HB11-070</b>	393.5	399.2	5.7	4.27	1.06	tr
and	406	424.4	18.4	13.8	0.63	tr
incl.	406	409	3	2.25	0.83	0.11
incl.	411.1	413	1.9	1.42	1.11	0.1
and	475.7	480.5	4.8	3.6	0.41	tr
and	523.5	526.5	3	2.25	3.3	tr
<b>HB11-071</b>	101	111	10	7.5	0.6	tr
incl.	106	107	1	0.75	2	tr
and	157	159	2	1.5	0.44	tr
and	170.4	177.1	6.7	5.02	0.87	tr
incl.	170.4	173	2.6	1.95	1.36	tr
and	186.76	192.2	5.45	4.08	1.05	tr
incl.	188.91	191.13	2.21	1.66	1.9	tr
<b>HB11-072</b>	175.5	179.8	4.3	3.23	1	0.18
incl.	177.5	179.8	2.3	1.73	1.4	0.25
and	188.9	193.9	5	3.75	0.85	tr
incl.	188.9	191.6	2.7	2.02	1.23	tr
<b>HB11-073</b>	552.5	576.2	23.7	17.78	0.77	tr
incl.	563.5	566	2.5	1.88	2.15	tr
incl.	565	566	1	0.75	3.36	tr
<b>HB11-074</b>	129.3	132	2.7	2.02	0.32	tr
<b>HB11-075</b>	418	421.4	3.4	2.55	3.2	0.16
and	435	438.2	3.2	2.4	1.12	tr
and	450	451	1	0.75	1.24	tr
<b>HB11-076</b>	207	210	3	2.25	1.09	tr
and	256	261.6	5.6	4.2	0.33	tr



---

Hole Id	From (m)	To (m)	Core Length (m)	True Width (m)	Au (g/t)	Cu (%)
incl.	88.2	111.9	23.7	17.78	1	tr
incl.	94.7	97.8	3.1	2.33	3.17	0.29
incl.	120	130.5	10.5	7.88	1	tr

Table A-6: Significant Intercepts for Coastal Gold Program III Drill Holes

Hole Id	From (m)	To (m)	Core Length (m)	True Width (m)	Au (g/t)	Cu (%)
<b>Mine Zone Area</b>						
<b>HB12-080</b>	132.8	143.3	10.5	7.9	0.72	0.01
and	148.4	156.2	7.8	5.8	0.98	0.11
incl.	155.0	156.2	1.2	0.9	2.51	0.26
<b>HB12-080E (i)</b>	156.2	170.6	14.4	10.8	2.14	0.12
incl.	156.2	161.9	5.7	4.3	3.40	0.20
<b>HB12-082 (ii)</b>	62.0	63.0	1.0	0.8	0.88	0.07
Hole was lost before reaching UG workings target.						
<b>HB12-083 (ii)</b>	252.0	261.0	9.0	6.8	0.49	0.01
incl.	255.0	256.5	1.5	1.1	1.81	0.01
and	304.9	312.5	7.6	5.7	0.27	0.02
and	320.6	322.1	1.5	1.1	0.60	0.06
Hole was lost before reaching UG workings target.						
<b>HB12-087 (iii)</b>	271.0	324.3	53.3	16.9	3.78	tr
incl.	284.0	294.7	10.7	3.4	6.71	tr
and	354.5	359.5	5.0	1.6	4.41	tr
and	406.3	425.2	14.2	6.0	0.81	tr
<b>HB12-047E (iv)</b>	149.0	187.0	38	14.23	5.47	0.13
incl.	173.5	187.0	13.5	5.06	10.54	tr
incl.	173.5	178.5	5.0	1.87	13.00	0.54
incl.	184.5	187.0	2.5	0.94	19.44	tr
Extension of HB11-047 to test location and grade of UG workings.						
<b>Southwest Extension Target Area</b>						
<b>HB12-081</b>	291.9	292.2	0.3	0.2	5.22	1
incl.	391.0	391.5	0.5	0.4	0.83	1.62
<b>HB12-084</b>	nsv					
<b>HB12-085</b>	121.0	154.4	34.4	25.8	0.59	tr
incl.	146.0	154.4	8.4	6.3	1.48	0.37
incl.	149.3	150.3	1.0	0.8	3.17	1.17
<b>HB12-086</b>	306.8	311.7	4.9	3.7	0.79	tr
<b>HB12-088</b>	277.9	286.2	8.3	6.2	0.92	tr
incl.	277.9	280.9	3.0	2.3	1.36	tr
incl.	283.6	286.2	2.6	1.9	1.18	tr
<b>HB12-089</b>	227.7	239.4	11.7	8.8	0.78	0.02
incl.	232.3	238	5.7	4.3	1.13	0.02
<b>HB12-090</b>	214.0	237.1	23.1	17.3	1.21	0.04
incl.	214.0	226.0	12.0	9.0	1.38	0.01

Northeast Extension Target Area						
<b>HB12-078</b>	nsv					
<b>HB12-079</b>	nsv					

1. *HB12-080E, the extension of HB12-080 which was originally lost before reaching its target, extended into the mine workings, testing the grade and location of an historic underground mine pillar.*
2. *HB12-082 and HB12-083 were unsuccessful in reaching target because of poor ground conditions.*
3. *HB12-087 was drilled from north to south and successfully penetrated through the possible ramp material and the lower mine workings.*
4. *HB12-047E is the extension of HB11-047 to test the location and grade of old mine workings. This hole ended in the mine workings.*
5. *incl. = including; tr = trace, nsv = no significant values, UG = underground*

Table A-7: Significant Intercepts for Coastal Gold Program IV Drill Holes.

Hole Id	From (m)	To (m)	Core Length (m)	True Width (m)	Au (g/t)	Cu (%)
<b>4960 Stope</b>						
<b>HB12-091</b>	133.00	138.70	5.70	2.59	<b>1.10</b>	0.00
and	206.30	235.90	29.60	13.44	<b>2.14</b>	<b>0.45</b>
incl.	217.60	232.20	14.60	6.63	<b>2.69</b>	<b>0.58</b>
incl.	227.90	232.20	4.30	1.95	<b>5.24</b>	<b>1.47</b>
and	253.40	260.40	7.00	3.18	0.98	0.01
<b>HB12-094</b>	106.30	111.00	4.70	1.99	1.11	0.00
and	156.30	169.00	12.70	5.37	0.34	0.00
and	180.90	220.00	39.10	16.52	<b>1.90</b>	0.12
incl.	185.00	197.50	12.50	5.28	<b>3.95</b>	0.07
<b>Mine Zone – 240 Connector Zone</b>						
<b>HB12-092</b>	314.40	330.90	16.50	12.60	0.64	0.02
incl.	319.60	322.00	2.40	1.80	<b>1.66</b>	0.04
<b>HB12-093</b>	366.60	382.00	15.40	10.10	0.46	0.04
incl.	370.40	381.00	10.60	6.95	0.52	0.04
<b>HB12-100</b>	349.9	368.0	18.1	7.4	<b>1.07</b>	0.05
incl.	349.9	355.4	5.5	2.2	<b>1.68</b>	0.11
and	412.5	426.5	14.0	5.7	<b>1.52</b>	0.04
incl.	418.5	426.5	8.0	3.3	<b>2.03</b>	0.07
<b>HB12-101</b>	329.1	338.0	8.9	2.8	<b>1.04</b>	0.02
incl.	329.1	333.0	3.9	1.2	<b>1.85</b>	0.02
and	344.0	347.0	3.0	0.9	0.63	0.08
and	355.0	356.0	1.0	0.3	0.83	<b>0.46</b>
and	365.4	368.3	2.9	0.9	<b>1.44</b>	0.15
and	371.2	372.1	0.9	0.3	0.59	0.02
and	374.5	376.0	1.5	0.5	0.67	tr
and	398.2	403.8	5.6	1.7	<b>1.35</b>	0.03
and	432.7	433.3	0.6	0.2	<b>1.53</b>	tr

Hole Id	From (m)	To (m)	Core Length (m)	True Width (m)	Au (g/t)	Cu (%)
and	527.5	529.0	1.5	0.5	0.61	0.03
<b>HB12-102</b>	225.4	226.7	1.3	0.9	0.54	tr
and	271.0	277.0	6.0	4.3	0.60	0.04
and	282.1	292.6	10.5	7.6	0.63	0.02
<b>HB12-106</b>	174.6	176.0	1.4	0.4	0.60	tr
and	384.0	385.5	1.5	0.3	0.65	0.02
and	410.0	411.0	1.0	0.4	0.26	0.15
and	412.2	413.5	1.3	0.4	0.60	0.04
and	441.5	443.0	1.5	0.4	<b>1.82</b>	<b>0.38</b>
and	452.5	454.0	1.5	0.4	0.36	<b>0.23</b>
<b>Chetwynd – 240 Connector Zone</b>						
<b>HB12-103</b>	201.0	203.0	2.0	1.7	0.15	0.13
<b>Chetwynd Prospect</b>						
<b>HB12-098</b>	225.0	230.2	5.2	4.4	tr	0.10
<b>HB12-099</b>	no significant values					
<b>Chetwynd South</b>						
<b>HB12-095</b>	223.5	224.3	0.8	0.7	0.74	0.11
and	229.6	231.1	1.5	1.4	<b>1.12</b>	0.14
<b>HB12-096</b>	no significant values					
<b>HB12-097</b>	188.5	190.00	1.5	1.2	0.68	tr
<b>NW Target Zone</b>						
<b>HB12-107</b>	63.5	64.5	1.0	0.5	0.04	0.12
<b>HB12-108</b>	29.0	30.8	1.8	0.8	0.68	<b>0.25</b>
and	60.3	60.9	0.6	0.3	0.80	<b>0.87</b>
<b>HB12-109</b>	42.4	43.2	0.8	0.7	0.04	0.11
and	46.0	47.3	1.3	1.2	0.28	<b>1.16</b>
<b>HB12-110</b>	150.0	151.0	1.0	0.4	0.04	<b>0.24</b>

---

Hole Id	From (m)	To (m)	Core Length (m)	True Width (m)	Au (g/t)	Cu (%)
<b>HB12-111</b>	53.0	54.0	1.0	0.9	0.18	<b>0.84</b>

Table A-8: Significant Drill Intercepts for Coastal Gold Program V Drill Holes.

Hole Id	From (m)	To (m)	Core Length (m)	True Width (m)	Au (g/t)	Cu (%)
<b>Footwall Target</b>						
<b>HB13-112*</b>	<b>144.0</b>	<b>154.0</b>	<b>10.0</b>	<b>4.9</b>	<b>2.99</b>	<b>0.01</b>
incl.	145.0	149.0	4.0	2.0	4.69	0.01
<b>HB13-113*</b>	<b>150.1</b>	<b>163.6</b>	<b>13.5</b>	<b>6.3</b>	<b>4.09</b>	<b>0.04</b>
incl.	155.1	163.6	8.5	4.0	5.42	0.04
<b>HB13-114</b>	124.0	136.0	12.0	4.5	0.61	0.01
and	<b>153.0</b>	<b>160.0</b>	<b>7.0</b>	2.6	<b>5.12</b>	<b>0.01</b>
<b>HB13-115</b>	153.0	174.5	21.5	7.7	1.66	0.01
incl.	<b>156.0</b>	<b>171.0</b>	<b>15.0</b>	5.4	<b>2.00</b>	<b>0.01</b>
and	189.3	208.8	19.5	7.0	1.10	0.02
incl.	<b>189.3</b>	<b>197.5</b>	<b>8.2</b>	<b>2.9</b>	<b>1.80</b>	<b>0.01</b>
and	<b>208.0</b>	<b>209.7</b>	<b>1.7</b>	<b>0.6</b>	<b>3.59</b>	<b>0.14</b>
<b>HB13-116</b>	151.5	166.4	14.9	6.8	4.95	0.01
incl.	<b>163.6</b>	<b>166.4</b>	<b>2.8</b>	<b>1.3</b>	<b>21.70</b>	<b>0.01</b>
<b>HB13-117</b>	129.0	138.0	9.0	3.7	0.66	trace
incl.	131.0	133.0	2.0	0.8	1.51	trace
<b>SW Pit Extension</b>						
<b>HB13-118</b>	<b>107.3</b>	<b>128.0</b>	<b>20.7</b>	<b>9.4</b>	<b>1.19</b>	<b>0.03</b>
incl.	<b>107.3</b>	<b>109.2</b>	<b>1.9</b>	<b>0.9</b>	<b>4.84</b>	<b>0.22</b>
and	132.5	158.0	25.5	11.6	0.54	trace
and	201.2	211.0	9.8	4.4	0.76	0.01
<b>HB13-119</b>	<b>5.0</b>	<b>20.1</b>	<b>15.1</b>	<b>13.3</b>	<b>1.52</b>	<b>0.02</b>
incl.	<b>5.0</b>	<b>10.0</b>	<b>5.0</b>	<b>4.4</b>	<b>2.27</b>	<b>trace</b>
<b>HB13-120</b>	64.1	87.0	22.9	17.5	0.75	0.01
incl.	<b>82.5</b>	<b>85.5</b>	<b>3.0</b>	<b>2.3</b>	<b>1.66</b>	<b>0.01</b>
<b>HB13-121</b>	<b>80.8</b>	<b>106.5</b>	<b>25.7</b>	<b>12.5</b>	<b>1.67</b>	<b>0.15</b>
incl.	<b>85.0</b>	<b>90.0</b>	<b>5.0</b>	<b>2.4</b>	<b>2.08</b>	<b>0.18</b>

Hole Id	From (m)	To (m)	Core Length (m)	True Width (m)	Au (g/t)	Cu (%)
incl.	<b>100.0</b>	<b>105.0</b>	<b>5.0</b>	<b>2.4</b>	<b>3.25</b>	<b>0.28</b>
<b>HB13-122</b>	160.0	170.5	10.5	7.3	0.92	0.01
<b>HB13-123</b>	18.7	27.0	8.3	7.3	0.72	0.08
and	<b>40.9</b>	<b>59.0</b>	<b>18.1</b>	<b>16.0</b>	<b>1.64</b>	<b>0.07</b>
incl.	<b>40.9</b>	<b>51.3</b>	<b>10.4</b>	<b>9.2</b>	<b>2.61</b>	<b>0.11</b>
<b>HB13-124</b>	133.5	141.5	8.0	6.3	0.73	0.46
and	<b>148.3</b>	<b>154.7</b>	<b>6.4</b>	<b>5.0</b>	<b>1.93</b>	<b>0.01</b>
<b>HB13-125</b>	<b>26.5</b>	<b>38.8</b>	<b>12.3</b>	<b>8.7</b>	<b>1.66</b>	<b>0.23</b>
incl.	<b>26.5</b>	<b>32.6</b>	<b>6.1</b>	<b>4.3</b>	<b>2.75</b>	<b>0.38</b>
and	<b>56.9</b>	<b>60.1</b>	<b>3.2</b>	<b>2.3</b>	<b>3.31</b>	<b>0.01</b>
<b>HB13-126</b>	181.1	193.5	12.4	7.8	0.67	0.01
incl.	181.1	185.0	3.9	2.5	0.85	0.02
<b>HB13-127</b>	22.0	36.3	14.3	12.6	0.82	0.01
incl.	29.0	34.2	5.2	4.6	1.12	trace
and	56.1	59.4	3.3	2.9	1.07	trace
<b>HB13-128</b>	60.4	66.3	5.9	5.2	1.09	0.01
and	81.0	84.2	3.2	2.8	0.68	0.04
<b>HB13-129</b>	101.0	103.0	2.0	1.2	1.09	0.01
and	125.0	126.8	1.8	1.1	1.29	0.36
and	<b>149.2</b>	<b>156.4</b>	<b>7.2</b>	<b>4.4</b>	<b>1.46</b>	<b>0.01</b>
<b>HB13-130</b>	64.0	68.0	4.0	2.9	1.17	0.06
and	<b>92.5</b>	<b>103.5</b>	<b>11.0</b>	<b>8.0</b>	<b>1.81</b>	<b>0.24</b>
incl.	<b>93.9</b>	<b>98.7</b>	<b>4.8</b>	<b>3.5</b>	<b>3.38</b>	<b>0.52</b>
<b>HB13-131</b>	<b>102.4</b>	<b>120.4</b>	<b>18.0</b>	<b>10.3</b>	<b>1.29</b>	<b>0.11</b>
incl.	<b>108.1</b>	<b>120.4</b>	<b>12.3</b>	<b>7.1</b>	<b>1.58</b>	<b>0.08</b>
incl.	<b>114.6</b>	<b>120.4</b>	<b>5.8</b>	<b>3.3</b>	<b>2.53</b>	<b>0.13</b>
<b>HB13-132</b>	141.7	158.5	16.8	7.6	0.69	0.02
incl.	155.0	158.5	3.5	1.6	1.22	0.03



Hole Id	From (m)	To (m)	Core Length (m)	True Width (m)	Au (g/t)	Cu (%)
and	178.9	179.7	0.8	0.4	2.01	0.01
<b>HB13-133</b>	57.3	90.5	33.2	29.0	0.87	0.02
incl.	62.0	71.0	9.0	7.9	1.16	0.02
incl.	81.0	87.0	6.0	5.2	1.29	0.03
<b>HB13-134</b>	79.0	83.2	4.2	3.7	0.63	trace
and	89.2	98.9	9.7	8.5	0.64	0.01
and	107.0	109.0	2.0	1.7	0.90	0.01
<b>HB13-135</b>	68.5	88.9	20.4	18.0	0.87	0.04
incl.	68.5	74.0	5.5	4.9	1.11	0.03
incl.	81.0	88.9	7.9	7.0	1.23	0.06
and	83.0	88.9	5.9	5.2	1.41	0.06
<b>HB13-136</b>	33.3	37.3	4.0	3.5	1.65	0.01
<b>HB13-137</b>	104.1	123.0	18.9	11.9	0.70	0.02
incl.	107.9	120.0	12.1	7.6	0.87	0.03
incl.	118.0	120.5	2.5	1.6	2.07	0.03

**Table A-9: Selected Intercepts from BP and Royal Oak Drill Holes**

Hole Id	From (m)	To (m)	Length (m)	True Width (m)	Au (g/t)
<b>4870-013</b>	0.00	99.22	99.22	55.54	3.44
<b>4870-046</b>	6.77	99.06	92.29	37.73	2.87
<b>4870-081</b>	0.00	75.84	75.84	58.67	3.19
<b>4900-007</b>	147.44	197.99	50.55	16.35	5.18
<b>4960-094</b>	1.56	78.50	76.94	38.17	4.89
<b>4960-123</b>	0.00	78.70	78.70	58.23	3.42
<b>5015-006</b>	18.06	114.09	96.03	52.72	3.53
<b>5015-026</b>	4.03	67.77	63.74	63.74	5.78
<b>5060-011</b>	11.37	52.32	40.95	40.95	4.72
<b>CE-149</b>	397.30	404.79	7.49	5.62	0.75
<b>CE-246</b>	524.41	575.93	51.52	38.64	3.17
<b>CE-283A</b>	504.24	552.46	48.22	36.17	2.69
<b>CE-284</b>	686.83	706.08	19.25	14.44	1.44
<b>CW-005</b>	42.00	58.30	16.30	12.23	7.17
<b>CW-014</b>	142.60	210.80	68.20	51.15	5.40
<b>CW-040A</b>	337.39	388.84	51.45	38.59	2.84
<b>CW-054</b>	102.90	174.00	71.10	53.33	5.35
<b>CW-077</b>	190.00	255.20	65.20	48.90	5.41
<b>CW-112</b>	2.52	44.89	42.37	31.78	2.58
<b>CW-135</b>	97.20	150.51	53.31	39.98	5.71
<b>CW-175</b>	88.80	136.48	47.68	35.76	7.70
<b>CW-194</b>	79.70	116.70	37.00	27.75	8.32
<b>CW-223</b>	0.00	15.50	15.50	11.63	8.08
<b>CW-242</b>	0.00	10.80	10.80	8.10	2.76
<b>CW-274</b>	169.26	175.60	6.34	4.76	4.44
<b>CW-281</b>	351.79	374.59	22.80	17.10	2.56

## **Appendix III**

### **Map 2012-2a and Map 2013-1**

### **Hope Brook Deposit Level Plans and Cross Sections**







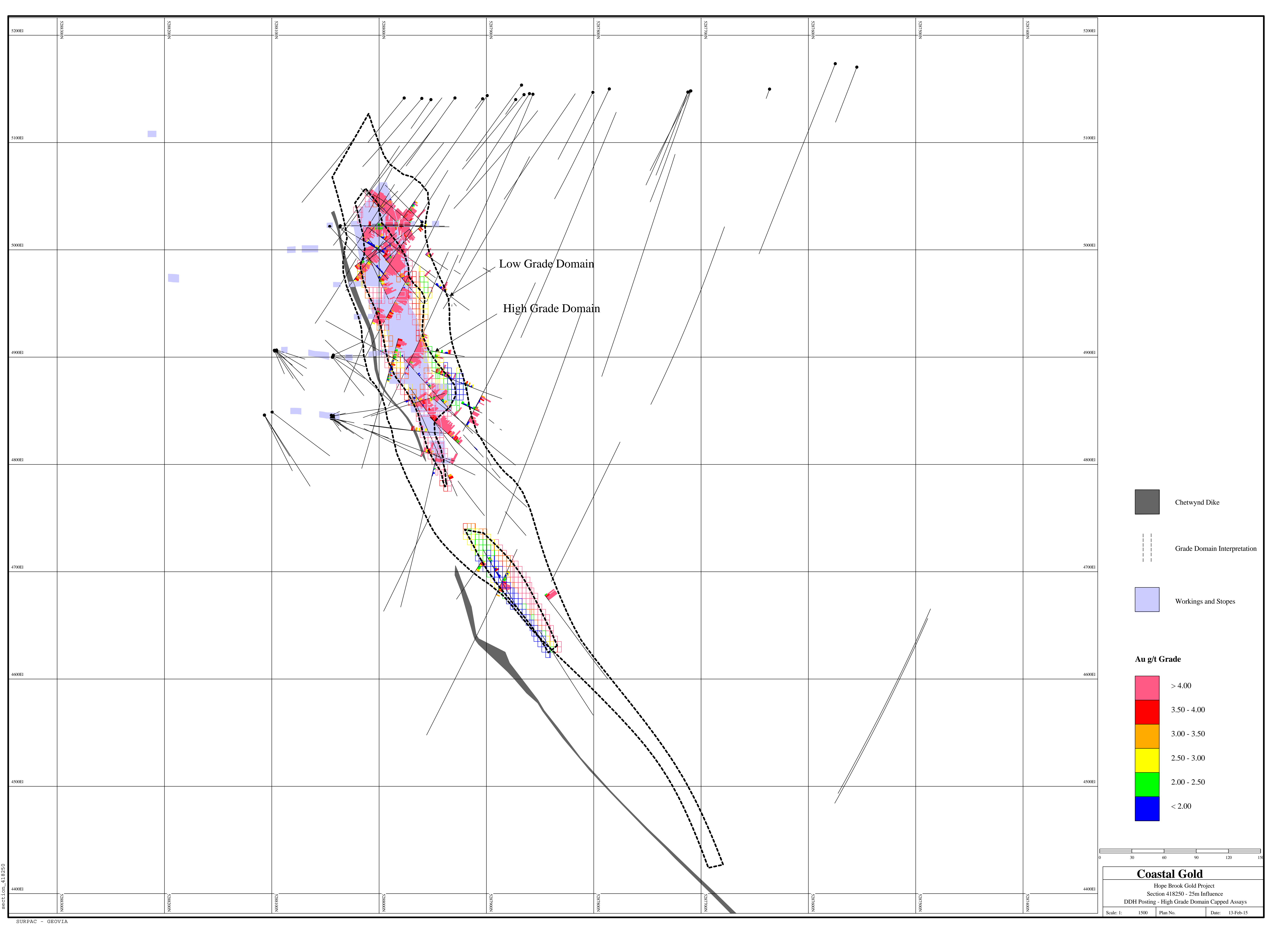
- 2010-2013 Diamond Drillholes  
 HB10-001 to 010  
 HB11-011 to 077  
 HB12-078 to 111  
 HB13-112 to 137  
 13 CW-series drillhole resamples
- \*\* Note drillholes for the Chetwynd South Chetwynd Prospects are SW off of the map.
- Pre-2010 Drill Holes

**COASTAL GOLD**

MAP 2013-01  
 Drillhole Locations 2010-2013


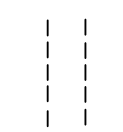
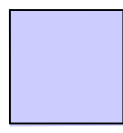
Scale 1:2500  
 UTM NAD83 Zone 21

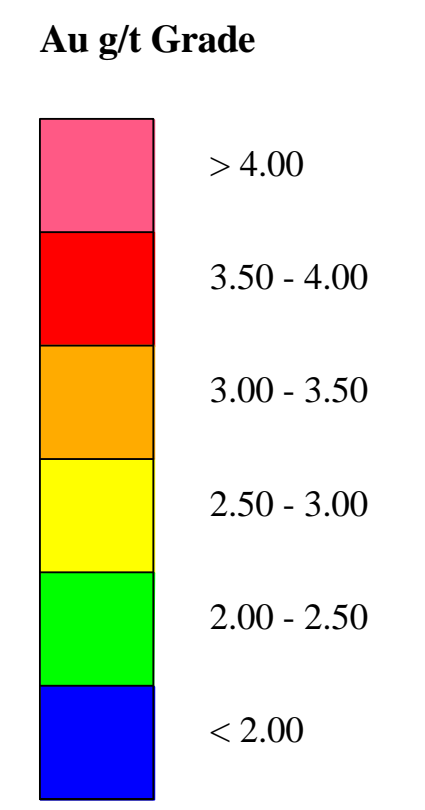




Low Grade Domain

High Grade Domain

-  Chetwynd Dike
-  Grade Domain Interpretation
-  Workings and Stopes

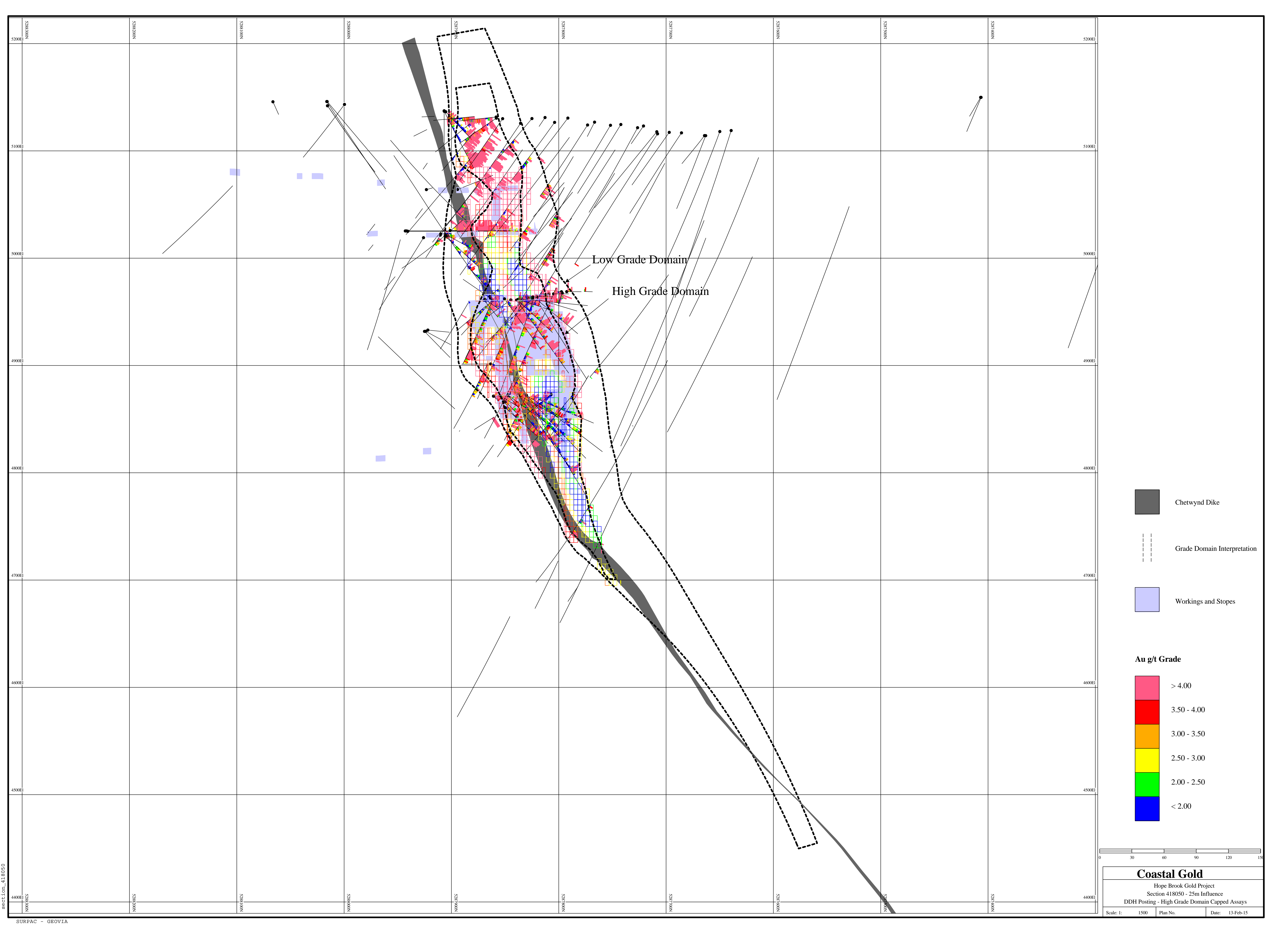


**Coastal Gold**

Hope Brook Gold Project  
Section 418250 - 25m Influence  
DDH Posting - High Grade Domain Capped Assays


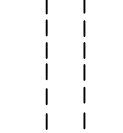
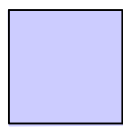
Scale: 1: 1500	Plan No.	Date: 13-Feb-15
----------------	----------	-----------------

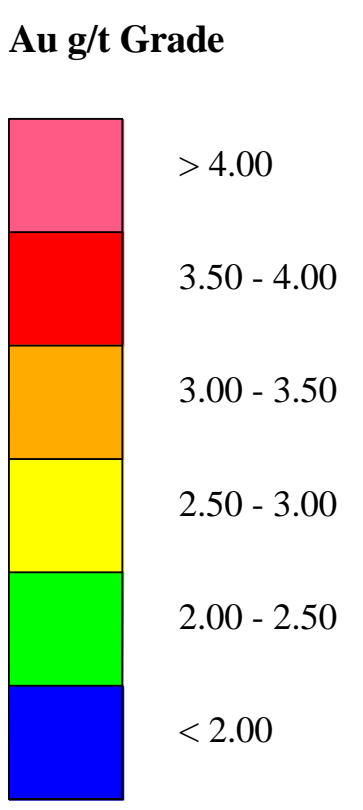
section\_418250



Low Grade Domain

High Grade Domain

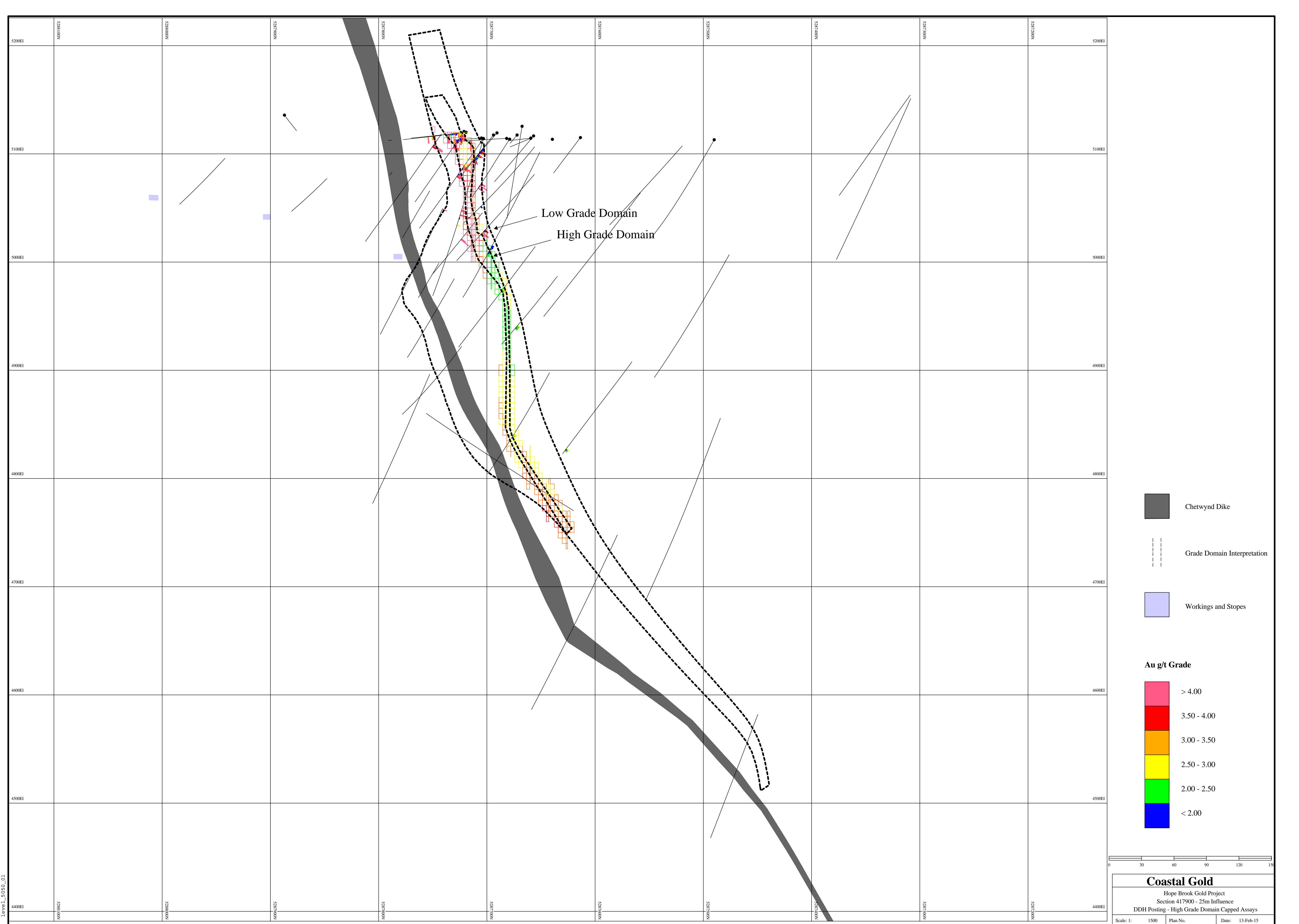
-  Chetwynd Dike
-  Grade Domain Interpretation
-  Workings and Stopes




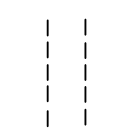
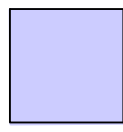
**Coastal Gold**  
 Hope Brook Gold Project  
 Section 418050 - 25m Influence  
 DDH Posting - High Grade Domain Capped Assays

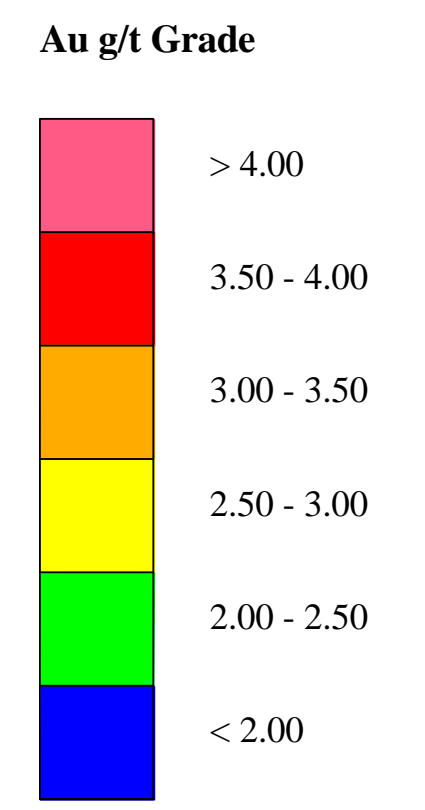
Scale: 1: 1500 Plan No. Date: 13-Feb-15

section\_418050



Low Grade Domain  
High Grade Domain

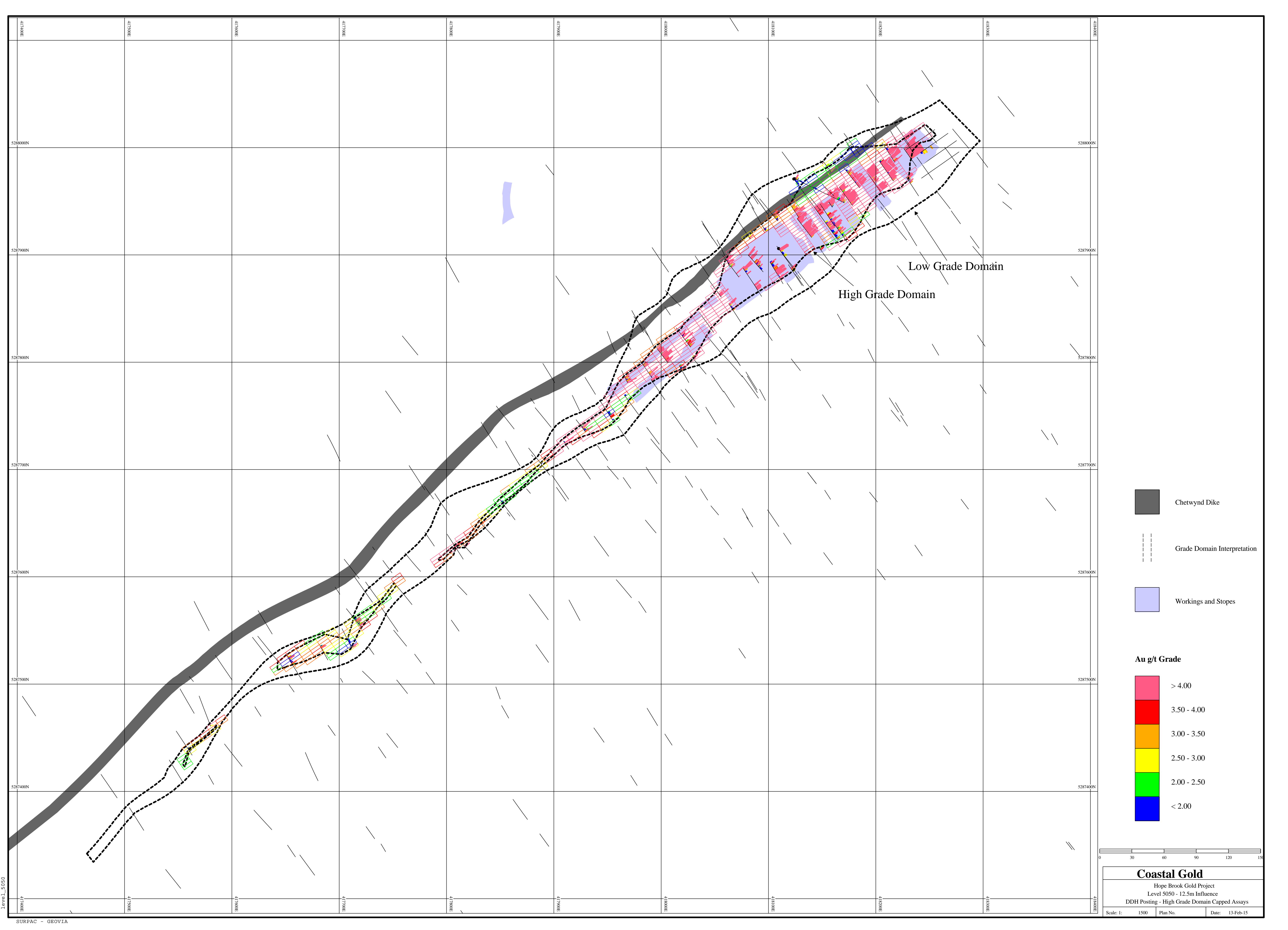
-  Chetwynd Dike
-  Grade Domain Interpretation
-  Workings and Stopes


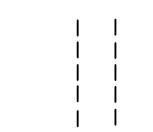
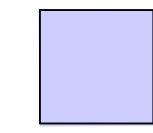


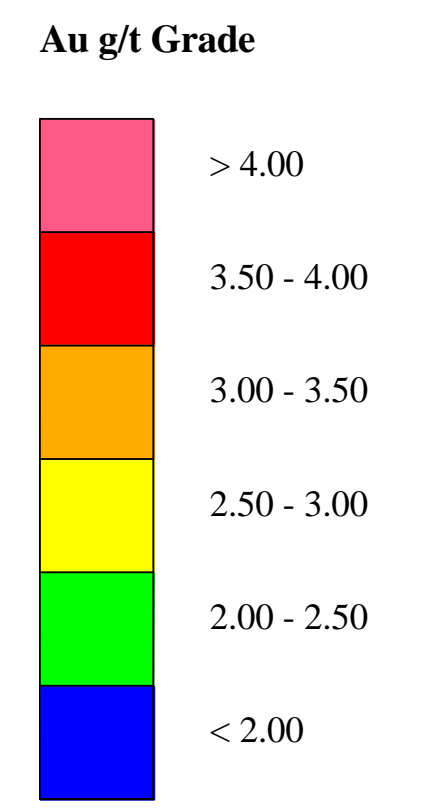
**Coastal Gold**  
 Hope Brook Gold Project  
 Section 417900 - 25m Influence  
 DDH Posting - High Grade Domain Capped Assays  
 Scale: 1: 1500 Plan No. Date: 13-Feb-15

Level\_5050\_01





-  Chetwynd Dike
-  Grade Domain Interpretation
-  Workings and Stopes

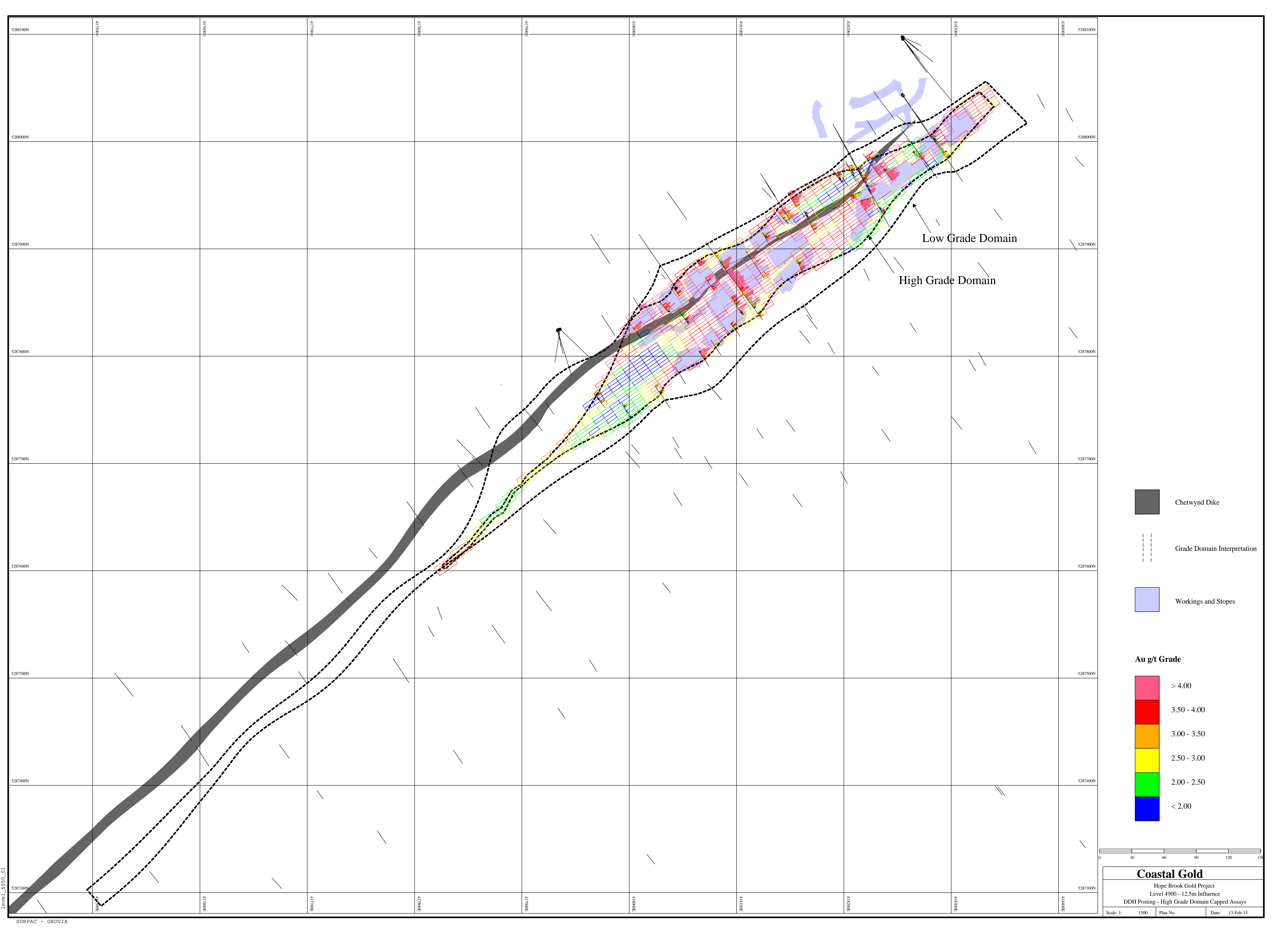


**Coastal Gold**

Hope Brook Gold Project  
Level 5050 - 12.5m Influence  
DDH Posting - High Grade Domain Capped Assays


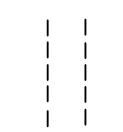
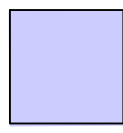
Scale: 1: 1500	Plan No.	Date: 13-Feb-15
----------------	----------	-----------------

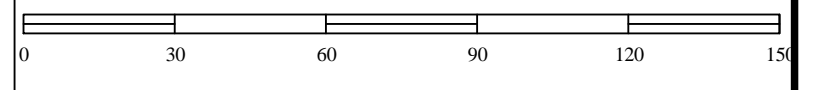
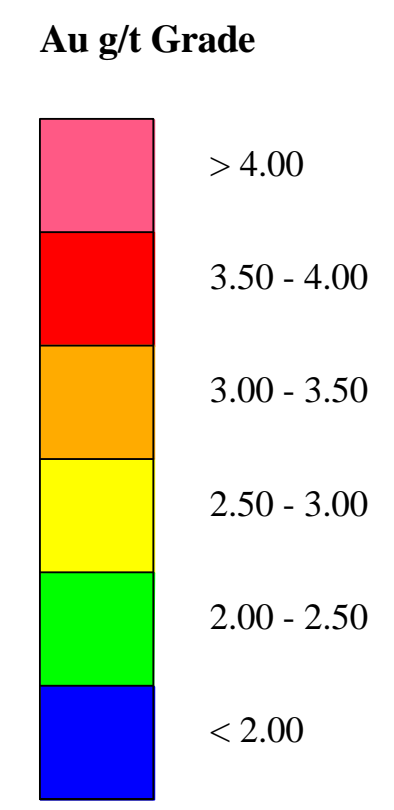
Level\_5050



Low Grade Domain

High Grade Domain

-  Chetwynd Dike
-  Grade Domain Interpretation
-  Workings and Stopes

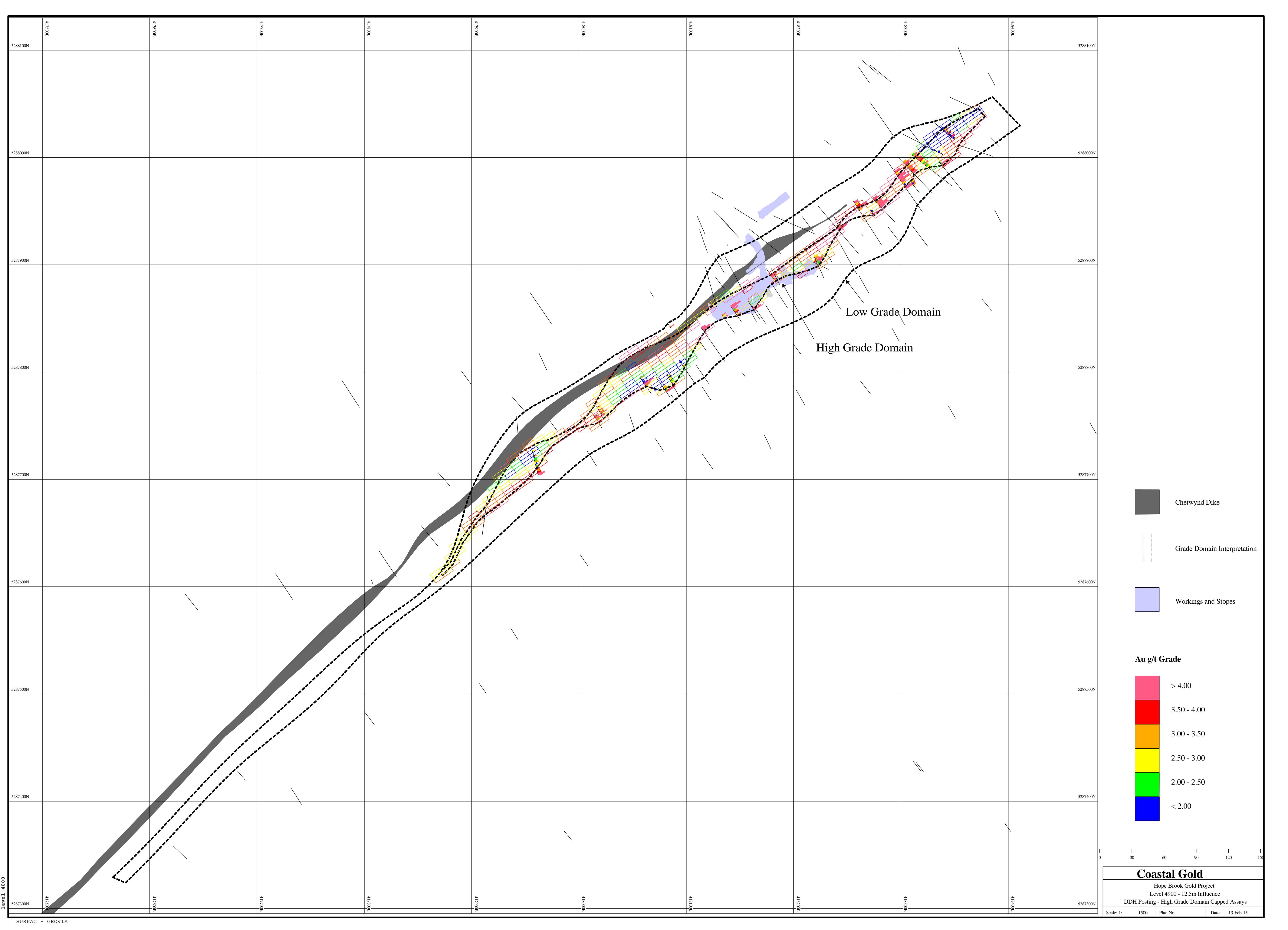


**Coastal Gold**  
 Hope Brook Gold Project  
 Level 4900 - 12.5m Influence  
 DDH Posting - High Grade Domain Capped Assays

Scale: 1: 1500    Plan No.    Date: 13-Feb-15

Level\_5050\_01





Level\_4800



<b>Coastal Gold</b>		
Hope Brook Gold Project		
Level 4900 - 12.5m Influence		
DDH Posting - High Grade Domain Capped Assays		
Scale: 1: 1500	Plan No.	Date: 13-Feb-15