APPENDIX B
Acid Rock Drainage Potential Report (2011)

Black Point Quarry Project
Guysborough County, NS
SLR Project No.: 210.05913.00000

Field Report

November 15, 2011

Submitted By: Peter Dalton

Purpose

To determine the potential for Acid Rock Drainage (ARD) related to the bedrock underlying the processing area at the proposed Black Point Aggregate project site.

Introduction

Erdene Resource Development's Black Point aggregate project is located approximately 10km west of Canso along the southern coast of the Chedabucto Bay, Guysborough County, Nova Scotia.

On October 27, 2011 Erdene geologists Mark Davies and Peter Dalton completed a one day geologic mapping and sampling program focused over the industrial footprint of the project site proposed for aggregate processing and marine load out facilities. Six representative rock samples were collected from both outcrop and subcrop located over the area of interest. All samples were submitted for sulphide concentration and acid producing potential analysis. Of the six samples collected only one sample (BP-ARD-5) exhibited intense sulphide (pyrite) mineralization suggesting the potential for acid production.

Geology

The central portion of the Black Point project area is dominated by a Devonian aged monzogranite pluton which intruded Ordovician aged metasedimentary units of both the Halifax and Goldenville Formations which comprise the Meguma Group (see Figure 1). The granite is the rock intended to be mined as construction aggregate. Most infrastructure related to aggregate processing would be constructed on the coastal platform comprised of the Halifax and Goldenville Formations in the northern portion of the project area.

Granite- Medium grained, equigranular, micaceous monzogranite

Halifax Formation- Highly foliated metawacke and slates. Commonly sulphide (pyrite) bearing.

Goldenville Formation- Silicified quartzites, minor interbeds of highly foliated shales and metawacke.

Discussion

A representative suite of six rock samples were collected over the proposed processing facility area at Black Point. An attempt to collect all samples from outcrop was not possible based upon the heavy surficial cover.

Samples from the Goldenville formation was exclusively collected from outcrop locations. The silicified weather resistive nature of the quartzite provide outcrops of prominent ridges and topographic highs.

Sampling related to the Halifax Formation was not sourced from outcrop but rather cobble sized material interpreted to be subcrop collected from within a small stream bed near the bottom of the prominent slope that rises in elevation towards the granite to the south.

Goldenville Formation

All samples related to the Goldenville Formation remained consistent in regards to lithology. Samples consisted of silicifed, very fine grained to aphanititc, well indurated quartzite. Variations observed included weak manganese staining and trace concentrations of oxidized pyrite.

Halifax Formation

The representative sample of the Halifax Formation consisted of a highly foliated slate with moderate intensity iron oxide staining on the weathered surface. The fresh surface exhibited ≤5% pyrite mineralization occurring as clumps along cleavage planes.

The most up to date geology map of the Black Point area is associated with the GSC Bulletin 383 by J.D. Hill, 1991. Mapping completed by Erdene geologists of the Goldenville and Halifax Formations at Black Point suggests a slight discrepancy when compared to the geology map indicated by J.D. Hill. Where Hill has mapped a geologic boundary between the Goldenville and the Halifax Formations Erdene geologist found evidence to suggest that the Goldenville quartzites extend further south (see Figure 2). This evidence is based on outcropping quartzite located at BP-ARD-4 clearly located within what was previously mapped as Halifax Formation metawacke.

Methodology and Laboratory Testing

All samples were either directly collected from outcrop or subcrop using a 2-5kg sample volume. Samples were cleared of any obvious organic debris to minimized contamination.

All samples were submitted to the Dalhousie University Minerals Engineering Center Laboratory in Halifax, Nova Scotia. Sample Analysis consists of the **BC Research Initial Test Method** which consists of:

Total Sulphur- weight %

*Total Sulphide-weight % (BP-ARD-1 and BP-ARD-5)

Acid Producing Potential- kg/tonne H_2SO_4

Acid Consuming Ability- kg/tonne H_2SO_4

pH

*Total Sulphide analysis was completed for sample BP-ARD-1 which represented the Goldenville quartzite sample with the highest total sulphur value and BP-ARD-5 which represents the Halifax pyritic slate.

Complete results of the ARD sampling are located in Appendix 1

Conclusion

A suite of six rock samples were collected from the proposed processing and marine load out area at the Black Point project location in Guysborough County, Nova Scotia to determine their acid producing potential. The samples collected represent both the Goldenville Formation quartzite and Halifax Formation slate which underlie the area of interest. Of these six samples collected only one sample (BP-ARD-5) collected from the Halifax Formation feature increased sulphur/sulphide concentrations in hand specimen. These samples were submitted to Dalhousie

University's Minerals Engineering Laboratory for sulphur and sulphide analysis by BC Research Initial Test method.

Geology	**S (Total wt%) Ave.**	**S (Sulphide)wt%**	**Acid Prod. Potential Ave. kg/t H_2SO_4**	**Acid Cons. Ability Ave.**	**pH Ave.**
Goldenville Quartzite	0.0114	0.009	0.29	4.012	8.06
Halifax Slate/Metawacke	1.0	0.935	28.60	4.61	7.4

Results indicate that the Goldenville quartzite pose no risk of acid production under meteoric conditions. The Halifax Formation slate and metawacke contains abundant concentrations of sulphide (pyrite) which elevates the acid producing potential of the rock to 28.60 kg/t H_2SO_4. It is interesting to note that although sample BP-ARD-5 contained abundant sulphide concentrations the overall pH of the sample was neutral to basic at 7.4.

Based upon these findings future steps of mitigation may be necessary in order to minimize acid rock drainage related of the Halifax Formation slates should the local bedrock become disturbed during infrastructure development.

References

Hill J.D. (1991) Petrology, tectonic Setting, and Economic Potential of Devonian Peraluminous Granitoid Plutons in the Canso and Forest Hill Areas, Eastern Meguma terrane, Nova Scotia. Geological Survey of Canada, Bulletin 383

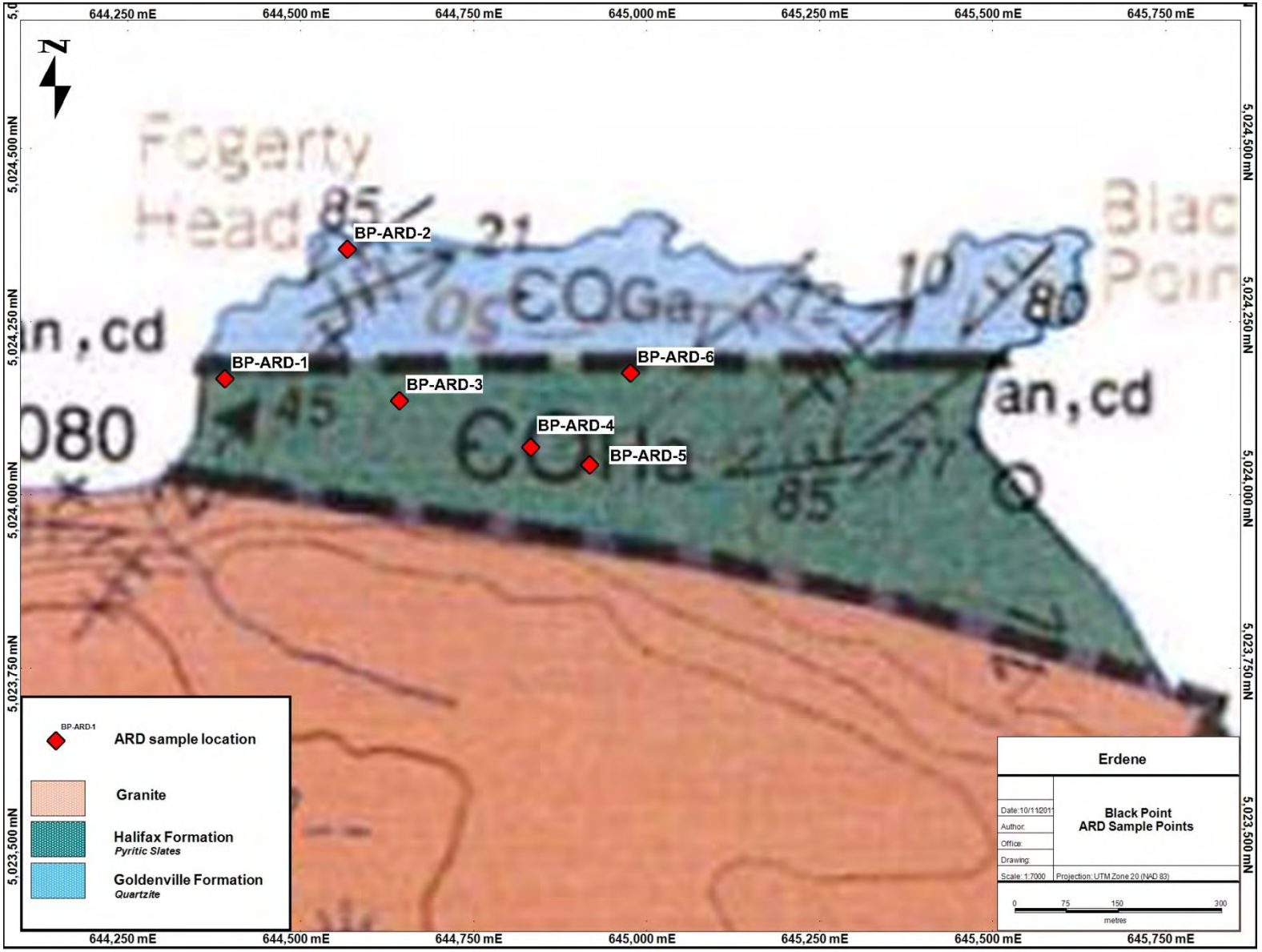

Figure 1 Black Point ARD sampling locations based on J.D. Hill 1991 Geology.

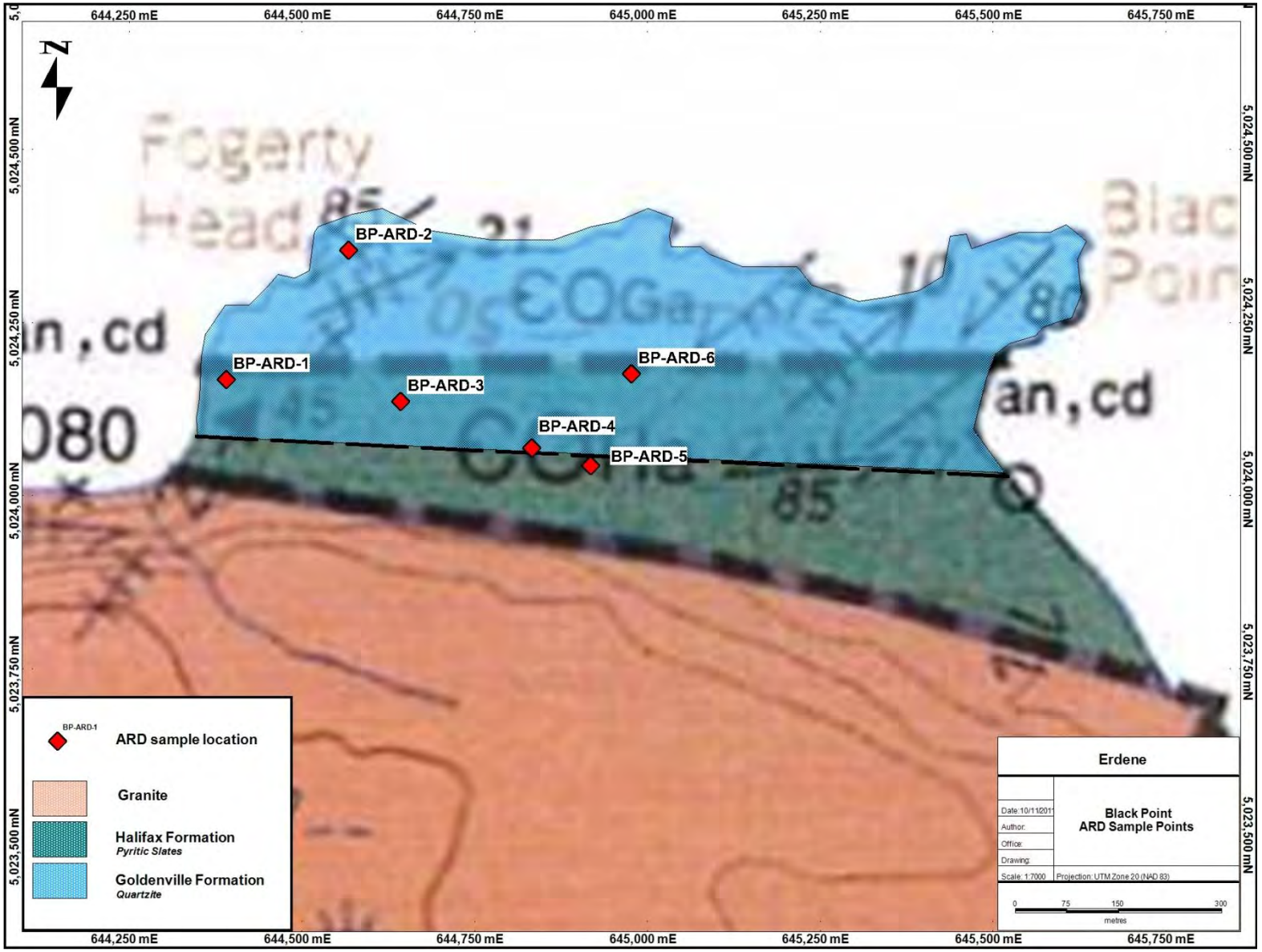

Figure 2 Black Point ARD sample locations with modification to Goldenville Quartzite based on field observations.

DALHOUSIE UNIVERSITY
Inspiring Minds

Minerals Engineering Centre
Dalhousie University
1360 Barrington Street
G.H. Murray Bldg. Rm. G101
Halifax, Nova Scotia
B3J 1Z1

minerals.engineering.dal.ca
Tel: 902.494.3955
Fax: 902.494.3506
Email: mec@dal.ca

14-Nov-11

Erdene Resource Development
Metropolitan Place
99 Wyse Road, Suite 1480
Dartmouth, NS
B3A 4S5
Attention: Peter J. Dalton

Re: Results of analysis on submitted samples.
Acid producing potential based on total sulphur unless sulphide sulphur analysis results are indicated.

	Wt. %		kg/t H2SO4		
Sample	S(Total)	S(Sulphide)	Acid Prod. Potential	Acid Cons. Ability	pH
BP-ARD-1	0.019	0.009	0.28	3.33	7.6
BP-ARD-2	0.008		0.23	3.43	8.9
BP-ARD-3	0.003		0.11	4.41	7.9
BP-ARD-4	0.013		0.40	4.37	7.8
BP-ARD-5	1.000	0.935	28.60	4.61	7.4
BP-ARD-6	0.014		0.43	4.52	8.1

Refer.	Wt. %
Sample	S (Total)
NBM-1	0.29
Recomd. Value	0.28

Digitally signed by Daniel Chevalier
Date: 2011.11.14 12:35:21 -04'00'

Daniel Chevalier, MASc
Manager, Minerals Engineering Centre

Appendix 1. ARD sample results by BC Research Initial Test Method