

Hole Number **H-12-3447**

Project: **LUNDBERG_ENGINE HOUSE**

Project Number:

<u>Drilling</u>		<u>Casing</u>		<u>Core</u>		<u>Location</u>		<u>Other</u>	
Azimuth:	0	Length:	0	Dimension:	NQ	Township:	BUCHANS	Logged by:	David Butler
Dip:	-90	Pulled:		Storage:	BMC Buchan	Claim No.:	10551M	Relog by:	
Length:	120	Capped:		Section:		NTS:	12A/15	Contractor:	Springdale Forestry
Started:	10-Aug-12	Cemented:		Hole Type		Hole:	SURFACE	Spotted by:	David Butler/Derrick Keats
Completed:								Surveyed:	
Logged:	13-Jul-12							Surveyed by:	hand held GPS
Comment:	Change hole ID to H-12-3447					<u>Local Grid Coordinate</u>		<u>UTM Coordinate</u>	
						East:	0	East:	509988.922
						North:	0	North:	5407564.84
						Elev.:	0	Elev.:	286.064
						Zone:	21	NAD:	NAD83
								Geophysics:	
								Geophysical Contractor:	
								Left in hole:	
								Making water:	
								Multi shot survey:	

Deviation

Distance	Azimuth	Dip	Type	Good	Comn
0.00	0.00	-90.00	C	☒	
14.00	306.20	-88.80	F	☒	Daysh
65.00	322.00	-89.00	F	☒	Nights
119.00	321.10	-88.90	F	☒	Nights

LITHOLOGY REPORT

Hole Number **H-12-3447**

Project: **LUNDBERG_ENGINE HOUSE**

Project Number:

From (m)	To (m)	Lithology	Sample #	From	To	Length	Cu (%)	Pb (%)	Zn (%)	Ag (ppm)	Au (ppb)
0.00	2.30	OB Overburden									
		Upper Contact:									
		Colour:									
		Glacial till									

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Project Number:

From (m)	To (m)	Lithology	Sample #	From	To	Length	Cu (%)	Pb (%)	Zn (%)	Ag (ppm)	Au (ppb)
2.30	44.10	RHY Prominent Quartz Rhyolite/Dacite Tuf PROM-Q-RHY TUFF Upper Contact: Colour: Green-greyPink Prominent quartz rhyolite/dacite tuff is pinkish grey-green in color, and consists of 10-15% white and predominantly rounded quartz fragments, approximately 5-10mm in diameter. The unit is relatively massive and locally exhibits layering at 30-35° to CA.									
44.10	70.25	ARK 65% Arkose/35% Black Argillite (SL) ARK-ARG Upper Contact: ConformableSharp Colour: Light-greyBlack Sedimentary sequence of 65% medium to locally coarse-grained tuffaceous sandstone, and 35% laminated black argillite. The upper portion of the unit in contact with the Prominent Quartz unit is moderately sheared at 35-50° to CA. The sedimentary sequence consists of coarse and fine-grained layers of tuffaceous sediment. Bedding is commonly between 40 and 50° to CA. Locally ash tuff is has moderate to strong sericitization.									

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From (m)	To (m)		Lithology	Sample #	From	To	Length	Cu (%)	Pb (%)	Zn (%)	Ag (ppm)	Au (ppb)
70.25	72.20	T	Sheared/gouged felsic to int tuff Upper Contact: Tectonic Fault Colour: Light-grey Green Fault zone consists of pale green to grey gouge with sheared contacts; Looks like felsic to intermediate rhyolite or dacite material, with local strong sericite alteration.									
72.20	85.80	BSLT	Amygdaloidal Basalt local tuff (BR) Upper Contact: Tectonic Shear Colour: Variably hematized locally amygdaloidal basalt with local tuffaceous/argillaceous beds. Unit is grey-green, with 20-25% of unit being hematized and carbonatized and weakly chloritized throughout. Unit is weakly foliated, and lower contact is sheared at 45° to CA.	79016	83.80	84.80	1.00	-	-	-	0	5
				79017	84.80	85.80	1.00	0.06	0.42	0.07	1	5

LITHOLOGY REPORT

Hole Number H-12-3447		Project: LUNDBERG_ENGINE HOUSE						Project Number:						
From (m)	To (m)	Lithology		Sample #	From	To	Length	Cu (%)	Pb (%)	Zn (%)	Ag (ppm)	Au (ppb)		
85.80	97.80	AGL	Mineralized Fel-Int Agglomerate (BR)	MIN FEL-INT AGL	79018	85.80	86.30	0.50	4.30	0.78	0.79	35	82	
		Upper Contact:	Conformable	Shear	79019	86.30	87.00	0.70	1.23	0.62	0.91	9	69	
		Colour:	Mineralized felsic-intermediate rhyodacite agglomerate is locally brecciated, with 15-20% sulphide overall. RhSulphides are locally massive and pyritic, with chalcopyrite more obvious in stringer sections. Massive sulphides are seen at 85.8-86.25 m, 88.2-88.5 m and 93.8-95.5 m. Foliation or agglomerate layering at 43° to CA.		79021	87.00	88.00	1.00	1.64	0.93	1.35	8	52	
		79022			88.00	89.00	1.00	0.49	0.23	0.36	3	38		
		79023			89.00	90.00	1.00	0.53	0.17	0.20	3	18		
		79024			90.00	91.00	1.00	0.32	0.10	0.14	2	19		
		79025			91.00	92.00	1.00	0.12	0.09	0.07	1	10		
		79026			92.00	93.00	1.00	2.40	0.06	0.16	4	9		
		79027			93.00	94.00	1.00	0.60	0.07	0.14	22	263		
		79028			94.00	95.00	1.00	0.43	0.11	0.65	51	691		
		79029			95.00	96.00	1.00	0.26	0.09	1.68	25	294		
		79031			96.00	97.00	1.00	0.28	0.10	0.40	11	271		
		79032			97.00	98.00	1.00	0.16	0.38	0.80	13	419		
		Structure Maj.:	Type/Angle to Core Axis	Comment										
		96.10 - 96.40	Gouge 60	Intact fault gouge										
97.80	108.25	T	Ash to lapilli Tuff (BR)	T-ASH-LAPILLI	79033	98.00	99.00	1.00	0.14	0.01	0.12	4	37	
		Upper Contact:	Conformable	Broken	79034	99.00	100.00	1.00	-	0.01	0.01	1	10	
		Colour:	Tuff is felsic to intermediate, grey-green with 10-15% lapilli size fragments (5 to 10 mm). Tuff is quartz-porphyritic, and fragments are commonly rhyolite/dacite. Local strong sericitization is pervasive in the ash matrix throughout the unit, and carbonate is locally common in matrix and along fractures. Sulphide mineralization in the unit consists of local pyritic disseminations in the upper portion (down to 100 m depth). Rare occurrences of fine galena occur in lower part of this unit, but are small (<1 cm) bands. Unit is blocky and broken from 99.7 to 102.9 m.		79035	100.00	101.00	1.00	-	0.01	0.01	1	13	
		Structure Maj.:	Type/Angle to Core Axis	Comment										
		99.70 - 102.90	Broken Core	Zone of very blocky and broken core										

LITHOLOGY REPORT

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From (m)	To (m)	Lithology	Sample #	From	To	Length	Cu (%)	Pb (%)	Zn (%)	Ag (ppm)	Au (ppb)
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108.25115.90

BX

Hematized amygd. basaltic breccia (SH

MAF-BX

Upper Contact:

Conformable

Sharp

Colour:

Purple

Green

Hematized mafic breccia is purple-green, and variably hematized throughout the unit. The unit is strained with moderate foliation at 55° to CA. The entire unit strongly carbonatized. The basalt is amygdaloidal throughout.

115.90119.00

RHY

Rhyolite/Dacite flow

RHY-DAC FLOW

Upper Contact:

Conformable

Shear

Colour:

Green-grey

Yellow

Rhyolite to dacite flow is locally brecciated and moderately sericitized and silicified throughout. Unit is grey-green to yellowish (where sericitized), and chlorite is locally common along fractures.

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From (m)	To (m)	Lithology	Sample #	From	To	Length	Cu (%)	Pb (%)	Zn (%)	Ag (ppm)	Au (ppb)
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EOH

Hole Number **H-12-3447**

Project: **LUNDBERG_ENGINE HOUSE**

Project Number:

Assay Report (part 1 of 0)

<i>From (m)</i>	<i>To (m)</i>	<i>Length (m)</i>	<i>Sample #</i>	<i>Lab</i>	<i>Certificate #</i>	<i>Date of Certificate</i>	<i>Cu (%)</i>	<i>Pb (%)</i>	<i>Zn (%)</i>	<i>Ag (ppm)</i>	<i>Au (ppb)</i>	<i>Ba (%)</i>
83.80	84.80	1.00	79016	Eastern Analytic	394-1203774		-	-	-	0	5	0.06
84.80	85.80	1.00	79017	Eastern Analytic	394-1203774. 394-		0.06	0.42	0.07	1	5	1.36
85.80	86.30	0.50	79018	Eastern Analytic	394-1203774. 394-		4.30	0.78	0.79	35	82	0.43
86.30	87.00	0.70	79019	Eastern Analytic	394-1203774. 394-		1.23	0.62	0.91	9	69	1.29
87.00	88.00	1.00	79021	Eastern Analytic	394-1203774. 394-		1.64	0.93	1.35	8	52	3.42
88.00	89.00	1.00	79022	Eastern Analytic	394-1203774. 394-		0.49	0.23	0.36	3	38	0.18
89.00	90.00	1.00	79023	Eastern Analytic	394-1203774		0.53	0.17	0.20	3	18	0.01
90.00	91.00	1.00	79024	Eastern Analytic	394-1203774		0.32	0.10	0.14	2	19	0.01
91.00	92.00	1.00	79025	Eastern Analytic	394-1203774		0.12	0.09	0.07	1	10	0.02
92.00	93.00	1.00	79026	Eastern Analytic	394-1203774. 394-		2.40	0.06	0.16	4	9	8.18
93.00	94.00	1.00	79027	Eastern Analytic	394-1203774. 394-		0.60	0.07	0.14	22	263	1.12
94.00	95.00	1.00	79028	Eastern Analytic	394-1203774. 394-		0.43	0.11	0.65	51	691	0.52
95.00	96.00	1.00	79029	Eastern Analytic	394-1203774. 394-		0.26	0.09	1.68	25	294	0.62
96.00	97.00	1.00	79031	Eastern Analytic	394-1203774. 394-		0.28	0.10	0.40	11	271	2.89
97.00	98.00	1.00	79032	Eastern Analytic	394-1203774. 394-		0.16	0.38	0.80	13	419	8.28
98.00	99.00	1.00	79033	Eastern Analytic	394-1203774		0.14	0.01	0.12	4	37	0.01
99.00	100.00	1.00	79034	Eastern Analytic	394-1203774		-	0.01	0.01	1	10	0.03
100.00	101.00	1.00	79035	Eastern Analytic	394-1203774		-	0.01	0.01	1	13	0.01

Hole Number H-12-3447

Project: LUNDBERG_ENGINE HOUSE

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ICP Report (part 1 of 1)

From (m)	To (m)	Length (m)	Sample #	Lab	Certificate #	Date of Certificate	Ag (ppm)	Al (%)	As (ppm)	Au 'PPB_FA', (ppm)	Ba (ppm)	Be (ppm)	Bi (ppm)	Ca (%)	Cd (ppm)	Ce (ppm)	Co (ppm)	Cr (ppm)	Cu (ppm)	Fe (%)	K (%)	La (ppm)	Mg (%)	Mn (ppm)	Mo (ppm)
83.80	84.80	1.00	79016	Eastern Analytical	394-1203774		0	2.87	5	5	550	1	2	5.50	3	40	30	109	48	4.72	0.11	10	3.26	858	1
84.80	85.80	1.00	79017	Eastern Analytical	394-1203774. 394-		1	1.24	20	5	550	1	2	4.31	4	38	8	64	573	2.57	0.15	10	1.24	887	10
85.80	86.30	0.50	79018	Eastern Analytical	394-1203774. 394-		6	0.24	1849	82	11	1	2	0.87	33	16	1	73	10000	10.00	0.07	10	0.11	223	164
86.30	87.00	0.70	79019	Eastern Analytical	394-1203774. 394-		6	0.99	280	69	21	1	2	0.95	45	11	1	83	10000	9.24	0.07	10	0.72	477	29
87.00	88.00	1.00	79021	Eastern Analytical	394-1203774. 394-		6	0.62	281	52	25	1	2	1.08	52	10	2	114	10000	8.82	0.08	10	0.62	401	52
88.00	89.00	1.00	79022	Eastern Analytical	394-1203774. 394-		3	1.57	23	38	14	1	2	1.81	18	12	6	58	4927	10.00	0.04	10	0.93	795	28
89.00	90.00	1.00	79023	Eastern Analytical	394-1203774		3	1.30	162	18	105	1	2	1.19	10	10	1	123	5309	3.09	0.03	10	1.14	713	8
90.00	91.00	1.00	79024	Eastern Analytical	394-1203774		2	1.76	10	19	105	1	2	1.98	8	14	1	89	3151	3.54	0.04	10	1.52	1126	8
91.00	92.00	1.00	79025	Eastern Analytical	394-1203774		1	1.41	7	10	192	1	2	1.33	4	12	1	149	1220	2.37	0.06	10	1.15	768	10
92.00	93.00	1.00	79026	Eastern Analytical	394-1203774. 394-		4	1.50	5	9	59	1	2	0.75	11	11	1	66	10000	5.18	0.05	10	1.15	576	10
93.00	94.00	1.00	79027	Eastern Analytical	394-1203774. 394-		6	0.35	693	263	15	1	2	5.50	14	21	2	77	5953	9.70	0.02	10	0.32	2391	126
94.00	95.00	1.00	79028	Eastern Analytical	394-1203774. 394-		6	0.33	565	691	17	1	2	4.16	21	22	4	49	4301	10.00	0.01	10	0.19	2064	184
95.00	96.00	1.00	79029	Eastern Analytical	394-1203774. 394-		6	0.27	262	294	28	1	2	4.49	41	21	4	94	2625	8.11	0.02	10	0.16	1898	126
96.00	97.00	1.00	79031	Eastern Analytical	394-1203774. 394-		6	0.78	28	271	32	1	2	0.80	21	15	3	77	2832	8.42	0.05	10	0.51	368	27
97.00	98.00	1.00	79032	Eastern Analytical	394-1203774. 394-		6	1.43	25	419	30	1	2	0.87	31	13	5	63	1638	7.08	0.04	10	1.24	582	49
98.00	99.00	1.00	79033	Eastern Analytical	394-1203774		4	1.63	30	37	73	1	2	0.77	10	13	3	73	1354	3.45	0.08	10	1.42	538	37
99.00	100.00	1.00	79034	Eastern Analytical	394-1203774		1	1.67	14	10	343	1	2	0.72	1	14	2	93	16	1.74	0.07	10	1.48	479	15
100.00	101.00	1.00	79035	Eastern Analytical	394-1203774		1	1.90	20	13	63	1	2	0.28	1	17	7	64	13	2.77	0.11	10	1.53	336	22

Hole Number H-12-3447

Project: LUNDBERG_ENGINE HOUSE

Project Number:

ICP Report (part 2 of 1)

From (m)	To (m)	Length (m)	Sample #	Lab	Certificate #	Date of Certificate	Na (%)	Ni (ppm)	P (%)	Pb (ppm)
83.80	84.80	1.00	79016	Eastern Analytical	394-1203774		0.18	61	0.06	2
84.80	85.80	1.00	79017	Eastern Analytical	394-1203774. 394-		0.14	8	0.06	2200
85.80	86.30	0.50	79018	Eastern Analytical	394-1203774. 394-		0.11	1	0.01	2200
86.30	87.00	0.70	79019	Eastern Analytical	394-1203774. 394-		0.14	1	0.01	2200
87.00	88.00	1.00	79021	Eastern Analytical	394-1203774. 394-		0.11	1	0.01	2200
88.00	89.00	1.00	79022	Eastern Analytical	394-1203774. 394-		0.09	1	0.01	2200
89.00	90.00	1.00	79023	Eastern Analytical	394-1203774		0.11	2	0.01	1650
90.00	91.00	1.00	79024	Eastern Analytical	394-1203774		0.11	1	0.01	978
91.00	92.00	1.00	79025	Eastern Analytical	394-1203774		0.18	3	0.01	919
92.00	93.00	1.00	79026	Eastern Analytical	394-1203774. 394-		0.16	1	0.01	625
93.00	94.00	1.00	79027	Eastern Analytical	394-1203774. 394-		0.12	3	0.01	720
94.00	95.00	1.00	79028	Eastern Analytical	394-1203774. 394-		0.09	12	0.01	1072
95.00	96.00	1.00	79029	Eastern Analytical	394-1203774. 394-		0.08	6	0.05	942
96.00	97.00	1.00	79031	Eastern Analytical	394-1203774. 394-		0.10	1	0.01	964
97.00	98.00	1.00	79032	Eastern Analytical	394-1203774. 394-		0.13	1	0.01	2200
98.00	99.00	1.00	79033	Eastern Analytical	394-1203774		0.13	4	0.02	134
99.00	100.00	1.00	79034	Eastern Analytical	394-1203774		0.16	4	0.01	106
100.00	101.00	1.00	79035	Eastern Analytical	394-1203774		0.12	4	0.03	57

GEOTECHNICAL DRILLHOLE REPORT SHEET

Minco Plc

Project: LUNDBERG_ENGINE HOUS

Logged by: David Butler

Hole Number: H-12-3447

Azimuth: 0

Location: BMC Buchans Core Shed

Logged date: 7/13/2012

Core Size: NQ

Inclination: -90

INTERVAL			RECOVERY		RQD		HARD	No. Joints	Typ. Joint	JOINT CONDITION					Geological Description - Rock Type, Colour, Texture, Alteration, Structure
FROM	TO	LENGTH	m	%	m	%				PERSIS	APER	ROUGH	INFILL	WTHR	
2.00	5.00	3.00	3.00	100.00	2.50	83.33		11		2	4	3		3	
5.00	8.00	3.00	3.00	100.00	2.80	93.33		7		4	4	5		3	25° to CA @ 7.65 m
8.00	11.00	3.00	3.00	100.00	3.00	100.00		5		4	4	3		3	
11.00	14.00	3.00	3.00	100.00	2.75	91.67		7		4	4	5		5	
14.00	17.00	3.00	3.00	100.00	2.10	70.00		15		2	4	3		5	
17.00	20.00	3.00	3.00	100.00	2.60	86.67		10		2	4	3		5	
20.00	23.00	3.00	3.00	100.00	2.00	66.67		12		2	4	3		5	Badly broken core in places
23.00	26.00	3.00	3.00	100.00	2.15	71.67		17		2	4	3		5	Badly broken core, a couple of sall gouges
26.00	29.00	3.00	3.00	100.00	2.90	96.67		6		4	4	3		5	25° to CA @ 28.00 m
29.00	32.00	3.00	3.00	100.00	2.50	83.33		13		2	4	3		5	
32.00	35.00	3.00	3.00	100.00	3.00	100.00		3		4	4	3		5	30° to CA @ 32.40 m
35.00	38.00	3.00	3.00	100.00	3.00	100.00		2		6	4	3		5	10° to CA @ 37.10 m
38.00	41.00	3.00	3.00	100.00	2.95	98.33		3		4	4	1		5	25° to CA @ 40.15 m
41.00	44.00	3.00	3.00	100.00	2.85	95.00		6		4	4	1		5	
44.00	47.00	3.00	3.00	100.00	2.80	93.33		9		4	4	1		5	
47.00	50.00	3.00	3.00	100.00	2.85	95.00		5		4	4	1		5	
50.00	53.00	3.00	3.00	100.00	3.00	100.00		4		4	4	1		5	45° to CA @ 50.45 m
53.00	56.00	3.00	3.00	100.00	3.00	100.00		2		6	4	1		5	
56.00	59.00	3.00	3.00	100.00	3.00	100.00		5		4	4	1		5	
59.00	62.00	3.00	3.00	100.00	3.00	100.00		3		4	4	1		5	
62.00	65.00	3.00	3.00	100.00	3.00	100.00		4		4	4	1		5	30° to CA @ 62.60 m
65.00	68.00	3.00	3.00	100.00	3.00	100.00		5		4	4	1		5	35° to CA @ 65.30 m
68.00	71.00	3.00	3.00	100.00	2.80	93.33		5		4	4	1		5	Small gouge @ 70.40 m
71.00	74.00	3.00	3.00	100.00	2.00	66.67		5		4	4	3		5	gouge zone from 71.00 m - 72.20 m
74.00	77.00	3.00	3.00	100.00	2.90	96.67		6		4	4	3		5	

Project: LUNDBERG_ENGINE HOUS

Logged by: David Butler

Hole Number: H-12-3447

Azimuth: 0

Location: BMC Buchans Core Shed

Logged date: 7/13/2012

Core Size: NQ

Inclination: -90

INTERVAL			RECOVERY		RQD		HARD	No. Joints	Typ. Joint	JOINT CONDITION					Geological Description - Rock Type, Colour, Texture, Alteration, Structure
FROM	TO	LENGTH	m	%	m	%				PERSIS	APER	ROUGH	INFILL	WTHR	
77.00	80.00	3.00	3.00	100.00	2.75	91.67		9		4	4	3		5	
80.00	83.00	3.00	3.00	100.00	2.95	98.33		4		4	4	1		5	35° to CA @ 80.90 m
83.00	86.00	3.00	3.00	100.00	2.80	93.33		8		4	4	1		5	
86.00	89.00	3.00	3.00	100.00	2.75	91.67		4		4	4	3		5	
89.00	92.00	3.00	3.00	100.00	3.00	100.00		3		4	4	5		5	30° to CA @ 91.90 m
92.00	95.00	3.00	3.00	100.00	2.90	96.67		6		4	4	3		5	30° to CA @ 92.15 m
95.00	98.00	3.00	3.00	100.00	2.60	86.67		9		4	4	5		5	Gouge from 96.15 m - 96.35 m
98.00	101.00	3.00	3.00	100.00	2.15	71.67		13		2	4	3		5	
101.00	104.00	3.00	3.00	100.00	2.40	80.00		11		2	4	3		5	
104.00	107.00	3.00	3.00	100.00	3.00	100.00		4		4	4	1		5	50° to CA @ 106.20 m
107.00	110.00	3.00	3.00	100.00	2.90	96.67		6		4	4	3		5	Small gouge at 107.00 m
110.00	113.00	3.00	3.00	100.00	3.00	100.00		3		4	4	1		5	
113.00	116.00	3.00	3.00	100.00	3.00	100.00		4		4	4	3		5	
116.00	119.00	3.00	3.00	100.00	2.90	96.67		5		4	4	3		5	E.O.H.