

Hole Number: ES2005-19

Units: METRIC

Project Name: Norway - Espedalen	Primary Coordinates Grid: UTM84-32N	Destination Coordinates Grid: UTM:	Collar Dip: -81.38
Project Number: 201	North: 6801174.10	North: 61.34	Collar Az: 243.59
Location: Surface	East: 535292.40	East: 9.66	Length: 125.35 (m)
	Elev: 974.09	Elev: 974.09	Start Depth: 0.00 (m)
Date Started: Mar 08, 2005	Collar Survey: Y	Plugged: N	Contractor: Arctic Drilling A/S
Date Completed: Mar 10, 2005	Multishot Survey: Y	Hole Size: TT46	Core Storage: Strand Fjellstue
Logged By: Trevor Blair	Pulse EM Survey: Y	Casing: Left in Hole, capped	Final Depth: 125.35 (m)

Comments: Purpose: Test 25m up-dip toe on mineralization intersected in hole ES2004-09 (1.74%Ni, 0.79%Cu, 0.06%Co / 14.60m (80.40-96.00m)).

Result: Intersected 25% stringer sulphides (po-pn-cpy) within a sheared ultramafic from 65.93-67.27m (1.34m) and a 20cm wide massive sulphide veinlet from 95.15-95.35m.

Assays: 2.67%Ni, 1.57%Cu, 0.07%Co / 0.82m (65.93-66.75m)
4.12%Ni, 0.60%Cu, 0.13%Co / 0.20m (95.15-95.35m)

Borehole UTEM: In-hole edge responses @ 67m & 88m. Response at 67m correlated with intersected mineralization.

Sample Averages

Average Type	From (m)	To (m)	Length (m)	Ni%	Cu%	Co%
WEIGHTED	65.10	67.27	2.17	1.1535	0.6985	0.0327

Survey Data

Depth (m)	Azimuth Decimal	Dip Decimal	Test Type	Flag	Comments	Depth (m)	Azimuth Decimal	Dip Decimal	Test Type	Flag	Comments
0.00	243.59	-81.38	MShot	OK		5.00	243.59	-81.13	MShot	OK	
10.00	243.59	-80.90	MShot	OK		15.00	243.40	-80.97	MShot	OK	
20.00	243.37	-81.10	MShot	OK		25.00	243.43	-80.97	MShot	OK	
30.00	243.39	-81.18	MShot	OK		35.00	243.70	-81.22	MShot	OK	
40.00	244.37	-81.08	MShot	OK		45.00	244.33	-81.09	MShot	OK	
50.00	243.76	-81.17	MShot	OK		55.00	243.58	-81.04	MShot	OK	
60.00	243.35	-81.10	MShot	OK		65.00	243.28	-81.03	MShot	OK	
70.00	244.30	-81.02	MShot	OK		75.00	245.06	-80.96	MShot	OK	
80.00	245.09	-80.90	MShot	OK		85.00	245.36	-80.99	MShot	OK	
90.00	245.91	-80.83	MShot	OK		95.00	247.07	-80.81	MShot	OK	
100.00	247.57	-80.95	MShot	OK		105.00	247.34	-80.84	MShot	OK	
110.00	247.54	-80.69	MShot	OK		115.00	247.87	-80.27	MShot	OK	
123.00	247.69	-80.23	MShot	OK							

Detailed Lithology		Assay Data							
From (m)	To (m)	Lithology	Sample Number	From (m)	To (m)	Length (m)	Ni%	Cu%	Co%
0	7.25	C, Casing							

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Detailed Lithology		Assay Data							
From (m)	To (m)	Lithology	Sample Number	From (m)	To (m)	Length (m)	Ni%	Cu%	Co%
7.25	35.75	<p>4s, Sausseritized/Tectonized Anorthosite</p> <p>Medium grained, highly tectonized, white-green, non-magnetic, heterogenous anorthosite. This unit contains patchy to pervasive (banded) sausseritization, hematization, epidotization and possibly sericitization. The unit contains 65-80% plagioclase (variably altered) and 20-35% alteration minerals (chlorite, hematite, sericite?, fuchsite?)</p> <p>This unit contains dm to m scale mafic dykes/sills which locally contain xenoliths of country rock (anorthosite). These mafic intervals are generally well foliated, fine grained, light to dark green, homogenous units that are unmineralized. See minor units for intervals as well as contact relationships.</p> <p>The anorthosite is unmineralized.</p> <p>The lower contact of this unit is sharp along a larger mafic dyke/sill perpendicular to the ca.</p> <p>Alteration 15.58 - 19.65 :HM Hematite, BN Banded, M Moderate Locally patchy and mottled</p> <p>Structure 21.90 - 21.91 : S1 First Foliation, 65 Deg to CA</p> <p>RQD 7.25 - 10.00 : 64.00 % RQD 100.00 % Core 10.00 - 13.00 : 20.00 % RQD 100.00 % Core 13.00 - 16.00 : 78.00 % RQD 100.00 % Core 16.00 - 19.00 : 60.00 % RQD 100.00 % Core 19.00 - 22.00 : 76.00 % RQD 100.00 % Core 22.00 - 25.00 : 78.00 % RQD 100.00 % Core 25.00 - 28.00 : 95.00 % RQD 100.00 % Core 28.00 - 31.00 : 87.00 % RQD 100.00 % Core 31.00 - 34.00 : 77.00 % RQD 100.00 % Core 34.00 - 37.00 : 91.00 % RQD 100.00 % Core</p> <p>MINOR INTERVALS: Minor Interval: 10.44 - 11.4 MD, Mafic Dike The upper and lower contacts are at 90 and 75 degrees to the ca, respectively. Minor Interval: 26.91 - 27.2 MD, Mafic Dike The upper and lower contacts are at ~75 (irregular) and 70 degrees to the ca, respectively. Minor Interval: 27.71 - 29.75 MD, Mafic Dike The upper contact is irregular with the lower contact at ~75 (irregular) degrees to the ca.</p>							

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Detailed Lithology		Assay Data							
From (m)	To (m)	Lithology	Sample Number	From (m)	To (m)	Length (m)	Ni%	Cu%	Co%
		<p>MINOR INTERVALS:</p> <p>Minor Interval: 30.53 - 31 MD, Mafic Dike The upper and lower contacts are at ~60 (irregular) and 90 degrees to the ca, respectively.</p> <p>Minor Interval: 33.52 - 33.95 MD, Mafic Dike The upper and lower contacts are at 90 and 80 (broken contact) degrees to the ca, respectively.</p>							
35.75	43.00	<p>MD, Mafic Dike</p> <p>Fine grained, green-grey-red, non-magnetic. homogenous, well foliated mafic dyke composed of chlorite, biotite, pyroxenes and plagioclase.</p> <p>Strongly banded hematization occurs from 39.18-41.32m with less pervasive hematization occurring between 41.32-43.00m.</p> <p>This unit is unmineralized.</p> <p>The lower contact of this unit is sharp at 55 degrees to the ca.</p> <p>Alteration 39.18 - 41.32 :HM Hematite, BN Banded, S Strong 41.32 - 43.00 :HM Hematite, BN Banded, W Weak Locally patchy</p> <p>Structure 40.45 - 40.46 : S1 First Foliation, 70 Deg to CA</p> <p>RQD 37.00 - 40.00 : 71.00 % RQD 100.00 % Core 40.00 - 43.00 : 67.00 % RQD 100.00 % Core</p>							

DETAILED LOG

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From (m)	To (m)	Lithology	Sample Number	From (m)	To (m)	Length (m)	Ni%	Cu%	Co%
43.00	88.45	4s, Sausseritized/Tectonized Anorthosite	PG03751	65.10	65.93	0.83	0.2400	0.2000	0.0100
		Medium grained, highly tectonized, white-green, non-magnetic, heterogenous anorthosite. This unit contains patchy to pervasive (banded) sausseritization, hematization, epidotization and possibly sericitization. The unit contains 75-85% plagioclase (variably altered) and 15-25% alteration minerals (chlorite, hematite, sericite?, fuchsite?). The anorthosite is unmineralized. The lower contact of this unit is sharp along a larger mafic dyke/sill at 70 degrees to the ca. RQD 43.00 - 46.00 : 86.00 % RQD 100.00 % Core 46.00 - 49.00 : 93.00 % RQD 100.00 % Core 49.00 - 52.00 : 92.00 % RQD 100.00 % Core 52.00 - 55.00 : 62.00 % RQD 100.00 % Core 55.00 - 58.00 : 67.00 % RQD 100.00 % Core 58.00 - 61.00 : 84.00 % RQD 100.00 % Core 61.00 - 64.00 : 80.00 % RQD 100.00 % Core 64.00 - 67.00 : 78.00 % RQD 100.00 % Core 67.00 - 70.00 : 92.00 % RQD 100.00 % Core 70.00 - 73.00 : 81.00 % RQD 100.00 % Core 73.00 - 76.00 : 96.00 % RQD 100.00 % Core 76.00 - 79.00 : 90.00 % RQD 100.00 % Core 79.00 - 82.00 : 84.00 % RQD 100.00 % Core 82.00 - 85.00 : 97.00 % RQD 100.00 % Core 85.00 - 88.00 : 73.00 % RQD 100.00 % Core 88.00 - 91.00 : 88.00 % RQD 100.00 % Core	PG03752	65.93	66.75	0.82	2.6700	1.5700	0.0700
			PG03753	66.75	67.27	0.52	0.2200	0.1200	0.0100
			PG03754	67.27	68.10	0.83	0.1400	0.0900	0.0100
			PG03914	68.10	69.50	1.40	0.0600	0.0600	0.0100
			PG03915	69.50	71.00	1.50	0.2300	0.1000	0.0100
			PG03916	71.00	72.00	1.00	0.0250	0.0250	0.0100

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Detailed Lithology		Assay Data							
From (m)	To (m)	Lithology	Sample Number	From (m)	To (m)	Length (m)	Ni%	Cu%	Co%
		<p>MINOR INTERVALS:</p> <p>Minor Interval: 65.93 - 67.27 6e, Ultramafic Schist</p> <p>Highly sheared, irregular, dark green to black, fine grained, moderately to strongly magnetic ultramafic unit composed of serpentine and chlorite. This unit contains dm scale anorthosite xenoliths with irregular, undulating contacts.</p> <p>This unit contains ~15-25% stringer sulphides (pentlandite, chalcopyrite, pyrrhotite) as well as blebby chalcopyrite.</p> <p>The upper contact of this unit is broken but appears at ~20 degrees to the ca. The lower contact of this unit is irregular but ~65 degrees to the ca.</p> <p>Mineralization 65.93 - 67.27 : Cpy Chalcopyrite, STR Stringers, 5% 65.93 - 67.27 : Pn Pentlandite, EY Eyes, 3% 65.93 - 67.27 : Po Pyrrhotite, STR Stringers, 15%</p>							
88.45	92.87	<p>MD, Mafic Dike</p> <p>Fine grained, well foliated, grey-green, homogenous, weakly to non-magnetic mafic dyke/sill composed of chlorite and plagioclase +- minor amounts of biotite.</p> <p>This unit is unmineralized.</p> <p>The upper and lower contacts of this unit are sharp at 70 and 80 degrees to the ca, respectively.</p> <p>Structure 88.90 - 88.91 : S1 First Foliation, 75 Deg to CA</p> <p>RQD 91.00 - 94.00 : 84.00 % RQD 100.00 % Core</p>							

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Detailed Lithology		Lithology	Assay Data						
From (m)	To (m)		Sample Number	From (m)	To (m)	Length (m)	Ni%	Cu%	Co%
92.87	125.35	4s, Sausseritized/Tectonized Anorthosite	PG03755	93.75	95.15	1.40	0.0250	0.0250	0.0100
		Medium grained, well foliated, non-magnetic, white-green-red, heterogenous anorthosite. This unit contains variably altered (sausseritized, epidotized, hematized) plagioclase. This unit contains <5% mafic injection as dm scale dykes/sills (see minor units for contact relationships and inhole intervals).	PG03756	95.15	95.35	0.20	4.1200	0.6000	0.1300
		This unit is unmineralized.	PG03757	95.35	96.75	1.40	0.0250	0.0250	0.0100
		The lower contact of this unit is unknown as the hole was stopped.							
		Mineralization							
		95.15 - 95.35 : Pn Pentlandite, EY Eyes, 7%							
		95.15 - 95.35 : Po Pyrrhotite, VN Veins, 93%							
		Structure							
		99.15 - 99.16 : S1 First Foliation, 90 Deg to CA							
		115.15 - 115.16 : S1 First Foliation, 70 Deg to CA							
		RQD							
		94.00 - 97.00 : 86.00 % RQD 100.00 % Core							
		97.00 - 100.00 : 100.00 % RQD 100.00 % Core							
		100.00 - 103.00 : 90.00 % RQD 100.00 % Core							
		103.00 - 106.00 : 52.00 % RQD 100.00 % Core							
		106.00 - 109.00 : 87.00 % RQD 100.00 % Core							
		109.00 - 112.00 : 94.00 % RQD 100.00 % Core							
		112.00 - 115.00 : 86.00 % RQD 100.00 % Core							
		115.00 - 118.00 : 65.00 % RQD 100.00 % Core							
		118.00 - 121.00 : 62.00 % RQD 100.00 % Core							
		121.00 - 125.00 : 93.00 % RQD 100.00 % Core							
		MINOR INTERVALS:							
		Minor Interval:							
		120.65 - 121.57 PYXT, Pyroxenite							
		Fine grained, dark green, well foliated, weakly to non-magnetic, homogenous ultramafic dyke/sill composed of serpentine, chlorite and +- plagioclase.							
		This unit is unmineralized.							
		The upper and lower contacts of this unit are sharp at 70 and 85 degrees to the ca, respectively.							

Samples

Sample Number	From (m)	To (m)	Ni%	Cu%	Co%
Sample Type	ASSAY				
PG03751	65.10	65.93	0.2400	0.2000	0.0100
PG03752	65.93	66.75	2.6700	1.5700	0.0700

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Samples

Sample Number	From (m)	To (m)	Ni%	Cu%	Co%
Sample Type	ASSAY				
PG03753	66.75	67.27	0.2200	0.1200	0.0100
PG03754	67.27	68.10	0.1400	0.0900	0.0100
PG03914	68.10	69.50	0.0600	0.0600	0.0100
PG03915	69.50	71.00	0.2300	0.1000	0.0100
PG03916	71.00	72.00	0.0250	0.0250	0.0100
PG03755	93.75	95.15	0.0250	0.0250	0.0100
PG03756	95.15	95.35	4.1200	0.6000	0.1300
PG03757	95.35	96.75	0.0250	0.0250	0.0100