

Hole Number: ES2004-09

Units: METRIC

Project Name:	Norway - Espedalen	Primary Coordinates	Grid: UTM84-32N	Destination Coordinates	Grid: UTM:	Collar Dip:	-78.68
Project Number:	201	North:	6801193.37	North:	61.34	Collar Az:	208.95
Location:	Surface	East:	535308.73	East:	9.66	Length:	139.20 (m)
		Elev:	969.19	Elev:	969.19	Start Depth:	0.00 (m)
Date Started:	Aug 27, 2004	Collar Survey:	Y	Plugged:	N	Contractor:	Geo Drilling A/S
Date Completed:	Aug 31, 2004	Multishot Survey:	Y	Hole Size:	TT46	Core Storage:	Strand Fjellstue
Logged By:	Yannick Beaudoin	Pulse EM Survey:	Y	Casing:	Left in Hole, capped	Final Depth:	139.20 (m)

Comments: Purpose: To follow-up on mineralization intersected in ES2004-08 and further test UTEM conductor ESP\_17\_17. Conductivity = 700, 1000 Siemens (2 plates)

Result: Intersected two units of mineralized ultramafic schist and two units of massive sulphide (MS) between 80.4m and 95.0m (po-pn-cp-py). Pentlandite "eyes" visible in MS intervals. Mineralized units are bounded by anorthosite and mafic dykes.

Assays: 1.73% Ni, 0.77% Cu, 0.06% Co / 14.60m (80.40-95.00m)  
 incl. 3.39% Ni, 2.03% Cu, 0.12% Co / 1.00m  
 3.03% Ni, 1.15% Cu, 0.14% Co / 1.80m  
 5.55% Ni, 5.42% Cu, 0.16% Co / 0.50m  
 6.91% Ni, 2.05% Cu, 0.21% Co / 1.90m

Borehole UTEM: Multi-peaked in-hole responses @ 68m, 85m & 95m. Latter two can be correlated with intersected mineralization listed above. Response at 68m can be correlated with cm scale sulphide stringers intersected within the following intervals: 63.50-63.55m, 64.80-64.80m & 73.50-74.85m.

Lithological interpretation: Anorthositic terrain intruded by mafic dykes and narrow mineralized ultramafic intrusions. Subsequent tectonization of all lithologies and partial remobilization of massive sulphides.

NOTE: Collar re-surveyed by Rob McKeown with base station DGPS in winter of 2005. Results as follows:  
 UTM North - 6,801,301.504 UTM East - 535,129.069 Grid North: 3006.306 Grid East: 11397.396

### Sample Averages

Average Type	From (m)	To (m)	Length (m)	Ni%	Cu%	Co%
WEIGHTED	80.40	87.50	7.10	1.6946	1.0380	0.0682
WEIGHTED	80.40	95.00	14.60	1.7384	0.7877	0.0637
WEIGHTED	93.10	95.00	1.90	6.9074	2.0489	0.2053

### Survey Data

Depth (m)	Azimuth Decimal	Dip Decimal	Test Type	Flag	Comments	Depth (m)	Azimuth Decimal	Dip Decimal	Test Type	Flag	Comments
0.00	208.95	-78.68	MShot	OK		5.00	208.95	-78.64	MShot	OK	
10.00	208.95	-78.43	MShot	OK		15.00	207.40	-78.31	MShot	OK	
20.00	208.18	-78.04	MShot	OK		25.00	207.39	-77.90	MShot	OK	
30.00	209.33	-77.91	MShot	OK		35.00	208.33	-77.64	MShot	OK	
40.00	208.77	-77.50	MShot	OK		45.00	212.22	-77.07	MShot	OK	
50.00	212.64	-76.86	MShot	OK		55.00	213.15	-77.00	MShot	OK	
60.00	214.39	-76.89	MShot	OK		65.00	213.57	-77.03	MShot	OK	
70.00	214.93	-77.45	MShot	OK		75.00	214.96	-77.27	MShot	OK	
80.00	216.57	-77.62	MShot	OK		85.00	216.01	-77.53	MShot	OK	

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## Survey Data

Depth (m)	Azimuth Decimal	Dip Decimal	Test Type	Flag	Comments	Depth (m)	Azimuth Decimal	Dip Decimal	Test Type	Flag	Comments
90.00	216.67	-77.43	MShot	OK		95.00	218.38	-77.34	MShot	OK	
100.00	218.28	-77.35	MShot	OK		105.00	217.81	-77.27	MShot	OK	
110.00	219.29	-76.53	MShot	OK		115.00	219.49	-77.14	MShot	OK	
120.00	218.67	-77.13	MShot	OK		125.00	221.11	-77.18	MShot	OK	
130.00	220.88	-76.84	MShot	OK		135.00	220.43	-76.52	MShot	OK	
137.00	220.40	-76.50	MShot	OK							

Detailed Lithology		Assay Data							
From (m)	To (m)	Lithology	Sample Number	From (m)	To (m)	Length (m)	Ni%	Cu%	Co%
0	8.80	C, Casing							
8.80	9.80	MD, Mafic Dike Unmineralized, fine-medium grained mafic dyke/flow.  Lower contact near perpendicular to core axis. RQD 8.80 - 11.00 : 15.00 % RQD 95.00 % Core							

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Detailed Lithology		Lithology	Assay Data						
From (m)	To (m)		Sample Number	From (m)	To (m)	Length (m)	Ni%	Cu%	Co%
9.80	80.43	4s, Sausseritized/Tectonized Anorthosite	PG03106	72.50	73.50	1.00	0.0250	0.0250	0.0100
		Inhomogeneous, foliated, mottled to banded, white and green, tectonized and altered anorthosite. Alteration consists of patchy to pervasive sausseritization and sericitization (?). Consists of 60-75% variably sausseritized plagioclase, 10-30% foliated, fine grained, pale green amorphous alteration mineral (sericite?) and 5-10% dark green chloritized mafic minerals. Locally contains cm to dm scale intervals of fine grained, green ultramafic schist (eg. 69.6-70m, 73.5-73.85m, 74.85-74.95m).	PG03107	73.50	74.85	1.35	0.4600	0.1200	0.0100
		Unit is cross cut by mm to cm scale foliation parallel quartz veins.	PG03108	74.85	75.60	0.75	0.0250	0.0250	0.0100
		Dm to m scale mafic dykes/flows intrude the unit (see Minor Units).	PG00231	79.40	80.40	1.00	0.0250	0.0250	0.0100
		Banded hematization occurs between 50.00m and 56.40m.	PG00232	80.40	81.40	1.00	3.3900	2.0300	0.1200
		Mineralization							
		63.50 - 63.55 : Py Pyrite, STR Stringers, 80% py, po stringer; isolated							
		64.80 - 64.84 : Po Pyrrhotite, STR Stringers, 55% po, minor ccp; isolated							
		73.50 - 74.85 : Po Pyrrhotite, STR Stringers, 5% 5% po (1pn, tr cp) concentrated in three 3-20mm wide massive stringers (73.5m: 33° to CA; 74.8m: 60° to CA).							
		Alteration							
		50.00 - 56.40 :HM Hematite, BN Banded, M Moderate							
		Structure							
		45.50 - 45.51 : Sm General Foliation, 76 Deg to CA							
		55.50 - 55.51 : Sm General Foliation, 63 Deg to CA							
		73.00 - 73.01 : Sm General Foliation, 80 Deg to CA							
		73.50 - 73.51 : Sm General Foliation, 35 Deg to CA							
		74.50 - 74.51 : Sm General Foliation, 80 Deg to CA							
		RQD							
		11.00 - 14.00 : 32.00 % RQD 100.00 % Core							
		14.00 - 17.00 : 68.00 % RQD 100.00 % Core							
		17.00 - 20.00 : 70.00 % RQD 100.00 % Core							
		20.00 - 23.00 : 69.00 % RQD 100.00 % Core							
		23.00 - 26.00 : 66.00 % RQD 100.00 % Core							
		26.00 - 29.00 : 63.00 % RQD 100.00 % Core							
		29.00 - 32.00 : 82.00 % RQD 100.00 % Core							
		32.00 - 35.00 : 88.00 % RQD 100.00 % Core							
		35.00 - 38.00 : 82.00 % RQD 98.00 % Core							
		38.00 - 41.00 : 68.00 % RQD 100.00 % Core							
		41.00 - 44.00 : 70.00 % RQD 100.00 % Core							
		44.00 - 47.00 : 64.00 % RQD 100.00 % Core							

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Detailed Lithology		Assay Data							
From (m)	To (m)	Lithology	Sample Number	From (m)	To (m)	Length (m)	Ni%	Cu%	Co%
		RQD							
		47.00 - 50.00 : 69.00 % RQD 100.00 % Core							
		50.00 - 53.00 : 31.00 % RQD 100.00 % Core							
		53.00 - 56.00 : 42.00 % RQD 100.00 % Core							
		56.00 - 59.00 : 49.00 % RQD 95.00 % Core							
		59.00 - 62.00 : 71.00 % RQD 98.00 % Core							
		62.00 - 65.00 : 74.00 % RQD 98.00 % Core							
		65.00 - 68.00 : 38.00 % RQD 100.00 % Core							
		68.00 - 71.00 : 43.00 % RQD 100.00 % Core							
		71.00 - 74.00 : 65.00 % RQD 100.00 % Core							
		74.00 - 77.00 : 66.00 % RQD 100.00 % Core							
		77.00 - 80.00 : 55.00 % RQD 98.00 % Core							
		80.00 - 83.00 : 37.00 % RQD 95.00 % Core							
		MINOR INTERVALS:							
		Minor Interval:							
		13.48 - 17.8 MD, Mafic Dike							
		Unmineralized, fine-medium grained mafic dyke/flow.							
		Upper contact near perpendicular to core axis. Lower contact at 85 degrees to core axis.							
		Minor Interval:							
		19.7 - 23.58 MD, Mafic Dike							
		Unmineralized, fine-medium grained mafic dyke/flow.							
		Upper contact at 75 degrees to core axis. Lower contact near perpendicular to core axis.							
		Minor Interval:							
		26.3 - 31.18 MD, Mafic Dike							
		Unmineralized, fine-medium grained mafic dyke/flow.							
		Upper contact near perpendicular to core axis. Lower contact at 75 degrees to core axis.							
		Minor Interval:							
		56.4 - 58 MD, Mafic Dike							
		Unmineralized, fine-medium grained mafic dyke/flow.							
		Upper contact near perpendicular to core axis. Lower contact at 45 degrees to core axis.							
		Minor Interval:							
		60.6 - 68.28 MD, Mafic Dike							
		Unmineralized, fine-medium grained mafic dyke/flow.							
		Upper contact at 50 degrees to core axis. Lower contact near perpendicular to core axis.							

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From (m)	To (m)		Sample Number	From (m)	To (m)	Length (m)	Ni%	Cu%	Co%
80.43	81.40	6e, Ultramafic Schist Fine grained, highly altered (chloritized) ultramafic schist.  Mineralization consists of 30-35% sulphides (po-pn-cpy) over length. Net textured on dm scale. Semi massive stringers.  Cm scale angular fragment of anorthositic gabbro.  Upper contact appears near perpendicular to core axis although some missing pieces make observation inconclusive. Lower contact is at 75 degrees to core axis.  Interpretation: May be consistent with Heim's rock suite 2b. Mineralization 80.43 - 81.40 : Po Pyrrhotite, STR Stringers, 33% locally net textured and semi massive stringers; po-pn-cpy Alteration 80.43 - 81.40 :CH Chlorite, P Pervasive, S Strong							
81.40	82.50	4s, Sausseritized/Tectonized Anorthosite Medium grained, mottled, white and grey anorthosite.  Unit is cross cut by mm to cm scale foliation parallel quartz veins.  Dm to m scale mafic dykes/flows intrude the unit.	PG00233	81.40	82.50	1.10	0.0250	0.0250	0.0100
82.50	84.28	6e, Ultramafic Schist Fine grained, highly altered (chloritized) ultramafic schist.  Mineralization consists of 45-50% sulphides (po-pn-cpy-py) over length. Visible pentlandite "eyes". Net-textured on dm scale. Locally semi- massive stringers.  Cm scale unmineralized patches.  In the vicinity of 83.20m, cm scale dark patches are observed within an unmineralized portion of the unit. Relict pyroxenes?  Upper and lower contacts are near perpendicular to core axis.  Interpretation: May be consistent with Heim's rock suite 2b. Mineralization 82.51 - 84.28 : Po Pyrrhotite, NT Net-Textured, 50% po-pn-cpy-py; visible pentlandite "eyes" Alteration 82.51 - 84.28 :CH Chlorite, P Pervasive, S Strong RQD 83.00 - 86.00 : 63.00 % RQD 100.00 % Core	PG00234	82.50	83.00	0.50	3.2900	1.3800	0.1700
			PG00235	83.00	83.50	0.50	2.9200	0.6800	0.1300
			PG00236	83.50	84.30	0.80	2.9400	1.3000	0.1200

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Detailed Lithology		Lithology	Assay Data						
From (m)	To (m)		Sample Number	From (m)	To (m)	Length (m)	Ni%	Cu%	Co%
84.28	87.00	MD, Mafic Dike Fine-medium grained mafic dyke/flow. Mineralization 86.66 - 87.00 : Po Pyrrhotite, STR Stringers, 5% with minor ccp RQD 86.00 - 89.00 : 59.00 % RQD 100.00 % Core MINOR INTERVALS: Minor Interval: 86.6 - 87.6e, Ultramafic Schist Ultramafic schist with 10% po and 5% cp in several 2-15mm wide veinlets.	PG00237	84.30	85.00	0.70	0.0250	0.0250	0.0100
			PG00238	85.00	86.00	1.00	0.0250	0.0250	0.0100
			PG00239	86.00	87.00	1.00	0.3400	0.4900	0.0100
87.00	87.50	MS, Massive Sulphide 20% fine grained, highly altered (chloritized) ultramafic schist and 80% massive sulphides (po-cpy-pn-py); visible pentlandite "eyes".  Upper contact slightly diffuse and at about 75 degrees to core axis. Lower contact at about 80 degrees to core axis.  Interpretation: May be consistent with Heim's rock suite 2b. Mineralization 87.00 - 87.50 : Po Pyrrhotite, M Massive, 93% po-cpy-pn-py; visible pentlandite "eyes" Alteration 87.00 - 87.50 :CH Chlorite, P Pervasive, S Strong	PG00240	87.00	87.50	0.50	5.5500	5.4200	0.1600
87.50	92.00	MD, Mafic Dike Fine grained, well foliated, unmineralized, green mafic dyke as 84.28-87m.  Uphole contact approximately perpendicular to CA; downhole contact at 80° to CA.  RQD 89.00 - 92.00 : 41.00 % RQD 100.00 % Core	PG00241	87.50	88.50	1.00	0.1100	0.0700	0.0100
			PG03094	88.50	89.50	1.00	0.0250	0.0250	0.0100
			PG03095	89.50	90.50	1.00	0.0250	0.0250	0.0100
			PG03096	90.50	92.00	1.50	0.0250	0.0600	0.0100
92.00	93.10	4s, Sausseritized/Tectonized Anorthosite Fine to medium grained, sheared, white and green anorthosite as previously. RQD 92.00 - 95.00 : 76.00 % RQD 100.00 % Core	PG00242	92.00	93.10	1.10	0.0250	0.0250	0.0100

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Detailed Lithology		Lithology	Assay Data						
From (m)	To (m)		Sample Number	From (m)	To (m)	Length (m)	Ni%	Cu%	Co%
93.10	95.00	MS, Massive Sulphide	PG00243	93.10	94.00	0.90	6.5600	1.8700	0.2000
		Fine grained, highly altered (chloritized) ultramafic schist.	PG00244	94.00	95.00	1.00	7.2200	2.2100	0.2100
		Mineralization consists of 75-80% sulphides (po-pn-cpy-py) over length. Visible pentlandite "eyes". From 93.10m to 93.22m, only ~trace sulphides. From 93.22m to 95m, 90-95% (massive) sulphides.							
		Minor cm to dm scale unmineralized fragments.							
		Upper contact at 45 degrees to core axis. Lower contact appears to be near perpendicular to core axis (missing piece).							
		Interpretation: May be consistent with Heim's rock suite 2b.							
		Mineralization							
		93.10 - 93.22 : Po Pyrrhotite, TR Trace, 0.5%							
		93.22 - 95.00 : Po Pyrrhotite, M Massive, 95% po-pn-cpy; visible pentlandite "eyes"							
		Alteration							
		93.10 - 95.00 :CH Chlorite, P Pervasive, S Strong							

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From (m)	To (m)		Sample Number	From (m)	To (m)	Length (m)	Ni%	Cu%	Co%
95.00	139.20	4s, Sausseritized/Tectonized Anorthosite Inhomogenous, medium grained, well foliated to banded altered and tectonized anorthosite. Consists of 70-80% white plagioclase, 15-20% pale green sericite (?) and 5-10% dark green, chloritized mafic minerals. Locally cross-cut by cm to dm scale schistose ultramafic dykes. Progressively more leucocratic with increasing depth. Alteration 137.00 - 139.19 :HM Hematite, ST Staining, M Moderate Structure 114.50 - 114.51 : Sm General Foliation, 83 Deg to CA RQD 95.00 - 98.00 : 77.00 % RQD 100.00 % Core 98.00 - 101.00 : 80.00 % RQD 100.00 % Core 101.00 - 104.00 : 75.00 % RQD 100.00 % Core 104.00 - 107.00 : 66.00 % RQD 100.00 % Core 107.00 - 110.00 : 62.00 % RQD 100.00 % Core 110.00 - 113.00 : 60.00 % RQD 100.00 % Core 113.00 - 116.00 : 57.00 % RQD 100.00 % Core 116.00 - 119.00 : 70.00 % RQD 100.00 % Core 119.00 - 122.00 : 85.00 % RQD 100.00 % Core 122.00 - 125.00 : 65.00 % RQD 100.00 % Core 125.00 - 128.00 : 68.00 % RQD 100.00 % Core 128.00 - 131.00 : 84.00 % RQD 100.00 % Core 131.00 - 134.00 : 70.00 % RQD 100.00 % Core 134.00 - 137.00 : 62.00 % RQD 95.00 % Core 137.00 - 139.20 : 35.00 % RQD 100.00 % Core MINOR INTERVALS: Minor Interval: 128.05 - 131 MD, Mafic Dike Unmineralized, fine-medium grained mafic dyke/flow. Upper contact at 40 degrees to core axis. Lower contact perpendicular to axis. Structure 128.05 - 128.06 : UC Upper Contact, 40 Deg to CA	PG00245	95.00	96.00	1.00	0.0600	0.1200	0.0100



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From (m)	To (m)	Lithology	Sample Number	From (m)	To (m)	Length (m)	Ni%	Cu%	Co%
		MINOR INTERVALS: Minor Interval: 131.5 - 132.4 MD, Mafic Dike Unmineralized, fine-medium grained mafic dyke/flow.  Upper and lower contacts at 75 degrees to core axis. Structure 131.50 - 131.51 : UC Upper Contact, 75 Deg to CA 132.39 - 132.40 : LC Lower Contact, 75 Deg to CA							

## Samples

Sample Number	From (m)	To (m)	Ni%	Cu%	Co%
Sample Type	ASSAY				
PG03106	72.50	73.50	0.0250	0.0250	0.0100
PG03107	73.50	74.85	0.4600	0.1200	0.0100
PG03108	74.85	75.60	0.0250	0.0250	0.0100
PG00231	79.40	80.40	0.0250	0.0250	0.0100
PG00232	80.40	81.40	3.3900	2.0300	0.1200
PG00233	81.40	82.50	0.0250	0.0250	0.0100
PG00234	82.50	83.00	3.2900	1.3800	0.1700
PG00235	83.00	83.50	2.9200	0.6800	0.1300
PG00236	83.50	84.30	2.9400	1.3000	0.1200
PG00237	84.30	85.00	0.0250	0.0250	0.0100
PG00238	85.00	86.00	0.0250	0.0250	0.0100
PG00239	86.00	87.00	0.3400	0.4900	0.0100
PG00240	87.00	87.50	5.5500	5.4200	0.1600
PG00241	87.50	88.50	0.1100	0.0700	0.0100
PG03094	88.50	89.50	0.0250	0.0250	0.0100
PG03095	89.50	90.50	0.0250	0.0250	0.0100
PG03096	90.50	92.00	0.0250	0.0600	0.0100
PG00242	92.00	93.10	0.0250	0.0250	0.0100
PG00243	93.10	94.00	6.5600	1.8700	0.2000
PG00244	94.00	95.00	7.2200	2.2100	0.2100
PG00245	95.00	96.00	0.0600	0.1200	0.0100