

## DETAILED LOG

Hole Number: ES2005-36

Units: METRIC

Project Name:	Norway - Espedalen	Primary Coordinates	Grid: UTM84-32N	Destination Coordinates	Grid: UTM:	Collar Dip:	-71.00
Project Number:	201	North:	6807737.88	North:	61.40	Collar Az:	231.00
Location:	Surface	East:	532770.31	East:	9.61	Length:	179.00 (m)
		Elev:	1133.28	Elev:	1133.28	Start Depth:	0.00 (m)
Date Started:	Jul 21, 2005	Collar Survey:	Y	Plugged:	N	Contractor:	Arctic Drilling A/S
Date Completed:	Jul 24, 2005	Multishot Survey:	N	Hole Size:	TT46	Core Storage:	Strand Fjellstue
Logged By:	larsw	Pulse EM Survey:	N	Casing:	Left in Hole, capped	Final Depth:	179.00 (m)

Comments: Purpose: Test UTEM conductor ESP\_09\_07 on L4950E, grid west of holes ES2004-03 and ES2004-16. These holes were unsuccessful in intersected the interpreted plate (Conductivity = 600-900 Siemens).

Result: Hole was drilled at an angle which was targeting the intersection of 2 interpreted conductive plates, but unfortunately did not take in consideration the borehole anomaly which was outlined in hole ES2004-16.

Borehole UTEM: Survey to be conducted in November 2005.

Lithological interpretation: Anorthositic rocks (Heim's rock suite 2a) locally crosscut by unmineralized mafic dykes.

## Sample Averages

Detailed Lithology		Assay Data							
From (m)	To (m)	Lithology	Sample Number	From (m)	To (m)	Length (m)	Ni%	Cu%	Co%
0	0.30	C, Casing							

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Detailed Lithology		Lithology	Assay Data						
From (m)	To (m)		Sample Number	From (m)	To (m)	Length (m)	Ni%	Cu%	Co%
0.30	151.15	4, Anorthosite / Anorthosite Gabbro	PG03944	74.75	76.15	1.40	0.0250	0.0250	0.0100
		This unit consists of a non-magnetic, locally well-foliated, black and white, medium to coarse-grained anorthositic gabbro containing white plagioclase and black pyroxenes in addition to minor alteration minerals. Especially up to a depth of ca. 100 m the unit is very homogeneous. Where the rock lacks a foliation it has a mottled appearance. The unit is cut by numerous mafic (10f) and dolerite (8a) dykes/sills.	PG03945	76.15	76.39	0.24	0.0600	0.0600	0.0200
		Locally, where the rock is in contact with the dykes it is very coarse-grained and contains less mafic minerals.	PG03946	76.39	77.79	1.40	0.0250	0.0250	0.0100
		Small diabase (dolerite) dykes are located at 127.85-128.32 m, 129.71-130.25 m, and 146.89-147.12m. The contacts are always sharp and at various angles tca.							
		Locally, small amounts of doleritic rocks seem to be injected into the anorthositic gabbro. These "injections?" do not have a reaction rim.							
		None of this unit is mineralized							
		Mineralization							
		12.51 - 13.36 : Po Pyrrhotite, TR Trace, 0.5%							
		15.45 - 16.07 : Po Pyrrhotite, TR Trace, 0.5%							
		41.01 - 41.02 : Mt Magnetite, M Massive, 80%							
		75.84 - 75.93 : Po Pyrrhotite, PAT Patchy, 10%							
		76.20 - 76.30 : Po Pyrrhotite, SM Semi-Massive, 30%							
		Structure							
		10.78 - 10.79 : S1 First Foliation, 45 Deg to CA							
		15.32 - 15.33 : S1 First Foliation, 50 Deg to CA							
		21.45 - 21.46 : S1 First Foliation, 50 Deg to CA							
		38.86 - 38.87 : S1 First Foliation, 50 Deg to CA							
		46.65 - 46.66 : S1 First Foliation, 75 Deg to CA							
		52.46 - 52.47 : S1 First Foliation, 70 Deg to CA							
		58.23 - 58.24 : S1 First Foliation, 60 Deg to CA							
		62.78 - 68.79 : S1 First Foliation, 65 Deg to CA							
		68.92 - 68.93 : S1 First Foliation, 60 Deg to CA							
		81.58 - 81.59 : S1 First Foliation, 60 Deg to CA							
		87.58 - 87.59 : S1 First Foliation, 70 Deg to CA							
		91.80 - 91.81 : S1 First Foliation, 75 Deg to CA							
		97.80 - 97.81 : S1 First Foliation, 80 Deg to CA							
		106.42 - 106.43 : S1 First Foliation, 70 Deg to CA							
		144.32 - 144.33 : S1 First Foliation, 50 Deg to CA							
		RQD							
		0.30 - 3.00 : 23.00 % RQD 100.00 % Core							
		3.00 - 6.00 : 80.00 % RQD 100.00 % Core							
		6.00 - 9.00 : 87.00 % RQD 100.00 % Core							
		9.00 - 12.00 : 95.00 % RQD 100.00 % Core							
		12.00 - 15.00 : 74.00 % RQD 100.00 % Core							
		15.00 - 18.00 : 81.00 % RQD 100.00 % Core							

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From (m)	To (m)	Lithology	Sample Number	From (m)	To (m)	Length (m)	Ni%	Cu%	Co%
		RQD							
		18.00 - 21.00 : 92.00 % RQD 100.00 % Core							
		21.00 - 24.00 : 100.00 % RQD 100.00 % Core							
		24.00 - 27.00 : 73.00 % RQD 100.00 % Core							
		27.00 - 30.00 : 100.00 % RQD 100.00 % Core							
		30.00 - 33.00 : 82.00 % RQD 100.00 % Core							
		33.00 - 36.00 : 90.00 % RQD 100.00 % Core							
		36.00 - 39.00 : 79.00 % RQD 100.00 % Core							
		39.00 - 42.00 : 92.00 % RQD 100.00 % Core							
		42.00 - 45.00 : 91.00 % RQD 100.00 % Core							
		45.00 - 48.00 : 82.00 % RQD 100.00 % Core							
		48.00 - 51.00 : 95.00 % RQD 100.00 % Core							
		51.00 - 54.00 : 87.00 % RQD 100.00 % Core							
		54.00 - 57.00 : 92.00 % RQD 100.00 % Core							
		57.00 - 60.00 : 69.00 % RQD 100.00 % Core							
		60.00 - 63.00 : 63.00 % RQD 100.00 % Core							
		63.00 - 66.00 : 82.00 % RQD 100.00 % Core							
		66.00 - 69.00 : 82.00 % RQD 100.00 % Core							
		69.00 - 72.00 : 92.00 % RQD 100.00 % Core							
		72.00 - 75.00 : 98.00 % RQD 100.00 % Core							
		75.00 - 78.00 : 88.00 % RQD 100.00 % Core							
		78.00 - 81.00 : 42.00 % RQD 100.00 % Core							
		81.00 - 84.00 : 88.00 % RQD 100.00 % Core							
		84.00 - 87.00 : 65.00 % RQD 100.00 % Core							
		87.00 - 90.00 : 78.00 % RQD 100.00 % Core							
		90.00 - 93.00 : 76.00 % RQD 100.00 % Core							
		93.00 - 96.00 : 66.00 % RQD 100.00 % Core							
		96.00 - 99.00 : 47.00 % RQD 100.00 % Core							
		99.00 - 102.00 : 48.00 % RQD 100.00 % Core							
		102.00 - 105.00 : 85.00 % RQD 100.00 % Core							
		105.00 - 108.00 : 78.00 % RQD 100.00 % Core							
		108.00 - 111.00 : 76.00 % RQD 100.00 % Core							
		111.00 - 114.00 : 91.00 % RQD 100.00 % Core							
		114.00 - 117.00 : 91.00 % RQD 100.00 % Core							
		117.00 - 120.00 : 74.00 % RQD 100.00 % Core							
		120.00 - 123.00 : 87.00 % RQD 100.00 % Core							
		123.00 - 126.00 : 92.00 % RQD 100.00 % Core							
		126.00 - 129.00 : 91.00 % RQD 100.00 % Core							

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From (m)	To (m)	Lithology	Sample Number	From (m)	To (m)	Length (m)	Ni%	Cu%	Co%
		RQD 129.00 - 132.00 : 87.00 % RQD 100.00 % Core 132.00 - 135.00 : 84.00 % RQD 100.00 % Core 135.00 - 138.00 : 92.00 % RQD 100.00 % Core 138.00 - 141.00 : 98.00 % RQD 100.00 % Core 141.00 - 144.00 : 81.00 % RQD 100.00 % Core 144.00 - 147.00 : 68.00 % RQD 100.00 % Core 147.00 - 150.00 : 65.00 % RQD 100.00 % Core 150.00 - 153.00 : 54.00 % RQD 100.00 % Core  MINOR INTERVALS: Minor Interval: 12.51 - 13.36 MD, Mafic Dike Fine-grained, dark gray to black, non-magnetic, homogeneous, mafic rock. The upper and lower contacts are sharp at 60 degrees tca and irregular, respectively. This subunit contains trace po. Minor Interval: 15.45 - 16.07 MD, Mafic Dike Fine-grained, dark gray to black, non-magnetic, homogeneous, mafic rock. The rock seems to have digested the wall rock along the contacts over 5 to 10 cm. Minor Interval: 70.96 - 71.52 DIA, Diabase Fine-to medium-grained black and white, non-magnetic, very homogeneous, non-foliated rock containing white plagioclase and black pyroxenes; the rock has an ophitic texture. The upper contact appears faulted, the lower contact is sharp at 15 degrees tca. There are no reaction rims along the contacts. This subunit is non-mineralized. Minor Interval: 93.09 - 97.42 MD, Mafic Dike Fine-grained, dark gray to black, non-magnetic, homogeneous, mafic rock. The upper and lower contacts are sharp at 80 degrees tca, respectively. The rock is finer-grained along the contacts. This unit is not mineralized. Minor Interval: 102.19 - 105.25 MD, Mafic Dike Fine-grained, dark gray to black, non-magnetic, homogeneous, mafic rock. The upper and lower contacts are sharp at 80 and 10 degrees tca, respectively. The unit is neither foliated nor mineralized.							

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From (m)	To (m)	Lithology	Sample Number	From (m)	To (m)	Length (m)	Ni%	Cu%	Co%
		<p>MINOR INTERVALS:</p> <p>Minor Interval: 108.5 - 112.47 DIA, Diabase Fine-to medium-grained black and white, non-magnetic, very homogeneous, non-foliated rock containing white plagioclase and black pyroxenes as well as biotite; the rock has an ophitic texture. The upper and lower contacts are sharp at 55 and 20 degrees, respectively. This subunit is non-mineralized.</p> <p>Minor Interval: 116.05 - 118.62 MD, Mafic Dike Fine-grained, dark gray to black, non-magnetic, homogeneous, mafic rock. The upper and lower contacts are sharp at 50 degrees tca. This unit is cut by numerous quartz-carbonate veinlets with very minor epidote. Locally, crenulation and folding are evident. This unit is not mineralized.</p> <p>Minor Interval: 140.43 - 143.15 DIA, Diabase Fine-to medium-grained black and white, weakly to moderately magnetic, very homogeneous, non-foliated rock containing white plagioclase and black pyroxenes; the rock has an ophitic texture. The upper and lower contacts are sharp at 70 and 30 degrees, respectively. This subunit is non-mineralized.</p>							

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From (m)	To (m)	Lithology	Sample Number	From (m)	To (m)	Length (m)	Ni%	Cu%	Co%
151.15	179.00	<p>MD, Mafic Dike</p> <p>Homogeneous, fine to medium-grained, dark gray and white, lineated, magnetic mafic intrusive. The rock contains abundant white plagioclase and mafic ?pyroxene minerals. Trace sulfides can be found as well as magnetite. The contact to the hanging wall unit is sharp at 60 degrees tca. The rock is finer-grained along contacts with the overlying unit as well as along the minor unit.</p> <p>The total thickness of this unit is unknown as the hole was shut down.</p> <p>Structure</p> <p>167.26 - 167.27 : S1 First Foliation, 90 Deg to CA</p> <p>RQD</p> <p>153.00 - 156.00 : 67.00 % RQD 100.00 % Core</p> <p>156.00 - 159.00 : 83.00 % RQD 100.00 % Core</p> <p>159.00 - 162.00 : 94.00 % RQD 100.00 % Core</p> <p>162.00 - 165.00 : 61.00 % RQD 100.00 % Core</p> <p>165.00 - 168.00 : 81.00 % RQD 100.00 % Core</p> <p>168.00 - 171.00 : 78.00 % RQD 100.00 % Core</p> <p>171.00 - 174.00 : 64.00 % RQD 100.00 % Core</p> <p>174.00 - 177.00 : 75.00 % RQD 100.00 % Core</p> <p>177.00 - 179.00 : 86.00 % RQD 100.00 % Core</p> <p>MINOR INTERVALS:</p> <p>Minor Interval:</p> <p>156.82 - 159.46 4, Anorthosite / Anorthosite Gabbro</p> <p>Coarse-grained, white to gray, non-magnetic anorthositic ?raft? within the mafic intrusive. The rock seems to be recrystallized.</p> <p>The upper and lower contacts are sharp at 70 and 30 degrees tca, respectively.</p> <p>This subunit is not mineralized.</p>							

Samples

Sample Number	From (m)	To (m)	Ni%	Cu%	Co%
Sample Type	ASSAY				
PG03944	74.75	76.15	0.0250	0.0250	0.0100
PG03945	76.15	76.39	0.0600	0.0600	0.0200
PG03946	76.39	77.79	0.0250	0.0250	0.0100