

DETAILED LOG

Hole Number: ES07-67

Units: METRIC

Project Name: Norway - Espedalen	Primary Coordinates Grid: UTM84-32N	Destination Coordinates Grid: UTM:	Collar Dip: -70.80
Project Number: 201	North: 6803965.64	North: 61.37	Collar Az: 51.70
Location: Trona	East: 536448.51	East: 9.68	Length: 188.61 (m)
	Elev: 825.16	Elev: 825.16	Start Depth: 0.00 (m)
Date Started: Jun 10, 2007	Collar Survey: Y	Plugged: N	Contractor: Geo Drilling A/S
Date Completed: Jun 13, 2007	Multishot Survey: N	Hole Size: T246	Core Storage:
Logged By: jdnor/cmnr	Pulse EM Survey: N	Casing: Left in Hole, capped.	Final Depth: 188.61 (m)

Comments: Target: Drill down dip of two mineralized mafic dykes intersected in ES07-66.

Results: Mineralized mafic dyke intersected from 49.35 to 52.05m, with 20% to 25% blebby/net textured Po and 1% to 2% Cpy.

Sample Averages

Average Type	From (m)	To (m)	Length (m)	Ni%	Cu%	Co%
WEIGHTED	49.65	52.05	2.40	0.2476	0.1830	0.0509

Detailed Lithology		Assay Data							
From (m)	To (m)	Lithology	Sample Number	From (m)	To (m)	Length (m)	Ni%	Cu%	Co%
0	3.00	O/B, Overburden OVERBURDEN? Casing pushed to 3.0m.							

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From (m)	To (m)		Sample Number	From (m)	To (m)	Length (m)	Ni%	Cu%	Co%
3.00	49.35	GAB, Gabbro	PG07501	41.60	42.60	1.00	0.0090	0.0080	0.0070
		ANORTHOSITIC GABBRO	PG07502	42.60	43.40	0.80	0.0620	0.0520	0.0160
		Variable unit, with coarse feldspar-rich anorthositic gabbro mixed with medium grained gabbroic dykes?	PG07503	43.40	44.40	1.00	0.0240	0.0100	0.0070
		Initially partially broken.	PG07504	47.85	48.85	1.00	0.0100	0.0060	0.0040
		Colour varies from white to medium grey to mottled dark green/cream coloured.	PG07505	48.85	49.35	0.50	0.0230	0.0110	0.0060
		Mafic component completely altered to chloite.							
		Feldspathic component weakly sericitic - fracture controlled.							
		Local, minor dark red-brown masses garnet.							
		Local dark grey patches or bands - dykes?, with 1% to 3% disseminated Po.							
		Fractured throughout.							
		3.00 - 11.85 Predominantly a medium grained mottled dark green/white medium grained gabbroic dyke. partially broken.							
		11.85 - 15.20 A coarse grained mottled gabbro. Fractured at 60 to 70 deg. and 10 to 15 deg. to CA.							
		15.20 - 23.88 a coarse anorthositic gabbro - chloritic content gradually increasing down hole.							
		28.80 - 32.80 Dark green, chloritic rich phase of gabbro. 40% to 60% plus chlorite Sheared - feldspar grains tectonized.							
		32.80 - 33.35 Partially broken core - in part faulted?							
		Alteration							
		3.00 - 49.35 :CHL Chlorite, H Patchy, M Moderate							
		3.00 - 49.35 :Ser Sericite, F Fracture Controlled, W Weak							
		Structure							
		37.88 - 37.88 : FLT Fault, 75 Deg to CA							

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From (m)	To (m)	Lithology	Sample Number	From (m)	To (m)	Length (m)	Ni%	Cu%	Co%
		<p>MINOR INTERVALS: Minor Interval: 42.65 - 43.39 MD, Mafic Dike Mafic Dyke Upper contact at 20 to 35 deg. to CA. Dark green and fine grained Partially broken. Strongly chloritic - pervasive. 1% to 2% qtz-carb blebs and stringers. 3% to 5% fracture controlled Po and Tr Cpy. Lower contact at 50 deg. to CA - broken. Mineralization 42.65 - 43.39 : PO Pyrrhotite, F Fracture Controlled, 4% Tr Cpy Alteration 42.65 - 43.39 :CHL Chlorite, P Pervasive, S Strong Structure 42.65 - 42.65 : UC Upper Contact, 30 Deg to CA undulating 43.39 - 43.39 : LC Lower Contact, 50 Deg to CA partially broken.</p>							
49.35	52.05	<p>MD, Mafic Dike MINERALIZED MAFIC DYKE Upper contact irregular, but at approximately 60 deg. to CA. Dark green and fine to medium grained. Pyroxene rich - locally appears like a pyroxenite. Local feldspathic sections - inclusions? 20 to 25% blebby/net textured Po and 1% to 2% fracture controlled and disseminated Cpy. Lower contact at 15 deg. - marked by quartz-feldspar pegmatite? Mineralization 49.35 - 52.05 : Cpy Chalcopyrite, F Fracture Controlled, 1% 49.35 - 52.05 : PO Pyrrhotite, Net Net Textured, 20% Alteration 49.35 - 52.05 :CHL Chlorite, P Pervasive, M Moderate Structure 49.35 - 49.35 : UC Upper Contact, 60 Deg to CA irregular. 52.05 - 52.05 : LC Lower Contact, 15 Deg to CA</p>	PG07506	49.35	49.65	0.30	0.1420	0.0790	0.0320
			PG07507	49.65	50.20	0.55	0.1870	0.1470	0.0380
			PG07508	50.20	50.70	0.50	0.3050	0.2820	0.0610
			PG07509	50.70	51.20	0.50	0.2870	0.1590	0.0590
			PG07510	51.20	51.60	0.40	0.2870	0.1860	0.0590
			PG07511	51.60	52.05	0.45	0.1790	0.1410	0.0390

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Detailed Lithology		Lithology	Assay Data						
From (m)	To (m)		Sample Number	From (m)	To (m)	Length (m)	Ni%	Cu%	Co%
52.05	56.60	GAB, Gabbro GABBRO Upper contact with mineralized dyke marked by 38cm quartz-feldspar pegmatitic zone. Dark green chloritic rich gabbro with a 10% to 15% feldspathic phase. A gabbroic dyke? Mafic phase - strongly chloritic. Lower contact with anorthosite gradational. Alteration 52.05 - 56.60 :CHL Chlorite, P Pervasive, M Moderate	PG07513	52.05	52.55	0.50	0.0390	0.0200	0.0090
			PG07514	52.55	53.55	1.00	0.0370	0.0140	0.0090
56.60	76.50	ANOR, Anorthosite ANORTHOSITE Dark grey to pale green and appears fine grained. Relatively massive. Patchy (fracture controlled) sericitic alteration - moderate. Cut by 5% to 10% pale green, medium grained mafic dykes. Weakly fractured.							

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From (m)	To (m)	Lithology	Sample Number	From (m)	To (m)	Length (m)	Ni%	Cu%	Co%
76.50	85.47	GAB, Gabbro ANORTHOSITIC GABBRO Gradual contact White to grey, pale to dark green Medium to very coarse grained Local mafic dyking with minor mineralization - Po, Cpy - remobilized? Sericite alteration - associated with feldspar component - weak to moderate Fracturing and faulting throughout unit Alteration 83.35 - 85.47 :Ser Sericite, BN Banded, M Moderate white, pale to dark green MINOR INTERVALS: Minor Interval: 79.1 - 79.35 MD, Mafic Dike MAFIC DYKE UC @ 60 deg Dark green - fine grained Fault @79.17 Trace Po Minor Interval: 79.95 - 80.96 MD, Mafic Dike MAFIC DYKE UC sharp @ 60 deg Dark green - fine grained Minor chlorite alteration Trace to 1% diss-patchy Po LC sharp @ 85 deg Minor Interval: 81.5 - 81.91 MD, Mafic Dike MAFIC DYKE UC faulted Pale to dark green - medium grained Minor qtz carb stringers, chlorite stringers LC sharp @ 65 deg	PG07515	84.47	85.47	1.00	0.0150	0.0110	0.0060

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From (m)	To (m)	Lithology	Sample Number	From (m)	To (m)	Length (m)	Ni%	Cu%	Co%
85.47	88.45	MD, Mafic Dike	PG07516	85.47	85.77	0.30	0.0340	0.0440	0.0110
		MAFIC DYKE	PG07517	85.77	86.17	0.40	0.0670	0.0530	0.0140
		Pale to dark green (gradual colour increase)	PG07518	86.17	86.51	0.34	0.0650	0.0710	0.0250
		Medium to coarse grained	PG07519	86.51	86.98	0.47	0.0260	0.0150	0.0080
		Chlorite alteration throughout shearing	PG07521	86.98	87.43	0.45	0.0580	0.0390	0.0160
		Sericite alteration throughout shearing	PG07522	87.43	87.73	0.30	0.0600	0.0560	0.0140
		Very poor fabric	PG07523	87.73	88.14	0.41	0.0610	0.0580	0.0150
		Local fracturing	PG07524	88.14	88.80	0.66	0.0180	0.0100	0.0060
		2-3% remobilized, patchy Po, Py, trace Cpy							
		LC - gradual into gabbroic unit							
		85.55 - 85.60 3-5% remobilized Po, Py							
		85.79 - 85.95 3-5% remobilized Po, Py, trace Cpy							
		86.05 - 86.46 3-5% remobilized Po, Py, trace Cpy							
		87.00 - 87.24 3-5% remobilized Po, Py, trace Cpy							
		88.42 - 88.80 2-4% remobilized Po, trace Py, Cpy							
		88.02 - 88.13 2-4% remobilized Po, trace Cpy							
		Mineralization							
		87.00 - 87.24 : Cpy Chalcopyrite, TR Trace, 0.5%							
		87.00 - 87.24 : PY Pyrite, STR Stringers, 3% remobilized							
		87.00 - 87.24 : PO Pyrrhotite, STR Stringers, 3% remobilized							
		86.05 - 86.46 : Cpy Chalcopyrite, TR Trace, 0.5%							
		86.05 - 86.46 : PY Pyrite, STR Stringers, 3% remobilized							
		86.05 - 86.46 : PO Pyrrhotite, STR Stringers, 3% remobilized							
		85.79 - 85.95 : Cpy Chalcopyrite, TR Trace, 0.5%							
		85.79 - 85.95 : PY Pyrite, STR Stringers, 3% remobilized							
		85.79 - 85.95 : PO Pyrrhotite, STR Stringers, 3% remobilized							
		85.55 - 85.60 : PY Pyrite, STR Stringers, 3% remobilized							
		85.55 - 85.60 : PO Pyrrhotite, STR Stringers, 3% remobilized							

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From (m)	To (m)		Sample Number	From (m)	To (m)	Length (m)	Ni%	Cu%	Co%
88.45	90.07	FLT, Fault FAULTED ZONE Mafic dyke? Pale green, very sheared Minor chlorite alteration Fracturing, faulting throughout unit Entire unit is broken core LC sharp @ 60 deg Structure 88.90 - 88.90 : FLT Fault, 50 Deg to CA 4 consecutive faults 90.07 - 90.07 : LC Lower Contact, 60 Deg to CA							
90.07	93.36	UM, Ultramafic ULTRA MAFIC UC @ 60 deg. Dark green to black Medium to very fine grained Minor 1-3cm qtz carb stingers throughout Minor fracturing throughout LC @ 35 deg Structure 93.36 - 93.36							
93.36	94.82	MD, Mafic Dike MAFIC DYKE UC sharp @ 35 deg Light to medium grained Minor qtz-carb stingers Minor 2-5 cm wall rock inclusions near LC- feldspathic LC sharp @ 50 deg Structure 93.39 - 93.39 : Frct Fracture, 30 Deg to CA 94.82 - 94.82 : LC Lower Contact, 50 Deg to CA							

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From (m)	To (m)	Lithology	Sample Number	From (m)	To (m)	Length (m)	Ni%	Cu%	Co%
94.82	103.82	GAB, Gabbro ANORTHOSITIC GABBRO Color varies - light grey - dark grey, pale to dark green Variable unit - very mottled - mix of feldspar and mafic material Chlorite alteration associated with mafic component Sericite alteration associated with feldspar component Local fracturing and faulting throughout Unit is not mineralized LC @ 50 deg Structure 98.21 - 98.21 : Frct Fracture, 55 Deg to CA 98.81 - 98.81 : Frct Fracture, 50 Deg to CA 100.89 - 101.00 : G Gouge, 40 Deg to CA fault gouge 103.82 - 103.82 : LC Lower Contact, 50 Deg to CA							

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From (m)	To (m)	Lithology	Sample Number	From (m)	To (m)	Length (m)	Ni%	Cu%	Co%
103.82	158.30	ANOR, Anorthosite ANORTHOSITE White to grey, pale green Medium to coarse grained Local gabbroic dyke? ~80% coarse grained feldspar, and ~20% fine grained mafic material Medium to strong sericite alteration throughout Local mafic dyking Local fine fracturing. Unit is not mineralized Structure 103.92 - 103.92 : Frct Fracture, 75 Deg to CA 105.60 - 105.60 : Frct Fracture, 50 Deg to CA 112.71 - 112.71 : Frct Fracture, 75 Deg to CA 112.87 - 112.87 : Frct Fracture, 30 Deg to CA MINOR INTERVALS: Minor Interval: 112.84 - 113.87 MD, Mafic Dike MAFIC DYKE UC @ 50 deg Green - fine grained Minor chlorite stringers Minor qtz eyes LC @ 85 deg Minor Interval: 122.06 - 123.16 MD, Mafic Dike MAFIC DYKE Pale to medium green Fine grained Minor chlorite stringers Minor qtz-carb stringers Minor, fine fracturing throughout LC @ 40 deg							

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From (m)	To (m)	Lithology	Sample Number	From (m)	To (m)	Length (m)	Ni%	Cu%	Co%
		<p>MINOR INTERVALS: Minor Interval: 142.3 - 143.18 MD, Mafic Dyke Mafic Dyke Upper contact sharp at 1 to 10 deg. to CA Light to medium buff-green and fine grained. Strongly sericitic - pervasive alteration. 10% to 15% mottled anorthositic gabbro inclusions - to 12 cm. Lower contact at 45 deg. to CA., marked by 10 to 12mm quartz vein. Alteration 142.30 - 143.18 :Ser Sericite, P Pervasive, S Strong Structure 142.30 - 142.30 : UC Upper Contact, 5 Deg to CA sharp 143.18 - 143.18 : LC Lower Contact, 45 Deg to CA</p>							
158.30	175.14	<p>MD, Mafic Dyke MAFIC DYKE Upper contact at 70 deg. to CA - obscure. Light to dark green and fine to medium grained. Local pale buff to grey-buff sericitic sections. Medium grained sections speckled with fine 1mm feldspar phenocrysts. Local anorthositic or gabbro inclusions. Locally well foliated at 40 deg. to CA Moderately sericitic throughout - locally strong. Moderately chloritic Lower contact at 50 deg. to CA - subtle. Alteration 158.30 - 175.14 :CHL Chlorite, P Pervasive, M Moderate 158.30 - 175.14 :Ser Sericite, P Pervasive, M Moderate Structure 158.30 - 158.30 : LC Lower Contact, 50 Deg to CA 158.30 - 158.30 : UC Upper Contact, 70 Deg to CA obscure MINOR INTERVALS: Minor Interval: 161.12 - 162.65 ANOR, Anorthosite Anorthosite Upper contact undulating at 20 to 40 deg. to CA Medium grey to pale green and fine grained? Moderately fractured and moderately sericitic. Alteration 161.12 - 162.65 :Ser Sericite, F Fracture Controlled, M Moderate Structure 161.12 - 161.12 : UC Upper Contact, 30 Deg to CA undulating</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%
175.14	181.30	ANOR, Anorthosite SHEARED ANORTHOSITE Predominantly a medium grey with pale grey-green sections and minor dark green chloritic bands. Initially fractured, but becomes increasingly foliated/sheared down hole. Moderately sericitic throughout - fracture controlled. Fabric (shearing) at 35 to 40 deg. to CA. Alteration 175.14 - 181.30 :Ser Sericite, F Fracture Controlled, M Moderate Structure 180.30 - 180.30 : FLT Fault, 25 Deg to CA badly broken							
181.30	187.15	MD, Mafic Dike SHEARED MAFIC DYKE Upper contact with anorthosite gradational? Mixed pale to medium green and a medium buff colour. Fine grained a strongly sheared at 45 to 50 deg. to CA. Buff coloured sections - strongly sericitic. Locally foliation crenulated. 10% to 15% Ca-carbonate stringers and gashes. Alteration 181.30 - 187.15 :Ser Sericite, H Patchy, S Strong							
187.15	188.60	GAB, Gabbro ANORTHOSITIC GABBRO Pale grey to light green with c. dark green spotting. Anorthosite to anorthositic gabbro. Moderately sericitic - fracture controlled. Alteration 187.15 - 188.60 :Ser Sericite, F Fracture Controlled, M Moderate							
188.60	188.61	EOH, End of Hole							

Samples

Sample Number	From (m)	To (m)	Ni%	Cu%	Co%
Sample Type	ASSAY				
PG07501	41.60	42.60	0.0090	0.0080	0.0070
PG07502	42.60	43.40	0.0620	0.0520	0.0160
PG07503	43.40	44.40	0.0240	0.0100	0.0070
PG07504	47.85	48.85	0.0100	0.0060	0.0040
PG07505	48.85	49.35	0.0230	0.0110	0.0060
PG07506	49.35	49.65	0.1420	0.0790	0.0320
PG07507	49.65	50.20	0.1870	0.1470	0.0380
PG07508	50.20	50.70	0.3050	0.2820	0.0610

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Samples

Sample Number	From (m)	To (m)	Ni%	Cu%	Co%
Sample Type	ASSAY				
PG07509	50.70	51.20	0.2870	0.1590	0.0590
PG07510	51.20	51.60	0.2870	0.1860	0.0590
PG07511	51.60	52.05	0.1790	0.1410	0.0390
PG07513	52.05	52.55	0.0390	0.0200	0.0090
PG07514	52.55	53.55	0.0370	0.0140	0.0090
PG07515	84.47	85.47	0.0150	0.0110	0.0060
PG07516	85.47	85.77	0.0340	0.0440	0.0110
PG07517	85.77	86.17	0.0670	0.0530	0.0140
PG07518	86.17	86.51	0.0650	0.0710	0.0250
PG07519	86.51	86.98	0.0260	0.0150	0.0080
PG07521	86.98	87.43	0.0580	0.0390	0.0160
PG07522	87.43	87.73	0.0600	0.0560	0.0140
PG07523	87.73	88.14	0.0610	0.0580	0.0150
PG07524	88.14	88.80	0.0180	0.0100	0.0060