

822869
Samatosum

MINNOVA INC.
SAMATOSUM PROJECT

MEMORANDUM

DATE: March 27, 1991
TO: John Purkis
COPIES TO: Dave Watkins, Alex Davidson, Larry Reaugh
FROM: Rob Friesen
SUBJECT: DDH U1330-83 Summary

Diamond drill hole U1330-83 successfully intersected the new gold zone. Details are as follows:

U1330-83 Section 96+70 (from 1330 Expln Drift)
Azimuth: 045 (astro).
Dip: -88
Length: 90 meters

Gold Zone Intersection:

From 48.5m to 57.0m (8.5m core length)
Approx elevation: 1280m
0.87% Cu
1.66% Zn
0.65% Pb
102g/t Ag
9.46g/t Au (uncut and unchecked)

This intersection includes a 0.2m interval (not sampled) @ "zero" grades.

The mineralized interval was contained in a quartz veined/silicified zone of pyritic sediments (MUT).

Immediately below this intersection is a 1.8 meter zone of semi-massive to massive fine grained pyrite containing low grade gold values as follows:

From 58.4m - 60.2m (1.8m core length)
0.11% Cu
0.17% Zn
0.43% Pb
13.5g/t Ag
1.11g/t Au

The gold zone has now been located on Sections 96+60mW, 96+70mW, 96+80mW and 97+00mW. We have so far been unsuccessful in locating it on 96+40mW, 96+90mW (hole lost), 97+10mW and 97+20mW. However, considering the drill is poorly located with respect to the probable orientation of the zone, it may have been missed on these sections.

B. Friesen

MINNOVA INC.

SAMATOSUM DIVISION

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Minnova Inc.
Mining Innovation

P.O. Box 739
Barriere, B.C.
V0E 1E0

Telephone (604) 672-9997
FAX 672-5676

TO: MINNOVA
TORONTO

DATE: 27 MARCH 1991

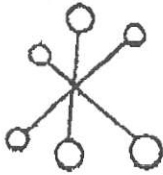
ATT'N: DAVE WATKINS

MESSAGE:

NUMBER OF PAGES FORWARDED INCLUDING THIS ONE: 89

FROM: B. FRIESEN.

IF YOU DO NOT RECEIVE ALL THE PAGES, PLEASE CALL THE FOLLOWING NUMBER
AS SOON AS POSSIBLE: 672-9997



ECO-TECH LABORATORIES LTD.

ASSAYING - ENVIRONMENTAL TESTING

10041 East Trans Canada Hwy., Kamloops, B.C. V2C 2J3 (604) 573-5700 Fax 573-4557

MARCH 25, 1991

CERTIFICATE OF ASSAY ETK 91-165

MINNOVA INC.
SAMATASUM MINE
P.O. BOX 739
BARRIERE, B.C.
VOE 1E0

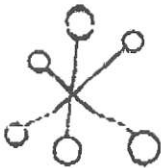
SAMPLE IDENTIFICATION: 44 CORE samples received MARCH 18, 1991
PROJECT: SAM UNDERGROUND
SHIPMENT NO.: U-1330-83

ETK	Description	Au (g/t)	Au (oz/t)	Ag (g/t)	Ag (oz/t)	Cu (%)	Pb (%)	Zn (%)	As (%)	Specific Gravity (g/cm ³)
165 - 1	30600	112.23 *	3.273	155.6	4.54	3.36	1.33	7.98	-	3.97
165 - 2	30601	.60	.017	52.3	1.53	.20	.83	.09	-	-
165 - 3	30602	1.48	.043	157.7	4.60	1.01	.66	1.33	-	2.95
165 - 4	30603	.74	.022	127.5	3.72	1.00	.18	.23	-	3.38
165 - 5	30604	.66	.019	63.4	1.85	.74	.19	.34	-	-
165 - 6	30605	.47	.014	107.8	3.14	.22	.43	1.02	-	2.91
165 - 7	30606	1.51	.044	805.0	23.48	1.12	1.48	2.58	-	2.87
165 - 8	30607	.62	.018	438.3	12.78	.53	.62	.83	-	2.60
165 - 9	30608	.53	.015	31.6	.92	.07	.19	.26	-	-
165 - 10	30609	.23	.007	52.6	1.53	.19	.23	.42	-	-
165 - 11	30610	.21	.006	61.8	1.80	.17	.67	.98	-	-
165 - 12	30611	.17	.005	20.9	.61	.05	.36	.40	-	-
165 - 13	30612	.28	.008	30.1	.88	.07	.38	.52	-	-
165 - 14	30613	1.17	.034	130.5	3.81	3.02	.03	.08	-	2.67
165 - 15	30614	1.91	.056	26.5	.77	4.38	.09	.07	-	2.71
165 - 16	30615	.42	.012	5.4	.16	.04	.09	.14	-	-
165 - 17	30616	26.69 *	.778	668.0	19.48	2.21	3.02	6.89	-	3.47
165 - 18	30617	15.90 *	.464	22.4	.65	.27	.52	1.98	-	2.99
165 - 19	30618	3.65	.106	4.4	.13	.01	.03	.14	-	2.85
165 - 20	30619	2.58	.075	27.2	.79	.26	.28	.89	-	2.88
165 - 21	30620	1.45	.042	11.3	.33	.08	.09	.32	-	3.12
165 - 22	30621	3.67	.107	26.6	.78	.20	.76	1.68	-	2.68
165 - 23	30622	7.92 *	.231	26.3	.77	.40	.59	1.13	-	3.05
165 - 24	30623	.57	.017	11.5	.34	.06	.18	1.28	-	-
165 - 25	30624	1.08	.031	20.0	.58	.18	.73	.64	-	3.35
165 - 26	30625	.89	.026	11.1	.32	.11	.34	.09	-	-
165 - 27	30626	1.55	.045	14.4	.42	.05	.44	.03	-	3.27
165 - 28	30627	.87	.025	5.8	.17	.01	.06	.05	-	-
165 - 29	30628	.50	.015	5.2	.15	.01	.04	.03	-	-
165 - 30	30629	.54	.016	48.7	1.42	.11	.23	.47	-	-

Delays in this interval.

15 " 173 " 2000 " 3000 " Au

[Signature]
JUPITA JEALOUSE, Certified Assayer



ECO-TECH LABORATORIES LTD.

ASSAYING - ENVIRONMENTAL TESTING

10041 EAST IRVING AVENUE, MINNOVA CITY, MINNESOTA, D.O. V20 228 (612) 872-6700 FAX 872-1007

MINNOVA INC.

MARCH 25, 1991

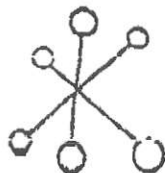
ET#	Description	Au (g/t)	Au (oz/t)	Ag (g/t)	Ag (oz/t)	Cu (%)	Pb (%)	Zn (%)	As (%)	Specific Gravity (g/cm3)
165 - 31	30630	.47	.014	38.5	1.12	.09	.16	.33	-	
165 - 32	30631	.46	.013	120.6	3.52	.35	.32	.43	-	2.88
165 - 33	30632	.34	.010	145.6	4.25	.47	.44	.65	-	2.65
165 - 34	30633	.34	.010	7.8	.23	.02	.03	.02	-	
165 - 35	30634	.29	.008	19.9	.58	.10	.42	.53	-	
165 - 36	30635	.15	.004	36.9	1.08	.15	.66	1.04	-	
165 - 37	30636	.12	.003	8.7	.25	.01	.31	.40	-	
165 - 38	30637	.31	.009	5.1	.15	.01	.09	.08	-	
165 - 39	30638	<.03	<.001	<.1	<.01	<.01	<.01	.01	.08	
165 - 40	30639	.40	.012	.4	.01	<.01	<.01	<.01	-	
165 - 41	30640	.43	.013	<.1	<.01	<.01	<.01	<.01	-	
165 - 42	30641	.53	.015	.3	.01	<.01	<.01	<.01	-	
165 - 43	30642	1.30	.038	.2	.01	.01	<.01	<.01	-	
165 - 44	30643	.06	.002	.3	.01	.01	<.01	.03	-	

NOTE: < = less than
 * = sample screened & metallics assayed

FAX: 1-672-5676
 1-672-0188

Jutta Jealouse
 ECO-TECH LABORATORIES LTD.
 JUTTA JEALOUSE
 B.C. Certified Assayer

SC91/MINNOVA2



ECO-TECH LABORATORIES LTD.

ASSAYING - ENVIRONMENTAL TESTING

10041 East Trans Canada Hwy., Kamloops, B.C. V2C 2L4 (250) 833-5700 Fax 573-4557

METALLIC CALCULATION

SAMPLE NUMBER	-140 VALUE	+140 VALUE	CALCULATED VALUE
165-1	87.85	1144.357	112.2309
165-17	22.74	1152.866	26.69372
165-18	13.09	1330.247	15.89541
165-23	6.58	251.087	7.92159

cut of CRPCK

ASSAY SHEET

018 P06
MINNOVA INC
MAR 27 '91 11:39

Sample Number	From (m)	To (m)	Estimate		Length (m)	%Cu	%Zn	%Pb	gm-T Ag	gm T Au	%SiO ₂	%TiO ₂	%Na ₂ O	%MgO	%Fe	PPM Cu	PPM Zn	PPM Pb	PPM Ag	PPB Au			
			Cu	Zn																			
30600	54.4	54.5			0.1	3.36	7.93	1.33	155.6	112.23													* NOTE: SAMPLE 30600 BELONGS TO GOLD ZONE.
30601	35.6	36.2			0.6	0.2	0.89	1.83	52.3	0.6													
30602	36.2	37.6			1.4	1.01	1.33	0.66	157.7	1.48													
30603	37.6	38.3			0.7	1.01	0.73	0.13	127.5	0.74													
30604	38.3	39.3			1.0	0.74	0.34	0.19	63.4	0.66													
30605	39.3	40.3			1.0	0.72	1.02	0.43	107.9	0.47													
30606	40.3	41.3			1.0	1.12	2.53	1.43	805.0	1.51													
30607	41.3	42.1			0.8	0.53	0.93	0.62	438.3	0.62													
30608	42.1	42.9			0.8	0.07	0.26	0.19	31.6	0.53													
30609	42.9	44.4			1.5	0.19	0.42	0.23	52.6	0.23													
30610	44.4	45.5			1.1	0.17	0.93	0.67	61.9	0.21													
30611	45.5	47.0			1.5	0.05	0.40	0.36	20.9	0.17													
30612	47.0	48.5			1.5	0.27	0.52	1.33	32.1	0.23													
30613	48.5	49.0			0.5	3.02	0.03	0.03	130.5	1.17													← insert 2.2m @ zone grade.
30614	49.2	49.7			0.5	4.33	0.07	0.09	26.5	1.91													
30615	49.7	50.6			0.9	0.04	0.14	0.09	5.4	0.42													
30616	50.6	51.6			1.0	2.21	6.99	3.02	668.0	26.81													
30617	51.6	53.1			1.5	0.27	1.93	0.52	22.4	15.90													
30618	53.1	54.4			1.3	0.01	0.14	0.03	4.4	3.65													
30619	54.5	54.8			0.3	0.26	0.98	0.28	27.2	2.58													

avg 48.5-57.0 : Cu Zn Pb Ag Au
(0.5m) 0.87, 1.66, 0.65 102 9.46

NO. 1330-83
ZIPPY PRINT - EST. RICHMOND

ASSAY SHEET

Sample Number	From (m)	To (m)	Estimate		Length (m)	% Cu	% Zn	% Pb	gm T Ag	gm T Au	% SiO ₂	% TiO ₂	% Fe	% MgO	PPM Cu	PPM Zn	PPM Pb	PPM Ag	PPM Au
			Cu	Zn															
30620	54.8	55.1			0.3	0.08	632	0.09	11.3	1.45									
30621	55.1	56.1			1.0	0.20	168	0.76	26.6	3.67	} See prev. page.								
30622	56.1	57.0			0.9	0.40	113	0.59	26.3	7.92									
30623	57.0	58.4			1.4	0.06	229	0.19	11.5	0.57									
30624	58.4	58.7			0.3	0.19	664	0.73	22.0	1.08				Pu	Zn	Pb	Ag	Au	
30625	58.7	59.7			1.0	0.11	609	0.34	11.1	7.89	} = 1.8 m. @ 0.11 0.17 0.43 13.5 1.105								
30626	59.7	60.2			0.5	0.25	33	0.44	14.4	1.55									
30627	60.2	60.8			0.6	0.01	605	0.06	5.8	0.87									
30628	60.8	62.3			1.5	0.01	603	0.04	5.2	0.50									
30629	62.3	63.8			1.5	0.11	647	0.23	42.7	0.54									
30630	63.8	65.3			1.5	0.09	633	0.16	38.5	0.47									
30631	65.3	66.7			1.5	0.35	643	0.32	120.6	0.46									
30632	66.8	67.4			0.6	0.47	665	0.44	145.6	0.34									
30633	67.4	68.9			1.5	0.02	622	0.03	7.8	0.34									
30634	68.9	70.4			1.5	0.10	653	0.42	14.9	0.29									
30635	70.4	71.9			1.5	0.15	604	0.66	36.9	0.15									
30636	71.9	72.7			0.8	0.01	640	0.31	9.7	0.12									
30637	72.7	73.6			0.9	0.01	608	0.09	5.1	0.31									
30638	80.8	81.6			0.8	<0.01	7.01	<0.01	29.1	<0.01									
30639	82.5	84.0			1.5	<0.01	<0.01	<0.01	0.4	0.48									

018 P07

MINNOVA INC

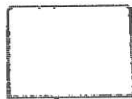
MAR 27 '91 11:40

ANSWIC

U-1330-83 ✓

ZPPYPRIN - - FRI. REPORT, RICHMOND

HOLE NO.



1330 EXPLORATION
DRIFT.

SECTION 96+70m W
LOOKING NW

6400 N.

6450 N

MAFIC Vx

SIL AREA
+
M.T.

QVTSECT

1300m.

FAULT ZONE
(faults out Ag zone)

Ag Zone

"MUT"

u1330-81

u1330-82

GOLD ZONE

8.5m @
0.87% Cu
1.66% Zn
0.65% Pb
102g/t Ag
9.46g/t Au
(uncorr +
unchecked)

SEMI-MASSIVE
TO MASSIVE
PYRITE ZONE

1.8m @
0.11% Cu
0.17% Zn
0.43% Pb
13.5g/t Ag
1.11g/t Au.

1250m.

u1330-83