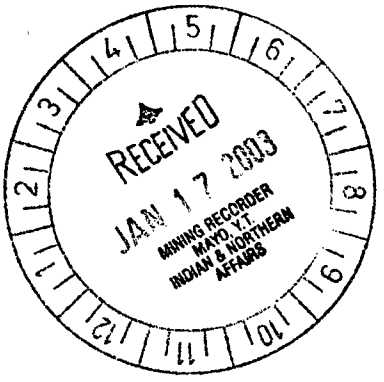
Report of Assessment work conducted on the

ANDREW PROPERTY, MAYO MINING DISTRICT

YUKON TERRITORY



Mining Claim	Grant Number
AMB 1 - 68	YC02355 - 422
AMB 69	YC02680
AMB 70	YC02423
AMB 71	YC02681
AMB 72 - 104	YC02424 - 56
AMB 105 - 112	YC02776 - 83
AMB 115 - 116	YC09953 - 54
AMB 117 FR	YC09955
AMB 118 - 122 FR	YC10001 - 05
AMB 123 - 146	YC09961 - 84
AMB 147 - 155	YC10006 - 14
AMB 156 - 162 FR	YC10015 - 21
ANDREW 1 - 10	YB65796 - 805

Geochemistry and Diamond Drilling

Conducted from July 31 to September 18, 2002

By

Noranda Inc.

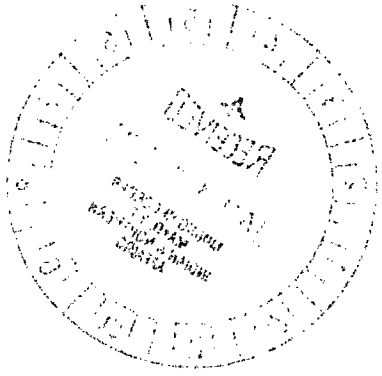
094363

NTS: 105K/16
Lat / Long: 132° 13' 7" N / -62° 55' 33" W
UTM: 6980155 N, 641070 E (NAD 83, Zone 8).

AUTHORS: Allan Huard
Michael Savell

DATE: January, 2003

Volume 1 – Text and Appendices



This report has been examined by the Geological Evaluation Unit under Section 53 (4) Yukon Quartz Mining Act and is allowed as representation work in the amount of $ 83,314.55 .

for Regional Manager, Exploration and Geological Services for Commissioner of Yukon Territory.

SUMMARY

This report documents geochemical and diamond drilling surveys undertaken from July 31 to September 18, 2002 on the Andrew Property, a group of mineral claims in central Yukon Territory, optioned by Noranda Inc. from Mr. R. Berdahl of Whitehorse. The property was optioned in 2000 after field examinations and reviews of historical data confirmed its favorable geological setting and indications of significant zinc mineralization.

The property is underlain by fault-bounded slices of Devono-Mississippian Earn Group black clastics and Proterozoic to Lower Cambrian Hyland Group slate, sandstone, conglomerate, and limestone. The rocks have been folded along north-northwest trending axes, and faulting has been localized mostly within less competent, carbonaceous shaley units. A few kilometers west of the property, these sediments are in contact with a Cretaceous granitic batholith. Evidence suggests that areas on the property have been intruded and effected by this batholith at depth.

Previous work by Noranda included an airborne EM survey, ground geophysics, soil and rock geochemistry, mapping, prospecting and diamond drilling (2,717.7 meters in 15 holes). The most significant result was the intersection of vein and breccia-fill Zn-Pb mineralization at Andrew. Significant drill intercepts from the 2001 program include 13.5 meters (est. true width) grading 0.12% Pb, 12.09% Zn, and 1.6 g/t Ag from hole AN-01-04, and 12.8 meters (est. true width) grading 2.31% Pb, 13.63% Zn, and 10.9 g/t Ag from hole AN-01-11.

The 2002 program was designed to test for extensions of the Andrew mineralized zone and to test the immediate area for similar mineralization. To these ends, a soil geochemical survey was conducted, with emphasis on areas of known surface mineralization, and an 8-hole drill program was completed (1,838.3 m).

Several strong soil anomalies were revealed and two of these were drill-tested, with mixed results. Although drilling at the Andrew zone encountered some new mineralization, it more commonly revealed the host breccia zones to be low-grade to barren, with poor continuity of high grade zones. The option agreement on the property was terminated.

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1.0 Introduction

This report was prepared to document the geochemical and diamond drilling surveys undertaken in 2002 on the Andrew property to satisfy internal company mandates, government assessment requirements, and to be an annual report of results and interpretations pertaining to these surveys for the vendor, from whom Noranda was earning an interest in the property.

All information and data documented in this report was obtained by employees of Noranda Inc., except for geochemical and assay analyses, which were conducted by ALS-Chemex Laboratories of Vancouver, B.C. Both of the authors directly managed the field program as follows: M. Savell, July 31 – August 21; A. Huard (August 16 – September 24). Conclusions and recommendations are those of the authors.

The complete background information on the property, including descriptions of access, climate, infrastructure, physiography, work history, known mineralization and regional geology were provided in "EXPLORATION REPORT ON THE ANDREW PROPERTY, MAYO MINING DISTRICT, YUKON TERRITORY" (Huard and Savell, 2001) and are not repeated here.

A List of Personnel and Contractors is provided in Appendix 1 and a Statement of Expenditures is provided in Appendix 2. Statements of Qualification for the Authors are provided in Appendix 3.

2.0 Property Description, Location and Logistics

The Andrew property consists of 170 contiguous Quartz Mineral Claims and Fractional Claims with an area totaling approximately 2,837 hectares, located 110 km north of Ross River in the Mayo Mining District, Yukon, NTS mapsheet # 105K/16 (Table 1, following page; Figure 1, appended). Note that the expiry dates indicated in Table 1 include the assessment work reported here. The center of the claim block is 132° 13' 7" N by 62° 55' 33" W, or UTM co-ordinates 6980155 N, 641070 E (NAD 83, Zone 8).

Noranda Inc. has the responsibility of permitting, claim maintenance, assessment filing and reporting, and all associated fees.

The claims lie on crown land, and surface rights belong to the crown. They do not lie within or near any park, special management zone, First Nation settlement land or land selection. However, they are situated within lands considered as traditional hunting and trapping areas by several First Nation bands.

The agreement also encompasses an area of interest defined by a rectangle with its corners located at the following points:

UTM Coordinates (NAD 83, Zone 8)

Point	Easting	Northing
1	639585	6985806
2	645631	6980338
3	642573	6976832
4	636536	6982380

This area totals approximately 37.5 square kilometers. It includes the current claim block, and some additional ground to the northeast and northwest.

The property has not been legally surveyed, but Claim Posts were located using handheld GPS units. All accompanying maps show the position of the claims based on the GPS survey.

Table 1: Listing of 170 Claims in the Andrew Property

Name	Grant #	Hectares	Recorded	Expires	Name	Grant #	Hectares	Recorded	Expires	Name	Grant #	Hectares	Recorded	Expires
AMB 1	YC02355	19.3	08/28/2000	08/28/2006	AMB 58	YC02412	11.3	08/28/2000	08/28/2006	AMB 117 FR	YC09955	9.9	10/12/2001	10/12/2005
AMB 2	YC02356	21.3	08/28/2000	08/28/2006	AMB 59	YC02413	19.9	08/28/2000	08/28/2006	AMB 118 FR	YC10001	8.3	03/20/2002	03/20/2006
AMB 3	YC02357	20.6	08/28/2000	08/28/2006	AMB 60	YC02414	10.4	08/28/2000	08/28/2006	AMB 119 FR	YC10002	5.3	03/20/2002	03/20/2006
AMB 4	YC02358	21.8	08/28/2000	08/28/2006	AMB 61	YC02415	19.4	08/28/2000	08/28/2006	AMB 120 FR	YC10003	7.7	03/20/2002	03/20/2006
AMB 5	YC02359	11.1	08/28/2000	08/28/2006	AMB 62	YC02416	8.3	08/28/2000	08/28/2006	AMB 121 FR	YC10004	10.6	03/20/2002	03/20/2006
AMB 6	YC02360	19.2	08/28/2000	08/28/2006	AMB 63	YC02417	18.2	08/28/2000	08/28/2006	AMB 122 FR	YC10005	13.0	03/20/2002	03/20/2006
AMB 7	YC02361	7.4	08/28/2000	08/28/2006	AMB 64	YC02418	10.0	08/28/2000	08/28/2006	AMB 123	YC09961	19.1	10/12/2001	10/12/2007
AMB 8	YC02362	19.6	08/28/2000	08/28/2006	AMB 65	YC02419	10.0	08/28/2000	08/28/2006	AMB 124	YC09962	20.9	10/12/2001	10/12/2007
AMB 9	YC02363	18.4	08/28/2000	08/28/2006	AMB 66	YC02420	19.1	08/28/2000	08/28/2006	AMB 125	YC09963	17.8	10/12/2001	10/12/2007
AMB 10	YC02364	19.7	08/28/2000	08/28/2006	AMB 67	YC02421	13.3	08/28/2000	08/28/2006	AMB 126	YC09964	18.6	10/12/2001	10/12/2007
AMB 11	YC02365	19.0	08/28/2000	08/28/2006	AMB 68	YC02422	7.3	08/28/2000	08/28/2006	AMB 127	YC09965	19.1	10/12/2001	10/12/2007
AMB 12	YC02366	19.1	08/28/2000	08/28/2006	AMB 69	YC02680	20.1	11/20/2000	11/20/2006	AMB 128	YC09966	19.5	10/12/2001	10/12/2007
AMB 13	YC02367	18.8	08/28/2000	08/28/2006	AMB 70	YC02423	11.1	08/28/2000	08/28/2006	AMB 129	YC09967	20.6	10/12/2001	10/12/2007
AMB 14	YC02368	18.1	08/28/2000	08/28/2006	AMB 71	YC02681	17.0	11/20/2000	11/20/2006	AMB 130	YC09968	20.9	10/12/2001	10/12/2007
AMB 15	YC02369	19.6	08/28/2000	08/28/2006	AMB 72	YC02424	8.3	08/28/2000	08/28/2006	AMB 131	YC09969	16.1	10/12/2001	10/12/2007
AMB 16	YC02370	18.8	08/28/2000	08/28/2006	AMB 73	YC02425	19.9	08/28/2000	08/28/2006	AMB 132	YC09970	16.7	10/12/2001	10/12/2007
AMB 17	YC02371	15.4	08/28/2000	08/28/2006	AMB 74	YC02426	8.2	08/28/2000	08/28/2006	AMB 133	YC09971	18.5	10/12/2001	10/12/2007
AMB 18	YC02372	15.1	08/28/2000	08/28/2006	AMB 75	YC02427	19.9	08/28/2000	08/28/2006	AMB 134	YC09972	18.8	10/12/2001	10/12/2007
AMB 19	YC02373	19.3	08/28/2000	08/28/2006	AMB 76	YC02428	8.0	08/28/2000	08/28/2006	AMB 135	YC09973	19.5	10/12/2001	10/12/2007
AMB 20	YC02374	19.8	08/28/2000	08/28/2006	AMB 77	YC02429	20.5	08/28/2000	08/28/2006	AMB 136	YC09974	19.2	10/12/2001	10/12/2007
AMB 21	YC02375	18.9	08/28/2000	08/28/2006	AMB 78	YC02430	16.7	08/28/2000	08/28/2006	AMB 137	YC09975	18.8	10/12/2001	10/12/2007
AMB 22	YC02376	20.0	08/28/2000	08/28/2006	AMB 79	YC02431	19.9	08/28/2000	08/28/2006	AMB 138	YC09976	19.4	10/12/2001	10/12/2007
AMB 23	YC02377	18.8	08/28/2000	08/28/2006	AMB 80	YC02432	20.5	08/28/2000	08/28/2006	AMB 139	YC09977	20.5	10/12/2001	10/12/2007
AMB 24	YC02378	19.1	08/28/2000	08/28/2006	AMB 81	YC02433	20.3	08/28/2000	08/28/2006	AMB 140	YC09978	20.9	10/12/2001	10/12/2007
AMB 25	YC02379	18.1	08/28/2000	08/28/2006	AMB 82	YC02434	20.5	08/28/2000	08/28/2006	AMB 141	YC09979	19.7	10/12/2001	10/12/2007
AMB 26	YC02380	20.4	08/28/2000	08/28/2006	AMB 83	YC02435	20.8	08/28/2000	08/28/2006	AMB 142	YC09980	18.9	10/12/2001	10/12/2007
AMB 27	YC02381	20.1	08/28/2000	08/28/2006	AMB 84	YC02436	19.7	08/28/2000	08/28/2006	AMB 143	YC09981	19.2	10/12/2001	10/12/2007
AMB 28	YC02382	18.4	08/28/2000	08/28/2006	AMB 85	YC02437	20.1	08/28/2000	08/28/2006	AMB 144	YC09982	19.7	10/12/2001	10/12/2007
AMB 29	YC02383	18.6	08/28/2000	08/28/2006	AMB 86	YC02438	19.7	08/28/2000	08/28/2006	AMB 145	YC09983	19.7	10/12/2001	10/12/2007
AMB 30	YC02384	17.7	08/28/2000	08/28/2006	AMB 87	YC02439	20.0	08/28/2000	08/28/2006	AMB 146	YC09984	19.5	10/12/2001	10/12/2007
AMB 31	YC02385	20.1	08/28/2000	08/28/2006	AMB 88	YC02440	19.4	08/28/2000	08/28/2006	AMB 147	YC10006	20.6	03/20/2002	03/20/2006
AMB 32	YC02386	17.0	08/28/2000	08/28/2006	AMB 89	YC02441	21.2	08/28/2000	08/28/2006	AMB 148	YC10007	20.8	03/20/2002	03/20/2006
AMB 33	YC02387	18.6	08/28/2000	08/28/2006	AMB 90	YC02442	19.9	08/28/2000	08/28/2006	AMB 149	YC10008	13.2	03/20/2002	03/20/2006
AMB 34	YC02388	18.7	08/28/2000	08/28/2006	AMB 91	YC02443	19.9	08/28/2000	08/28/2006	AMB 150	YC10009	17.4	03/20/2002	03/20/2006
AMB 35	YC02389	18.9	08/28/2000	08/28/2006	AMB 92	YC02444	19.6	08/28/2000	08/28/2006	AMB 151	YC10010	2.2	03/20/2002	03/20/2006
AMB 36	YC02390	19.4	08/28/2000	08/28/2006	AMB 93	YC02445	19.8	08/28/2000	08/28/2006	AMB 152	YC10011	4.4	03/20/2002	03/20/2006
AMB 37	YC02391	20.0	08/28/2000	08/28/2006	AMB 94	YC02446	17.8	08/28/2000	08/28/2006	AMB 153	YC10012	7.1	03/20/2002	03/20/2006
AMB 38	YC02392	20.0	08/28/2000	08/28/2006	AMB 95	YC02447	20.6	08/28/2000	08/28/2006	AMB 154	YC10013	8.6	03/20/2002	03/20/2006
AMB 39	YC02393	20.2	08/28/2000	08/28/2006	AMB 96	YC02448	18.3	08/28/2000	08/28/2006	AMB 155	YC10014	8.3	03/20/2002	03/20/2006
AMB 40	YC02394	19.8	08/28/2000	08/28/2006	AMB 97	YC02449	18.9	08/28/2000	08/28/2006	AMB 156 FR	YC10015	2.6	03/20/2002	03/20/2006
AMB 41	YC02395	19.7	08/28/2000	08/28/2006	AMB 98	YC02450	16.6	08/28/2000	08/28/2006	AMB 157 FR	YC10016	4.1	03/20/2002	03/20/2006
AMB 42	YC02396	20.2	08/28/2000	08/28/2006	AMB 99	YC02451	19.3	08/28/2000	08/28/2006	AMB 158 FR	YC10017	6.5	03/20/2002	03/20/2006
AMB 43	YC02397	19.7	08/28/2000	08/28/2006	AMB 100	YC02452	15.1	08/28/2000	08/28/2006	AMB 159 FR	YC10018	6.4	03/20/2002	03/20/2006
AMB 44	YC02398	20.7	08/28/2000	08/28/2006	AMB 101	YC02453	19.5	08/28/2000	08/28/2006	AMB 160 FR	YC10019	2.1	03/20/2002	03/20/2006
AMB 45	YC02399	18.7	08/28/2000	08/28/2006	AMB 102	YC02454	13.6	08/28/2000	08/28/2006	AMB 161 FR	YC10020	2.0	03/20/2002	03/20/2006
AMB 46	YC02400	16.2	08/28/2000	08/28/2006	AMB 103	YC02455	19.5	08/28/2000	08/28/2006	AMB 162 FR	YC10021	2.5	03/20/2002	03/20/2006
AMB 47	YC02401	19.2	08/28/2000	08/28/2006	AMB 104	YC02456	12.1	08/28/2000	08/28/2006	ANDREW 1	YB65796	18.1	08/16/2000	08/16/2006
AMB 48	YC02402	16.3	08/28/2000	08/28/2006	AMB 105	YC02776	16.9	07/10/2001	07/10/2006	ANDREW 2	YB65797	18.9	08/16/2000	08/16/2006
AMB 49	YC02403	19.6	08/28/2000	08/28/2006	AMB 106	YC02777	18.7	07/10/2001	07/10/2006	ANDREW 3	YB65798	20.4	08/16/2000	08/16/2008
AMB 50	YC02404	15.1	08/28/2000	08/28/2006	AMB 107	YC02778	18.8	07/10/2001	07/10/2006	ANDREW 4	YB65799	21.1	08/16/2000	08/16/2008
AMB 51	YC02405	12.2	08/28/2000	08/28/2006	AMB 108	YC02779	20.5	07/10/2001	07/10/2006	ANDREW 5	YB65800	16.2	08/16/2000	08/16/2008
AMB 52	YC02406	14.0	08/28/2000	08/28/2006	AMB 109	YC02780	17.5	07/10/2001	07/10/2006	ANDREW 6	YB65801	17.4	08/16/2000	08/16/2008
AMB 53	YC02407	19.7	08/28/2000	08/28/2006	AMB 110	YC02781	19.0	07/10/2001	07/10/2006	ANDREW 7	YB65802	14.9	08/16/2000	08/16/2008
AMB 54	YC02408	12.7	08/28/2000	08/28/2006	AMB 111	YC02782	19.9	07/10/2001	07/10/2006	ANDREW 8	YB65803	14.0	08/16/2000	08/16/2008
AMB 55	YC02409	17.7	08/28/2000	08/28/2006	AMB 112	YC02783	20.2	07/10/2001	07/10/2006	ANDREW 9	YB65804	19.2	08/16/2000	08/16/2008
AMB 56	YC02410	10.9	08/28/2000	08/28/2006	AMB 115	YC09953	18.0	10/12/2001	10/12/2007	ANDREW 10	YB65805	19.0	08/16/2000	08/16/2008
AMB 57	YC02411	19.3	08/28/2000	08/28/2006	AMB 116	YC09954	17.1	10/12/2001	10/12/2007					

There has been no prior mineral extraction on the property. There are several known mineral zones on the property which were partially exposed by previous operators using bulldozer and hand trenching. Some of these have been tested by diamond drilling. The quantity of diamond drilling to date is inadequate to allow an estimate of any resource or reserve.

Previous operators were responsible for construction of approximately 20 kilometers of bulldozer trails and trenches in the late 1960's. Other than a few areas on bare rock, these have revegetated naturally and no potential erosional problems were observed. A 300-meter airstrip was also constructed by previous operators, and had been rehabilitated prior to the 2001 program.

A tent camp accommodating up to 20 people, utilizing lumber frames and plywood floors had been constructed in 2001 adjacent to the airstrip and was used for the 2002 program. The camp was completely demobilized at the end of the 2002 program and a Final Licence Decommissioning Inspection was conducted by Bill Leary (Mining Lands Inspector, Mayo Mining District) on September 24, 2002. The only things left on site were 9 plywood tent floors and the core shack, beside which the drillcore has been crosspiled.

This program was conducted pursuant to the Yukon Quartz Mining Act and Regulations and conditions specified in Mining Land Use Permit No. LQ00066, granted on April 16, 2001. The Permit was terminated on Noranda's abandonment of the property.

Access for the 2002 program was provided by a de Havilland Otter aircraft operated by Alkan Air of Whitehorse from the Faro Airstrip. For the work program, personnel and equipment were transported by a helicopter chartered from Guardian Helicopters of Calgary, Alberta.

3.0 SAMPLING METHODOLOGY

3.1 Soil Geochemistry

Soil samples were collected over areas in which quartzite breccias and basemetal mineralization were known to occur. Soil geochemistry may provide an indication of enhanced metal concentrations in underlying rocks, providing the soil profile has been stable for a significant period of time. Samples were collected at 25 meter intervals along lines spaced at 100 meters. A total of 565 soil samples were collected and analyzed. Soils were collected by digging through the organic and leached layer with a "Swedish type" soil auger. An approximately 0.5 kilogram sample of "B" horizon material was placed in Kraft paper envelopes marked with the grid station co-ordinate. Results were entered into a digital spreadsheet and processed with commercial software.

3.2 Drillcore

Drillcore was cleaned with water, logged, digitally photographed, and marked for sampling by the geologist at the camp. Only rocks with visible mineralization and adjacent to visible mineralization were sampled for ore grade assays. Sample intervals were determined where clear mineralogical or lithological contrasts were observed. 185 core samples were submitted for assay grade Zn, Pb, and Ag analysis. They were also analysed for a suite of trace elements by an ICP technique, as were an additional 38 samples of core.

4.0 Sample Preparation, Analysis and Security

4.1 Soil

Soil samples were air dried at camp, recorded on transmittal sheets, then packed in polyweave bags and shipped to ALS-Chemex Laboratories in Vancouver, B.C for analysis. The samples were transported internally by the camp helicopter to our expediting service in Faro, which delivered them by truck to Whitehorse. From Whitehorse, the bags were shipped by air freight directly to the lab in Vancouver. At the lab, the samples were oven dried, and sieved through a –180 micron mesh. Specific sample preparation and analytical techniques are indicated on each lab report, and are described in Appendix 6.

4.2 Drillcore

Splitting was performed on site both by the geologist and by a worker employed by Noranda and under the direct supervision of the geologist. An electric masonry saw with a sliding sample tray and diamond blade lubricated with fresh, non-recirculated water was used for most mineralized zones, with lesser mineralized zones split with a standard, Longyear type manual core splitter. The split portions were placed in heavy duty, clear plastic bags with an identifying number marked on the bag and on a white heavy paper ticket placed inside the bag. The samples were recorded, packed in polyweave bags at the camp and shipped for analysis to ALS Chemex Laboratories in Vancouver, B.C. as for the soil samples. Specific sample preparation and analytical techniques are indicated on each lab report, and are described in Appendix 6.

5.0 Data Verification

Noranda's standard QAQC procedure for initial stage drilling projects was implemented. It calls for submission of blanks and standards in each batch of samples submitted to the lab. Standards were purchased from Geostats, a sampling and assay monitoring service based in Australia. Two different standard samples were used. Round robins conducted by Geostats give average values of 1.38% Pb, 28.00% Zn and 9.7g/t Ag for standard GBM399-8, and 0.96% Pb, 3.02% Zn, and 12.5 g/t Ag for standard GBM300-8. Blanks were made from drill core of (visually) barren quartzite from the 2001 drill program.

Analytical results for standards and blanks are presented on Table 2. It shows good agreement between the Zn and Pb assays with accepted values for all the standards. However, sample #254943, which was Standard 300-8 accompanying workorder #3121 was far out of range for Ag, returning 64 ppm against an accepted value of 12.5. The other standard which accompanied the batch was acceptable, returning 11.0 ppm against an accepted value of 9.7 ppm. The blank which accompanied the batch was also acceptable. Ag performed by geochem on sample 254943 returned 11.8 ppm, eliminating the possibility of contamination before the lab. Inspection of the results for workorder #3121 rules out wholesale contamination of the batch as the only core sample with > 5 ppm Ag was a high grade sample with 3.54% Zn, 26.4% Pb and 48 g/t Ag. Comparing Ag analyses by the two techniques for the entire program reveals no comparable discrepancies. Reanalysis by the same technique yielded an acceptable 12.0 g/t Ag.

The highest values for the blanks were 0.11% Zn, 0.02% Pb and 2.0 ppm Ag. This material was deemed blank by inspection only and could locally have contained metals in these concentrations.

6.0 2002 Exploration Program

The 2002 program was designed to test for extensions of the Andrew mineralized zone and to test the immediate area for similar mineralization. To these ends, a soil geochemical survey was conducted, with emphasis on areas of known surface mineralization, and an 8-hole drill program was completed (1,838.3 m). Results are presented in the following sections.

6.1 Soil Geochemistry

565 soil samples were collected over the Andrew showing (for characterization) and along a known mineralized trend extending almost 2000 m to the southeast. Soil locations are provided on Figure 2, with concentrations of Zn, Pb, Cu and Ag posted. Certificates of Analysis are provided in Appendix 4. Note that the sample number is the UTM coordinate in NAD83, Zone 8.

Five large Zn ± Pb anomalies are apparent and are described here:

- A: The Andrew kill zone occupies the western part of a strong anomaly >400 m long. It is open to the east and is closed off to the west. Both Pb and Zn locally exceed 10,000 ppm, but more typically it returns ~2000 ppm Zn and 1000 ppm Pb. Ag and Cd are commonly elevated with up to 2.7 and 26.7 ppm respectively.
- B: A strong Zn ± Pb soil anomaly at least 450 m long is centred 500 m southeast of the Andrew zone. Soils returned up to 11,900 ppm Zn, 1,240 ppm Pb, 0.7 ppm Ag and 46.2 ppm Cd. The anomaly was drilltested with a single hole, AN0221, described in the following section.

Table 2: Analytical Results for Standards and Blanks

Medium	Work Order	SAMPLE#	Zn %	Pb %	Ag g/t
BLANK	Chemex 2910	254923	0.06	0.02	2.0
BLANK	Chemex 3121	254945	0.04	0.01	0.5
BLANK	Chemex 3219	557272	0.04	0.01	0.5
BLANK	Chemex 3219	557291	0.01	0.01	0.5
BLANK	Chemex 3299	644146	0.09	0.01	0.5
BLANK	Chemex 3299	644178	0.02	0.01	0.5
BLANK	Chemex 3299	644189	0.11	0.01	1.0
BLANK	Chemex 3722	176285	0.04	0.01	0.5
BLANK	Chemex 4441	319975	0.04	0.01	0.5
STANDARD 300-8	Chemex 3121	254943	3.06	0.98	**64.0**
STANDARD 300-8	Chemex 3219	557290	3.12	0.99	12.0
STANDARD 300-8	Chemex 3299	644177	3.23	1.03	14.0
STANDARD 300-8	Chemex 3722	176286	3.10	0.99	12.0
STANDARD 300-8	Chemex 4441	319976	3.17	1.00	13.0
		Accepted Value:	**3.02**	**0.96**	**12.5**
STANDARD 399-8	Chemex 2910	254922	27.90	1.35	11.0
STANDARD 399-8	Chemex 3121	254944	28.20	1.37	11.0
STANDARD 399-8	Chemex 3219	557271	28.90	1.42	10.0
STANDARD 399-8	Chemex 3299	644145	28.00	1.39	10.0
STANDARD 399-8	Chemex 3299	644188	27.50	1.41	9.0
STANDARD 399-8	Chemex 3722	176284	27.50	1.39	10.0
STANDARD 399-8	Chemex 4441	319977	27.90	1.38	11.0
		Accepted Value:	**28.01**	**1.38**	**9.7**

Notes:
Ag by geochem for sample 254943 returned 11.8 g/t
Standard 254944 which accompanied Workorder 3121 was acceptable.
Blank 254945 which accompanied Workorder 3121 was acceptable.
Reanalysis of 254943 yielded 12.0 g/t Ag.
See text for additional discussion

- C: This anomaly is parallel and similar in size to "B", and is centred 300 m to the east-northeast. Maximum concentrations are 11,600 ppm Zn, 2,140 ppm Pb, 1.0 ppm Ag and 53.4 ppm Cd. This anomaly was drilltested in it's geographic centre in 2001 by AN0108, which intersected only minor amounts of sphalerite (0.76% Zn over 0.5 m).
- D: Centred 800 m east-southeast of "C", this anomaly is at least 400 m long and is open to the northwest. Maximum concentrations are 3,830 ppm Zn, 1,605 ppm Pb, 0.3 ppm Ag and 19.6 ppm Cd. The northernmost sample on the westernmost line of this anomaly returned 324 ppm Cu. 75 m to the south of this, a 4 station Cu anomaly starts, with values from 208 to 344 ppm. No other elements correlate with Cu in this area. The centre of the anomaly was drilltested with a single hole, AN0222, described in the next section.
- E: This anomaly is centred 400 m south-southeast of "D". It is at least 200 m long and is open to the east. Maximum concentrations are 3,830 ppm Zn, 1,605 ppm Pb, 0.3 ppm Ag and 19.6 ppm Cd. It was not drilltested.

Spot Zn and Pb anomalies also occur but the 5 anomalies described above are regarded as most significant. In addition, scattered Ag anomalies (up to 1.9 ppm), and separate As anomalies (up to 247 ppm) occur west and northwest of the Andrew showing. The As anomalies are much stronger than those associated with the mineralization and are not accompanied by elevated Pb or Zn. They might reflect a different style of mineralization.

6.2 2002 Diamond Drilling Program

Drilling was conducted by Advanced Drilling Ltd. of Surrey, B.C. The Boyles 25 "fly" drill which had been left on the property at the end of the 2001 program was used. Drilling was conducted 24 hours a day by 2 drill crews of two men each working 12 hour shifts, and work was supervised by a foreman. Preparation of drill pads, and site reclamation was undertaken by the drilling contractors. Crew changes, drill moves and servicing relied on helicopter support. Camp facilities were provided by Noranda. At the end of the program, the drill rig and all equipment were removed from the property.

The core was placed in wood core boxes at the drillsite, secured with lids, and transported by helicopter to the camp. With the exception of two boxes of core from AN0220 (135.0-140.8 and 178.1-183.7) , all the core was cross-piled next to the core shack adjacent to the airstrip, and the top layer was covered with plywood lids. The two boxes from AN0220 were shipped to Ron Berdahl in Whitehorse, after logging and sampling were completed.

Drillsites were located with handheld GPS. When complete, handheld GPS was used in autorecord mode to record several readings which were averaged. Where possible, drillholes were also chained from stations on the DGPS grid established to control the 2001 gravity survey. Elevations were determined both from the chaining and by scaling from published 1 : 50,000 contour maps. It was noticed that the elevations determined for all points on the 2001 gravity survey averaged 12.05 m higher than the topo map would indicate. To achieve consistency and comparability, 12.05 m was subtracted from the starting elevations for all chaining measurements. All location data are provided at the start of Appendix 5.

Noranda Inc. personnel performed logging and sampling at the camp. All observations and analytical data were entered into a Gemcom drillhole database. Azimuth and dip measurements were surveyed down the hole using a Sperry-Sun single shot borehole survey instrument.

With the exception of AN0220, the composited assays from the 2002 program have not been weighted by specific gravity determinations. This will probably result in slight underestimation of the grade. For example, the highest composite grade (density weighted) from the 2002 program is 13.63% Zn from 178.3 to 184.3 in AN0220. Without doing the density weighting, the grade is understated at 13.10% Zn.

Drill Logs and Certificates of Analysis are provided in Appendix 5. Drillhole locations and section traces are shown on Figure 3 (appended). Drill sections, including previous drillholes in the Andrew

deposit area, are provided in Figures 4 to 10 (appended) and a summary of significant intersections, including results from 2001, is provided in Table 3. Results are discussed in the following sections, in the sequence of drilling.

AN0216 (374.0 m) tested for a downdip extension in the western part of the deposit, on Section 641450E. The last drillhole from the 2001 program (AN0115) had been drilled there and returned 2 significant intersections, namely 9.52% Zn and 18.84% Pb over 8.40 m (core length) and 10.98% Zn and 20.16% Pb over 10.25 m (core length). AN0216 was targeted to intersect these zones approximately 125 m farther downdip. It intersected rocks comparable to the host rocks updip, but no brecciation or sulphide mineralization was encountered.

AN0217 (321.3 m) was collared on section 641650E. This section has one of the best near-surface intersections, 14.89% Zn and 3.12% Pb over 18.50 m (core length) in AN0111, although a down-dip test in 2001 (AN0112) showed a marked drop in grade, to 5.02% Zn and 0.06% Pb over 30.0 m (core length) approximately 100 m down-dip. AN0217 was designed to intersect 100 m below the zone in AN0112. It intersected typical Andrew host breccia over almost 50 m (core length), from which two higher grade zones can be extracted, namely 5.63% Zn and 2.53% Pb over a core length of 10.8 m (upper zone) and 6.56% Zn and 0.01% Pb over 3.9 m (core length, Lower Zone). Both zones were intersected higher in the hole than expected, and this is attributed to a reverse fault bringing the down-dip extension to shallower levels.

AN0218 (210.0 m) tested for a western extension of the Andrew Zone. The only previous drillhole in the area (AN0106) was drilled before a good understanding of the deposit's geometry was possible. Later drilling showed the deposit to be highly oblique to bedding, and a model described in the report on the 2001 drill program (Huard and Savell, 2001) suggested that it was controlled and truncated in the west by a fault. Regardless of the interpretation, it was thought that AN0106 was not drilled deep enough to test the Andrew target, so AN0218 was drilled to test for a western extension despite the model's prediction. No brecciation or mineralization was encountered. A calcite vein (27.1 – 27.7) adjacent to a fault zone near surface may be related to the northwest striking fault inferred to mark the western end of the deposit. Results are depicted on Figure 8, and the interpretation from the adjacent section (641,450E) was drawn onto the section for reference.

In similar fashion to AN0218, **AN0219** was collared to test for a shallow eastern extension of the Andrew deposit, despite the prediction of the model that it too should be terminated by a fault. It intersected weakly mineralized breccia in an Upper Zone from 95.8 to 106.3 m, which returned 6.49% Zn and 0.27% Pb over 10.5 m (core length), and a Lower Zone from 129.1 to 131.85, which returned 3.76% Zn and 0.01% Pb over 2.75 m (core length). The zones are separated by low grade mineralized breccia and calcite veins.

Given the better than expected result from AN0219, **AN0220** was collared to undercut the mineralization in AN0219. It also intersected two mineralized zones, both of which are significantly more mineralized than the corresponding zones up-dip. Mineralization consists of sphalerite with lesser galena associated with calcite-quartz veins and silicified hydrothermal breccia zones. The Upper Zone returned 10.34% Zn over 10.2 m (core length) from 135.5 to 145.7, and the Lower Zone returned 13.63% Zn over 6.0 m (core length) from 178.3 to 184.3. The intersections in AN0220 were at a low angle to the zone and as reported in Table 3, the true thicknesses are estimated to be slightly less than half of the core lengths.

Following the completion of AN0220, drilling turned to 2 areas of known surface mineralization with strong soil geochemical anomalies. **AN0221** tested soil anomaly "B" (see previous section) and it intersected sphalerite associated with quartz and calcite veins in brecciated limestone and quartzite, adjacent to a fault zone. It returned 7.54% Zn and 0.01% Pb over 5.55 m (core length) from 39.95 to 45.5 It also intersected small high grade veins of galena and sphalerite (usually separate) in the 5.5 m interval from 70.5 to 76.0, which returned 2.04% Zn and 2.51% Pb. The latter mineralized zone resembles surface mineralization and is probably the down-dip equivalent thereof. Core angles are consistent with this interpretation.

Table 3: Summary of Significant Intercepts - Andrew Project - 2001 & 2002

DDH	From (m)	To (m)	Core (m)	True (m)	Zn %	Pb %	Ag g/t	Density	Thickness Corrections			
									Dip		Azimuth	
									Dip	Factor	Azimuth	Factor
AN0104	96.60	103.40	6.80	4.44	10.78	0.01	0.6	2.75	-53	0.79	214	0.83
and	110.10	137.60	27.50	17.97	12.84	0.12	1.8	2.80	-53	0.79	214	0.83
including	110.10	113.90	3.80	2.48	11.50	0.01	0.6	2.71	-53	0.79	214	0.83
including	116.00	126.40	10.40	6.79	15.01	0.01	1.1	2.83	-53	0.79	214	0.83
including	132.00	137.60	5.60	3.66	21.88	0.54	5.1	3.00	-53	0.79	214	0.83
AN0111	89.00	107.50	18.50	13.72	14.89	3.12	12.6	2.89	-47	0.85	151	0.87
including	90.70	94.40	3.70	2.74	21.36	0.14	5.0	2.91	-47	0.85	151	0.87
including	99.00	105.70	6.70	4.97	22.42	0.03	3.7	2.97	-47	0.85	151	0.87
including	105.70	107.50	1.80	1.34	9.12	27.28	83.9	3.34	-47	0.85	151	0.87
AN0112	151.15	181.15	30.00	12.14	5.02	0.06	1.1	2.68	-78	0.45	153	0.89
including	151.15	163.15	12.00	4.85	5.25	0.01	0.8	2.67	-78	0.45	153	0.89
including	167.00	173.20	6.20	2.53	6.13	0.01	0.7	2.71	-78	0.45	154	0.90
AN0113	214.70	255.60	40.90	35.23	1.13	0.90	2.2	2.67	-45	0.87	186	0.99
including	214.70	221.50	6.80	5.86	2.61	0.01	0.5	2.66	-45	0.87	186	0.99
including	251.15	255.60	4.45	3.83	2.40	6.32	12.5	2.79	-45	0.87	186	0.99
AN0114	123.35	127.90	4.55	3.71	6.59	24.52	64.3	3.27	-50	0.82	174	0.99
AN0115	141.20	143.75	2.55	1.35	3.59	22.63	60.9	3.15	-73	0.53	177	1.00
and	153.60	162.00	8.40	4.45	9.52	18.84	67.9	3.32	-73	0.53	177	1.00
including	156.40	159.40	3.00	1.59	6.07	39.67	140.0	4.33	-73	0.53	177	1.00
including	159.40	162.00	2.60	1.38	19.57	1.42	9.5	2.92	-73	0.53	177	1.00
and	185.85	196.10	10.25	5.58	10.98	20.16	45.7	3.30	-72	0.54	179	1.00
including	186.95	192.50	5.55	3.02	16.97	15.04	34.3	3.33	-72	0.54	179	1.00
AN0217	174.10	184.90	10.80	7.09	5.63	2.53	5.2		-64	0.66	180	1.00
and	211.60	215.50	3.90	2.51	6.56	0.01	1.0		-65	0.64	181	1.00
AN0219	95.80	106.30	10.50	8.91	6.49	0.27	2.0		-46	0.86	172	0.99
and	129.10	131.85	2.75	2.41	3.76	0.01	0.6		-43	0.88	174	0.99
AN0220	135.50	145.70	10.20	4.78	10.34	0.67	2.6	2.85	-77	0.47	176	1.00
and	178.30	184.30	6.00	2.72	13.63	0.01	1.7	2.96	-78	0.45	177	1.00
AN0221	39.95	45.50	5.55	4.90	7.54	0.01	0.6		-43	0.88	182	1.00
and	70.50	76.00	5.50	4.83	2.04	2.51	5.0		-43	0.88	186	0.99
AN0223	194.30	198.70	4.40	2.00	0.64	0.89	38.4		-78	0.45	181	1.00
and	228.30	228.70	0.40	0.18	5.35	0.01	1.1		-78	0.45	174	0.99

True thicknesses based on following assumptions:

Dip correction based on 75 assumed dip of mineralized zone

Azimuth correction based on east-west strike of mineralized zone

Note that no density measurements were taken on AN0217, AN0219, AN0221 and AN0223

AN0222 tested soil anomaly "D" where outcropping sphalerite mineralization was noted in prospecting. It intersected a barren quartzite breccia zone at 79.0 - 85.3 m. Traces of sphalerite occur over a 2.2 m interval in fault-related rocks in the hangingwall of the quartzite breccia zone. The best interval returned 0.20% Zn over 0.7 m from 77.2 to 77.9. These features probably correlate with the surface mineralization, and indicate it is not extensive.

AN0223, the final drillhole of the 2002 program, was collared to test for an eastward and downdip continuation of the mineralization encountered in AN0220, which was the best intersected in this phase of drilling, and which was open down-dip and to the east. It intersected very weakly mineralized breccia along the projection of the Andrew Upper and Lower Zones, as intersected 100 m to the west by AN0219 and AN0220. A 4.4 m interval from 194.3 to 198.7 returned 0.64% Zn and 0.89% Pb. For reference, AN0223 is illustrated on the same cross section as AN0219 and AN0220, but note that it is 100 m to the east of that section.

7.0 Discussion, Interpretation and Conclusions

The 2002 drill program enlarged the boundaries of the Andrew deposit to the east, and it remains open downdip on some eastern sections. New mineralization was intersected in drillcore southeast of Andrew, and although of subeconomic grade and width, it remains open in all directions. Arsenic (only) anomalies revealed by the soil geochem program could be indicative of another style of mineralization northwest of the Andrew Deposit.

No mineralization of the thickness and grade of that in AN0104 or AN0111 was encountered. The 2002 program also placed firm boundaries on the limits of higher grade mineralization to the west and downdip.

The style of mineralization at the Andrew Deposit and its association with fault zones, and some evidence suggesting reverse faults, suggests that it occupies dilational zones caused by changing geometry in a complex reverse fault system. This accounts for the structural style and near horizontal long-axis of the mineralized zone. Similar mineralization could exist along strike, down-dip, or in faults en echelon to that which hosts the Andrew Deposit. Evidence of a second such system is provided by AN0221.

The capability of such a system or systems to create an orebody, economic even in such a remote location, is unproved. Results to date indicate that no further work is warranted at this time.

REFERENCE

Huard, A. and Savell, M.
2002: Exploration Report on the Andrew Property, Mayo Mining District, Yukon Territory for Work Undertaken in 2001. Assessment Report filed with YT Government.

Appendix 1:
List of Personnel and Contractors

The following personnel and contractors performed work on the Andrew Property over the dates indicated:

Employee	Work type	Residence	From	To	Days
Fred Keats	Camp construction / Soil Geochem	Montreal, QC	July 24, 2002	August 6, 2002	13
	Prospecting		August 30, 2002	September 3, 2002	4
Mike Savell	Supervision / Core Logging	Toronto, ON	July 29, 2002	August 22, 2002	24
Allan Huard	Supervision / Core Logging	Montreal, QC	August 16, 2002	September 24, 2002	39
Charlie Peeling	Camp maintenance / core splitting	Faro, YT	July 26, 2002	August 30, 2002	35
			September 4, 2002	September 24, 2002	20
Adrian Singh	Camp construction / soil geochem	Faro, YT	July 26, 2002	July 31, 2002	5
Paul Kelly	Camp construction / soil geochem	Faro, YT	July 26, 2002	August 8, 2002	13
Lisa Turner	Cook / First Aid Attendant	Whitehorse, YT	July 30, 2002	September 6, 2002	38
Karen van der Laars	Cook / First Aid Attendant	Whitehorse, YT	September 6, 2002	September 23, 2002	17
				Total mandays	208
Contractors					
Guardian Helicopters	Helicopter Services (1-2 personnel)	Calgary, Alberta	August 4, 2002	September 24, 2002	
Advanced Drilling	Drilling (5 personnel)	Surrey, B.C.	August 4, 2002	September 23, 2002	

Appendix 2: Statement of Expenditures

	0003 - Permanent Payroll	0004 - Contract Payroll	0005 - Supplies	0006 - Hardware / Software	0007 - Miscellaneous	0009 - Lodging	0010 - Transportation	0011 - Fixed Wing	0012 - Helicopters	0015 - Assays	0021 - Mels / Groceries	0030 - Drill Contractors	0031 - Drill Mob / demob	0032 - Drill hourly	0033 - Drill Consumables	0034 - Drill Coring	0046 - Couriers / Freight	0050 - Government Payments	Total
9031 - Government Payments																		665.00	665.00
9032 - Claim Staking									5,708.00			3,170.25							8,878.25
9070 - Geology	60,940.55		8,882.00	1,772.41	11,211.41	315.78	2,944.99	2,630.00		315.69	1,578.61	4,859.20					2,071.84		97,522.48
9091 - Soil Geochemistry									3,231.90	4,494.63		1,500.67							9,227.20
9092 - Rock Geochem										4,042.70							2,534.65		6,577.35
9111 - Diamond Drilling	22,633.56	11,250.01	9,869.64		19,069.93	1,666.53	7,515.20	50,308.00	200,794.85	3,809.88	6,358.82	11,467.47	8,100.31	44,032.50	25,351.37	94,931.02	204.60		517,363.69
9112 - Reclamation									3,000.00										3,000.00
Total	83,574.11	11,250.01	18,751.64	1,772.41	30,281.34	1,982.31	10,460.19	52,938.00	212,734.75	12,662.90	7,937.43	20,997.59	8,100.31	44,032.50	25,351.37	94,931.02	4,811.09	665.00	**643,233.97**

These expenditures were incurred by and charged to the Andrew Project between January 1 and December 11, 2002. All figures are Canadian $.

Certified Correct,

Allan Huard

Allan Huard
Senior Project Geologist

Appendix 3
Authors' Statements of Qualifications

Statement of Qualifications

I, Allan Andrew Huard declare that,

- I am a geologist and have been employed continuously with Noranda Inc. since May, 1986. My address is 234 Allancroft Crescent, Beaconsfield, Quebec, H9W 1L7.
- I graduated from St. Francis Xavier University in Antigonish, Nova Scotia with a B. Sc. (First Class Honours) Degree in geology in 1984. I graduated from Memorial University of Newfoundland in St. John's, Newfoundland with an M. Sc. Degree in geology in 1989. I am a Practicing Member of the Association of Professional Geoscientists of Ontario (#204).
- I supervised the Andrew program and logged the drillcore from August 16 to September 24, 2002.
- I am not aware of any material fact or material change with respect to the subject matter of this report which is not reflected in this report, the omission of which would make this report misleading.
- My only association with the property and its vendor is as an employee of Noranda Inc. I have no financial interest of any sort with the property or it's vendor, nor will I receive any.

Dated at Laval, Quebec on January 6 / 2003

Allan Huard
Senior Project Geologist
Noranda Inc.

Statement of Qualifications

I, Michael Savell declare that,

- I am a geologist and have been employed continuously with Noranda Inc. since May, 1980. My address is 1004 Roxborough Drive, Oakville, Ontario, L6M 1E3.
- I graduated from Dalhousie University in Halifax, Nova Scotia with a B. Sc. (Honours) Degree in geology in 1980. I have been accepted for membership in the Association of Professional Geoscientists of Ontario (#0477).
- I was on site and supervised the Andrew program, including core logging, from August 1st to August 15th, 2002.
- I am not aware of any material fact or material change with respect to the subject matter of this report which is not reflected in this report, the omission of which would make this report misleading.
- My only association with the property and its vendor is as an employee of Noranda Inc. I have no financial interest of any sort with the property or it's vendor, nor will I receive any.

Dated at Toronto, Ontario on Dec. 3, 2002

Michael Savell
Senior Geologist
Noranda Inc.

Appendix 4
Soil Sample Certificates of Analysis

ALS Chemex
EXCELLENCE IN ANALYTICAL CHEMISTRY
Aurora Laboratory Services Ltd.
212 Brooksbank Avenue
North Vancouver BC V7J 2C1 Canada
Phone: 604 984 0221 Fax: 604 984 0218

To: NORANDA MINING AND EXPLORATION INC.
874 TUNGSTEN ST.
THUNDER BAY ON P7B 6J3

Date : 26-Aug-2002
Account: BUF

Project : 2501

CERTIFICATE OF ANALYSIS VA02002679

Sample Description	Method Analyte Units LOR	WEI-21 Recvd Wt kg 0.02	ME-ICP41 Ag ppm 0.2	ME-ICP41 Al % 0.01	ME-ICP41 As ppm 2	ME-ICP41 B ppm 10	ME-ICP41 Ba ppm 10	ME-ICP41 Be ppm 0.5	ME-ICP41 Bi ppm 2	ME-ICP41 Ca % 0.01	ME-ICP41 Cd ppm 0.5	ME-ICP41 Co ppm 1	ME-ICP41 Cr ppm 1	ME-ICP41 Cu ppm 1	ME-ICP41 Fe % 0.01	ME-ICP41 Ga ppm 10
L641200E 6978100		0.22	<0.2	0.73	5	<10	130	0.5	<2	0.08	<0.5	6	10	16	1.81	<10
L641200E 6978125		0.20	<0.2	0.71	5	<10	130	0.5	4	0.54	<0.5	4	6	11	1.33	<10
L641200E 6978150		0.30	<0.2	0.88	16	<10	170	0.8	<2	0.13	<0.5	13	20	27	3.51	<10
L641200E 6978175		0.14	0.2	0.64	3	<10	140	<0.5	<2	0.11	<0.5	4	7	12	1.26	<10
L641200E 6978200		0.26	<0.2	0.90	17	<10	130	<0.5	<2	0.02	<0.5	5	13	14	2.94	<10
L641200E 6978225		0.34	<0.2	0.95	28	<10	210	0.6	<2	0.19	0.7	8	15	20	2.94	10
L641200E 6978250		0.26	<0.2	0.78	247	<10	150	<0.5	<2	0.20	<0.5	11	13	18	3.08	10
L641200E 6978275		0.20	<0.2	0.48	6	<10	40	<0.5	<2	0.03	<0.5	2	6	7	1.23	<10
L641200E 6978300		0.28	<0.2	1.26	13	<10	260	0.6	3	0.61	<0.5	6	16	12	2.52	<10
L641200E 6978325		0.28	<0.2	0.47	5	<10	80	<0.5	<2	0.50	<0.5	2	6	9	1.29	<10
L641200E 6978350		0.22	<0.2	1.45	19	<10	280	1.0	<2	0.77	<0.5	5	20	23	2.47	<10
L641300E 6978100		0.34	<0.2	1.05	3	<10	210	0.8	<2	0.08	<0.5	12	17	23	2.70	<10
L641300E 6978125		0.18	<0.2	1.27	8	<10	250	0.8	<2	0.08	<0.5	8	14	21	2.44	<10
L641300E 6978150		0.22	<0.2	1.05	11	<10	130	0.6	<2	0.12	<0.5	10	18	17	3.47	<10
L641300E 6978175		0.20	<0.2	0.70	9	<10	190	<0.5	<2	0.21	<0.5	4	12	12	2.13	<10
L641300E 6978200		0.30	<0.2	0.87	8	<10	120	<0.5	<2	0.17	<0.5	4	14	11	2.09	<10
L641300E 6978225		0.28	<0.2	0.87	12	<10	140	<0.5	<2	0.11	<0.5	7	15	17	2.78	<10
L641300E 6978250		0.30	<0.2	1.52	13	<10	290	1.3	<2	0.14	0.5	8	21	19	4.11	10
L641300E 6978275		0.28	<0.2	0.92	6	<10	70	<0.5	<2	0.07	<0.5	1	13	14	1.71	10
L641300E 6978300		0.14	0.2	0.21	<2	<10	10	<0.5	<2	0.07	<0.5	<1	1	3	0.23	<10
L641300E 6978325		0.20	<0.2	1.01	18	<10	130	<0.5	<2	0.27	<0.5	5	20	17	2.63	10
L641300E 6978350		0.30	<0.2	1.25	8	<10	180	0.7	<2	0.34	<0.5	5	19	15	2.32	<10
L641400E 6978100		0.24	<0.2	0.82	7	<10	130	<0.5	<2	0.12	1.3	3	12	12	2.51	<10
L641400E 6978125		0.20	<0.2	0.87	7	<10	180	<0.5	<2	0.26	0.6	7	14	12	2.17	<10
L641400E 6978150		0.26	<0.2	1.48	7	<10	310	0.9	<2	0.13	<0.5	7	24	13	3.68	10
L641400E 6978175		0.20	<0.2	0.30	<2	<10	30	<0.5	<2	0.09	<0.5	1	2	1	0.40	<10
L641400E 6978200		0.30	<0.2	1.20	20	<10	140	1.0	<2	0.30	<0.5	7	20	13	2.97	<10
L641400E 6978225		0.30	<0.2	1.31	4	<10	250	0.8	<2	0.36	<0.5	9	17	16	2.76	<10
L641400E 6978250		0.26	<0.2	1.87	143	<10	100	0.8	<2	0.02	<0.5	10	31	31	6.09	10
L641400E 6978275		0.24	0.7	0.82	7	<10	200	1.1	6	1.26	0.7	6	10	35	1.42	<10
L641400E 6978300		0.24	<0.2	0.92	9	<10	270	0.6	<2	0.38	<0.5	7	13	19	2.04	<10
L641400E 6978325		0.26	<0.2	0.89	6	<10	70	<0.5	<2	0.02	<0.5	2	12	13	2.60	10
L641400E 6978350		0.24	<0.2	0.78	4	<10	60	<0.5	<2	0.04	<0.5	2	13	17	2.09	10
L641500E 6978100		0.20	<0.2	1.22	6	<10	260	0.7	3	0.43	<0.5	6	18	16	2.49	<10
L641500E 6978125		0.24	<0.2	0.84	10	<10	150	0.6	<2	0.28	1.0	5	13	14	2.11	<10
L641500E 6978150		0.20	<0.2	1.07	10	<10	170	0.5	<2	0.21	1.4	6	17	12	2.82	<10
L641500E 6978175		0.32	1.2	0.95	27	<10	100	0.6	4	0.38	3.7	5	18	23	3.11	<10
L641500E 6978200		0.28	<0.2	0.80	6	<10	230	0.8	<2	0.06	1.1	7	11	10	2.69	<10
L641500E 6978225		0.20	<0.2	1.03	4	<10	180	0.8	<2	0.14	<0.5	9	12	16	2.41	<10
L641500E 6978250		0.16	<0.2	0.82	5	<10	180	0.8	<2	0.32	<0.5	8	10	49	1.58	<10

ALS Chemex
EXCELLENCE IN ANALYTICAL CHEMISTRY
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Phone: 604 984 0221 Fax: 604 984 0218

To: NORANDA MINING AND EXPLORATION INC.
874 TUNGSTEN ST.
THUNDER BAY ON P7B 6J3

Date : 26-Aug-2002
Account: BUF

Project : 2501

CERTIFICATE OF ANALYSIS VA02002679

Sample Description	Method	WEI-21	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41
	Analyte	Recvd Wt	Ag	Al	As	B	Ba	Be	Bi	Ca	Cd	Co	Cr	Cu	Fe	Ga
	Units	kg	ppm	%	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	%	ppm
	LOR	0.02	0.2	0.01	2	10	10	0.5	2	0.01	0.5	1	1	1	0.01	10
L641400E 6977750		0.28	<0.2	0.72	11	<10	170	<0.5	<2	0.19	<0.5	10	15	27	2.38	<10
L641400E 6977775		0.18	<0.2	0.45	6	<10	40	<0.5	<2	0.02	<0.5	4	6	14	1.34	<10
L641400E 6977800		0.28	<0.2	0.88	33	<10	190	0.7	<2	0.15	<0.5	14	15	57	3.87	<10
L641400E 6977825		0.24	<0.2	1.10	36	<10	80	0.6	6	0.01	<0.5	10	14	35	3.47	<10
L641400E 6977850		0.24	<0.2	0.89	25	<10	80	0.5	<2	0.09	<0.5	13	16	37	3.28	<10
L641400E 6977875		0.26	<0.2	0.93	16	<10	160	0.7	<2	0.10	<0.5	10	15	30	2.54	<10
L641400E 6977900		0.30	<0.2	1.06	23	<10	280	0.8	<2	0.24	<0.5	9	15	34	2.55	<10
L641900E 6977600		0.16	<0.2	0.70	20	<10	60	<0.5	<2	0.03	<0.5	8	12	28	2.84	<10
L641900E 6977625		0.22	<0.2	0.74	24	<10	120	0.6	<2	0.11	<0.5	14	14	34	2.63	<10
L641900E 6977650		0.26	<0.2	0.85	15	<10	240	0.7	<2	0.43	<0.5	9	14	28	2.50	<10
L641900E 6977675		0.22	<0.2	0.63	31	<10	170	1.0	3	0.30	<0.5	16	13	55	3.63	<10
L641900E 6977700		0.20	<0.2	0.64	28	<10	190	0.6	<2	0.80	<0.5	7	8	26	2.05	<10
L641900E 6977725		0.22	<0.2	0.79	25	<10	230	0.8	<2	0.55	<0.5	10	12	33	2.62	<10
L641900E 6977750		0.16	<0.2	0.81	16	<10	260	0.7	<2	0.66	<0.5	9	12	33	1.92	<10
L641900E 6977775		0.22	<0.2	0.94	15	<10	240	0.8	<2	0.54	<0.5	11	16	35	2.70	<10
L641900E 6977800		0.22	<0.2	0.90	13	<10	160	0.9	4	0.31	<0.5	12	18	42	3.11	<10
L641900E 6977825		0.18	<0.2	0.82	24	<10	220	0.7	<2	0.74	<0.5	10	11	30	2.34	<10
L641900E 6977850		0.20	<0.2	0.83	14	<10	200	0.7	2	0.50	<0.5	10	13	31	2.16	<10
L641900E 6977875		0.18	<0.2	0.90	18	<10	190	0.9	<2	0.45	<0.5	12	16	36	2.68	<10
L641900E 6977900		0.16	<0.2	0.88	12	<10	250	0.7	<2	0.66	<0.5	14	12	34	2.10	<10
L641900E6977925		0.18	<0.2	0.92	15	<10	80	0.6	<2	0.06	0.7	16	15	26	3.28	10
L641900E6977950		0.22	<0.2	1.08	20	<10	250	1.1	<2	0.82	5.2	10	17	68	2.76	<10
L641900E6977975		0.14	<0.2	0.91	16	<10	190	0.7	<2	0.50	<0.5	10	13	26	2.10	<10
L641900E6978000		0.20	<0.2	0.68	16	<10	60	<0.5	<2	0.02	<0.5	4	6	14	1.77	10
L641900E6978025		0.20	<0.2	1.03	18	<10	60	<0.5	<2	0.02	<0.5	10	15	19	3.29	10
L641900E6978050		0.20	<0.2	0.82	14	<10	60	<0.5	<2	0.01	<0.5	5	12	17	2.81	10
L641900E6978075		0.14	<0.2	0.76	12	<10	50	<0.5	<2	0.03	<0.5	4	15	12	3.06	10
L641900E6978100		0.20	<0.2	0.78	13	<10	70	<0.5	<2	0.04	0.7	12	10	23	2.44	<10
L642000E 6977600		0.20	<0.2	0.88	20	<10	220	0.5	<2	0.44	<0.5	9	18	31	3.18	<10
L642000E 6977625		0.12	<0.2	0.92	10	<10	260	0.5	2	1.16	<0.5	8	14	24	2.09	<10
L642000E 6977650		0.16	<0.2	0.81	14	<10	220	0.7	<2	1.07	<0.5	9	13	35	2.58	<10
L642000E 6977675		0.28	<0.2	0.65	13	<10	140	0.5	<2	0.63	<0.5	9	12	29	2.33	<10
L642000E 6977700		0.24	<0.2	1.07	15	<10	230	0.8	<2	0.36	<0.5	11	23	38	3.09	<10
L642000E 6977725		0.20	0.2	1.07	9	<10	310	0.7	<2	0.58	<0.5	8	15	36	2.22	<10
L642000E 6977750		0.20	<0.2	1.02	14	<10	200	0.7	<2	0.44	<0.5	11	21	33	3.03	<10
L642000E 6977775		0.22	<0.2	1.09	12	<10	250	0.9	<2	0.65	<0.5	12	21	39	3.00	<10
L642000E 6977800		0.22	<0.2	0.66	7	<10	150	<0.5	2	0.71	<0.5	6	10	17	1.59	<10
L642000E 6977825		0.18	<0.2	1.30	9	<10	240	0.9	<2	0.70	<0.5	14	21	39	3.27	10
L642000E 6977850		0.14	<0.2	1.00	13	<10	160	0.9	<2	0.74	<0.5	13	18	46	2.96	<10
L642000E 6977875		0.18	<0.2	1.10	13	<10	180	0.9	<2	0.51	<0.5	13	20	44	3.27	<10

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To: NORANDA MINING AND EXPLORATION INC.
874 TUNGSTEN ST.
THUNDER BAY ON P7B 6J3

Date : 26-Aug-2002
Account: BUF

Project : 2501

CERTIFICATE OF ANALYSIS VA02002679

Sample Description	Method	WEI-21	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41
	Analyte	Recvd Wt	Ag	Al	As	B	Ba	Be	Bi	Ca	Cd	Co	Cr	Cu	Fe	Ga
	Units	kg	ppm	%	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	%	ppm
	LOR	0.02	0.2	0.01	2	10	10	0.5	2	0.01	0.5	1	1	1	0.01	10
L641500E 6978275		0.26	<0.2	1.65	3	<10	310	0.9	<2	0.53	<0.5	14	21	20	3.61	10
L641500E 6978300		0.36	<0.2	1.27	10	<10	270	1.7	<2	0.46	<0.5	7	23	45	2.46	<10
L641500E 6978325		0.20	<0.2	0.79	5	<10	180	0.5	2	0.47	3.1	7	13	32	1.84	<10
L641500E 6978350		0.28	<0.2	1.28	11	<10	250	1.1	<2	0.49	<0.5	15	23	37	3.42	<10
L641600E 6978100		0.18	0.3	0.85	9	<10	180	0.5	<2	0.54	22.5	5	7	45	1.18	<10
L641600E 6978125		0.20	<0.2	0.60	2	<10	80	<0.5	<2	0.06	0.6	1	5	12	1.02	<10
L641600E 6978150		0.34	1.1	0.79	16	<10	70	0.8	<2	0.13	14.0	19	7	77	1.68	10
L641600E 6978175		0.30	0.2	1.23	15	<10	70	0.5	<2	0.06	1.2	4	14	20	2.31	<10
L641600E 6978200		0.24	2.7	0.87	14	<10	140	0.6	<2	0.23	26.7	12	5	110	1.20	10
L641600E 6978225		0.20	<0.2	1.74	9	<10	240	1.4	<2	0.09	1.5	11	20	27	3.16	10
L641600E 6978250		0.30	<0.2	1.94	5	<10	180	1.9	<2	0.04	<0.5	11	20	29	4.04	10
L641600E 6978275		0.26	<0.2	1.34	5	<10	180	1.1	<2	0.06	<0.5	16	17	26	3.35	<10
L641600E 6978300		0.20	<0.2	0.58	4	<10	70	<0.5	<2	0.07	<0.5	1	10	13	2.06	10
L641600E 6978325		0.24	<0.2	0.77	4	<10	190	0.8	<2	0.39	<0.5	8	12	25	1.78	<10
L641600E 6978350		0.20	<0.2	0.39	<2	<10	30	<0.5	<2	0.01	<0.5	1	5	6	0.83	<10
L641700E 6978100		0.22	<0.2	0.82	8	<10	100	0.7	<2	0.13	2.8	6	9	29	1.48	<10
L641700E 6978125		0.08	<0.2	0.79	15	<10	140	0.8	<2	0.16	3.3	11	13	34	1.86	<10
L641700E 6978150		0.28	<0.2	1.07	12	<10	140	1.2	<2	0.08	2.7	15	17	33	2.16	10
L641700E 6978175		0.24	<0.2	0.95	9	<10	120	0.5	<2	0.06	<0.5	3	12	9	1.41	<10
L641700E 6978200		0.28	<0.2	0.65	17	<10	80	<0.5	<2	0.03	<0.5	4	6	15	1.32	<10
L641700E 6978225		0.18	<0.2	1.52	7	<10	210	1.2	<2	0.20	4.7	17	25	39	3.49	10
L641700E 6978250		0.20	<0.2	1.11	7	<10	120	0.5	<2	0.03	0.6	5	14	12	3.82	10
L641700E 6978275		0.22	<0.2	0.89	3	<10	60	<0.5	<2	0.02	<0.5	2	9	7	2.07	10
L641700E 6978300		0.20	<0.2	0.66	2	<10	50	<0.5	<2	0.01	<0.5	1	7	8	1.37	<10
L641700E 6978325		0.32	<0.2	0.71	3	<10	100	<0.5	<2	0.07	<0.5	2	12	16	1.73	<10
L641700E 6978350		0.26	<0.2	0.75	<2	<10	120	0.5	<2	0.18	<0.5	4	12	19	1.57	<10
L641800E 6978100		0.20	0.3	0.70	9	<10	260	<0.5	<2	0.38	3.8	6	9	24	1.79	<10
L641800E 6978125		0.34	<0.2	0.86	19	<10	280	0.6	<2	0.17	2.0	6	14	30	3.40	<10
L641800E 6978150		0.30	<0.2	0.76	15	<10	140	<0.5	<2	0.06	2.4	7	15	22	2.69	<10
L641800E 6978175		0.26	0.2	0.85	9	<10	190	0.5	<2	0.18	4.1	5	8	40	1.55	<10
L641800E 6978200		0.30	<0.2	0.89	31	<10	70	0.5	<2	0.05	0.9	5	11	24	2.37	10
L641800E 6978225		0.24	<0.2	1.25	11	<10	110	0.7	<2	0.04	0.5	8	18	20	3.47	10
L641800E 6978250		0.24	<0.2	1.26	5	<10	150	0.7	<2	0.03	<0.5	4	15	24	2.51	10
L641800E 6978275		0.24	<0.2	0.79	9	<10	120	0.5	<2	0.12	<0.5	5	12	16	1.62	<10
L641800E 6978300		0.26	<0.2	0.89	3	<10	170	0.5	<2	0.15	<0.5	6	15	11	1.75	<10
L641800E 6978325		0.32	<0.2	0.86	6	<10	200	1.6	<2	0.41	0.7	13	17	57	3.25	<10
L641800E 6978350		0.26	<0.2	1.10	5	<10	120	<0.5	<2	0.04	<0.5	6	18	18	4.08	10
L641900E 6978100		0.30	0.2	1.01	41	<10	260	0.6	<2	0.42	3.7	9	13	24	2.65	<10
L641900E 6978125		0.24	0.4	0.63	4	<10	320	0.6	4	0.58	12.3	7	6	46	1.10	<10
L641900E 6978150		0.30	<0.2	0.83	18	<10	180	0.7	<2	0.33	6.1	12	15	43	3.09	<10

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Total # of pages : 7 (A - C)
Date : 26-Aug-2002
Account: BUF

Project : 2501

CERTIFICATE OF ANALYSIS VA02002679

Sample Description	Method Analyte Units LOR	WEI-21 Recvd Wt kg 0.02	ME-ICP41 Ag ppm 0.2	ME-ICP41 Al % 0.01	ME-ICP41 As ppm 2	ME-ICP41 B ppm 10	ME-ICP41 Ba ppm 10	ME-ICP41 Be ppm 0.5	ME-ICP41 Bi ppm 2	ME-ICP41 Ca % 0.01	ME-ICP41 Cd ppm 0.5	ME-ICP41 Co ppm 1	ME-ICP41 Cr ppm 1	ME-ICP41 Cu ppm 1	ME-ICP41 Fe % 0.01	ME-ICP41 Ga ppm 10
L641900E 6978175		0.24	0.2	0.70	8	<10	90	0.5	<2	0.10	2.2	2	7	15	1.20	<10
L641900E 6978200		0.24	0.8	0.80	47	<10	170	1.0	<2	0.74	2.5	5	7	47	1.69	<10
L641900E 6978225		0.24	0.4	0.81	23	<10	250	0.8	2	0.56	5.2	8	12	35	2.20	<10
L641900E 6978250		0.28	<0.2	0.91	23	<10	150	0.6	<2	0.30	1.7	8	16	20	2.88	<10
L641900E 6978275		0.30	<0.2	0.34	9	<10	40	<0.5	<2	0.04	0.8	3	6	14	1.65	<10
L641900E 6978300		0.24	0.2	0.61	14	<10	160	<0.5	2	0.26	5.0	3	7	22	1.52	<10
L641900E 6978325		0.26	<0.2	0.56	31	<10	140	<0.5	<2	0.24	0.7	8	10	22	2.37	<10
L641900E 6978350		0.34	0.6	0.62	34	<10	180	0.5	<2	0.33	0.8	4	6	32	1.61	<10
L641200E 6977600		0.24	<0.2	0.89	8	<10	170	0.5	<2	0.15	<0.5	6	9	20	2.13	<10
L641200E 6977625		0.18	<0.2	0.44	3	<10	130	<0.5	<2	0.09	<0.5	3	6	24	1.50	<10
L641200E 6977650		0.18	<0.2	0.47	2	<10	30	<0.5	<2	0.01	<0.5	2	5	10	0.91	<10
L641200E 6977675		0.22	<0.2	1.02	10	<10	60	<0.5	<2	0.01	<0.5	10	34	27	5.13	<10
L641200E 6977700		0.26	<0.2	0.89	8	<10	60	<0.5	<2	0.01	<0.5	6	11	21	2.81	<10
L641200E 6977725		0.20	<0.2	0.90	9	<10	70	<0.5	<2	0.02	<0.5	9	11	25	2.45	10
L641200E 6977750		0.22	<0.2	0.35	5	<10	60	<0.5	<2	0.09	<0.5	4	5	10	1.17	<10
L641200E 6977775		0.28	<0.2	0.67	9	<10	50	<0.5	<2	0.01	<0.5	5	11	22	3.05	<10
L641200E 6977800		0.20	<0.2	0.82	8	<10	280	0.7	<2	0.69	<0.5	10	12	27	2.66	<10
L641200E 6977825		0.20	<0.2	0.60	8	<10	220	<0.5	<2	0.28	<0.5	4	9	15	1.85	<10
L641200E 6977850		0.24	<0.2	0.57	24	<10	140	1.0	<2	0.26	0.5	13	15	77	4.28	<10
L641200E 6977875		0.26	<0.2	0.73	27	<10	170	1.0	<2	0.07	0.5	21	16	68	4.48	<10
L641200E 6977900		0.20	<0.2	0.85	22	<10	250	1.2	5	0.50	0.5	15	16	64	3.93	<10
L641300E 6977600		0.22	<0.2	1.76	8	<10	560	0.8	6	0.95	<0.5	6	52	41	2.78	10
L641300E 6977625		0.24	<0.2	1.05	4	<10	60	<0.5	<2	0.04	<0.5	4	15	27	3.74	<10
L641300E 6977650		0.24	<0.2	0.66	11	<10	100	<0.5	<2	0.02	<0.5	4	7	23	2.03	10
L641300E 6977675		0.26	0.2	1.60	5	<10	610	1.6	<2	0.81	<0.5	11	18	41	3.00	<10
L641300E 6977700		0.24	<0.2	1.03	9	<10	110	<0.5	<2	0.13	<0.5	3	16	11	2.51	10
L641300E 6977725		0.24	<0.2	0.28	4	<10	70	<0.5	<2	0.15	<0.5	1	5	7	0.83	<10
L641300E 6977750		0.24	<0.2	0.37	4	<10	60	<0.5	<2	0.05	<0.5	4	6	11	1.18	<10
L641300E 6977775		0.18	0.2	0.73	4	<10	150	<0.5	<2	0.38	<0.5	5	7	16	1.14	<10
L641300E 6977800		0.20	0.2	0.55	10	<10	210	0.6	<2	0.25	<0.5	6	7	23	1.20	<10
L641300E 6977825		0.26	<0.2	0.65	11	<10	80	<0.5	5	0.01	<0.5	4	7	23	1.41	<10
L641300E 6977850		0.22	<0.2	0.51	6	<10	30	<0.5	<2	0.23	<0.5	4	6	12	1.36	<10
L641300E 6977875		0.22	<0.2	0.97	13	<10	210	0.6	<2	0.07	<0.5	9	16	20	2.56	10
L641300E 6977900		0.28	<0.2	1.33	14	<10	80	0.6	<2	0.02	<0.5	12	20	28	4.25	<10
L641400E 6977600		0.34	<0.2	1.11	16	<10	190	0.8	<2	0.20	<0.5	16	20	36	3.17	<10
L641400E 6977625		0.16	<0.2	0.92	12	<10	200	0.6	<2	0.23	<0.5	12	15	23	2.41	<10
L641400E 6977650		0.34	<0.2	0.73	18	<10	70	<0.5	<2	0.02	<0.5	11	13	28	2.85	<10
L641400E 6977675		0.22	<0.2	0.60	6	<10	170	<0.5	<2	0.30	<0.5	5	6	13	1.17	<10
L641400E 6977700		0.22	<0.2	0.42	6	<10	180	<0.5	<2	0.24	<0.5	6	6	13	1.30	<10
L641400E 6977725		0.26	<0.2	0.53	6	<10	100	<0.5	<2	0.13	<0.5	4	6	8	1.04	<10

ALS Chemex
EXCELLENCE IN ANALYTICAL CHEMISTRY
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To: NORANDA MINING AND EXPLORATION IN
874 TUNGSTEN ST.
THUNDER BAY ON P7B 6J3

Total # of pages : 7 (A - C)
Date : 26-Aug-2002
Account: BUF

Project : 2501

CERTIFICATE OF ANALYSIS VA02002679

Sample Description	Method Analyte Units LOR	WEI-21 Recvd Wt kg 0.02	ME-ICP41 Ag ppm 0.2	ME-ICP41 Al % 0.01	ME-ICP41 As ppm 2	ME-ICP41 B ppm 10	ME-ICP41 Ba ppm 10	ME-ICP41 Be ppm 0.5	ME-ICP41 Bi ppm 2	ME-ICP41 Ca % 0.01	ME-ICP41 Cd ppm 0.5	ME-ICP41 Co ppm 1	ME-ICP41 Cr ppm 1	ME-ICP41 Cu ppm 1	ME-ICP41 Fe % 0.01	ME-ICP41 Ga ppm 10
L642000E 6977900		0.18	<0.2	0.98	9	<10	220	0.7	<2	0.86	4.1	9	15	33	2.36	<10
L642000E 6977925		0.20	<0.2	1.02	13	<10	160	0.9	<2	0.52	<0.5	14	19	47	3.17	<10
L642000E 6977950		0.16	<0.2	0.75	16	<10	100	<0.5	<2	0.19	0.7	5	10	18	1.99	10
L642000E 6977975		0.14	<0.2	0.46	11	<10	120	<0.5	<2	0.36	<0.5	4	6	12	1.58	<10
L642000E 6978000		0.16	<0.2	0.59	12	<10	100	<0.5	<2	0.18	0.9	4	9	24	1.81	<10
L642000E 6978025		0.22	<0.2	0.47	5	<10	90	<0.5	<2	0.50	3.1	3	5	11	1.09	<10
L642000E 6978050		0.16	<0.2	0.66	6	<10	40	<0.5	<2	0.01	<0.5	3	6	11	1.34	<10
L642000E 6978075		0.20	<0.2	0.84	16	<10	70	<0.5	<2	0.01	<0.5	8	14	20	2.97	10
L642000E 6978100		0.16	<0.2	0.61	15	<10	40	<0.5	<2	0.01	<0.5	5	9	21	2.61	10
L642100E 6977600		0.22	<0.2	0.77	7	<10	200	0.6	<2	0.78	<0.5	9	11	29	2.32	<10
L642100E 6977625		0.16	<0.2	0.65	9	<10	200	0.6	3	0.74	<0.5	8	10	40	2.44	<10
L642100E 6977650		0.28	<0.2	1.18	12	<10	240	0.5	<2	0.49	<0.5	12	23	24	3.34	<10
L642100E 6977675		0.20	<0.2	0.74	13	<10	70	<0.5	<2	0.03	<0.5	6	14	21	2.86	10
L642100E 6977700		0.12	<0.2	1.52	14	<10	100	0.6	<2	0.15	<0.5	10	25	30	4.25	10
L642100E 6977725		0.16	0.2	0.80	4	<10	130	0.6	<2	0.55	<0.5	3	6	14	1.05	<10
L642100E 6977750		0.18	<0.2	1.06	13	<10	210	0.8	<2	0.76	<0.5	10	18	28	2.53	<10
L642100E 6977775		0.14	0.2	1.28	10	<10	290	0.9	<2	0.98	<0.5	12	23	31	2.91	<10
L642100E 6977800		0.18	<0.2	1.19	9	<10	260	1.0	<2	0.86	1.2	12	23	46	3.03	<10
L642100E 6977825		0.18	<0.2	1.29	16	<10	220	0.8	<2	0.51	0.9	14	20	32	3.63	<10
L642100E 6977850		0.20	0.7	0.92	15	<10	190	1.0	<2	0.89	46.2	13	16	122	2.78	10
L642100E 6977875		0.14	<0.2	0.78	10	<10	80	<0.5	<2	0.01	<0.5	5	10	22	2.42	10
L642100E 6977900		0.18	<0.2	1.93	13	<10	80	0.5	<2	0.01	<0.5	10	25	35	4.67	10
L642100E 6977925		0.14	<0.2	0.53	4	<10	90	<0.5	<2	0.08	1.9	2	6	19	0.99	<10
L642100E 6977950		0.22	<0.2	0.67	10	<10	80	<0.5	<2	0.08	0.6	5	9	30	2.26	<10
L642100E 6977975		0.14	0.4	1.31	18	<10	80	0.5	<2	0.11	0.6	9	15	22	4.28	10
L642100E 6978000		0.20	<0.2	1.19	11	<10	80	<0.5	<2	0.02	<0.5	8	14	25	3.45	10
L642100E 6978025		0.16	<0.2	0.57	11	<10	40	<0.5	<2	0.01	<0.5	5	7	25	2.24	<10
L642100E 6978050		0.16	<0.2	1.26	15	<10	120	0.5	<2	0.07	0.7	10	16	32	3.96	<10
L642100E 6978075		0.18	<0.2	0.58	9	<10	50	<0.5	<2	0.02	<0.5	5	8	19	2.11	<10
L642100E 6978100		0.12	<0.2	0.20	<2	<10	20	<0.5	<2	0.02	<0.5	1	2	4	0.53	<10
L643300E 6977300		0.18	<0.2	0.60	5	<10	130	0.7	<2	0.12	<0.5	6	8	16	1.75	<10
L643300E 6977325		0.18	<0.2	0.38	6	<10	100	<0.5	<2	0.11	0.7	9	6	12	2.21	<10
L643300E 6977350		0.28	<0.2	0.34	4	<10	50	<0.5	<2	0.06	<0.5	8	8	16	2.88	<10
L643300E 6977375		0.20	<0.2	0.51	3	<10	120	<0.5	<2	0.22	0.6	5	7	7	1.19	<10
L643300E 6977400		0.24	<0.2	0.58	6	<10	110	<0.5	<2	0.33	4.3	6	6	28	1.54	<10
L643300E 6977425		0.32	<0.2	0.30	3	<10	60	<0.5	<2	0.06	0.7	4	4	14	0.76	<10
L643300E 6977450		0.30	<0.2	0.69	3	<10	240	0.9	<2	0.50	5.8	10	21	19	2.88	<10
L643300E 6977475		0.20	<0.2	0.43	<2	<10	210	<0.5	<2	0.67	1.4	1	9	7	1.16	<10
L643300E 6977500		0.26	<0.2	0.40	4	<10	90	<0.5	<2	0.19	0.6	6	8	7	1.92	<10
L643300E 6977525		0.14	<0.2	0.34	<2	<10	80	<0.5	<2	0.17	0.8	2	3	8	0.44	<10

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To: NORANDA MINING AND EXPLORATION INC.
874 TUNGSTEN ST.
THUNDER BAY ON P7B 6J3

Date : 26-Aug-2002
Account: BUF

Project : 2501

CERTIFICATE OF ANALYSIS VA02002679

Sample Description	Method Analyte Units LOR	WEI-21 Recvd Wt kg 0.02	ME-ICP41 Ag ppm 0.2	ME-ICP41 Al % 0.01	ME-ICP41 As ppm 2	ME-ICP41 B ppm 10	ME-ICP41 Ba ppm 10	ME-ICP41 Be ppm 0.5	ME-ICP41 Bi ppm 2	ME-ICP41 Ca % 0.01	ME-ICP41 Cd ppm 0.5	ME-ICP41 Co ppm 1	ME-ICP41 Cr ppm 1	ME-ICP41 Cu ppm 1	ME-ICP41 Fe % 0.01	ME-ICP41 Ga ppm 10
L643300E 6977550		0.18	0.2	0.59	5	<10	170	<0.5	<2	0.26	0.8	3	6	14	1.03	<10
L643300E 6977575		0.20	<0.2	0.22	<2	<10	30	<0.5	<2	0.02	<0.5	1	5	6	0.88	<10
L643300E 6977600		0.14	0.2	0.39	<2	<10	130	<0.5	<2	0.35	<0.5	1	4	22	0.42	<10
L643300E 6977625		0.12	<0.2	0.23	<2	<10	20	<0.5	<2	0.03	<0.5	1	1	3	0.36	<10
L643300E 6977650		0.26	<0.2	0.39	<2	<10	30	<0.5	<2	0.07	<0.5	1	2	3	0.41	<10
L643300E 6977675		0.26	<0.2	0.30	<2	<10	30	<0.5	<2	0.04	<0.5	1	1	2	0.33	<10
L643300E 6977700		0.26	<0.2	0.30	3	<10	150	<0.5	<2	0.23	<0.5	3	5	4	0.87	<10
L643300E 6977725		0.22	<0.2	0.55	<2	<10	80	<0.5	<2	0.29	<0.5	2	3	13	0.55	<10
L643300E 6977750		0.16	<0.2	0.56	2	<10	170	<0.5	<2	0.90	<0.5	4	6	14	0.94	<10
L643300E 6977775		0.22	0.2	0.80	9	<10	220	0.5	<2	1.31	<0.5	11	15	18	2.57	<10
L643300E 6977800		0.16	<0.2	0.74	4	<10	150	1.0	<2	0.58	<0.5	8	21	11	3.15	<10

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To: NORANDA MINING AND EXPLORATION INC.
874 TUNGSTEN ST.
THUNDER BAY ON P7B 6J3

Date : 26-Aug-2002
Account: BUF

Project : 2501

CERTIFICATE OF ANALYSIS VA02002679

Sample Description	Method / Analyte / Units / LOR	ME-ICP41 Hg ppm 1	ME-ICP41 K % 0.01	ME-ICP41 La ppm 10	ME-ICP41 Mg % 0.01	ME-ICP41 Mn ppm 5	ME-ICP41 Mo ppm 1	ME-ICP41 Na % 0.01	ME-ICP41 Ni ppm 1	ME-ICP41 P ppm 10	ME-ICP41 Pb ppm 2	ME-ICP41 S % 0.01	ME-ICP41 Sb ppm 2	ME-ICP41 Sc ppm 1	ME-ICP41 Sr ppm 1	ME-ICP41 Ti % 0.01
L641200E 6978100		<1	0.07	10	0.12	564	1	0.02	11	350	19	0.02	<2	1	10	0.01
L641200E 6978125		<1	0.06	<10	0.08	682	<1	0.02	8	490	12	0.03	<2	1	51	0.01
L641200E 6978150		1	0.09	20	0.25	692	1	0.01	29	350	31	0.01	2	2	16	0.01
L641200E 6978175		<1	0.05	<10	0.09	506	1	0.02	6	480	11	0.03	<2	1	15	0.01
L641200E 6978200		<1	0.10	20	0.12	464	1	0.01	10	400	19	0.02	<2	1	7	0.01
L641200E 6978225		1	0.10	20	0.17	695	1	0.02	13	440	33	0.02	<2	1	21	0.01
L641200E 6978250		<1	0.11	10	0.13	1275	1	0.01	14	430	26	0.02	3	1	18	0.01
L641200E 6978275		<1	0.05	10	0.05	86	1	0.02	5	220	7	0.01	<2	1	5	0.02
L641200E 6978300		<1	0.05	10	0.17	840	1	0.01	11	480	20	0.02	<2	2	43	0.01
L641200E 6978325		<1	0.04	10	0.04	108	<1	0.01	6	190	13	0.01	<2	1	37	0.01
L641200E 6978350		<1	0.07	20	0.31	212	1	0.01	18	720	28	0.05	<2	2	50	0.01
L641300E 6978100		<1	0.06	10	0.24	864	1	0.01	16	280	21	0.01	<2	2	13	0.01
L641300E 6978125		<1	0.06	10	0.12	778	1	0.02	12	370	17	0.01	<2	2	14	0.01
L641300E 6978150		<1	0.08	10	0.24	667	1	0.01	15	540	25	0.02	<2	2	12	0.01
L641300E 6978175		<1	0.11	10	0.11	486	1	0.01	9	510	20	0.02	<2	<1	18	0.01
L641300E 6978200		<1	0.10	10	0.20	225	<1	0.02	11	320	13	0.01	<2	1	13	0.01
L641300E 6978225		<1	0.08	10	0.19	272	1	0.01	15	300	20	0.01	<2	1	13	0.01
L641300E 6978250		<1	0.09	20	0.21	390	1	0.01	15	520	26	0.02	<2	2	16	0.01
L641300E 6978275		<1	0.09	10	0.11	97	1	0.01	6	320	14	0.03	<2	1	11	0.01
L641300E 6978300		1	0.02	<10	0.01	11	<1	0.03	1	160	<2	0.01	<2	<1	8	0.01
L641300E 6978325		<1	0.10	20	0.29	288	<1	0.02	11	290	20	0.02	<2	2	23	0.02
L641300E 6978350		<1	0.07	20	0.32	328	1	0.01	14	270	18	0.01	<2	2	24	0.01
L641400E 6978100		<1	0.10	20	0.14	196	1	0.01	12	290	96	0.01	<2	1	14	0.01
L641400E 6978125		1	0.10	20	0.19	426	1	0.02	13	260	97	0.02	<2	1	21	0.01
L641400E 6978150		<1	0.18	20	0.26	517	1	0.01	15	370	31	0.01	<2	2	14	0.01
L641400E 6978175		<1	0.02	<10	0.02	40	<1	0.03	1	280	7	0.01	<2	<1	9	0.02
L641400E 6978200		<1	0.06	10	0.29	635	<1	0.01	22	290	22	0.02	<2	3	21	0.01
L641400E 6978225		<1	0.07	10	0.17	1835	<1	0.01	15	400	20	0.02	<2	2	25	0.01
L641400E 6978250		<1	0.06	20	0.36	1335	1	0.01	27	460	43	0.02	<2	2	7	0.01
L641400E 6978275		<1	0.05	<10	0.13	928	<1	0.02	19	770	155	0.07	<2	1	78	0.02
L641400E 6978300		<1	0.07	20	0.14	370	1	0.01	14	250	38	0.02	<2	1	31	0.01
L641400E 6978325		<1	0.07	10	0.07	187	1	0.01	7	280	14	0.02	2	1	7	0.01
L641400E 6978350		<1	0.08	20	0.07	119	2	0.01	9	300	18	0.02	<2	1	8	0.02
L641500E 6978100		<1	0.10	20	0.22	302	1	0.02	13	310	45	0.02	<2	2	31	0.01
L641500E 6978125		<1	0.07	10	0.17	350	1	0.02	12	440	185	0.03	<2	1	26	0.01
L641500E 6978150		<1	0.08	10	0.20	342	1	0.01	15	290	605	0.01	<2	2	16	0.01
L641500E 6978175		<1	0.08	20	0.24	250	2	0.01	19	580	5420	0.03	8	2	30	0.01
L641500E 6978200		<1	0.14	20	0.06	944	1	0.01	6	590	97	0.02	<2	1	9	0.01
L641500E 6978225		<1	0.12	20	0.14	599	1	0.02	11	300	23	0.01	<2	1	13	0.01
L641500E 6978250		<1	0.05	10	0.10	905	1	0.03	15	480	50	0.02	<2	1	29	0.01

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874 TUNGSTEN ST.
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CERTIFICATE OF ANALYSIS VA02002679

Sample Description	Method Analyte Units LOR	ME-ICP41 Hg ppm 1	ME-ICP41 K % 0.01	ME-ICP41 La ppm 10	ME-ICP41 Mg % 0.01	ME-ICP41 Mn ppm 5	ME-ICP41 Mo ppm 1	ME-ICP41 Na % 0.01	ME-ICP41 Ni ppm 1	ME-ICP41 P ppm 10	ME-ICP41 Pb ppm 2	ME-ICP41 S % 0.01	ME-ICP41 Sb ppm 2	ME-ICP41 Sc ppm 1	ME-ICP41 Sr ppm 1	ME-ICP41 Ti % 0.01
L641500E 6978275		<1	0.09	20	0.37	1140	1	0.01	21	550	15	0.02	<2	2	42	0.01
L641500E 6978300		<1	0.08	10	0.44	387	1	0.01	18	660	30	0.04	2	3	42	0.03
L641500E 6978325		<1	0.08	10	0.19	793	1	0.02	12	480	18	0.04	<2	1	44	0.02
L641500E 6978350		<1	0.10	10	0.44	854	1	0.01	27	590	53	0.04	<2	3	44	0.03
L641600E 6978100		<1	0.06	<10	0.09	473	<1	0.02	12	480	581	0.04	<2	1	40	0.01
L641600E 6978125		<1	0.07	10	0.04	80	<1	0.02	4	250	203	0.03	<2	1	9	<0.01
L641600E 6978150		2	0.08	20	0.11	1545	<1	0.02	18	760	2860	0.04	<2	3	13	0.01
L641600E 6978175		<1	0.05	10	0.18	165	1	0.01	16	290	849	0.01	<2	2	8	<0.01
L641600E 6978200		3	0.06	10	0.08	2080	<1	0.02	9	980	>10000	0.06	4	3	16	0.01
L641600E 6978225		<1	0.09	20	0.23	4310	1	0.01	21	450	190	0.02	<2	2	11	0.01
L641600E 6978250		<1	0.07	10	0.18	610	1	0.02	13	460	52	0.02	<2	3	8	0.01
L641600E 6978275		<1	0.08	10	0.26	1610	1	0.01	19	420	55	0.02	<2	2	13	0.01
L641600E 6978300		<1	0.05	10	0.06	96	1	0.01	4	180	11	0.01	<2	1	11	0.02
L641600E 6978325		<1	0.07	10	0.18	518	1	0.02	11	450	21	0.03	<2	1	43	0.02
L641600E 6978350		<1	0.03	10	0.02	20	<1	0.02	2	140	5	0.01	<2	<1	4	0.02
L641700E 6978100		<1	0.07	10	0.14	362	1	0.02	15	710	539	0.03	<2	1	14	0.01
L641700E 6978125		1	0.08	20	0.19	601	1	0.02	19	500	523	0.03	<2	2	18	0.01
L641700E 6978150		<1	0.09	30	0.25	630	<1	0.01	22	530	727	0.02	2	2	14	<0.01
L641700E 6978175		<1	0.13	40	0.15	127	<1	0.01	11	220	534	0.01	<2	1	9	<0.01
L641700E 6978200		<1	0.10	50	0.05	98	1	0.01	13	210	182	0.02	<2	1	11	<0.01
L641700E 6978225		<1	0.11	30	0.42	2070	1	0.01	25	470	75	0.02	<2	4	27	0.01
L641700E 6978250		<1	0.07	10	0.10	386	<1	0.02	7	430	13	0.01	<2	1	9	0.01
L641700E 6978275		<1	0.06	10	0.07	186	1	0.02	6	380	8	0.01	<2	1	5	0.01
L641700E 6978300		<1	0.04	10	0.04	102	1	0.02	4	250	6	0.01	<2	1	4	0.02
L641700E 6978325		1	0.06	10	0.14	135	1	0.01	8	220	12	0.01	<2	1	11	0.02
L641700E 6978350		<1	0.06	10	0.17	198	1	0.02	9	180	25	0.01	<2	1	28	0.02
L641800E 6978100		<1	0.06	10	0.10	770	1	0.02	13	700	50	0.04	<2	1	48	0.01
L641800E 6978125		<1	0.11	20	0.15	497	2	0.01	18	610	36	0.01	<2	2	23	0.01
L641800E 6978150		<1	0.08	10	0.15	427	2	0.01	16	400	183	0.01	<2	2	13	0.01
L641800E 6978175		<1	0.06	10	0.11	186	<1	0.02	12	310	7690	0.02	2	2	18	0.01
L641800E 6978200		<1	0.07	40	0.12	150	1	0.01	13	320	619	0.01	5	2	8	<0.01
L641800E 6978225		<1	0.08	10	0.22	330	1	0.01	16	490	60	0.02	<2	2	8	0.01
L641800E 6978250		<1	0.10	10	0.14	244	1	0.01	10	600	20	0.03	<2	1	7	0.01
L641800E 6978275		<1	0.06	10	0.14	752	1	0.02	9	220	13	0.01	<2	1	17	0.01
L641800E 6978300		2	0.08	20	0.25	310	1	0.01	13	140	20	0.01	<2	1	18	0.01
L641800E 6978325		<1	0.10	10	0.23	1095	1	0.01	26	440	70	0.03	<2	3	50	0.02
L641800E 6978350		<1	0.12	30	0.17	258	1	0.01	13	240	17	0.01	<2	2	8	0.02
L641900E 6978100		<1	0.05	10	0.29	493	2	0.01	25	760	80	0.02	<2	2	27	0.01
L641900E 6978125		<1	0.04	<10	0.09	585	1	0.03	21	580	587	0.04	<2	1	79	0.01
L641900E 6978150		<1	0.07	10	0.28	926	2	0.01	29	730	586	0.02	2	3	51	0.01

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To: NORANDA MINING AND EXPLORATION INC.
874 TUNGSTEN ST.
THUNDER BAY ON P7B 6J3

Date : 26-Aug-2002
Account: BUF

Project : 2501

CERTIFICATE OF ANALYSIS VA02002679

Sample Description	Method Analyte Units LOR	ME-ICP41 Hg ppm 1	ME-ICP41 K % 0.01	ME-ICP41 La ppm 10	ME-ICP41 Mg % 0.01	ME-ICP41 Mn ppm 5	ME-ICP41 Mo ppm 1	ME-ICP41 Na % 0.01	ME-ICP41 Ni ppm 1	ME-ICP41 P ppm 10	ME-ICP41 Pb ppm 2	ME-ICP41 S % 0.01	ME-ICP41 Sb ppm 2	ME-ICP41 Sc ppm 1	ME-ICP41 Sr ppm 1	ME-ICP41 Ti % 0.01
L641900E 6978175		1	0.06	<10	0.08	131	<1	0.02	8	350	229	0.02	<2	1	12	0.01
L641900E 6978200		<1	0.06	10	0.09	482	1	0.02	12	530	314	0.05	5	2	79	0.01
L641900E 6978225		2	0.08	10	0.18	597	1	0.02	21	440	129	0.04	<2	2	51	0.01
L641900E 6978250		<1	0.07	10	0.23	560	1	0.01	18	290	51	0.01	<2	2	25	0.01
L641900E 6978275		<1	0.07	20	0.02	106	1	0.01	9	210	41	0.01	<2	1	8	0.01
L641900E 6978300		<1	0.06	10	0.07	270	1	0.02	9	210	37	0.01	5	1	24	0.01
L641900E 6978325		<1	0.06	10	0.08	444	1	0.01	12	280	40	0.01	<2	1	25	0.02
L641900E 6978350		<1	0.05	10	0.09	221	<1	0.02	12	440	38	0.02	4	1	29	0.01
L641200E 6977600		<1	0.06	20	0.12	287	1	0.02	13	500	14	0.02	<2	1	18	0.01
L641200E 6977625		<1	0.04	10	0.04	420	1	0.02	10	360	5	0.01	<2	1	14	0.01
L641200E 6977650		<1	0.03	10	0.02	65	1	0.02	5	240	5	0.01	<2	<1	4	0.01
L641200E 6977675		<1	0.07	20	0.17	646	1	0.01	38	520	29	0.01	<2	3	6	<0.01
L641200E 6977700		<1	0.05	20	0.07	295	1	0.01	18	340	16	0.01	<2	2	7	0.01
L641200E 6977725		<1	0.05	20	0.06	597	1	0.01	16	450	19	0.02	<2	2	7	0.01
L641200E 6977750		<1	0.04	10	0.04	489	1	0.02	7	500	7	0.02	<2	<1	10	0.01
L641200E 6977775		<1	0.06	20	0.06	244	1	0.01	14	510	18	0.02	<2	2	6	0.01
L641200E 6977800		1	0.07	10	0.20	993	1	0.01	23	750	20	0.04	<2	2	52	0.01
L641200E 6977825		<1	0.05	10	0.06	363	1	0.02	10	430	8	0.02	<2	1	31	0.01
L641200E 6977850		<1	0.08	20	0.19	528	3	0.01	38	820	29	0.02	3	5	27	<0.01
L641200E 6977875		<1	0.07	20	0.17	1270	3	0.01	35	920	38	0.03	<2	4	12	<0.01
L641200E 6977900		<1	0.08	20	0.24	801	3	0.01	38	760	32	0.02	<2	5	39	<0.01
L641300E 6977600		<1	0.06	10	0.37	535	2	0.01	29	1430	14	0.03	<2	3	121	0.01
L641300E 6977625		<1	0.05	20	0.15	497	1	0.01	11	670	24	0.03	<2	1	7	0.01
L641300E 6977650		<1	0.05	20	0.05	294	3	0.01	7	470	11	0.01	<2	1	7	0.01
L641300E 6977675		<1	0.07	10	0.33	1555	1	0.01	23	1450	26	0.06	<2	3	79	0.01
L641300E 6977700		<1	0.06	10	0.24	163	2	0.01	12	310	15	0.02	<2	1	15	0.02
L641300E 6977725		<1	0.04	10	0.03	94	1	0.02	4	200	6	0.01	<2	1	16	0.02
L641300E 6977750		<1	0.04	10	0.07	156	<1	0.02	8	240	10	0.01	<2	1	9	0.01
L641300E 6977775		1	0.05	<10	0.07	239	1	0.02	8	640	7	0.04	<2	1	44	0.01
L641300E 6977800		<1	0.04	10	0.06	438	1	0.02	12	590	12	0.03	<2	1	25	0.01
L641300E 6977825		<1	0.04	20	0.03	88	1	0.01	8	410	8	0.01	<2	1	6	<0.01
L641300E 6977850		<1	0.03	10	0.06	164	1	0.02	5	420	7	0.01	<2	<1	15	0.01
L641300E 6977875		1	0.05	10	0.17	635	2	0.01	16	620	22	0.01	<2	1	11	0.01
L641300E 6977900		<1	0.04	10	0.19	734	3	0.01	19	800	26	0.01	<2	2	5	0.01
L641400E 6977600		<1	0.06	20	0.33	705	2	0.01	27	490	31	0.01	<2	2	24	0.01
L641400E 6977625		<1	0.06	20	0.21	891	2	0.02	15	730	17	0.02	<2	1	25	0.01
L641400E 6977650		<1	0.06	20	0.09	437	3	0.01	20	590	19	0.01	<2	1	16	0.01
L641400E 6977675		<1	0.05	10	0.05	279	1	0.03	7	560	10	0.01	<2	1	27	0.01
L641400E 6977700		<1	0.06	10	0.07	324	1	0.02	10	310	9	0.01	<2	1	23	0.01
L641400E 6977725		<1	0.04	<10	0.05	125	1	0.02	6	360	9	0.01	<2	<1	12	0.01

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To: NORANDA MINING AND EXPLORATION INC.
874 TUNGSTEN ST.
THUNDER BAY ON P7B 6J3

Date : 26-Aug-2002
Account: BUF

Project : 2501

CERTIFICATE OF ANALYSIS VA02002679

Sample Description	Method Analyte Units LOR	ME-ICP41 Hg ppm 1	ME-ICP41 K % 0.01	ME-ICP41 La ppm 10	ME-ICP41 Mg % 0.01	ME-ICP41 Mn ppm 5	ME-ICP41 Mo ppm 1	ME-ICP41 Na % 0.01	ME-ICP41 Ni ppm 1	ME-ICP41 P ppm 10	ME-ICP41 Pb ppm 2	ME-ICP41 S % 0.01	ME-ICP41 Sb ppm 2	ME-ICP41 Sc ppm 1	ME-ICP41 Sr ppm 1	ME-ICP41 Ti % 0.01
L641400E 6977750		<1	0.07	20	0.14	377	2	0.01	15	580	16	0.01	<2	1	17	0.01
L641400E 6977775		1	0.03	10	0.04	116	1	0.02	7	430	9	0.02	<2	1	5	0.01
L641400E 6977800		<1	0.06	10	0.16	1195	5	0.01	31	820	39	0.04	3	2	69	0.01
L641400E 6977825		<1	0.04	20	0.16	524	3	0.01	19	500	33	0.01	3	2	8	0.01
L641400E 6977850		<1	0.06	20	0.22	704	5	0.01	24	670	35	0.02	<2	1	22	0.01
L641400E 6977875		<1	0.05	10	0.22	434	2	0.01	23	480	26	0.01	<2	2	13	0.01
L641400E 6977900		1	0.07	10	0.20	496	1	0.02	22	890	24	0.03	<2	3	31	0.01
L641900E 6977600		<1	0.04	10	0.08	438	2	0.01	17	470	21	<0.01	2	1	7	0.01
L641900E 6977625		<1	0.05	10	0.18	690	2	0.02	25	650	52	0.01	2	2	15	0.01
L641900E 6977650		<1	0.06	10	0.12	589	2	0.01	18	490	38	0.01	<2	2	30	0.01
L641900E 6977675		<1	0.09	30	0.16	824	1	0.01	36	570	56	0.04	<2	4	37	0.01
L641900E 6977700		<1	0.07	20	0.08	296	1	0.02	15	550	40	0.04	3	2	42	0.01
L641900E 6977725		<1	0.08	20	0.11	570	1	0.02	23	540	37	0.04	2	2	37	0.01
L641900E 6977750		1	0.07	10	0.15	726	1	0.02	22	490	21	0.02	<2	3	35	0.01
L641900E 6977775		<1	0.07	10	0.22	459	1	0.01	28	540	22	0.01	<2	4	32	0.01
L641900E 6977800		<1	0.07	20	0.30	394	2	0.01	32	640	26	<0.01	2	4	25	0.01
L641900E 6977825		<1	0.08	10	0.17	584	1	0.01	22	620	21	0.03	<2	2	39	0.01
L641900E 6977850		<1	0.07	10	0.18	478	1	0.02	23	500	23	0.02	<2	3	31	0.01
L641900E 6977875		<1	0.08	20	0.24	680	1	0.01	25	510	29	0.01	<2	3	31	0.01
L641900E 6977900		<1	0.07	10	0.17	1040	2	0.02	22	680	25	0.03	<2	2	41	0.01
L641900E6977925		1	0.05	20	0.17	923	3	0.01	19	590	69	0.01	<2	2	9	0.01
L641900E6977950		1	0.09	20	0.26	407	2	0.01	30	640	29	0.03	<2	4	54	0.01
L641900E6977975		<1	0.06	10	0.19	524	1	0.02	18	630	23	0.02	<2	2	32	0.01
L641900E6978000		1	0.05	20	0.03	116	2	0.01	8	350	22	<0.01	<2	1	6	0.01
L641900E6978025		<1	0.05	20	0.08	510	1	0.01	13	500	34	0.02	<2	1	6	0.01
L641900E6978050		<1	0.05	20	0.10	244	2	0.01	12	270	27	0.01	<2	1	4	0.01
L641900E6978075		<1	0.04	10	0.09	253	2	0.01	9	440	26	0.02	<2	1	5	0.03
L641900E6978100		<1	0.05	20	0.09	806	1	0.01	14	720	59	0.03	<2	1	8	0.01
L642000E 6977600		<1	0.06	20	0.09	1025	2	0.01	22	490	19	0.02	2	2	21	0.01
L642000E 6977625		<1	0.05	10	0.18	512	2	0.01	18	650	15	0.04	<2	1	46	0.01
L642000E 6977650		<1	0.06	10	0.20	400	2	0.01	27	650	24	0.04	<2	2	42	0.01
L642000E 6977675		<1	0.06	10	0.15	449	2	0.01	25	480	16	0.02	2	2	26	0.01
L642000E 6977700		<1	0.08	20	0.33	441	3	0.01	34	460	18	0.01	<2	4	21	0.01
L642000E 6977725		<1	0.08	10	0.21	421	1	0.02	25	630	15	0.03	<2	3	27	0.01
L642000E 6977750		<1	0.08	20	0.30	356	2	0.01	31	480	17	0.01	<2	3	22	0.01
L642000E 6977775		<1	0.09	20	0.33	597	2	0.01	33	590	20	0.03	<2	3	32	0.01
L642000E 6977800		<1	0.06	10	0.15	251	1	0.02	14	360	12	0.02	<2	1	36	0.01
L642000E 6977825		<1	0.09	20	0.40	526	2	0.01	32	630	23	0.03	<2	3	42	0.01
L642000E 6977850		<1	0.10	20	0.33	560	3	0.01	32	680	25	0.03	<2	3	52	0.01
L642000E 6977875		<1	0.10	20	0.36	485	3	0.01	33	640	27	0.02	2	4	37	0.01

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CERTIFICATE OF ANALYSIS VA02002679

Sample Description	Method	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41
	Analyte	Hg	K	La	Mg	Mn	Mo	Na	Ni	P	Pb	S	Sb	Sc	Sr	Ti
	Units	ppm	%	ppm	%	ppm	ppm	%	ppm	ppm	ppm	%	ppm	ppm	ppm	%
	LOR	1	0.01	10	0.01	5	1	0.01	1	10	2	0.01	2	1	1	0.01
L642000E 6977900		<1	0.07	10	0.23	653	2	0.01	21	680	31	0.04	<2	2	55	0.01
L642000E 6977925		<1	0.09	20	0.36	566	3	0.01	35	720	27	0.02	<2	3	36	0.01
L642000E 6977950		<1	0.07	30	0.07	222	2	0.01	10	400	15	0.01	<2	1	22	0.01
L642000E 6977975		<1	0.05	20	0.03	133	1	0.01	8	200	14	0.01	<2	1	22	0.01
L642000E 6978000		<1	0.05	20	0.03	157	2	0.01	9	390	75	0.01	<2	1	12	0.01
L642000E 6978025		<1	0.04	10	0.04	174	1	0.02	6	360	31	0.02	<2	<1	28	0.01
L642000E 6978050		<1	0.04	10	0.04	89	1	0.01	6	240	20	0.01	<2	1	3	0.01
L642000E 6978075		<1	0.05	20	0.09	480	2	0.01	14	290	26	0.01	<2	1	5	0.01
L642000E 6978100		<1	0.05	20	0.04	276	2	0.01	11	290	34	0.01	<2	1	3	0.01
L642100E 6977600		<1	0.06	10	0.14	551	1	0.02	29	820	20	0.04	<2	1	42	0.01
L642100E 6977625		<1	0.06	10	0.10	503	3	0.02	26	920	16	0.06	3	1	57	0.01
L642100E 6977650		<1	0.07	10	0.37	499	3	0.01	29	470	17	0.01	<2	3	25	0.01
L642100E 6977675		<1	0.06	10	0.09	446	2	0.01	12	580	16	0.02	<2	1	7	0.02
L642100E 6977700		<1	0.05	20	0.34	387	3	0.01	25	1230	17	0.04	<2	2	17	0.01
L642100E 6977725		<1	0.03	10	0.05	368	1	0.03	10	460	29	0.03	<2	1	64	0.01
L642100E 6977750		<1	0.07	20	0.31	802	2	0.01	27	890	17	0.03	<2	3	69	0.01
L642100E 6977775		<1	0.08	20	0.40	1205	2	0.01	29	870	20	0.04	<2	3	78	0.01
L642100E 6977800		<1	0.09	20	0.33	616	3	0.01	30	620	25	0.03	<2	4	66	0.01
L642100E 6977825		<1	0.07	10	0.33	803	3	0.01	32	330	31	0.02	<2	2	39	<0.01
L642100E 6977850		8	0.07	20	0.21	1005	2	0.01	29	600	25	0.04	<2	3	63	0.01
L642100E 6977875		<1	0.03	20	0.05	163	2	0.01	10	180	19	0.01	<2	1	4	0.01
L642100E 6977900		<1	0.04	20	0.29	413	3	0.01	25	320	38	0.01	<2	2	4	<0.01
L642100E 6977925		<1	0.03	<10	0.05	81	1	0.02	7	360	494	0.02	<2	1	13	0.01
L642100E 6977950		<1	0.04	20	0.04	154	2	0.01	12	300	54	0.01	<2	1	11	0.01
L642100E 6977975		<1	0.05	20	0.08	661	2	0.01	18	600	1240	0.03	2	2	7	<0.01
L642100E 6978000		<1	0.04	20	0.12	318	2	0.01	16	250	38	0.01	<2	2	4	<0.01
L642100E 6978025		<1	0.03	20	0.03	490	4	0.01	15	260	75	0.01	<2	1	3	0.01
L642100E 6978050		<1	0.06	20	0.13	1055	3	0.01	23	300	118	0.01	<2	2	9	<0.01
L642100E 6978075		<1	0.05	20	0.03	238	2	0.01	9	240	20	0.01	<2	1	4	0.01
L642100E 6978100		<1	0.02	<10	0.01	33	<1	0.02	1	210	8	0.01	<2	<1	4	0.01
L643300E 6977300		<1	0.09	20	0.09	337	1	0.01	13	300	131	0.02	<2	2	15	0.01
L643300E 6977325		<1	0.10	20	0.03	256	1	0.01	14	230	28	0.01	<2	1	10	0.01
L643300E 6977350		<1	0.09	20	0.06	135	1	0.01	17	280	13	0.01	<2	2	8	0.01
L643300E 6977375		<1	0.07	20	0.10	347	1	0.01	7	170	22	0.01	<2	1	16	0.01
L643300E 6977400		<1	0.04	10	0.05	243	1	0.01	12	280	416	0.02	<2	1	28	0.01
L643300E 6977425		<1	0.05	10	0.02	170	<1	0.01	7	150	61	0.01	<2	1	8	0.01
L643300E 6977450		<1	0.08	<10	0.17	355	1	0.01	22	600	79	0.04	<2	2	31	0.02
L643300E 6977475		<1	0.04	10	0.03	36	1	0.02	5	240	18	0.03	<2	1	40	0.02
L643300E 6977500		<1	0.05	10	0.04	693	1	0.01	10	190	81	0.01	<2	1	14	0.01
L643300E 6977525		<1	0.03	<10	0.04	103	<1	0.03	4	300	23	0.02	<2	<1	18	0.01

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Aurora Laboratory Services Ltd.
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Phone: 604 984 0221 Fax: 604 984 0218

To: NORANDA MINING AND EXPLORATION INC.
874 TUNGSTEN ST.
THUNDER BAY ON P7B 6J3

Date : 26-Aug-2002
Account: BUF

Project : 2501

CERTIFICATE OF ANALYSIS VA02002679

Sample Description	Method Analyte Units LOR	ME-ICP41 Hg ppm 1	ME-ICP41 K % 0.01	ME-ICP41 La ppm 10	ME-ICP41 Mg % 0.01	ME-ICP41 Mn ppm 5	ME-ICP41 Mo ppm 1	ME-ICP41 Na % 0.01	ME-ICP41 Ni ppm 1	ME-ICP41 P ppm 10	ME-ICP41 Pb ppm 2	ME-ICP41 S % 0.01	ME-ICP41 Sb ppm 2	ME-ICP41 Sc ppm 1	ME-ICP41 Sr ppm 1	ME-ICP41 Ti % 0.01
L643300E 6977550		<1	0.05	<10	0.07	491	1	0.03	9	280	21	0.01	<2	1	27	0.01
L643300E 6977575		<1	0.03	<10	0.01	27	<1	0.02	2	190	4	0.01	<2	<1	5	0.01
L643300E 6977600		<1	0.03	<10	0.03	112	<1	0.02	5	690	4	0.04	<2	1	26	0.01
L643300E 6977625		<1	0.02	<10	0.02	15	<1	0.03	1	50	2	0.01	<2	<1	7	0.02
L643300E 6977650		<1	0.02	<10	0.02	28	<1	0.02	1	260	2	0.01	<2	<1	8	0.02
L643300E 6977675		<1	0.02	<10	0.01	17	<1	0.03	1	220	<2	0.01	<2	<1	7	0.02
L643300E 6977700		<1	0.04	30	0.02	174	<1	0.01	4	130	4	<0.01	<2	1	16	<0.01
L643300E 6977725		<1	0.02	<10	0.02	449	<1	0.03	3	320	4	0.01	<2	<1	17	0.01
L643300E 6977750		<1	0.03	10	0.08	507	1	0.03	8	650	6	0.04	<2	1	44	0.02
L643300E 6977775		<1	0.03	10	0.21	724	1	0.01	18	860	18	0.06	<2	2	64	0.01
L643300E 6977800		<1	0.08	10	0.24	128	2	0.01	21	680	13	0.02	<2	2	35	0.03

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CERTIFICATE OF ANALYSIS VA02002679

Sample Description	Method / Analyte / Units / LOR	ME-ICP41 Tl ppm 10	ME-ICP41 U ppm 10	ME-ICP41 V ppm 1	ME-ICP41 W ppm 10	ME-ICP41 Zn ppm 2	Pb-AA46 Pb % 0.01	Zn-AA46 Zn % 0.01
L641200E 6978100		<10	<10	15	<10	65		
L641200E 6978125		<10	<10	13	<10	42		
L641200E 6978150		<10	<10	24	<10	91		
L641200E 6978175		<10	<10	16	<10	36		
L641200E 6978200		<10	<10	36	<10	87		
L641200E 6978225		<10	<10	31	<10	199		
L641200E 6978250		<10	<10	30	<10	146		
L641200E 6978275		<10	<10	20	<10	54		
L641200E 6978300		<10	<10	35	<10	102		
L641200E 6978325		<10	<10	26	<10	44		
L641200E 6978350		<10	<10	24	<10	85		
L641300E 6978100		<10	<10	25	<10	58		
L641300E 6978125		<10	<10	26	<10	59		
L641300E 6978150		<10	<10	28	<10	87		
L641300E 6978175		<10	<10	30	<10	103		
L641300E 6978200		<10	<10	28	<10	68		
L641300E 6978225		<10	<10	27	<10	84		
L641300E 6978250		<10	<10	43	<10	149		
L641300E 6978275		<10	<10	33	<10	51		
L641300E 6978300		<10	<10	6	<10	18		
L641300E 6978325		<10	<10	29	<10	111		
L641300E 6978350		<10	<10	25	<10	97		
L641400E 6978100		<10	<10	30	<10	286		
L641400E 6978125		<10	<10	24	<10	205		
L641400E 6978150		<10	<10	33	<10	121		
L641400E 6978175		<10	<10	9	<10	18		
L641400E 6978200		<10	<10	20	<10	91		
L641400E 6978225		<10	<10	25	<10	99		
L641400E 6978250		<10	<10	26	<10	104		
L641400E 6978275		<10	<10	16	<10	97		
L641400E 6978300		<10	<10	21	<10	106		
L641400E 6978325		<10	<10	37	<10	61		
L641400E 6978350		<10	<10	48	<10	71		
L641500E 6978100		<10	<10	26	<10	226		
L641500E 6978125		<10	<10	21	<10	417		
L641500E 6978150		<10	<10	29	<10	548		
L641500E 6978175		<10	<10	31	<10	1565		
L641500E 6978200		<10	<10	18	<10	174		
L641500E 6978225		<10	<10	22	<10	87		
L641500E 6978250		<10	<10	21	<10	83		

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CERTIFICATE OF ANALYSIS VA02002679

Sample Description	Method Analyte Units LOR	ME-ICP41 Tl ppm 10	ME-ICP41 U ppm 10	ME-ICP41 V ppm 1	ME-ICP41 W ppm 10	ME-ICP41 Zn ppm 2	Pb-AA46 Pb % 0.01	Zn-AA46 Zn % 0.01
L641500E 6978275		<10	<10	25	<10	132		
L641500E 6978300		<10	<10	34	<10	166		
L641500E 6978325		<10	<10	24	<10	351		
L641500E 6978350		<10	<10	31	<10	173		
L641600E 6978100		<10	<10	17	<10	4320		
L641600E 6978125		<10	<10	16	<10	331		
L641600E 6978150		<10	<10	15	<10	>10000		1.16
L641600E 6978175		<10	<10	27	<10	946		
L641600E 6978200		<10	<10	13	<10	8440	1.18	
L641600E 6978225		<10	<10	25	<10	583		
L641600E 6978250		<10	<10	31	<10	178		
L641600E 6978275		<10	<10	23	<10	170		
L641600E 6978300		<10	<10	32	<10	64		
L641600E 6978325		<10	<10	21	<10	103		
L641600E 6978350		<10	<10	14	<10	17		
L641700E 6978100		<10	<10	15	<10	1845		
L641700E 6978125		<10	<10	15	<10	1325		
L641700E 6978150		<10	<10	15	<10	1680		
L641700E 6978175		<10	<10	14	<10	700		
L641700E 6978200		<10	<10	12	<10	532		
L641700E 6978225		<10	<10	25	<10	1380		
L641700E 6978250		<10	<10	34	<10	133		
L641700E 6978275		<10	<10	26	<10	47		
L641700E 6978300		<10	<10	31	<10	33		
L641700E 6978325		<10	<10	38	<10	68		
L641700E 6978350		<10	<10	27	<10	78		
L641800E 6978100		<10	<10	19	<10	801		
L641800E 6978125		<10	<10	30	<10	322		
L641800E 6978150		<10	<10	33	<10	384		
L641800E 6978175		<10	<10	18	<10	663		
L641800E 6978200		<10	<10	20	<10	622		
L641800E 6978225		<10	<10	31	<10	229		
L641800E 6978250		<10	<10	32	<10	87		
L641800E 6978275		<10	<10	24	<10	83		
L641800E 6978300		<10	<10	20	<10	80		
L641800E 6978325		<10	<10	22	<10	161		
L641800E 6978350		<10	<10	35	<10	89		
L641900E 6978100		<10	<10	27	<10	1025		
L641900E 6978125		<10	<10	11	<10	1765		
L641900E 6978150		<10	<10	20	<10	3030		

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874 TUNGSTEN ST.
THUNDER BAY ON P7B 6J3

Date : 26-Aug-2002
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Project : 2501

CERTIFICATE OF ANALYSIS VA02002679

Sample Description	Method / Analyte / Units / LOR	ME-ICP41 Tl ppm 10	ME-ICP41 U ppm 10	ME-ICP41 V ppm 1	ME-ICP41 W ppm 10	ME-ICP41 Zn ppm 2	Pb-AA46 Pb % 0.01	Zn-AA46 Zn % 0.01
L641900E 6978175		<10	<10	15	<10	686		
L641900E 6978200		<10	<10	12	<10	508		
L641900E 6978225		<10	<10	19	<10	807		
L641900E 6978250		<10	<10	25	<10	443		
L641900E 6978275		<10	<10	22	<10	162		
L641900E 6978300		<10	<10	20	<10	261		
L641900E 6978325		<10	<10	25	<10	157		
L641900E 6978350		<10	<10	17	<10	149		
L641200E 6977600		<10	<10	19	<10	79		
L641200E 6977625		<10	<10	18	<10	38		
L641200E 6977650		<10	<10	20	<10	28		
L641200E 6977675		<10	<10	24	<10	89		
L641200E 6977700		<10	<10	28	<10	63		
L641200E 6977725		<10	<10	29	<10	65		
L641200E 6977750		<10	<10	13	<10	38		
L641200E 6977775		<10	<10	22	<10	66		
L641200E 6977800		<10	<10	18	<10	115		
L641200E 6977825		<10	<10	26	<10	71		
L641200E 6977850		<10	<10	19	<10	162		
L641200E 6977875		<10	<10	19	<10	152		
L641200E 6977900		<10	<10	19	<10	137		
L641300E 6977600		<10	<10	58	<10	71		
L641300E 6977625		<10	<10	23	<10	83		
L641300E 6977650		<10	<10	51	<10	59		
L641300E 6977675		<10	<10	25	<10	82		
L641300E 6977700		<10	<10	41	<10	61		
L641300E 6977725		<10	<10	21	<10	40		
L641300E 6977750		<10	<10	14	<10	40		
L641300E 6977775		<10	<10	13	<10	52		
L641300E 6977800		<10	<10	16	<10	55		
L641300E 6977825		<10	<10	27	<10	58		
L641300E 6977850		<10	<10	22	<10	44		
L641300E 6977875		<10	<10	37	10	80		
L641300E 6977900		<10	<10	25	10	99		
L641400E 6977600		<10	<10	29	10	126		
L641400E 6977625		<10	<10	25	10	92		
L641400E 6977650		<10	<10	35	10	102		
L641400E 6977675		<10	<10	18	<10	45		
L641400E 6977700		<10	<10	14	<10	72		
L641400E 6977725		<10	<10	19	<10	46		

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Sample Description	Method Analyte Units LOR	ME-ICP41 Tl ppm 10	ME-ICP41 U ppm 10	ME-ICP41 V ppm 1	ME-ICP41 W ppm 10	ME-ICP41 Zn ppm 2	Pb-AA46 Pb % 0.01	Zn-AA46 Zn % 0.01
L641400E 6977750		<10	<10	33	<10	99		
L641400E 6977775		<10	<10	19	<10	46		
L641400E 6977800		<10	<10	35	10	212		
L641400E 6977825		<10	<10	31	<10	113		
L641400E 6977850		<10	<10	30	<10	116		
L641400E 6977875		<10	<10	24	<10	104		
L641400E 6977900		<10	<10	27	<10	118		
L641900E 6977600		<10	<10	31	<10	99		
L641900E 6977625		<10	<10	21	<10	137		
L641900E 6977650		<10	<10	32	<10	104		
L641900E 6977675		<10	<10	18	<10	172		
L641900E 6977700		<10	<10	15	<10	99		
L641900E 6977725		<10	<10	18	<10	109		
L641900E 6977750		<10	<10	17	<10	117		
L641900E 6977775		<10	<10	21	<10	150		
L641900E 6977800		<10	<10	23	<10	150		
L641900E 6977825		<10	<10	19	<10	128		
L641900E 6977850		<10	<10	21	<10	125		
L641900E 6977875		<10	<10	21	<10	155		
L641900E 6977900		<10	<10	18	<10	137		
L641900E6977925		<10	<10	30	<10	857		
L641900E6977950		<10	<10	24	<10	2890		
L641900E6977975		<10	<10	19	<10	352		
L641900E6978000		<10	<10	37	<10	193		
L641900E6978025		10	10	33	<10	296		
L641900E6978050		<10	<10	38	<10	182		
L641900E6978075		<10	<10	45	<10	139		
L641900E6978100		10	<10	23	<10	447		
L642000E 6977600		<10	<10	34	<10	116		
L642000E 6977625		<10	<10	23	<10	91		
L642000E 6977650		<10	<10	18	<10	139		
L642000E 6977675		<10	<10	16	<10	128		
L642000E 6977700		<10	<10	29	<10	118		
L642000E 6977725		<10	<10	20	<10	86		
L642000E 6977750		10	<10	24	<10	133		
L642000E 6977775		<10	10	22	<10	123		
L642000E 6977800		<10	<10	15	<10	79		
L642000E 6977825		10	10	26	<10	165		
L642000E 6977850		<10	10	21	<10	168		
L642000E 6977875		10	<10	23	<10	178		

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Sample Description	Method Analyte Units LOR	ME-ICP41 Tl ppm 10	ME-ICP41 U ppm 10	ME-ICP41 V ppm 1	ME-ICP41 W ppm 10	ME-ICP41 Zn ppm 2	Pb-AA46 Pb % 0.01	Zn-AA46 Zn % 0.01
L642000E 6977900		<10	10	21	<10	1385		
L642000E 6977925		<10	10	22	<10	247		
L642000E 6977950		10	10	33	<10	589		
L642000E 6977975		<10	<10	26	<10	255		
L642000E 6978000		<10	<10	36	<10	439		
L642000E 6978025		<10	<10	18	<10	1080		
L642000E 6978050		<10	<10	22	<10	142		
L642000E 6978075		10	10	52	<10	185		
L642000E 6978100		<10	10	41	<10	177		
L642100E 6977600		<10	<10	20	<10	124		
L642100E 6977625		<10	<10	22	<10	115		
L642100E 6977650		<10	10	32	<10	101		
L642100E 6977675		<10	<10	45	<10	85		
L642100E 6977700		<10	<10	37	<10	125		
L642100E 6977725		<10	<10	13	<10	63		
L642100E 6977750		<10	10	23	<10	124		
L642100E 6977775		<10	10	27	<10	201		
L642100E 6977800		<10	<10	24	<10	351		
L642100E 6977825		<10	<10	25	<10	554		
L642100E 6977850		<10	<10	23	<10	>10000		1.19
L642100E 6977875		<10	<10	37	<10	213		
L642100E 6977900		10	10	35	<10	242		
L642100E 6977925		<10	<10	14	<10	511		
L642100E 6977950		10	<10	35	<10	193		
L642100E 6977975		<10	10	29	<10	596		
L642100E 6978000		<10	<10	33	<10	170		
L642100E 6978025		<10	<10	52	<10	145		
L642100E 6978050		10	10	29	<10	1350		
L642100E 6978075		10	<10	38	<10	130		
L642100E 6978100		<10	<10	10	<10	23		
L643300E 6977300		<10	<10	13	<10	285		
L643300E 6977325		10	10	15	<10	250		
L643300E 6977350		10	<10	20	<10	239		
L643300E 6977375		<10	<10	16	<10	458		
L643300E 6977400		<10	<10	14	<10	1070		
L643300E 6977425		<10	<10	13	<10	143		
L643300E 6977450		<10	<10	24	<10	1405		
L643300E 6977475		<10	<10	14	<10	430		
L643300E 6977500		<10	<10	23	<10	372		
L643300E 6977525		<10	<10	8	<10	208		

ALS Chemex
EXCELLENCE IN ANALYTICAL CHEMISTRY
Aurora Laboratory Services Ltd.
212 Brooksbank Avenue
North Vancouver BC V7J 2C1 Canada
Phone: 604 984 0221 Fax: 604 984 0218

To: NORANDA MINING AND EXPLORATION INC.
874 TUNGSTEN ST.
THUNDER BAY ON P7B 6J3

Date : 26-Aug-2002
Account: BUF

Project : 2501

CERTIFICATE OF ANALYSIS VA02002679

Sample Description	Method / Analyte / Units / LOR	ME-ICP41 Tl ppm 10	ME-ICP41 U ppm 10	ME-ICP41 V ppm 1	ME-ICP41 W ppm 10	ME-ICP41 Zn ppm 2	Pb-AA46 Pb % 0.01	Zn-AA46 Zn % 0.01
L643300E 6977550		<10	<10	13	<10	419		
L643300E 6977575		<10	<10	16	<10	34		
L643300E 6977600		<10	<10	8	<10	33		
L643300E 6977625		<10	<10	10	<10	14		
L643300E 6977650		<10	<10	13	<10	12		
L643300E 6977675		<10	<10	9	<10	12		
L643300E 6977700		<10	10	10	<10	27		
L643300E 6977725		<10	<10	11	<10	21		
L643300E 6977750		<10	<10	16	<10	32		
L643300E 6977775		<10	10	27	<10	81		
L643300E 6977800		<10	10	30	<10	66		

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To: NORANDA MINING AND EXPLORATION INC.
874 TUNGSTEN ST.
THUNDER BAY ON P7B 6J3

Date : 26-Aug-2002
Account: BUF

CERTIFICATE OF ANALYSIS VA02002712

Sample Description	Method Analyte Units LOR	WEI-21 Recvd Wt kg 0.02	ME-ICP41 Ag ppm 0.2	ME-ICP41 Al % 0.01	ME-ICP41 As ppm 2	ME-ICP41 B ppm 10	ME-ICP41 Ba ppm 10	ME-ICP41 Be ppm 0.5	ME-ICP41 Bi ppm 2	ME-ICP41 Ca % 0.01	ME-ICP41 Cd ppm 0.5	ME-ICP41 Co ppm 1	ME-ICP41 Cr ppm 1	ME-ICP41 Cu ppm 1	ME-ICP41 Fe % 0.01	ME-ICP41 Ga ppm 10
640900E 6978400N		0.16	<0.2	0.64	10	<10	60	<0.5	<2	0.02	<0.5	2	5	19	1.25	<10
640900E 6978425N		0.14	<0.2	0.98	17	<10	80	0.5	<2	0.10	<0.5	7	17	24	3.72	<10
640900E 6978450N		0.20	<0.2	0.92	32	<10	350	0.7	3	0.55	<0.5	5	12	21	4.42	10
640900E 6978475N		0.18	<0.2	1.43	7	<10	70	1.0	<2	0.01	<0.5	23	21	30	5.59	<10
640900E 6978500N		0.16	<0.2	0.79	65	<10	60	0.5	<2	0.01	<0.5	1	13	27	4.41	<10
640900E 6978525N		0.24	<0.2	0.52	66	<10	50	<0.5	<2	<0.01	<0.5	<1	6	21	2.94	<10
640900E 6978550N		0.16	0.3	0.51	8	<10	70	<0.5	<2	0.01	<0.5	4	5	18	1.22	<10
640900E 6978575N		0.16	<0.2	0.99	23	<10	100	0.8	<2	0.02	<0.5	4	12	55	3.48	10
640900E 6978600N		0.18	<0.2	0.58	16	<10	50	<0.5	<2	0.01	<0.5	3	8	26	2.42	<10
640900E 6978625N		0.20	<0.2	0.73	12	<10	80	0.6	<2	0.01	<0.5	4	12	42	3.43	<10
640900E 6978650N		0.22	0.5	1.26	7	<10	160	1.2	<2	0.05	<0.5	18	16	38	3.11	<10
640900E 6978675N		0.32	<0.2	0.73	13	<10	90	<0.5	<2	0.03	<0.5	5	19	42	3.17	<10
640900E 6978700N		0.16	<0.2	0.11	2	<10	10	<0.5	<2	0.01	<0.5	<1	1	2	0.17	<10
640900E 6978725N		<0.02	0.2	0.40	12	<10	40	<0.5	<2	0.01	<0.5	2	6	18	1.60	<10
640900E 6978750N		0.16	<0.2	0.45	23	<10	40	<0.5	<2	0.02	<0.5	3	9	25	2.36	10
640900E 6978775N		0.20	1.0	1.53	16	<10	140	0.7	<2	0.11	<0.5	12	16	23	3.00	<10
640900E 6978800N		0.24	<0.2	1.08	22	<10	90	<0.5	<2	0.02	<0.5	4	14	14	2.90	<10
640900E 6978825N		0.28	0.5	0.40	15	<10	70	<0.5	<2	0.01	<0.5	1	5	11	1.27	<10
640900E 6978850N		0.18	<0.2	0.56	5	<10	50	<0.5	<2	0.01	<0.5	1	6	13	1.28	<10
640900E 6978875N		0.26	<0.2	0.52	17	<10	30	<0.5	<2	0.01	<0.5	3	9	18	2.07	<10
640900E 6978900N		0.20	0.2	0.87	11	<10	40	<0.5	<2	0.01	<0.5	3	11	14	2.63	<10
641000E 6978400N		0.18	<0.2	1.47	5	<10	230	0.6	<2	0.05	<0.5	7	15	18	2.55	<10
641000E 6978425N		0.20	<0.2	1.31	9	<10	140	<0.5	<2	0.11	<0.5	6	18	22	2.79	10
641000E 6978450N		<0.02	<0.2	1.36	14	<10	260	0.5	<2	0.29	<0.5	4	19	23	2.62	10
641000E 6978475N		0.12	<0.2	1.24	19	<10	70	<0.5	<2	0.04	<0.5	3	20	15	3.92	10
641000E 6978500N		0.22	<0.2	1.24	11	<10	230	1.1	<2	0.07	<0.5	5	16	30	2.56	<10
641000E 6978525N		0.18	<0.2	1.27	13	<10	380	1.8	<2	0.05	<0.5	9	20	43	3.37	<10
641000E 6978550N		0.20	<0.2	0.51	6	<10	50	<0.5	<2	0.02	<0.5	2	5	11	1.29	<10
641000E 6978575N		0.16	<0.2	1.30	18	<10	110	<0.5	<2	0.01	<0.5	5	16	19	3.24	<10
641000E 6978600N		0.14	<0.2	0.86	18	<10	60	<0.5	<2	0.02	<0.5	4	11	14	2.61	<10
641000E 6978625N		0.20	<0.2	1.08	21	<10	90	<0.5	<2	0.01	<0.5	5	18	25	3.25	<10
641000E 6978650N		0.28	<0.2	0.81	11	<10	70	<0.5	<2	0.04	<0.5	5	10	14	2.33	<10
641000E 6978675N		0.26	<0.2	1.24	8	<10	110	<0.5	<2	0.07	<0.5	2	13	14	1.88	<10
641000E 6978700N		0.22	<0.2	1.17	12	<10	60	<0.5	<2	0.02	<0.5	3	13	18	3.27	<10
641000E 6978725N		0.26	<0.2	1.10	16	<10	60	<0.5	<2	0.01	<0.5	5	15	20	3.09	10
641000E 6978750N		0.22	<0.2	0.22	3	<10	10	<0.5	<2	0.02	<0.5	<1	1	2	0.21	<10
641000E 6978775N		0.24	<0.2	1.13	9	<10	80	<0.5	<2	0.02	<0.5	4	11	16	2.24	10
641000E 6978800N		0.20	<0.2	1.17	13	<10	60	<0.5	<2	0.02	<0.5	4	12	19	2.79	<10
641000E 6978825N		0.30	<0.2	0.91	16	<10	70	<0.5	<2	0.02	<0.5	6	11	25	2.88	10
641000E 6978850N		0.30	<0.2	0.72	5	<10	60	<0.5	<2	0.02	<0.5	1	7	11	1.08	<10

ALS Chemex
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To: NORANDA MINING AND EXPLORATION INC.
874 TUNGSTEN ST.
THUNDER BAY ON P7B 6J3

Date : 26-Aug-2002
Account: BUF

CERTIFICATE OF ANALYSIS VA02002712

Sample Description	Method Analyte Units LOR	WEI-21 Recvd Wt kg 0.02	ME-ICP41 Ag ppm 0.2	ME-ICP41 Al % 0.01	ME-ICP41 As ppm 2	ME-ICP41 B ppm 10	ME-ICP41 Ba ppm 10	ME-ICP41 Be ppm 0.5	ME-ICP41 Bi ppm 2	ME-ICP41 Ca % 0.01	ME-ICP41 Cd ppm 0.5	ME-ICP41 Co ppm 1	ME-ICP41 Cr ppm 1	ME-ICP41 Cu ppm 1	ME-ICP41 Fe % 0.01	ME-ICP41 Ga ppm 10
641000E 6978875N		0.20	<0.2	1.13	15	<10	120	<0.5	<2	0.06	<0.5	3	11	11	2.11	10
641000E 6978900N		0.22	<0.2	0.66	10	<10	40	<0.5	<2	0.02	<0.5	3	9	12	2.38	10
641100E 6978400N		0.16	<0.2	1.45	13	<10	110	0.5	<2	0.02	<0.5	6	17	22	3.62	<10
641100E 6978425N		0.20	<0.2	1.07	8	<10	100	<0.5	<2	0.03	<0.5	3	10	12	1.98	<10
641100E 6978450N		0.22	<0.2	1.03	5	<10	210	<0.5	<2	0.70	<0.5	4	14	11	2.09	<10
641100E 6978475N		0.24	<0.2	1.69	15	<10	410	1.5	<2	0.70	<0.5	11	22	31	3.20	<10
641100E 6978500N		0.16	<0.2	1.28	9	<10	110	<0.5	<2	0.05	<0.5	4	21	25	3.14	10
641100E 6978525N		0.18	<0.2	1.39	18	<10	80	<0.5	<2	0.02	<0.5	6	19	28	3.70	10
641100E 6978550N		0.24	0.2	1.13	14	<10	270	0.7	<2	0.12	<0.5	13	18	38	3.15	<10
641100E 6978575N		0.20	<0.2	0.82	14	<10	110	<0.5	<2	0.02	<0.5	4	9	25	2.01	10
641100E 6978600N		0.16	<0.2	0.92	15	<10	170	0.5	<2	0.08	<0.5	6	15	32	2.53	<10
641100E 6978625N		0.10	<0.2	0.73	6	<10	80	<0.5	<2	0.07	<0.5	1	5	22	0.66	<10
641100E 6978650N		0.18	<0.2	1.30	12	<10	490	0.7	<2	0.17	<0.5	15	18	33	2.42	10
641100E 6978675N		0.24	<0.2	0.79	4	<10	130	<0.5	<2	0.11	<0.5	9	10	25	1.86	<10
641100E 6978700N		0.28	<0.2	0.91	9	<10	210	<0.5	<2	0.25	0.8	3	8	16	1.40	<10
641100E 6978725N		0.24	<0.2	0.71	10	<10	60	<0.5	<2	0.03	<0.5	1	7	13	1.04	<10
641100E 6978750N		<0.02	<0.2	0.74	7	<10	70	<0.5	<2	0.02	<0.5	2	9	11	1.69	10
641100E 6978775N		0.24	<0.2	0.78	2	<10	60	<0.5	<2	0.03	<0.5	1	4	11	0.89	<10
641100E 6978800N		0.22	<0.2	1.71	8	<10	240	1.1	<2	0.35	<0.5	7	25	19	4.04	<10
641100E 6978825N		0.20	1.0	1.15	16	<10	210	1.0	<2	0.86	<0.5	7	15	21	2.51	<10
641100E 6978850N		0.22	<0.2	0.87	12	<10	110	0.7	<2	0.05	<0.5	9	6	20	2.69	<10
641100E 6978875N		0.22	<0.2	0.75	7	<10	50	<0.5	<2	0.02	<0.5	1	6	11	1.19	<10
641100E 6978900N		0.26	<0.2	0.49	2	<10	20	<0.5	<2	0.04	<0.5	<1	3	6	0.41	<10
641200E 6978400N		0.18	<0.2	0.81	4	<10	80	<0.5	<2	0.08	<0.5	3	8	15	1.04	<10
641200E 6978425N		0.18	<0.2	1.30	8	<10	160	<0.5	<2	0.10	<0.5	3	13	11	1.88	10
641200E 6978450N		0.16	<0.2	1.40	10	<10	510	0.6	<2	0.41	<0.5	7	18	19	2.76	10
641200E 6978475N		0.24	0.2	0.37	2	<10	70	<0.5	<2	0.08	<0.5	1	4	18	0.63	<10
641200E 6978500N		0.12	<0.2	0.25	<2	<10	30	<0.5	<2	0.10	<0.5	<1	1	5	0.23	<10
641200E 6978525N		0.22	0.2	1.36	15	<10	230	0.8	<2	0.39	<0.5	4	18	32	2.62	<10
641200E 6978550N		0.18	<0.2	0.95	95	<10	190	0.6	<2	0.55	0.7	9	12	18	3.20	<10
641200E 6978575N		0.18	<0.2	1.18	11	<10	300	0.5	<2	0.21	<0.5	8	19	14	2.37	<10
641200E 6978600N		0.08	<0.2	0.57	2	<10	50	<0.5	<2	0.06	<0.5	<1	2	4	0.23	<10
641200E 6978625N		0.18	<0.2	1.22	9	<10	170	0.6	<2	0.33	<0.5	5	17	17	2.39	<10
641200E 6978650N		0.24	1.9	1.26	9	<10	200	1.5	2	0.79	<0.5	7	20	76	2.56	<10
641200E 6978675N		0.18	0.2	0.36	4	<10	30	<0.5	<2	0.13	<0.5	<1	2	6	0.32	<10
641200E 6978700N		0.22	<0.2	0.23	<2	<10	20	<0.5	<2	0.01	<0.5	<1	2	5	0.24	<10
641200E 6978725N		0.20	<0.2	0.22	<2	<10	20	<0.5	<2	0.13	<0.5	<1	1	3	0.09	<10
641200E 6978750N		0.26	0.3	1.11	5	<10	270	0.6	<2	0.77	0.5	7	16	33	2.17	<10
641200E 6978775N		0.24	0.3	1.56	9	<10	300	1.2	<2	0.65	0.9	11	31	30	4.52	<10
641200E 6978800N		0.24	<0.2	1.70	10	<10	260	1.1	<2	0.57	0.5	15	38	24	4.20	10

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To: NORANDA MINING AND EXPLORATION INC.
874 TUNGSTEN ST.
THUNDER BAY ON P7B 6J3

Date : 26-Aug-2002
Account: BUF

CERTIFICATE OF ANALYSIS VA02002712

Sample Description	Method Analyte Units LOR	WEI-21 Recvd Wt kg 0.02	ME-ICP41 Ag ppm 0.2	ME-ICP41 Al % 0.01	ME-ICP41 As ppm 2	ME-ICP41 B ppm 10	ME-ICP41 Ba ppm 10	ME-ICP41 Be ppm 0.5	ME-ICP41 Bi ppm 2	ME-ICP41 Ca % 0.01	ME-ICP41 Cd ppm 0.5	ME-ICP41 Co ppm 1	ME-ICP41 Cr ppm 1	ME-ICP41 Cu ppm 1	ME-ICP41 Fe % 0.01	ME-ICP41 Ga ppm 10
641200E 6978825N		0.20	<0.2	0.58	2	<10	70	<0.5	<2	0.06	<0.5	1	5	7	0.77	<10
641200E 6978850N		0.18	<0.2	1.29	11	<10	100	<0.5	<2	0.07	<0.5	3	16	16	2.32	10
641200E 6978875N		0.22	<0.2	0.52	4	<10	30	<0.5	<2	0.02	<0.5	1	3	5	0.51	<10
641200E 6978900N		0.24	<0.2	0.65	8	<10	50	<0.5	<2	0.03	<0.5	1	7	7	1.35	<10
641300E 6978400N		0.22	<0.2	1.51	2	<10	360	0.6	<2	0.29	<0.5	6	15	33	2.25	<10
641300E 6978425N		0.14	<0.2	0.47	2	<10	70	<0.5	<2	0.14	<0.5	5	5	11	0.92	<10
641300E 6978450N		0.14	<0.2	0.47	4	<10	40	<0.5	<2	0.01	<0.5	1	4	10	0.54	<10
641300E 6978475N		0.16	<0.2	1.73	8	<10	260	0.8	<2	0.22	<0.5	7	26	21	3.17	10
641300E 6978500N		0.12	0.2	0.22	<2	<10	20	<0.5	<2	0.10	<0.5	<1	1	4	0.23	<10
641300E 6978525N		0.12	<0.2	0.44	3	<10	50	<0.5	<2	0.07	<0.5	2	7	10	1.13	<10
641300E 6978550N		0.20	<0.2	0.98	15	<10	180	0.9	<2	0.55	<0.5	10	15	16	2.53	<10
641300E 6978575N		0.14	<0.2	0.41	10	<10	80	<0.5	<2	0.06	<0.5	<1	2	5	0.45	<10
641300E 6978600N		0.16	<0.2	0.50	<2	<10	70	<0.5	<2	0.24	1.0	2	4	17	0.82	<10
641300E 6978625N		0.14	<0.2	0.69	6	<10	110	0.5	<2	0.35	1.1	12	9	15	1.87	<10
641300E 6978650N		0.24	<0.2	0.31	<2	<10	30	<0.5	<2	0.03	<0.5	<1	2	5	0.37	<10
641300E 6978675N		0.16	<0.2	0.56	3	<10	130	<0.5	<2	0.11	0.8	2	4	15	0.71	<10
641300E 6978700N		0.30	<0.2	0.66	9	<10	140	<0.5	<2	0.34	<0.5	4	11	12	1.70	<10
641300E 6978725N		0.24	0.3	0.90	4	<10	140	0.6	<2	0.58	0.5	6	9	17	1.48	<10
641300E 6978750N		0.16	0.3	0.73	3	<10	110	<0.5	<2	0.90	<0.5	2	7	21	0.66	<10
641300E 6978775N		0.16	<0.2	0.59	2	<10	120	<0.5	<2	0.35	<0.5	2	3	9	0.59	<10
641300E 6978800N		0.12	<0.2	0.73	5	<10	60	<0.5	<2	0.01	<0.5	<1	18	12	3.18	10
641300E 6978825N		0.18	<0.2	0.51	7	<10	30	<0.5	<2	0.02	<0.5	1	4	8	0.87	<10
641300E 6978850N		0.20	<0.2	0.53	8	<10	50	<0.5	<2	0.02	<0.5	1	5	8	1.00	<10
641300E 6978875N		0.22	<0.2	0.30	<2	<10	20	<0.5	<2	0.03	<0.5	<1	1	4	0.21	<10
641300E 6978900N		0.22	<0.2	1.29	10	<10	80	<0.5	<2	0.02	<0.5	6	17	23	2.99	10
641400E 6978400N		0.14	<0.2	1.16	11	<10	300	<0.5	<2	0.25	<0.5	7	20	17	2.41	10
641400E 6978425N		0.18	<0.2	1.02	8	<10	170	0.5	<2	0.36	0.8	13	17	32	2.27	10
641400E 6978450N		0.20	<0.2	0.68	8	<10	150	1.2	<2	0.67	<0.5	6	11	52	1.33	<10
641400E 6978475N		0.18	0.2	1.05	9	<10	230	<0.5	2	0.55	<0.5	9	22	33	2.36	10
641400E 6978500N		0.16	0.8	1.23	8	<10	250	1.1	3	2.14	<0.5	9	17	67	2.07	<10
641400E 6978525N		0.18	<0.2	1.19	12	<10	160	0.5	<2	0.36	<0.5	11	16	16	3.18	<10
641400E 6978550N		0.16	0.3	1.00	10	<10	220	0.5	6	1.04	<0.5	6	11	31	1.57	<10
641400E 6978575N		0.20	0.3	1.17	14	<10	200	0.9	3	0.91	<0.5	14	18	24	2.37	<10
641400E 6978600N		0.16	<0.2	0.39	2	10	90	<0.5	<2	0.49	0.6	6	4	14	0.92	<10
641400E 6978625N		0.18	<0.2	1.05	6	<10	190	0.8	<2	0.53	0.6	11	20	27	2.17	<10
641400E 6978650N		0.26	0.3	1.19	17	<10	250	1.0	<2	1.05	<0.5	12	20	31	2.41	<10
641400E 6978675N		0.24	<0.2	0.54	6	<10	100	<0.5	<2	0.23	<0.5	3	9	15	1.16	<10
641400E 6978700N		0.18	0.2	1.10	15	<10	240	0.7	<2	1.00	1.0	10	14	37	1.83	<10
641400E 6978725N		0.18	<0.2	0.28	<2	<10	40	<0.5	<2	0.26	<0.5	2	2	5	0.47	<10
641400E 6978750N		0.20	<0.2	0.42	3	<10	50	<0.5	<2	0.28	<0.5	1	2	11	0.34	<10

ALS Chemex
EXCELLENCE IN ANALYTICAL CHEMISTRY
Aurora Laboratory Services Ltd.
212 Brooksbank Avenue
North Vancouver BC V7J 2C1 Canada
Phone: 604 984 0221 Fax: 604 984 0218

To: NORANDA MINING AND EXPLORATION INC.
874 TUNGSTEN ST.
THUNDER BAY ON P7B 6J3

Date : 26-Aug-2002
Account: BUF

CERTIFICATE OF ANALYSIS VA02002712

Sample Description	Method	WEI-21	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41
	Analyte	Recvd Wt	Ag	Al	As	B	Ba	Be	Bi	Ca	Cd	Co	Cr	Cu	Fe	Ga
	Units	kg	ppm	%	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	%	ppm
	LOR	0.02	0.2	0.01	2	10	10	0.5	2	0.01	0.5	1	1	1	0.01	10
641400E 6978775N		0.22	0.5	0.63	2	<10	100	<0.5	2	0.37	0.7	4	5	26	0.72	<10
641400E 6978800N		0.18	<0.2	0.25	<2	<10	20	<0.5	<2	0.02	<0.5	1	1	3	0.24	<10
641400E 6978825N		0.20	0.4	0.45	5	<10	40	<0.5	<2	0.02	<0.5	2	4	8	0.76	<10
641400E 6978850N		0.24	<0.2	1.51	6	<10	140	1.2	<2	0.19	<0.5	13	15	14	3.41	10
641400E 6978875N		0.22	<0.2	0.95	14	<10	150	1.0	<2	1.39	0.5	10	12	23	2.56	<10
641400E 6978900N		0.22	<0.2	0.72	4	<10	90	<0.5	5	0.30	<0.5	4	11	8	1.55	<10
642200E 6977625N		0.22	<0.2	0.68	5	<10	120	<0.5	<2	0.27	<0.5	4	8	12	1.32	<10
642200E 6977650N		0.26	<0.2	1.19	12	<10	220	0.5	<2	0.45	<0.5	11	17	27	2.94	10
642200E 6977675N		0.22	<0.2	0.75	38	<10	180	1.1	2	2.80	<0.5	11	22	20	2.68	10
642200E 6977700N		0.30	<0.2	0.88	27	<10	130	<0.5	4	0.43	<0.5	9	15	21	2.64	<10
642200E 6977725N		0.24	<0.2	1.25	15	<10	220	1.0	<2	0.26	<0.5	15	20	41	3.32	<10
642200E 6977750N		0.20	<0.2	0.93	12	<10	100	<0.5	<2	0.07	<0.5	10	17	26	2.74	10
642200E 6977775N		0.24	<0.2	0.34	4	<10	90	0.5	3	0.05	<0.5	10	8	9	1.95	<10
642200E 6977800N		0.14	<0.2	0.18	<2	<10	20	<0.5	<2	0.03	<0.5	<1	1	2	0.15	<10
642200E 6977825N		0.20	<0.2	0.46	12	<10	30	<0.5	<2	0.02	<0.5	1	2	9	0.38	<10
642200E 6977850N		0.36	<0.2	0.52	30	<10	100	0.9	<2	0.08	9.5	27	5	153	1.29	<10
642200E 6977875N		0.16	<0.2	0.58	2	<10	40	<0.5	<2	0.02	1.3	2	4	16	0.79	<10
642200E 6977900N		0.28	<0.2	0.32	13	<10	60	<0.5	<2	0.08	<0.5	5	4	11	1.25	<10
642200E 6977925N		0.28	<0.2	0.96	10	<10	100	<0.5	<2	0.02	<0.5	9	15	32	2.76	<10
642200E 6977950N		0.34	<0.2	1.00	6	<10	110	0.5	<2	0.03	<0.5	9	15	27	2.44	<10
642200E 6977975N		0.30	<0.2	1.22	13	<10	130	0.6	<2	0.06	<0.5	10	19	25	3.28	<10
642200E 6978000N		0.32	<0.2	0.84	5	<10	190	0.5	<2	0.32	<0.5	8	11	23	1.84	<10
642200E 6978025N		0.26	<0.2	0.36	5	<10	30	<0.5	<2	0.02	<0.5	2	3	6	0.62	<10
642200E 6978050N		0.26	<0.2	0.84	9	<10	40	<0.5	2	0.04	0.8	5	11	12	2.02	<10
642200E 6978075N		0.24	<0.2	1.13	19	<10	80	0.5	<2	0.02	0.6	13	14	26	3.85	10
642200E 6978100N		0.28	<0.2	0.61	10	<10	150	0.5	<2	0.50	3.6	6	9	24	1.66	<10
642300E 6977600N		0.24	<0.2	1.20	6	<10	140	<0.5	<2	0.27	0.5	9	15	20	2.42	<10
642300E 6977625N		0.20	<0.2	0.68	3	<10	120	<0.5	<2	0.79	<0.5	5	8	15	1.03	<10
642300E 6977650N		0.38	<0.2	0.84	9	<10	180	0.7	<2	0.31	<0.5	7	15	26	2.42	10
642300E 6977675N		0.14	<0.2	0.94	8	<10	150	<0.5	<2	0.35	1.6	6	5	16	0.98	<10
642300E 6977700N		0.20	<0.2	1.33	18	<10	250	1.7	8	3.46	0.6	13	51	44	3.05	10
642300E 6977725N		0.22	<0.2	0.65	3	<10	130	<0.5	2	0.72	0.5	8	10	13	1.74	<10
642300E 6977750N A		0.28	<0.2	0.33	17	20	210	<0.5	<2	>15.0	1.7	9	4	27	4.10	10
642300E 6977750N B		0.26	<0.2	0.83	38	<10	120	1.0	<2	0.30	<0.5	23	14	61	3.86	<10
642300E 6977800N		0.24	0.6	1.90	10	<10	120	0.9	6	0.08	<0.5	7	21	19	2.82	10
642300E 6977825N		0.12	<0.2	0.11	<2	10	10	<0.5	<2	0.03	<0.5	1	4	2	0.31	<10
642300E 6977850N		0.32	<0.2	0.60	3	<10	40	<0.5	<2	0.01	<0.5	1	4	8	0.22	<10
642300E 6977875N		0.18	<0.2	0.47	4	<10	30	<0.5	3	0.03	<0.5	1	6	10	0.29	<10
642300E 6977900N		0.18	<0.2	0.56	23	<10	60	<0.5	2	0.03	0.9	4	10	17	1.38	<10
642300E 6977925N		0.20	<0.2	0.27	3	<10	20	<0.5	<2	0.02	<0.5	1	1	5	0.31	<10
642300E 6977950N		0.18	<0.2	0.80	10	<10	160	0.7	<2	0.44	10.1	11	11	39	2.19	<10

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To: NORANDA MINING AND EXPLORATION INC.
874 TUNGSTEN ST.
THUNDER BAY ON P7B 6J3

Date : 26-Aug-2002
Account: BUF

CERTIFICATE OF ANALYSIS VA02002712

Sample Description	Method Analyte Units LOR	WEI-21 Recvd Wt kg 0.02	ME-ICP41 Ag ppm 0.2	ME-ICP41 Al % 0.01	ME-ICP41 As ppm 2	ME-ICP41 B ppm 10	ME-ICP41 Ba ppm 10	ME-ICP41 Be ppm 0.5	ME-ICP41 Bi ppm 2	ME-ICP41 Ca % 0.01	ME-ICP41 Cd ppm 0.5	ME-ICP41 Co ppm 1	ME-ICP41 Cr ppm 1	ME-ICP41 Cu ppm 1	ME-ICP41 Fe % 0.01	ME-ICP41 Ga ppm 10
642300E 6977975N		0.28	0.2	0.55	14	<10	190	0.6	<2	0.48	21.4	5	6	54	1.38	<10
642300E 6978000N		0.24	<0.2	0.29	<2	<10	30	<0.5	<2	0.02	<0.5	2	3	9	0.64	<10
642300E 6978025N		0.18	<0.2	0.34	<2	10	40	<0.5	<2	0.14	3.3	1	2	16	0.38	<10
642300E 6978050N		0.18	0.4	1.19	14	<10	190	0.9	<2	0.81	20.9	11	23	108	2.33	<10
642300E 6978075N		0.18	<0.2	0.72	13	<10	110	0.6	<2	0.25	5.4	11	13	19	1.71	<10
642300E 6978100N		0.28	<0.2	0.15	<2	10	10	<0.5	<2	0.04	<0.5	1	1	2	0.26	<10
642400E 6977600N		0.18	<0.2	1.03	10	<10	370	0.9	2	0.81	<0.5	10	19	43	2.12	<10
642400E 6977625N		0.20	0.2	1.16	12	<10	470	1.2	4	0.85	0.5	16	20	49	2.43	<10
642400E 6977650N		0.14	<0.2	2.48	35	10	750	3.2	6	7.44	2.8	39	134	55	8.13	30
642400E 6977675N		0.16	<0.2	0.51	<2	<10	120	<0.5	<2	0.43	0.5	2	5	22	0.87	<10
642400E 6977700N		0.14	<0.2	0.18	<2	<10	20	<0.5	<2	0.09	<0.5	1	1	2	0.27	<10
642400E 6977725N		0.12	<0.2	0.27	<2	<10	30	<0.5	<2	0.25	<0.5	1	1	5	0.29	<10
642400E 6977750N		0.18	<0.2	1.02	9	<10	190	0.6	<2	0.64	<0.5	7	18	29	2.11	<10
642400E 6977775N		0.18	<0.2	0.57	4	<10	150	<0.5	2	0.21	<0.5	8	8	55	1.90	10
642400E 6977800N		0.12	<0.2	0.53	2	<10	80	<0.5	<2	0.35	1.0	3	3	16	0.66	<10
642400E 6977825N		0.18	<0.2	0.33	3	<10	20	<0.5	<2	0.03	<0.5	1	2	5	0.44	<10
642400E 6977850N		0.18	0.2	0.31	<2	<10	50	<0.5	<2	0.08	0.7	1	2	7	0.37	<10
642400E 6977875N		0.20	<0.2	0.57	6	<10	50	<0.5	2	0.02	1.0	3	8	23	1.38	<10
642400E 6977900N		0.26	1.0	1.02	28	<10	280	1.8	<2	0.45	53.4	13	15	155	2.68	10
642400E 6977925N		0.22	<0.2	0.35	5	<10	30	<0.5	<2	0.02	<0.5	2	3	8	0.69	<10
642400E 6977950N		0.18	<0.2	0.46	8	<10	50	<0.5	<2	0.01	<0.5	5	7	12	1.94	<10
642400E 6977975N		0.30	<0.2	0.95	10	<10	180	0.9	<2	0.21	13.8	17	17	37	3.25	<10
642400E 6978000N		0.32	<0.2	0.57	7	<10	60	<0.5	<2	0.04	<0.5	4	8	8	1.29	<10
642400E 6978025N		0.24	<0.2	0.85	9	<10	310	0.8	<2	0.45	1.0	10	14	19	1.95	<10
642400E 6978050N		0.24	<0.2	0.67	5	<10	70	<0.5	2	0.10	<0.5	7	9	7	2.30	<10
642400E 6978075N		0.26	<0.2	0.46	2	<10	80	<0.5	<2	0.10	<0.5	1	4	9	0.51	<10
642400E 6978100N		0.22	<0.2	0.55	6	<10	90	<0.5	5	0.11	<0.5	3	7	6	1.11	<10

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To: NORANDA MINING AND EXPLORATION INC.
874 TUNGSTEN ST.
THUNDER BAY ON P7B 6J3

Date : 26-Aug-2002
Account: BUF

CERTIFICATE OF ANALYSIS VA02002712

Sample Description	Method / Analyte / Units / LOR	ME-ICP41 Hg ppm 1	ME-ICP41 K % 0.01	ME-ICP41 La ppm 10	ME-ICP41 Mg % 0.01	ME-ICP41 Mn ppm 5	ME-ICP41 Mo ppm 1	ME-ICP41 Na % 0.01	ME-ICP41 Ni ppm 1	ME-ICP41 P ppm 10	ME-ICP41 Pb ppm 2	ME-ICP41 S % 0.01	ME-ICP41 Sb ppm 2	ME-ICP41 Sc ppm 1	ME-ICP41 Sr ppm 1	ME-ICP41 Ti % 0.01
640900E 6978400N		<1	0.02	10	0.02	115	1	0.01	7	570	10	0.03	<2	<1	4	0.01
640900E 6978425N		<1	0.05	<10	0.18	655	4	0.01	14	790	25	0.04	2	<1	12	0.01
640900E 6978450N		<1	0.05	10	0.22	764	2	0.01	14	1050	17	0.06	<2	1	51	0.01
640900E 6978475N		<1	0.04	20	0.37	1335	1	0.01	35	600	24	0.01	<2	1	4	0.01
640900E 6978500N		<1	0.06	20	0.20	423	1	0.01	11	620	24	0.04	7	1	8	0.01
640900E 6978525N		<1	0.04	20	0.04	114	1	0.01	4	850	15	0.03	9	<1	12	<0.01
640900E 6978550N		<1	0.02	<10	0.03	782	<1	0.01	5	690	8	0.02	<2	<1	6	0.01
640900E 6978575N		<1	0.04	10	0.04	233	1	0.01	13	1460	18	0.04	<2	<1	8	<0.01
640900E 6978600N		<1	0.04	10	0.03	340	1	0.01	8	850	10	0.02	25	<1	4	0.01
640900E 6978625N		<1	0.06	10	0.04	618	2	0.01	10	1420	18	0.05	2	<1	14	0.01
640900E 6978650N		<1	0.05	<10	0.11	1290	1	0.01	14	2180	24	0.08	<2	1	11	<0.01
640900E 6978675N		1	0.04	<10	0.06	493	3	0.01	24	2150	16	0.05	<2	<1	9	<0.01
640900E 6978700N		<1	0.01	<10	0.01	15	<1	0.01	1	250	<2	0.01	2	<1	4	0.01
640900E 6978725N		<1	0.03	10	0.02	68	1	0.01	9	830	9	0.02	<2	<1	4	0.01
640900E 6978750N		<1	0.03	10	0.04	291	2	0.01	11	620	9	0.01	2	1	6	0.01
640900E 6978775N		<1	0.02	<10	0.06	1195	1	0.01	16	900	18	0.05	2	1	12	0.02
640900E 6978800N		<1	0.03	10	0.13	361	1	0.01	12	380	14	0.01	<2	1	6	0.01
640900E 6978825N		<1	0.03	10	0.02	87	2	0.01	6	370	36	0.02	3	<1	12	0.01
640900E 6978850N		<1	0.02	10	0.03	66	1	0.01	7	620	11	0.02	2	<1	4	0.01
640900E 6978875N		<1	0.04	10	0.05	162	2	0.01	10	480	10	0.02	<2	<1	3	0.01
640900E 6978900N		<1	0.03	10	0.10	262	1	0.01	10	390	11	0.02	<2	1	5	0.02
641000E 6978400N		<1	0.03	<10	0.10	3450	1	0.01	10	730	14	0.03	<2	1	10	0.01
641000E 6978425N		<1	0.04	10	0.32	303	1	0.01	17	270	12	0.01	<2	1	11	0.01
641000E 6978450N		<1	0.04	10	0.28	392	1	0.01	13	330	12	0.01	<2	1	25	0.01
641000E 6978475N		<1	0.03	10	0.23	259	2	0.01	15	420	13	0.02	<2	1	6	0.03
641000E 6978500N		<1	0.03	10	0.22	295	1	0.01	14	760	13	0.03	<2	1	10	0.01
641000E 6978525N		<1	0.05	<10	0.30	811	1	0.01	18	590	24	0.02	<2	1	10	0.01
641000E 6978550N		<1	0.03	10	0.03	229	2	0.01	6	250	6	0.01	<2	<1	5	0.02
641000E 6978575N		<1	0.03	10	0.19	384	1	0.01	15	290	20	0.01	<2	1	4	0.01
641000E 6978600N		<1	0.03	10	0.08	302	3	0.01	9	340	13	0.01	<2	<1	4	0.02
641000E 6978625N		<1	0.04	10	0.23	255	1	0.01	16	430	13	0.01	<2	1	5	0.01
641000E 6978650N		<1	0.02	10	0.08	545	1	0.01	10	350	14	0.01	<2	<1	6	0.01
641000E 6978675N		<1	0.03	10	0.13	157	1	0.01	9	480	14	0.01	2	1	11	0.01
641000E 6978700N		<1	0.03	10	0.10	320	1	0.01	12	420	17	0.02	2	1	7	0.01
641000E 6978725N		2	0.03	10	0.08	221	1	0.01	17	460	13	0.01	<2	2	4	0.01
641000E 6978750N		<1	0.02	<10	0.01	11	<1	0.02	<1	280	<2	0.01	<2	<1	4	0.01
641000E 6978775N		<1	0.03	10	0.09	242	1	0.01	10	280	12	0.01	<2	1	9	0.01
641000E 6978800N		<1	0.03	10	0.11	244	2	0.01	12	420	14	0.02	3	1	7	0.01
641000E 6978825N		<1	0.05	10	0.10	510	2	0.01	11	410	17	0.01	<2	1	8	0.01
641000E 6978850N		1	0.03	10	0.04	180	1	0.01	4	410	10	0.01	<2	<1	5	0.01

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Account: BUF

CERTIFICATE OF ANALYSIS VA02002712

Sample Description	Method Analyte Units LOR	ME-ICP41 Hg ppm 1	ME-ICP41 K % 0.01	ME-ICP41 La ppm 10	ME-ICP41 Mg % 0.01	ME-ICP41 Mn ppm 5	ME-ICP41 Mo ppm 1	ME-ICP41 Na % 0.01	ME-ICP41 Ni ppm 1	ME-ICP41 P ppm 10	ME-ICP41 Pb ppm 2	ME-ICP41 S % 0.01	ME-ICP41 Sb ppm 2	ME-ICP41 Sc ppm 1	ME-ICP41 Sr ppm 1	ME-ICP41 Ti % 0.01
641000E 6978875N		<1	0.04	10	0.11	206	1	0.01	8	350	13	0.01	<2	1	11	0.01
641000E 6978900N		<1	0.04	10	0.05	428	1	0.01	9	350	20	0.01	<2	1	5	0.02
641100E 6978400N		<1	0.04	10	0.14	385	1	0.01	18	390	26	0.02	2	2	8	0.01
641100E 6978425N		<1	0.03	10	0.07	233	1	0.01	8	450	14	0.01	<2	1	8	0.01
641100E 6978450N		<1	0.03	10	0.12	456	1	0.01	9	430	12	0.02	<2	1	40	0.01
641100E 6978475N		<1	0.08	10	0.30	745	2	0.01	23	810	22	0.03	<2	3	45	0.01
641100E 6978500N		<1	0.06	10	0.28	282	2	0.01	14	320	18	0.02	<2	1	9	0.03
641100E 6978525N		<1	0.06	20	0.22	272	2	0.01	20	450	18	0.02	<2	2	7	0.01
641100E 6978550N		<1	0.06	10	0.24	916	2	0.01	27	610	27	0.02	<2	2	18	0.01
641100E 6978575N		<1	0.05	10	0.05	162	2	0.01	12	670	12	0.02	<2	1	7	0.01
641100E 6978600N		<1	0.06	10	0.15	356	2	0.01	17	760	17	0.03	<2	1	12	0.01
641100E 6978625N		<1	0.03	<10	0.04	95	1	0.02	3	430	11	0.02	<2	<1	11	0.02
641100E 6978650N		<1	0.06	10	0.19	1990	1	0.01	14	1100	19	0.05	<2	1	22	0.01
641100E 6978675N		1	0.07	20	0.12	967	1	0.01	9	610	15	0.02	<2	<1	12	0.01
641100E 6978700N		<1	0.06	30	0.08	274	1	0.01	9	390	81	0.02	<2	1	23	<0.01
641100E 6978725N		<1	0.04	10	0.04	110	1	0.01	5	330	243	0.01	3	<1	6	0.01
641100E 6978750N		<1	0.05	10	0.06	305	1	0.01	6	200	38	0.01	<2	1	6	0.03
641100E 6978775N		<1	0.03	10	0.02	68	1	0.01	4	210	7	0.01	<2	1	6	0.01
641100E 6978800N		<1	0.05	10	0.42	1770	1	0.01	26	470	22	0.02	2	4	28	0.01
641100E 6978825N		<1	0.04	10	0.18	1630	1	0.01	18	670	49	0.05	3	2	57	0.02
641100E 6978850N		<1	0.06	20	0.05	1825	<1	0.01	14	520	32	0.03	<2	2	6	<0.01
641100E 6978875N		<1	0.02	10	0.05	79	1	0.01	4	170	10	0.01	<2	<1	5	0.02
641100E 6978900N		<1	0.02	<10	0.02	21	<1	0.02	1	240	4	0.01	<2	<1	7	0.02
641200E 6978400N		<1	0.04	10	0.05	142	1	0.01	6	600	11	0.02	<2	<1	10	0.01
641200E 6978425N		<1	0.07	10	0.14	130	1	0.01	8	240	11	0.01	<2	1	13	0.02
641200E 6978450N		<1	0.11	20	0.28	276	<1	0.01	17	480	9	0.02	<2	2	42	0.01
641200E 6978475N		<1	0.02	<10	0.02	105	1	0.02	6	440	3	0.01	<2	<1	9	0.01
641200E 6978500N		1	0.02	<10	0.02	12	<1	0.03	1	330	2	0.01	<2	<1	11	0.01
641200E 6978525N		<1	0.04	10	0.23	625	2	0.01	16	1390	22	0.07	<2	1	36	0.01
641200E 6978550N		2	0.05	<10	0.16	3510	1	0.01	14	770	57	0.07	<2	1	44	0.01
641200E 6978575N		<1	0.06	10	0.36	400	1	0.01	19	280	144	0.01	<2	2	20	0.01
641200E 6978600N		<1	0.02	<10	0.01	14	1	0.02	1	200	9	0.02	<2	<1	10	0.01
641200E 6978625N		<1	0.05	10	0.28	390	1	0.01	15	460	19	0.03	<2	1	28	0.02
641200E 6978650N		<1	0.04	10	0.28	1325	1	0.01	30	1020	25	0.08	<2	2	44	0.02
641200E 6978675N		<1	0.02	<10	0.02	40	<1	0.02	2	440	18	0.01	<2	<1	10	0.01
641200E 6978700N		<1	0.02	<10	0.01	18	<1	0.01	1	160	2	0.01	<2	<1	3	0.01
641200E 6978725N		<1	0.02	<10	0.01	9	<1	0.02	1	300	<2	0.01	<2	<1	9	0.01
641200E 6978750N		<1	0.05	10	0.20	896	1	0.01	16	660	24	0.05	<2	1	50	0.01
641200E 6978775N		<1	0.08	10	0.53	1480	<1	0.01	34	730	48	0.03	<2	4	44	0.02
641200E 6978800N		1	0.07	20	0.56	1235	1	0.01	33	590	121	0.04	<2	3	37	0.02

ALS Chemex
EXCELLENCE IN ANALYTICAL CHEMISTRY
Aurora Laboratory Services Ltd.
212 Brooksbank Avenue
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Phone: 604 984 0221 Fax: 604 984 0218

To: NORANDA MINING AND EXPLORATION INC.
874 TUNGSTEN ST.
THUNDER BAY ON P7B 6J3

Date : 26-Aug-2002
Account: BUF

CERTIFICATE OF ANALYSIS VA02002712

Sample Description	Method	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41
	Analyte	Hg	K	La	Mg	Mn	Mo	Na	Ni	P	Pb	S	Sb	Sc	Sr	Ti
	Units	ppm	%	ppm	%	ppm	ppm	%	ppm	ppm	ppm	%	ppm	ppm	ppm	%
	LOR	1	0.01	10	0.01	5	1	0.01	1	10	2	0.01	2	1	1	0.01
641200E 6978825N		<1	0.02	<10	0.06	100	<1	0.01	3	240	48	0.01	<2	<1	6	0.01
641200E 6978850N		<1	0.04	10	0.23	230	1	0.01	11	250	154	0.01	<2	1	10	0.01
641200E 6978875N		<1	0.02	10	0.02	42	1	0.01	2	140	13	0.01	<2	<1	3	0.01
641200E 6978900N		<1	0.02	10	0.05	217	1	0.01	4	180	18	0.01	<2	<1	6	0.03
641300E 6978400N		<1	0.06	20	0.26	177	1	0.01	15	350	9	0.01	<2	2	39	0.01
641300E 6978425N		<1	0.03	<10	0.06	491	<1	0.02	4	650	9	0.02	<2	1	13	0.01
641300E 6978450N		<1	0.04	10	0.03	35	<1	0.01	2	210	4	0.01	<2	<1	4	0.01
641300E 6978475N		<1	0.07	20	0.42	267	1	0.01	19	370	29	0.02	<2	2	23	0.01
641300E 6978500N		<1	0.02	<10	0.01	21	<1	0.02	1	290	<2	0.01	<2	<1	12	0.01
641300E 6978525N		<1	0.05	10	0.05	135	1	0.01	6	240	7	0.01	<2	1	8	0.01
641300E 6978550N		<1	0.07	20	0.18	801	1	0.01	14	340	41	0.02	<2	2	31	0.01
641300E 6978575N		<1	0.05	10	0.01	34	1	0.01	2	90	16	0.01	<2	<1	7	0.01
641300E 6978600N		1	0.02	10	0.02	165	<1	0.02	4	200	50	0.02	<2	1	25	0.01
641300E 6978625N		1	0.04	10	0.17	1085	1	0.01	13	410	37	0.03	<2	1	21	0.01
641300E 6978650N		<1	0.02	<10	0.02	35	<1	0.01	2	180	4	0.01	<2	<1	5	0.02
641300E 6978675N		<1	0.04	10	0.02	214	<1	0.01	5	310	63	0.01	<2	1	12	0.01
641300E 6978700N		<1	0.06	10	0.14	475	1	0.01	11	260	221	0.01	<2	1	22	0.02
641300E 6978725N		1	0.05	10	0.15	487	<1	0.02	13	510	23	0.03	<2	1	35	0.01
641300E 6978750N		<1	0.02	<10	0.08	300	1	0.02	7	670	13	0.07	<2	1	49	0.01
641300E 6978775N		1	0.03	<10	0.03	122	<1	0.02	4	430	5	0.04	<2	<1	32	0.01
641300E 6978800N		<1	0.07	40	0.02	125	1	0.01	5	420	14	0.01	<2	1	6	0.01
641300E 6978825N		<1	0.03	10	0.03	53	1	0.01	3	260	14	0.01	<2	<1	5	0.01
641300E 6978850N		<1	0.02	10	0.02	113	1	0.01	5	180	11	0.01	<2	<1	5	0.02
641300E 6978875N		<1	0.02	<10	0.01	8	<1	0.02	1	170	2	0.01	2	<1	6	0.01
641300E 6978900N		1	0.06	20	0.17	253	2	0.01	11	360	20	<0.01	<2	2	7	0.02
641400E 6978400N		<1	0.07	10	0.33	228	1	0.01	15	130	23	<0.01	<2	2	26	0.02
641400E 6978425N		<1	0.05	10	0.21	1220	1	0.01	13	450	55	0.02	<2	1	35	0.02
641400E 6978450N		<1	0.09	40	0.15	256	<1	0.01	14	410	20	0.03	2	2	39	0.01
641400E 6978475N		1	0.05	10	0.32	592	<1	0.01	17	300	26	0.01	<2	2	39	0.03
641400E 6978500N		1	0.09	10	0.28	577	1	0.01	20	1400	19	0.15	<2	2	99	0.01
641400E 6978525N		<1	0.06	10	0.20	507	1	0.01	12	290	43	<0.01	<2	1	25	0.01
641400E 6978550N		<1	0.05	10	0.12	1030	<1	0.02	12	360	59	0.04	<2	1	57	0.02
641400E 6978575N		<1	0.09	20	0.26	555	1	0.01	19	550	30	0.03	<2	2	55	0.02
641400E 6978600N		<1	0.04	<10	0.04	792	1	0.03	7	280	10	0.02	<2	1	31	0.01
641400E 6978625N		1	0.14	40	0.30	307	1	0.01	17	300	20	0.01	<2	2	37	0.02
641400E 6978650N		2	0.06	10	0.33	713	1	0.01	20	740	52	0.06	<2	2	65	0.02
641400E 6978675N		<1	0.06	10	0.11	85	<1	0.01	6	210	7	0.01	<2	1	17	0.02
641400E 6978700N		<1	0.04	10	0.21	1360	1	0.02	18	900	33	0.06	<2	1	65	0.02
641400E 6978725N		<1	0.03	<10	0.04	202	<1	0.03	2	320	3	0.01	<2	<1	18	0.02
641400E 6978750N		<1	0.02	<10	0.02	92	<1	0.03	2	360	2	0.03	<2	<1	20	0.02

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To: NORANDA MINING AND EXPLORATION INC.
874 TUNGSTEN ST.
THUNDER BAY ON P7B 6J3

Date : 26-Aug-2002
Account: BUF

CERTIFICATE OF ANALYSIS VA02002712

Sample Description	Method Analyte Units LOR	ME-ICP41 Hg ppm 1	ME-ICP41 K % 0.01	ME-ICP41 La ppm 10	ME-ICP41 Mg % 0.01	ME-ICP41 Mn ppm 5	ME-ICP41 Mo ppm 1	ME-ICP41 Na % 0.01	ME-ICP41 Ni ppm 1	ME-ICP41 P ppm 10	ME-ICP41 Pb ppm 2	ME-ICP41 S % 0.01	ME-ICP41 Sb ppm 2	ME-ICP41 Sc ppm 1	ME-ICP41 Sr ppm 1	ME-ICP41 Ti % 0.01
641400E 6978775N		1	0.02	<10	0.04	420	1	0.02	5	560	13	0.03	<2	<1	28	0.02
641400E 6978800N		<1	0.02	<10	0.01	14	<1	0.02	1	140	3	0.01	<2	<1	5	0.01
641400E 6978825N		<1	0.02	10	0.02	60	1	0.02	3	140	28	0.01	<2	<1	5	0.02
641400E 6978850N		1	0.04	10	0.10	1585	1	0.01	15	500	30	0.02	<2	2	18	0.01
641400E 6978875N		<1	0.04	10	0.13	1440	<1	0.01	16	810	14	0.05	<2	2	81	0.01
641400E 6978900N		<1	0.06	20	0.13	216	1	0.01	7	180	5	0.01	<2	1	20	0.01
642200E 6977625N		<1	0.03	10	0.06	196	1	0.02	8	320	6	0.01	<2	1	40	0.01
642200E 6977650N		1	0.06	10	0.17	689	1	0.01	17	320	24	<0.01	<2	2	60	0.01
642200E 6977675N		<1	0.05	40	0.19	2510	4	0.03	61	5990	19	0.03	<2	2	398	0.01
642200E 6977700N		1	0.06	10	0.16	611	9	0.04	16	370	21	0.09	<2	2	54	0.01
642200E 6977725N		1	0.05	10	0.33	755	1	0.01	27	310	23	<0.01	<2	3	30	0.01
642200E 6977750N		<1	0.07	20	0.12	880	1	0.01	14	670	31	0.03	<2	1	19	0.01
642200E 6977775N		<1	0.10	20	0.05	212	1	0.01	15	360	6	<0.01	<2	1	8	0.01
642200E 6977800N		<1	0.02	<10	0.01	9	<1	0.03	1	140	4	0.01	<2	<1	6	0.01
642200E 6977825N		1	0.03	10	0.01	29	1	0.02	1	210	4	0.02	<2	<1	6	0.01
642200E 6977850N		1	0.08	30	0.07	1395	1	0.01	12	660	49	0.06	<2	3	14	<0.01
642200E 6977875N		1	0.02	10	0.02	59	1	0.02	3	260	28	0.01	<2	<1	5	0.01
642200E 6977900N		<1	0.09	30	0.01	200	<1	0.01	8	190	27	<0.01	<2	1	8	<0.01
642200E 6977925N		<1	0.05	10	0.15	455	2	0.01	20	190	24	<0.01	<2	2	7	0.01
642200E 6977950N		1	0.04	10	0.19	375	1	0.01	19	270	24	<0.01	<2	2	8	0.01
642200E 6977975N		<1	0.07	10	0.24	592	2	0.01	21	380	32	<0.01	<2	2	11	0.01
642200E 6978000N		1	0.07	10	0.11	616	1	0.02	13	410	34	0.01	<2	2	20	0.01
642200E 6978025N		<1	0.03	10	0.01	42	<1	0.01	3	130	5	<0.01	<2	<1	5	0.01
642200E 6978050N		<1	0.04	10	0.05	195	1	0.01	10	300	9	<0.01	<2	1	5	0.01
642200E 6978075N		<1	0.07	20	0.08	575	2	0.01	16	350	66	<0.01	<2	2	7	<0.01
642200E 6978100N		<1	0.05	10	0.09	523	1	0.02	14	350	41	0.01	<2	1	27	0.01
642300E 6977600N		1	0.06	10	0.17	571	2	0.01	15	250	15	<0.01	<2	2	32	0.01
642300E 6977625N		<1	0.04	<10	0.10	235	1	0.03	8	530	8	0.03	<2	1	80	0.01
642300E 6977650N		1	0.07	10	0.16	279	1	0.01	14	360	18	0.01	<2	1	29	0.02
642300E 6977675N		<1	0.02	<10	0.04	2030	<1	0.02	6	450	2	0.03	<2	<1	55	0.02
642300E 6977700N		<1	0.03	110	0.30	3440	2	0.03	62	6570	13	0.07	<2	3	458	0.01
642300E 6977725N		1	0.06	<10	0.09	497	1	0.02	8	560	6	0.03	<2	1	74	0.03
642300E 6977750N A		<1	0.02	<10	7.63	>10000	<1	0.03	37	330	6	0.02	<2	2	108	<0.01
642300E 6977750N B		<1	0.07	20	0.15	852	8	0.01	47	950	49	<0.01	7	4	29	<0.01
642300E 6977800N		1	0.04	10	0.23	199	1	0.01	19	350	1210	0.01	<2	2	11	0.01
642300E 6977825N		<1	0.02	<10	0.01	19	1	0.02	2	150	5	0.01	<2	<1	5	0.01
642300E 6977850N		1	0.04	10	0.01	14	<1	0.01	3	190	5	0.01	<2	<1	4	<0.01
642300E 6977875N		<1	0.04	10	0.02	14	1	0.02	3	230	5	0.01	<2	<1	5	0.01
642300E 6977900N		<1	0.03	10	0.05	138	2	0.01	9	200	15	<0.01	<2	1	7	0.01
642300E 6977925N		<1	0.02	<10	0.01	20	<1	0.02	1	90	2	0.01	<2	<1	5	0.01
642300E 6977950N		1	0.05	10	0.17	1205	1	0.02	22	620	24	0.02	<2	2	34	0.01

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CERTIFICATE OF ANALYSIS VA02002712

Sample Description	Method / Analyte / Units / LOR	ME-ICP41 Hg ppm 1	ME-ICP41 K % 0.01	ME-ICP41 La ppm 10	ME-ICP41 Mg % 0.01	ME-ICP41 Mn ppm 5	ME-ICP41 Mo ppm 1	ME-ICP41 Na % 0.01	ME-ICP41 Ni ppm 1	ME-ICP41 P ppm 10	ME-ICP41 Pb ppm 2	ME-ICP41 S % 0.01	ME-ICP41 Sb ppm 2	ME-ICP41 Sc ppm 1	ME-ICP41 Sr ppm 1	ME-ICP41 Ti % 0.01
642300E 6977975N		3	0.06	10	0.06	489	1	0.02	20	570	13	0.02	<2	2	28	0.01
642300E 6978000N		1	0.03	10	0.02	38	1	0.02	3	150	3	<0.01	<2	<1	5	0.01
642300E 6978025N		1	0.03	<10	0.02	45	1	0.03	2	260	205	0.01	<2	<1	13	0.02
642300E 6978050N		2	0.07	10	0.41	517	2	0.01	33	760	32	0.04	<2	2	49	0.02
642300E 6978075N		1	0.07	20	0.22	455	1	0.01	23	580	60	<0.01	<2	2	19	0.01
642300E 6978100N		<1	0.02	<10	0.01	15	<1	0.03	1	150	<2	<0.01	<2	<1	8	0.02
642400E 6977600N		1	0.06	10	0.29	638	2	0.01	17	610	18	0.04	<2	2	78	0.02
642400E 6977625N		<1	0.10	10	0.31	563	1	0.01	20	610	18	0.04	<2	3	93	0.01
642400E 6977650N		<1	0.05	200	0.96	>10000	3	0.05	237	>10000	73	<0.01	<2	11	1395	0.02
642400E 6977675N		<1	0.03	<10	0.04	73	1	0.02	5	340	3	0.02	<2	<1	47	0.01
642400E 6977700N		<1	0.02	<10	0.02	19	<1	0.03	1	250	2	0.01	<2	<1	11	0.02
642400E 6977725N		<1	0.02	<10	0.02	22	<1	0.03	1	150	<2	0.02	<2	<1	28	0.02
642400E 6977750N		1	0.06	10	0.28	592	1	0.01	14	290	14	0.01	<2	2	65	0.04
642400E 6977775N		1	0.05	10	0.04	386	1	0.01	7	180	8	<0.01	<2	1	27	0.02
642400E 6977800N		<1	0.03	<10	0.04	170	<1	0.03	4	330	6	0.02	<2	1	34	0.02
642400E 6977825N		<1	0.02	<10	0.02	21	1	0.02	2	170	4	0.01	<2	<1	5	0.01
642400E 6977850N		<1	0.02	<10	0.02	23	<1	0.03	2	210	9	0.01	<2	<1	9	0.01
642400E 6977875N		<1	0.05	30	0.01	30	1	0.01	11	350	19	<0.01	<2	1	6	0.01
642400E 6977900N		15	0.12	10	0.20	688	2	0.01	46	1250	2140	0.08	<2	3	37	0.01
642400E 6977925N		<1	0.02	<10	0.02	41	1	0.02	3	80	11	<0.01	<2	<1	5	0.02
642400E 6977950N		<1	0.05	10	0.02	79	1	0.01	11	180	8	<0.01	<2	1	5	0.02
642400E 6977975N		1	0.06	20	0.27	1005	2	0.01	31	650	37	<0.01	3	3	19	0.01
642400E 6978000N		1	0.04	10	0.05	105	1	0.01	6	100	10	<0.01	<2	1	7	0.02
642400E 6978025N		1	0.06	20	0.18	1090	1	0.01	17	550	22	0.01	<2	2	26	0.01
642400E 6978050N		<1	0.08	20	0.08	271	1	0.01	14	320	87	<0.01	<2	2	9	0.01
642400E 6978075N		<1	0.03	<10	0.02	26	<1	0.02	3	210	6	0.01	<2	<1	12	0.01
642400E 6978100N		2	0.03	<10	0.10	73	1	0.02	5	180	9	<0.01	<2	1	11	0.01

ALS Chemex
EXCELLENCE IN ANALYTICAL CHEMISTRY
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North Vancouver BC V7J 2C1 Canada
Phone: 604 984 0221 Fax: 604 984 0218

To: NORANDA MINING AND EXPLORATION INC.
874 TUNGSTEN ST.
THUNDER BAY ON P7B 6J3

Date : 26-Aug-2002
Account: BUF

CERTIFICATE OF ANALYSIS VA02002712

Sample Description	Method Analyte Units LOR	ME-ICP41 Tl ppm 10	ME-ICP41 U ppm 10	ME-ICP41 V ppm 1	ME-ICP41 W ppm 10	ME-ICP41 Zn ppm 2	Zn-AA46 Zn % 0.01
640900E 6978400N		<10	<10	26	<10	45	
640900E 6978425N		<10	<10	38	<10	85	
640900E 6978450N		<10	<10	26	<10	82	
640900E 6978475N		<10	<10	24	<10	105	
640900E 6978500N		<10	<10	17	<10	51	
640900E 6978525N		<10	<10	18	<10	36	
640900E 6978550N		<10	<10	10	<10	28	
640900E 6978575N		<10	<10	27	<10	77	
640900E 6978600N		<10	<10	20	<10	44	
640900E 6978625N		<10	<10	30	<10	53	
640900E 6978650N		<10	<10	20	<10	52	
640900E 6978675N		<10	<10	58	<10	125	
640900E 6978700N		<10	<10	4	<10	9	
640900E 6978725N		<10	<10	29	<10	52	
640900E 6978750N		<10	<10	64	<10	57	
640900E 6978775N		<10	<10	30	<10	71	
640900E 6978800N		<10	<10	37	<10	60	
640900E 6978825N		<10	<10	36	<10	50	
640900E 6978850N		<10	<10	28	<10	40	
640900E 6978875N		<10	<10	40	<10	66	
640900E 6978900N		<10	<10	32	<10	46	
641000E 6978400N		<10	<10	27	<10	54	
641000E 6978425N		<10	<10	33	<10	62	
641000E 6978450N		<10	<10	36	<10	52	
641000E 6978475N		<10	<10	55	<10	76	
641000E 6978500N		<10	<10	25	<10	52	
641000E 6978525N		<10	<10	29	<10	56	
641000E 6978550N		<10	<10	31	<10	33	
641000E 6978575N		<10	<10	34	<10	69	
641000E 6978600N		<10	<10	39	<10	57	
641000E 6978625N		<10	<10	21	<10	59	
641000E 6978650N		<10	<10	32	<10	61	
641000E 6978675N		<10	<10	31	<10	42	
641000E 6978700N		<10	<10	30	<10	59	
641000E 6978725N		<10	<10	32	<10	66	
641000E 6978750N		<10	<10	5	<10	10	
641000E 6978775N		<10	<10	26	<10	44	
641000E 6978800N		<10	<10	29	<10	55	
641000E 6978825N		<10	<10	34	<10	60	
641000E 6978850N		<10	<10	24	<10	32	

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To: [redacted] 874 TUNGSTEN ST.
THUNDER BAY ON P7B 6J3

Page # : [redacted]
Total # of pages : 6 (A - C)
Date : 26-Aug-2002
Account: BUF

CERTIFICATE OF ANALYSIS VA02002712

Sample Description	Method / Analyte / Units / LOR	ME-ICP41 Tl ppm 10	ME-ICP41 U ppm 10	ME-ICP41 V ppm 1	ME-ICP41 W ppm 10	ME-ICP41 Zn ppm 2	Zn-AA46 Zn % 0.01
641000E 6978875N		<10	<10	36	<10	40	
641000E 6978900N		<10	<10	34	<10	58	
641100E 6978400N		<10	<10	32	<10	82	
641100E 6978425N		<10	<10	31	<10	51	
641100E 6978450N		<10	<10	38	<10	69	
641100E 6978475N		<10	<10	32	<10	79	
641100E 6978500N		<10	<10	46	<10	72	
641100E 6978525N		<10	<10	34	<10	85	
641100E 6978550N		<10	<10	29	<10	104	
641100E 6978575N		<10	<10	31	<10	65	
641100E 6978600N		<10	<10	24	<10	77	
641100E 6978625N		<10	<10	16	<10	20	
641100E 6978650N		<10	<10	33	<10	62	
641100E 6978675N		<10	<10	21	<10	52	
641100E 6978700N		<10	<10	22	<10	301	
641100E 6978725N		<10	<10	30	<10	48	
641100E 6978750N		<10	<10	37	<10	45	
641100E 6978775N		<10	<10	24	<10	30	
641100E 6978800N		<10	<10	30	<10	74	
641100E 6978825N		<10	<10	24	<10	73	
641100E 6978850N		<10	<10	12	<10	49	
641100E 6978875N		<10	<10	32	<10	22	
641100E 6978900N		<10	<10	14	<10	13	
641200E 6978400N		<10	<10	24	<10	44	
641200E 6978425N		<10	<10	36	<10	49	
641200E 6978450N		<10	<10	26	<10	75	
641200E 6978475N		<10	<10	16	<10	26	
641200E 6978500N		<10	<10	5	<10	19	
641200E 6978525N		<10	<10	35	<10	89	
641200E 6978550N		<10	<10	21	<10	100	
641200E 6978575N		<10	<10	23	<10	79	
641200E 6978600N		<10	<10	7	<10	27	
641200E 6978625N		<10	<10	30	<10	105	
641200E 6978650N		<10	<10	24	<10	128	
641200E 6978675N		<10	<10	6	<10	28	
641200E 6978700N		<10	<10	6	<10	15	
641200E 6978725N		<10	<10	2	<10	9	
641200E 6978750N		<10	<10	26	<10	90	
641200E 6978775N		<10	<10	29	<10	157	
641200E 6978800N		<10	<10	33	<10	117	

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874 TUNGSTEN ST.
THUNDER BAY ON P7B 6J3

Date : 26-Aug-2002
Account: BUF

CERTIFICATE OF ANALYSIS VA02002712

Sample Description	Method Analyte Units LOR	ME-ICP41 Tl ppm 10	ME-ICP41 U ppm 10	ME-ICP41 V ppm 1	ME-ICP41 W ppm 10	ME-ICP41 Zn ppm 2	Zn-AA46 Zn % 0.01
641200E 6978825N		<10	<10	17	<10	26	
641200E 6978850N		<10	<10	44	<10	56	
641200E 6978875N		<10	<10	21	<10	17	
641200E 6978900N		<10	<10	37	<10	25	
641300E 6978400N		<10	<10	23	<10	47	
641300E 6978425N		<10	<10	11	<10	30	
641300E 6978450N		<10	<10	16	<10	27	
641300E 6978475N		<10	<10	39	<10	81	
641300E 6978500N		<10	<10	7	<10	19	
641300E 6978525N		<10	<10	22	<10	62	
641300E 6978550N		<10	<10	22	<10	156	
641300E 6978575N		<10	<10	11	<10	39	
641300E 6978600N		<10	<10	15	<10	75	
641300E 6978625N		<10	<10	12	<10	266	
641300E 6978650N		<10	<10	11	<10	19	
641300E 6978675N		<10	<10	12	<10	167	
641300E 6978700N		<10	<10	24	<10	138	
641300E 6978725N		<10	<10	14	<10	116	
641300E 6978750N		<10	<10	10	<10	82	
641300E 6978775N		<10	<10	9	<10	55	
641300E 6978800N		<10	<10	33	<10	33	
641300E 6978825N		<10	<10	15	<10	33	
641300E 6978850N		<10	<10	36	<10	31	
641300E 6978875N		<10	<10	5	<10	11	
641300E 6978900N		<10	<10	48	10	49	
641400E 6978400N		<10	<10	32	10	92	
641400E 6978425N		<10	<10	34	10	184	
641400E 6978450N		<10	<10	13	10	111	
641400E 6978475N		<10	<10	38	10	120	
641400E 6978500N		<10	10	17	10	126	
641400E 6978525N		<10	<10	27	10	113	
641400E 6978550N		<10	<10	21	10	156	
641400E 6978575N		<10	<10	25	10	138	
641400E 6978600N		<10	<10	8	<10	89	
641400E 6978625N		<10	<10	24	10	333	
641400E 6978650N		<10	<10	29	10	113	
641400E 6978675N		<10	<10	22	10	86	
641400E 6978700N		<10	<10	23	10	162	
641400E 6978725N		<10	<10	10	<10	32	
641400E 6978750N		<10	<10	8	<10	29	

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To: NORANDA MINING AND EXPLORATION INC.
874 TUNGSTEN ST.
THUNDER BAY ON P7B 6J3

Date : 26-Aug-2002
Account: BUF

CERTIFICATE OF ANALYSIS VA02002712

Sample Description	Method Analyte Units LOR	ME-ICP41 Tl ppm 10	ME-ICP41 U ppm 10	ME-ICP41 V ppm 1	ME-ICP41 W ppm 10	ME-ICP41 Zn ppm 2	Zn-AA46 Zn % 0.01
641400E 6978775N		<10	<10	14	<10	80	
641400E 6978800N		<10	<10	8	<10	11	
641400E 6978825N		<10	<10	22	<10	28	
641400E 6978850N		<10	<10	33	10	125	
641400E 6978875N		<10	<10	21	10	111	
641400E 6978900N		<10	<10	26	10	71	
642200E 6977625N		<10	<10	22	<10	50	
642200E 6977650N		<10	<10	36	10	126	
642200E 6977675N		<10	<10	22	10	108	
642200E 6977700N		<10	<10	26	10	93	
642200E 6977725N		<10	<10	24	10	97	
642200E 6977750N		<10	<10	44	10	63	
642200E 6977775N		<10	<10	15	10	88	
642200E 6977800N		<10	<10	3	<10	24	
642200E 6977825N		<10	<10	7	<10	89	
642200E 6977850N		<10	<10	7	<10	3770	
642200E 6977875N		<10	<10	14	<10	177	
642200E 6977900N		<10	<10	13	10	272	
642200E 6977925N		<10	<10	32	10	194	
642200E 6977950N		<10	<10	22	10	200	
642200E 6977975N		<10	<10	32	10	255	
642200E 6978000N		<10	<10	20	10	181	
642200E 6978025N		<10	<10	19	<10	63	
642200E 6978050N		<10	<10	37	10	183	
642200E 6978075N		<10	<10	30	10	506	
642200E 6978100N		<10	<10	19	<10	1190	
642300E 6977600N		<10	<10	32	10	107	
642300E 6977625N		<10	<10	14	<10	62	
642300E 6977650N		<10	<10	33	10	104	
642300E 6977675N		<10	<10	17	10	126	
642300E 6977700N		<10	<10	37	10	131	
642300E 6977725N		<10	<10	26	10	121	
642300E 6977750N A		<10	<10	25	20	74	
642300E 6977750N B		<10	<10	29	10	2030	
642300E 6977800N		<10	<10	51	10	933	
642300E 6977825N		<10	<10	11	<10	19	
642300E 6977850N		<10	<10	6	<10	96	
642300E 6977875N		<10	<10	10	<10	56	
642300E 6977900N		<10	<10	41	<10	467	
642300E 6977925N		<10	<10	8	<10	14	
642300E 6977950N		<10	<10	20	<10	3120	

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To: NORANDA MINING AND EXPLORATION INC.
874 TUNGSTEN ST.
THUNDER BAY ON P7B 6J3

Date : 26-Aug-2002
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CERTIFICATE OF ANALYSIS VA02002712

Sample Description	Method Analyte Units LOR	ME-ICP41 Tl ppm 10	ME-ICP41 U ppm 10	ME-ICP41 V ppm 1	ME-ICP41 W ppm 10	ME-ICP41 Zn ppm 2	Zn-AA46 Zn % 0.01
642300E 6977975N		<10	<10	21	<10	3880	
642300E 6978000N		<10	<10	16	<10	53	
642300E 6978025N		<10	<10	11	<10	807	
642300E 6978050N		<10	<10	36	<10	9390	
642300E 6978075N		<10	<10	22	<10	3760	
642300E 6978100N		<10	<10	9	<10	35	
642400E 6977600N		<10	<10	29	10	161	
642400E 6977625N		<10	<10	27	10	171	
642400E 6977650N		20	<10	114	20	161	
642400E 6977675N		<10	<10	16	<10	56	
642400E 6977700N		<10	<10	9	<10	16	
642400E 6977725N		<10	<10	8	<10	26	
642400E 6977750N		<10	<10	35	10	198	
642400E 6977775N		<10	<10	36	10	96	
642400E 6977800N		<10	<10	16	<10	325	
642400E 6977825N		<10	<10	12	<10	72	
642400E 6977850N		<10	<10	10	<10	193	
642400E 6977875N		<10	<10	26	<10	472	
642400E 6977900N		<10	<10	18	<10	>10000	1.16
642400E 6977925N		<10	<10	14	<10	57	
642400E 6977950N		<10	<10	32	10	328	
642400E 6977975N		<10	<10	24	<10	4830	
642400E 6978000N		<10	<10	40	10	112	
642400E 6978025N		<10	<10	21	10	434	
642400E 6978050N		<10	<10	17	10	256	
642400E 6978075N		<10	<10	14	<10	36	
642400E 6978100N		<10	<10	21	10	91	

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To: NORANDA MINING AND EXPLORATION INC.
874 TUNGSTEN ST.
THUNDER BAY ON P7B 6J3

Date : 21-Aug-2002
Account: BUF

CERTIFICATE OF ANALYSIS VA02002713

Sample Description	Method	WEI-21	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41
	Analyte	Recvd Wt	Ag	Al	As	B	Ba	Be	Bi	Ca	Cd	Co	Cr	Cu	Fe	Ga
	Units	kg	ppm	%	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	%	ppm
	LOR	0.02	0.2	0.01	2	10	10	0.5	2	0.01	0.5	1	1	1	0.01	10
642500E 6977600N		0.18	<0.2	0.28	5	<10	60	<0.5	<2	0.19	<0.5	1	2	10	0.33	<10
642500E 6977625N		0.18	0.2	0.67	4	<10	110	0.6	2	0.58	<0.5	6	6	26	0.93	<10
642500E 6977650N		0.20	0.4	1.05	13	<10	250	1.0	4	0.93	0.5	8	18	57	2.34	<10
642500E 6977675N		0.12	<0.2	0.34	5	<10	100	<0.5	<2	0.91	<0.5	1	2	10	0.51	<10
642500E 6977700N		0.22	0.2	0.56	7	<10	140	<0.5	<2	0.68	<0.5	3	5	16	0.71	<10
642500E 6977725N		0.24	<0.2	0.44	10	<10	160	<0.5	<2	0.33	<0.5	4	10	14	2.15	<10
642500E 6977750N		0.18	<0.2	0.34	5	<10	60	<0.5	<2	0.08	<0.5	3	13	21	2.46	<10
642500E 6977775N		0.28	<0.2	0.68	8	<10	170	0.6	<2	0.35	<0.5	10	17	20	2.33	<10
642500E 6977800N		0.28	<0.2	0.20	6	<10	30	<0.5	<2	0.02	<0.5	5	4	14	1.58	<10
642500E 6977825N		0.18	0.3	0.90	12	<10	150	0.7	<2	0.48	0.9	10	19	30	2.82	<10
642500E 6977850N		0.18	<0.2	0.33	3	<10	100	<0.5	<2	0.36	1.6	7	6	23	2.50	<10
642500E 6977875N		0.20	<0.2	0.85	8	<10	180	1.2	<2	0.43	<0.5	7	13	30	2.41	<10
642500E 6977900N		0.18	<0.2	1.14	8	<10	340	0.6	5	0.88	<0.5	11	18	26	2.77	<10
642500E 6977925N		0.16	<0.2	0.43	4	<10	120	0.6	<2	0.65	7.0	8	5	31	1.93	<10
642500E 6977950N		0.18	<0.2	0.60	9	<10	140	0.5	2	0.39	2.6	5	12	28	2.58	<10
642500E 6977975N		0.18	<0.2	0.56	12	<10	80	<0.5	<2	0.03	<0.5	4	11	14	2.33	<10
642500E 6978000N		0.18	<0.2	0.91	11	<10	140	<0.5	<2	0.08	<0.5	8	16	14	3.35	<10
642500E 6978025N		0.20	<0.2	0.73	10	<10	90	<0.5	<2	0.06	<0.5	3	10	10	1.69	<10
642500E 6978050N		0.22	<0.2	0.71	10	<10	200	0.5	2	0.34	<0.5	7	14	15	2.93	<10
642500E 6978075N		0.20	<0.2	0.64	9	<10	100	<0.5	<2	0.06	<0.5	4	9	15	2.27	<10
642500E 6978100N		0.18	<0.2	0.62	13	<10	60	<0.5	<2	0.02	<0.5	9	15	22	3.85	<10
642600E 6977600N		0.12	<0.2	0.87	10	<10	260	<0.5	<2	0.44	<0.5	8	20	18	2.50	<10
642600E 6977625N		0.16	<0.2	0.79	22	<10	320	1.1	2	0.77	<0.5	12	17	48	4.51	<10
642600E 6977650N		0.22	<0.2	0.93	18	<10	240	0.9	2	0.59	<0.5	13	18	29	2.90	<10
642600E 6977675N		0.24	<0.2	0.71	5	<10	200	1.5	3	0.87	<0.5	13	20	40	2.45	<10
642600E 6977700N		0.10	<0.2	0.46	5	<10	140	<0.5	2	0.82	<0.5	3	5	21	0.69	<10
642600E 6977725N		0.22	<0.2	0.57	2	<10	360	0.6	3	0.65	<0.5	10	11	31	1.42	<10
642600E 6977750N		0.18	0.3	0.66	11	<10	210	0.8	5	0.58	<0.5	11	14	40	2.07	<10
642600E 6977775N		0.16	<0.2	0.35	5	<10	90	0.5	<2	0.19	<0.5	12	12	14	3.08	<10
642600E 6977800N		0.16	<0.2	0.64	13	<10	150	0.6	3	0.52	<0.5	8	14	28	3.49	<10
642600E 6977825N		0.18	<0.2	0.30	20	<10	170	<0.5	<2	0.25	<0.5	7	4	20	1.62	<10
642600E 6977850N		0.16	<0.2	0.56	10	<10	170	0.6	<2	0.27	<0.5	4	13	26	3.62	<10
642600E 6977875N		0.22	<0.2	0.45	17	<10	180	0.5	<2	0.15	<0.5	3	5	17	1.60	<10
642600E 6977900N		0.24	<0.2	0.64	13	<10	90	<0.5	<2	0.05	<0.5	7	17	16	3.07	<10
642600E 6977925N		0.16	<0.2	0.45	15	<10	110	1.1	5	1.28	<0.5	13	9	25	2.69	<10
642600E 6977950N		0.20	0.3	0.41	16	<10	150	0.9	<2	1.37	<0.5	13	8	31	2.11	<10
642600E 6977975N		0.28	<0.2	0.27	13	<10	120	1.1	<2	0.63	<0.5	15	10	60	2.61	<10
642600E 6978000N		0.16	<0.2	0.52	8	<10	90	0.5	<2	0.04	<0.5	11	13	11	3.38	<10
642600E 6978025N		0.22	<0.2	0.36	15	<10	50	<0.5	<2	0.01	<0.5	8	7	31	2.96	<10
642600E 6978050N		0.14	<0.2	1.00	5	<10	90	0.5	2	0.01	<0.5	12	24	11	5.30	10

ALS Chemex
EXCELLENCE IN ANALYTICAL CHEMISTRY
Aurora Laboratory Services Ltd.
212 Brooksbank Avenue
North Vancouver BC V7J 2C1 Canada
Phone: 604 984 0221 Fax: 604 984 0218

To: **NORANDA MINING AND EXPLORATION INC.**
874 TUNGSTEN ST.
THUNDER BAY ON P7B 6J3

Date : 21-Aug-2002
Account: BUF

CERTIFICATE OF ANALYSIS VA02002713

Sample Description	Method Analyte Units LOR	WEI-21 Recvd Wt kg 0.02	ME-ICP41 Ag ppm 0.2	ME-ICP41 Al % 0.01	ME-ICP41 As ppm 2	ME-ICP41 B ppm 10	ME-ICP41 Ba ppm 10	ME-ICP41 Be ppm 0.5	ME-ICP41 Bi ppm 2	ME-ICP41 Ca % 0.01	ME-ICP41 Cd ppm 0.5	ME-ICP41 Co ppm 1	ME-ICP41 Cr ppm 1	ME-ICP41 Cu ppm 1	ME-ICP41 Fe % 0.01	ME-ICP41 Ga ppm 10
642600E 6978075N		0.20	<0.2	0.87	10	<10	150	0.6	<2	0.10	<0.5	13	17	24	3.41	<10
642600E 6978100N		0.20	<0.2	1.13	15	<10	270	0.9	<2	0.07	<0.5	18	23	29	3.68	<10
642700E 6977300N		0.22	<0.2	1.27	14	<10	410	1.0	<2	1.98	0.6	14	20	33	3.02	<10
642700E 6977325N		0.14	0.6	0.35	<2	<10	60	<0.5	2	0.65	<0.5	1	2	22	0.28	<10
642700E 6977350N		0.18	<0.2	0.26	8	<10	30	<0.5	<2	0.03	<0.5	8	5	35	1.55	<10
642700E 6977375N		0.28	<0.2	0.25	19	<10	50	<0.5	<2	0.05	<0.5	14	8	67	2.91	<10
642700E 6977400N		0.14	0.6	0.50	<2	<10	120	<0.5	<2	1.22	<0.5	2	4	18	0.50	<10
642700E 6977425N		0.16	0.3	1.01	11	<10	280	0.8	<2	2.07	<0.5	10	17	61	2.07	<10
642700E 6977450N		0.24	0.4	0.82	12	<10	270	0.7	4	2.18	0.6	9	12	66	1.33	<10
642700E 6977475N		0.28	<0.2	1.02	16	<10	380	1.5	5	1.11	<0.5	14	21	189	2.82	<10
642700E 6977500N		0.28	0.2	0.77	15	<10	600	1.5	<2	1.57	<0.5	10	19	97	2.07	<10
642700E 6977525N		<0.02	<0.2	0.86	19	<10	410	2.3	<2	0.64	<0.5	9	21	97	2.48	<10
642700E 6977550N		0.28	0.3	0.99	10	<10	480	2.5	<2	0.93	<0.5	8	17	93	2.06	<10
642700E 6977575N		0.30	<0.2	0.64	11	<10	340	1.0	<2	0.66	<0.5	8	16	35	2.37	<10
642700E 6977600N		0.24	<0.2	0.99	7	<10	420	2.1	2	1.09	<0.5	11	18	94	2.24	<10
642700E 6977625N		0.26	<0.2	0.82	11	<10	360	0.5	<2	0.93	<0.5	12	19	22	2.42	<10
642700E 6977650N		0.30	<0.2	0.71	4	<10	310	1.2	<2	0.93	<0.5	7	13	35	1.74	<10
642700E 6977675N		0.24	<0.2	0.95	19	<10	420	2.5	4	1.15	<0.5	12	21	95	2.54	<10
642700E 6977700N		0.32	<0.2	0.38	4	<10	370	1.2	<2	0.29	<0.5	19	9	81	2.30	<10
642700E 6977725N		0.32	<0.2	0.96	9	<10	100	<0.5	<2	0.04	<0.5	10	21	15	3.54	<10
642700E 6977750N		0.26	0.2	0.44	2	<10	50	<0.5	2	0.02	<0.5	2	7	7	1.05	<10
642700E 6977775N		0.18	<0.2	0.36	3	<10	40	<0.5	<2	0.02	<0.5	4	7	8	1.36	<10
642700E 6977800N		0.30	<0.2	0.35	3	<10	40	<0.5	<2	0.01	<0.5	5	14	5	2.01	<10
642800E 6977300N		0.32	<0.2	1.27	16	<10	560	0.8	<2	0.83	<0.5	19	31	44	3.94	<10
642800E 6977325N		0.26	<0.2	1.18	11	<10	90	<0.5	<2	0.08	<0.5	7	13	29	3.20	<10
642800E 6977350N		0.20	0.4	0.80	4	<10	170	0.5	<2	1.50	0.5	6	11	39	1.38	<10
642800E 6977375N		0.22	0.2	0.38	6	<10	100	<0.5	<2	0.23	<0.5	4	7	11	0.84	<10
642800E 6977400N		0.30	<0.2	0.91	11	<10	260	0.6	<2	0.84	<0.5	10	16	41	2.02	<10
642800E 6977425N		0.22	<0.2	0.76	7	<10	200	<0.5	<2	0.77	0.5	6	17	26	1.66	<10
642800E 6977450N		0.30	<0.2	1.13	14	<10	370	1.9	<2	1.13	<0.5	9	19	69	2.47	<10
642800E 6977475N		0.30	0.3	0.87	6	<10	450	2.7	6	1.74	<0.5	6	16	131	1.57	<10
642800E 6977500N		0.36	<0.2	0.79	13	<10	110	<0.5	<2	0.02	<0.5	8	19	21	3.32	<10
642800E 6977525N		0.28	<0.2	0.32	7	<10	30	<0.5	<2	0.02	<0.5	3	5	9	1.17	<10
642800E 6977550N		0.34	<0.2	0.95	9	<10	320	2.2	<2	0.52	<0.5	9	18	120	2.16	<10
642800E 6977575N		0.18	<0.2	0.99	4	<10	60	<0.5	<2	0.02	<0.5	6	15	12	2.40	10
642800E 6977600N		0.24	<0.2	1.33	13	<10	380	0.7	<2	0.73	<0.5	12	20	32	3.26	<10
642800E 6977625N		0.26	<0.2	0.54	5	<10	260	<0.5	<2	0.40	<0.5	5	9	18	1.38	<10
642800E 6977650N		0.22	0.2	0.40	4	<10	110	<0.5	<2	0.30	<0.5	3	7	11	1.08	<10
642800E 6977675N		0.20	<0.2	0.50	9	<10	180	<0.5	<2	0.34	<0.5	5	9	18	1.55	<10
642800E 6977700N		0.18	<0.2	0.92	4	<10	170	<0.5	<2	0.23	0.5	5	6	13	1.90	10

ALS Chemex
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To: NORANDA MINING AND EXPLORATION INC.
874 TUNGSTEN ST.
THUNDER BAY ON P7B 6J3

Date : 21-Aug-2002
Account: BUF

CERTIFICATE OF ANALYSIS VA02002713

Sample Description	Method	WEI-21	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41
	Analyte	Recvd Wt	Ag	Al	As	B	Ba	Be	Bi	Ca	Cd	Co	Cr	Cu	Fe	Ga
	Units	kg	ppm	%	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	%	ppm
	LOR	0.02	0.2	0.01	2	10	10	0.5	2	0.01	0.5	1	1	1	0.01	10
642800E 6977725N		0.30	<0.2	1.03	19	<10	420	1.5	<2	0.65	<0.5	11	20	43	2.86	<10
642800E 6977750N		0.26	<0.2	0.67	6	<10	270	<0.5	<2	0.33	<0.5	4	13	9	1.70	<10
642800E 6977775N		0.30	<0.2	1.09	9	<10	300	1.0	<2	0.05	<0.5	9	18	27	2.85	<10
642800E 6977800N		0.20	<0.2	0.65	12	<10	60	<0.5	<2	0.01	<0.5	4	12	15	2.40	10
642900E 6977300N		0.36	<0.2	0.47	17	<10	170	0.5	2	0.36	<0.5	7	10	51	2.48	<10
642900E 6977325N		0.24	<0.2	3.70	6	<10	220	0.5	<2	0.17	0.6	36	106	24	9.69	10
642900E 6977350N		0.36	<0.2	0.53	8	<10	170	1.1	<2	0.84	<0.5	11	12	49	3.16	<10
642900E 6977375N		0.34	<0.2	1.50	21	<10	240	0.8	<2	0.90	<0.5	18	60	36	4.33	<10
642900E 6977400N		0.28	<0.2	0.75	17	<10	240	<0.5	<2	0.69	<0.5	11	21	15	2.45	<10
642900E 6977425N		0.30	<0.2	0.59	19	<10	40	<0.5	<2	0.04	<0.5	8	16	31	3.33	10
642900E 6977450N		0.34	<0.2	0.83	12	<10	190	<0.5	<2	0.62	<0.5	11	19	23	2.44	<10
642900E 6977475N		0.22	<0.2	1.09	9	<10	390	1.7	<2	0.66	<0.5	17	34	75	2.27	<10
642900E 6977500N		0.34	<0.2	0.89	14	<10	330	0.9	<2	0.84	<0.5	12	19	47	2.72	<10
642900E 6977525N		0.28	<0.2	1.37	17	<10	650	1.3	<2	0.95	<0.5	12	29	57	3.23	<10
642900E 6977550N		0.26	<0.2	0.96	9	<10	350	0.6	<2	0.51	<0.5	5	13	20	1.79	<10
642900E 6977575N		0.26	0.4	0.58	3	<10	270	<0.5	<2	0.65	<0.5	2	3	17	0.53	<10
642900E 6977600N		0.22	0.3	0.48	4	<10	550	0.6	4	0.97	<0.5	3	5	45	0.72	<10
642900E 6977625N		0.32	<0.2	0.96	8	<10	530	0.7	<2	0.75	<0.5	12	25	37	1.56	<10
642900E 6977650N		0.10	0.4	0.58	15	<10	90	2.7	6	1.33	1.5	29	10	208	2.48	<10
642900E 6977675N		0.18	1.0	0.77	12	<10	760	2.3	2	1.12	2.0	11	12	208	1.10	<10
642900E 6977700N		0.22	0.2	1.24	14	<10	670	4.6	<2	0.78	<0.5	8	18	299	3.17	<10
642900E 6977725N		0.18	0.2	1.35	12	<10	610	6.7	<2	1.08	<0.5	11	26	344	3.08	<10
642900E 6977750N		0.20	0.2	0.97	7	<10	500	0.9	<2	0.63	0.7	7	18	61	1.69	<10
642900E 6977775N		0.24	<0.2	0.75	11	<10	240	0.8	<2	0.42	0.8	11	17	22	2.14	<10
642900E 6977800N		0.20	0.3	1.11	25	<10	420	3.1	4	1.02	19.6	13	19	324	2.73	<10
643000E 6977300N		0.34	0.2	0.65	4	<10	120	<0.5	<2	0.31	<0.5	4	10	12	1.09	<10
643000E 6977325N		0.22	<0.2	0.45	4	<10	150	<0.5	<2	0.15	0.5	6	8	16	1.02	<10
643000E 6977350N		0.26	<0.2	0.78	6	<10	170	<0.5	<2	1.00	<0.5	9	14	19	1.90	<10
643000E 6977375N		0.26	0.3	1.01	8	<10	370	1.1	<2	1.58	0.6	8	13	47	2.17	<10
643000E 6977400N		0.28	<0.2	0.80	7	<10	70	<0.5	<2	0.03	<0.5	7	12	12	2.85	<10
643000E 6977425N		0.32	<0.2	0.76	5	<10	70	<0.5	<2	0.02	<0.5	6	13	8	2.36	<10
643000E 6977450N		0.28	<0.2	0.69	4	<10	80	<0.5	<2	0.01	<0.5	4	9	7	1.59	<10
643000E 6977475N		0.30	<0.2	1.29	13	<10	170	0.6	<2	0.04	<0.5	5	13	13	2.17	<10
643000E 6977500N		0.30	<0.2	1.22	6	<10	190	1.2	<2	0.07	<0.5	11	18	31	2.74	<10
643000E 6977525N		0.18	<0.2	0.85	8	<10	160	<0.5	<2	0.02	<0.5	14	12	32	3.82	10
643000E 6977550N		0.22	<0.2	0.54	3	<10	60	<0.5	<2	0.03	<0.5	3	5	9	1.05	<10
643000E 6977575N		0.24	<0.2	0.86	10	<10	110	<0.5	<2	0.02	<0.5	8	13	26	3.20	<10
643000E 6977600N		0.12	<0.2	1.15	13	<10	180	0.5	<2	0.07	0.8	13	17	19	3.75	10
643000E 6977625N		0.16	<0.2	1.05	15	<10	180	0.5	<2	0.08	1.4	12	19	22	3.80	<10
643000E 6977650N		0.16	<0.2	1.32	8	<10	230	<0.5	<2	0.09	<0.5	7	16	18	2.94	<10

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To: **NORANDA MINING AND EXPLORATION INC.**
874 TUNGSTEN ST.
THUNDER BAY ON P7B 6J3

Date : 21-Aug-2002
Account: BUF

CERTIFICATE OF ANALYSIS VA02002713

Sample Description	Method Analyte Units LOR	WEI-21 Recvd Wt kg 0.02	ME-ICP41 Ag ppm 0.2	ME-ICP41 Al % 0.01	ME-ICP41 As ppm 2	ME-ICP41 B ppm 10	ME-ICP41 Ba ppm 10	ME-ICP41 Be ppm 0.5	ME-ICP41 Bi ppm 2	ME-ICP41 Ca % 0.01	ME-ICP41 Cd ppm 0.5	ME-ICP41 Co ppm 1	ME-ICP41 Cr ppm 1	ME-ICP41 Cu ppm 1	ME-ICP41 Fe % 0.01	ME-ICP41 Ga ppm 10
643000E 6977675N		0.22	<0.2	0.60	4	<10	60	<0.5	<2	0.03	<0.5	2	5	9	1.07	<10
643000E 6977700N		0.16	<0.2	1.00	8	<10	90	<0.5	<2	0.04	<0.5	6	13	17	2.77	<10
643000E 6977725N		0.28	<0.2	0.92	6	<10	70	<0.5	<2	0.03	<0.5	4	7	10	1.51	<10
643000E 6977750N		0.16	<0.2	1.30	18	<10	90	0.6	<2	0.03	<0.5	15	18	33	4.35	<10
643000E 6977775N		0.26	<0.2	1.58	16	<10	90	0.6	<2	0.01	<0.5	13	20	21	3.74	<10
643000E 6977800N		0.20	0.2	0.48	<2	<10	30	<0.5	<2	0.06	<0.5	1	2	6	0.37	<10
643100E 6977300N		0.16	<0.2	0.94	18	<10	420	1.0	<2	0.18	0.6	17	18	60	3.43	<10
643100E 6977325N		0.18	<0.2	0.93	5	<10	660	1.1	<2	0.02	<0.5	15	25	23	4.32	<10
643100E 6977350N		0.16	<0.2	0.52	<2	<10	70	<0.5	<2	0.03	<0.5	4	14	5	2.03	<10
643100E 6977375N		0.18	<0.2	0.51	2	<10	90	<0.5	<2	0.09	<0.5	3	8	6	1.10	<10
643100E 6977400N		0.24	<0.2	1.31	4	<10	370	0.9	<2	0.48	<0.5	7	14	14	2.12	<10
643100E 6977425N		0.20	<0.2	1.33	7	<10	130	0.5	<2	0.03	0.7	6	11	10	2.33	<10
643100E 6977450N		0.14	<0.2	0.82	15	<10	100	<0.5	<2	0.06	<0.5	4	6	8	0.91	<10
643100E 6977475N		0.20	<0.2	0.89	9	<10	250	1.0	<2	0.57	0.8	6	11	21	1.93	10
643100E 6977500N		0.20	0.3	1.26	17	<10	210	0.8	<2	0.24	3.0	11	21	20	2.93	<10
643100E 6977525N		0.16	<0.2	0.49	3	<10	140	<0.5	<2	0.13	<0.5	14	21	19	3.36	<10
643100E 6977550N		0.24	<0.2	0.98	6	<10	120	0.6	<2	0.04	<0.5	8	17	12	3.46	<10
643100E 6977575N		0.12	<0.2	0.41	<2	<10	30	<0.5	<2	0.03	<0.5	1	2	4	0.38	<10
643100E 6977600N		0.20	<0.2	0.39	21	<10	250	<0.5	<2	0.40	1.1	7	4	21	1.48	<10
643100E 6977625N		<0.02	<0.2	0.41	8	<10	110	<0.5	<2	0.13	<0.5	4	5	16	1.32	<10
643100E 6977650N		0.20	<0.2	1.46	11	<10	190	0.6	<2	0.10	<0.5	6	17	8	2.46	<10
643100E 6977675N		0.26	<0.2	0.62	23	<10	120	0.9	2	0.14	5.1	11	11	24	2.75	<10
643100E 6977700N		0.18	<0.2	0.43	12	<10	60	0.5	<2	0.02	<0.5	10	6	33	2.51	<10
643100E 6977725N		0.24	<0.2	0.58	3	<10	230	1.2	<2	0.35	4.9	21	10	17	2.79	<10
643100E 6977750N		0.18	<0.2	0.69	23	<10	100	0.6	<2	0.15	3.1	12	8	26	2.64	<10
643100E 6977775N		0.20	<0.2	0.37	3	<10	190	0.8	<2	0.23	1.8	7	3	12	1.71	<10
643100E 6977800N		0.14	<0.2	0.64	6	<10	80	<0.5	<2	0.03	<0.5	5	4	10	1.27	<10
643200E 6977300N		0.20	<0.2	0.63	11	<10	100	<0.5	<2	0.02	0.6	6	9	14	1.87	<10
643200E 6977325N		0.20	<0.2	0.44	9	<10	90	0.5	<2	0.04	<0.5	10	9	22	2.53	<10
643200E 6977350N		0.16	<0.2	0.71	9	<10	110	<0.5	<2	0.13	1.8	7	11	16	2.49	<10
643200E 6977375N		0.14	<0.2	0.65	7	<10	170	<0.5	<2	0.44	<0.5	13	8	15	2.58	<10
643200E 6977400N		0.16	<0.2	0.62	9	<10	130	0.6	<2	0.38	2.2	12	11	20	3.54	<10
643200E 6977425N		0.22	<0.2	0.50	13	<10	150	<0.5	<2	0.34	0.8	21	9	15	2.78	<10
643200E 6977450N		0.20	<0.2	0.44	7	<10	50	<0.5	<2	0.05	<0.5	3	4	10	1.13	<10
643200E 6977475N		0.14	0.4	0.36	<2	<10	20	<0.5	<2	0.08	<0.5	1	1	3	0.29	<10
643200E 6977500N		0.14	<0.2	0.29	<2	<10	40	<0.5	<2	0.23	0.6	1	1	3	0.24	<10
643200E 6977525N		0.22	<0.2	0.37	2	<10	50	0.6	<2	0.02	<0.5	13	12	42	4.71	<10
643200E 6977550N		0.14	<0.2	0.60	<2	<10	60	<0.5	<2	0.03	<0.5	1	2	5	0.38	<10
643200E 6977575N		0.24	<0.2	1.53	16	<10	140	0.9	<2	0.02	<0.5	9	17	23	3.25	<10
643200E 6977600N		0.16	<0.2	0.47	9	<10	50	<0.5	<2	0.01	<0.5	4	7	8	1.61	<10

ALS Chemex
EXCELLENCE IN ANALYTICAL CHEMISTRY
Aurora Laboratory Services Ltd.
212 Brooksbank Avenue
North Vancouver BC V7J 2C1 Canada
Phone: 604 984 0221 Fax: 604 984 0218

To: NORANDA MINING AND EXPLORATION INC.
874 TUNGSTEN ST.
THUNDER BAY ON P7B 6J3

Date : 21-Aug-2002
Account: BUF

CERTIFICATE OF ANALYSIS VA02002713

Sample Description	Method Analyte Units LOR	WEI-21 Recvd Wt kg 0.02	ME-ICP41 Ag ppm 0.2	ME-ICP41 Al % 0.01	ME-ICP41 As ppm 2	ME-ICP41 B ppm 10	ME-ICP41 Ba ppm 10	ME-ICP41 Be ppm 0.5	ME-ICP41 Bi ppm 2	ME-ICP41 Ca % 0.01	ME-ICP41 Cd ppm 0.5	ME-ICP41 Co ppm 1	ME-ICP41 Cr ppm 1	ME-ICP41 Cu ppm 1	ME-ICP41 Fe % 0.01	ME-ICP41 Ga ppm 10
643200E 6977625N		0.20	<0.2	1.08	12	<10	90	0.5	<2	0.01	<0.5	17	18	29	4.05	<10
643200E 6977650N		0.16	<0.2	0.42	<2	<10	50	<0.5	<2	0.08	<0.5	1	3	10	0.65	<10
643200E 6977675N		0.14	<0.2	0.50	8	<10	50	<0.5	<2	0.01	<0.5	4	8	13	1.99	<10
643200E 6977700N		0.16	<0.2	0.41	2	<10	40	<0.5	<2	0.01	<0.5	2	3	6	0.84	<10
643200E 6977725N		0.16	<0.2	0.61	<2	<10	40	<0.5	<2	0.04	<0.5	1	2	9	0.59	<10
643200E 6977750N		0.20	<0.2	0.41	12	<10	50	<0.5	<2	0.02	<0.5	7	4	11	1.87	<10
643200E 6977775N		0.16	<0.2	0.50	6	<10	60	<0.5	<2	0.02	<0.5	2	4	7	0.79	<10
643200E 6977800N		0.14	<0.2	0.74	7	<10	90	<0.5	<2	0.13	<0.5	6	11	5	2.18	<10

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874 TUNGSTEN ST.
THUNDER BAY ON P7B 6J3

Date : 21-Aug-2002
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CERTIFICATE OF ANALYSIS VA02002713

Sample Description	Method	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41
	Analyte	Hg	K	La	Mg	Mn	Mo	Na	Ni	P	Pb	S	Sb	Sc	Sr	Tl
	Units	ppm	%	ppm	%	ppm	ppm	%	ppm	ppm	ppm	%	ppm	ppm	ppm	%
	LOR	1	0.01	10	0.01	5	1	0.01	1	10	2	0.01	2	1	1	0.01
642500E 6977600N		<1	0.02	<10	0.02	20	<1	0.02	2	170	3	0.02	2	<1	25	0.01
642500E 6977625N		<1	0.02	<10	0.08	400	1	0.02	6	640	9	0.04	<2	1	69	0.01
642500E 6977650N		<1	0.05	10	0.27	818	2	0.02	21	1020	24	0.06	<2	2	101	0.01
642500E 6977675N		<1	0.02	<10	0.02	203	<1	0.02	3	240	4	0.03	<2	<1	76	0.01
642500E 6977700N		<1	0.02	<10	0.07	585	1	0.02	6	520	5	0.03	<2	1	61	0.01
642500E 6977725N		<1	0.03	<10	0.07	248	2	0.01	9	190	11	0.01	<2	1	37	0.03
642500E 6977750N		<1	0.04	<10	0.04	273	1	0.01	6	180	9	0.01	<2	<1	11	0.01
642500E 6977775N		<1	0.05	<10	0.26	516	1	0.01	17	290	11	0.02	<2	1	33	0.02
642500E 6977800N		<1	0.06	10	0.02	128	1	0.01	8	200	4	0.01	<2	1	5	0.01
642500E 6977825N		<1	0.04	10	0.37	394	1	0.01	32	970	17	0.01	3	3	35	0.02
642500E 6977850N		<1	0.09	10	0.08	363	1	0.01	15	270	4	0.01	2	1	23	<0.01
642500E 6977875N		<1	0.06	<10	0.23	346	1	0.01	21	460	13	0.02	<2	2	29	0.01
642500E 6977900N		<1	0.04	<10	0.37	785	1	0.01	24	690	26	0.04	<2	2	56	0.01
642500E 6977925N		<1	0.07	<10	0.08	485	1	0.02	16	500	14	0.04	<2	1	49	0.01
642500E 6977950N		<1	0.04	<10	0.12	313	1	0.01	15	190	16	0.01	<2	1	35	<0.01
642500E 6977975N		<1	0.03	10	0.07	253	1	0.01	9	140	16	<0.01	<2	1	7	0.01
642500E 6978000N		1	0.03	10	0.20	600	1	0.01	17	190	27	0.01	<2	1	12	0.01
642500E 6978025N		<1	0.03	<10	0.07	253	1	0.01	7	260	13	0.01	<2	<1	9	0.01
642500E 6978050N		<1	0.04	10	0.17	412	1	0.01	16	230	16	0.01	<2	1	34	0.01
642500E 6978075N		<1	0.03	10	0.08	232	1	0.01	9	220	12	0.01	<2	1	11	0.01
642500E 6978100N		<1	0.05	20	0.12	611	1	0.01	17	200	109	<0.01	<2	1	10	0.01
642600E 6977600N		<1	0.04	<10	0.34	490	2	0.01	15	190	18	0.02	2	1	58	0.02
642600E 6977625N		2	0.04	<10	0.26	1685	4	0.01	25	620	44	0.05	2	2	88	0.01
642600E 6977650N		<1	0.05	10	0.34	588	1	0.01	21	510	12	0.03	<2	2	68	0.01
642600E 6977675N		<1	0.07	<10	0.25	839	1	0.01	19	510	19	0.04	<2	2	88	0.01
642600E 6977700N		<1	0.03	<10	0.08	266	1	0.02	7	430	5	0.04	3	1	86	0.01
642600E 6977725N		<1	0.04	<10	0.12	704	1	0.01	12	420	10	0.04	<2	1	81	0.01
642600E 6977750N		<1	0.05	<10	0.24	467	1	0.01	21	360	13	0.03	<2	2	47	0.01
642600E 6977775N		<1	0.07	10	0.10	505	1	0.01	15	190	14	0.01	2	2	20	0.01
642600E 6977800N		<1	0.06	<10	0.10	701	2	0.01	16	460	27	0.02	<2	1	33	0.01
642600E 6977825N		<1	0.05	20	0.03	248	<1	0.01	11	160	8	<0.01	<2	1	17	<0.01
642600E 6977850N		<1	0.05	10	0.09	466	1	0.01	18	220	70	0.01	2	1	23	<0.01
642600E 6977875N		<1	0.04	10	0.03	168	1	0.01	10	180	34	0.03	8	1	20	<0.01
642600E 6977900N		<1	0.04	10	0.18	477	1	0.01	14	200	18	0.01	<2	1	9	0.01
642600E 6977925N		<1	0.04	10	0.10	453	2	0.01	25	620	43	0.02	2	4	121	<0.01
642600E 6977950N		<1	0.05	10	0.04	832	1	0.01	22	990	28	0.02	3	2	150	<0.01
642600E 6977975N		<1	0.06	20	0.04	472	3	0.01	26	550	17	0.01	<2	3	94	<0.01
642600E 6978000N		<1	0.10	40	0.05	258	1	0.01	16	350	15	<0.01	<2	1	9	0.01
642600E 6978025N		<1	0.07	40	0.05	125	1	0.01	15	460	13	<0.01	2	1	11	0.01
642600E 6978050N		<1	0.08	30	0.15	560	1	0.01	13	500	20	<0.01	<2	1	3	0.03

ALS Chemex
EXCELLENCE IN ANALYTICAL CHEMISTRY
Aurora Laboratory Services Ltd.
212 Brooksbank Avenue
North Vancouver BC V7J 2C1 Canada
Phone: 604 984 0221 Fax: 604 984 0218

To: NORANDA MINING AND EXPLORATION INC.
874 TUNGSTEN ST.
THUNDER BAY ON P7B 6J3

Date : 21-Aug-2002
Account: BUF

CERTIFICATE OF ANALYSIS VA02002713

Sample Description	Method Analyte Units LOR	ME-ICP41 Hg ppm 1	ME-ICP41 K % 0.01	ME-ICP41 La ppm 10	ME-ICP41 Mg % 0.01	ME-ICP41 Mn ppm 5	ME-ICP41 Mo ppm 1	ME-ICP41 Na % 0.01	ME-ICP41 Ni ppm 1	ME-ICP41 P ppm 10	ME-ICP41 Pb ppm 2	ME-ICP41 S % 0.01	ME-ICP41 Sb ppm 2	ME-ICP41 Sc ppm 1	ME-ICP41 Sr ppm 1	ME-ICP41 Ti % 0.01
642600E 6978075N		<1	0.08	20	0.18	509	1	0.01	15	310	36	<0.01	<2	1	9	0.01
642600E 6978100N		<1	0.06	20	0.30	800	1	0.01	23	170	85	<0.01	<2	2	8	<0.01
642700E 6977300N		<1	0.04	10	0.53	2170	1	0.01	23	710	21	0.04	<2	3	65	0.01
642700E 6977325N		<1	0.02	<10	0.02	214	<1	0.02	4	320	<2	0.03	<2	<1	29	0.01
642700E 6977350N		<1	0.03	<10	0.03	165	3	0.01	17	410	10	<0.01	<2	1	4	<0.01
642700E 6977375N		<1	0.05	10	0.03	310	6	0.01	36	420	21	<0.01	2	1	8	<0.01
642700E 6977400N		<1	0.03	<10	0.09	157	1	0.02	5	570	5	0.07	<2	1	71	0.01
642700E 6977425N		<1	0.04	10	0.39	912	1	0.01	22	990	24	0.09	<2	2	97	0.01
642700E 6977450N		<1	0.04	10	0.23	751	1	0.02	16	970	27	0.10	<2	1	153	0.01
642700E 6977475N		<1	0.07	10	0.38	809	2	0.01	26	850	29	0.06	<2	2	83	0.01
642700E 6977500N		<1	0.06	<10	0.28	593	1	0.01	14	710	15	0.07	<2	2	133	0.01
642700E 6977525N		<1	0.06	<10	0.29	595	2	0.01	16	620	31	0.04	<2	2	61	0.02
642700E 6977550N		<1	0.06	10	0.23	332	1	0.02	15	1000	19	0.07	<2	3	134	0.01
642700E 6977575N		<1	0.05	<10	0.14	246	2	0.01	10	370	20	0.03	<2	1	86	0.02
642700E 6977600N		<1	0.05	<10	0.32	1080	1	0.01	17	740	29	0.06	<2	2	128	0.01
642700E 6977625N		<1	0.06	<10	0.29	1160	2	0.01	14	360	16	0.03	<2	1	106	0.02
642700E 6977650N		<1	0.04	<10	0.16	430	<1	0.02	11	540	10	0.04	<2	1	95	0.01
642700E 6977675N		<1	0.06	10	0.27	618	1	0.01	23	1020	20	0.09	<2	2	132	0.01
642700E 6977700N		<1	0.06	<10	0.10	2640	1	0.01	27	160	9	0.01	<2	3	39	<0.01
642700E 6977725N		<1	0.04	10	0.17	496	1	0.01	12	220	14	<0.01	<2	1	6	0.01
642700E 6977750N		<1	0.02	<10	0.03	125	<1	0.01	2	190	7	<0.01	<2	<1	5	0.02
642700E 6977775N		<1	0.02	<10	0.03	251	1	0.01	2	260	8	0.01	<2	<1	4	0.01
642700E 6977800N		<1	0.03	<10	0.06	214	1	0.01	4	230	14	<0.01	<2	1	1	0.01
642800E 6977300N		<1	0.06	10	0.39	1065	5	0.01	35	870	25	0.01	<2	5	35	<0.01
642800E 6977325N		<1	0.03	10	0.19	198	3	0.01	11	440	19	0.01	<2	1	8	0.01
642800E 6977350N		<1	0.04	10	0.18	265	1	0.02	16	900	17	0.08	<2	1	67	0.01
642800E 6977375N		<1	0.05	10	0.06	239	1	0.01	5	280	9	0.02	<2	1	19	0.01
642800E 6977400N		<1	0.05	10	0.25	569	2	0.01	16	520	20	0.04	<2	1	68	0.01
642800E 6977425N		<1	0.04	<10	0.22	263	1	0.01	11	330	18	0.03	<2	1	69	0.02
642800E 6977450N		<1	0.04	10	0.29	834	2	0.01	17	1850	37	0.10	<2	2	96	0.01
642800E 6977475N		<1	0.05	<10	0.22	695	1	0.01	12	990	14	0.09	<2	2	161	0.01
642800E 6977500N		<1	0.04	10	0.12	352	1	0.01	15	240	18	<0.01	<2	2	6	0.01
642800E 6977525N		<1	0.03	<10	0.03	108	1	0.01	4	240	9	0.01	<2	<1	3	0.01
642800E 6977550N		<1	0.06	10	0.23	295	1	0.02	18	510	10	0.02	<2	3	52	0.01
642800E 6977575N		<1	0.04	10	0.14	413	1	0.01	10	210	16	<0.01	<2	1	5	0.01
642800E 6977600N		<1	0.06	10	0.51	644	1	0.01	15	570	24	0.04	<2	2	74	0.01
642800E 6977625N		<1	0.05	10	0.09	153	2	0.01	7	180	10	0.01	<2	1	57	0.02
642800E 6977650N		<1	0.03	10	0.06	75	1	0.01	5	100	6	0.01	<2	1	43	0.02
642800E 6977675N		<1	0.05	10	0.09	134	1	0.01	8	130	12	0.01	<2	1	49	0.02
642800E 6977700N		<1	0.02	10	0.05	2600	1	0.01	7	310	15	0.02	<2	1	21	0.01

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THUNDER BAY ON P7B 6J3

Date : 21-Aug-2002
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CERTIFICATE OF ANALYSIS VA02002713

Sample Description	Method Analyte Units LOR	ME-ICP41 Hg ppm 1	ME-ICP41 K % 0.01	ME-ICP41 La ppm 10	ME-ICP41 Mg % 0.01	ME-ICP41 Mn ppm 5	ME-ICP41 Mo ppm 1	ME-ICP41 Na % 0.01	ME-ICP41 Ni ppm 1	ME-ICP41 P ppm 10	ME-ICP41 Pb ppm 2	ME-ICP41 S % 0.01	ME-ICP41 Sb ppm 2	ME-ICP41 Sc ppm 1	ME-ICP41 Sr ppm 1	ME-ICP41 Ti % 0.01
642800E 6977725N		<1	0.06	10	0.27	787	1	0.01	18	490	55	0.03	<2	2	73	0.01
642800E 6977750N		<1	0.04	10	0.12	160	1	0.01	5	130	37	<0.01	<2	1	39	0.02
642800E 6977775N		<1	0.05	10	0.19	543	1	0.01	11	230	123	<0.01	<2	2	9	0.01
642800E 6977800N		<1	0.04	10	0.06	156	1	0.01	7	240	20	<0.01	<2	1	4	0.01
642900E 6977300N		<1	0.08	10	0.07	349	6	0.01	26	560	19	0.01	2	2	25	<0.01
642900E 6977325N		<1	0.01	<10	1.53	2170	<1	0.01	120	530	26	0.01	<2	8	38	0.02
642900E 6977350N		<1	0.15	10	0.17	437	1	0.01	31	600	20	0.03	<2	4	50	<0.01
642900E 6977375N		<1	0.08	10	0.86	834	3	0.01	74	700	21	0.06	<2	5	60	0.01
642900E 6977400N		<1	0.05	10	0.29	429	1	0.01	19	210	20	0.01	<2	2	43	0.02
642900E 6977425N		<1	0.05	10	0.09	338	2	0.01	17	400	20	<0.01	<2	1	4	0.01
642900E 6977450N		<1	0.06	10	0.22	547	1	0.01	16	350	20	0.01	<2	1	31	0.01
642900E 6977475N		<1	0.06	10	0.37	162	2	0.01	35	690	27	0.10	<2	5	58	0.01
642900E 6977500N		<1	0.07	10	0.27	678	1	0.01	21	650	24	0.05	<2	3	97	0.01
642900E 6977525N		<1	0.10	10	0.43	1010	1	0.01	23	1200	23	0.07	<2	4	105	0.01
642900E 6977550N		<1	0.05	10	0.16	141	1	0.02	12	390	14	0.03	<2	1	52	0.01
642900E 6977575N		<1	0.03	<10	0.06	90	<1	0.03	3	560	4	0.05	<2	<1	67	0.02
642900E 6977600N		<1	0.03	<10	0.07	328	1	0.01	9	340	11	0.35	<2	1	103	0.01
642900E 6977625N		<1	0.06	10	0.31	125	2	0.01	26	490	23	0.24	<2	3	83	0.01
642900E 6977650N		<1	0.04	10	0.11	291	4	0.02	77	430	63	2.30	<2	3	154	0.01
642900E 6977675N		<1	0.05	<10	0.13	238	2	0.01	27	440	186	0.50	2	3	140	<0.01
642900E 6977700N		<1	0.10	10	0.18	993	1	0.02	16	840	1035	0.06	<2	5	102	0.01
642900E 6977725N		<1	0.11	20	0.27	703	1	0.01	22	1320	981	0.07	<2	5	137	0.01
642900E 6977750N		<1	0.05	10	0.24	524	1	0.01	15	720	41	0.04	<2	2	88	0.01
642900E 6977775N		<1	0.08	10	0.28	522	1	0.01	17	360	131	0.01	<2	2	51	0.01
642900E 6977800N		<1	0.10	20	0.30	501	1	0.01	37	1080	1605	0.08	<2	3	125	0.01
643000E 6977300N		<1	0.04	<10	0.12	394	1	0.03	8	350	9	0.01	<2	1	29	0.02
643000E 6977325N		<1	0.04	10	0.03	332	1	0.01	6	200	11	0.02	<2	1	21	0.02
643000E 6977350N		<1	0.06	<10	0.22	543	1	0.01	14	550	13	0.04	<2	1	67	0.02
643000E 6977375N		<1	0.07	10	0.19	831	1	0.01	21	830	15	0.07	<2	2	124	0.01
643000E 6977400N		<1	0.05	10	0.07	429	1	0.01	9	320	18	<0.01	<2	1	3	0.02
643000E 6977425N		<1	0.05	10	0.13	186	1	0.01	9	290	9	<0.01	<2	1	4	0.02
643000E 6977450N		<1	0.05	10	0.04	103	1	0.01	5	160	12	<0.01	<2	1	4	0.02
643000E 6977475N		<1	0.05	20	0.15	175	1	0.01	10	150	104	<0.01	<2	2	9	0.01
643000E 6977500N		<1	0.06	10	0.22	1425	<1	0.01	16	360	140	0.01	<2	2	11	0.01
643000E 6977525N		<1	0.08	10	0.08	1560	1	0.01	14	470	24	<0.01	<2	2	8	0.01
643000E 6977550N		<1	0.03	10	0.04	127	1	0.01	4	230	5	<0.01	<2	<1	6	0.02
643000E 6977575N		<1	0.06	10	0.07	432	2	0.01	14	460	16	<0.01	<2	2	5	0.01
643000E 6977600N		<1	0.08	10	0.14	976	2	0.01	15	520	37	0.01	<2	1	11	0.02
643000E 6977625N		<1	0.07	10	0.14	1040	2	0.01	16	420	26	<0.01	<2	2	14	0.02
643000E 6977650N		<1	0.05	10	0.17	294	1	0.01	14	200	34	<0.01	<2	2	18	0.01

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EXCELLENCE IN ANALYTICAL CHEMISTRY
Aurora Laboratory Services Ltd.
212 Brooksbank Avenue
North Vancouver BC V7J 2C1 Canada
Phone: 604 984 0221 Fax: 604 984 0218

To: NORANDA MINING AND EXPLORATION INC.
874 TUNGSTEN ST.
THUNDER BAY ON P7B 6J3

Date : 21-Aug-2002
Account: BUF

CERTIFICATE OF ANALYSIS VA02002713

Sample Description	Method	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41
	Analyte	Hg	K	La	Mg	Mn	Mo	Na	Ni	P	Pb	S	Sb	Sc	Sr	Ti
	Units	ppm	%	ppm	%	ppm	ppm	%	ppm	ppm	ppm	%	ppm	ppm	ppm	%
	LOR	1	0.01	10	0.01	5	1	0.01	1	10	2	0.01	2	1	1	0.01
643000E 6977675N		<1	0.02	10	0.03	49	1	0.01	3	170	26	0.01	<2	<1	7	0.02
643000E 6977700N		<1	0.06	20	0.08	218	1	0.01	10	210	47	<0.01	<2	1	7	0.01
643000E 6977725N		<1	0.03	10	0.04	130	1	0.01	5	200	37	<0.01	<2	1	6	0.01
643000E 6977750N		<1	0.07	30	0.16	548	1	0.01	19	230	204	<0.01	<2	2	6	<0.01
643000E 6977775N		<1	0.07	30	0.14	283	1	0.01	17	240	163	<0.01	<2	2	2	<0.01
643000E 6977800N		<1	0.02	<10	0.01	16	<1	0.02	1	230	3	0.01	<2	<1	7	0.02
643100E 6977300N		<1	0.12	10	0.28	873	2	0.01	37	620	30	<0.01	<2	5	29	0.01
643100E 6977325N		<1	0.11	10	0.24	680	<1	0.01	17	250	36	0.01	<2	3	11	0.02
643100E 6977350N		<1	0.07	10	0.06	99	1	0.01	5	200	9	<0.01	<2	1	6	0.02
643100E 6977375N		<1	0.05	10	0.06	66	1	0.02	4	200	48	<0.01	<2	1	10	0.02
643100E 6977400N		<1	0.08	30	0.17	245	<1	0.01	10	240	424	<0.01	<2	2	45	<0.01
643100E 6977425N		<1	0.04	20	0.06	260	1	0.01	10	190	548	<0.01	<2	1	4	0.01
643100E 6977450N		<1	0.04	20	0.05	129	1	0.01	5	130	89	<0.01	<2	1	10	<0.01
643100E 6977475N		<1	0.03	20	0.09	8340	<1	0.01	12	440	80	0.02	<2	4	31	0.01
643100E 6977500N		<1	0.08	10	0.29	713	1	0.01	22	370	941	0.01	<2	3	20	0.01
643100E 6977525N		<1	0.09	10	0.14	569	1	0.01	12	120	83	<0.01	<2	1	14	0.02
643100E 6977550N		<1	0.04	10	0.07	366	1	0.01	7	160	21	<0.01	<2	1	6	0.02
643100E 6977575N		<1	0.02	<10	0.01	31	<1	0.02	1	80	2	0.01	<2	<1	7	0.02
643100E 6977600N		<1	0.11	50	0.06	183	1	0.01	7	390	20	0.06	2	1	57	<0.01
643100E 6977625N		<1	0.06	40	0.04	101	1	0.01	7	140	18	<0.01	<2	1	18	0.01
643100E 6977650N		<1	0.04	10	0.27	206	1	0.01	10	140	80	<0.01	<2	2	11	0.01
643100E 6977675N		<1	0.08	20	0.14	509	1	0.01	18	270	586	<0.01	<2	2	13	0.01
643100E 6977700N		<1	0.07	30	0.04	292	1	0.01	18	470	29	0.01	<2	2	5	0.01
643100E 6977725N		<1	0.11	40	0.14	577	1	0.01	26	290	812	<0.01	<2	4	27	0.01
643100E 6977750N		<1	0.06	20	0.12	648	2	0.01	14	350	401	0.01	3	1	15	0.01
643100E 6977775N		<1	0.12	10	0.03	206	<1	0.01	10	190	26	0.01	<2	2	29	<0.01
643100E 6977800N		<1	0.05	20	0.02	169	1	0.01	6	150	12	<0.01	<2	1	7	0.01
643200E 6977300N		<1	0.06	10	0.10	164	1	0.01	12	170	128	<0.01	<2	1	5	0.01
643200E 6977325N		<1	0.10	30	0.06	160	1	0.01	17	210	29	<0.01	<2	2	7	<0.01
643200E 6977350N		<1	0.10	10	0.09	255	2	0.01	12	310	41	0.01	<2	1	10	0.01
643200E 6977375N		<1	0.07	20	0.08	409	1	0.01	11	300	29	<0.01	<2	2	25	0.01
643200E 6977400N		<1	0.06	20	0.17	1130	<1	0.01	14	350	287	0.01	4	2	24	0.01
643200E 6977425N		<1	0.07	10	0.10	393	<1	0.01	21	180	65	<0.01	<2	2	20	0.01
643200E 6977450N		1	0.04	10	0.03	122	<1	0.01	6	250	405	0.01	3	1	5	0.01
643200E 6977475N		<1	0.02	<10	0.01	41	<1	0.02	1	310	16	0.01	<2	<1	9	0.02
643200E 6977500N		<1	0.02	<10	0.02	31	<1	0.03	1	310	9	0.01	<2	<1	17	0.02
643200E 6977525N		<1	0.08	10	0.07	394	1	0.01	30	320	191	<0.01	<2	2	1	0.01
643200E 6977550N		<1	0.02	10	0.01	13	<1	0.01	1	150	6	0.01	<2	<1	6	0.01
643200E 6977575N		<1	0.06	20	0.14	310	1	0.01	17	210	365	<0.01	<2	2	4	<0.01
643200E 6977600N		<1	0.04	20	0.02	102	1	0.01	7	120	46	<0.01	<2	1	3	0.02

ALS Chemex
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To: NORANDA MINING AND EXPLORATION INC.
874 TUNGSTEN ST.
THUNDER BAY ON P7B 6J3

Date : 21-Aug-2002
Account: BUF

CERTIFICATE OF ANALYSIS VA02002713

Sample Description	Method Analyte Units LOR	ME-ICP41 Hg ppm 1	ME-ICP41 K % 0.01	ME-ICP41 La ppm 10	ME-ICP41 Mg % 0.01	ME-ICP41 Mn ppm 5	ME-ICP41 Mo ppm 1	ME-ICP41 Na % 0.01	ME-ICP41 Ni ppm 1	ME-ICP41 P ppm 10	ME-ICP41 Pb ppm 2	ME-ICP41 S % 0.01	ME-ICP41 Sb ppm 2	ME-ICP41 Sc ppm 1	ME-ICP41 Sr ppm 1	ME-ICP41 Tl % 0.01
643200E 6977625N		<1	0.06	20	0.15	765	1	0.01	19	260	228	<0.01	<2	2	3	0.01
643200E 6977650N		<1	0.03	<10	0.02	36	<1	0.02	2	320	28	0.01	<2	<1	10	0.01
643200E 6977675N		<1	0.03	10	0.02	64	1	0.01	8	180	18	<0.01	<2	1	2	0.01
643200E 6977700N		<1	0.02	10	0.02	82	1	0.01	3	110	4	<0.01	<2	<1	3	0.01
643200E 6977725N		<1	0.02	<10	0.01	19	<1	0.02	2	100	12	0.01	<2	<1	8	0.01
643200E 6977750N		<1	0.05	30	0.02	89	1	0.01	9	150	8	<0.01	<2	1	4	0.01
643200E 6977775N		<1	0.05	40	0.02	29	1	0.01	3	150	9	0.01	<2	1	5	0.01
643200E 6977800N		<1	0.04	10	0.14	177	1	0.01	7	70	19	<0.01	<2	1	8	0.02

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CERTIFICATE OF ANALYSIS VA02002713

Sample Description	Method Analyte Units LOR	ME-ICP41 Tl ppm 10	ME-ICP41 U ppm 10	ME-ICP41 V ppm 1	ME-ICP41 W ppm 10	ME-ICP41 Zn ppm 2
642500E 6977600N		<10	<10	8	<10	15
642500E 6977625N		<10	<10	13	<10	48
642500E 6977650N		<10	<10	23	<10	130
642500E 6977675N		<10	<10	8	<10	43
642500E 6977700N		<10	<10	10	<10	27
642500E 6977725N		<10	<10	47	<10	67
642500E 6977750N		<10	<10	34	<10	57
642500E 6977775N		<10	<10	33	<10	99
642500E 6977800N		<10	<10	18	<10	33
642500E 6977825N		<10	<10	34	<10	608
642500E 6977850N		<10	<10	12	<10	737
642500E 6977875N		<10	<10	21	<10	343
642500E 6977900N		<10	<10	31	<10	332
642500E 6977925N		<10	<10	9	<10	1245
642500E 6977950N		<10	<10	22	<10	635
642500E 6977975N		<10	<10	28	<10	69
642500E 6978000N		<10	<10	32	<10	80
642500E 6978025N		<10	<10	28	<10	41
642500E 6978050N		<10	<10	22	<10	63
642500E 6978075N		<10	<10	29	<10	43
642500E 6978100N		<10	<10	24	<10	87
642600E 6977600N		<10	<10	42	<10	93
642600E 6977625N		<10	<10	26	<10	91
642600E 6977650N		<10	<10	30	<10	88
642600E 6977675N		<10	<10	19	<10	69
642600E 6977700N		<10	<10	9	<10	55
642600E 6977725N		<10	<10	17	<10	32
642600E 6977750N		<10	<10	17	<10	70
642600E 6977775N		<10	<10	17	<10	59
642600E 6977800N		<10	<10	24	<10	176
642600E 6977825N		<10	<10	9	<10	64
642600E 6977850N		<10	<10	24	<10	272
642600E 6977875N		<10	<10	10	<10	20
642600E 6977900N		<10	<10	34	<10	76
642600E 6977925N		<10	<10	15	<10	121
642600E 6977950N		<10	10	14	<10	67
642600E 6977975N		<10	<10	19	<10	60
642600E 6978000N		10	<10	20	<10	73
642600E 6978025N		<10	<10	23	<10	78
642600E 6978050N		<10	<10	36	<10	75

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CERTIFICATE OF ANALYSIS VA02002713

Sample Description	Method Analyte Units LOR	ME-ICP41 Tl ppm 10	ME-ICP41 U ppm 10	ME-ICP41 V ppm 1	ME-ICP41 W ppm 10	ME-ICP41 Zn ppm 2
642600E 6978075N		<10	<10	26	<10	207
642600E 6978100N		<10	<10	24	<10	362
642700E 6977300N		<10	10	38	<10	110
642700E 6977325N		<10	<10	5	<10	27
642700E 6977350N		<10	<10	24	<10	74
642700E 6977375N		<10	<10	35	<10	204
642700E 6977400N		<10	<10	7	<10	47
642700E 6977425N		<10	10	24	<10	99
642700E 6977450N		<10	10	14	<10	86
642700E 6977475N		<10	10	29	<10	97
642700E 6977500N		<10	<10	23	<10	69
642700E 6977525N		<10	10	29	<10	67
642700E 6977550N		<10	10	22	<10	71
642700E 6977575N		<10	<10	32	<10	88
642700E 6977600N		<10	10	19	<10	78
642700E 6977625N		<10	10	29	<10	131
642700E 6977650N		<10	<10	21	<10	59
642700E 6977675N		<10	10	22	<10	82
642700E 6977700N		<10	10	10	<10	50
642700E 6977725N		<10	<10	37	<10	64
642700E 6977750N		<10	<10	19	<10	15
642700E 6977775N		<10	<10	21	<10	20
642700E 6977800N		<10	<10	27	<10	21
642800E 6977300N		<10	<10	41	<10	133
642800E 6977325N		<10	<10	47	<10	68
642800E 6977350N		<10	<10	16	<10	108
642800E 6977375N		<10	<10	18	<10	45
642800E 6977400N		<10	<10	23	<10	72
642800E 6977425N		<10	<10	30	<10	68
642800E 6977450N		<10	10	26	<10	117
642800E 6977475N		<10	10	16	<10	64
642800E 6977500N		<10	<10	37	<10	68
642800E 6977525N		<10	<10	22	<10	31
642800E 6977550N		<10	<10	20	<10	52
642800E 6977575N		<10	<10	37	<10	54
642800E 6977600N		<10	<10	36	<10	119
642800E 6977625N		<10	<10	30	<10	58
642800E 6977650N		<10	<10	31	<10	43
642800E 6977675N		<10	<10	29	<10	56
642800E 6977700N		<10	10	15	<10	72

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CERTIFICATE OF ANALYSIS VA02002713

Sample Description	Method Analyte Units LOR	ME-ICP41 Tl ppm 10	ME-ICP41 U ppm 10	ME-ICP41 V ppm 1	ME-ICP41 W ppm 10	ME-ICP41 Zn ppm 2
642800E 6977725N		<10	<10	29	<10	106
642800E 6977750N		<10	<10	31	<10	37
642800E 6977775N		<10	<10	41	<10	74
642800E 6977800N		<10	<10	38	<10	48
642900E 6977300N		<10	<10	37	<10	157
642900E 6977325N		<10	10	115	<10	116
642900E 6977350N		<10	<10	17	<10	94
642900E 6977375N		<10	<10	48	<10	105
642900E 6977400N		<10	<10	39	<10	52
642900E 6977425N		<10	<10	51	<10	99
642900E 6977450N		<10	<10	31	<10	119
642900E 6977475N		<10	<10	33	<10	146
642900E 6977500N		<10	10	27	<10	102
642900E 6977525N		<10	10	35	<10	161
642900E 6977550N		<10	<10	24	<10	55
642900E 6977575N		<10	<10	9	<10	30
642900E 6977600N		<10	<10	7	<10	61
642900E 6977625N		<10	<10	25	<10	119
642900E 6977650N		<10	10	14	<10	267
642900E 6977675N		<10	<10	15	<10	317
642900E 6977700N		<10	10	20	<10	191
642900E 6977725N		<10	20	23	<10	159
642900E 6977750N		<10	<10	29	<10	138
642900E 6977775N		<10	<10	24	<10	1075
642900E 6977800N		<10	10	26	<10	3830
643000E 6977300N		<10	<10	20	<10	49
643000E 6977325N		<10	<10	33	<10	57
643000E 6977350N		<10	<10	28	<10	83
643000E 6977375N		<10	10	19	<10	102
643000E 6977400N		<10	<10	47	<10	80
643000E 6977425N		<10	<10	41	<10	44
643000E 6977450N		<10	<10	28	<10	27
643000E 6977475N		<10	<10	40	<10	91
643000E 6977500N		<10	10	29	<10	255
643000E 6977525N		<10	<10	33	<10	106
643000E 6977550N		<10	<10	27	<10	31
643000E 6977575N		<10	<10	41	<10	98
643000E 6977600N		<10	<10	46	<10	167
643000E 6977625N		<10	<10	49	<10	228
643000E 6977650N		<10	<10	42	<10	150

ALS Chemex
EXCELLENCE IN ANALYTICAL CHEMISTRY
Aurora Laboratory Services Ltd.
212 Brooksbank Avenue
North Vancouver BC V7J 2C1 Canada
Phone: 604 984 0221 Fax: 604 984 0218

To: NORANDA MINING AND EXPLORATION INC.
874 TUNGSTEN ST.
THUNDER BAY ON P7B 6J3

Date : 21-Aug-2002
Account: BUF

CERTIFICATE OF ANALYSIS VA02002713

Sample Description	Method Analyte Units LOR	ME-ICP41 Tl ppm 10	ME-ICP41 U ppm 10	ME-ICP41 V ppm 1	ME-ICP41 W ppm 10	ME-ICP41 Zn ppm 2
643000E 6977675N		<10	<10	28	<10	49
643000E 6977700N		<10	<10	31	<10	148
643000E 6977725N		<10	<10	24	<10	153
643000E 6977750N		10	<10	22	<10	441
643000E 6977775N		10	<10	27	<10	333
643000E 6977800N		<10	<10	10	<10	17
643100E 6977300N		<10	<10	31	<10	241
643100E 6977325N		<10	<10	31	<10	100
643100E 6977350N		<10	<10	25	<10	37
643100E 6977375N		<10	<10	23	<10	26
643100E 6977400N		10	<10	25	<10	67
643100E 6977425N		<10	<10	40	<10	295
643100E 6977450N		<10	<10	20	<10	188
643100E 6977475N		<10	30	20	<10	211
643100E 6977500N		<10	<10	36	<10	3100
643100E 6977525N		<10	<10	29	<10	221
643100E 6977550N		<10	<10	46	<10	67
643100E 6977575N		<10	<10	8	<10	16
643100E 6977600N		10	10	10	<10	399
643100E 6977625N		10	<10	21	<10	53
643100E 6977650N		<10	<10	48	<10	477
643100E 6977675N		<10	<10	21	<10	2480
643100E 6977700N		10	<10	21	<10	217
643100E 6977725N		10	10	13	<10	2070
643100E 6977750N		10	<10	24	<10	1135
643100E 6977775N		<10	<10	6	<10	681
643100E 6977800N		<10	<10	24	<10	39
643200E 6977300N		<10	<10	22	<10	231
643200E 6977325N		10	<10	16	<10	241
643200E 6977350N		<10	<10	28	<10	253
643200E 6977375N		<10	<10	18	<10	204
643200E 6977400N		<10	10	11	<10	1055
643200E 6977425N		<10	<10	18	<10	554
643200E 6977450N		<10	<10	19	<10	83
643200E 6977475N		<10	<10	8	<10	17
643200E 6977500N		<10	<10	7	<10	200
643200E 6977525N		<10	<10	24	<10	154
643200E 6977550N		<10	<10	12	<10	24
643200E 6977575N		<10	<10	27	<10	705
643200E 6977600N		<10	<10	31	<10	97

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Date : 21-Aug-2002
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CERTIFICATE OF ANALYSIS VA02002713

Sample Description	Method Analyte Units LOR	ME-ICP41 Tl ppm 10	ME-ICP41 U ppm 10	ME-ICP41 V ppm 1	ME-ICP41 W ppm 10	ME-ICP41 Zn ppm 2
643200E 6977625N		10	<10	29	<10	297
643200E 6977650N		<10	<10	13	<10	44
643200E 6977675N		<10	<10	33	<10	151
643200E 6977700N		<10	<10	19	<10	34
643200E 6977725N		<10	<10	13	<10	25
643200E 6977750N		<10	<10	19	<10	59
643200E 6977775N		10	<10	18	<10	14
643200E 6977800N		<10	<10	35	<10	50

Appendix 5
Diamond Drill Locations, Collar Information, Core Logs and Certificates of Analysis

Drillhole Location information

DDH	Easting	Northing	Elevation	Comment
AN0104	641595.25	6978287.64		Average of 72 Garmin 12 GPS autorecords at 20 second intervals
			1302.30	scaled from contour map using averaged XY for location
	641596.29	6978285.47	1303.60	Chained From 1100E, 500N
AN0105	641605.49	6978463.22	1296.32	Chained From 1000E, 600N
	641602.02	6978464.72		Average of 34 Garmin 12 GPS autorecords at 20 second intervals
			1298.30	scaled from contour map using averaged XY for location
AN0106	641391.70	6978350.12	1341.98	Chained From 800E, 400N
			1341.20	scaled from contour map using averaged XY for location
	641396.22	6978353.47		Average of 95 Garmin 12 GPS autorecords at 20 second intervals
AN0107			1281.80	scaled from contour map using averaged XY for location
	641709.34	6978272.20	1286.60	Chained From 1150E, 500N
	641706.22	6978274.42		Average of 71 Garmin 12 GPS autorecords at 20 second intervals
AN0108			1195.70	scaled from contour map using averaged XY for location
	642337.00	6978040.00	1195.00	From 2001 database
AN0109	641565.03	6978136.12		Average of 64 Garmin 12 GPS autorecords at 20 second intervals
			1249.20	scaled from contour map using averaged XY for location
	641563.85	6978130.90	1248.16	Chained From 1200E, 300N
AN0113			1310.90	scaled from contour map using averaged XY for location
	641550.82	6978402.96	1307.64	Chained From 1000E, 500N
	641550.27	6978402.32	1307.63	Chained From 950E, 500N
	641548.79	6978406.60		Average of 26 Garmin 12 GPS autorecords at 20 second intervals
AN0114			1332.80	scaled from contour map using averaged XY for location
	641438.97	6978305.74		Average of 64 Garmin 12 GPS autorecords at 20 second intervals
	641444.41	6978303.46	1335.53	Chained From 1000E, 300N
AN0216	641447.01	6978398.98	1329.65	Chained From 850E, 500N
	641450.67	6978399.58		Average of 26 Garmin 12 GPS autorecords at 20 second intervals
	641450.38	6978399.70	1329.75	Chained From 900E, 500N
			1330.10	scaled from contour map using averaged XY for location
AN0217	641641.18	6978395.91	1288.98	Chained From 1000E, 600N
			1289.20	scaled from contour map using averaged XY for location
	641649.42	6978390.49	1289.56	Chained From 1000E, 500N
	641646.31	6978399.75		Average of 224 Garmin 12 GPS autorecords at 20 second intervals
AN0218	641344.62	6978321.23	1350.62	Chained From L800E, 300N
			1350.20	scaled from contour map using averaged XY for location
	641350.04	6978330.46		Average of 212 Garmin 12 GPS autorecords at 20 second intervals
	641350.39	6978329.09	1349.97	Chained From 1000E, 300N
AN0219			1261.43	Chained From 1200E, 600N
	641795.19	6978332.71		Average of 18 Garmin 12 GPS autorecords at 20 second intervals
			1251.70	scaled from contour map using averaged XY for location
AN0221			1228.80	scaled from contour map using averaged XY for location
	642219.55	6977912.59	1229.48	Chained From 1800E, 500N
	642218.98	6977912.23		Average of 89 Garmin 12 GPS autorecords at 20 second intervals
AN0222	643123.17	6977809.31		Average of 68 Garmin 12 GPS autorecords at 20 second intervals
			1128.10	scaled from contour map using averaged XY for location
AN0223	641900.73	6978381.52		Average of 33 Garmin 12 GPS autorecords at 20 second intervals
			1226.30	scaled from contour map using averaged XY for location
	641899.54	6978381.17	1228.19	Chained From 1200E, 700N

Horizontal and vertical angles measured with handheld compass and clinometer, respectively.
Chaining was 2-person using a nylon chain.
Final locations determined by unweighted averaging of all the data for each drillhole.

Summary of Drillholes on Andrew Property

DDH #	Length (m)	Started	Finished	Logged by	Azimuth	Dip	UTM Easting	UTM Northing	Elevation (m asl)
77-1	5.27	August 14, 1977	August 15, 1977		225	-52	639563	6982381	1125.5
77-2	9.51	August 15, 1977	August 18, 1977		225	50	639568	6982393	1124.5
AN0101	141.7	July 15, 2001	July 18, 2001	C. Barr	225	-50	639596	6982428	1122
AN0102	149.4	July 18, 2001	July 20, 2001	C. Barr	225	-50	639818	6982654	1120
AN0103	160.3	July 20, 2001	July 22, 2001	C. Barr	220	-50	640830	6981602	1182
AN0104	171.6	July 23, 2001	July 25, 2001	C. Barr	218	-50	641595.8	6978286.6	1303.6
AN-01-05A	41.5	July 25, 2001	July 26, 2001	C. Barr	218	-51	641603.7	6978464	1296.3
AN0105	195.1	July 26, 2001	July 28, 2001	C. Barr	218	-51	641603.7	6978464	1296.3
AN0106	159.7	July 29, 2001	July 31, 2001	C. Barr	218	-50	641394	6978351.8	1342
AN0107	176.8	August 1, 2001	August 1, 2001	C. Barr	200	-52	641707.8	6978273.3	1286.6
AN0108	146.3	August 4, 2001	August 6, 2001	C. Barr	205	-50	642337	6978040	1195
AN0109	239.3	August 7, 2001	August 9, 2001	C. Barr	343	-52	641564.4	6978133.5	1248.2
AN0110	98.5	August 10, 2001	August 11, 2001	C. Barr	158	-50	639695	6983921	1005
AN0111	126.5	August 12, 2001	August 14, 2001	C. Barr	155	-50	641596.8	6978287.6	1303.6
AN0112	215.5	September 21, 2001	September 26, 2001	D. King	155	-80	641596.8	6978287.6	1303.6
AN0113	308.76	September 27, 2001	October 3, 2001	D. King	185	-55	641550	6978404	1307.6
AN0114	210.9	October 4, 2001	October 9, 2001	D. King	180	-55	641441.7	6978304.6	1335.5
AN0115	217.3	October 9, 2001	October 13, 2001	D. King	178.34	-75	641441.7	6978304.6	1335.5
AN0216	374	August 7, 2002	August 14, 2002	M. Savell	179.48	-70	641449.4	6978399.4	1329.7
AN0217	321.3	August 16, 2002	August 21, 2002	A. Huard	179.48	-70	641645.6	6978395.4	1289.3
AN0218	210	August 23, 2002	August 26, 2002	A. Huard	179.48	-70	641348.4	6978326.9	1350.3
AN0219	178.6	August 27, 2002	August 30, 2002	A. Huard	179	-45	641795.2	6978332.7	1251.7
AN0220	206.3	August 31, 2002	September 3, 2002	A. Huard	179	-80	641795.2	6978332.7	1251.7
AN0221	151.2	September 5, 2002	September 7, 2002	A. Huard	190	-45	642219.3	6977912.4	1229.5
AN0222	120.4	September 8, 2002	September 12, 2002	A. Huard	195	-45	643123.2	6977809.3	1134
AN0223	276.5	September 14, 2002	September 18, 2002	A. Huard	177	-80	641900.1	6978381.3	1228.2

Total: 4612.24

Note that coordinates are NAD 83, Zone 8

Complete Listing of Samples from Drillcore - Andrew 2002 Drill Program

					Assay Samples (on drill logs)			Geochem Samples (not on drill logs)					
DDH #	From (m)	To (m)	Length (m)	Sample #	Zn %	Pb %	Ag (ppm)	Zn (ppm)	Pb (ppm)	Ag (ppm)	Cu (ppm)	Cd (ppm)	As (ppm)
AN0216	124.70	126.70	2.00	254754				63	7	0.1	317	0.25	4
AN0216	126.70	128.70	2.00	254755				53	26	0.1	90	0.25	30
AN0216	128.70	130.70	2.00	254756				68	13	0.1	100	0.25	12
AN0216	130.70	132.70	2.00	254757				61	12	0.1	30	0.25	11
AN0216	142.00	144.00	2.00	254758				2	29	0.9	57	0.25	42
AN0216	144.00	146.00	2.00	254759				3	641	1.2	73	0.25	44
AN0216	146.00	148.00	2.00	254760				8	581	0.8	58	0.25	35
AN0216	148.00	150.00	2.00	254774				13	30	0.4	68	0.25	37
AN0216	150.00	152.00	2.00	254775				2	15	0.3	56	0.25	89
AN0216	152.00	154.00	2.00	254776				25	20	0.4	69	0.25	28
AN0216	154.00	156.00	2.00	254761				2	27	0.4	105	0.25	18
AN0216	156.00	158.00	2.00	254762				112	74	0.4	164	0.8	22
AN0216	163.00	165.00	2.00	254763				151	27	0.2	57	0.8	9
AN0216	178.00	180.00	2.00	254764				59	23	0.1	71	0.25	23
AN0216	180.00	182.00	2.00	254765				21	5	0.1	19	0.25	1
AN0216	182.00	184.00	2.00	254766				22	13	0.1	39	0.25	15
AN0216	210.00	212.00	2.00	254767				161	21	0.3	63	0.8	8
AN0216	225.00	227.00	2.00	254768				248	84	0.2	48	1.7	7
AN0216	228.00	230.00	2.00	254769				195	27	0.2	60	1	9
AN0216	234.00	236.00	2.00	254770				53	15	0.1	21	0.25	12
AN0216	264.00	266.00	2.00	254771				74	19	0.1	24	0.25	3
AN0216	271.00	273.00	2.00	254772				46	17	0.1	20	0.25	4
AN0216	327.00	328.00	1.00	254773				52	17	0.1	21	0.25	4
AN0217	167.90	168.90	1.00	254778	0.01	0.005	1	9	112	0.4	55	0.25	9
AN0217	168.90	169.20	0.30	254779	0.01	0.01	2	31	49	0.3	107	0.25	22
AN0217	169.20	170.20	1.00	254780	0.005	3.69	11	8	36900	9	13	0.25	29
AN0217	170.20	172.20	2.00	254781	1.67	0.08	1	16700	743	0.7	49	61.7	18
AN0217	172.20	174.10	1.90	254782	0.01	0.01	1	104	65	0.1	9	0.25	15
AN0217	174.10	175.60	1.50	254783	7.43	0.06	1	74300	534	0.7	68	315	24
AN0217	175.60	176.40	0.80	254784	0.04	0.005	2	220	8	0.2	2	0.9	4
AN0217	176.40	176.70	0.30	254785	6.11	0.005	2	61100	22	0.5	47	213	16
AN0217	176.70	177.10	0.40	254786	1.87	0.01	1	18700	12	0.3	27	45.5	7
AN0217	177.10	177.60	0.50	254787	1.32	0.02	0.5	13200	139	0.1	21	50.2	25
AN0217	177.60	178.10	0.50	254788	0.01	0.03	0.5	81	143	0.1	4	0.25	2
AN0217	178.10	179.70	1.60	254789	19.55	0.19	1	195500	1635	0.9	606	942	36
AN0217	179.70	180.60	0.90	254790	4.74	1.36	5	47400	13600	4.1	93	155	22
AN0217	180.60	181.60	1.00	254791	0.86	0.01	0.5	5910	24	0.8	62	18.9	11
AN0217	181.60	183.10	1.50	254792	4.9	0.23	1	49000	1705	1.2	92	87.2	9
AN0217	183.10	184.40	1.30	254793	0.4	0.03	0.5	2510	154	0.2	14	6.6	3
AN0217	184.40	184.90	0.50	254794	4.12	50.45	86	41200	504500	70.8	46	196	10
AN0217	184.90	186.50	1.60	254795	0.23	2.26	6	1735	22600	4.8	5	6.3	8
AN0217	186.50	188.10	1.60	254796	0.73	0.08	2	5410	498	0.7	15	15.3	18
AN0217	188.10	189.00	0.90	254797	4.9	0.05	2	49000	448	0.7	46	179	15
AN0217	189.00	191.00	2.00	254798	0.42	0.01	1	3710	46	0.2	18	16	12
AN0217	191.00	192.70	1.70	254799	2.44	0.02	0.5	24400	134	0.2	21	84.1	8
AN0217	192.70	193.60	0.90	254800	0.59	0.005	0.5	4820	6	0.1	11	14.8	8
AN0217	193.60	194.60	1.00	254911	0.02	0.005	0.5	188	7	0.3	12	0.6	31
AN0217	194.60	195.90	1.30	254912	0.1	0.05	1	889	387	0.2	31	3.5	20
AN0217	195.90	197.20	1.30	254913	3.54	26.4	48	35400	264000	42.5	40	196	10
AN0217	197.20	198.90	1.70	254914	0.1	1.07	3	760	8510	1.9	12	2	24
AN0217	198.90	200.60	1.70	254915	0.2	0.89	4	1570	6880	2.1	9	6.6	24
AN0217	200.60	201.30	0.70	254916	4.43	0.13	1	44300	888	0.7	31	78.5	15
AN0217	201.30	203.20	1.90	254917	0.11	0.01	1	932	114	0.1	19	2.8	19

Complete Listing of Samples from Drillcore - Andrew 2002 Drill Program

					Assay Samples (on drill logs)			Geochem Samples (not on drill logs)					
DDH #	From (m)	To (m)	Length (m)	Sample #	Zn %	Pb %	Ag (ppm)	Zn (ppm)	Pb (ppm)	Ag (ppm)	Cu (ppm)	Cd (ppm)	As (ppm)
AN0217	203.20	204.80	1.60	254918	0.12	0.005	1	1015	18	0.2	52	2.7	3
AN0217	204.80	206.40	1.60	254919	1.96	0.02	1	19600	161	0.6	38	43.9	16
AN0217	206.40	207.10	0.70	254920	5.21	0.01	2	52100	89	1.1	90	122	22
AN0217	207.10	208.30	1.20	254921	0.07	0.02	0.5	623	128	0.3	45	1.9	26
AN0217	208.30	209.60	1.30	254924	0.03	0.01	1	235	38	0.3	27	0.7	23
AN0217	209.60	210.20	0.60	254925	0.01	0.005	1	49	19	0.1	10	0.25	15
AN0217	210.20	211.60	1.40	254926	1.11	0.005	1	9240	26	0.2	49	29.3	23
AN0217	211.60	212.90	1.30	254927	6.92	0.005	1	69200	9	0.9	90	165	46
AN0217	212.90	214.20	1.30	254928	7.02	0.005	1	70200	6	0.2	69	254	35
AN0217	214.20	215.50	1.30	254929	5.73	0.005	1	57300	4	0.2	68	170.5	41
AN0217	215.50	216.50	1.00	254930	0.59	0.005	0.5	5880	4	0.1	13	16.4	17
AN0217	216.50	217.60	1.10	254931	0.18	0.01	0.5	1725	47	0.1	28	5.6	68
AN0217	217.60	218.10	0.50	254932	0.26	1.19	2	2060	9790	1.8	31	7.2	36
AN0217	218.10	219.60	1.50	254933	0.005	0.01	1	36	25	0.1	10	0.25	16
AN0217	219.60	221.10	1.50	254934	0.005	0.19	1	43	1690	0.5	20	0.25	43
AN0217	221.10	222.60	1.50	254935	0.005	0.005	0.5	21	11	0.1	9	0.25	7
AN0217	222.60	224.30	1.70	254936	0.09	0.13	0.5	861	1175	0.3	13	2.8	19
AN0217	224.30	226.00	1.70	254937	1.75	0.42	1	17500	4700	1.6	46	63	24
AN0217	226.00	227.60	1.60	254938	0.06	0.005	0.5	565	19	0.1	6	1.6	10
AN0217	227.60	229.20	1.60	254939	0.02	0.03	0.5	208	237	0.1	25	0.7	18
AN0217	229.20	230.70	1.50	254940	0.05	0.01	0.5	478	80	0.1	133	1.5	13
AN0217	230.70	231.30	0.60	254941	0.01	0.05	0.5	91	433	0.1	27	0.25	48
AN0217	231.30	232.00	0.70	254942	0.005	1.46	3	17	14600	2.7	157	0.25	6
AN0218	123.00	123.90	0.90	254946				70	33	0.1	28	0.25	7
AN0218	127.20	128.00	0.80	254947				76	35	0.1	34	0.25	18
AN0218	140.80	141.80	1.00	254948				45	24	0.1	11	0.25	32
AN0218	141.80	142.80	1.00	254949				30	17	0.1	10	0.25	68
AN0218	142.80	144.40	1.60	254950				23	14	0.1	9	0.25	44
AN0218	180.70	181.80	1.10	557258				49	16	0.1	10	0.25	4
AN0218	194.90	195.20	0.30	557259				86	27	0.1	27	0.25	6
AN0218	208.40	208.50	0.10	557260				57	32	0.4	19	0.25	15
AN0219	95.40	95.80	0.40	557261	0.005	0.005	0.5	167	25	0.25	19	0.25	11
AN0219	95.80	96.70	0.90	557262	8.97	0.005	1	89700	29	0.25	62	273	23
AN0219	96.70	97.60	0.90	557263	2.82	0.005	0.5	28200	10	0.25	63	93.5	6
AN0219	97.60	98.00	0.40	557264	4.7	0.005	1	47000	15	0.25	185	159	22
AN0219	98.00	99.30	1.30	557265	10.6	0.01	1	106000	38	0.7	100	316	12
AN0219	99.30	99.90	0.60	557266	0.03	0.005	0.5	271	20	0.25	10	0.5	32
AN0219	99.90	101.20	1.30	557267	3.02	0.005	0.5	30200	7	0.25	20	76.7	14
AN0219	101.20	102.00	0.80	557268	1.81	0.005	0.5	18100	6	0.25	19	38.4	18
AN0219	102.00	102.80	0.80	557269	1.89	0.005	5	18900	3	0.25	22	45.4	49
AN0219	102.80	103.80	1.00	557270	28.4	0.005	5	284000	27	5	286	>500	28
AN0219	103.80	104.60	0.80	557273	4.13	0.16	0.5	41300	1390	0.7	51	127.5	57
AN0219	104.60	106.00	1.40	557274	0.19	0.43	1	1570	3550	0.6	22	4.6	30
AN0219	106.00	106.30	0.30	557275	9.96	6.94	18	99600	69400	18.2	144	330	27
AN0219	106.30	107.20	0.90	557276	0.05	0.04	0.5	431	301	0.25	14	0.6	30
AN0219	107.20	107.30	0.10	557277	0.04	0.005	0.5	365	40	0.25	32	0.25	55
AN0219	107.30	108.70	1.40	557278	0.01	0.01	0.5	103	40	0.25	1325	0.25	18
AN0219	108.70	110.60	1.90	557279	0.01	0.04	0.5	95	304	0.25	63	0.25	23
AN0219	110.60	111.80	1.20	557280	0.01	0.005	0.5	90	10	0.25	32	0.25	12
AN0219	111.80	113.00	1.20	557281	0.005	0.005	0.5	47	9	0.25	19	0.25	6
AN0219	113.00	114.20	1.20	557282	0.01	0.005	0.5	70	2	0.25	21	0.25	5
AN0219	114.20	114.60	0.40	557283	0.01	0.005	0.5	161	23	0.25	70	0.25	21
AN0219	114.60	115.40	0.80	557284	0.01	0.005	0.5	84	11	0.25	47	0.25	18

Complete Listing of Samples from Drillcore - Andrew 2002 Drill Program

					Assay Samples (on drill logs)			Geochem Samples (not on drill logs)					
DDH #	From (m)	To (m)	Length (m)	Sample #	Zn %	Pb %	Ag (ppm)	Zn (ppm)	Pb (ppm)	Ag (ppm)	Cu (ppm)	Cd (ppm)	As (ppm)
AN0219	115.40	116.50	1.10	557285	0.005	0.01	0.5	144	155	0.25	19	0.25	26
AN0219	116.50	117.60	1.10	557286	0.01	0.005	0.5	69	6	0.25	13	0.25	14
AN0219	117.60	119.40	1.80	557287	0.02	0.14	0.5	235	1290	0.25	27	0.25	33
AN0219	119.40	121.20	1.80	557288	0.5	0.01	0.5	4810	120	0.25	42	13.2	28
AN0219	121.20	123.00	1.80	557289	0.09	0.005	0.5	913	30	0.25	26	2.3	91
AN0219	123.00	124.70	1.70	557292	0.37	0.05	0.5	3530	440	0.25	38	10.7	16
AN0219	124.70	126.60	1.90	557293	0.09	0.01	0.5	804	113	0.25	25	1.8	18
AN0219	126.60	127.30	0.70	557294	0.49	0.005	0.5	4020	13	0.25	19	11.2	11
AN0219	127.30	129.10	1.80	557295	1.31	0.01	0.5	13100	10	0.25	39	75.1	10
AN0219	129.10	129.60	0.50	557296	3.55	0.005	0.5	35500	1	0.25	42	80.2	5
AN0219	129.60	130.60	1.00	557297	5.39	0.005	0.5	53900	8	0.5	60	143	9
AN0219	130.60	131.65	1.05	557298	1.02	0.005	0.5	9840	43	0.25	21	28.6	12
AN0219	131.65	131.85	0.20	557299	10.5	0.005	2	105000	5	1.6	141	266	2.5
AN0219	131.85	133.40	1.55	557300	0.85	0.005	0.5	7550	6	0.25	17	22.5	6
AN0219	133.40	134.90	1.50	644132	0.24	0.01	0.5	2630	11	0.25	10	7.6	5
AN0219	134.90	136.20	1.30	644133	1.13	0.005	0.5	11300	3	0.25	22	30.8	7
AN0219	136.20	137.20	1.00	644134	0.1	0.005	0.5	890	4	0.25	11	2	6
AN0220	133.50	134.50	1.00	644135	0.005	0.005	1	63	17.9	0.1	14.4	0.1	14.1
AN0220	134.50	135.50	1.00	644136	0.51	0.04	0.5	4310	308	0.18	389	16	14.3
AN0220	135.50	136.40	0.90	644137	9.04	0.005	0.5	90400	38.6	0.43	214	340	16.5
AN0220	136.40	136.65	0.25	644138	0.92	0.005	1	7680	208	0.13	51	31.7	28
AN0220	136.65	137.00	0.35	644139	9.06	14	45	90600	140000	40	101	220	35.7
AN0220	137.00	138.10	1.10	644140	31.42	0.27	3	314200	2420	2.62	537	>500	22.8
AN0220	138.10	139.20	1.10	644141	27.6	0.02	1	276000	155	1.59	259	>500	12.9
AN0220	139.20	140.30	1.10	644142	4.02	0.005	0.5	40200	10.5	0.22	58.8	118	3.5
AN0220	140.30	141.40	1.10	644143	0.29	0.005	0.5	2680	15	0.07	15.8	7.93	5.5
AN0220	141.40	141.60	0.20	644144	0.02	0.005	0.5	324	7.6	0.07	18.6	0.83	7.6
AN0220	141.60	143.60	2.00	644147	4.01	0.09	0.5	40100	754	0.36	75.9	125.5	9.6
AN0220	143.60	145.70	2.10	644148	4.51	0.52	1	45100	4620	1.26	220	132.5	13.3
AN0220	145.70	146.10	0.40	644149	0.14	0.01	0.5	1430	110	0.15	156	5.45	29.8
AN0220	146.10	147.90	1.80	644150	1.41	3.29	6	14100	32900	5.3	118	41.9	15
AN0220	147.90	149.00	1.10	644162	1.05	0.02	0.5	10500	157	0.35	51.2	28.4	31.6
AN0220	149.00	150.00	1.00	644163	0.17	0.01	0.5	1805	35.8	0.12	78.3	6.18	3
AN0220	150.00	150.30	0.30	644198	29.3	0.005	1	293000	16.9	1.72	212	>500	4.4
AN0220	150.30	150.70	0.40	644164	3.88	0.005	0.5	38800	6.4	0.19	92	136.5	4.3
AN0220	150.70	150.95	0.25	644165	1.09	0.005	0.5	7800	2.7	0.05	19.7	38.5	2.5
AN0220	150.95	153.20	2.25	644166	1.7	0.005	0.5	17000	15	0.26	47.4	57.6	14.9
AN0220	153.20	153.60	0.40	644167	1.47	0.02	0.5	14700	174	0.35	25.6	38.2	2.5
AN0220	153.60	154.50	0.90	644168	0.11	0.005	0.5	1460	35.4	0.1	12.8	3.53	9
AN0220	154.50	156.50	2.00	644169	0.61	0.005	0.5	5650	24.5	0.09	24.9	25.3	6
AN0220	156.50	158.30	1.80	644170	0.53	0.005	0.5	5450	6.9	0.11	19.1	19.6	11.7
AN0220	158.30	160.10	1.80	644171	0.65	0.005	0.5	8340	21.8	0.12	17.7	29.2	15.3
AN0220	160.10	161.50	1.40	644172	0.27	0.005	1	2500	19.5	0.21	8.1	7.93	16.2
AN0220	161.50	161.90	0.40	644173	5.04	0.005	0.5	50400	6.6	0.36	148	160	2.5
AN0220	161.90	164.30	2.40	644174	1.01	0.25	0.5	8950	2290	0.73	46.7	45.9	14.6
AN0220	164.30	165.90	1.60	644175	1.95	1.61	4	19500	16100	3.76	30.6	96.3	9.8
AN0220	165.90	166.60	0.70	644176	0.01	0.01	0.5	145	38.8	0.1	4.8	0.51	10.6
AN0220	166.60	169.00	2.40	644179	0.11	0.005	0.5	927	8	0.07	6.2	3.25	2.5
AN0220	169.00	171.50	2.50	644180	0.02	0.01	0.5	235	60.7	0.06	9.1	0.62	17
AN0220	171.50	172.90	1.40	644181	0.005	0.005	0.5	62	13.2	0.15	7	0.05	30.8
AN0220	172.90	175.30	2.40	644182	5.59	0.01	0.5	55900	86.2	0.59	61.4	116.5	2.5
AN0220	175.30	176.80	1.50	644183	0.81	0.005	0.5	6640	0.25	0.09	10.7	19.75	2.5
AN0220	176.80	178.30	1.50	644184	1.19	0.005	0.5	8350	2.7	0.13	19	26.1	5

Complete Listing of Samples from Drillcore - Andrew 2002 Drill Program

					Assay Samples (on drill logs)			Geochem Samples (not on drill logs)					
DDH #	From (m)	To (m)	Length (m)	Sample #	Zn %	Pb %	Ag (ppm)	Zn (ppm)	Pb (ppm)	Ag (ppm)	Cu (ppm)	Cd (ppm)	As (ppm)
AN0220	178.30	179.40	1.10	644185	7.12	0.005	1	71200	10.4	0.86	73.8	196	14.6
AN0220	179.40	180.70	1.30	644186	21.1	0.005	3	211000	11.8	2.81	149	>500	8.8
AN0220	180.70	181.10	0.40	644187	40.17	0.005	6	401700	13.4	5.43	426	>500	10.1
AN0220	181.10	181.50	0.40	644190	7.86	0.005	1	78600	4.3	0.7	82.3	193.5	25
AN0220	181.50	183.60	2.10	644191	6.34	0.005	0.5	63400	1.8	0.35	48.3	144	14.1
AN0220	183.60	184.30	0.70	644192	15.45	0.005	1	154500	3.4	1.39	121	345	13.4
AN0220	184.30	185.70	1.40	644193	2.53	0.005	0.5	25300	3.8	0.22	23.4	62.7	48.8
AN0220	185.70	187.10	1.40	644194	0.21	0.005	0.5	1835	10	0.13	31.4	5.52	35.1
AN0220	187.10	188.50	1.40	644195	0.66	0.01	0.5	6210	6.8	0.2	18.3	21.2	35.8
AN0220	188.50	189.90	1.40	644196	0.03	0.005	0.5	232	1.7	0.05	19.9	0.51	10.2
AN0220	189.90	190.60	0.70	644197	0.005	0.01	0.5	74	50.4	0.3	60.6	0.13	11.7
AN0221	38.70	39.95	1.25	644199	0.09	0.005	0.5	1295	39	1.2	12	1.8	6
AN0221	39.95	40.70	0.75	644200	29.5	0.01	1	295000	176	2.7	385	>500	21
AN0221	40.70	42.60	1.90	176269	0.04	0.005	0.5	438	14	0.1	6	0.7	6
AN0221	42.60	45.50	2.90	176270	6.78	0.005	0.5	67800	1	0.1	63	195.5	12
AN0221	45.50	46.30	0.80	176271	0.07	0.005	0.5	563	14	0.1	16	0.25	11
AN0221	58.10	60.00	1.90	176272	0.06	0.005	0.5	737	11	0.1	25	1.9	8
AN0221	60.00	61.80	1.80	176273	0.01	0.005	0.5	240	4	0.1	24	0.5	3
AN0221	61.80	62.10	0.30	176274	0.01	0.59	0.5	160	5460	0.7	23	0.25	9
AN0221	62.10	62.60	0.50	176275	0.01	0.01	0.5	162	112	0.1	25	0.25	16
AN0221	70.50	72.00	1.50	176276	1.61	8.77	17	16100	87700	17	168	41	9
AN0221	72.00	74.00	2.00	176277	0.17	0.02	0.5	1550	144	0.1	15	4.3	13
AN0221	74.00	76.00	2.00	176278	4.24	0.3	0.5	42400	2800	0.9	79	112	10
AN0221	76.00	78.00	2.00	176279	0.61	0.01	0.5	5660	79	0.1	125	17.5	8
AN0221	78.00	80.00	2.00	176280	0.07	9.08	20	749	90800	19.6	16	2.2	6
AN0221	80.00	82.10	2.10	176281	0.05	0.03	0.5	534	315	0.1	11	1.4	11
AN0221	82.10	83.50	1.40	176282	1.86	0.005	0.5	18600	80	0.2	22	72.1	18
AN0221	97.20	97.70	0.50	176283	6.03	0.005	1	60300	56	2	121	166.5	20
AN0222	75.70	77.20	1.50	176287				692	265	0.1	9.7	1.84	6.8
AN0222	77.20	77.90	0.70	176288				2030	29.1	0.13	13.6	6.39	6.4
AN0222	77.90	79.00	1.10	176289				1395	72.1	0.46	30.3	3.26	30.1
AN0222	79.00	81.00	2.00	176290				178	2.9	0.02	7.9	0.39	1.1
AN0222	81.00	83.00	2.00	176291				39	5.7	0.02	4.5	0.07	3.1
AN0222	83.00	85.00	2.00	176292				108	5.9	0.02	6.8	0.24	0.6
AN0222	85.00	86.00	1.00	176293				221	19.7	0.16	25.1	0.46	14.4
AN0223	47.10	49.20	2.10	176296	0.03	0.005	0.5	420	51	0.1	63	0.25	15
AN0223	76.70	78.30	1.60	176297	0.46	0.005	0.5	4360	16	0.1	37	12.4	4
AN0223	78.30	79.90	1.60	176298	0.8	0.005	0.5	8030	10	0.1	12	22.3	1
AN0223	175.60	176.80	1.20	176299	0.02	0.01	1	175	81	0.3	59	0.25	68
AN0223	176.80	178.10	1.30	176300	0.2	0.27	19	1980	2580	18.5	83	25.9	376
AN0223	178.10	179.90	1.80	319951	0.31	0.41	18	3040	3940	17.4	57	39	242
AN0223	179.90	181.70	1.80	319952	0.26	0.25	13	2580	2380	13.1	53	31.7	160
AN0223	181.70	183.50	1.80	319953	1.13	1.2	62	11300	12000	64.9	99	157	163
AN0223	183.50	185.30	1.80	319954	0.24	0.32	12	2230	2920	11.6	30	27.7	134
AN0223	185.30	187.10	1.80	319955	0.09	0.34	15	865	3390	16.1	18	8.7	125
AN0223	187.10	188.90	1.80	319956	0.08	0.08	5	733	759	4.2	21	3.2	182
AN0223	188.90	189.00	0.10	319957	0.08	0.1	7	875	915	6.8	35	7	306
AN0223	189.00	191.40	2.40	319958	0.31	0.26	14	2900	2420	13.4	44	33.6	258
AN0223	191.40	192.70	1.30	319959	0.19	0.11	6	1905	1010	5.4	27	22.8	365
AN0223	192.70	194.30	1.60	319960	0.25	0.2	14	2280	1880	14	83	29.8	327
AN0223	194.30	195.70	1.40	319961	0.69	1.64	71	7020	16400	67.2	80	102	141
AN0223	195.70	196.50	0.80	319962	0.27	0.23	10	2430	1995	8.3	131	33.1	173
AN0223	196.50	198.70	2.20	319963	0.75	0.65	28	6830	5970	26.4	134	99.5	234

Complete Listing of Samples from Drillcore - Andrew 2002 Drill Program

					Assay Samples (on drill logs)			Geochem Samples (not on drill logs)					
DDH #	From (m)	To (m)	Length (m)	Sample #	Zn %	Pb %	Ag (ppm)	Zn (ppm)	Pb (ppm)	Ag (ppm)	Cu (ppm)	Cd (ppm)	As (ppm)
AN0223	198.70	201.00	2.30	319964	0.05	0.005	1	436	36	1	8	2.3	13
AN0223	201.00	203.00	2.00	319965	0.01	0.01	1	75	30	0.5	10	0.5	23
AN0223	203.00	205.00	2.00	319966	1.12	0.04	2	11200	330	2.3	53	92.9	30
AN0223	205.00	207.00	2.00	319967	0.005	0.005	0.5	43	14	0.3	28	0.25	20
AN0223	207.00	209.00	2.00	319968	0.37	0.005	0.5	3510	53	0.3	33	15.8	19
AN0223	209.00	211.00	2.00	319969	0.005	0.005	0.5	21	7	0.1	42	0.25	34
AN0223	211.00	213.00	2.00	319970	0.16	0.005	0.5	1505	26	0.2	52	5.6	31
AN0223	224.90	227.00	2.10	319971	0.005	0.11	1	13	1045	1.8	9	0.25	12
AN0223	227.00	228.30	1.30	319972	0.005	0.02	0.5	45	212	0.1	55	0.25	22
AN0223	228.30	228.40	0.10	319973	20.5	0.005	3	205000	50	3.4	160	>500	28
AN0223	228.40	228.70	0.30	319974	0.3	0.005	0.5	3500	7	0.2	18	11.4	5

NORANDA INC.

Drill Hole Log

Drillhole Collar

Hole-ID:	AN0216	**Length:**	374	**Units:**	meters
Started	07/08/02	**Proj. #:**	2501	**Project:**	Andrew
Finished:	14/08/02	**Claim #:**	YB65802	**Logged By:**	M. Savell
Drill Type:	Boyles JKS 25	**Case Pld:**	yes	**Contractor:**	Advanced Drilling
Core Size:	NQ2	**Case Dep:**	6.6	**Core Location:**	Andrew Camp

Co-ordinates - GEMCOM		Co-ordinates - Grid		Co-ordinates - UTM		Co-ordinates - Lat/Long	
Easting:	641449.4	**Easting:**	0.00	**Easting:**	641449.4	**Latitude:**	0
Northing:	6978399.4	**Northing:**	0.00	**Northing:**	6978399.4	**Longitude:**	0
Elevation:	1329.7	**Elevation:**	0.00	**Elevation:**	1329.7		
Plot_Sys:	UTM NAD 83	**Grid Declin:**	2.48	**UTM Declin:**	2.48		
NTS:	105K16	**Mag Declin:**	27.34	**UTM Zone:**	8		

Collar Survey: Chained from 2 DGPS points, Handheld GPS
Target: ANDREW ZONE, SEC. 641450E, 100M UNDER #15
Geophysics: No
Remarks: No mineralization intersected. Several breccia zones were cut, but none have the same characteristics as the mineralized breccia zones intersected in hole 15.

Downhole Survey

Distance	Dip	Mag Azm	True N Azm	Type	Comments
0.00	-70.00	152.14	179.48	Collar	
124.09	-69.75	153.00	180.34	Sperry-Sun	Single Shot
185.06	-69.00	156.00	183.34	Sperry-Sun	Single Shot
245.40	-68.25	159.00	186.34	Sperry-Sun	Single Shot
368.00	-72.25	163.00	190.34	Sperry-Sun	Single Shot

Geology

Lithology

From - To: Rock Code - Rock Name
Description

0.00 - 6.60: OB - Overburden

Alteration

From - To: Alt Code
Description

Mineralization

From - To: Min Code
Description

Assay

From - To: Smple Cu % Pb % Zn % Ag G/t Au G/t

AN0216

Lithology

From - To: Rock Code - Rock Name
Description

6.60 - 7.70: QTZ - Quartzite
Medium grey, fine to medium grained quartz-feldspar-shale grain-mica sandstone to quartzite, massive bedded, cut by mm scale, ragged, cross-cutting calcite veinlets, offset by microfractures

7.70 - 7.80: _FAULT - Fault
Intensely fractured, calcite veined shear zone

7.80 - 12.10: QTZ - Quartzite
As from 6.6 to 7.7

12.10 - 12.30: SNDST - Sandstone
Dark grey, coarse sandstone, with scattered, angular shale fragments aligned to bedding, with minor black and dull olive-grey shale interbeds

12.30 - 12.35: SHL_BLK - Black Shale
Black to dark grey shale or mudstone, often sheared or deformed

12.35 - 13.30: SNDST - Sandstone
As from 12.1 to 12.3

13.30 - 13.35: SHL_BLK - Black Shale
As from 12.3 to 12.35

13.35 - 13.45: SNDST - Sandstone
As from 12.1 to 12.3

13.45 - 13.50: SHL_BLK - Black Shale
As from 12.3 to 12.35

13.50 - 13.80: SNDST - Sandstone
As from 12.1 to 12.3

13.80 - 13.85: _FAULT - Fault
Intensely fractured, calcite veined shear zone with slickensides

13.85 - 16.10: QTZ - Quartzite
As from 6.6 to 7.7, coarse grained, salt and pepper texture due to fine, dark, shaley fragments, weakly laminated, a few scattered mm scale, ragged calcite veinlets

16.10 - 16.60: SHL_GRY - Grey Shale
Mixed grey shale, quartzite

16.60 - 18.10: SNDST - Sandstone
As from 13.85 to 16.1, with rare pale blue cherty quartz grains. Patchy, weak bleaching (silicification) associated with cross-cutting, hairline fractures

18.10 - 19.50: SHL_GRN - Green Shale
Dull olive-medium grey, laminated shale to siltstone, hard, does not break along laminae. Upper contact sheared, rare calcite veinlets.

Alteration

From - To: Alt Code
Description

Mineralization

From - To: Min Code
Description

Assay

From - To:	Smple	Cu %	Pb %	Zn %	Ag G/t	Au G/t

AN0216

Lithology	Alteration	Mineralization	Assay
From - To: Rock Code - Rock Name Description	From - To: Alt Code Description	From - To: Min Code Description	From - To: Smple Cu % Pb % Zn % Ag G/t Au G/t

19.50 - 20.80: SNDST - Sandstone
Well laminated, grey silty sandstone with centimeter scale interbeds of dull olive green-grey to grey brown siltstone, scattered, ragged, calcite veinlets and blebs, cross-cutting

20.80 - 21.00: SNDST - Sandstone
Grey quartz sandstone with patchy to speckled, very fine, black alteration mineral (tourmaline?) along cross-cutting hairline fractures at 35 deg to CA, and along laminations close to fractures,

21.00 - 21.50: SNDST - Sandstone
As from 19.5 to 20.8

21.50 - 24.35: LST - Limestone
Pale creamy grey, finely crystalline massive limestone interbedded with laminated, dull olive-grey, calcareous siltstone and shale. Mm scale, black shaley partings or stylolites at 1 to 10 cm apart in limestone. Coarse calcite veinlets and blebs, more abundant in limestone.

24.35 - 26.00: _SHEAR - Shear Zone
Sheared, deformed, bleached grey siltstone, with ragged calcite and ankerite coated hairline fractures, blebs of ankerite

26.00 - 28.00: SLTST - Siltstone
Interbedded grey siltstone and shale, scattered, sinuous, hairline calcite veinlets. Laminations at 27m turn parallel to CA, possible fold axis

28.00 - 29.10: SHL_MAR - Maroon Shale
Dull maroon shale or mudstone, hard, does not break along laminae. Scattered, mm to cm scale interbeds of olive-grey siltstone, offsets along microfractures common. Trace calcite veinlets.

29.10 - 32.10: _SHEAR - Shear Zone
Sheared, contorted, dull olive-grey to maroon mudstone, bleached, mottled texture, weak silicification, very ragged, calcite and ankerite coated fractures

32.10 - 33.60: SLTST - Siltstone
Pale to medium grey, fine grained, finely laminated siltstone with quartz rich sandstone sections, ragged, ankerite coated hairline fractures, sheared, broken up core.

33.60 - 33.70: _FAULT - Fault
Fault gouge, with 1 to 20 mm angular siltstone fragments

33.70 - 37.75: SLTST - Siltstone
As from 32.1 to 33.6

AN0216

Lithology	Alteration	Mineralization	Assay
From - To: Rock Code - Rock Name Description	From - To: Alt Code Description	From - To: Min Code Description	From - To: Smple Cu % Pb % Zn % Ag G/t Au G/t
37.75 - 37.80: _FAULT - Fault Fault gouge, with 1 to 20 mm angular siltstone fragments			
37.80 - 38.10: SLTST - Siltstone As from 32.1 to 33.6			
38.10 - 38.30: LST - Limestone Pale creamy grey limestone and calcareous siltstone			
38.30 - 38.60: BX_QTZ - Breccia Brecciated, silicified quartzite, with quartz and later calcite veinlets			
38.60 - 38.80: QTZ - Quartzite Sheared, fractured quartzite with black, patchy to disseminated (tourmaline?) alteration along fractures and laminae			
38.80 - 39.00: _SHEAR - Shear Zone Interbedded, mixed pale grey quartzite and grey to grey-maroon, mottled siltstone. Broken up core, sheared and fractured, with films of dark green chlorite, anhydrite, and ankerite			
39.00 - 39.30: QTZ - Quartzite As from 38.6 to 38.8			
39.30 - 45.10: _SHEAR - Shear Zone As from 38.8 to 39			
45.10 - 58.00: SHL_MAR - Maroon Shale Maroon shale or mudstone, massive to faintly laminated (45 to 55 deg to CA), with 20% by volume of medium grey-green, finely laminated silty shale interbeds from 1 to 20 cm thick. Local shearing or small scale deformation of sediments, scattered calcite veinlets			
58.00 - 60.30: SHL_GRY - Grey Shale Pale grey-olive green siltstone and silty mudstone, laminated, minor maroon mudstone interlaminations, cm scale. Local fracturing with bleaching or weak silicification, with dark green chlorite and anhydrite lining fractures			
60.30 - 61.30: SHL_MAR - Maroon Shale Maroon shale and mudstone, with 10% by volume of pale grey-green silty interbeds 1 to 10 cm thick.			
61.30 - 64.50: _SHEAR - Shear Zone Pale grey-green siltstone, with bleached silicified patches and drusy quartz veinlets related to fracturing, minor mottled, pale maroon patches			

AN0216

Lithology	Alteration	Mineralization	Assay
From - To: Rock Code - Rock Name	From - To: Alt Code	From - To: Min Code	
Description	Description	Description	From - To: Smple Cu % Pb % Zn % Ag G/t Au G/t

64.50 - 73.95: SHL_MAR - Maroon Shale

Maroon shale or mudstone, laminated, fairly hard, with 5% by volume of pale grey-green silty interbeds, mm to 15 cm thick, rhythmic. The silty interbeds typically have a dull grey-green silty core, rimmed by a few mm's of pale creamy-grey-green mudstone quickly passing into maroon mudstone.

73.95 - 75.90: _SHEAR - Shear Zone

Sheared, bleached (silicified), shale with quartz and calcite veinlets

75.90 - 79.80: SHL_MAR - Maroon Shale

As from 64.5 to 73.95

79.80 - 79.90: _SHEAR - Shear Zone

As from 73.95 to 75.9

79.90 - 82.30: SHL_MAR - Maroon Shale

As from 64.5 to 73.95

82.30 - 82.60: _SHEAR - Shear Zone

As from 73.95 to 75.9

82.60 - 83.00: SHL_MAR - Maroon Shale

As from 64.5 to 73.95

83.00 - 83.25: _SHEAR - Shear Zone

As from 73.95 to 75.9

83.25 - 83.70: SHL_MAR - Maroon Shale

As from 64.5 to 73.95

83.70 - 83.80: _SHEAR - Shear Zone

As from 73.95 to 75.9

83.80 - 85.00: SHL_MAR - Maroon Shale

As from 64.5 to 73.95

85.00 - 85.60: _SHEAR - Shear Zone

As from 73.95 to 75.9

85.60 - 86.40: SHL_MAR - Maroon Shale

As from 64.5 to 73.95

86.40 - 87.50: _SHEAR - Shear Zone

As from 73.95 to 75.9

87.50 - 89.80: SHL_MAR - Maroon Shale

As from 64.5 to 73.95

89.80 - 90.30: _SHEAR - Shear Zone

As from 73.95 to 75.9

90.30 - 91.40: SHL_MAR - Maroon Shale

As from 64.5 to 73.95

91.40 - 91.55: _SHEAR - Shear Zone

As from 73.95 to 75.9

91.55 - 96.80: SHL_MAR - Maroon Shale

As from 64.5 to 73.95

96.80 - 97.50: _SHEAR - Shear Zone

As from 73.95 to 75.9

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Lithology

From - To: Rock Code - Rock Name
Description

97.50 - 98.30: SHL_MAR - Maroon Shale
As from 64.5 to 73.95

98.30 - 98.90: _SHEAR - Shear Zone
As from 73.95 to 75.9

98.90 - 100.40: SHL_MAR - Maroon Shale
As from 64.5 to 73.95

100.40 - 100.70: _SHEAR - Shear Zone
As from 73.95 to 75.9

100.70 - 100.90: SHL_MAR - Maroon Shale
As from 64.5 to 73.95

100.90 - 103.40: SHL_GRN - Green Shale
Pale olive-grey, bleached, mottled shale or argillite

103.40 - 104.10: SHL_MAR - Maroon Shale
As from 64.5 to 73.95

104.10 - 106.10: SHL_GRN - Green Shale
As from 100.9 to 103.4

106.10 - 110.90: SHL_MAR - Maroon Shale
As from 64.5 to 73.95

110.90 - 112.10: SHL_GRN - Green Shale
As from 100.9 to 103.4, with dark green chlorite coated, ragged hairline fractures

112.10 - 120.90: SHL_MAR - Maroon Shale
As from 64.5 to 73.95, with 5% by volume mm to 5 cm scale beds of pale olive green siltstone. These beds are often deformed and fractured on a small scale, however the deformation is not visible in the surrounding maroon shale due to its homogeneity.

120.90 - 121.00: _FAULT - Fault
Seam of maroon mud and sand with angular rock fragments, probable fault gouge

121.00 - 121.05: SHL_MAR - Maroon Shale
As from from 64.5 to 73.95

121.05 - 122.00: SHL_GRN - Green Shale
Sheared, bleached, mottled, shale and fine siltstone, pale grey-green-maroon, with ragged, thin blebs and veinlets of quartz and ankerite? Gradational unit.

Alteration

From - To: Alt Code
Description

Mineralization

From - To: Min Code
Description

Assay

From - To:	Smple	Cu %	Pb %	Zn %	Ag G/t	Au G/t

AN0216

Lithology	Alteration	Mineralization	Assay
From - To: Rock Code - Rock Name Description	From - To: Alt Code Description	From - To: Min Code Description	From - To: Smple Cu % Pb % Zn % Ag G/t Au G/t
122.00 - 125.45: BX_BS - Black Shale Breccia Black to dark grey, shale and argillite with paler silty interbeds, variably sheared and brecciated. Deformation varies from moderate, with cm scale offsets and buckling, to intense breccias, sometimes with rounded clasts, elsewhere jigsaw patterns. Becomes darker, more carbonaceous with depth. Fractures show greasy black graphitic carbon. Some breccia zones grade into fault gouge or broken up, friable sections, especially where graphite is abundant. Traces of disseminated pyrite associated with quartz veining in intensely brecciated sections including 124.7 to 125.5m.		122.00 - 125.45 - tr. Pyrite finely disseminated	
125.45 - 125.48: _FAULT - Fault Black, clayey and carbonaceous fault gouge.			
125.48 - 132.85: BX_BS - Black Shale Breccia As from 122 to 125.45m. More intensely brecciated from 126.4 to 132.9m.			
132.85 - 132.95: _FAULT - Fault Black, clayey and carbonaceous fault gouge.			
132.95 - 140.80: BX_BS - Black Shale Breccia As from 122 to 125.45m.			
140.80 - 148.00: BX_BS - Black Shale Breccia Similar to above, mostly massive, graphitic, black, sheared shale and argillite, with fine disseminated pyrite, and occasional clusters and patches of pyrite associated with quartz and breccia intensity.		140.80 - 148.00 - tr. Pyrite finely disseminated, rare clusters	
148.00 - 163.10: BX_BS - Black Shale Breccia As from 122 to 125.45, more intensely brecciated down to 157.4m.			
163.10 - 164.50: BX_BS - Breccia Intensely brecciated and quartz veined shale, hydrothermal character			
164.50 - 164.55: _FAULT - Fault Black, clayey and carbonaceous fault gouge.			
164.55 - 165.50: BX_BS - Breccia As from 163.1 to 164.5			
165.50 - 178.00: SHL_BLK - Black Shale Black shale or argillite, massive, graphitic, weakly fissile, with occasional medium grey, silty laminations up to 1 cm thick. A few ragged quartz-ankerite veins and clots. Trace fine disseminated pyrite, especially within pale, silty laminae near bottom.		165.50 - 178.00 - tr. Pyrite finely disseminated pyrite	

Lithology	Alteration	Mineralization	Assay
From - To: Rock Code - Rock Name Description	From - To: Alt Code Description	From - To: Min Code Description	From - To: Smple Cu % Pb % Zn % Ag G/t Au G/t
178.00 - 183.30: BX_BS - Black Shale Breccia Brecciated black shale and dark grey siltstone, chaotic, well lithified, angular to subrounded fragments in fine black matrix. Some breccia fragments have quartz veinlets that do not extend through matrix. Clasts with disseminated pyrite in upper 30 cm. A few ragged quartz veinlets, 1 to 10 mm thick.		178.00 - 183.30 - tr. Pyrite clasts with disseminated pyrite	
183.30 - 184.60: BX_BS - Breccia Intensely sheared to weakly brecciated, carbonate (ankerite) altered shale and siltstone, cross-cutting, ragged veinlets throughout			
184.60 - 185.60: BX_BS - Black Shale Breccia As from 178 to 183.3, chaotic breccia to intensely sheared, some ankerite			
185.60 - 189.10: SLTST - Siltstone Medium grey, siltstone and quartzite, fine grained, some brecciation and minor quartz veining, anhydrite coated fractures, 2 to 8 mm clots of pyrrhotite at 191.95		185.60 - 189.10 - tr. Po 2 to 8 mm clots of pyrrhotite at 191.95	
189.10 - 189.30: _FAULT - Fault Several 5 mm seams of fault gouge			
189.30 - 189.75: SLTST - Siltstone As from 185.6 to 189.1			
189.75 - 189.80: _FAULT - Fault Fault gouge.			
189.80 - 192.00: SLTST - Siltstone As from 185.6 to 189.1			
192.00 - 192.70: BX_BS - Black Shale Breccia Variably brecciated, medium to dark grey to almost black, siltstone and shale, chaotic texture, with ragged veinlets and clots of quartz, ankerite, some anhydrite coating fractures			
192.70 - 192.85: _FAULT - Fault Probable fault gouge.			
192.85 - 203.30: BX_BS - Black Shale Breccia As from 192 to 192.7			
203.30 - 212.00: SHL_BLK - Black Shale Massive, black, carbonaceous argillite or shale, rare mm scale, grey silty laminae, scattered 0.5 to 5 mm ragged quartz veinlets. Minor disseminated py, and local patches, clusters 5 to 20 cm across, py coated irregular fractures. Occasional angular clasts of quartz veined, grey siltstone. At 210.25, 2x4 cm lense of densely clustered pyrrhotite grains, associated with disseminated pyrite. At 211.95, 0.5x3 cm irregular lense of densely clustered pyrite, associated with fine disseminated pyrite and mm veinlets. Graphite on fractures.		203.30 - 212.00 - tr. Pyrite finely disseminated pyrite, local patches and clusters 5 to 20 cm across, pyrite coated fractures. At 210.25, 2 x 4 cm lense of densely clustered pyrrhotite associated with pyrite	

Lithology	Alteration	Mineralization	Assay
From - To: Rock Code - Rock Name Description	From - To: Alt Code Description	From - To: Min Code Description	From - To: Smple Cu % Pb % Zn % Ag G/t Au G/t
212.00 - 212.10: BX_BS - Breccia Ragged clots, broken veins of quartz and ankerite in ground up black shale matrix.			
212.10 - 215.10: SHL_BLK - Black Shale Massive black argillite or shale, homogeneous, minor calcite veinlets, disseminated pyrite.		212.10 - 215.10 - tr. Pyrite finely disseminated pyrite	
215.10 - 215.20: BX_BS - Breccia As from 212 to 212.1			
215.20 - 223.70: SHL_BLK - Black Shale Massive black argillite or shale, homogeneous, minor calcite veinlets, disseminated pyrite.		215.20 - 223.70 - tr. Pyrite finely disseminated pyrite	
223.70 - 223.80: BX_BS - Breccia As from 212 to 212.1			
223.80 - 225.50: SHL_BLK - Black Shale Massive black argillite or shale, homogeneous, minor calcite veinlets, disseminated pyrite.		223.80 - 225.70 - tr. Pyrite finely disseminated pyrite	
225.50 - 227.00: _FAULT - Fault Fault zone, with fault gouge at 225.9-225.95, 226.3-226.4, 226.5-226.7, 226.8-226.85, 227.0-227.05, and 227.45-227.5 separating intervals of black argillite. Angles to core axis vary from 40 to 65 deg.			
227.00 - 228.10: SHL_BLK - Black Shale Massive black argillite or shale, homogeneous, minor calcite veinlets, disseminated pyrite.		227.00 - 228.10 - tr. Pyrite finely disseminated pyrite	
228.10 - 228.20: _FAULT - Fault Fault gouge, black with broken up fragments of argillite, quartz-ankerite veinlets.			
228.20 - 229.40: SHL_BLK - Black Shale Black argillite, variably sheared, with ragged calcite veinlets, minor pyrite.			
229.40 - 229.90: _FAULT - Fault Fault zone, with fault gouge at 229.4-229.42, 229.5-229.52, 229.59-229.63, 229.75-229.8, separating intervals of grey calcareous sandstone and black argillite.			
229.90 - 234.40: SNDST_CA - Calcareous Sandstone Calcareous siltstone and sandstone, finely laminated, pale to dark grey. Distinct mm to cm scale laminations, cross-bedding common, minor black, graphitic, argillic laminae. Cross-cutting, ragged calcite veinlets common, more so and thicker in paler, more massive and calcareous intervals.			
234.40 - 235.30: _FAULT - Fault Fault zone, intensely sheared, grey silty mudstone with ragged, crushed quartz-calcite vein material, 20% by volume, and ragged, mm scale black graphitic partings.			

Lithology	Alteration	Mineralization	Assay
From - To: Rock Code - Rock Name Description	From - To: Alt Code Description	From - To: Min Code Description	From - To: Smple Cu % Pb % Zn % Ag G/t Au G/t
235.30 - 236.50: SHL_GRY - Grey Shale Pale grey, finely laminated, cherty mudstone or shale, scattered thin calcite veinlets.			
236.50 - 242.28: SNDST_CA - Calcareous Sandstone Interbedded grey calcareous sandstone, siltstone, grey siltstone, and black argillite. Calcite veinlets throughout, more abundant and thicker in calcareous intervals. Minor disseminated pyrite.		236.50 - 242.28 - tr. Pyrite finely disseminated pyrite	
242.28 - 242.30: _FAULT - Fault Fault gouge.			
242.30 - 243.50: QTZ - Quartzite Fine to medium grained, grey, salt and pepper texture, rounded quartz grains with some carbonaceous or shaley material in matrix. Lower contact irregular, roughly 45 deg.			
243.50 - 244.50: SHL_GRY - Grey Shale As from 236.5 to 242.28. Angular, black shale clasts common. Rare black, graphitic argillite intervals up to 10 cm thick, minor disseminated pyrite. Cross-cutting calcite veinlets throughout. Microfractures displace laminae, veinlets. Bedding variable from 50 to 75 deg.			
244.50 - 244.60: SNDST_CA - Calcareous Sandstone Pale grey, fine grained, massive calcareous sandstone to limestone.			
244.60 - 251.00: SNDST_CA - Calcareous Sandstone Dark grey, fine grained calcareous sandstone, minor black argillite intervals with black, waxy surface when broken.			
251.00 - 251.50: SNDST_CA - Calcareous Sandstone As from 244.6 to 251			
251.50 - 252.70: SHL_GRY - Grey Shale Finely laminated, very hard, pale grey shale, siltstone, argillite.			
252.70 - 256.60: SNDST_CA - Calcareous Sandstone Pale grey, fine calcareous sandstone.			
256.60 - 256.90: SNDST_CA - Calcareous Sandstone As from 244.6 to 251			
256.90 - 261.20: SHL_GRY - Grey Shale Finely laminated grey shale, with pale olive-green to pale grey-maroon color variations.			
261.20 - 264.30: SNDST_CA - Calcareous Sandstone Pale grey, massive calcareous sandstone, heavily calcite veined.			
264.30 - 264.70: _FAULT - Fault Fault-breccia zone, various rock fragments in fine, dark, ground rock fragment matrix, several mm scale fault gouge layers in bottom 10 cm.			

Lithology	Alteration	Mineralization	Assay
From - To: Rock Code - Rock Name Description	From - To: Alt Code Description	From - To: Min Code Description	From - To: Smple Cu % Pb % Zn % Ag G/t Au G/t
264.70 - 265.80: SHL_GRY - Grey Shale Finely laminated, grey shale, some narrow intervals of brecciated, weakly silicified calcareous sandstone.			
265.80 - 268.70: SNDST_CA - Calcareous Sandstone Massive, pale grey, fine grained, calcareous sandstone.			
268.70 - 271.00: SHL_GRY - Grey Shale Grey, laminated shale, minor intervals of calcareous sandstone.			
271.00 - 273.00: SNDST_CA - Breccia Brecciated, calcite veined calcareous sandstone and grey laminated shale.			
273.00 - 274.60: SHL_GRY - Grey Shale Medium to dark, laminated shale, minor intervals of calcareous sandstone.			
274.60 - 276.20: SNDST_CA - Calcareous Sandstone Pale, massive, calcareous sandstone, minor intervals of black argillite.			
276.20 - 277.10: SHL_GRY - Grey Shale Laminated grey shale, minor intervals of calcareous sandstone.			
277.10 - 277.60: SNDST_CA - Calcareous Sandstone Pale grey calcareous sandstone, ragged calcite veinlets throughout.			
277.60 - 282.80: SHL_GRY - Grey Shale Laminated, hard, minor silty and calcareous intervals.			
282.80 - 292.00: SNDST_CA - Calcareous Sandstone As from 277.1 to 277.6, hard, minor intervals of grey laminated shale up to 10 cm thick. Bedding variable, from 45 to 80 deg to CA.			
292.00 - 293.60: SHL_GRY - Grey Shale Occasional laminations with fine, densely disseminated pyrite, minor intervals of brecciation.		292.00 - 293.60 - tr. Pyrite finely disseminated pyrite, occasional laminations with densely disseminated pyrite over a few mm	
293.60 - 297.40: QTZ - Quartzite Medium grey, fine grained, massive or coarsely bedded quartzite, quartz siltstone and sandstone, some weakly calcareous intervals with ragged, cross-cutting, irregular calcite veinlets.			
297.40 - 302.90: SHL_GRY - Grey Shale Laminated to finely bedded, argillic to silty laminae, weakly fissile and phyllitic.			
302.90 - 304.60: SNDST_CA - Calcareous Sandstone Pale grey, fine to medium grained, massive (thickly bedded), also weakly calcareous, quartzite intervals, quartz and calcite veinlets, trace. Pyrite. Minor intervals of laminated, dark grey shale, pyritic.		302.90 - 304.60 - tr. Pyrite finely disseminated pyrite	

Lithology	Alteration	Mineralization	Assay
From - To: Rock Code - Rock Name Description	From - To: Alt Code Description	From - To: Min Code Description	From - To: Smple Cu % Pb % Zn % Ag G/t Au G/t
304.60 - 321.80: QTZ - Quartzite Similar to above, but pure quartzite intervals more abundant, a few decimeter scale intervals of black to dark grey argillaceous, laminated shale. Cross-cutting quartz veinlets scattered throughout. Bedding variable from 40 to 70 deg.			
321.80 - 323.40: QTZ - Quartzite Quartzite with weakly calcareous intervals, local brecciation with quartz vein matrix.			
323.40 - 323.55: _FAULT - Fault Fault zone, fault gouge and shattered quartzite.			
323.55 - 327.65: QTZ - Quartzite Quartzite with weakly calcareous intervals.			
327.65 - 327.90: _FAULT - Fault Fault zone, with gouge and brecciated, shattered grey shale fragments.			
327.90 - 329.90: SHL_GRY - Grey Shale Grey, with some olive-grey intervals, finely laminated, bedding variable from 35 to 60 deg.			
329.90 - 330.60: QTZ - Quartzite Pale grey, fine grained quartzite, coarsens to quartz pebble grit or fine conglomerate bottom 50 cm. Ragged quartz veinlets cross-cutting.			
330.60 - 332.80: SHL_GRY - Grey Shale As from 327.9 to 329.9, with decimeter scale intervals of quartzite intervals.			
332.80 - 336.80: QTZ - Quartzite Grey, fine to medium grained, massive bedded, with minor grey shale intervals. Cross-cutting ragged quartz veinlets common. Minor brecciated, deformed intervals.			
336.80 - 343.00: SLTST - Siltstone Interbedded dark grey-brown siltstone, pale grey quartzite, and laminated grey shale. Angular shale clasts up to 2cm in some of the quartzite and siltstone intervals. Quartz veinlets more common in quartzite. Probable epidote coating some fractures. At 341.55 to 341.60, an irregular, milky white quartz vein with pyrite lined vug.		336.80 - 343.00 - tr. Pyrite pyrite in quartz vein	
343.00 - 350.85: SHL_GRY - Grey Shale Dark grey to grey-brown, laminated, with minor centimeter scale siltstone and quartzite intervals. At 348.4, 5mm thick fault gouge at 45 deg to CA.			
350.85 - 350.90: _FAULT - Fault Fault gouge and crushed rock.			

AN0216

Lithology

From - To: Rock Code - Rock Name
Description

350.90 - 356.30: QTZ - Quartzite
Grey to pale grey, fine to coarse grained, occasional decimeter scale intervals of white quartz pebble conglomerate, minor grey to grey-green laminated shale intervals. Ragged quartz veinlets throughout, some with fine black lining.

356.30 - 363.90: SHL_GRY - Grey Shale
Dark grey to dark olive-grey, finely laminated, weakly fissile and phyllitic.

363.90 - 367.90: SNDST_CA - Calcareous Sandstone
Grey, massive to finely laminated, calcareous sandstone or quartzite, with decimeter scale intervals of pale grey, massive, finely crystalline limestone, minor cm scale grey shale intervals.

367.90 - 374.00: SNDST_CA - Calcareous Sandstone
Interbedded grey calcareous sandstone, grey to black, laminated shale and siltstone. Black intervals are argillic and phyllitic. Minor quartz and calcite veinlets.

Alteration

From - To: Alt Code
Description

Mineralization

From - To: Min Code
Description

Assay

From - To:	Smple	Cu %	Pb %	Zn %	Ag G/t	Au G/t

noranda

NORANDA INC.

Drill Hole Log

Drillhole Collar

Hole-ID:	AN0217	**Length:**	321.3	**Units:**	meters
Started	16/08/02	**Proj. #:**	2501	**Project:**	Andrew
Finished:	21/08/02	**Claim #:**	YB65802, YB6	**Logged By:**	A. Huard
Drill Type:	Boyles JKS 25	**Case Pkd:**	yes	**Contractor:**	Advanced Drilling
Core Size:	NQ2	**Case Dep:**	6.6	**Core Location:**	Andrew camp

Co-ordinates - GEMCOM		Co-ordinates - Grid		Co-ordinates - UTM		Co-ordinates - Lat/Long	
Easting:	641645.6	**Easting:**	0.00	**Easting:**	641645.6	**Latitude:**	0
Northing:	6978395.4	**Northing:**	0.00	**Northing:**	6978395.4	**Longitude:**	0
Elevation:	1289.3	**Elevation:**	0.00	**Elevation:**	1289.3		
Plot_Sys:	UTM NAD 83	**Grid Declin:**	2.48	**UTM Declin:**	2.48		
NTS:	105K16	**Mag Declin:**	27.34	**UTM Zone:**	8		

Collar Survey: Chained from 2 DGPS points, Handheld GPS
Target: Andrew Zone Section 641650E, downdip extension
Geophysics: No
Remarks: A low grade mineralized zone was intersected ~50 m off the projection of the mineralized plane defined by previous drilling. A second, probably fault-repeated zone is closer to the expected depth. Assays returned 5.63% Zn and 2.53% Pb over a core length of 10.8 m in the upper zone and 6.56% Zn and 0.01% Pb over 3.9 m (core length) in the lower Zone.

Downhole Survey

Distance	Dip	Mag Azm	True N Azm	Type	Comments
0.00	-70.00	152.14	179.48	Collar	
91.44	-70.60	154.00	181.34	Sperry-Sun	Single Shot
182.88	-64.00	155.00	182.34	Sperry-Sun	Single Shot
276.40	-67.00	157.00	184.34	Sperry-Sun	Single Shot
306.90	-68.00	158.00	185.34	Sperry-Sun	Single Shot

Geology

Lithology

From - To: Rock Code - Rock Name
Description

0.00 - 6.60: OB - Overburden

Alteration

From - To: Alt Code
Description

Mineralization

From - To: Min Code
Description

Assay

From - To: Smple Cu % Pb % Zn % Ag G/t Au G/t

Lithology

From - To: Rock Code - Rock Name
Description

6.60 - 9.90: SHL_GRN - Green Shale
Green shale with variable bedding from 40° to 70° to c.a.

9.90 - 10.50: LST - Limestone
White, micritic limestone with minor green shaley partings.

10.50 - 15.10: SHL_MAR - Maroon Shale
Homogeneous maroon shale with cm-scale green shale partings. Bedding consistent at 55° to c.a.

15.10 - 22.40: SHL_GRN - Green Shale
Mostly green shale with decimetric subintervals of maroon shale. Bedding consistent at 55° to c.a. but disturbed by minor cm-scale zones of brecciation/faulting.

22.40 - 42.10: SHL_MAR - Maroon Shale
Primarily, massive, poorly-bedded maroon shale with lesser green shale. Chaotic, tight minor folds are locally visible, but bedding is generally ~60° to c.a.

42.10 - 44.70: SHL_GRN - Green Shale
Green and grey shale with weakly brecciated, bleached zones featuring 1% calcite veinlets.

44.70 - 51.50: SHL_MAR - Maroon Shale
Primarily maroon shale with lesser green shale. Bedding rotates from 60° at top, through 0° and back to ~60° at bottom of interval. Probably NOT a fold closure.

51.50 - 51.60: LST - Limestone
White, micritic limestone with minor green shaley partings.

51.60 - 51.90: SHL_GRN - Green Shale
Green-grey well bedded shale with mm-scale, gritty siliceous intervals. Bedding consistent at 60° to c.a.

51.90 - 52.10: LST - Limestone
White, micritic limestone with minor green shaley partings.
White, micritic limestone with minor green shaley partings.

52.10 - 52.90: SHL_GRN - Green Shale
Green-grey well bedded shale with mm-scale, gritty siliceous intervals. Bedding consistent at 60° to c.a. ~1% white calcite veinlets.

52.90 - 55.10: QTZ - Quartzite
Fairly massive, pale grey to dark grey quartzite. Poorly bedded.

55.10 - 56.10: SHL_GRN - Green Shale
Mixed green shale with minor cm-scale beds of quartzite.

Alteration

From - To: Alt Code
Description

Mineralization

From - To: Min Code
Description

27.10 - 27.70 -
1% pyrite in fractures and disseminations in bleached, fractured zone.

Assay

From - To:	Smple	Cu %	Pb %	Zn %	Ag G/t	Au G/t

AN0217

Lithology

From - To: Rock Code - Rock Name
Description

56.10 - 62.90: SHL_MAR - Maroon Shale
Primarily massive maroon shale with minor green shale in cm-scale beds. Bedding fairly consistent at 70° to c.a.

62.90 - 79.00: SNDST - Sandstone
Grey-green, fine-grained silty sandstone with lesser interbeds of siltstone. Not as "clean" as regular quartzite. Bedding averages 70° to c.a. but rotates through 0° locally in probable (minor) fold closures. Seeming "injection" of silty intervals into sandier ones gives a sedimentary breccia appearance. Minor brecciation at 67.7-68.3. Minor white calcite veinlets throughout (<<1%).

79.00 - 90.30: SLTST - Siltstone
Similar lithologies as above but siltstone is predominant. Bedding is consistently 75° to c.a. except in rare contortions. <1% white calcite veinlets.

90.30 - 96.00: SNDST - Sandstone
Same as 62.9-79.0. Sudden change in core angles (not faulted) with bedding averaging 30° to c.a. (probably indicates a significant fold ?).

96.00 - 99.40: SHL_GRY - Grey Shale
Poorly bedded grey shale with bedding at 80° to c.a. Abrupt change in bedding angle from above unit does not seem to be a fault. 1% white calcite veinlets.

99.40 - 100.10: _FAULT - Fault
Fault breccia with 2% broken calcite veinlets.

100.10 - 102.50: SHL_GRY - Grey Shale
Poorly bedded grey shale with bedding varying from 40° to 90° to c.a. 1% white calcite veinlets.

102.50 - 103.75: BX_BS - Black Shale Breccia
Dark grey, fairly massive carbonaceous shale with scattered fragments of grey shale. 2% calcite veinlets. Bedding consistent at 70° to c.a.

103.75 - 103.80: _FAULT - Fault
Fault gouge at 70° to c.a.

103.80 - 106.90: BX_BS - Black Shale Breccia
Dark grey, fairly massive carbonaceous shale with scattered fragments of grey shale. 2% calcite veinlets. Bedding consistent at 70° to c.a.

106.90 - 106.95: _FAULT - Fault
Fault breccia and gouge

106.95 - 108.30: BX_BS - Black Shale Breccia
Dark grey, fairly massive carbonaceous shale with scattered fragments of grey shale. Bedding consistent at 70° to c.a.

Alteration

From - To: Alt Code
Description

Mineralization

From - To: Min Code
Description

Assay

From - To:	Smple	Cu %	Pb %	Zn %	Ag G/t	Au G/t

Lithology	Alteration	Mineralization	Assay
From - To: Rock Code - Rock Name Description	From - To: Alt Code Description	From - To: Min Code Description	From - To: Smple Cu % Pb % Zn % Ag G/t Au G/t
108.30 - 108.35: _FAULT - Fault Fault gouge at 70° to c.a.			
108.35 - 112.55: BX_BS - Black Shale Breccia Dark grey, fairly massive carbonaceous shale with scattered fragments of grey shale. Bedding consistent at 70° to c.a.			
112.55 - 112.60: _FAULT - Fault Fault breccia and gouge			
112.60 - 114.90: BX_BS - Black Shale Breccia Dark grey, fairly massive carbonaceous shale with scattered fragments of grey shale. Bedding consistent at 70° to c.a.			
114.90 - 126.90: SHL_GRY - Grey Shale Fairly massive, grey shale with poorly developed bedding that rotates from 70° to c.a. at top of interval to 35° to c.a. at bottom.			
126.90 - 135.40: BX_BS - Black Shale Breccia Dark grey, fairly massive carbonaceous shale with scattered fragments of grey shale.			
135.40 - 137.40: FEL_DYKE - Diorite Grey, massive quartz-phyric intermediate/felsic dyke.			
137.40 - 138.60: BX_BS - Black Shale Breccia Black, graphitic shale matrix with 40% grey shale fragments.			
138.60 - 139.20: FEL_DYKE - Diorite Grey, massive quartz-phyric intermediate/felsic dyke.			
139.20 - 140.50: BX_BS - Black Shale Breccia Black, graphitic shale matrix with 40% grey shale fragments.			
140.50 - 141.70: FEL_DYKE - Diorite Grey, massive quartz-phyric intermediate/felsic dyke.			
141.70 - 141.90: BX_BS - Black Shale Breccia Black, graphitic shale matrix with 40% grey shale fragments.			
141.90 - 142.30: FEL_DYKE - Diorite Grey, massive quartz-phyric intermediate/felsic dyke.			
142.30 - 158.80: BX_BS - Black Shale Breccia Black, graphitic shale matrix with 40% grey shale fragments. Shearing parallel to bedding is common. Bedding is fairly consistent at 60° to c.a. but is locally contorted. ~2% calcite veinlets below 155.			
158.80 - 159.50: _FAULT - Fault Mostly soft fault gouge with minor breccia. Upper contact is 60° to c.a.			

AN0217

Lithology	Alteration	Mineralization	Assay				
From - To: Rock Code - Rock Name Description	From - To: Alt Code Description	From - To: Min Code Description	From - To:	Smple	Cu %	Pb %	Zn %	Ag G/t	Au G/t
159.50 - 165.50: BX_BS - Black Shale Breccia Black, graphitic shale matrix with 40% grey shale fragments. Shearing parallel to bedding is common and there is local fault gouge development. Bedding is highly disrupted. Minor lenses of quartzite and 1% calcite veinlets.									
165.50 - 169.20: _FAULT - Fault Abundant fault gouge developed in black shale breccia. Gouge zones average ~40° to c.a. Culminates in 30 cm of fault gouge at bottom of interval.			167.90-168.90	254778	0.00	0.01	1.00		
			168.90-169.20	254779	0.01	0.01	2.00		
169.20 - 174.10: MNZN - Mineralized Zone Black shale breccia flooded with 15% calcite veins.		169.20 - 174.10 - 2% coarse crystalline galena and trace pyrite in calcite veins.	169.20-170.20	254780	3.69	0.00	11.00		
			170.20-172.20	254781	0.08	1.67	1.00		
			172.20-174.10	254782	0.01	0.01	1.00		
174.10 - 175.60: MNZN - Mineralized Zone Sharp contact with dark grey, brecciated quartzitic sandstone. Engulfed by 15% calcite-sphalerite-quartz veins.		174.10 - 175.60 - ~8% c.g. sphalerite in cc-sp-qtz veins	174.10-175.60	254783	0.06	7.43	1.00		
175.60 - 176.40: MNZN - Mineralized Zone Clean, white calcite-quartz vein			175.60-176.40	254784	0.00	0.04	2.00		
176.40 - 176.70: MNZN - Mineralized Zone Strongly brecciated dark grey quartzite with 25% cc-sp-qtz veins		176.40 - 176.70 - ~15% c.g. sphalerite in cc-sp-qtz veins	176.40-176.70	254785	0.00	6.11	2.00		
176.70 - 177.10: MNZN - Mineralized Zone Clean, white calcite-quartz vein			176.70-177.10	254786	0.01	1.87	1.00		
177.10 - 177.60: MNZN - Mineralized Zone Dark grey, strongly brecciated quartzite and black shale breccia with 10% cc-qtz-sp veins.		177.10 - 177.60 - ~3% c.g. sphalerite in cc-sp-qtz veins	177.10-177.60	254787	0.02	1.32	0.50		
177.60 - 178.10: MNZN - Mineralized Zone Clean, white calcite-quartz vein		177.60 - 178.10 - ~0.5% c.g. galena in cc-sp-qtz veins	177.60-178.10	254788	0.03	0.01	0.50		
178.10 - 179.70: MNZN - Mineralized Zone Intensely brecciated quartzite with 25% veins of cc-sp-qtz.		178.10 - 179.70 - ~20% c.g. sphalerite in cc-sp-qtz veins, and lesser sp veins which appear to be partially replacing host rock.	178.10-179.70	254789	0.19	19.55	1.00		
179.70 - 180.60: MNZN - Mineralized Zone Strongly brecciated quartzite with 25% veins of cc-sp-qtz.		179.70 - 180.60 - ~4 c.g. sphalerite in cc-sp-qtz veins	179.70-180.60	254790	1.36	4.74	5.00		
180.60 - 183.10: MNZN - Mineralized Zone Clean, white calcite-quartz vein.		180.60 - 183.10 - Minor quartzite fragments within are rimmed by 5 mm thick halo of sphalerite, totalling ~1% sp.	180.60-181.60	254791	0.01	0.86	0.50		
			181.60-183.10	254792	0.23	4.90	1.00		
183.10 - 184.40: MNZN - Mineralized Zone Clean, white calcite-quartz vein.			183.10-184.40	254793	0.03	0.40	0.50		
184.40 - 184.90: MNZN - Mineralized Zone Clean, white calcite-quartz vein.		184.40 - 184.90 - 25% galena and 3% sphalerite in vein	184.40-184.90	254794	50.45	4.12	86.00		

AN0217

Lithology	Alteration	Mineralization	Assay					
From - To: Rock Code - Rock Name Description	From - To: Alt Code Description	From - To: Min Code Description	From - To:	Smple	Cu %	Pb %	Zn %	Ag G/t	Au G/t
184.90 - 188.10: MNZN - Mineralized Zone Clean, white calcite-quartz vein with minor quartzite wallrock fragments.		184.90 - 188.10 - 1% each of sphalerite and galena , former typically associated with rims of wallrock fragments.	184.90-186.50	254795	2.26	0.23	6.00		
			186.50-188.10	254796	0.08	0.73	2.00		
188.10 - 189.00: MNZN - Mineralized Zone Strongly brecciated quartzite with 20% cc-qtz-sp veins.		188.10 - 189.00 - 10% sphalerite in veins.	188.10-189.00	254797	0.05	4.90	2.00		
189.00 - 192.70: MNZN - Mineralized Zone Brecciated quartzite engulfed by 10% cc-qtz-sp veins.		189.00 - 192.70 - Sphalerite is associated with some of the veins but constitutes only ~1% of the interval.	189.00-191.00	254798	0.01	0.42	1.00		
			191.00-192.70	254799	0.02	2.44	0.50		
192.70 - 193.60: MNZN - Mineralized Zone Calcite-quartz-sphalerite veins with ~15% fragments of brecciated quartzite.		192.70 - 193.60 - ~1% sphalerite in veins	192.70-193.60	254800	0.00	0.59	0.50		
193.60 - 195.90: QTZ - Quartzite Brecciated quartzite with 15% calcite-quartz veins			193.60-194.60	254911	0.00	0.02	0.50		
			194.60-195.90	254912	0.05	0.10	1.00		
195.90 - 197.20: MNZN - Mineralized Zone Brecciated quartzite with 25% calcite-galena-quartz-sphalerite veins.		195.90 - 197.20 - 8% galena and 4% sphalerite in veins	195.90-197.20	254913	26.40	3.54	48.00		
197.20 - 200.60: MNZN - Mineralized Zone Calcite-quartz veins with 25% fragments of brecciated quartzite.		197.20 - 200.60 - ~2% spalerite and 1% galena in veins	197.20-198.90	254914	1.07	0.10	3.00		
			198.90-200.60	254915	0.89	0.20	4.00		
200.60 - 201.30: MNZN - Mineralized Zone Calcite-spalerite-quartz veins engulfing 25% fragments of intensely brecciated quartzite.		200.60 - 201.30 - 15% spalerite in veins.	200.60-201.30	254916	0.13	4.43	1.00		
201.30 - 203.20: MNZN - Mineralized Zone Brecciated quartzite with 10% veins of calcite-quartz			201.30-203.20	254917	0.01	0.11	1.00		
203.20 - 206.40: MNZN - Mineralized Zone Calcite-quartz-sphalerite veins with 20% fragments of brecciated quartzite		203.20 - 206.40 - 4% spalerite in veins.	203.20-204.80	254918	0.00	0.12	1.00		
			204.80-206.40	254919	0.02	1.96	1.00		
206.40 - 207.10: MNZN - Mineralized Zone Brecciated quartzite cut by a 2 cm wide cc-sp-qtz vein that runs parallel to c.a. throughout interval.		206.40 - 207.10 - 10% crustiform sphalerite in vein with calcite-quartz.	206.40-207.10	254920	0.01	5.21	2.00		
207.10 - 209.60: BX_BS - Black Shale Breccia Black shale breccia with some visible bedding consistently at 45° to c.a. 5% calcite veinlets.			207.10-208.30	254921	0.02	0.07	0.50		
			208.30-209.60	254924	0.01	0.03	1.00		
209.60 - 210.20: QTZ - Quartzite Dark grey quartzite; weakly brecciated and infilled with 5% calcite veinlets.			209.60-210.20	254925	0.00	0.01	1.00		
210.20 - 211.60: _FAULT - Fault Strongly brecciated quartzite with 60% calcite veinlets. Minor fault gouge and local strong shearing at 70° to c.a.		210.20 - 211.60 - 1% sphalerite in c.g. clots.	210.20-211.60	254926	0.00	1.11	1.00		
211.60 - 212.90: MNZN - Mineralized Zone 80% cc-qtz-sp veins engulf 20% strongly brecciated quartzite fragments.		211.60 - 212.90 - 8% sphalerite in veins	211.60-212.90	254927	0.00	6.92	1.00		

AN0217

Lithology	Alteration	Mineralization	Assay					
From - To: Rock Code - Rock Name Description	From - To: Alt Code Description	From - To: Min Code Description	From - To:	Smple	Cu %	Pb %	Zn %	Ag G/t	Au G/t
212.90 - 215.50: MNZN - Mineralized Zone Black shale breccia with 20% veins of cc-sp-qtz		212.90 - 215.50 - Total of 5% sphalerite in veins.	212.90-214.20	254928	0.00	7.02	1.00		
			214.20-215.50	254929	0.00	5.73	1.00		
215.50 - 217.60: MNZN - Mineralized Zone Black shale breccia with 3% cc-sp veinlets.		215.50 - 217.60 - ~1% sphalerite in veins	215.50-216.50	254930	0.00	0.59	0.50		
			216.50-217.60	254931	0.01	0.18	0.50		
217.60 - 218.10: _FAULT - Fault Strongly sheared (60° to c.a.) black shale breccia with minor fault gouge and injected my 60% cc-sp-qtz veins.		217.60 - 218.10 - ~1% sphalerite in veins	217.60-218.10	254932	1.19	0.26	2.00		
218.10 - 222.60: QTZ - Quartzite Dark grey, moderately brecciated quartzite with 5% calcite veinlets.			218.10-219.60	254933	0.01	0.00	1.00		
			219.60-221.10	254934	0.19	0.00	1.00		
			221.10-222.60	254935	0.00	0.00	0.50		
222.60 - 226.00: MNZN - Mineralized Zone Brecciated cc-qtz veins with minor quartzite fragments.		222.60 - 226.00 - 1% sphalerite and trace galena in veins.	222.60-224.30	254936	0.13	0.09	0.50		
			224.30-226.00	254937	0.42	1.75	1.00		
226.00 - 230.70: BX_BS - Black Shale Breccia Black shale breccia with locally visible bedding at 60° to c.a. 2% cc-qtz veinlets.		226.00 - 230.70 - Trace sphalerite in brecciated veins. Trace chalcopyrite.	226.00-227.60	254938	0.00	0.06	0.50		
			227.60-229.20	254939	0.03	0.02	0.50		
			229.20-230.70	254940	0.01	0.05	0.50		
230.70 - 231.30: _FAULT - Fault Fault breccia and gouge foliated at 45° to c.a.			230.70-231.30	254941	0.05	0.01	0.50		
231.30 - 234.80: BX_BS - Black Shale Breccia Black shale breccia with increasing quartzite content to bottom. Bedding varies from 10° to 50° to c.a.			231.30-232.00	254942	1.46	0.00	3.00		
234.80 - 239.70: QTZ - Quartzite Pale grey massive quartzite cut by 5% dark breccia veins with chlorite (?) and traces of chalcopyrite.									
239.70 - 240.20: SHL_GRY - Grey Shale Well-bedded (60° to c.a.) grey shale.									
240.20 - 243.10: QTZ - Quartzite Pale grey massive quartzite cut by 5% dark breccia veins with chlorite (?) and traces of chalcopyrite. 2% calcite veinlets.		240.20 - 243.10 - 2 sphalerite veinlets ~5 mm thick near bottom of interval.							
243.10 - 251.60: SHL_GRY - Grey Shale Well-bedded grey shale with rare calcite veinlets. Bedding is fairly consistent at 70° to c.a.									
251.60 - 251.90: _FAULT - Fault Fault breccia and gouge foliated at 70° to c.a.		251.60 - 251.90 - Trace chalcopyrite and sphalerite							
251.90 - 252.10: SHL_GRY - Grey Shale Well-bedded grey shale with rare calcite veinlets. Bedding is fairly consistent at 70° to c.a.									
252.10 - 252.70: _FAULT - Fault Brecciated units from above and below. Minor gouge foliated at 60° to c.a.		252.10 - 252.70 - 1% sphalerite, ½% each chalcopyrite and galena							

AN0217

Lithology

From - To: Rock Code - Rock Name
Description

252.70 - 256.30: QTZ - Quartzite
Fairly massive quartzite. Primarily dark grey but with irregular patchy zones of bleached, pale grey quartzite suggesting the latter is an alteration effect.

256.30 - 258.30: SHL_GRY - Grey Shale
Well-bedded grey shale with rare calcite veinlets. Bedding is ~40° to c.a. at top and bottom, but is contorted (0°-90° to c.a.) in middle (minor folding). Rare angular fragments of grey shale.

258.30 - 260.70: QTZ - Quartzite
Quartzite same as 252.7-256.3

260.70 - 261.10: SHL_GRN - Green Shale
Green shale with highly variable bedding.

261.10 - 264.90: QTZ - Quartzite
Quartzite same as 252.7-256.3

264.90 - 266.10: _FAULT - Fault
Grey shale with several small fault gouge zones. Bedding and gouge zones are at 20° to c.a.

266.10 - 268.60: SNDST - Sandstone
Pale grey, fairly massive sandstone with minor grey shale interbeds at 50° to c.a.

268.60 - 274.20: SHL_GRY - Grey Shale
Mixed grey shale and grey gritty sandstone with consistent bedding at 70° to c.a.

274.20 - 277.90: SNDST - Sandstone
Massive grey, gritty sandstone.

277.90 - 279.20: SHL_GRY - Grey Shale
Grey shale with bedding at 45° to c.a.

279.20 - 279.90: SNDST - Sandstone
Massive grey, gritty sandstone with 5% calcite veinlets at bottom of interval.

279.90 - 300.40: SHL_GRY - Grey Shale
Well-bedded grey shales with decimetric interbeds of pale calcareous mudstone (limestone of previous logs ?) and rare millimetric beds of pyrite. Minor interbeds of gritty sandstone comparable to unit above. THIS INTERVAL MARKS A TRANSITION INTO CALCAREOUS SANDSTONES OF UNIT BELOW. Bedding varies from 50° to 80° to c.a.

300.40 - 313.60: SNDST_CA - Calcareous Sandstone
Grey, fairly massive sandstones with calcareous matrix and ~2% calcite veins throughout. Decimetric interbeds of grey shale show change in bedding from 80° at top to 60° to c.a. at bottom of interval.

313.60 - 321.30: SHL_GRY - Grey Shale
Grey shale with variable bedding at 40° to 70° to c.a.

Alteration

From - To: Alt Code
Description

Mineralization

From - To: Min Code
Description

264.90 - 266.10 -
Trace sphalerite in fault zone

Assay

From - To:	Smple	Cu %	Pb %	Zn %	Ag G/t	Au G/t

NORANDA INC.

noranda

Drill Hole Log

Drillhole Collar

Hole-ID:	AN0218	**Length:**	210	**Units:**	meters
Started	23/08/02	**Proj. #:**	2501	**Project:**	Andrew
Finished:	26/08/02	**Claim #:**	YB65802	**Logged By:**	A. Huard
Drill Type:	Boyles JKS 25	**Case Pkd:**	yes	**Contractor:**	Advanced Drilling
Core Size:	NQ2	**Case Dep:**	11.2	**Core Location:**	Andrew Camp

Co-ordinates - GEMCOM		Co-ordinates - Grid		Co-ordinates - UTM		Co-ordinates - Lat/Long	
Easting:	641348.4	**Easting:**	0.00	**Easting:**	641348.4	**Latitude:**	0
Northing:	6978326.9	**Northing:**	0.00	**Northing:**	6978326.9	**Longitude:**	0
Elevation:	1350.3	**Elevation:**	0.00	**Elevation:**	1350.3		
Plot_Sys:	UTM NAD 83	**Grid Declin:**	2.48	**UTM Declin:**	2.48		
NTS:	105K16	**Mag Declin:**	27.34	**UTM Zone:**	8		

Collar Survey: Chained from 2 DGPS points, Handheld GPS
Target: Andrew Zone Section 641350
Geophysics: No
Remarks: AN0218 intersected a calcite vein with trace galena under a major fault. This is similar in setting to weak mineralization intersected in AN0106, which is not part of the E-W Andrew trend but rather is related to a NW-SE fault which is inferred to both control and mark the western end of the dilation zone which the Andrew Deposit occupies. There was no indication of the Andrew Zone to the end of the drillhole.

Downhole Survey

Distance	Dip	Mag Azm	True N Azm	Type	Comments
0.00	-70.00	153.14	180.48	Collar	
124.10	-69.00	154.00	181.34	Sperry-Sun	Single Shot
185.00	-66.50	159.00	186.34	Sperry-Sun	Single Shot
210.00	-64.50	161.00	188.34	Sperry-Sun	Single Shot

Geology

Lithology

From - To: Rock Code - Rock Name
Description

0.00 - 11.20: OB - Overburden

Alteration

From - To: Alt Code
Description

Mineralization

From - To: Min Code
Description

Assay

From - To:	Smple	Cu %	Pb %	Zn %	Ag G/t	Au G/t

Lithology

From - To: Rock Code - Rock Name
Description

11.20 - 13.00: LST - Limestone
Pale grey, massive micritic limestone

13.00 - 13.40: _FAULT - Fault
Fault breccia and gouge foliated at 10° to c.a.

13.40 - 18.20: SHL_GRY - Grey Shale
Pale grey, soft, grey shale with poor defined bedding at 10° to c.a.

18.20 - 19.20: SNDST_CA - Calcareous Sandstone
Grey, gritty sandstone with a calcareous matrix and bedding at 10° to c.a.

19.20 - 19.70: LST - Limestone
Pale grey, massive micritic limestone

19.70 - 21.00: SHL_GRY - Grey Shale
Pale grey, soft, grey shale with poor defined bedding at 10° to c.a.

21.00 - 23.60: FEL_DYKE - Felsic Dyke
Pale grey, very hard, siliceous felsite dyke (?). Weakly brecciated with 2% calcite veinlets.

23.60 - 27.10: _FAULT - Fault
Strongly brecciated calcareous sandstone with several centimetric fault gouge zones at various orientations. Larger pieces of sandstone have bedding consistently at 10° to c.a. but this is probably not orientation of fault.

27.10 - 27.70: MNZN - Mineralized Zone
Calcite vein.

27.70 - 29.70: SLTST - Siltstone
Pale grey, siliceous siltstone with poor bedding at 20° to c.a.

29.70 - 34.70: SNDST_CA - Calcareous Sandstone
Mostly grey, gritty calcareous sandstone with minor interbeds of grey shale. Bedding has changed abruply to 40° - 80° to c.a.

34.70 - 35.70: _FAULT - Fault
Fault gouge and breccia with some foliated zones at 70° to c.a.

35.70 - 42.00: SNDST_CA - Calcareous Sandstone
Mostly grey, gritty calcareous sandstone with minor interbeds of grey shale. Bedding varies from 10 to 30° to c.a.

42.00 - 44.10: SHL_GRY - Grey Shale
Pale grey, soft shale with 2% calcite veinlets

44.10 - 45.30: SNDST_CA - Calcareous Sandstone
Calcareous sandstone with bedding at 10° to c.a. and 5% calcite veinlets

45.30 - 46.70: SHL_GRY - Grey Shale
Pale grey, soft shale with poor bedding at 10° to c.a.

Alteration

From - To: Alt Code
Description

Mineralization

From - To: Min Code
Description

27.10 - 27.70 -
2% pyrite and trace galena and sphalerite in vein.

Assay

From - To:	Smple	Cu %	Pb %	Zn %	Ag G/t	Au G/t

AN0218

Lithology

From - To: Rock Code - Rock Name
Description

46.70 - 48.30: SNDST_CA - Calcareous Sandstone
Dark grey, gritty calcareous sandstone with bedding at 20° to c.a.

48.30 - 48.40: _FAULT - Fault
2 cm fault gouge crosses core at 20° to c.a.

48.40 - 55.80: SNDST_CA - Calcareous Sandstone
Dark grey, gritty calcareous sandstone with bedding at 20° to c.a.

55.80 - 57.00: _FAULT - Fault
Fault breccia and gouge derived from calcareous sandstone. Weak foliation is at 20° to c.a.

57.00 - 62.00: SNDST_CA - Calcareous Sandstone
Massive grey calcareous ssandstone. Upper and lower contacts are at 20° to c.a.

62.00 - 64.80: SHL_GRY - Grey Shale
Grey well-bedded shale with variable bedding from 20° to 40° to c.a.

64.80 - 77.80: SNDST_CA - Calcareous Sandstone
Grey generally massive calcareous sandstone with 2% white calcite veins. Minor shale intervals indicate bedding at 30° to c.a.

77.80 - 86.10: SHL_GRY - Grey Shale
Pale grey, soft shale. Bedding variable between 10° and 30° to c.a.

86.10 - 87.20: _FAULT - Fault
Fault gouge, mostly lost. Gouge caved repeatedly during drilling.

87.20 - 88.80: SHL_GRY - Grey Shale
Pale grey, soft shale. Bedding variable between 10° and 30° to c.a.

88.80 - 92.60: SNDST_CA - Calcareous Sandstone
Grey, massive to well-bedded calcareous sandstone with minor shale intervals. Bedding is consistently at 30° to c.a. 1% calcite viens.

92.60 - 92.70: _FAULT - Fault
Fault gouge zone 2 cm thick crosses core at 30° to c.a.

92.70 - 99.80: SNDST_CA - Calcareous Sandstone
Grey, massive to well-bedded calcareous sandstone with minor shale intervals. Bedding is consistently at 30° to c.a. 1% calcite viens.

99.80 - 116.10: SHL_GRY - Grey Shale
Grey shale. Centimetric well-bedded intervals are strongly boudinaged in more massive shale.Minor pale grey limestone nodules (boudins) and beds up to 30 cm. Bedding is fairly consistent at 10° to 30° to c.a.

Alteration

From - To: Alt Code
Description

Mineralization

From - To: Min Code
Description

Assay

From - To:	Smple	Cu %	Pb %	Zn %	Ag G/t	Au G/t

AN0218

Lithology

From - To: Rock Code - Rock Name
Description

116.10 - 123.00: SNDST_CA - Calcareous Sandstone
Grey, well-bedded calcareous sandstone with 1% calcite veins. Minor shale intervals. Bedding varies from 10° to 30° to c.a.

123.00 - 123.90: SHL_GRY - Grey Shale
Grey, wel bedded, weakly calcareous shale with bedding from 10° to 20° to c.a.

123.90 - 127.20: SNDST_CA - Calcareous Sandstone
Grey, well-bedded calcareous sandstone with 1% calcite veins. Minor shale intervals. Bedding varies from 10° to 30° to c.a.

127.20 - 128.00: SHL_GRY - Grey Shale
Grey, well-bedded, weakly calcareous shale with bedding from 10° to 20° to c.a. Possibly same bed as 123.0-123.9.

128.00 - 140.80: SNDST_CA - Calcareous Sandstone
Grey, well-bedded calcareous sandstone with 1% calcite veins. Minor shale intervals. Bedding varies from 10° to 30° to c.a.

140.80 - 144.80: SNDST_CA - Calcareous Sandstone
As above but with 5% calcite veinlets - weakly developed breccia.

144.80 - 153.30: SNDST_CA - Calcareous Sandstone
Grey, fairly massive calcareous sandstone. Where present, bedding averages 30° to c.a. but passes through a minor fold closure at 151 m. 1% calcite veinlets.

153.30 - 195.20: SHL_GRY - Grey Shale
Mostly soft, grey, shale with minor centimetric maroon shale interbeds. Approximately ¼ of interval is pale grey, calcareous mudstone and limestone. Bedding averages 30° to c.a. but is highly variable with several fold closures going through 90°. 1% mm-scale calcite veinlets throughout but 5% calcite veins up to 2 cm thick at 180.7-181.8.

195.20 - 204.40: SNDST_CA - Calcareous Sandstone
Dark grey, calcareous sandstone with consistent bedding at 30° to c.a. 2% white calcite veinlets.

204.40 - 210.00: SHL_GRY - Grey Shale
Soft grey-green shale with lesser pale grey, calcareous mudstone and sandstone. Bedding consistent at 30° to c.a.

Alteration

From - To: Alt Code
Description

Mineralization

From - To: Min Code
Description

123.00 - 123.90 -
<1% v.f.g.pyrite in 2 mm thick beds running near parallel to c.a.

127.20 - 128.00 -
<1% v.f.g.pyrite in 2 mm thick beds running near parallel to c.a.

194.90 - 195.20 -
1% pyrite in fine, mm-thick laminae

208.40 - 208.50 -
3% laminated pyrite in 10 cm thick black shale interval

Assay

From - To:	Smple	Cu %	Pb %	Zn %	Ag G/t	Au G/t

NORANDA INC.

noranda

Drill Hole Log

Drillhole Collar

Hole-ID:	AN0219	**Length:**	178.6	**Units:**	meters
Started	27/08/02	**Proj. #:**	2501	**Project:**	Andrew
Finished:	30/08/02	**Claim #:**	YB65801	**Logged By:**	A. Huard
Drill Type:	Boyles JKS 25	**Case Pkd:**	yes	**Contractor:**	Advanced Drilling
Core Size:	NQ2	**Case Dep:**	9.1	**Core Location:**	Andrew Camp

Co-ordinates - GEMCOM		Co-ordinates - Grid		Co-ordinates - UTM		Co-ordinates - Lat/Long	
Easting:	641795.2	**Easting:**	0.00	**Easting:**	641795.2	**Latitude:**	0
Northing:	6978332.7	**Northing:**	0.00	**Northing:**	6978332.7	**Longitude:**	0
Elevation:	1251.7	**Elevation:**	0.00	**Elevation:**	1251.7		
Plot_Sys:	UTM NAD 83	**Grid Declin:**	2.48	**UTM Declin:**	2.48		
NTS:	105K16	**Mag Declin:**	27.34	**UTM Zone:**	8		

Collar Survey: Chained from 1 DGPS point, Handheld GPS

Target: Andrew Zone Section 641,800E

Geophysics: No

Remarks: AN0219 intersected a large zone of brecciated quartzite with weak sphalerite mineralization at the top and bottom. It lies along the projection of the Andrew deposit and extended it 100 m to the east. The Upper Zone returned 6.49% Zn and 0.27% Pb over 10.5 m (core length) and the Lower Zone returned 3.76% Zn and 0.01% Pb over 2.75 m (core length).

Downhole Survey

Distance	Dip	Mag Azm	True N Azm	Type	Comments
0.00	-45.00	151.66	179.00	Collar	
18.30	-45.00	145.00	172.34	Sperry-Sun	Single Shot
60.00	-47.50	146.00	173.34	Sperry-Sun	Single Shot
124.00	-43.00	149.00	176.34	Sperry-Sun	Single Shot
178.60	-45.00	147.00	174.34	Sperry-Sun	Single Shot

Geology

Lithology

From - To: Rock Code - Rock Name
Description

0.00 - 9.10: OB - Overburden

Alteration

From - To: Alt Code
Description

Mineralization

From - To: Min Code
Description

Assay

From - To: Smple Cu % Pb % Zn % Ag G/t Au G/t

AN0219

Lithology

From - To: Rock Code - Rock Name
Description

9.10 - 17.00: SHL_GRN - Green Shale
Soft, nearly massive pale green-grey shale with poor bedding at 60° to c.a.

17.00 - 22.50: QTZ - Quartzite
Dark grey, badly broken quartzite with variable bedding from 30° to 70° to c.a. 2% calcite-quartz veinlets. 52% core recovery.

22.50 - 25.30: SHL_GRN - Green Shale
Soft, pale green shale with consistent bedding at 70° to c.a.

25.30 - 28.30: QTZ - Quartzite
same as 17.0-22.5 but 40% recovery.

28.30 - 33.90: SHL_GRY - Grey Shale
Soft, grey shale with variable bedding from 20° to 70° to c.a.. 27% recovery.

33.90 - 41.70: QTZ - Quartzite
Pale grey, fairly massive quartzite with 1% calcite veinlets. Minor argillaceous intervals indicate variable bedding from 40° to 70° to c.a.

41.70 - 43.20: SHL_GRY - Grey Shale
Pale grey, well-bedded shale with centimetric intervals of quartzite. Bedding is consistent at 70° to c.a.

43.20 - 57.30: QTZ - Quartzite
Pale grey, fairly massive gritty quartzite with rare bedding at 70° to c.a.

57.30 - 57.70: SHL_GRN - Green Shale
Grey well-bedded (70° to c.a.) shale.

57.70 - 58.90: _FAULT - Fault
Weakly brecciated quartzite with soft fault gouge zone running up core at 5° to c.a.

58.90 - 60.90: QTZ - Quartzite
Fairly massive grey quartzite

60.90 - 61.00: _FAULT - Fault
Soft fault gouge weakly foliated at 20° to c.a.

61.00 - 63.30: QTZ - Quartzite
Fairly massive grey quartzite with local poor bedding at 70° to c.a.

63.30 - 63.50: _FAULT - Fault
Weakly fault brecciated quartzite

63.50 - 63.80: SHL_GRY - Grey Shale
Soft grey shale. Brecciated at top; otherwise well-bedded at 80° to c.a.

63.80 - 71.40: QTZ - Quartzite
Grey quartzite with 1% calcite veinlets. Locally visible bedding is 80° to c.a.

Alteration

From - To: Alt Code
Description

Mineralization

From - To: Min Code
Description

Assay

From - To: Smple Cu % Pb % Zn % Ag G/t Au G/t

AN0219

Lithology From - To: Rock Code - Rock Name Description	Alteration From - To: Alt Code Description	Mineralization From - To: Min Code Description	Assay From - To:	Smple	Cu %	Pb %	Zn %	Ag G/t	Au G/t
71.40 - 71.50: _FAULT - Fault Centimetre-wide zone of fault gouge cuts core at 10° to c.a.									
71.50 - 72.90: QTZ - Quartzite Grey quartzite with 1% calcite veinlets.									
72.90 - 73.10: _FAULT - Fault Brecciated and veined contact zone.									
73.10 - 73.70: SHL_GRN - Green Shale Soft, pale green shale with bedding at 70° to c.a.									
73.70 - 93.60: SHL_MAR - Maroon Shale Monotonous, massive maroon shale with 5% decimetric interbeds of green shale. Contacts are generally 70° to c.a.									
93.60 - 95.80: SHL_GRN - Green Shale Pale green, almost massive shale with darker beds indicating tight folds but with limbs averaging 60° to c.a.			95.40-95.80	557261		0.00	0.00	0.50	
95.80 - 97.60: MNZN - Mineralized Zone Dark grey brecciated quartzite engulfed by 15% calcite-quartz-sphalerite veinlets		95.80 - 97.60 - 3% c.g. sphalerite in veins	95.80-96.70	557262		0.00	8.97	1.00	
			96.70-97.60	557263		0.00	2.82	0.50	
97.60 - 98.00: _FAULT - Fault Only 5 cm fault gouge recovered from this interval.			97.60-98.00	557264		0.00	4.70	1.00	
98.00 - 99.30: MNZN - Mineralized Zone Dark grey brecciated quartzite engulfed by 15% calcite-quartz-sphalerite veinlets		98.00 - 99.30 - 7% c.g. sphalerite in veins and replacements of quartzite	98.00-99.30	557265		0.01	10.60	1.00	
99.30 - 99.90: MNZN - Mineralized Zone Dark grey brecciated quartzite engulfed by 10% calcite-quartz veinlets			99.30-99.90	557266		0.00	0.03	0.50	
99.90 - 101.20: MNZN - Mineralized Zone Dark grey brecciated quartzite engulfed by 20% calcite-quartz-sphalerite veinlets		99.90 - 101.20 - 4% c.g. sphalerite in veins and replacements of quartzite	99.90-101.20	557267		0.00	3.02	0.50	
101.20 - 102.80: MNZN - Mineralized Zone Strongly silicified, intensely quartz-calcite veined quartzite. 70% vein material.	101.20 - 102.80 - Strong silicification	101.20 - 102.80 - 2% sphalerite in veins and replacements.	101.20-102.00	557268		0.00	1.81	0.50	
			102.00-102.80	557269		0.00	1.89	5.00	
102.80 - 103.80: MNZN - Mineralized Zone Strongly silicified, intensely quartz-calcite veined quartzite. 70% vein material.	102.80 - 103.80 - Strong silicification	102.80 - 103.80 - 30% c.g. sphalerite in massive veins (replacements?) and in quartz veins	102.80-103.80	557270		0.00	28.40	5.00	
103.80 - 104.60: MNZN - Mineralized Zone Intensely silicified quartzite broken into mm-scale angular fragments. 5% quartz-spahlerite veinlets.	103.80 - 104.60 - Intense silicification	103.80 - 104.60 - 3% sphalerite in quartz-sphalerite veinlets	103.80-104.60	557273		0.16	4.13	0.50	
104.60 - 106.00: MNZN - Mineralized Zone 80% calcite-quartz viens with a few strongly, hydrothermally brecciated fragments of silicified quartzite.		104.60 - 106.00 - Trace sphalerite and galena	104.60-106.00	557274		0.43	0.19	1.00	
106.00 - 106.30: MNZN - Mineralized Zone Strongly silicified hydrothermally brecciated quartzite with 5% calcite veinlets.	106.00 - 106.30 - Strong silicification	106.00 - 106.30 - 15% sphalerite and 5% galena as replacements and veins	106.00-106.30	557275		6.94	9.96	18.00	

AN0219

Lithology	Alteration	Mineralization	Assay					
From - To: Rock Code - Rock Name Description	From - To: Alt Code Description	From - To: Min Code Description	From - To:	Smple	Cu %	Pb %	Zn %	Ag G/t	Au G/t
106.30 - 107.20: BX_QTZ - Carbonatized Quartzite Brec Strongly brecciated quartzite with 15% calcite veins			106.30-107.20	557276		0.04	0.05	0.50	
107.20 - 107.30: _FAULT - Fault Zone of fault gouge cuts at 40° to c.a.			107.20-107.30	557277		0.00	0.04	0.50	
107.30 - 108.70: BX_QTZ - Carbonatized Quartzite Brec Brecciated quartzite engulfed by 10% calcite-quartz-chlorite-chalcopyrite veins		107.30 - 108.70 - Trace chalcopyrite in veins	107.30-108.70	557278		0.01	0.01	0.50	
108.70 - 110.60: SHL_GRY - Grey Shale 50% calcite-quartz veins engulfing dark grey shale fragments.			108.70-110.60	557279		0.04	0.01	0.50	
110.60 - 114.20: BX_QTZ - Carbonatized Quartzite Brec Brecciated quartzite with 10% calcite-quartz veins			110.60-111.80	557280		0.00	0.01	0.50	
			111.80-113.00	557281		0.00	0.00	0.50	
			113.00-114.20	557282		0.00	0.01	0.50	
114.20 - 114.60: SHL_GRY - Grey Shale Grey shale with bedding at 20° to c.a. 5% calcite veinlets.			114.20-114.60	557283		0.00	0.01	0.50	
114.60 - 115.40: BX_QTZ - Carbonatized Quartzite Brec Brecciated quartzite with 10% calcite-quartz veins			114.60-115.40	557284		0.00	0.01	0.50	
115.40 - 117.60: VEIN - Calcite - quartz vein Calcite-quartz veins with 20% angular grey shale fragments.			115.40-116.50	557285		0.01	0.00	0.50	
			116.50-117.60	557286		0.00	0.01	0.50	
117.60 - 124.70: BX_QTZ - Carbonatized Quartzite Brec Strongly brecciated quartzite with 10% calcite veins.		117.60 - 124.70 - Trace galena and sphalerite	117.60-119.40	557287		0.14	0.02	0.50	
			119.40-121.20	557288		0.01	0.50	0.50	
			121.20-123.00	557289		0.00	0.09	0.50	
			123.00-124.70	557292		0.05	0.37	0.50	
124.70 - 126.60: _FAULT - Fault Major fault zone. Foliated fault gouge derived from quartzite breccia (as above) and green shale. Contains 10% calcite viens. Fabric is 20° to c.a.			124.70-126.60	557293		0.01	0.09	0.50	
126.60 - 127.30: MNZN - Mineralized Zone White calcite-quartz-sphalerite vein with 10% quartzite and green shale fragments.		126.60 - 127.30 - 2% c.g. sphalerite	126.60-127.30	557294		0.00	0.49	0.50	
127.30 - 129.10: MNZN - Mineralized Zone Pale grey, absolutely massive quartz pebble conglomerate (?). Resembles a quartz porphyritic intrusion but granular quartz in matrix and strong rounding of quartz suggests not. 10% calcite-quartz-sphalerite veins.		127.30 - 129.10 - 2% c.g. sphalerite in veins	127.30-129.10	557295		0.01	1.31	0.50	
129.10 - 129.60: MNZN - Mineralized Zone White calcite-sphalerite-quartz vein		129.10 - 129.60 - 4% c.g. sphalerite	129.10-129.60	557296		0.00	3.55	0.50	
129.60 - 131.65: MNZN - Mineralized Zone Quartz pebble conglomerate as 127.3-129.1 with 20% calcite-sphalerite-quartz veins		129.60 - 131.65 - 3% c.g. sphalerite in veins.	129.60-130.60	557297		0.00	5.39	0.50	
			130.60-131.65	557298		0.00	1.02	0.50	
131.65 - 131.85: MNZN - Mineralized Zone White calcite-sphalerite-quartz vein		131.65 - 131.85 - 15% c.g. sphalerite	131.65-131.85	557299		0.00	10.50	2.00	

AN0219

Lithology

From - To: Rock Code - Rock Name
Description

131.85 - 134.90: QTZ - Quartzite
Massive quartz pebble conglomerate as 127.3-129.1 with 4% calcite-quartz veins.

134.90 - 136.20: QTZ - Quartzite
Massive quartz pebble conglomerate as 127.3-129.1 with 4% calcite-quartz-sphalerite veins.

136.20 - 137.20: QTZ - Quartzite
Massive quartz pebble conglomerate as 127.3-129.1

137.20 - 140.60: _FAULT - Fault
Fault zone. 15% recovery. Quartz pebble conglomerate fragments and fault gouge.

140.60 - 143.30: QTZ - Quartzite
Massive quartz pebble conglomerate as 127.3-129.1 with some finer beds at 45° to c.a. 2% quartz-calcite veins

143.30 - 145.70: _FAULT - Fault
Fault zone. 15% recovery. Badly broken quartzite, green shale and fault gouge.

145.70 - 152.00: SHL_GRY - Grey Shale
Very dark grey, fairly well-bedded shale with beds at 70° to c.a. Some fault brecciation above 146.8

152.00 - 153.30: _FAULT - Fault
Several small fault gouge zones in shale as above. Faults 60° to c.a.

153.30 - 161.90: SHL_GRY - Grey Shale
Grey-green well-bedded shale with silty and sandy interbeds. Bedding consistent at 60° to c.a.

161.90 - 178.60: SNDST - Sandstone
Fairly massive, grey-green quartz sandstone with minor silty interbeds at 60° to c.a.

Alteration

From - To: Alt Code
Description

Mineralization

From - To: Min Code
Description

134.90 - 136.20 -
<1 % sphalerite in veins

Assay

From - To:	Smple	Cu %	Pb %	Zn %	Ag G/t	Au G/t
131.85-133.40	557300		0.00	0.85	0.50	
133.40-134.90	644132		0.01	0.24	0.50	
134.90-136.20	644133		0.00	1.13	0.50	
136.20-137.20	644134		0.00	0.10	0.50	

noranda

NORANDA INC.

Drill Hole Log

Drillhole Collar

Hole-ID:	AN0220	**Length:**	206.3	**Units:**	meters
Started	31/08/02	**Proj. #:**	2501	**Project:**	Andrew
Finished:	03/09/02	**Claim #:**	YB65801	**Logged By:**	A. Huard
Drill Type:	Boyles JKS 25	**Case Pkd:**	yes	**Contractor:**	Advanced Drilling
Core Size:	NQ2	**Case Dep:**	9.1	**Core Location:**	Andrew Camp

Co-ordinates - GEMCOM		Co-ordinates - Grid		Co-ordinates - UTM		Co-ordinates - Lat/Long	
Easting:	641795.2	**Easting:**	0.00	**Easting:**	641795.2	**Latitude:**	0
Northing:	6978332.7	**Northing:**	0.00	**Northing:**	6978332.7	**Longitude:**	0
Elevation:	1251.7	**Elevation:**	0.00	**Elevation:**	1251.7		
Plot_Sys:	UTM NAD 83	**Grid Declin:**	2.48	**UTM Declin:**	2.48		
NTS:	105K16	**Mag Declin:**	27.34	**UTM Zone:**	8		

Collar Survey: Chained from 1 DGPS point, Handheld GPS

Target: Undercut broad zones of weak sphalerite mineralization in AN0219.

Geophysics: No

Remarks: AN0220 intersected two mineralized zones, both of which are significantly more mineralized than the corresponding zones up-dip in AN0219. Mineralization consists of sphalerite with lesser galena associated with calcite-quartz veins and silicified hydrothermal breccia zones. The Upper Zone returned 10.34% Zn over 10.2 m (core length) from 135.5 to 145.7, and the Lower Zone returned 13.63% Zn over 6.0 m (core length) from 178.3 to 184.3. True thicknesses are estimated to be slightly less than half of the core lengths.

Downhole Survey

Distance	Dip	Mag Azm	True N Azm	Type	Comments
0.00	-80.00	151.66	179.00	Collar	
17.40	-82.00	138.00	165.34	Sperry-Sun	Single Shot
78.30	-74.75	152.00	179.34	Sperry-Sun	Single Shot
139.30	-77.00	151.00	178.34	Sperry-Sun	Single Shot
206.30	-78.00	152.00	179.34	Sperry-Sun	Single Shot

Geology

Lithology

From - To: Rock Code - Rock Name
Description

Alteration

From - To: Alt Code
Description

Mineralization

From - To: Min Code
Description

Assay

From - To:	Smple	Cu %	Pb %	Zn %	Ag G/t	Au G/t

AN0220

Lithology	Alteration	Mineralization	Assay
From - To: Rock Code - Rock Name Description	From - To: Alt Code Description	From - To: Min Code Description	From - To: Smple Cu % Pb % Zn % Ag G/t Au G/t
0.00 - 9.10: OB - Overburden			
9.10 - 19.10: SHL_GRN - Green Shale Soft green shale with bedding at 70° to c.a.			
19.10 - 26.40: QTZ - Quartzite Dark grey quartz sandstone to quartzite with shaley interbeds. Bedding at 70° to c.a.			
26.40 - 36.00: SHL_GRY - Grey Shale Dark grey, well-bedded, folded grey shale with several sandy interbeds. Bedding is variable from 0° to 60° to c.a.			
36.00 - 41.10: QTZ - Quartzite Dark grey, bedded quartz sandstone with abundant grey shale interbeds. Bedding is folded from 0° to 45° to c.a. 1% calcite veinlets			
41.10 - 48.40: SHL_GRY - Grey Shale Grey to dark grey, soft, fairly massive shale.			
48.40 - 48.80: _FAULT - Fault 5 cm of badly broken core & gouge recovered from fault zone.			
48.80 - 51.90: SHL_GRY - Grey Shale Folded and locally brecciated grey shale.			
51.90 - 55.00: _FAULT - Fault 20% core recovery. Foliated (30° to c.a.) fault gouge and badly broken core.			
55.00 - 69.20: QTZ - Quartzite Fairly massive quartz sandstone to quartzite. 2% calcite veinlets.			
69.20 - 71.20: SHL_GRY - Grey Shale Well-bedded grey shale with bedding at 45° to c.a.			
71.20 - 82.90: QTZ - Quartzite Massive gritty quartz sandstone with minor grey shale interbeds at 40° to c.a.			
82.90 - 85.90: QTZ - Quartzite Weakly brecciated, massive grey quartz sandstone with 5% white calcite veins.			
85.90 - 89.80: QTZ - Quartzite Massive gritty quartz sandstone with 2% calcite veinlets. Locally poorly developed bedding at 40° to c.a.			
89.80 - 89.90: _FAULT - Fault Fault gouge and breccia weakly foliated at 60° to c.a.			
89.90 - 104.40: QTZ - Quartzite Massive to poorly bedded quartz sandstone with minor grey shale interbeds. Bedding consistent at 50° to c.a. 2% calcite veins throughout.			

Lithology	Alteration	Mineralization	Assay
From - To: Rock Code - Rock Name Description	From - To: Alt Code Description	From - To: Min Code Description	From - To: Smple / Cu % / Pb % / Zn % / Ag G/t / Au G/t
104.40 - 105.40: _FAULT - Fault Fault gouge and breccia crosses core at 30° to c.a.			
105.40 - 108.60: QTZ - Quartzite Massive quartz sandstone with minor grey shale interbeds at 45° to c.a. 2% calcite veins throughout.			
108.60 - 109.00: SHL_GRY - Grey Shale Massive, soft, waxy pale grey shale			
109.00 - 109.70: _FAULT - Fault Fault gouge and breccia marks contact			
109.70 - 110.40: QTZ - Quartzite Massive grey quartzite - weakly fault brecciated			
110.40 - 111.40: SHL_GRY - Grey Shale Pale grey, soft waxy shale with local bedding at 50° to c.a.			
111.40 - 111.50: _FAULT - Fault Fault gouge and breccia foliated at 40° to c.a.			
111.50 - 113.40: SHL_GRY - Grey Shale Shale. Gradational colour change from grey shale above to maroon shale below. Bedding locally visible at 45° to c.a.			
113.40 - 132.60: SHL_MAR - Maroon Shale Massive maroon shale with irregular intervals of reduced, grey shale. Bedding is generally 45° to c.a. but reveals several minor fold closures.			
132.60 - 134.50: SHL_GRY - Grey Shale Soft, waxy pale grey-green shale with beds at 45° to c.a. Minor fault contact at bottom.			133.50-134.50 644135 0.00 0.00 1.00
134.50 - 135.50: MNZN - Mineralized Zone Strongly brecciated quartzite with 5% quartz-calcite veins. Note: All measurements in mineralized zone are measured from tags at 137.5 and 140.5. This forces some core loss back into this interval, which will be low grade, rather than exaggerate core lengths in the folowing richer sections, which are characterized by 100% recovery of good, interlocking core.		134.50 - 135.50 - 0.5% spahlerite as replacement in small zone and trace disseminated chalcopyrite.	134.50-135.50 644136 0.04 0.51 0.50
135.50 - 136.40: MNZN - Mineralized Zone Brecciated quartzite with 25% veins of sp and qtz-cc-sp		135.50 - 136.40 - 15% c.g. sphalerite in cm-scale veins alone, or with quartz and calcite.	135.50-136.40 644137 0.00 9.04 0.50
136.40 - 136.65: MNZN - Mineralized Zone Strongly silicified pale grey-green shale cut by 10% quartz-calcite veinlets			136.40-136.65 644138 0.00 0.92 1.00
136.65 - 137.00: MNZN - Mineralized Zone Strongly silicified pale grey-green shale cut by 40% quartz-sphalerite-calcite-galena veinlets		136.65 - 137.00 - 10% sphalerite with quartz in silicified zones and 8% galerna, mostly at bottom of interval	136.65-137.00 644139 14.00 9.06 45.00

AN0220

Lithology From - To: Rock Code - Rock Name Description	Alteration From - To: Alt Code Description	Mineralization From - To: Min Code Description	Assay From - To:	Smple	Cu %	Pb %	Zn %	Ag G/t	Au G/t
137.00 - 139.20: MNZN - Mineralized Zone 60% veins of sp-cc-qtz engulfing silicified shale and lesser brecciated quartzite fragments.		137.00 - 139.20 - 45% sphalerite as veins up to 20 cm thick and with lesser calcite-quartz veins	137.00-138.10	644140	0.27	31.42	3.00		
			138.10-139.20	644141	0.02	27.60	1.00		
139.20 - 140.30: MNZN - Mineralized Zone Weakly brecciated grey quartzite with 10% sp-cc-qtz veinlets.		139.20 - 140.30 - 6% sphalerite with calcite in veins	139.20-140.30	644142	0.00	4.02	0.50		
140.30 - 141.40: MNZN - Mineralized Zone Grey shale with 10% quartz-calcite veins. Locally silicified.		140.30 - 141.40 - ½% sphalerite with calcite veins, especially at top of interval.	140.30-141.40	644143	0.00	0.29	0.50		
141.40 - 141.60: _FAULT - Fault Fault breccia derived from unit above. Weakly foliated at 60° to c.a.			141.40-141.60	644144	0.00	0.02	0.50		
141.60 - 145.70: MNZN - Mineralized Zone Weakly brecciated, massive grey quartzite with 10% calcite-sphalerite-quartz veins		141.60 - 145.70 - Total of 4% sphalerite with trace galena and chalcopyrite, concentrated in 5-10 cm thick zones of cc-sp veining.	141.60-143.60	644147	0.09	4.01	0.50		
			143.60-145.70	644148	0.52	4.51	1.00		
145.70 - 146.10: SHL_GRY - Grey Shale Soft waxy grey shale with bedding at 50° to c.a.			145.70-146.10	644149	0.01	0.14	0.50		
146.10 - 147.90: MNZN - Mineralized Zone Weakly brecciated quartzite with 5% calcite-quartz-sphalerite-galena veins. Minor interbedded shale at 45° to c.a.		146.10 - 147.90 - 1% each galena and sphalerite in veins	146.10-147.90	644150	3.29	1.41	6.00		
147.90 - 149.00: SHL_GRY - Grey Shale Grey-green, well bedded (45° to c.a.) silty shale. Weakly brecciated with 10% calcite-quartz-sphalerite veins		147.90 - 149.00 - 1% sphalerite in veins	147.90-149.00	644162	0.02	1.05	0.50		
149.00 - 150.00: MNZN - Mineralized Zone Grey, weakly brecciated quartzite with 10% calcite-quartz veins		149.00 - 150.00 - ½ % sphalerite in veins	149.00-150.00	644163	0.01	0.17	0.50		
150.00 - 150.30: MNZN - Mineralized Zone Calcite-sphalerite vein		150.00 - 150.30 - 50% sphalerite	150.00-150.30	644198	0.00	29.30	1.00		
150.30 - 150.70: QTZ - Quartzite Weakly brecciated quartzite with 2% calcite veins			150.30-150.70	644164	0.00	3.88	0.50		
150.70 - 150.95: VEIN - Calcite - quartz vein calcite-quartz veins			150.70-150.95	644165	0.00	1.09	0.50		
150.95 - 153.20: SNDST - Sandstone Brecciated quartz sandstone with 5% calcite-quartz-sphalerite veinlets		150.95 - 153.20 - 1% sphalerite	150.95-153.20	644166	0.00	1.70	0.50		
153.20 - 153.60: VEIN - Calcite - quartz vein Calcite-quartz vein with 20% angular rock fragments		153.20 - 153.60 - Trace sphalerite	153.20-153.60	644167	0.02	1.47	0.50		
153.60 - 154.50: SHL_GRY - Grey Shale Soft, waxy grey shale. Brecciated and cut by 10% calcite veins. Bedding at 10° to 30° to c.a.			153.60-154.50	644168	0.00	0.11	0.50		
154.50 - 156.50: LST - Limestone Weakly brecciated micritic limestone with 10% calcite-sphalerite veins. Bedding at 0° to 20° to c.a.		154.50 - 156.50 - 1% sphalerite in veins	154.50-156.50	644169	0.00	0.61	0.50		

AN0220

Lithology	Alteration	Mineralization	Assay				
From - To: Rock Code - Rock Name Description	From - To: Alt Code Description	From - To: Min Code Description	From - To:	Smple	Cu %	Pb %	Zn %	Ag G/t	Au G/t
156.50 - 160.10: MNZN - Mineralized Zone Soft, waxy grey shale with minor interbeds of pale, micritic limestone. Weakly brecciated with 5% calcite-sphalerite veins		156.50 - 160.10 - 1% sphalerite in calcite veins	156.50-158.30	644170	0.00	0.53	0.50		
			158.30-160.10	644171	0.00	0.65	0.50		
160.10 - 161.50: SNDST - Sandstone Strongly brecciated quartz sandstone with 20% calcite as veins and breccia fill		160.10 - 161.50 - 1% sphalerite in veins	160.10-161.50	644172	0.00	0.27	1.00		
161.50 - 161.90: VEIN - Calcite - quartz vein Calcite vein with sphalerite along contacts.		161.50 - 161.90 - 5% spahlerite	161.50-161.90	644173	0.00	5.04	0.50		
161.90 - 162.80: SNDST_CA - Calcareous Sandstone Massive, dark grey calcareous sandstone with 2% calcite veinlets			161.90-164.30	644174	0.25	1.01	0.50		
162.80 - 165.90: MNZN - Mineralized Zone Moderately brecciated quartzite engulfed by 20% calcite-quartz-sulphide veins		162.80 - 165.90 - 3% sphalerite and ½ % galena in veins	164.30-165.90	644175	1.61	1.95	4.00		
165.90 - 166.60: QTZ - Quartzite Dark grey, weakly brecciated quartzite with 5% calcite-quartz veins			165.90-166.60	644176	0.01	0.01	0.50		
166.60 - 171.50: VEIN - Calcite - quartz vein Calcite-quartz vein with 20% angular shale fragments			166.60-169.00	644179	0.00	0.11	0.50		
			169.00-171.50	644180	0.01	0.02	0.50		
171.50 - 172.90: SHL_GRY - Grey Shale Grey, brecciated shale with 10% calcite as veins and breccia fill			171.50-172.90	644181	0.00	0.00	0.50		
172.90 - 175.30: MNZN - Mineralized Zone Calcite-quartz-sphalerite vein		172.90 - 175.30 - 5% sphalerite	172.90-175.30	644182	0.01	5.59	0.50		
175.30 - 178.30: VEIN - Calcite - quartz vein Calcite-quartz-sphalerite vein with minor angular shale fragments. Strongly brecciated at bottom.		175.30 - 178.30 - 1% sphalerite	175.30-176.80	644183	0.00	0.81	0.50		
			176.80-178.30	644184	0.00	1.19	0.50		
178.30 - 179.40: MNZN - Mineralized Zone Strongly brecciated and silicified quartzite with 15% quartz-sphalerite-calcite veins		178.30 - 179.40 - 6% sphalerite with quartz veinlets	178.30-179.40	644185	0.00	7.12	1.00		
179.40 - 180.70: MNZN - Mineralized Zone Strongly brecciated and silicified quartzite with 20% quartz-sphalerite-calcite veins		179.40 - 180.70 - 25% sphalerite replacing silicified quartzite. Only minor sphalerite in veins	179.40-180.70	644186	0.00	21.10	3.00		
180.70 - 181.10: MNZN - Mineralized Zone Vein or hydrothermal explosion breccia now mostly sphalerite-calcite-quartzite fragments-quartz.		180.70 - 181.10 - 70% sphalerite	180.70-181.10	644187	0.00	40.17	6.00		
181.10 - 181.50: MNZN - Mineralized Zone Intensely silicified hydrothermal breccia with 10% later calcite-sphalerite-quartz veins		181.10 - 181.50 - 5% sphalerite with quartz-calcite veins	181.10-181.50	644190	0.00	7.86	1.00		
181.50 - 183.60: MNZN - Mineralized Zone Grey, strongly brecciated quartzite with 10% calcite-sphalerite-quartz veins		181.50 - 183.60 - 5% sphalerite with quartz-calcite veins	181.50-183.60	644191	0.00	6.34	0.50		

AN0220

Lithology

From - To: Rock Code - Rock Name
Description

183.60 - 184.30: MNZN - Mineralized Zone
Grey, strongly brecciated and veined quartzite with 50% calcite-quartz-sphalerite as veins and breccia filling

184.30 - 189.90: MNZN - Mineralized Zone
Strongly brecciated, locally silicified quartzite with 20% shale fragments and 10% quartz-calcite-sphalerite veins

189.90 - 190.60: SHL_GRY - Grey Shale
Soft, dark grey shale. Bedding rotates from 70° to c.a. at top to 20° to c.a. at bottom

190.60 - 190.70: _FAULT - Fault
Fault gouge foliated at 45° to c.a.

190.70 - 194.50: SHL_GRY - Grey Shale
Soft dark grey shale with bedding at 45° to c.a.

194.50 - 196.90: _FAULT - Fault
Concentration of decimetric-scale fault gouge zones foliated at 60° to c.a. Zones are parallel to bedding.

196.90 - 200.50: SHL_GRN - Green Shale
Soft dark grey shale with bedding at 50° to c.a.

200.50 - 201.40: SNDST - Sandstone
Dark grey, massive quartz sandstone

201.40 - 201.80: _FAULT - Fault
Badly broken core and fault gouge foliated at 40° to c.a.

201.80 - 202.90: SHL_GRY - Grey Shale
Soft, finely bedded (50° to c.a.) grey shale

202.90 - 203.00: _FAULT - Fault
Fault gouge foliated at 60° to c.a.

203.00 - 204.30: SHL_GRY - Grey Shale
Soft, finely bedded (60° to c.a.) grey shale

204.30 - 204.40: _FAULT - Fault
Fault gouge foliated at 40° to c.a.

204.40 - 206.30: SHL_GRY - Grey Shale
Soft, finely bedded (50° to c.a.) grey shale

Alteration

From - To: Alt Code
Description

Mineralization

From - To: Min Code
Description

183.60 - 184.30 -
16% sphalerite in veins

184.30 - 189.90 -
½ % sphalerite with quartz

Assay

From - To:	Smple	Cu %	Pb %	Zn %	Ag G/t	Au G/t
183.60-184.30	644192		0.00	15.45	1.00	
184.30-185.70	644193		0.00	2.53	0.50	
185.70-187.10	644194		0.00	0.21	0.50	
187.10-188.50	644195		0.01	0.66	0.50	
188.50-189.90	644196		0.00	0.03	0.50	
189.90-190.60	644197		0.01	0.00	0.50	

noranda

NORANDA INC.

Drill Hole Log

Drillhole Collar

Hole-ID:	AN0221	**Length:**	151.2	**Units:**	meters
Started	05/09/02	**Proj. #:**	2501	**Project:**	Andrew
Finished:	07/09/02	**Claim #:**	YB65799	**Logged By:**	A. Huard
Drill Type:	Boyles JKS 25	**Case Pld:**	yes	**Contractor:**	Advanced Drilling
Core Size:	NQ2	**Case Dep:**	20.2	**Core Location:**	Andrew Camp

Co-ordinates - GEMCOM		Co-ordinates - Grid		Co-ordinates - UTM		Co-ordinates - Lat/Long	
Easting:	642219.3	**Easting:**	0.00	**Easting:**	642219.3	**Latitude:**	0
Northing:	6977912.4	**Northing:**	0.00	**Northing:**	6977912.4	**Longitude:**	0
Elevation:	1229.5	**Elevation:**	0.00	**Elevation:**	1229.5		
Plot_Sys:	UTM NAD 83	**Grid Declin:**	2.48	**UTM Declin:**	2.48		
NTS:	105K16	**Mag Declin:**	27.34	**UTM Zone:**	8		

Collar Survey: Chained from 1 DGPS point, Handheld GPS

Target: Kill zone with coincident soil geochem and mineralized talus, 700 m southeast of Andrew deposit.

Geophysics: No

Remarks: AN0221 intersected sphalerite associated with quartz and calcite veins in brecciated limestone and quartzite, adjacent to a fault zone. It returned 7.54% Zn and 0.01% Pb over 5.55 m (core length) from 39.95 to 45.5 It also intersected small high grade veins of galena and sphalerite (usually separate) in the 5.5 m interval from 70.5 to 76.0, which returned 2.04% Zn and 2.51% Pb. The latter mineralized zone resembles surface mineralization and is probably the down-dip equivalent thereof. Core angles are consistent with this interpretation. AN0221 intersected several faults, probably due to proximity to a regional structural / geophysical break.

Downhole Survey

Distance	Dip	Mag Azm	True N Azm	Type	Comments
0.00	-45.00	162.66	190.00	Collar	
26.50	-43.50	157.00	184.34	Sperry-Sun	Single Shot
124.10	-43.50	161.00	188.34	Sperry-Sun	Single Shot
151.20	-46.50	162.00	189.34	Sperry-Sun	Single Shot

Geology

Lithology

From - To: Rock Code - Rock Name
Description

Alteration

From - To: Alt Code
Description

Mineralization

From - To: Min Code
Description

Assay

From - To: Smple Cu % Pb % Zn % Ag G/t Au G/t

AN0221

Lithology From - To: Rock Code - Rock Name Description	Alteration From - To: Alt Code Description	Mineralization From - To: Min Code Description	Assay From - To:	Smple	Cu %	Pb %	Zn %	Ag G/t	Au G/t
0.00 - 20.20: OB - Overburden Overburden									
20.20 - 27.10: _FAULT - Fault Fault breccia. Mostly dark grey green calcareous, with lesser black carbonaceous mudstone forming a matrix to 20% pale grey limestone fragments. Unfoliated.									
27.10 - 27.30: _FAULT - Fault Fault gouge foliated at 45° to c.a.									
27.30 - 39.95: _FAULT - Fault Fault zone: Predominantly pale grey brecciated limestone fragments engulfed by soft, green waxy clay. Strongly resembles karst fill but could also be tectonically created by boudinage & brecciation. Subsequently deformed with local gouge and shear zones at 45° to c.a.		38.70 - 39.95 - Trace sphalerite in matrix	38.70-39.95	644199	0.00	0.09	0.50		
39.95 - 40.70: MNZN - Mineralized Zone Brecciated limestone as above.		39.95 - 40.70 - 30% crustiform sphalerite filling a vein cored by calcite and as breccia infill.	39.95-40.70	644200	0.01	29.50	1.00		
40.70 - 42.60: LST - Limestone Strongly brecciated, pale grey, stylolitic limestone with 10% waxy clay infilling			40.70-42.60	176269	0.00	0.04	0.50		
42.60 - 45.50: MNZN - Mineralized Zone Dark grey, strongly silicified granular quartzite with 5% calcite veins		42.60 - 45.50 - 5% sphalerite as coarse, disseminated clots and veins with calcite-quartz.	42.60-45.50	176270	0.00	6.78	0.50		
45.50 - 53.90: BX_BS - Black Shale Breccia Dark grey to black, heterolithic breccia with locally carbonaceous matrix. Upper contact is 30° to c.a. but fabric rotates to 45 to c.a. in shear and gouge zones throughout.			45.50-46.30	176271	0.00	0.07	0.50		
53.90 - 54.00: _FAULT - Fault Fault gouge, weakly foliated at 60° to c.a.									
54.00 - 57.20: SHL_GRY - Grey Shale Pale grey, soft, nearly massive shale with local zones of sedimentary breccia.									
57.20 - 58.10: SHL_GRY - Grey Shale Grey shale as above but moderately brecciated and infilled with 5% calcite veinlets.									
58.10 - 61.80: QTZ - Quartzite Pale grey, massive gritty quartzite. Moderately brecciated with 10% calcite veins. (NOTE: Irregular dark grey patches are probably original colour of quartz sandstone, and the pale "quartzite" look is an alteration of it.)			58.10-60.00 60.00-61.80	176272 176273	0.00 0.00	0.06 0.01	0.50 0.50		
61.80 - 62.10: MNZN - Mineralized Zone Brecciated quartzite as above but brecciation is stronger and zone is strongly silicified.		61.80 - 62.10 - trace galena	61.80-62.10	176274	0.59	0.01	0.50		

AN0221

Lithology

From - To: Rock Code - Rock Name
Description

62.10 - 62.60: _FAULT - Fault
Fault brecciated shale from unit below. 3% broken calcite veins.

62.60 - 70.40: SHL_GRY - Grey Shale
Soft, locally well-bedded shale. Bedding averages 60° to c.a.but in minor zones it is folded and broken. 2% calcite veins.

70.40 - 70.50: _FAULT - Fault
Fault gouge foliated at 45° to c.a.

70.50 - 82.10: MNZN - Mineralized Zone
Grey, massive "quartzite" with patchy less altered zones. Cross-cut by 10% calcite-quartz-sulphide veins and breccia fillings.

82.10 - 87.80: SNDST - Sandstone
Dark grey, massive quartz sandstone. Moderate brecciation and infilling with 5% quartz-calcite veins. Minor grey shale intervals indicate bedding at 60° to c.a.

87.80 - 93.10: BX_BS - Black Shale Breccia
Mix of dark grey, locally black carbonaceous shale breccia with an equal amount of brecciated quartz sandstone blocks

93.10 - 96.30: QTZ - Quartzite
Pale grey, moderately brecciated quartzite cut by 10% calcite-quartz veins. Overprinted by weak fault brecciation.

96.30 - 97.20: _FAULT - Fault
Strongly sheared black shale breccia. Strong foliation wraps around qurtz sandstone boudins but averages 60° to c.a.

97.20 - 97.70: QTZ - Quartzite
Strongly brecciated (boudin of ?) pale quartzite infilled with 20% clcite-quartz-sphalerite veins.

97.70 - 98.60: SHL_GRY - Grey Shale
Fairly massive grey shale with weak brecciation.

98.60 - 98.70: _FAULT - Fault
Fault gouge zone cuts core at 60° to c.a.

98.70 - 99.90: BX_QTZ - Carbonatized Quartzite Breccia
Strongly brecciated, massive quartz sandstone with 5% calcite veins

99.90 - 103.30: _FAULT - Fault
Mixed shale and quartzite unit with shale unit strongly sheared (average 60° to c.a.) and several gouge zones developed.

Alteration

From - To: Alt Code
Description

Mineralization

From - To: Min Code
Description

62.60 - 70.40 -
trace chalcopyrite in calcite veinlets

70.50 - 82.10 -
1% each galena and sphalerite

82.10 - 83.50 -
Trace sphalerite

97.20 - 97.70 -
6% sphalerite in veins

Assay

From - To:	Smple	Cu %	Pb %	Zn %	Ag G/t	Au G/t
62.10-62.60	176275		0.01	0.01	0.50	
70.50-72.00	176276		8.77	1.61	17.00	
72.00-74.00	176277		0.02	0.17	0.50	
74.00-76.00	176278		0.30	4.24	0.50	
76.00-78.00	176279		0.01	0.61	0.50	
78.00-80.00	176280		9.08	0.07	20.00	
80.00-82.10	176281		0.03	0.05	0.50	
82.10-83.50	176282		0.00	1.86	0.50	
97.20-97.70	176283		0.00	6.03	1.00	

AN0221

Lithology

From - To: Rock Code - Rock Name
Description

103.30 - 104.80: SHL_GRY - Grey Shale
Grey shale with bedding at 45° to c.a.

104.80 - 106.70: QTZ - Quartzite
Dark grey, massive quartz sandstone with 5% calcite veins.

106.70 - 108.20: SHL_GRY - Grey Shale
Grey shale with some quartz sandstone interbeds

108.20 - 108.30: _FAULT - Fault
Fault gouge zone cuts core at 35° to c.a.

108.30 - 116.10: SHL_GRY - Grey Shale
Grey shale with gently varying bedding from 60° to 80° to c.a.

116.10 - 117.30: SNDST_CA - Calcareous Sandstone
Pale grey, weakly brecciated, weakly calcareous sandstone

117.30 - 119.40: SHL_GRY - Grey Shale
Farily massive grey shale

119.40 - 120.60: _FAULT - Fault
Fault gouge zone cuts core at 20° to c.a.

120.60 - 123.00: SHL_GRN - Green Shale
Pale green shale with local bedding at 70° to c.a.

123.00 - 138.10: SHL_MAR - Maroon Shale
Massive maroon shale with some irregular patches of grey-green shale. Where visible, bedding is commonly broken and features minor folds, but averages 60° to c.a.

138.10 - 139.00: _FAULT - Fault
Pale grey shale with strong shearing at 70° to c.a. Local gouge zones. Strong boudinage of a few sandstone fragments.

139.00 - 147.20: SNDST - Sandstone
Dark grey, gritty quartz sandstone. Nearly massive but local bedding at 70° to .c.a. Minor dark green shale interbeds. 2% calcite veinlets.

147.20 - 151.20: SLTST - Siltstone
Dark grey, finely laminated (65° to c.a.) siltstone. Minor mm-scale pyritic laminae

Alteration

From - To: Alt Code
Description

Mineralization

From - To: Min Code
Description

Assay

From - To:	Smple	Cu %	Pb %	Zn %	Ag G/t	Au G/t

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Drill Hole Log

Drillhole Collar

Hole-ID:	AN0222	**Length:**	120.4	**Units:**	meters
Started	08/09/02	**Proj. #:**	2501	**Project:**	Andrew
Finished:	12/09/02	**Claim #:**	YC02364	**Logged By:**	A. Huard
Drill Type:	Boyles JKS 25	**Case Pkd:**	yes	**Contractor:**	Advanced Drilling
Core Size:	NQ2	**Case Dep:**	12	**Core Location:**	Andrew Camp

Co-ordinates - GEMCOM		Co-ordinates - Grid		Co-ordinates - UTM		Co-ordinates - Lat/Long	
Easting:	643123.2	**Easting:**		**Easting:**	643123.2	**Latitude:**	
Northing:	6977809.3	**Northing:**		**Northing:**	6977809.3	**Longitude:**	
Elevation:	1134	**Elevation:**		**Elevation:**	1134		
Plot_Sys:	UTM NAD 83	**Grid Declin:**	2.48	**UTM Declin:**	2.48		
NTS:	105K16	**Mag Declin:**	27.34	**UTM Zone:**	8		

Collar Survey: Handheld GPS, Elevation from topomap

Target: Outcropping sphalerite / galena mineralization with coincident soil geochem response

Geophysics: No

Remarks: AN0222 intersected a barren quartzite breccia zone at 79.0 - 85.3 m. Traces of sphalerite occur in fault related rocks over a 2.2 m interval in the hangingwall of the quartzite breccia zone. The best interval returned 0.20% Zn over 0.7 m from 77.2 to 77.9. These features probably correlate with the surface mineralization, and indicate it is not extensive

Downhole Survey

Distance	Dip	Mag Azm	True N Azm	Type	Comments
0.00	-45.00	167.66	195.00	Collar	
17.40	-43.00	161.00	188.34	Sperry-Sun	Single Shot
35.40	-43.50	160.00	187.34	Sperry-Sun	Single Shot

Geology

Lithology

From - To: Rock Code - Rock Name
Description

0.00 - 12.00: OB - Overburden

Alteration

From - To: Alt Code
Description

Mineralization

From - To: Min Code
Description

Assay

From - To: Smple Cu % Pb % Zn % Ag G/t Au G/t

Lithology

From - To: Rock Code - Rock Name
Description

12.00 - 14.00: SNDST_CA - Calcareous Sandstone
Well-bedded calcareous sandstone with interlayered green shale. Bedding is folded but averages 30° to c.a. 5% calcite veins.

14.00 - 17.40: SHL_GRY - Grey Shale
Dark grey, almost massive shale with weak bedding at 30° to c.a.

17.40 - 18.70: _FAULT - Fault
Fault zone caved repeatedly during drilling. 50% recovery. Broken calcareous sandstone and minor fault gouge recovered.

18.70 - 22.20: SNDST_CA - Calcareous Sandstone
Grey, calcareous sandstone with intercalated grey shale, bedded at 30° to c.a. 2% calcite veinlets.

22.20 - 23.70: QTZ - Quartzite
Grey, gritty quartz sandstone with 5% calcite veinlets.

23.70 - 26.30: _FAULT - Fault
Strongly brecciated calcareous sandstone and quartz grit with 5% calcite veins. Several foliated fault gouge zones at 70° to c.a.

26.30 - 27.10: SHL_GRY - Grey Shale
Soft, waxy, pale grey-brown shale with colour laminations (bedding ?) at 70° to c.a.

27.10 - 28.00: _FAULT - Fault
Brecciated grey shale and fault gouge, with foliation in gouge at 45° to c.a.

28.00 - 41.80: QTZ - Quartzite
Massive, very hard, very pale grey gritty quartzite. Weak shearing (bedding parallel ?) at 60° to c.a.

41.80 - 43.50: SHL_GRY - Grey Shale
Soft, pale grey-green shale with rare quartzite boudins and bedding at 40° to c.a.

43.50 - 51.60: SHL_MAR - Maroon Shale
Nearly massive maroon shale with irregular green interbeds & patches. Bedding is commonly folded, but averages ~45° to c.a.

51.60 - 53.50: SHL_GRY - Grey Shale
Soft, pale grey-green shale with rare quartzite boudins and bedding at 45° to c.a.

53.50 - 67.90: QTZ - Quartzite
Grey, gritty quartzite with rarely developed bedding at 40° to c.a.

67.90 - 77.20: QTZ - Quartzite
Fragmental quartzite (sedimentary breccia ?) with cm-scale fragments in a typical quartzite martrix. 2% calcite veinlets.

Alteration

From - To: Alt Code
Description

Mineralization

From - To: Min Code
Description

75.70 - 77.20 -
trace sphalerite with quartz-calcite vienlets

Assay

From - To:	Smple	Cu %	Pb %	Zn %	Ag G/t	Au G/t
75.70-77.20	176287					

AN0222

Lithology

From - To: Rock Code - Rock Name
Description

77.20 - 77.90: QTZ - Quartzite
As above but strongly sheared at 45° to c.a.

77.90 - 79.00: _FAULT - Fault
Fault breccia derived from quartzites from above and below, and fault gouge derived from black, carbonaceous shale. Foliated at 50° to c.a.

79.00 - 85.30: BX_QTZ - Carbonatized Quartzite Breccia
Brecciated quartzite engulfed by 15% quartz-calcite veins. No sulphides.

85.30 - 86.00: _FAULT - Fault
Foliated (20° to c.a.) fault gouge and breccia derived from grey shale.

86.00 - 93.30: QTZ - Quartzite
Massive gritty quartzite with 5% quartz-calcote veins. Trace sphalerite in vein at 89.1

93.30 - 95.30: BX_QTZ - Carbonatized Quartzite Breccia
Brecciated quartzite engulfed by 15% quartz-calcite veins. No sulphides.

95.30 - 104.80: QTZ - Quartzite
Massive, gritty, grey quartzite.

104.80 - 107.30: SHL_GRY - Grey Shale
Soft grey shale with highly variable, folded bedding.

107.30 - 108.20: QTZ - Quartzite
Brecciated grey quartzite with 3% quartz-calcite veinlets.

108.20 - 113.80: SHL_GRY - Grey Shale
Soft grey shale with interbeds of quartz sandstone. Bedding averages 40° to c.a. 3% quartz-calcite veins preferentially in sandstone intervals.

113.80 - 119.30: QTZ - Quartzite
Grey brecciated quartzite with 3% quartz-calcite veins and irregular grey shale intervals.

119.30 - 120.40: SHL_GRY - Grey Shale
Grey shale with bedding at 70° to c.a.

Alteration

From - To: Alt Code
Description

Mineralization

From - To: Min Code
Description

77.20 - 77.90 -
trace sphalerite with quartz-calcite vienlets

Assay

From - To:	Smple	Cu %	Pb %	Zn %	Ag G/t	Au G/t
77.20-77.90	176288					
77.90-79.00	176289					
79.00-81.00	176290					
81.00-83.00	176291					
83.00-85.00	176292					
85.00-86.00	176293					

noranda

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Drill Hole Log

Drillhole Collar

Hole-ID:	AN0223	**Length:**	276.5	**Units:**	meters
Started	14/09/02	**Proj. #:**	2501	**Project:**	Andrew
Finished:	18/09/02	**Claim #:**	YB65801	**Logged By:**	A. Huard
Drill Type:	Boyles JKS 25	**Case Pld:**	yes	**Contractor:**	Advanced Drilling
Core Size:	NQ2	**Case Dep:**	13	**Core Location:**	Andrew Camp

Co-ordinates - GEMCOM		Co-ordinates - Grid		Co-ordinates - UTM		Co-ordinates - Lat/Long	
Easting:	641900.1	**Easting:**	0.00	**Easting:**	641900.1	**Latitude:**	0
Northing:	6978381.3	**Northing:**	0.00	**Northing:**	6978381.3	**Longitude:**	0
Elevation:	1228.2	**Elevation:**	0.00	**Elevation:**	1228.2		
Plot_Sys:	UTM NAD 83	**Grid Declin:**	2.48	**UTM Declin:**	2.48		
NTS:	105K16	**Mag Declin:**	27.34	**UTM Zone:**	8		

Collar Survey: Chained from 1 DGPS point, Handheld GPS

Target: Andrew Zone 100 m east and downdip from AN0220

Geophysics: No

Remarks: AN0223 intersected very weak mineralization along the projection of the Andrew Upper and Lower Zones, as intersected 100 m to the west by AN0219 and AN0220. A 4.4 m interval from 194.3 to 198.7 returned 0.64% Zn and 0.89% Pb. Core angles near surface indicate nearly flat-lying beds, but on the section 100 m to the west, steep bedding was indicated by a maroon shale unit, which was not present on this section. Pyrite is more abundant here than other sections, and veining is typically quartz with sulphides, unlike the calcite dominated vein systems associated with better mineralization to the west. The lower zone is hosted by a grey shale unit, unlike the more typical quartzite host.

Downhole Survey

Distance	Dip	Mag Azm	True N Azm	Type	Comments
0.00	-80.00	149.66	177.00	Collar	
20.40	-75.75	148.00	175.34	Sperry-Sun	Single Shot
87.50	-75.50	142.00	169.34	Sperry-Sun	Single Shot
182.00	-77.50	156.00	183.34	Sperry-Sun	Single Shot
239.90	-78.50	149.00	176.34	Sperry-Sun	Single Shot

Geology

Lithology | Alteration | Mineralization | Assay

AN0223

From - To: Rock Code - Rock Name Description	From - To: Alt Code Description	From - To: Min Code Description	From - To:	Smple	Cu %	Pb %	Zn %	Ag G/t	Au G/
0.00 - 13.00: OB - Overburden									
13.00 - 15.90: SLTST - Siltstone Dark grey-green, locally calcareous siltstone. Poorly developed bedding at 60° to c.a.									
15.90 - 17.50: QTZ - Quartzite Massive, gritty pale grey quartzite with 1% quartz veinlets. Weak brecciation with fracture selvages lined by chlorite (?).									
17.50 - 18.40: _FAULT - Fault 30% recovery from fault gouge zone, weakly foliated at 30° to c.a.									
18.40 - 22.80: SHL_GRY - Grey Shale Soft, grey shale well-bedded at 50 to 80° to c.a.									
22.80 - 24.70: QTZ - Quartzite Massive, pale-grey quartzite									
24.70 - 24.80: _FAULT - Fault Fault gouge foliated at 70° to c.a.									
24.80 - 31.00: SHL_GRY - Grey Shale Well-bedded shale with gritty quartz interbeds from few mm to dm thick.Bedding is folded but averages 70° to c.a. Rare mm-scale pyrite beds.									
31.00 - 31.70: _FAULT - Fault Fault gouge									
31.70 - 32.40: SHL_GRY - Grey Shale Well-bedded grey shale with rare pyrite interbeds 1 mm thick. Bedding is folded but averages 80° to c.a.									
32.40 - 46.00: QTZ - Quartzite Massive grey quartzite with rare shale interbeds at 70° to c.a.									
46.00 - 47.10: SHL_GRY - Grey Shale Dark grey well-bedded shale with rare mm-thick pyrite beds and nodules. Bedding uniform at 70° to c.a.									
47.10 - 49.20: SHL_BLK - Black Shale - pyritic Black shale with 2% pyritic laminae and 30% gritty quartz sandstone interbeds. Bedding is variable but averages 70° to c.a.			47.10-49.20	176296		0.00	0.03	0.50	
49.20 - 49.40: _FAULT - Fault Fault gouge foliated at 50° to c.a.									
49.40 - 50.00: SHL_GRY - Grey Shale Soft grey shale with bedding at 60° to c.a.									
50.00 - 50.40: _FAULT - Fault Fault gouge and breccia foliated at 50° to c.a.									
50.40 - 54.10: SHL_GRY - Grey Shale Soft grey shale. Bedding rotates from 50° to c.a. at top to 80° to c.a. at bottom									

AN0223

Lithology

From - To: Rock Code - Rock Name
Description

54.10 - 56.80: QTZ - Quartzite
Massive, pale grey, gritty quartzite with minor grey shale interbeds at 80° to c.a.

56.80 - 56.90: _FAULT - Fault
Fault gouge cuts core at 40° to c.a.

56.90 - 57.40: QTZ - Quartzite
Massive, pale grey quartzite.

57.40 - 57.50: _FAULT - Fault
Fault gouge foliated at 80° to c.a.

57.50 - 62.40: QTZ - Quartzite
Grey, gritty quartzite with minor grey shale interbeds at 70° to c.a.

62.40 - 62.60: _FAULT - Fault
Fault gouge foliated at 70° to c.a.

62.60 - 70.60: QTZ - Quartzite
Grey, gritty quartzite with minor grey shale interbeds at 70° to c.a.

70.60 - 70.70: _FAULT - Fault
Fault gouge foliated at 70° to c.a.

70.70 - 73.30: QTZ - Quartzite
Grey, gritty quartzite with minor grey shale interbeds at 80° to c.a.

73.30 - 73.40: _FAULT - Fault
Fault gouge foliated at 50° to c.a.

73.40 - 75.50: QTZ - Quartzite
Massive grey quartzite

75.50 - 75.60: _FAULT - Fault
Fault gouge foliated at 60° to c.a.

75.60 - 76.60: QTZ - Quartzite
Massive grey quartzite

76.60 - 76.70: _FAULT - Fault
Fault gouge foliated at 60° to c.a.

76.70 - 79.90: QTZ - Quartzite
Massive gritty grey quartzite with 1% quartz veins.

79.90 - 81.10: SHL_GRY - Grey Shale
Grey shale with fine bedding at 70° to c.a.

81.10 - 85.40: QTZ - Quartzite
Massive pale grey quartzite with abundant, prominent quartz grains up to 5 mm across.

85.40 - 85.60: _FAULT - Fault
Fault gouge. Upper contact is at 40° to c.a. but foliation in gouge is at 70° to c.a.

85.60 - 91.20: QTZ - Quartzite
Grey, gritty quartzite with 10% grey shale interbeds at 80° to c.a.

Alteration

From - To: Alt Code
Description

Mineralization

From - To: Min Code
Description

76.70 - 79.90 -
Trace sphalerite in quartz veins

Assay

From - To:	Smple	Cu %	Pb %	Zn %	Ag G/t	Au G/t
76.70-78.30	176297		0.00	0.46	0.50	
78.30-79.90	176298		0.00	0.80	0.50	

AN0223

Lithology	Alteration	Mineralization	Assay
From - To: Rock Code - Rock Name Description	From - To: Alt Code Description	From - To: Min Code Description	From - To: Smple Cu % Pb % Zn % Ag G/t Au G/t
91.20 - 91.25: _FAULT - Fault Fault gouge cuts core at 70° to c.a.			
91.25 - 92.60: SHL_GRY - Grey Shale Grey well-bedded shale with quartzite interbeds. Bedding is uniform at 70° to c.a.			
92.60 - 96.30: QTZ - Quartzite Grey, massive gritty quartzite with minor shale interbeds at 70° to c.a.			
96.30 - 100.00: _FAULT - Fault 1 m of broken quartzite recovered. Drillers reported 2 zones of caving here.			
100.00 - 103.30: SHL_GRY - Grey Shale Well-bedded soft grey shale with gritty grey quartzite interbeds. Bedding is uniform at 80° to c.a.			
103.30 - 107.70: QTZ - Quartzite Gritty grey quartzite with rare grey shale interbeds at 80° to c.a.			
107.70 - 117.90: SHL_GRY - Grey Shale Well-bedded grey shale with abundant gritty quartzite interbeds. Bedding rotates from 80° to c.a. at top to 50° to c.a. at bottom.			
117.90 - 126.60: QTZ - Quartzite Grey quartzite with minor grey shale interbeds at 70° to c.a.			
126.60 - 126.80: _FAULT - Fault Fault breccia and gouge foliated at 80° to c.a.			
126.80 - 131.00: SHL_GRY - Grey Shale Grey well-bedded shale with quartzite internbeds. Bedding rotates from 30° to c.a. at top to 70° to c.a. below.			
131.00 - 131.80: QTZ - Quartzite Massive grey quartzite, brecciated near bottom			
131.80 - 131.90: _FAULT - Fault Fault gouge foliated at 70° to c.a.			
131.90 - 135.60: QTZ - Quartzite Weakly brecciated quartzite with 1% quartz-calcite veins			
135.60 - 136.80: SHL_GRY - Grey Shale Mostly grey shale with lesser gritty quartzite interbeds. Bedding at 60° to c.a.			
136.80 - 136.90: _FAULT - Fault Fault gouge foliated at 70° to c.a.			
136.90 - 138.00: QTZ - Quartzite Weakly brecciated quartzite with 3% quartz-calcite veins			
138.00 - 138.90: SHL_GRY - Grey Shale Soft grey, massive shale			

AN0223

Lithology	Alteration	Mineralization	Assay
From - To: Rock Code - Rock Name Description	From - To: Alt Code Description	From - To: Min Code Description	From - To: Smple Cu % Pb % Zn % Ag G/t Au G/t
138.90 - 139.40: _FAULT - Fault Strongly sheared (70° to c.a.) sedimentary breccia (?) - mostly quartzite fragments in grey shale matrix.			
139.40 - 148.40: SHL_GRY - Grey Shale - micritic Green-grey shale and micritic shale, with 50% pale grey micritic limestone, locally nodular. (This is a distinctive unit). Bedding uniform at 80° to c.a.			
148.40 - 148.45: _FAULT - Fault Fault gouge in a zone at 70° to c.a.			
148.45 - 157.90: QTZ - Quartzite Pale grey and dark grey quartz sandstone. Minor green shale interbeds. Weakly brecciated with 5% white quartz-calcite veinlets. Bedding at 80° to c.a.			
157.90 - 164.80: QTZ - Quartzite Pale grey and dark grey, massive quartz sandstone.			
164.80 - 171.50: _FAULT - Fault MAJOR FAULT ZONE: Fault breccia and gouge derived from quartzite. Zone is cored by a gouge zone that cuts core at 10° to c.a.		164.80 - 171.50 - Locally 1% disseminated pyrite in fault gouge	
171.50 - 175.60: QTZ - Quartzite Weakly brecciated quartzite with minor grey shale interbeds at 50° to c.a. 1% quartz-calcite veinlets			
175.60 - 178.10: _FAULT - Fault Strongly foliated fault breccia and gouge derived from quartzite and grey shale. Fabric is uniform at 60° to c.a.		175.60 - 178.10 - 5% disseminated pyrite	175.60-176.80 176299 0.01 0.02 1.00 176.80-178.10 176300 0.27 0.20 19.00
178.10 - 188.90: MNZN - Mineralized Zone Very strongly brecciated and rebrecciated, grey quartzite, with multiple episodes of quartz veining with sulphides.		178.10 - 188.90 - <1% coarse-grained sphalerite with traces of galena in quartz-pyrite veins. Very fine-grained pyrite fills fractures, commonly slickensided, and imparts dark colour.	178.10-179.90 319951 0.41 0.31 18.00 179.90-181.70 319952 0.25 0.26 13.00 181.70-183.50 319953 1.20 1.13 62.00 183.50-185.30 319954 0.32 0.24 12.00 185.30-187.10 319955 0.34 0.09 15.00 187.10-188.90 319956 0.08 0.08 5.00
188.90 - 189.00: _FAULT - Fault Fault gouge		188.90 - 189.00 - 5% disseminated pyrite	188.90-189.00 319957 0.10 0.08 7.00
189.00 - 191.40: BX_BS - Black Shale Breccia Black, strongly brecciated and silicified shale cut by 5% quartz ± pyrite ± sphalerite veinlets in multiple generations. Core is badly broken and abundantly slickensided.		189.00 - 191.40 - 5% pyrite and trace sphalerite in veins	189.00-191.40 319958 0.26 0.31 14.00
191.40 - 192.70: BX_BS - Black Shale Breccia As above but strongly sheared at 20° to c.a.		191.40 - 192.70 - 5% pyrite and trace sphalerite in veins	191.40-192.70 319959 0.11 0.19 6.00
192.70 - 194.30: BX_QTZ - Carbonatized Quartzite Brec Dark grey, strongly brecciated quartzite with 5% quartz ± pyrite veins. Moderate foliation at 30° to c.a.		192.70 - 194.30 - 5% pyrite in veins with quartz, as c.g. disseminations and as v.f.g. coatings on slickenside surfaces.	192.70-194.30 319960 0.20 0.25 14.00

AN0223

Lithology	Alteration	Mineralization	Assay					
From - To: Rock Code - Rock Name Description	From - To: Alt Code Description	From - To: Min Code Description	From - To:	Smple	Cu %	Pb %	Zn %	Ag G/t	Au G/t
194.30 - 195.70: MNZN - Mineralized Zone Intensely hydrothermally brecciated, silicified shale with multiple generations and directions of quartz veinlets from 5 mm to <0.5 mm thick.		194.30 - 195.70 - 5% pyrite with 2% galena and 1% sphalerite. Sulphides are coarse-grained and intergrown, associated with the quartz veining.	194.30-195.70	319961	1.64	0.69	71.00		
195.70 - 196.50: _FAULT - Fault Fault gouge and breccia derived from units above and below		195.70 - 196.50 - 3% disseminated pyrite	195.70-196.50	319962	0.23	0.27	10.00		
196.50 - 198.70: SHL_GRY - Grey Shale Strongly brecciated green-grey shale with local foliation at 60° to c.a.		196.50 - 198.70 - Clotty, irregular coarse-grained intergrowths of pyrite (5%), sphalerite (1%) and galena (1%)	196.50-198.70	319963	0.65	0.75	28.00		
198.70 - 213.00: BX_QTZ - Carbonatized Quartzite Brec Intensely brecciated, strongly silicified pale grey siltstone with dark silica-chlorite(?) matrix.		198.70 - 213.00 - <1% sphalerite, concentrated in irregular disseminations and veins with silica	198.70-201.00	319964	0.00	0.05	1.00		
			201.00-203.00	319965	0.01	0.01	1.00		
			203.00-205.00	319966	0.04	1.12	2.00		
			205.00-207.00	319967	0.00	0.00	0.50		
			207.00-209.00	319968	0.00	0.37	0.50		
			209.00-211.00	319969	0.00	0.00	0.50		
			211.00-213.00	319970	0.00	0.16	0.50		
213.00 - 217.80: SHL_GRY - Grey Shale Soft grey shale with bedding folded from 30° to c.a. to 60° to c.a.		213.00 - 215.00 - 1% disseminated pyrite							
217.80 - 218.40: _FAULT - Fault Fault gouge and breccia, with lower contact at 20° to c.a.									
218.40 - 224.80: SHL_GRN - Green Shale Mostly soft green-grey shale with fragments of grey shale and cherty siltstone, and beds of sedimentary breccia. Bedding is highly variable from 10° to c.a. to 40° to c.a.									
224.80 - 224.90: _FAULT - Fault Fault gouge									
224.90 - 227.00: SHL_GRY - Grey Shale - SIL, BX Pale grey, intensely silicified, strongly brecciated grey shale. 20% quartz-calcite veins.			224.90-227.00	319971	0.11	0.00	1.00		
227.00 - 228.30: SHL_GRY - Grey Shale Soft grey shale with folded bedding			227.00-228.30	319972	0.02	0.00	0.50		
228.30 - 228.40: MNZN - Mineralized Zone Sphalerite as breccia matrix in unit below.		228.30 - 228.40 - 70% sphalerite	228.30-228.40	319973	0.00	20.50	3.00		
228.40 - 228.70: SHL_GRY - Grey Shale - SIL, BX Pale grey, intensely silicified, strongly brecciated grey shale. 30% quartz-calcite veins.			228.40-228.70	319974	0.00	0.30	0.50		
228.70 - 237.30: _FAULT - Fault Major fault zone at low angle to core. Strongly brecciated shales and siltstones from above, and quartzites from below feature multiple zones of fault gouge from 0° to c.a. to 20° to c.a. 5% calcite-quartz veins.									

AN0223

Lithology

From - To: Rock Code - Rock Name
Description

237.30 - 243.70: QTZ - Quartzite
Grey, weakly brecciated massive quartzite with 5% quartz-calcite veins. This unit is much finer-grained than most quartzite, and also resembles silicified siltstone unit at 198.7-213, although without the brecciation.

243.70 - 249.00: _FAULT - Fault
Fault zone at low angle to core. Strongly brecciated quartzites from above, and shales from below with multiple zones of fault gouge from 0° to c.a. to 20° to c.a.

249.00 - 252.20: SHL_GRY - Grey Shale
Very dark grey, almost massive shale.

252.20 - 266.60: BX_LST - Limestone Breccia
Pale grey, featureless, fine-grained limestone engulfed by 15% calcite veinlets.

266.60 - 276.50: SHL_GRN - Green Shale
Soft, almost massive green shale with local bedding at 40° to c.a.

Alteration

From - To: Alt Code
Description

Mineralization

From - To: Min Code
Description

Assay

From - To:	Smple	Cu %	Pb %	Zn %	Ag G/t	Au G/t

ALS Chemex
EXCELLENCE IN ANALYTICAL CHEMISTRY
Aurora Laboratory Services Ltd.
212 Brooksbank Avenue
North Vancouver BC V7J 2C1 Canada
Phone: 604 984 0221 Fax: 604 984 0218

To: NORANDA MINING AND EXPLORATION INC.
874 TUNGSTEN ST.
THUNDER BAY ON P7B 6J3

Date : 29-Aug-2002
Account: BUF

Project : 2501

CERTIFICATE OF ANALYSIS VA02002909

Sample Description	Method Analyte Units LOR	WEI-21 Recvd Wt kg 0.02	ME-ICP41 Ag ppm 0.2	ME-ICP41 Al % 0.01	ME-ICP41 As ppm 2	ME-ICP41 B ppm 10	ME-ICP41 Ba ppm 10	ME-ICP41 Be ppm 0.5	ME-ICP41 Bi ppm 2	ME-ICP41 Ca % 0.01	ME-ICP41 Cd ppm 0.5	ME-ICP41 Co ppm 1	ME-ICP41 Cr ppm 1	ME-ICP41 Cu ppm 1	ME-ICP41 Fe % 0.01	ME-ICP41 Ga ppm 10
254754		3.76	<0.2	1.64	4	<10	110	0.9	<2	0.46	<0.5	9	36	317	3.80	<10
254755		4.22	<0.2	1.46	30	<10	140	1.0	<2	2.20	<0.5	26	30	90	4.38	<10
254756		4.14	<0.2	1.96	12	<10	160	0.8	<2	0.70	<0.5	14	35	100	4.69	<10
254757		5.42	<0.2	1.69	11	<10	240	1.1	3	0.35	<0.5	16	23	30	4.73	10
254758		4.50	0.9	0.31	42	<10	90	<0.5	<2	2.09	<0.5	7	60	57	2.84	<10
254759		4.54	1.2	0.28	44	<10	70	<0.5	3	1.38	<0.5	9	51	73	2.27	<10
254760		5.14	0.8	0.25	35	<10	60	<0.5	5	1.76	<0.5	9	80	58	2.30	<10
254761		5.10	0.4	0.34	18	<10	160	0.8	2	2.75	<0.5	10	30	105	2.44	<10
254762		3.92	0.4	0.27	22	<10	120	0.5	4	1.50	0.8	14	74	164	1.75	<10
254763		4.94	0.2	0.44	9	<10	140	0.5	2	1.47	0.8	9	45	57	2.59	<10
254764		6.18	<0.2	1.43	23	<10	150	1.0	<2	0.23	<0.5	27	28	71	3.64	<10
254765		4.94	<0.2	1.13	<2	<10	140	0.6	3	1.31	<0.5	7	68	19	2.82	<10
254766		5.06	<0.2	1.28	15	<10	140	0.6	7	2.86	<0.5	13	85	39	4.25	<10
254767		3.72	0.3	0.88	8	<10	140	0.6	<2	1.14	0.8	8	30	63	3.27	<10
254768		3.66	0.2	0.37	7	<10	240	0.6	4	2.88	1.7	7	25	48	2.58	<10
254769		3.32	0.2	0.56	9	<10	160	0.6	4	1.34	1.0	11	29	60	2.94	<10
254770		4.36	<0.2	0.66	12	<10	180	0.6	<2	1.49	<0.5	10	45	21	1.88	<10
254771		4.74	<0.2	1.06	3	<10	230	0.8	<2	5.22	<0.5	9	39	24	2.58	<10
254772		5.12	<0.2	1.05	4	<10	210	0.6	2	2.97	<0.5	9	59	20	2.44	<10
254773		2.08	<0.2	1.03	4	<10	130	0.7	7	1.43	<0.5	8	49	21	2.45	<10
254774		5.02	0.4	0.24	37	<10	80	<0.5	<2	0.98	<0.5	12	73	68	2.18	<10
254775		4.82	0.3	0.16	89	<10	60	<0.5	<2	2.39	<0.5	11	61	56	2.56	10
254776		4.88	0.4	0.19	28	<10	90	<0.5	6	1.76	<0.5	10	79	69	2.09	<10
254777		3.48	<0.2	1.45	4	<10	90	1.1	<2	0.73	<0.5	12	46	32	3.54	10

ALS Chemex
EXCELLENCE IN ANALYTICAL CHEMISTRY
Aurora Laboratory Services Ltd.
212 Brooksbank Avenue
North Vancouver BC V7J 2C1 Canada
Phone: 604 984 0221 Fax: 604 984 0218

To: NORANDA MINING AND EXPLORATION INC.
874 TUNGSTEN ST.
THUNDER BAY ON P7B 6J3

Date : 29-Aug-2002
Account: BUF

Project : 2501

CERTIFICATE OF ANALYSIS VA02002909

Sample Description	Method Analyte Units LOR	ME-ICP41 Hg ppm 1	ME-ICP41 K % 0.01	ME-ICP41 La ppm 10	ME-ICP41 Mg % 0.01	ME-ICP41 Mn ppm 5	ME-ICP41 Mo ppm 1	ME-ICP41 Na % 0.01	ME-ICP41 Ni ppm 1	ME-ICP41 P ppm 10	ME-ICP41 Pb ppm 2	ME-ICP41 S % 0.01	ME-ICP41 Sb ppm 2	ME-ICP41 Sc ppm 1	ME-ICP41 Sr ppm 1	ME-ICP41 Ti % 0.01
254754		<1	0.19	20	0.66	634	<1	0.01	28	270	7	0.07	<2	4	99	<0.01
254755		<1	0.20	10	1.27	1955	3	0.01	40	760	26	0.69	3	6	218	<0.01
254756		<1	0.20	10	0.83	1320	1	0.01	32	410	13	0.11	<2	4	134	<0.01
254757		<1	0.24	20	0.75	2200	1	0.01	33	460	12	0.07	2	5	125	<0.01
254758		<1	0.12	<10	0.59	2960	4	0.01	77	1390	29	2.05	<2	3	172	<0.01
254759		<1	0.11	<10	0.38	1835	4	0.01	88	1490	641	1.73	6	2	143	<0.01
254760		<1	0.10	<10	0.45	2070	4	0.01	63	1870	581	1.63	<2	3	169	<0.01
254761		<1	0.19	<10	0.95	2200	5	0.01	42	1900	27	0.70	3	5	307	<0.01
254762		<1	0.16	<10	0.48	1005	3	0.01	44	690	74	0.83	<2	3	169	<0.01
254763		<1	0.16	<10	0.73	659	2	0.01	38	590	27	0.56	8	4	210	<0.01
254764		<1	0.28	10	0.67	489	<1	0.01	48	360	23	0.83	3	3	65	<0.01
254765		<1	0.26	10	0.46	1180	1	0.01	25	240	5	0.19	3	3	102	0.01
254766		<1	0.24	10	1.36	2980	1	0.01	52	690	13	0.65	5	5	281	0.01
254767		<1	0.25	<10	0.73	420	3	0.01	41	690	21	1.12	<2	3	146	<0.01
254768		<1	0.18	<10	0.72	751	3	0.01	34	480	84	0.54	<2	4	292	<0.01
254769		<1	0.19	<10	0.62	789	3	0.01	45	510	27	0.91	2	4	150	<0.01
254770		<1	0.17	<10	0.38	187	1	0.01	23	370	15	0.53	<2	2	156	<0.01
254771		<1	0.19	<10	0.57	456	<1	0.02	25	280	19	0.31	<2	3	376	0.01
254772		<1	0.17	<10	0.51	445	<1	0.02	24	170	17	0.34	<2	2	204	0.01
254773		<1	0.17	10	0.50	530	<1	0.02	21	210	17	0.39	<2	2	156	<0.01
254774		<1	0.10	<10	0.37	2360	2	0.01	69	760	30	1.05	<2	2	105	<0.01
254775		<1	0.06	<10	0.73	5360	2	0.01	93	310	15	0.74	3	3	172	<0.01
254776		<1	0.10	<10	0.56	3310	3	0.01	49	860	20	0.75	4	3	153	<0.01
254777		<1	0.24	10	0.72	564	1	0.01	32	340	23	0.35	<2	4	70	0.01

ALS Chemex
EXCELLENCE IN ANALYTICAL CHEMISTRY
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To: NORANDA MINING AND EXPLORATION INC.
874 TUNGSTEN ST.
THUNDER BAY ON P7B 6J3

Date : 29-Aug-2002
Account: BUF

Project : 2501

CERTIFICATE OF ANALYSIS VA02002909

Sample Description	Method Analyte Units LOR	ME-ICP41 Tl ppm 10	ME-ICP41 U ppm 10	ME-ICP41 V ppm 1	ME-ICP41 W ppm 10	ME-ICP41 Zn ppm 2
254754		<10	<10	17	<10	63
254755		<10	<10	30	<10	53
254756		<10	<10	21	<10	68
254757		<10	<10	17	<10	61
254758		<10	<10	16	<10	2
254759		<10	<10	15	<10	3
254760		<10	<10	14	<10	8
254761		<10	<10	24	<10	2
254762		<10	<10	15	<10	112
254763		<10	<10	16	<10	151
254764		<10	<10	14	<10	59
254765		<10	<10	13	<10	21
254766		<10	<10	34	<10	22
254767		<10	<10	28	<10	161
254768		<10	<10	23	<10	248
254769		<10	<10	31	<10	195
254770		<10	<10	7	<10	53
254771		<10	<10	14	<10	74
254772		<10	<10	13	<10	46
254773		<10	<10	12	<10	52
254774		<10	<10	14	<10	13
254775		<10	<10	14	<10	2
254776		<10	<10	15	<10	25
254777		<10	<10	19	<10	114

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To: NORANDA MINING AND EXPLORATION INC.
874 TUNGSTEN ST.
THUNDER BAY ON P7B 6J3

Date : 6-Sep-2002
Account: BUF

Project : 2501

CERTIFICATE OF ANALYSIS VA02002910

Sample Description	Method Analyte Units LOR	ME-ICP41 Tl ppm 10	ME-ICP41 U ppm 10	ME-ICP41 V ppm 1	ME-ICP41 W ppm 10	ME-ICP41 Zn ppm 2	Ag-AA46 Ag ppm 1	Pb-AA46 Pb % 0.01	Zn-AA46 Zn % 0.01	Cd-AA46 Cd % 0.0001
254778		<10	<10	7	<10	9	1	<0.01	0.01	
254779		<10	<10	14	<10	31	2	0.01	0.01	
254780		<10	<10	4	<10	8	11	3.69	<0.01	
254781		<10	<10	2	<10	>10000	1	0.08	1.67	
254782		<10	<10	3	<10	104	1	0.01	0.01	
254783		<10	<10	2	<10	>10000	1	0.06	7.43	
254784		<10	<10	<1	10	220	2	<0.01	0.04	
254785		<10	<10	1	<10	>10000	2	<0.01	6.11	
254786		<10	<10	<1	<10	>10000	1	0.01	1.07	
254787		<10	<10	2	<10	>10000	<1	0.02	1.32	
254788		<10	<10	1	<10	81	<1	0.03	0.01	
254789		<10	<10	1	<10	>10000	1	0.19	19.55	0.0942
254790		<10	<10	1	<10	>10000	5	1.36	4.74	
254791		<10	<10	<1	<10	5910	<1	0.01	0.86	
254792		<10	<10	<1	<10	>10000	1	0.23	4.90	
254793		<10	<10	<1	<10	2510	<1	0.03	0.40	
254794		<10	<10	<1	<10	>10000	86	>30.0	4.12	
254795		<10	<10	<1	<10	1735	6	2.26	0.23	
254796		<10	<10	<1	<10	5410	2	0.08	0.73	
254797		<10	<10	<1	<10	>10000	2	0.05	4.90	
254922		20	<10	11	<10	>10000	11	1.35	27.9	
254923		<10	<10	14	<10	367	2	0.02	0.06	

Comments: Carryover between samples may affect some of the ME-ICP41 Zinc values.

NORANDA THBAY 1 807 623 0452 06/06/2002 21:48 FAX

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EXCELLENCE IN ANALYTICAL CHEMISTRY

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To: NORANDA MINING AND EXPLORATION INC.
874 TUNGSTEN ST.
THUNDER BAY ON P7B 6J3

RECEIVED SEP 2 4 2002

Date : 6-Sep-2002
Account: BUF

Project : 2501

CERTIFICATE OF ANALYSIS VA02002910

Sample Description	Method Analyte Units LOR	WEI-21 Recvd Wt kg 0.02	ME-ICP41 Ag ppm 0.2	ME-ICP41 Al % 0.01	ME-ICP41 As ppm 2	ME-ICP41 B ppm 10	ME-ICP41 Ba ppm 10	ME-ICP41 Be ppm 0.5	ME-ICP41 Bi ppm 2	ME-ICP41 Ca % 0.01	ME-ICP41 Cd ppm 0.5	ME-ICP41 Co ppm 1	ME-ICP41 Cr ppm 1	ME-ICP41 Cu ppm 1	ME-ICP41 Fe % 0.01	ME-ICP41 Ga ppm 10
254778		2.34	0.4	0.30	9	<10	140	0.8	7	1.56	<0.5	5	29	55	2.24	<10
254779		0.66	0.3	0.39	22	<10	90	0.7	4	0.97	<0.5	16	66	107	3.83	<10
254780		3.06	9.0	0.20	29	<10	120	<0.5	<2	7.27	<0.5	9	60	13	1.16	<10
254781		5.70	0.7	0.20	18	<10	120	<0.5	<2	13.70	61.7	12	33	49	0.54	10
254782		4.80	<0.2	0.33	15	<10	190	0.9	6	1.63	<0.5	5	38	9	0.22	<10
254783		2.78	0.7	0.15	24	<10	40	<0.5	<2	4.75	315	36	91	68	0.61	20
254784		2.06	0.2	0.01	4	<10	40	<0.5	<2	>15.0	0.9	<1	3	2	0.37	10
254785		0.72	0.5	0.10	16	<10	50	<0.5	<2	8.03	213	21	65	47	0.46	20
254786		1.42	0.3	0.03	7	<10	80	<0.5	<2	>15.0	45.5	5	12	27	0.40	10
254787		1.88	<0.2	0.24	25	<10	90	0.6	5	1.51	50.2	15	71	21	0.30	<10
254788		0.90	<0.2	0.02	2	<10	50	<0.5	<2	>15.0	<0.5	<1	3	4	0.30	50
254789		4.50	0.9	0.07	36	<10	30	<0.5	<2	8.31	>500	68	52	606	1.06	60
254790		1.78	4.1	0.15	22	<10	50	<0.5	<2	4.98	155.0	23	66	93	0.39	10
254791		2.28	0.8	0.03	11	<10	50	<0.5	<2	>15.0	18.9	2	12	62	0.46	10
254792		3.34	1.2	0.03	9	<10	40	<0.5	<2	>15.0	87.2	6	9	92	0.45	10
254793		2.74	0.2	0.01	3	<10	30	<0.5	<2	>15.0	6.6	<1	3	14	0.35	10
254794		1.44	70.8	0.01	10	<10	10	<0.5	<2	6.93	196.0	13	11	46	0.31	10
254795		3.80	4.8	0.02	8	<10	50	<0.5	<2	>15.0	6.3	1	6	5	0.42	10
254796		3.54	0.7	0.03	18	<10	40	<0.5	<2	>15.0	15.3	3	7	15	0.45	10
254797		2.62	0.7	0.06	15	<10	20	<0.5	5	2.03	179.0	19	115	46	0.51	10
254922		0.02	9.0	0.31	63	<10	10	0.8	<2	0.32	420	6	6	127	2.30	<10
254923		2.58	<0.2	1.06	5	<10	70	0.5	2	1.21	1.1	8	119	15	2.39	<10

Comments: Carryover between samples may afftect some of the ME-ICP41 Zinc values.

ALS Chemex

EXCELLENCE IN ANALYTICAL CHEMISTRY

Aurora Laboratory Services Ltd.
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To: **NORANDA MINING AND EXPLORATION INC.**
874 TUNGSTEN ST.
THUNDER BAY ON P7B 6J3

Date : 6-Sep-2002
Account: BUF

Project : 2501

CERTIFICATE OF ANALYSIS VA02002910

Sample Description	Method Analyte Units LOR	ME-ICP41 Hg ppm 1	ME-ICP41 K % 0.01	ME-ICP41 La ppm 10	ME-ICP41 Mg % 0.01	ME-ICP41 Mn ppm 5	ME-ICP41 Mo ppm 1	ME-ICP41 Na % 0.01	ME-ICP41 Ni ppm 1	ME-ICP41 P ppm 10	ME-ICP41 Pb ppm 2	ME-ICP41 S % 0.01	ME-ICP41 Sb ppm 2	ME-ICP41 Sc ppm 1	ME-ICP41 Sr ppm 1	ME-ICP41 Ti % 0.01
254778		<1	0.24	10	0.62	2180	1	0.01	13	440	112	0.26	4	4	169	<0.01
254779		<1	0.16	<10	0.54	3950	3	0.01	33	580	49	0.34	11	5	134	<0.01
254780		1	0.15	10	0.13	2050	<1	0.01	22	220	>10000	0.71	21	5	165	<0.01
254781		4	0.18	<10	0.06	3420	<1	0.01	12	70	743	0.96	<2	4	524	<0.01
254782		<1	0.29	30	0.04	351	1	0.01	9	220	65	0.06	2	2	107	<0.01
254783		29	0.11	<10	0.03	1015	<1	0.01	11	350	534	4.12	<2	2	187	<0.01
254784		<1	0.01	30	0.02	5110	<1	0.01	<1	<10	8	0.01	<2	2	465	<0.01
254785		19	0.09	10	0.02	1885	<1	0.01	6	60	22	2.45	<2	1	163	<0.01
254786		3	0.02	30	0.02	4670	<1	0.01	2	<10	12	0.60	<2	2	384	<0.01
254787		5	0.21	10	0.03	308	<1	0.01	15	190	139	0.82	<2	2	81	<0.01
254788		<1	0.01	90	0.02	3920	<1	<0.01	1	10	143	0.01	<2	3	318	<0.01
254789		59	0.06	10	0.02	1625	<1	0.01	11	50	1635	4.82	<2	5	160	<0.01
254790		14	0.10	<10	0.02	1005	<1	0.01	10	830	>10000	2.44	5	2	156	<0.01
254791		1	0.03	10	0.03	5640	<1	0.01	2	<10	24	0.38	<2	8	389	<0.01
254792		9	0.02	10	0.02	5150	<1	0.01	3	<10	1705	0.94	3	7	356	<0.01
254793		<1	<0.01	40	0.02	4880	<1	0.01	1	<10	154	0.13	<2	11	336	<0.01
254794		15	0.01	10	0.01	1690	<1	0.01	5	10	>10000	7.02	280	4	90	<0.01
254795		1	0.01	20	0.03	5660	<1	0.01	2	<10	>10000	0.38	14	6	415	<0.01
254796		<1	0.03	20	0.03	5530	<1	0.01	5	<10	498	0.34	<2	5	398	<0.01
254797		14	0.04	<10	0.01	383	<1	0.01	8	60	448	2.56	<2	1	46	<0.01
254922		10	0.13	<10	0.05	755	10	0.02	15	1280	>10000	>10.0	<2	1	6	<0.01
254923		<1	0.19	10	0.51	696	1	0.02	20	150	101	0.11	3	2	104	0.01

Comments: Carryover between samples may afftect some of the ME-ICP41 Zinc values.

ALS Chemex
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To: NORANDA MINING AND EXPLORATION INC.
874 TUNGSTEN ST.
THUNDER BAY ON P7B 6J3

Date : 6-Sep-2002
Account: BUF

Project : 2501

CERTIFICATE OF ANALYSIS VA02002910

Sample Description	Method Analyte Units LOR	ME-ICP41 Tl ppm 10	ME-ICP41 U ppm 10	ME-ICP41 V ppm 1	ME-ICP41 W ppm 10	ME-ICP41 Zn ppm 2	Ag-AA46 Ag ppm 1	Pb-AA46 Pb % 0.01	Zn-AA46 Zn % 0.01	Cd-AA46 Cd % 0.0001
254778		<10	<10	7	<10	9	1	<0.01	0.01	
254779		<10	<10	14	<10	31	2	0.01	0.01	
254780		<10	<10	4	<10	8	11	3.69	<0.01	
254781		<10	<10	2	<10	>10000	1	0.08	1.67	
254782		<10	<10	3	<10	104	1	0.01	0.01	
254783		<10	<10	2	<10	>10000	1	0.06	7.43	
254784		<10	<10	<1	10	220	2	<0.01	0.04	
254785		<10	<10	1	<10	>10000	2	<0.01	6.11	
254786		<10	<10	<1	<10	>10000	1	0.01	1.87	
254787		<10	<10	2	<10	>10000	<1	0.02	1.32	
254788		<10	<10	1	<10	81	<1	0.03	0.01	
254789		<10	<10	1	<10	>10000	1	0.19	19.55	0.0942
254790		<10	<10	1	<10	>10000	5	1.36	4.74	
254791		<10	<10	<1	<10	5910	<1	0.01	0.86	
254792		<10	<10	<1	<10	>10000	1	0.23	4.90	
254793		<10	<10	<1	<10	2510	<1	0.03	0.40	
254794		<10	<10	<1	<10	>10000	86	>30.0	4.12	
254795		<10	<10	<1	<10	1735	6	2.26	0.23	
254796		<10	<10	<1	<10	5410	2	0.08	0.73	
254797		<10	<10	<1	<10	>10000	2	0.05	4.90	
254922		20	<10	11	<10	>10000	11	1.35	27.9	
254923		<10	<10	14	<10	367	2	0.02	0.06	

Comments: Carryover between samples may afftect some of the ME-ICP41 Zinc values.

ALS Chemex
EXCELLENCE IN ANALYTICAL CHEMISTRY
Aurora Laboratory Services Ltd.
212 Brooksbank Avenue
North Vancouver BC V7J 2C1 Canada
Phone: 604 984 0221 Fax: 604 984 0218

To: NORANDA MINING AND EXPLORATION INC.
874 TUNGSTEN ST.
THUNDER BAY ON P7B 6J3

RECEIVED SEP 2 4 2002

Date : 11-Sep-2002
Account: BUF

Project : 2501

CERTIFICATE OF ANALYSIS VA02003121

Sample Description	Method Analyte Units LOR	WEI-21 Recvd Wt kg 0.02	Ag-AA46 Ag ppm 1	Zn-AA46 Zn % 0.01	Pb-AA46 Pb % 0.01	ME-ICP41 Ag ppm 0.2	ME-ICP41 Al % 0.01	ME-ICP41 As ppm 2	ME-ICP41 B ppm 10	ME-ICP41 Ba ppm 10	ME-ICP41 Be ppm 0.5	ME-ICP41 Bi ppm 2	ME-ICP41 Ca % 0.01	ME-ICP41 Cd ppm 0.5	ME-ICP41 Co ppm 1	ME-ICP41 Cr ppm 1
254911		2.20	<1	0.02	<0.01	0.3	0.09	31	<10	50	<0.5	<2	14.55	0.6	11	43
254912		2.82	1	0.10	0.05	0.2	0.18	20	<10	70	<0.5	<2	5.11	3.5	7	60
254913		4.80	48	3.54	26.4	42.5	0.09	10	<10	30	<0.5	<2	4.23	196.0	13	51
254914		4.38	3	0.10	1.07	1.9	0.12	24	<10	50	<0.5	<2	11.75	2.0	6	45
254915		4.62	4	0.20	0.89	2.1	0.08	24	<10	60	<0.5	<2	14.65	6.6	7	35
254916		2.30	1	4.43	0.13	0.7	0.12	15	<10	60	<0.5	<2	14.75	78.5	11	19
254917		5.28	1	0.11	0.01	<0.2	0.22	19	<10	100	<0.5	<2	3.76	2.8	9	51
254918		3.94	1	0.12	<0.01	0.2	0.08	3	<10	50	<0.5	<2	11.95	2.7	2	41
254919		5.00	1	1.96	0.02	0.6	0.08	16	<10	60	<0.5	<2	>15.0	43.9	7	37
254920		2.16	2	5.21	0.01	1.1	0.19	22	<10	60	<0.5	<2	9.86	122.0	17	32
254921		3.02	<1	0.07	0.02	0.3	0.33	26	<10	180	0.8	<2	2.43	1.9	15	30
254924		2.80	1	0.03	0.01	0.3	0.36	23	<10	120	0.7	<2	3.66	0.7	16	34
254925		1.48	1	0.01	<0.01	<0.2	0.19	15	<10	100	<0.5	<2	3.11	<0.5	8	67
254926		2.80	1	1.11	<0.01	0.2	0.23	23	<10	100	<0.5	<2	9.11	29.3	13	38
254927		2.50	1	6.92	<0.01	0.9	0.07	46	<10	30	<0.5	<2	5.71	165.0	28	68
254928		3.00	1	7.02	<0.01	0.2	0.29	35	<10	40	0.5	<2	1.15	254	35	49
254929		2.90	1	5.73	<0.01	0.2	0.21	41	<10	40	0.5	<2	0.17	170.5	33	54
254930		1.18	<1	0.59	<0.01	<0.2	0.37	17	10	170	0.9	2	0.14	16.4	10	40
254931		2.02	<1	0.18	0.01	<0.2	0.32	68	<10	150	0.8	<2	0.26	5.6	25	46
254932		1.24	2	0.26	1.19	1.8	0.17	36	<10	110	<0.5	<2	12.20	7.2	11	38
254933		3.22	1	<0.01	0.01	<0.2	0.23	16	<10	80	<0.5	<2	1.96	<0.5	10	87
254934		4.16	1	<0.01	0.19	0.5	0.34	43	10	140	0.7	<2	1.81	<0.5	15	55
254935		3.50	<1	<0.01	<0.01	<0.2	0.24	7	<10	80	<0.5	<2	1.96	<0.5	3	78
254936		1.74	<1	0.09	0.13	0.3	0.17	19	<10	70	<0.5	<2	2.33	2.8	9	88
254937		4.10	1	1.75	0.42	1.6	0.11	24	<10	80	<0.5	<2	0.37	63.0	16	114
254938		4.14	<1	0.06	<0.01	<0.2	0.37	10	<10	280	0.8	<2	0.94	1.6	4	35
254939		4.26	<1	0.02	0.03	<0.2	0.35	18	<10	140	1.0	<2	1.22	0.7	15	21
254940		4.24	<1	0.05	0.01	<0.2	0.33	13	<10	150	0.7	<2	0.11	1.5	7	44
254941		1.60	<1	0.01	0.05	<0.2	0.32	48	<10	180	0.7	<2	0.17	<0.5	22	59
254942		1.38	3	<0.01	1.46	2.7	0.28	6	<10	110	0.6	<2	0.06	<0.5	5	56
254943		0.04	64	3.06	0.98	11.8	0.46	15	<10	20	0.7	<2	0.41	62.6	9	12
254944		0.04	11	28.2	1.37	8.9	0.34	42	<10	10	0.8	<2	0.29	412	8	6
254945		2.56	<1	0.04	0.01	<0.2	1.40	5	<10	90	0.9	<2	0.92	<0.5	11	52
254798		5.76	1	0.42	0.01	0.2	0.17	12	<10	50	<0.5	<2	4.61	16.0	8	62
254799		3.56	<1	2.44	0.02	0.2	0.18	8	<10	80	<0.5	<2	8.26	84.1	13	53
254800		1.64	<1	0.59	<0.01	<0.2	0.06	8	<10	60	<0.5	<2	>15.0	14.8	6	25

ALS Chemex
EXCELLENCE IN ANALYTICAL CHEMISTRY
Aurora Laboratory Services Ltd.
212 Brooksbank Avenue
North Vancouver BC V7J 2C1 Canada
Phone: 604 984 0221 Fax: 604 984 0218

To: NORANDA MINING AND EXPLORATION INC.
874 TUNGSTEN ST.
THUNDER BAY ON P7B 6J3

Date : 11-Sep-2002
Account: BUF

Project : 2501

CERTIFICATE OF ANALYSIS VA02003121

Sample Description	Method Analyte Units LOR	ME-ICP41 Cu ppm 1	ME-ICP41 Fe % 0.01	ME-ICP41 Ga ppm 10	ME-ICP41 Hg ppm 1	ME-ICP41 K % 0.01	ME-ICP41 La ppm 10	ME-ICP41 Mg % 0.01	ME-ICP41 Mn ppm 5	ME-ICP41 Mo ppm 1	ME-ICP41 Na % 0.01	ME-ICP41 Ni ppm 1	ME-ICP41 P ppm 10	ME-ICP41 Pb ppm 2	ME-ICP41 S % 0.01	ME-ICP41 Sb ppm 2
254911		12	0.56	20	<1	0.07	10	0.04	1360	<1	0.01	19	120	7	0.38	4
254912		31	0.28	10	<1	0.13	20	0.03	841	<1	0.01	11	140	387	0.14	3
254913		40	0.37	20	9	0.07	<10	0.02	744	<1	0.01	7	50	>10000	4.95	123
254914		12	0.33	30	<1	0.09	20	0.03	2220	<1	0.01	11	50	8510	0.21	3
254915		9	0.36	30	<1	0.06	20	0.04	2520	<1	0.01	12	80	6880	0.26	4
254916		31	0.53	40	6	0.09	20	0.04	2760	<1	0.01	9	50	888	1.87	<2
254917		19	0.37	10	<1	0.17	20	0.04	733	<1	0.01	11	150	114	0.22	<2
254918		52	0.31	30	<1	0.05	10	0.04	2190	<1	0.01	2	30	18	0.07	<2
254919		38	0.42	40	5	0.06	20	0.03	2800	<1	0.01	8	30	161	0.94	<2
254920		90	0.68	30	14	0.16	10	0.03	1835	<1	0.01	13	90	89	2.26	<2
254921		45	0.60	10	<1	0.26	30	0.04	426	<1	0.01	20	350	128	0.54	3
254924		27	0.59	10	<1	0.27	20	0.05	680	<1	0.01	19	220	38	0.43	3
254925		10	0.35	10	<1	0.13	10	0.03	594	<1	0.01	11	100	19	0.17	<2
254926		49	0.57	20	2	0.19	20	0.05	1640	<1	0.01	13	190	26	0.82	3
254927		90	0.65	20	19	0.06	10	0.03	1035	<1	0.01	24	40	9	3.01	<2
254928		69	0.64	20	17	0.23	10	0.04	227	<1	0.01	21	150	6	3.12	<2
254929		68	0.64	10	17	0.18	20	0.03	54	<1	0.01	30	190	4	2.56	<2
254930		13	0.42	<10	1	0.29	50	0.04	68	<1	0.01	12	300	4	0.48	<2
254931		28	0.48	<10	<1	0.28	50	0.04	59	<1	0.01	42	290	47	0.39	<2
254932		31	0.57	30	<1	0.13	20	0.09	2210	<1	0.01	20	210	9790	0.42	3
254933		10	0.71	10	<1	0.14	10	0.04	409	<1	0.01	12	180	25	0.52	2
254934		20	0.36	10	<1	0.26	30	0.05	384	1	0.01	28	220	1690	0.15	<2
254935		9	0.45	10	<1	0.15	20	0.07	558	<1	0.01	6	140	11	0.05	<2
254936		13	0.44	10	<1	0.12	10	0.05	671	<1	0.01	13	150	1175	0.21	2
254937		46	0.51	10	5	0.08	10	0.05	98	<1	0.01	18	60	4700	1.08	3
254938		6	0.20	<10	<1	0.29	50	0.04	197	<1	0.01	7	280	19	0.06	<2
254939		25	0.45	10	<1	0.30	50	0.06	292	<1	0.01	17	280	237	0.18	<2
254940		133	0.35	<10	<1	0.25	40	0.04	43	<1	0.01	12	210	80	0.16	<2
254941		27	0.74	<10	<1	0.22	30	0.06	58	<1	0.01	44	220	433	0.47	6
254942		157	0.19	<10	<1	0.22	20	0.03	12	<1	0.01	10	110	>10000	0.25	6
254943		119	12.75	250	<1	0.18	10	0.70	>10000	2	0.02	31	820	8130	1.74	3
254944		122	2.56	10	9	0.14	<10	0.06	781	10	0.02	17	1180	>10000	>10.0	12
254945		21	3.33	10	<1	0.24	30	0.68	554	<1	0.01	23	160	22	0.22	<2
254798		18	0.47	10	2	0.12	10	0.03	805	<1	0.01	10	90	46	0.52	<2
254799		21	0.50	20	8	0.11	10	0.04	1335	<1	0.01	9	60	134	1.40	2
254800		11	0.47	30	<1	0.05	10	0.04	2800	<1	<0.01	6	90	6	0.46	2

ALS Chemex
EXCELLENCE IN ANALYTICAL CHEMISTRY
Aurora Laboratory Services Ltd.
212 Brooksbank Avenue
North Vancouver BC V7J 2C1 Canada
Phone: 604 984 0221 Fax: 604 984 0218

To: NORANDA MINING AND EXPLORATION INC.
874 TUNGSTEN ST.
THUNDER BAY ON P7B 6J3

Date : 11-Sep-2002
Account: BUF

Project : 2501

CERTIFICATE OF ANALYSIS VA02003121

Sample Description	Method	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41
	Analyte	Sc	Sr	Tl	Tl	U	V	W	Zn
	Units	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm
	LOR	1	1	0.01	10	10	1	10	2
254911		2	528	<0.01	<10	<10	1	<10	188
254912		2	118	<0.01	<10	<10	1	<10	889
254913		1	108	<0.01	<10	<10	1	10	>10000
254914		2	227	<0.01	<10	<10	1	<10	760
254915		5	389	<0.01	<10	<10	1	<10	1570
254916		3	536	<0.01	<10	<10	1	<10	>10000
254917		2	189	<0.01	<10	<10	1	<10	932
254918		3	357	<0.01	<10	<10	1	<10	1015
254919		3	345	<0.01	<10	<10	1	<10	>10000
254920		4	148	<0.01	<10	<10	1	<10	>10000
254921		2	106	<0.01	<10	20	2	<10	623
254924		2	139	<0.01	<10	<10	2	<10	235
254925		1	101	<0.01	<10	<10	1	<10	49
254926		2	365	<0.01	<10	<10	2	<10	9240
254927		1	214	<0.01	<10	<10	1	<10	>10000
254928		1	67	<0.01	<10	<10	3	<10	>10000
254929		1	33	<0.01	<10	30	2	<10	>10000
254930		2	49	<0.01	<10	10	3	<10	5880
254931		2	54	<0.01	<10	60	3	<10	1725
254932		4	959	<0.01	<10	<10	2	<10	2060
254933		1	135	<0.01	<10	<10	2	<10	36
254934		2	126	<0.01	<10	<10	3	<10	43
254935		1	143	<0.01	<10	<10	2	<10	21
254936		1	110	<0.01	<10	<10	1	<10	861
254937		<1	41	<0.01	<10	<10	1	<10	>10000
254938		2	72	<0.01	<10	40	3	<10	565
254939		2	83	<0.01	<10	30	3	<10	208
254940		1	44	<0.01	<10	50	3	<10	478
254941		2	46	<0.01	<10	50	3	<10	91
254942		1	30	<0.01	<10	40	3	<10	17
254943		2	<1	<0.01	<10	<10	20	<10	>10000
254944		1	<1	<0.01	10	<10	13	<10	>10000
254945		3	64	0.01	<10	<10	16	10	80
254798		1	114	<0.01	<10	<10	1	<10	3710
254799		2	310	<0.01	<10	<10	1	<10	>10000
254800		3	778	<0.01	<10	<10	<1	<10	4820

ALS Chemex

December 17, 2002

Noranda Mining and Exploration Inc.
874 Tungsten Street
Thunder Bay, ON
P7B 6J3

ATTENTION: Allan Huard

Dear Mr. Huard,

RE: Certificate of Analysis VA02003121
Corrected copy for Ag – Sample 254943

Please find enclosed Certificate of Analysis VA02003121, which contains revisions to the silver results for sample 254943. As per your request, this sample was re-assayed due to discrepancies between the expected and obtained results for silver. Re-assay of this sample generated a result of 12 ppm, which corresponds to the expected value of 12.5 ppm. Please allow me to apologize on behalf of ALS Chemex for any inconvenience this change in data may have caused.

Samples surrounding this sample were also re-assayed, and it has been determined that no sample switches occurred. The other re-assayed samples showed a high correlation between the original and re-run data. It is probable that the change in data from 64 ppm to 12 ppm, for sample 254943, can be attributed to carryover for silver within the flask in which this sample was analysed.
Please find attached a table outlining the original and re-assay results.

Sample	Ag-AA46 Ag ppm Original	Ag-AA46 Ag ppm Check
254942	3	3
254943	64	12
254944	11	10

If you have any further questions or concerns, please feel free to contact me.

Yours sincerely

Michele Ramshaw
Quality Assurance Chemist

Enclosures: Certificate of Analysis VA02003121
Corrected copy for Ag –Sample 254943

AURORA LABORATORY SERVICES LTD.
212 Brooksbank Avenue North Vancouver BC Canada V7J 2C1
Phone: 604 984 0221 Fax: 604 984 0218 Website: www.alschemex.com

ALS Chemex
EXCELLENCE IN ANALYTICAL CHEMISTRY
ALS Canada Ltd.
212 Brooksbank Avenue
North Vancouver BC V7J 2C1 Canada
Phone: 604 984 0221 Fax: 604 984 0218

To: **NORANDA MINING AND EXPLORATION INC.**
874 TUNGSTEN ST.
THUNDER BAY ON P7B 6J3

Date : 16-Dec-2002
Account: BUF

CERTIFICATE VA02003121

Project : 2501

P.O. No:

This report is for 36 DRILL CORE samples submitted to our lab in North Vancouver, BC, Canada on 30-Aug-2002.

The following have access to data associated with this certificate:

MICHAEL SAVELL
ALLAN HUARD

contains re-analysis of Ag (assay) for 254943

SAMPLE PREPARATION

ALS CODE	DESCRIPTION
WEI-21	Received Sample Weight
LOG-22	Sample login - Rcd w/o BarCode
CRU-31	Fine crushing - 70% <2mm
SPL-21	Split sample - riffle splitter
PUL-31	Pulverize split to 85% <75 um

ANALYTICAL PROCEDURES

ALS CODE	DESCRIPTION	INSTRUMENT
Ag-AA46	Ore grade Ag - aqua regia/AA	AAS
Zn-AA46	Ore grade Zn - aqua regia/AA	AAS
Pb-AA46	Ore grade Pb - aqua regia/AA	AAS
ME-ICP41	34 element aqua regia ICP-AES	ICP-AES

To: **NORANDA MINING AND EXPLORATION INC.**
ATTN: ALLAN HUARD
874 TUNGSTEN ST.
THUNDER BAY ON P7B 6J3

This is the Final Report and supersedes any preliminary report with this certificate number. Results apply to samples as submitted. All pages of this report have been checked and approved for release.

Signature:

ALS Chemex
EXCELLENCE IN ANALYTICAL CHEMISTRY
ALS Canada Ltd.
212 Brooksbank Avenue
North Vancouver BC V7J 2C1 Canada
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To: NORANDA MINING AND EXPLORATION INC.
874 TUNGSTEN ST.
THUNDER BAY ON P7B 6J3

Date : 16-Dec-2002
Account: BUF

Project : 2501

CERTIFICATE OF ANALYSIS VA02003121

Sample Description	Method Analyte Units LOR	WEI-21 Recvd Wt kg 0.02	Ag-AA46 Ag ppm 1	Zn-AA46 Zn % 0.01	Pb-AA46 Pb % 0.01	ME-ICP41 Ag ppm 0.2	ME-ICP41 Al % 0.01	ME-ICP41 As ppm 2	ME-ICP41 B ppm 10	ME-ICP41 Ba ppm 10	ME-ICP41 Be ppm 0.5	ME-ICP41 Bi ppm 2	ME-ICP41 Ca % 0.01	ME-ICP41 Cd ppm 0.5	ME-ICP41 Co ppm 1	ME-ICP41 Cr ppm 1
254911		2.20	<1	0.02	<0.01	0.3	0.09	31	<10	50	<0.5	<2	14.55	0.6	11	43
254912		2.82	1	0.10	0.05	0.2	0.18	20	<10	70	<0.5	<2	5.11	3.5	7	60
254913		4.80	48	3.54	26.4	42.5	0.09	10	<10	30	<0.5	<2	4.23	196.0	13	51
254914		4.38	3	0.10	1.07	1.9	0.12	24	<10	50	<0.5	<2	11.75	2.0	6	45
254915		4.62	4	0.20	0.89	2.1	0.08	24	<10	60	<0.5	<2	14.65	6.6	7	35
254916		2.30	1	4.43	0.13	0.7	0.12	15	<10	60	<0.5	<2	14.75	78.5	11	19
254917		5.28	1	0.11	0.01	<0.2	0.22	19	<10	100	<0.5	<2	3.76	2.8	9	51
254918		3.94	1	0.12	<0.01	0.2	0.08	3	<10	50	<0.5	<2	11.95	2.7	2	41
254919		5.00	1	1.96	0.02	0.6	0.08	16	<10	60	<0.5	<2	>15.0	43.9	7	37
254920		2.16	2	5.21	0.01	1.1	0.19	22	<10	60	<0.5	<2	9.86	122.0	17	32
254921		3.02	<1	0.07	0.02	0.3	0.33	26	<10	180	0.8	<2	2.43	1.9	15	30
254924		2.80	1	0.03	0.01	0.3	0.36	23	<10	120	0.7	<2	3.66	0.7	16	34
254925		1.48	1	0.01	<0.01	<0.2	0.19	15	<10	100	<0.5	<2	3.11	<0.5	8	67
254926		2.80	1	1.11	<0.01	0.2	0.23	23	<10	100	<0.5	<2	9.11	29.3	13	38
254927		2.50	1	6.92	<0.01	0.9	0.07	46	<10	30	<0.5	<2	5.71	165.0	28	68
254928		3.00	1	7.02	<0.01	0.2	0.29	35	<10	40	0.5	<2	1.15	254	35	49
254929		2.90	1	5.73	<0.01	0.2	0.21	41	<10	40	0.5	<2	0.17	170.5	33	54
254930		1.18	<1	0.59	<0.01	<0.2	0.37	17	10	170	0.9	2	0.14	16.4	10	40
254931		2.02	<1	0.18	0.01	<0.2	0.32	68	<10	150	0.8	<2	0.26	5.6	25	46
254932		1.24	2	0.26	1.19	1.8	0.17	36	<10	110	<0.5	<2	12.20	7.2	11	38
254933		3.22	1	<0.01	0.01	<0.2	0.23	16	<10	80	<0.5	<2	1.96	<0.5	10	87
254934		4.16	1	<0.01	0.19	0.5	0.34	43	10	140	0.7	<2	1.81	<0.5	15	55
254935		3.50	<1	<0.01	<0.01	<0.2	0.24	7	<10	80	<0.5	<2	1.96	<0.5	3	78
254936		1.74	<1	0.09	0.13	0.3	0.17	19	<10	70	<0.5	<2	2.33	2.8	9	88
254937		4.10	1	1.75	0.42	1.6	0.11	24	<10	80	<0.5	<2	0.37	63.0	16	114
254938		4.14	<1	0.06	<0.01	<0.2	0.37	10	<10	280	0.8	<2	0.94	1.6	4	35
254939		4.26	<1	0.02	0.03	<0.2	0.35	18	<10	140	1.0	<2	1.22	0.7	15	21
254940		4.24	<1	0.05	0.01	<0.2	0.33	13	<10	150	0.7	<2	0.11	1.5	7	44
254941		1.60	<1	0.01	0.05	<0.2	0.32	48	<10	180	0.7	<2	0.17	<0.5	22	59
254942		1.38	3	<0.01	1.46	2.7	0.28	6	<10	110	0.6	<2	0.06	<0.5	5	56
254943		0.04	12	3.06	0.98	11.8	0.46	15	<10	20	0.7	<2	0.41	62.6	9	12
254944		0.04	11	28.2	1.37	8.9	0.34	42	<10	10	0.8	<2	0.29	412	8	6
254945		2.56	<1	0.04	0.01	<0.2	1.40	5	<10	90	0.9	<2	0.92	<0.5	11	52
254798		5.76	1	0.42	0.01	0.2	0.17	12	<10	50	<0.5	<2	4.61	16.0	8	62
254799		3.56	<1	2.44	0.02	0.2	0.18	8	<10	80	<0.5	<2	8.26	84.1	13	53
254800		1.64	<1	0.59	<0.01	<0.2	0.06	8	<10	60	<0.5	<2	>15.0	14.8	6	25

Comments: **CORRECTED COPY for Ag on sample 254943**

ALS Chemex
EXCELLENCE IN ANALYTICAL CHEMISTRY
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212 Brooksbank Avenue
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Phone: 604 984 0221 Fax: 604 984 0218

To: NORANDA MINING AND EXPLORATION INC.
874 TUNGSTEN ST.
THUNDER BAY ON P7B 6J3

Date : 16-Dec-2002
Account: BUF

Project : 2501

CERTIFICATE OF ANALYSIS VA02003121

Sample Description	Method Analyte Units LOR	ME-ICP41 Cu ppm 1	ME-ICP41 Fe % 0.01	ME-ICP41 Ga ppm 10	ME-ICP41 Hg ppm 1	ME-ICP41 K % 0.01	ME-ICP41 La ppm 10	ME-ICP41 Mg % 0.01	ME-ICP41 Mn ppm 5	ME-ICP41 Mo ppm 1	ME-ICP41 Na % 0.01	ME-ICP41 Ni ppm 1	ME-ICP41 P ppm 10	ME-ICP41 Pb ppm 2	ME-ICP41 S % 0.01	ME-ICP41 Sb ppm 2
254911		12	0.56	20	<1	0.07	10	0.04	1360	<1	0.01	19	120	7	0.38	4
254912		31	0.28	10	<1	0.13	20	0.03	841	<1	0.01	11	140	387	0.14	3
254913		40	0.37	20	9	0.07	<10	0.02	744	<1	0.01	7	50	>10000	4.95	123
254914		12	0.33	30	<1	0.09	20	0.03	2220	<1	0.01	11	50	8510	0.21	3
254915		9	0.36	30	<1	0.06	20	0.04	2520	<1	0.01	12	80	6880	0.26	4
254916		31	0.53	40	6	0.09	20	0.04	2760	<1	0.01	9	50	888	1.87	<2
254917		19	0.37	10	<1	0.17	20	0.04	733	<1	0.01	11	150	114	0.22	<2
254918		52	0.31	30	<1	0.05	10	0.04	2190	<1	0.01	2	30	18	0.07	<2
254919		38	0.42	40	5	0.06	20	0.03	2800	<1	0.01	8	30	161	0.94	<2
254920		90	0.68	30	14	0.16	10	0.03	1835	<1	0.01	13	90	89	2.26	<2
254921		45	0.60	10	<1	0.26	30	0.04	426	<1	0.01	20	350	128	0.54	3
254924		27	0.59	10	<1	0.27	20	0.05	680	<1	0.01	19	220	38	0.43	3
254925		10	0.35	10	<1	0.13	10	0.03	594	<1	0.01	11	100	19	0.17	<2
254926		49	0.57	20	2	0.19	20	0.05	1640	<1	0.01	13	190	26	0.82	3
254927		90	0.65	20	19	0.06	10	0.03	1035	<1	0.01	24	40	9	3.01	<2
254928		69	0.64	20	17	0.23	10	0.04	227	<1	0.01	21	150	6	3.12	<2
254929		68	0.64	10	17	0.18	20	0.03	54	<1	0.01	30	190	4	2.56	<2
254930		13	0.42	<10	1	0.29	50	0.04	68	<1	0.01	12	300	4	0.48	<2
254931		28	0.48	<10	<1	0.28	50	0.04	59	<1	0.01	42	290	47	0.39	<2
254932		31	0.57	30	<1	0.13	20	0.09	2210	<1	0.01	20	210	9790	0.42	3
254933		10	0.71	10	<1	0.14	10	0.04	409	<1	0.01	12	180	25	0.52	2
254934		20	0.36	10	<1	0.26	30	0.05	384	1	0.01	28	220	1690	0.15	<2
254935		9	0.45	10	<1	0.15	20	0.07	558	<1	0.01	6	140	11	0.05	<2
254936		13	0.44	10	<1	0.12	10	0.05	671	<1	0.01	13	150	1175	0.21	2
254937		46	0.51	10	5	0.08	10	0.05	98	<1	0.01	18	60	4700	1.08	3
254938		6	0.20	<10	<1	0.29	50	0.04	197	<1	0.01	7	280	19	0.06	<2
254939		25	0.45	10	<1	0.30	50	0.06	292	<1	0.01	17	280	237	0.18	<2
254940		133	0.35	<10	<1	0.25	40	0.04	43	<1	0.01	12	210	80	0.16	<2
254941		27	0.74	<10	<1	0.22	30	0.06	58	<1	0.01	44	220	433	0.47	6
254942		157	0.19	<10	<1	0.22	20	0.03	12	<1	0.01	10	110	>10000	0.25	6
254943		119	12.75	250	<1	0.18	10	0.70	>10000	2	0.02	31	820	8130	1.74	3
254944		122	2.56	10	9	0.14	<10	0.06	781	10	0.02	17	1180	>10000	>10.0	12
254945		21	3.33	10	<1	0.24	30	0.68	554	<1	0.01	23	160	22	0.22	<2
254798		18	0.47	10	2	0.12	10	0.03	805	<1	0.01	10	90	46	0.52	<2
254799		21	0.50	20	8	0.11	10	0.04	1335	<1	0.01	9	60	134	1.40	2
254800		11	0.47	30	<1	0.05	10	0.04	2800	<1	<0.01	6	90	6	0.46	2

Comments: **CORRECTED COPY for Ag on sample 254943**

ALS Chemex
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To: NORANDA MINING AND EXPLORATION INC.
874 TUNGSTEN ST.
THUNDER BAY ON P7B 6J3

Date : 16-Dec-2002
Account: BUF

Project : 2501

CERTIFICATE OF ANALYSIS VA02003121

Sample Description	Method Analyte Units LOR	ME-ICP41 Sc ppm 1	ME-ICP41 Sr ppm 1	ME-ICP41 Ti % 0.01	ME-ICP41 Tl ppm 10	ME-ICP41 U ppm 10	ME-ICP41 V ppm 1	ME-ICP41 W ppm 10	ME-ICP41 Zn ppm 2
254911		2	528	<0.01	<10	<10	1	<10	188
254912		2	118	<0.01	<10	<10	1	<10	889
254913		1	108	<0.01	<10	<10	1	10	>10000
254914		2	227	<0.01	<10	<10	1	<10	760
254915		5	389	<0.01	<10	<10	1	<10	1570
254916		3	536	<0.01	<10	<10	1	<10	>10000
254917		2	189	<0.01	<10	<10	1	<10	932
254918		3	357	<0.01	<10	<10	1	<10	1015
254919		3	345	<0.01	<10	<10	1	<10	>10000
254920		4	148	<0.01	<10	<10	1	<10	>10000
254921		2	106	<0.01	<10	20	2	<10	623
254924		2	139	<0.01	<10	<10	2	<10	235
254925		1	101	<0.01	<10	<10	1	<10	49
254926		2	365	<0.01	<10	<10	2	<10	9240
254927		1	214	<0.01	<10	<10	1	<10	>10000
254928		1	67	<0.01	<10	<10	3	<10	>10000
254929		1	33	<0.01	<10	30	2	<10	>10000
254930		2	49	<0.01	<10	10	3	<10	5880
254931		2	54	<0.01	<10	60	3	<10	1725
254932		4	959	<0.01	<10	<10	2	<10	2060
254933		1	135	<0.01	<10	<10	2	<10	36
254934		2	126	<0.01	<10	<10	3	<10	43
254935		1	143	<0.01	<10	<10	2	<10	21
254936		1	110	<0.01	<10	<10	1	<10	861
254937		<1	41	<0.01	<10	<10	1	<10	>10000
254938		2	72	<0.01	<10	40	3	<10	565
254939		2	83	<0.01	<10	30	3	<10	208
254940		1	44	<0.01	<10	50	3	<10	478
254941		2	46	<0.01	<10	50	3	<10	91
254942		1	30	<0.01	<10	40	3	<10	17
254943		2	<1	<0.01	<10	<10	20	<10	>10000
254944		1	<1	<0.01	10	<10	13	<10	>10000
254945		3	64	0.01	<10	<10	16	10	80
254798		1	114	<0.01	<10	<10	1	<10	3710
254799		2	310	<0.01	<10	<10	1	<10	>10000
254800		3	778	<0.01	<10	<10	<1	<10	4820

Comments: **CORRECTED COPY for Ag on sample 254943**

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EXCELLENCE IN ANALYTICAL CHEMISTRY
Aurora Laboratory Services Ltd.
212 Brooksbank Avenue
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Phone: 604 984 0221 Fax: 604 984 0218

To: NORANDA MINING AND EXPLORATION INC.
874 TUNGSTEN ST.
THUNDER BAY ON P7B 6J3

Date : 18-Sep-2002
Account: BUF

RECEIVED OCT - 2 2002

CERTIFICATE VA02003142

Project : 2501

P.O. No:

This report is for 22 PULP samples submitted to our lab in North Vancouver, BC, Canada on 6-Sep-2002.

The following have access to data associated with this certificate:

MICHAEL SAVELL
ALLAN HUARD

SAMPLE PREPARATION

ALS CODE	DESCRIPTION
LOG-21	Sample logging - ClientBarCode

ANALYTICAL PROCEDURES

ALS CODE	DESCRIPTION	INSTRUMENT
Hg-CV41	Trace Hg - cold vapor/AAS	FIMS
Hg-CV42	High Level Hg - cold vapor/AA	FIMS
ME-ICP61	27 element four acid ICP-AES	ICP-AES
Pb-AA62	Ore grade Pb - four acid / AAS	AAS
Zn-AA62	Ore grade Zn - four acid / AAS	AAS

See VA02002910 for other elements on these samples

To: **NORANDA MINING AND EXPLORATION INC.**
ATTN: ALLAN HUARD
874 TUNGSTEN ST.
THUNDER BAY ON P7B 6J3

This is the Final Report and supersedes any preliminary report with this certificate number. Results apply to samples as submitted. All pages of this report have been checked and approved for release.

Signature:

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874 TUNGSTEN ST.
THUNDER BAY ON P7B 6J3

Date : 18-Sep-2002
Account: BUF

Project : 2501

CERTIFICATE OF ANALYSIS VA02003142

Sample Description	Method	Hg-CV41	ME-ICP61	ME-ICP61	ME-ICP61	ME-ICP61	ME-ICP61	ME-ICP61	ME-ICP61	ME-ICP61	ME-ICP61	ME-ICP61	ME-ICP61	ME-ICP61	ME-ICP61	ME-ICP61
	Analyte	Hg	Ag	Al	As	Ba	Be	Bi	Ca	Cd	Co	Cr	Cu	Fe	K	Mg
	Units	ppm	ppm	%	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	%	%	%
	LOR	0.01	0.5	0.01	5	10	0.5	2	0.01	0.5	1	1	1	0.01	0.01	0.01
254778		<0.01	<0.5	4.89	13	1730	2.1	<2	1.58	<0.5	7	62	53	2.72	2.40	0.95
254779		0.01	<0.5	4.42	23	760	1.7	<2	1.01	<0.5	17	117	104	4.33	1.85	0.83
254780		0.02	8.3	2.89	21	550	0.9	<2	7.26	<0.5	9	95	13	1.43	1.37	0.28
254781		6.52	<0.5	4.08	14	720	1.2	<2	13.35	65.8	12	54	48	0.90	2.11	0.24
254782		0.04	<0.5	7.63	11	1190	2.3	<2	1.63	<0.5	5	59	10	0.89	3.72	0.42
254783		>10.0	<0.5	3.12	18	360	0.6	<2	4.89	323	32	141	66	0.78	1.13	0.13
254784		0.10	<0.5	0.06	<5	60	<0.5	<2	>25.0	0.6	<1	3	5	0.44	0.02	0.03
254785		>10.0	<0.5	2.58	7	390	<0.5	<2	8.50	229	21	114	47	0.63	1.00	0.11
254786		6.44	<0.5	0.51	8	230	<0.5	<2	24.2	55.9	6	17	28	0.51	0.21	0.04
254787		3.95	<0.5	5.86	21	540	1.7	<2	1.59	52.7	14	93	23	0.76	2.79	0.30
254788		0.04	<0.5	0.16	7	90	<0.5	<2	21.2	<0.5	1	3	6	0.38	0.08	0.03
254789		>10.0	<0.5	1.27	19	280	<0.5	<2	8.76	>500	63	92	582	1.25	0.55	0.06
254790		>10.0	3.4	2.35	21	360	0.5	<2	5.26	164.5	22	98	92	0.55	0.90	0.11
254791		2.60	<0.5	0.60	9	130	<0.5	<2	24.2	19.9	2	14	71	0.54	0.29	0.05
254792		>10.0	<0.5	0.57	8	390	<0.5	<2	22.7	106.0	7	15	96	0.55	0.27	0.05
254793		1.11	<0.5	0.03	5	40	<0.5	<2	>25.0	7.8	1	3	21	0.43	0.01	0.03
254794		>10.0	76.5	0.20	7	140	<0.5	<2	8.08	213	12	21	48	0.35	0.08	0.02
254795		0.70	4.4	0.24	7	1000	<0.5	<2	24.1	6.4	1	6	7	0.48	0.11	0.04
254796		2.05	<0.5	0.67	14	120	<0.5	<2	22.9	16.5	3	9	16	0.53	0.31	0.05
254797		>10.0	<0.5	1.14	8	130	<0.5	<2	2.04	184.0	16	149	44	0.57	0.33	0.04
254922		>10.0	9.0	2.67	42	60	2.0	<2	0.36	453	8	21	127	2.87	1.28	0.20
254923		0.07	<0.5	5.53	8	710	1.2	<2	1.34	1.2	10	131	16	2.86	2.10	0.74

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To: NORANDA MINING AND EXPLORATION INC.
874 TUNGSTEN ST.
THUNDER BAY ON P7B 6J3

Date : 18-Sep-2002
Account: BUF

Project : 2501

CERTIFICATE OF ANALYSIS VA02003142

Sample Description	Method Analyte Units LOR	ME-ICP61 Mn ppm 5	ME-ICP61 Mo ppm 1	ME-ICP61 Na % 0.01	ME-ICP61 Ni ppm 1	ME-ICP61 P ppm 10	ME-ICP61 Pb ppm 2	ME-ICP61 S % 0.01	ME-ICP61 Sb ppm 5	ME-ICP61 Sr ppm 1	ME-ICP61 Ti % 0.01	ME-ICP61 V ppm 1	ME-ICP61 W ppm 10	ME-ICP61 Zn ppm 2	Pb-AA62 Pb % 0.01	Zn-AA62 Zn % 0.01
254778		2070	2	0.04	18	460	28	0.26	7	176	0.29	70	<10	28		
254779		3830	2	0.04	41	570	47	0.33	14	133	0.26	92	<10	46		
254780		1980	<1	0.03	25	240	>10000	0.65	23	162	0.15	54	<10	31	3.76	
254781		3250	<1	0.09	15	130	656	0.91	<5	503	0.20	41	10	>10000		1.69
254782		357	1	0.16	15	240	55	0.05	<5	116	0.38	80	<10	113		
254783		969	<1	0.68	12	330	501	3.46	10	185	0.14	27	10	>10000		7.35
254784		5540	<1	0.01	<1	<10	12	0.02	<5	473	<0.01	<1	10	245		
254785		1840	<1	0.53	8	50	29	2.61	<5	170	0.10	20	<10	>10000		6.22
254786		5060	<1	0.10	2	<10	9	0.80	<5	389	0.02	4	<10	>10000		1.85
254787		320	<1	0.32	19	230	133	0.78	<5	93	0.26	51	<10	>10000		1.37
254788		4500	<1	<0.01	1	30	157	0.02	<5	380	0.01	2	10	88		
254789		1460	<1	0.05	14	50	1575	7.88	20	156	0.05	11	10	>10000		20.3
254790		972	<1	0.07	12	810	>10000	2.56	7	157	0.10	18	10	>10000	1.35	4.48
254791		5650	<1	0.01	3	20	26	0.40	<5	370	0.03	6	<10	6930		
254792		5120	<1	0.01	4	20	1670	1.95	<5	348	0.02	5	<10	>10000		4.64
254793		5480	<1	<0.01	<1	<10	164	0.17	<5	351	<0.01	1	10	2870		
254794		1530	<1	0.01	6	10	>10000	8.27	57	108	0.01	2	10	>10000	>30.0	4.07
254795		5680	<1	0.01	1	40	>10000	0.43	11	426	0.01	1	10	1795	2.22	
254796		5550	<1	0.03	5	10	468	0.34	<5	403	0.03	5	<10	5710		
254797		372	<1	0.27	9	60	416	2.48	<5	48	0.03	5	10	>10000		4.71
254922		711	2	0.04	37	1360	>10000	>10.0	19	20	0.11	100	10	>10000	NSS	NSS
254923		721	1	1.26	23	170	112	0.12	<5	153	0.23	43	<10	554		

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CERTIFICATE OF ANALYSIS VA02003142

Sample Description	Method Analyte Units LOR	Hg-CV42 Hg ppm 0.1
254778		
254779		
254780		
254781		
254782		
254783		31.9
254784		
254785		24.8
254786		
254787		
254788		
254789		72.6
254790		15.4
254791		
254792		15.9
254793		
254794		16.9
254795		
254796		
254797		17.2
254922		11.5
254923		

ALS Chemex
EXCELLENCE IN ANALYTICAL CHEMISTRY
Aurora Laboratory Services Ltd.
212 Brooksbank Avenue
North Vancouver BC V7J 2C1 Canada
Phone: 604 984 0221 Fax: 604 984 0218

To: **NORANDA MINING AND EXPLORATION INC.**
874 TUNGSTEN ST.
THUNDER BAY ON P7B 6J3

Date : 18-Sep-2002
Account: BUF

RECEIVED OCT - 2 2002

CERTIFICATE VA02003143

Project : 2501

P.O. No:

This report is for 36 PULP samples submitted to our lab in North Vancouver, BC, Canada on 6-Sep-2002.

The following have access to data associated with this certificate:

MICHAEL SAVELL
ALLAN HUARD

SAMPLE PREPARATION

ALS CODE	DESCRIPTION
LOG-21	Sample logging - ClientBarCode

ANALYTICAL PROCEDURES

ALS CODE	DESCRIPTION	INSTRUMENT
Hg-CV41	Trace Hg - cold vapor/AAS	FIMS
Hg-CV42	High Level Hg - cold vapor/AA	FIMS
ME-ICP61	27 element four acid ICP-AES	ICP-AES
Pb-AA62	Ore grade Pb - four acid / AAS	AAS
Zn-AA46	Ore grade Zn - aqua regia/AA	AAS

See VA02003121 for other elements on these samples

To: **NORANDA MINING AND EXPLORATION INC.**
ATTN: ALLAN HUARD
874 TUNGSTEN ST.
THUNDER BAY ON P7B 6J3

This is the Final Report and supersedes any preliminary report with this certificate number. Results apply to samples as submitted. All pages of this report have been checked and approved for release.

Signature:

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THUNDER BAY ON P7B 6J3

Date : 18-Sep-2002
Account: BUF

Project : 2501

CERTIFICATE OF ANALYSIS VA02003143

Sample Description	Method	Hg-CV41	Zn-AA46	ME-ICP61	ME-ICP61	ME-ICP61	ME-ICP61	ME-ICP61	ME-ICP61	ME-ICP61	ME-ICP61	ME-ICP61	ME-ICP61	ME-ICP61	ME-ICP61	ME-ICP61
	Analyte	Hg	Zn	Ag	Al	As	Ba	Be	Bi	Ca	Cd	Co	Cr	Cu	Fe	K
	Units	ppm	%	ppm	%	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	%	%
	LOR	0.01	0.01	0.5	0.01	5	10	0.5	2	0.01	0.5	1	1	1	0.01	0.01
254911		0.06		<0.5	1.65	37	300	<0.5	<2	14.50	0.6	13	59	15	0.68	0.74
254912		0.25		<0.5	3.90	21	470	0.8	3	5.10	3.8	7	82	33	0.48	1.44
254913		>10.0	3.48	43.6	1.86	13	140	<0.5	<2	4.34	217	13	91	40	0.46	0.67
254914		0.26		1.7	1.87	24	260	<0.5	<2	12.30	2.5	6	67	14	0.44	0.77
254915		0.50		1.7	1.50	27	250	<0.5	<2	14.45	7.2	7	54	10	0.45	0.64
254916		8.51	4.52	<0.5	1.89	18	320	0.5	<2	14.60	91.6	12	25	35	0.67	0.89
254917		0.21		<0.5	5.45	17	760	1.4	<2	3.85	3.4	9	61	20	0.69	2.32
254918		0.38		<0.5	1.56	<5	190	<0.5	<2	13.15	3.0	2	50	58	0.39	0.45
254919		7.09	1.91	<0.5	1.62	14	230	<0.5	<2	16.90	52.4	7	45	44	0.53	0.65
254920		>10.0	5.34	0.5	4.38	23	360	1.0	<2	10.75	146.0	19	58	98	1.02	2.01
254921		0.17		<0.5	8.52	22	1010	2.3	<2	2.47	2.2	15	45	49	1.16	4.13
254924		0.08		<0.5	7.21	25	970	1.9	<2	3.60	0.7	16	50	28	1.01	3.23
254925		0.05		<0.5	4.29	13	570	0.9	<2	3.12	<0.5	7	81	11	0.56	1.62
254926		3.17	1.20	<0.5	5.02	25	760	1.2	<2	8.93	30.9	13	57	50	0.85	2.30
254927		>10.0	7.14	0.5	1.13	53	170	<0.5	<2	5.96	186.0	30	111	94	0.77	0.46
254928		>10.0	6.92	<0.5	4.61	34	200	1.4	<2	1.16	271	35	92	69	1.03	2.02
254929		>10.0	5.69	<0.5	4.95	39	280	1.5	<2	0.17	173.5	31	92	65	1.08	2.17
254930		1.72		<0.5	7.90	19	1410	2.4	<2	0.15	16.9	10	76	14	1.16	3.59
254931		0.51		<0.5	7.21	62	1250	2.2	<2	0.25	5.2	23	69	27	1.17	3.36
254932		0.57		0.8	2.86	34	620	0.8	<2	12.45	7.4	11	62	33	0.75	1.31
254933		0.02		<0.5	4.16	17	610	0.8	<2	1.97	<0.5	10	133	10	0.92	1.44
254934		0.02		<0.5	5.82	38	1050	1.9	<2	1.80	<0.5	15	101	21	0.84	2.55
254935		<0.01		<0.5	3.89	10	660	0.9	<2	1.86	<0.5	3	106	10	0.67	1.49
254936		0.32		<0.5	2.44	17	530	0.6	<2	2.18	2.4	8	115	13	0.57	1.00
254937		4.59	1.83	1.5	1.64	24	310	0.5	<2	0.38	64.5	15	133	45	0.60	0.66
254938		0.17		<0.5	7.36	9	1450	2.2	<2	0.93	1.7	6	48	7	0.82	3.13
254939		0.07		<0.5	8.44	18	1350	2.6	<2	1.22	0.6	17	44	28	1.32	3.94
254940		0.13		<0.5	6.13	14	1130	1.7	<2	0.11	1.6	7	53	132	0.86	2.68
254941		0.10		<0.5	6.52	49	1280	1.9	<2	0.17	<0.5	21	77	28	1.28	2.80
254942		0.01		2.7	4.68	10	900	1.5	<2	0.06	<0.5	5	75	153	0.63	2.02
254943		2.20	2.97	11.5	1.96	12	160	1.4	<2	0.44	71.6	10	30	124	13.90	0.76
254944		8.24	28.7	9.2	2.61	40	90	2.0	<2	0.30	441	8	24	122	2.90	1.11
254945		0.01		<0.5	6.95	<5	890	1.7	<2	0.95	<0.5	11	61	21	3.75	2.53
254798		1.31		<0.5	3.18	16	330	0.6	<2	4.57	17.0	9	85	19	0.61	1.02
254799		7.61	2.32	<0.5	2.87	10	300	0.5	<2	7.79	85.1	12	64	20	0.60	0.93
254800		1.67		<0.5	0.83	10	230	<0.5	<2	19.20	16.3	6	30	12	0.55	0.35

ALS Chemex
EXCELLENCE IN ANALYTICAL CHEMISTRY
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212 Brooksbank Avenue
North Vancouver BC V7J 2C1 Canada
Phone: 604 984 0221 Fax: 604 984 0218

To: NORANDA MINING AND EXPLORATION INC.
874 TUNGSTEN ST.
THUNDER BAY ON P7B 6J3

Date : 18-Sep-2002
Account: BUF

Project : 2501

CERTIFICATE OF ANALYSIS VA02003143

Sample Description	Method Analyte Units LOR	ME-ICP61 Mg % 0.01	ME-ICP61 Mn ppm 5	ME-ICP61 Mo ppm 1	ME-ICP61 Na % 0.01	ME-ICP61 Ni ppm 1	ME-ICP61 P ppm 10	ME-ICP61 Pb ppm 2	ME-ICP61 S % 0.01	ME-ICP61 Sb ppm 5	ME-ICP61 Sr ppm 1	ME-ICP61 Ti % 0.01	ME-ICP61 V ppm 1	ME-ICP61 W ppm 10	ME-ICP61 Zn ppm 2	Pb-AA62 Pb % 0.01
254911		0.12	1405	<1	0.03	22	140	7	0.42	6	548	0.07	13	10	245	
254912		0.17	849	1	0.58	14	160	418	0.15	<5	129	0.14	27	<10	953	
254913		0.08	733	<1	0.24	12	70	>10000	5.82	65	113	0.07	12	10	>10000	24.4
254914		0.10	2280	1	0.02	14	60	9180	0.25	8	251	0.07	14	<10	891	
254915		0.09	2590	<1	0.03	13	100	7290	0.30	5	407	0.06	12	<10	1730	
254916		0.12	2750	<1	0.02	11	100	1015	1.98	<5	586	0.08	16	<10	>10000	
254917		0.26	741	<1	0.17	15	190	133	0.25	5	207	0.20	42	<10	1045	
254918		0.08	2340	<1	0.47	3	40	17	0.09	<5	391	0.04	7	<10	1155	
254919		0.09	2860	<1	0.17	9	40	177	1.01	<5	374	0.05	10	20	>10000	
254920		0.21	1860	<1	0.13	19	130	109	2.84	<5	174	0.18	34	<10	>10000	
254921		0.42	444	<1	0.07	26	420	135	0.58	8	125	0.34	72	<10	699	
254924		0.34	671	<1	0.06	25	270	44	0.46	8	152	0.30	58	<10	234	
254925		0.18	590	2	0.05	15	120	49	0.19	<5	102	0.15	29	<10	61	
254926		0.24	1595	<1	0.05	17	240	30	0.85	10	370	0.20	40	<10	>10000	
254927		0.07	1030	<1	0.02	26	50	11	3.35	<5	229	0.04	10	10	>10000	
254928		0.25	234	<1	0.04	27	190	7	3.34	8	73	0.22	51	<10	>10000	
254929		0.26	61	<1	0.05	35	210	9	2.76	<5	40	0.25	54	10	>10000	
254930		0.42	80	1	0.07	21	350	8	0.50	<5	61	0.37	77	<10	5790	
254931		0.39	73	1	0.06	48	310	50	0.39	<5	64	0.34	76	<10	1695	
254932		0.21	2160	<1	0.03	24	250	9880	0.44	6	968	0.14	40	<10	2170	
254933		0.19	422	<1	0.71	15	200	29	0.54	<5	152	0.16	31	<10	36	
254934		0.33	390	1	0.06	34	250	1690	0.16	6	137	0.26	56	<10	88	
254935		0.21	544	<1	0.26	9	150	12	0.05	<5	144	0.14	28	<10	14	
254936		0.15	625	1	0.02	15	160	1110	0.22	5	108	0.09	20	<10	828	
254937		0.12	98	<1	0.02	25	70	4460	1.10	<5	45	0.06	12	<10	>10000	
254938		0.38	206	1	0.06	16	310	27	0.06	8	84	0.35	75	<10	605	
254939		0.46	310	1	0.08	28	340	243	0.20	<5	103	0.40	84	<10	234	
254940		0.32	54	<1	0.07	19	250	81	0.16	<5	57	0.28	61	<10	492	
254941		0.36	72	<1	0.05	52	250	439	0.50	11	61	0.29	67	<10	106	
254942		0.28	27	<1	0.05	15	130	>10000	0.26	9	43	0.21	51	<10	37	1.51
254943		0.84	>10000	<1	0.03	37	900	8870	1.97	6	<1	0.08	48	<10	>10000	
254944		0.20	735	1	0.05	37	1310	>10000	>10.0	27	19	0.11	99	10	>10000	1.41
254945		0.91	575	<1	1.32	28	200	50	0.24	<5	118	0.28	53	<10	403	
254798		0.13	797	<1	0.64	13	110	52	0.53	<5	118	0.12	21	<10	3930	
254799		0.13	1210	<1	0.35	10	70	131	1.33	<5	293	0.11	18	<10	>10000	
254800		0.08	2760	<1	0.02	7	100	6	0.49	<5	760	0.03	7	<10	5270	

ALS Chemex
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212 Brooksbank Avenue
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TO: NORANDA MINING AND EXPLORATION INC.
874 TUNGSTEN ST.
THUNDER BAY ON P7B 6J3

Date : 18-Sep-2002
Account: BUF

Project : 2501

CERTIFICATE OF ANALYSIS VA02003143

Sample Description	Method Analyte Units LOR	Hg-CV42 Hg ppm 0.1
254911 254912 254913 254914 254915		11.8
254916 254917 254918 254919 254920		18.4
254921 254924 254925 254926 254927		22.8
254928 254929 254930 254931 254932		20.0 18.0
254933 254934 254935 254936 254937		
254938 254939 254940 254941 254942		
254943 254944 254945 254798 254799		
254800		

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To: NORANDA MINING AND EXPLORATION INC.
874 TUNGSTEN ST.
THUNDER BAY ON P7B 6J3

RECEIVED SEP 24 2002

Date : 15-Sep-2002
Account: BUF

Project : 2501

CERTIFICATE OF ANALYSIS VA02003218

Sample Description	Method Analyte Units LOR	WEI-21 Recvd Wt kg 0.02	ME-ICP41 Ag ppm 0.2	ME-ICP41 Al % 0.01	ME-ICP41 As ppm 2	ME-ICP41 B ppm 10	ME-ICP41 Ba ppm 10	ME-ICP41 Be ppm 0.5	ME-ICP41 Bi ppm 2	ME-ICP41 Ca % 0.01	ME-ICP41 Cd ppm 0.5	ME-ICP41 Co ppm 1	ME-ICP41 Cr ppm 1	ME-ICP41 Cu ppm 1	ME-ICP41 Fe % 0.01	ME-ICP41 Ga ppm 10
254946		2.68	<0.2	1.14	7	<10	100	1.0	<2	4.49	<0.5	13	33	28	3.45	10
254947		2.22	<0.2	1.41	18	<10	90	1.2	2	2.75	<0.5	16	28	34	4.30	10
254948		3.46	<0.2	0.45	32	<10	50	<0.5	<2	>15.0	<0.5	4	20	11	1.58	10
254949		4.06	<0.2	0.42	68	<10	60	<0.5	6	<0.01	<0.5	4	19	10	1.63	10
254950		2.78	<0.2	0.39	44	<10	90	<0.5	2	>15.0	<0.5	4	20	9	1.44	10
557257		0.04	10.3	0.47	16	<10	10	0.8	2	0.44	66.3	9	11	124	13.10	260
557258		3.34	<0.2	0.76	4	<10	80	<0.5	5	>15.0	<0.5	4	25	10	1.75	20
557259		1.28	<0.2	1.68	6	<10	130	1.0	<2	3.20	<0.5	13	44	27	4.02	10
557260		0.46	0.4	0.72	15	<10	70	0.6	<2	8.37	<0.5	9	32	19	1.97	20

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CERTIFICATE OF ANALYSIS VA02003218

Sample Description	Method Analyte Units LOR	ME-ICP41 Hg ppm 1	ME-ICP41 K % 0.01	ME-ICP41 La ppm 10	ME-ICP41 Mg % 0.01	ME-ICP41 Mn ppm 5	ME-ICP41 Mo ppm 1	ME-ICP41 Na % 0.01	ME-ICP41 Ni ppm 1	ME-ICP41 P ppm 10	ME-ICP41 Pb ppm 2	ME-ICP41 S % 0.01	ME-ICP41 Sb ppm 2	ME-ICP41 Sc ppm 1	ME-ICP41 Sr ppm 1	ME-ICP41 Tl % 0.01
254946		<1	0.35	20	0.74	410	2	0.02	30	220	33	1.72	<2	3	209	0.02
254947		2	0.35	30	0.85	297	2	0.01	39	300	35	2.30	<2	3	182	0.01
254948		1	0.13	10	0.38	760	<1	0.01	11	310	24	0.87	<2	2	744	<0.01
254949		<1	0.17	10	0.38	645	1	0.02	10	270	17	1.13	5	2	732	<0.01
254950		<1	0.17	10	0.37	801	<1	0.02	9	340	14	0.96	2	2	801	<0.01
557257		<1	0.19	10	0.73	>10000	5	0.02	32	930	8700	2.09	<2	2	<1	<0.01
557258		<1	0.19	20	0.47	1295	<1	0.02	11	250	16	0.13	<2	3	895	<0.01
557259		1	0.42	30	0.99	292	1	0.02	30	220	27	1.10	<2	3	185	0.03
557260		<1	0.22	20	0.51	1395	<1	0.01	21	210	32	1.04	6	2	429	<0.01

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CERTIFICATE OF ANALYSIS VA02003218

Sample Description	Method Analyte Units LOR	ME-ICP41 Tl ppm 10	ME-ICP41 U ppm 10	ME-ICP41 V ppm 1	ME-ICP41 W ppm 10	ME-ICP41 Zn ppm 2	Zn-AA46 Zn % 0.01
254946		<10	<10	17	<10	70	
254947		<10	<10	18	<10	76	
254948		<10	<10	5	<10	45	
254949		<10	<10	7	<10	30	
254950		<10	<10	6	<10	23	
557257		<10	<10	25	<10	>10000	3.10
557258		<10	<10	8	<10	49	
557259		<10	<10	23	<10	86	
557260		<10	<10	8	<10	57	

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874 TUNGSTEN ST.
THUNDER BAY ON P7B 6J3

RECEIVED OCT - 8 2002

Date : 19-Sep-2002
Account: BUF

Project : 2501

CERTIFICATE OF ANALYSIS VA02003219

Sample Description	Method Analyte Units LOR	WEI-21 Recvd Wt kg 0.02	ME-ICP61 Ag ppm 0.5	ME-ICP61 Al % 0.01	ME-ICP61 As ppm 5	ME-ICP61 Ba ppm 10	ME-ICP61 Be ppm 0.5	ME-ICP61 Bi ppm 2	ME-ICP61 Ca % 0.01	ME-ICP61 Cd ppm 0.5	ME-ICP61 Co ppm 1	ME-ICP61 Cr ppm 1	ME-ICP61 Cu ppm 1	ME-ICP61 Fe % 0.01	ME-ICP61 K % 0.01	ME-ICP61 Mg % 0.01
557261		1.14	<0.5	8.20	11	960	2.2	<2	2.38	<0.5	13	64	19	3.13	2.47	1.15
557262		2.06	<0.5	2.92	23	100	0.6	<2	1.12	273	42	132	62	0.93	1.05	0.13
557263		1.88	<0.5	2.07	6	190	<0.5	<2	1.00	93.5	13	87	63	0.45	0.56	0.09
557264		0.18	<0.5	3.03	22	160	0.6	<2	0.43	159.0	31	202	185	0.94	0.97	0.14
557265		3.42	0.7	1.35	12	140	<0.5	<2	2.22	316	40	144	100	0.86	0.49	0.07
557266		1.22	<0.5	4.53	32	570	1.0	<2	5.27	0.5	19	83	10	1.33	1.88	0.25
557267		3.10	<0.5	1.02	14	180	<0.5	<2	5.08	76.7	14	147	20	0.62	0.38	0.05
557268		1.98	<0.5	1.11	18	250	<0.5	2	0.80	38.4	8	191	19	0.44	0.38	0.04
557269		1.82	<0.5	2.07	49	360	0.7	<2	0.96	45.4	19	171	22	0.54	0.78	0.08
557270		3.08	5.0	1.27	28	150	<0.5	<2	0.39	>500	85	115	286	2.13	0.49	0.05
557271		0.04	9.2	2.61	47	70	1.9	<2	0.31	441	8	23	121	2.90	1.11	0.19
557272		2.16	<0.5	6.18	7	810	1.4	<2	1.02	<0.5	10	119	15	3.19	1.99	0.79
557273		1.54	0.7	2.78	57	300	0.8	<2	0.45	127.5	27	132	51	0.74	1.07	0.12
557274		4.20	0.6	1.08	30	170	<0.5	<2	15.90	4.6	8	71	22	0.43	0.44	0.06
557275		0.72	18.2	3.22	27	190	0.9	<2	1.55	330	59	99	144	1.12	1.28	0.15
557276		2.18	<0.5	3.70	30	480	0.8	<2	8.95	0.6	8	80	14	0.60	1.50	0.17
557277		0.20	<0.5	11.40	55	1570	2.8	<2	0.17	<0.5	16	65	32	1.00	4.88	0.50
557278		2.96	<0.5	4.08	18	500	0.8	<2	5.14	<0.5	8	84	1325	0.63	1.49	0.17
557279		3.80	<0.5	4.31	23	730	0.8	<2	13.20	<0.5	7	49	63	0.63	1.81	0.19
557280		2.52	<0.5	2.85	12	340	0.5	<2	1.69	<0.5	3	128	32	0.36	0.96	0.11
557281		2.34	<0.5	1.69	6	190	<0.5	<2	2.43	<0.5	2	145	19	0.32	0.48	0.07
557282		1.96	<0.5	1.87	5	220	<0.5	<2	0.14	<0.5	2	165	21	0.38	0.54	0.08
557283		0.94	<0.5	10.15	21	1530	2.1	<2	0.39	<0.5	10	55	70	0.78	4.44	0.41
557284		1.74	<0.5	2.86	18	380	0.5	<2	0.71	<0.5	5	152	47	0.47	1.04	0.13
557285		1.96	<0.5	2.16	26	380	0.5	<2	3.15	<0.5	5	95	19	0.35	0.84	0.10
557286		2.54	<0.5	0.93	14	180	<0.5	<2	4.45	<0.5	3	51	13	0.22	0.34	0.05
557287		3.78	<0.5	4.88	33	740	1.1	<2	0.86	<0.5	9	78	27	0.48	1.94	0.19
557288		3.40	<0.5	4.36	28	690	1.0	<2	1.22	13.2	6	74	42	0.51	1.74	0.18
557289		2.62	<0.5	4.24	91	630	1.0	<2	1.47	2.3	15	105	26	0.66	1.70	0.18
557290		0.04	12.0	1.97	13	80	1.4	<2	0.45	71.3	10	29	124	14.00	0.73	0.85
557291		2.44	<0.5	4.50	<5	530	0.8	<2	1.58	<0.5	7	114	11	2.24	1.38	0.56
557292		2.88	<0.5	3.38	16	590	0.7	<2	2.21	10.7	7	81	38	0.45	1.32	0.15
557293		3.18	<0.5	5.49	18	910	1.1	<2	10.90	1.8	6	48	25	0.68	2.40	0.23
557294		1.52	<0.5	0.83	11	190	<0.5	<2	>25.0	11.2	3	13	19	0.44	0.37	0.07
557295		4.12	<0.5	1.94	10	290	<0.5	<2	3.86	75.1	8	179	39	0.62	0.67	0.09
557296		1.36	<0.5	0.23	5	110	<0.5	<2	24.8	80.2	6	13	42	0.54	0.09	0.04
557297		1.90	0.5	1.16	9	170	<0.5	<2	3.55	143.0	12	105	60	0.61	0.39	0.06
557298		2.40	<0.5	2.63	12	410	0.5	<2	6.15	28.6	5	116	21	0.54	0.99	0.12
557299		0.64	1.6	0.41	<5	110	<0.5	<2	11.15	266	17	77	141	1.05	0.14	0.04
557300		3.52	<0.5	2.48	6	320	<0.5	<2	1.63	22.5	3	154	17	0.48	0.87	0.10

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To: NORANDA MINING AND EXPLORATION INC.
874 TUNGSTEN ST.
THUNDER BAY ON P7B 6J3

Date : 19-Sep-2002
Account: BUF

Project : 2501

CERTIFICATE OF ANALYSIS VA02003219

Sample Description	Method	WEI-21	ME-ICP61	ME-ICP61	ME-ICP61	ME-ICP61	ME-ICP61	ME-ICP61	ME-ICP61	ME-ICP61	ME-ICP61	ME-ICP61	ME-ICP61	ME-ICP61	ME-ICP61	ME-ICP61
	Analyte	Recvd Wt	Ag	Al	As	Ba	Be	Bi	Ca	Cd	Co	Cr	Cu	Fe	K	Mg
	Units	kg	ppm	%	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	%	%	%
	LOR	0.02	0.5	0.01	5	10	0.5	2	0.01	0.5	1	1	1	0.01	0.01	0.01
644132		2.96	<0.5	2.43	5	310	<0.5	3	2.90	7.6	3	149	10	0.44	0.81	0.10
644133		2.44	<0.5	2.70	7	370	0.5	<2	0.22	30.8	4	200	22	0.51	0.89	0.12
644134		1.72	<0.5	2.58	6	350	<0.5	<2	0.11	2.0	3	194	11	0.45	0.85	0.10

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CERTIFICATE OF ANALYSIS VA02003219

Sample Description	Method	ME-ICP61	ME-ICP61	ME-ICP61	ME-ICP61	ME-ICP61	ME-ICP61	ME-ICP61	ME-ICP61	ME-ICP61	ME-ICP61	ME-ICP61	ME-ICP61	ME-ICP61	Ag-AA46	Pb-AA46
	Analyte	Mn	Mo	Na	Ni	P	Pb	S	Sb	Sr	Ti	V	W	Zn	Ag	Pb
	Units	ppm	ppm	%	ppm	ppm	ppm	%	ppm	ppm	%	ppm	ppm	ppm	ppm	%
	LOR	5	1	0.01	1	10	2	0.01	5	1	0.01	1	10	2	1	0.01
557261		503	<1	1.43	33	480	25	0.34	8	207	0.41	119	<10	167	<1	<0.01
557262		219	<1	0.23	20	60	29	4.67	<5	48	0.12	24	<10	>10000	1	<0.01
557263		205	<1	0.11	11	50	10	1.47	<5	47	0.08	13	<10	>10000	<1	<0.01
557264		205	<1	0.04	22	70	15	2.70	8	38	0.13	23	10	>10000	1	<0.01
557265		389	<1	0.06	15	520	38	5.32	<5	65	0.06	11	<10	>10000	1	0.01
557266		754	<1	0.18	31	100	20	1.08	<5	187	0.18	31	<10	271	<1	<0.01
557267		761	<1	0.02	11	120	7	1.71	5	134	0.04	8	<10	>10000	<1	<0.01
557268		154	<1	0.03	14	50	6	0.97	<5	34	0.04	9	10	>10000	<1	<0.01
557269		177	<1	0.04	30	90	3	1.05	<5	39	0.08	18	10	>10000	5	<0.01
557270		101	<1	0.02	22	60	27	>10.0	<5	19	0.05	11	10	>10000	5	<0.01
557271		690	2	0.04	36	1290	>10000	>10.0	29	20	0.11	100	<10	>10000	10	1.42
557272		597	<1	1.41	24	210	37	0.20	<5	122	0.26	50	<10	544	<1	<0.01
557273		95	<1	0.04	36	140	1390	2.25	<5	34	0.11	24	10	>10000	<1	0.16
557274		2750	<1	0.02	15	40	3550	0.21	<5	159	0.04	9	<10	1570	1	0.43
557275		290	<1	0.04	21	190	>10000	5.99	30	46	0.13	28	<10	>10000	18	6.94
557276		1550	<1	0.04	17	110	301	0.12	<5	146	0.14	31	<10	431	<1	0.04
557277		41	<1	0.10	32	350	40	0.21	9	83	0.39	105	<10	365	<1	<0.01
557278		909	<1	0.04	13	80	40	0.24	<5	127	0.15	33	<10	103	<1	0.01
557279		2250	<1	0.05	13	140	304	0.11	<5	574	0.17	40	10	95	<1	0.04
557280		292	<1	0.26	8	80	10	0.02	<5	67	0.11	23	<10	90	<1	<0.01
557281		425	1	0.19	6	50	9	0.01	<5	104	0.07	12	<10	47	<1	<0.01
557282		33	2	0.18	7	60	2	0.01	<5	17	0.07	14	<10	70	<1	<0.01
557283		44	<1	0.09	21	1170	23	0.15	8	83	0.41	90	<10	161	<1	<0.01
557284		141	<1	0.04	15	210	11	0.03	<5	37	0.12	25	<10	84	<1	<0.01
557285		528	1	0.03	12	160	155	0.03	<5	129	0.07	18	<10	144	<1	0.01
557286		710	<1	0.02	8	60	6	0.01	<5	140	0.03	7	<10	69	<1	<0.01
557287		161	<1	0.05	22	250	1290	0.09	<5	55	0.17	41	<10	235	<1	0.14
557288		277	<1	0.05	15	180	120	0.26	<5	47	0.17	39	<10	4810	<1	0.01
557289		305	<1	0.04	26	210	30	0.17	<5	61	0.16	36	<10	913	<1	<0.01
557290		>10000	<1	0.03	37	870	8960	1.96	<5	<1	0.08	48	<10	>10000	12	0.99
557291		803	<1	1.24	15	140	31	0.09	<5	139	0.18	30	<10	117	<1	<0.01
557292		476	<1	0.04	14	310	440	0.21	<5	105	0.13	30	<10	3530	<1	0.05
557293		1735	<1	0.07	14	290	113	0.10	<5	435	0.20	45	<10	804	<1	0.01
557294		3890	<1	0.01	4	30	13	0.25	<5	706	0.03	6	<10	4020	<1	<0.01
557295		629	<1	0.18	10	70	10	1.38	<5	211	0.07	13	10	>10000	<1	0.01
557296		3820	<1	0.01	2	10	<2	1.26	<5	831	0.01	2	10	>10000	<1	<0.01
557297		574	<1	0.02	7	40	8	2.43	<5	171	0.04	8	<10	>10000	<1	<0.01
557298		993	<1	0.05	8	140	43	0.59	<5	210	0.09	21	<10	9840	<1	<0.01
557299		1945	<1	0.03	5	20	5	4.34	<5	253	0.01	2	<10	>10000	2	<0.01
557300		299	<1	0.21	7	110	6	0.43	<5	60	0.09	18	<10	7550	<1	<0.01

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874 TUNGSTEN ST.
THUNDER BAY ON P7B 6J3

Date : 19-Sep-2002
Account: BUF

Project : 2501

CERTIFICATE OF ANALYSIS VA02003219

Sample Description	Method	ME-ICP61	ME-ICP61	ME-ICP61	ME-ICP61	ME-ICP61	ME-ICP61	ME-ICP61	ME-ICP61	ME-ICP61	ME-ICP61	ME-ICP61	ME-ICP61	ME-ICP61	Ag-AA46	Pb-AA46
	Analyte	Mn	Mo	Na	Ni	P	Pb	S	Sb	Sr	Ti	V	W	Zn	Ag	Pb
	Units	ppm	ppm	%	ppm	ppm	ppm	%	ppm	ppm	%	ppm	ppm	ppm	ppm	%
	LOR	5	1	0.01	1	10	2	0.01	5	1	0.01	1	10	2	1	0.01
644132		509	<1	0.33	8	70	11	0.14	<5	119	0.09	18	<10	2630	<1	0.01
644133		59	<1	0.23	7	70	3	0.55	<5	32	0.10	19	<10	>10000	<1	<0.01
644134		43	1	0.25	9	80	4	0.02	<5	23	0.10	19	<10	890	<1	<0.01

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CERTIFICATE OF ANALYSIS VA02003219

Sample Description	Method Analyte Units LOR	Zn-AA46 Zn % 0.01	Hg-CV41 Hg ppm 0.01
557261		<0.01	0.15
557262		8.97	>10.0
557263		2.82	7.10
557264		4.70	>10.0
557265		10.60	>10.0
557266		0.03	0.10
557267		3.02	6.51
557268		1.81	4.06
557269		1.89	4.41
557270		28.4	>10.0
557271		28.9	9.48
557272		0.04	0.04
557273		4.13	>10.0
557274		0.19	0.62
557275		9.96	>10.0
557276		0.05	0.13
557277		0.04	0.03
557278		0.01	0.01
557279		0.01	0.07
557280		0.01	0.01
557281		<0.01	0.01
557282		0.01	0.01
557283		0.01	0.01
557284		0.01	0.01
557285		<0.01	0.01
557286		0.01	0.02
557287		0.02	0.04
557288		0.50	1.42
557289		0.09	0.23
557290		3.12	2.34
557291		0.01	0.03
557292		0.37	1.12
557293		0.09	0.20
557294		0.49	1.45
557295		1.31	8.48
557296		3.55	9.38
557297		5.39	>10.0
557298		1.02	2.31
557299		10.50	>10.0
557300		0.85	2.66

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Date : 19-Sep-2002
Account: BUF

Project : 2501

CERTIFICATE OF ANALYSIS VA02003219

Sample Description	Method	Zn-AA46	Hg-CV41
	Analyte	Zn	Hg
	Units	%	ppm
	LOR	0.01	0.01
644132		0.24	0.77
644133		1.13	3.37
644134		0.10	0.04

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To: NORANDA MINING AND EXPLORATION INC.
874 TUNGSTEN ST.
THUNDER BAY ON P7B 6J3

RECEIVED OCT - 8 2002

Date : 30-Sep-2002
Account: BUF

CERTIFICATE OF ANALYSIS VA02003299

Sample Description	Method Analyte Units LOR	WEI-21 Recvd Wt kg 0.02	Zn-AA46 Zn % 0.01	OA-GRA08b S.G. Unity 0.01	ME-MS61 Ag ppm 0.01	ME-MS61 Al % 0.01	ME-MS61 As ppm 0.2	ME-MS61 Ba ppm 0.5	ME-MS61 Be ppm 0.05	ME-MS61 Bi ppm 0.01	ME-MS61 Ca % 0.01	ME-MS61 Cd ppm 0.02	ME-MS61 Ce ppm 0.01	ME-MS61 Co ppm 0.1	ME-MS61 Cr ppm 1	ME-MS61 Cs ppm 0.05
644135		2.32	<0.01	2.84	0.10	9.49	14.1	1790	2.96	0.44	0.24	0.10	110.0	14.2	61	18.80
644136		1.20	0.51	2.68	0.18	3.62	14.3	580	0.99	0.16	2.72	16.00	40.5	7.1	102	4.43
644137		2.32	9.04	2.80	0.43	4.10	16.5	65.0	1.10	0.15	1.45	340	40.6	36.4	73	6.66
644138		0.60	0.92	2.69	0.13	2.96	28.0	570	0.90	0.01	2.48	31.7	38.6	16.7	92	4.38
644139		0.92	9.06	3.06	40.0	1.16	35.7	67.0	0.32	0.18	4.05	220	21.0	25.0	118	1.64
644140		3.56	>30.0	3.23	2.62	1.35	22.8	16.2	0.35	0.01	1.83	>500	21.4	92.5	102	1.97
644141		3.28	27.6	3.11	1.59	1.37	12.9	15.7	0.29	<0.01	2.85	>500	17.40	91.0	148	1.97
644142		3.10	4.02	2.77	0.22	2.74	3.5	180.0	0.45	<0.01	3.01	118.0	26.4	10.0	98	2.68
644143		2.80	0.29	2.70	0.07	5.44	5.5	840	1.59	0.06	2.41	7.93	61.3	7.5	72	7.87
644144		0.44	0.02	2.68	0.07	7.44	7.6	1480	1.98	0.10	3.44	0.83	90.4	6.5	54	9.09
644145		0.04	28.0	3.09	8.84	2.71	51.0	47.0	2.14	0.16	0.30	412	39.6	10.9	26	11.45
644146		2.12	0.09	2.70	0.13	7.35	5.1	880	1.75	0.13	1.03	0.97	68.7	17.2	84	5.24
644147		4.68	4.01	2.72	0.36	2.16	9.6	220	0.38	<0.01	3.41	125.5	40.3	19.0	90	1.46
644148		5.74	4.51	2.77	1.26	2.87	13.3	120.0	0.49	0.03	2.32	132.5	39.2	21.0	87	2.44
644149		1.02	0.14	2.70	0.15	11.65	29.8	1370	3.14	0.36	1.49	5.45	120.0	20.8	44	15.90
644150		4.60	1.41	2.74	5.30	3.40	15.0	220	0.70	0.09	2.51	41.9	29.6	14.1	65	3.03
644162		2.48	1.05	2.70	0.35	7.04	31.6	790	1.49	0.12	7.06	28.4	65.8	20.0	41	8.24
644163		2.46	0.17	2.65	0.12	4.19	3.0	560	0.84	<0.01	6.25	6.18	41.1	3.4	94	3.89
644164		1.00	3.88	2.75	0.19	7.58	4.3	180.0	1.76	<0.01	2.07	136.5	54.1	19.0	71	7.78
644165		0.78	1.09	2.68	0.05	0.32	<5.0	82.3	0.08	<0.01	>25.0	38.5	120.0	6.1	5	0.40
644166		4.90	1.70	2.70	0.26	4.52	14.9	370	0.84	0.05	4.04	57.6	38.9	18.4	91	4.02
644167		1.04	1.47	2.71	0.35	0.64	<5.0	160.0	0.14	<0.01	24.2	38.2	60.1	6.2	21	0.67
644168		2.16	0.11	2.65	0.10	5.99	9.0	890	2.09	0.12	4.79	3.53	73.1	7.8	40	8.86
644169		5.20	0.61	2.67	0.09	3.40	6.0	460	0.81	<0.01	13.80	25.3	41.7	5.4	42	3.48
644170		3.42	0.53	2.66	0.11	5.78	11.7	1090	2.06	0.16	9.49	19.60	100.0	10.3	33	9.57
644171		3.66	0.65	2.69	0.12	5.01	15.3	840	1.66	0.08	5.78	29.2	73.4	9.7	48	6.75
644172		3.14	0.27	2.61	0.21	3.10	16.2	410	0.52	<0.01	7.80	7.93	35.6	8.7	53	2.55
644173		1.02	5.04	2.75	0.36	0.70	<5.0	120.0	0.11	<0.01	20.3	160.0	54.2	20.0	30	0.66
644174		5.90	1.01	2.69	0.73	3.50	14.6	380	0.55	0.04	4.02	45.9	53.8	11.8	65	2.59
644175		4.12	1.95	2.65	3.76	2.87	9.8	280	0.46	0.05	5.75	96.3	40.9	15.0	77	2.24
644176		1.94	0.01	2.63	0.10	3.47	10.6	380	0.47	<0.01	4.84	0.51	43.0	7.0	70	2.52
644177		0.04	3.23	2.98	12.45	2.06	17.4	80.9	1.73	0.28	0.45	72.4	35.1	10.9	31	7.68
644178		2.12	0.02	2.69	0.14	7.04	3.9	890	1.68	0.15	1.69	0.24	79.9	10.4	99	5.85
644179		5.74	0.11	2.70	0.07	1.42	<5.0	240	0.42	<0.01	24.0	3.25	130.0	5.2	11	2.23
644180		5.56	0.02	2.65	0.06	1.90	17.0	290	0.46	<0.01	16.40	0.62	106.0	8.6	34	2.32
644181		2.72	<0.01	2.68	0.15	7.33	30.8	990	1.66	0.20	1.41	0.05	74.1	17.0	37	9.66
644182		6.30	5.59	2.69	0.59	0.13	<5.0	110.0	0.06	<0.01	>25.0	116.5	4.02	10.2	6	0.13
644183		3.72	0.81	2.63	0.09	0.03	<5.0	57.7	<0.05	<0.01	>25.0	19.75	3.12	1.9	4	<0.05
644184		3.88	1.19	2.81	0.13	0.60	5.0	220	0.15	<0.01	23.8	26.1	8.69	4.5	8	0.64
644185		2.74	7.12	2.85	0.86	1.90	14.6	280	0.52	<0.01	7.50	196.0	38.6	32.4	75	2.22

Comments: Interference: Ca>10% on ICP-MS As,ICP-AES results shown. REE's may not be totally soluble in MS61 method.

ALS Chemex

EXCELLENCE IN ANALYTICAL CHEMISTRY

Aurora Laboratory Services Ltd.
212 Brooksbank Avenue
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Phone: 604 984 0221 Fax: 604 984 0218

To: NORANDA MINING AND EXPLORATION INC.
874 TUNGSTEN ST.
THUNDER BAY ON P7B 6J3

Date : 30-Sep-2002
Account: BUF

CERTIFICATE OF ANALYSIS VA02003299

Sample Description	Method Analyte Units LOR	WEI-21 Recvd Wt kg 0.02	Zn-AA46 Zn % 0.01	OA-GRA08b S.G. Unity 0.01	ME-MS61 Ag ppm 0.01	ME-MS61 Al % 0.01	ME-MS61 As ppm 0.2	ME-MS61 Ba ppm 0.5	ME-MS61 Be ppm 0.05	ME-MS61 Bi ppm 0.01	ME-MS61 Ca % 0.01	ME-MS61 Cd ppm 0.02	ME-MS61 Ce ppm 0.01	ME-MS61 Co ppm 0.1	ME-MS61 Cr ppm 1	ME-MS61 Cs ppm 0.05
644186		3.68	21.1	3.05	2.81	0.55	8.8	120.0	0.18	<0.01	5.79	>500	25.9	68.8	88	0.64
644187		1.18	>30.0	3.51	5.43	0.73	10.1	17.6	0.22	<0.01	3.54	>500	19.20	83.2	61	0.97
644188		0.06	27.5	3.12	10.15	2.69	34.7	50.0	2.67	0.19	0.28	421	51.3	10.1	24	14.25
644189		2.04	0.11	2.80	0.13	6.86	2.9	940	1.61	0.11	1.12	2.22	66.2	14.7	89	4.59
644190		1.10	7.86	2.89	0.70	1.47	25.0	170.0	0.49	<0.01	3.63	193.5	55.5	25.2	118	1.63
644191		4.96	6.34	2.85	0.35	3.24	14.1	190.0	0.66	<0.01	4.72	144.0	49.2	16.6	68	2.59
644192		1.62	15.45	2.98	1.39	1.67	13.4	77.1	0.47	<0.01	4.93	345	33.0	37.0	97	2.03
644193		2.98	2.53	2.79	0.22	5.90	48.8	520	1.42	0.13	1.12	62.7	82.2	24.9	42	6.96
644194		2.80	0.21	2.78	0.13	8.37	35.1	1310	1.94	0.17	2.50	5.52	100.0	18.8	55	9.86
644195		3.86	0.66	2.80	0.20	5.23	35.8	750	1.36	0.11	0.80	21.2	82.6	16.7	54	6.48
644196		3.44	0.03	2.72	0.05	4.67	10.2	780	0.69	0.02	1.16	0.51	47.6	6.3	55	3.86
644197		1.66	<0.01	2.86	0.30	12.90	11.7	1730	3.63	0.48	0.88	0.13	140.0	18.7	45	8.94
644198		0.94	29.3	3.37	1.72	0.31	4.4	60.0	0.12	<0.01	5.23	>500	15.75	117.0	88	0.43

Comments: Interference: Ca>10% on ICP-MS As,ICP-AES results shown. REE's may not be totally soluble in MS61 method.

ALS Chemex

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874 TUNGSTEN ST.
THUNDER BAY ON P7B 6J3

Date : 30-Sep-2002
Account: BUF

CERTIFICATE OF ANALYSIS VA02003299

Sample Description	Method Analyte Units LOR	ME-MS61 Cu ppm 0.2	ME-MS61 Fe % 0.01	ME-MS61 Ga ppm 0.05	ME-MS61 Ge ppm 0.05	ME-MS61 Hf ppm 0.1	ME-MS61 In ppm 0.005	ME-MS61 K % 0.01	ME-MS61 La ppm 0.5	ME-MS61 Li ppm 0.2	ME-MS61 Mg % 0.01	ME-MS61 Mn ppm 5	ME-MS61 Mo ppm 0.05	ME-MS61 Na % 0.01	ME-MS61 Nb ppm 0.1	ME-MS61 Ni ppm 0.2
644135		14.4	5.35	29.4	0.24	2.7	0.082	1.63	50.9	37.1	0.62	1905	0.56	0.07	13.6	36.4
644136		389	1.34	11.20	0.16	1.5	0.189	1.22	21.4	35.7	0.21	708	1.21	0.03	5.1	17.5
644137		214	1.30	45.9	0.20	1.5	2.81	1.60	19.4	30.6	0.19	324	1.19	0.04	6.1	19.5
644138		51.0	0.61	11.90	0.25	1.0	0.227	1.23	20.0	30.5	0.12	471	1.10	0.03	4.5	32.2
644139		101.0	0.69	26.0	0.27	0.3	1.380	0.49	10.4	23.4	0.06	756	1.12	0.02	1.6	36.9
644140		537	1.83	80.0	1.18	0.3	6.87	0.55	10.3	14.7	0.06	349	0.49	0.03	2.0	20.0
644141		259	1.49	95.5	0.85	0.5	6.75	0.57	7.9	18.6	0.06	544	1.25	0.02	2.3	15.2
644142		58.8	0.53	19.25	0.36	1.2	0.659	0.97	12.9	15.5	0.11	577	0.75	0.46	3.4	9.2
644143		15.8	0.70	15.80	0.22	1.9	0.081	2.33	32.9	28.3	0.26	506	1.09	0.12	8.0	14.8
644144		18.6	0.96	22.4	0.31	2.1	0.047	2.13	51.8	24.4	0.36	758	0.51	0.06	11.2	12.7
644145		124.0	2.80	9.89	0.34	1.4	0.032	1.17	19.8	10.6	0.18	722	18.60	0.03	4.9	42.0
644146		25.0	3.72	21.3	0.21	2.2	0.064	2.17	32.7	50.1	0.89	627	1.03	1.53	11.4	36.0
644147		75.9	0.53	15.60	0.22	1.3	1.020	0.60	19.3	14.1	0.08	749	0.98	0.31	2.7	9.3
644148		220	0.62	18.20	0.22	1.6	1.300	0.88	18.7	20.2	0.10	512	1.89	0.60	4.0	15.0
644149		156.0	1.03	37.8	0.29	3.7	0.125	2.41	72.2	24.3	0.50	279	1.16	0.18	18.9	27.0
644150		118.0	0.53	13.35	0.20	1.5	0.286	1.16	15.6	23.0	0.13	476	1.66	0.27	4.5	16.8
644162		51.2	0.82	22.4	0.55	2.1	0.176	2.82	36.4	15.1	0.30	1390	0.61	0.48	11.6	27.1
644163		78.3	0.59	11.65	0.29	1.6	0.167	1.55	18.9	33.3	0.18	1160	1.67	0.04	5.7	11.5
644164		92.0	0.83	31.0	0.24	2.5	0.313	3.24	28.7	18.6	0.33	374	0.60	0.05	11.3	10.9
644165		19.7	0.52	4.84	0.34	0.3	0.502	0.14	53.0	3.5	0.06	4600	0.11	0.01	0.7	6.0
644166		47.4	0.82	14.90	0.30	2.0	0.406	1.69	19.9	23.9	0.21	732	0.82	0.10	6.1	18.1
644167		25.6	0.60	6.26	0.17	0.3	0.583	0.28	20.3	10.2	0.08	5580	0.42	0.01	1.2	8.7
644168		12.8	0.69	16.05	0.45	2.3	0.069	2.50	40.8	25.8	0.37	744	0.64	0.05	7.6	15.0
644169		24.9	0.56	10.20	0.31	1.8	0.400	1.10	19.1	16.0	0.19	1955	0.58	0.28	4.4	9.6
644170		19.1	0.76	19.15	0.42	2.9	0.118	2.28	59.6	24.6	0.38	1585	0.28	0.04	7.9	14.2
644171		17.7	0.67	16.90	0.59	2.1	0.138	2.18	41.6	23.4	0.31	1050	0.65	0.04	6.8	17.8
644172		8.1	0.58	8.56	0.28	1.0	0.068	1.13	18.3	28.0	0.14	1675	0.52	0.34	3.5	16.0
644173		148.0	0.71	10.10	0.18	0.4	0.182	0.21	16.9	11.5	0.06	4590	0.36	0.15	0.9	6.8
644174		46.7	0.51	11.30	0.28	1.6	0.247	1.14	27.8	22.8	0.12	732	0.65	0.91	3.9	14.1
644175		30.6	0.58	13.80	0.18	1.4	1.015	0.86	19.3	24.3	0.10	1010	1.15	0.76	3.2	13.1
644176		4.8	0.45	8.43	0.25	2.0	0.025	1.08	20.9	17.2	0.13	952	0.59	0.86	3.8	11.8
644177		128.0	13.60	7.67	0.21	1.2	0.079	0.84	17.6	11.2	0.80	>10000	2.91	0.04	3.7	41.6
644178		23.2	3.29	19.25	0.18	2.3	0.053	1.87	40.1	35.9	0.80	965	1.01	1.37	10.3	26.4
644179		6.2	0.53	5.31	0.33	0.6	0.104	0.63	81.5	5.7	0.09	4980	0.14	0.02	2.9	11.0
644180		9.1	0.51	5.68	0.18	0.6	0.084	0.82	48.0	17.0	0.09	3610	0.57	0.02	3.0	17.0
644181		7.0	0.76	18.90	0.35	1.8	0.038	2.47	48.3	29.5	0.30	317	0.43	0.06	9.6	25.8
644182		61.4	0.51	6.74	9.44	<0.1	0.350	0.05	2.2	3.2	0.04	5330	0.12	0.01	0.4	3.1
644183		10.7	0.45	1.22	1.65	<0.1	0.089	0.01	1.4	1.0	0.03	6720	0.06	<0.01	0.2	1.1
644184		19.0	0.44	2.62	2.10	<0.1	0.094	0.26	5.2	3.3	0.06	5200	0.13	0.01	1.1	5.1
644185		73.8	0.75	21.4	7.32	0.9	5.31	0.79	18.7	25.1	0.11	1650	0.41	0.02	2.8	14.6

Comments: Interference: Ca>10% on ICP-MS As,ICP-AES results shown. REE's may not be totally soluble in MS61 method.

ALS Chemex

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874 TUNGSTEN ST.
THUNDER BAY ON P7B 6J3

Date : 30-Sep-2002
Account: BUF

CERTIFICATE OF ANALYSIS VA02003299

Sample Description	Method Analyte Units LOR	ME-MS61 Cu ppm 0.2	ME-MS61 Fe % 0.01	ME-MS61 Ga ppm 0.05	ME-MS61 Ge ppm 0.05	ME-MS61 Hf ppm 0.1	ME-MS61 In ppm 0.005	ME-MS61 K % 0.01	ME-MS61 La ppm 0.5	ME-MS61 Li ppm 0.2	ME-MS61 Mg % 0.01	ME-MS61 Mn ppm 5	ME-MS61 Mo ppm 0.05	ME-MS61 Na % 0.01	ME-MS61 Nb ppm 0.1	ME-MS61 Ni ppm 0.2
644186		149.0	1.34	46.4	17.10	0.3	11.25	0.23	13.9	17.3	0.03	1195	1.02	0.01	1.0	10.2
644187		426	2.93	82.0	144.5	0.4	12.15	0.33	11.2	9.3	0.04	774	0.29	0.01	1.4	7.6
644188		123.0	2.76	8.78	0.12	1.8	0.046	1.21	18.4	13.3	0.17	714	15.50	0.03	4.7	38.2
644189		20.6	3.41	19.80	0.47	2.8	0.073	2.18	30.1	56.7	0.80	681	0.55	1.46	11.5	31.2
644190		82.3	0.82	15.85	1.39	0.7	1.330	0.61	27.3	43.2	0.08	780	1.29	0.03	2.2	20.2
644191		48.3	0.76	12.80	1.46	1.2	0.252	1.35	27.9	24.7	0.14	1025	0.51	0.03	3.5	12.5
644192		121.0	1.14	25.2	39.8	0.8	1.465	0.66	19.7	30.3	0.08	1090	1.04	0.02	2.3	13.3
644193		23.4	0.71	17.40	0.46	1.9	0.381	2.46	56.8	32.4	0.25	247	0.56	0.05	7.3	31.8
644194		31.4	0.78	21.7	0.42	2.8	0.124	3.54	60.1	24.2	0.34	551	1.22	0.07	11.0	28.7
644195		18.3	0.62	16.60	0.24	2.3	0.079	2.14	43.9	33.2	0.20	165	1.04	0.16	7.2	27.1
644196		19.9	0.52	9.56	0.14	1.6	0.021	1.90	25.6	22.4	0.18	261	1.12	0.16	4.7	13.3
644197		60.6	2.43	39.7	1.04	3.7	0.096	5.35	53.3	32.0	0.50	1180	0.50	0.11	20.0	30.1
644198		212	1.83	57.8	89.2	0.1	0.661	0.14	7.1	11.4	0.02	905	1.09	0.01	0.7	5.7

Comments: Interference: Ca>10% on ICP-MS As,ICP-AES results shown. REE's may not be totally soluble in MS61 method.

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CERTIFICATE OF ANALYSIS VA02003299

Sample Description	Method Analyte Units LOR	ME-MS61 P ppm 10	ME-MS61 Pb ppm 0.5	ME-MS61 Rb ppm 0.1	ME-MS61 Re ppm 0.002	ME-MS61 S % 0.01	ME-MS61 Sb ppm 0.05	ME-MS61 Se ppm 1	ME-MS61 Sn ppm 0.2	ME-MS61 Sr ppm 0.2	ME-MS61 Ta ppm 0.05	ME-MS61 Te ppm 0.05	ME-MS61 Th ppm 0.2	ME-MS61 Ti % 0.01	ME-MS61 Tl ppm 0.02	ME-MS61 U ppm 0.1
644135		330	17.9	183.0	0.004	0.15	2.06	2	3.2	65.7	1.00	0.07	16.5	0.45	0.97	2.1
644136		120	308	56.4	0.003	0.31	1.56	1	1.2	90.9	0.33	<0.05	8.8	0.17	0.26	1.4
644137		120	38.6	93.2	0.003	3.84	5.29	7	4.3	63.8	0.37	<0.05	7.4	0.18	0.33	1.3
644138		110	208	59.4	0.003	0.47	3.95	1	1.5	105.0	0.19	<0.05	6.0	0.15	0.24	1.1
644139		40	>10000	24.8	0.004	5.79	51.3	9	2.3	176.0	0.05	<0.05	2.0	0.05	0.26	0.2
644140		50	2420	29.1	0.003	>10.00	15.40	23	11.6	64.9	0.12	<0.05	2.0	0.06	0.13	0.4
644141		30	155.0	28.2	0.003	>10.00	12.80	20	9.2	105.0	0.15	<0.05	2.2	0.07	0.11	0.5
644142		70	10.5	40.7	0.002	2.17	3.48	3	1.9	112.0	0.19	<0.05	7.5	0.11	0.16	0.9
644143		180	15.0	100.0	0.003	0.16	4.10	1	1.8	100.0	0.43	<0.05	11.5	0.26	0.42	1.5
644144		250	7.6	100.0	0.004	0.14	3.88	1	2.3	168.0	0.71	<0.05	14.6	0.32	0.60	1.6
644145		1260	>10000	90.5	0.007	>10.00	24.5	25	1.5	22.0	0.15	0.16	6.3	0.11	54.2	6.0
644146		200	41.0	123.0	0.004	0.20	1.26	1	2.4	122.0	0.87	<0.05	16.9	0.32	0.70	2.5
644147		90	754	27.4	0.004	1.87	3.95	3	2.3	96.9	0.13	<0.05	10.4	0.08	0.17	1.2
644148		90	4620	41.6	0.003	2.17	5.69	3	2.8	50.9	0.26	<0.05	10.9	0.12	0.20	1.4
644149		890	110.0	100.0	0.004	0.34	11.25	2	3.9	109.0	1.42	0.07	26.3	0.48	0.88	7.2
644150		100	>10000	52.9	0.003	1.16	13.45	2	1.5	76.2	0.30	<0.05	9.8	0.14	0.27	1.2
644162		200	157.0	110.0	0.004	0.76	8.15	2	2.5	173.0	0.77	<0.05	14.1	0.33	0.49	2.7
644163		100	35.8	71.7	0.003	0.12	1.01	1	1.6	126.0	0.22	<0.05	9.7	0.20	0.27	0.9
644164		170	6.4	130.0	0.003	1.84	1.64	4	2.5	89.7	0.72	<0.05	14.8	0.33	0.55	1.8
644165		10	2.7	7.2	0.005	0.43	0.12	3	0.4	416	0.06	<0.05	0.9	0.01	0.03	0.1
644166		110	15.0	73.0	0.003	1.13	3.93	2	1.8	149.0	0.42	<0.05	11.1	0.19	0.35	1.8
644167		30	174.0	14.0	0.003	0.66	0.60	3	1.1	706	0.09	<0.05	1.7	0.03	0.07	0.3
644168		190	35.4	120.0	0.004	0.13	1.36	1	1.9	168.0	0.28	<0.05	15.0	0.27	0.51	2.0
644169		120	24.5	52.7	0.003	0.34	0.66	1	1.4	390	0.23	<0.05	8.8	0.13	0.22	1.4
644170		220	6.9	110.0	0.004	0.37	1.11	2	2.0	238	0.46	<0.05	15.1	0.25	0.54	2.2
644171		180	21.8	100.0	0.003	0.50	1.40	2	2.0	217	0.42	<0.05	11.9	0.22	0.44	1.6
644172		60	19.5	49.4	0.004	0.34	3.55	1	1.3	261	0.14	<0.05	6.0	0.11	0.22	0.9
644173		10	6.6	10.8	0.005	1.92	1.84	5	0.7	539	0.07	<0.05	1.7	0.02	0.05	0.2
644174		80	2290	52.0	0.003	0.69	3.98	2	1.3	171.0	0.20	<0.05	9.8	0.12	0.23	1.3
644175		70	>10000	39.6	0.003	1.33	11.20	2	2.1	208	0.13	<0.05	7.7	0.10	0.20	1.2
644176		80	38.8	46.4	0.003	0.14	2.73	1	1.1	200.0	0.15	<0.05	11.3	0.12	0.24	1.5
644177		860	9000	74.2	0.005	1.87	3.95	4	1.6	22.7	0.29	0.06	5.5	0.08	7.45	1.9
644178		210	42.1	133.0	0.004	0.20	0.72	1	2.3	126.0	0.84	<0.05	17.6	0.29	0.66	2.2
644179		90	8.0	32.8	0.006	0.13	0.82	3	0.7	331	0.21	<0.05	4.0	0.05	0.17	0.9
644180		90	60.7	39.1	0.003	0.08	1.24	2	0.8	227	0.20	<0.05	5.2	0.07	0.18	0.8
644181		240	13.2	100.0	0.002	0.19	3.72	1	2.4	76.3	0.62	<0.05	17.8	0.28	0.55	2.8
644182		30	86.2	2.1	<0.002	2.29	2.00	3	0.7	500	0.16	<0.05	<0.2	<0.01	0.03	0.1
644183		30	<0.5	0.4	<0.002	0.39	0.14	1	0.3	374	0.09	<0.05	<0.2	<0.01	<0.02	<0.1
644184		60	2.7	10.0	<0.002	0.54	0.71	1	0.6	651	0.18	<0.05	0.2	0.02	0.05	0.3
644185		70	10.4	39.2	<0.002	3.50	2.44	5	6.1	504	0.32	<0.05	4.3	0.07	0.16	0.8

Comments: Interference: Ca>10% on ICP-MS As,ICP-AES results shown. REE's may not be totally soluble in MS61 method.

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874 TUNGSTEN ST.
THUNDER BAY ON P7B 6J3

Date : 30-Sep-2002
Account: BUF

CERTIFICATE OF ANALYSIS VA02003299

Sample Description	Method	ME-MS61	ME-MS61	ME-MS61	ME-MS61	ME-MS61	ME-MS61	ME-MS61	ME-MS61	ME-MS61	ME-MS61	ME-MS61	ME-MS61	ME-MS61	ME-MS61	ME-MS61
	Analyte	P	Pb	Rb	Re	S	Sb	Se	Sn	Sr	Ta	Te	Th	Ti	Tl	U
	Units	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm
	LOR	10	0.5	0.1	0.002	0.01	0.05	1	0.2	0.2	0.05	0.05	0.2	0.01	0.02	0.1
644186		30	11.8	13.0	<0.002	8.38	4.06	14	12.9	218	0.16	<0.05	1.5	0.02	0.08	0.3
644187		20	13.4	17.8	<0.002	>10.00	5.82	25	41.6	157.0	0.20	<0.05	2.0	0.03	0.13	0.3
644188		1260	>10000	100.0	0.002	>10.00	9.18	17	0.9	26.4	0.44	0.20	8.0	0.11	57.9	7.5
644189		170	24.1	89.9	<0.002	0.13	0.92	1	2.7	128.0	1.05	<0.05	17.7	0.27	0.65	2.5
644190		70	4.3	31.0	<0.002	3.70	1.20	6	5.1	206	0.21	<0.05	3.9	0.06	0.16	0.5
644191		110	1.8	48.6	<0.002	3.14	0.98	3	1.8	152.0	0.33	<0.05	6.2	0.12	0.22	1.2
644192		50	3.4	35.8	<0.002	6.61	2.06	9	5.0	90.8	0.24	<0.05	3.9	0.06	0.16	0.8
644193		150	3.8	120.0	<0.002	1.40	2.47	2	2.6	80.3	0.66	<0.05	13.7	0.24	0.45	2.3
644194		210	10.0	160.0	0.002	0.19	1.08	1	3.0	209	1.06	<0.05	19.0	0.32	0.65	3.7
644195		120	6.8	100.0	<0.002	0.52	1.94	1	2.0	69.2	0.69	<0.05	14.8	0.20	0.48	2.7
644196		110	1.7	84.9	<0.002	0.08	0.55	1	1.4	91.3	0.45	<0.05	9.1	0.19	0.26	1.5
644197		460	50.4	240	0.002	0.53	3.30	1	4.6	182.0	1.83	0.07	19.0	0.42	1.24	6.3
644198		10	16.9	7.5	<0.002	>10.00	5.17	20	1.7	93.5	0.12	<0.05	0.8	0.01	0.07	0.1

Comments: Interference: Ca>10% on ICP-MS As,ICP-AES results shown. REE's may not be totally soluble in MS61 method.

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874 TUNGSTEN ST.
THUNDER BAY ON P7B 6J3

Date : 30-Sep-2002
Account: BUF

CERTIFICATE OF ANALYSIS VA02003299

Sample Description	Method Analyte Units LOR	ME-MS61 V ppm 1	ME-MS61 W ppm 0.1	ME-MS61 Y ppm 0.1	ME-MS61 Zn ppm 2	ME-MS61 Zr ppm 0.5	Hg-CV41 Hg ppm 0.01	Ag-AA46 Ag ppm 1	Pb-AA46 Pb % 0.01
644135		99	1.9	18.6	63	84.6	0.31	1	<0.01
644136		32	0.8	9.2	4310	47.0	1.31	<1	0.04
644137		37	1.0	8.4	>10000	49.8	>10.0	<1	<0.01
644138		32	0.8	7.2	7680	32.3	2.68	1	<0.01
644139		12	0.5	6.2	>10000	10.2	>10.0	45	14.00
644140		13	0.3	5.4	>10000	13.4	>10.0	3	0.27
644141		14	0.6	7.1	>10000	21.4	>10.0	1	0.02
644142		19	0.6	7.0	>10000	35.0	>10.0	<1	<0.01
644143		48	1.4	11.5	2680	63.4	0.92	<1	<0.01
644144		64	1.3	16.3	324	66.9	0.10	<1	<0.01
644145		100	1.5	19.4	>10000	56.9	8.61	10	1.39
644146		59	1.3	13.5	485	66.9	0.16	<1	0.01
644147		13	0.4	10.7	>10000	38.0	9.59	<1	0.09
644148		21	1.0	9.4	>10000	48.1	>10.0	1	0.52
644149		105	1.9	24.1	1430	174.0	0.49	<1	0.01
644150		26	1.0	7.3	>10000	46.4	3.14	6	3.29
644162		59	1.2	22.3	>10000	67.7	2.71	<1	0.02
644163		32	1.0	11.9	1805	50.1	0.46	<1	0.01
644164		65	1.3	11.4	>10000	79.0	8.71	<1	<0.01
644165		3	0.2	45.0	7800	3.5	3.05	<1	<0.01
644166		32	0.8	10.3	>10000	54.2	4.40	<1	<0.01
644167		6	0.3	56.7	>10000	7.4	3.74	<1	0.02
644168		45	0.9	14.7	1460	73.1	0.41	<1	<0.01
644169		21	0.8	17.1	5650	54.9	1.37	<1	<0.01
644170		44	1.2	29.9	5450	88.3	1.53	<1	<0.01
644171		40	1.2	17.7	8340	68.0	2.14	<1	<0.01
644172		21	0.4	16.5	2500	30.5	0.70	1	<0.01
644173		4	0.3	54.2	>10000	9.4	>10.0	<1	<0.01
644174		20	0.5	11.5	8950	52.9	2.40	<1	0.25
644175		17	0.8	11.6	>10000	46.3	6.72	4	1.61
644176		20	0.5	13.5	145	50.6	0.09	<1	0.01
644177		50	1.2	15.5	>10000	44.3	1.93	14	1.03
644178		53	1.3	13.9	157	68.7	0.03	<1	0.01
644179		11	0.4	56.5	927	12.3	0.19	<1	<0.01
644180		15	0.5	43.7	235	15.6	0.05	<1	0.01
644181		56	1.0	9.8	62	58.0	0.02	<1	<0.01
644182		1	0.1	0.8	>10000	0.5	>10.0	<1	0.01
644183		1	0.1	3.5	6640	<0.5	1.40	<1	<0.01
644184		5	0.2	3.1	8350	0.9	2.31	<1	<0.01
644185		13	0.4	16.0	>10000	30.6	>10.0	1	<0.01

Comments: Interference: Ca>10% on ICP-MS As,ICP-AES results shown. REE's may not be totally soluble in MS61 method.

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874 TUNGSTEN ST.
THUNDER BAY ON P7B 6J3

Date : 30-Sep-2002
Account: BUF

CERTIFICATE OF ANALYSIS VA02003299

Sample Description	Method Analyte Units LOR	ME-MS61 V ppm 1	ME-MS61 W ppm 0.1	ME-MS61 Y ppm 0.1	ME-MS61 Zn ppm 2	ME-MS61 Zr ppm 0.5	Hg-CV41 Hg ppm 0.01	Ag-AA46 Ag ppm 1	Pb-AA46 Pb % 0.01
644186		5	0.4	10.2	>10000	8.3	>10.0	3	<0.01
644187		8	0.2	5.6	>10000	13.6	>10.0	6	<0.01
644188		101	1.5	20.5	>10000	56.9	>10.0	9	1.41
644189		52	1.3	13.5	827	85.8	0.17	1	0.01
644190		16	0.8	11.4	>10000	25.7	>10.0	1	<0.01
644191		26	0.5	10.2	>10000	42.8	>10.0	<1	<0.01
644192		15	0.6	10.2	>10000	24.7	>10.0	1	<0.01
644193		54	0.9	8.2	>10000	61.3	6.01	<1	<0.01
644194		73	1.8	14.2	1835	76.9	0.43	<1	<0.01
644195		43	1.1	8.0	6210	71.7	1.64	<1	0.01
644196		42	1.0	5.4	232	48.8	0.06	<1	<0.01
644197		109	2.5	12.8	74	91.5	0.05	<1	0.01
644198		4	0.4	5.7	>10000	5.8	>10.0	1	<0.01

Comments: Interference: Ca>10% on ICP-MS As,ICP-AES results shown. REE's may not be totally soluble in MS61 method.

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874 TUNGSTEN ST.
THUNDER BAY ON P7B 6J3

Date : 7-Oct-2002
Account: BUF

Project : 2501

CERTIFICATE OF ANALYSIS VA02003721

Sample Description	Method Analyte Units LOR	WEI-21 Recvd Wt kg 0.02	ME-MS61 Ag ppm 0.01	ME-MS61 Al % 0.01	ME-MS61 As ppm 0.2	ME-MS61 Ba ppm 0.5	ME-MS61 Be ppm 0.05	ME-MS61 Bi ppm 0.01	ME-MS61 Ca % 0.01	ME-MS61 Cd ppm 0.02	ME-MS61 Ce ppm 0.01	ME-MS61 Co ppm 0.1	ME-MS61 Cr ppm 1	ME-MS61 Cs ppm 0.05	ME-MS61 Cu ppm 0.2	ME-MS61 Fe % 0.01
176287		4.16	0.10	6.76	6.8	710	1.59	0.15	1.01	1.84	72.2	8.3	60	5.66	9.7	0.65
176288		2.10	0.13	6.68	6.4	700	1.87	0.16	0.87	6.39	71.6	11.1	77	5.61	13.6	0.75
176289		2.90	0.46	8.13	30.1	610	2.27	0.30	1.11	3.26	90.6	23.9	90	6.01	30.3	1.81
176290		5.34	0.02	1.40	1.1	130.0	0.28	0.04	1.73	0.39	21.4	2.2	143	0.79	7.9	0.43
176291		5.12	0.02	1.25	3.1	110.0	0.25	0.03	0.38	0.07	16.55	2.1	112	0.58	4.5	0.33
176292		4.74	0.02	1.17	0.6	110.0	0.27	0.03	1.61	0.24	21.0	2.3	126	0.65	6.8	0.41
176293		2.26	0.16	10.30	14.4	1130	2.57	0.24	0.27	0.46	90.6	21.0	65	5.66	25.1	0.90
176294		2.38	0.06	7.68	3.6	1070	1.87	0.18	1.01	0.08	71.5	17.1	100	5.88	24.8	3.91
176295		0.04	14.70	2.08	13.6	81.0	1.76	0.34	0.44	75.4	33.0	10.4	34	7.29	134.0	14.20

Comments: REE's may not be totally soluble in MS61 method.

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THUNDER BAY ON P7B 6J3

Date : 7-Oct-2002
Account: BUF

Project : 2501

CERTIFICATE OF ANALYSIS VA02003721

Sample Description	Method Analyte Units LOR	ME-MS61 Ga ppm 0.05	ME-MS61 Ge ppm 0.05	ME-MS61 Hf ppm 0.1	ME-MS61 In ppm 0.005	ME-MS61 K % 0.01	ME-MS61 La ppm 0.5	ME-MS61 Li ppm 0.2	ME-MS61 Mg % 0.01	ME-MS61 Mn ppm 5	ME-MS61 Mo ppm 0.05	ME-MS61 Na % 0.01	ME-MS61 Nb ppm 0.1	ME-MS61 Ni ppm 0.2	ME-MS61 P ppm 10	ME-MS61 Pb ppm 0.5
176287		19.05	0.18	3.6	0.032	2.85	33.3	14.1	0.29	273	0.69	0.35	9.9	16.6	200	265
176288		19.60	0.20	3.5	0.051	2.92	34.0	16.1	0.30	249	1.39	0.04	9.6	19.9	210	29.1
176289		22.4	0.26	2.9	0.042	3.58	45.7	17.7	0.43	458	2.85	0.08	10.6	40.3	690	72.1
176290		3.62	0.19	0.5	0.007	0.59	11.7	11.4	0.07	430	1.91	0.01	1.8	9.5	60	2.9
176291		2.97	0.11	0.5	0.005	0.50	9.5	11.5	0.05	119	0.91	0.01	1.5	6.0	40	5.7
176292		3.01	0.15	0.3	0.005	0.48	10.4	8.1	0.07	406	1.98	0.01	1.4	9.2	50	5.9
176293		25.6	0.22	5.4	0.032	4.49	43.5	15.7	0.34	82	1.38	0.06	13.2	26.7	330	19.7
176294		20.3	0.28	2.3	0.047	2.66	27.5	55.6	0.94	609	1.04	1.46	11.7	34.1	290	24.5
176295		7.44	0.32	1.2	0.071	0.88	15.8	11.1	0.82	10000	2.85	0.03	3.8	38.7	900	9510

Comments: REE's may not be totally soluble in MS61 method.

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CERTIFICATE OF ANALYSIS VA02003721

Sample Description	Method	ME-MS61	ME-MS61	ME-MS61	ME-MS61	ME-MS61	ME-MS61	ME-MS61	ME-MS61	ME-MS61	ME-MS61	ME-MS61	ME-MS61	ME-MS61	ME-MS61	ME-MS61
	Analyte	Rb	Re	S	Sb	Se	Sn	Sr	Ta	Te	Th	Tl	Tl	U	V	W
	Units	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm
	LOR	0.1	0.002	0.01	0.05	1	0.2	0.2	0.05	0.05	0.2	0.01	0.02	0.1	1	0.1
176287		120.0	0.002	0.11	2.43	1	2.0	80.7	0.51	0.05	17.4	0.29	0.57	2.7	54	1.0
176288		130.0	0.002	0.24	5.41	1	2.1	61.4	0.51	0.05	17.1	0.29	0.60	3.0	56	1.3
176289		160.0	0.005	1.20	8.26	2	2.1	79.9	0.72	0.06	16.9	0.31	0.81	4.0	88	1.4
176290		25.0	0.002	0.03	1.55	1	0.6	56.3	0.05	0.05	4.8	0.07	0.13	0.8	14	0.9
176291		21.6	0.002	0.03	0.71	1	0.4	26.1	0.05	0.05	3.8	0.05	0.12	0.6	10	0.4
176292		20.6	0.002	0.03	0.77	1	0.5	91.2	0.05	0.05	4.1	0.05	0.11	0.7	12	0.8
176293		180.0	0.002	0.32	7.68	1	2.2	44.7	0.88	0.05	21.8	0.42	0.86	5.0	91	1.5
176294		120.0	0.002	0.25	1.18	1	2.1	148.0	0.71	0.05	16.2	0.32	0.69	2.4	69	1.3
176295		60.7	0.002	1.99	3.82	3	1.5	19.4	0.29	0.06	5.5	0.08	7.28	2.0	55	1.2

Comments: REE's may not be totally soluble in MS61 method.

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Project : 2501

CERTIFICATE OF ANALYSIS VA02003721

Sample Description	Method Analyte Units LOR	ME-MS61 Y ppm 0.1	ME-MS61 Zn ppm 2	ME-MS61 Zr ppm 0.5	Hg-CV41 Hg ppm 0.01	Zn-AA62 Zn % 0.01
176287		10.5	692	110.5	0.03	
176288		10.4	2030	116.0	0.12	
176289		13.8	1395	94.5	0.07	
176290		5.3	178	21.7	0.01	
176291		2.6	39	21.3	<0.01	
176292		4.5	108	16.0	0.01	
176293		12.8	221	184.0	0.01	
176294		13.1	88	70.4	<0.01	
176295		12.9	>10000	38.7	1.99	2.86

Comments: REE's may not be totally soluble in MS61 method.

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Date : 26-Sep-2002
Account: BUF

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Project : 2501

CERTIFICATE OF ANALYSIS VA02003722

Sample Description	Method Analyte Units LOR	WEI-21 Recvd Wt kg 0.02	Zn-AA46 Zn % 0.01	ME-ICP41 Ag ppm 0.2	ME-ICP41 Al % 0.01	ME-ICP41 As ppm 2	ME-ICP41 B ppm 10	ME-ICP41 Ba ppm 10	ME-ICP41 Be ppm 0.5	ME-ICP41 Bi ppm 2	ME-ICP41 Ca % 0.01	ME-ICP41 Cd ppm 0.5	ME-ICP41 Co ppm 1	ME-ICP41 Cr ppm 1	ME-ICP41 Cu ppm 1	ME-ICP41 Fe % 0.01
176269		4.78	0.04	<0.2	0.21	6	<10	60	<0.5	<2	>15.0	0.7	3	18	6	0.45
176270		7.62	6.78	<0.2	0.05	12	<10	20	<0.5	5	7.77	195.5	24	80	63	0.50
176271		5.78	0.07	<0.2	0.46	11	<10	90	1.4	4	2.05	<0.5	9	13	16	0.83
176272		4.12	0.06	<0.2	0.36	8	<10	90	0.5	3	2.73	1.9	5	105	25	0.39
176273		4.50	0.01	<0.2	0.24	3	<10	50	<0.5	<2	3.25	0.5	2	90	24	0.28
176274		1.36	0.01	0.7	0.27	9	<10	80	<0.5	<2	1.26	<0.5	4	141	23	0.38
176275		1.46	0.01	<0.2	0.46	16	<10	110	1.0	<2	1.77	<0.5	15	24	25	0.64
176276		4.78	1.61	17.0	0.30	9	<10	40	<0.5	<2	0.80	41.0	8	140	168	0.53
176277		5.02	0.17	<0.2	0.33	13	<10	60	<0.5	4	0.77	4.3	7	76	15	0.26
176278		4.36	4.24	0.9	0.23	10	<10	50	<0.5	<2	2.29	112.0	11	89	79	0.53
176279		5.66	0.61	<0.2	0.28	8	<10	100	<0.5	3	1.54	17.5	5	107	125	0.35
176280		5.28	0.07	19.6	0.21	6	<10	50	<0.5	7	1.06	2.2	3	85	16	0.24
176281		6.02	0.05	<0.2	0.24	11	<10	60	<0.5	<2	1.12	1.4	6	88	11	0.24
176282		3.04	1.86	0.2	0.29	18	<10	80	0.6	<2	0.30	72.1	15	56	22	0.39
176283		1.40	6.03	2.0	0.41	20	<10	50	0.7	<2	0.54	166.5	15	63	121	0.93
176284		0.04	27.5	9.5	0.36	54	<10	10	0.9	<2	0.31	446	8	7	134	2.65
176285		2.12	0.04	<0.2	1.16	8	<10	90	0.7	<2	0.74	0.7	12	57	22	2.97
176286		0.04	3.10	21.7	0.48	18	20	20	0.9	<2	0.43	68.5	7	16	130	12.60
644199		2.58	0.09	1.2	0.14	6	<10	110	<0.5	2	>15.0	1.8	5	10	12	0.69
644200		2.50	29.5	2.7	0.13	21	<10	20	<0.5	<2	6.05	>500	51	24	385	1.56

ALS Chemex
EXCELLENCE IN ANALYTICAL CHEMISTRY
Aurora Laboratory Services Ltd.
212 Brooksbank Avenue
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Phone: 604 984 0221 Fax: 604 984 0218

To: NORANDA MINING AND EXPLORATION INC.
874 TUNGSTEN ST.
THUNDER BAY ON P7B 6J3

Date : 26-Sep-2002
Account: BUF

Project : 2501

CERTIFICATE OF ANALYSIS VA02003722

Sample Description	Method Analyte Units LOR	ME-ICP41 Ga ppm 10	ME-ICP41 Hg ppm 1	ME-ICP41 K % 0.01	ME-ICP41 La ppm 10	ME-ICP41 Mg % 0.01	ME-ICP41 Mn ppm 5	ME-ICP41 Mo ppm 1	ME-ICP41 Na % 0.01	ME-ICP41 Ni ppm 1	ME-ICP41 P ppm 10	ME-ICP41 Pb ppm 2	ME-ICP41 S % 0.01	ME-ICP41 Sb ppm 2	ME-ICP41 Sc ppm 1	ME-ICP41 Sr ppm 1
176269		<10	<1	0.15	10	0.13	1190	<1	0.01	5	280	14	0.11	2	3	546
176270		10	20	0.03	<10	0.03	516	<1	0.01	7	280	<2	3.29	<2	1	210
176271		<10	<1	0.35	20	0.23	718	1	0.01	12	550	14	0.23	2	5	60
176272		<10	<1	0.22	10	0.04	540	<1	0.01	8	440	11	0.09	<2	2	87
176273		<10	<1	0.15	10	0.03	536	<1	0.01	4	100	4	0.03	<2	1	77
176274		<10	1	0.17	10	0.03	230	1	0.01	9	110	5460	0.14	3	1	52
176275		<10	1	0.33	20	0.04	291	<1	0.01	20	300	112	0.48	<2	2	52
176276		<10	6	0.14	<10	0.06	182	2	0.01	11	80	>10000	2.19	38	1	22
176277		<10	<1	0.18	10	0.04	163	<1	0.01	8	130	144	0.14	<2	1	38
176278		10	13	0.14	<10	0.07	341	2	0.01	7	120	2800	2.18	<2	1	53
176279		<10	2	0.14	<10	0.05	267	2	0.01	7	90	79	0.38	<2	1	40
176280		<10	2	0.14	<10	0.03	198	1	0.01	7	120	>10000	1.49	39	1	45
176281		<10	1	0.13	10	0.03	184	1	0.01	8	460	315	0.09	<2	1	32
176282		10	6	0.21	10	0.03	50	1	0.01	12	170	80	1.12	<2	1	14
176283		10	18	0.20	<10	0.12	134	2	0.01	14	170	56	3.11	<2	1	25
176284		20	11	0.14	<10	0.06	799	16	0.01	17	1300	>10000	>10.0	<2	1	1
176285		<10	<1	0.23	10	0.58	621	<1	0.02	24	150	60	0.58	<2	3	60
176286		10	<1	0.17	<10	0.70	>10000	3	0.02	34	850	8630	1.94	<2	3	<1
644199		<10	<1	0.12	<10	0.10	591	<1	0.01	8	140	39	0.59	<2	1	803
644200		50	88	0.11	<10	0.03	578	1	<0.01	8	190	176	>10.0	<2	1	148

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To: NORANDA MINING AND EXPLORATION INC.
874 TUNGSTEN ST.
THUNDER BAY ON P7B 6J3

Date : 26-Sep-2002
Account: BUF

Project : 2501

CERTIFICATE OF ANALYSIS VA02003722

Sample Description	Method / Analyte / Units / LOR	ME-ICP41 Tl % 0.01	ME-ICP41 Tl ppm 10	ME-ICP41 U ppm 10	ME-ICP41 V ppm 1	ME-ICP41 W ppm 10	ME-ICP41 Zn ppm 2	Ag-AA46 Ag ppm 1	Pb-AA46 Pb % 0.01
176269		<0.01	<10	10	2	<10	438	<1	<0.01
176270		<0.01	<10	<10	1	<10	>10000	<1	<0.01
176271		<0.01	<10	<10	7	<10	563	<1	<0.01
176272		<0.01	<10	<10	3	<10	737	<1	<0.01
176273		<0.01	<10	<10	2	<10	240	<1	<0.01
176274		<0.01	<10	<10	2	<10	160	<1	0.59
176275		<0.01	<10	<10	4	<10	162	<1	0.01
176276		<0.01	<10	<10	2	<10	>10000	17	8.77
176277		<0.01	<10	<10	2	<10	1550	<1	0.02
176278		<0.01	<10	<10	2	<10	>10000	<1	0.30
176279		<0.01	<10	<10	2	<10	5660	<1	0.01
176280		<0.01	<10	<10	2	<10	749	20	9.08
176281		<0.01	<10	<10	2	<10	534	<1	0.03
176282		<0.01	<10	<10	2	<10	>10000	<1	<0.01
176283		<0.01	<10	<10	3	<10	>10000	1	<0.01
176284		<0.01	10	<10	14	<10	>10000	10	1.39
176285		0.01	<10	<10	16	10	551	<1	<0.01
176286		<0.01	<10	30	20	20	>10000	12	0.99
644199		<0.01	<10	<10	2	<10	1295	<1	<0.01
644200		<0.01	<10	<10	1	<10	>10000	1	0.01

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To: NORANDA MINING AND EXPLORATION INC.
874 TUNGSTEN ST.
THUNDER BAY ON P7B 6J3

RECEIVED OCT 2 9 2002

Date : 22-Oct-2002
Account: BUF

Project : 2501

CERTIFICATE OF ANALYSIS VA02004441

Sample Description	Method Analyte Units LOR	WEI-21 Recvd Wt kg 0.02	ME-ICP41 Ag ppm 0.2	ME-ICP41 Al % 0.01	ME-ICP41 As ppm 2	ME-ICP41 B ppm 10	ME-ICP41 Ba ppm 10	ME-ICP41 Be ppm 0.5	ME-ICP41 Bi ppm 2	ME-ICP41 Ca % 0.01	ME-ICP41 Cd ppm 0.5	ME-ICP41 Co ppm 1	ME-ICP41 Cr ppm 1	ME-ICP41 Cu ppm 1	ME-ICP41 Fe % 0.01	ME-ICP41 Ga ppm 10
319951		3.78	17.4	0.22	242	<10	50	<0.5	8	1.16	39.0	12	75	57	3.87	<10
319952		4.68	13.1	0.20	160	<10	50	<0.5	8	1.44	31.7	10	118	53	2.92	<10
319953		3.80	64.9	0.15	163	<10	40	<0.5	8	1.08	157.0	8	92	99	3.19	<10
319954		4.68	11.6	0.15	134	<10	40	<0.5	3	1.76	27.7	6	140	30	2.20	<10
319955		4.10	16.1	0.23	125	<10	40	<0.5	4	1.47	8.7	8	131	18	2.20	<10
319956		3.58	4.2	0.26	182	<10	60	<0.5	<2	2.11	3.2	12	126	21	2.96	<10
319957		0.36	6.8	0.42	306	<10	40	0.6	4	1.80	7.0	18	102	35	4.84	<10
319958		5.62	13.4	0.35	258	<10	30	<0.5	5	1.71	33.6	15	104	44	4.65	<10
319959		3.62	5.4	0.41	365	<10	50	0.7	12	1.49	22.8	15	71	27	4.05	<10
319960		3.74	14.0	0.56	327	<10	30	<0.5	5	1.94	29.8	12	116	83	5.12	<10
319961		3.68	67.2	0.08	141	10	20	<0.5	10	1.91	102.0	5	118	80	3.67	<10
319962		1.46	8.3	0.36	173	10	80	<0.5	<2	2.80	33.1	13	128	131	3.73	<10
319963		5.20	26.4	0.36	234	<10	40	<0.5	12	2.11	99.5	24	69	134	5.27	<10
319964		5.40	1.0	0.06	13	<10	30	<0.5	<2	0.48	2.3	4	196	8	0.38	<10
319965		4.76	0.5	0.09	23	<10	40	<0.5	<2	0.90	0.5	8	146	10	0.32	<10
319966		5.78	2.3	0.06	30	<10	30	<0.5	17	0.91	92.9	7	173	53	0.52	<10
319967		5.40	0.3	0.15	20	<10	60	<0.5	<2	1.09	<0.5	5	143	28	0.53	<10
319968		6.46	0.3	0.15	19	<10	70	<0.5	7	0.98	15.8	6	195	33	0.40	<10
319969		5.72	<0.2	0.20	34	<10	80	<0.5	<2	0.75	<0.5	14	109	42	0.40	<10
319970		5.20	0.2	0.27	31	<10	110	0.5	4	1.30	5.6	18	127	52	0.96	<10
319971		5.94	1.8	0.29	12	<10	70	<0.5	8	1.48	<0.5	7	104	9	0.37	<10
319972		3.10	<0.2	0.53	22	<10	160	1.2	4	1.68	<0.5	13	22	55	1.35	<10
319973		0.74	3.4	0.20	28	<10	10	<0.5	<2	1.47	>500	76	69	160	1.82	20
319974		0.94	0.2	0.13	5	<10	40	<0.5	5	3.85	11.4	5	166	18	0.52	<10
319975		2.08	<0.2	1.67	5	<10	120	0.9	<2	1.21	<0.5	14	85	19	3.60	10
319976		0.04	7.8	0.47	16	40	20	0.9	5	0.46	74.0	7	17	130	12.75	10
319977		0.06	9.8	0.33	44	<10	10	0.9	<2	0.32	496	8	7	130	2.65	20
176296		3.88	<0.2	0.48	15	<10	90	1.2	<2	0.59	<0.5	17	73	63	3.91	<10
176297		3.42	<0.2	0.30	4	<10	70	<0.5	4	0.12	12.4	6	117	37	0.73	<10
176298		3.68	<0.2	0.23	<2	<10	60	<0.5	14	0.08	22.3	4	198	12	0.34	<10
176299		3.66	0.3	0.50	68	<10	100	0.9	4	1.85	<0.5	17	30	59	3.85	<10
176300		3.32	18.5	0.49	376	<10	30	0.7	6	2.08	25.9	15	85	83	5.45	<10

ALS Chemex
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To: NORANDA MINING AND EXPLORATION INC.
874 TUNGSTEN ST.
THUNDER BAY ON P7B 6J3

Date : 22-Oct-2002
Account: BUF

Project : 2501

CERTIFICATE OF ANALYSIS VA02004441

Sample Description	Method Analyte Units LOR	ME-ICP41 Hg ppm 1	ME-ICP41 K % 0.01	ME-ICP41 La ppm 10	ME-ICP41 Mg % 0.01	ME-ICP41 Mn ppm 5	ME-ICP41 Mo ppm 1	ME-ICP41 Na % 0.01	ME-ICP41 Ni ppm 1	ME-ICP41 P ppm 10	ME-ICP41 Pb ppm 2	ME-ICP41 S % 0.01	ME-ICP41 Sb ppm 2	ME-ICP41 Sc ppm 1	ME-ICP41 Sr ppm 1	ME-ICP41 Tl % 0.01
319951		<1	0.14	<10	0.34	1100	5	0.01	31	650	3940	4.21	10	1	82	<0.01
319952		<1	0.12	<10	0.40	1415	8	0.01	28	870	2380	2.86	14	1	95	<0.01
319953		1	0.10	<10	0.27	993	3	0.01	25	520	>10000	3.81	45	1	60	<0.01
319954		1	0.09	<10	0.30	1290	3	0.01	23	520	2920	2.15	12	1	72	<0.01
319955		<1	0.11	<10	0.24	1085	3	0.01	18	350	3390	2.10	6	1	55	<0.01
319956		<1	0.12	<10	0.53	2210	5	0.01	29	610	759	2.65	5	2	107	<0.01
319957		<1	0.21	<10	0.50	1925	5	0.01	68	1720	915	4.87	12	2	125	<0.01
319958		<1	0.16	<10	0.28	1740	5	0.01	72	1350	2420	4.90	13	1	73	<0.01
319959		<1	0.21	<10	0.40	1760	2	0.01	36	450	1010	3.77	7	2	67	<0.01
319960		1	0.27	<10	0.45	2210	6	0.01	33	2360	1880	4.97	10	2	156	<0.01
319961		1	0.04	<10	0.06	2130	2	0.01	11	280	>10000	4.33	45	<1	107	<0.01
319962		<1	0.18	<10	0.75	3010	11	0.01	69	2420	1995	2.05	16	2	185	<0.01
319963		<1	0.20	<10	0.62	2820	6	0.01	75	1410	5970	4.36	26	2	121	<0.01
319964		<1	0.04	<10	0.03	239	1	0.01	10	150	36	0.12	2	1	39	<0.01
319965		<1	0.06	<10	0.03	344	1	0.01	14	70	30	0.06	4	1	80	<0.01
319966		1	0.04	<10	0.04	490	1	<0.01	13	50	330	0.78	3	1	66	<0.01
319967		<1	0.09	<10	0.11	719	1	<0.01	12	80	14	0.15	2	2	60	<0.01
319968		<1	0.10	<10	0.04	379	2	0.01	17	50	53	0.26	3	1	74	<0.01
319969		<1	0.13	<10	0.07	515	<1	0.01	25	100	7	0.08	5	2	45	<0.01
319970		1	0.17	<10	0.16	1020	12	0.01	32	100	26	0.67	5	2	91	<0.01
319971		<1	0.19	10	0.10	416	1	0.01	9	140	1045	0.11	3	1	62	<0.01
319972		<1	0.36	30	0.13	849	1	0.01	19	450	212	0.84	4	3	124	<0.01
319973		11	0.14	<10	0.20	857	<1	<0.01	19	90	50	9.53	9	1	57	<0.01
319974		1	0.08	<10	0.11	898	2	0.01	10	180	7	0.34	2	1	180	<0.01
319975		<1	0.26	20	0.78	754	<1	0.02	29	160	28	0.22	<2	4	89	0.02
319976		<1	0.15	<10	0.72	>10000	3	0.02	34	880	9160	2.07	<2	3	<1	<0.01
319977		11	0.12	<10	0.06	901	15	0.01	17	1410	>10000	>10.0	19	1	<1	<0.01
176296		<1	0.29	20	0.45	731	3	0.01	45	190	51	2.08	<2	3	45	<0.01
176297		<1	0.17	10	0.07	264	<1	0.01	10	100	16	0.28	<2	1	20	<0.01
176298		<1	0.13	10	0.03	58	2	0.01	8	50	10	0.42	<2	<1	12	<0.01
176299		<1	0.30	10	0.64	2530	1	0.01	35	410	81	2.35	2	3	117	<0.01
176300		<1	0.30	10	0.60	2300	2	0.01	42	1290	2580	5.09	7	3	143	<0.01

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THUNDER BAY ON P7B 6J3

Date : 22-Oct-2002
Account: BUF

Project : 2501

CERTIFICATE OF ANALYSIS VA02004441

Sample Description	Method Analyte Units LOR	ME-ICP41 Tl ppm 10	ME-ICP41 U ppm 10	ME-ICP41 V ppm 1	ME-ICP41 W ppm 10	ME-ICP41 Zn ppm 2	Ag-AA46 Ag ppm 1	Pb-AA46 Pb % 0.01	Zn-AA46 Zn % 0.01
319951		<10	<10	9	<10	3040	18	0.41	0.31
319952		<10	10	14	<10	2580	13	0.25	0.26
319953		<10	<10	8	<10	>10000	62	1.20	1.13
319954		<10	<10	10	<10	2230	12	0.32	0.24
319955		<10	<10	11	<10	865	15	0.34	0.09
319956		<10	10	21	<10	733	5	0.08	0.08
319957		<10	10	20	<10	875	7	0.10	0.08
319958		<10	<10	28	<10	2900	14	0.26	0.31
319959		<10	<10	11	<10	1905	6	0.11	0.19
319960		<10	10	21	<10	2280	14	0.20	0.25
319961		<10	<10	5	<10	7020	71	1.64	0.69
319962		<10	10	49	<10	2430	10	0.23	0.27
319963		<10	<10	26	<10	6830	28	0.65	0.75
319964		<10	<10	3	<10	436	1	<0.01	0.05
319965		<10	<10	2	<10	75	1	0.01	0.01
319966		<10	<10	2	<10	>10000	2	0.04	1.12
319967		<10	<10	3	<10	43	<1	<0.01	<0.01
319968		<10	<10	3	<10	3510	<1	<0.01	0.37
319969		<10	<10	3	<10	21	<1	<0.01	<0.01
319970		<10	<10	5	<10	1505	<1	<0.01	0.16
319971		<10	<10	3	<10	13	1	0.11	<0.01
319972		<10	<10	6	<10	45	<1	0.02	<0.01
319973		<10	<10	2	<10	>10000	3	<0.01	20.5
319974		<10	<10	2	<10	3500	<1	<0.01	0.30
319975		<10	<10	25	<10	381	<1	<0.01	0.04
319976		<10	30	25	<10	>10000	13	1.00	3.17
319977		10	<10	14	<10	>10000	11	1.38	27.9
176296		<10	<10	9	<10	420	<1	<0.01	0.03
176297		<10	<10	3	<10	4360	<1	<0.01	0.46
176298		<10	<10	3	<10	8030	<1	<0.01	0.80
176299		<10	<10	10	<10	175	1	0.01	0.02
176300		<10	<10	12	<10	1980	19	0.27	0.20

BONDAR CLEGG

VANCOUVER BRANCH

Geochemical Lab Report

NORANDA INC.
MR. ALLAN HUARD
874 TUNGSTEN STREET
THUNDER BAY ON P7B 6J3

Bondar Clegg Canada Limited
212 Brooksbank Avenue, North Vancouver, BC, V7J 2C1, Canada
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BONDAR CLEGG

Geochemical Lab Report

REPORT: V02-01121.0 (COMPLETE) REFERENCE:

CLIENT: NORANDA INC. SUBMITTED BY: A. HUARD

PROJECT: 2501 DATE RECEIVED: 14-NOV-02 DATE PRINTED: 20-NOV-02

DATE APPROVED	ORDER	ELEMENT		NUMBER OF ANALYSES	LOWER DETECTION LIMIT	EXTRACTION	METHOD
021119	1	Pb	Pb - ST35	1	0.01 PCT		TITRIMETRIC
021119	2	Zn	Zn - ST73/ ST83	2	0.01 PCT		TITRIMETRIC

SAMPLE TYPES	NUMBER	SIZE FRACTIONS	NUMBER	SAMPLE PREPARATIONS	NUMBER
P PREPARED PULP	3	4 AS RECEIVED	3	SAMPLES FROM STORAGE	3

REPORT COPIES TO: MR. ALLAN HUARD INVOICE TO: MR. ALLAN HUARD

****

This report must not be reproduced except in full. The data presented in this report is specific to those samples identified under "Sample Number" and is applicable only to the samples as received expressed on a dry basis unless otherwise indicated

****

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BONDAR CLEGG

Geochemical Lab Report

CLIENT: NORANDA INC. PROJECT: 2501

REPORT: V02-01121.0 (COMPLETE) DATE RECEIVED: 14-NOV-02 DATE PRINTED: 20-NOV-02

SAMPLE NUMBER	ELEMENT UNITS	Pb PCT	Zn PCT
P4 254794		50.45	
P4 644140			31.42
P4 644187			40.17

Bondar Clegg Canada Limited
212 Brooksbank Avenue, North Vancouver, BC, V7J 2C1, Canada
Tel: (604) 984-0221, Fax: (604) 984-0218

BONDAR CLEGG

VANCOUVER BRANCH

Geochemical Lab Report

CLIENT: NORANDA INC. PROJECT: 2501

REPORT: V02-01121.0 (COMPLETE) DATE RECEIVED: 14-NOV-02 DATE PRINTED: 20-NOV-02 PAGE 2 OF 3

STANDARD NAME	ELEMENT UNITS	Pb PCT	Zn PCT
IGS44 BRIT.GEO.SURV.		34.71	-
Number of Analyses		1	-
Mean Value		34.710	-
Standard Deviation		-	-
Accepted Value		-	-
CZN-3		-	51.10
Number of Analyses		-	1
Mean Value		-	51.100
Standard Deviation		-	-
Accepted Value		0.11	50.92

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BONDAR CLEGG

VANCOUVER BRANCH

Geochemical Lab Report

CLIENT: NORANDA INC. PROJECT: 2501

REPORT: V02-01121.0 (COMPLETE) DATE RECEIVED: 14-NOV-02 DATE PRINTED: 20-NOV-02 PAGE 3 OF 3

SAMPLE NUMBER	ELEMENT UNITS	Pb PCT	Zn PCT
254794		50.45	
Duplicate		50.35	
644140			31.42
Duplicate			31.44

Bondar Clegg Canada Limited
212 Brooksbank Avenue, North Vancouver, BC, V7J 2C1, Canada
Tel: (604) 984-0221, Fax: (604) 984-0218

Appendix 6
Sample Preparation and Analytical Techniques

ALS Chemex

Sample Preparation Procedure - Received as Pulp

Pulp samples are tested to determine if they meet the Chemex quality control requirement that greater than 90% of the pulp material pass through a 106 micron (Tyler 150 mesh) screen. If samples are found to fail these requirements, the client is notified. If requested, the sample may be run without any further preparation. Analytical work begins following consultation with the client.

Chemex Code	Parameter
214	Pulp Sample - Mesh Size Check
225	Run as received

May 15, 2000

ALS Chemex

Sample Preparation Procedure - SCR-41 to 45

Method: Sieving

Geochemical samples (soils, stream sediments, silts) are dried and then hammered to disaggregate any clumps. The samples are then placed in a stainless steel sieve and shaken from side-to-side until as much minus fraction as possible has been extracted.

The sieve size opening determines which code will be applied.

ALS Chemex Code	New Service Schedule Code	Rush Code	Parameter	Opening Size (Microns)	Tyler Mesh Size
*240			Sieve to -10 Mesh	1700	10
3291	9409		Sieve to -20 Mesh	850	20
*203	*9408	*243	Sieve to -35 Mesh	425	35
204			Sieve to -60 Mesh	250	60
201	9406	241	Sieve to -80 Mesh	180	80
1338			Sieve to -100 Mesh	150	100
216	9403		Sieve to -150 Mesh	106	150
230			Sieve to -200 Mesh	75	200
254	9405		Sieve to -250 Mesh	63	250
3254	9404		Sieve to -270 Mesh	53	270

***Note:** Samples typically undergo further particle size reduction prior to laboratory analysis.

ALS Chemex

Sample Preparation Procedure - CRU-31

Method: Crushing

The entire sample is passed through a primary crusher to yield a crushed product of which greater than 70% is less than approximately 2mm. A split (split size is determined by the final preparation method and analysis requested) is then taken using a stainless steel riffle splitter.

The crushing code indicates the weight of the original sample.

ALS Chemex Code	Rush Code	Parameter	Sample Weight (lb)	Sample Weight (kg)
226	295	0-3 kg Crush and Split	0 - 6	0 - 3
294	272	4-7 kg Crush and Split	7 - 15	4 - 7
276	293	8-12 kg Crush and Split	16 - 25	8 - 12
273	271	13-18 kg Crush and Split	26 - 40	13 -18
270		19-26 kg Crush and Split	41 - 60	19 - 26
278		27-36 kg Crush and Split	61 -79	27 - 36

ALS Chemex

Sample Preparation Procedure - Pulverizing

Method: Pulverizing - No Screen

A sample split (200 to 300 grams) is ground in a rotary pulverizer until approximately 90% of the material will pass through a 106 micron (Tyler 150 mesh) screen.

Chemex Code	Parameter
275	Assay Grade Pulverize
212	Geochemical Pulverize

ALS Chemex

Sample Preparation Procedure - PUL-31

Method: Grinding

A crushed sample split (200 - 300 grams) is ground using a ring mill pulverizer with a chrome steel ring set. The ALS Chemex specification for this procedure is that greater than 85% of the ground material passes through a 75 micron (Tyler 200 mesh) screen. Grinding with chrome steel may impart trace amounts of iron and chromium into a sample.

ALS Chemex Code	Rush Code	Parameter
208	258	Assay Grade Ring Grind
205	255	Geochemical Ring Grind

ALS Chemex

Geochemical Procedure - ME-ICP41
Trace Level Methods Using Conventional ICP-AES Analysis

Sample Decomposition: Nitric Aqua Regia Digestion
Analytical Method: Inductively Coupled Plasma - Atomic Emission Spectroscopy (ICP - AES)

A prepared sample (0.50 grams) is digested with aqua regia for at least one hour in a hot water bath. After cooling, the resulting solution is diluted to 12.5 ml with demineralized water, mixed and analyzed by inductively coupled plasma-atomic emission spectrometry. The analytical results are corrected for inter-element spectral interferences.

Chemex Code		Element	Symbol	Detection Limit	Upper Limit
229		ICP-AQ Digestion	n/a	n/a	n/a
2119	*	Aluminum	Al	0.01%	15 %
2141		Antimony	Sb	2 ppm	1 %
2120		Arsenic	As	2 ppm	1 %
2121	*	Barium	Ba	10 ppm	1 %
2122	*	Beryllium	Be	0.5 ppm	0.01 %
2123		Bismuth	Bi	2 ppm	1 %
557		Boron	B	10 ppm	10,000 ppm
2125		Cadmium	Cd	0.5 ppm	0.05 %
2124	*	Calcium	Ca	0.01%	15 %
2127	*	Chromium	Cr	1 ppm	1 %
2126		Cobalt	Co	1 ppm	1 %
2128		Copper	Cu	1 ppm	1 %
2130	*	Gallium	Ga	10 ppm	1 %
2150		Iron	Fe	0.01%	15 %
2151	*	Lanthanum	La	10 ppm	1 %
2140		Lead	Pb	2 ppm	1 %
2134	*	Magnesium	Mg	0.01%	15 %
2135		Manganese	Mn	5 ppm	1 %
2131		Mercury	Hg	1 ppm	1 %
2136		Molybdenum	Mo	1 ppm	1 %
2138		Nickel	Ni	1 ppm	1 %
2139		Phosphorus	P	10 ppm	1 %
2132	*	Potassium	K	0.01%	10 %

May 25, 2001

ALS Chemex

Geochemical Procedure - ME-ICP41 *(con't)*

Chemex Code		Element	Symbol	Detection Limit	Upper Limit
2142	*	Scandium	Sc	1 ppm	1 %
2118		Silver	Ag	0.2 ppm	0.01 %
2137	*	Sodium	Na	0.01%	10 %
2143	*	Strontium	Sr	1 ppm	1 %
551		Sulfur	S	0.01 %	10 %
2145	*	Thallium	Tl	10 ppm	1 %
2144	*	Titanium	Ti	0.01%	10 %
2148	*	Tungsten	W	10 ppm	1 %
2146		Uranium	U	10 ppm	1 %
2147		Vanadium	V	1 ppm	1 %
2149		Zinc	Zn	2 ppm	1 %

*Elements for which the digestion is possibly incomplete.

ALS Chemex

Geochemical Procedure - ME-MS61
Ultra-Trace Level Methods Using ICP-MS and ICP-AES

Sample Decomposition: HF-HNO_3-$HClO_4$ acid digestion, HCl leach
Analytical Methods: Inductively Coupled Plasma - Atomic Emission Spectroscopy (ICP - AES)
Inductively Coupled Plasma - Mass Spectrometry (ICP-MS)

A prepared sample (0.500 gram) is digested with perchloric, nitric and hydrofluoric acids to dryness. The residue is taken up in nitric and hydrochloric acids and diluted to a final volume with deionized water. The resulting solution is analyzed by inductively coupled plasma-atomic emission spectrometry. Following this analysis, the results are reviewed to ensure that base metal concentrations are less than 1%, with the exception of Silver, Bismuth, and Tungsten which have upper analytical limits of 100, 500, and 1000 ppm. Samples that meet this criteria are then diluted and analysed by ICPMS. Results are corrected for spectral interelement interferences.

Chemex Code	Element	Symbol	Detection Limit	Upper Limit	Analytical Technique
9327	Silver	Ag	0.02 ppm	100 ppm	AES+MS
9301	Aluminum	Al	0.01%	25%	AES
9340	Arsenic	As	0.2 ppm	10,000 ppm	AES+MS
9302	Barium	Ba	0.5 ppm	10,000 ppm	AES
9303	Beryllium	Be	0.05 ppm	1000 ppm	AES+MS
9304	Bismuth	Bi	0.01 ppm	10,000 ppm	AES+MS
9306	Calcium	Ca	0.01%	25%	AES
9305	Cadmium	Cd	0.02 ppm	500 ppm	AES+MS
9307	Cerium	Ce	0.01 ppm	500 ppm	MS
9310	Cobalt	Co	0.1 ppm	10,000 ppm	AES+MS
9309	Chromium	Cr	1 ppm	10,000 ppm	AES
9308	Cesium	Cs	0.05 ppm	500 ppm	MS
9311	Copper	Cu	0.2 ppm	10,000 ppm	AES
9315	Iron	Fe	0.01%	25%	AES
9312	Gallium	Ga	0.05 ppm	500 ppm	MS
9313	Germanium	Ge	0.05 ppm	500 ppm	MS
9243	Hafnium	Hf	0.1 ppm	500 ppm	MS
9314	Indium	In	0.005 ppm	500 ppm	MS
9325	Potassium	K	0.01%	10%	AES
9316	Lanthanum	La	0.5 ppm	500 ppm	MS

Geochemical Procedure - ME-MS61 *(con't)*

Chemex Code	Element	Symbol	Detection Limit	Upper Limit	Analytical Technique
9318	Lithium	Li	0.2 ppm	500 ppm	MS
9319	Magnesium	Mg	0.01%	15 %	AES
9320	Manganese	Mn	5 ppm	10,000 ppm	AES
9321	Molybdenum	Mo	0.05 ppm	10,000 ppm	AES
9328	Sodium	Na	0.01%	10 %	AES
9323	Niobium	Nb	0.1 ppm	500 ppm	MS
9322	Nickel	Ni	0.2 ppm	10,000 ppm	AES+MS
9324	Phosphorus	P	10 ppm	10,000 ppm	AES
9317	Lead	Pb	0.5 ppm	10,000 ppm	AES+MS
9326	Rubidium	Rb	0.1 ppm	500 ppm	MS
9349	Rhenium	Re	0.002 ppm	50 ppm	MS
9351	Sulfur	S	0.01%	10 %	AES
9341	Antimony	Sb	0.05 ppm	1,000 ppm	MS
9350	Selenium	Se	1 ppm	1,000 ppm	MS
9352	Tin	Sn	0.2 ppm	500 ppm	MS
9329	Strontium	Sr	0.2 ppm	10,000 ppm	AES+MS
9330	Tantalum	Ta	0.05 ppm	100 ppm	MS
9331	Tellurium	Te	0.05 ppm	500 ppm	MS
9333	Thorium	Th	0.2 ppm	500 ppm	MS
9334	Titanium	Ti	0.01%	10 %	AES+MS
9332	Thallium	Tl	0.02 ppm	500 ppm	MS
9336	Uranium	U	0.1 ppm	500 ppm	MS
9337	Vanadium	V	1 ppm	10,000 ppm	AES
9335	Tungsten	W	0.1 ppm	10,000 ppm	AES+MS
9338	Yttrium	Y	0.1 ppm	500 ppm	MS
9339	Zinc	Zn	2 ppm	1 %	AES
9353	Zirconium	Zr	0.5 ppm	500 ppm	MS

MS - Results are from the ICP-MS scan
AES - Results are from the ICP-AES scan
AES+MS - Results are a combination of ICP-AES and ICP-MS scans

Samples which fail to meet the Upper Concentration limits as outlined above, will be treated as regular T24 digestions and all detection limits will apply as per that method.

ALS Chemex

Assay Procedure - ME-AA46
Evaluation of Ores and High Grade Materials by Aqua Regia digestion

Sample Decomposition: Nitric - Aqua Regia Digestion
Analytical Method: Atomic Absorption Spectroscopy (AAS)

A prepared sample (0.2 to 2.0g) is digested with concentrated nitric acid for one half hour. After cooling, hydrochloric acid is added to produce aqua regia and the mixture is then digested for an additional hour and a half. An ionization suppressant is added if molybdenum is to be measured. The resulting solution is diluted to volume (100 or 250 ml) with demineralized water, mixed and then analyzed by atomic absorption spectrometry against matrix-matched standards.

International Units:

ALS Chemex Code	Element	Symbol	Detection Limit	Upper Limit
331	Arsenic	As	0.01 %	30 %
349	Bismuth	Bi	0.001 %	30 %
320	Cadmium	Cd	0.001 %	10 %
301	Copper	Cu	0.01 %	30 %
3501	Copper	Cu	0.001 %	100 %
3508	Copper	Cu	10 ppm	1,000,000 ppm
326	Iron	Fe	0.01 %	30 %
312	Lead	Pb	0.01 %	30 %
306	Molybdenum	Mo	0.001 %	10 %
307	Molybdenum as MoS_2	MoS_2	0.001 %	100 %
386	Silver	Ag	0.3 g/t	1500 g/t
956	Silver (Rush charge)	Ag	0.3 g/t	1500 g/t
365	Selenium	Se	0.01%	30 %
316	Zinc	Zn	0.01 %	30 %
8089	Manganese	Mn	0.01 %	30 %

American/English Units:

ALS Chemex Code	Element	Symbol	Detection Limit	Upper Limit
385	Silver	Ag	0.01 oz/ton	50 oz/ton
980	Silver (Rush charge)	Ag	0.01 oz/ton	50 oz/ton

ALS Chemex

Assay Procedure - ME-AA62
Evaluation of Ores and High Grade Materials

Sample Decomposition: HNO_3-$HClO_4$-HF-HCl digestion
Analytical Method: Atomic Absorption Spectroscopy (AAS)

A prepared sample (0.2 to 2.0g) is digested with nitric, perchloric, and hydrofluoric acids, and then evaporated to dryness. Hydrochloric acid is added for further digestion, and the sample is again taken to dryness. The residue is dissolved in nitric and hydrochloric acids and transferred to a volumetric flask (100 or 250 ml). The resulting solution is diluted to volume with demineralized water, mixed and then analyzed by atomic absorption spectrometry against matrix-matched standards.

International Units:

ALS Chemex Code	Element	Symbol	Detection Limit	Upper Limit
323	Cobalt	Co	0.001 %	30 %
3310	Copper	Cu	0.01 %	30 %
3503	Copper	Cu	0.001 %	30 %
327	Iron	Fe	0.01 %	30 %
3312	Lead	Pb	0.01 %	30 %
3505	Lead	Pb	0.001 %	30 %
3328	Manganese	Mn	0.01 %	50 %
3506	Molybdenum	Mo	0.001 %	10 %
321	Nickel	Ni	0.01 %	30 %
3321	Nickel	Ni	0.001 %	30 %
3386	Silver	Ag	1 g/t	1,000 g/t
3316	Zinc	Zn	0.01 %	30 %
3504	Zinc	Zn	0.001 %	30 %

American/English Units:

ALS Chemex Code	Element	Symbol	Detection Limit	Upper Limit
3385	Silver	Ag	0.03 oz/ton	30 oz/ton

May 10, 2001

ALS Chemex

Assay Concentrate Procedure - Zinc

Sample Decomposition: Multiple Acid Digestion
Analytical Method: Titration

A prepared sample (0.25 - 1.0g) is digested with nitric, hydrochloric, sulfuric and hydrofluoric acids. The resulting solution is evaporated to dryness and then dissolved with hydrochloric acid and water. Test lead is added to the sample and then it is boiled to precipitate antimony and copper. Iron is oxidized with potassium permanganate, and the acidity of the solution is then adjusted with hydrochloric acid. The resulting solution is titrated with potassium ferrocyanide.

Chemex Code	Element	Symbol	Detection Limit	Upper Limit
318	Zinc	Zn	0.01 %	100 %.

May 15, 2000

ALS Chemex

Assay Concentrate Procedure - Lead

Sample Decomposition: Multiple Acid Digestion
Analytical Method: Titration

A prepared sample (0.5 g) is digested with hydrochloric, hydrofluoric, nitric and sulfuric acids. The resulting solution is evaporated to sulfuric fumes and cooled. Demineralized water is added and the solution is boiled, cooled and then filtered. The collected precipitate is dissolved in ammonium acetate solution, heated, and titrated with ammonium molybdate solution.

Chemex Code	Element	Symbol	Detection Limit	Upper Limit
314	Lead	Pb	0.01 %	100 %

May 15, 2000

ALS Chemex

Assay Procedure - OA-GRA09
Bulk Density

Analytical Method: Gravimetric, Volumetric

The rock or core section (up to 6 kg) is weighed and then slowly placed into a bulk density apparatus which is filled with water. The displaced water is collected into a graduated cylinder and measured. From the data, the bulk density is calculated:

$$\text{Density} = \frac{\text{Weight of sample (g)}}{\text{Volume of water displaced (cm}^3\text{)}}$$

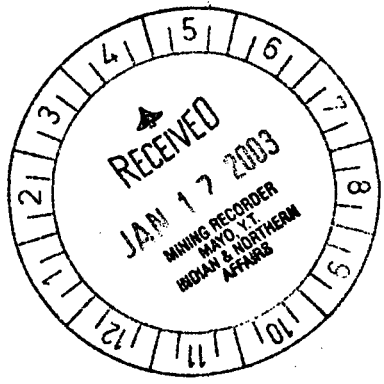
Chemex Code	Parameter	Symbol	Detection Limit	Upper Limit
441	Bulk Density	Bd	0.01 g/cm^3	20 g/cm^3

June 14, 2001

Report of Assessment work conducted on the

ANDREW PROPERTY, MAYO MINING DISTRICT

YUKON TERRITORY



Mining Claim	Grant Number
AMB 1 - 68	YC02355 - 422
AMB 69	YC02680
AMB 70	YC02423
AMB 71	YC02681
AMB 72 - 104	YC02424 - 56
AMB 105 - 112	YC02776 - 83
AMB 115 - 116	YC09953 - 54
AMB 117 FR	YC09955
AMB 118 - 122 FR	YC10001 - 05
AMB 123 - 146	YC09961 - 84
AMB 147 - 155	YC10006 - 14
AMB 156 - 162 FR	YC10015 - 21
ANDREW 1 - 10	YB65796 - 805

Geochemistry and Diamond Drilling

Conducted from July 31 to September 18, 2002

By

Noranda Inc.

NTS: 105K/16
Lat / Long: 132° 13' 7" N / -62° 55' 33" W
UTM: 6980155 N, 641070 E (NAD 83, Zone 8).

AUTHORS: Allan Huard
Michael Savell

094363

DATE: January, 2003

Volume 2 – Maps

638,000E 639,000E 640,000E 641,000E 642,000E 643,000E 644,000E 645,000E

6,984,000N
6,983,000N
6,982,000N
6,981,000N
6,980,000N
6,979,000N
6,978,000N
6,977,000N
6,976,000N

AMB 103 AMB 104 AMB 101 AMB 91 AMB 102 AMB 99 AMB 92 AMB 89 AMB 100 AMB 97 AMB 90 AMB 79 AMB 95 AMB 98 AMB 87 AMB 88 AMB 80 AMB 93 AMB 96 AMB 85 AMB 77 AMB 94 AMB 86 AMB 78 AMB 83 AMB 76 AMB 147 AMB 84 AMB 63 AMB 76 AMB 148 AMB 81 AMB 73 AMB 64 AMB 74 AMB 61 AMB 82 AMB 106 AMB 71 AMB 47 AMB 62 AMB 72 AMB 105 AMB 59 AMB 48 AMB 108 AMB 69 AMB 44 AMB 60 AMB 70 AMB 107 AMB 67 AMB 57 AMB 46 AMB 110 AMB 43 AMB 58 AMB 68 AMB 66 AMB 109 AMB 55 AMB 44 AMB 112 AMB 41 AMB 56 AMB 65 AMB 122 FR ANDREW 1 AMB 53 AMB 42 AMB 111 AMB 39 AMB 54 AMB 121 FR AMB 31 ANDREW 2 AMB 149 AMB 40 AMB 51 AMB 150 AMB 25 AMB 32 AMB 52 AMB 37 AMB 120 FR AMB 49 AMB 38 AMB 24 AMB 27 AMB 30 AMB 50 AMB 35 AMB 119 FR AMB 23 AMB 22 AMB 36 AMB 28 AMB 26 AMB 33 AMB 21 AMB 118 FR AMB 15 AMB 25 AMB 163 FR AMB 34 AMB 116 AMB 20 AMB 164 FR AMB 161 FR AMB 117 FR AMB 19 AMB 13 AMB 16 AMB 115 ANDREW 10 AMB 18 AMB 159 FR AMB 14 AMB 133 AMB 4 ANDREW 9 ANDREW 8 AMB 17 AMB 11 AMB 131 AMB 134 AMB 158 FR ANDREW 6 AMB 12 AMB 3 ANDREW 7 AMB 9 AMB 129 AMB 132 AMB 145 AMB 157 FR ANDREW 5 ANDREW 4 AMB 10 AMB 146 AMB 2 AMB 156 FR ANDREW 3 AMB 7 AMB 130 AMB 127 AMB 143 AMB 152 AMB 1 AMB 8 AMB 144 AMB 5 AMB 125 AMB 128 AMB 141 AMB 6 AMB 153 AMB 142 AMB 126 AMB 123 AMB 139 AMB 154 AMB 124 AMB 140 AMB 137 AMB 155 AMB 138 AMB 135 AMB 136

East Creek

Contour interval: 20 m

Andrew Property - Yukon
Claim Status

Geology by:		Scale:	**1 : 10,000**
Compiled by:	**A. Huard**	Projection:	**UTM NAD 83 Zone 8**
Drawn by:	**A Huard**	NTS:	**105K/16**
Date:	**December, 2002**	Figure #:	**1**

noranda

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Laval, QC, H7L 5A7

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Andrew Property - Yukon
Soil Geochem Results

Geology by:		Scale:	1 : 2,500
Compiled by:	A. Huard	Projection:	UTM NAD 83 Zone 8
Drawn by:	A Huard	NTS:	105K/16
Date:	December, 2002	Figure #:	2

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3296 avenue Francis-Hughes
Laval, QC, H7L 5A7

See text for discussion of anomalies A - E.

AMB 116
AMB 115
AMB 135 FR
AMB 137 FR
AMB 136 FR
AMB 1
AMB 2
ANDREW 9
ANDREW 10
ANDREW 8
ANDREW 7
ANDREW 6
ANDREW 5
ANDREW 4
ANDREW 3
AMB 18
AMB 19
AMB 17
AMB 11
AMB 12
AMB 9
AMB 10
AMB 7
AMB 8
AMB 5
AMB 6
AMB 125
AMB 127

A
B
C
D
E

6,978,000N
641,000E
642,000E
643,000E

0 100 200 300 400 500 m

Soils posted with Zn, Pb, Cu, Ag
Thematic Legend
- *< 250 ppm Zn*
- *250-499 ppm Zn*
- *500-999 ppm Zn*
- *>= 1000 ppm Zn*

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PO Box 2703
Whitehorse, Yukon Y1A 2C6
094363

Andrew Property - Yukon
Drillhole Locations and Section Lines

Geology by:		Scale:	1 : 2,500
Compiled by:	A. Huard	Projection:	UTM NAD 83 Zone 8
Drawn by:	A Huard	NTS:	105K/16
Date:	December, 2002	Figure #:	3

noranda
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Laval, QC, H7L 5A7

Section 641,350E
Section 641,450E
Section 641,550E
Section 641,650E
Section 641,800E
Section 642,200E
Section AN0222

AN-01-05A
AN0216
AN0113
AN0105
AN0106
AN0218
AN0217
AN0223
AN0220
AN0107
AN0112
AN0111
AN0219
AN0104
AN0115
AN0114
AN0109
AN0108
AN0221
AN0222

A
B
C
D
E

6,978,000N

641,000E
642,000E
643,000E

0 100 200 300 400 500 m

2001 DDH Traces in BLUE
2002 DDH Traces in RED

Thematic Legend for Soils
- < 250 ppm Zn
- 250-499 ppm Zn
- 500-999 ppm Zn
- >= 1000 ppm Zn

AMB 116
AMB 161 FR
ANDREW 10
AMB 18
AMB 19
AMB 13
AMB 11
ANDREW 9
ANDREW 8
AMB 17
AMB 158 FR
ANDREW 6
AMB 12
AMB 9
ANDREW 7
AMB 157 FR
ANDREW 5
ANDREW 4
AMB 10
AMB 2
AMB 7
ANDREW 3
AMB 156 FR
AMB 8
AMB 5
AMB 1
AMB 6
AMB 125

AN0107
(182.20)

AN0219

AN0220

AN0223
(-100.00)

0.03, 6.17, 12.37 / 6.9

6.49, 0.27, 1.96 / 10.50

3.76, 0.01, 0.61 / 2.75

10.34, 0.67, 2.62 / 10.20

13.63, 0.01, 1.67 / 6.00

0.64, 0.89, 38.41 / 4.4

5.35, 0.01, 1.13 / 0.40

176.80
(118.87)

178.60
(-12.37)

206.30
(0.80)

276.50
(-97.30)

Overburden
Limestone
Grey Shale
Fault Breccia
Quartzite
Green Shale
Maroon Shale
Mineralized Zone
Calcite - quartz vein
Carbonatized Quartzite Breccia
Black Shale Breccia
Sandstone
Siltstone
Grey Shale - micritic
Limestone Breccia
Fault

LEGEND

- SHL_MAR: Maroon shale, generally poorly bedded
- SHL_GRN: Green shale
- SHL_GRY: Grey shale
- SHL_BLK: Black shale, rare millimetric pyrite laminae
- QTZ: Quartzite, quartz sandstone, minor pebble conglomerate
- SNDST: Gritty quartz sandstone
- SLTST: Grey, green and brown siltstones
- SNDST_CA: Calcareous sandstone
- LST: Pale grey, micritic limestone
- BX_QTZ: Brecciated quartzite with calcite-quartz veins
- BX_BS: Black shale fragments in black shale matrix
- BX_LST: Brecciated limestone with calcite veinlets
- MNZN: sp-go-qtz-cc veins and breccia filling
- VEIN: metre-scale calcite-quartz veins
- Fault or shear
- FEL_DYKE: Felsic dyke

Bar graphs of Zn (Blue) and Pb (black) (Bars Capped at 10%)

13.63, 0.01, 1.67 / 6.00
Zn (%), Pb (%), Ag (g/t) / core length (m)

Core angles to bedding / foliation

DDH Length (m)

Metres in front of plane (negative) or metres behind plane (positive)

-10 0 10 20 30 40 50 60 70 80 90
Scale 1:500

094363

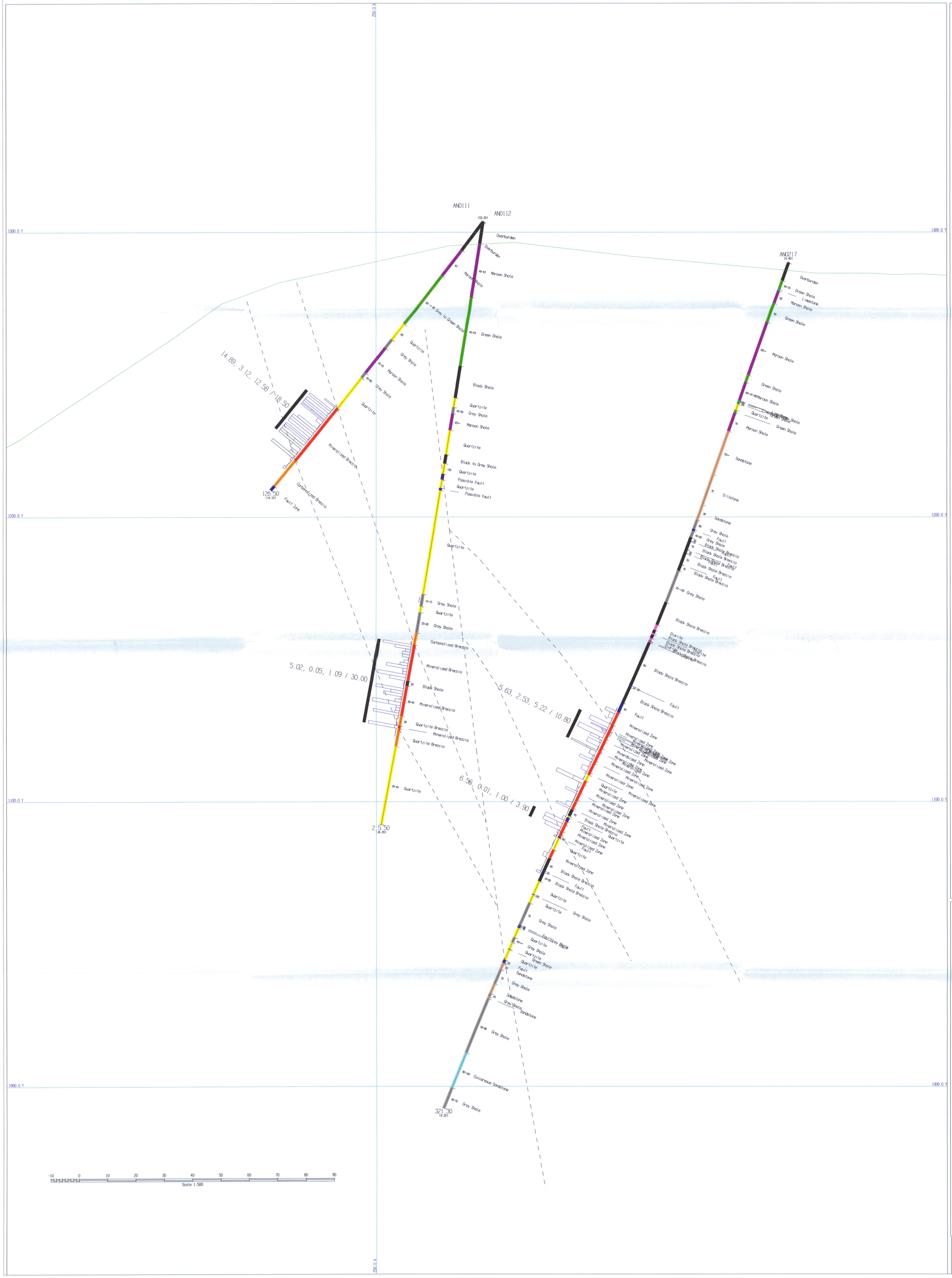
Noranda Inc.
Western Canada Region
874 Tungsten Street
Thunder Bay, ON
P7B 6J3

UNITS : METRES DATE: 02/12/10 TIME: 13:02:06

Andrew Deposit Yukon Territory
Section 641,800E - Looking West
1 : 500
Figure 4

Software by Geosoft Software International

YUKON ENERGY, MINES & RESOURCES LIBRARY
P.O. Box 2703
Whitehorse, Yukon Y1A 2C6



094383

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P7B 6J3

UNITS : METRES DATE: 02/12/10 TIME: 14:23:07

Andrew Deposit Yukon Territory
Section 641,650E - Looking West
1 : 500
Figure 5

YUKON ENERGY, MINES & RESOURCES LIBRARY
P.O. Box 2703
Whitehorse, Yukon Y1A 2C6
Software by Geosoft Software International

AN0109
(-14.40)
Overburden
Fault Zone
Limestone
Grey Shale
Fault Zone
Quartzite
Dark grey to Black Shale
Quartzite
Grey Shale
Quartzite
Fault Zone
Quartzite
Fault Zone
Grey-green Shale
Mineralized Breccia
Quartzite
Grey Shale
Mineralized Breccia
Carbonatized Brecciated Quartzite
Mineralized Breccia
Grey Shale
Mineralized Breccia
Carbonatized Brecciated Quartzite
Grey Shale
Fault
Grey Shale
Quartzite
Grey Shale
Quartzite
Fault Zone
Quartzite
Fault Zone
AN0104
(-45.80)
Overburden
Maroon Shale
Green Shale
Black Shale
Shale
Grey Shale
Quartz Mineralized Breccia
Grey Shale
Mineralized Breccia
Black Shale
Grey Shale
Grey Shale
Limestone
Grey Shale
Quartzite
Grey Shale
Diorite
Limestone Breccia
Black Shale Breccia
Fault
Black Shale Breccia
Fault/Black Shale Breccia
Black Shale Breccia
Fault
Black Shale Breccia
Black Shale Breccia
Grey Shale
Fault
Grey Shale
Grey Shale
Maroon Shale
Grey Shale
Maroon Shale
AN0113
(0.00)
Overburden
Grey Shale
Maroon Shale
Maroon Shale
AN0105
(-50.30)
Quartzite
Maroon Shale
Grey to Black Shale
Possible Fault
Grey to Black Shale
Possible Fault
Grey to Black Shale
10.78, 0.01, 0.64 / 6.8
12.84, 0.12, 1.75 / 27.50
1.73, 0.89, 2.23 / 40.90
171.60
(14.32)
308.76
(11.25)
239.30
(38.10)
195.10
(14.03)
1300.0 Y
1200.0 Y
1100.0 Y
1000.0 Y
250.0 X

-10 0 10 20 30 40 50 60 70 80 90
Scale 1:500

LEGEND

- SHL_MAR: Maroon shale, generally poorly bedded
- SHL_GRN: Green shale
- SHL_GRY: Grey shale
- SHL_BLK: Black shale, rare millimetric pyrite laminae
- QTZ: Quartzite, quartz sandstone, minor pebble conglomerate
- SNDST: Gritty quartz sandstone
- SLTST: Grey, green and brown siltstones
- SNDST_CA: Calcareous sandstone
- LST: Pale grey, micritic limestone
- BX_QTZ: Brecciated quartzite with calcite-quartz veins
- BX_BS: Black shale fragments in black shale matrix
- BX_LST: Brecciated limestone with calcite veinlets
- MNZN: sp-ga-qtz-cc veins and breccia filling
- VEIN: metre-scale calcite-quartz veins
- Fault or shear
- FEL_DYKE: Felsic dyke

Bar graphs of Zn (Blue)
and Pb (black)
(Bars Capped at 10%)

13.63, 0.01, 1.67 / 6.00
Zn (%), Pb (%), Ag (g/t) / core length (m)

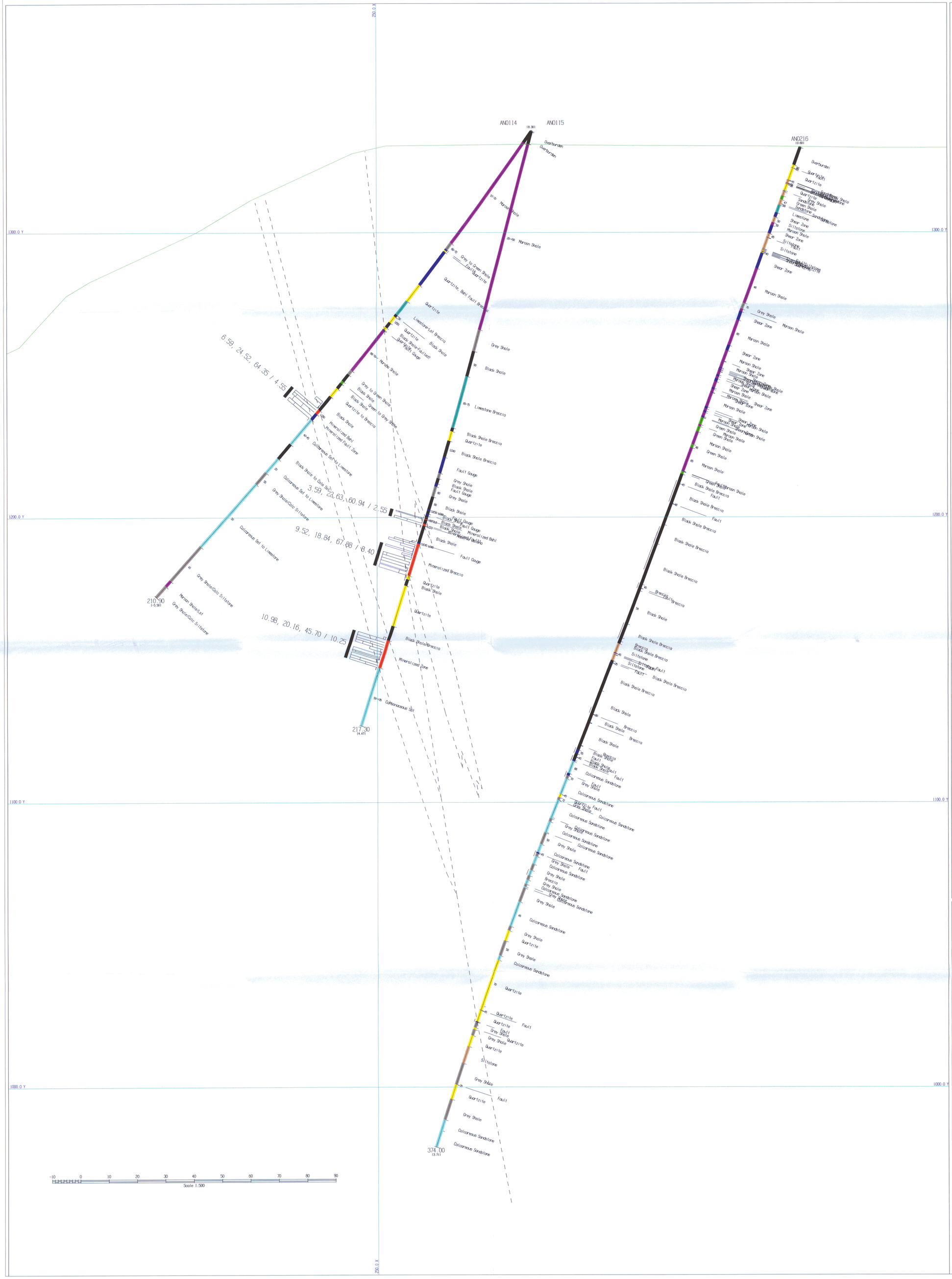
Core angles to bedding / foliation

DDH Length (m)

206.30
(0.80)

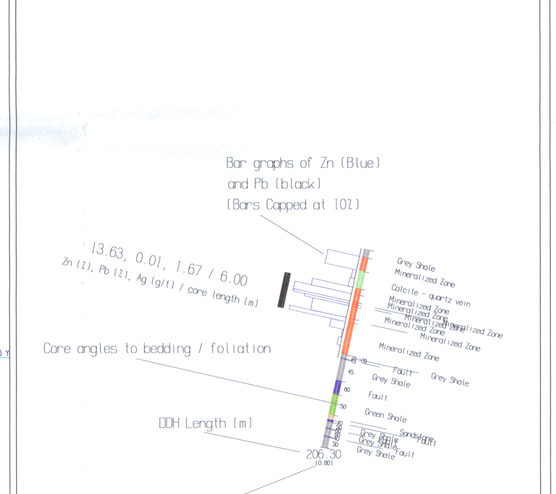
Metres in front of plane (negative)
or metres behind plane (positive)

Grey Shale
Mineralized Zone
Calcite - quartz vein
Mineralized Zone
Mineralized Zone
Mineralized Zone



LEGEND

- SHL_MAR: Maroon shale, generally poorly bedded
- SHL_GRN: Green shale
- SHL_GRY: Grey shale
- SHL_BLK: Black shale, rare millimetric pyrite laminae
- QTZ: Quartzite, quartz sandstone, minor pebble conglomerate
- SNDST: Gritty quartz sandstone
- SLTST: Grey, green and brown siltstones
- SNDST_CA: Calcareous sandstone
- LST: Pale grey, micritic limestone
- BX_QTZ: Brecciated quartzite with calcite-quartz veins
- BX_BS: Black shale fragments in black shale matrix
- BX_LST: Brecciated limestone with calcite veinlets
- MNZN: sp-py-qtz-cc veins and breccia filling
- VEIN: metre-scale calcite-quartz veins
- Fault or shear
- FEL_DYKE: Felsic dyke



094363

Noranda Inc. Western Canada Region 874 Tungsten Street Thunder Bay, ON P7B 6J8	Andrew Deposit Yukon Territory Section 641,450E - Looking West 1 : 500 Figure 7
UNITS : METRES DATE: 02/12/10 TIME: 14:53:24	Software by Geosoft Software International

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P.O. Box 2703
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AN0218
11.801

AN0106
1-44.001

Overburden
Limestone
Fault
Grey Shale
Calcareous Sandstone
Grey Shale
Mafic Dyke
Fault
Siltstone
Mineralized Zone
Calcareous Sandstone
Fault
Calcareous Sandstone
Grey Shale
Calcareous Sandstone
Grey Shale
Fault
Calcareous Sandstone
Fault
Calcareous Sandstone
Grey Shale
Calcareous Sandstone
Quartzite
Shale
Fault Zone/Black Shale
Fault
Mineralized Breccia
Grey Shale
Calcareous Sandstone
Fault
Quartzite
Calcareous Sandstone
Grey Shale
Grey Shale
Calcareous Sandstone
Calcareous Sandstone
Grey Shale
Calcareous Sandstone
Grey Shale
Calcareous Sandstone
Calcareous Sandstone
Grey Shale
Calcareous Sandstone
Grey Shale
159.70
111.301
210.00
19.001

Maroon Shale
Grey to Greygreen Shale

1300.0 Y
1200.0 Y
1100.0 Y
1000.0 Y
250.0 X

Interpretation from Adjacent

Section 641,450 E

For reference only.

-10 0 10 20 30 40 50 60 70 80 90
Scale 1:500

LEGEND

- SHL_MAR: Maroon shale, generally poorly bedded
- SHL_GRN: Green shale
- SHL_GRY: Grey shale
- SHL_BLK: Black shale, rare millimetric pyrite laminae
- QTZ: Quartzite, quartz sandstone, minor pebble conglomerate
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- BX_LST: Brecciated limestone with calcite veinlets
- MNZN: sp-galqtz-cc veins and breccia filling
- VEIN: metre-scale calcite-quartz veins
- Fault or shear
- FEL_DYKE: Felsic dyke

Bar graphs of Zn (Blue)
and Pb (black)
(Bars Capped at 1%)

13.63, 0.01, 1.67 / 6.00
Zn (%), Pb (%), Ag (g/t) / core length (m)

Core angles to bedding / foliation

DDH Length (m)

206.30
10.801

Metres in front of plane (negative)
or metres behind plane (positive)

Grey Shale
Mineralized Zone
Calcite - quartz vein
Mineralized Zone
Mineralized Zone
Mineralized Zone
Mineralized Zone
Mineralized Zone
Mineralized Zone
Fault
Grey Shale
Fault
Green Shale
Grey Shale
Sandy Fault
Grey Shale
Fault
Grey Shale

094363

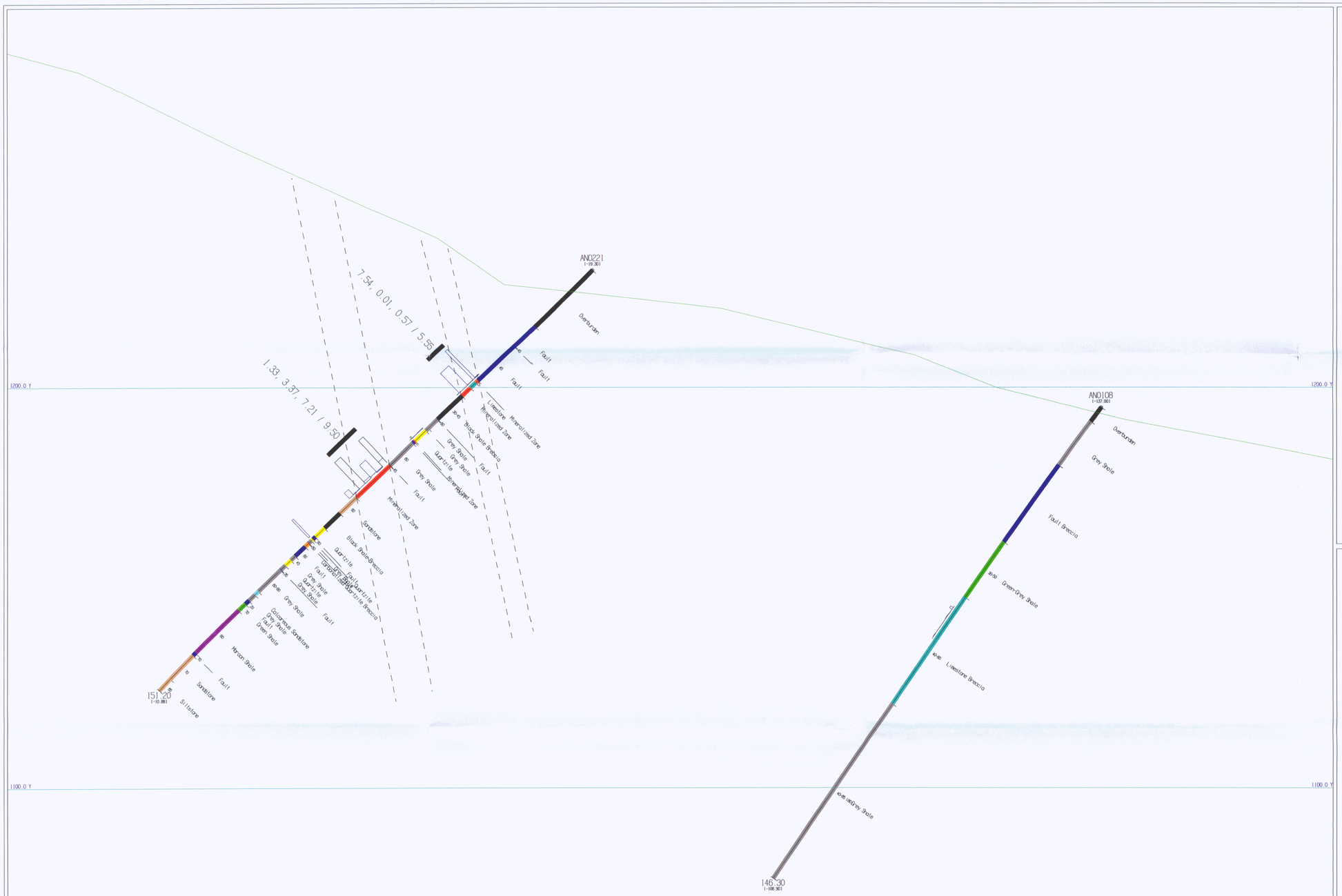
Noranda Inc.
Western Canada Region
874 Tungsten Street
Thunder Bay, ON
P7B 6J8

Andrew Deposit Yukon Territory
Section 641,350E - Looking West
1 : 500
Figure 8

UNITS : METRES DATE: 02/12/10 TIME: 15:21:40

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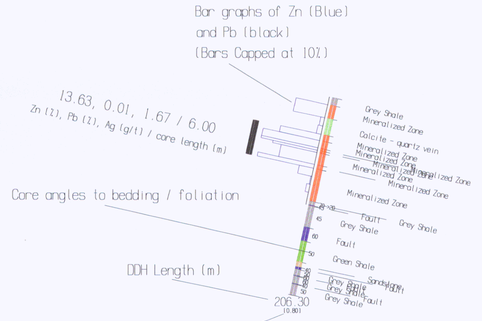
Software by Datamine Software International



LEGEND

- SHL_MAR: Maroon shale, generally poorly bedded
- SHL_GRN: Green shale
- SHL_GRY: Grey shale
- SHL_BLK: Black shale, rare millimetric pyrite laminae
- QTZ: Quartzite, quartz sandstone, minor pebble conglomerate
- SNDST: Gritty quartz sandstone
- SLTST: Grey, green and brown siltstones
- SNDST_CA: Calcareous sandstone
- LST: Pale grey, micritic limestone
- BX_QTZ: Brecciated quartzite with calcite-quartz veins
- BX_BS: Black shale fragments in black shale matrix
- BX_LST: Brecciated limestone with calcite veinlets
- MNZN: sp-gn-qtz-cc veins and breccia filling
- VEIN: metre-scale calcite-quartz veins
- Fault or shear
- FEL_DYKE: Felsic dyke

Bar graphs of Zn (Blue) and Pb (black) (Bars Capped at 10%)



094363

Noranda Inc. Western Canada Region 874 Tungsten Street Thunder Bay, ON P7B 6J8	Andrew Property - Yukon Territory Section 642,200E - Looking West 1 : 500 Figure 9
UNITS : METRES DATE: 02/12/10 TIME: 16.07.49	Software by Geosoft Software International

YUKON ENERGY, MINES & RESOURCES LIBRARY
P.O. Box 2703
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1200.0 Y

1100.0 Y

1000.0 Y

AN0222
[-3.56]

Overburden

Calcareous Sandstone

Grey Shale

fault

Calcareous Sandstone

Quartzite

fault

Grey Shale

Quartzite

Grey Shale

Maroon Shale

Grey Shale

Quartzite

Quartzite

fault

Carbonatized Quartzite Breccia

Quartzite

fault

Carbonatized Quartzite Breccia

Quartzite

Grey Shale

Quartzite

Grey Shale

120.40
[-14.16]

-10 0 10 20 30 40 50 60 70 80 90

Scale 1:500

LEGEND

- SHL_MAR: Maroon shale, generally poorly bedded
- SHL_GRN: Green shale
- SHL_GRY: Grey shale
- SHL_BLK: Black shale, rare millimetric pyrite laminae
- QTZ: Quartzite, quartz sandstone, minor pebble conglomerate
- SNDST: Gritty quartz sandstone
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- BX_BS: Black shale fragements in black shale matrix
- BX_LST: Brecciated limestone with calcite veinlets
- MNZN: sp-ga-qtz-cc veins and breccia filling
- VEIN: metre-scale calcite-quartz veins
- Fault or shear
- FEL_DYKE: Felsic dyke

Bar graphs of Zn (Blue)
and Pb (black)
(Bars Capped at 10%)

13.63, 0.01, 1.67 / 6.00
Zn (%), Pb (%), Ag (g/t) / core length (m)

Core angles to bedding / foliation

DDH Length (m)

206.30
[0.86]

Metres in front of plane (negative)
or metres behind plane (positive)

Grey Shale
Mineralized Zone
Calcite - quartz vein
Mineralized Zone
Mineralized Zone
Mineralized Zone
Mineralized Zone
Mineralized Zone
Mineralized Zone
Mineralized Zone
Mineralized Zone
Fault
Grey Shale
Grey Shale
Fault
Green Shale
Sandstone
Grey Shale
Grey Shale
Grey Shale
Fault

094363

Noranda Inc.
Western Canada Region
874 Tungsten Street
Thunder Bay, ON
P7B 6J3

UNITS : METRES DATE: 02/12/10 TIME: 16:33:30

Andrew Property - Yukon Territory
Section AN0222 - Looking WNW
1 : 500
Figure 10

Software by Gemcom Software International

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