1996 ENZYME LEACH SOIL SAMPLING PROGRAM
MANN BELT
PN 8269

NTS 42A/14 & 15

Prepared for
FALCONBRIDGE LIMITED
Timmins Exploration Office

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2.17658

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1.0 EXECUTIVE SUMMARY

An extensive enzyme leach soil geochemical sampling program was executed in the summer and fall of 1996 on the Mann Belt project on grids AUR95-02, CAL95-01, DUF95-02, and DUF96-03.

Enzyme leach geochemical surveys were used as a tool to complement ground geophysical surveys in the Mann Belt Projects area. The area is characterized by a lack of outcrop, numerous untested AEM anomalies, and known presence of graphitic argillites. The enzyme leach surveys were used to evaluate and prioritize targets on grids with untested conductors and untested conductors with nearby graphitic argillite.

The following conclusions were made based on the survey results:

- The survey did not produce false anomalies over barren graphite.
- The survey has helped to evaluate grids with known graphite horizons.
- Precise type of anomaly (apical vs. rabbit ears) is still not fully understood over VMS deposits hidden under moderately thick glacial overburden.

No further work is recommended on these grids at this time.

2.0 INTRODUCTION

From July to December 1996 an enzyme leach soil geochemical sampling program was carried out on the Mann Belt grids in order to locate and define base metal targets. Soil samples were analysed for trace elements, after being treated by the enzyme leach partial extraction technique (Clark, 1992), by ICP/MS at Activation Labs Ltd (Actlabs). Results are then used to define geochemical anomalies in overburden interpreted to be related to underlying mineralized bedrock.

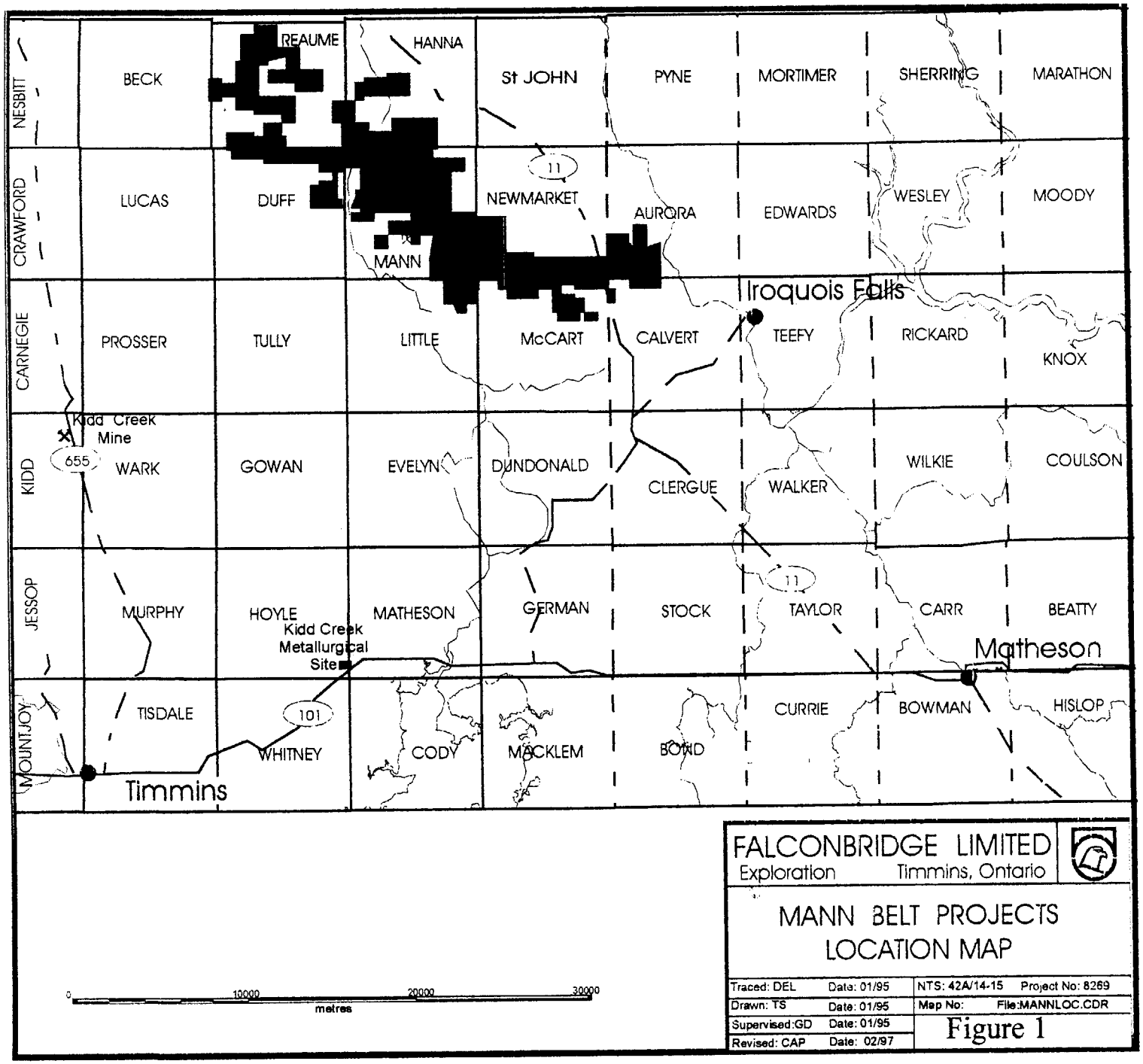
3.0 LOCATION AND ACCESS

The grids are located in Aurora, Calvert, and Duff townships and are centered approximately 25 km northwest of the town of Iroquois Falls (Figure 1). A variety of concession and logging roads allow truck or ATV access to the all of the grids from Highways 11 and 655.

4.0 TOPOGRAPHY AND VEGETATION

The Mann Belt is bound by three rivers; to the east by the Abitibi river, to the west by the Buskegau River, and through the center by the Frederick House river with several creeks and streams crosscutting. Several good fishing lakes containing predominantly pike, perch, walleye and some rainbow trout also lie within the bounds of the property.

The area is generally flat and swampy with vegetation consisting of mostly black spruce and alders. The higher elevated areas are mostly covered by large poplar and birch, with some jackpine found generally associated with eskers. The area has been extensively logged in the past, mostly for black spruce and poplar, leaving behind a network of good logging roads for excellent access.


REAUME
HANNA
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PYNE
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SHERRING
MARATHON
NESBITT
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WESLEY
MOODY
CRAWFORD
MANN
Iroquois Falls
PROSSER
TULLY
LITTLE
McCART
CALVERT
TEEFY
RICKARD
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CARNEGIE
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WARK
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DUNDONALD
CLERGUE
WALKER
WILKIE
COULSON
KIDD
MURPHY
HOYLE
MATHESON
GERMAN
STOCK
TAYLOR
CARR
BEATTY
JESSOP
Kidd Creek
Metallurgical
Site
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CURRIE
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MANN BELT PROJECTS
LOCATION MAP
Traced: DEL
Date: 01/95
NTS: 42A/14-15
Project No: 8269
Drawn: TS
Date: 01/95
Map No:
File:MANNLOC.CDR
Supervised:GD
Date: 01/95
Revised: CAP
Date: 02/97
Figure 1

5.0 PREVIOUS GEOLOGICAL WORK

The 1988 OGS sponsored GEOTEM survey covers the bulk of the property area and detected numerous untested bedrock conductors. Compilation at 1:20,000 scale indicated the presence of a large ultramafic-mafic complex intercalated and mantled by mafic to felsic calc-alkaline and tholeiitic volcanic rocks and sedimentary units (chemical and clastic). Past exploration efforts also indicated the presence of a significant base metal showing in Mann Township.

6.0 1996 SOIL SAMPLING PROGRAM

6.1 INTRODUCTION

The enzyme leach soil geochemical surveys were used on the Mann Belt grids in an attempt to test geophysical targets and to evaluate the potential for base metal massive sulphide mineralization. Previous drilling of geophysical targets on the properties intersected graphitic argillites with minor sulphide mineralization. Large properties such as this one with many geophysical targets become very expensive to test properly. Enzyme leach soil geochemical sampling may be a cost effective tool to check geophysical targets and to test their base metal content.

6.2 ENZYME LEACH THEORY (from De Schutter, 1996)

Theory behind the enzyme leach analytical technique is discussed in great detail by Clark (1992) and references therein, and is included in this report in Appendix I. A brief summary of the technique is given below.

Conventional geochemical analyses of transported or deeply weathered overburden would reveal only the composition of overburden and not give any indication of underlying (and possibly mineralized) bedrock. Trace elements released by weathering of mineral deposits in bedrock will ascend through overburden via ground water flow, capillary action, or diffusion of volatile compounds. Amorphous manganese dioxide (MnO_2), which is usually a small proportion of the total MnO_2 component of the soil, is an effective trap for these upward migrating trace elements. A selective leach has been developed that employs a self-limiting enzyme reaction to selectively dissolve amorphous manganese dioxide and release trapped trace elements.

Three types of geochemical anomalies are generally found with the enzyme leach technique: 1) mechanical/hydromorphic dispersion anomalies are formed in basal till as mineralized bedrock is smeared down ice during glaciation; 2) oxidation halo anomalies are produced by the gradual oxidation of buried reduced bodies (massive sulphide) and are distinguished by an asymmetrical halo or partial halo formed around the reduced body by the "oxidation suite" and 3) apical anomalies are formed by diffusion of trace elements away from a concentrated source and develop directly over the source.

Studies indicate amorphous MnO_2 concentrates predominantly in B-horizon soils and as a consequence, care should be taken to sample from a consistent soil horizon rather than a constant depth. In general, the best level to sample appears to be between 20 and 40 cm depth below the "A" horizon.

Since amorphous MnO_2 makes up a minute proportion of the total MnO_2 in a sample, results of trace elements released by the enzyme leach are reported in parts-per-billion (ppb). An anomaly along a traverse line for a given element is tentatively identified when there is a noticeable trend below or above background

levels; this makes acquiring background samples very important. Significant anomalies are generally an order of magnitude (10X) above or below background levels.

The enzyme leach analytical package consists of 62 trace elements (Li, Be, Cl, Sc, Ti, V, Mn, Co, Ni, Cu, Zn, Ga, Ge, As, Se, Br, Rb, Sr, Y, Zr, Nb, Mo, Ru, Rh, Pd, Ag, Cd, In, Sn, Sb, Te, I, Cs, Ba, La, Ce, Pr, Nd, Sm, Eu, Gd, Tb, Dy, Ho, Er, Tm, Yb, Lu, Hf, Ta, W, Re, Os, Ir, Pt, Au, Hg, Tl, Pb, Bi, Th, and U) all of which are reported in parts-per-billion (ppb). Activation Laboratories Ltd. of Ancaster, Ontario performed the analyses. Hard copy results were first acquired by FAX and a diskette containing digital results usually followed a week later.

Samples consisted of 300 to 600 grams of material depending on grain size of the soil. All samples were air dried in a dry, cool room for a minimum of three days prior to shipping to Actlabs. Samples must be air dried as heating to above 40°C spoils the sample for a proper analysis (drives off the volatile components). All sample preparation was done by Actlabs; this included breaking-up samples with a hammer and sieving to minus 60 mesh. The leach solutions were then analysed for trace element concentrations (in ppb) by ICP/MS.

6.3 SOIL SAMPLING PROCEDURE (from De Schutter, 1996)

A total of 1889 B-horizon soil samples were collected from 88.5 km of traverse lines distributed over 18 grids, covering untested conductors, untested conductors with known graphitic argillites or drill intersected mineralization on specific horizons.

The sample material most commonly analyzed with the enzyme leach is B-horizon soils. Typical soil profiles found in humid climate areas consist of: an A horizon - an upper humus layer which is characterized by a dark layer of mixed organic and mineral matter which may or may not have a bleached mineral layer at the bottom; and a B-horizon - the top of which lacks organic material and where oxide coatings on mineral grains impart a brown to rusty red colour to the soil.

In the case of this study, the B-horizon samples consisted of clay to silty-clay or reddish brown fine grained sand. The typical soil profile encountered during this project consisted of :

1. a humus layer consisting of either grasses, leaf litter, lichen or muskeg ranging from 0.1 to 15 cm in thickness;
2. an A-horizon: a black, organic-rich layer (coarse mud) of 0.1 to > 50 cm in thickness with highly variable moisture content ranging from "soupy" to relatively dry. Thickness of this layer depends on topography and surface vegetation; spruce swamps have the thickest A-horizon while poplar forest in topographic highs have the thinnest A-horizon;
3. a "leached" zone (A2 horizon): an often chalky-white to black, coarse, organic-bearing layer underlying the A-horizon ranging from 0.5 to 5 cm in thickness. In well drained areas, this layer is generally light in colour (white to tan), dry and crumbly whereas in poorly drained areas it is usually very fine grained (clay to silt sized), very dense and very dark in colour (dark brown to black);
4. a B-horizon: an organic-free (may contain few hair-like root filaments), light coloured, clay to silty-clay layer or brown to reddish-brown, fine grained sand of undetermined thickness (usually greater than the reach of the auger). In well drained areas, the clay is generally dry and some shade of tan to brown (it may also have a grey-blue to grey-green tinge). In poorly drained areas, it is generally very dense and sticky and may range from a light tan to brown or grey-blue to grey-green in colour.

Samples were collected using a standard 135 cm long auger (including a 30 cm long sampling tube attached to the bottom). As a standard practice and where possible, the first 10-15 cm of the clay layer was thrown away to ensure the sample was free of organic and leached material. Generally, it required three to four passes with the auger down the same hole to acquire sufficient material to fill up the sample bag (300 to

500 grams). If the B-horizon was not reached after the first pass with the auger (30-35 cm depth), the sampling tube was cleaned of all material (humus and A-horizon material) by hand and reinserted down the hole until the proper material was reached.

In the more poorly drained areas, samples tended to be covered with a film of organic-rich mud because the sample tube was pulled back up through the A-horizon during extraction. Every effort was made to clean this film off all samples even though it was generally a very messy and time consuming task.

Soil sample books were used to note the location of samples (grid co-ordinates) and all pertinent information such as slope attitude, colour and composition of sample (clay, silt, sand,...), quality of drainage, vegetation and any extra remarks. Each sample site was marked with flagging tape upon which the sample number was written; the flagging tape was usually tied to the grid picket or to a nearby tree branch.

7.0 DATA MANIPULATION

Raw geochemical results were received on diskette as WK1 and CSV files. The data was then formatted in Excel for export into Geosoft™ in which the geochemical profiles were produced. The profiles were drawn at an appropriate scale and then exported as a DXF file into AUTOCAD where the profiles could be superimposed onto existing geological maps and/or profiles.

8.0 1996 ENZYME LEACH RESULTS

Enzyme leach geochemical profile plots (plan view maps, Appendix I) are found in the back of this report. The maps are drawn to an appropriate scale and include topography. It is important to pay close attention to the vertical scale of the geochemical profiles as it does vary from element to element (e.g. 1 cm = 20 ppb Br and 1 cm = 225 ppb Zn). The base line value is 0 for all profiles.

Appendix III includes all the raw geochemical data. All trace element values are reported in parts-per-billion (ppb); negative values indicate that the element is not detected at that lower limit (i.e. -10 ppb = below 10 ppb); S.Q. indicates that element is determined semi-quantitatively; and values = 999999 are greater than the working range of the instrument.

9.0 DISCUSSION and CONCLUSIONS

AUR95-02

The grid was sampled on July 8, 1996, by temporary summer staff Geoff Band, Jack Giroux, Joel Conquer, Andrew Reid, Jimmy Sevigny and Jamie Keenan. Samples were collected every 40 metres over 7 grid lines for a total of 90 samples over 3.6 line kilometres. The "B" horizon encountered on this grid was grey or brown clay at an average depth of 220 cm. The survey results show much higher background numbers to the north of the grid than the south. This is probably as a result of an overburden depth change or a lithology change.

CAL95-01

This grid was sampled on July 12, 1996, by Jimmy Sevigny and Jamie Keenan. Sample were collected every 40 metres over 3 grid lines for a total of 53 samples over 2.65 line kilometres. The "B" horizon encountered on this grid was reddish-brown sand at an average depth of 20 cm. This grid has not been drilled. The survey results show a slightly elevated trend cutting through the property. These elevated numbers are likely due to a small fault zone or jointing. The results also show no copper being detected throughout the property. As a result three additional samples were taken on September 15, 1996, on three

previously sampled sites. The results are listed below and show, in some elements, a huge difference in value. The reason for the difference is unknown. No anomalies were detected.

SAMPLES TAKEN ON JULY 12,1996

Line	Station	Sample ID:	S.Q.Cl	Mn	Co	Ni	Cu	Zn	Br	I	Sr	Cs	Ba	La	Ce
300	320	SA 16057	5894	9199	29	21	-5	151	40	-10	15	-1	387	3	6
300	360	SA 16058	-3000	2210	15	20	-5	204	-30	-10	86	-1	329	2	6
300	400	SA 16059	-3000	2257	18	96	-5	117	-30	-10	100	-1	1890	4	9

SAMPLES TAKEN ON SEPTEMBER 15,1996

Line	Station	Sample ID:	S.Q.Cl	Mn	Co	Ni	Cu	Zn	Br	I	Sr	Cs	Ba	La	Ce
300	320	SA 20334	11456	3326	18	12	14	335	90	38	6	518	5	24	-1
300	360	SA 20335	-3000	1403	8	8	6	157	65	44	4	194	-1	7	-1
300	400	SA 20336	-3000	1222	7	-5	-5	229	61	75	3	623	-1	-1	-1

DUF95-02

This grid was sampled at first on lines 400W to 700W on September 25 and 27, 1996, by André Taillefer and Geoff Band. The remaining grid lines were sampled on November 22 to 25, 1996, by contractor Ron Leduc. Samples were collected every 50 metres over 9 grid lines for a total of 147 samples. The "B" horizon encountered on this grid was grey or brown clay at an average depth of 150 cm. This grid has been and intersected 28 metres of graphitic argillite with trace zinc and copper mineralization. The survey did not pick up any new mineralized zones.

DUF96-03

This grid was sampled at first on lines 400E, 600E and 800E on September 2nd, 1996, by Martin Stewart and Geoff Band. The remaining grid lines were sampled on November 13 to 22, 1996, by contractor Ron Leduc. Samples were collected every 50 metres over 15 grid lines for a total of 226 samples over 11.3 line kilometres. Sampling was hampered by deep overburden and the presence of 3 lakes and its tributaries. The "B" horizon encountered on this grid varied from grey sand on line 800E, to a combination of brown sand-clay on lines 400E and 600E, to grey silty clay for the remaining grid. The average depth of the "B" horizon varied dramatically also, from an average of 20 cm to the east of the grid, to an average of 150 cm to the west. This grid has been drilled and intersected a thick package of strongly foliated and faulted argillites and graphitic argillite with trace zinc and copper mineralization. The survey results show a slightly elevated trend on the northeast corner of the property. These elevated numbers are likely due to a small fault zone or jointing. The survey also shows a difference in background numbers from one sampling session to the other. This could be explained by the different soil types encountered during sampling. No other significant zones were found.

André Taillefer
Geological Technician

10.0 REFERENCES

Clark, J.R., 1992, Detection of bedrock-related geochemical anomalies at the surface of transported overburden. Explore, Newsletter for the Association of Exploration of Exploration Geochemists. Number 76, p. 2-11.

De Schutter, G., 1996, 1995 Enzyme Leach Soil Sampling Program, Currie-Bowman Option, Internal Falconbridge Report, Assessment Report filed November 15, 1995.

Petch C.A., 1997, Mann Belt Projects Fall 1995 and 1996 Exploration Report. Falconbridge Internal Report.

APPENDIX I - CERTIFICATION

I, André D. Taillefer do hereby certify:

1. that I reside at 1351 Dalton Road, Timmins, Ontario.

2. that I graduated from Cambrian College of Applied Arts and Technology in 1987 with a diploma in the Geological Engineering Technician program.

3. that I have been practicing my profession continuously for 10 years.

4. that I have based conclusions and recommendations contained in this report on knowledge of the area, my previous experience and on the results of the field work I supervised on the property.

5. that I have no personal interest in the described property and present this report in my capacity as an employee of Falconbridge Limited

Dated this 3rd day of April, 1997
at Timmins, Ontario.

APPENDIX II - ENZYME LEACH THEORY

EXPLORE

Newsletter for the Association of Exploration Geochemists

NUMBER 76

JULY 1992

PRESIDENT'S MESSAGE

A Need for Volunteers

The Association of Exploration Geochemists was founded twenty-two years ago after members recognized the need for a professional organization to represent exploration geochemists. Our organization has been served over this period of time by a capable group of volunteers in the Executive, Council, EXPLORE, Journal of Geochemical Exploration (JGE), and various committees.

The AEG has reaffirmed its focus on exploration geochemistry but has also made the commitment to expand its contacts with professionals in related fields (e.g. environmental geochemistry) and to conduct activities which will serve the membership (e.g. education, professional registration, short courses, special publications). This taxes the limited time of existing volunteers.

As with any volunteer organization, there is a small active group of volunteers who carry out the vast majority of activities of the Association within the framework of several committees. In order to maintain the vitality of the organization, we need more members to participate in the endeavors of these committees.

The list of committees is included at the end of this column. The titles are, for the most part, self-explanatory and reflect the commitments and activities of the Association. The committees are of two types, those which were formed to address specific issues, such as the Bylaws Review, Elsevier Negotiations, and Membership Application forms. These committees are dissolved after their task has been accomplished. However, the vast majority of committees are ongoing. These committees need your input.

In the past, it has been difficult to determine who to contact to volunteer your assistance. For that reason, we are also including the corresponding addresses of the Committee Chairman. Contact the chairmen and volunteer your time to the Association.

A second way to participate is for members to upgrade their membership status to Voting Member. This gives you the opportunity to vote on matters concerning the Association and have a say in the direction of the Association. Applications may be obtained through the Association offices in Vancouver.

If you have any questions, comments, or suggestions for the Association, feel free to contact any of the Chairman listed starting on the next page.

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TECHNICAL NOTES

Detection of Bedrock-related Geochemical Anomalies at the Surface of Transported Overburden

Introduction

The chemistry performed before instrumental determinations are made is critical to the quality of the geochemical interpretations made from the resulting data. In the 1970's and 1980's much emphasis in exploration geochemistry was placed on new instrumental techniques. Many geochemists found that volumes of multi-element data could be generated by inductively-coupled plasma/atomic emission spectroscopy (ICP/AES) for a relatively low cost. Consequently, interest in data handling and manipulation using computers to assist in producing interpretations increased dramatically. During this period of "Black Box" analyses the importance of preparatory chemistry was largely ignored, and the usefulness of analytical chemistry for unraveling dispersion processes was frequently overlooked. Consequently, geochemical exploration data often have been interpreted with little regard for the strengths or weaknesses of the analytical techniques used to produce the data. Also, an adage that has often been quoted is that you can not do exploration geochemistry on transported overburden, because the material in the overburden is unrelated to the bedrock that it covers. This viewpoint exemplifies a lack of comprehension of chemical mobility, geochemical barriers, and how selective partial analysis can be used to enhance extremely subtle geochemical anomalies.

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LINDGREN AWARD NOMINATIONS

The Lindgren award is offered annually by the Society of Economic Geologists to a young geologist whose published research represents an outstanding contribution to economic geology. The award, which consists of a citation, dues-free membership in the Society, and travel to the fall meeting for the presentation, is not restricted as to the candidate's nationality, place of employment, or membership in the Society. The work for which the Lindgren Award is given must have been published as a single paper or series of papers in a recognized journal before the author's 35th birthday, and the awardee must be less than 37 years of age on January 1 of the year in which the award is presented.

The award can be given for contributions to economic geology from any subdiscipline of geology (including, among others, structural geology, mineralogy, petrology, geochemistry, stratigraphy, geophysics, and mine geology).

Any Society member in good standing may nominate candidates for the award. We are currently seeking nominations for the 1993 Award, for which nominees must have been born after January 1, 1956. Nominees who are not selected for 1993 but are still eligible will be considered for awards in following years. The deadline for nominations is October 30, 1992.

For more information please contact:
Jonathan G. Price, Chair of the Lindgren Award Committee
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In the Canadian Shield, large areas are covered by one or more sequences of glacial till and glaciolacustrine sediments. In the Basin and Range Province much of the bedrock has been buried by basin fill. Typically the overburden in these regions is exotic to the bedrock that it covers. A conventional chemical analysis would reveal only the composition of the overburden and would not give any indication of the underlying bedrock. Drilling has been the only means of collecting useful geochemical samples in areas of extensive overburden. An inexpensive technique was needed for gathering meaningful geochemical data from overburden that would provide some indication of the chemistry of the bedrock.

Small amounts of trace elements mobilized by oxidation of sulfide minerals in the bedrock or basal till can migrate through overburden by various mechanisms, such as ground water flow, capillary action, or diffusion of volatile compounds. Oxides of manganese and iron, which form coatings on mineral grains in soils developed on overburden, are effective traps for mobilized elements. However, the proportion of a given element from a bedrock-related source that has been introduced into an overburden sample is typically very small compared to its total concentration in the overburden. Thus, it has been difficult to determine the amount of a trace element that has been added to the overburden rather than the total concentration. Selectively determining trace elements in oxide coatings can be an effective approach to mineral exploration in buried terrains. Chao (1984) thoroughly reviewed the principles and practices of partial analysis.

Analytical Problem

Amorphous manganese oxide, which is commonly a very small part of the total manganese oxides in soils, is one of the most efficient natural traps for trace elements mobilized in the surface/near-surface environment. The large surface area per unit mass and the random distribution of both positive and negative charges on the irregular surface of this material make it an ideal adsorber for a variety of cations, anions, and polar molecules. Anomalous concentrations of trace elements adsorbed by this material are often indicative of the chemistry of oxidizing minerals in the bedrock or basal till rather than the composition of the exotic overburden from which the soil formed. Previously, no partial leaches had been developed which were selective for amorphous manganese oxide.

Hydroxylamine hydrochloride has been used very effectively as a selective reducing agent for manganese oxide coatings (Canney and Nowlan, 1964; Chao, 1972). This reducing agent rapidly reacts with nearly all of the manganese oxide phases in a geological sample. It can be used along with other reagents in

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such dilute concentrations that any chemical attack upon the mineral substrates of the coatings is very minor. However, the concentrations of many trace elements in these leach solutions could be so low that specialized instrumental techniques would be needed to make determinations. These techniques would likely be inductively-coupled plasma/mass spectrometry (ICP/MS) and graphite furnace atomic absorption (GFAA). The presence of chloride ions in the hydroxylamine hydrochloride-leach solutions can produce extreme interferences for many elements by both of these instrumental techniques. Therefore, hydroxylamine hydrochloride is not a viable leaching agent when seeking many extremely low-level trace-element signatures.

Hydrogen peroxide also acts as a reducing agent for MnO_2. In an aqueous solution it will react with manganese dioxide, consuming hydrogen ions, and resulting in the manganese being reduced to the divalent state, which is soluble.

$$MnO_{2(s)} + H_2O_2 + 2H^+ \rightarrow Mn^{2+} + O_{2(aq)} + H_2O.$$

In this process, all the trace elements trapped in the manganese dioxide are released. Chao (1972) rejected the use of hydrogen peroxide as a selective leaching agent because, even at very high concentrations, it reacts very slowly with many crystalline phases of manganese dioxide (Taylor and McKenzie, 1966). However, even dilute concentrations of hydrogen peroxide vigorously react with amorphous manganese dioxide.

It would be possible to selectively leach for amorphous MnO_2 by adding H_2O_2 directly to the leach solution. However, the chemist would not know how much hydrogen peroxide should be used to leach each particular soil or sediment sample. If too much were added, there would be increased leaching of crystalline manganese oxides, as well as leaching of organic matter, sulfide minerals, and other oxidizable phases in the soil sample. Also, with some samples too high a concentration of H_2O_2 in the leach solution could produce precipitation of insoluble metal peroxides. Alternatively, if too little reagent were added, the leaching of amorphous manganese oxide would be incomplete.

Enzyme Leach

An enzyme chemical reaction slowly generates very low concentrations of hydrogen peroxide in aqueous media. Glucose oxidase reacts with dextrose (D-glucose) to produce hydrogen peroxide and gluconic acid.

$$\text{Dextrose} + O_{2(aq)} + H_2O \rightarrow^{\text{(Glucose Oxidase)}} \text{Gluconic Acid} + H_2O_2$$

Dilute hydrogen peroxide readily reduces and dissolves amorphous manganese dioxide, releasing trace elements and polar molecules trapped in that material. Gluconic acid complexes the metals and holds them in solution. Once all the amorphous manganese dioxide has been dissolved, the products of the glucose oxidase-dextrose reaction are no longer being consumed at a rapid rate, and the enzyme reaction virtually stops. The hydrogen peroxide concentration probably never exceeds 40 µg/ml, and sufficient gluconic acid is produced to complex the metals solubilized by the process. This self-limiting characteristic of the process minimizes undesirable leaching of mineral substrates. Thus, the background concentrations for many elements determined are extremely low and the anomaly/background contrast is often dramatically enhanced.

Trace-element concentrations for many elements in the leach solutions are often in the mid-to-low picogram-per-liter range. The only current instrumental technique that can be effectively used to determine such low concentrations for large numbers of elements in a significant number of samples is ICP/MS. Nothing is added to the leach solution that would be detrimental to the ICP/MS technique, or which would produce a serious analytical blank problem. The leach solutions are also amenable to determination of many trace elements by GFAA and ICP/AES.

Results and Discussion

In an early experiment with the Enzyme leach, a relatively large quantity of amorphous MnO_2 precipitate was dissolved in only one hour (Clark, pending). Alternatively, in a set of soil samples from a regional mineral-resource assessment project in northern Minnesota, the Enzyme leach typically leached less than five percent of the total manganese oxides in the samples (Clark pending; Clark, in press). Based on the observations of Taylor and McKenzie (1966), it was expected that very dilute hydrogen peroxide concentrations would have minimal leaching effect on many crystalline manganese oxide phases. Thus, it appears that the Enzyme leach is somewhat selective for amorphous manganese dioxide.

Crystalline manganese oxides are known to be effective traps for such metals as Ba, Co, Ni, and Zn. Enzyme leach analyses of soil samples often reveal anomalies not only of these metals, but also a long list of other trace elements, some of which occur as cations and others that form anions in the surficial environment. The list includes Ag, As, Bi, Br, Cd, Cl, Cu, Ga, I, In, Mo, Pb, Re, Sb, Se, Tl, U, V, and W. Because the surface chemistry of amorphous MnO_2 allows it to trap a variety of cations, anions, and polar molecules, selectively leaching for that material provides distinct advantages.

In samples that are identified as being part of a background population with respect to a number of leachable trace elements, a correlation is often observed among leachable Ba, Co, Mn, Ni, and Zn. However, in samples that have concentrations above threshold values for one or more elements, no relationship has been found between leachable Mn and the leachable

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concentrations of the anomalous elements. Therefore, the Enzyme leach is not prone to generating false anomalies.

Glacially Buried Terrain as in Desert Sediments.

A regional mineral-resource assessment project in the International Falls and Roseau 1°x2° quadrangle of Minnesota was the first large-scale application of the Enzyme leach. The bedrock in most of the region is buried by a minimum of two till sheets, and in most of the area these tills are capped by glaciolacustrine sediments from Glacial Lake Agassie. In the initial phase of that project, a pilot study revealed a relationship between Enzyme-leach anomalies in B-horizon soils and vegetation anomalies at the same sites. In effect, the B-horizon soils apparently have been acting as long-term integrators of vegetation anomalies (Clark, in press). Enzyme leaching of B-horizon soils proved to be the most cost-effective means of conducting a mineral-resource assessment of that region.

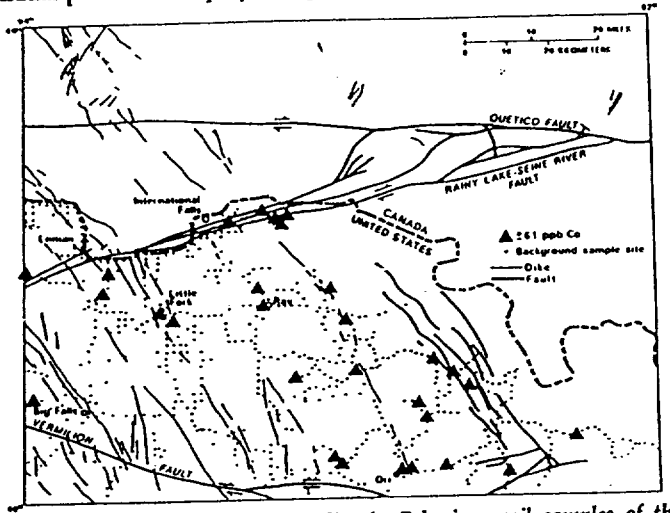

Fig. 1. Enzyme-leach Co anomalies in B-horizon soil samples of the International Fall 1°x2° quadrangle, Minnesota.

This geochemical study of northern Minnesota produced the first recognized evidence of potential for Proterozoic vein deposits in that region. A plot of cobalt anomalies in the International Falls 1°x2° quadrangle revealed an alignment of anomalous-sample sites along what appears to be northwest-striking structural trends (Fig. 1). Some of the trends coincided with diabase dikes, and the Co anomalies tended to occur within a short distance east or west of the termination of dike segments. Other trends appeared to be controlled by faults. Clark et al. (1990) observed that the diabase dikes could not be the sources of the Co, and plots of Ag and Tl revealed anomalous trends that either paralleled or coincided with the Co trends. The anomalous-sample sites tended to cluster in areas where structural trends evidently intersect in the covered basement. Stronger leaching methods did not perform as well as the Enzyme leach. An augmented version of the Enzyme leach (Clark et al. 1990) detected fewer anomalies. In a pilot study, the potassium iodide+ascorbic acid leach (Viets and others, 1984) and the oxalic acid leach (Alminas and Mosier, 1976; Church and others, 1987) failed to detect any of the anomalies along one of the trends southeast of International Falls.

Desert pediments. The first desert pediment study used soil samples collected along two traverses perpendicular to the mineralized structure that hosts the Sleeper ore body, in northwestern Nevada. A plot of Enzyme-leachable Re along traverse two (Fig. 2, 600 meters north of the pit) is one example of trace-element anomalies along that traverse. The overburden along traverse two (Fig. 2, 600 meters north of the pit) is one

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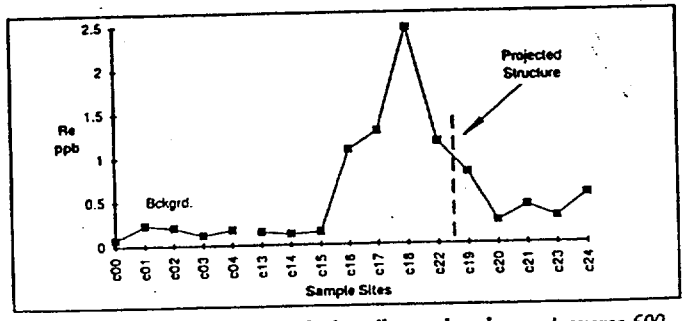

Fig. 2. Enzyme-leach Re anomaly in soil samples along a traverse 600 meters north of the Sleeper pit, Nevada. The vertical dashed line represents the approximate location of a buried mineralized structure. Sample site spacing along traverse 2 varies between 30 and 60 meters.

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example of trace element anomalies along that traverse. The overburden along traverse 2 (sample sites c13-c24) consisted of from 20 meters to 40 meters of basin fill. The background-soil sample sites (c00-c04) were collected on basin fill up slope from the mineralized structure.

Anomaly/background ratios show the dramatic contrast of the Enzyme-leach soil anomalies found near the Sleeper mine (Fig. 3). The elements with the highest anomaly contrasts are those that characteristically occur as anions in the surficial environment. By comparison, the stronger partial leaching methods, potassium iodide+ascorbic acid (Viets and others, 1984) and oxalic acid (Alminas and Mosier, 1976; Church and others 1987), produced much lower anomaly contrasts than the Enzyme leach (Fig. 3). Even higher anomaly contrasts were obtained by using the Enzyme leach on soil samples

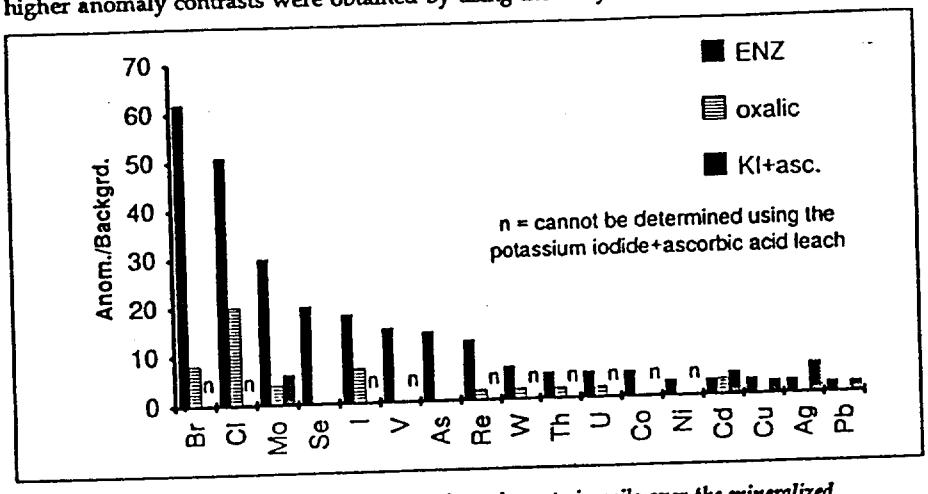

Fig. 3. Anomaly/background ratios for anomalous elements in soils over the mineralized structure at the Sleeper deposit, Nevada. The three analytical methods used were the Enzyme leach, the oxalic acid leach, and the potassium iodide + ascorbic acid leach.

collected over the Rabbit Creek deposit, in north central Nevada.

Enzyme leach analyses of soil samples from desert pediments at several localities have revealed strong correlations between anomalous concentrations of one or more halogens and other trace elements. The leachable concentrations of arsenic and iodine in the samples collected near the Sleeper mine show a nearly linear relationship (Fig. 4). Scatter plots of Mo and Cl and Re and Br also reveal similar relationships in the leach

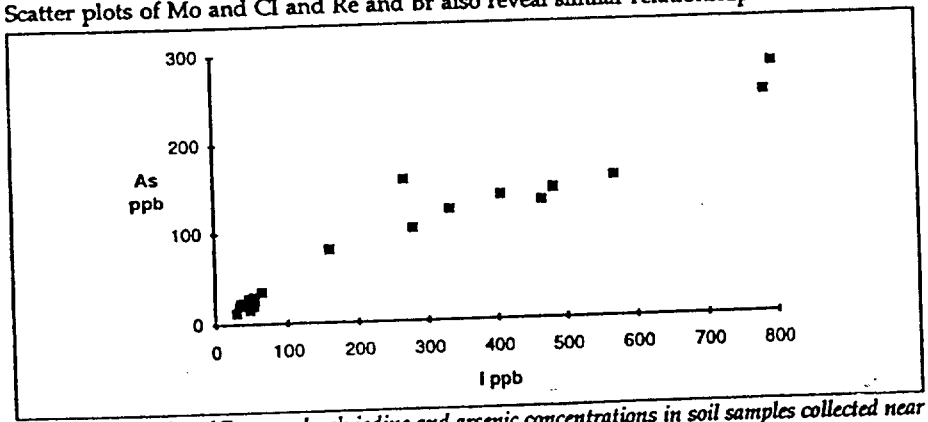

Fig. 4. Scatter plot of Enzyme-leach iodine and arsenic concentrations in soil samples collected near the Sleeper mine, Nevada.

data from the Sleeper samples. Figure 5 shows the nearly linear relationship between Sb and Br produced by Enzyme leaching of soils from another property in Nevada. The strong linear relationships between pairs of elements would seem to indicate that each pair is migrating together at that given location. Trace elements that correlate strongly with the halogens at various localities are those that tend to volatilize as halides under acid/oxidizing conditions used for chemical digestion of geological samples. Although the boiling points of halides and oxyhalides of these metals are 100°C to 300°C above

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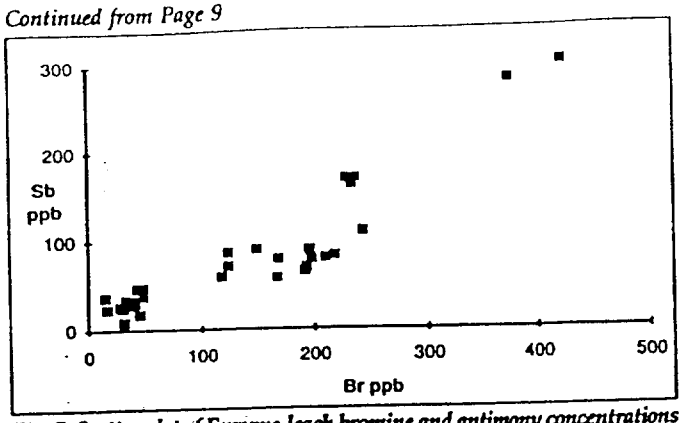

Fig. 5. Scatter plot of Enzyme-leach bromine and antimony concentrations in soil samples collected over a property in Nevada.

the ambient temperature, they would have moderate vapor pressure in localities where sulfide-rich bodies of rock were being oxidized. It seems that these halogen compounds are migrating very slowly through the overburden over extended periods of time and are being trapped by amorphous MnO_2 near the surface.

Limitations. The development of this new leaching technology does not diminish the need for performing pilot studies. In northern Minnesota it was essential to sample the B-horizon (Clark, in press). With desert soils, evidence suggests that the depth of collection can be of major importance. Where the overburden is generally less than 3 meters thick, stronger partial leaches usually produce greater anomaly contrasts. As an experiment, identical sample sets were sieved to minus 60 mesh in one case and pulverized in the other. The pulverized samples either failed to show any anomalies or the anomaly contrast was drastically reduced when compared to the sieved samples. Grinding may have caused this, because amorphous MnO_2 is a soft material that is readily reduced to a fine powder, which in turn may be dissipated by the air movement in and around the grinding apparatus. Alternatively, volatile compounds trapped in MnO_2 coatings could easily be lost due to the heat generated by the grinding process. Although the Enzyme leach performs extremely well for detecting currently active dispersal processes, in cases where barren oxide coatings have had time to accumulate on the surfaces of mineral grains, stronger leaching techniques produce more useful results.

Enzyme leaching of surficial geochemical samples is a relatively inexpensive technique that can be used to define overburden drilling targets. This new technology opens the door for cost-effective geochemical exploration for mineral deposits in many geographic areas where the bedrock is buried by overburden.

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Sample Media

Applied geochemistry and, therefore, plans for geochemical mapping, are being driven increasingly by environmental considerations.

In 1991 it became clear from papers and discussions that the preferred sampling media for the IGM project are stream sediment, soil, and water, as and when analytical problems relating to low concentrations can be overcome. Support for overbank sampling seemed to weaken. Evidence presented by John Ridgway et al. in Uppsala seemed to confirm the opinions of others that for reliable interpretation they require, in general, more detailed site investigations than are practical for regional reconnaissance purposes.

The Uppsala Symposium on Environmental Geochemistry helped to clarify a number of issues. Water is becoming the most sought-after natural commodity and for obvious reasons attracts the greatest public interest. The Symposium underlined the need for baseline data on soils (sensu latu), as the almost-universal surface sampling media of general environmental significance. Stream sediments are complementary in providing enhanced sensitivity for some elements of economic importance, but this medium is of lesser interest to most scientists concerned with non-geological environmental questions. Lake sediments substitute for stream sediments in wet Shield areas with poorly developed drainage, and have the advantage that, with suitable sampling, long-term changes can be detected.

An important consideration in the selection of methods is that sample spacing for soil surveys, and to a lesser degree water, stream and lake sediment surveys, can be increased beyond that required for initial reconnaissance coverage to permit more detailed investigations for specific purposes. Since most countries have undertaken geochemical surveys and based their data on

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GEOCHEMICAL MAPPING

Update on the International Geochemical Mapping Project

The International Geochemical Mapping (IGM) project, sponsored through UNESCO/IUGS as IGCP Project 259, distributes a newsletter in January each year to its 350 listed participants in 80 countries. The following is taken from the editorial in the latest edition, with updates from recent project meetings held in Keyworth U.K. April 22-24, and Reston, Virginia, May 8-10, 1992. For more background information about the project see Vol. 39 (1990) of the Journal of Geochemical Exploration.

APPENDIX III - ENZYME LEACH RAW GEOCHEMICAL DATA

(all lines are "Easting" i.e. Line 100 = Line 100E)

Line 400

/	Station	S.Q.Li	S.Q.Be	S.Q.Cl	S.Q.Sc	S.Q.Ti	V	Mn	Co	Ni	Cu	Zn	Ga	Ge	As
400	360	63	-20	10431	-10	-100	963	2176	16	35	314	72	3	5	31
400	400	48	-20	9108	-10	-100	1135	1672	17	28	316	67	2	-1	45
400	440	65	-20	3938	-10	-100	687	2540	17	37	304	67	1	-1	40
400	480	62	-20	3366	-10	-100	560	2205	18	39	284	69	2	-1	42
400	520	60	-20	3103	-10	-100	615	2570	23	60	307	90	3	-1	44
400	560	68	-20	-3000	-10	-100	808	2741	16	48	303	68	5	-1	41

Line 500

/	Station	S.Q.Li	S.Q.Be	S.Q.Cl	S.Q.Sc	S.Q.Ti	V	Mn	Co	Ni	Cu	Zn	Ga	Ge	As
500	600	63	-20	-3000	-10	-100	774	3073	23	45	334	65	-1	1	30
500	560	58	-20	-3000	-10	-100	770	2564	14	36	339	69	9	-1	59
500	520	63	-20	-3000	-10	-100	785	2610	27	81	336	70	5	1	49
500	480	60	-20	-3000	-10	-100	751	2644	17	43	317	67	1	-1	41
500	440	62	-20	-3000	-10	-100	833	2596	18	47	419	60	2	2	29
500	400	58	-20	-3000	-10	-100	1200	2629	16	33	327	40	-1	1	35
500	360	63	-20	-3000	-10	-100	824	3194	14	23	315	44	-1	-1	31
500	320	72	-20	3916	-10	-100	951	2920	11	25	299	36	1	-1	27
500	280	56	-20	5009	-10	-100	798	2057	15	35	330	41	2	-1	40
500	240	63	-20	-3000	-10	-100	1058	2447	11	20	272	26	1	-1	29
500	200	53	-20	4316	-10	-100	1089	2250	15	26	339	34	-1	-1	33
500	160	65	-20	-3000	-10	-100	941	2637	10	16	244	24	2	-1	43
500	120	24	-20	6109	-10	-100	1585	2048	10	17	193	24	-1	-1	26
500	80	42	-20	-3000	-10	-100	596	1910	9	15	115	12	1	-1	25
500	40	-10	-20	-3000	-10	-100	181	415	5	12	36	18	2	-1	11
500	0	23	-20	-3000	-10	-100	244	385	6	12	15	-10	-1	-1	14
500	-40	11	-20	-3000	-10	-100	122	299	7	18	11	17	-1	-1	10
500	-80	13	-20	-3000	-10	-100	189	430	6	10	16	11	-1	-1	15
500	-120	-10	-20	-3000	-10	-100	577	1215	10	22	28	18	-1	-1	11
500	-160	-10	-20	-3000	-10	-100	103	497	10	20	22	23	1	-1	12
500	-200	11	-20	-3000	-10	-100	173	381	6	27	15	-10	3	-1	12
500	-260	34	-20	-3000	-10	-100	254	358	3	11	7	12	3	-1	12
500	-280	15	-20	-3000	-10	-100	206	474	7	12	18	-10	-1	-1	18
500	-320	17	-20	-3000	-10	-100	168	460	7	19	14	11	-1	-1	15
500	-360	34	-20	-3000	-10	-100	246	413	6	13	13	11	3	-1	18
500	-400	29	-20	-3000	-10	-100	203	496	7	11	11	-10	4	-1	14

Line 700

/	Station	S.Q.Li	S.Q.Be	S.Q.Cl	S.Q.Sc	S.Q.Ti	V	Mn	Co	Ni	Cu	Zn	Ga	Ge	As
700	200	26	-20	4200	-10	-100	1138	1868	11	15	244	30	1	-1	27
700	240	48	-20	-3000	-10	-100	1065	1957	11	23	273	29	-1	-1	39
700	280	55	-20	3218	-10	-100	862	2453	8	21	231	28	-1	1	34
700	320	43	-20	-3000	-10	-100	1223	1014	14	64	211	31	2	-1	35

700	360	63	-20	3338	-10	-100	715	1786	15	36	325	69	3	-1	44
700	400	68	-20	-3000	-10	-100	515	2423	15	30	259	55	-1	-1	33
700	440	62	-20	3542	-10	-100	509	2424	15	29	273	64	-1	-1	29
700	480	61	-20	4835	-10	-100	523	2180	22	48	340	84	2	-1	38
700	520	58	-20	-3000	-10	110	570	2436	24	54	303	103	5	-1	43
700	560	54	-20	-3000	-10	-100	544	2522	22	63	296	93	1	-1	40
700	600	54	-20	7287	-10	-100	635	1976	16	65	246	71	2	-1	38

Line 600

/	Station	S.Q.Li	S.Q.Be	S.Q.Cl	S.Q.Sc	S.Q.Ti	V	Mn	Co	Ni	Cu	Zn	Ga	Ge	As
600	560	57	-20	7825	-10	-100	697	1793	13	28	276	59	-1	-1	38
600	520	60	-20	7489	-10	-100	882	1745	13	28	317	53	3	-1	44
600	480	56	-20	3571	-10	-100	899	1843	11	23	302	42	-1	-1	27
600	440	64	-20	-3000	-10	-100	1185	2029	10	24	313	40	3	-1	35
600	400	60	-20	7595	-10	-100	1197	1949	8	23	284	28	2	-1	27
600	360	57	-20	8207	-10	-100	1299	1706	11	23	299	59	3	-1	37

Line 200

/	Station	S.Q.Li	S.Q.Be	S.Q.Cl	S.Q.Sc	S.Q.Ti	V	Mn	Co	Ni	Cu	Zn	Ga	Ge	As
200	360	69	-20	15363	-10	-100	1586	1538	7	13	325	17	7	-1	46
200	400	76	-20	19007	-10	-100	1218	1984	7	16	303	14	4	-1	39
200	440	63	-20	11210	-10	-100	869	2041	9	25	292	31	-1	-1	49
200	480	58	-20	6618	-10	-100	964	1663	9	18	293	14	-1	-1	33
200	520	62	-20	5288	-10	-100	1040	1782	7	16	298	17	2	1	34
200	560	43	-20	7000	-10	-100	1331	1460	9	19	328	19	1	-1	43

Line 300

/	Station	S.Q.Li	S.Q.Be	S.Q.Cl	S.Q.Sc	S.Q.Ti	V	Mn	Co	Ni	Cu	Zn	Ga	Ge	As
300	600	65	-20	9320	-10	-100	1322	1442	7	20	310	19	1	-1	40
300	560	57	-20	12677	-10	-100	1021	1639	10	17	344	23	3	-1	52
300	520	90	-20	16375	-10	-100	1049	2197	8	10	269	10	1	-1	36
300	480	61	-20	13111	-10	-100	1127	1615	11	25	324	20	3	-1	50
300	400	63	-20	10520	-10	-100	1156	1967	12	31	348	22	3	-1	54
300	360	60	-20	10275	-10	-100	1468	1520	11	29	359	22	-1	1	62
300	280	90	-20	17018	-10	134	1243	2906	10	25	317	-10	2	1	38
300	240	67	-20	12012	-10	-100	1533	1964	7	16	276	-10	4	-1	31
300	200	57	-20	6575	-10	-100	1154	2256	8	17	324	20	2	-1	35
300	160	66	-20	6771	-10	-100	1185	2332	7	8	284	16	2	-1	37
300	120	40	-20	6763	-10	-100	1241	2087	8	9	224	-10	25	-1	33
300	80	36	-20	6025	-10	-100	886	2094	6	11	147	15	6	-1	25
300	40	52	-20	-3000	-10	-100	990	2797	7	10	217	14	1	-1	40
300	0	67	-20	8096	-10	-100	900	1848	10	14	306	27	-1	-1	33
300	-40	25	-20	7772	-10	-100	319	1103	6	17	51	-10	-1	-1	17
300	-80	36	-20	9178	-10	-100	318	443	5	7	15	21	-1	-1	16

300	-120	43	-20	13616	-10	-100	327	312	6	17	31	23	2	-1	13
300	-160	25	-20	11062	-10	-100	247	269	4	13	36	16	2	-1	14
300	-200	42	-20	5164	-10	-100	279	429	7	17	28	19	-1	-1	14
300	-240	36	-20	7858	-10	-100	249	405	5	22	28	18	4	-1	16
300	-280	37	-20	8775	-10	-100	251	331	5	15	39	18	2	-1	15
300	-320	19	-20	-3000	-10	-100	143	280	6	16	25	16	3	-1	11
300	-360	44	-20	6438	-10	-100	248	789	9	24	23	17	6	-1	14
300	-400	33	-20	6216	-10	-100	183	703	11	34	46	28	3	-1	19
Line 100															
/	Station	S.Q.Li	S.Q.Be	S.Q.Cl	S.Q.Sc	S.Q.Ti	V	Mn	Co	Ni	Cu	Zn	Ga	Ge	As
100	200	66	-20	22355	-10	-100	1310	1422	7	30	309	24	7	-1	26
100	240	61	-20	12526	-10	-100	1620	2223	7	19	200	21	3	-1	22
100	280	66	-20	7261	-10	106	1131	1984	7	18	223	20	4	-1	25
100	320	67	-20	7418	-10	-100	1392	2087	8	27	292	18	7	1	27
100	360	69	-20	8584	-10	-100	1362	1388	9	25	336	27	5	1	42
100	400	68	-20	13701	-10	-100	993	1541	15	53	293	44	8	-1	45
100	440	125	-20	19891	37	217	1493	3890	20	65	384	65	10	2	37
100	480	74	-20	8496	-10	-100	1235	2170	12	29	271	36	3	-1	29
100	520	208	-20	25521	114	415	2107	5396	45	137	552	171	142	2	66
100	560	122	-20	17449	29	131	1666	3377	19	66	337	66	16	1	38
100	600	34	-20	-3000	-10	-100	610	1249	10	19	203	32	36	-1	28

Se	Br	I	Rb	Sr	Y	Zr	Nb	Mo	Ru	Rh	Pd	Ag	Cd	In	Sn
-30	-30	15	99	2150	34	116	3	34	-1	-1	-1	-0.2	0.5	-0.2	-1
-30	-30	14	95	2067	36	112	4	80	-1	-1	-1	-0.2	0.3	-0.2	-1
-30	-30	13	102	2223	32	111	3	39	-1	-1	-1	-0.2	0.5	-0.2	-1
-30	-30	15	98	2253	28	104	2	39	-1	-1	-1	-0.2	0.3	-0.2	-1
-30	-30	15	104	2128	30	103	3	30	-1	-1	-1	-0.2	0.7	-0.2	1
-30	-30	16	106	2181	31	112	2	37	-1	-1	-1	-0.2	0.7	-0.2	1

Se	Br	I	Rb	Sr	Y	Zr	Nb	Mo	Ru	Rh	Pd	Ag	Cd	In	Sn
-30	37	18	101	2084	35	121	3	41	-1	-1	1	-0.2	0.5	-0.2	-1
-30	-30	14	93	2271	32	109	3	40	-1	-1	-1	-0.2	0.7	-0.2	-1
-30	-30	14	103	2151	36	119	3	61	-1	-1	-1	-0.2	0.5	-0.2	-1
-30	-30	12	86	2146	33	118	2	44	-1	-1	-1	-0.2	0.3	-0.2	-1
-30	-30	13	86	2048	40	128	3	32	-1	-1	-1	-0.2	0.3	-0.2	-1
-30	-30	14	83	2236	37	126	3	34	-1	-1	-1	-0.2	0.5	-0.2	-1
-30	-30	13	79	2238	34	113	3	39	-1	-1	-1	-0.2	0.7	-0.2	1
-30	-30	15	70	2356	35	122	3	20	-1	-1	-1	-0.2	0.7	-0.2	-1
-30	-30	10	88	2111	39	130	2	36	-1	-1	-1	-0.2	0.7	-0.2	-1
-30	-30	12	61	2204	34	116	2	25	-1	-1	-1	-0.2	1	-0.2	-1
-30	-30	11	65	1992	42	128	3	63	-1	-1	-1	-0.2	0.7	-0.2	-1
-30	-30	12	50	2145	36	104	2	33	1	-1	-1	-0.2	0.3	-0.2	-1
-30	-30	15	43	1409	36	98	3	20	-1	-1	-1	-0.2	-0.2	-0.2	-1
-30	-30	38	22	1239	27	57	-1	40	-1	-1	-1	-0.2	-0.2	-0.2	1
-30	90	72	13	1312	19	47	2	-1	-1	-1	-1	-0.2	-0.2	-0.2	-1
-30	-30	88	32	1191	19	33	-1	4	-1	-1	-1	-0.2	-0.2	-0.2	-1
-30	81	75	36	761	31	52	1	-1	-1	-1	-1	-0.2	0.5	-0.2	-1
-30	61	74	30	1007	27	53	1	-1	-1	-1	-1	-0.2	-0.2	-0.2	-1
-30	-30	37	32	1251	16	42	2	15	-1	-1	-1	-0.2	-0.2	-0.2	-1
-30	171	68	34	483	39	84	2	-1	-1	-1	-1	-0.2	-0.2	-0.2	-1
-30	-30	49	32	863	23	43	1	-1	-1	-1	-1	-0.2	-0.2	-0.2	1
-30	-30	51	26	1145	15	22	-1	30	-1	-1	-1	-0.2	-0.2	-0.2	-1
-30	65	94	29	1059	20	37	1	-1	-1	-1	-1	-0.2	-0.2	-0.2	1
-30	35	79	35	958	19	36	1	3	-1	-1	-1	-0.2	-0.2	-0.2	-1
-30	54	86	31	1027	22	34	1	-1	-1	-1	-1	-0.2	-0.2	-0.2	-1
-30	-30	66	30	706	17	23	-1	2	-1	-1	-1	-0.2	-0.2	-0.2	1

Se	Br	I	Rb	Sr	Y	Zr	Nb	Mo	Ru	Rh	Pd	Ag	Cd	In	Sn
-30	43	17	30	1346	35	91	3	22	-1	-1	-1	-0.2	-0.2	-0.2	-1
-30	-30	12	33	1463	34	97	3	25	-1	-1	-1	-0.2	-0.2	-0.2	-1
-30	-30	-10	41	1986	32	96	3	15	-1	-1	-1	-0.2	-0.2	-0.2	-1
-30	31	12	50	1750	32	99	3	125	-1	-1	-1	-0.2	0.3	-0.2	-1

-30	-30	14	87	2173	33	120	3	62	-1	-1	-1	-0.2	0.3	-0.2	-1
-30	-30	14	76	2342	29	114	2	31	-1	-1	-1	-0.2	0.3	-0.2	-1
-30	-30	12	81	2210	30	114	2	49	-1	-1	-1	-0.2	0.3	-0.2	-1
-30	-30	13	87	2090	36	133	3	38	-1	-1	-1	-0.2	0.5	-0.2	-1
-30	-30	13	69	2070	39	138	3	39	-1	-1	-1	-0.2	0.7	-0.2	-1
-30	38	11	65	2102	35	134	3	30	-1	-1	-1	-0.2	-0.2	-0.2	-1
49	-30	12	62	2072	30	108	3	37	-1	-1	-1	-0.2	-0.2	-0.2	-1

Se	Br	I	Rb	Sr	Y	Zr	Nb	Mo	Ru	Rh	Pd	Ag	Cd	In	Sn
-30	-30	14	92	2039	28	94	3	52	-1	-1	-1	-0.2	0.5	-0.2	-1
-30	-30	12	92	2180	30	95	3	65	-1	-1	-1	-0.2	0.3	-0.2	-1
-30	-30	-10	64	2164	30	86	3	34	-1	-1	-1	-0.2	-0.2	-0.2	-1
-30	-30	18	65	2329	30	93	2	53	-1	-1	-1	-0.2	0.5	-0.2	-1
-30	-30	14	65	2183	29	79	2	31	-1	-1	-1	-0.2	0.3	-0.2	-1
-30	-30	12	71	2104	32	101	3	72	2	-1	2	-0.2	0.3	-0.2	-1

Se	Br	I	Rb	Sr	Y	Zr	Nb	Mo	Ru	Rh	Pd	Ag	Cd	In	Sn
-30	-30	17	99	2630	29	64	3	58	-1	-1	-1	-0.2	-0.2	-0.2	-1
-30	50	11	109	2969	31	51	3	48	-1	-1	-1	-0.2	-0.2	-0.2	-1
-30	-30	20	114	2710	26	63	3	56	-1	-1	-1	-0.2	0.5	-0.2	1
-30	-30	13	106	2782	26	52	2	35	-1	-1	-1	-0.2	0.3	-0.2	-1
-30	-30	14	103	2711	27	55	3	35	-1	-1	-1	-0.2	0.3	-0.2	-1
-30	-30	12	100	2595	33	75	3	33	-1	-1	-1	-0.2	-0.2	-0.2	-1

Se	Br	I	Rb	Sr	Y	Zr	Nb	Mo	Ru	Rh	Pd	Ag	Cd	In	Sn
-30	-30	15	115	3067	24	51	2	33	-1	-1	-1	-0.2	-0.2	-0.2	-1
-30	-30	11	118	2514	28	66	3	48	-1	-1	-1	-0.2	-0.2	-0.2	-1
-30	-30	18	97	3529	28	50	2	22	-1	-1	-1	-0.2	-0.2	-0.2	-1
-30	-30	11	131	2912	35	77	4	84	-1	-1	-1	-0.2	-0.2	-0.2	-1
-30	-30	14	117	2731	34	74	3	78	-1	-1	-1	-0.2	-0.2	-0.2	-1
-30	35	10	109	2799	40	94	4	133	2	-1	-1	-0.2	0.3	-0.2	-1
-30	50	-10	105	2945	37	69	4	45	-1	-1	-1	-0.2	0.3	-0.2	-1
-30	79	11	78	2577	36	62	4	22	-1	-1	-1	-0.2	-0.2	-0.2	-1
-30	-30	10	60	2210	35	83	4	43	-1	-1	-1	-0.2	-0.2	-0.2	-1
54	-30	13	49	2155	30	73	4	29	-1	-1	-1	-0.2	-0.2	-0.2	-1
49	31	21	43	1786	27	43	3	35	-1	-1	-1	-0.2	-0.2	-0.2	-1
-30	-30	26	32	1629	24	34	2	30	-1	-1	-1	-0.2	-0.2	-0.2	-1
-30	-30	17	39	2072	25	49	2	39	-1	-1	-1	-0.2	-0.2	-0.2	-1
-30	-30	16	81	2637	27	64	3	42	-1	-1	-1	-0.2	0.3	-0.2	-1
-30	-30	64	30	1317	19	20	-1	9	-1	-1	-1	-0.2	-0.2	-0.2	-1
-30	52	80	36	1358	13	8	-1	22	-1	-1	-1	-0.2	-0.2	-0.2	2

-30	55	57	38	1391	16	32	1	42	-1	-1	-1	-0.2	0.4	-0.2	3
-30	110	69	38	1159	19	35	1	16	-1	-1	-1	-0.2	0.4	-0.2	2
-30	96	104	38	1233	17	30	1	19	-1	-1	-1	-0.2	-0.2	-0.2	2
-30	107	70	40	1399	16	27	-1	16	-1	-1	-1	-0.2	-0.2	-0.2	2
-30	91	75	41	1368	17	33	1	26	-1	-1	-1	-0.2	-0.2	-0.2	2
-30	141	56	35	983	9	20	-1	5	-1	-1	-1	-0.2	-0.2	-0.2	2
-30	30	60	36	1099	12	24	-1	20	-1	-1	-1	-0.2	-0.2	-0.2	2
-30	172	114	34	1543	15	33	1	14	-1	-1	-1	-0.2	-0.2	-0.2	2

Se	Br	I	Rb	Sr	Y	Zr	Nb	Mo	Ru	Rh	Pd	Ag	Cd	In	Sn
-30	119	25	72	2182	34	85	4	38	1	-1	-1	-0.2	0.4	-0.2	4
-30	67	20	63	2049	23	58	3	49	-1	-1	-1	-0.2	-0.2	-0.2	1
-30	66	20	63	2417	28	68	3	29	-1	-1	-1	-0.2	-0.2	-0.2	-1
-30	51	22	77	2380	33	84	4	56	-1	-1	-1	-0.2	0.6	-0.2	1
-30	97	20	79	2377	40	112	4	60	-1	-1	-1	-0.2	0.4	-0.2	2
-30	84	20	105	2564	29	87	4	101	-1	-1	-1	-0.2	0.4	-0.2	2
-30	270	23	146	3567	43	146	7	31	-1	-1	1	-0.2	1.2	-0.2	3
-30	106	18	98	2477	33	100	3	34	-1	-1	-1	-0.2	0.6	-0.2	3
-30	456	29	335	4686	60	252	19	77	-1	-1	2	0.4	1.1	-0.2	7
-30	312	19	194	3385	44	133	7	47	-1	-1	1	-0.2	1	-0.2	2
-30	-30	-10	73	1290	24	61	1	23	-1	-1	-1	-0.2	-0.2	-0.2	-1

Sb	Te	Cs	Ba	La	Ce	Pr	Nd	Sm	Eu	Gd	Tb	Dy	Ho	Er	Tm
4	-1	-1	1144	45	114	15	57	9	2	11	1	7	1	3	-1
8	-1	1	1175	54	132	17	65	11	2	11	1	8	1	3	-1
5	2	-1	1175	46	111	14	53	8	2	9	1	7	1	2	-1
4	-1	-1	1130	40	99	12	46	8	2	9	1	6	-1	2	-1
4	-1	-1	1147	44	107	14	48	8	2	9	1	6	1	2	-1
4	-1	-1	1172	43	109	14	52	8	2	9	1	6	1	3	-1

Sb	Te	Cs	Ba	La	Ce	Pr	Nd	Sm	Eu	Gd	Tb	Dy	Ho	Er	Tm
5	2	-1	1276	53	129	16	64	11	2	11	1	8	1	3	-1
5	-1	-1	1190	49	118	15	55	10	2	9	1	7	1	3	-1
6	-1	-1	1200	51	126	16	58	9	2	9	1	8	1	3	-1
5	-1	-1	1148	46	114	15	57	9	2	9	1	7	1	3	-1
4	-1	-1	1207	57	150	20	71	12	2	14	1	8	2	4	-1
5	-1	-1	1221	57	139	18	67	11	2	12	1	8	1	3	-1
3	-1	-1	1154	51	128	16	61	10	2	11	1	8	1	3	-1
2	-1	-1	1159	52	139	17	65	10	2	12	1	7	1	3	-1
5	-1	-1	1295	57	145	19	70	11	3	13	1	9	1	3	-1
2	-1	-1	1039	53	135	17	65	10	3	11	1	8	1	3	-1
4	-1	-1	1097	64	165	21	83	13	3	15	2	10	2	3	-1
1	-1	-1	1010	55	141	17	67	10	2	11	1	7	2	3	-1
2	-1	-1	759	56	133	16	62	10	2	11	1	7	1	3	-1
-1	-1	-1	650	39	99	13	47	8	2	9	-1	5	-1	2	-1
-1	1	-1	348	29	56	8	31	5	1	5	-1	4	-1	1	-1
-1	2	-1	410	32	46	9	33	5	1	6	-1	4	-1	1	-1
-1	-1	-1	426	50	65	13	49	7	1	8	1	6	1	2	-1
-1	-1	-1	406	47	76	13	50	8	2	9	1	6	-1	2	-1
-1	-1	-1	477	28	54	7	28	5	1	5	-1	3	-1	1	-1
-1	-1	-1	373	59	86	16	65	10	2	10	1	8	1	3	-1
-1	1	-1	443	39	53	11	40	5	1	7	-1	4	-1	2	-1
-1	-1	-1	413	25	51	8	29	5	1	5	-1	3	-1	1	-1
-1	1	-1	346	34	55	9	37	5	1	6	-1	4	-1	2	-1
-1	2	-1	379	34	58	9	37	6	1	6	-1	4	-1	1	-1
-1	-1	-1	400	36	61	11	41	5	1	7	-1	4	-1	1	-1
-1	-1	-1	385	28	49	8	30	5	1	5	-1	3	-1	1	-1

Sb	Te	Cs	Ba	La	Ce	Pr	Nd	Sm	Eu	Gd	Tb	Dy	Ho	Er	Tm
1	-1	-1	689	55	131	17	66	10	2	12	1	7	2	3	-1
1	-1	-1	827	46	120	15	59	11	2	10	1	7	2	3	-1
1	-1	-1	837	49	121	15	58	9	2	10	1	7	1	3	-1
3	-1	-1	845	54	141	16	61	9	2	11	1	7	1	3	-1

6	-1	-1	1093	47	117	15	58	10	2	11	1	7	1	3	-1
4	1	-1	1138	41	101	12	49	8	2	9	-1	6	1	2	-1
4	-1	-1	1112	42	102	13	47	8	2	10	1	6	1	2	-1
4	-1	-1	1178	51	126	16	60	9	2	11	1	8	1	3	-1
4	1	-1	1307	53	127	16	61	10	2	11	1	7	2	2	-1
4	-1	-1	1214	48	118	14	57	9	2	9	1	7	2	3	-1
4	-1	-1	1177	41	103	13	47	7	2	9	1	6	-1	2	-1

Sb	Te	Cs	Ba	La	Ce	Pr	Nd	Sm	Eu	Gd	Tb	Dy	Ho	Er	Tm
5	-1	-1	1013	40	101	13	48	7	2	9	-1	6	1	2	-1
6	1	-1	1057	45	111	13	52	8	2	10	1	7	1	2	-1
3	-1	-1	899	46	111	15	55	7	2	10	-1	6	1	2	-1
4	-1	-1	972	46	119	14	55	9	2	10	1	7	1	2	-1
3	2	-1	885	46	114	14	53	8	2	9	1	6	1	2	-1
5	-1	-1	960	50	124	16	59	10	2	9	1	7	1	2	-1

Sb	Te	Cs	Ba	La	Ce	Pr	Nd	Sm	Eu	Gd	Tb	Dy	Ho	Er	Tm
5	-1	-1	962	44	105	13	49	7	2	8	1	5	-1	2	-1
3	-1	-1	1023	50	110	13	48	8	2	8	1	5	-1	2	-1
4	1	1	1115	38	92	12	41	7	2	8	-1	5	1	2	-1
4	-1	-1	1063	38	92	11	43	7	1	8	-1	5	1	2	-1
4	-1	-1	1033	40	101	13	47	8	2	8	-1	6	1	2	-1
5	1	-1	1037	51	122	15	56	8	2	9	1	6	1	3	-1

Sb	Te	Cs	Ba	La	Ce	Pr	Nd	Sm	Eu	Gd	Tb	Dy	Ho	Er	Tm
4	-1	-1	1075	38	87	11	41	6	2	7	-1	5	-1	2	-1
5	-1	-1	1040	46	110	13	48	7	2	9	-1	6	-1	2	-1
3	1	-1	1059	42	98	12	49	7	2	8	-1	6	-1	2	-1
6	1	1	1153	56	129	16	61	9	2	11	1	7	1	3	-1
6	1	-1	1061	53	117	15	57	9	2	10	1	6	1	3	-1
8	-1	1	1146	59	140	18	65	10	2	11	1	8	2	3	-1
4	-1	1	1024	59	132	15	58	9	2	10	-1	7	1	3	-1
2	1	-1	852	58	141	16	64	9	2	11	2	6	1	2	-1
4	-1	-1	921	59	139	18	65	10	2	11	1	7	1	2	-1
3	-1	-1	853	52	127	15	58	9	2	9	-1	7	1	2	-1
-1	-1	-1	648	44	104	14	53	8	2	8	1	5	1	2	-1
-1	-1	-1	543	38	90	11	45	7	2	8	-1	5	-1	2	-1
1	-1	-1	741	40	100	12	46	8	2	8	-1	5	1	2	-1
3	-1	-1	1047	44	107	12	47	8	2	9	-1	5	-1	2	-1
-1	-1	-1	370	30	60	9	36	5	1	6	-1	4	-1	1	-1
-1	1	-1	340	25	42	7	26	4	-1	4	-1	3	-1	-1	-1

-1	1	-1	428	28	52	8	31	5	1	5	1	3	-1	1	-1
-1	-1	-1	407	34	42	10	36	6	1	6	1	3	-1	-1	-1
-1	-1	-1	419	31	44	9	35	5	1	6	-1	4	-1	1	-1
-1	-1	-1	393	29	44	9	33	5	1	5	-1	3	-1	1	-1
-1	-1	-1	397	30	51	9	34	5	1	6	-1	4	-1	1	-1
-1	-1	-1	250	16	28	5	19	3	-1	3	-1	2	-1	-1	-1
-1	1	-1	368	22	45	6	26	4	-1	4	-1	3	-1	1	-1
-1	-1	-1	336	28	47	8	30	4	-1	5	-1	3	-1	1	-1

Sb	Te	Cs	Ba	La	Ce	Pr	Nd	Sm	Eu	Gd	Tb	Dy	Ho	Er	Tm
4	-1	-1	889	58	132	17	66	9	2	12	1	7	1	3	-1
3	1	-1	757	40	96	12	47	8	2	9	-1	5	1	2	-1
2	-1	-1	867	44	109	13	54	8	2	10	1	6	1	2	-1
3	-1	-1	943	55	135	16	62	11	2	11	1	7	1	3	-1
5	1	-1	1109	66	162	21	78	12	2	14	2	9	2	3	-1
6	2	1	1148	48	114	13	51	8	2	9	1	6	1	3	-1
5	-1	2	1578	68	161	20	75	13	3	13	2	8	2	3	-1
4	-1	-1	1223	48	116	15	56	9	2	10	1	7	1	3	-1
9	-1	8	2497	111	258	30	106	15	4	15	2	12	2	5	-1
6	-1	3	1708	69	150	19	69	11	2	12	2	8	2	3	-1
2	-1	-1	804	35	83	11	40	7	1	8	1	5	1	2	-1

Yb	Lu	Hf	Ta	W	Re	Os	Ir	Pt	Au	S.Q.Hg	Tl	Pb	Bi	Th	U
3	-1	2	-1	-1	-0.1	-1	-1	-1	-0.1	-1	-1	1	-1	16	7
3	-1	2	-1	-1	-0.1	-1	-1	-1	-0.1	-1	-1	6	-1	20	8
3	-1	2	-1	-1	-0.1	-1	-1	-1	0.1	-1	-1	2	-1	17	9
2	-1	2	-1	-1	-0.1	-1	-1	-1	-0.1	-1	-1	3	-1	13	9
3	-1	2	-1	-1	-0.1	-1	-1	-1	-0.1	-1	-1	3	-1	15	10
3	-1	2	-1	-1	-0.1	-1	-1	-1	-0.1	-1	-1	-1	-1	15	11

Yb	Lu	Hf	Ta	W	Re	Os	Ir	Pt	Au	S.Q.Hg	Tl	Pb	Bi	Th	U
4	-1	2	-1	-1	-0.1	-1	-1	-1	-0.1	-1	-1	1	-1	20	11
3	-1	2	-1	-1	-0.1	-1	-1	-1	-0.1	-1	-1	4	-1	18	10
3	-1	2	-1	-1	-0.1	-1	-1	-1	-0.1	-1	-1	2	-1	20	14
3	-1	3	-1	-1	-0.1	-1	-1	-1	-0.1	-1	-1	4	-1	19	12
4	-1	3	-1	-1	-0.1	-1	-1	-1	1.4	-1	-1	5	-1	25	7
3	-1	2	-1	-1	0.2	-1	-1	-1	-0.1	-1	-1	2	-1	25	14
3	-1	2	-1	-1	-0.1	-1	-1	-1	-0.1	-1	-1	2	-1	22	5
3	-1	2	-1	-1	-0.1	-1	-1	-1	-0.1	-1	-1	1	-1	24	8
4	-1	2	-1	-1	0.2	-1	-1	-1	-0.1	-1	-1	3	-1	23	17
3	-1	2	-1	-1	-0.1	-1	-1	-1	-0.1	-1	-1	1	-1	24	11
4	-1	2	-1	-1	-0.1	-1	-1	-1	-0.1	-1	-1	5	-1	31	10
3	-1	2	-1	-1	-0.1	-1	-1	-1	-0.1	-1	-1	-1	-1	22	6
3	-1	1	-1	-1	-0.1	-1	-1	-1	-0.1	-1	-1	6	-1	20	5
2	-1	1	-1	-1	-0.1	-1	-1	-1	-0.1	-1	-1	2	-1	14	3
2	-1	-1	-1	-1	-0.1	-1	-1	-1	-0.1	-1	-1	-1	-1	8	2
1	-1	-1	-1	-1	-0.1	-1	-1	-1	-0.1	-1	-1	-1	-1	8	3
2	-1	-1	-1	-1	-0.1	-1	-1	-1	-0.1	-1	-1	-1	-1	7	2
2	-1	1	-1	-1	-0.1	-1	-1	-1	-0.1	-1	-1	-1	-1	14	2
2	-1	-1	-1	-1	-0.1	-1	-1	-1	-0.1	-1	-1	-1	-1	7	3
3	-1	2	-1	-1	-0.1	-1	-1	-1	-0.1	-1	-1	1	-1	11	2
2	-1	-1	-1	-1	-0.1	-1	-1	-1	-0.1	-1	-1	-1	-1	9	3
1	-1	-1	-1	-1	-0.1	-1	-1	-1	-0.1	-1	-1	-1	-1	5	3
2	-1	-1	-1	-1	-0.1	-1	-1	-1	-0.1	-1	-1	-1	-1	8	2
2	-1	-1	-1	-1	-0.1	-1	-1	-1	-0.1	-1	-1	-1	-1	9	2
2	-1	-1	-1	-1	-0.1	-1	-1	-1	-0.1	-1	-1	-1	-1	10	2
1	-1	-1	-1	-1	-0.1	-1	-1	-1	-0.1	-1	-1	-1	-1	7	2

Yb	Lu	Hf	Ta	W	Re	Os	Ir	Pt	Au	S.Q.Hg	Tl	Pb	Bi	Th	U
4	-1	2	-1	-1	-0.1	-1	-1	-1	-0.1	-1	-1	7	-1	19	4
3	-1	1	-1	-1	-0.1	-1	-1	-1	-0.1	-1	-1	4	-1	20	4
3	-1	2	-1	-1	-0.1	-1	-1	-1	-0.1	-1	-1	2	-1	23	5
3	-1	2	-1	-1	0.2	-1	-1	-1	-0.1	-1	-1	10	-1	21	8

3	-1	3	-1	-1	-0.1	-1	-1	-1	-0.1	-1	-1	5	-1	22	14
3	-1	2	-1	-1	-0.1	-1	-1	-1	-0.1	-1	-1	2	-1	17	8
3	-1	2	-1	-1	-0.1	-1	-1	-1	-0.1	-1	-1	-1	-1	18	11
3	-1	2	-1	-1	-0.1	-1	-1	-1	-0.1	-1	-1	1	-1	23	11
4	-1	2	-1	-1	-0.1	-1	-1	-1	-0.1	-1	-1	2	-1	24	8
3	-1	3	-1	-1	-0.1	-1	-1	-1	-0.1	-1	-1	1	-1	22	10
2	-1	2	-1	-1	-0.1	-1	-1	-1	-0.1	-1	-1	3	-1	17	8

Yb	Lu	Hf	Ta	W	Re	Os	Ir	Pt	Au	S.Q.Hg	Tl	Pb	Bi	Th	U
3	-1	2	-1	-1	-0.1	-1	-1	-1	-0.1	-1	-1	5	-1	15	9
3	-1	2	-1	-1	-0.1	-1	-1	-1	-0.1	-1	-1	5	-1	19	15
2	-1	1	-1	-1	-0.1	-1	-1	-1	-0.1	-1	-1	7	-1	19	5
2	-1	2	-1	-1	-0.1	-1	-1	-1	-0.1	-1	-1	5	-1	19	10
3	-1	1	-1	-1	-0.1	-1	-1	-1	-0.1	-1	-1	4	-1	18	7
3	-1	2	-1	-1	0.2	-1	-1	-1	-0.1	-1	-1	5	-1	24	12

Yb	Lu	Hf	Ta	W	Re	Os	Ir	Pt	Au	S.Q.Hg	Tl	Pb	Bi	Th	U
2	-1	2	-1	2	-0.1	-1	-1	-1	-0.1	-1	-1	3	-1	15	7
3	-1	-1	-1	-1	0.2	-1	-1	-1	-0.1	-1	-1	2	-1	15	11
2	-1	2	-1	-1	-0.1	-1	-1	-1	-0.1	-1	-1	4	-1	14	10
2	-1	1	-1	-1	-0.1	-1	-1	-1	-0.1	-1	-1	2	-1	15	10
2	-1	1	-1	-1	-0.1	-1	-1	-1	-0.1	-1	-1	3	-1	16	11
3	-1	2	-1	-1	-0.1	-1	-1	-1	-0.1	-1	-1	5	-1	21	9

Yb	Lu	Hf	Ta	W	Re	Os	Ir	Pt	Au	S.Q.Hg	Tl	Pb	Bi	Th	U
2	-1	-1	-1	-1	-0.1	-1	-1	-1	-0.1	-1	-1	4	-1	14	11
2	-1	2	-1	-1	-0.1	-1	-1	-1	-0.1	-1	1	4	-1	16	11
2	-1	1	-1	-1	-0.1	-1	-1	-1	-0.1	-1	-1	1	-1	12	8
3	-1	2	-1	-1	-0.1	-1	-1	-1	-0.1	-1	-1	5	-1	21	9
3	-1	2	-1	-1	-0.1	-1	-1	-1	-0.1	-1	-1	5	-1	22	14
3	-1	2	-1	-1	0.2	-1	-1	-1	-0.1	-1	-1	6	-1	23	10
3	-1	1	-1	-1	-0.1	-1	-1	-1	-0.1	-1	-1	1	-1	20	14
2	-1	1	-1	-1	-0.1	-1	-1	-1	-0.1	-1	-1	4	-1	21	5
3	-1	2	-1	-1	-0.1	-1	-1	-1	-0.1	-1	-1	5	-1	26	6
3	-1	1	-1	-1	-0.1	-1	-1	-1	-0.1	-1	-1	4	-1	25	5
2	-1	1	-1	-1	-0.1	-1	-1	-1	-0.1	-1	-1	4	-1	17	3
2	-1	1	-1	-1	-0.1	-1	-1	-1	-0.1	-1	-1	2	-1	14	3
2	-1	-1	-1	-1	-0.1	-1	-1	-1	-0.1	-1	-1	4	-1	16	5
2	-1	1	-1	-1	-0.1	-1	-1	-1	-0.1	-1	-1	3	-1	19	17
1	-1	-1	-1	-1	-0.1	-1	-1	-1	-0.1	-1	-1	-1	-1	8	3
1	-1	-1	-1	-1	-0.1	-1	-1	-1	-0.1	-1	-1	-1	-1	8	2

2	-1	-1	-1	1	0.2	-1	-1	-1	-0.1	-1	-1	3	-1	8	3
1	-1	1	-1	-1	0.2	-1	-1	-1	-0.1	-1	-1	2	-1	7	3
2	-1	-1	-1	-1	-0.1	-1	-1	-1	-0.1	-1	-1	3	-1	7	2
1	-1	-1	-1	-1	-0.1	-1	-1	-1	-0.1	-1	-1	2	-1	8	2
1	-1	-1	-1	1	-0.1	-1	-1	-1	-0.1	-1	-1	3	-1	9	5
-1	-1	-1	-1	-1	-0.1	-1	-1	-1	-0.1	-1	-1	2	-1	4	1
1	-1	-1	-1	2	-0.1	-1	-1	-1	-0.1	-1	-1	3	-1	6	2
1	-1	-1	-1	1	-0.1	-1	-1	-1	-0.1	-1	-1	3	-1	8	7

Yb	Lu	Hf	Ta	W	Re	Os	Ir	Pt	Au	S.Q.Hg	Tl	Pb	Bi	Th	U
3	-1	1	-1	3	-0.1	-1	-1	-1	-0.1	-1	-1	8	-1	22	4
2	-1	1	-1	5	-0.1	-1	-1	-1	-0.1	-1	-1	9	-1	16	9
3	-1	2	-1	2	-0.1	-1	-1	-1	-0.1	-1	-1	6	-1	17	6
3	-1	2	-1	2	-0.1	-1	-1	-1	-0.1	-1	-1	7	-1	23	9
4	-1	2	-1	3	-0.1	-1	-1	-1	-0.1	-1	-1	8	-1	27	7
3	-1	2	-1	4	-0.1	-1	-1	-1	-0.1	-1	-1	10	-1	20	17
4	-1	3	2	3	-0.1	-1	-1	-1	-0.1	-1	-1	11	-1	28	15
3	-1	2	-1	2	-0.1	-1	-1	-1	-0.1	-1	-1	7	-1	21	9
6	1	6	4	5	0.2	-1	-1	-1	-0.1	-1	2	26	-1	40	21
4	-1	4	2	4	-0.1	-1	-1	-1	-0.1	-1	-1	10	-1	23	12
2	-1	1	-1	-1	-0.1	-1	-1	-1	-0.1	-1	-1	13	-1	13	7

/	Sample ID
/	SA 15635
/	SA 15636
/	SA 15637
/	SA 15638
/	SA 15639
/	SA 15640
/	Sample ID
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/	SA 18200
/	SA 18533
/	SA 18529
/	SA 18530
/	SA 18531
/	SA 18532

500															
/	Station	S.Q.Li	S.Q.Be	S.Q.Cl	S.Q.Sc	S.Q.Ti	V	Mn	Co	Ni	Cu	Zn	Ga	Ge	As
500	680	-10	-20	-3000	-10	-100	21	1983	9	22	-5	194	2	-1	-5
500	640	-10	-20	-3000	-10	-100	8	738	7	6	-5	69	-1	-1	-5
500	600	-10	-20	-3000	-10	-100	7	1612	6	12	-5	57	19	-1	-5
500	560	-10	-20	-3000	-10	-100	-5	1651	19	15	-5	103	-1	-1	-5
500	520	-10	-20	-3000	-10	-100	-5	2180	8	18	-5	123	14	-1	-5
500	480	-10	-20	-3000	-10	-100	7	2477	20	16	-5	74	2	-1	-5
500	440	-10	-20	-3000	-10	-100	7	1549	20	24	-5	63	2	-1	-5
500	400	-10	-20	-3000	-10	-100	8	1572	7	8	-5	92	-1	-1	-5
500	360	-10	-20	-3000	-10	-100	-5	1306	7	24	-5	154	3	-1	-5
500	320	-10	-20	-3000	-10	-100	-5	1144	7	20	-5	164	-1	-1	-5
500	280	-10	-20	-3000	-10	-100	-5	11434	23	21	-5	204	1	-1	-5
500	240	-10	-20	-3000	-10	-100	28	1028	10	16	-5	46	3	-1	-5
500	200	-10	-20	3007	-10	-100	9	3646	16	25	-5	91	3	-1	-5
500	160	-10	-20	-3000	-10	-100	-5	5561	22	13	-5	105	3	-1	-5
500	120	-10	-20	-3000	-10	-100	17	2601	13	8	-5	44	-1	-1	-5
500	80	-10	-20	-3000	-10	-100	10	2178	10	10	-5	49	-1	-1	-5
500	40	-10	-20	3298	-10	-100	16	1808	13	22	-5	62	7	-1	-5
500	0	-10	-20	-3000	-10	-100	12	1871	6	9	-5	42	2	-1	-5

Line 100															
/	Station	S.Q.Li	S.Q.Be	S.Q.Cl	S.Q.Sc	S.Q.Ti	V	Mn	Co	Ni	Cu	Zn	Ga	Ge	As
100	0	-10	-20	-3000	-10	-100	11	80	2	13	-5	50	1	-1	-5
100	40	-10	-20	-3000	-10	-100	11	76	1	10	-5	88	-1	-1	-5
100	80	-10	-20	-3000	-10	-100	18	105	1	11	-5	82	-1	-1	-5
100	120	-10	-20	-3000	-10	-100	21	162	4	15	-5	119	1	-1	-5
100	160	-10	-20	-3000	-10	-100	19	428	9	22	-5	37	4	-1	-5
100	200	-10	-20	-3000	-10	-100	28	1284	26	25	-5	82	2	-1	-5
100	240	-10	-20	-3000	-10	-100	16	4076	27	8	-5	81	54	-1	-5
100	280	-10	-20	-3000	-10	-100	12	3248	12	-5	-5	81	-1	-1	-5
100	320	-10	-20	-3000	-10	-100	11	3110	25	6	-5	67	-1	-1	-5
100	360	-10	-20	-3000	-10	-100	12	2685	14	10	-5	82	-1	-1	-5
100	400	-10	-20	-3000	-10	-100	25	791	5	20	-5	69	2	-1	-5
100	440	-10	-20	-3000	-10	-100	12	2834	38	17	-5	120	3	-1	-5
100	480	-10	-20	4048	-10	-100	12	2146	25	11	-5	60	3	-1	-5
100	520	-10	-20	-3000	-10	-100	78	1402	15	-5	-5	-10	-1	-1	-5
100	560	-10	-20	-3000	-10	-100	29	1252	15	9	-5	45	-1	-1	-5
100	600	-10	-20	-3000	-10	-100	16	440	7	-5	-5	23	-1	-1	-5
100	640	-10	-20	-3000	-10	-100	13	233	4	-5	-5	26	-1	-1	-5
100	680	-10	-20	-3000	-10	-100	13	248	3	9	-5	44	-1	-1	-5

Line 300															
/	Station	S.Q.Li	S.Q.Be	S.Q.Cl	S.Q.Sc	S.Q.Ti	V	Mn	Co	Ni	Cu	Zn	Ga	Ge	As

300	0	-10	-20	-3000	-10	-100	7	5642	13	14	-5	80	1	-1	-5
300	80	-10	-20	-3000	-10	-100	10	872	10	20	-5	119	-1	-1	-5
300	120	-10	-20	-3000	-10	-100	42	705	7	-5	-5	-10	2	-1	-5
300	160	-10	-20	6265	-10	-100	26	1134	7	-5	-5	13	2	-1	-5
300	200	-10	-20	-3000	-10	-100	13	3806	21	9	-5	83	1	-1	-5
300	240	-10	-20	3596	-10	-100	12	3531	25	15	-5	55	1	-1	-5
300	280	-10	-20	3388	-10	-100	7	4803	30	27	-5	91	4	-1	-5
300	320	-10	-20	5894	-10	-100	9	9199	29	21	-5	151	1	-1	-5
300	360	-10	-20	-3000	-10	-100	6	2210	15	20	-5	204	-1	-1	-5
300	400	-10	-20	-3000	-10	-100	9	2257	18	96	-5	117	-1	-1	-5
300	440	-10	-20	-3000	-10	-100	10	1549	14	20	-5	41	-1	-1	-5
300	480	-10	-20	-3000	-10	-100	6	4099	27	15	-5	125	3	-1	-5
300	520	-10	-20	3093	-10	-100	12	1718	27	18	-5	69	1	-1	-5
300	560	-10	-20	-3000	-10	-100	7	2943	22	37	-5	207	1	-1	-5
300	600	-10	-20	3491	-10	-100	13	948	12	16	-5	72	2	-1	-5
300	640	-10	-20	-3000	-10	-100	6	944	10	11	-5	36	1	-1	-5
300	680	-10	-20	-3000	-10	-100	10	654	10	24	-5	74	3	-1	-5

Se	Br	I	Rb	Sr	Y	Zr	Nb	Mo	Ru	Rh	Pd	Ag	Cd	In	Sn
-30	32	14	32	98	2	-1	-1	-1	-1	-1	-1	-0.2	1.8	-0.2	1
-30	-30	-10	63	33	9	3	-1	-1	-1	-1	-1	-0.2	1.4	-0.2	-1
51	32	-10	35	19	14	-1	-1	-1	-1	-1	-1	-0.2	1	-0.2	-1
-30	75	-10	32	24	6	-1	-1	-1	-1	-1	-1	-0.2	2.8	-0.2	1
-30	53	-10	27	27	3	-1	-1	-1	-1	-1	-1	-0.2	1.6	-0.2	1
-30	-30	-10	33	27	9	-1	-1	-1	-1	-1	-1	-0.2	2.2	-0.2	-1
-30	-30	-10	31	9	9	-1	-1	-1	-1	-1	-1	-0.2	1.4	-0.2	-1
-30	-30	-10	43	269	3	-1	-1	-1	-1	-1	-1	-0.2	0.9	-0.2	-1
-30	35	-10	63	47	3	-1	-1	-1	-1	-1	-1	-0.2	2.8	-0.2	1
-30	53	-10	32	38	-1	-1	-1	-1	-1	-1	-1	-0.2	2.4	-0.2	2
-30	54	-10	36	32	3	-1	-1	-1	-1	-1	-1	-0.2	7.9	-0.2	2
-30	-30	19	93	81	26	9	-1	-1	-1	-1	-1	-0.2	2.4	-0.2	1
-30	33	11	69	185	6	3	-1	-1	-1	-1	-1	-0.2	2.9	-0.2	1
-30	-30	-10	41	35	2	-1	-1	-1	-1	-1	-1	-0.2	3.3	-0.2	2
-30	-30	-10	89	91	2	1	-1	-1	-1	-1	-1	-0.2	1.8	-0.2	-1
-30	-30	-10	51	166	1	-1	-1	-1	-1	-1	-1	-0.2	1.8	-0.2	1
-30	47	30	96	210	8	13	-1	-1	-1	-1	-1	-0.2	1.6	-0.2	2
-30	46	17	97	151	2	-1	-1	-1	-1	-1	-1	-0.2	0.7	-0.2	-1

Se	Br	I	Rb	Sr	Y	Zr	Nb	Mo	Ru	Rh	Pd	Ag	Cd	In	Sn
-30	-30	-10	35	27	4	-1	-1	-1	-1	-1	-1	-0.2	0.3	-0.2	-1
-30	-30	-10	46	46	1	-1	-1	-1	-1	-1	-1	-0.2	0.5	-0.2	-1
-30	-30	-10	55	56	2	-1	-1	-1	-1	-1	-1	-0.2	0.5	-0.2	1
-30	-30	-10	35	88	-1	-1	-1	-1	-1	-1	-1	-0.2	0.7	-0.2	-1
53	-30	-10	149	203	4	4	-1	-1	-1	-1	-1	-0.2	0.5	-0.2	-1
-30	-30	16	137	368	7	50	2	-1	-1	-1	-1	-0.2	1	-0.2	1
-30	-30	-10	78	181	3	-1	-1	-1	-1	-1	-1	-0.2	2.2	-0.2	-1
-30	-30	-10	53	300	-1	-1	-1	-1	-1	-1	-1	-0.2	1.8	-0.2	-1
-30	-30	-10	60	201	-1	-1	-1	-1	-1	-1	-1	-0.2	2	-0.2	-1
-30	-30	-10	87	91	2	-1	-1	-1	-1	-1	-1	-0.2	1	-0.2	-1
-30	-30	-10	78	70	2	1	-1	-1	-1	-1	-1	-0.2	0.5	-0.2	-1
-30	-30	-10	75	111	3	-1	-1	-1	-1	-1	-1	-0.2	1.8	-0.2	-1
-30	-30	-10	76	64	3	-1	-1	-1	-1	-1	-1	-0.2	1.4	-0.2	-1
-30	-30	-10	39	159	6	-1	1	-1	-1	-1	-1	-0.2	-0.2	-0.2	-1
-30	-30	14	90	194	22	-1	-1	-1	-1	-1	-1	-0.2	0.7	-0.2	-1
-30	-30	22	84	178	11	-1	-1	-1	-1	-1	-1	-0.2	-0.2	-0.2	-1
-30	-30	-10	37	48	9	-1	-1	-1	-1	-1	-1	-0.2	-0.2	-0.2	-1
-30	-30	13	43	80	17	-1	-1	-1	-1	-1	-1	-0.2	0.3	-0.2	-1

Se	Br	I	Rb	Sr	Y	Zr	Nb	Mo	Ru	Rh	Pd	Ag	Cd	In	Sn

-30	-30	-10	78	169	2	-1	-1	-1	-1	-1	-1	-0.2	2	-0.2	-1
-30	-30	12	67	101	7	-1	-1	-1	-1	-1	-1	-0.2	3.3	-0.2	-1
-30	-30	19	29	211	2	-1	-1	-1	-1	-1	-1	-0.2	-0.2	-0.2	-1
-30	-30	-10	19	237	4	-1	-1	-1	-1	-1	-1	-0.2	0.3	-0.2	-1
-30	-30	12	66	332	4	-1	-1	-1	-1	-1	-1	-0.2	2.6	-0.2	-1
-30	-30	-10	86	76	6	-1	-1	-1	-1	-1	-1	-0.2	1.8	-0.2	-1
-30	-30	-10	57	30	2	-1	-1	-1	-1	-1	-1	-0.2	3.5	-0.2	-1
-30	40	-10	32	15	3	-1	-1	-1	-1	-1	-1	-0.2	4.5	-0.2	-1
-30	-30	-10	31	86	2	-1	-1	-1	-1	-1	-1	-0.2	2	-0.2	-1
-30	-30	-10	108	100	3	-1	-1	-1	-1	-1	-1	-0.2	3.9	-0.2	-1
-30	-30	10	102	242	7	-1	-1	-1	-1	-1	-1	-0.2	2	-0.2	-1
-30	-30	-10	28	31	4	-1	-1	-1	-1	-1	-1	-0.2	1.6	-0.2	-1
-30	-30	-10	75	70	6	-1	-1	-1	-1	-1	-1	-0.2	4.1	-0.2	-1
-30	-30	10	67	81	5	-1	-1	-1	-1	-1	-1	-0.2	3.5	-0.2	-1
-30	-30	-10	74	190	14	-1	-1	-1	-1	-1	-1	-0.2	1.8	-0.2	-1
-30	-30	-10	40	20	17	-1	-1	-1	-1	-1	-1	-0.2	2.2	-0.2	-1
-30	-30	-10	71	132	7	-1	-1	-1	-1	-1	-1	-0.2	2.6	-0.2	-1

Sb	Te	Cs	Ba	La	Ce	Pr	Nd	Sm	Eu	Gd	Tb	Dy	Ho	Er
-1	-1	-1	234	3	7	-1	3	-1	-1	-1	-1	-1	-1	-1
-1	-1	-1	469	15	27	3	13	2	-1	2	-1	1	-1	-1
-1	-1	-1	471	18	44	5	20	3	-1	4	-1	2	-1	-1
-1	-1	-1	408	6	12	2	7	1	-1	-1	-1	1	-1	-1
-1	-1	-1	301	3	8	-1	4	-1	-1	-1	-1	-1	-1	-1
-1	-1	-1	680	12	27	3	13	2	-1	2	-1	2	-1	-1
-1	-1	-1	219	7	31	3	12	3	1	3	-1	2	-1	-1
-1	-1	-1	538	2	8	-1	3	-1	-1	-1	-1	-1	-1	-1
-1	-1	-1	303	3	7	-1	3	-1	-1	-1	-1	-1	-1	-1
-1	-1	-1	355	1	3	-1	-1	-1	-1	-1	-1	-1	-1	-1
-1	-1	-1	319	2	7	-1	3	-1	-1	-1	-1	-1	-1	-1
-1	-1	2	1975	36	60	8	32	5	2	7	-1	5	-1	1
-1	-1	-1	1097	6	14	2	7	1	-1	2	-1	2	-1	-1
-1	-1	-1	499	3	6	-1	2	-1	-1	-1	-1	-1	-1	-1
-1	-1	-1	988	5	6	-1	2	-1	-1	-1	-1	-1	-1	-1
-1	1	-1	640	1	3	-1	-1	-1	-1	-1	-1	-1	-1	-1
-1	-1	-1	968	10	21	2	11	2	-1	2	-1	2	-1	-1
-1	-1	-1	310	2	4	-1	2	-1	-1	-1	-1	-1	-1	-1

Sb	Te	Cs	Ba	La	Ce	Pr	Nd	Sm	Eu	Gd	Tb	Dy	Ho	Er
-1	-1	-1	338	5	10	1	5	1	-1	1	-1	-1	-1	-1
-1	-1	1	427	2	3	-1	1	-1	-1	-1	-1	-1	-1	-1
-1	-1	-1	112	3	8	-1	3	-1	-1	-1	-1	-1	-1	-1
-1	-1	-1	563	-1	2	-1	1	-1	-1	-1	-1	-1	-1	-1
-1	-1	1	1736	6	17	1	6	-1	-1	1	-1	1	-1	-1
-1	-1	-1	944	12	22	3	11	2	-1	2	-1	2	-1	-1
-1	-1	-1	1260	6	9	1	6	1	-1	1	-1	1	-1	-1
-1	-1	-1	896	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
-1	-1	-1	2082	1	2	-1	1	-1	-1	-1	-1	-1	-1	-1
-1	-1	1	1203	2	3	-1	1	-1	-1	-1	-1	-1	-1	-1
-1	-1	-1	458	3	6	-1	3	-1	-1	-1	-1	-1	-1	-1
-1	-1	1	1205	4	11	-1	4	-1	-1	-1	-1	-1	-1	-1
-1	-1	1	1113	4	10	-1	3	-1	-1	-1	-1	-1	-1	-1
-1	-1	-1	314	8	24	2	9	2	-1	2	-1	1	-1	-1
-1	-1	1	1846	36	77	9	35	6	2	7	-1	4	-1	1
-1	-1	2	1635	18	30	3	13	1	-1	2	-1	1	-1	-1
-1	-1	2	934	12	29	3	11	2	-1	2	-1	1	-1	-1
-1	-1	2	1139	27	66	6	24	3	-1	5	-1	3	-1	-1

Sb	Te	Cs	Ba	La	Ce	Pr	Nd	Sm	Eu	Gd	Tb	Dy	Ho	Er

-1	1	1	1261	3	5	-1	2	-1	-1	-1	-1	-1	-1
-1	-1	-1	1035	8	15	2	7	2	-1	1	-1	1	-1
-1	-1	-1	270	2	5	-1	3	-1	-1	-1	-1	-1	-1
-1	-1	-1	500	5	10	2	6	-1	-1	1	-1	-1	-1
-1	-1	-1	1705	6	7	1	6	1	-1	-1	-1	-1	-1
-1	-1	-1	614	12	21	3	10	1	-1	2	-1	1	-1
-1	-1	-1	681	2	5	-1	3	-1	-1	-1	-1	-1	-1
-1	-1	-1	387	3	6	-1	3	-1	-1	-1	-1	-1	-1
-1	-1	-1	329	2	6	-1	4	-1	-1	-1	-1	-1	-1
-1	-1	-1	1890	4	9	-1	4	-1	-1	-1	-1	-1	-1
-1	1	2	2487	15	17	3	10	1	-1	2	-1	1	-1
-1	-1	-1	606	3	8	-1	4	1	-1	1	-1	-1	-1
-1	-1	1	1734	10	14	2	7	-1	-1	-1	-1	1	-1
-1	-1	-1	1237	4	9	1	6	1	-1	-1	-1	-1	-1
-1	-1	-1	1859	18	31	4	17	3	1	3	-1	3	-1
-1	-1	-1	698	33	61	8	29	5	1	5	-1	3	-1
-1	-1	-1	1036	9	15	2	8	2	-1	2	-1	1	-1

Tm	Yb	Lu	Hf	Ta	W	Re	Os	Ir	Pt	Au	S.Q.Hg	Tl	Pb	Bi	Th
-1	-1	-1	-1	-1	-1	-0.1	-1	-1	-1	-0.1	-1	-1	4	-1	-1
-1	-1	-1	-1	-1	-1	-0.1	-1	-1	-1	-0.1	-1	-1	1	-1	-1
-1	-1	-1	-1	-1	-1	-0.1	-1	-1	-1	-0.1	-1	-1	-1	-1	-1
-1	-1	-1	-1	-1	-1	-0.1	-1	-1	-1	-0.1	-1	-1	-1	-1	-1
-1	-1	-1	-1	-1	-1	-0.1	-1	-1	-1	-0.1	-1	-1	-1	-1	-1
-1	-1	-1	-1	-1	-1	-0.1	-1	-1	-1	-0.1	-1	-1	-1	-1	-1
-1	-1	-1	-1	-1	-1	-0.1	-1	-1	-1	-0.1	-1	-1	-1	-1	-1
-1	-1	-1	-1	-1	-1	-0.1	-1	-1	-1	-0.1	-1	-1	-1	-1	-1
-1	-1	-1	-1	-1	-1	-0.1	-1	-1	-1	-0.1	-1	-1	2	-1	-1
-1	-1	-1	-1	-1	-1	-0.1	-1	-1	-1	-0.1	-1	-1	2	-1	-1
-1	-1	-1	-1	-1	-1	-0.1	-1	-1	-1	-0.1	-1	-1	3	-1	-1
-1	1	-1	-1	-1	-1	-0.1	-1	-1	-1	-0.1	-1	-1	-1	-1	-1
-1	-1	-1	-1	-1	-1	-0.1	-1	-1	-1	-0.1	-1	-1	-1	-1	-1
-1	-1	-1	-1	-1	-1	-0.1	-1	-1	-1	-0.1	-1	-1	-1	-1	-1
-1	-1	-1	-1	-1	-1	-0.1	-1	-1	-1	0.2	-1	-1	-1	-1	-1
-1	-1	-1	-1	-1	-1	-0.1	-1	-1	-1	-0.1	-1	-1	-1	-1	-1
-1	-1	-1	-1	-1	-1	-0.1	-1	-1	-1	-0.1	-1	-1	-1	-1	3
-1	-1	-1	-1	-1	-1	-0.1	-1	-1	-1	-0.1	-1	-1	-1	-1	-1

Tm	Yb	Lu	Hf	Ta	W	Re	Os	Ir	Pt	Au	S.Q.Hg	Tl	Pb	Bi	Th
-1	-1	-1	-1	-1	-1	-0.1	-1	-1	-1	-0.1	-1	-1	-1	-1	-1
-1	-1	-1	-1	-1	-1	-0.1	-1	-1	-1	-0.1	-1	-1	-1	-1	-1
-1	-1	-1	-1	-1	-1	-0.1	-1	-1	-1	-0.1	-1	-1	-1	-1	-1
-1	-1	-1	-1	-1	-1	-0.1	-1	-1	-1	-0.1	-1	-1	-1	-1	-1
-1	-1	-1	-1	-1	-1	-0.1	-1	-1	-1	-0.1	-1	-1	-1	-1	3
-1	-1	-1	2	-1	-1	-0.1	-1	-1	-1	-0.1	-1	-1	-1	-1	7
-1	-1	-1	-1	-1	-1	-0.1	-1	-1	-1	-0.1	-1	-1	-1	-1	-1
-1	-1	-1	-1	-1	-1	-0.1	-1	-1	-1	-0.1	-1	-1	2	-1	-1
-1	-1	-1	-1	-1	-1	-0.1	-1	-1	-1	-0.1	-1	-1	-1	-1	-1
-1	-1	-1	-1	-1	-1	-0.1	-1	-1	-1	-0.1	-1	-1	-1	-1	-1
-1	-1	-1	-1	-1	-1	-0.1	-1	-1	-1	-0.1	-1	-1	-1	-1	-1
-1	-1	-1	-1	-1	-1	-0.1	-1	-1	-1	-0.1	-1	-1	-1	-1	-1
-1	-1	-1	-1	-1	-1	-0.1	-1	-1	-1	0.2	-1	-1	-1	-1	-1
-1	-1	-1	-1	-1	-1	-0.1	-1	-1	-1	-0.1	-1	-1	-1	-1	1
-1	-1	-1	-1	-1	-1	-0.1	-1	-1	-1	-0.1	-1	1	-1	-1	-1
-1	-1	-1	-1	-1	-1	0.2	-1	-1	-1	-0.1	-1	-1	-1	-1	-1
-1	-1	-1	-1	-1	-1	-0.1	-1	-1	-1	-0.1	-1	1	-1	-1	-1
-1	-1	-1	-1	-1	-1	-0.1	-1	-1	-1	0.2	-1	-1	-1	-1	-1

Tm	Yb	Lu	Hf	Ta	W	Re	Os	Ir	Pt	Au	S.Q.Hg	Tl	Pb	Bi	Th

-1	-1	-1	-1	-1	-1	-0.1	-1	-1	-1	-0.1	-1	-1	-1	-1	-1
-1	-1	-1	-1	-1	-1	-0.1	-1	-1	-1	-0.1	-1	-1	1	-1	-1
-1	-1	-1	-1	-1	-1	-0.1	-1	-1	-1	-0.1	-1	-1	-1	-1	-1
-1	-1	-1	-1	-1	-1	-0.1	-1	-1	-1	-0.1	-1	-1	-1	-1	-1
-1	-1	-1	-1	-1	-1	-0.1	-1	-1	-1	-0.1	-1	-1	-1	-1	-1
-1	-1	-1	-1	-1	-1	-0.1	-1	-1	-1	-0.1	-1	-1	-1	-1	-1
-1	-1	-1	-1	-1	-1	-0.1	-1	-1	-1	-0.1	-1	-1	-1	-1	-1
-1	-1	-1	-1	-1	-1	-0.1	-1	-1	-1	-0.1	-1	-1	-1	-1	-1
-1	-1	-1	-1	-1	-1	-0.1	-1	-1	-1	-0.1	-1	-1	-1	-1	-1
-1	-1	-1	-1	-1	-1	-0.1	-1	-1	-1	-0.1	-1	-1	-1	-1	-1
-1	-1	-1	-1	-1	-1	-0.1	-1	-1	-1	-0.1	-1	-1	-1	-1	-1
-1	-1	-1	-1	-1	-1	-0.1	-1	-1	-1	-0.1	-1	-1	-1	-1	-1
-1	-1	-1	-1	-1	-1	-0.1	-1	-1	-1	-0.1	-1	-1	-1	-1	-1
-1	-1	-1	-1	-1	-1	-0.1	-1	-1	-1	-0.1	-1	-1	2	-1	-1
-1	-1	-1	-1	-1	-1	-0.1	-1	-1	-1	-0.1	-1	-1	-1	-1	-1
-1	-1	-1	-1	-1	-1	-0.1	-1	-1	-1	-0.1	-1	-1	-1	-1	-1
-1	-1	-1	-1	-1	-1	-0.1	-1	-1	-1	-0.1	-1	-1	1	-1	-1

U	/	Sample ID
1	/	SA 16013
-1	/	SA 16014
-1	/	SA 16015
-1	/	SA 16016
-1	/	SA 16017
-1	/	SA 16018
-1	/	SA 16019
-1	/	SA 16020
-1	/	SA 16021
-1	/	SA 16022
-1	/	SA 16023
-1	/	SA 16024
-1	/	SA 16025
-1	/	SA 16026
-1	/	SA 16027
-1	/	SA 16028
-1	/	SA 16029
-1	/	SA 16030
U	/	Sample ID
-1	/	SA 16031
-1	/	SA 16032
-1	/	SA 16033
-1	/	SA 16034
-1	/	SA 16035
-1	/	SA 16036
-1	/	SA 16037
-1	/	SA 16038
-1	/	SA 16039
-1	/	SA 16040
-1	/	SA 16041
-1	/	SA 16042
-1	/	SA 16043
-1	/	SA 16044
-1	/	SA 16045
-1	/	SA 16046
-1	/	SA 16047
-1	/	SA 16048
U	/	Sample ID

-1	/	SA 16049
-1	/	SA 16051
-1	/	SA 16052
-1	/	SA 16053
-1	/	SA 16054
-1	/	SA 16055
-1	/	SA 16056
-1	/	SA 16057
-1	/	SA 16058
-1	/	SA 16059
-1	/	SA 16060
-1	/	SA 16061
-1	/	SA 16062
-1	/	SA 16063
-1	/	SA 16064
-1	/	SA 16065
-1	/	SA 16066

Line 900																
/	Station	S.Q.Li	S.Q.Be	S.Q.Cl	S.Q.Sc	S.Q.Ti	V	Mn	Co	Ni	Cu	Zn	Ga	Ge	As	
-900	-800	51	-20	6940	48	-100	922	3090	7	18	173	81	22	3		48
-900	-750	36	-20	3244	31	-100	410	3072	23	25	111	85	12	1		39
-900	-700	33	-20	3770	45	-100	222	1605	24	41	165	87	16	16		26
-900	-650	50	-20	4229	-10	-100	269	754	9	50	58	23	23	-1		22
-900	-600	39	-20	9097	-10	-100	212	2036	10	54	58	46	15	1		23
-900	-550	52	-20	11539	31	-100	533	3283	22	47	118	29	7	-1		46
-900	-500	56	-20	13655	31	-100	910	3330	19	38	195	72	15	-1		59
-900	-450	56	-20	5037	12	-100	451	2899	17	45	82	37	25	-1		30
-900	-400	30	-20	4860	-10	-100	179	1730	8	16	54	22	-1	-1		21
-900	-350	43	-20	4206	17	-100	834	2964	19	24	178	54	15	-1		49
-900	-300	56	-20	7861	11	-100	995	2730	10	34	225	52	6	-1		57
-900	-250	32	-20	-3000	-10	-100	663	1183	11	20	280	53	21	2		54
-900	-200	47	-20	5338	-10	-100	701	2830	9	42	249	50	9	-1		38
-900	-150	59	-20	-3000	-10	183	1001	3589	15	41	212	52	32	2		31
-900	-100	47	-20	3162	53	-100	1044	2382	16	30	244	62	19	2		60
-900	-50	37	-20	6637	85	-100	904	1924	19	20	274	51	15	-1		53
-900	0	48	-20	-3000	30	-100	1180	1847	14	32	242	44	9	2		51

Line 100																
/	Station	S.Q.Li	S.Q.Be	S.Q.Cl	S.Q.Sc	S.Q.Ti	V	Mn	Co	Ni	Cu	Zn	Ga	Ge	As	
-100	-800	43	-20	5796	12	-100	203	494	9	17	49	30	3	-1		26
-100	-750	60	-20	14475	-10	114	286	756	8	49	93	86	7	1		25
-100	-700	49	-20	4556	24	-100	248	558	14	24	23	21	4	-1		20
-100	-650	54	-20	5967	12	-100	1199	2977	14	58	249	65	-1	-1		48
-100	-600	95	-20	58334	-10	289	1492	3079	14	36	210	28	28	-1		32
-100	-550	45	-20	12038	-10	-100	1203	2631	15	28	176	24	5	-1		42
-100	-500	76	-20	4056	70	201	978	4406	14	78	225	81	-1	2		35
-100	-450	87	-20	9844	51	206	889	4230	23	43	190	98	30	1		27
-100	-400	83	-20	11206	48	149	904	4941	22	83	227	96	33	2		31
-100	-350	69	-20	4188	21	128	1120	3425	15	48	247	87	22	-1		34
-100	-300	68	-20	5479	82	105	840	3162	12	52	183	69	2	-1		32
-100	-250	88	-20	9136	31	143	750	4470	20	50	174	95	4	-1		24
-100	-200	68	-20	6239	33	-100	794	3146	17	40	201	59	-1	-1		31
-100	-150	75	-20	6104	41	-100	575	3340	14	65	187	82	8	-1		44
-100	-100	56	-20	4589	33	-100	808	3476	12	67	192	76	14	2		26
-100	-50	55	-20	4496	-10	132	721	3091	26	51	237	67	23	-1		46
-100	0	67	-20	7992	52	-100	799	3741	19	82	244	62	29	-1		35

Line 200																
/	Station	S.Q.Li	S.Q.Be	S.Q.Cl	S.Q.Sc	S.Q.Ti	V	Mn	Co	Ni	Cu	Zn	Ga	Ge	As	
-200	-800	76	-20	8897	21	174	779	3879	19	63	224	81	-1	2		51
-200	-750	44	-20	4533	34	-100	706	2544	16	71	263	79	15	2		68

-200	-700	64	-20	5655	41	-100	979	3677	23	50	232	64	-1	18	38
-200	-650	52	-20	5680	36	-100	984	3055	14	29	232	54	7	-1	45
-200	-600	53	-20	-3000	32	135	1002	3515	9	30	236	58	15	1	44
-200	-550	69	-20	7477	38	166	884	4091	14	40	204	96	12	2	37
-200	-500	63	-20	3768	21	-100	892	4120	8	49	213	52	-1	-1	31
-200	-450	79	-20	-3000	32	157	767	3833	13	45	196	63	8	-1	33
-200	-400	64	-20	6305	50	-100	870	3834	13	45	200	44	28	-1	36
-200	-350	81	-20	10952	85	102	1041	4069	22	75	208	70	23	-1	26
-200	-300	67	-20	7611	25	-100	682	3601	24	37	217	45	32	-1	30
-200	-250	90	-20	10408	22	131	845	3943	19	68	225	65	31	-1	30
-200	-200	91	-20	3754	73	147	688	4877	20	92	181	45	43	-1	23
-200	-150	62	-20	3702	22	-100	844	3764	17	64	238	56	2	1	34
-200	-100	59	-20	-3000	-10	-100	882	3596	11	59	244	58	-1	-1	32
-200	-50	88	-20	6344	22	148	784	4381	26	54	211	71	17	-1	27
-200	0	69	-20	3723	82	128	792	4490	19	47	228	54	25	-1	31

Line 300

/	Station	S.Q.Li	S.Q.Be	S.Q.Cl	S.Q.Sc	S.Q.Ti	V	Mn	Co	Ni	Cu	Zn	Ga	Ge	As
-300	-800	59	-20	9458	45	-100	958	3253	18	32	207	52	-1	3	38
-300	-650	60	-20	9544	23	-100	923	3699	21	68	244	59	26	-1	47
-300	-600	80	-20	9548	47	-100	986	3997	13	38	214	71	12	2	33
-300	-550	62	-20	4685	67	-100	743	3497	15	25	217	58	3	2	45
-300	-500	70	-20	7648	37	-100	790	3488	14	37	233	61	8	1	32
-300	-450	68	-20	11593	25	-100	1020	2921	14	29	250	57	42	-1	47
-300	-400	68	-20	11829	41	-100	968	4011	17	64	240	49	-1	-1	38
-300	-350	64	-20	8673	51	-100	860	4433	16	87	234	54	22	2	40
-300	-300	67	-20	11684	52	-100	883	3408	10	40	237	36	19	-1	27
-300	-250	72	-20	-3000	36	-100	805	4050	14	78	237	73	18	-1	21
-300	-200	37	-20	4964	19	-100	667	2336	12	67	272	37	18	2	58
-300	-150	65	-20	6225	-10	131	970	3596	14	49	238	59	-1	-1	35
-300	-100	34	-20	-3000	-10	-100	915	1638	9	27	232	38	20	-1	60
-300	-50	50	-20	9140	-10	106	1011	2719	12	22	305	35	3	-1	33

Line 400

/	Station	S.Q.Li	S.Q.Be	S.Q.Cl	S.Q.Sc	S.Q.Ti	V	Mn	Co	Ni	Cu	Zn	Ga	Ge	As
-400	0	42	-20	16733	-10	-100	1126	2473	10	27	283	36	2	-1	54
-400	-50	76	-20	14705	-10	128	734	3132	19	61	242	76	7	-1	36
-400	-100	55	-20	10414	-10	-100	599	2931	17	47	271	58	4	-1	42
-400	-150	87	-20	16896	-10	130	615	3882	17	54	245	72	7	-1	29
-400	-200	64	-20	11110	-10	108	800	3280	23	63	244	70	5	-1	49
-400	-250	85	-20	15465	-10	114	866	3752	14	38	267	72	7	-1	28
-400	-300	100	-20	17616	-10	262	1095	4565	16	55	273	55	9	1	29
-400	-350	77	-20	13672	-10	116	999	3765	11	38	290	53	6	-1	31
-400	-400	83	-20	10872	-10	-100	842	3980	9	33	330	52	2	-1	32

-400	-450	84	-20	13073	-10	123	1026	4476	12	39	298	55	6	5	29
-400	-500	85	-20	14073	-10	151	1053	3638	13	45	298	55	9	-1	36
-400	-550	81	-20	13011	-10	143	1068	3637	13	44	292	69	7	1	30
-400	-600	80	-20	13927	-10	135	1092	4016	12	41	299	58	6	1	33
-400	-650	75	-20	11388	-10	192	1081	3272	19	53	284	63	6	1	48
-400	-700	79	-20	13187	-10	221	986	3717	15	52	279	70	6	1	43
-400	-750	81	-20	11190	-10	160	720	3770	26	76	288	81	8	-1	37
-400	-800	87	-20	14170	-10	154	911	3648	15	48	289	61	8	1	35

Line 500

/	Station	S.Q.Li	S.Q.Be	S.Q.Cl	S.Q.Sc	S.Q.Ti	V	Mn	Co	Ni	Cu	Zn	Ga	Ge	As
-500	-800	58	-20	10695	-10	-100	1150	3425	11	36	285	51	4	-1	46
-500	-750	138	-20	16626	-10	267	1109	4615	14	56	275	63	9	-1	31
-500	-700	74	-20	10743	-10	198	945	3855	12	38	310	52	7	1	31
-500	-650	60	-20	12754	-10	106	1326	3284	11	36	328	48	5	4	40
-500	-600	95	-20	11667	-10	-100	1199	2680	9	27	303	49	5	1	45
-500	-550	70	-20	9690	-10	-100	936	3616	10	24	343	48	4	5	35
-500	-500	72	-20	17120	-10	121	1070	4285	12	40	282	53	9	2	36
-500	-450	47	-20	10261	-10	-100	1199	2282	8	27	254	41	4	-1	38
-500	-400	65	-20	11332	-10	177	1065	4530	11	38	295	46	5	1	38
-500	-350	62	-20	11280	-10	-100	1049	4475	11	30	297	43	6	-1	37
-500	-300	80	-20	9695	-10	-100	856	3876	10	35	299	50	5	-1	29
-500	-250	75	-20	9513	-10	-100	991	4125	13	37	298	51	6	-1	29
-500	-200	61	-20	7542	-10	-100	889	3590	13	41	335	54	43	1	38
-500	-150	75	-20	7705	-10	103	800	3741	13	40	290	51	6	-1	29

Line 700

/	Station	S.Q.Li	S.Q.Be	S.Q.Cl	S.Q.Sc	S.Q.Ti	V	Mn	Co	Ni	Cu	Zn	Ga	Ge	As
-700	0	68	-20	10127	-10	-100	811	3582	12	30	242	59	7	-1	25
-700	-50	96	-20	14782	-10	142	705	3727	14	54	261	64	9	-1	34
-700	-100	60	-20	7885	-10	-100	697	2862	11	32	242	61	2	-1	34
-700	-150	70	-20	10575	-10	-100	784	4206	12	34	257	45	6	-1	31
-700	-200	73	-20	10370	-10	-100	804	3936	10	30	269	51	2	1	31
-700	-250	80	-20	11182	-10	105	952	4540	11	42	277	45	6	1	26
-700	-300	72	-20	7251	-10	-100	812	3945	11	31	279	49	5	-1	35
-700	-350	43	-20	5021	-10	-100	1164	2583	7	16	280	29	3	-1	42
-700	-400	59	-20	10911	-10	-100	858	3660	9	26	297	37	4	-1	37
-700	-450	53	-20	9797	-10	-100	1034	3211	11	35	313	54	4	5	44
-700	-500	64	-20	10176	-10	-100	923	3881	11	28	315	46	4	1	35
-700	-550	71	-20	8429	-10	-100	790	3816	10	31	285	61	6	-1	36
-700	-600	69	-20	10682	-10	192	879	4114	12	36	287	55	6	-1	36
-700	-650	59	-20	9339	-10	-100	932	3280	9	36	284	47	2	-1	38
-700	-700	57	-20	5701	-10	-100	922	3097	8	26	306	40	3	-1	44
-700	-750	51	-20	7336	-10	106	774	3355	8	24	204	33	5	-1	37

-700	-800	49	-20	10430	-10	-100	768	2694	8	25	215	44	4	-1	28
Line 600															
/	Station	S.Q.Li	S.Q.Be	S.Q.Cl	S.Q.Sc	S.Q.Ti	V	Mn	Co	Ni	Cu	Zn	Ga	Ge	As
-600	0	76	-20	18231	-10	181	894	3265	17	46	247	48	10	1	37
-600	-50	81	-20	19665	-10	198	895	3481	17	43	251	52	11	1	35
-600	-100	39	-20	15707	-10	-100	1021	2217	9	19	256	35	3	1	47
-600	-150	107	-20	28827	-10	196	1105	5040	16	45	237	50	11	2	31
-600	-200	98	-20	30262	-10	186	1070	4319	17	43	264	48	11	2	36
-600	-250	63	-20	14759	-10	128	930	3315	12	39	253	43	7	-1	32
-600	-300	64	-20	16477	-10	107	1093	3868	12	35	276	44	6	2	47
-600	-350	91	-20	24215	-10	181	1076	4534	15	43	259	36	9	1	33
-600	-400	90	-20	19416	-10	224	1100	3431	18	53	272	47	12	5	44
-600	-450	60	-20	18460	-10	-100	765	3192	18	47	197	35	3	-1	44
-600	-500	78	-20	20064	-10	140	961	3390	14	44	239	44	8	1	39
-600	-550	63	-20	16566	-10	-100	589	2604	15	42	213	38	3	-1	29
-600	-600	62	-20	15042	-10	-100	861	2682	9	22	253	34	5	-1	40
-600	-650	55	-20	19106	-10	-100	842	2392	9	31	277	30	4	-1	39
-600	-700	76	-20	18411	-10	126	924	3297	13	39	273	35	6	2	32
-600	-750	41	-20	20928	-10	-100	1125	2290	7	17	288	20	3	-1	41
-600	-800	58	-20	14267	-10	-100	1023	2598	8	20	263	29	4	1	48
Line 800															
/	Station	S.Q.Li	S.Q.Be	S.Q.Cl	S.Q.Sc	S.Q.Ti	V	Mn	Co	Ni	Cu	Zn	Ga	Ge	As
-800	0	27	-20	8883	51	-100	1238	1507	12	18	133	69	-1	1	40
-800	-50	36	-20	13151	45	115	367	1451	13	54	178	93	-1	3	34
-800	-100	44	-20	13122	33	-100	1014	2825	14	36	192	79	24	2	50
-800	-150	42	-20	9299	80	-100	576	1341	24	36	206	41	14	14	38
-800	-200	44	-20	7847	98	-100	628	2091	10	47	278	57	3	-1	48
-800	-250	54	-20	12089	-10	-100	1031	3072	11	50	217	79	9	1	47
-800	-300	55	-20	9829	35	-100	1042	4163	15	35	226	67	-1	2	41
-800	-350	57	-20	10431	18	-100	1048	4127	25	37	269	69	35	2	47
-800	-400	38	-20	-3000	40	-100	1213	2767	31	25	212	80	24	1	38
-800	-450	50	-20	7496	36	149	1006	3634	7	52	247	75	-1	3	51
-800	-500	45	-20	7009	40	-100	1034	3201	16	52	235	67	15	3	42
-800	-550	44	-20	13186	35	-100	999	3349	16	46	225	81	3	-1	51
-800	-600	58	-20	12274	-10	141	1031	4186	8	63	223	104	24	1	33
-800	-650	53	-20	5975	25	-100	837	3026	10	23	274	80	9	-1	48
-800	-700	43	-20	5326	69	-100	518	2290	4	32	234	86	46	-1	43
-800	-750	43	-20	8675	-10	-100	873	2791	25	69	160	79	31	3	55
-800	-800	40	-20	-3000	-10	-100	227	1046	11	41	60	77	6	-1	24

Se	Br	I	Rb	Sr	Y	Zr	Nb	Mo	Ru	Rh	Pd	Ag	Cd	In	Sn
-30	-30	-10	34	1167	35	105	3	48	-1	-1	2	0.4	1	0.2	-1
-30	228	24	28	1027	40	66	2	12	2	-1	1	-0.2	1.2	-0.2	-1
-30	252	37	28	1123	19	46	1	41	-1	-1	1	-0.2	2.6	-0.2	-1
-30	143	57	27	1009	26	47	2	39	-1	-1	-1	-0.2	0.6	-0.2	-1
-30	118	75	27	785	28	59	2	20	-1	-1	-1	0.3	0.9	-0.2	-1
-30	114	32	46	1299	30	102	4	24	-1	-1	1	0.3	0.9	-0.2	-1
-30	209	21	54	1261	38	128	5	32	-1	-1	1	-0.2	0.9	-0.2	-1
-30	111	19	36	1321	32	71	2	37	-1	-1	1	-0.2	1.4	-0.2	-1
-30	-30	38	26	922	32	46	1	17	-1	-1	1	0.3	1.4	0.2	-1
-30	40	24	45	1144	44	116	4	20	-1	-1	2	-0.2	1.2	0.2	-1
-30	-30	11	66	1357	48	153	4	25	-1	-1	2	0.3	0.9	-0.2	-1
-30	59	-10	38	1161	30	75	3	41	-1	-1	2	-0.2	0.6	-0.2	-1
-30	74	13	46	1674	30	79	3	31	1	-1	2	-0.2	0.9	-0.2	-1
-30	179	-10	72	1619	50	150	7	35	-1	-1	2	0.5	1.2	-0.2	-1
-30	210	-10	57	1460	49	147	4	72	1	-1	2	0.3	1.2	0.2	-1
-30	38	12	46	1144	42	105	4	13	2	-1	2	0.3	1.2	-0.2	-1
-30	128	-10	52	1185	50	125	4	77	-1	-1	2	-0.2	1.2	-0.2	-1

Se	Br	I	Rb	Sr	Y	Zr	Nb	Mo	Ru	Rh	Pd	Ag	Cd	In	Sn
-30	69	82	23	891	26	52	2	9	1	-1	-1	-0.2	1.2	-0.2	-1
-30	-30	65	37	856	29	71	2	10	-1	-1	1	-0.2	2.7	-0.2	-1
-30	126	49	28	932	21	39	1	13	-1	-1	-1	0.3	0.9	-0.2	-1
-30	103	12	76	1336	52	151	5	33	-1	-1	2	0.3	1.7	0.2	-1
-30	392	-10	83	1728	51	161	6	19	-1	-1	2	0.5	0.9	-0.2	-1
-30	177	-10	65	1565	46	135	4	18	-1	-1	1	-0.2	0.4	-0.2	-1
-30	181	12	94	1884	41	151	7	32	-1	-1	2	0.5	2.2	0.2	-1
-30	112	16	87	2161	36	107	5	34	-1	-1	2	0.3	0.4	-0.2	-1
-30	115	12	112	1941	41	139	7	19	2	-1	2	0.5	0.6	-0.2	-1
-30	51	15	115	1799	42	137	6	52	1	-1	3	-0.2	1.4	-0.2	-1
-30	35	-10	88	1885	37	123	5	34	-1	-1	2	0.3	1.9	-0.2	-1
-30	97	11	122	2213	32	120	6	19	-1	-1	3	0.5	1.9	-0.2	-1
57	35	15	83	1908	35	119	3	19	1	-1	-1	0.3	0.9	-0.2	-1
65	120	-10	110	2524	36	115	4	22	1	-1	2	0.3	1.2	-0.2	-1
-30	115	13	96	2116	37	122	4	14	-1	-1	2	0.5	0.9	-0.2	-1
-30	97	-10	110	1915	35	98	4	31	-1	-1	1	0.5	0.9	-0.2	-1
-30	104	10	112	2055	42	127	5	32	-1	-1	3	0.3	1.4	-0.2	-1

Se	Br	I	Rb	Sr	Y	Zr	Nb	Mo	Ru	Rh	Pd	Ag	Cd	In	Sn
-30	76	-10	132	2264	34	110	4	24	1	-1	4	0.2	0.6	-0.2	-1
-30	167	-10	107	1778	32	90	2	34	1	-1	2	0.5	1.1	-0.2	-1

-30	261	-10	99	2049	39	127	4	22	-1	-1	3	-0.2	1.1	-0.2	-1
-30	84	-10	86	1700	41	113	4	29	-1	-1	2	0.5	0.6	-0.2	-1
-30	52	-10	93	1662	47	110	4	20	-1	-1	3	0.5	1.1	-0.2	-1
-30	103	-10	105	2027	42	126	6	21	-1	-1	5	0.5	1.9	-0.2	-1
-30	63	10	103	1945	38	117	4	22	-1	-1	2	0.5	1.4	-0.2	-1
-30	78	-10	91	2082	35	111	4	13	-1	-1	2	0.5	0.9	-0.2	-1
-30	221	15	96	1909	46	125	4	30	-1	-1	2	0.5	1.1	-0.2	-1
-30	94	16	124	2043	42	128	5	24	-1	-1	2	0.2	1.7	-0.2	-1
-30	172	-10	98	2056	32	104	4	28	-1	-1	2	0.3	1.4	-0.2	-1
-30	65	12	110	2005	43	122	6	27	-1	-1	1	0.2	1.2	-0.2	-1
-30	143	18	114	2235	32	117	7	38	-1	-1	2	0.2	-0.2	-0.2	-1
-30	67	-10	88	2041	45	118	4	41	-1	-1	3	0.5	0.9	-0.2	-1
-30	112	13	99	1747	41	139	3	34	1	-1	2	0.5	1.4	0.2	-1
-30	107	14	112	2350	35	116	6	25	1	-1	1	0.2	2.2	-0.2	-1
-30	161	13	115	2204	49	146	7	20	-1	-1	3	0.2	1.7	-0.2	-1

Se	Br	I	Rb	Sr	Y	Zr	Nb	Mo	Ru	Rh	Pd	Ag	Cd	In	Sn
-30	97	11	105	1713	38	124	4	23	-1	-1	2	0.2	0.6	-0.2	-1
-30	99	-10	108	2195	37	112	3	24	-1	-1	3	0.2	1.4	-0.2	-1
-30	104	-10	93	2065	38	124	4	20	-1	-1	3	0.2	2.2	-0.2	-1
-30	217	-10	111	2202	34	114	3	32	-1	-1	2	-0.2	0.6	-0.2	-1
-30	73	-10	88	1807	36	104	4	22	-1	-1	2	0.3	0.4	-0.2	-1
-30	122	-10	93	1971	48	120	3	37	-1	-1	3	0.8	1.7	-0.2	-1
-30	94	-10	112	2150	46	116	4	29	-1	-1	2	0.5	0.9	-0.2	-1
-30	181	17	103	2175	44	108	3	42	-1	-1	2	0.5	1.4	-0.2	-1
-30	84	-10	96	1983	37	112	4	25	-1	-1	1	0.3	0.9	-0.2	-1
-30	-30	-10	103	2131	39	109	5	35	-1	-1	2	0.8	1.4	-0.2	-1
-30	199	-10	74	1452	35	67	3	20	-1	-1	1	0.3	0.9	-0.2	-1
-30	32	17	69	1925	36	99	3	40	-1	-1	2	0.2	1.1	-0.2	-1
-30	114	-10	63	1498	29	61	2	24	-1	-1	2	-0.2	-0.2	-0.2	-1
-30	53	10	93	1882	35	84	4	24	-1	-1	2	0.3	2.2	0.2	-1

Se	Br	I	Rb	Sr	Y	Zr	Nb	Mo	Ru	Rh	Pd	Ag	Cd	In	Sn
-30	57	11	78	1671	33	116	4	68	-1	-1	-1	-0.2	0.7	-0.2	-1
56	43	-10	118	2410	29	116	6	46	-1	-1	-1	-0.2	1.3	-0.2	-1
-30	70	-10	85	2225	28	98	5	39	-1	-1	1	-0.2	0.7	-0.2	-1
-30	39	-10	138	2253	27	104	6	40	-1	-1	-1	-0.2	1.3	-0.2	-1
-30	65	-10	120	2087	30	112	6	42	-1	-1	1	-0.2	1.3	-0.2	-1
-30	56	-10	105	2330	30	104	6	33	-1	-1	-1	-0.2	0.7	-0.2	-1
-30	51	12	122	2125	35	106	8	37	-1	-1	-1	-0.2	1.3	-0.2	-1
-30	82	-10	83	1962	37	110	6	38	-1	-1	-1	-0.2	1.3	-0.2	-1
64	75	11	76	1968	34	104	5	40	-1	-1	-1	-0.2	0.7	-0.2	-1

-30	61	14	93	1991	34	95	7	33	-1	-1	-1	-0.2	1	-0.2	-1
-30	68	12	100	2139	36	110	7	26	-1	-1	1	-0.2	1	-0.2	-1
58	51	11	101	1914	40	113	8	39	-1	-1	-1	-0.2	1	-0.2	-1
62	53	-10	109	2007	39	111	7	33	-1	-1	-1	-0.2	0.7	-0.2	-1
-30	53	-10	121	2254	35	111	6	43	-1	-1	-1	-0.2	1	-0.2	-1
-30	45	-10	128	2303	36	120	7	45	-1	-1	-1	-0.2	0.7	-0.2	-1
-30	32	-10	138	2259	34	113	7	39	-1	-1	-1	-0.2	1.5	-0.2	-1
-30	34	-10	97	2054	40	120	8	18	-1	-1	-1	-0.2	1.3	-0.2	1

Se	Br	I	Rb	Sr	Y	Zr	Nb	Mo	Ru	Rh	Pd	Ag	Cd	In	Sn
-30	36	17	79	1775	39	123	6	61	-1	-1	1	-0.2	1.3	-0.2	-1
-30	45	16	121	2337	36	110	8	47	-1	-1	1	-0.2	1	-0.2	1
-30	53	12	102	2062	37	106	6	45	-1	-1	-1	-0.2	1.3	-0.2	-1
-30	75	11	84	1622	47	132	7	32	-1	-1	1	0.3	1	-0.2	-1
-30	58	-10	56	1665	38	117	6	20	-1	-1	-1	-0.2	1	-0.2	-1
-30	50	12	58	1962	34	115	6	46	-1	-1	-1	-0.2	1.3	-0.2	-1
54	67	10	88	1833	37	116	7	56	-1	-1	-1	-0.2	1	-0.2	-1
-30	54	-10	82	1680	40	123	5	66	-1	-1	1	-0.2	1	-0.2	-1
-30	37	14	82	1897	39	112	7	51	-1	-1	1	-0.2	1	-0.2	-1
-30	49	14	72	1771	42	112	6	37	-1	-1	-1	-0.2	0.4	-0.2	-1
-30	77	22	73	2001	32	112	5	38	-1	-1	1	-0.2	1.3	-0.2	-1
-30	58	17	91	2406	36	120	6	43	-1	-1	1	-0.2	1.3	-0.2	-1
-30	43	11	102	1807	42	134	6	53	-1	-1	1	-0.2	1.3	-0.2	-1
-30	44	11	106	2148	36	114	7	42	-1	-1	1	-0.2	1	-0.2	-1

Se	Br	I	Rb	Sr	Y	Zr	Nb	Mo	Ru	Rh	Pd	Ag	Cd	In	Sn
64	60	-10	82	1994	31	104	5	39	-1	-1	-1	-0.2	1	-0.2	1
58	69	-10	89	2477	29	112	6	32	-1	-1	-1	-0.2	0.7	-0.2	-1
57	40	-10	87	1832	27	102	4	46	-1	-1	-1	-0.2	1	-0.2	-1
-30	65	12	75	1921	37	109	6	36	-1	-1	1	-0.2	0.4	-0.2	-1
-30	67	10	77	1967	34	94	6	37	-1	-1	1	-0.2	0.7	-0.2	-1
-30	62	13	73	2161	35	102	7	32	-1	-1	-1	-0.2	1	-0.2	-1
57	57	14	81	2050	33	93	6	33	-1	-1	1	-0.2	0.7	-0.2	-1
-30	58	12	47	1515	31	82	4	55	-1	-1	-1	-0.2	0.4	-0.2	-1
-30	70	13	58	1796	31	104	5	40	-1	-1	-1	-0.2	0.4	-0.2	-1
-30	60	-10	67	1472	39	126	6	62	-1	-1	1	-0.2	1.3	-0.2	-1
-30	46	-10	72	1957	39	121	6	38	-1	-1	-1	-0.2	1.2	-0.2	-1
-30	41	-10	70	2049	32	104	6	34	-1	-1	1	-0.2	1.5	-0.2	-1
-30	70	10	74	2020	39	123	7	41	-1	-1	-1	-0.2	1	-0.2	-1
-30	51	-10	64	1599	39	118	6	50	-1	-1	1	-0.2	1.3	-0.2	-1
-30	57	-10	61	1656	36	113	5	15	-1	-1	1	-0.2	0.4	-0.2	-1
47	53	14	38	1514	29	75	3	19	-1	-1	-1	-0.2	0.4	-0.2	-1

52	73	-10	49	1385	35	88	3	21	-1	-1	-1	-0.2	1	-0.2	-1

Se	Br	I	Rb	Sr	Y	Zr	Nb	Mo	Ru	Rh	Pd	Ag	Cd	In	Sn
69	66	15	132	1785	35	131	8	68	-1	-1	-1	-0.2	0.7	-0.2	2
-30	59	11	131	1953	33	108	8	53	-1	-1	1	0.3	0.4	-0.2	-1
-30	64	-10	84	1462	33	74	4	47	-1	-1	-1	-0.2	0.4	-0.2	-1
78	49	19	119	1991	34	119	8	47	-1	-1	-1	-0.2	0.7	-0.2	1
-30	52	12	111	1933	37	110	10	27	-1	-1	1	-0.2	0.7	-0.2	1
-30	-30	-10	92	1907	33	117	7	36	-1	-1	1	0.3	0.7	-0.2	-1
73	41	14	83	1983	33	103	5	33	-1	-1	-1	-0.2	0.7	-0.2	-1
-30	82	18	102	1903	39	99	8	42	-1	-1	1	-0.2	1.3	-0.2	-1
-30	57	-10	132	2028	41	121	10	29	-1	-1	1	-0.2	1	-0.2	2
-30	46	21	107	2019	22	86	5	53	-1	-1	1	-0.2	0.4	-0.2	-1
-30	54	16	108	2234	29	112	7	31	-1	-1	-1	-0.2	0.7	-0.2	-1
77	60	11	107	2223	23	70	4	43	-1	-1	-1	-0.2	0.7	-0.2	-1
-30	62	12	80	1880	27	98	5	33	-1	-1	-1	-0.2	0.7	-0.2	-1
74	59	-10	78	1753	31	88	4	39	-1	-1	-1	-0.2	1	-0.2	-1
88	62	16	93	2077	28	109	7	35	-1	-1	-1	-0.2	0.7	-0.2	-1
-30	88	11	66	1374	32	79	4	40	-1	-1	-1	-0.2	-0.2	-0.2	-1
85	55	11	59	1552	31	93	5	34	-1	-1	-1	-0.2	0.7	-0.2	-1

Se	Br	I	Rb	Sr	Y	Zr	Nb	Mo	Ru	Rh	Pd	Ag	Cd	In	Sn
-30	106	14	33	1394	21	49	3	31	-1	-1	-1	-0.2	0.2	-0.2	-1
-30	136	-10	50	1151	16	51	5	2	1	-1	1	0.3	1.4	0.2	-1
-30	267	14	63	1594	34	109	4	79	1	-1	2	0.7	1.7	0.4	1
-30	203	11	41	1445	21	38	2	38	1	-1	-1	-0.2	1.4	0.2	-1
-30	166	14	47	1627	23	63	3	30	1	-1	2	-0.2	1.9	-0.2	-1
-30	270	30	50	1674	37	104	3	92	1	-1	2	0.2	3.1	0.4	-1
-30	193	14	67	1816	47	121	5	42	-1	-1	2	0.2	1.7	-0.2	-1
-30	100	10	68	1919	46	118	5	14	1	-1	2	0.3	1.2	-0.2	-1
-30	191	12	55	1317	43	125	4	18	-1	-1	3	0.5	1.9	-0.2	-1
-30	205	12	56	1663	39	117	4	31	-1	-1	2	0.5	1.6	-0.2	-1
-30	116	-10	49	1395	38	115	4	41	1	-1	2	-0.2	1.7	-0.2	-1
-30	137	17	65	1729	47	128	7	52	2	-1	3	0.3	0.9	-0.2	1
-30	421	13	50	1620	40	99	3	18	-1	-1	1	0.6	2.1	-0.2	2
-30	321	-10	37	1535	32	97	3	16	-1	-1	2	0.4	1.7	0.4	1
-30	339	-10	34	1282	26	68	2	20	-1	-1	-1	0.4	1.7	-0.2	-1
-30	211	14	34	1279	38	89	3	32	1	-1	2	0.4	1.2	-0.2	-1
-30	118	40	29	1033	26	50	2	-1	2	-1	2	-0.2	0.5	0.4	-1

Sb	Te	Cs	Ba	La	Ce	Pr	Nd	Sm	Eu	Gd	Tb	Dy	Ho	Er	Tm
4	1	-1	968	46	120	16	58	10	2	12	1	7	1	3	-1
-1	-1	-1	645	60	161	23	81	13	3	13	2	8	1	3	-1
-1	3	-1	590	36	87	14	48	7	2	8	-1	5	-1	2	-1
-1	1	-1	585	40	91	13	48	7	2	8	1	5	1	2	-1
-1	-1	-1	578	45	107	15	55	9	1	10	1	5	1	2	-1
1	-1	1	883	54	128	15	58	4	2	10	2	6	1	2	-1
3	1	1	973	70	184	22	76	13	3	14	2	8	1	3	-1
-1	-1	-1	770	50	137	16	62	11	2	9	-1	7	1	3	-1
-1	2	-1	556	52	121	17	59	11	2	16	2	5	1	2	-1
1	1	-1	911	71	189	22	81	13	4	14	2	9	1	3	-1
2	-1	1	1097	82	200	25	94	16	3	15	2	9	2	4	-1
3	-1	-1	827	56	137	16	61	9	2	15	1	7	1	2	-1
1	-1	-1	1022	54	139	15	57	7	2	9	1	6	1	2	-1
3	1	2	1212	90	212	26	95	14	3	17	2	9	2	4	-1
4	1	-1	1139	76	192	24	92	15	3	16	2	10	2	4	-1
3	1	-1	1000	70	184	22	79	13	3	15	2	8	1	3	-1
4	-1	-1	1036	91	228	27	102	16	4	15	2	10	2	4	-1

Sb	Te	Cs	Ba	La	Ce	Pr	Nd	Sm	Eu	Gd	Tb	Dy	Ho	Er	Tm
-1	-1	-1	483	50	99	14	51	8	2	10	1	6	-1	1	-1
-1	-1	-1	606	52	103	16	59	7	2	12	1	7	1	2	-1
-1	-1	-1	542	34	69	11	38	8	2	6	-1	3	-1	1	-1
4	1	-1	1087	83	188	25	94	13	3	16	2	10	2	5	-1
2	-1	1	1058	64	170	21	80	13	3	16	2	8	2	4	-1
3	-1	-1	1095	79	203	23	81	12	3	14	2	8	1	3	-1
3	-1	2	1273	76	185	20	80	13	3	13	2	9	1	4	-1
4	-1	2	1240	67	161	19	62	10	3	10	1	7	1	2	-1
5	2	2	1378	82	180	22	82	12	2	13	2	8	2	4	-1
5	-1	2	1336	78	202	22	88	12	3	16	2	7	2	3	-1
5	1	2	1240	63	162	20	70	14	3	14	1	8	2	2	-1
4	3	2	1327	61	138	16	59	10	2	10	-1	6	-1	2	-1
4	2	-1	1185	56	144	17	66	11	3	13	2	7	1	3	-1
6	1	1	1326	51	119	14	49	7	2	10	1	6	1	2	-1
5	4	1	1197	63	151	18	62	9	2	11	2	6	1	3	-1
6	2	1	1210	56	144	17	65	11	2	8	1	6	1	2	-1
8	3	2	1372	69	153	20	71	11	3	14	2	8	2	3	-1

Sb	Te	Cs	Ba	La	Ce	Pr	Nd	Sm	Eu	Gd	Tb	Dy	Ho	Er	Tm
7	-1	2	1352	66	146	17	62	9	2	11	1	7	1	3	-1
7	-1	-1	1065	60	134	16	60	10	2	10	1	6	1	2	-1

5	1	2	1226	68	156	19	72	9	2	13	2	7	1	3	-1
6	-1	-1	1144	63	157	19	71	11	2	14	2	9	1	3	-1
5	-1	1	1128	72	175	22	79	12	2	14	2	8	1	3	-1
4	-1	2	1287	78	180	22	71	14	3	13	2	8	2	3	-1
5	3	2	1214	71	184	20	74	11	3	14	2	8	2	3	-1
3	1	2	1237	64	147	19	66	11	2	10	1	7	1	2	-1
5	1	2	1319	80	203	25	92	14	3	14	2	8	2	3	-1
5	-1	2	1575	73	174	21	79	13	3	12	2	9	2	4	-1
6	-1	1	1241	61	132	17	63	11	3	10	1	6	1	2	-1
5	-1	2	1332	76	181	22	80	12	3	14	1	8	1	4	-1
6	2	2	1328	67	140	16	59	9	2	10	1	5	2	2	-1
4	-1	2	1287	73	185	22	74	15	3	13	2	8	1	4	-1
5	-1	2	1296	72	183	22	83	13	3	15	2	9	2	3	-1
4	-1	2	1353	69	165	17	63	10	2	11	1	6	1	2	-1
5	1	2	1337	79	190	21	87	12	3	16	1	8	2	4	-1

Sb	Te	Cs	Ba	La	Ce	Pr	Nd	Sm	Eu	Gd	Tb	Dy	Ho	Er	Tm
6	2	2	1191	65	153	18	70	9	3	14	2	8	1	4	-1
7	-1	1	1300	63	149	19	68	11	2	11	2	7	1	3	-1
4	-1	1	1294	65	161	19	67	10	2	11	1	8	1	2	-1
7	-1	1	1244	52	131	15	52	8	2	9	1	6	-1	2	-1
4	-1	-1	1100	57	144	19	66	10	3	9	1	7	1	2	-1
5	1	-1	1195	67	176	22	75	11	3	13	2	8	2	3	-1
3	2	2	1202	67	153	18	65	11	2	14	2	7	2	3	-1
4	-1	1	1195	67	161	20	72	12	2	15	1	8	2	3	-1
4	2	1	1182	65	154	18	76	11	3	11	1	7	1	3	-1
4	2	2	1230	62	141	18	59	10	2	11	2	6	1	3	-1
4	2	-1	872	52	141	16	59	9	3	10	1	6	1	3	-1
4	-1	-1	1091	54	139	17	65	10	3	12	1	7	1	2	-1
4	-1	-1	847	49	132	16	54	10	2	12	1	6	-1	2	-1
3	1	-1	1141	61	152	19	69	8	2	13	2	7	1	3	-1

Sb	Te	Cs	Ba	La	Ce	Pr	Nd	Sm	Eu	Gd	Tb	Dy	Ho	Er	Tm
6	-1	-1	1165	42	110	9	52	10	2	10	1	6	1	3	-1
6	-1	2	1384	43	94	7	45	8	2	8	1	5	1	2	-1
5	-1	-1	1341	36	89	7	42	8	2	8	1	5	1	2	-1
5	-1	2	1445	40	89	7	43	8	2	8	-1	5	1	2	-1
4	-1	1	1376	41	102	8	45	8	2	8	-1	5	1	2	-1
4	1	1	1356	43	112	9	51	7	2	8	-1	5	1	2	-1
4	-1	2	1312	51	126	11	57	10	2	9	1	7	1	3	-1
4	-1	1	1248	57	145	13	64	11	3	11	1	6	1	3	-1
4	-1	1	1242	49	126	11	55	10	2	11	1	7	1	3	-1

4	-1	1	1247	54	136	13	60	10	2	11	1	7	1	3	-1
3	-1	2	1302	56	142	12	59	11	2	10	1	7	1	3	-1
3	-1	2	1278	62	156	14	67	12	2	11	1	7	2	3	-1
4	-1	2	1348	61	150	13	65	11	3	11	1	7	1	3	-1
6	-1	1	1393	52	130	12	56	9	2	10	1	7	1	3	-1
6	-1	2	1452	52	125	11	53	9	2	9	1	7	1	3	-1
5	-1	2	1427	55	133	11	55	9	2	9	1	7	1	3	-1
3	-1	2	1309	63	155	14	70	12	2	11	1	8	1	3	-1

Sb	Te	Cs	Ba	La	Ce	Pr	Nd	Sm	Eu	Gd	Tb	Dy	Ho	Er	Tm
4	1	-1	1256	55	144	14	67	11	2	14	1	7	1	3	-1
5	1	2	1379	54	132	12	59	9	2	10	1	6	1	3	-1
5	-1	2	1332	59	145	13	64	12	2	11	1	8	1	3	-1
4	1	-1	1218	72	186	19	88	14	3	14	2	9	2	4	-1
3	-1	-1	1132	60	158	16	70	12	3	12	1	8	1	3	-1
3	-1	-1	1283	48	133	11	58	10	2	11	1	7	1	3	-1
4	1	1	1273	52	126	13	61	10	2	10	2	7	1	3	-1
4	-1	-1	1142	54	139	14	68	12	2	12	2	7	1	3	-1
3	1	1	1218	57	149	14	66	10	2	10	2	7	1	3	-1
3	-1	-1	1258	64	163	16	73	12	3	12	2	8	2	3	-1
3	-1	-1	1373	46	120	11	54	9	2	9	1	6	1	3	-1
5	-1	1	1436	52	133	11	57	10	2	10	1	7	1	3	-1
6	-1	1	1287	58	140	14	71	11	2	12	2	8	2	4	-1
5	-1	1	1328	52	128	12	59	9	2	10	1	7	1	3	-1

Sb	Te	Cs	Ba	La	Ce	Pr	Nd	Sm	Eu	Gd	Tb	Dy	Ho	Er	Tm
4	-1	-1	1315	47	122	10	56	9	2	9	1	6	1	3	-1
2	-1	2	1350	45	109	10	50	10	2	9	-1	6	1	2	-1
5	-1	-1	1197	36	96	8	41	8	2	9	1	5	1	2	-1
3	-1	1	1298	56	147	14	69	12	2	11	1	7	1	3	-1
3	-1	1	1250	52	131	12	58	10	2	11	1	6	1	3	-1
3	-1	1	1266	54	140	12	59	10	2	11	1	7	1	3	-1
3	1	1	1223	48	121	11	53	10	2	10	1	6	1	3	-1
3	-1	-1	955	48	130	11	59	9	2	11	1	6	1	3	-1
3	-1	-1	1132	51	126	11	59	8	2	10	1	6	1	3	-1
4	-1	-1	1248	57	155	15	72	13	2	12	2	8	1	4	-1
4	-1	-1	1275	58	153	15	68	12	3	11	1	7	1	3	-1
3	-1	1	1270	48	126	11	56	10	2	9	1	7	1	3	-1
3	-1	1	1244	64	164	15	72	14	3	11	1	8	1	4	-1
3	-1	-1	1160	67	171	18	76	12	3	12	2	8	1	3	-1
2	-1	-1	1077	55	143	14	63	10	2	11	1	7	1	3	-1
2	-1	-1	825	45	125	10	57	11	2	10	1	6	1	3	-1

2	-1	-1	842	50	135	13	65	11	2	11	1	7	1	3	-1	

Sb	Te	Cs	Ba	La	Ce	Pr	Nd	Sm	Eu	Gd	Tb	Dy	Ho	Er	Tm	
5	-1	3	1227	49	121	10	54	11	2	8	1	7	1	3	-1	
6	-1	3	1201	47	124	11	56	9	2	8	1	7	1	3	-1	
6	-1	-1	988	45	123	10	53	10	2	9	1	6	1	3	-1	
4	-1	2	1139	54	116	10	52	8	2	9	1	7	-1	3	-1	
3	-1	3	1182	58	141	12	63	11	2	13	1	7	2	3	-1	
4	-1	1	1204	50	119	10	61	9	2	9	1	7	1	3	-1	
3	-1	1	1162	44	118	10	58	9	2	11	1	6	1	3	-1	
4	-1	2	1166	66	161	13	66	12	2	11	1	8	2	3	-1	
5	-1	2	1215	69	157	13	66	11	2	10	1	7	2	3	-1	
6	-1	1	1253	21	59	4	32	6	1	5	1	4	-1	2	-1	
4	2	2	1179	38	103	6	47	7	2	8	1	5	-1	3	-1	
6	-1	2	1125	28	74	5	33	5	2	6	1	4	-1	1	-1	
3	-1	1	1040	41	108	8	50	8	2	9	1	5	1	2	-1	
4	-1	1	1027	38	109	9	53	8	2	8	1	6	1	3	-1	
3	-1	2	1148	42	108	8	50	9	2	7	1	5	1	2	-1	
3	-1	-1	879	48	130	13	63	10	2	10	1	7	1	3	-1	
2	-1	-1	913	42	108	10	55	9	2	10	1	7	1	3	-1	

Sb	Te	Cs	Ba	La	Ce	Pr	Nd	Sm	Eu	Gd	Tb	Dy	Ho	Er	Tm	
3	-1	-1	728	41	97	15	48	7	2	7	1	4	1	1	-1	
1	-1	1	656	33	75	8	31	6	2	6	1	3	-1	1	-1	
6	-1	-1	1031	50	130	16	50	9	2	13	-1	5	1	2	-1	
4	1	-1	617	36	87	11	43	7	1	6	-1	4	-1	2	-1	
3	-1	-1	846	34	88	12	42	7	1	6	1	4	-1	1	-1	
6	3	-1	1147	54	140	19	70	10	2	13	1	7	1	3	-1	
6	-1	-1	1155	74	193	23	86	14	3	13	1	8	1	3	-1	
4	1	-1	1263	75	181	24	79	13	3	18	2	8	2	4	-1	
2	-1	-1	1023	71	185	21	88	11	3	14	2	9	2	4	-1	
4	3	-1	1065	69	168	23	75	16	3	12	1	6	1	3	-1	
5	4	-1	1081	68	170	23	79	13	3	21	2	9	2	3	-1	
6	4	-1	1220	73	180	24	87	12	4	16	2	9	2	4	-1	
6	-1	-1	1095	71	179	22	83	11	3	14	2	8	2	4	-1	
4	-1	-1	1007	52	140	16	66	12	3	12	1	6	1	2	-1	
3	-1	-1	819	44	111	14	48	9	3	8	-1	6	-1	2	-1	
3	-1	-1	876	60	154	20	78	13	2	13	2	9	2	4	-1	
-1	-1	-1	482	42	95	15	48	8	2	8	1	5	-1	2	-1	

Yb	Lu	Hf	Ta	W	Re	Os	Ir	Pt	Au	S.Q.Hg	Tl	Pb	Bi	Th	U
2	-1	2	-1	-1	-0.1	-1	-1	-1	-0.1	-1	-1	5	-1	22	4
3	-1	-1	2	-1	-0.1	-1	-1	-1	-0.1	-1	-1	5	-1	15	2
-1	-1	-1	-1	-1	-0.1	-1	-1	-1	-0.1	-1	-1	3	-1	11	1
1	-1	-1	-1	-1	-0.1	-1	-1	-1	-0.1	-1	-1	1	-1	8	-1
2	-1	-1	-1	1	-0.1	-1	-1	-1	-0.1	-1	-1	1	-1	8	-1
2	-1	2	2	-1	-0.1	-1	-1	-1	-0.1	-1	-1	4	-1	14	1
4	-1	2	1	2	-0.1	-1	-1	-1	-0.1	-1	-1	4	-1	18	2
2	-1	-1	-1	1	-0.1	-1	-1	-1	-0.1	-1	-1	4	-1	10	2
2	-1	1	-1	-1	-0.1	-1	-1	-1	-0.1	-1	-1	2	-1	11	1
4	-1	1	2	-1	-0.1	-1	-1	-1	-0.1	-1	-1	5	-1	20	2
4	-1	2	1	2	-0.1	-1	-1	-1	-0.1	-1	-1	8	-1	26	2
2	-1	1	-1	1	-0.1	-1	-1	-1	-0.1	-1	-1	15	-1	9	2
3	-1	-1	1	1	-0.1	-1	-1	-1	-0.1	-1	-1	6	-1	10	2
4	-1	2	2	2	-0.1	-1	-1	-1	-0.1	-1	-1	4	-1	27	2
4	-1	2	-1	2	-0.1	-1	-1	-1	-0.1	-1	-1	9	-1	18	1
3	-1	1	-1	1	-0.1	-1	-1	-1	-0.1	-1	-1	16	-1	9	1
4	-1	1	-1	2	-0.1	-1	-1	-1	-0.1	-1	-1	8	-1	18	2

Yb	Lu	Hf	Ta	W	Re	Os	Ir	Pt	Au	S.Q.Hg	Tl	Pb	Bi	Th	U
2	-1	1	-1	-1	-0.1	-1	-1	-1	-0.1	-1	-1	2	-1	12	2
3	-1	2	-1	1	-0.1	-1	-1	-1	-0.1	-1	-1	3	-1	15	-1
1	-1	-1	-1	-1	-0.1	-1	-1	-1	-0.1	-1	-1	1	-1	5	-1
4	-1	2	1	3	-0.1	-1	-1	-1	-0.1	-1	-1	4	-1	21	1
4	-1	3	2	2	-0.1	-1	-1	-1	-0.1	-1	-1	7	-1	22	2
4	-1	2	-1	2	-0.1	-1	-1	-1	-0.1	-1	-1	4	-1	20	2
3	-1	1	1	1	-0.1	-1	-1	-1	-0.1	-1	-1	5	-1	20	1
4	-1	2	1	2	-0.1	-1	-1	-1	-0.1	-1	-1	6	-1	20	4
5	-1	2	3	2	-0.1	-1	-1	-1	-0.1	-1	-1	8	-1	22	3
3	-1	2	2	1	0.2	-1	-1	-1	-0.1	-1	-1	10	-1	21	3
3	-1	2	1	1	-0.1	-1	-1	-1	-0.1	-1	-1	5	-1	20	5
3	-1	2	2	2	-0.1	-1	-1	-1	-0.1	-1	-1	6	-1	19	3
3	-1	2	-1	2	-0.1	-1	-1	-1	-0.1	-1	-1	6	-1	20	4
2	-1	1	2	-1	-0.1	-1	-1	-1	-0.1	-1	-1	5	-1	13	5
3	-1	1	1	1	-0.1	-1	-1	-1	-0.1	-1	-1	5	-1	15	4
4	-1	2	-1	1	-0.1	-1	-1	-1	-0.1	-1	-1	5	-1	12	5
3	-1	1	1	2	-0.1	-1	-1	-1	-0.1	-1	-1	6	-1	19	5

Yb	Lu	Hf	Ta	W	Re	Os	Ir	Pt	Au	S.Q.Hg	Tl	Pb	Bi	Th	U
2	-1	1	2	2	-0.1	-1	-1	-1	-0.1	-1	-1	5	-1	16	4
2	-1	1	1	3	-0.1	-1	-1	-1	-0.1	-1	-1	8	-1	10	4

2	-1	1	1	1	-0.1	-1	-1	-1	-0.1	-1	-1	6	-1	16	6
3	-1	2	1	2	-0.1	-1	-1	-1	-0.1	-1	-1	5	-1	17	4
4	1	1	1	2	-0.1	-1	-1	-1	-0.1	-1	-1	9	-1	15	3
4	-1	1	1	1	-0.1	-1	-1	-1	-0.1	-1	-1	8	-1	17	3
3	-1	1	1	2	-0.1	-1	-1	-1	-0.1	-1	-1	7	-1	18	3
4	-1	2	-1	2	-0.1	-1	-1	-1	-0.1	-1	-1	6	-1	15	3
4	-1	2	2	-1	-0.1	-1	-1	-1	-0.1	-1	-1	9	-1	20	4
3	-1	2	2	1	0.1	-1	-1	-1	-0.1	-1	-1	6	-1	16	5
2	-1	1	-1	1	-0.1	-1	-1	-1	-0.1	-1	-1	6	-1	15	6
3	-1	2	1	2	-0.1	-1	-1	-1	-0.1	-1	-1	7	-1	17	3
2	-1	1	2	2	-0.1	-1	-1	-1	-0.1	-1	-1	6	-1	21	3
3	-1	2	1	2	-0.1	-1	-1	-1	-0.1	-1	-1	8	-1	16	4
5	-1	2	1	2	-0.1	-1	-1	-1	-0.1	-1	-1	8	-1	22	4
3	-1	3	2	2	-0.1	-1	-1	-1	-0.1	-1	-1	7	-1	19	5
3	-1	2	2	1	-0.1	-1	-1	-1	-0.1	-1	-1	9	-1	20	5

Yb	Lu	Hf	Ta	W	Re	Os	Ir	Pt	Au	S.Q.Hg	Tl	Pb	Bi	Th	U
4	-1	2	1	4	-0.1	-1	-1	-1	-0.1	-1	-1	5	-1	17	2
3	-1	2	1	2	-0.1	-1	-1	-1	-0.1	-1	-1	7	-1	14	5
4	-1	3	2	2	-0.1	-1	-1	-1	-0.1	-1	-1	7	-1	17	4
2	-1	1	-1	2	-0.1	-1	-1	-1	-0.1	-1	-1	6	-1	14	4
3	-1	1	-1	2	-0.1	-1	-1	-1	-0.1	-1	-1	5	-1	16	3
3	-1	1	-1	2	-0.1	-1	-1	-1	-0.1	-1	-1	7	-1	20	3
2	-1	2	-1	2	-0.1	-1	-1	-1	-0.1	-1	-1	8	-1	17	4
3	-1	1	1	2	-0.1	-1	-1	-1	-0.1	-1	-1	6	-1	16	4
3	-1	2	-1	2	-0.1	-1	-1	-1	-0.1	-1	-1	7	-1	16	3
3	-1	2	1	3	-0.1	-1	-1	-1	-0.1	-1	-1	6	-1	18	5
3	-1	1	1	1	-0.1	-1	-1	-1	-0.1	-1	-1	17	-1	7	3
3	-1	2	-1	2	-0.1	-1	-1	-1	-0.1	-1	-1	5	-1	16	4
3	-1	1	1	2	-0.1	-1	-1	-1	-0.1	-1	-1	13	-1	9	4
2	-1	2	-1	2	-0.1	-1	-1	-1	-0.1	-1	-1	10	-1	13	4

Yb	Lu	Hf	Ta	W	Re	Os	Ir	Pt	Au	S.Q.Hg	Tl	Pb	Bi	Th	U
3	-1	2	-1	2	-0.1	-1	-1	-1	-0.1	-1	-1	11	-1	19	4
2	-1	2	2	2	-0.1	-1	-1	-1	-0.1	-1	-1	6	-1	19	8
2	-1	2	1	-1	-0.1	-1	-1	-1	-0.1	-1	-1	5	-1	14	4
3	-1	2	2	1	-0.1	-1	-1	-1	-0.1	-1	-1	5	-1	17	5
3	-1	2	1	1	-0.1	-1	-1	-1	-0.1	-1	1	6	-1	16	6
3	-1	2	1	2	-0.1	-1	-1	-1	-0.1	-1	-1	8	-1	17	7
3	-1	2	2	2	-0.1	-1	-1	-1	-0.1	-1	-1	9	-1	25	5
4	-1	2	1	1	-0.1	-1	-1	-1	-0.1	-1	-1	7	-1	21	5
3	-1	2	2	1	-0.1	-1	-1	-1	-0.1	-1	-1	9	-1	20	6

4	-1	2	2	2	-0.1	-1	-1	-1	-0.1	-1	-1	7	-1	21	6
3	-1	2	2	1	-0.1	-1	-1	-1	-0.1	-1	-1	7	-1	22	4
4	-1	2	2	1	-0.1	-1	-1	-1	-0.1	-1	-1	9	-1	26	5
4	-1	2	2	1	-0.1	-1	-1	-1	-0.1	-1	-1	8	-1	25	6
3	-1	2	1	2	-0.1	-1	-1	-1	-0.1	-1	-1	8	-1	19	9
4	-1	2	2	2	-0.1	-1	-1	-1	-0.1	-1	-1	8	-1	19	9
3	-1	2	2	1	-0.1	-1	-1	-1	-0.1	-1	-1	8	-1	19	7
4	-1	2	2	1	-0.1	-1	-1	-1	-0.1	-1	-1	9	-1	27	4

Yb	Lu	Hf	Ta	W	Re	Os	Ir	Pt	Au	S.Q.Hg	Tl	Pb	Bi	Th	U
4	-1	2	1	2	-0.1	-1	-1	-1	-0.1	-1	-1	7	-1	24	5
3	-1	2	2	2	-0.1	-1	-1	-1	-0.1	-1	-1	8	-1	29	7
4	-1	2	2	2	-0.1	-1	-1	-1	-0.1	-1	-1	8	-1	22	6
5	-1	2	1	2	-0.1	-1	-1	-1	-0.1	-1	-1	10	-1	30	5
3	-1	2	1	2	-0.1	-1	-1	-1	-0.1	-1	-1	7	-1	27	3
3	-1	2	1	1	-0.1	-1	-1	-1	-0.1	-1	-1	8	-1	21	4
4	2	2	2	2	-0.1	-1	-1	-1	-0.1	-1	-1	9	-1	24	2
4	-1	2	1	2	-0.1	-1	-1	-1	-0.1	-1	-1	7	-1	23	2
4	-1	2	1	2	-0.1	-1	-1	-1	-0.1	-1	-1	8	-1	24	2
4	-1	2	1	2	-0.1	-1	-1	-1	-0.1	-1	-1	7	-1	26	3
3	-1	2	1	2	-0.1	-1	-1	-1	-0.1	-1	-1	7	-1	18	4
4	-1	2	1	2	-0.1	-1	-1	-1	-0.1	-1	-1	6	-1	17	6
4	-1	2	1	2	0.2	-1	-1	-1	-0.1	-1	-1	9	-1	24	5
3	-1	2	2	2	-0.1	-1	-1	-1	-0.1	-1	-1	7	-1	21	6

Yb	Lu	Hf	Ta	W	Re	Os	Ir	Pt	Au	S.Q.Hg	Tl	Pb	Bi	Th	U
3	-1	2	2	1	-0.1	-1	-1	-1	-0.1	-1	-1	7	-1	19	3
3	-1	2	2	-1	-0.1	-1	-1	-1	-0.1	-1	-1	10	-1	16	4
3	-1	2	-1	1	-0.1	-1	-1	-1	-0.1	-1	-1	4	-1	15	6
4	-1	2	1	1	-0.1	-1	-1	-1	-0.1	-1	-1	6	-1	21	2
3	-1	1	1	2	-0.1	-1	-1	-1	-0.1	-1	-1	6	-1	22	3
3	-1	2	2	1	-0.1	-1	-1	-1	-0.1	-1	-1	5	-1	23	5
3	-1	2	1	1	-0.1	-1	-1	-1	-0.1	-1	-1	7	-1	18	3
3	-1	1	-1	1	-0.1	-1	-1	-1	-0.1	-1	-1	10	-1	14	4
3	-1	2	1	1	-0.1	-1	-1	-1	-0.1	-1	-1	7	-1	23	4
4	-1	2	1	1	-0.1	-1	-1	-1	-0.1	-1	-1	9	-1	26	3
3	-1	2	1	2	-0.1	-1	-1	-1	-0.1	-1	-1	6	-1	25	4
4	-1	2	2	-1	-0.1	-1	-1	-1	-0.1	-1	-1	8	-1	22	4
4	-1	2	2	1	-0.1	-1	-1	-1	-0.1	-1	-1	8	-1	26	3
4	-1	2	2	2	-0.1	-1	-1	-1	-0.1	-1	-1	8	-1	28	4
4	-1	2	1	1	-0.1	-1	-1	-1	-0.1	-1	-1	7	-1	26	2
3	-1	-1	1	-1	-0.1	-1	-1	-1	-0.1	-1	-1	5	-1	18	2

3	-1	1	1	-1	-0.1	-1	-1	-1	-0.1	-1	-1	6	-1	19	2

Yb	Lu	Hf	Ta	W	Re	Os	Ir	Pt	Au	S.Q.Hg	Tl	Pb	Bi	Th	U
3	-1	2	2	3	-0.1	-1	-1	-1	-0.1	-1	-1	9	-1	26	5
3	-1	2	2	2	-0.1	-1	-1	-1	-0.1	-1	-1	8	-1	28	6
3	-1	2	-1	2	-0.1	-1	-1	-1	-0.1	-1	-1	7	-1	18	4
3	-1	2	1	2	-0.1	-1	-1	-1	-0.1	-1	-1	7	-1	28	5
4	-1	2	2	2	-0.1	-1	-1	-1	-0.1	-1	-1	9	-1	28	3
3	-1	2	2	2	-0.1	-1	-1	-1	-0.1	-1	-1	8	-1	23	5
3	-1	3	1	1	-0.1	-1	-1	-1	-0.1	-1	-1	8	-1	22	6
4	-1	2	2	2	-0.1	-1	-1	-1	-0.1	-1	-1	9	-1	30	5
3	-1	3	2	2	-0.1	-1	-1	-1	-0.1	-1	-1	10	-1	29	4
3	-1	1	-1	2	-0.1	-1	-1	-1	-0.1	-1	-1	4	-1	15	6
3	-1	2	1	1	-0.1	-1	-1	-1	-0.1	-1	-1	7	-1	23	4
2	-1	2	1	1	-0.1	-1	-1	-1	-0.1	-1	-1	2	-1	14	6
3	-1	2	2	2	-0.1	-1	-1	-1	-0.1	-1	-1	5	-1	24	5
3	-1	1	2	1	-0.1	-1	-1	-1	-0.1	-1	-1	6	-1	22	4
2	-1	3	1	2	-0.1	-1	-1	-1	-0.1	-1	-1	8	-1	23	6
3	-1	2	1	2	-0.1	-1	-1	-1	-0.1	-1	-1	6	-1	24	4
3	-1	2	-1	1	-0.1	-1	-1	-1	-0.1	-1	-1	3	-1	27	4

Yb	Lu	Hf	Ta	W	Re	Os	Ir	Pt	Au	S.Q.Hg	Tl	Pb	Bi	Th	U
2	-1	1	-1	2	-0.1	-1	-1	-1	-0.1	-1	-1	13	-1	9	3
1	-1	1	2	1	-0.1	-1	-1	-1	-0.1	-1	-1	16	-1	9	2
2	-1	2	2	2	-0.1	-1	-1	-1	-0.1	-1	-1	9	-1	20	2
-1	-1	-1	-1	-1	-0.1	-1	-1	-1	-0.1	-1	-1	14	-1	7	3
2	-1	1	-1	3	-0.1	-1	-1	-1	-0.1	-1	-1	14	-1	11	2
4	-1	2	-1	3	-0.1	-1	-1	-1	-0.1	-1	-1	8	-1	23	4
3	-1	2	1	2	-0.1	-1	-1	-1	-0.1	-1	-1	9	-1	30	3
2	-1	2	2	2	0.1	-1	-1	-1	-0.1	-1	-1	7	-1	24	2
3	-1	1	1	2	-0.1	-1	-1	-1	-0.1	-1	-1	8	-1	24	-1
3	-1	2	-1	2	-0.1	-1	-1	-1	-0.1	-1	-1	5	-1	24	2
4	-1	2	1	2	-0.1	-1	-1	-1	-0.1	-1	-1	9	-1	25	3
3	-1	3	-1	2	-0.1	-1	-1	-1	-0.1	-1	-1	10	-1	31	3
3	-1	1	1	1	-0.1	-1	-1	-1	-0.1	-1	-1	7	-1	22	3
2	-1	1	1	1	-0.1	-1	-1	-1	-0.1	-1	-1	8	-1	19	2
3	-1	-1	-1	-1	-0.1	-1	-1	-1	-0.1	-1	-1	11	-1	12	2
3	-1	-1	-1	2	-0.1	-1	-1	-1	-0.1	-1	-1	7	-1	19	2
1	-1	-1	-1	-1	-0.1	-1	-1	-1	-0.1	-1	-1	5	-1	11	1

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Line 600												
/	Station	S.Q.Li	S.Q.Be	S.Q.Cl	S.Q.Sc	S.Q.Ti	V	Mn	Co	Ni	Cu	Zn
-600	0	76	-20	24604	63	143	811	1584	8	66	197	85
-600	-50	45	-20	12294	-10	-100	798	1713	9	49	163	67
-600	-100	45	-20	23320	13	-100	784	1597	7	27	190	72
-600	-150	32	-20	9215	-10	-100	626	1188	11	33	172	39
-600	-200	49	-20	14275	-10	-100	1026	1226	9	32	176	52
-600	-250	39	-20	10521	-10	112	663	1679	8	34	162	44
-600	-300	58	-20	22333	32	-100	760	1618	3	15	154	58
-600	-350	23	-20	11826	13	-100	475	1111	9	30	72	37
-600	-400	35	-20	5906	39	-100	637	1717	-1	21	158	31
-600	-450	59	-20	7779	-10	121	896	1596	3	31	199	56
-600	-500	43	-20	5980	-10	-100	493	1548	6	7	114	58
-600	-550	43	-20	19193	21	-100	754	1547	7	38	224	48
-600	-600	42	-20	24838	16	-100	637	1250	6	35	183	60
-600	-650	43	-20	8959	38	-100	765	1183	6	34	213	62
-600	-700	42	-20	6712	13	-100	788	1660	5	20	195	46
-600	-750	50	-20	9048	-10	118	704	1733	8	13	184	54
-600	-800	53	-20	14105	52	-100	768	2135	8	21	193	63
-600	-850	58	-20	7068	13	-100	714	2091	7	33	196	45
-600	-900	50	-20	14498	-10	120	813	1853	4	58	200	59
-600	-950	48	-20	6846	-10	-100	583	1570	10	-5	185	68
-600	-1000	51	-20	10804	26	125	836	1969	9	10	220	62
Line 700												
/	Station	S.Q.Li	S.Q.Be	S.Q.Cl	S.Q.Sc	S.Q.Ti	V	Mn	Co	Ni	Cu	Zn
-700	-1000	57	-20	-3000	-10	-100	763	1852	6	24	163	54
-700	-950	38	-20	3845	10	-100	184	756	4	13	40	43
-700	-900	51	-20	9888	49	-100	278	999	6	25	43	70
-700	-850	39	-20	-3000	-10	-100	456	1827	8	13	109	49
-700	-800	51	-20	9190	46	-100	844	2360	7	53	176	55
-700	-750	40	-20	4990	31	109	841	1455	6	37	303	61
-700	-700	33	-20	6374	29	108	513	1325	7	37	193	76
-700	-650	51	-20	16033	23	-100	869	2552	7	36	180	51
-700	-600	39	-20	10836	-10	-100	562	1859	6	31	217	69
-700	-550	49	-20	7953	16	-100	554	1707	9	54	172	72
-700	-500	56	-20	8856	21	-100	582	1625	7	40	161	51
-700	-450	50	-20	27939	29	-100	847	1140	12	37	184	80
-700	-400	56	-20	13200	43	-100	602	2007	4	40	191	53

-700	-350	49	-20	16032	37	-100	842	2221	5	39	197	53
-700	-300	36	-20	-3000	10	-100	413	1251	7	19	174	73
-700	-250	51	-20	7286	35	-100	679	2319	8	43	203	61
-700	-200	63	-20	14090	33	-100	811	1830	9	20	145	82
-700	-150	72	-20	-3000	25	-100	543	2130	9	21	140	30
-700	-100	46	-20	-3000	29	-100	236	745	7	-5	32	28
-700	-50	53	-20	10118	25	125	911	2008	10	-5	178	65
-700	0	49	-20	15646	12	107	748	1927	9	36	204	35
Line 800												
/	Station	S.Q.Li	S.Q.Be	S.Q.Cl	S.Q.Sc	S.Q.Ti	V	Mn	Co	Ni	Cu	Zn
-800	0	57	-20	7627	63	-100	792	2193	10	32	187	54
-800	-50	56	-20	11542	-10	-100	1013	1753	4	19	189	51
-800	-100	44	-20	9504	-10	-100	872	1632	11	40	232	87
-800	-150	38	-20	4097	-10	-100	889	1719	5	12	238	39
-800	-200	46	-20	13029	45	-100	1042	1703	9	11	193	53
-800	-250	43	-20	10557	20	-100	820	1675	13	6	205	43
-800	-300	56	-20	5675	-10	-100	704	1550	10	45	199	42
-800	-350	31	-20	12265	-10	-100	1024	1728	8	23	251	59
-800	-400	50	-20	8180	52	-100	826	1439	12	30	230	51
-800	-450	50	-20	9809	-10	-100	1206	1640	7	22	236	67
-800	-500	47	-20	8494	-10	-100	718	1679	8	13	232	60
-800	-550	43	-20	-3000	-10	-100	860	1990	15	43	248	69
-800	-600	32	-20	16696	-10	-100	556	1606	4	-5	211	53
-800	-650	57	-20	7077	-10	-100	1100	1937	9	25	208	42
-800	-700	69	-20	20291	-10	-100	1138	1639	6	48	225	39
-800	-750	52	-20	8191	-10	-100	803	1716	9	10	210	49
-800	-800	34	-20	5857	-10	-100	156	1765	12	27	65	46
-800	-850	42	-20	-3000	-10	-100	305	1014	4	11	67	51
-800	-900	29	-20	7352	-10	-100	807	1324	1	-5	208	40
-800	-950	41	-20	6804	-10	-100	755	1756	4	9	239	51
-800	-1000	52	-20	20392	41	-100	738	1739	11	-5	237	36
Line 500												
/	Station	S.Q.Li	S.Q.Be	S.Q.Cl	S.Q.Sc	S.Q.Ti	V	Mn	Co	Ni	Cu	Zn
-500	-1000	46	-20	7161	30	-100	725	2020	4	-5	267	17
-500	-950	53	-20	19053	30	-100	720	1245	12	18	196	38
-500	-900	43	-20	7154	20	-100	699	1692	16	35	223	39
-500	-850	37	-20	18884	12	-100	760	1807	10	29	190	46

-500	-800	49	-20	10010	-10	-100	704	1503	9	25	219	32
-500	-750	42	-20	13456	-10	-100	980	1955	6	20	250	25
-500	-700	55	-20	5645	13	-100	742	2101	10	21	224	52
-500	-650	44	-20	6684	11	-100	859	1850	12	7	213	37
-500	-600	46	-20	6807	13	-100	865	1518	3	18	211	74
-500	-550	39	-20	3655	-10	-100	242	1515	7	27	130	38
-500	-500	50	-20	7345	17	-100	292	984	9	31	69	53
-500	-450	50	-20	9500	-10	-100	575	922	4	11	108	45
-500	-400	57	-20	7971	-10	-100	872	1632	10	29	233	47
-500	-350	40	-20	9317	-10	-100	907	1281	6	21	245	37
-500	-300	42	-20	-3000	-10	-100	410	1427	8	19	166	44
-500	-250	58	-20	6834	40	-100	1222	2112	7	36	249	65
-500	-200	40	-20	3133	-10	-100	691	1589	10	18	201	74
-500	-150	47	-20	5030	32	-100	226	515	7	8	38	30
-500	-100	61	-20	9506	-10	-100	132	924	6	7	34	47
-500	-50	49	-20	12364	31	-100	199	398	6	6	28	33
-500	0	60	-20	10128	-10	-100	147	442	2	11	24	30
Line 400												
/	Station	S.Q.Li	S.Q.Be	S.Q.Cl	S.Q.Sc	S.Q.Ti	V	Mn	Co	Ni	Cu	Zn
-400	0	49	-20	12736	-10	-100	181	436	7	5	30	33
-400	-50	30	-20	8449	-10	-100	162	413	5	-5	28	55
-400	-100	47	-20	8719	-10	-100	183	724	6	13	22	52
-400	-150	44	-20	12827	32	-100	675	1825	12	43	258	73
-400	-200	42	-20	9009	-10	-100	974	2091	14	53	210	44
-400	-250	41	-20	11985	-10	-100	499	1940	7	15	156	85
-400	-300	43	-20	10020	-10	-100	214	715	6	19	43	50
-400	-350	33	-20	8902	-10	-100	660	1682	12	31	239	76
-400	-400	28	-20	15604	-10	-100	195	567	10	19	39	32
-400	-450	39	-20	6784	-10	-100	203	950	8	38	47	74
-400	-500	27	-20	9660	-10	-100	219	1385	11	32	49	56
-400	-550	36	-20	4961	-10	-100	151	515	14	30	26	56
-400	-600	46	-20	6545	50	-100	171	440	5	39	19	51
-400	-650	52	-20	7428	15	-100	315	1745	9	49	69	29
-400	-700	30	-20	9184	-10	-100	267	1228	13	17	78	72
-400	-750	61	-20	9827	77	-100	536	2152	10	28	158	32
-400	-800	39	-20	12360	-10	-100	179	621	9	23	43	89
-400	-850	37	-20	9678	65	-100	168	563	6	5	36	40
-400	-900	34	-20	9780	18	-100	702	768	8	10	165	49

-400	-950	52	-20	13753	19	109	797	2173	23	28	179	64
-400	-1000	45	-20	12976	72	-100	851	1587	5	32	196	62
Line 300												
/	Station	S.Q.Li	S.Q.Be	S.Q.Cl	S.Q.Sc	S.Q.Ti	V	Mn	Co	Ni	Cu	Zn
-300	-1000	47	-20	3893	-10	-100	762	1652	7	11	210	47
-300	-950	47	-20	6318	-10	-100	940	1236	11	40	206	81
-300	-900	42	-20	10354	26	-100	939	1600	10	29	246	68
-300	-850	28	-20	15059	-10	-100	207	596	12	19	34	59
-300	-800	34	-20	6169	28	-100	164	548	6	7	26	34
-300	-750	33	-20	15864	-10	-100	211	653	6	23	25	37
-300	-700	33	-20	5574	56	-100	163	940	5	12	30	54
-300	-650	48	-20	3053	31	-100	690	2002	9	34	177	89
-300	-600	53	-20	8038	22	-100	900	1822	7	24	217	61
-300	-550	29	-20	11229	91	-100	380	1401	14	28	78	62
-300	-500	43	-20	4203	25	-100	406	1729	14	33	142	50
-300	-450	37	-20	13830	39	-100	176	448	6	25	33	47
-300	-400	30	-20	8806	33	-100	162	1679	28	22	76	55
-300	-350	26	-20	12764	26	-100	345	670	3	-5	31	65
-300	-300	42	-20	10405	17	-100	739	1967	12	25	189	56
-300	-250	75	-20	12803	-10	-100	570	1744	18	10	199	75
-300	-200	29	-20	8471	21	-100	141	631	11	26	37	66
-300	-150	22	-20	12011	12	-100	152	907	7	26	44	73
-300	-100	36	-20	16600	21	-100	404	1936	9	45	84	62
-300	-50	29	-20	17998	60	-100	894	2646	5	25	173	68
-300	0	42	-20	15386	-10	-100	762	2407	7	12	234	43
Line 200												
/	Station	S.Q.Li	S.Q.Be	S.Q.Cl	S.Q.Sc	S.Q.Ti	V	Mn	Co	Ni	Cu	Zn
-200	0	67	-20	10835	15	109	881	1523	7	21	245	71
-200	-50	37	-20	10054	-10	-100	187	450	18	27	45	73
-200	-100	45	-20	14621	31	-100	264	1060	15	23	54	58
-200	-150	48	-20	14086	27	-100	967	932	11	12	181	79
-200	-200	44	-20	7907	-10	-100	743	1777	10	18	163	56
-200	-250	39	-20	4983	-10	-100	1050	1352	4	35	188	58
-200	-300	50	-20	9892	26	-100	907	1484	16	34	278	61
-200	-350	45	-20	24725	-10	-100	1083	1319	10	24	226	75
-200	-400	57	-20	14391	-10	-100	905	1358	12	30	204	51
-200	-450	24	-20	16122	-10	-100	963	783	8	59	220	51

-200	-500	33	-20	16040	17	-100	1134	1198	10	34	209	110
Line 100												
/	Station	S.Q.Li	S.Q.Be	S.Q.Cl	S.Q.Sc	S.Q.Ti	V	Mn	Co	Ni	Cu	Zn
-100	-500	34	-20	16342	-10	-100	1227	1292	6	14	225	56
-100	-550	47	-20	21380	-10	-100	990	1348	11	10	216	59
-100	-600	41	-20	20364	-10	-100	1248	1035	12	40	210	81
-100	-650	63	-20	28688	88	123	2049	2144	21	44	245	106
-100	-700	39	-20	12947	-10	-100	1217	1157	8	23	204	78
-100	-750	55	-20	13663	59	-100	930	1459	5	27	226	94
-100	-800	39	-20	9101	-10	-100	713	1168	8	19	203	77
-100	-850	47	-20	5399	47	-100	1306	1412	9	37	283	58
-100	-900	35	-20	20880	24	-100	650	1310	6	35	233	50
-100	-950	34	-20	12333	18	-100	308	1113	11	22	55	58
-100	-1000	36	-20	10634	-10	-100	928	932	4	32	208	51
Line 0												
/	Station	S.Q.Li	S.Q.Be	S.Q.Cl	S.Q.Sc	S.Q.Ti	V	Mn	Co	Ni	Cu	Zn
0	-1000	63	-20	20262	20	-100	801	1568	8	24	278	46
0	-950	40	-20	11305	33	-100	853	1244	14	19	214	56
0	-900	47	-20	18224	-10	112	760	1344	12	19	220	67
0	-850	47	-20	13208	11	-100	953	1370	16	19	225	52
0	-800	61	-20	22128	-10	178	1112	2198	11	42	234	110
0	-750	61	-20	17811	19	-100	917	1345	11	14	289	48
0	-700	58	-20	15742	-10	-100	772	1844	6	32	267	54
0	-650	58	-20	12528	-10	-100	905	1223	8	7	179	53
0	-600	45	-20	14120	-10	-100	693	1713	5	20	299	55
0	-550	39	-20	12285	-10	-100	959	1203	10	35	216	66
0	-500	45	-20	17048	-10	-100	728	1458	11	19	256	69
Line 100												
/	Station	S.Q.Li	S.Q.Be	S.Q.Cl	S.Q.Sc	S.Q.Ti	V	Mn	Co	Ni	Cu	Zn
100	-700	46	-20	7936	-10	-100	899	1429	10	25	217	78
100	-750	47	-20	10923	-10	-100	732	1572	5	45	214	50
100	-800	39	-20	3494	-10	-100	797	1427	6	19	211	54
100	-850	38	-20	12689	-10	-100	957	1515	8	17	240	65
100	-900	42	-20	6575	-10	-100	887	1522	17	19	225	66
100	-950	24	-20	25464	-10	-100	183	675	3	-5	47	36
100	-1000	29	-20	6476	14	-100	513	2287	7	23	128	54

Line 200												
/	Station	S.Q.Li	S.Q.Be	S.Q.Cl	S.Q.Sc	S.Q.Ti	V	Mn	Co	Ni	Cu	Zn
200	-1000	43	-20	12126	13	-100	854	1799	14	27	246	47
200	-950	52	-20	14425	-10	-100	701	2222	4	22	238	36
200	-900	43	-20	14627	13	-100	893	1334	4	38	237	56
200	-850	50	-20	11493	-10	-100	864	1613	7	38	201	81
200	-800	51	-20	18207	12	-100	823	2105	16	52	193	65
200	-750	67	-20	11471	22	-100	757	2098	19	15	232	69
200	-700	51	-20	11178	10	-100	1557	1271	11	26	155	65
Line 300												
/	Station	S.Q.Li	S.Q.Be	S.Q.Cl	S.Q.Sc	S.Q.Ti	V	Mn	Co	Ni	Cu	Zn
300	-1000	38	-20	11638	60	-100	666	1244	15	48	212	59
300	-950	57	-20	14488	-10	-100	792	1814	8	16	249	46
300	-900	25	-20	19903	31	-100	168	310	9	19	72	44
300	-850	-10	-20	11021	-10	-100	85	336	8	22	31	36
300	-800	-10	-20	5535	18	-100	132	579	7	20	46	39
300	-750	23	-20	9433	59	-100	299	1533	15	26	60	57
300	-700	31	-20	30650	-10	-100	288	1572	6	19	66	88
Line 800												
/	Station	S.Q.Li	S.Q.Be	S.Q.Cl	S.Q.Sc	S.Q.Ti	V	Mn	Co	Ni	Cu	Zn
800	0	-10	-20	-3000	-10	-100	30	389	2	8	7	39
800	-50	-10	-20	-3000	-10	-100	32	2026	6	12	9	91
800	-100	-10	-20	-3000	-10	-100	24	830	3	8	6	69
800	-150	-10	-20	-3000	-10	-100	10	2027	3	7	-5	203
800	-250	-10	-20	-3000	-10	-100	18	2963	4	10	-5	33
800	-300	-10	-20	-3000	-10	-100	-5	1333	8	18	-5	65
800	-350	-10	-20	-3000	-10	-100	7	1111	6	7	-5	96
800	-400	-10	-20	-3000	-10	-100	9	411	2	7	-5	109
800	-450	-10	-20	-3000	-10	-100	12	2177	5	10	-5	99
800	-500	-10	-20	-3000	-10	-100	8	547	2	7	-5	30
800	-550	-10	-20	-3000	-10	-100	29	1464	9	11	8	56
800	-600	-10	-20	3387	-10	-100	33	694	4	10	6	33
800	-650	-10	-20	10147	-10	-100	68	735	7	23	19	11
800	-800	17	-20	4517	-10	-100	45	959	9	19	9	231
800	-850	-10	-20	-3000	-10	-100	38	1592	13	20	13	69
800	-900	-10	-20	7572	-10	-100	152	416	5	22	120	20

800	-950	13	-20	5782	-10	-100	131	715	4	24	74	18
800	-1000	22	-20	12666	-10	-100	161	1519	8	26	66	25
Line 400												
/	Station	S.Q.Li	S.Q.Be	S.Q.Cl	S.Q.Sc	S.Q.Ti	V	Mn	Co	Ni	Cu	Zn
400	-1000	15	-20	7939	-10	-100	149	458	7	23	42	18
400	-950	23	-20	5963	-10	-100	125	377	4	28	34	74
400	-900	-10	-20	6419	-10	-100	141	519	7	19	41	17
400	-850	31	-20	5266	-10	-100	182	381	6	30	35	17
400	-800	41	-20	5815	-10	-100	223	561	6	20	40	20
400	-750	20	-20	10169	-10	-100	178	454	5	19	40	23
400	-700	38	-20	4547	-10	-100	292	594	8	24	43	27
400	-650	61	-20	14910	-10	-100	290	381	4	16	21	19
400	-600	13	-20	5901	-10	-100	118	208	3	21	32	17
400	-550	-10	-20	8433	-10	-100	113	333	4	19	53	17
400	-500	17	-20	-3000	-10	-100	42	1745	9	20	19	60
Line 600												
/	Station	S.Q.Li	S.Q.Be	S.Q.Cl	S.Q.Sc	S.Q.Ti	V	Mn	Co	Ni	Cu	Zn
600	-600	-10	-20	4561	-10	-100	51	1072	11	27	27	27
600	-650	-10	-20	7117	-10	-100	128	370	4	22	48	26
600	-700	26	-20	8585	-10	-100	141	453	6	24	26	21
600	-750	-10	-20	6743	-10	-100	95	353	5	17	33	19
600	-800	-10	-20	3277	-10	-100	57	618	7	18	31	23
600	-850	12	-20	7306	-10	-100	171	290	4	25	39	13
600	-900	-10	-20	5203	-10	-100	94	217	3	15	21	14
600	-950	61	-20	-3000	-10	166	63	267	19	42	34	239
600	-1000	32	-20	7562	-10	-100	229	464	5	19	25	11
Line 600												
/	Station	S.Q.Li	S.Q.Be	S.Q.Cl	S.Q.Sc	S.Q.Ti	V	Mn	Co	Ni	Cu	Zn
600	-50	14	-20	5748	-10	-100	82	1569	11	24	40	27
600	-100	17	-20	-3000	-10	-100	28	5947	16	20	13	95
600	-150	23	-20	-3000	-10	-100	30	6453	39	28	13	367
600	-200	-10	-20	-3000	-10	-100	13	320	4	19	-5	48
600	-250	11	-20	-3000	-10	-100	13	428	4	13	5	28
600	-300	20	-20	-3000	-10	-100	12	1297	4	27	-5	91
600	-350	15	-20	-3000	-10	-100	13	229	7	18	6	33
600	-400	38	-20	7122	-10	-100	45	1741	18	28	14	289

Ga	Ge	As	Se	Br	I	Rb	Sr	Y	Zr	Nb	Mo	Ru
12	-1	47	-30	-30	13	98	2249	22	97	4	67	-1
2	1	59	-30	-30	16	91	1734	28	97	5	87	-1
3	2	45	-30	-30	11	61	1389	30	83	5	53	-1
2	1	59	-30	30	-10	68	1403	22	59	4	102	-1
11	1	32	-30	-30	10	46	1487	29	90	3	54	-1
12	-1	60	60	-30	-10	65	1586	26	80	4	108	-1
2	-1	31	-30	82	13	60	1598	24	71	3	42	-1
7	2	21	-30	36	47	35	867	21	48	2	12	-1
6	-1	45	-30	130	19	38	1333	24	62	2	33	-1
5	-1	38	-30	90	12	60	1736	29	92	5	41	-1
-1	1	18	-30	-30	13	32	1267	17	45	2	38	-1
10	2	29	-30	86	-10	61	1497	27	88	4	41	-1
9	-1	33	52	69	-10	78	1594	20	63	2	75	-1
19	1	26	-30	-30	-10	79	1417	32	88	3	28	-1
16	-1	33	-30	74	11	60	1553	25	88	5	40	-1
6	1	38	-30	35	-10	61	1523	25	80	3	71	-1
5	13	31	-30	-30	-10	67	1666	32	95	4	35	-1
1	-1	41	-30	41	19	49	1595	25	76	3	30	-1
7	1	51	67	-30	-10	86	1711	26	60	3	78	-1
1	1	45	-30	49	-10	69	1749	22	67	4	66	-1
7	-1	38	-30	-30	-10	63	1591	35	127	3	23	-1

Ga	Ge	As	Se	Br	I	Rb	Sr	Y	Zr	Nb	Mo	Ru
3	3	36	-30	72	15	41	1652	24	73	2	40	1
3	1	18	-30	37	73	29	1162	19	36	1	34	-1
5	-1	22	-30	75	51	34	1267	17	41	2	35	-1
-1	-1	22	38	60	26	32	1143	22	43	2	25	-1
10	2	26	-30	-30	16	66	1638	28	100	4	45	-1
8	13	48	-30	-30	-10	65	1647	29	90	4	59	-1
5	1	39	-30	143	-10	56	1469	25	58	4	42	-1
5	1	34	-30	86	11	59	1649	29	72	3	61	-1
20	2	35	-30	55	15	66	1769	20	58	2	32	-1
6	-1	30	56	-30	-10	66	1610	19	65	3	22	-1
24	-1	40	-30	-30	10	102	1600	20	61	3	78	-1
2	-1	41	-30	91	14	71	1490	37	93	4	72	-1
11	1	33	-30	128	10	56	1972	23	76	3	52	-1

3	2	38	-30	-30	10	72	1657	31	87	5	54	-1
9	-1	29	-30	-30	-10	50	1225	18	43	3	29	-1
6	2	39	-30	36	10	52	1514	28	75	3	33	-1
12	2	38	-30	53	11	66	1765	26	98	3	59	-1
5	1	25	-30	-30	14	47	1327	31	62	2	27	-1
4	-1	19	-30	118	50	30	1045	17	34	-1	17	1
11	-1	34	-30	75	12	57	1459	31	86	3	57	-1
28	-1	58	-30	78	-10	98	1522	27	72	3	54	-1
Ga	Ge	As	Se	Br	I	Rb	Sr	Y	Zr	Nb	Mo	Ru
15	-1	33	-30	-30	-10	67	1649	29	92	4	37	-1
21	-1	41	-30	41	-10	54	1516	27	78	3	34	-1
27	-1	65	-30	59	-10	86	1396	24	59	2	84	2
29	3	41	-30	82	-10	50	1520	24	64	3	64	1
25	4	32	-30	103	-10	56	1394	33	77	3	65	1
14	-1	31	-30	65	-10	73	1448	24	57	2	34	-1
14	-1	46	-30	103	-10	88	1597	21	61	2	50	1
20	-1	29	-30	35	-10	63	1396	33	72	3	33	-1
19	-1	25	-30	48	-10	52	1511	25	66	3	13	-1
28	-1	66	-30	102	13	59	1759	34	91	4	53	-1
2	-1	38	-30	-30	-10	59	1600	26	69	3	20	2
30	1	27	42	150	-10	63	1226	29	74	3	20	1
4	-1	29	-30	77	-10	74	1740	23	66	3	32	-1
6	-1	39	-30	64	-10	71	1782	23	67	3	39	-1
4	-1	31	-30	122	-10	49	1654	29	77	4	41	-1
24	-1	39	-30	-30	-10	36	1258	28	85	3	10	-1
6	-1	18	-30	-30	38	23	1093	15	31	1	15	-1
2	-1	14	-30	109	43	23	1145	13	33	1	14	-1
15	-1	77	-30	31	10	65	1591	23	75	3	113	1
27	-1	37	-30	66	11	49	1648	25	68	3	34	-1
9	-1	33	-30	48	14	66	1572	21	64	3	38	-1
Ga	Ge	As	Se	Br	I	Rb	Sr	Y	Zr	Nb	Mo	Ru
27	3	51	-30	90	16	58	1513	27	59	3	54	1
17	2	59	41	68	13	73	1826	23	58	3	58	-1
13	-1	61	-30	74	14	82	1624	26	75	3	80	-1
27	-1	59	-30	48	12	41	1341	31	71	3	20	-1

-1	-1	27	-30	40	-10	66	1831	20	53	4	33	-1
7	-1	29	-30	30	11	52	1563	25	72	3	18	-1
-1	-1	35	-30	67	-10	56	1746	24	68	4	28	-1
4	1	46	-30	-30	12	62	1481	31	77	3	60	-1
21	-1	48	-30	51	-10	60	1583	33	100	4	76	-1
4	-1	16	-30	94	-10	39	1298	18	48	2	9	-1
12	-1	26	-30	116	28	33	1118	17	34	1	19	-1
7	-1	20	-30	-30	-10	32	1344	21	48	2	17	-1
10	-1	65	-30	-30	-10	61	1551	30	84	3	68	-1
16	1	43	-30	43	-10	64	1302	35	95	4	73	-1
5	1	21	-30	62	-10	45	1142	23	49	1	18	-1
5	2	68	-30	208	15	95	1992	33	107	4	101	1
6	-1	55	-30	34	-10	88	1754	26	68	3	89	-1
11	-1	25	-30	47	49	27	1264	15	29	2	12	-1
11	8	19	-30	46	27	31	1227	13	30	1	3	-1
9	-1	20	-30	47	54	23	1388	13	29	1	21	-1
10	-1	16	-30	-30	42	30	1271	13	27	1	18	-1
Ga	Ge	As	Se	Br	I	Rb	Sr	Y	Zr	Nb	Mo	Ru
6	-1	14	-30	55	73	33	1215	16	33	1	30	-1
7	-1	18	-30	71	50	40	682	15	38	2	-1	-1
11	-1	19	-30	61	59	25	1116	18	35	1	31	-1
4	-1	67	-30	86	13	66	1550	28	85	3	68	-1
10	2	64	-30	103	13	70	1383	30	86	3	160	-1
7	-1	17	-30	-30	-10	30	1169	21	43	2	24	-1
5	-1	18	-30	-30	32	25	994	18	39	1	29	1
26	-1	65	40	68	-10	65	1401	27	71	3	51	1
17	-1	22	-30	85	69	41	818	23	46	2	6	-1
11	-1	21	-30	-30	30	30	1043	21	40	2	18	-1
16	1	21	-30	131	41	33	839	22	48	2	14	1
13	-1	18	-30	-30	41	30	1065	14	30	1	28	1
5	-1	23	-30	98	71	28	853	21	38	1	10	-1
15	-1	14	-30	38	33	31	1308	23	52	2	59	-1
13	-1	12	-30	54	31	33	1059	33	64	1	14	-1
27	-1	38	-30	50	21	33	1528	21	60	2	29	-1
15	-1	17	-30	34	65	23	1104	24	44	-1	19	1
15	-1	19	-30	-30	58	31	645	19	27	2	16	-1
19	-1	72	-30	41	12	52	1134	22	66	4	70	2

36	-1	37	38	62	14	61	1399	34	111	5	78	-1
18	-1	62	39	-30	-10	63	1190	34	81	3	116	-1
Ga	Ge	As	Se	Br	I	Rb	Sr	Y	Zr	Nb	Mo	Ru
23	-1	38	-30	107	-10	39	1329	33	102	3	24	-1
26	-1	61	-30	-30	-10	48	1245	37	113	4	65	1
11	-1	38	-30	35	-10	50	1115	38	104	4	45	1
21	-1	20	-30	119	99	24	807	23	39	1	15	-1
14	-1	18	-30	30	86	22	822	20	38	1	25	-1
11	-1	27	32	65	70	17	795	23	33	2	11	-1
19	-1	23	-30	120	43	27	965	22	41	2	1	-1
20	3	59	-30	-30	15	78	1726	26	90	4	78	-1
13	-1	31	-30	-30	-10	81	1397	32	85	3	25	-1
8	-1	24	-30	181	16	33	1123	30	56	1	13	-1
26	-1	16	-30	-30	12	31	1070	35	78	1	11	1
17	-1	20	-30	108	38	29	1070	27	47	1	10	-1
24	-1	11	-30	107	-10	47	1158	22	53	1	-1	-1
17	-1	17	45	73	44	27	1028	20	36	2	10	-1
9	-1	34	-30	62	-10	58	1111	31	77	3	23	-1
24	1	61	-30	44	-10	76	1559	25	81	3	83	-1
28	-1	18	-30	51	33	28	701	16	31	1	16	1
23	13	21	-30	-30	61	31	584	25	58	2	5	1
7	-1	16	-30	63	40	27	1014	22	47	2	11	-1
24	2	41	-30	94	21	58	1382	27	84	3	25	-1
32	-1	47	-30	-30	13	49	1454	27	81	3	50	-1
Ga	Ge	As	Se	Br	I	Rb	Sr	Y	Zr	Nb	Mo	Ru
29	-1	41	-30	120	17	47	1531	39	123	3	48	-1
21	-1	17	-30	-30	150	28	1182	20	33	2	17	-1
20	-1	21	-30	180	37	33	1023	17	29	1	20	-1
23	2	38	-30	168	15	64	1400	30	93	3	75	-1
18	-1	39	-30	167	20	47	1179	22	59	2	46	-1
26	-1	41	-30	92	13	71	1286	34	92	3	71	-1
32	-1	55	-30	347	11	65	1413	32	89	4	33	-1
18	1	34	-30	189	12	72	1730	36	91	3	64	1
13	-1	35	-30	234	12	73	1583	25	84	3	61	1
18	-1	48	-30	103	-10	53	1246	32	79	3	62	1

8	3	41	-30	166	-10	64	1295	33	86	3	64	-1
Ga	Ge	As	Se	Br	I	Rb	Sr	Y	Zr	Nb	Mo	Ru
26	-1	42	-30	121	-10	53	1335	32	83	3	56	-1
7	1	39	-30	201	12	57	1275	31	94	2	63	1
13	-1	64	-30	100	11	115	1492	25	94	3	54	-1
39	3	34	-30	-30	-10	112	1987	32	134	8	30	1
28	-1	41	-30	162	-10	73	1528	37	95	3	39	-1
23	-1	64	-30	51	11	112	1765	28	73	2	57	-1
6	-1	46	-30	31	-10	99	1489	21	69	3	81	-1
27	1	56	-30	155	21	55	1350	41	93	4	33	-1
3	-1	39	-30	71	16	45	1142	24	57	2	30	-1
21	10	23	-30	84	39	19	706	17	37	1	18	-1
17	-1	54	-30	70	12	83	1170	34	80	3	40	-1
Ga	Ge	As	Se	Br	I	Rb	Sr	Y	Zr	Nb	Mo	Ru
27	-1	45	-30	173	15	62	1527	29	72	3	51	-1
6	-1	52	40	209	-10	80	1458	28	70	3	66	-1
24	-1	45	-30	80	-10	98	1716	27	95	4	113	-1
13	2	43	-30	61	11	66	1464	28	86	2	39	-1
36	2	55	-30	139	18	88	2040	30	149	9	70	1
20	2	35	-30	120	12	61	1640	27	81	3	51	-1
25	-1	47	-30	36	10	56	1509	25	67	3	30	-1
19	-1	40	-30	196	13	61	1473	23	58	3	42	-1
13	-1	42	-30	162	10	43	1374	24	71	3	29	1
13	-1	38	-30	184	-10	61	1228	33	101	3	42	-1
24	-1	47	-30	111	16	47	1451	23	58	2	56	-1
Ga	Ge	As	Se	Br	I	Rb	Sr	Y	Zr	Nb	Mo	Ru
18	-1	58	-30	85	-10	97	1634	25	64	3	53	2
13	-1	40	-30	123	14	62	1982	25	79	3	41	-1
20	2	37	-30	116	-10	78	1468	33	83	3	42	-1
31	1	32	-30	-30	-10	51	1197	37	88	4	37	1
23	-1	67	-30	-30	-10	67	1374	32	93	3	85	-1
10	-1	13	-30	60	56	18	789	16	25	-1	9	-1
4	-1	36	43	198	36	29	1128	27	54	2	36	-1

Ga	Ge	As	Se	Br	I	Rb	Sr	Y	Zr	Nb	Mo	Ru
12	2	51	-30	-30	14	60	1389	33	79	3	79	-1
42	-1	37	49	123	16	57	1416	30	69	3	44	-1
31	-1	57	-30	161	10	67	1592	25	64	3	66	-1
27	-1	65	-30	-30	11	97	1697	30	65	3	115	1
14	-1	33	-30	58	17	105	1832	27	102	4	68	-1
12	-1	56	-30	126	15	63	1713	34	95	2	43	-1
3	4	34	70	96	11	57	1262	39	104	3	24	1

Ga	Ge	As	Se	Br	I	Rb	Sr	Y	Zr	Nb	Mo	Ru
19	-1	42	-30	-30	-10	80	1440	21	69	3	91	1
29	-1	37	-30	225	11	46	1216	31	75	3	62	-1
12	-1	20	-30	111	60	49	774	26	44	2	2	-1
10	-1	20	-30	119	96	41	492	29	66	1	-1	-1
17	-1	20	-30	91	56	36	614	19	45	-1	-1	-1
21	-1	17	-30	90	34	28	949	14	29	2	30	-1
16	1	18	-30	38	31	32	994	18	41	1	15	-1

Ga	Ge	As	Se	Br	I	Rb	Sr	Y	Zr	Nb	Mo	Ru
2	-1	-5	-30	45	14	25	155	3	7	-1	-1	-1
1	-1	7	-30	78	25	35	206	5	20	1	-1	-1
1	-1	6	-30	48	19	19	143	2	13	2	-1	-1
-1	-1	-5	-30	-30	-10	6	87	-1	2	-1	-1	-1
-1	1	-5	-30	53	17	33	166	1	4	-1	-1	-1
-1	-1	-5	-30	41	-10	45	59	1	-1	-1	-1	-1
1	-1	-5	-30	-30	-10	18	96	-1	-1	-1	-1	-1
-1	-1	-5	-30	37	-10	45	83	1	-1	-1	-1	-1
-1	-1	-5	-30	37	-10	26	103	-1	2	-1	-1	-1
1	-1	-5	-30	-30	-10	33	82	-1	6	-1	-1	-1
-1	-1	7	-30	35	15	36	155	3	17	2	-1	-1
-1	-1	6	-30	76	30	58	161	7	23	2	-1	-1
2	-1	8	-30	171	39	38	463	19	33	2	9	-1
-1	-1	5	-30	40	15	27	196	2	-1	1	3	-1
2	-1	-5	-30	63	18	51	224	3	12	3	6	-1
4	-1	15	-30	80	13	38	394	22	49	2	3	-1

2	-1	11	-30	40	-10	51	685	17	32	2	10	-1
1	-1	8	41	35	-10	43	991	16	39	2	9	-1
Ga	Ge	As	Se	Br	I	Rb	Sr	Y	Zr	Nb	Mo	Ru
2	-1	16	-30	116	55	26	635	25	46	2	10	-1
1	-1	11	-30	82	43	29	472	19	26	1	5	-1
1	3	15	-30	105	44	23	521	23	40	2	-1	-1
1	-1	17	-30	95	58	23	701	16	31	1	11	-1
1	-1	18	31	52	27	25	753	20	29	1	7	-1
2	-1	15	-30	78	47	31	641	22	32	1	4	-1
1	-1	17	-30	41	11	19	737	25	35	1	18	-1
2	-1	19	33	44	18	21	647	15	16	-1	40	-1
3	-1	10	-30	106	79	22	487	22	42	1	-1	-1
2	-1	15	-30	163	66	25	449	25	43	1	-1	-1
1	-1	7	31	80	24	69	215	8	50	2	-1	-1
Ga	Ge	As	Se	Br	I	Rb	Sr	Y	Zr	Nb	Mo	Ru
1	-1	12	-30	141	39	42	237	24	49	2	-1	-1
2	-1	19	-30	200	58	11	513	24	51	1	-1	-1
2	-1	21	-30	68	22	22	762	20	24	2	-1	-1
1	-1	20	35	119	50	15	523	19	32	1	-1	-1
3	-1	8	-30	101	31	43	186	16	49	3	-1	-1
2	-1	16	-30	104	50	14	473	22	49	1	-1	-1
2	-1	9	-30	94	47	13	505	15	35	1	-1	-1
7	1	9	-30	124	28	81	201	5	26	5	-1	-1
1	-1	17	-30	60	67	21	680	19	26	1	12	-1
Ga	Ge	As	Se	Br	I	Rb	Sr	Y	Zr	Nb	Mo	Ru
2	-1	11	-30	130	52	35	573	23	67	1	-1	-1
3	-1	6	-30	54	21	21	143	5	14	1	-1	-1
2	-1	8	-30	70	16	8	174	2	15	2	-1	-1
20	-1	-5	-30	47	10	61	121	2	15	-1	-1	-1
-1	-1	-5	-30	59	10	56	146	3	6	-1	-1	-1
3	-1	-5	-30	-30	-10	11	65	-1	8	-1	-1	-1
-1	-1	-5	-30	87	13	57	245	2	11	-1	-1	-1
4	3	12	-30	63	22	25	130	2	25	3	-1	-1

Rh	Pd	Ag	Cd	In	Sn	Sb	Te	Cs	Ba	La	Ce	Pr
-1	2	0.4	0.9	0.2	-1	8	-1	2	991	38	90	11
-1	2	0.4	0.9	-0.2	-1	7	1	2	903	45	109	13
-1	2	0.4	0.6	-0.2	-1	4	-1	-1	716	49	123	15
-1	1	0.4	0.6	-0.2	-1	7	-1	-1	689	43	89	11
-1	2	0.4	-0.2	-0.2	-1	5	-1	-1	703	46	113	14
-1	2	0.4	-0.2	-0.2	-1	5	1	-1	739	46	103	13
-1	2	0.4	0.4	-0.2	-1	2	-1	-1	651	36	89	11
-1	2	-0.2	-0.2	0.2	-1	2	-1	-1	361	39	91	12
-1	1	0.6	-0.2	-0.2	-1	2	-1	-1	554	38	97	11
-1	2	-0.2	0.9	-0.2	-1	4	-1	-1	743	48	110	14
-1	1	-0.2	0.6	0.2	-1	2	-1	-1	514	31	70	10
-1	2	0.4	1.1	-0.2	-1	4	-1	-1	723	44	116	14
-1	2	-0.2	1.1	0.2	-1	4	-1	-1	732	31	77	9
-1	2	-0.2	1.1	-0.2	-1	6	-1	-1	861	48	117	15
-1	2	-0.2	0.6	-0.2	-1	3	-1	-1	827	43	104	14
-1	2	-0.2	-0.2	-0.2	-1	5	-1	-1	759	49	114	14
-1	2	0.6	0.4	-0.2	-1	3	-1	-1	798	55	129	17
-1	2	0.6	1.4	0.2	-1	1	-1	-1	689	38	93	13
-1	2	-0.2	0.4	0.2	-1	7	-1	-1	804	44	102	13
-1	1	0.4	1.4	-0.2	-1	7	2	-1	829	36	84	9
-1	3	-0.2	1.1	-0.2	-1	3	-1	-1	750	55	138	16

Rh	Pd	Ag	Cd	In	Sn	Sb	Te	Cs	Ba	La	Ce	Pr
-1	2	-0.2	0.9	0.2	-1	3	-1	-1	671	37	94	11
-1	-1	-0.2	0.4	-0.2	-1	1	-1	-1	404	31	69	9
-1	-1	-0.2	0.4	-0.2	-1	1	-1	-1	467	28	71	9
-1	-1	0.4	-0.2	0.2	-1	1	-1	-1	472	35	88	12
-1	2	-0.2	0.4	-0.2	-1	4	-1	1	786	47	119	14
-1	2	0.4	0.6	-0.2	-1	5	5	-1	829	46	116	16
-1	4	0.4	1.1	0.2	-1	4	-1	-1	651	43	99	12
-1	3	0.6	3.2	-0.2	-1	5	1	1	808	50	115	16
-1	3	0.4	0.9	-0.2	-1	4	-1	-1	730	38	90	11
-1	-1	0.4	0.4	-0.2	-1	4	-1	-1	756	37	80	10
-1	2	0.4	-0.2	0.2	-1	8	-1	-1	769	36	79	10
-1	3	0.4	1.1	-0.2	-1	7	-1	-1	831	56	143	18
-1	2	-0.2	0.4	-0.2	-1	4	-1	-1	819	38	92	10

-1	3	0.6	1.4	0.2	-1	5	-1	1	856	54	126	16
-1	1	-0.2	-0.2	-0.2	-1	3	-1	-1	608	41	94	11
-1	4	0.4	1.1	0.2	-1	3	3	-1	733	47	114	15
-1	4	0.4	0.4	-0.2	-1	7	1	1	913	42	102	12
-1	2	-0.2	0.9	-0.2	-1	3	-1	-1	641	44	117	15
-1	-1	-0.2	0.4	0.2	-1	-1	-1	-1	407	28	59	9
-1	3	0.4	0.4	-0.2	-1	4	-1	-1	827	47	120	15
-1	2	0.6	1.4	-0.2	-1	9	1	-1	828	42	103	13
Rh	Pd	Ag	Cd	In	Sn	Sb	Te	Cs	Ba	La	Ce	Pr
-1	2	-0.2	1.1	0.2	-1	4	-1	-1	858	46	115	14
-1	2	0.4	1	0.2	-1	8	1	-1	728	40	100	12
-1	3	0.6	0.5	0.4	-1	10	1	-1	820	42	91	12
-1	2	-0.2	1.3	0.2	-1	6	-1	-1	748	40	91	12
-1	2	0.6	2.1	0.2	-1	7	4	-1	801	49	118	16
-1	1	0.4	0.5	0.2	-1	8	-1	-1	784	36	87	11
-1	1	0.4	0.5	-0.2	-1	10	1	-1	800	35	87	10
-1	2	0.4	1	-0.2	-1	6	-1	-1	744	55	119	16
-1	2	0.6	1	0.2	-1	3	-1	-1	694	42	99	13
-1	3	0.4	0.8	0.2	-1	6	-1	-1	860	52	126	15
-1	2	0.4	0.8	-0.2	-1	5	-1	-1	774	42	98	13
-1	2	0.4	0.8	-0.2	-1	5	1	-1	732	50	118	15
-1	2	-0.2	0.5	-0.2	-1	5	1	-1	708	36	88	11
-1	2	0.6	1.6	0.2	-1	6	-1	-1	734	38	86	11
-1	2	0.9	0.3	-0.2	-1	4	-1	-1	716	43	112	14
-1	2	-0.2	0.5	0.2	-1	3	-1	-1	620	39	103	13
-1	1	-0.2	0.8	0.2	-1	-1	1	-1	347	31	71	9
-1	1	-0.2	0.5	0.2	-1	-1	-1	-1	335	23	48	7
-1	3	0.4	1.5	0.2	-1	8	-1	-1	779	40	85	11
-1	1	0.4	-0.2	-0.2	-1	7	-1	-1	754	41	100	12
-1	2	0.4	1.3	-0.2	-1	7	-1	-1	745	33	80	11
Rh	Pd	Ag	Cd	In	Sn	Sb	Te	Cs	Ba	La	Ce	Pr
-1	2	0.4	1	0.2	-1	5	-1	-1	712	40	103	13
-1	1	0.4	1.6	0.2	-1	11	3	-1	861	35	89	11
-1	2	0.4	1.3	-0.2	-1	6	-1	-1	828	39	95	12
-1	2	0.3	0.5	0.2	-1	5	1	-1	611	45	107	14

-1	1	-0.2	1.3	0.2	3	6	-1	-1	713	31	64	9
-1	1	-0.2	0.8	-0.2	-1	5	-1	-1	735	41	102	13
-1	2	-0.2	0.5	0.2	-1	4	-1	-1	818	41	105	13
-1	3	-0.2	1.3	-0.2	-1	5	-1	-1	727	49	117	15
-1	3	-0.2	1.6	-0.2	-1	7	4	-1	804	53	122	16
-1	1	-0.2	1	-0.2	-1	1	2	-1	526	34	80	10
-1	-1	-0.2	0.5	0.2	-1	2	-1	-1	372	27	66	8
-1	2	0.4	0.8	-0.2	-1	3	-1	-1	481	30	80	10
-1	2	0.6	1.5	0.2	-1	8	-1	-1	745	39	95	12
-1	2	-0.2	0.5	-0.2	-1	8	-1	-1	716	54	126	16
-1	-1	-0.2	0.5	-0.2	-1	-1	1	-1	474	38	95	12
-1	3	0.4	2.1	-0.2	-1	8	1	-1	1061	53	124	16
-1	2	-0.2	0.5	-0.2	-1	8	1	-1	849	38	88	11
-1	-1	-0.2	0.3	-0.2	-1	-1	-1	-1	350	25	55	7
-1	-1	-0.2	1	-0.2	-1	-1	1	-1	343	23	52	6
-1	1	-0.2	0.5	-0.2	-1	1	-1	-1	348	20	43	6
-1	-1	-0.2	1	-0.2	-1	-1	-1	-1	362	23	48	7

Rh	Pd	Ag	Cd	In	Sn	Sb	Te	Cs	Ba	La	Ce	Pr
-1	-1	-0.2	0.5	-0.2	-1	1	-1	-1	377	26	57	9
-1	1	0.4	0.5	-0.2	-1	-1	-1	-1	339	28	57	9
-1	-1	-0.2	-0.2	-0.2	-1	2	-1	-1	461	30	61	10
-1	2	-0.2	0.4	0.2	-1	7	3	-1	798	43	108	16
-1	2	-0.2	2.2	-0.2	-1	12	-1	-1	832	49	116	15
-1	-1	-0.2	0.6	-0.2	-1	3	-1	-1	496	31	78	11
-1	-1	-0.2	0.4	-0.2	-1	-1	2	-1	408	30	78	10
-1	2	0.5	0.9	0.2	-1	8	-1	-1	743	42	112	14
-1	-1	0.3	0.6	0.2	-1	2	-1	-1	401	42	87	13
-1	-1	0.3	-0.2	0.2	-1	2	2	-1	431	36	81	10
-1	1	-0.2	0.6	0.2	-1	2	-1	-1	431	39	81	11
-1	-1	-0.2	0.9	-0.2	-1	1	-1	-1	442	26	54	8
-1	-1	0.3	0.4	0.2	-1	2	1	-1	456	35	64	11
-1	1	-0.2	-0.2	0.2	-1	2	-1	-1	599	34	84	11
-1	2	-0.2	1.4	-0.2	-1	2	-1	-1	464	56	129	18
-1	1	-0.2	0.6	-0.2	-1	3	-1	-1	672	30	81	10
-1	2	-0.2	-0.2	-0.2	-1	1	1	-1	446	41	89	12
-1	1	-0.2	0.6	-0.2	14	1	-1	-1	343	34	75	10
-1	2	0.5	-0.2	-0.2	-1	8	-1	-1	579	32	78	10

-1	3	0.5	2.5	0.2	-1	5	1	-1	879	56	138	17
-1	2	0.3	2.5	0.5	-1	6	-1	-1	803	59	151	18
Rh	Pd	Ag	Cd	In	Sn	Sb	Te	Cs	Ba	La	Ce	Pr
-1	2	-0.2	1.9	0.2	-1	4	-1	-1	687	50	133	17
-1	3	-0.2	0.6	0.2	1	8	-1	-1	842	56	139	18
-1	2	1	1.4	-0.2	-1	4	-1	-1	842	63	154	20
-1	-1	-0.2	1.4	-0.2	-1	1	1	-1	442	45	96	14
-1	1	0.3	0.6	0.2	-1	2	4	-1	409	37	70	11
-1	1	0.3	1.4	0.2	-1	2	-1	-1	462	45	74	13
-1	1	0.5	0.4	0.2	-1	-1	-1	-1	414	34	68	11
-1	4	0.5	0.9	0.2	-1	11	2	-1	867	43	98	12
-1	2	-0.2	0.9	-0.2	-1	6	-1	-1	831	48	113	16
-1	2	-0.2	0.4	-0.2	-1	2	-1	-1	508	44	115	15
-1	2	-0.2	1.7	0.2	-1	2	-1	-1	623	52	136	19
-1	2	-0.2	0.4	0.2	-1	-1	-1	-1	416	39	89	13
-1	3	0.5	0.4	-0.2	-1	2	1	-1	683	34	68	10
-1	1	-0.2	-0.2	0.2	-1	2	4	-1	344	32	75	11
-1	2	0.5	0.6	-0.2	-1	5	2	-1	705	44	103	13
-1	1	-0.2	1.2	0.2	-1	6	-1	-1	819	37	86	11
-1	-1	-0.2	-0.2	-0.2	-1	2	-1	-1	377	33	73	11
-1	1	0.3	2.2	0.2	-1	1	-1	-1	409	42	87	14
-1	2	0.3	0.9	0.2	-1	3	1	-1	400	38	84	13
-1	3	0.3	1.2	-0.2	-1	4	-1	-1	651	52	116	15
-1	2	0.3	0.9	-0.2	-1	5	1	-1	840	47	110	14
Rh	Pd	Ag	Cd	In	Sn	Sb	Te	Cs	Ba	La	Ce	Pr
-1	4	0.8	0.4	-0.2	-1	4	2	-1	811	66	164	22
-1	2	0.3	-0.2	0.2	-1	2	1	-1	387	32	71	10
-1	1	-0.2	0.4	-0.2	-1	2	-1	-1	370	27	66	8
-1	2	-0.2	0.9	0.2	-1	6	-1	-1	713	47	114	15
-1	2	0.3	0.4	0.2	-1	4	-1	-1	522	36	88	12
-1	2	0.5	0.9	-0.2	-1	5	-1	-1	704	50	119	17
-1	2	-0.2	1.2	0.2	-1	5	-1	-1	684	47	118	15
-1	3	-0.2	1.2	0.2	-1	4	1	-1	767	51	124	15
-1	3	-0.2	0.9	-0.2	-1	7	-1	-1	743	45	108	13
-1	2	0.5	1.4	0.2	-1	10	4	-1	750	45	112	15

-1	2	-0.2	1.2	0.2	-1	5	-1	-1	732	48	113	16
Rh	Pd	Ag	Cd	In	Sn	Sb	Te	Cs	Ba	La	Ce	Pr
-1	2	0.3	0.4	0.2	-1	7	1	-1	752	50	120	17
-1	3	0.8	1.4	0.2	-1	6	-1	-1	706	49	125	17
-1	2	-0.2	0.9	0.2	-1	12	-1	-1	837	42	97	13
7	11	0.3	4.1	-0.2	-1	8	-1	1	978	59	144	15
-1	2	0.3	1.4	-0.2	-1	5	-1	-1	725	54	124	17
-1	1	0.5	0.6	0.2	-1	11	1	-1	785	41	92	13
-1	2	0.5	1.2	-0.2	-1	8	-1	-1	728	39	89	11
-1	2	0.3	0.9	-0.2	-1	6	-1	-1	761	61	152	20
-1	1	-0.2	0.4	-0.2	-1	3	2	-1	523	46	115	14
-1	-1	0.3	-0.2	-0.2	-1	2	2	-1	324	31	69	9
-1	2	0.3	0.9	0.2	-1	6	3	-1	672	46	113	15
Rh	Pd	Ag	Cd	In	Sn	Sb	Te	Cs	Ba	La	Ce	Pr
-1	2	-0.2	0.4	-0.2	-1	5	-1	-1	651	48	112	14
-1	2	-0.2	0.6	-0.2	-1	7	-1	-1	761	42	106	13
-1	2	0.3	0.6	0.2	-1	12	-1	-1	842	45	108	14
-1	2	-0.2	1.2	0.2	-1	5	1	-1	782	51	113	14
4	6	-0.2	5.1	-0.2	-1	3	-1	2	871	61	127	16
-1	2	-0.2	0.4	-0.2	-1	4	1	-1	733	40	97	12
-1	2	-0.2	0.4	-0.2	-1	3	-1	-1	717	41	104	13
-1	2	-0.2	-0.2	-0.2	-1	3	-1	-1	652	38	98	11
-1	2	0.3	-0.2	-0.2	-1	3	-1	-1	602	40	99	14
-1	2	0.3	1.4	0.2	-1	6	-1	-1	723	51	128	17
-1	3	-0.2	0.6	0.2	-1	2	-1	-1	578	38	103	11
Rh	Pd	Ag	Cd	In	Sn	Sb	Te	Cs	Ba	La	Ce	Pr
-1	1	-0.2	0.4	-0.2	-1	10	2	-1	724	40	91	11
-1	2	-0.2	0.9	-0.2	-1	5	-1	-1	717	40	99	13
-1	2	-0.2	0.9	0.2	-1	5	2	-1	847	52	127	17
-1	2	-0.2	0.4	-0.2	-1	4	-1	-1	697	50	128	17
-1	2	1	0.4	0.2	-1	6	-1	-1	801	50	118	15
-1	-1	-0.2	0.4	0.2	-1	3	-1	-1	265	26	63	8
-1	3	0.3	1.4	0.2	-1	4	4	-1	499	42	100	13

Rh	Pd	Ag	Cd	In	Sn	Sb	Te	Cs	Ba	La	Ce	Pr
-1	3	-0.2	1.4	-0.2	-1	8	-1	-1	764	45	114	15
-1	-1	0.5	0.9	0.2	-1	6	-1	-1	788	50	125	16
-1	1	0.3	0.9	0.2	-1	7	1	-1	726	43	96	12
-1	2	0.5	1.2	0.2	-1	10	2	-1	859	40	94	12
-1	2	0.3	1.7	-0.2	-1	11	1	-1	996	42	100	13
-1	2	0.8	0.9	-0.2	-1	4	3	-1	888	57	133	19
-1	3	0.3	0.4	-0.2	-1	8	-1	-1	872	53	135	19

Rh	Pd	Ag	Cd	In	Sn	Sb	Te	Cs	Ba	La	Ce	Pr
-1	-1	0.5	0.4	0.2	-1	9	1	-1	734	41	90	11
-1	1	0.3	-0.2	-0.2	-1	4	-1	-1	662	46	112	16
-1	2	0.5	1.2	0.2	-1	3	1	-1	356	53	109	15
-1	2	0.3	-0.2	0.2	-1	2	4	-1	229	51	76	14
-1	1	-0.2	0.4	-0.2	-1	2	-1	-1	281	32	59	9
-1	-1	-0.2	0.6	0.2	-1	3	-1	-1	304	27	53	8
-1	-1	-0.2	0.9	-0.2	-1	3	-1	-1	404	28	66	9

Rh	Pd	Ag	Cd	In	Sn	Sb	Te	Cs	Ba	La	Ce	Pr
-1	-1	-0.2	0.4	-0.2	-1	-1	-1	-1	198	7	15	2
-1	-1	-0.2	0.9	-0.2	-1	-1	-1	-1	328	9	20	2
-1	-1	-0.2	0.7	-0.2	-1	-1	-1	-1	267	4	11	2
-1	-1	-0.2	0.9	-0.2	-1	-1	-1	-1	253	1	3	-1
-1	-1	-0.2	0.7	-0.2	-1	-1	-1	-1	510	2	5	-1
-1	-1	-0.2	0.8	-0.2	-1	-1	-1	-1	450	2	3	-1
-1	-1	-0.2	1.3	-0.2	-1	-1	-1	-1	250	1	3	-1
-1	-1	-0.2	1	-0.2	-1	-1	-1	-1	338	2	4	-1
-1	-1	-0.2	0.6	-0.2	-1	-1	1	-1	255	1	3	-1
-1	-1	-0.2	0.8	-0.2	-1	-1	-1	-1	172	5	5	-1
-1	-1	-0.2	0.8	-0.2	-1	-1	-1	-1	395	5	14	2
-1	-1	-0.2	0.9	-0.2	-1	-1	-1	-1	229	11	23	3
-1	-1	-0.2	0.3	-0.2	-1	1	-1	-1	238	32	42	9
-1	-1	-0.2	0.6	-0.2	-1	1	-1	-1	423	2	1	1
-1	-1	-0.2	1.2	-0.2	-1	1	-1	-1	529	2	8	1
-1	1	-0.2	0.3	-0.2	-1	1	-1	-1	329	29	58	9

-1	-1	-0.2	0.3	-0.2	-1	1	-1	-1	547	29	58	8
-1	1	-0.2	0.8	-0.2	-1	1	1	-1	893	23	53	8
Rh	Pd	Ag	Cd	In	Sn	Sb	Te	Cs	Ba	La	Ce	Pr
-1	1	-0.2	0.4	-0.2	-1	1	-1	-1	350	37	68	12
-1	-1	-0.2	-0.2	-0.2	-1	-1	-1	-1	396	32	34	10
-1	-1	-0.2	-0.2	-0.2	-1	-1	-1	-1	301	38	58	12
-1	-1	-0.2	0.5	-0.2	-1	-1	-1	-1	373	24	42	8
-1	-1	-0.2	0.3	-0.2	-1	-1	-1	-1	455	33	60	10
-1	-1	-0.2	-0.2	-0.2	-1	-1	2	-1	430	35	66	12
-1	-1	-0.2	0.3	-0.2	-1	-1	-1	-1	533	31	81	12
-1	-1	-0.2	-0.2	-0.2	-1	-1	-1	-1	516	22	44	8
-1	1	-0.2	-0.2	-0.2	-1	-1	-1	-1	285	34	50	11
-1	1	-0.2	0.4	-0.2	-1	-1	-1	-1	232	41	56	12
-1	1	-0.2	1.4	-0.2	-1	-1	-1	-1	571	10	31	4
Rh	Pd	Ag	Cd	In	Sn	Sb	Te	Cs	Ba	La	Ce	Pr
-1	1	-0.2	1.2	-0.2	-1	-1	-1	-1	187	34	63	10
-1	1	-0.2	0.3	-0.2	-1	-1	-1	-1	271	38	49	11
-1	-1	-0.2	0.3	-0.2	-1	-1	-1	-1	480	30	56	10
-1	-1	-0.2	0.3	-0.2	-1	-1	-1	-1	303	32	52	10
-1	1	-0.2	0.8	-0.2	-1	-1	-1	-1	186	25	68	8
-1	1	-0.2	0.3	-0.2	-1	-1	-1	-1	346	33	54	11
-1	-1	-0.2	0.3	-0.2	-1	-1	1	-1	274	21	33	7
-1	-1	-0.2	1.5	-0.2	1	-1	2	1	396	11	20	2
-1	-1	-0.2	0.3	-0.2	-1	-1	-1	-1	437	26	49	9
Rh	Pd	Ag	Cd	In	Sn	Sb	Te	Cs	Ba	La	Ce	Pr
-1	1	-0.2	0.4	-0.2	-1	-1	-1	-1	256	37	64	12
-1	-1	-0.2	1.5	-0.2	-1	-1	-1	-1	433	6	18	4
-1	-1	-0.2	2.6	-0.2	-1	-1	1	-1	663	1	7	1
-1	-1	-0.2	0.5	-0.2	-1	-1	-1	-1	442	-1	2	-1
-1	-1	-0.2	0.5	-0.2	-1	-1	-1	-1	425	2	7	1
-1	-1	-0.2	1	-0.2	-1	-1	-1	-1	218	-1	-1	-1
-1	-1	-0.2	0.6	-0.2	-1	-1	-1	-1	349	-1	3	1
-1	-1	-0.2	3.7	-0.2	1	-1	-1	-1	462	-1	5	1

Nd	Sm	Eu	Gd	Tb	Dy	Ho	Er	Tm	Yb	Lu	Hf	Ta
44	8	1	8	-1	5	1	2	-1	2	-1	2	2
47	7	2	10	1	5	1	2	-1	3	-1	2	-1
57	8	2	10	1	6	1	2	-1	3	-1	2	2
40	6	2	6	1	4	-1	1	-1	1	-1	2	-1
58	11	2	10	2	6	1	3	-1	3	-1	2	-1
49	7	2	9	1	5	-1	2	-1	2	-1	2	-1
46	8	2	9	-1	5	-1	2	-1	2	-1	2	-1
44	7	2	10	1	5	1	2	-1	2	-1	-1	-1
47	7	2	8	-1	5	-1	2	-1	2	-1	1	-1
53	9	2	9	1	5	-1	2	-1	2	-1	2	-1
38	5	1	6	-1	3	-1	2	-1	1	-1	1	-1
51	7	2	8	1	5	-1	2	-1	2	-1	2	2
34	4	1	6	-1	4	-1	1	-1	1	-1	2	-1
58	9	2	10	1	6	1	3	-1	2	-1	2	-1
50	8	2	7	1	5	-1	3	-1	2	-1	1	-1
55	9	2	8	1	5	-1	2	-1	2	-1	2	-1
57	12	2	12	1	6	1	3	-1	3	-1	1	-1
46	6	1	6	1	5	-1	2	-1	2	-1	-1	2
48	8	2	7	1	6	-1	2	-1	2	-1	2	-1
37	7	1	7	1	4	-1	1	-1	2	-1	1	-1
64	9	2	13	1	7	1	3	-1	3	-1	2	-1

Nd	Sm	Eu	Gd	Tb	Dy	Ho	Er	Tm	Yb	Lu	Hf	Ta
43	7	1	7	1	4	1	2	-1	1	-1	2	2
38	6	1	7	-1	4	-1	1	-1	2	-1	-1	-1
32	4	1	7	-1	3	-1	2	-1	1	-1	1	-1
45	7	2	7	-1	5	-1	1	-1	2	-1	-1	-1
51	9	2	10	1	6	-1	2	-1	3	-1	2	2
57	9	2	10	1	6	1	3	-1	3	-1	1	2
40	7	2	8	1	4	-1	2	-1	1	-1	2	-1
55	7	2	11	-1	5	-1	3	-1	2	-1	2	2
43	6	2	8	1	4	-1	2	-1	2	-1	1	-1
37	7	1	5	-1	4	-1	2	-1	2	-1	-1	-1
39	9	2	8	-1	4	-1	2	-1	2	-1	1	-1
64	12	2	14	1	7	2	2	-1	4	-1	3	-1
43	6	2	8	1	4	-1	2	-1	2	-1	1	-1

59	10	2	11	1	6	1	2	-1	3	-1	2	-1
40	7	1	7	-1	4	-1	1	-1	2	-1	1	-1
55	9	2	10	-1	5	-1	2	-1	2	-1	2	-1
54	7	2	9	1	6	-1	2	-1	2	-1	2	-1
58	10	2	10	1	6	1	2	-1	3	-1	1	-1
30	5	1	7	-1	3	-1	1	-1	1	-1	-1	-1
61	11	2	12	1	6	1	2	-1	2	-1	2	2
47	9	1	9	1	5	-1	2	-1	2	-1	2	-1
Nd	Sm	Eu	Gd	Tb	Dy	Ho	Er	Tm	Yb	Lu	Hf	Ta
57	10	2	11	1	6	1	3	-1	2	-1	2	2
46	8	2	9	1	5	-1	2	-1	2	-1	-1	-1
43	7	2	7	1	4	1	2	-1	2	-1	-1	-1
44	7	2	14	1	5	-1	2	-1	1	-1	2	-1
59	11	2	10	2	7	-1	3	-1	2	-1	2	-1
43	7	2	8	-1	6	-1	2	-1	2	-1	-1	-1
42	8	1	7	1	5	-1	1	-1	2	-1	1	-1
63	9	2	15	2	7	1	3	-1	3	-1	1	-1
47	7	2	7	1	5	-1	3	-1	2	-1	-1	-1
59	11	3	11	1	8	1	2	-1	2	-1	2	-1
48	7	1	10	-1	4	-1	2	-1	2	-1	-1	-1
59	12	2	13	1	6	1	2	-1	3	-1	-1	-1
42	7	2	6	1	5	1	1	-1	2	-1	1	-1
44	8	2	10	-1	5	-1	2	-1	1	-1	-1	-1
52	7	2	10	1	6	1	2	-1	2	-1	-1	1
51	7	2	9	1	6	-1	3	-1	2	-1	2	-1
30	5	-1	7	-1	3	-1	1	-1	1	-1	-1	-1
29	4	1	4	-1	3	-1	1	-1	-1	-1	-1	-1
41	6	2	9	1	5	-1	2	-1	2	-1	1	-1
44	6	2	6	-1	5	1	2	-1	2	-1	1	-1
35	4	1	7	1	5	-1	1	-1	1	-1	1	-1
Nd	Sm	Eu	Gd	Tb	Dy	Ho	Er	Tm	Yb	Lu	Hf	Ta
50	10	2	9	1	5	1	2	-1	3	-1	2	-1
44	8	2	8	-1	5	-1	2	-1	2	-1	1	-1
46	7	2	10	-1	5	1	2	-1	3	-1	-1	-1
55	9	2	9	1	6	-1	3	-1	3	-1	1	-1

39	5	2	7	-1	4	-1	1	-1	2	-1	-1	-1
50	8	2	10	-1	5	-1	2	-1	2	-1	-1	1
49	11	2	8	1	5	-1	2	-1	2	-1	-1	-1
59	10	2	10	1	6	1	3	-1	1	-1	2	1
66	10	3	11	1	6	1	3	-1	3	-1	1	1
37	6	1	7	-1	4	-1	2	-1	2	-1	-1	-1
30	6	1	6	-1	4	-1	1	-1	-1	-1	1	-1
38	7	1	8	1	4	-1	1	-1	2	-1	-1	-1
51	8	2	7	1	5	1	2	-1	3	-1	2	-1
68	9	3	13	2	7	2	3	-1	3	-1	2	-1
48	8	1	8	1	4	-1	2	-1	2	-1	-1	-1
64	12	3	10	1	6	1	3	-1	3	-1	1	2
41	6	2	7	1	5	-1	2	-1	-1	-1	1	-1
25	4	-1	5	-1	3	-1	-1	-1	1	-1	-1	-1
24	4	-1	5	-1	2	-1	-1	-1	1	-1	-1	-1
25	4	1	5	-1	2	-1	1	-1	-1	-1	-1	-1
25	5	1	6	-1	2	-1	-1	-1	1	-1	-1	-1
Nd	Sm	Eu	Gd	Tb	Dy	Ho	Er	Tm	Yb	Lu	Hf	Ta
32	4	1	6	-1	3	-1	-1	-1	1	-1	-1	-1
34	6	1	7	-1	3	-1	2	-1	-1	-1	-1	-1
39	6	1	8	-1	4	-1	1	-1	1	-1	-1	-1
55	7	2	9	1	5	1	2	-1	3	-1	1	1
54	9	2	10	1	5	-1	3	-1	2	-1	1	-1
43	6	2	8	-1	4	-1	1	-1	2	-1	1	-1
37	6	2	7	1	5	-1	1	-1	2	-1	2	1
54	9	2	7	1	5	-1	2	-1	2	-1	2	-1
49	9	2	9	1	5	1	2	-1	1	-1	-1	-1
42	8	2	6	1	4	-1	2	-1	2	-1	-1	-1
45	8	2	9	1	6	-1	2	-1	2	-1	1	1
29	5	-1	5	-1	3	-1	1	-1	1	-1	-1	-1
41	7	1	9	-1	3	-1	2	-1	2	-1	-1	-1
48	6	2	9	1	5	-1	2	-1	2	-1	-1	-1
62	12	2	10	1	7	1	3	-1	3	-1	1	-1
37	6	2	7	-1	4	-1	2	-1	1	-1	-1	-1
48	8	2	9	1	5	-1	2	-1	2	-1	-1	-1
37	8	1	7	1	4	-1	1	-1	1	-1	-1	-1
36	4	1	6	-1	4	-1	1	-1	2	-1	-1	-1

68	12	2	12	1	7	1	3	-1	2	-1	2	1
82	6	2	13	2	9	1	3	-1	3	-1	2	1
Nd	Sm	Eu	Gd	Tb	Dy	Ho	Er	Tm	Yb	Lu	Hf	Ta
70	12	3	12	1	8	1	4	-1	3	-1	2	-1
67	12	3	13	1	8	2	3	-1	3	-1	2	-1
79	11	3	14	2	7	1	3	-1	2	-1	2	1
49	7	2	9	1	6	1	2	-1	1	-1	1	-1
43	9	1	8	-1	4	1	2	-1	1	-1	-1	-1
52	8	2	8	1	6	-1	2	-1	2	-1	-1	-1
39	6	2	8	1	4	-1	1	-1	1	-1	-1	-1
45	7	2	7	1	6	1	2	-1	3	-1	1	-1
62	10	2	12	1	7	1	2	-1	3	-1	-1	1
55	9	2	12	1	6	1	2	-1	2	-1	1	-1
72	11	2	12	1	5	1	2	-1	3	-1	2	1
47	8	2	8	1	5	1	1	-1	2	-1	1	-1
42	6	2	6	1	4	1	2	-1	2	-1	1	1
40	7	2	7	1	4	-1	1	-1	2	-1	-1	-1
56	8	2	9	1	6	1	2	-1	2	-1	1	-1
42	6	2	7	-1	5	1	2	-1	2	-1	1	-1
38	7	1	6	1	3	-1	1	-1	1	-1	-1	-1
49	8	2	9	1	4	1	2	-1	2	-1	1	-1
44	7	2	8	1	4	-1	2	-1	2	-1	1	-1
54	9	2	11	2	7	1	2	-1	2	-1	2	1
53	8	2	12	2	5	-1	2	-1	2	-1	1	-1
Nd	Sm	Eu	Gd	Tb	Dy	Ho	Er	Tm	Yb	Lu	Hf	Ta
82	12	3	14	2	8	2	4	-1	4	-1	2	-1
35	6	1	8	-1	4	-1	1	-1	2	-1	-1	-1
32	7	1	6	-1	3	-1	2	-1	-1	-1	-1	-1
59	9	2	13	1	6	1	2	-1	2	-1	-1	-1
45	9	2	8	1	5	1	2	-1	-1	-1	-1	-1
60	9	3	12	2	7	1	2	-1	2	-1	-1	-1
56	9	2	9	2	6	1	2	-1	3	-1	1	1
59	10	2	12	2	7	1	3	-1	3	-1	2	1
52	9	2	11	1	5	1	2	-1	3	-1	-1	-1
55	9	2	9	2	7	-1	1	-1	3	-1	1	-1

60	11	2	12	1	8	1	2	-1	3	-1	-1	-1
Nd	Sm	Eu	Gd	Tb	Dy	Ho	Er	Tm	Yb	Lu	Hf	Ta
63	9	2	11	1	6	1	3	-1	3	-1	2	-1
62	11	2	12	1	7	1	2	-1	4	-1	2	-1
51	8	2	9	1	5	1	2	-1	2	-1	1	1
53	6	2	13	2	8	1	3	-1	3	-1	3	1
61	11	2	11	1	7	1	2	-1	2	-1	1	-1
45	9	2	8	1	6	1	2	-1	1	-1	1	1
38	6	2	7	1	4	-1	1	-1	1	-1	-1	-1
76	12	3	14	2	6	1	4	-1	3	-1	2	-1
57	7	2	9	1	5	-1	2	-1	2	-1	1	-1
32	5	2	6	-1	3	-1	1	-1	1	-1	-1	-1
56	10	3	10	1	7	1	3	-1	2	-1	2	-1
Nd	Sm	Eu	Gd	Tb	Dy	Ho	Er	Tm	Yb	Lu	Hf	Ta
55	7	2	10	1	6	1	2	-1	2	-1	-1	1
52	9	2	9	-1	6	1	3	-1	2	-1	1	-1
51	9	2	10	1	6	1	2	-1	3	-1	1	1
56	8	3	10	1	6	1	3	-1	2	-1	1	-1
62	9	2	11	2	7	1	2	-1	3	-1	2	3
46	9	2	9	-1	5	1	2	-1	2	-1	1	1
50	8	1	10	1	5	1	2	-1	2	-1	-1	-1
47	8	2	8	-1	5	1	2	-1	2	-1	1	-1
49	9	2	9	1	5	1	2	-1	1	-1	-1	-1
61	10	2	9	1	7	1	2	-1	2	-1	2	-1
40	7	1	9	1	5	-1	2	-1	2	-1	2	-1
Nd	Sm	Eu	Gd	Tb	Dy	Ho	Er	Tm	Yb	Lu	Hf	Ta
44	8	2	8	1	4	-1	2	-1	2	-1	-1	1
47	10	2	8	-1	5	1	2	-1	2	-1	-1	-1
62	11	2	11	2	7	1	3	-1	4	-1	1	-1
65	12	2	11	1	6	-1	2	-1	2	-1	2	-1
53	9	2	8	1	6	1	2	-1	2	-1	2	-1
31	6	-1	6	-1	3	-1	1	-1	1	-1	-1	-1
46	8	2	9	1	6	1	2	-1	2	-1	1	-1

Nd	Sm	Eu	Gd	Tb	Dy	Ho	Er	Tm	Yb	Lu	Hf	Ta
56	8	2	10	2	7	1	2	-1	3	-1	1	-1
55	9	2	11	1	6	1	2	-1	3	-1	1	-1
46	9	2	8	1	5	1	2	-1	2	-1	2	-1
43	9	2	8	1	6	-1	2	-1	1	-1	1	1
51	8	2	9	1	5	1	2	-1	3	-1	2	1
66	11	2	10	2	9	1	3	-1	3	-1	2	-1
74	11	2	15	2	8	2	3	-1	4	-1	1	-1

Nd	Sm	Eu	Gd	Tb	Dy	Ho	Er	Tm	Yb	Lu	Hf	Ta
38	6	2	9	-1	3	1	2	-1	2	-1	1	-1
57	9	2	10	1	6	1	2	-1	2	-1	1	-1
51	9	2	11	1	6	-1	2	-1	2	-1	1	-1
51	8	2	10	1	5	1	2	-1	2	-1	2	-1
34	5	1	7	-1	4	-1	-1	-1	-1	-1	1	-1
23	3	-1	4	-1	2	-1	-1	-1	-1	-1	-1	-1
30	5	1	5	1	3	-1	2	-1	1	-1	-1	-1

Nd	Sm	Eu	Gd	Tb	Dy	Ho	Er	Tm	Yb	Lu	Hf	Ta
9	2	-1	2	-1	1	-1	-1	-1	-1	-1	-1	-1
11	1	-1	2	-1	2	-1	-1	-1	-1	-1	-1	-1
4	-1	-1	1	-1	-1	-1	-1	-1	-1	-1	-1	-1
2	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
3	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
2	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
2	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
2	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
5	-1	-1	1	-1	1	-1	-1	-1	-1	-1	-1	-1
12	2	-1	2	-1	2	-1	-1	-1	-1	-1	-1	-1
32	6	1	6	2	4	-1	1	-1	3	-1	1	-1
2	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
1	1	-1	1	-1	-1	-1	-1	-1	-1	-1	-1	-1
32	6	1	7	1	5	-1	2	-1	2	-1	1	-1

30	5	1	7	-1	4	-1	1	-1	2	-1	1	-1
29	4	1	6	-1	4	-1	1	-1	2	-1	-1	-1
Nd	Sm	Eu	Gd	Tb	Dy	Ho	Er	Tm	Yb	Lu	Hf	Ta
44	7	2	9	1	6	-1	2	-1	2	-1	1	-1
35	6	1	8	1	4	-1	1	-1	2	-1	-1	-1
43	7	2	10	1	5	1	2	-1	2	-1	1	1
27	5	1	6	-1	3	-1	1	-1	2	-1	-1	-1
39	8	1	7	1	5	-1	1	-1	2	-1	-1	-1
41	7	2	10	1	5	-1	2	-1	2	-1	1	-1
42	8	2	10	1	5	-1	2	-1	2	-1	-1	-1
25	5	1	6	-1	3	-1	1	-1	2	-1	-1	-1
41	7	1	9	1	5	-1	2	-1	2	-1	1	-1
41	8	2	9	1	5	1	2	-1	2	-1	1	-1
11	3	-1	3	-1	2	-1	-1	-1	-1	-1	2	-1
Nd	Sm	Eu	Gd	Tb	Dy	Ho	Er	Tm	Yb	Lu	Hf	Ta
38	8	2	10	1	5	-1	2	-1	2	-1	1	-1
40	7	2	9	1	5	1	2	-1	2	-1	1	-1
34	7	1	8	1	4	-1	2	-1	2	-1	-1	-1
33	6	1	7	1	4	-1	2	-1	1	-1	-1	-1
27	5	1	6	-1	4	-1	1	-1	2	-1	2	-1
37	8	2	9	1	5	-1	2	-1	2	-1	1	-1
23	4	1	6	-1	4	-1	1	-1	1	-1	1	-1
5	2	-1	3	-1	2	-1	-1	-1	-1	-1	1	1
32	6	1	7	-1	4	-1	1	-1	2	-1	-1	-1
Nd	Sm	Eu	Gd	Tb	Dy	Ho	Er	Tm	Yb	Lu	Hf	Ta
46	8	2	10	1	6	1	2	-1	2	-1	2	-1
8	2	-1	3	-1	-1	-1	-1	-1	-1	-1	-1	-1
3	1	-1	2	-1	-1	-1	-1	-1	-1	-1	-1	-1
-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
3	1	-1	1	-1	-1	-1	-1	-1	-1	-1	-1	-1
-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	1	-1

W	Re	Os	Ir	Pt	Au	S.Q.Hg	Tl	Pb	Bi	Th	U	/
5	-0.1	-1	-1	-1	-0.1	-1	-1	5	-1	17	10	/
5	-0.1	-1	-1	-1	-0.1	-1	-1	6	-1	19	9	/
3	-0.1	-1	-1	-1	-0.1	-1	-1	9	-1	20	5	/
3	-0.1	-1	-1	-1	0.2	-1	-1	7	-1	14	8	/
3	-0.1	-1	-1	-1	-0.1	-1	-1	7	-1	17	7	/
3	-0.1	-1	-1	-1	-0.1	-1	-1	7	-1	18	5	/
2	-0.1	-1	-1	-1	-0.1	-1	-1	5	-1	15	5	/
2	-0.1	-1	-1	-1	-0.1	-1	-1	5	-1	10	3	/
2	-0.1	-1	-1	-1	-0.1	-1	-1	6	-1	13	5	/
3	-0.1	-1	-1	-1	-0.1	-1	-1	6	-1	21	4	/
2	-0.1	-1	-1	-1	-0.1	-1	-1	6	-1	10	3	/
3	-0.1	-1	-1	-1	-0.1	-1	-1	8	-1	21	4	/
3	-0.1	-1	-1	-1	0.2	-1	-1	6	-1	11	6	/
3	-0.1	-1	-1	-1	-0.1	-1	-1	10	-1	21	4	/
3	-0.1	-1	-1	-1	-0.1	-1	-1	5	-1	21	5	/
3	-0.1	-1	-1	-1	-0.1	-1	-1	7	-1	21	6	/
3	-0.1	-1	-1	-1	-0.1	-1	-1	6	-1	22	4	/
2	-0.1	-1	-1	-1	-0.1	-1	-1	3	-1	16	3	/
4	0.2	-1	-1	-1	-0.1	-1	-1	8	-1	14	7	/
3	-0.1	-1	-1	-1	-0.1	-1	-1	5	-1	14	8	/
2	-0.1	-1	-1	-1	-0.1	-1	-1	7	-1	23	3	/

W	Re	Os	Ir	Pt	Au	S.Q.Hg	Tl	Pb	Bi	Th	U	/
2	-0.1	-1	-1	-1	-0.1	-1	-1	4	-1	16	6	/
2	-0.1	-1	-1	-1	-0.1	-1	-1	4	-1	10	2	/
1	-0.1	-1	-1	-1	-0.1	-1	-1	2	-1	8	4	/
-1	-0.1	-1	-1	-1	-0.1	-1	-1	4	-1	9	3	/
4	-0.1	-1	-1	-1	-0.1	-1	-1	5	-1	28	5	/
2	-0.1	-1	-1	-1	-0.1	-1	-1	5	-1	19	2	/
2	-0.1	-1	-1	-1	-0.1	-1	-1	10	-1	11	3	/
5	-0.1	-1	-1	-1	-0.1	-1	-1	5	-1	23	7	/
3	-0.1	-1	-1	-1	-0.1	-1	-1	8	-1	12	8	/
2	-0.1	-1	-1	-1	-0.1	-1	-1	7	-1	17	5	/
3	-0.1	-1	-1	-1	-0.1	-1	-1	7	-1	14	8	/
4	-0.1	-1	-1	-1	-0.1	-1	-1	11	-1	20	6	/
3	-0.1	-1	-1	-1	-0.1	-1	-1	8	-1	17	6	/

3	-0.1	-1	-1	-1	-0.1	-1	-1	5	-1	24	6	/
2	-0.1	-1	-1	-1	-0.1	-1	-1	14	-1	8	5	/
3	-0.1	-1	-1	-1	-0.1	-1	-1	4	-1	21	5	/
4	-0.1	-1	-1	-1	-0.1	-1	-1	5	-1	20	6	/
2	-0.1	-1	-1	-1	-0.1	-1	-1	4	-1	17	3	/
1	-0.1	-1	-1	-1	-0.1	-1	-1	3	-1	8	1	/
2	-0.1	-1	-1	-1	-0.1	-1	-1	6	-1	20	4	/
3	-0.1	-1	-1	-1	-0.1	-1	-1	5	-1	18	8	/
W	Re	Os	Ir	Pt	Au	S.Q.Hg	Tl	Pb	Bi	Th	U	/
3	-0.1	-1	-1	-1	-0.1	-1	-1	6	-1	22	6	/
4	-0.1	-1	-1	-1	0.2	-1	-1	7	-1	15	5	/
3	-0.1	-1	-1	-1	-0.1	-1	-1	8	-1	13	7	/
5	-0.1	-1	-1	-1	-0.1	-1	-1	10	-1	14	9	/
3	-0.1	-1	-1	-1	-0.1	-1	-1	9	-1	16	4	/
4	-0.1	-1	-1	-1	-0.1	-1	-1	10	-1	14	6	/
2	-0.1	-1	-1	-1	-0.1	-1	-1	9	-1	13	13	/
3	-0.1	-1	-1	-1	0.1	-1	-1	11	-1	18	6	/
2	-0.1	-1	-1	-1	-0.1	-1	-1	10	-1	14	4	/
2	-0.1	-1	-1	-1	0.2	-1	-1	10	-1	18	4	/
2	-0.1	-1	-1	-1	-0.1	-1	-1	12	-1	15	6	/
3	-0.1	-1	-1	-1	-0.1	-1	-1	11	-1	19	7	/
2	-0.1	-1	-1	-1	-0.1	-1	-1	9	-1	15	9	/
2	-0.1	-1	-1	-1	-0.1	-1	-1	8	-1	18	13	/
2	-0.1	-1	-1	-1	-0.1	-1	-1	8	-1	14	5	/
2	-0.1	-1	-1	-1	-0.1	-1	-1	8	-1	17	3	/
-1	-0.1	-1	-1	-1	-0.1	-1	-1	5	-1	9	1	/
2	-0.1	-1	-1	-1	-0.1	-1	-1	4	-1	6	3	/
2	-0.1	-1	-1	-1	-0.1	-1	-1	8	-1	15	4	/
4	-0.1	-1	-1	-1	-0.1	-1	-1	10	-1	15	11	/
3	-0.1	-1	-1	-1	-0.1	-1	-1	9	-1	11	9	/
W	Re	Os	Ir	Pt	Au	S.Q.Hg	Tl	Pb	Bi	Th	U	/
2	-0.1	-1	-1	-1	-0.1	-1	-1	9	-1	15	9	/
3	-0.1	-1	-1	-1	-0.1	-1	-1	10	-1	10	9	/
4	-0.1	-1	-1	-1	0.2	-1	-1	11	-1	19	11	/
3	-0.1	-1	-1	-1	-0.1	-1	-1	9	-1	12	6	/

2	0.2	-1	-1	-1	0.2	-1	-1	7	-1	12	6	/
3	-0.1	-1	-1	-1	0.1	-1	-1	8	-1	18	6	/
2	-0.1	-1	-1	-1	0.2	-1	-1	8	-1	18	3	/
3	-0.1	-1	-1	-1	0.2	-1	-1	7	-1	22	5	/
3	-0.1	-1	-1	-1	-0.1	-1	-1	9	-1	21	5	/
-1	-0.1	-1	-1	-1	-0.1	-1	-1	7	-1	11	4	/
1	-0.1	-1	-1	-1	0.2	-1	-1	3	-1	7	2	/
2	-0.1	-1	-1	-1	-0.1	-1	-1	6	-1	7	4	/
3	-0.1	-1	-1	-1	-0.1	-1	-1	9	-1	18	9	/
2	-0.1	-1	-1	-1	-0.1	-1	-1	9	-1	20	8	/
1	-0.1	-1	-1	-1	-0.1	-1	-1	8	-1	8	3	/
7	-0.1	-1	-1	-1	-0.1	-1	-1	5	-1	27	8	/
2	0.2	-1	-1	-1	-0.1	-1	-1	8	-1	14	8	/
3	-0.1	-1	-1	-1	-0.1	-1	-1	5	-1	6	3	/
2	-0.1	-1	-1	-1	-0.1	-1	-1	3	-1	5	2	/
2	-0.1	-1	-1	-1	0.2	-1	-1	3	-1	6	3	/
-1	-0.1	-1	-1	-1	-0.1	-1	-1	2	-1	7	1	/

W	Re	Os	Ir	Pt	Au	S.Q.Hg	Tl	Pb	Bi	Th	U	/
2	-0.1	-1	-1	-1	0.2	-1	-1	1	-1	9	1	/
2	-0.1	-1	-1	-1	0.2	-1	-1	3	-1	8	-1	/
2	-0.1	-1	-1	-1	-0.1	-1	-1	2	-1	10	-1	/
3	-0.1	-1	-1	-1	-0.1	-1	-1	6	-1	15	5	/
3	-0.1	-1	-1	-1	-0.1	-1	-1	5	-1	22	6	/
2	-0.1	-1	-1	-1	-0.1	-1	-1	8	-1	8	3	/
2	-0.1	-1	-1	-1	-0.1	-1	-1	5	-1	7	2	/
2	-0.1	-1	-1	-1	-0.1	-1	-1	8	-1	20	4	/
2	-0.1	-1	-1	-1	-0.1	-1	-1	5	-1	10	1	/
2	-0.1	-1	-1	-1	-0.1	-1	-1	3	-1	8	1	/
1	-0.1	-1	-1	-1	-0.1	-1	-1	5	-1	10	2	/
2	-0.1	-1	-1	-1	-0.1	-1	-1	2	-1	9	1	/
2	-0.1	-1	-1	-1	-0.1	-1	-1	3	-1	9	1	/
-1	-0.1	-1	-1	-1	-0.1	-1	-1	2	-1	12	4	/
2	-0.1	-1	-1	-1	-0.1	-1	-1	2	-1	18	1	/
2	-0.1	-1	-1	-1	-0.1	-1	-1	4	-1	14	3	/
2	-0.1	-1	-1	-1	-0.1	-1	-1	2	-1	10	2	/
1	-0.1	-1	-1	-1	-0.1	-1	-1	3	-1	9	-1	/
5	-0.1	-1	-1	-1	-0.1	-1	-1	12	-1	9	5	/

4	-0.1	-1	-1	-1	-0.1	-1	-1	6	-1	33	4	/
4	-0.1	-1	-1	-1	-0.1	-1	-1	9	-1	29	3	/
W	Re	Os	Ir	Pt	Au	S.Q.Hg	Tl	Pb	Bi	Th	U	/
2	-0.1	-1	-1	-1	-0.1	-1	-1	7	-1	20	4	/
5	-0.1	-1	-1	-1	-0.1	-1	-1	9	-1	23	5	/
3	-0.1	-1	-1	-1	-0.1	-1	-1	7	-1	26	3	/
2	-0.1	-1	-1	-1	-0.1	-1	-1	4	-1	14	2	/
2	-0.1	-1	-1	-1	-0.1	-1	-1	4	-1	14	2	/
2	-0.1	-1	-1	-1	-0.1	-1	-1	2	-1	16	1	/
-1	-0.1	-1	-1	-1	-0.1	-1	-1	3	-1	8	1	/
4	-0.1	-1	-1	-1	-0.1	-1	-1	4	-1	20	9	/
3	-0.1	-1	-1	-1	-0.1	-1	-1	5	-1	20	7	/
-1	-0.1	-1	-1	-1	-0.1	-1	-1	5	-1	13	3	/
2	-0.1	-1	-1	-1	-0.1	-1	-1	4	-1	20	2	/
1	-0.1	-1	-1	-1	-0.1	-1	-1	3	-1	13	-1	/
1	-0.1	-1	-1	-1	-0.1	-1	-1	5	-1	10	2	/
1	-0.1	-1	-1	-1	-0.1	-1	-1	7	-1	10	4	/
3	-0.1	-1	-1	-1	-0.1	-1	-1	6	-1	16	3	/
4	-0.1	-1	-1	-1	-0.1	-1	-1	8	-1	14	7	/
3	-0.1	-1	-1	-1	-0.1	-1	-1	4	-1	8	3	/
2	-0.1	-1	-1	-1	-0.1	-1	-1	4	-1	10	2	/
3	-0.1	-1	-1	-1	-0.1	-1	-1	6	-1	11	5	/
3	-0.1	-1	-1	-1	-0.1	-1	-1	7	-1	20	4	/
2	-0.1	-1	-1	-1	-0.1	-1	-1	7	-1	19	6	/
W	Re	Os	Ir	Pt	Au	S.Q.Hg	Tl	Pb	Bi	Th	U	/
3	-0.1	-1	-1	-1	-0.1	-1	-1	6	-1	30	9	/
-1	-0.1	-1	-1	-1	-0.1	-1	-1	5	-1	8	4	/
1	-0.1	-1	-1	-1	-0.1	-1	-1	4	-1	8	3	/
5	-0.1	-1	-1	-1	-0.1	-1	-1	18	-1	15	5	/
2	-0.1	-1	-1	-1	-0.1	-1	-1	11	-1	10	4	/
3	-0.1	-1	-1	-1	-0.1	-1	-1	11	-1	18	6	/
3	-0.1	-1	-1	-1	-0.1	-1	-1	8	-1	18	5	/
3	-0.1	-1	-1	-1	-0.1	-1	-1	11	-1	20	5	/
2	-0.1	-1	-1	-1	-0.1	-1	-1	7	-1	22	6	/
3	-0.1	-1	-1	-1	-0.1	-1	-1	18	-1	10	9	/

3	-0.1	-1	-1	-1	-0.1	-1	-1	10	-1	18	5	/
W	Re	Os	Ir	Pt	Au	S.Q.Hg	Tl	Pb	Bi	Th	U	/
4	-0.1	-1	-1	-1	-0.1	-1	-1	10	-1	20	7	/
4	-0.1	-1	-1	-1	-0.1	-1	-1	9	-1	21	8	/
5	-0.1	-1	-1	-1	-0.1	-1	-1	13	-1	14	6	/
3	-0.1	-1	-1	-1	-0.1	-1	-1	4	-1	33	7	/
3	-0.1	-1	-1	-1	-0.1	-1	-1	14	-1	16	4	/
2	-0.1	-1	-1	-1	-0.1	-1	-1	12	-1	14	10	/
3	-0.1	-1	-1	-1	-0.1	-1	-1	12	-1	9	9	/
3	-0.1	-1	-1	-1	-0.1	-1	-1	10	-1	23	7	/
3	-0.1	-1	-1	-1	-0.1	-1	-1	11	-1	14	7	/
1	-0.1	-1	-1	-1	-0.1	-1	-1	4	-1	8	3	/
4	-0.1	-1	-1	-1	-0.1	-1	-1	15	-1	16	2	/
W	Re	Os	Ir	Pt	Au	S.Q.Hg	Tl	Pb	Bi	Th	U	/
3	-0.1	-1	-1	-1	-0.1	-1	-1	7	-1	19	5	/
2	-0.1	-1	-1	-1	-0.1	-1	-1	12	-1	16	5	/
5	-0.1	-1	-1	-1	-0.1	-1	-1	9	-1	20	11	/
4	-0.1	-1	-1	-1	-0.1	-1	-1	9	-1	19	5	/
2	-0.1	-1	-1	-1	-0.1	-1	-1	4	-1	32	5	/
3	-0.1	-1	-1	-1	-0.1	-1	-1	9	-1	17	4	/
3	-0.1	-1	-1	-1	-0.1	-1	-1	8	-1	19	5	/
4	-0.1	-1	-1	-1	-0.1	-1	-1	11	-1	12	4	/
1	-0.1	-1	-1	-1	-0.1	-1	-1	8	-1	15	4	/
4	-0.1	-1	-1	-1	-0.1	-1	-1	10	-1	22	4	/
2	-0.1	-1	-1	-1	-0.1	-1	-1	10	-1	14	3	/
W	Re	Os	Ir	Pt	Au	S.Q.Hg	Tl	Pb	Bi	Th	U	/
5	0.1	-1	-1	-1	-0.1	-1	-1	11	-1	13	13	/
4	-0.1	-1	-1	-1	-0.1	-1	-1	9	-1	16	5	/
4	-0.1	-1	-1	-1	-0.1	-1	-1	9	-1	21	4	/
4	-0.1	-1	-1	-1	-0.1	-1	-1	10	-1	19	5	/
4	-0.1	-1	-1	-1	-0.1	-1	-1	9	-1	19	6	/
1	-0.1	-1	-1	-1	-0.1	-1	-1	7	-1	6	4	/
2	-0.1	-1	-1	-1	-0.1	-1	-1	5	-1	14	3	/

W	Re	Os	Ir	Pt	Au	S.Q.Hg	Tl	Pb	Bi	Th	U	/
5	-0.1	-1	-1	-1	-0.1	-1	-1	11	-1	21	3	/
6	0.2	-1	-1	-1	-0.1	-1	-1	10	-1	28	6	/
4	-0.1	-1	-1	-1	-0.1	-1	-1	13	-1	13	5	/
5	0.1	-1	-1	-1	-0.1	-1	-1	11	-1	14	8	/
6	-0.1	-1	-1	-1	-0.1	-1	-1	6	-1	26	6	/
3	-0.1	-1	-1	-1	-0.1	-1	-1	6	-1	27	4	/
6	-0.1	-1	-1	-1	-0.1	-1	-1	7	-1	23	5	/

W	Re	Os	Ir	Pt	Au	S.Q.Hg	Tl	Pb	Bi	Th	U	/
2	-0.1	-1	-1	-1	-0.1	-1	-1	11	-1	12	11	/
3	-0.1	-1	-1	-1	-0.1	-1	-1	11	-1	18	7	/
4	-0.1	-1	-1	-1	-0.1	-1	-1	8	-1	11	3	/
-1	-0.1	-1	-1	-1	-0.1	-1	-1	4	-1	10	4	/
-1	-0.1	-1	-1	-1	-0.1	-1	-1	1	-1	12	2	/
3	-0.1	-1	-1	-1	-0.1	-1	-1	4	-1	7	7	/
2	-0.1	-1	-1	-1	-0.1	-1	-1	4	-1	8	7	/

W	Re	Os	Ir	Pt	Au	S.Q.Hg	Tl	Pb	Bi	Th	U	/
-1	-0.1	-1	-1	-1	-0.1	-1	-1	2	-1	3	1	/
-1	-0.1	-1	-1	-1	-0.1	-1	-1	3	-1	8	1	/
-1	-0.1	-1	-1	-1	-0.1	-1	-1	1	-1	4	-1	/
-1	-0.1	-1	-1	-1	-0.1	-1	-1	1	-1	1	-1	/
-1	-0.1	-1	-1	-1	-0.1	-1	-1	1	-1	2	-1	/
-1	-0.1	-1	-1	-1	-0.1	-1	-1	1	-1	-1	-1	/
-1	-0.1	-1	-1	-1	-0.1	-1	-1	2	-1	-1	-1	/
-1	-0.1	-1	-1	-1	-0.1	-1	-1	1	-1	-1	-1	/
-1	-0.1	-1	-1	-1	-0.1	-1	-1	1	-1	-1	-1	/
-1	-0.1	-1	-1	-1	-0.1	-1	-1	1	-1	-1	-1	/
-1	-0.1	-1	-1	-1	-0.1	-1	-1	3	-1	4	-1	/
-1	-0.1	-1	-1	-1	-0.1	-1	-1	3	-1	5	-1	/
1	-0.1	-1	-1	-1	-0.1	-1	-1	3	-1	7	-1	/
1	-0.1	-1	-1	-1	-0.1	-1	-1	3	-1	3	-1	/
1	-0.1	-1	-1	-1	-0.1	-1	-1	4	-1	6	-1	/
1	-0.1	-1	-1	-1	-0.1	-1	-1	6	-1	9	2	/

2	-0.1	-1	-1	-1	-0.1	-1	-1	6	-1	10	3	/
2	-0.1	-1	-1	-1	-0.1	-1	-1	4	-1	9	2	/
W	Re	Os	Ir	Pt	Au	S.Q.Hg	Tl	Pb	Bi	Th	U	/
3	-0.1	-1	-1	-1	-0.1	-1	-1	3	-1	11	3	/
1	-0.1	-1	-1	-1	-0.1	-1	-1	3	-1	7	2	/
1	-0.1	-1	-1	-1	-0.1	-1	-1	3	-1	10	2	/
2	-0.1	-1	-1	-1	-0.1	-1	-1	4	-1	9	3	/
1	-0.1	-1	-1	-1	-0.1	-1	-1	3	-1	10	2	/
1	-0.1	-1	-1	-1	-0.1	-1	-1	3	-1	12	2	/
1	-0.1	-1	-1	-1	-0.1	-1	-1	3	-1	11	3	/
1	-0.1	-1	-1	-1	-0.1	-1	-1	2	-1	7	2	/
-1	-0.1	-1	-1	-1	-0.1	-1	-1	3	-1	9	2	/
1	-0.1	-1	-1	-1	-0.1	-1	-1	2	-1	11	2	/
-1	-0.1	-1	-1	-1	-0.1	-1	-1	3	-1	11	1	/
W	Re	Os	Ir	Pt	Au	S.Q.Hg	Tl	Pb	Bi	Th	U	/
-1	-0.1	-1	-1	-1	-0.1	-1	-1	6	-1	11	2	/
-1	-0.1	-1	-1	-1	-0.1	-1	-1	3	-1	11	2	/
-1	-0.1	-1	-1	-1	-0.1	-1	-1	2	-1	12	1	/
1	-0.1	-1	-1	-1	-0.1	-1	-1	2	-1	9	2	/
-1	-0.1	-1	-1	-1	-0.1	-1	-1	4	-1	12	1	/
-1	-0.1	-1	-1	-1	-0.1	-1	-1	2	-1	12	2	/
-1	-0.1	-1	-1	-1	-0.1	-1	-1	1	-1	8	2	/
-1	-0.1	-1	-1	-1	-0.1	-1	-1	12	-1	8	2	/
1	-0.1	-1	-1	-1	-0.1	-1	-1	3	-1	13	2	/
W	Re	Os	Ir	Pt	Au	S.Q.Hg	Tl	Pb	Bi	Th	U	/
-1	-0.1	-1	-1	-1	-0.1	-1	-1	4	-1	15	2	/
-1	-0.1	-1	-1	-1	-0.1	-1	-1	8	-1	4	1	/
-1	-0.1	-1	-1	-1	-0.1	-1	-1	8	-1	5	1	/
-1	-0.1	-1	-1	-1	-0.1	-1	-1	4	-1	2	-1	/
-1	-0.1	-1	-1	-1	-0.1	-1	-1	5	-1	2	-1	/
-1	-0.1	-1	-1	-1	-0.1	-1	-1	6	-1	-1	-1	/
-1	-0.1	-1	-1	-1	-0.1	-1	-1	6	-1	3	-1	/
-1	-0.1	-1	-1	-1	-0.1	-1	-1	14	-1	5	-1	/

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APPENDIX IV - STATISTICS

S.Q.Li		S.Q.Be		S.Q.Cl		S.Q.Sc		S.Q.Ti		V		Mn	
Mean	53.4777778	Mean	-20	Mean	4818.97778	Mean	-7.66666667	Mean	-80.9666667	Mean	840.1444444	Mean	1781.47778
Standard Error	2.98971302	Standard Error	0	Standard Error	747.137142	Standard Error	1.524498239	Standard Error	8.117142508	Standard Error	47.41166321	Standard Error	98.8268909
Median	58	Median	-20	Median	5226	Median	-10	Median	-100	Median	875.5	Median	1953
Mode	63	Mode	-20	Mode	-3000	Mode	-10	Mode	-100	Mode	1185	Mode	1984
Standard Deviation	28.3629081	Standard Deviation	0	Standard Deviation	7087.96528	Standard Deviation	14.46266017	Standard Deviation	77.00597525	Standard Deviation	449.7865302	Standard Deviation	937.554208
Sample Variance	804.454557	Sample Variance	0	Sample Variance	50239251.8	Sample Variance	209.1685393	Sample Variance	5929.920225	Sample Variance	202307.9227	Sample Variance	879007.893
Kurtosis	9.73505026	Kurtosis	#####	Kurtosis	-0.23028885	Kurtosis	58.68548201	Kurtosis	22.56913536	Kurtosis	-0.59687511	Kurtosis	1.33239163
Skewness	1.62122516	Skewness	#####	Skewness	0.54136556	Skewness	7.362896081	Skewness	4.550637641	Skewness	0.107128869	Skewness	0.35855852
Range	218	Range	0	Range	28521	Range	124	Range	515	Range	2004	Range	5127
Minimum	-10	Minimum	-20	Minimum	-3000	Minimum	-10	Minimum	-100	Minimum	103	Minimum	269
Maximum	208	Maximum	-20	Maximum	25521	Maximum	114	Maximum	415	Maximum	2107	Maximum	5396
Sum	4813	Sum	-1800	Sum	433708	Sum	-690	Sum	-7287	Sum	75613	Sum	160333
Count	90	Count	90	Count	90	Count	90	Count	90	Count	90	Count	90
Confidence Level(99.000%)	7.701006	Confidence Level(99.000%)	#NUM!	Confidence Level(99.000%)	1924.50164	Confidence Level(99.000%)	3.926855182	Confidence Level(99.000%)	20.90841583	Confidence Level(99.000%)	122.1245985	Confidence Level(99.000%)	254.561717

Co		Ni		Cu		Zn		Ga		Ge		As	
Mean	11.4333333	Mean	27.9111111	Mean	229.0555556	Mean	33.8222222	Mean	4.32222222	Mean	-0.61111111	Mean
Standard Error	0.6574361	Standard Error	2.05052561	Standard Error	13.55528156	Standard Error	3.12636798	Standard Error	1.64030293	Standard Error	0.105639299	Standard Error
Median	10	Median	23	Median	284	Median	24	Median	2	Median	-1	Median
Mode	7	Mode	17	Mode	284	Mode	-10	Mode	-1	Mode	-1	Mode
Standard Deviation	6.23698645	Standard Deviation	19.452994	Standard Deviation	128.5986922	Standard Deviation	29.6593308	Standard Deviation	15.5612799	Standard Deviation	1.002182388	Standard Deviation
Sample Variance	38.9	Sample Variance	378.418976	Sample Variance	16537.10924	Sample Variance	879.675905	Sample Variance	242.153433	Sample Variance	1.004369538	Sample Variance
Kurtosis	8.49966563	Kurtosis	10.575066	Kurtosis	-0.65280045	Kurtosis	4.03176742	Kurtosis	70.7974688	Kurtosis	11.19264795	Kurtosis
Skewness	2.21979102	Skewness	2.6319158	Skewness	-0.63067421	Skewness	1.40335137	Skewness	8.07524285	Skewness	3.052973366	Skewness
Range	42	Range	130	Range	545	Range	181	Range	143	Range	6	Range
Minimum	3	Minimum	7	Minimum	7	Minimum	-10	Minimum	-1	Minimum	-1	Minimum
Maximum	45	Maximum	137	Maximum	552	Maximum	171	Maximum	142	Maximum	5	Maximum
Sum	1029	Sum	2512	Sum	20615	Sum	3044	Sum	389	Sum	-55	Sum
Count	90	Count	90	Count	90	Count	90	Count	90	Count	90	Count
Confidence Level(99.000%)	1.69344659	Confidence Level(99.000%)	5.28181465	Confidence Level(99.000%)	34.9161621	Confidence Level(99.000%)	8.05300654	Confidence Level(99.000%)	4.2251489	Confidence Level(99.000%)	0.272109353	Confidence Level(99.000%)

Se		Br		I		Rb		Sr		Y	
31.71111111	Mean	-27.3111111	Mean	19.8111111	Mean	28.2555556	Mean	73.3333333	Mean	2024.24444	Mean	29.3777778
1.35232213	Standard Error	1.535566233	Standard Error	8.78259962	Standard Error	2.8924354	Standard Error	4.57515955	Standard Error	75.1899672	Standard Error	0.88298916
33	Median	-30	Median	-30	Median	15	Median	70.5	Median	2136.5	Median	30
40	Mode	-30	Mode	-30	Mode	14	Mode	65	Mode	2210	Mode	30
12.82925418	Standard Deviation	14.56766038	Standard Deviation	83.3190557	Standard Deviation	27.4400516	Standard Deviation	43.4037745	Standard Deviation	713.31466	Standard Deviation	8.37677069
164.5897628	Sample Variance	212.2167291	Sample Variance	6942.06504	Sample Variance	752.956429	Sample Variance	1883.88764	Sample Variance	508817.805	Sample Variance	70.1702871
-0.37723705	Kurtosis	26.66512149	Kurtosis	9.2373242	Kurtosis	0.85835877	Kurtosis	14.0151749	Kurtosis	1.2531295	Kurtosis	1.14311322
0.119440384	Skewness	5.295612061	Skewness	2.6122084	Skewness	1.34003955	Skewness	2.6673201	Skewness	0.42007088	Skewness	0.0453026
56	Range	84	Range	486	Range	124	Range	322	Range	4203	Range	51
10	Minimum	-30	Minimum	-30	Minimum	-10	Minimum	13	Minimum	483	Minimum	9
66	Maximum	54	Maximum	456	Maximum	114	Maximum	335	Maximum	4686	Maximum	60
2854	Sum	-2458	Sum	1783	Sum	2543	Sum	6600	Sum	182182	Sum	2644
90	Count	90	Count	90	Count	90	Count	90	Count	90	Count	90
3.483358016	Confidence Level(99.000%)	3.955364503	Confidence Level(99.000%)	22.6225232	Confidence Level(99.000%)	7.45043494	Confidence Level(99.000%)	11.7848539	Confidence Level(99.000%)	193.676913	Confidence Level(99.000%)	2.27443395

Zr		Nb		Mo		Ru		Rh		Pd		Ag	
Mean	80.4666667	Mean	2.52222222	Mean	36.6222222	Mean	-0.88888889	Mean	-1	Mean	-0.86666667	Mean	-0.19333333
Standard Error	4.19178794	Standard Error	0.24694274	Standard Error	2.65214105	Standard Error	0.055742507	Standard Error	0	Standard Error	0.059544673	Standard Error	0.006666667
Median	83.5	Median	3	Median	34	Median	-1	Median	-1	Median	-1	Median	-0.2
Mode	112	Mode	3	Mode	-1	Mode	-1	Mode	-1	Mode	-1	Mode	-0.2
Standard Deviation	39.7667921	Standard Deviation	2.34270456	Standard Deviation	25.1604191	Standard Deviation	0.528819853	Standard Deviation	0	Standard Deviation	0.564890364	Standard Deviation	0.063245553
Sample Variance	1581.39775	Sample Variance	5.48826467	Sample Variance	633.046692	Sample Variance	0.279650437	Sample Variance	0	Sample Variance	0.319101124	Sample Variance	0.004
Kurtosis	2.29254887	Kurtosis	27.235935	Kurtosis	3.02206516	Kurtosis	22.22111947	Kurtosis	#DIV/0!	Kurtosis	17.14203562	Kurtosis	90
Skewness	0.75442064	Skewness	3.80285899	Skewness	1.23912473	Skewness	4.785066781	Skewness	#DIV/0!	Skewness	4.234672127	Skewness	9.486832981
Range	244	Range	20	Range	134	Range	3	Range	0	Range	3	Range	0.6
Minimum	8	Minimum	-1	Minimum	-1	Minimum	-1	Minimum	-1	Minimum	-1	Minimum	-0.2
Maximum	252	Maximum	19	Maximum	133	Maximum	2	Maximum	-1	Maximum	2	Maximum	0.4
Sum	7242	Sum	227	Sum	3296	Sum	-80	Sum	-90	Sum	-78	Sum	-17.4
Count	90	Count	90	Count	90	Count	90	Count	90	Count	90	Count	90
Confidence Level(99.000%)	10.7973521	Confidence Level(99.000%)	0.63608364	Confidence Level(99.000%)	6.83147644	Confidence Level(99.000%)	0.143583473	Confidence Level(99.000%)	#NUM!	Confidence Level(99.000%)	0.153377223	Confidence Level(99.000%)	0.01717223

Cd		In		Sn		Sb		Te		Cs		Ba	
Mean	0.16	Mean	-0.2	Mean	-0.13333333	Mean	2.644444444	Mean	-0.42222222	Mean	-0.68888889	Mean
Standard Error	0.041168937	Standard Error	1.39301E-09	Standard Error	0.161299343	Standard Error	0.28191919	Standard Error	0.107145202	Standard Error	0.123053579	Standard Error
Median	0.3	Median	-0.2	Median	-1	Median	3	Median	-1	Median	-1	Median
Mode	-0.2	Mode	-0.2	Mode	-1	Mode	-1	Mode	-1	Mode	-1	Mode
Standard Deviation	0.390562832	Standard Deviation	1.32152E-08	Standard Deviation	1.53021993	Standard Deviation	2.67452027	Standard Deviation	1.016468637	Standard Deviation	1.167388755	Standard Deviation
Sample Variance	0.152539326	Sample Variance	1.74642E-16	Sample Variance	2.341573034	Sample Variance	7.153058677	Sample Variance	1.033208489	Sample Variance	1.362796504	Sample Variance
Kurtosis	-0.72899647	Kurtosis	-2.04597701	Kurtosis	4.46075353	Kurtosis	-0.96998709	Kurtosis	0.088897089	Kurtosis	35.64189504	Kurtosis
Skewness	0.583837922	Skewness	-1.01702958	Skewness	1.942115307	Skewness	-0.1098561	Skewness	1.326705389	Skewness	5.432395068	Skewness
Range	1.4	Range	0	Range	8	Range	10	Range	3	Range	9	Range
Minimum	-0.2	Minimum	-0.2	Minimum	-1	Minimum	-1	Minimum	-1	Minimum	-1	Minimum
Maximum	1.2	Maximum	-0.2	Maximum	7	Maximum	9	Maximum	2	Maximum	8	Maximum
Sum	14.4	Sum	-18	Sum	-12	Sum	238	Sum	-38	Sum	-62	Sum
Count	90	Count	90	Count	90	Count	90	Count	90	Count	90	Count
Confidence Level(99.000%)	0.10604437	Confidence Level(99.000%)	3.58815E-09	Confidence Level(99.000%)	0.415480416	Confidence Level(99.000%)	0.72617718	Confidence Level(99.000%)	0.27598831	Confidence Level(99.000%)	0.316965657	Confidence Level(99.000%)

La		Ce		Pr		Nd		Sm		Eu		
899.822222	Mean	45.7444444	Mean	104.933333	Mean	13.7	Mean	51.9888889	Mean	8.15555556	Mean	1.733333333
39.3870597	Standard Error	1.3577871	Standard Error	3.92767955	Standard Error	0.40884417	Standard Error	1.50043643	Standard Error	0.24270177	Standard Error	0.083314605
1011.5	Median	46	Median	110.5	Median	14	Median	53	Median	8	Median	2
1175	Mode	46	Mode	114	Mode	13	Mode	65	Mode	8	Mode	2
373.658457	Standard Deviation	12.8810994	Standard Deviation	37.2612399	Standard Deviation	3.87863639	Standard Deviation	14.2343898	Standard Deviation	2.30247113	Standard Deviation	0.790391739
139620.642	Sample Variance	165.922722	Sample Variance	1388.4	Sample Variance	15.0438202	Sample Variance	202.617853	Sample Variance	5.30137328	Sample Variance	0.624719101
2.43284859	Kurtosis	6.31548364	Kurtosis	1.99525714	Kurtosis	2.50685147	Kurtosis	1.37397754	Kurtosis	0.02838219	Kurtosis	5.072657149
0.54630191	Skewness	1.22604599	Skewness	0.31398415	Skewness	0.58223954	Skewness	0.34111323	Skewness	0.09929953	Skewness	-1.5781844
2247	Range	95	Range	230	Range	25	Range	87	Range	12	Range	5
250	Minimum	16	Minimum	28	Minimum	5	Minimum	19	Minimum	3	Minimum	-1
2497	Maximum	111	Maximum	258	Maximum	30	Maximum	106	Maximum	15	Maximum	4
80984	Sum	4117	Sum	9444	Sum	1233	Sum	4679	Sum	734	Sum	156
90	Count	90	Count	90	Count	90	Count	90	Count	90	Count	90
101.454548	Confidence Level(99.000%)	3.49743486	Confidence Level(99.000%)	10.1170526	Confidence Level(99.000%)	1.05311493	Confidence Level(99.000%)	3.86487594	Confidence Level(99.000%)	0.62515959	Confidence Level(99.000%)	0.214604634

Gd		Tb		Dy		Ho		Er		Tm		Yb	
Mean	9.066666667	Mean	0.333333333	Mean	6.03333333	Mean	0.466666667	Mean	2.188888889	Mean	-1	Mean	
Standard Error	0.263842725	Standard Error	0.110610608	Standard Error	0.18925572	Standard Error	0.115253615	Standard Error	0.103490209	Standard Error	0	Standard Error	
Median	9	Median	1	Median	6	Median	1	Median	2	Median	-1	Median	
Mode	9	Mode	1	Mode	7	Mode	1	Mode	2	Mode	-1	Mode	
Standard Deviation	2.503031869	Standard Deviation	1.049344365	Standard Deviation	1.79543741	Standard Deviation	1.093391795	Standard Deviation	0.981794327	Standard Deviation	0	Standard Deviation	
Sample Variance	6.265168539	Sample Variance	1.101123596	Sample Variance	3.22359551	Sample Variance	1.195505618	Sample Variance	0.9639201	Sample Variance	0	Sample Variance	
Kurtosis	-0.03578799	Kurtosis	-1.51109745	Kurtosis	0.44080168	Kurtosis	-1.345888	Kurtosis	2.414754355	Kurtosis	#DIV/0!	Kurtosis	
Skewness	-0.12130847	Skewness	-0.35139885	Skewness	0.06811418	Skewness	-0.38774538	Skewness	-0.90121969	Skewness	#DIV/0!	Skewness	
Range	12	Range	3	Range	10	Range	3	Range	6	Range	0	Range	
Minimum	3	Minimum	-1	Minimum	2	Minimum	-1	Minimum	-1	Minimum	-1	Minimum	
Maximum	15	Maximum	2	Maximum	12	Maximum	2	Maximum	5	Maximum	-1	Maximum	
Sum	816	Sum	30	Sum	543	Sum	42	Sum	197	Sum	-90	Sum	
Count	90	Count	90	Count	90	Count	90	Count	90	Count	90	Count	
Confidence Level(99.000%)	0.679615199	Confidence Level(99.000%)	0.284914622	Confidence Level(99.000%)	0.48749142	Confidence Level(99.000%)	0.296874239	Confidence Level(99.000%)	0.266573652	Confidence Level(99.000%)	#NUM!	Confidence Level(99.000%)	

Lu		Hf		Ta		W		Re		Os	
2.544444444	Mean	-0.97777778	Mean	1.177777778	Mean	-0.87777778	Mean	-0.38888889	Mean	-0.07	Mean	-1
0.102601749	Standard Error	0.022222222	Standard Error	0.150388749	Standard Error	0.072114103	Standard Error	0.155381568	Standard Error	0.00953998	Standard Error	0
3	Median	-1	Median	2	Median	-1	Median	-1	Median	-0.1	Median	-1
3	Mode	-1	Mode	2	Mode	-1	Mode	-1	Mode	-0.1	Mode	-1
0.973365655	Standard Deviation	0.210818511	Standard Deviation	1.426693969	Standard Deviation	0.684134453	Standard Deviation	1.474078988	Standard Deviation	0.09050421	Standard Deviation	0
0.947440699	Sample Variance	0.044444444	Sample Variance	2.03545568	Sample Variance	0.46803995	Sample Variance	2.172908864	Sample Variance	0.00819101	Sample Variance	0
2.278775965	Kurtosis	90	Kurtosis	0.30029275	Kurtosis	35.48449694	Kurtosis	4.555896476	Kurtosis	5.47660513	Kurtosis	#DIV/0!
-0.16511479	Skewness	9.486832981	Skewness	-0.15480969	Skewness	5.869860846	Skewness	2.360350043	Skewness	2.71207889	Skewness	#DIV/0!
7	Range	2	Range	7	Range	5	Range	6	Range	0.3	Range	0
-1	Minimum	-1	Minimum	-1	Minimum	-1	Minimum	-1	Minimum	-0.1	Minimum	-1
6	Maximum	1	Maximum	6	Maximum	4	Maximum	5	Maximum	0.2	Maximum	-1
229	Sum	-88	Sum	106	Sum	-79	Sum	-35	Sum	-6.3	Sum	-90
90	Count	90	Count	90	Count	90	Count	90	Count	90	Count	90
0.264285126	Confidence Level(99.000%)	0.057240767	Confidence Level(99.000%)	0.387371378	Confidence Level(99.000%)	0.185753996	Confidence Level(99.000%)	0.400237207	Confidence Level(99.000%)	0.02457341	Confidence Level(99.000%)	#NUM!

Ir		Pt		Au		S Q Hg		Tl		Pb		Bi	
Mean	-1	Mean	-1	Mean	-0.08111111	Mean	-1	Mean	-0.94444444	Mean	3.47777778	Mean	-1
Standard Error	0	Standard Error	0	Standard Error	0.016789394	Standard Error	0	Standard Error	0.039853386	Standard Error	0.4130299	Standard Error	0
Median	-1	Median	-1	Median	-0.1	Median	-1	Median	-1	Median	3	Median	-1
Mode	-1	Mode	-1	Mode	-0.1	Mode	-1	Mode	-1	Mode	-1	Mode	-1
Standard Deviation	0	Standard Deviation	0	Standard Deviation	0.159278178	Standard Deviation	0	Standard Deviation	0.378082421	Standard Deviation	3.91834572	Standard Deviation	0
Sample Variance	0	Sample Variance	0	Sample Variance	0.025369538	Sample Variance	0	Sample Variance	0.142946317	Sample Variance	15.3534332	Sample Variance	0
Kurtosis	#DIV/0!	Kurtosis	#DIV/0!	Kurtosis	86.78701451	Kurtosis	#DIV/0!	Kurtosis	49.51930741	Kurtosis	11.3566818	Kurtosis	#DIV/0!
Skewness	#DIV/0!	Skewness	#DIV/0!	Skewness	9.255036095	Skewness	#DIV/0!	Skewness	6.987686415	Skewness	2.39884802	Skewness	#DIV/0!
Range	0	Range	0	Range	1.5	Range	0	Range	3	Range	27	Range	0
Minimum	-1	Minimum	-1	Minimum	-0.1	Minimum	-1	Minimum	-1	Minimum	-1	Minimum	-1
Maximum	-1	Maximum	-1	Maximum	1.4	Maximum	-1	Maximum	2	Maximum	26	Maximum	-1
Sum	-90	Sum	-90	Sum	-7.3	Sum	-90	Sum	-85	Sum	313	Sum	-90
Count	90	Count	90	Count	90	Count	90	Count	90	Count	90	Count	90
Confidence Level(99.000%)	#NUM!	Confidence Level(99.000%)	#NUM!	Confidence Level(99.000%)	0.043246701	Confidence Level(99.000%)	#NUM!	Confidence Level(99.000%)	0.102655728	Confidence Level(99.000%)	1.06389658	Confidence Level(99.000%)	#NUM!

Th		*U*	
Mean	17.0111111	Mean	7.655555556
Standard Error	0.70143325	Standard Error	0.463165332
Median	17.5	Median	8
Mode	8	Mode	2
Standard Deviation	6.65438006	Standard Deviation	4.393972151
Sample Variance	44.280774	Sample Variance	19.30699126
Kurtosis	0.38207816	Kurtosis	-0.17402412
Skewness	0.18444824	Skewness	0.516395489
Range	36	Range	20
Minimum	4	Minimum	1
Maximum	40	Maximum	21
Sum	1531	Sum	689
Count	90	Count	90
Confidence Level(99.000%)	1.80677597	Confidence Level(99.000%)	1.193037249

S.Q.Li		S.Q.Be		S.Q.Cl		S.Q.Sc		S.Q.Ti		V		Mn	
Mean	-10	Mean	-20	Mean	-1809.81132	Mean	-10	Mean	-100	Mean	12.8879245	Mean	2225.5283
Standard Error	0	Standard Error	0	Standard Error	370.7663807	Standard Error	0	Standard Error	0	Standard Error	1.78447541	Standard Error	292.266152
Median	-10	Median	-20	Median	-3000	Median	-10	Median	-100	Median	11	Median	1651
Mode	-10	Mode	-20	Mode	-3000	Mode	-10	Mode	-100	Mode	12	Mode	1549
Standard Deviation	0	Standard Deviation	0	Standard Deviation	2699.219995	Standard Deviation	0	Standard Deviation	0	Standard Deviation	12.9911771	Standard Deviation	2127.7297
Sample Variance	0	Sample Variance	0	Sample Variance	7285788.579	Sample Variance	0	Sample Variance	0	Sample Variance	168.770682	Sample Variance	4527233.68
Kurtosis	#DIV/0!	Kurtosis	#DIV/0!	Kurtosis	2.189922025	Kurtosis	#DIV/0!	Kurtosis	#DIV/0!	Kurtosis	11.6552489	Kurtosis	7.42253652
Skewness	#DIV/0!	Skewness	#DIV/0!	Skewness	1.951905678	Skewness	#DIV/0!	Skewness	#DIV/0!	Skewness	2.58017147	Skewness	2.37343407
Range	0	Range	0	Range	9265	Range	0	Range	0	Range	83	Range	11358
Minimum	-10	Minimum	-20	Minimum	-3000	Minimum	-10	Minimum	-100	Minimum	-5	Minimum	76
Maximum	-10	Maximum	-20	Maximum	6265	Maximum	-10	Maximum	-100	Maximum	78	Maximum	11434
Sum	-530	Sum	-1060	Sum	-95920	Sum	-530	Sum	-5300	Sum	682	Sum	117953
Count	53	Count	53	Count	53	Count	53	Count	53	Count	53	Count	53
Largest(1)	-10	Largest(1)	-20	Largest(1)	6265	Largest(1)	-10	Largest(1)	-100	Largest(1)	78	Largest(1)	11434
Smallest(1)	-10	Smallest(1)	-20	Smallest(1)	-3000	Smallest(1)	-10	Smallest(1)	-100	Smallest(1)	-5	Smallest(1)	76
Confidence Level(99.000%)	#NUM!	Confidence Level(99.000%)	#NUM!	Confidence Level(99.000%)	955.0328402	Confidence Level(99.000%)	#NUM!	Confidence Level(99.000%)	#NUM!	Confidence Level(99.000%)	4.59651335	Confidence Level(99.000%)	752.829241

Co		Ni		Cu		Zn		Ga		Ge		As	
Mean	14.20754717	Mean	15.245283	Mean	-5	Mean	83.1886792	Mean	2.52830189	Mean	-1	Mean	-5
Standard Error	1.201522525	Standard Error	1.99707799	Standard Error	0	Standard Error	6.91268687	Standard Error	1.10303835	Standard Error	0	Standard Error	0
Median	13	Median	15	Median	-5	Median	74	Median	1	Median	-1	Median	-5
Mode	7	Mode	-5	Mode	-5	Mode	69	Mode	-1	Mode	-1	Mode	-5
Standard Deviation	8.74721602	Standard Deviation	14.5389472	Standard Deviation	0	Standard Deviation	50.3251186	Standard Deviation	8.03024038	Standard Deviation	0	Standard Deviation	0
Sample Variance	76.5137881	Sample Variance	211.380987	Sample Variance	0	Sample Variance	2532.61756	Sample Variance	64.4847605	Sample Variance	0	Sample Variance	0
Kurtosis	-0.41729896	Kurtosis	18.0045068	Kurtosis	#DIV/0!	Kurtosis	0.6580772	Kurtosis	33.7415496	Kurtosis	#DIV/0!	Kurtosis	#DIV/0!
Skewness	0.580638023	Skewness	3.1870702	Skewness	#DIV/0!	Skewness	0.81660234	Skewness	5.46200288	Skewness	#DIV/0!	Skewness	#DIV/0!
Range	37	Range	101	Range	0	Range	217	Range	55	Range	0	Range	0
Minimum	1	Minimum	-5	Minimum	-5	Minimum	-10	Minimum	-1	Minimum	-1	Minimum	-5
Maximum	38	Maximum	96	Maximum	-5	Maximum	207	Maximum	54	Maximum	-1	Maximum	-5
Sum	753	Sum	808	Sum	-265	Sum	4409	Sum	134	Sum	-53	Sum	-265
Count	53	Count	53	Count	53	Count	53	Count	53	Count	53	Count	53
Largest(1)	38	Largest(1)	96	Largest(1)	-5	Largest(1)	207	Largest(1)	54	Largest(1)	-1	Largest(1)	-5
Smallest(1)	1	Smallest(1)	-5	Smallest(1)	-5	Smallest(1)	-10	Smallest(1)	-1	Smallest(1)	-1	Smallest(1)	-5
Confidence Level(99.000%)	3.094923191	Confidence Level(99.000%)	5.14414242	Confidence Level(99.000%)	#NUM!	Confidence Level(99.000%)	17.8059369	Confidence Level(99.000%)	2.84124424	Confidence Level(99.000%)	#NUM!	Confidence Level(99.000%)	#NUM!

Se		*Br*		*I*		*Rb*		*Sr*		*Y*		*Zr*
Mean	-26.9056604	Mean	-14.3396226	Mean	-3.22641509	Mean	61.3207547	Mean	115.660377	Mean	5.56603774	Mean
Standard Error	2.167055106	Standard Error	4.316399971	Standard Error	1.612865885	Standard Error	3.94775143	Standard Error	12.2157653	Standard Error	0.76408375	Standard Error
Median	-30	Median	-30	Median	-10	Median	60	Median	88	Median	4	Median
Mode	-30	Mode	-30	Mode	-10	Mode	32	Mode	27	Mode	2	Mode
Standard Deviation	15.77639931	Standard Deviation	31.42386611	Standard Deviation	11.74184088	Standard Deviation	28.7400642	Standard Deviation	88.932114	Standard Deviation	5.56261364	Standard Deviation
Sample Variance	248.894775	Sample Variance	987.4593614	Sample Variance	137.8708273	Sample Variance	825.991292	Sample Variance	7908.9209	Sample Variance	30.9426705	Sample Variance
Kurtosis	23.85851148	Kurtosis	0.924312719	Kurtosis	0.172026975	Kurtosis	0.66317162	Kurtosis	0.22962563	Kurtosis	3.66224231	Kurtosis
Skewness	4.995446168	Skewness	1.621605518	Skewness	1.321173974	Skewness	0.85131141	Skewness	0.9368156	Skewness	1.80155698	Skewness
Range	83	Range	105	Range	40	Range	130	Range	359	Range	27	Range
Minimum	-30	Minimum	-30	Minimum	-10	Minimum	19	Minimum	9	Minimum	-1	Minimum
Maximum	53	Maximum	75	Maximum	30	Maximum	149	Maximum	368	Maximum	26	Maximum
Sum	-1426	Sum	-760	Sum	-171	Sum	3250	Sum	6130	Sum	295	Sum
Count	53	Count	53	Count	53	Count	53	Count	53	Count	53	Count
Largest(1)	53	Largest(1)	75	Largest(1)	30	Largest(1)	149	Largest(1)	368	Largest(1)	26	Largest(1)
Smallest(1)	-30	Smallest(1)	-30	Smallest(1)	-10	Smallest(1)	19	Smallest(1)	9	Smallest(1)	-1	Smallest(1)
Confidence Level(99.000%)	5.581975336	Confidence Level(99.000%)	11.11833202	Confidence Level(99.000%)	4.154475615	Confidence Level(99.000%)	10.1687544	Confidence Level(99.000%)	31.46579	Confidence Level(99.000%)	1.96815329	Confidence Level(99.000%)

Nb		Mo		Ru		Rh		Pd		Ag		Cd	
0.73584906	Mean	-0.90566038	Mean	-1	Mean	-1	Mean	-1	Mean	-1	Mean	-0.2	Mean	1.82641509
1.00836521	Standard Error	0.067422756	Standard Error	0	Standard Error	0	Standard Error	0	Standard Error	0	Standard Error	1.13538E-09	Standard Error	0.19682072
-1	Median	-1	Median	-1	Median	-1	Median	-1	Median	-1	Median	-0.2	Median	1.8
-1	Mode	-1	Mode	-1	Mode	-1	Mode	-1	Mode	-1	Mode	-0.2	Mode	1.8
7.34100953	Standard Deviation	0.49084507	Standard Deviation	0	Standard Deviation	0	Standard Deviation	0	Standard Deviation	0	Standard Deviation	8.26568E-09	Standard Deviation	1.43287647
53.8904209	Sample Variance	0.240928882	Sample Variance	0	Sample Variance	0	Sample Variance	0	Sample Variance	0	Sample Variance	6.83214E-17	Sample Variance	2.05313498
40.8009742	Kurtosis	28.22909711	Kurtosis	#DIV/0!	Kurtosis	#DIV/0!	Kurtosis	#DIV/0!	Kurtosis	#DIV/0!	Kurtosis	-2.08	Kurtosis	4.95740329
6.15261443	Skewness	5.308032713	Skewness	#DIV/0!	Skewness	#DIV/0!	Skewness	#DIV/0!	Skewness	#DIV/0!	Skewness	-1.02936508	Skewness	1.52053168
51	Range	3	Range	0	Range	0	Range	0	Range	0	Range	0	Range	8.1
-1	Minimum	-1	Minimum	-1	Minimum	-1	Minimum	-1	Minimum	-1	Minimum	-0.2	Minimum	-0.2
50	Maximum	2	Maximum	-1	Maximum	-1	Maximum	-1	Maximum	-1	Maximum	-0.2	Maximum	7.9
39	Sum	-48	Sum	-53	Sum	-53	Sum	-53	Sum	-53	Sum	-10.6	Sum	96.8
53	Count	53	Count	53	Count	53	Count	53	Count	53	Count	53	Count	53
50	Largest(1)	2	Largest(1)	-1	Largest(1)	-1	Largest(1)	-1	Largest(1)	-1	Largest(1)	-0.2	Largest(1)	7.9
-1	Smallest(1)	-1	Smallest(1)	-1	Smallest(1)	-1	Smallest(1)	-1	Smallest(1)	-1	Smallest(1)	-0.2	Smallest(1)	-0.2
2.59738191	Confidence Level(99.000%)	0.173669861	Confidence Level(99.000%)	#NUM!	Confidence Level(99.000%)	#NUM!	Confidence Level(99.000%)	#NUM!	Confidence Level(99.000%)	#NUM!	Confidence Level(99.000%)	2.92455E-09	Confidence Level(99.000%)	0.5069776

In		*Sn*		*Sb*		*Te*		*Cs*		*Ba*	
Mean	-0.2	Mean	-0.43396226	Mean	-1	Mean	-0.88679245	Mean	#DIV/0!	Mean	-0.41509434	Mean	892.6037736
Standard Error	1.13538E-09	Standard Error	0.141291559	Standard Error	0	Standard Error	0.064091153	Standard Error	65535	Standard Error	0.14815031	Standard Error	80.9022836
Median	-0.2	Median	-1	Median	-1	Median	-1	Median	#NUM!	Median	-1	Median	681
Mode	-0.2	Mode	-1	Mode	-1	Mode	-1	Mode	#N/A	Mode	-1	Mode	#N/A
Standard Deviation	8.26568E-09	Standard Deviation	1.028618079	Standard Deviation	0	Standard Deviation	0.466590636	Standard Deviation	#DIV/0!	Standard Deviation	1.06399035	Standard Deviation	588.9775149
Sample Variance	6.83214E-17	Sample Variance	1.058055152	Sample Variance	0	Sample Variance	0.217706821	Sample Variance	#DIV/0!	Sample Variance	1.13207547	Sample Variance	346894.5131
Kurtosis	-2.08	Kurtosis	0.33827017	Kurtosis	#DIV/0!	Kurtosis	14.13665882	Kurtosis	#DIV/0!	Kurtosis	0.30265158	Kurtosis	-0.22400143
Skewness	-1.02936508	Skewness	1.413200113	Skewness	#DIV/0!	Skewness	3.950223415	Skewness	#DIV/0!	Skewness	1.41191359	Skewness	0.829110532
Range	0	Range	3	Range	0	Range	2	Range	0	Range	3	Range	2375
Minimum	-0.2	Minimum	-1	Minimum	-1	Minimum	-1	Minimum	0	Minimum	-1	Minimum	112
Maximum	-0.2	Maximum	2	Maximum	-1	Maximum	1	Maximum	0	Maximum	2	Maximum	2487
Sum	-10.6	Sum	-23	Sum	-53	Sum	-47	Sum	0	Sum	-22	Sum	47308
Count	53	Count	53	Count	53	Count	53	Count	0	Count	53	Count	53
Largest(1)	-0.2	Largest(1)	2	Largest(1)	-1	Largest(1)	1	Largest(1)	#NUM!	Largest(1)	2	Largest(1)	2487
Smallest(1)	-0.2	Smallest(1)	-1	Smallest(1)	-1	Smallest(1)	-1	Smallest(1)	#NUM!	Smallest(1)	-1	Smallest(1)	112
Confidence Level(99.000%)	2.92455E-09	Confidence Level(99.000%)	0.363943675	Confidence Level(99.000%)	#NUM!	Confidence Level(99.000%)	0.165088204	Confidence Level(99.000%)	#DIV/0!	Confidence Level(99.000%)	0.37645903	Confidence Level(99.000%)	208.3908944

La		*Ce*		*Pr*		*Nd*		*Sm*		*Eu*		*Gd*	
Mean	7.94339623	Mean	16.3584906	Mean	1.11320755	Mean	7.54716981	Mean	0.49056604	Mean	-0.77358491	Mean	
Standard Error	1.19851598	Standard Error	2.36525011	Standard Error	0.35906302	Standard Error	1.09244869	Standard Error	0.25502588	Standard Error	0.099496225	Standard Error	
Median	5	Median	9	Median	1	Median	5	Median	-1	Median	-1	Median	
Mode	3	Mode	6	Mode	-1	Mode	3	Mode	-1	Mode	-1	Mode	
Standard Deviation	8.72532806	Standard Deviation	17.2192807	Standard Deviation	2.61401825	Standard Deviation	7.95314654	Standard Deviation	1.85661646	Standard Deviation	0.724343454	Standard Deviation	
Sample Variance	76.1313498	Sample Variance	296.503628	Sample Variance	6.83309144	Sample Variance	63.2525399	Sample Variance	3.44702467	Sample Variance	0.52467344	Sample Variance	
Kurtosis	3.66520054	Kurtosis	3.80619656	Kurtosis	1.37705507	Kurtosis	3.71589802	Kurtosis	0.61064302	Kurtosis	8.436057392	Kurtosis	
Skewness	1.96462037	Skewness	2.00504747	Skewness	1.29480089	Skewness	1.91750846	Skewness	1.09279653	Skewness	3.094832392	Skewness	
Range	37	Range	78	Range	10	Range	36	Range	7	Range	3	Range	
Minimum	-1	Minimum	-1	Minimum	-1	Minimum	-1	Minimum	-1	Minimum	-1	Minimum	
Maximum	36	Maximum	77	Maximum	9	Maximum	35	Maximum	6	Maximum	2	Maximum	
Sum	421	Sum	867	Sum	59	Sum	400	Sum	26	Sum	-41	Sum	
Count	53	Count	53	Count	53	Count	53	Count	53	Count	53	Count	
Largest(1)	36	Largest(1)	77	Largest(1)	9	Largest(1)	35	Largest(1)	6	Largest(1)	2	Largest(1)	
Smallest(1)	-1	Smallest(1)	-1	Smallest(1)	-1	Smallest(1)	-1	Smallest(1)	-1	Smallest(1)	-1	Smallest(1)	
Confidence Level(99.000%)	3.08717884	Confidence Level(99.000%)	6.09249287	Confidence Level(99.000%)	0.92488692	Confidence Level(99.000%)	2.81396705	Confidence Level(99.000%)	0.65690447	Confidence Level(99.000%)	0.256285811	Confidence Level(99.000%)	

Tb		Dy		Ho		Er		Tm		Yb		Lu	
0.62264151	Mean	-1	Mean	0.22641509	Mean	-1	Mean	-0.9245283	Mean	-1	Mean	-0.96226415	Mean	-1
0.29537609	Standard Error	0	Standard Error	0.21825524	Standard Error	0	Standard Error	0.052850919	Standard Error	0	Standard Error	0.037735849	Standard Error	0
-1	Median	-1	Median	-1	Median	-1	Median	-1	Median	-1	Median	-1	Median	-1
-1	Mode	-1	Mode	-1	Mode	-1	Mode	-1	Mode	-1	Mode	-1	Mode	-1
2.15037041	Standard Deviation	0	Standard Deviation	1.5889221	Standard Deviation	0	Standard Deviation	0.384760495	Standard Deviation	0	Standard Deviation	0.274721128	Standard Deviation	0
4.62409289	Sample Variance	0	Sample Variance	2.52467344	Sample Variance	0	Sample Variance	0.148040639	Sample Variance	0	Sample Variance	0.075471698	Sample Variance	0
1.33828086	Kurtosis	#DIV/0!	Kurtosis	0.31035953	Kurtosis	#DIV/0!	Kurtosis	23.84083045	Kurtosis	#DIV/0!	Kurtosis	53	Kurtosis	#DIV/0!
1.3205861	Skewness	#DIV/0!	Skewness	1.04725135	Skewness	#DIV/0!	Skewness	4.994194185	Skewness	#DIV/0!	Skewness	7.280109889	Skewness	#DIV/0!
8	Range	0	Range	6	Range	0	Range	2	Range	0	Range	2	Range	0
-1	Minimum	-1	Minimum	-1	Minimum	-1	Minimum	-1	Minimum	-1	Minimum	-1	Minimum	-1
7	Maximum	-1	Maximum	5	Maximum	-1	Maximum	1	Maximum	-1	Maximum	1	Maximum	-1
33	Sum	-53	Sum	12	Sum	-53	Sum	-49	Sum	-53	Sum	-51	Sum	-53
53	Count	53	Count	53	Count	53	Count	53	Count	53	Count	53	Count	53
7	Largest(1)	-1	Largest(1)	5	Largest(1)	-1	Largest(1)	1	Largest(1)	-1	Largest(1)	1	Largest(1)	-1
-1	Smallest(1)	-1	Smallest(1)	-1	Smallest(1)	-1	Smallest(1)	-1	Smallest(1)	-1	Smallest(1)	-1	Smallest(1)	-1
0.76083993	Confidence Level(99.000%)	#NUM!	Confidence Level(99.000%)	0.56218937	Confidence Level(99.000%)	#NUM!	Confidence Level(99.000%)	0.13613522	Confidence Level(99.000%)	#NUM!	Confidence Level(99.000%)	0.097201302	Confidence Level(99.000%)	#NUM!

Hf		*Ta*		*W*		*Re*		*Os*		*Ir*		*Pt*	
Mean	-0.94339623	Mean	-1	Mean	-1	Mean	-0.09433962	Mean	-1	Mean	-1	Mean	-1
Standard Error	0.056603774	Standard Error	0	Standard Error	0	Standard Error	0.005660377	Standard Error	0	Standard Error	0	Standard Error	0
Median	-1	Median	-1	Median	-1	Median	-0.1	Median	-1	Median	-1	Median	-1
Mode	-1	Mode	-1	Mode	-1	Mode	-0.1	Mode	-1	Mode	-1	Mode	-1
Standard Deviation	0.412081692	Standard Deviation	0	Standard Deviation	0	Standard Deviation	0.041208169	Standard Deviation	0	Standard Deviation	0	Standard Deviation	0
Sample Variance	0.169811321	Sample Variance	0	Sample Variance	0	Sample Variance	0.001698113	Sample Variance	0	Sample Variance	0	Sample Variance	0
Kurtosis	53	Kurtosis	#DIV/0!	Kurtosis	#DIV/0!	Kurtosis	53	Kurtosis	#DIV/0!	Kurtosis	#DIV/0!	Kurtosis	#DIV/0!
Skewness	7.280109889	Skewness	#DIV/0!	Skewness	#DIV/0!	Skewness	7.280109889	Skewness	#DIV/0!	Skewness	#DIV/0!	Skewness	#DIV/0!
Range	3	Range	0	Range	0	Range	0.3	Range	0	Range	0	Range	0
Minimum	-1	Minimum	-1	Minimum	-1	Minimum	-0.1	Minimum	-1	Minimum	-1	Minimum	-1
Maximum	2	Maximum	-1	Maximum	-1	Maximum	0.2	Maximum	-1	Maximum	-1	Maximum	-1
Sum	-50	Sum	-53	Sum	-53	Sum	-5	Sum	-53	Sum	-53	Sum	-53
Count	53	Count	53	Count	53	Count	53	Count	53	Count	53	Count	53
Largest(1)	2	Largest(1)	-1	Largest(1)	-1	Largest(1)	0.2	Largest(1)	-1	Largest(1)	-1	Largest(1)	-1
Smallest(1)	-1	Smallest(1)	-1	Smallest(1)	-1	Smallest(1)	-0.1	Smallest(1)	-1	Smallest(1)	-1	Smallest(1)	-1
Confidence Level(99.000%)	0.145801954	Confidence Level(99.000%)	#NUM!	Confidence Level(99.000%)	#NUM!	Confidence Level(99.000%)	0.014580195	Confidence Level(99.000%)	#NUM!	Confidence Level(99.000%)	#NUM!	Confidence Level(99.000%)	#NUM!

Au		*S Q.Hg*		*Tl*		*Pb*		*Bi*		*Th*		*U*	
Mean	-0.08301887	Mean	-1	Mean	-0.9245283	Mean	-0.49056604	Mean	-1	Mean	-0.66037736	Mean	-0.96226415
Standard Error	0.009613673	Standard Error	0	Standard Error	0.052850919	Standard Error	0.165234235	Standard Error	0	Standard Error	0.184570651	Standard Error	0.037735849
Median	-0.1	Median	-1	Median	-1	Median	-1	Median	-1	Median	-1	Median	-1
Mode	-0.1	Mode	-1	Mode	-1	Mode	-1	Mode	-1	Mode	-1	Mode	-1
Standard Deviation	0.069988595	Standard Deviation	0	Standard Deviation	0.384760495	Standard Deviation	1.202923386	Standard Deviation	0	Standard Deviation	1.343694623	Standard Deviation	0.274721128
Sample Variance	0.004898403	Sample Variance	0	Sample Variance	0.148040639	Sample Variance	1.447024673	Sample Variance	0	Sample Variance	1.805515239	Sample Variance	0.075471698
Kurtosis	14.13665882	Kurtosis	#DIV/0!	Kurtosis	23.84083045	Kurtosis	4.310294087	Kurtosis	#DIV/0!	Kurtosis	22.05006835	Kurtosis	53
Skewness	3.950223415	Skewness	#DIV/0!	Skewness	4.994194185	Skewness	2.284711783	Skewness	#DIV/0!	Skewness	4.532866786	Skewness	7.280109889
Range	0.3	Range	0	Range	2	Range	5	Range	0	Range	8	Range	2
Minimum	-0.1	Minimum	-1	Minimum	-1	Minimum	-1	Minimum	-1	Minimum	-1	Minimum	-1
Maximum	0.2	Maximum	-1	Maximum	1	Maximum	4	Maximum	-1	Maximum	7	Maximum	1
Sum	-4.4	Sum	-53	Sum	-49	Sum	-26	Sum	-53	Sum	-35	Sum	-51
Count	53	Count	53	Count	53	Count	53	Count	53	Count	53	Count	53
Largest(1)	0.2	Largest(1)	-1	Largest(1)	1	Largest(1)	4	Largest(1)	-1	Largest(1)	7	Largest(1)	1
Smallest(1)	-0.1	Smallest(1)	-1	Smallest(1)	-1	Smallest(1)	-1	Smallest(1)	-1	Smallest(1)	-1	Smallest(1)	-1
Confidence Level(99.000%)	0.024763231	Confidence Level(99.000%)	#NUM!	Confidence Level(99.000%)	0.13613522	Confidence Level(99.000%)	0.425616045	Confidence Level(99.000%)	#NUM!	Confidence Level(99.000%)	0.475423454	Confidence Level(99.000%)	0.097201302

S.Q.Li		S.Q.Be		S.Q.Cl		S.Q.Sc		S.Q.Ti		V		Mn	
Mean	63.6666667	Mean	-20	Mean	9870.63946	Mean	11.95918367	Mean	0.006802721	Mean	870.2108844	Mean	3286.190476
Standard Error	1.47239796	Standard Error	0	Standard Error	588.000446	Standard Error	2.344400665	Standard Error	10.49223478	Standard Error	19.40329029	Standard Error	75.43497345
Median	63	Median	-20	Median	9690	Median	-10	Median	-100	Median	895	Median	3425
Mode	64	Mode	-20	Mode	-3000	Mode	-10	Mode	-100	Mode	1199	Mode	3072
Standard Deviation	17.8518766	Standard Deviation	0	Standard Deviation	7129.12653	Standard Deviation	28.42434745	Standard Deviation	127.211586	Standard Deviation	235.2523923	Standard Deviation	914.6004467
Sample Variance	318.689498	Sample Variance	0	Sample Variance	50824445	Sample Variance	807.9435281	Sample Variance	16182.78762	Sample Variance	55343.6881	Sample Variance	836493.9772
Kurtosis	1.038765	Kurtosis	#DIV/0!	Kurtosis	14.209783	Kurtosis	-0.01421258	Kurtosis	-1.42465795	Kurtosis	1.415098874	Kurtosis	0.828326683
Skewness	0.54855668	Skewness	#DIV/0!	Skewness	2.23936942	Skewness	1.001383928	Skewness	0.589890055	Skewness	-0.94525278	Skewness	-0.88449816
Range	111	Range	0	Range	61334	Range	108	Range	389	Range	1313	Range	4546
Minimum	27	Minimum	-20	Minimum	-3000	Minimum	-10	Minimum	-100	Minimum	179	Minimum	494
Maximum	138	Maximum	-20	Maximum	58334	Maximum	98	Maximum	289	Maximum	1492	Maximum	5040
Sum	9359	Sum	-2940	Sum	1450984	Sum	1758	Sum	1	Sum	127921	Sum	483070
Count	147	Count	147	Count	147	Count	147	Count	147	Count	147	Count	147
Largest(1)	138	Largest(1)	-20	Largest(1)	58334	Largest(1)	98	Largest(1)	289	Largest(1)	1492	Largest(1)	5040
Smallest(1)	27	Smallest(1)	-20	Smallest(1)	-3000	Smallest(1)	-10	Smallest(1)	-100	Smallest(1)	179	Smallest(1)	494
Confidence Level(99.000%)	3.7926535	Confidence Level(99.000%)	#NUM!	Confidence Level(99.000%)	1514.59184	Confidence Level(99.000%)	6.038788148	Confidence Level(99.000%)	27.02626048	Confidence Level(99.000%)	49.97966483	Confidence Level(99.000%)	194.3080082

Co		Ni		Cu		Zn		Ga		Ge		As	
Mean	14.1292517	Mean	42.3673469	Mean	235.3945578	Mean	56.78231293	Mean	10.6598639	Mean	0.56462585	Mean
Standard Error	0.40730815	Standard Error	1.31115945	Standard Error	4.93778953	Standard Error	1.470947394	Standard Error	0.8564085	Standard Error	0.2262002	Standard Error
Median	13	Median	40	Median	242	Median	54	Median	7	Median	-1	Median
Mode	14	Mode	36	Mode	244	Mode	52	Mode	6	Mode	-1	Mode
Standard Deviation	4.93834883	Standard Deviation	15.8969635	Standard Deviation	59.86749728	Standard Deviation	17.83428936	Standard Deviation	10.3834013	Standard Deviation	2.74253165	Standard Deviation
Sample Variance	24.3872892	Sample Variance	252.713447	Sample Variance	3584.11723	Sample Variance	318.0618768	Sample Variance	107.815022	Sample Variance	7.52147982	Sample Variance
Kurtosis	0.42611441	Kurtosis	0.40305729	Kurtosis	2.35482357	Kurtosis	-0.29542025	Kurtosis	1.41567844	Kurtosis	20.1789039	Kurtosis
Skewness	0.82299805	Skewness	0.74677817	Skewness	-1.34157091	Skewness	0.289967711	Skewness	1.35900166	Skewness	3.91707014	Skewness
Range	27	Range	76	Range	320	Range	84	Range	47	Range	19	Range
Minimum	4	Minimum	16	Minimum	23	Minimum	20	Minimum	-1	Minimum	-1	Minimum
Maximum	31	Maximum	92	Maximum	343	Maximum	104	Maximum	46	Maximum	18	Maximum
Sum	2077	Sum	6228	Sum	34603	Sum	8347	Sum	1567	Sum	83	Sum
Count	147	Count	147	Count	147	Count	147	Count	147	Count	147	Count
Largest(1)	31	Largest(1)	92	Largest(1)	343	Largest(1)	104	Largest(1)	46	Largest(1)	18	Largest(1)
Smallest(1)	4	Smallest(1)	16	Smallest(1)	23	Smallest(1)	20	Smallest(1)	-1	Smallest(1)	-1	Smallest(1)
Confidence Level(99.000%)	1.04915838	Confidence Level(99.000%)	3.37732976	Confidence Level(99.000%)	12.71892463	Confidence Level(99.000%)	3.788917067	Confidence Level(99.000%)	2.20596658	Confidence Level(99.000%)	0.58265428	Confidence Level(99.000%)

Se		Br		I		Rb		Sr		Y		
37.6530612	Mean	-17.1088435	Mean	97.1632653	Mean	6.72789116	Mean	81.19727891	Mean	1792.013605	Mean	35.85034014
0.7632685	Standard Error	2.70915038	Standard Error	6.29102723	Standard Error	1.42218264	Standard Error	2.385513689	Standard Error	31.26253954	Standard Error	0.565968182
36	Median	-30	Median	70	Median	11	Median	83	Median	1897	Median	36
31	Mode	-30	Mode	-30	Mode	-10	Mode	93	Mode	1144	Mode	35
9.2541387	Standard Deviation	32.84670273	Standard Deviation	76.2746516	Standard Deviation	17.2430482	Standard Deviation	28.92281638	Standard Deviation	379.038148	Standard Deviation	6.86199953
85.639083	Sample Variance	1078.90588	Sample Variance	5817.82248	Sample Variance	297.32271	Sample Variance	836.5293076	Sample Variance	143669.9176	Sample Variance	47.08703755
0.09718466	Kurtosis	3.089731789	Kurtosis	3.57340924	Kurtosis	3.70640629	Kurtosis	-0.82798078	Kurtosis	-0.19884721	Kurtosis	0.191408118
0.57056888	Skewness	2.214528808	Skewness	1.61498756	Skewness	1.40953048	Skewness	-0.19645202	Skewness	-0.63065817	Skewness	-0.08744236
48	Range	118	Range	451	Range	92	Range	115	Range	1739	Range	36
20	Minimum	-30	Minimum	-30	Minimum	-10	Minimum	23	Minimum	785	Minimum	16
68	Maximum	88	Maximum	421	Maximum	82	Maximum	138	Maximum	2524	Maximum	52
5535	Sum	-2515	Sum	14283	Sum	989	Sum	11936	Sum	263426	Sum	5270
147	Count	147	Count	147	Count	147	Count	147	Count	147	Count	147
68	Largest(1)	88	Largest(1)	421	Largest(1)	82	Largest(1)	138	Largest(1)	2524	Largest(1)	52
20	Smallest(1)	-30	Smallest(1)	-30	Smallest(1)	-10	Smallest(1)	23	Smallest(1)	785	Smallest(1)	16
1.96605333	Confidence Level(99.000%)	6.978323055	Confidence Level(99.000%)	16.2046451	Confidence Level(99.000%)	3.66330714	Confidence Level(99.000%)	6.144688496	Confidence Level(99.000%)	80.52712836	Confidence Level(99.000%)	1.457840378

Zr		Nb		Mo		Ru		Rh		Pd		Ag	
Mean	106.1020408	Mean	4.87755102	Mean	34.1088435	Mean	-0.65306122	Mean	-1	Mean	0.863945578	Mean	0.05102041
Standard Error	2.007435036	Standard Error	0.150449876	Standard Error	1.22860515	Standard Error	0.068022551	Standard Error	0	Standard Error	0.119655119	Standard Error	0.02493804
Median	111	Median	5	Median	33	Median	-1	Median	-1	Median	1	Median	-0.2
Mode	104	Mode	4	Mode	20	Mode	-1	Mode	-1	Mode	-1	Mode	-0.2
Standard Deviation	24.33885633	Standard Deviation	1.82410781	Standard Deviation	14.8960458	Standard Deviation	0.824729605	Standard Deviation	0	Standard Deviation	1.450741217	Standard Deviation	0.30235771
Sample Variance	592.3799273	Sample Variance	3.327369304	Sample Variance	221.892182	Sample Variance	0.680178921	Sample Variance	0	Sample Variance	2.104650079	Sample Variance	0.09142018
Kurtosis	0.749917764	Kurtosis	-0.30628199	Kurtosis	1.70191121	Kurtosis	2.859719562	Kurtosis	#DIV/0!	Kurtosis	-0.97852823	Kurtosis	-1.18633531
Skewness	-0.82503107	Skewness	0.177013729	Skewness	0.82953937	Skewness	2.098148526	Skewness	#DIV/0!	Skewness	-0.05960609	Skewness	0.5919754
Range	123	Range	9	Range	93	Range	3	Range	0	Range	6	Range	1
Minimum	38	Minimum	1	Minimum	-1	Minimum	-1	Minimum	-1	Minimum	-1	Minimum	-0.2
Maximum	161	Maximum	10	Maximum	92	Maximum	2	Maximum	-1	Maximum	5	Maximum	0.8
Sum	15597	Sum	717	Sum	5014	Sum	-96	Sum	-147	Sum	127	Sum	7.5
Count	147	Count	147	Count	147	Count	147	Count	147	Count	147	Count	147
Largest(1)	161	Largest(1)	10	Largest(1)	92	Largest(1)	2	Largest(1)	-1	Largest(1)	5	Largest(1)	0.8
Smallest(1)	38	Smallest(1)	1	Smallest(1)	-1	Smallest(1)	-1	Smallest(1)	-1	Smallest(1)	-1	Smallest(1)	-0.2
Confidence Level(99.000%)	5.170820452	Confidence Level(99.000%)	0.387533985	Confidence Level(99.000%)	3.16468356	Confidence Level(99.000%)	0.175214835	Confidence Level(99.000%)	#NUM!	Confidence Level(99.000%)	0.308211785	Confidence Level(99.000%)	0.06423627

Cd		In		Sn		Sb		Te		Cs		Ba	
Mean	1.09319728	Mean	-0.15646259	Mean	-0.82993197	Mean	3.775510204	Mean	-0.17006803	Mean	0.442176871	Mean	
Standard Error	0.04381044	Standard Error	0.011342962	Standard Error	0.050506843	Standard Error	0.15287629	Standard Error	0.111901979	Standard Error	0.111799961	Standard Error	
Median	1	Median	-0.2	Median	-1	Median	4	Median	-1	Median	1	Median	
Mode	1	Mode	-0.2	Mode	-1	Mode	4	Mode	-1	Mode	-1	Mode	
Standard Deviation	0.53117341	Standard Deviation	0.137526101	Standard Deviation	0.612362925	Standard Deviation	1.853526511	Standard Deviation	1.356739391	Standard Deviation	1.355502493	Standard Deviation	
Sample Variance	0.28214519	Sample Variance	0.018913428	Sample Variance	0.374988352	Sample Variance	3.435560526	Sample Variance	1.840741776	Sample Variance	1.83738701	Sample Variance	
Kurtosis	1.55235944	Kurtosis	7.819759865	Kurtosis	11.26134476	Kurtosis	1.064140497	Kurtosis	0.838777274	Kurtosis	-1.66631412	Kurtosis	
Skewness	0.64674521	Skewness	3.019819377	Skewness	3.518149048	Skewness	-0.83039973	Skewness	1.398094763	Skewness	0.056981666	Skewness	
Range	3.3	Range	0.6	Range	3	Range	9	Range	5	Range	4	Range	
Minimum	-0.2	Minimum	-0.2	Minimum	-1	Minimum	-1	Minimum	-1	Minimum	-1	Minimum	
Maximum	3.1	Maximum	0.4	Maximum	2	Maximum	8	Maximum	4	Maximum	3	Maximum	
Sum	160.7	Sum	-23	Sum	-122	Sum	555	Sum	-25	Sum	65	Sum	
Count	147	Count	147	Count	147	Count	147	Count	147	Count	147	Count	
Largest(1)	3.1	Largest(1)	0.4	Largest(1)	2	Largest(1)	8	Largest(1)	4	Largest(1)	3	Largest(1)	
Smallest(1)	-0.2	Smallest(1)	-0.2	Smallest(1)	-1	Smallest(1)	-1	Smallest(1)	-1	Smallest(1)	-1	Smallest(1)	
Confidence Level(99.000%)	0.11284845	Confidence Level(99.000%)	0.029217592	Confidence Level(99.000%)	0.130097269	Confidence Level(99.000%)	0.393784024	Confidence Level(99.000%)	0.28824098	Confidence Level(99.000%)	0.287978199	Confidence Level(99.000%)	

La		*Ce*		*Pr*		*Nd*		*Sm*		*Eu*	
1137.265306	Mean	57.23129252	Mean	141.9659864	Mean	15.53741497	Mean	64.04761905	Mean	10.3945578	Mean	2.32653061
18.39329828	Standard Error	1.072398692	Standard Error	2.619584943	Standard Error	0.411971641	Standard Error	1.123877517	Standard Error	0.18406307	Standard Error	0.04646006
1201	Median	56	Median	140	Median	15	Median	63	Median	10	Median	2
1287	Mode	52	Mode	161	Mode	11	Mode	59	Mode	10	Mode	2
223.00689	Standard Deviation	13.00214315	Standard Deviation	31.76053702	Standard Deviation	4.994890689	Standard Deviation	13.62629073	Standard Deviation	2.23164606	Standard Deviation	0.56329833
49732.07297	Sample Variance	169.0557264	Sample Variance	1008.731712	Sample Variance	24.948933	Sample Variance	185.6757991	Sample Variance	4.98024415	Sample Variance	0.317305
1.008227822	Kurtosis	-0.20567616	Kurtosis	-0.14840633	Kurtosis	-0.71491938	Kurtosis	-0.00088089	Kurtosis	0.07760007	Kurtosis	0.22958429
-1.1890643	Skewness	0.074071948	Skewness	0.00368779	Skewness	0.123898106	Skewness	0.242869723	Skewness	0.08140988	Skewness	0.60220168
1093	Range	70	Range	169	Range	23	Range	71	Range	12	Range	3
482	Minimum	21	Minimum	59	Minimum	4	Minimum	31	Minimum	4	Minimum	1
1575	Maximum	91	Maximum	228	Maximum	27	Maximum	102	Maximum	16	Maximum	4
167178	Sum	8413	Sum	20869	Sum	2284	Sum	9415	Sum	1528	Sum	342
147	Count	147	Count	147	Count	147	Count	147	Count	147	Count	147
1575	Largest(1)	91	Largest(1)	228	Largest(1)	27	Largest(1)	102	Largest(1)	16	Largest(1)	4
482	Smallest(1)	21	Smallest(1)	59	Smallest(1)	4	Smallest(1)	31	Smallest(1)	4	Smallest(1)	1
47.37809254	Confidence Level(99.000%)	2.762321565	Confidence Level(99.000%)	6.747565792	Confidence Level(99.000%)	1.061170771	Confidence Level(99.000%)	2.894922499	Confidence Level(99.000%)	0.474116	Confidence Level(99.000%)	0.11967343

Gd		Tb		Dy		Ho		Er		Tm		Yb	
Mean	11.2244898	Mean	1.17687075	Mean	6.850340136	Mean	1.020408163	Mean	2.816326531	Mean	-1	Mean	3.040816327
Standard Error	0.22324099	Standard Error	0.06381518	Standard Error	0.113135825	Standard Error	0.065805679	Standard Error	0.061827244	Standard Error	0	Standard Error	0.076546918
Median	11	Median	1	Median	7	Median	1	Median	3	Median	-1	Median	3
Mode	10	Mode	1	Mode	7	Mode	1	Mode	3	Mode	-1	Mode	3
Standard Deviation	2.70665319	Standard Deviation	0.77371794	Standard Deviation	1.371698984	Standard Deviation	0.797851462	Standard Deviation	0.749615501	Standard Deviation	0	Standard Deviation	0.928082063
Sample Variance	7.32597148	Sample Variance	0.59863946	Sample Variance	1.881558103	Sample Variance	0.636566956	Sample Variance	0.561923399	Sample Variance	0	Sample Variance	0.861336315
Kurtosis	0.41193692	Kurtosis	2.29701309	Kurtosis	0.120460026	Kurtosis	1.874592041	Kurtosis	0.242421541	Kurtosis	#DIV/0!	Kurtosis	3.775342289
Skewness	0.40376418	Skewness	-1.30711302	Skewness	-0.24259296	Skewness	-1.26727154	Skewness	-0.17940232	Skewness	#DIV/0!	Skewness	-1.17620636
Range	16	Range	3	Range	7	Range	3	Range	4	Range	0	Range	6
Minimum	5	Minimum	-1	Minimum	3	Minimum	-1	Minimum	1	Minimum	-1	Minimum	-1
Maximum	21	Maximum	2	Maximum	10	Maximum	2	Maximum	5	Maximum	-1	Maximum	5
Sum	1650	Sum	173	Sum	1007	Sum	150	Sum	414	Sum	-147	Sum	447
Count	147	Count	147	Count	147	Count	147	Count	147	Count	147	Count	147
Largest(1)	21	Largest(1)	2	Largest(1)	10	Largest(1)	2	Largest(1)	5	Largest(1)	-1	Largest(1)	5
Smallest(1)	5	Smallest(1)	-1	Smallest(1)	3	Smallest(1)	-1	Smallest(1)	1	Smallest(1)	-1	Smallest(1)	-1
Confidence Level(99.000%)	0.57503185	Confidence Level(99.000%)	0.16437734	Confidence Level(99.000%)	0.291419164	Confidence Level(99.000%)	0.16950454	Confidence Level(99.000%)	0.15925675	Confidence Level(99.000%)	#NUM!	Confidence Level(99.000%)	0.197172194

Lu		*Hf*		*Ta*		*W*		*Re*		*Os*		*Ir*	
Mean	-0.96598639	Mean	1.56462585	Mean	0.789115646	Mean	1.360544218	Mean	-0.09319728	Mean	-1	Mean	-1
Standard Error	0.0244499	Standard Error	0.075437424	Standard Error	0.097604947	Standard Error	0.087917741	Standard Error	0.003434744	Standard Error	0	Standard Error	0
Median	-1	Median	2	Median	1	Median	2	Median	-0.1	Median	-1	Median	-1
Mode	-1	Mode	2	Mode	1	Mode	2	Mode	-0.1	Mode	-1	Mode	-1
Standard Deviation	0.296439279	Standard Deviation	0.914630154	Standard Deviation	1.183397087	Standard Deviation	1.065945964	Standard Deviation	0.041644062	Standard Deviation	0	Standard Deviation	0
Sample Variance	0.087876246	Sample Variance	0.836548318	Sample Variance	1.400428665	Sample Variance	1.136240798	Sample Variance	0.001734228	Sample Variance	0	Sample Variance	0
Kurtosis	82.26405315	Kurtosis	2.604814712	Kurtosis	-1.11620832	Kurtosis	0.780756293	Kurtosis	38.62124551	Kurtosis	#DIV/0!	Kurtosis	#DIV/0!
Skewness	8.978965023	Skewness	-1.63667296	Skewness	-0.56256904	Skewness	-1.07394421	Skewness	6.229042143	Skewness	#DIV/0!	Skewness	#DIV/0!
Range	3	Range	4	Range	4	Range	5	Range	0.3	Range	0	Range	0
Minimum	-1	Minimum	-1	Minimum	-1	Minimum	-1	Minimum	-0.1	Minimum	-1	Minimum	-1
Maximum	2	Maximum	3	Maximum	3	Maximum	4	Maximum	0.2	Maximum	-1	Maximum	-1
Sum	-142	Sum	230	Sum	116	Sum	200	Sum	-13.7	Sum	-147	Sum	-147
Count	147	Count	147	Count	147	Count	147	Count	147	Count	147	Count	147
Largest(1)	2	Largest(1)	3	Largest(1)	3	Largest(1)	4	Largest(1)	0.2	Largest(1)	-1	Largest(1)	-1
Smallest(1)	-1	Smallest(1)	-1	Smallest(1)	-1	Smallest(1)	-1	Smallest(1)	-0.1	Smallest(1)	-1	Smallest(1)	-1
Confidence Level(99.000%)	0.062978895	Confidence Level(99.000%)	0.194314319	Confidence Level(99.000%)	0.25141419	Confidence Level(99.000%)	0.226461552	Confidence Level(99.000%)	0.008847333	Confidence Level(99.000%)	#NUM!	Confidence Level(99.000%)	#NUM!

Pt		Au		S Q Hg		Tl		Pb		Bi		Th	
Mean	-1	Mean	-0.1	Mean	-1	Mean	-0.98639456	Mean	7.14285714	Mean	-1	Mean	19.12244898
Standard Error	0	Standard Error	6.27013E-10	Standard Error	0	Standard Error	0.013805442	Standard Error	0.22515384	Standard Error	0	Standard Error	0.463352513
Median	-1	Median	-0.1	Median	-1	Median	-1	Median	7	Median	-1	Median	19
Mode	-1	Mode	-0.1	Mode	-1	Mode	-1	Mode	8	Mode	-1	Mode	19
Standard Deviation	0	Standard Deviation	7.60213E-09	Standard Deviation	0	Standard Deviation	0.16495722	Standard Deviation	2.7298452	Standard Deviation	0	Standard Deviation	5.617850658
Sample Variance	0	Sample Variance	5.77924E-17	Sample Variance	0	Sample Variance	0.027210884	Sample Variance	7.45205479	Sample Variance	0	Sample Variance	31.56024602
Kurtosis	#DIV/0!	Kurtosis	-2.02777778	Kurtosis	#DIV/0!	Kurtosis	147	Kurtosis	2.32918405	Kurtosis	#DIV/0!	Kurtosis	-0.40058733
Skewness	#DIV/0!	Skewness	-1.01033894	Skewness	#DIV/0!	Skewness	12.12435565	Skewness	0.84934212	Skewness	#DIV/0!	Skewness	-0.19460265
Range	0	Range	0	Range	0	Range	2	Range	16	Range	0	Range	26
Minimum	-1	Minimum	-0.1	Minimum	-1	Minimum	-1	Minimum	1	Minimum	-1	Minimum	5
Maximum	-1	Maximum	-0.1	Maximum	-1	Maximum	1	Maximum	17	Maximum	-1	Maximum	31
Sum	-147	Sum	-14.7	Sum	-147	Sum	-145	Sum	1050	Sum	-147	Sum	2811
Count	147	Count	147	Count	147	Count	147	Count	147	Count	147	Count	147
Largest(1)	-1	Largest(1)	-0.1	Largest(1)	-1	Largest(1)	1	Largest(1)	17	Largest(1)	-1	Largest(1)	31
Smallest(1)	-1	Smallest(1)	-0.1	Smallest(1)	-1	Smallest(1)	-1	Smallest(1)	1	Smallest(1)	-1	Smallest(1)	5
Confidence Level(99.000%)	#NUM!	Confidence Level(99.000%)	1.61508E-09	Confidence Level(99.000%)	#NUM!	Confidence Level(99.000%)	0.035045368	Confidence Level(99.000%)	0.57995902	Confidence Level(99.000%)	#NUM!	Confidence Level(99.000%)	1.193519395

U	
Mean	3.6122449
Standard Error	0.15092946
Median	4
Mode	4
Standard Deviation	1.82992245
Sample Variance	3.34861616
Kurtosis	0.66008523
Skewness	0.02526653
Range	10
Minimum	-1
Maximum	9
Sum	531
Count	147
Largest(1)	9
Smallest(1)	-1
Confidence Level(99.000%)	0.38876931

S Q Li		S Q Be		S Q Cl		S Q Sc		S Q Ti		V		Mn	
Mean	36.72123894	Mean	-20	Mean	9353.75221	Mean	6.65929204	Mean	-84.1371681	Mean	552.1283186	Mean	1381.44248
Standard Error	1.355664311	Standard Error	0	Standard Error	455.694596	Standard Error	1.54595781	Standard Error	3.848172504	Standard Error	24.96208306	Standard Error	49.46238
Median	42	Median	-20	Median	9202.5	Median	-10	Median	-100	Median	655	Median	1456.5
Mode	-10	Mode	-20	Mode	-3000	Mode	-10	Mode	-100	Mode	760	Mode	1679
Standard Deviation	20.38010337	Standard Deviation	0	Standard Deviation	6850.59192	Standard Deviation	23.240842	Standard Deviation	57.85071776	Standard Deviation	375.2623928	Standard Deviation	743.582618
Sample Variance	415.3486136	Sample Variance	0	Sample Variance	46930609.6	Sample Variance	540.136735	Sample Variance	3346.705546	Sample Variance	140821.8635	Sample Variance	552915.11
Kurtosis	0.651800835	Kurtosis	#DIV/0!	Kurtosis	0.40380299	Kurtosis	0.95627496	Kurtosis	9.995466218	Kurtosis	-0.24850666	Kurtosis	14.255236
Skewness	-1.07661062	Skewness	#DIV/0!	Skewness	0.15059255	Skewness	1.27417698	Skewness	3.425562641	Skewness	0.261318534	Skewness	2.25750462
Range	86	Range	0	Range	33650	Range	101	Range	278	Range	2054	Range	6245
Minimum	-10	Minimum	-20	Minimum	-3000	Minimum	-10	Minimum	-100	Minimum	-5	Minimum	208
Maximum	76	Maximum	-20	Maximum	30650	Maximum	91	Maximum	178	Maximum	2049	Maximum	6453
Sum	8299	Sum	-4520	Sum	2113948	Sum	1505	Sum	-19015	Sum	124781	Sum	312206
Count	226	Count	226	Count	226	Count	226	Count	226	Count	226	Count	226
Largest(1)	76	Largest(1)	-20	Largest(1)	30650	Largest(1)	91	Largest(1)	178	Largest(1)	2049	Largest(1)	6453
Smallest(1)	-10	Smallest(1)	-20	Smallest(1)	-3000	Smallest(1)	-10	Smallest(1)	-100	Smallest(1)	-5	Smallest(1)	208
Confidence Level(99.000%)	3.491966922	Confidence Level(99.000%)	#NUM!	Confidence Level(99.000%)	1173.79387	Confidence Level(99.000%)	3.98213149	Confidence Level(99.000%)	9.912255553	Confidence Level(99.000%)	64.29819509	Confidence Level(99.000%)	127.406906

Co		Ni		Cu		Zn		Ga		Ge		As	
Mean	8.41150442	Mean	23.3761062	Mean	137.8274336	Mean	58.1548673	Mean	11.92035398	Mean	-0.07079646	Mean	
Standard Error	0.3048842	Standard Error	0.87014314	Standard Error	6.016307354	Standard Error	2.53800834	Standard Error	0.655639875	Standard Error	0.14293367	Standard Error	
Median	8	Median	22	Median	173.5	Median	54	Median	10	Median	-1	Median	
Mode	7	Mode	19	Mode	-5	Mode	51	Mode	2	Mode	-1	Mode	
Standard Deviation	4.58341459	Standard Deviation	13.0811197	Standard Deviation	90.44493156	Standard Deviation	38.1546316	Standard Deviation	9.856428556	Standard Deviation	2.14876425	Standard Deviation	
Sample Variance	21.0076893	Sample Variance	171.115693	Sample Variance	8180.285644	Sample Variance	1455.77591	Sample Variance	97.14918387	Sample Variance	4.61718781	Sample Variance	
Kurtosis	9.58573025	Kurtosis	0.39922346	Kurtosis	-1.51167662	Kurtosis	28.0950804	Kurtosis	-0.52931415	Kurtosis	19.1940098	Kurtosis	
Skewness	2.12119295	Skewness	0.26594744	Skewness	-0.21364525	Skewness	4.44079137	Skewness	0.614341463	Skewness	3.91892528	Skewness	
Range	40	Range	71	Range	308	Range	356	Range	43	Range	14	Range	
Minimum	-1	Minimum	-5	Minimum	-5	Minimum	11	Minimum	-1	Minimum	-1	Minimum	
Maximum	39	Maximum	66	Maximum	303	Maximum	367	Maximum	42	Maximum	13	Maximum	
Sum	1901	Sum	5283	Sum	31149	Sum	13143	Sum	2694	Sum	-16	Sum	
Count	226	Count	226	Count	226	Count	226	Count	226	Count	226	Count	
Largest(1)	39	Largest(1)	66	Largest(1)	303	Largest(1)	367	Largest(1)	42	Largest(1)	13	Largest(1)	
Smallest(1)	-1	Smallest(1)	-5	Smallest(1)	-5	Smallest(1)	11	Smallest(1)	-1	Smallest(1)	-1	Smallest(1)	
Confidence Level(99.000%)	0.78533125	Confidence Level(99.000%)	2.24134473	Confidence Level(99.000%)	15.49701213	Confidence Level(99.000%)	6.53748948	Confidence Level(99.000%)	1.688819819	Confidence Level(99.000%)	0.36817349	Confidence Level(99.000%)	

Se		Br		I		Rb		Sr		Y	
30.75221239	Mean	-23.1283186	Mean	64.6902655	Mean	16.6637168	Mean	50.74336283	Mean	1168.380531	Mean	22.84513274
1.228089177	Standard Error	1.448610216	Standard Error	4.42823763	Standard Error	1.73898807	Standard Error	1.508632095	Standard Error	33.87253372	Standard Error	0.602152475
31	Median	-30	Median	63	Median	13	Median	51	Median	1296.5	Median	24
-5	Mode	-30	Mode	-30	Mode	-10	Mode	61	Mode	1389	Mode	25
18.46222858	Standard Deviation	21.77738672	Standard Deviation	66.5710087	Standard Deviation	26.142723	Standard Deviation	22.67971341	Standard Deviation	509.2158384	Standard Deviation	9.052336628
340.853884	Sample Variance	474.2545723	Sample Variance	4431.69919	Sample Variance	683.441967	Sample Variance	514.3694002	Sample Variance	259300.7701	Sample Variance	81.94479843
-0.49650843	Kurtosis	7.154619279	Kurtosis	0.705958	Kurtosis	2.66986399	Kurtosis	-0.25949363	Kurtosis	-0.42047389	Kurtosis	0.666177957
0.141951493	Skewness	2.958410115	Skewness	0.45052596	Skewness	1.2805113	Skewness	0.41967501	Skewness	-0.88795761	Skewness	-0.8922049
82	Range	100	Range	377	Range	160	Range	109	Range	2190	Range	42
-5	Minimum	-30	Minimum	-30	Minimum	-10	Minimum	6	Minimum	59	Minimum	-1
77	Maximum	70	Maximum	347	Maximum	150	Maximum	115	Maximum	2249	Maximum	41
6950	Sum	-5227	Sum	14620	Sum	3766	Sum	11468	Sum	264054	Sum	5163
226	Count	226	Count	226	Count	226	Count	226	Count	226	Count	226
77	Largest(1)	70	Largest(1)	347	Largest(1)	150	Largest(1)	115	Largest(1)	2249	Largest(1)	41
-5	Smallest(1)	-30	Smallest(1)	-30	Smallest(1)	-10	Smallest(1)	6	Smallest(1)	59	Smallest(1)	-1
3.163354489	Confidence Level(99.000%)	3.731380193	Confidence Level(99.000%)	11.4064073	Confidence Level(99.000%)	4.47934548	Confidence Level(99.000%)	3.885986619	Confidence Level(99.000%)	87.25004144	Confidence Level(99.000%)	1.551045129

Zr		Nb		Mo		Ru		Rh		Pd		Ag	
Mean	59.96460177	Mean	2.33628319	Mean	34.9070796	Mean	-0.68141593	Mean	-0.94247788	Mean	1.19911504	Mean
Standard Error	1.901889124	Standard Error	0.09960023	Standard Error	1.98450759	Standard Error	0.051154219	Standard Error	0.041659814	Standard Error	0.10753699	Standard Error
Median	62.5	Median	3	Median	30	Median	-1	Median	-1	Median	2	Median
Mode	58	Mode	3	Mode	-1	Mode	-1	Mode	-1	Mode	2	Mode
Standard Deviation	28.59166287	Standard Deviation	1.49731979	Standard Deviation	29.8336908	Standard Deviation	0.769016535	Standard Deviation	0.626284324	Standard Deviation	1.6166355	Standard Deviation
Sample Variance	817.4831858	Sample Variance	2.24196657	Sample Variance	890.049105	Sample Variance	0.591386431	Sample Variance	0.392232055	Sample Variance	2.61351032	Sample Variance
Kurtosis	-0.31099866	Kurtosis	2.23862528	Kurtosis	0.7434569	Kurtosis	2.813731313	Kurtosis	132.7337248	Kurtosis	4.82646527	Kurtosis
Skewness	-0.02165539	Skewness	0.03539659	Skewness	0.85933658	Skewness	2.105258683	Skewness	11.34915271	Skewness	0.73649828	Skewness
Range	150	Range	10	Range	161	Range	3	Range	8	Range	12	Range
Minimum	-1	Minimum	-1	Minimum	-1	Minimum	-1	Minimum	-1	Minimum	-1	Minimum
Maximum	149	Maximum	9	Maximum	160	Maximum	2	Maximum	7	Maximum	11	Maximum
Sum	13552	Sum	528	Sum	7889	Sum	-154	Sum	-213	Sum	271	Sum
Count	226	Count	226	Count	226	Count	226	Count	226	Count	226	Count
Largest(1)	149	Largest(1)	9	Largest(1)	160	Largest(1)	2	Largest(1)	7	Largest(1)	11	Largest(1)
Smallest(1)	-1	Smallest(1)	-1	Smallest(1)	-1	Smallest(1)	-1	Smallest(1)	-1	Smallest(1)	-1	Smallest(1)
Confidence Level(99.000%)	4.898951647	Confidence Level(99.000%)	0.25655371	Confidence Level(99.000%)	5.11176315	Confidence Level(99.000%)	0.131764803	Confidence Level(99.000%)	0.107308786	Confidence Level(99.000%)	0.2769975	Confidence Level(99.000%)

Cd		In		Sn		Sb		Te		Cs	
0.069026549	Mean	0.78584071	Mean	-0.05442478	Mean	-0.88938053	Mean	3.469026549	Mean	-0.21681416	Mean	-0.90707965
0.022049906	Standard Error	0.04759603	Standard Error	0.013080625	Standard Error	0.070150073	Standard Error	0.225262141	Standard Error	0.091589523	Standard Error	0.031057618
-0.2	Median	0.6	Median	-0.2	Median	-1	Median	3	Median	-1	Median	-1
-0.2	Mode	0.4	Mode	-0.2	Mode	-1	Mode	-1	Mode	-1	Mode	-1
0.331482769	Standard Deviation	0.71552526	Standard Deviation	0.196644917	Standard Deviation	1.054586835	Standard Deviation	3.386432529	Standard Deviation	1.376591776	Standard Deviation	0.466898383
0.109880826	Sample Variance	0.5119764	Sample Variance	0.038669223	Sample Variance	1.112153392	Sample Variance	11.46792527	Sample Variance	1.895004916	Sample Variance	0.2179941
-0.99385441	Kurtosis	8.29025732	Kurtosis	-1.4125409	Kurtosis	179.3196863	Kurtosis	-0.59700488	Kurtosis	2.005196571	Kurtosis	25.16492894
0.648792585	Skewness	1.99702908	Skewness	0.6592907	Skewness	12.92119872	Skewness	0.344780723	Skewness	1.675348192	Skewness	5.072931249
1.2	Range	5.3	Range	0.7	Range	15	Range	13	Range	6	Range	3
-0.2	Minimum	-0.2	Minimum	-0.2	Minimum	-1	Minimum	-1	Minimum	-1	Minimum	-1
1	Maximum	5.1	Maximum	0.5	Maximum	14	Maximum	12	Maximum	5	Maximum	2
15.6	Sum	177.6	Sum	-12.3	Sum	-201	Sum	784	Sum	-49	Sum	-205
226	Count	226	Count	226	Count	226	Count	226	Count	226	Count	226
1	Largest(1)	5.1	Largest(1)	0.5	Largest(1)	14	Largest(1)	12	Largest(1)	5	Largest(1)	2
-0.2	Smallest(1)	-0.2	Smallest(1)	-0.2	Smallest(1)	-1	Smallest(1)	-1	Smallest(1)	-1	Smallest(1)	-1
0.056796908	Confidence Level(99.000%)	0.1225995	Confidence Level(99.000%)	0.033893526	Confidence Level(99.000%)	0.180694979	Confidence Level(99.000%)	0.580237998	Confidence Level(99.000%)	0.235867937	Confidence Level(99.000%)	0.079999286

Ba		La		Ce		Pr		Nd		Sm		Eu	
Mean	602.2256637	Mean	36.83628319	Mean	85.22123894	Mean	11.36725664	Mean	42.7920354	Mean	6.986725664	Mean	
Standard Error	13.8615329	Standard Error	0.949739316	Standard Error	2.394367933	Standard Error	0.305070803	Standard Error	1.154710975	Standard Error	0.204134269	Standard Error	
Median	671.5	Median	39	Median	90.5	Median	12	Median	45	Median	7	Median	
Mode	651	Mode	38	Mode	89	Mode	11	Mode	44	Mode	7	Mode	
Standard Deviation	208.3845323	Standard Deviation	14.27771262	Standard Deviation	35.99524278	Standard Deviation	4.586219794	Standard Deviation	17.35911233	Standard Deviation	3.068810973	Standard Deviation	
Sample Variance	43424.11329	Sample Variance	203.8530777	Sample Variance	1295.657502	Sample Variance	21.033412	Sample Variance	301.3387807	Sample Variance	9.417600787	Sample Variance	
Kurtosis	-1.13359688	Kurtosis	0.916920448	Kurtosis	0.006639839	Kurtosis	1.060250386	Kurtosis	0.683701154	Kurtosis	0.977055445	Kurtosis	
Skewness	-0.26808788	Skewness	-1.0277913	Skewness	-0.66381484	Skewness	-0.96671894	Skewness	-0.80067331	Skewness	-0.95740572	Skewness	
Range	889	Range	67	Range	165	Range	23	Range	83	Range	13	Range	
Minimum	172	Minimum	-1	Minimum	-1	Minimum	-1	Minimum	-1	Minimum	-1	Minimum	
Maximum	1061	Maximum	66	Maximum	164	Maximum	22	Maximum	82	Maximum	12	Maximum	
Sum	136103	Sum	8325	Sum	19260	Sum	2569	Sum	9671	Sum	1579	Sum	
Count	226	Count	226	Count	226	Count	226	Count	226	Count	226	Count	
Largest(1)	1061	Largest(1)	66	Largest(1)	164	Largest(1)	22	Largest(1)	82	Largest(1)	12	Largest(1)	
Smallest(1)	172	Smallest(1)	-1	Smallest(1)	-1	Smallest(1)	-1	Smallest(1)	-1	Smallest(1)	-1	Smallest(1)	
Confidence Level(99.000%)	35.70501486	Confidence Level(99.000%)	2.44637131	Confidence Level(99.000%)	6.167495562	Confidence Level(99.000%)	0.785811903	Confidence Level(99.000%)	2.974344385	Confidence Level(99.000%)	0.525816097	Confidence Level(99.000%)	

Gd		Tb		Dy		Ho		Er		Tm		
1.446902655	Mean	7.969026549	Mean	0.376106195	Mean	4.557522124	Mean	-0.16371681	Mean	1.601769912	Mean	-1
0.070656819	Standard Error	0.223179103	Standard Error	0.071096341	Standard Error	0.140637138	Standard Error	0.067972821	Standard Error	0.07809926	Standard Error	0
2	Median	8	Median	1	Median	5	Median	-1	Median	2	Median	-1
2	Mode	9	Mode	1	Mode	5	Mode	-1	Mode	2	Mode	-1
1.062204901	Standard Deviation	3.355117607	Standard Deviation	1.06881237	Standard Deviation	2.114239777	Standard Deviation	1.021855562	Standard Deviation	1.174089325	Standard Deviation	0
1.128279253	Sample Variance	11.25681416	Sample Variance	1.142359882	Sample Variance	4.470009833	Sample Variance	1.044188791	Sample Variance	1.378485742	Sample Variance	0
0.989989818	Kurtosis	1.147384474	Kurtosis	-1.44793282	Kurtosis	1.4500481	Kurtosis	-1.63928782	Kurtosis	0.704032948	Kurtosis	#DIV/0!
-1.352679	Skewness	-0.8946953	Skewness	-0.33434081	Skewness	-1.10427506	Skewness	0.459687241	Skewness	-1.06164805	Skewness	#DIV/0!
4	Range	16	Range	3	Range	10	Range	3	Range	5	Range	0
-1	Minimum	-1	Minimum	-1	Minimum	-1	Minimum	-1	Minimum	-1	Minimum	-1
3	Maximum	15	Maximum	2	Maximum	9	Maximum	2	Maximum	4	Maximum	-1
327	Sum	1801	Sum	85	Sum	1030	Sum	-37	Sum	362	Sum	-226
226	Count	226	Count	226	Count	226	Count	226	Count	226	Count	226
3	Largest(1)	15	Largest(1)	2	Largest(1)	9	Largest(1)	2	Largest(1)	4	Largest(1)	-1
-1	Smallest(1)	-1	Smallest(1)	-1	Smallest(1)	-1	Smallest(1)	-1	Smallest(1)	-1	Smallest(1)	-1
0.182000273	Confidence Level(99.000%)	0.574872438	Confidence Level(99.000%)	0.18313241	Confidence Level(99.000%)	0.362257994	Confidence Level(99.000%)	0.175086738	Confidence Level(99.000%)	0.20117077	Confidence Level(99.000%)	#NUM!

Yb		Lu		Hf		Ta		W		Re		Os	
Mean	1.650442478	Mean	-1	Mean	0.473451327	Mean	-0.59734513	Mean	2.066371681	Mean	-0.09292035	Mean	-1
Standard Error	0.083599589	Standard Error	0	Standard Error	0.085109763	Standard Error	0.060538132	Standard Error	0.118163983	Standard Error	0.00290347	Standard Error	0
Median	2	Median	-1	Median	1	Median	-1	Median	2	Median	-0.1	Median	-1
Mode	2	Mode	-1	Mode	-1	Mode	-1	Mode	2	Mode	-0.1	Mode	-1
Standard Deviation	1.256777105	Standard Deviation	0	Standard Deviation	1.27948029	Standard Deviation	0.910087681	Standard Deviation	1.776393881	Standard Deviation	0.043648727	Standard Deviation	0
Sample Variance	1.579488692	Sample Variance	0	Sample Variance	1.637069813	Sample Variance	0.828259587	Sample Variance	3.155575221	Sample Variance	0.001905211	Sample Variance	0
Kurtosis	0.390737497	Kurtosis	#DIV/0!	Kurtosis	-1.6156704	Kurtosis	2.607154665	Kurtosis	-0.2625526	Kurtosis	37.4755407	Kurtosis	#DIV/0!
Skewness	-0.98187747	Skewness	#DIV/0!	Skewness	-0.08169076	Skewness	2.005523792	Skewness	-0.26433272	Skewness	6.191027609	Skewness	#DIV/0!
Range	5	Range	0	Range	4	Range	4	Range	8	Range	0.3	Range	0
Minimum	-1	Minimum	-1	Minimum	-1	Minimum	-1	Minimum	-1	Minimum	-0.1	Minimum	-1
Maximum	4	Maximum	-1	Maximum	3	Maximum	3	Maximum	7	Maximum	0.2	Maximum	-1
Sum	373	Sum	-226	Sum	107	Sum	-135	Sum	467	Sum	-21	Sum	-226
Count	226	Count	226	Count	226	Count	226	Count	226	Count	226	Count	226
Largest(1)	4	Largest(1)	-1	Largest(1)	3	Largest(1)	3	Largest(1)	7	Largest(1)	0.2	Largest(1)	-1
Smallest(1)	-1	Smallest(1)	-1	Smallest(1)	-1	Smallest(1)	-1	Smallest(1)	-1	Smallest(1)	-0.1	Smallest(1)	-1
Confidence Level(99.000%)	0.215338656	Confidence Level(99.000%)	#NUM!	Confidence Level(99.000%)	0.219228665	Confidence Level(99.000%)	0.15593621	Confidence Level(99.000%)	0.304370815	Confidence Level(99.000%)	0.007478859	Confidence Level(99.000%)	#NUM!

Ir		Pt		Au		S.Q.Hg		Tl		Pb		Bi	
Mean	-1	Mean	-1	Mean	-0.08318584	Mean	-1	Mean	-1	Mean	6.4159292	Mean	-1
Standard Error	0	Standard Error	0	Standard Error	0.004557307	Standard Error	0	Standard Error	0	Standard Error	0.22423924	Standard Error	0
Median	-1	Median	-1	Median	-0.1	Median	-1	Median	-1	Median	6	Median	-1
Mode	-1	Mode	-1	Mode	-0.1	Mode	-1	Mode	-1	Mode	3	Mode	-1
Standard Deviation	0	Standard Deviation	0	Standard Deviation	0.068511352	Standard Deviation	0	Standard Deviation	0	Standard Deviation	3.371055	Standard Deviation	0
Sample Variance	0	Sample Variance	0	Sample Variance	0.004693805	Sample Variance	0	Sample Variance	0	Sample Variance	11.3640118	Sample Variance	0
Kurtosis	#DIV/0!	Kurtosis	#DIV/0!	Kurtosis	13.18521914	Kurtosis	#DIV/0!	Kurtosis	#DIV/0!	Kurtosis	0.12079331	Kurtosis	#DIV/0!
Skewness	#DIV/0!	Skewness	#DIV/0!	Skewness	3.87162039	Skewness	#DIV/0!	Skewness	#DIV/0!	Skewness	0.55848832	Skewness	#DIV/0!
Range	0	Range	0	Range	0.3	Range	0	Range	0	Range	0	Range	0
Minimum	-1	Minimum	-1	Minimum	-0.1	Minimum	-1	Minimum	-1	Minimum	-1	Minimum	-1
Maximum	-1	Maximum	-1	Maximum	0.2	Maximum	-1	Maximum	-1	Maximum	-1	Maximum	-1
Sum	-226	Sum	-226	Sum	-18.8	Sum	-226	Sum	-226	Sum	1450	Sum	-226
Count	226	Count	226	Count	226	Count	226	Count	226	Count	226	Count	226
Largest(1)	-1	Largest(1)	-1	Largest(1)	0.2	Largest(1)	-1	Largest(1)	-1	Largest(1)	-1	Largest(1)	-1
Smallest(1)	-1	Smallest(1)	-1	Smallest(1)	-0.1	Smallest(1)	-1	Smallest(1)	-1	Smallest(1)	1	Smallest(1)	-1
Confidence Level(99.000%)	#NUM!	Confidence Level(99.000%)	#NUM!	Confidence Level(99.000%)	0.011738869	Confidence Level(99.000%)	#NUM!	Confidence Level(99.000%)	#NUM!	Confidence Level(99.000%)	0.57760318	Confidence Level(99.000%)	#NUM!

Th		*U*	
Mean	13.7566372	Mean	4.09734513
Standard Error	0.442697	Standard Error	0.20097395
Median	14	Median	4
Mode	14	Mode	2
Standard Deviation	6.65519515	Standard Deviation	3.02130098
Sample Variance	44.2916224	Sample Variance	9.12825959
Kurtosis	0.116047	Kurtosis	0.10851206
Skewness	0.22407809	Skewness	0.40257351
Range	34	Range	14
Minimum	-1	Minimum	-1
Maximum	33	Maximum	13
Sum	3109	Sum	926
Count	226	Count	226
Largest(1)	33	Largest(1)	13
Smallest(1)	-1	Smallest(1)	-1
Confidence Level(99.000%)	1.1403142	Confidence Level(99.000%)	0.51767564

Ontario Ministry of Northern Development and Mines

Declaration of Assessment Work Performed on Mining Land

Mining Act, Subsection 65(2) and 66(3), R.S.O. 1990

Transaction Number (office use): W9760.00350
Assessment Files Research Imaging

Personal information collected under the Mining Act. Under section 8 of the Mining Act, the information is required to correspond with the mining land holder. Questions about this collection may be directed to the Ministry of Northern Development and Mines, 6th Floor, 933 Ramsey Lake Road, Sudbury, Ontario P3E 6B5.

42A15NW0028 2.17658 NEWMARKET

900

Instructions: - For work performed on Crown Lands before recording a claim, use form 0240.
- Please type or print in ink.

2.17658

1. Recorded holder(s) (Attach a list if necessary)

Name	Client Number
FALCONBRIDGE LTD.	130679
Address	Telephone Number
P.O. BOX 1140, 571 MONETA AVE.	(705) 267-1188
TIMMINS, ONTARIO P4N 7H9	Fax Number (705) 264-6080
Name	Client Number
Address	Telephone Number
	Fax Number

2. Type of work performed: Check (✓) and report on only ONE of the following groups for this declaration.

☒ Geotechnical: prospecting, surveys, assays and work under section 18 (regs) ☐ Physical: drilling, stripping, trenching and associated assays ☐ Rehabilitation

Work Type	Office Use
GEOCHEMICAL SOIL SAMPLING	Commodity
	Total $ Value of Work Claimed $16,522
Dates Work Performed From 08 Day / 07 Month / 96 Year To 25 Day / 11 Month / 96 Year	NTS Reference
Global Positioning System Data (if available) — Township/Area: AURORA, CALVERT, DUFF	Mining Division: Porcupine
M or G-Plan Number	Resident Geologist District: Timmins

Please remember to: - obtain a work permit from the Ministry of Natural Resources as required;
- provide proper notice to surface rights holders before starting work;
- complete and attach a Statement of Costs, form 0212;
- provide a map showing contiguous mining lands that are linked for assigning work;
- include two copies of your technical report.

3. Person or companies who prepared the technical report (Attach a list if necessary)

Name	Telephone Number
ANDRÉ TAILLEFER	(705) 267-1188
Address	Fax Number
P.O. BOX 1140, 571 MONETA AVE. TIMMINS, ONT. P4N 7H9	(705) 264-6080
Name	Telephone Number
Address	Fax Number
Name	Telephone Number
Address	Fax Number

RECEIVED SEP 19 1997 11:30 GEOSCIENCE ASSESSMENT OFFICE

RECEIVED SEP 18 1997 9:45 AM PORCUPINE MINING DIVISION

4. Certification by Recorded Holder or Agent

I, CHRISTINE PETCH (Print Name), do hereby certify that I have personal knowledge of the facts set forth in this Declaration of Assessment Work having caused the work to be performed or witnessed the same during or after its completion and, to the best of my knowledge, the annexed report is true.

Signature of Recorded Holder or Agent	Date
C. Petch	SEPT. 17, 1997
Agent's Address	Telephone Number / Fax Number
P.O. BOX 1140, 571 MONETA AVE, TIMMINS, ONT. P4N 7H9	(705) 267-1188 / (705) 264-6080

0241 (02/96)

Approved December 17/97.

5. **Work to be recorded and distributed.** Work can only be assigned to claims that are contiguous (adjoining) to the mining land where work was performed, at the time work was performed. A map showing the contiguous link must accompany this form.

	Mining Claim Number. Or if work was done on other eligible mining land, show in this column the location number indicated on the claim map.	Number of Claim Units. For other mining land, list hectares.	Value of work performed on this claim or other mining land.	Value of work applied to this claim.	Value of work assigned to other mining claims.	Bank. Value of work to be distributed at a future date.
			$26, 825	N/A	$24,000	$2,825
eg	TB 7827	16 ha	0	$24,000	0	0
eg	1234567	12	$ 8, 892	$ 4,000	0	$4,892
eg	1234568	2				
1	DUF96-03 P 1201957 50%	6 ✓	3426	ϕ	3,426	-
2 X	P 1200934 50%	15 ✓	3427	ϕ	3,427	-
3						
4 X	DUF 95-02 1200929	16 ✓	4,643	ϕ	4,643	-
5 X	CAL95-01 1201366	4 ✓	1,889	ϕ	1,889	-
6						
7	AUR95-02 1200983 85%	8 ✓	2,666	ϕ	144	2522
8	1200960 15%	16	471	ϕ	471	-
9						
10	1200982	1	-	400	-	-
11	1200985	12	-	4800	-	-
12	1200980	16	-	6400	-	-
13	1200981	6	-	2400	-	-
14						
15						
		Column Totals	16,522	14,000	14,000	2,522

I, CHRISTINE PETCH (Print Full Name), do hereby certify that the above work credits are eligible under subsection 7 (1) of the Assessment Work Regulation 6/96 for assignment to contiguous claims or for application to the claim where the work was done.

Signature of Recorded Holder or Agent (Authorized in Writing) C. Petch — Date SEPT. 17, 1997

6. **Instructions for cutting back credits that are not approved.**

Some of the credits claimed in this declaration may be cut back. Please check (✓) in the boxes below to show how you wish to prioritize the deletion of credits:

- ☐ 1. Credits are to be cut back from the Bank first, followed by option 2 or 3 or 4 as indicated.
- ☐ 2. Credits are to be cut back starting with the claims listed last, working backwards; or
- ☐ 3. Credits are to be cut back equally over all claims listed in this declaration; or
- ☒ 4. Credits are to be cut back as prioritized on the attached appendix or as follows (describe):

P1200983 (banked)

Note: If you have not indicated how your credits are to be deleted, credits will be cut back from the Bank first, followed by option number 2 if necessary.

For Office Use Only

Received Stamp: RECEIVED SEP 18 1997

Deemed Approved Date	Date Notification Sent
Date Approved	Total Value of Credit Approved

Approved for Recording by Mining Recorder (Signature)

Ontario Ministry of Northern Development and Mines

Statement of Costs for Assessment Credit

Transaction Number (office use): W9760.00350

Personal information collected on this form is obtained under the authority of subsection 6(1) of the Assessment Work Regulation 6/96. Under section 8 of the Mining Act, the information is a public record. This information will be used to review the assessment work and correspond with the mining land holder. Questions about this collection should be directed to the Chief Mining Recorder, Ministry of Northern Development and Mines, 6th Floor, 933 Ramsey Lake Road, Sudbury, Ontario, P3E 6B5.

2.17658

Work Type	Units of Work Depending on the type of work, list the number of hours/days worked, metres of drilling, kilometres of grid line, number of samples, etc.	Cost Per Unit of work	Total Cost
SOIL SAMPLING	28 PERSON DAYS WORKED	$100	2,800
LAB ANALYSES	516 SAMPLES	$22.50	11,610
Associated Costs (e.g. supplies, mobilization and demobilization).			
SAMPLE BAGS (516 ~~SAMPLES~~ SAMPLES)		0.41	212
Transportation Costs			
TRUCK RENTAL (1 MONTH)			500
Food and Lodging Costs			
FOOD ($800) + HOTEL ($600)			1,400
		Total Value of Assessment Work	16,522

RECEIVED
SEP 18 1997
PORCUPINE MINING DIVISION

Calculations of Filing Discounts:

1. Work filed within two years of performance is claimed at 100% of the above Total Value of Assessment Work.
2. If work is filed after two years and up to five years after performance, it can only be claimed at 50% of the Total Value of Assessment Work. If this situation applies to your claims, use the calculation below:

TOTAL VALUE OF ASSESSMENT WORK × 0.50 = Total $ value of worked claimed.

Note:
- Work older than 5 years is not eligible for credit.
- A recorded holder may be required to verify expenditures claimed in this statement of costs within 45 days of a request for verification and/or correction/clarification. If verification and/or correction/clarification is not made, the Minister may reject all or part of the assessment work submitted.

RECEIVED
SEP 19 1997 11:30
GEOSCIENCE ASSESSMENT OFFICE

Certification verifying costs:

I, CHRISTINE PETCH (please print full name), do hereby certify, that the amounts shown are as accurate as may reasonably be determined and the costs were incurred while conducting assessment work on the lands indicated on the accompanying Declaration of Work form as SR. FIELD GEOLOGIST (recorded holder, agent, or state company position with signing authority) I am authorized to make this certification.

Signature	Date
C. Petch	SEPT. 17/1997

0212 (02/96)

Ontario

Ministry of Northern Development and Mines

Ministère du Développement du Nord et des Mines

Geoscience Assessment Office
933 Ramsey Lake Road
6th Floor
Sudbury, Ontario
P3E 6B5

Telephone: (888) 415-9846
Fax: (705) 670-5863

December 9, 1997

Christine Petch
FALCONBRIDGE LIMITED
P.O. Box 1140, 571 Moneta Ave.
Timmins, ONTARIO
P4N-7H9

Dear Sir or Madam:

Submission Number: 2.17658

Subject: Transaction Number(s):		**Status**
	W9760.00350	Approval

We have reviewed your Assessment Work submission with the above noted Transaction Number(s). The attached summary page(s) indicate the results of the review. WE RECOMMEND YOU READ THIS SUMMARY FOR THE DETAILS PERTAINING TO YOUR ASSESSMENT WORK.

If the status for a transaction is a 45 Day Notice, the summary will outline the reasons for the notice, and any steps you can take to remedy deficiencies. The 90-day deemed approval provision, subsection 6(7) of the Assessment Work Regulation, will no longer be in effect for assessment work which has received a 45 Day Notice.

Please note any revisions must be submitted in DUPLICATE to the Geoscience Assessment Office, by the response date on the summary.

If you have any questions regarding this correspondence, please contact Steve Beneteau by e-mail at benetest@epo.ndm.gov.on.ca or by telephone at (705) 670-5855.

Yours sincerely,

ORIGINAL SIGNED BY
Blair Kite
Supervisor, Geoscience Assessment Office
Mining Lands Section

Correspondence ID: 11638
Copy for: Assessment Library

Work Report Assessment Results

Submission Number: 2.17658

Date Correspondence Sent: December 09, 1997 **Assessor:** Steve Beneteau

Transaction Number	First Claim Number	Township(s) / Area(s)	Status	Approval Date
W9760.00350	1201957	AURORA, CALVERT, DUFF	Approval	December 08, 1997

Section:
13 Geochemical GCHEM

Correspondence to:
Resident Geologist
South Porcupine, ON

Assessment Files Library
Sudbury, ON

Recorded Holder(s) and/or Agent(s):
Christine Petch
FALCONBRIDGE LIMITED
Timmins, ONTARIO

Correspondence ID: 11638

Pyne Twp.

VI

V

IV

III

II

I

Newmarket Twp

Edwards Twp

Calvert Twp.

12 11 10 9 8 7 6 5 4 3 2 1

To Contour 780' To Land Sault Rapids

To Contour 790 Ft.

Abitibi

S.R.O.

1201911
(6 units)

1200978
(6 UNITS)

1200979
16 UNITS
(12 UNITS)

1200980

1200981
6 UNITS

(16 UNITS)

To 790FT to Iroquois Falls G.S. (Assumed)

THE INFORMATION THAT APPEARS ON THIS MAP HAS BEEN COMPILED FROM VARIOUS SOURCES AND ACCURACY IS NOT GUARANTEED. THOSE WISHING TO STAKE MINING CLAIMS SHOULD CONSULT WITH THE MINING RECORDER, MINISTRY OF NORTHERN DEVELOPMENT AND MINES FOR ADDITIONAL INFORMATION ON THE STATUS OF THE LANDS SHOWN HEREON.

GEM

2.17658
GCHEM

THE TOWNSHIP OF AURORA

DISTRICT OF COCHRANE

PORCUPINE MINING DIVISION

SCALE 1-INCH = 40 CHAINS

LEGEND

REGISTERED PLAN OF SUBDIVISION	
PATENTED LAND	(P)
CROWN LAND SALE	C.S.
LEASES	(L)
LOCATED LAND	Loc.
LICENSE OF OCCUPATION	L.O.
ROADS	
IMPROVED ROADS	
RAILWAYS	
POWER LINES	
MARSH OR MUSKEG	
TRAIL	
WATER POWER LEASE	W.P.L.

NOTES

400' Surface rights reservation around all lakes and rivers.

Flooding area shown thus

Flooding rights reserved to H.E.P.C. To Contour 790' and 780'

WASTE DISPOSAL SITE LEACHATE ATTENUATION ZONE
NOTICE RECEIVED APRIL 6, 1990

~~THIS TWP SUBJECT TO FOREST ACTIVITY IN 1991/92.~~
~~FURTHER INFORMATION AVAILABLE ON FILE.~~

(ST) SNOWMOBILE TRAIL
NOTICE RECEIVED 92-DEC-09

~~THIS TWP. IS SUBJECT TO FOREST ACTIVITY IN 1993/94. (CHEM. SPRAY JULY 20 1993)~~

DATE OF ISSUE

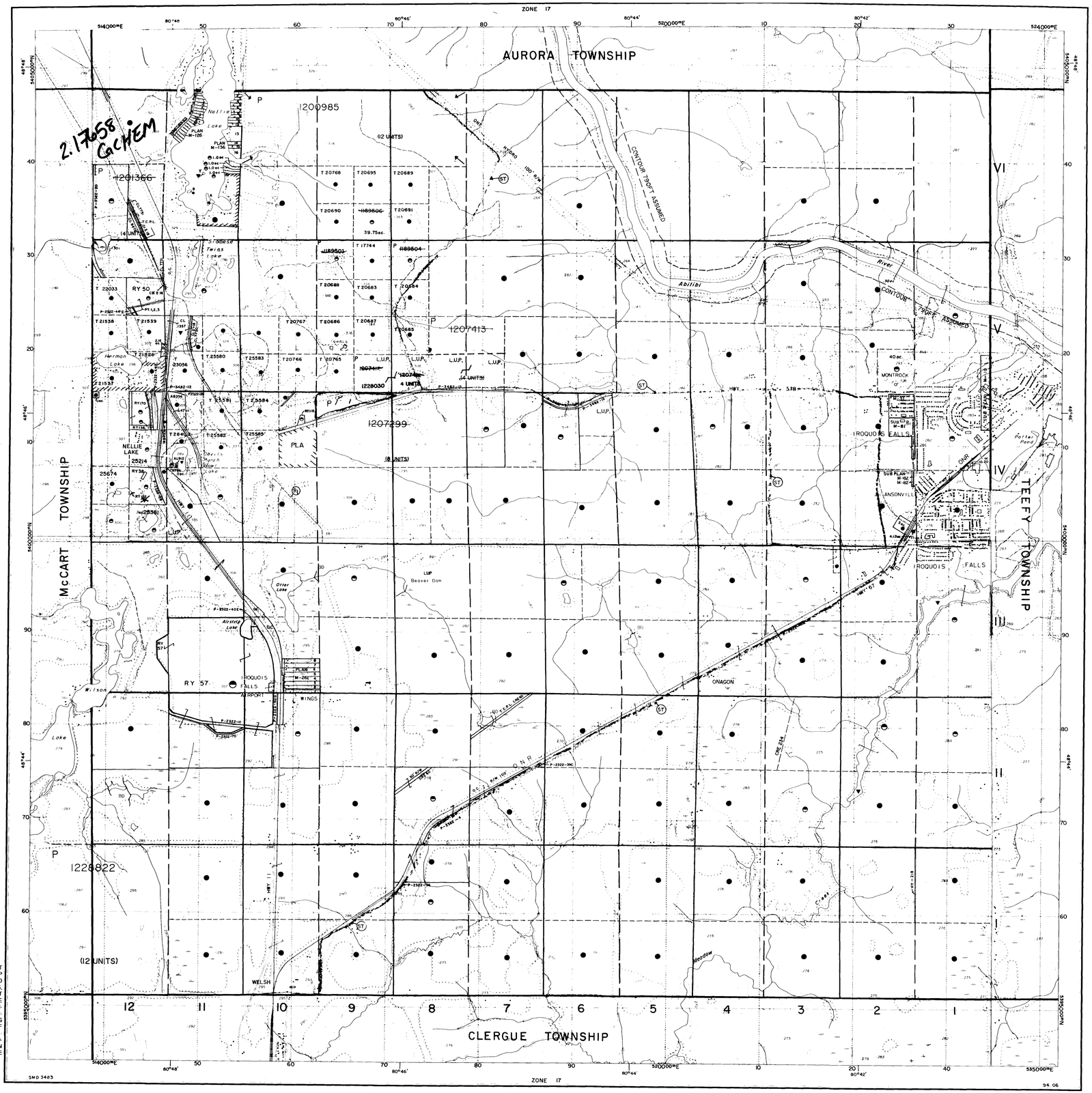
DEC 0 8 1997

PROVINCIAL RECORDING OFFICE - SUDBURY

Received Oct 15/97

PLAN NO. — M 408

ONTARIO
MINISTRY OF NATURAL RESOURCES
SURVEYS AND MAPPING BRANCH



THE INFORMATION THAT APPEARS ON THIS MAP HAS BEEN COMPILED FROM VARIOUS SOURCES, AND ACCURACY IS NOT GUARANTEED. THOSE WISHING TO STAKE MINING CLAIMS SHOULD CONSULT WITH THE MINING RECORDER, MINISTRY OF NORTHERN DEVELOPMENT AND MINES, FOR ADDITIONAL INFORMATION ON THE STATUS OF THE LANDS SHOWN HEREON.

Ontario

Ministry of Natural Resources

Ministry of Northern Development and Mines

210

INDEX TO LAND DISPOSITION

PLAN

G-3483

TOWNSHIP

CALVERT

M.N.R. ADMINISTRATIVE DISTRICT

COCHRANE

MINING DIVISION

PORCUPINE

LAND TITLES/REGISTRY DIVISION

COCHRANE

Scale 1:20 000

1000 Metres 0 1000 2000 Metres

1000 0 1000 2000 3000 4000 5000 6000 7000 8000 9000 10000 Feet

Contour Interval 10 Metres

SYMBOLS

Boundary
- Township, Meridian, Baseline
- Road allowance; surveyed
- shoreline
- Lot/Concession; surveyed
- unsurveyed
- Parcel; surveyed
- unsurveyed
- Right-of-way; road
- railway
- utility
- Reservation
- Cliff, Pit, Pile
- Contour 20
- Interpolated
- Approximate
- Depression
- Control point (horizontal) △
- Flooded land
- Mine head frame
- Pipeline (above ground)
- Railway; single track
- double track
- abandoned
- Road; highway, county, township
- access
- trail, bush
- Shoreline (original)
- Transmission line
- Wooded area

AREAS WITHDRAWN FROM DISPOSITION

MRO - Mining Rights Only
SRO - Surface Rights Only
M + S - Mining and Surface Rights

Description	Order No.	Date	Disposition	File

(R1) SURFACE RIGHTS WITHDRAWN UNDER SEC. 36 THE MINING ACT R.S.O. 1980, ORDER NO. W-01/91/ONT (TRANS CANADA PIPELINE RIGHT OF WAY AND BUFFER ZONE PARTICULARLY 40.25 METERS OR 132 FT. ON EITHER SIDE OF CENTRE LINE OF RIGHT OF WAY)

DATE OF ISSUE

DEC 0 8 1997

PROVINCIAL RECORDING OFFICE - SUDBURY

DISPOSITION OF CROWN LANDS

Patent
- Surface & Mining Rights ●
- Surface Rights Only ◓
- Mining Rights Only ◒

Lease
- Surface & Mining Rights ■
- Surface Rights Only ▣
- Mining Rights Only ▤

Licence of Occupation ▼

Order-in-Council OC

Cancelled ⊕

Reservation ◔

Sand & Gravel ◔

NOTES

FLOODING RIGHTS ALONG THE SHORES OF ABITIBI RIVER TO CONTOUR 790.0'

(ST) SNOWMOBILE TRAIL - NOTICE REC'D 92-DEC-09

LUP LAND USE PERMIT

ACTIVATED BY: D.C - OCT 17/95
CHECKED BY: G.W. RW

Map base and land disposition drafting by Surveys and Mapping Branch, Ministry of Natural Resources.

The disposition of land, location of lot fabric and parcel boundaries on this index was compiled for administrative purposes only.

REFERENCES

AREAS WITHDRAWN FROM DISPOSITION

M.R.O. – MINING RIGHTS ONLY

S.R.O. – SURFACE RIGHTS ONLY

M.+ S. – MINING AND SURFACE RIGHTS

Description	Order No.	Date	Disposition	File
(RI) — SEC 36/80	W.J/80	8/8/80	M ++ S	

Subdivision of this township into lots and concessions was annulled May 10, 1963.

(ST) — SNOWMOBILE TRAIL

SAND and GRAVEL

(G) — QUARRY PERMIT

THE INFORMATION THAT APPEARS ON THIS MAP HAS BEEN COMPILED FROM VARIOUS SOURCES, AND ACCURACY IS NOT GUARANTEED. THOSE WISHING TO STAKE MINING CLAIMS SHOULD CONSULT WITH THE MINING RECORDER, MINISTRY OF NORTHERN DEVELOPMENT AND MINES, FOR ADDITIONAL INFORMATION ON THE STATUS OF THE LANDS SHOWN HEREON.

J.S.H.

REAUME TP.

LUCAS TP.

MANN TP.

TULLY TP.

P 1200935 (12 UNITS)

P 1201957 (6 UNITS)

P 1200934 (15 UNITS)

P ~~1200933~~ (9 UNITS)

P 1204745 (8 UNITS)

P ~~1200990~~ (8 UNITS)

P 1203218 (2 UNITS)

P 1200932 (8 UNITS)

P 1193104 (16 UNITS)

P 1193105 (4 UNITS)

P 1200989 (4 UNITS)

P ~~1200987~~ (3 UNITS)

P ~~1200931~~ (2 UNITS)

P 1200991 (4 UNITS)

P 1200929 (16 UNITS)

Crawfish Lakes

RTS

2.17658 GEHEM

P 1200992 (4 UNITS)

P ~~1200988~~ (4 UNITS)

P ~~1200933~~ (2 UNITS)

(RI)

P 1203217 (2 UNITS)

P 1200993 (4 UNITS)

Buskegau River

P ~~988318~~

P ~~988319~~

P ~~988320~~

P 1206865

P 1206866 (6 UNITS)

P 1219220 (12 UNITS)

P 1219219 (16 UNITS)

P 1200994 (9 UNITS)

P 1206864

P 1219221

P 1200995 (6 UNITS)

S.E. CORNER CO-ORDINATES (Approx.)
LAT. 48° 47' 50"
DEP. 81° 04' 28"

220

42A15NW0029 2.17658 NEWMARKET

LEGEND

- HIGHWAY AND ROUTE No.
- OTHER ROADS
- TRAILS
- SURVEYED LINES:
  - TOWNSHIPS, BASE LINES, ETC.
  - LOTS, MINING CLAIMS, PARCELS, ETC.
- UNSURVEYED LINES:
  - LOT LINES
  - PARCEL BOUNDARY
  - MINING CLAIMS ETC.
- RAILWAY AND RIGHT OF WAY
- UTILITY LINES
- NON-PERENNIAL STREAM
- FLOODING OR FLOODING RIGHTS
- SUBDIVISION OR COMPOSITE PLAN
- RESERVATIONS
- ORIGINAL SHORELINE
- MARSH OR MUSKEG
- MINES
- TRAVERSE MONUMENT

DISPOSITION OF CROWN LANDS

TYPE OF DOCUMENT	SYMBOL
PATENT, SURFACE & MINING RIGHTS	●
" , SURFACE RIGHTS ONLY	◒
" , MINING RIGHTS ONLY	◓
LEASE, SURFACE & MINING RIGHTS	■
" , SURFACE RIGHTS ONLY	◨
" , MINING RIGHTS ONLY	◧
LICENCE OF OCCUPATION	▼
ORDER-IN-COUNCIL	OC
RESERVATION	(R)
CANCELLED	⊗
SAND & GRAVEL	(G)
LAND USE PERMIT	*

NOTE: MINING RIGHTS IN PARCELS PATENTED PRIOR TO MAY 6, 1913, VESTED IN ORIGINAL PATENTEE BY THE PUBLIC LANDS ACT, R.S.O. 1970, CHAP. 380, SEC. 63, SUBSEC 1.

REMOTE TOURIST SITE ..... (RTS)

SCALE: 1 INCH = 40 CHAINS

FEET 0 1000 2000 4000 6000 8000

METRES 0 200 1000 (1 KM) 2000 (2 KM)

DATE OF ISSUE

DEC 0 8 1997

PROVINCIAL RECORDING OFFICE - SUDBURY

TOWNSHIP

DUFF

M.N.R. ADMINISTRATIVE DISTRICT

COCHRANE

MINING DIVISION

PORCUPINE

LAND TITLES / REGISTRY DIVISION

COCHRANE

Ministry of Natural Resources — Land Management Branch

Ontario

Date MARCH, 1985

ACTIVATED JAN. 23, 1997 DK

Number

G-3234

AREAS WITHDRAWN FROM DISPOSITION

M.R.O. – MINING RIGHTS ONLY

S.R.O. – SURFACE RIGHTS ONLY

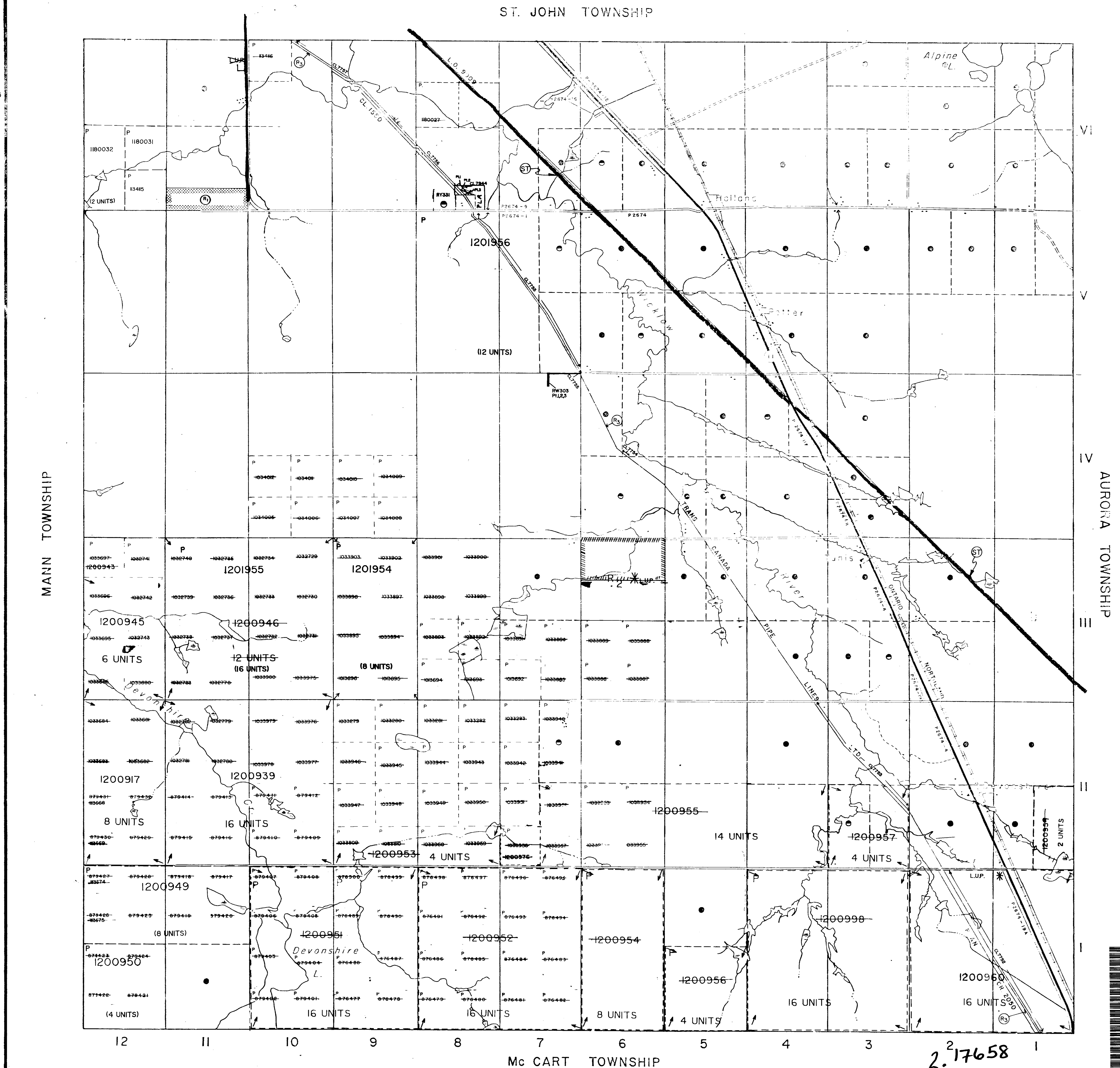
M.+ S. – MINING AND SURFACE RIGHTS

Description	Order No.	Date	Disposition	File
(R1)	W. 43/79 NR.	16/8/79	S.R.O.	33749

(R3) Surface Rights Withdrawn under Sec. 36, The Mining Act R.S.O. 1980, ORDER NO. W-01/91/ONT (Trans Canada Pipeline Right of Way and Buffer Zone particularly 40.25 meters or 132 ft. on either side of centre line of right of way)

~~LUP APPLICATION DATED JAN. 12/94.~~ CANCELLED - MARCH 3/95

THE INFORMATION THAT APPEARS ON THIS MAP HAS BEEN COMPILED FROM VARIOUS SOURCES, AND ACCURACY IS NOT GUARANTEED. THOSE WISHING TO STAKE MINING CLAIMS SHOULD CONSULT WITH THE MINING RECORDER, MINISTRY OF NORTHERN DEVELOPMENT AND MINES, FOR ADDITIONAL INFORMATION ON THE STATUS OF THE LANDS SHOWN HEREON.



2.17658
GCHEM

LEGEND

HIGHWAY AND ROUTE No.
OTHER ROADS
TRAILS
SURVEYED LINES
TOWNSHIPS, BASE LINES, ETC.
LOTS, MINING CLAIMS, PARCELS, ETC.
UNSURVEYED LINES
LOT LINES
PARCEL BOUNDARY
MINING CLAIMS ETC.
RAILWAY AND RIGHT OF WAY
UTILITY LINES
NON-PERENNIAL STREAM
FLOODING OR FLOODING RIGHTS
SUBDIVISION OR COMPOSITE PLAN
RESERVATIONS
ORIGINAL SHORELINE
MARSH OR MUSKEG
MINES
TRAVERSE MONUMENT

DISPOSITION OF CROWN LANDS

TYPE OF DOCUMENT — SYMBOL

PATENT, SURFACE & MINING RIGHTS
" , SURFACE RIGHTS ONLY
" , MINING RIGHTS ONLY
LEASE, SURFACE & MINING RIGHTS
" , SURFACE RIGHTS ONLY
" , MINING RIGHTS ONLY
LICENCE OF OCCUPATION
ORDER IN COUNCIL
RESERVATION
CANCELLED
SAND & GRAVEL
L.U.P. (LAND USE PERMIT)

NOTE: MINING RIGHTS IN PARCELS PATENTED PRIOR TO MAY 6, 1913, VESTED IN ORIGINAL PATENTEE BY THE PUBLIC LANDS ACT, R.S.O. 1970, CHAP. 380, SEC. 63, SUBSEC. 1

SCALE 1:20 000

R_2 - AGRICULTURAL PERMIT

(ST) SNOWMOBILE TRAIL NOTICE RECEIVED 92-DEC-09

DATE OF ISSUE
DEC 0 8 1997
PROVINCIAL RECORDING OFFICE - SUDBURY

230

42A15NW0028 2.17658 NEWMARKET

TOWNSHIP

NEWMARKET

M.N.R. ADMINISTRATIVE DISTRICT

COCHRANE

MINING DIVISION

PORCUPINE

LAND TITLES / REGISTRY DIVISION

COCHRANE

Ontario — Ministry of Natural Resources — Ministry of Northern Development and Mines

Date: SEPTEMBER 1986

checked L.N. Nov. 20/86
JB FEB. 18 '87

Number: G-3548

G-3548

2.17658

FALCONBRIDGE LIMITED

Exploration Division — Timmins ONTARIO

MANN BELT CLAIMS PROJECT

AURORA, CALVERT, DUFF, HANNA, LITTLE, MANN, McCART, NEWMARKET & REAUME TOWNSHIPS

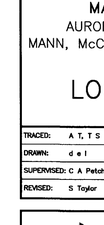
LOCATION OF GRIDS

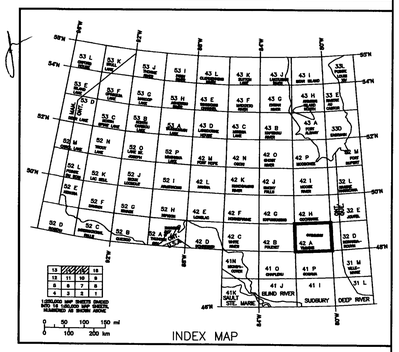
TRACED: A T, T S	DATE: 12/96	NTS: 42–A/14 & 15	PROJECT: 8269
DRAWN: d e l	DATE: 08/04/97	MAP No:	FILE: 8269CJ
SUPERVISED: C A Petch	DATE: 31/03/97	SCALE 1:50 000 (metres)	
REVISED: S Taylor	DATE: 07/04/97	0 500 1000 1500 2000	

ASTRONOMIC

SHEET ORIENTED UTM NORTH AZIMUTH 359° 54'

240





Symbols

CONTACTS
- Outcrop (small, observed, inferred, boulder/float)
- Geological Boundary (observed, approximate, assumed)
- Geological Boundary (gradational, gradationally inferred)
- Fault Contact (defined, approximate)

MEASUREMENTS
- Bedding with tops known (horizontal, inclined, vertical, overturned, dip unknown)
- Bedding with tops unknown (inclined, vertical, dip unknown)
- Plane top (horizontal, inclined, vertical, overturned, dip unknown)
- Syncline top
- Antiformally, gradationally, stoss-up or culmination (horizontal, inclined, vertical, dip unknown)
- Lineation (No. of trials = observation – S1, S2, S3)
- Jointing (horizontal, inclined, vertical, dip unknown)
- Lineation (horizontal, inclined, vertical)
- Folding – defined folds: S fold, Z fold, multiple S, multiple Z)
- Folding – undetermined type
- Fault (defined, approximate, assumed) (inclined, vertical, movement w/(stoss on downthrown side)
- Fault (Geophysically inferred, Lineament Inferred)
- Thrust Fault (defined, approximate, assumed) (teeth indicate upthrust side)
- Shear zone
- Dyke, vein (defined, approximate, assumed)
- Anticline, Antiform (with or without plunge, overturned)
- Syncline, Synform (with or without plunge, overturned)
- Stoss vector (Direction known, unknown) (numbers indicate relative age)
- Unit of Geological Mapping
- Layering, Direction

PHYSICAL WORK
- Mineral Occurrence
- Trench (1:250,000 =, 1:5,000 –)
- Diamond Drill Hole (vertical, inclined, collar located, collar unlocated)
- Overburden Drill Hole
- Mine, quarry or glory hole (active, abandoned)
- Shaft (vertical, inclined, raise, winze)
- Adit, Ramp
- Rock Dump, Tailings
- Gravel Pit (active, abandoned)

CULTURAL AND PHYSIOGRAPHIC FEATURES
- All weather road (paved, gravel)
- Road (fair, poor)
- Trail
- Buildings
- Campsite
- Power Line (major line, regular line)
- Telephone Line (landline, wireless)
- Railroad Track
- Tunnel
- Bridge
- River (open, rapids)
- Intermittent Stream
- Lake
- Swamp
- Esker
- Claim Post (OLS surveyed, Inspected survey, located, unlocated, witness, in holes)
- Grids (current grid, old grid)
- Survey Pin (located, unlocated)
- Lot/Concession Corner Pin (located, government defined)

HWY 11

100 EAST

200 EAST

300 EAST

400 EAST

500 EAST

1200984

4 Units

600 NORTH

400 NORTH

200 NORTH

0

ONR

Nellie

Lake

ASTRONOMIC

N

SHEET ORIENTED UTM NORTH
AZIMUTH 000° 11'

McCART
Twp.

CALVERT
Twp.

LEGEND

Iodine Values 1cm = 20 ppb

Note: All Cu numbers are below detection limit.

250

2.17658

FALCONBRIDGE LIMITED

Exploration Division Timmins ONTARIO

MANN BELT PROJECT
GRID CAL95-01
CALVERT TOWNSHIP

ENZYME LEACH PROFILE PLOT
Copper & Iodine

TRACED: Geosoft	DATE: 09/96	NTS: 42-A/15	PROJECT: 8269
DRAWN: A. Tallefer	DATE: 09/96	MAP No:	FILE: CAL9501-
SUPERVISED: C. Petch	DATE: 09/96	SCALE 1:5 000 (metres)	
REVISED:	DATE:	0 40 80 120 160	

HWY 11

100 EAST | 200 EAST | 300 EAST | 400 EAST | 500 EAST

1200984
4 Units

	100 EAST	200 EAST	300 EAST	400 EAST	500 EAST
	13 -5	-10 -5	-10 -5	14 -5	
	-10 -5	-10 -5	-10 -5	-10 -5	
600 NORTH	22 -5	-10 -5	-10 -5	-10 -5	
	14 -5	10 -5	-10 -5	-10 -5	
	-10 -5	-10 -5	-10 -5	-10 -5	
	-10 -5	-10 -5	-10 -5	-10 -5	
	-10 -5	10 -5	-10 -5	-10 -5	
400 NORTH	-10 -5	-10 -5	-10 -5	-10 -5	
	-10 -5	-10 -5	-10 -5	-10 -5	
	-10 -5	-10 -5	-10 -5	-10 -5	
	-10 -5	-10 -5	-10 -5	-10 -5	
	-10 -5	-10 -5	-10 -5	19 -5	
200 NORTH	16 -5	12 -5	-10 -5	11 -5	
	-10 -5	-10 -5	-10 -5	-10 -5	
	-10 -5	19 -5	-10 -5	-10 -5	
	-10 -5	12 -5	-10 -5	-10 -5	
	-10 -5			30 -5	
	0 -10 -5	-10 -5		17 -5	

ONR

Nellie

Lake

ASTRONOMIC

N

SHEET ORIENTED UTM NORTH
AZIMUTH 000° 11'

McCART Twp.

CALVERT Twp.

LEGEND

-30 — 37
-30 — 51
-30 — 48

Iodine Values Copper Values

2.17658

42A15NW0028 2.17658 NEWMARKET

260

FALCONBRIDGE LIMITED

Exploration Division Timmins ONTARIO

MANN BELT PROJECT
GRID CAL95-01
CALVERT TOWNSHIP

ENZYME LEACH VALUES PLOT COPPER & IODINE

TRACED: Geosoft	DATE: 09/96	NTS: 42-A/15	PROJECT: 8269
DRAWN: A. Taillefer	DATE: 09/96	MAP No:	FILE: CAL9501-
SUPERVISED: C. Patch	DATE: 09/96	SCALE 1:5 000 (metres)	
REVISED:	DATE:	0 40 80 120 160	

HWY 11

100 EAST
200 EAST
300 EAST
400 EAST
500 EAST

1200984
4 Units

600 NORTH

400 NORTH

200 NORTH

0

O N R

Nellie

Lake

ASTRONOMIC

N

SHEET ORIENTED UTM NORTH
AZIMUTH 000° 11'

McCART
Twp.

CALVERT
Twp.

LEGEND

Bromine Values 1cm = 50 ppb

Zinc Values 1cm = 100 ppb

42A15NW0028 2.17658 NEWMARKET

270

2.17658

FALCONBRIDGE LIMITED

Exploration Division — Timmins ONTARIO

MANN BELT PROJECT
GRID CAL95-01
CALVERT TOWNSHIP

ENZYME LEACH PROFILE PLOT
Zinc & Bromine

TRACED: Geosoft	DATE: 09/96	NTS: 42-A/15	PROJECT: 8269
DRAWN: A. Taillefer	DATE: 09/96	MAP No:	FILE: CAL9501-
SUPERVISED: C. Petch	DATE: 09/96	SCALE 1:5 000 (metres)	
REVISED:	DATE:	0 40 80 120 160	

HWY 11

100 EAST | 200 EAST | 300 EAST | 400 EAST | 500 EAST

1200984
4 Units

	-30	44		-30	74		32	194	
	-30	26		-30	36		-30	69	
600 NORTH	-30	23		-30	72		32	57	
	-30	45		-30	207		75	103	
	-30	-10		-30	69		53	123	
	-30	60		-30	125		-30	74	
	-30	120		-30	41		-30	63	
400 NORTH	-30	69		-30	117		-30	92	
	-30	82		-30	204		35	154	
	-30	67		40	151		53	164	
	-30	81		-30	91		54	204	
	-30	81		-30	55		-30	46	
200 NORTH	-30	82		-30	83		33	91	
	-30	37		-30	13		-30	105	
	-30	119		-30	-10		-30	44	
	-30	82		-30	119		-30	49	
	-30	88					47	62	
0	-30	50		-30	80		46	42	

Nellie

Lake

ONR

ASTRONOMIC

N

SHEET ORIENTED UTM NORTH
AZIMUTH 000° 11'

McCART
Twp.

CALVERT
Twp.

LEGEND

-30 | 37
-30 | 51
-30 | 48

Bromine Values Zinc Values

42A15NW0028 2.17658 NEWMARKET

280

FALCONBRIDGE LIMITED

Exploration Division Timmins ONTARIO

MANN BELT PROJECT
GRID CAL95-01
CALVERT TOWNSHIP

ENZYME LEACH VALUES PLOT
ZINC & BROMINE

TRACED: Geosoft	DATE: 09/96	NTS: 42-A/15	PROJECT: 8269
DRAWN: A. Taillefer	DATE: 09/96	MAP No:	FILE: CAL9501-
SUPERVISED: C. Patch	DATE: 09/96	SCALE 1:5 000 (metres)	
REVISED:	DATE:	0 40 80 120 160	

HWY 11

100 EAST

200 EAST

300 EAST

400 EAST

500 EAST

1200984
4 Units

600 NORTH

400 NORTH

200 NORTH

0

LOWR

Nellie

Lake

ASTRONOMIC

N

SHEET ORIENTED UTM NORTH
AZIMUTH 000° 11'

McCART
Twp.

CALVERT
Twp.

LEGEND

Manganese Values 1cm = 2500 ppb

2.17658

290

FALCONBRIDGE LIMITED

Exploration Division Timmins ONTARIO

MANN BELT PROJECT
GRID CAL95-01
CALVERT TOWNSHIP

ENZYME LEACH PROFILE PLOT
Manganese

TRACED:	Geosoft	DATE: 09/96	NTS: 42-A/15	PROJECT: 8269	
DRAWN:	A. Taillefer	DATE: 09/96	MAP No:	FILE: CAL9501-	
SUPERVISED:	C. Petch	DATE: 09/96	SCALE 1:5 000 (metres)		
REVISED:		DATE:	0 40 80 120 160		

HWY 11

100 EAST | 200 EAST | 300 EAST | 400 EAST | 500 EAST

1200984
4 Units

	248	654		1983
	233	944		738
600 NORTH	440	948		1612
	1252	2943		1651
	1402	1718		2180
	2146	4099		2477
	2834	1549		1549
400 NORTH	791	2257		1572
	2685	2210		1306
	3110	9199		1144
	3248	4803		11434
	4076	3531		1028
200 NORTH	1284	3806		3646
	428	1134		5561
	162	705		2601
	105	872		2178
	76			1808
0	80	5642		1871

ONR

Nellie

Lake

ASTRONOMIC

N

SHEET ORIENTED 17th NORTH AZIMUTH 000° 11'

42A15NW0028 2.17658 NEWMARKET

300

McCART Twp.

CALVERT Twp.

FALCONBRIDGE LIMITED

Exploration Division — Timmins ONTARIO

MANN BELT PROJECT
GRID CAL95-01
CALVERT TOWNSHIP

ENZYME LEACH VALUES PLOT
Manganese

TRACED:	Geosoft	DATE: 09/96	NTS: 42-A/15	PROJECT: 8269	
DRAWN:	A. Taillefer	DATE: 09/96	MAP No:	FILE: CAL9501-	
SUPERVISED:	C. Patch	DATE: 09/96	SCALE 1:5 000 (metres)		
REVISED:		DATE:	0 40 80 120 160		

LEGEND

LEGEND

30 – 37

30 – 51

30 – 48

Iodine Values Copper Values

500 EAST

1200 NORTH

900 EAST

800 EAST

700 EAST

600 EAST

400 EAST

300 EAST

200 EAST

100 EAST

800 NORTH

600 NORTH

400 NORTH

200 NORTH

1200960

16 Units

1200983

8 Units

200 SOUTH

400 SOUTH

HWY 11

O N R

ASTRONOMIC

N

SHEET ORIENTED UTM NORTH
AZIMUTH 000° 11'

310

Nellie Lake

42A15NW0028 2.17658 NEWMARKET

FALCONBRIDGE LIMITED

Exploration Division Timmins ONTARIO

MANN BELT PROJECT

GRID AUR95-02

AURORA TOWNSHIP

ENZYME LEACH VALUES PLOT

COPPER & IODINE

TRACED: Geosoft	DATE: 09/96	NTS: 42-A/15	PROJECT: 6269
DRAWN: A. Tallieter	DATE: 09/96	MAP No:	FILE: AUR9502-
SUPERVISED: C. Petch	DATE: 09/96	SCALE 1:5 000 (metres)	
REVISED:	DATE:	0 40 80 120 160	

LEGEND

Manganese Values 1cm = 3000 ppb

500 EAST

1200 NORTH

100 EAST

200 EAST

300 EAST

400 EAST

600 EAST

700 EAST

800 EAST

900 EAST

800 NORTH

600 NORTH

400 NORTH

200 NORTH

0

200 SOUTH

400 SOUTH

1200960

16 Units

1200983

8 Units

ONR

HWY 11

ASTRONOMIC

N

SHEET ORIENTED UTM NORTH
AZIMUTH 000° 11'

2.17658

Nellie Lake

FALCONBRIDGE LIMITED

Exploration Division — Timmins ONTARIO

MANN BELT PROJECT

GRID AUR95-02

AURORA TOWNSHIP

ENZYME LEACH PROFILE PLOT

Manganese

TRACED:	Geosoft	DATE: 09/96	NTS: 42-A/15	PROJECT: 8209	
DRAWN:	A. Tellefer	DATE: 09/96	MAP No:	FILE: AUR9502-	
SUPERVISED:	C. Petch	DATE: 09/96	SCALE 1:5 000 (metres)		
REVISED:		DATE:	0 40 80 120 160		

42A15NW0028 2.17658 NEWMARKET

320

500 EAST
1200 NORTH
600 EAST
700 EAST
800 EAST
900 EAST
800 NORTH
600 NORTH
400 NORTH
200 NORTH
0
200 SOUTH
400 SOUTH
400 EAST
300 EAST
200 EAST
100 EAST
HWY 11
330
ONR
Nellie Lake

LEGEND

LEGEND

30 – 37
30 – 51
30 – 48

Bromine Values Zinc Values

1200960

16 Units

1200983

8 Units

ASTRONOMIC

N

SHEET ORIENTED 11th NORTH AZIMUTH 000° 11'

42A15NW0028 2.17658 NEWMARKET

FALCONBRIDGE LIMITED

Exploration Division Timmins ONTARIO

MANN BELT PROJECT

GRID AUR95-02

AURORA TOWNSHIP

ENZYME LEACH VALUES PLOT

ZINC & BROMINE

TRACED:	Geosoft	DATE: 09/96	NTS: 42-A/15	PROJECT: 8269	
DRAWN:	A. Tellefer	DATE: 09/96	MAP No:	FILE: AUR9502-	
SUPERVISED:	C. Petch	DATE: 09/96	SCALE 1:5 000 (metres)		
REVISED:		DATE:	0 40 80 120 160		

LEGEND

Copper Values 1cm = 300 ppb

Iodine Values 1cm = 30 ppb

500 EAST

1200 NORTH

900 EAST

800 EAST

700 EAST

600 EAST

400 EAST

300 EAST

200 EAST

100 EAST

800 NORTH

600 NORTH

400 NORTH

200 NORTH

0

200 SOUTH

400 SOUTH

1200960

16 Units

1200983

8 Units

ASTRONOMIC

N

SHEET ORIENTED UTM NORTH
AZIMUTH 000° 11'

ONR

HWY 11

Nellie Lake

2.17658

42A15NW0028 2.17658 NEWMARKET

340

FALCONBRIDGE LIMITED

Exploration Division — Timmins ONTARIO

MANN BELT PROJECT

GRID AUR95-02

AURORA TOWNSHIP

ENZYME LEACH PROFILE PLOT

Copper & Iodine

TRACED:	Geosoft	DATE: 09/96	NTS: 42-A/15	PROJECT: 8269	
DRAWN:	A. Taillefer	DATE: 09/96	MAP No:	FILE: AUR9502-	
SUPERVISED:	C. Petch	DATE: 09/96	SCALE 1:5 000 (metres)		
REVISED:		DATE:	0	40	80 120 160

LEGEND

500 EAST
1200 NORTH
100 EAST
200 EAST
300 EAST
400 EAST
600 EAST
700 EAST
800 EAST
900 EAST
800 NORTH
600 NORTH
400 NORTH
200 NORTH
200 SOUTH
400 SOUTH

1200960
16 Units

1249 3377 5396 2170 3890 1541 1388 2087 1984 2223 1422
1460 1782 1663 2041 1984 1538
1442 1639 2197 1615
1967 1520
2741 2570 2205 2540 1672 2176
2906 1964 2256 2332 2087 2094 2797 1848 1103
3073 2564 2610 2644 2596 2629 3194 2920 2057 2447 2250 2637 2048 1910
1793 1745 1843 2029 1949 1706
1976 2522 2436 2180 2424 2423 1786 1014 2453 1957 1868

1200983
415
8 Units
385 299 430 1215 497 381 358 474 460 413 496
443 312 269 429 405 331 280 789 703

ONR
HWY 11

ASTRONOMIC
N
SHEET ORIENTED UTM NORTH AZIMUTH 000° 11'

Nellie Lake

42A15NW0028 2.17658 NEWMARKET

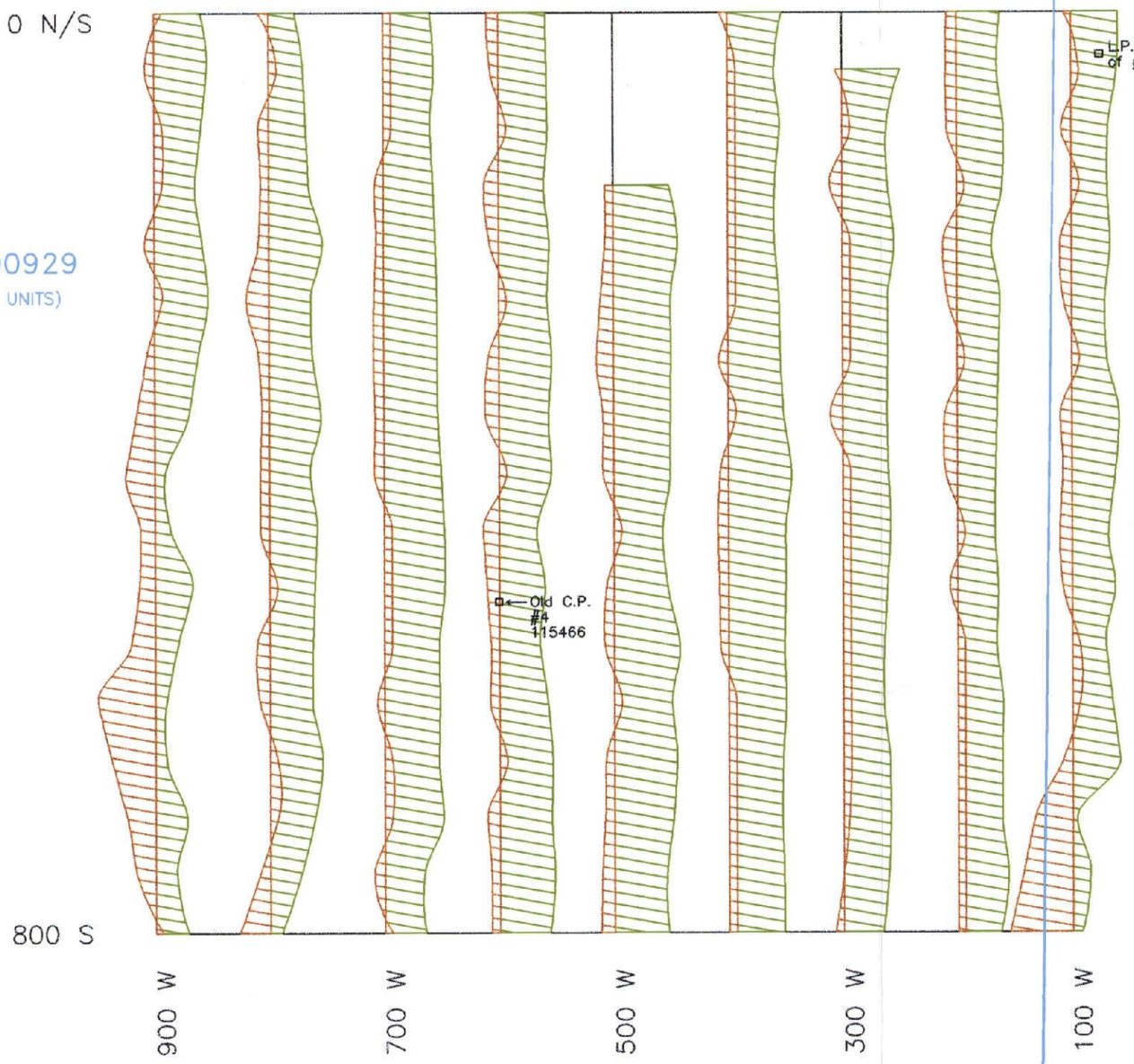
350

FALCONBRIDGE LIMITED
Exploration Division — Timmins ONTARIO

MANN BELT PROJECT
GRID AUR95-02
AURORA TOWNSHIP

ENZYME LEACH VALUES PLOT
Manganese

TRACED: Geosoft	DATE: 09/96	NTS: 42-A/15	PROJECT: 8269
DRAWN: A. Taillefer	DATE: 09/96	MAP No:	FILE: AUR9502-
SUPERVISED: C. Petch	DATE: 09/96	SCALE 1:5 000 (metres)	0 40 80 120 160
REVISED:	DATE:		



360

ASTRONOMIC

N

LEGEND

Iodine Values 1cm = 75 ppb Copper Values 1cm = 300 ppb

2.17658

FALCONBRIDGE LIMITED

Exploration Division Timmins ONTARIO

MANN BELT PROJECT
GRID DUF95-02
DUFF TOWNSHIP

ENZYME LEACH PROFILE PLOT
COPPER & IODINE

TRACED:	Geosoft	DATE: 02/97	NTS: 42-A/14	PROJECT: 8289	
DRAWN:	A.D.T.	DATE: 02/97	MAP No: DUF95-02	FILE: DUF9502K	
SUPERVISED:	C. Petch	DATE: 02/97	SCALE 1:5 000 (metres)		
REVISED:		DATE:	0 40 80 120 160		

0 N/S	-10	~~242~~	~~14~~	~~133~~	~~10~~	~~242~~	~~15~~	~~247~~			~~11~~	~~283~~			~~13~~	~~228~~	~~10~~	244
	12	274	-10	178	-10	261	11	251			-10	242	10	305	14	211	-10	237
	-10	244	14	192	-10	242	-10	256			-10	271	-10	232	13	244	13	192
	-10	212	11	206	12	257	19	237	11	290	-10	245	17	238	-10	238	-10	187
	13	249	14	278	10	269	12	264	11	335	-10	244	-10	272	18	181	15	201
	-10	280	30	217	13	277	-10	253	17	298	-10	267	-10	237	12	225	11	174
	11	225	14	226	14	279	14	276	22	299	12	273	-10	237	-10	217	-10	183
	24	178	10	269	12	280	18	259	14	297	-10	290	17	234	16	208	15	247
	38	54	12	212	13	297	-10	272	14	295	11	330	-10	240	15	200	12	227
	19	82	12	247	-10	313	21	197	-10	254	14	298	-10	250	-10	196	16	190
	21	195	-10	235	-10	315	16	239	10	282	12	298	-10	233	10	213	12	225
	32	118	17	225	-10	285	11	213	12	343	11	292	-10	217	-10	204	-10	176
	75	58	13	223	10	287	12	253	-10	303	-10	299	-10	244	-10	238	-10	210
	57	58	-10	274	-10	284	-10	277	11	328	-10	284	-10	244	-10	232	12	249
	37	165	-10	234	-10	306	16	273	12	310	-10	279			-10	232	49	23
	24	111	14	160	14	204	11	288	16	275	-10	288			-10	263	65	93
800 S	-10	~~173~~	~~40~~	~~60~~	~~10~~	~~215~~	~~11~~	~~263~~	~~17~~	~~285~~	~~10~~	~~289~~	~~11~~	~~207~~	~~10~~	~~224~~	~~32~~	49
		900 W				700 W				500 W				300 W				100 W

Old C.P. #4 115466

L.P. 1200 m N of #3-1200988

1200929
(16 UNITS)

1200988
(4 UNITS)

LEGEND

-30 — 37
-30 — 51
-30 — 48

Iodine Values Copper Values

ASTRONOMIC

N

42A15NW0028 2.17658 NEWMARKET

370

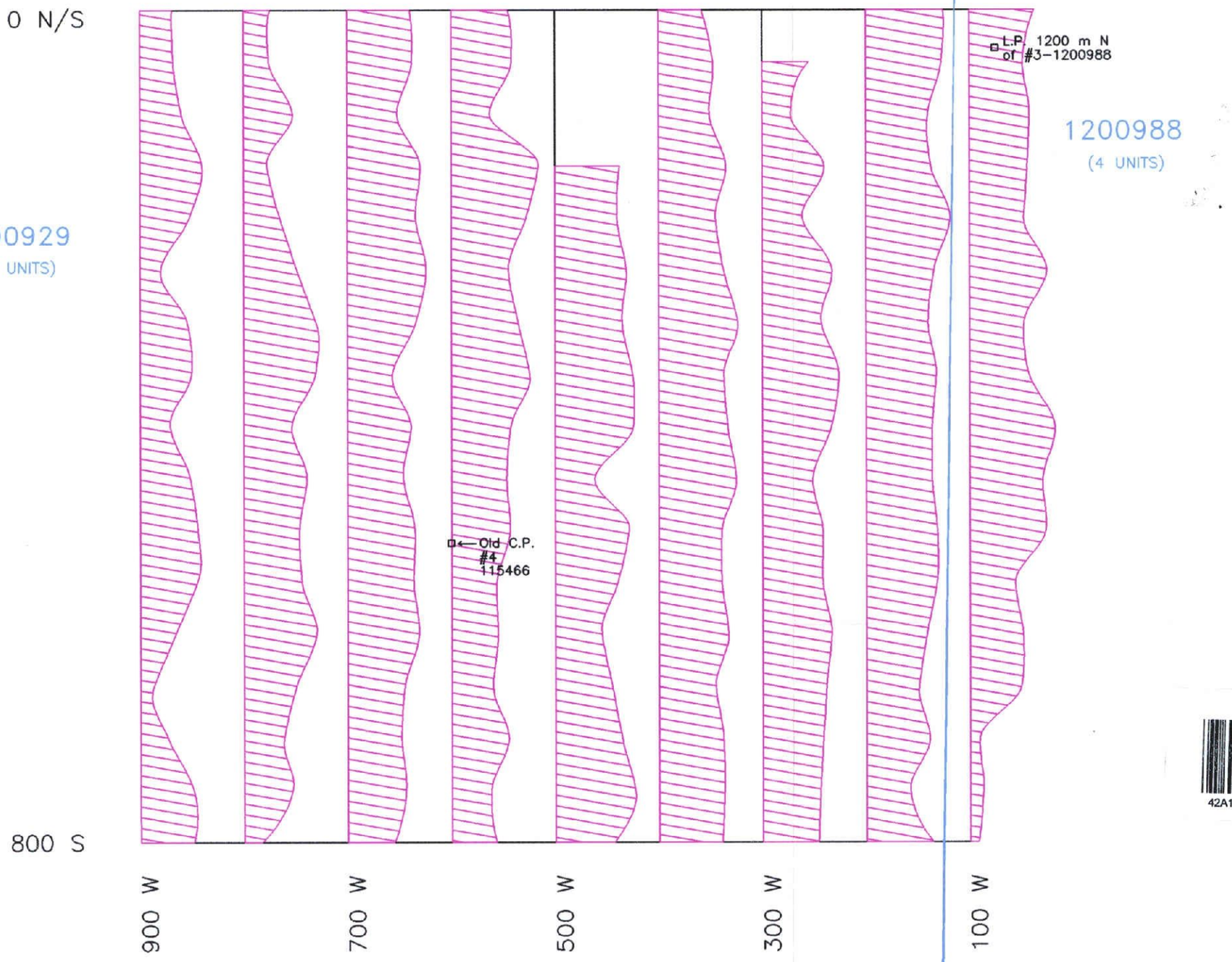
FALCONBRIDGE LIMITED

Exploration Division Timmins ONTARIO

MANN BELT PROJECT
GRID DUF95-02
DUFF TOWNSHIP

ENZYME LEACH VALUES PLOT
COPPER & IODINE

TRACED: Geosoft	DATE: 02/97	NTS: 42-A/14	PROJECT: 8269
DRAWN: A.D.T.	DATE: 02/97	MAP No: DUF95-02	FILE: DUF9502K
SUPERVISED: C. Petch	DATE: 02/97	SCALE 1:5 000 (metres)	
REVISED:	DATE:	0 40 80 120 160	



380

ASTRONOMIC

N

2.17658

LEGEND

Manganese Values 1cm = 3000 ppb

FALCONBRIDGE LIMITED

Exploration Division Timmins ONTARIO

MANN BELT PROJECT
GRID DUF95-02
DUFF TOWNSHIP

ENZYME LEACH PROFILE PLOT
Manganese

TRACED:	Geosoft	DATE: 02/97	NTS: 42-A/14		PROJECT: 8269
DRAWN:	A.D.T.	DATE: 02/97	MAP No: DUF95-02		FILE: DUF9502K
SUPERVISED:	C. Petch	DATE: 02/97	SCALE 1:5 000 (metres)		
REVISED:		DATE:	0	40 80 120	160

0 N/S

900 W	700 W	500 W	300 W	100 W
~~1847~~	~~1507~~	~~3582~~	~~3265~~	~~2473~~	~~4490~~	3741
1924	1451	3727	3481	3132	2719	4381	3091
2382	2825	2862	2217	2931	1638	3596	3476
3589	1341	4206	5040	3741	3882	3596	3764	3340
2830	2091	3936	4319	3590	3280	2336	4877	3146
1183	3072	4540	3315	4125	3752	4050	3943	4470
2730	4163	3945	3868	3876	4565	3408	3601	3162
2964	4127	2583	4534	4475	3765	4433	4069	3425
1730	2767	3660	3431	4530	3980	4011	3834	4941
2899	3634	3211	3192	2282	4476	2921	3833	4230
3330	3201	3881	3390	4285	3638	3488	4120	4406
3283	3349	3816	2604	3616	3637	3497	4091	2631
2036	4186	4114	2682	2680	4016	3997	3515	**3079**
754	3026	3280	2392	3284	3272	3699	3055	2977
1605	2290	3097	3297	3855	3717		3677	558
3072	2791	3355	2290	4615	3770		2544	756
~~3090~~	~~1046~~	~~2694~~	~~2598~~	~~3425~~	~~3648~~	~~3253~~	~~3879~~	494

800 S

Old C.P. #4 115466

L.P. 1200 m N of #3-1200988

1200929
(16 UNITS)

1200988
(4 UNITS)

42A15NW0028 2.17658 NEWMARKET

390

ASTRONOMIC

N

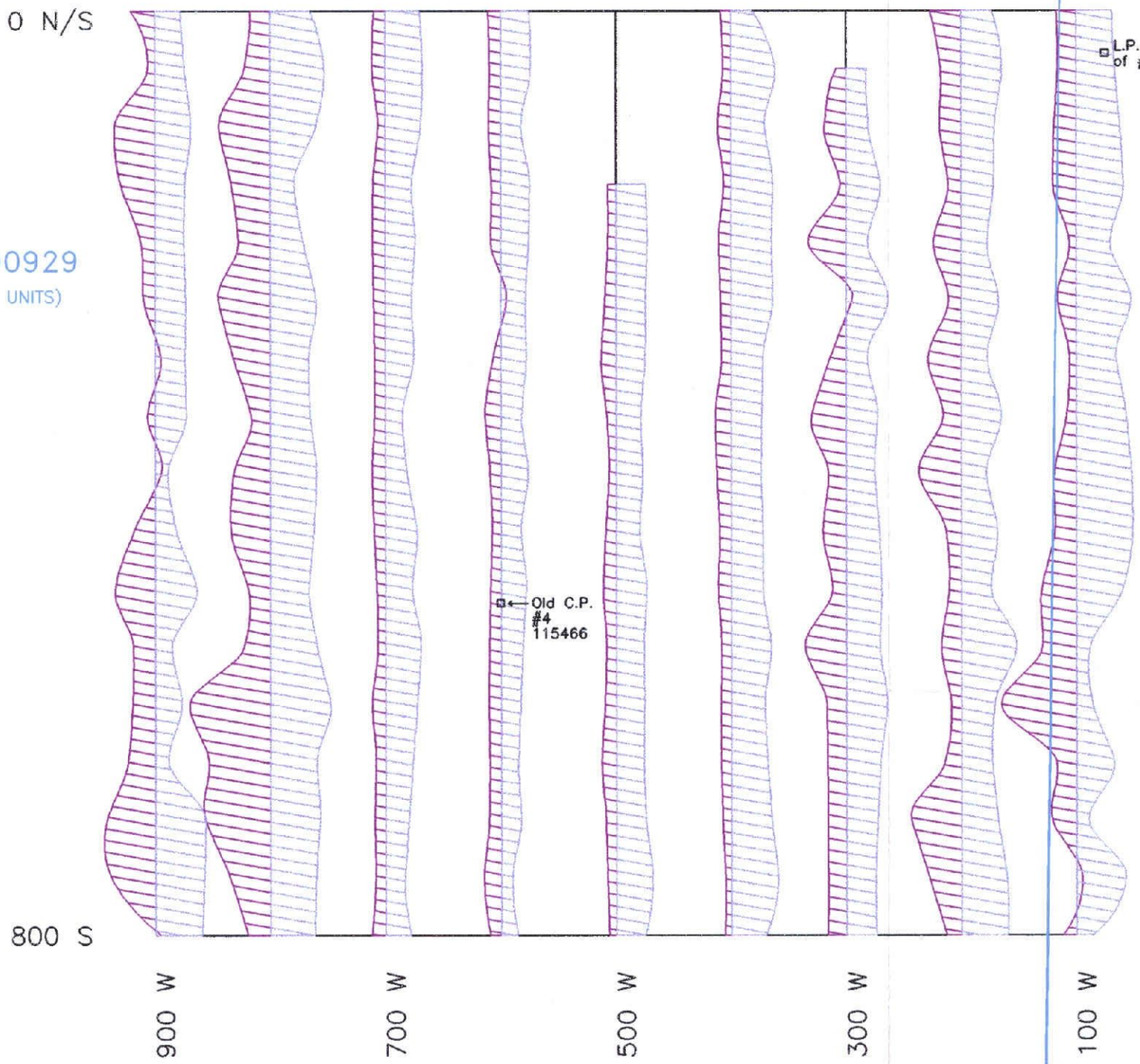
FALCONBRIDGE LIMITED

Exploration Division — Timmins ONTARIO

MANN BELT PROJECT
GRID DUF95-02
DUFF TOWNSHIP

ENZYME LEACH VALUES PLOT
Manganese

TRACED: Geosoft	DATE: 02/97	NTS: 42-A/14	PROJECT: 8269
DRAWN: A.D.T.	DATE: 02/97	MAP No: DUF95-02	FILE: DUF9502K
SUPERVISED: C. Petch	DATE: 02/97	SCALE 1:5 000 (metres)	0 40 80 120 160
REVISED:	DATE:		



LEGEND

Bromine Values 1cm = 300 ppb

Zinc Values 1cm = 100 ppb

400

ASTRONOMIC

N

2.17658

FALCONBRIDGE LIMITED

Exploration Division — Timmins ONTARIO

MANN BELT PROJECT
GRID DUF95-02
DUFF TOWNSHIP

ENZYME LEACH PROFILE PLOT
ZINC & BROMINE

TRACED:	Geosoft	DATE: 02/97	NTS: 42-A/14	PROJECT: 8269	
DRAWN:	A.D.T.	DATE: 02/97	MAP No: DUF95-02	FILE: DUF9502K	
SUPERVISED:	C. Petch	DATE: 02/97	SCALE 1:5 000 (metres)		
REVISED:		DATE:	0 40 80 120 160		

0 N/S																		
	128	44	106	69	60	59	66	48			57	36			161	54	104	62
	38	51	136	93	69	64	59	52			43	76	53	35	107	71	97	67
	210	62	267	79	40	61	64	35			70	58	114	38	112	58	115	76
	179	52	203	41	65	45	49	50	44	51	39	72	32	59	67	56	120	82
	74	50	166	57	67	51	52	48	43	54	65	70	199	37	143	45	35	59
	59	53	270	79	62	45	-30	43	58	51	56	72	-30	73	65	65	97	95
	-30	52	193	67	57	49	41	44	77	50	51	55	84	36	172	45	35	69
	40	54	100	69	58	29	82	36	49	43	82	53	181	54	94	70	51	87
	-30	22	191	80	70	37	57	47	37	46	75	52	94	49	221	44	115	96
	111	37	205	75	60	54	46	35	54	41	61	55	122	57	78	63	112	98
	209	72	116	67	46	46	54	44	67	53	68	55	73	61	63	52	181	81
	114	29	137	81	41	61	60	38	50	48	51	69	217	58	103	96	177	24
	118	46	421	104	70	55	62	34	58	49	53	58	104	71	[illegible]			28
	143	23	321	80	51	47	59	30	75	48	53	63	99	59	84	54	103	65
	252	87	339	86	57	40	62	35	53	52	45	70			261	64	126	21
	228	85	211	79	53	33	88	20	45	63	32	81			167	79	-30	86
800 S	-30	81	118	77	73	44	55	29	36	51	34	61	97	52	76	81	69	30
		900 W			700 W			500 W			300 W			100 W				

L.P. 1200 m N of #3-1200988

Old C.P. #4 115466

1200929
(16 UNITS)

1200988
(4 UNITS)

42A15NW0028 2.17658 NEWMARKET

410

ASTRONOMIC

N

LEGEND

-30 – 37
-30 – 51
-30 – 48

Bromine Values Zinc Values

FALCONBRIDGE LIMITED

Exploration Division Timmins ONTARIO

MANN BELT PROJECT
GRID DUF95-02
DUFF TOWNSHIP

ENZYME LEACH VALUES PLOT
ZINC & BROMINE

TRACED:	Geosoft	DATE: 02/97	NTS: 42-A/14	PROJECT: 8269	
DRAWN:	A.D.T.	DATE: 02/97	MAP No: DUF95-02	FILE: DUF9502K	
SUPERVISED:	C. Petch	DATE: 02/97	SCALE 1:5 000 (metres)		
REVISED:		DATE:	0 40 80 120 160		

1204691 (6 UNITS)

1201995 (6 UNITS)

REAUME Twp.

DUFF Twp.

1200935 (12 UNITS)

D. GAMBLE/S. GAMBLE (2 UNITS)

1203218

1201957
(6 Units)

1200934
(15 Units)

Lake

Lake

Lake

Lake

0

200 SOUTH

400 SOUTH

600 SOUTH

800 SOUTH

1000 SOUTH

Road

800 WEST 700 WEST 600 WEST 500 WEST 400 WEST 300 WEST 200 WEST 100 WEST 0 100 EAST 200 EAST 300 EAST 400 EAST 500 EAST 600 EAST 700 EAST 800 EAST

Iodine Values 1cm = 100 ppb

LEGEND

Copper Values 1cm = 200 ppb

ASTRONOMIC

N

SHEET ORIENTED UTM NORTH
AZIMUTH 000° 11'

2.17658

42A15NW0028 2.17658 NEWMARKET

420

FALCONBRIDGE LIMITED

Exploration Division Timmins ONTARIO

MANN BELT PROJECT
GRID DUF96-03
DUFF TOWNSHIP

ENZYME LEACH PROFILE PLOT
COPPER & IODINE

TRACED:	Geosoft	DATE: 01/96	NTS: 42-A/15	PROJECT: 8289	
DRAWN:	A. Tallefer	DATE: 01/96	MAP No: DUF9603	FILE: DUF9603K	
SUPERVISED:	C. Petch	DATE: 01/96	SCALE 1:5 000 (metres)		
REVISED:		DATE:	0 40 80 120 160		

1204691 (6 UNITS)

1201995 (6 UNITS)

REAUME Twp.

DUFF Twp.

Lake

Lake

Lake

Lake

1200935 (12 UNITS)

D. GAMBLE/S. GAMBLE (2 UNITS)

1203218

1201957 (6 Units)

1200934 (15 Units)

200 SOUTH

400 SOUTH

600 SOUTH

800 SOUTH

1000 SOUTH

Road

800 WEST 700 WEST 600 WEST 500 WEST 400 WEST 300 WEST 200 WEST 100 WEST 0 100 EAST 200 EAST 300 EAST 400 EAST 500 EAST 600 EAST 700 EAST 800 EAST

-10 187 -10 204 13 197 42 24 73 30 13 234 17 245

-10 189 12 178 16 163 54 28 50 28 21 173 150 45

-10 232 50 32 11 190 27 34 59 22 40 84 37 54

-10 238 14 140 -10 172 49 38 13 258 61 44 15 181

-10 193 11 145 10 176 -10 201 13 210 33 37 20 163

-10 205 10 203 -10 162 15 249 -10 156 -10 199 13 188

-10 199 -10 174 13 154 -10 166 32 43 -10 189 11 278

-10 251 10 197 47 72 -10 245 -10 239 44 31 12 226

-10 230 10 191 19 158 -10 233 69 39 -10 76 12 204

13 236 14 184 12 199 -10 108 30 47 38 33 -10 220

-10 232 10 161 13 114 28 69 41 49 12 142 -10 209 -10 225 16 256

-10 248 -10 172 -10 224 -10 130 41 26 16 78 12 216 -10 216

-10 211 15 217 -10 183 -10 211 71 19 -10 217 11 210 10 299

-10 208 11 180 -10 213 12 213 33 69 15 177 -10 245 13 179

-10 225 -10 193 11 195 -10 224 31 78 43 30 -10 204 10 267 -10 217 11 155 31 66

-10 210 -10 303 -10 184 11 250 21 158 70 25 11 226 12 289 14 214 15 232 34 60

38 65 16 176 -10 193 -10 219 65 43 86 26 -10 203 18 234 -10 211 17 193 56 46

43 67 26 109 19 196 12 190 58 36 99 34 21 283 11 225 -10 240 11 201 96 31

10 208 51 43 -10 200 14 223 12 165 -10 246 16 233 -10 220 -10 225 10 237 60 72

11 239 73 40 -10 185 13 196 14 179 -10 206 39 55 -10 214 56 47 16 238 11 249

14 237 15 163 -10 220 16 267 -10 196 -10 210 12 208 15 278 36 128 14 246 -10 212

24 19 52 40 14 7 0

66 53 21 13 25 9

79 32 16 13 19 6

18 21 10 -5 -10 -5

58 48 10 -5 17 -5

22 26 10 5 -10 -5

50 33 -10 -5 -10 -5

31 31 13 6 -10 -5

50 39 22 14 -10 -5

47 21 -10 -5

28 34 15 8

67 25 30 6

39 27 39 19

58 48

22 26

50 33

31 31 15 9

50 39 18 13

47 21 13 120

28 34 -10 74

67 25 -10 66

LEGEND

-30 37

-30 51

-30 48

Iodine Values Copper Values

ASTRONOMIC

N

SHEET ORIENTED UTM NORTH AZIMUTH 000° 11'

FALCONBRIDGE LIMITED

Exploration Division Timmins ONTARIO

MANN BELT PROJECT

GRID DUF96-03

DUFF TOWNSHIP

ENZYME LEACH VALUES PLOT

COPPER & IODINE

TRACED:	GeoscR	DATE: 01/96	NTS: 42-A/15	PROJECT: 8269	
DRAWN:	A. Tellefer	DATE: 01/96	MAP No: DUF9603	FILE: DUF9603K	
SUPERVISED:	C. Petch	DATE: 01/96	SCALE 1:5 000 (metres)		
REVISED:		DATE:	0 40 80 120 160		

42A15NW0028 2.17658 NEWMARKET

1204691 (6 UNITS)

1201995 (6 UNITS)

REAUME Twp.

DUFF Twp.

1200935 (12 UNITS)

D. GAMBLE/S. GAMBLE

1203218 (2 UNITS)

1201957

(6 Units)

1200934

(15 Units)

Lake

Lake

Lake

Lake

Road

0

200 SOUTH

400 SOUTH

600 SOUTH

800 SOUTH

1000 SOUTH

800 WEST 700 WEST 600 WEST 500 WEST 400 WEST 300 WEST 200 WEST 100 WEST 0 100 EAST 200 EAST 300 EAST 400 EAST 500 EAST 600 EAST 700 EAST 800 EAST

LEGEND

Bromine Values 1cm = 200 ppb

Zinc Values 1cm = 100 ppb

ASTRONOMIC

N

SHEET ORIENTED UTM NORTH AZIMUTH 000° 11'

42A15NW0028 2.17658 NEWMARKET

440

2.17658

FALCONBRIDGE LIMITED

Exploration Division Timmins ONTARIO

MANN BELT PROJECT

GRID DUF96-03

DUFF TOWNSHIP

ENZYME LEACH PROFILE PLOT

ZINC & BROMINE

TRACED:	Geosoft	DATE: 01/96	NTS: 42-A/15	PROJECT: 8289	
DRAWN:	A. Tallefer	DATE: 01/96	MAP No: DUF9603	FILE: DUF9603K	
SUPERVISED:	C. Petch	DATE: 01/96	SCALE 1:5 000 (metres)		
REVISED:		DATE:	0 40 80 120 160		

1204691 (6 UNITS)

1201995 (6 UNITS)

REAUME Twp.

DUFF Twp.

1200935 (12 UNITS)

1201957 (6 Units)

1200934 (15 Units)

1203218 (2 UNITS) D. GAMBLE/S. GAMBLE

Lake

Lake

Lake

Lake

Road

800 WEST 700 WEST 600 WEST 500 WEST 400 WEST 300 WEST 200 WEST 100 WEST 0 100 EAST 200 EAST 300 EAST 400 EAST 500 EAST 600 EAST 700 EAST 800 EAST

0 200 SOUTH 400 SOUTH 600 SOUTH 800 SOUTH 1000 SOUTH

2.17658

2.17658

ASTRONOMIC

N

SHEET ORIENTED UTM NORTH AZIMUTH 000° 11'

LEGEND

-30 | 37

-30 | 51

-30 | 48

Bromine Values Zinc Values

450

42A15NW0028 2.17658 NEWMARKET

FALCONBRIDGE LIMITED

Exploration Division Timmins ONTARIO

MANN BELT PROJECT

GRID DUF96-03

DUFF TOWNSHIP

ENZYME LEACH VALUES PLOT

ZINC & BROMINE

TRACED:	Geosoft	DATE: 01/96	NTS: 42-A/15	PROJECT: 8269	
DRAWN:	A. Tellefer	DATE: 01/96	MAP No: DUF9603	FILE: DUF9603K	
SUPERVISED:	C. Petch	DATE: 01/96	SCALE 1:5 000 (metres)		
REVISED:		DATE:	0 40 80 120 160		

1204691 (6 UNITS)

1201995 (6 UNITS)

REAUME Twp.

DUFF Twp.

1200935 (12 UNITS)

D. GAMBLE/S. GAMBLE

1203218 (2 UNITS)

1201957

(6 Units)

1200934

(15 Units)

Lake

Lake

Lake

Lake

0

200 SOUTH

400 SOUTH

Road

600 SOUTH

800 SOUTH

1000 SOUTH

800 WEST 700 WEST 600 WEST 500 WEST 400 WEST 300 WEST 200 WEST 100 WEST 0 100 EAST 200 EAST 300 EAST 400 EAST 500 EAST 600 EAST 700 EAST 800 EAST

2.17658

LEGEND

Manganese Values 1cm = 2000 ppb

ASTRONOMIC

N

SHEET ORIENTED UTM NORTH AZIMUTH 000° 11'

FALCONBRIDGE LIMITED

Exploration Division Timmins ONTARIO

MANN BELT PROJECT

GRID DUF96-03

DUFF TOWNSHIP

ENZYME LEACH PROFILE PLOT

Manganese

TRACED:	Geosoft	DATE: 01/96	NTS: 42-A/15	PROJECT: 8289	
DRAWN:	A. Taillefer	DATE: 01/96	MAP No: DUF9603	FILE: DUF9603K	
SUPERVISED:	C. Petch	DATE: 01/96	SCALE 1:5 000 (metres)		
REVISED:		DATE:	0 40 80 120 160		

460

1204691 (6 UNITS)

1201995 (6 UNITS)

REAUME Twp.

DUFF Twp.

1200935 (12 UNITS)

D. GAMBLE/S. GAMBLE (2 UNITS) 1203218

1201957 (6 Units)

1200934 (15 Units)

Lake

Lake

Lake

Lake

Road

800 WEST	700 WEST	600 WEST	500 WEST	400 WEST	300 WEST	200 WEST	100 WEST	0	100 EAST	200 EAST	300 EAST	400 EAST	500 EAST	600 EAST	700 EAST	800 EAST
2193	1927	1584	442	436	2407	1523								389	0	
1753	2008	1713	398	413	2646	450								1569	2026	
1632	745	1597	924	724	1936	1060								5947	830	
1719	2130	1188	515	1825	907	932								6453	2027	
1703	1830	1226	1589	2091	631	1777								320	2963	200 SOUTH
1675	2319	1679	2112	1940	1744	1352								428	1333	
1550	1251	1618	1427	715	1967	1484								1297	1111	
1728	2221	1111	1281	1682	670	1319								229	411	
1439	2007	1717	1632	567	1679	1358								1741	2177	400 SOUTH
1640	1140	1596	922	950	448	783									547	
1679	1625	1548	984	1385	1729	1198	1292	1458					1745		1464	
1990	1707	1547	1515	515	1401		1348	1203					333		694	
1606	1859	1250	1518	440	1822		1035	1713					208	1072	735	600 SOUTH
1937	2552	1183	1850	1745	2002		2144	1223					381	370		
1639	1325	1660	2101	1228	940		1157	1844	1429	1271	1572	594		453		
1716	1455	1733	1955	2152	653		1459	1345	1572	2098	1533	454		353		
1765	2360	2135	1503	621	548		1168	2198	1427	2105	579	561		618		
1014	1827	2091	1807	563	596		1412	1370	1515	1613	336	381		290		
1324	999	1853	1692	768	1600		1310	1344	1522	1334	310	519		217		
1756	756	1570	1245	2173	1236		1113	1244	675	2222	1814	377		267		
1739	1852	1969	2020	1587	1652		932	1568	2287	1799	1244	458		464	1519	1000 SOUTH

ASTRONOMIC

N

SHEET ORIENTED UTM NORTH AZIMUTH 000° 11'

FALCONBRIDGE LIMITED

Exploration Division Timmins ONTARIO

MANN BELT PROJECT

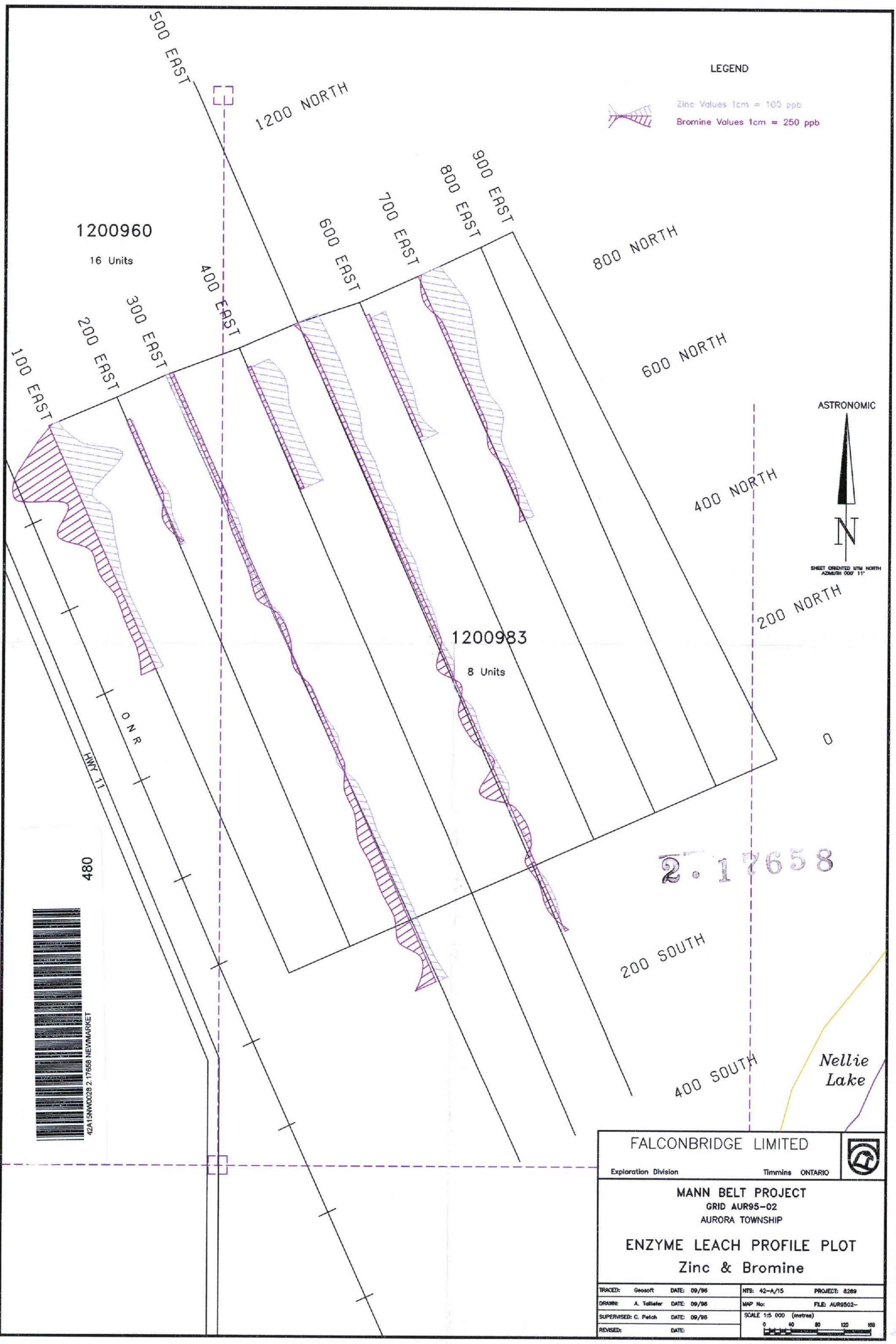
GRID DUF96-03

DUFF TOWNSHIP

ENZYME LEACH VALUES PLOT

Manganese

TRACED: Geosoft	DATE: 01/96	NTS: 42-A/15	PROJECT: 8269
DRAWN: A. Tellefer	DATE: 01/96	MAP No: DUF9603	FILE: DUF9603K
SUPERVISED: C. Petch	DATE: 01/96	SCALE 1:5 000 (metres)	
REVISED:	DATE:	0 40 80 120 160	



FALCONBRIDGE LIMITED

Exploration Division — Timmins ONTARIO

MANN BELT PROJECT

GRID AUR95-02

AURORA TOWNSHIP

ENZYME LEACH PROFILE PLOT

Zinc & Bromine

TRACED:	Geosoft	DATE: 09/96	NTS: 42-A/15	PROJECT: 8289	
DRAWN:	A. Tallefer	DATE: 09/96	MAP No:	FILE: AUR9502-	
SUPERVISED:	C. Petch	DATE: 09/96	SCALE 1:5 000 (metres)		
REVISED:		DATE:	0 40 80 120 160		