BASELINE AND MONITORING STUDIES AT THE SEQI OLIVINE MINE 2004 TO 2007

NERI Technical Report no. 715 2009

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Data sheet

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Abstract: In 2005 an olivine mine in West Greenland started production. This report compiles and assesses data from baseline studies conducted in 2004 and 2005 and from monitoring studies conducted in 2006 and 2007. Baseline concentrations of elements were not elevated at the olivine deposit. Monitoring studies show that dust from the operation has caused levels of chromium, nickel and iron to increase in lichens, seaweed and blue mussels. This effect, however, is very local, within 1-2 km from the mine and fish are not affected. Thus the effect of the mine is very local.

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Summary

Olivine has been mined and exported at Seqi in West Greenland since 2005. In 2004 and 2005 baseline studies were performed in order to describe the occurrence of fish, marine bottom invertebrates (crabs and shrimps), and birds in the area and to obtain information on sediment characteristics. An area in the inner parts of Tasiussarsuaq, close to the olivine deposit, was found to be anoxic at depths greater than 100 m. To assess possible impacts of the olivine deposit prior to mining, a range of elements was analysed in lichens, brown seaweed and blue mussels before the olivine mining started. There were no measurable natural elevations of elements originating from the olivine deposit.

In 2007 a spreading of dust was indicated after the mining started. The dust contains elevated concentrations of chromium and nickel and some other elements as reflected in the increased levels of these elements in lichens collected close to Seqi. In seaweed and blue mussels this dusting has resulted in elevated concentrations of chromium and nickel, but only at one station very close to the deposit. No chromium or nickel pollution could be detected in fish or in water samples from the lake. Thus the effect of the mine is very local and is by DMU interpreted as insignificant for the environment at Fiskefjord.

Resume

Der har været brudt olivine ved Seqi siden 2005. I 2004 og 2005 blev der udført baggrundsundersøgelser med det formål at beskrive den upåvirkede natur før minedrift startede. Forekomsten af fisk, marine bundinvertebrater (krabber og rejer), og fugle samt marine sedimenters karakter blev beskrevet.

Et område af fjordbunden med vanddybder dybere end 100 meter i den indre del af Fiskefjord tæt på olivinforekomsten fandtes at være iltfrit.

En række grundstoffer blev analyseret i et udvalg af de indsamlede prøver af lav, tang, blåmusling og ferskvand. Der var ingen målelige naturlige forhøjelser af grundstoffer ved olivinforekomsten.

I 2007 var der indikationer for en støvspredning som resultat af minedriften på stedet. Støvet indeholdt forhøjede koncentrationer af krom, nikkel og enkelte andre grundstoffer, hvilket blev påvist ved analyse af lavprøver indsamlet tæt på olivinforekomsten.

I tang og musling kunne denne støvspredning konstateres som et forhøjet indhold af krom og nikkel ved én station beliggende hvor elven fra Long Lake munder ud i fjorden. Der fandtes ikke forhøjede koncentrationer af krom og nikkel i fisk og i ferskvand. Den målte støvforurening var meget lokal, og vurderes af DMU som ubetydelig for miljøet i Fiskefjord generelt.

Eqikkaaneq

2005-imiii Seqinnersuusaami olivenisiortoqalersimavoq. Aatsitassarsiornerup aallartinnissaa sioqqullugu pinngortitaq suli sunnerneqarsimanngitsoq allaaseriumallugu 2004-imi 2005-imilu misissuisoqartarpoq. Aalisakkat qimerluitsullu natermiut (assagiarsuit raajallu), timmissat kiisalu immap naqqani marraap qanoq issusia allaaserineqarput.

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Qillinerit, equutit, uillut imerlu pinngoqqaatinik akoqassusiinik misissuiffigineqarput. Qillinerit, equutit, uillut imerlu pinngoqqaatinik akoqassusiinik misissuiffigineqarput. Oliveqarfimmi pinngoqqaatit imminni qaffasinnerunerannik uuttuisoqarsimanngilaq.

2007-imi tamaani aatsitassarsiortoqarneratigut pujoralaat assut siammarsimanerat paasineqarpoq. Pujoralak kromimik, nikkelimik pinngoqqaatinillu ataasiakkaanik allanik annertuunik akoqarpoq, tamannalu oliveneqarfiup eqqaani qillinernik misissuinikkut paasineqarpoq.

Equutini uillunilu pujoralaat siammarsimanerat tamanna kuup Long Lakep kangerlummut akuata eqqaani sumiiffimmi ataatsimi kromip nikkelillu annertusisimaneratigut paasineqarpoq. Kromip nikkelillu aalisakkani imermilu annerulersimanerat takussutissaqanngilaq. Pujoralammik mingutsitsineq sumiiffimmi annikitsuinnarmi pisimavoq Niaqunngunallu sinneranut annerusumik sunniuteqarsimasutut oqaatigineqarsinnaanani. Tamannalu DMU-miit Niaqunngunamut sunniuteqanngitsutut nalilerneqarpoq.

1 About olivine and the Seqi mine

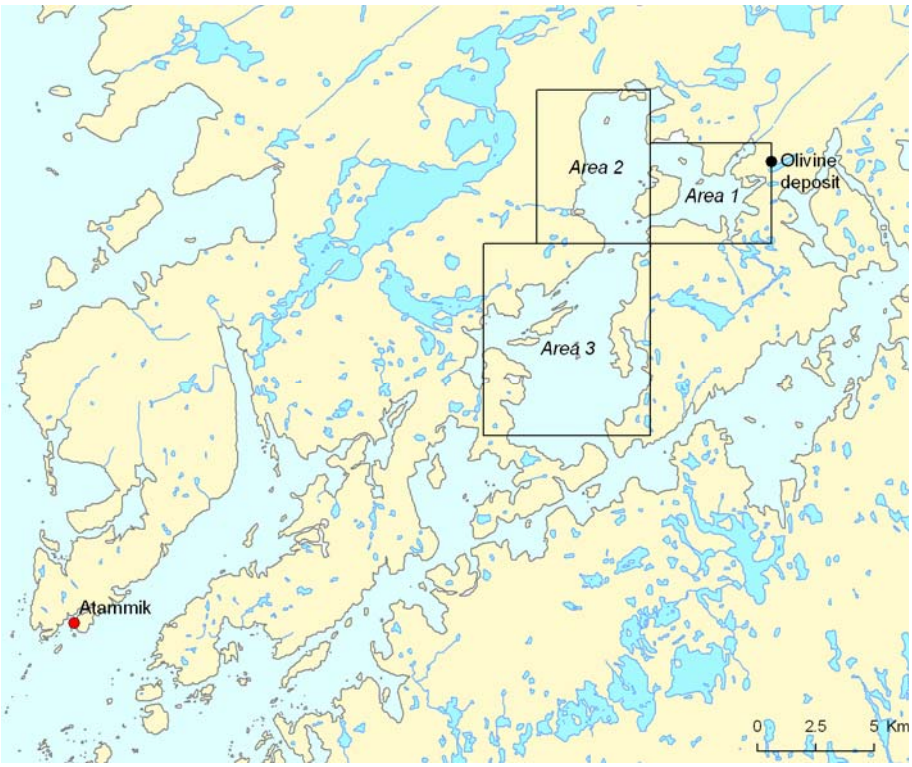
The deposit of olivine at Seqi has been known for a long time; see Nielsen (1976) for a geological description. Olivine is an industrial mineral with the composition $FeMgSiO_4$. It is mainly used in the steel industry. Olivine is used extensively as a refractory raw material, as a slag conditioner in blast furnaces and as a tap hole filler in electric arc furnaces.

Olivine is a very common mineral known from all parts of the World. It is mined in several countries, among others Norway.

Figure 1.

In Greenland the locality where the olivine deposit is located is called Seqi (Figure 1). It is located east of the settlement Atammik in the inlet Tasiussarsuaq close to the sea and it is accessable most of the year (Figure 2). The approach to the deposit goes through a long and narrow fiord Niaquungunaq (in Danish Fiskefjord). The fiord is both narrow and shallow at several places. This results in strong tidal currents so that the fiord is only navigable during a short period of time around high tide.

Figure 2. Map of Fiskefjord.



The deposit is mined in an open pit. The ore is crushed and stored at the coast before being shipped out in bulk carriers. Photos from the operation are shown below. Maps from the area at the mine are shown in Figure 2, Figure 3, and Figure 4.

In late 2005 the company Seqi Olivine A/S got permission to mine 120,000 tons of olivine. On November 24, 2005 the first ship was loaded with 46,000 tons of olivine. Later the company was given a permanent license to full scale mining and exportation of olivine for 30 years. The present production is about 500,000 tons per year.

Seqi Olivine A/S is owned by Minelco, a daughter company of Swedish LKAB.

The ore treatment at Seqi.
Photo: Bureau of Minerals and Petroleum, Nuuk.

Mining of olivine at Seqi.
Photo: Bureau of Minerals and Petroleum, Nuuk.

2 Environmental studies

The first baseline studies were conducted in May 2004 with the aim to identify suitable indicator species. Blue mussels, seaweed, snow crabs, Greenland cod, shorthorn sculpin, lichens as well as sediments were collected. Based on the result of the 2004 campaign the same biota, except crabs and Greenland cod, were re-sampled in 2005, 2006 and 2007, but no sediments were taken. Water samples from the river running out of "Long Lake" at Seqi have also been taken before and during mining.

The evaluation of the environmental effects of the mining operation has been done by comparing the pre-mining levels of certain elements in the biota (2004 and 2005) with the levels in 2006 when test mining had just started and samples from 2007 when mining had been going on at full production rate for more than a year. Comparison of samples collected close to the mine with samples collected far from the mine has also been used in the evaluation.

In addition, in 2004 a general survey of fish and shellfish in the inlet of Tasiussarsuaq was conducted, and bird observations were also made.

The first background studies were conducted on a cruise with the research vessel Adolf Jensen in May 2004 by Lene Bruun NERI, Gert Asmund NERI and Tanja Nielsen Nalunaq Gold Mine. All later studies have been performed by Sigga Joensen and Lene Bruun with assistance of local people from the mining site. In 2004, samples were frozen onboard Adolf Jensen and sent by ship to NERI in Roskilde. At later studies samples were frozen at the mining company's camp and then sent to NERI. In 2005, 2006 and 2007 sampling was done by use of a small boat with assistance from local workforce. In 2007 also two Arctic chars from Long Lake were sampled. Water from Long Lake was sampled by the mining company at irregular intervals. We have divided the sampling area into three sub areas 1, 2, and 3 as shown in Figure 2. Sub area 1 is the area close to the deposit, sub area 2 is the northern part and sub area 3 the southern part of Tasiussarsuaq.

A selection of the samples have been analysed for a range of trace elements by ICP-MS at the Department of Arctic Environment at NERI in Roskilde, Denmark.

3 Background observations and sample collection

3.1 Samples collected at tidal stations

A total of 25 tidal stations were established. Close to the olivine deposit, stations were placed within a short distance from each other. The samples from station 22 and 23 in Fiskefjord are outside the inlet of Tasiussarsuaq and can be regarded as reference samples. The position of the stations can be seen in Figure 3 and 4. The positions of the tidal stations and the lichen stations are listed in Table 1.

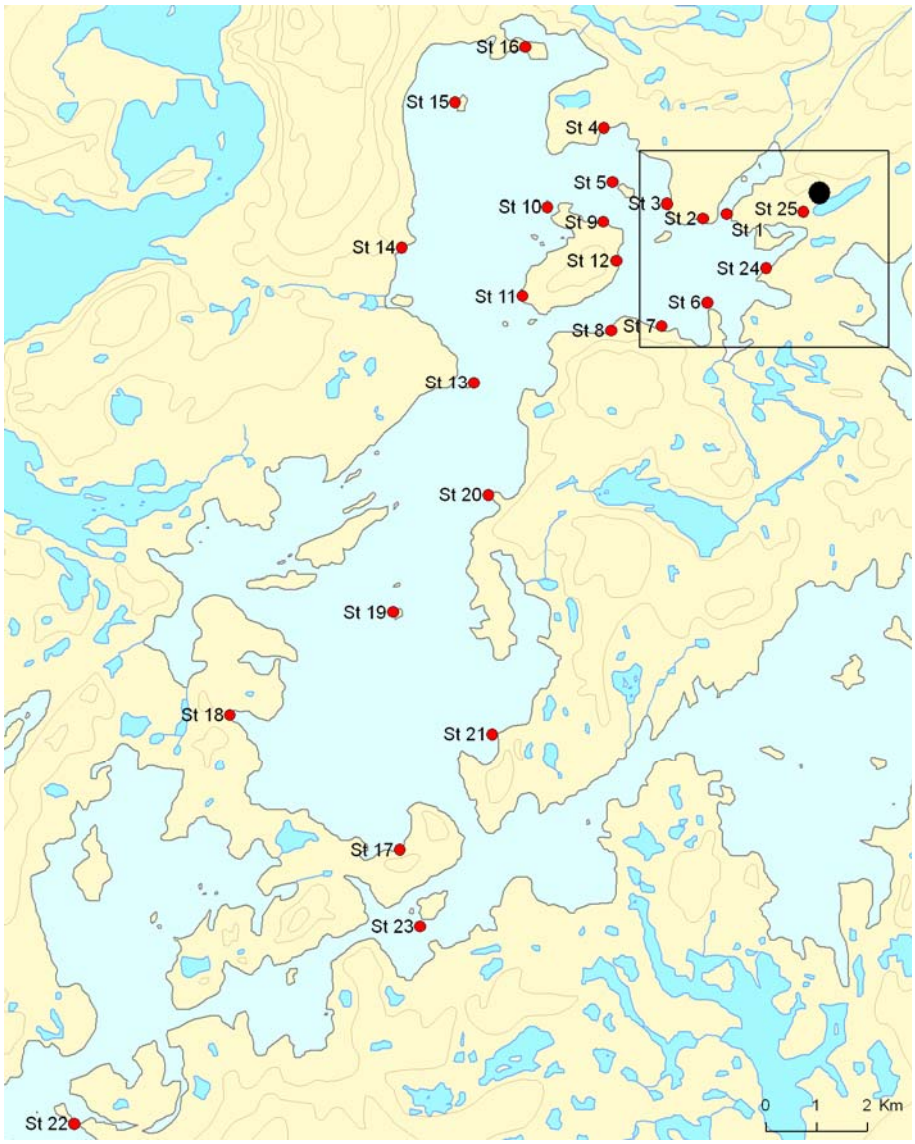


Figure 3. Tidal stations. See the detailed map in figure 4.

Table 1. Positions of tidal stations and lichen stations.

Station	Position		Station	Position	
	64 N +min.	51 W +min.		64 N +min.	51 W +min.
St 1	58.9000	35.6000	St 19	54.6150	43.8670
St 2	58.8500	36.1940	St 20	55.8730	41.5030
St 3	59.0000	37.1000	St 21	53.3260	41.3330
St 4	59.8000	38.7000	St 22	49.1240	51.6720
St 5	59.2180	38.4720	St 23	51.2640	43.0940
St 6	57.9570	36.0680	St 24	58.3260	34.5960
St 7	57.7000	37.2000	St 25	58.8320	33.6654
St 8	57.6450	38.4750	Lichen stations		
St 9	58.8010	38.6920	Lav1	58.9320	33.6654
St 10	58.9550	40.0950	Lav2	59.1318	33.2640
St 11	58.0000	40.7040	Lav3	59.0958	33.1950
St 12	58.3890	38.3650	Lav4	59.3922	32.0988
St 13	57.0690	41.8940	Lav5	58.8978	33.2808
St 14	58.5080	43.7470	Lav6	58.7736	33.4860
St 15	60.0550	42.4400	Lav7	58.3260	34.5980
St 16	60.6500	40.7000	Lav8	59.3171	31.9648
St 17	52.0790	43.6220	Lav9	59.1958	32.1735
St 18	53.4980	47.9060	Lav10	58.9697	32.8899

3.1.1 Blue mussels

Blue mussels (*Mytilus edulis*) were collected by hand at low tide at all stations (Figure 3). St 24 and St 25 were not sampled in 2004. The mussels were measured and two size groups, 4 to 5 cm and 5 to 6 cm, were chosen. In each size group 20 mussels were cut open and left for drainage some minutes. Then the soft parts were scraped out with a scalpel into a polyethylene bag. The pooled samples were then weighed and frozen. Data for the blue mussel are kept in a database at NERI containing the information about sampling position and time and length and weight of the mussels.

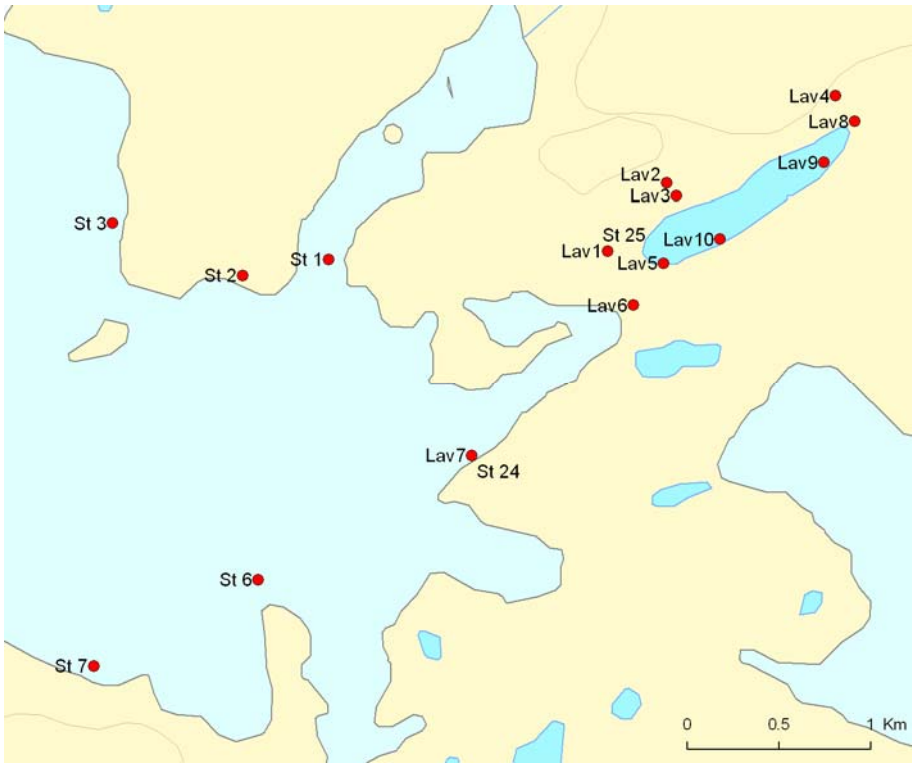
3.1.2 Seaweed

At each tidal station (see Figure 3), two 10 litres plastic bags were filled with brown seaweed, *Fucus vesiculosus*. The two samples were collected 10 to 20 meters apart, thus constituting two separate samples. In the lab the new growth tips were cut of with a pair of stainless steel scissors. The tips were then washed three times with deionised water or clean fresh water and packed in polyethylene bags and frozen.

3.1.3 Lichen

The lichen species sampled was C*etraria nivalis*. The species has been used at several places in Greenland by NERI for dust monitoring, and data from several stations distributed over most of Greenland are available e.g. Riget et. (2000). Table 1 gives a list of stations where lichen has been sampled. Samples denoted "Lav 1-10" are close to the deposit (see Figure 4).

Figure 4. Close up of the sampling stations for lichens.



The lichen samples were packed in paper bags, and dried by storing in the laboratory. They were shipped unfrozen to NERI.

3.2 Marine sediment samples

Marine sediment samples were taken in the deeper part of the fiord system (> 70m) with a HAPS stainless steel gravity box corer except at one location. Some of the cores taken in area 1 were cut into 1-cm slices. They can be used for determination of the sedimentation rate. For the remaining sediment cores only the top layer was sampled. Several of the cores had the characteristic properties of oxygen free environment (anoxic sediment). They were black and soft, muddy, smelled strongly of hydrogen sulphide, and did not contain any sign of macroscopic life. Other samples were green mud with more or less stones. They contained typical benthic organisms such as polychaetes and mussels. Table 2 gives an overview of the sediment samples taken. The second last column shows if the sediment is anoxic (Yes) or not (No).

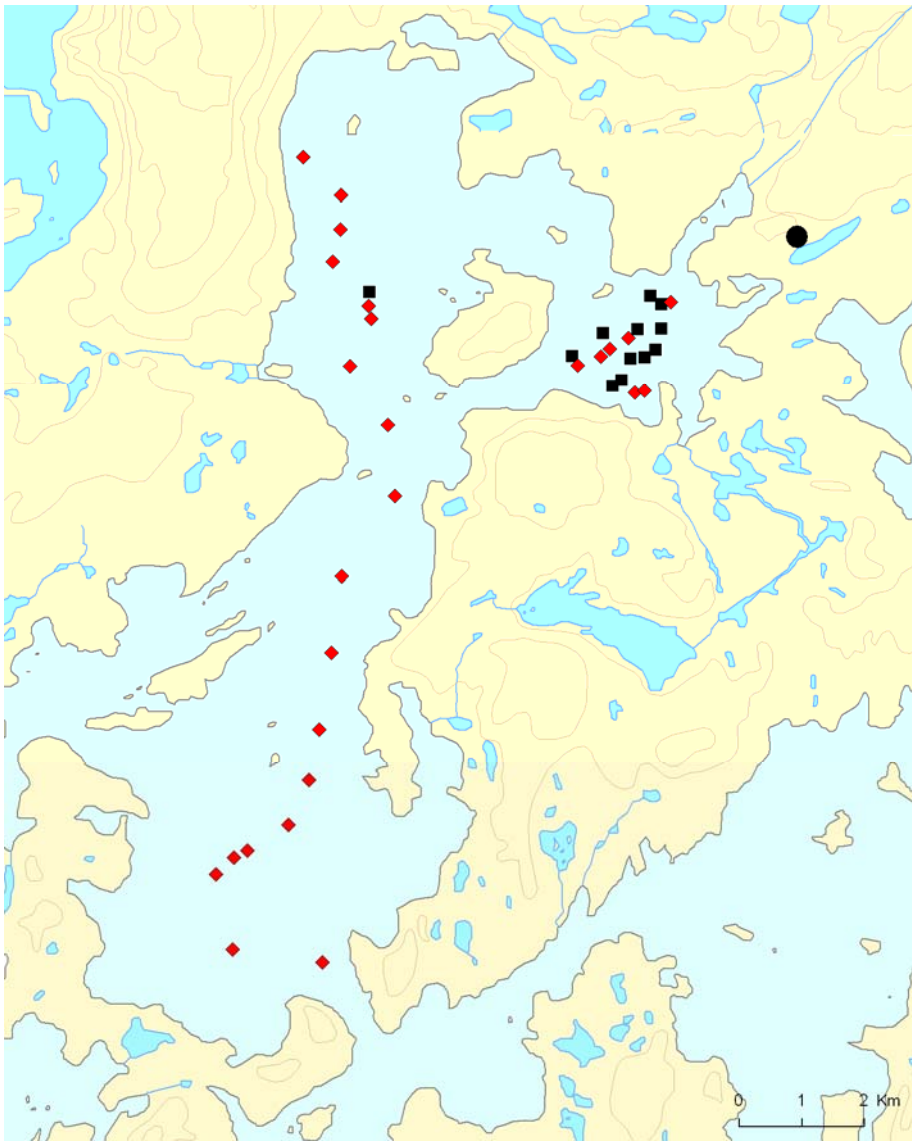
Sediment sample No. 31291 was taken by a Van Veen grab sampler, in the southernmost part of area 3. The bottom in this part of area 3 was mainly composed of shells from mussels, and it could not be sampled with the HAPS. Only at one of the stations in this part of area 3 it was possible to get a sample with the Van Veen. Non of the sediment samples have been analysed to date.

Table 2. Sediment samples.

ID-No	Collection date	Station	Lat deg	Lat min	Long deg	Long min	Comments	An-oxic?	depth, m
31291	20040513	V1	64	52.869	51	42.7039	Chrushed shells	no	150
31301	20040511	Haps-1	64	57.838	51	36.9857	0-1 cm	yes	130
31302	20040511	Haps-1	64	57.838	51	36.9857	0-20 cm cut into 1cm slices, anoxic	yes	130
31303	20040511	Haps-2	64	58.336	51	36.0056	0-20cm cut into 1 cm slices	yes	115
31304	20040511	Haps-3	64	58.6176	51	36.2391	cut into 1 cm slices	yes	109
31305	20040511	Haps-4	64	58.2939	51	37.1869	0-17cm cut into 1 cm slices	yes	122
31306	20040511	Haps-5	64	58.0934	51	37.8012	0-26 cm, cut into 1 cm slices, anoxic	yes	121
31307	20040512	Haps-6	64	58.564	51	35.8136	0-1 cm, green mud with life,	no	84
31308	20040512	Haps-7	64	58.5452	51	36.0093	0-1cm, green/black mud smell of hydrogen sulphide,dead	yes	100
31309	20040512	Haps-8	64	58.3319	51	36.4828	0-1 cm,green mud, dead,stones and shells	yes	105
31310	20040512	Haps-9	64	58.2518	51	36.6717	0-1 cm,stones, green, life	no	70
31311	20040512	Haps-10	64	58.1557	51	37.039	no sample,corals, life,	no	87
31312	20040512	Haps-11	64	58.0934	51	37.2244	0-1 cm, stones, green, life,	no	94
31313	20040512	Haps12	64	58.0110	51	37.6847			100
31330	20040513	Haps-13	64	58.1575	51	36.1189	0-1 cm,black hydrogen sulphide,dead mud	yes	139
31331	20040513	Haps-14	64	58.0879	51	36.332	0-1 cm,black hydrogen sulphide,dead mud	yes	120
31332	20040513	Haps-15	64	58.0788	51	36.6236	0-1 cm,black hydrogen sulphide,dead mud	yes	120
31333	20040513	Haps-16	64	57.8897	51	36.7987	0-1 cm,black hydrogen sulphide,dead mud	yes	130
31334	20040513	Haps-17	64	57.7798	51	36.5309	1 sample with stones and green mud, life	no	77
31335	20040513	Haps-18	64	57.8	51	36.3284	0-1 cm, green mud, no life	no	97
31387	20040514	Haps-19	64	58.3928	51	41.8696	mixed sample,green mud, life	no	228
31388	20040514	Haps-20	64	58.6253	51	41.9144	0-1cm,black mud, hydrogen sulphide, dead	yes	252
31389	20040514	Haps-21	64	58.5059	51	41.9279	0-1cm,green mud with traces of black,life,	no	238
31390	20040514	Haps-22	64	58.8821	51	42.6592	0-1cm,green mud with life	no	200
31391	20040514	Haps-23	64	59.1568	51	42.5047	0-1cm, green mud with life	no	175
31392	20040514	Haps-24	64	59.4456	51	42.5015	0-1cm, green mud with life	no	150
31393	20040514	Haps-25	64	59.7665	51	43.2772	0-1cm, green mud with life	no	123
31434	20040515	Haps-26	64	53.6073	51	44.8737	0-1 cm,green muds	no	306
31435	20040515	Haps-27	64	53.7547	51	44.5166	0-1 cm,green mud with some stones, with life	no	264
31436	20040515	Haps-28	64	53.8156	51	44.2422	0-5cm,very stony with life	no	197
31437	20040515	Haps-29	64	54.0367	51	43.418	big worm at 10 cm	no	175
31438	20040515	Haps-29	64	54.0367	51	43.418	0-5cm,very stony top with life,stones re-moved from sample	no	175
31439	20040515	Haps-30	64	54.424	51	43.0197	0-3cm,green mud with life, few stones	no	150
31440	20040515	Haps-31	64	54.8666	51	42.8172	0-3cm,green mud with life, few stones	no	169
31441	20040515						hard bottom, no sample	no	80
31442	20040515	Haps-32	64	55.5258	51	42.5974	0-5cm,green mud with stones with life	no	175
31443	20040515	Haps-33	64	56.1818	51	42.4017	0-5cm, green mud with some stones, with life	no	148
31444	20040515	Haps-34	64	56.8712	51	41.3512	0-10cm,green mud with very many stones, one scallop	no	126
31445	20040515	Haps-35	64	57.4805	51	41.5091	0-3cm,green gravel with mud, with life	no	186
31446	20040515	Haps-36	64	579845	51	42.2848	0-7cm,green mud with stones	no	88
31495	20040516	Haps-38	64	52.9706	51	44.5235	0-2 cm green mud with life	no	256

Figure 5 shows that anoxic bottom is quite common in area 1, the area closest to the mine. All sediments taken in area 1 at a water depth greater than 100 m were anoxic, stinking, and contained black mud, whereas all sediments taken at depths less than 100 m were gray-green and contained life.

Figure 5. Sediment samples. Anoxic sediments are marked as black squares and sediments containing macrobiota are marked with red triangles.



In area 2 only the deepest sediment sample at 252 m water depth was anoxic, whereas samples from 238 m and less depth were green gray sediments containing macrobiota.

In area 3 no anoxic sediments were found.

The explanation is that the very strong tidal currents in the narrow entrance to area 3 supply sufficient energy to stir the water in area 3 down to the bottom. In area 2 there are only weak tidal currents, that can penetrate to somewhere between 238 and 252 metres.

In area 1 there are only very weak tidal currents and the bottom water obviously becomes stagnant, and no fresh oxygen is supplied to the water below 100 metres. It is important to know if a sediment is anoxic as anoxic sediments will accumulate many elements like lead, copper and zinc, while other elements like manganese and iron might become soluble in anoxic environments.

3.3 Fish survey

In May 2004 the occurrence of fish in Tasiussarsuaq was investigated by use of longline fishing, by fishing with gill-nets, by angling, by crab pods and by trawling, see Table 3.

Table 3. Location of fishing stations in 2004.

Fish station	Position
Longline-xx	See Figure 6
tejne-xx	see Figure 7
Net-1	close to tidal station 1
Ulk-2	close to tidal station 6
Ulk-3	close to tidal station 1
Trawl-1	The northern part of area 2
Nordlige område 2	At the island with tidal station 15 and north of this island
Område-3	Several places in area 3.

3.3.1 Long line fishing

Long lines with 500 hooks with squid as bait were applied at 5 locations in Fiskefjord, see Figure 6 and Table 4.

Table 4. The result of long line fishing with 500 hooks with squid as bait.

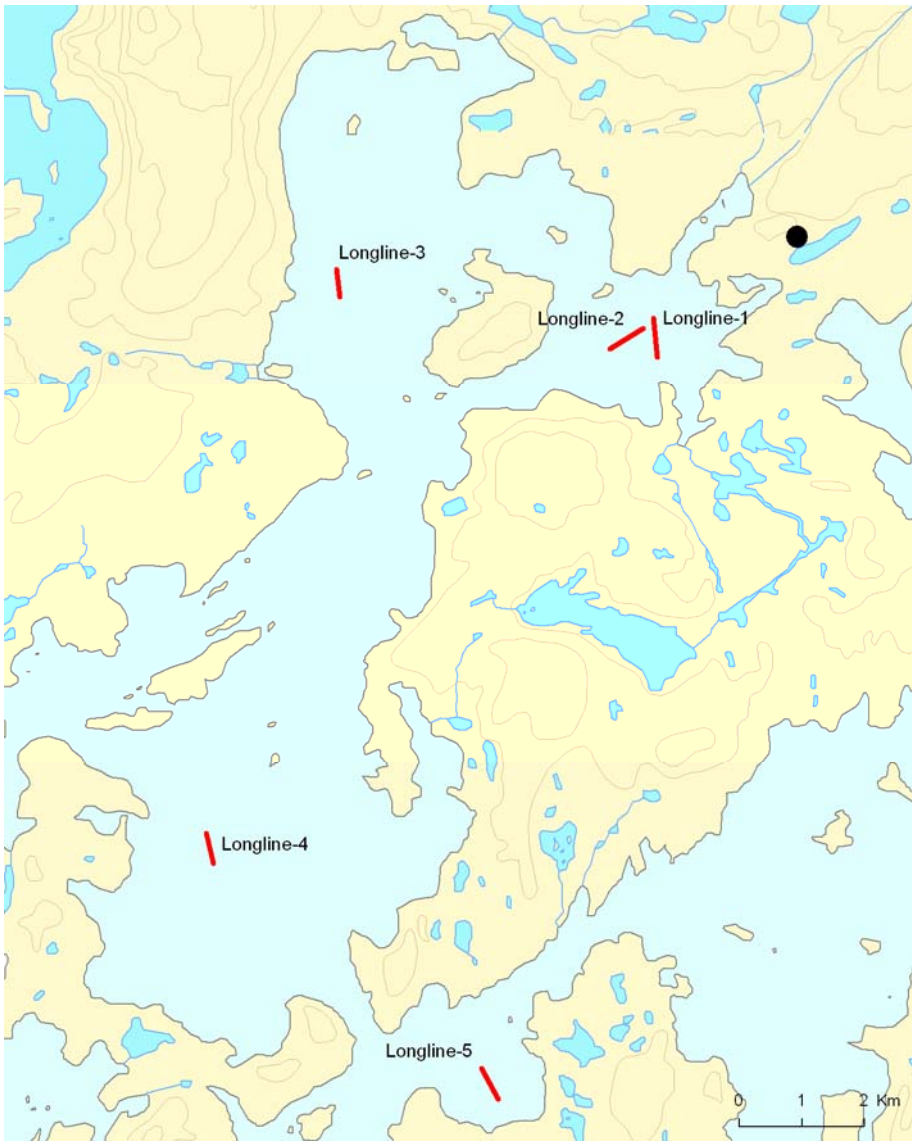
Line	No. of Greenland cod	No. of long rough dab	No. of Scallops	Area	Water depth metres
1	9			1	less than 100
2	58	3		1	86 – 107
3	52			2	206 – 214
4	38			3	298 – 309
5	58		8		72 – 118

The fishing success was excellent for one species, the Greenland cod, *Gadus ogac*. Other fish species occurred only sporadic.

8 scallops were caught on the long line No 5. It looked as if the scallops had bitten on the hooks with squid bite, but perhaps the scallops were just caught "by chance" when the hooks were dragged over the bottom during the harvesting of the long line. It shows, however, that scallops are abundant at relatively shallow water (less than 100 m) close to the places with strong tidal currents.

Meat and liver of 20 Greenland cods were sampled from each line. Fish from line 1 were however supplemented with fish caught in crab pods at the same location as line 1. Data for the fish that were sampled are seen in appendix 1.

Figure 6. Positions of the long lines.



3.3.2 Gill nets

Fishing with gill nets was conducted mainly to catch shorthorn sculpin and Arctic char.

However the fishing success for Greenland cod was so overwhelming that it excluded practically all other species, and the gill net fishing for sculpins was soon abandoned. The catch of Greenland cod by the use of long lines was sufficient. Shorthorn sculpins were therefore mainly caught by angling from the rubber dinghy in shallow water. One Atlantic cod was caught in "net-1" close to tidal station 1.

3.3.3 Angling

Shorthorn sculpins were in 2004 caught mainly by angling close to the shore. All sculpins caught were sampled for muscle and liver. In 2005, 2006 and 2007 sculpins were caught by angling only.

3.3.4 Fish caught in crab pods and by trawling

A few fish were caught in the crab pods. These are in Table 5 listed under station Tejne-xx (Tejne is Danish for pod). Also a few fish were caught in the few trawls attempted. In appendix 1 these fish are listed under "trawl-1".

3.4 Description of the catch from the crab pods

Crab pods were applied in 2004 in strings of 12 pods. All pods were equipped with fine mesh net, capable of retaining shrimps and small crabs. The bait was squid or Greenland cod. The crab pods were harvested 24 hours after they were deployed. The positions of the crab pods are given in Figure 7.

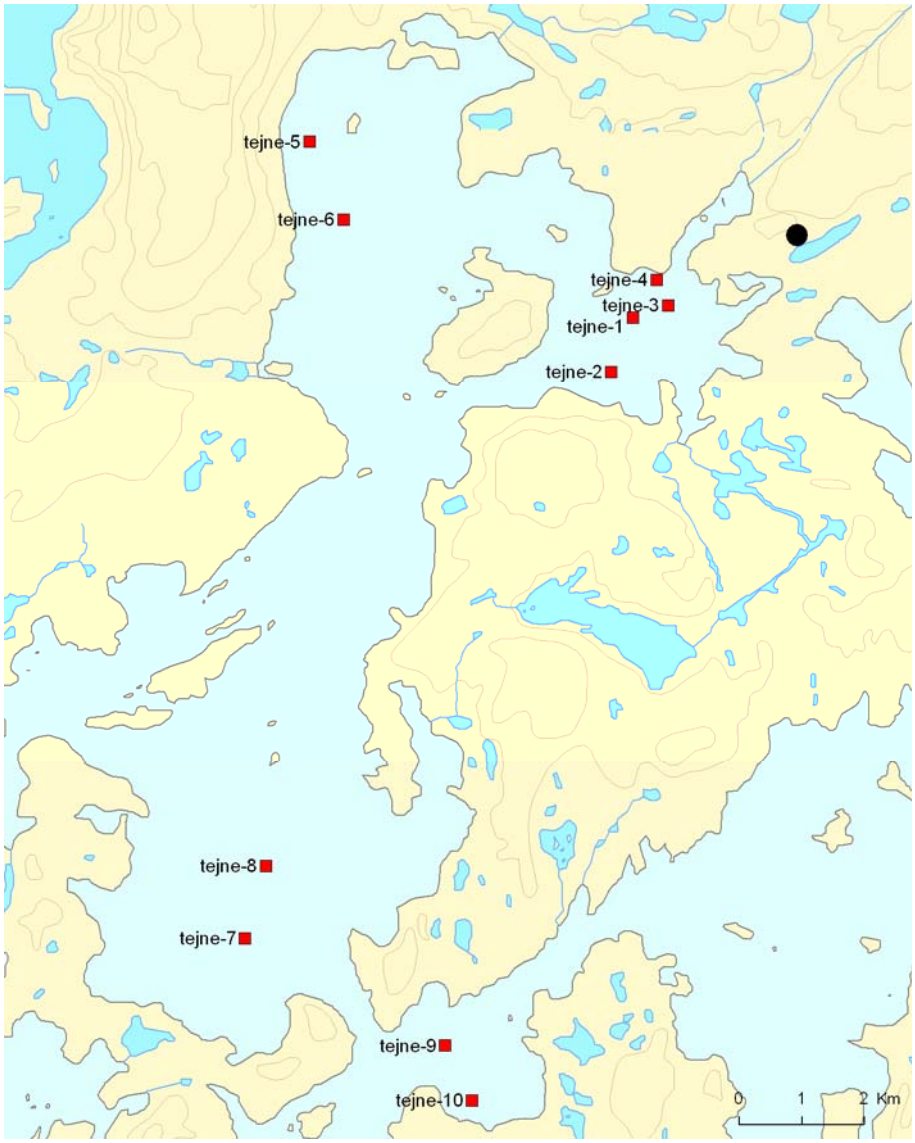


Figure 7. Positions where crab pods were applied.

The pods also contained some fish, see Table 5.

Table 5. Catch of crabs and Greenland cod in crab pods, 12 pods per station.

Station	Water depths, m	No of male snow crabs	No of female snow crabs	No of great spider crabs	No of Greenland cods
tejne-1	80 – 90	102	25	0	2
tejne-2	86 – 107	0	0	0	1
tejne-3	117	42	25	1	5
tejne-4	48 – 91	57	21	13	6
tejne-5	109 – 139	68	49	0	1
tejne-6	164 – 177	210	78	0	1
tejne-7	214 – 223	91	6	4	0
tejne-8	155 – 204	154	12	8	0
tejne-9	165 – 197	7	4	241	1
tejne-10	118 – 120	116	36	67	

Although the crab pods were equipped with fine mesh net the catch of prawns was minimal: one or two prawns *(Pandalus borealis)* in each pod. It was therefore decided not to sample prawns, as the area seemingly does not support a significant population of prawns.

The only major catch in the crab pods was the snow crab, *Chionoecetes opilio*, but mostly small and very small specimens. Also the great spider crab, *Hyas araneus*, was caught. Table 5 shows an overview of the crabs and Greenland cods caught in the pods.

From the catches in the crab pods male crabs were selected for metal analysis. If the number of big males was sufficiently high a sample of the 6 biggest males (carapace length 95 to 110 mm) and a sample of 6 – 10 "rather big" (carapace length 80 to 95 mm) males were selected. From each group, all hepatopancreas (a liver-like organ in the crab) was pooled in one polyethylene bag, and all meat from the walking legs was pooled in another polyethylene bag. In most cases this procedure resulted in two pooled meat samples and two pooled hepatopancreas samples from each station. Appendix 2 shows the properties of the crab samples.

3.5 Description of trawl results

The research trawl "Sigsbee" was tried a few times. In most cases the only catch were big boulders that destroyed the few animals caught and the net in the trawl. The conclusion is that the bottom of of the area is not suited for trawling. Four long rough dabs were caught in the first trawl.

3.6 Bird observations

3.6.1 Seabird colonies in the area

Information about bird life in the Fiskefjord-area is limited, and only three seabird breeding colonies are known and recorded in the 'Greenland seabird colony database' maintained by NERI-AE.

Present information about these colonies is given in Figure 8. The numbers refer to the code number used in the NERI database.

No. 64008: A small and flat island in the mouth of Fiskefjord. Only surveyed in July 1992, when breeding common eiders (*Somateria mollissima*) and some gulls (including lesser black-backed gull (*Larus fuscus*) were observed.

No. 64048: This is a low island, and according to local information (fisherman from Atammik in 2000) common eiders breed here in fair numbers (100-150 individuals).

No. 64049: This is a typical bird cliff where gulls nest on a steep mountain side. According to the same local fisherman (see above) about 1000 (individuals) gulls breed here. Two species occur: Iceland gull (*Larus glaucoides*) and kittiwake (*Rissa tridactyla*).

3.6.2 Bird observations in May 2004

In May 2004 the following bird observations were made.

White-tailed eagle (*Haliaeetus albicilla*). Two were seen at strait 6 (see map in Figure 8) and four on the north side of the island Ukalialissuaq.

Mallard (*Anas platyrhynchos*). A single flock with 30 individuals was seen at strait 5.

Long-tailed duck (*Clangula hyemalis*). A flock with 25-30 birds at strait 1.

Common eider (*Somateria mollissima*). A few seen here and there. However, none were observed at the colony 64048. But they may not have arrived from their winter quarters yet.

Black guillemot (*Cepphus grylle*). Several flocks (12, 20, 25 and 100 individuals) were seen in the fiord, mainly at the straits 4 and 5.

Gulls *(Larus spp.)*. Flocks seen on the islands at 64048. These may indicate breeding colonies of, most likely, Iceland gulls.

Iceland gull (*Larus glaucoides*). Numerous on the bird cliff 68049, where they were distributed pairwise on the ledges. This colony is undoubtedly still occupied. On photographs taken 17 May 2004, 150-200 pairs are present on the cliff (Figure 9).

Kittiwake (*Rissa tridactyla*). According to the local information, this gull should also breed on the cliff. None were recorded in May 2004, but the birds may not yet have arrived from their winter quarters. On the photos taken May 17th, a part of the cliff shows signs of an area occupied by this species.

3.6.3 Evaluation

Breeding birds

There are breeding colonies of seabirds in the fiord. Two of the species known to occur are under Greenland conservation concern. These are common eider and kittiwake, which both have shown serious population decreases in West Greenland for many decades. The many flocks of black guillemots recorded in May 2004 indicate that more seabird breeding

colonies are present than those hitherto known and recorded in the Greenland seabird colony database.

The fiords with many narrow straits with strong tidal currents and many river outlets seem to be optimal habitats for white-tailed eagle. The observations of this species in May 2004 may confirm this.

The many rivers and lakes in the lowlands surrounding the fiord look like a prime habitat for the rare and elusive harlequin duck (*Histrionicus histrionicus*).

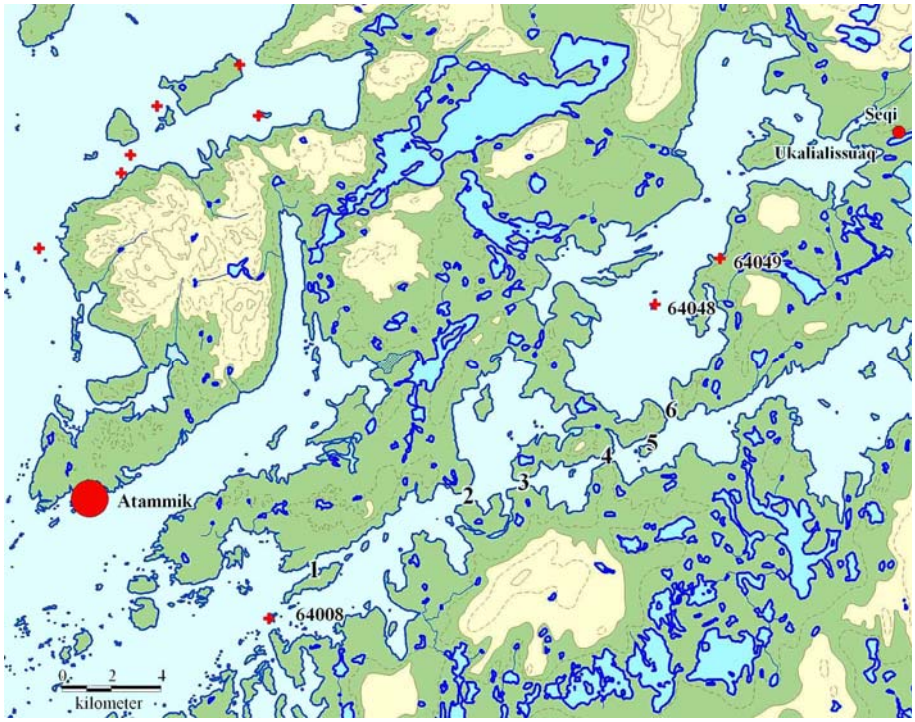


Figure 8. The Fiskefjord area. Red crosses indicate the location of seabird breeding colonies. The colonies known from the Fiskefjord area are indicated with their database code no. The narrow straits with strong tidal currents are shown with numerals referred to in the text.

Birds outside the breeding season

The many narrow straits with strong tidal currents create ice free areas throughout the winter even in very cold periods. Such sites are of vital importance to marine birds that depend on shallow water for feeding, such as mallard, common eider and red-breasted merganser (*Mergus serrartor*) and also to the white-tailed eagle.

The mouth of the fiord – south of the settlement Atammik – is most likely an important area to wintering seabirds. Here large numbers of common eiders and Brünnich's guillemots (*Uria lomvia*) most likely occur in company with less numerous species such as great cormorant (*Phalacrocorax carbo*), long-tailed ducks and harlequin ducks. And this area undoubtedly is an important hunting area for the people living in Atammik.

The mining operation itself is so localised that it is unlikely that it could significantly affect bird life. A potential threat to the seabirds is the risk of oil spills, in particular from shipping, and care should be taken to avoid spills.

Figure 9. Part of the seabird colony 64049, May 17th, 2004. 150-200 pairs of Iceland gulls are visible on their breeding ledges. To the left are white areas coloured by guano visible. This is most likely the kittiwake nesting area.

4 Analytical methods

A selection of the samples were analysed by ICP-MS, Inductively coupled plasma mass spectrometry, after a pretreatment. Crabs, sediments and Greenland cods were not analysed, but kept in the sample bank for reference in future studies.

4.1.1 Mussels

The soft parts of the blue mussels were freeze dried to constant weight. The weights before and after drying were used to determine the dry matter per cent. 0.3 grams of dried crushed mussels were dissolved in 4 ml suprapure nitric acid in Teflon pressure bombs in a microwave furnace and diluted to 25 grams with milliQ water. These solutions were then analysed by ICP-MS for a large selection of elements.

4.1.2 Seaweed

Seaweed was treated in the same way as mussels, only the dry matter concentration was not determined.

4.1.3 Fish

From each fish sub-samples from the muscle or the liver were taken with a stainless steel scalpel, and then dissolved in the same way as described for the mussels and seaweed. The dry matter concentrations were determined on separate samples.

4.1.4 Lichen

Lichen samples were first rinsed mechanically and only fresh looking parts of the lichen were used. Content of other plants, moss, soil, or dead lichen was removed. After the rinsing the lichens were dried at 105° Celsius and then dissolved and analysed in the same way as mussel, seaweed and fish.

4.1.5 Water

Water was sampled in polyethylene bottles that had been rinsed 3 times with nitric acid and washed in milliQ water. At the arrival in the laboratory they were acidified with 1 g/L suprapure nitric acid.

4.1.6 Quality control

Detection limits were calculated on the basis of 3 times the standard deviation on analysing blank solutions. For water a blank solution is milliQ water, for biota a blank solution is acid alone treated in the Teflon bombs and diluted in the same way as the samples. The detection limits are seen in the tables containing the results. (Appendix 3 to 6)

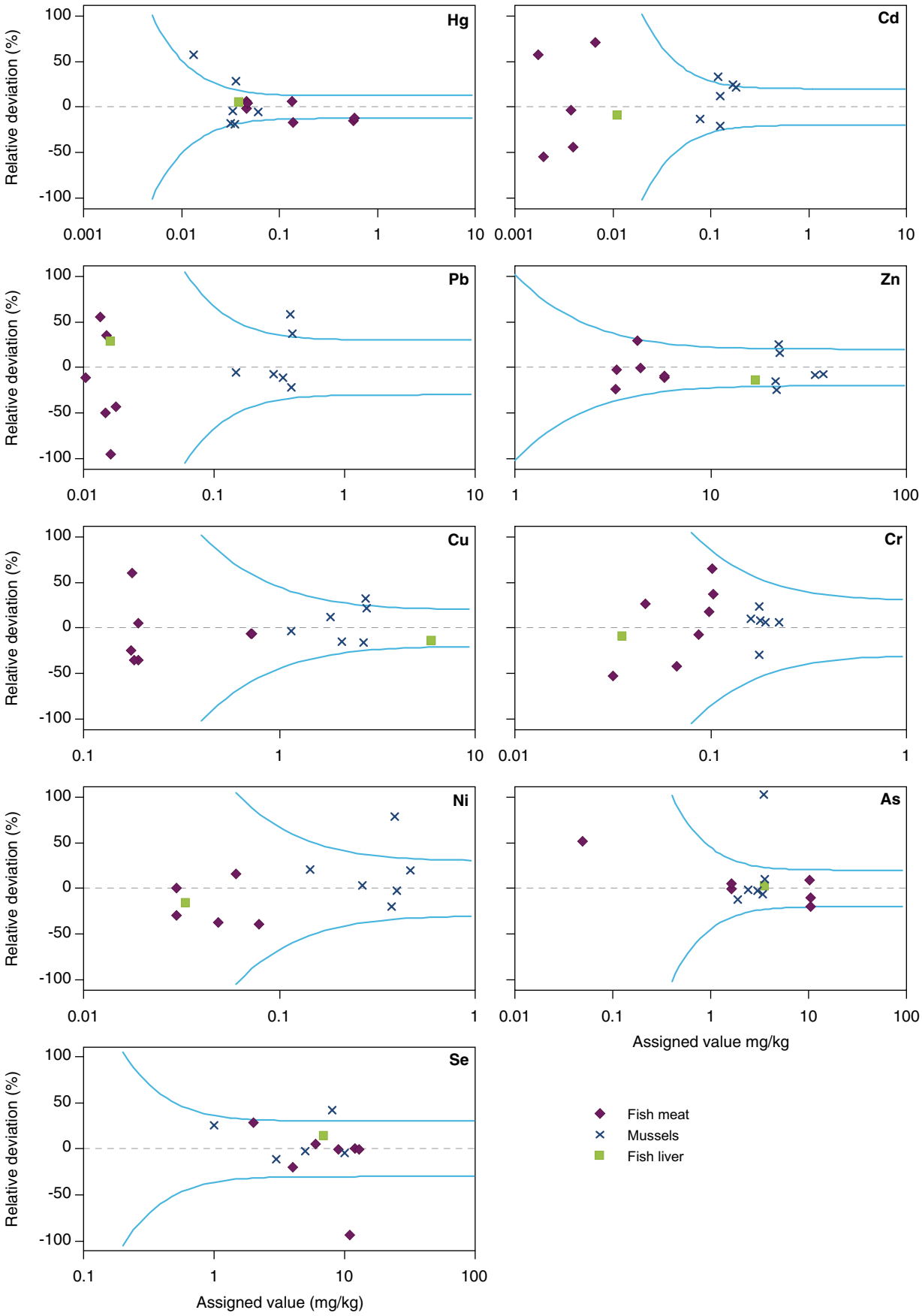


Figure 10. NERI-DAE results in the QUASIMEME laboratory proficiency testing NERI-DAE results in the QUASIMEME laboratory proficiency testing.

Biota

The Quality of the methods is for biota documented by participating in the QUASIMEME laboratory proficiency testing.

The laboratory is accredited by DANAK to analyse biota for Zn, Cd, Pb, Cu, Hg, Cr, Ni, As, Se, Hg. Figure 10 shows the results of the NERI-Department of Arctic Environment laboratory in the QUASIMEME studies. In these figures each point represents one sample with x-axis the assigned value and y-axis the relative deviation from the assigned value. The line drawn represents the allowed uncertainty on a 95% confidence level, based on the accredited detection limit and relative accuracy.

It is seen that for mercury, cadmium, zinc, copper and arsenic the uncertainty by NERI-DAE is about 25% for samples with the highest concentrations. For lead, chromium, nickel and selenium the uncertainty by NERI-DAE is somewhat higher. At very low concentrations the uncertainty is much higher, except for mercury, zinc, arsenic and selenium.

The elements that are not accredited have a higher uncertainty as they have not been controlled by an independent organisation like QUASIMEME. We expect that the uncertainty for results well over the detection limit is 25% relative on a 95% confidence level.

Water

The analyses of water samples are accredited for the following elements.

Table 6. Accreditation parameters for water analyses.

	Water acidified to 1% HNO_3 [µg/l]		
	DL µg/l	**Repeatability**	**Precision**
Li	1.0	10%	15%
Be	0.2	10%	5%
Na	55	5%	10%
Mg	10	5%	10%
Al	10	5%	10%
P	15	5%	15%
K	25	5%	10%
V	0.2	5%	5%
Cr	0.2	5%	5%
Mn	2.5	6%	15%
Fe	10	5%	5%
Co	0.2	5%	8%
Ni	0.5	5%	10%
Cu	0.8	5%	10%
Zn	10.0	5%	15%
As	1.0	5%	20%
Se	0.5	5%	10%
Sr	0.5	5%	5%
Mo	2.0	5%	15%
Cd	0.1	5%	10%
Sn	2.0	10%	i.v.
Sb	2.0	5%	40%
Cs	0.1	20%	i.v.
Ba	1.0	5%	5%
Pb	0.3	5%	10%

5 Assessing baseline data from 2004 and 2005

Analytical results for seaweed, blue mussels, shorthorn sculpins, and lichens are used to assess whether the olivine deposit has had an effect on trace elements in biota causing natural elevated levels of elements. This assessment is based on results from the collections in 2004 and 2005.

The 2004 and the 2005 analytical results are all true background results. Therefore the mean values of these two years have been calculated for each element and species, even though the mean element concentrations those years are not always the same. For seaweed, ratios between 2004- and 2005-means range between 0.6 and 2.7, some of the ratios are significantly different from one on a 5% confidense level. For mussels, the ratios between 2004 and 2005 range between 0.4 and 1.23, but only very few are significant. For lichens the ratios between 2004 and 2005 range between 0.5 and 2 with very few elements significantly different the two years.

In seaweed and blue mussels the assessment is based on a comparison of element concentrations in samples collected close to the olivine deposit, Stations 1, 2, 24, and 25, with concentrations in samples collected far from the olivine deposit, stations 17, 18, 19, 21, 22, and 23. The ratios between element concentrations in seaweed and blue mussels calculated as mean of these stations in 2004 and 2005 are seen in Table 7.

5.1.1 Blue mussels

In Table 7, the calculations in columns 3 and 7 are performed on analyses on a dry weight basis. The mean of all elements is 1.14 with a standard deviation of 0.30. The concentration of elements, thus, is in average 14% higher close to Seqi than far from Seqi, app. 18 km. If the calculations are based on wet weight concentrations, however, the mean is 0.94. This is so close to 1.00 as it can be in practice. Thus it appears that mussels in the inner fiord are not enriched in trace elements. The individual elements have a ratio between inner fiord and background at 0.7 to 1.4. Only gold and wolfram have ratios higher than 1.5, and the ratios 1.6 and 1.9 must be considered very low ”enrichments”.

Thus analyses of mussels for 59 elements show that there are practically the same concentrations on a wet weight basis close to Seqi and farther away. The olivine deposit apparently causes no increased metal levels or “natural pollution” in the mussels.

Table 7. The ratio between element concentrations in seaweed and mussels close to Seqi (Station 1,2,24 and 25) and far from Seqi (Station 17, 18, 19, 21, 22 and 23) in 2004 and 2005.

Element	Seaweed	Blue mussels		Element	Seaweed	Blue mussels	
		dry weight	wet weight			dry weight	wet weight
Li	1.01	0.98	0.83	Sr	1.26	1.11	0.93
Be	1.08	0.62	0.50	Y	1.80	1.10	0.92
Na	0.63	1.04	0.87	Zr	1.98	1.20	0.98
Mg	0.98	1.06	0.89	Mo	1.12	1.05	0.88
S	1.11	1.04	0.87	Rh	1.35	0.98	0.80
Al	5.21	1.32	1.09	Pd	1.00	0.78	0.63
Si	4.27	1.22	1.03	Ag	1.24	1.22	1.03
P	1.45	1.03	0.87	Cd	0.60	1.04	0.86
K	0.90	1.04	0.88	Sn	3.13	1.31	1.00
Ca	1.00	1.04	0.84	Sb	1.19	1.08	0.87
Sc	2.28	1.19	0.99	Cs	0.89	0.83	0.69
Ti	1.61	1.03	0.86	Ba	1.59	1.71	1.42
V	1.63	1.13	0.95	La	3.84	1.72	1.44
Cr	2.68	1.17	0.96	Ce	3.31	1.44	1.19
Mn	1.92	0.89	0.76	Nd	3.00	1.56	1.29
Fe	2.45	1.24	1.02	W	1.58	1.90	1.56
Ni	1.45	0.96	0.78	Au	1.03	2.15	1.87
Cu	1.74	1.03	0.86	Hg	2.13	1.50	1.24
Zn	1.11	0.84	0.72	Tl	0.47	0.52	0.42
Ga	1.81	1.07	0.87	Pb	0.99	0.79	0.66
Co	1.57	1.05	0.88	Bi	1.69	0.95	0.79
As	1.67	1.18	0.99	Th	2.15	1.31	1.04
Se	0.85	1.09	0.91	U	0.94	1.01	0.84
Rb	0.93	0.97	0.82				
Mean of all elements					1.69	1.14	0.94
Standard deviation of all elements					0.98	0.30	0.26

5.1.2 Seaweed

In Table 7 column 2 and 6 the ratio between element concentrations at stations close to Seqi and stations far from Seqi is calculated. The stations are the same as for blue mussels. This ratio is different than for mussels, as most elements in seaweed are higher at Seqi than at stations far from Seqi, in average 1.69 times. Only the alkali metals (Na, K, Rb, Cs) and Se, Cd, Tl and U are lower close to Seqi. This could indicate a significant impact of the olivine deposit on the environment.

However, the distribution of elements in seaweed has been studied in Nuup Kangerlua in areas with no known local sources, natural or man made (Riget et al. 1997). In this study the elements Ca, Fe, Co, Ce, Sr, Sc, and Cu were all found in higher concentrations in seaweed from the inner areas of Nuup Kangerlua than in the outer parts. It is also shown that Na, Br and Cd have lower concentrations in seaweed from inner parts of the fiord. The elements Pb and Zn showed no consistent differences between those areas.

The analyses of seaweed from Fiskefjorden show exactly the same pattern. The elements that can be expected to be higher at Seqi actually are also higher, while Cd clearly is lower at Seqi compared to stations in Fiskefjorden far from Seqi. Pb and Zn are almost at the same level eve-

rywhere in Fiskefjorden as found in Nuup Kangerlua. The differences observed in Nuup Kangerlua and in Fiskefjord probably are due to a lower salinity in the inner parts of the fiords.

The distribution of elements in seaweed from Fiskefjorden is as expected for an unpolluted fiord in Greenland. Thus there is no indication that the olivine deposit creates a "natural pollution".

5.1.3 Lichen

The lichen species *Cetraria nivalis* was collected and analysed for 59 elements. *Cetraria nivalis* is common in Greenland and may be used as an indicator of metal pollution in the atmosphere. It grows primarily on dead organic matter and takes up nutrients (and contaminants) exclusively from its surface.

The assessment of whether there is a natural enrichment of elements at Seqi has been made by comparing mean concentrations in lichens collected at the olivine deposit with mean concentrations in lichens collected at other locations in the Fiskefjorden area, see Table 8.

Table 8 shows that most of the elements are found in lower concentrations at the deposit than at the tidal stations, and in most cases where the concentrations are above the detection limits, the result is significant at a 5% level or lower.

Zn, Cs and Hg are the only exceptions. Their concentrations are higher at the deposit than at the tidal stations. For Zn and Cs the differences are however small and may be a result of random variation. For Hg the high concentration at the deposit is due to the 2005 results only. For some unknown reason all lichen samles collected at the deposit had high concentrations of Hg in 2005. The effect was not seen in 2006, and there is at present no explanation of the unusual phenomena in 2005.

It thus appears that the olivine deposit does not have a natural dusting potential. If during mining elevated concentrations are found in lichens this is most likely due to the dusting related to the mining operations.

Table 8. Concentrations of elements in lichens collected in the deposit compared to concentrations outside the deposit at tidal stations. Samples from 2004 and 2005

	Mean at lichen stations at the deposit Lav 1 to lav 7	Mean at the tidal stations Station 1 to 23	P of t-test	Significant higher or lower at the deposit
Li	0.0309	0.0549	0.22%	Low
Be	<d.l.	0.0034	28.23%	
Na	1057	1439	0	Low
Mg	1085	1750	0	Low
Al	147	246	0.00%	Low
Si	127	189	0.25%	Low
P	502	537	42.95%	
K	2256	2326	38.33%	
Ca	3440	3862	55.57%	
Sc	0.32	0.81	0.00%	Low
Ti	12.24	20.25	0.00%	Low
V	0.17	0.28	0.01%	Low
Cr	0.28	0.37	32.97%	
Mn	73.0	70.0	85.99%	
Fe	86.6	135.4	0.21%	Low
Ni	0.84	1.15	42.80%	
Cu	0.63	1.03	0.03%	Low
Zn	26.40	20.84	4.33%	High
Ga	0.188	0.079	5.30%	
Co	0.11	0.23	0.27%	Low
As	<d.l.	<d.l.	0.00%	Low
Se	<d.l.	<d.l.	14.15%	
Rb	3.69	1.88	0.00%	High
Sr	9	21	0.00%	Low
Y	0.056	0.082	0.13%	Low
Zr	0.110	0.158	1.22%	Low
Mo	<d.l.	<d.l.	96.33%	
Rh	<d.l.	<d.l.	0.00%	Low
Pd	<d.l.	<d.l.	8.93%	
Ag	0.0158	0.0152	91.17%	
Cd	0.0822	0.0807	89.91%	
Sn	<d.l.	<d.l.	17.49%	
Sb	<d.l.	<d.l.	64.85%	
Cs	0.0498	0.0335	2.83%	High
Ba	9.78	13.30	21.15%	
La	0.191	0.370	2.47%	Low
Ce	0.379	0.686	2.39%	Low
Nd	0.150	0.265	0.18%	Low
Ta	<d.l.	<d.l.	30.78%	
W	<d.l.	<d.l.	54.96%	
Au	<d.l.	<d.l.	7.68%	
Hg	0.587	0.061	0.027	High
Tl	<d.l.	<d.l.	10.29%	
Pb	0.518	0.626	3.03%	Low
Bi	<d.l.	<d.l.	90.96%	
Th	0.0136	0.0220	7.08%	
U	<d.l.	0.00928	0.07%	Low

5.1.4 Shorthorn sculpins

Shorthorn sculpins were collected in 2004 and 2005 in order to determine the background concentrations of elements in the liver, and to see if there are any area differences that could be related to the occurrence of the olivine deposit.

Preferably large female sculpins were collected. In 2004 sculpins were collected from area 2 and 3, and in 2005 also sculpins from area 1 were collected. The trace metal content in liver was analysed by ICP-MS. The mean and standard deviations of element concentrations are shown in Table 9.

In Table 9 also mean concentrations below the detection limits are shown, as they are needed for the statistical analyses, the result of which is shown in the last 3 columns in Table 9.

The statistical treatment is a t-test with two tails and allowing for unequal variance of samples. The purpose is to compare the 3 areas in which sculpins have been collected. If for a certain element the concentration is lower in area 1 than in area 2 and the difference is significant on a 95% level it is noted as "1<2" in the table. Similar for the other two comparisons. If the significant result is a result of comparison of two means that are below the chemical analytical detection limit the result is shown in brackets e.g. (1<3). Results of this type are less reliable than the results without brackets.

As seen in Table 9 the results are very consistent. When area 1 and 2 are compared, all 22 significant results show that the element concentration is lower in area 1. In 26 cases there was no statatistical significant difference. When area 1 is compared with area 3 there are 29 cases with area 1 lower and 19 cases with no significant differences. Area 1 was never significantly higher than the other areas.

When area 2 and 3 are compared there are almost no significant differences, only two elements are higher in area 3 and one element highest in area 2.

In conclusion, all elements that could be measured sufficiently exact to obtain significant differences are lower in sculpin liver from area 1 compared to area 2 and area 3. Area 2 and 3 are very similar. As area 1 is the area adjacent to the olivine deposit one can conclude that there are no indications of a "natural pollution" due to the olivine deposit. This investigation does not show whether the lower concentrations in area 1 is due to the olivine deposit or to the different hydrographies and geographical positions of the areas.

Table 9. Mean element concentrations (µg/kg wet weight) and standard deviations in shorthorn sculpin liver from area 1, 2, and 3. Mean for 2004 and 2005.

	detection limit	**2004-05 area 1**	**std. dev.**	**2004-05 area 2**	**std. dev.**	**2004-5 area 3**	**std. dev.**	**significant differences**		
No.		**11**		**12**		**17**				
Li	*0.02*	0.018	0.004	0.025	0.008	0.033	0.015	1<2	1<3	
Be	*0.0034*	0.0005	0.0003	0.0011	0.0012	0.0006	0.0001			
Na	*87*	2316	397	2742	821	3296	1249		1<3	
Mg	*4*	169	20	218	60	211	40	1<2	1<3	
S	*627*	3172	368	3785	755	3676	434	1<2	1<3	
Al	*16.01*	1.53	1.12	2.11	2.56	1.48	1.24			
Si	*1.80*	7.38	1.00	10.90	3.13	9.54	2.24	1<2	1<3	
P	*15*	2016	201	2780	716	2770	373	1<2	1<3	
K	*44*	3377	370	4051	577	3773	653	1<2	1<3	
Ca	*86*	185	111	177	291	133	141			
Sc	*0.07*	0.09	0.01	0.12	0.02	0.11	0.01	1<2	1<3	
Ti	*0.13*	21.69	2.04	27.92	5.99	28.80	3.45	1<2	1<3	
V	*0.013*	0.020	0.021	0.063	0.046	0.060	0.046	1<2	1<3	
Cr	*0.15*	0.05	0.01	0.06	0.02	0.10	0.10			
Mn	*0.08*	0.58	0.13	0.62	0.23	0.54	0.12			
Fe	*12*	144	117	223	209	192	100			
Ni	*0.32*	0.22	0.06	0.18	0.03	0.30	0.12		(1<3)	(2<3)
Cu	*0.22*	1.34	0.90	3.68	2.53	4.18	2.70	1<2	1<3	
Zn	*0.75*	34.59	6.80	45.27	20.45	46.08	15.77		1<3	
Ga	*0.022*	0.027	0.002	0.031	0.003	0.032	0.004	1<2	1<3	
Co	*0.012*	0.077	0.106	0.063	0.036	0.073	0.036			
As	*0.41*	3.70	1.40	5.54	2.58	3.99	2.34	1<2		
Se	*0.14*	1.13	0.22	1.47	0.42	1.66	0.60	1<2	1<3	
Rb	*0.01*	0.50	0.09	0.59	0.12	0.49	0.12			2>3
Sr	*0.52*	0.98	0.43	1.79	3.25	1.34	1.44			
Y	*0.00*	0.0010	0.0009	0.0017	0.0013	0.0018	0.0011			
Zr	*0.04*	0.0032	0.0012	0.0039	0.0009	0.0052	0.0025		(1<3)	(2<3)
Mo	*0.110*	0.081	0.016	0.095	0.025	0.112	0.038		(1<3)	
Rh	*0.0011*	0.0003	0.0000	0.0004	0.0001	0.0005	0.0001	(1<2)	(1<3)	
Pd	*0.007*	0.002	0.001	0.003	0.001	0.003	0.001		(1<3)	
Ag	*0.011*	0.094	0.082	0.309	0.183	0.339	0.153	1<2	1<3	
Cd	*0.020*	0.373	0.253	1.522	2.137	1.273	1.241		1<3	
Sn	*0.043*	0.005	0.001	0.006	0.001	0.008	0.002	(1<2)	(1<3)	
Sb	*0.027*	0.004	0.001	0.004	0.001	0.004	0.001			
Cs	*0.006*	0.015	0.005	0.021	0.006	0.018	0.005	1<2	1<3	
Ba	*0.053*	0.014	0.011	0.018	0.024	0.012	0.010			
La	*0.005*	0.003	0.001	0.004	0.002	0.005	0.003			
Ce	*0.0094*	0.0032	0.0018	0.0037	0.0024	0.0044	0.0035			
Nd	*0.0036*	0.0033	0.0010	0.0038	0.0015	0.0045	0.0018			
Ta	*0.0123*	0.0012	0.0002	0.0018	0.0005	0.0015	0.0003			
W	*0.0280*	0.0020	0.0004	0.0038	0.0011	0.0039	0.0021			
Au	*0.0495*	0.0022	0.0015	0.0039	0.0024	0.0027	0.0013			
Hg	*0.0467*	0.0646	0.0240	0.1632	0.0593	0.1448	0.0630			
Tl	*0.0260*	0.0020	0.0011	0.0053	0.0060	0.0030	0.0016			
Pb	*0.0285*	0.0148	0.0198	0.0117	0.0041	0.0127	0.0047			
Bi	*0.0065*	0.0022	0.0014	0.0027	0.0015	0.0032	0.0017			
Th	*0.0121*	0.0005	0.0003	0.0007	0.0003	0.0007	0.0002			
U	*0.0073*	0.0007	0.0009	0.0020	0.0015	0.0024	0.0023			

6 Monitoring of the environment after mine start-up

Based on the results of the baseline studies the indicator species lichen, seaweed, blue mussel, and shorthorn sculpin were selected to be used to monitor and assess potential impact of the mining on the environment. Also fresh water from Long Lake was analysed end the results assessed.

6.1 Lichens

Collection and analyses of the lichen *Cetraria nivalis* is here used as a mean for dust monitoring. According to the background concentrations determined in 2004 and in 2005, there were no significant differences (except for Hg) between element concentrations in lichen among locations.

Dust is mainly produced where the ore is crushed but also at the minesite. Traffic on the roads might also contribute to the dusting. Figure 11 shows the position of the activities at Seqi.

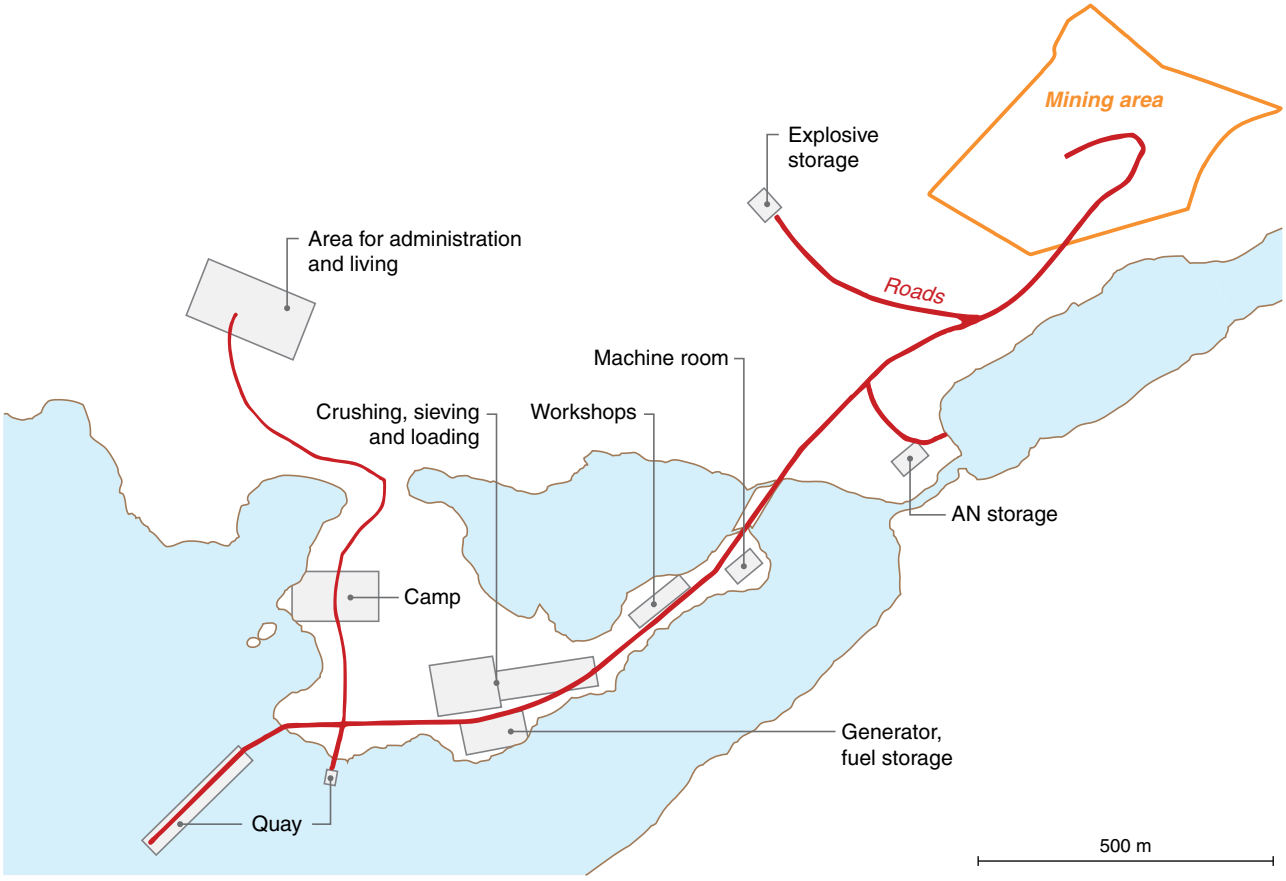


Figure 11. Roads, buildings, quays, and mining area at Seqi

The purpose of the lichen studies in 2006 and 2007 was to determine how much the test-mining in 2006 and the full scale mining in 2007 had affected the environment with respect to dust. For that purpose the stations were divided into stations very close to the deposit (stations lav1 to lav10, Figure 3 and 4) and farther away (the rest of the stations). In Table 10 the mean concentrations are calculated for the two types of stations in 2006 and 2007 and the mean of all stations for the years 2004 to 2007. The detailed results of the lichen analyses are listed in appendix 5.

It is obvious that many elements were found in higher concentrations at lav1 to lav10 in 2007. In order to make a more thorough evaluation, the ratios between mean lichen concentrations at the two types of stations in 2006 and 2007 and the mean concentrations calculated for 2004 and 2005 together were calculated. The results are seen in Table 11.

The results have been treated statistically by a double Students t-test. If mean concentrations shall be regarded as a sign of dust spreading from the mining, two conditions have to be fulfilled:

The mean concentrations at lav1 to lav10 must be higher than the mean of 2004 and 2005 concentrations, and the difference must be significant at a 5% level

The mean concentrations at lav1 to lav10 must be higher than the mean concentrations at the rest of the stations the same year, and the difference must be significant at a 5% level.

Numbers in bold and red in Table 11 fulfil those conditions.

Table 10. Lichen analyses. Mean of all analyses at different years, and mean for selected stations.

		2004	2005	2006			2007		
	d.l.	Mean all	Mean all	Mean all	Mean lav 1 to lav 10	mean rest	Mean all	Mean lav 1 to lav 10	Mean rest
Li	0.019	0.042	0.056	0.042	0.074	0.032	0.079	0.122	0.056
Be	0.0034	<d.l.	0.0039	<d.l.	<d.l.	<d.l.	0.0062	0.0057	0.0064
Mg	4	1936	1521	1134	1742	949	1470	2166	1078
Al	16	184	256	184	223	173	294	317	281
Si	2	146	199	10	17	8	40	67	26
P	15	594	469	461	538	437	776	853	732
K	44	2294	2326	1534	1846	1439	1641	1796	1553
Ca	86	4094	3664	2525	2522	2526	1882	2093	1763
Sc	0.069	0.467	0.885	0.155	0.253	0.125	0.128	0.245	<d.l.
Ti	0.1	15.6	20.7	12.3	17.3	10.8	15.3	21.8	11.7
V	0.013	0.220	0.287	0.267	0.454	0.210	0.479	0.652	0.381
Cr	0.146	0.366	0.339	0.925	2.717	0.379	4.352	9.912	1.225
Mn	0	50	90	51	75	43	45	50	42
Fe	12	108	137	146	251	113	297	578	138
Ni	0.32	1.11	1.03	2.21	6.91	0.78	9.02	20.83	2.38
Cu	0.22	0.79	1.06	0.59	0.66	0.56	0.82	0.60	0.95
Zn	0.75	18.71	25.32	17.14	20.33	16.17	15.22	18.19	13.55
Ga	0.022	0.157	0.060	0.047	0.068	0.041	0.094	0.115	0.082
Co	0.012	0.171	0.227	0.155	0.334	0.101	0.573	1.183	0.229
As	0.408	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.
Se	0.143	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.
Rb	0.01	2.23	2.41	2.23	3.64	1.80	4.37	6.60	3.12
Sr	0.52	20.07	17.00	11.26	9.64	11.75	19.49	16.08	21.42
Y	0.003	0.065	0.085	0.066	0.101	0.055	0.149	0.217	0.111
Zr	0.039	0.126	0.164	0.081	0.096	0.077	0.161	0.193	0.143
Mo	0.110	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.
Rh	0.001	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.
Pd	0.007	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	0.013	0.009	0.015
Ag	0.011	<d.l.	0.022	<d.l.	0.013	<d.l.	0.025	0.038	0.018
Cd	0.020	0.070	0.091	0.059	0.070	0.056	0.075	0.091	0.066
Sn	0.043	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	0.067
Sb	0.027	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.
Cs	0.006	0.037	0.038	0.039	0.069	0.030	0.068	0.114	0.042
Ba	0.1	9.6	15.0	7.7	10.2	7.0	13.7	15.7	12.6
La	0.005	0.193	0.445	0.254	0.480	0.185	0.476	0.745	0.324
Ce	0.009	0.387	0.810	0.494	0.929	0.362	0.922	1.440	0.631
Nd	0.004	0.173	0.293	0.251	0.472	0.184	0.315	0.484	0.219
Ta	0.012	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	0.013	<d.l.
W	0.028	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.
Au	0.050	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.
Hg	0.047	<d.l.	0.312	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.
Tl	0.026	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	0.030	<d.l.
Pb	0.028	0.469	0.716	0.548	0.517	0.557	0.725	0.677	0.751
Bi	0.007	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.
Th	0.012	0.016	0.023	0.026	0.068	0.014	0.026	0.059	<d.l.
U	0.007	0.009	0.008	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.

Table 11. Ratio between means of element concentrations in lichens.

	2006 (Lav1 to Lav10)		2007 (Lav1 to Lav10)	
	Relative to 2004/2005	**Relative to the rest of the stations that year**	**Relative to 2004/2005**	**Relative to the rest of the stations that year**
Li	1.51	2.33	**2.49**	**2.19**
Be	0.51	0.68	1.74	0.90
Mg	1.05	1.84	1.31	2.01
Al	1.01	1.29	1.43	1.13
Si	0.10	2.11	0.38	2.59
P	1.02	1.23	1.62	1.16
K	0.80	1.28	0.78	1.16
Ca	0.66	1.00	0.55	1.19
Sc	0.37	2.02	0.36	4.00
Ti	0.95	1.60	1.19	1.87
V	1.78	2.16	2.55	1.71
Cr	7.73	7.17	**28.20**	**8.09**
Mn	1.06	1.74	0.70	1.18
Fe	2.04	2.22	**4.69**	**4.19**
Ni	6.46	8.85	**19.48**	**8.75**
Cu	0.71	1.18	0.64	0.63
Zn	0.92	1.26	0.82	1.34
Ga	0.64	1.67	1.09	1.41
Co	1.67	3.32	**5.90**	**5.16**
As	0.01	0.04	0.01	0.02
Se	0.03	0.03	0.03	0.03
Rb	**1.56**	**2.02**	**2.84**	**2.12**
Sr	0.52	0.82	0.87	0.75
Y	1.34	1.83	**2.87**	**1.95**
Zr	0.66	1.26	1.32	1.35
Rh	3.16	3.51	3.16	2.25
Pd	1.17	0.29	6.32	0.60
Ag	0.85	1.45	**2.47**	**2.05**
Cd	0.86	1.25	1.12	1.38
Sn	0.14	0.09	0.14	0.02
Sb	0.81	2.56	0.81	0.93
Cs	1.84	2.29	**3.05**	**2.70**
Ba	0.82	1.45	1.26	1.24
La	1.47	2.60	**2.29**	**2.30**
Ce	1.52	2.57	**2.36**	**2.28**
Nd	2.00	2.57	**2.05**	**2.21**
Hg	0.01	0.06	0.01	0.07
Pb	0.86	0.93	1.13	0.90
Bi	0.71	1.35	0.71	2.09
Th	3.42	4.97	**2.98**	**8.18**
U	0.20	0.46	0.20	0.35

The largest increases in element concentrations are for the elements Ni, Co, Cr and Fe, especially Cr (29 times elevation) and Ni (19 times elevation). These elements are known to be enriched in olivine rocks, and it is not surprising that those elements are enriched in the dust. The observation of these elevated levels in lichens is in line with observations done during sample collection. The NERI personnel who collected the samples observed a very high degree of dust around the mine and the crushers during the sampling in 2007.

The rare earth elements measured are all enriched 2 to 3 times. The elements measured are Y, La, Ce, Nd, Th (Th is technically not a rare earth element but behaves like one). The alkali elements Li, Rb, and Cs are also enriched about 3 times. The enrichment of rare earth elements and the alkali elements is probably a result of dusting in general. We have no explanation for the relatively small enrichment of silver in the lichen samples lav1 to lav10 in 2007.

Conclusion for lichens

The mining activities in 2006 and 2007 have resulted in dust spreading that could be measured in lichen samples collected close to Seqi and the mining activities. Several elements are found in higher concentrations in lichens after mine start-up, in particular chromium and nickel.

6.2 Seaweed

The analytical results for individual seaweed samples can be seen in appendix 4. In Table 12 the mean concentrations for all samples from a given year is seen. It can be seen that the results from the 4 years are very similar, but closer inspection of the data shows that the concentrations at station 25 were higher for several elements in 2007. The mean concentration for seaweed was therefore calculated for this station in 2007 (3 samples) and are included in Table 12. The high concentrations of silicium in 2004 and 2005 could have been due to higher concentrations of silt in the water those years, and is not treated further in this report. It is highest at stations 7 and 16 (see Figure 4).

St 25 is the tidal water station that is situated right where the river from Long Lake enters the fiord. Long lake is located next to the olivine deposit.

In the last 3 columns in Table 12 the mean concentration at St 25 is compared to all other years and stations (97 samples) as well as to all other stations from 2007 (34 samples).

The criteria for a significant increase is, as before, that both ratios are significantly higher than 1 (at a 5% significance level).

Table 12. Mean concentrations in seaweed µg/g d.w. and ratios of concentrations.

Year	d.l.	Mean all 2004	Mean all 2005	Mean all 2006	Mean all 2007	Mean St 25 2007	St 25 relative to all other 2004 to 2007	St 25 relative to the rest of 2007	Significant increase at St 25 2007
Li	0.02	0.55	0.35	0.42	0.58	0.43	0.86	0.73	
Be	0.003	<d.l.	<d.l.	0.004	0.004	<d.l.			
Na	87	32525	36760	Ikke målt	59299	36066	0.75	0.59	
Mg	4	7953	8417	7936	6776	6750	0.88	1.00	
Al	16	33	30	<d.l.	21	67	2.81	3.83	sign.
Si	1.80	141.62	52.68	2.45	3.98	13.27	0.26	4.26	
P	15	3226	1778	1606	1944	1619	0.74	0.82	
K	44	33426	43064	34956	37502	32095	0.84	0.84	
Ca	86	7517	8271	10054	6674	6490	0.80	0.97	
Sc	0.069	0.628	0.368	<d.l.	<d.l.	<d.l.			
Ti	0.13	26.17	22.96	3.45	2.58	4.85	0.37	2.03	
V	0.013	0.587	0.182	0.237	0.318	0.468	1.34	1.54	sign.
Cr	0.15	0.55	0.23	0.36	0.48	2.42	6.56	8.31	sign.
Mn	0.08	21.32	14.03	18.32	20.21	30.31	1.63	1.57	sign.
Fe	12	97	38	29	56	169	3.39	3.76	sign.
Ni	0.32	2.76	1.74	1.24	1.56	5.36	3.08	4.47	sign.
Cu	0.22	2.11	1.73	2.24	4.92	3.13	1.04	0.62	
Zn	0.75	14.64	9.31	8.36	13.02	16.39	1.42	1.28	sign.
Ga	0.022	0.232	0.035	<d.l.	<d.l.	0.023	0.30	1.73	
Co	0.01	0.79	0.36	0.29	0.45	0.75	1.57	1.76	sign.
As	0.41	45.19	38.73	47.58	58.17	53.77	1.10	0.92	
Se	0.14	0.24	0.26	0.45	0.31	0.21	0.68	0.66	
Rb	0.010	9.485	9.324	9.550	17.630	17.444	1.44	0.99	
Sr	0.52	757.37	658.84	716.95	676.50	601.06	0.86	0.88	
Y	0.00	0.08	0.05	0.03	0.07	0.06	1.10	0.98	
Zr	0.04	0.24	0.14	0.08	0.18	0.12	0.68	0.64	
Mo	0.11	0.22	0.14	0.13	0.15	0.11	0.67	0.71	
Rh	0.001	0.025	0.029	0.031	0.019	0.015	0.59	0.75	
Pd	0.007	0.033	0.036	0.132	0.410	0.311	1.60	0.74	
Ag	0.011	0.136	0.072	0.053	0.128	0.099	0.94	0.76	
Cd	0.02	2.34	1.51	1.60	1.63	0.91	0.51	0.53	
Sn	0.04	<d.l.	0.32	0.53	0.27	0.09	0.29	0.32	
Sb	0.03	0.04	<d.l.	<d.l.	<d.l.	<d.l.			
Cs	0.006	0.028	0.031	0.034	0.055	0.054	1.38	0.98	
Ba	0.05	10.31	9.64	7.31	11.14	13.67	1.44	1.25	sign.
La	0.01	0.19	0.16	0.07	0.18	0.24	1.55	1.40	sign.
Ce	0.01	0.16	0.18	0.09	0.20	0.28	1.74	1.47	sign.
Nd	0.00	0.14	0.16	0.08	0.14	0.17	1.28	1.27	sign.
Ta	0.012	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.			
W	0.03	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.			
Au	0.05	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.			
Hg	0.05	<d.l.	<d.l.	0.05	<d.l.	<d.l.			
Tl	0.03	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.			
Pb	0.028	0.066	0.034	0.037	0.066	0.042	0.79	0.62	
Bi	0.007	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.			
Th	0.01	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.			
U	0.01	0.56	0.47	0.52	0.60	0.46	0.82	0.74	

The elements chromium, nickel, and iron are the elements that are most elevated at station 25 in 2007, chromium 7 times and nickel 3.6 times. Other increases are: Al 3.1 times and V, Mn, Zn, Ba, La, Ce, Nd between 1 and 2 times.

Conclusion for seaweed

Of the stations investigated, only one station close to where the river from Long Lake enters the fiord has elevated element concentrations. The elements that are elevated are to a high degree the same elements that were found to be elevated in lichen samples near the Seqi.

6.3 Mussels

Blue mussels were collected at the same stations as seaweed and at the same times starting in 2004 and ending in 2007. Individual concentrations can be seen in Appendix 3. Mean concentrations are shown in Table 13.

Several element concentrations are higher in the mussels from station 25 in 2007. However, the statistical treatment is somewhat more complicated for the mussels than for the seaweed. Because there are only two pooled mussel samples from St 25 in 2007 the results are more uncertain, and the result is dependent on the statistical assumptions made. If the data are treated with the assumption of 2-tailed distribution and equal variance the following elements are significantly higher at station 25 than at all other stations and all other years:

V – Cr – Mn – Fe – Ni – Co – As – Pb.

If, however the assumption about equal variance is omitted (as was done for seaweed) only

As - Ce – Ta

are significantly increased.

If an F-test is performed one finds that the following elements have significantly higher variance at St 25:

V – Cr – Mn – Fe – Ni – Co - Pd – Sn – Nd.

As a conclusion on the statistical treatment one can say that the following elements at St 25 have changed significantly:

V – Cr – Mn – Fe – Ni – Co.

Because there are only two samples to base the results on it is not clear whether the mean concentrations have increased significantly or it is the variance that has increased significantly (or both). However since it is the same elements that were elevated in lichens and in seaweed, it appears safe to conclude that also blue mussels at St 25 have increased concentrations of those elements.

Table 13. Mean concentrations in blue mussels µg/g d.w. and ratios of concentrations.

	d.l.	Mean all 2004	Mean all 2005	Mean all 2006	Mean all 2007 without St 25	St 25 2007	St 25 2007 relative to all other stations	St 25 2007 relative to the rest2007	Sign. increase
Li	*0.01*	0.86	0.63	0.65	0.52	0.70	1.04	1.02	
Be	*0.002*	0.003	0.005	0.005	0.002	0.003	0.86	0.65	
Na	*121*	53108	53707	60806	54170	60437	1.08	0.99	
Mg	*3*	5367	4953	3685	4106	4466	1.04	1.24	
Al	*1*	177	146	83	50	196	1.71	2.14	
Si	*3.17*	373.91	189.20	10.50	7.23	36.05	0.26	3.14	
P	*35*	10026	9892	11693	8553	12433	1.19	0.97	
K	*55*	22736	18755	14282	14062	14040	0.85	0.96	
Ca	*157*	3163	3859	2502	3226	2437	0.79	0.98	
Sc	*0.223*	1.155	1.090	<d.l.	<d.l.	<d.l.			
Ti	*0.14*	77.37	107.34	11.31	13.71	14.91	0.31	1.37	
V	*0.006*	0.650	0.524	0.498	0.419	1.165	2.21	2.21	sign.
Cr	*0.26*	1.51	1.25	1.13	1.03	9.71	7.88	8.38	sign.
Mn	*0.06*	6.47	4.70	4.38	3.22	9.06	1.90	1.91	sign.
Fe	*4*	199	215	129	117	541	3.34	4.08	sign.
Ni	*0.93*	3.28	2.85	1.45	1.53	16.65	7.53	11.82	sign.
Cu	*0.13*	5.91	5.77	6.45	5.22	6.58	1.10	0.95	
Zn	*0.74*	81.76	71.24	74.60	61.81	69.24	0.94	0.86	
Ga	*0.022*	0.109	0.140	0.039	0.048	0.060	0.76	1.63	
Co	*0.01*	0.52	0.40	0.33	0.27	1.03	2.68	2.89	sign.
As	*1.52*	9.98	11.03	10.45	9.33	15.22	1.49	1.40	sign.
Se	*0.06*	3.22	4.63	3.36	4.12	3.05	0.82	0.92	
Rb	*0.008*	7.346	4.903	6.271	4.345	6.368	1.07	0.92	
Sr	*0.22*	44.41	35.40	31.41	30.45	27.23	0.77	0.84	
Y	*0.00*	0.11	0.10	0.10	0.06	0.11	1.13	1.00	
Zr	*0.02*	0.04	0.07	0.09	<d.l.	0.03	0.40	0.22	
Mo	*0.35*	0.73	0.70	0.51	0.45	0.46	0.78	0.87	
Rh	*0.001*	0.002	0.003	0.001	0.001	0.001	0.38	1.22	
Pd	*0.012*	<d.l.	<d.l.	0.041	<d.l.	0.040	1.69	0.78	
Ag	*0.006*	0.074	0.173	0.090	0.060	0.075	0.76	0.76	
Cd	*0.04*	3.61	4.42	3.04	3.57	1.52	0.43	0.51	
Sn	*0.05*	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.			
Sb	*0.01*	<d.l.	0.02	<d.l.	<d.l.	<d.l.			
Cs	*0.003*	0.022	0.023	0.023	0.013	0.023	1.06	0.85	
Ba	*0.01*	2.44	1.58	1.28	0.47	2.05	1.35	1.34	
La	*0.00*	0.45	0.47	0.47	0.28	0.56	1.27	1.04	
Ce	*0.00*	0.39	0.40	0.37	0.21	0.57	1.60	1.34	
Nd	*0.00*	0.28	0.32	0.26	0.21	0.32	1.16	1.09	
Ta	*0.005*	<d.l.	<d.l.	<d.l.	<d.l.	0.012	3.74	2.59	
W	*0.05*	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.			
Au	*0.01*	0.01	0.04	0.02	0.02	0.03	1.05	0.92	
Hg	*0.02*	0.16	0.24	0.14	0.16	0.08	0.51	0.67	
Tl	*0.01*	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.			
Pb	*0.004*	0.390	0.373	0.386	0.322	0.551	1.49	1.37	sign.
Bi	*0.006*	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.			
Th	*0.01*	0.02	0.03	0.02	0.01	0.03	1.65	1.74	
U	*0.00*	0.21	0.17	0.16	0.11	0.16	0.94	0.87	

Conclusion for blue mussels

Analytical results from blue mussels support the conclusions made for seaweed, that St 25 has increased concentrations of several elements after mine start-up. The elements that are elevated are to a high degree the same elements that were found to be elevated in lichen samples near the Seqi.

6.4 Shorthorn sculpin

The spreading of several elements like Cr and Ni via dust was demonstrated in the lichen studies. The effect was demonstrated in the marine environment at station 25 close to the mouth of the river that flows from Long Lake, by the analyses of seaweed and blue mussels. There is a risk that this pollution can spread to fish in the fiord. Sculpin liver is known to be a very sensitive indicator for marine pollution in fish, e.g. because they are quite stationary. Sculpin liver was therefore collected and analysed in all studies. Table 14 shows the mean concentrations for sculpin liver in 2004, 2005, 2006 and 2007. Each year about 20 sculpins were analysed. They are all caught in the areas 1, 2 and 3 shown in Figure 2. If fish were polluted, the pollution should be seen first in area 1 closest to the mine and concentration levels should be highest in this area.

In Table 14 is also shown the mean concentrations in sculpin liver from fish caught in area 1 in 2007, in area 2 in 2007, and in area 1 in 2005+2006. For a pollution to be real the concentrations in area 1 in 2007 must be significantly higher than in area 2 in 2007 and area 1 in 2005+2006.

The two conditions that must be fulfilled in order for there to be a statistically significant increase of trace elements in shorthorn sculpins are:

1) Levels in sculpins from area 1 in 2007 should be significantly higher than in the other areas in 2007.
2) Levels in sculpins from area 1 in 2007 should be significantly higher than in sculpins from area 1 in 2005 and 2006. (no sculpins were caught in area 1 in 2004).

These conditions are fulfilled for

Li – Ag – Pd – La – Hg.

But for Li, Pd, and La the situation is that those elements have concentrations lower than the detection limits in one or both of the situations other than area 1 in 2007. The increase for those is therefore somewhat more uncertain than for Ag and Hg.

These two elements are significantly higher in area 1 in 2007 compared to both area 1 in 2005 and 2006 and to other areas in 2007. The factor is 3 for Ag and 2 for Hg.

Table 14. Mean concentrations µg/kg wet weight in shorthorn sculpin liver.

	detection limit	Mean all 2004	Mean all 2005	Mean all 2006	Mean all 2007	2007 area 1	2007 area 2	2005-2006 area 1
Li	*0.02*	0.03	0.02	0.02	0.03	0.03	0.02	<d.l.
Be	*0.003*	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.
Na	*87*	3192	2697	<d.l.	1679	1988.49	1472.16	2315.61
Mg	*4*	222	193	195	126	135.72	119.69	167.89
Al	*16*	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.
Si	*1.80*	10.14	8.62	<d.l.	<d.l.	<d.l.	<d.l.	3.83
P	*15*	3060	2169	1721	1962	2017.20	1925.82	1898.93
K	*44*	3894	3611	1969	2364	2236.87	2449.57	2689.49
Ca	*86*	<d.l.	225	309	<d.l.	<d.l.	<d.l.	168.44
Sc	*0.069*	0.113	0.105	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.
Ti	*0.13*	30.63	23.50	2.41	1.54	1.61	1.50	12.13
V	*0.013*	0.064	0.043	0.066	0.050	0.09	0.02	0.05
Cr	*0.15*	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.
Mn	*0.08*	0.63	0.56	0.38	0.76	0.95	0.64	0.49
Fe	*12*	238	137	124	115	180.05	71.02	108.18
Ni	*0.32*	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.
Cu	*0.22*	4.51	2.31	1.03	2.16	3.33	1.29	1.03
Zn	*0.75*	56.30	32.23	27.28	26.94	30.26	22.98	29.45
Ga	*0.022*	0.032	0.029	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.
Co	*0.01*	0.09	0.06	0.04	0.10	0.18	0.04	0.05
As	*0.41*	7.43	4.28	3.31	4.17	5.18	3.34	3.38
Se	*0.14*	1.57	1.44	1.20	1.12	1.38	0.91	1.11
Rb	*0.010*	0.534	0.512	0.344	0.981	0.87	1.06	0.43
Sr	*0.52*	0.76	1.82	2.71	<d.l.	0.76	<d.l.	1.02
Y	*0.00*	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.
Zr	*0.04*	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.
Mo	*0.11*	0.11	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.
Rh	*0.001*	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.
Pd	*0.007*	<d.l.	<d.l.	<d.l.	<d.l.	0.01	<d.l.	<d.l.
Ag	*0.011*	0.372	0.167	0.107	0.124	0.21	0.06	0.08
Cd	*0.02*	1.70	0.62	0.61	0.63	1.04	0.34	0.32
Sn	*0.04*	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.
Sb	*0.03*	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.
Cs	*0.006*	0.021	0.016	0.010	0.014	0.01	0.01	0.01
Ba	*0.05*	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.
La	*0.01*	0.01	<d.l.	<d.l.	<d.l.	0.01	<d.l.	<d.l.
Ce	*0.01*	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.
Nd	*0.004*	0.005	0.004	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.
Ta	*0.012*	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.
W	*0.03*	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.
Au	*0.05*	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.
Hg	*0.05*	0.14	0.10	0.09	0.08	0.11	0.05	0.06
Tl	*0.03*	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.
Pb	*0.028*	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.
Bi	*0.007*	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.
Th	*0.01*	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.
U	*0.01*	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.

We have no explanations for the moderate elevations, but it is believed that the elevations are caused by other factors than the mining of olivine, since this would have been associated with elevations of Cr and Ni. Analytical results have not been normalised with respect to length, weight, and sex which is the standard procedure, since only large female fish 30 to 44 cm, were used for analyses.

In conclusion it is not likely that the mining operation has affected the element levels in sculpin.

6.5 Long Lake

Long Lake is located just south and east of the olivine deposit (Figure 2 and 4). The lake and the short river that flows to the fiord can receive drainage water and dust directly from the deposit and from the mining operations. Thus Long Lake is the fresh water body that is most likely to be affected by the mining operation.

Water has been collected and analysed before mining, during mine construction and after mining had started. Mean concentrations are shown in Table 15 together with the analytical detection limit and the Provincional water quality objectives of Ontario. The analyses have been made by NERI and the collection performed by personnel from MT Højgaard A/S.

It is seen from Table 15 that there are no substantial increase of element concentrations during mining in 2007. During mine construction there were a few increases particularly of copper, but those increases disappear in 2007. The high Cu value in the table is a mean of 4 measurements where only the sample from November 13 2005 was high (21.7 µg/kg. In 2007 all concentrations were well below the Ontario guidelines for surface waters. The Ontario guidelines have been used for Greenland in other mine relevant studies.

Chemical analyses of the Arctic char living in the lake can be considered an indicator for the pollution state of that lake. Therefore we have tried to get char samples. Unfortunately until 2007 only two fish have been caught in Long Lake, both in 2007. They have been analysed, but two fish is too small a sample size to make a reliable evaluation of the state of pollution. However, the results indicate that element levels are as low as found in char from unaffected streams in Greenland.

Conclusion for the fresh water environment

No indication of higher element concentrations in the fresh water environment has been observed after mine start-up.

Table 15. Analyses of fresh water from Long Lake. Concentrations in microgram/liter.

	Before mining 2004 and 2005	During construction 2005 and 2006	During mining Summer 2007	Detection limit	Ontario PWQO for soft water
	mean	mean	mean		
Li	0.101	0.14	0.11	0.09	
Be	<d.l.	<d.l.	<d.l.	0.03	11
Na	2031	940	2488	116	
Mg	871	733	1448	6	
Al	15.5	17.4	13.4	5.5	75
Si	130		28.44	1	
P	<d.l.	<d.l.	<d.l.	6.8	
S	525	<d.l.	1714	1528	
K	461	489	556	48	
Ca	1860	2002	2440	19	
Sc	0.105	0.81	0.48	0.35	
Ti	0.203	0.60	0.19	0.50	
V	0.073	0.067	0.069	0.040	6
Cr	0.184	0.252	0.138	0.042	1
Mn	0.007	0.313	<d.l.	0.072	
Fe	8	23	8	8	300
Co	<d.l.	<d.l.	<d.l.	0.04	
Ni	1.108	1.93	1.06	0.29	25
Cu	0.332	5.97	0.39	0.05	1
Zn	<d.l.	3.31	<d.l.	0.31	20
Ga		0.11	<d.l.	0.040	
As	0.07	1.15	<d.l.	0.13	5
Se	0.265	1.51	<d.l.	0.23	100
Rb	8.852	1.50	1.49	0.05	
Sr	7.81	13.72	11.92	0.12	
Y	0.017	0.03	0.03	0.009	
Zr	0.012	0.03	0.03	0.007	4
Mo	0.081	0.14	0.17	0.083	40
Rh	d.l.	<d.l.	<d.l.	0.005	
Pd	0.001	0.01	0.02	0.007	
Ag	<d.l.	<d.l.	<d.l.	0.09	0.1
Cd	0.003	<d.l.	<d.l.	0.035	0.2
Sn	0.004	0.03	0.03	0.018	
Sb	<d.l.	0.01	0.02	0.029	20
Te	<d.l.	<d.l.	<d.l.	0.02	
Cs	<d.l.	<d.l.	<d.l.	0.07	
Ba	2.88	5.92	2.45	0.04	
La	0.044	0.10	0.05	0.01	
Ce	0.042	0.10	0.05	0.01	
Nd	0.047	0.09	0.06	0.01	
Ta	0.002	<d.l.	0.01	0.003	
W	0.054	0.10	0.19	0.049	
Pt	<d.l.	<d.l.	<d.l.	0.021	
Au	0.007	0.02	0.01	0.006	
Tl	<d.l.	<d.l.	<d.l.	0.113	0.3
Pb	0.002	0.02	<d.l.	0.041	1
Bi	<d.l.	<d.l.	0.0015	0.0013	
Th	0.01	0.02	0.02	0.008	
U	0.04	0.07	0.05	0.033	5

7 Evaluation and recommendations

The levels of chromium and nickel can be environmentally evaluated based on a Norwegian classification system.

According to"Statens Forurensningstilsyn in Norway" (Molvær et al. 1997) the levels of pollution can be divided in different classes based on the concentrations of pollutants in the indicator organisms seaweed, mussels, and fish liver.

The system can be used on the levels of chromium and nickel in seaweed and blue mussels, which in Table 16 are compared with the concentrations used in the Norwegian classification system:

Table 16. Pollution classes and measured concentrations in mg/Kg d.w.

	Cr	Cr	Ni	Ni
	Seaweed	**Blue mussels**	**Seaweed**	**Blue mussels**
Measured concentrations				
All stations 2007 except station 25 (average)	**0.48**	**1.03**	**1.56**	**1.53**
Station 25	**2.42**	**9.71**	**5.36**	**16.65**
Classification concentration levels				
Insignificantly polluted	1	3	5	5
Moderately polluted	5	10	25	20
Pronounced polluted	15	30	50	50
Strongly polluted	50	60	100	100
Very strongly polluted	>50	>60	>100	>100

Hence, all stations except station 25 have a pollution that is smaller than "Insignificantly polluted". Station 25 have a pollution with chromium and nickel that places it between "insignificantly polluted" and "moderately polluted". The classes "moderately polluted", "pronounced polluted"," strongly polluted", and "very strongly polluted" are not seen in the Seqi area.

DMU interpretation:
Since pollution of the biological indicator organisms can be found only at the station that is placed in the immediate vicinity of the mining operations, and since it can be classified as between insignificantly and moderately polluted we find it insignificant for the environment at the Fiskefjord in general. However, we recommend that the pollution caused by dust spreading is continuously monitored so that it can be assured that the affected area does not grow unacceptably with time. We further recommend that the dusting is evaluated by experts in working environment in order to protect workers at the mining and crushing facilities.

8 Conclusion

Baseline levels of elements in the area around the olivine deposit appear not to be naturally elevated in seaweed, blue mussels and sculpins. Freshwater from a lake close to the deposit did not have elevated element levels.

After the mine started operating, dust from the operation has caused levels of in particular chromium, nickel and iron, but also some other elements, to increase in lichens at the deposit, but only within 1-2 km from the mine. Levels have also increased in seaweed and blue mussels close to the mine. The Cr and Ni pollution could not be detected in fish nor in the freshwater of the lake. Thus the effect of the mine is very local and is by DMU interpreted as insignificant for the environment at Fiskefjord. We further recommend that the pollution should be continuously monitored and evaluated by experts in working environment due to the local dust pollution close to mining activities.

9 References

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Appendix 1. Data for fish

Description of the fish caught in the background investigations in 2004.

ID-No	Sample type	Collection date	Station	Sex	Length cm	Weight g
31365	Cod	20040513	net-1	female	72	3900
31314	Greenland cod	20040512	longline-1	female	41.5	600
31315	Greenland cod	20040512	longline-1	female	45	1150
31316	Greenland cod	20040512	longline-1	male	46	850
31317	Greenland cod	20040512	longline-1	female	43	900
31318	Greenland cod	20040512	longline-1	male	41.5	800
31319	Greenland cod	20040512	longline-1	female	44	850
31320	Greenland cod	20040512	longline-1	female	41	600
31321	Greenland cod	20040512	longline-1	female	46.5	900
31322	Greenland cod	20040512	longline-1	female	54	1450
31323	Greenland cod	20040512	tejne-1	male	38.5	500
31324	Greenland cod	20040512	tejne-1	female	49	1000
31325	Greenland cod	20040512	tejne-2	female	48.5	1250
31336	Greenland cod	20040513	longline-2	female	43	700
31337	Greenland cod	20040513	longline-2	female	41.5	650
31338	Greenland cod	20040513	longline-2	female	38	400
31339	Greenland cod	20040513	longline-2	female	45	1150
31340	Greenland cod	20040513	longline-2	female	55	1750
31341	Greenland cod	20040513	longline-2	female	49.5	1100
31342	Greenland cod	20040513	longline-2	female	42.5	950
31343	Greenland cod	20040513	longline-2	female	48	1150
31344	Greenland cod	20040513	longline-2	female	43.5	900
31345	Greenland cod	20040513	longline-2	female	48	1250
31346	Greenland cod	20040513	longline-2	female	45	800
31347	Greenland cod	20040513	longline-2	male	45	950
31348	Greenland cod	20040513	longline-2	female	40	650
31349	Greenland cod	20040513	longline-2	female	46.5	1100
31350	Greenland cod	20040513	longline-2	female	54	1500
31351	Greenland cod	20040513	longline-2	male	43.5	850
31352	Greenland cod	20040513	longline-2	female	46	1000
31353	Greenland cod	20040513	longline-2	female	49.5	1150
31354	Greenland cod	20040513	longline-2	male	42.5	650
31355	Greenland cod	20040513	longline-2	female	44	950
31401	Greenland cod	20040515	longline-3	female	54	1650
31402	Greenland cod	20040515	longline-3	female	50	1250
31403	Greenland cod	20040515	longline-3	female	48.5	1050
31404	Greenland cod	20040515	longline-3	female	52	1300
31405	Greenland cod	20040515	longline-3	female	53	1300
31406	Greenland cod	20040515	longline-3	female	50	1300
31407	Greenland cod	20040515	longline-3	female	50	1150
31408	Greenland cod	20040515	longline-3	female	40	750
31409	Greenland cod	20040515	longline-3	female	49.5	1100
31410	Greenland cod	20040515	longline-3	female	42.5	800
31411	Greenland cod	20040515	longline-3	female	50.5	1350
31412	Greenland cod	20040515	longline-3	female	52	1400
31413	Greenland cod	20040515	longline-3	female	48	1200
31414	Greenland cod	20040515	longline-3	female	50.5	1100
31415	Greenland cod	20040515	longline-3	female	48	1200

31416	Greenland cod	20040515	longline-3	female	50	1250
31417	Greenland cod	20040515	longline-3	female	49	1250
31418	Greenland cod	20040515	longline-3	female	44	800
31419	Greenland cod	20040515	longline-3	male	50	1050
31420	Greenland cod	20040515	longline-3	female	49	1150
31452	Greenland cod	20040516	longline-4	female	50	1400
31453	Greenland cod	20040516	longline-4	male	43	750
31454	Greenland cod	20040516	longline-4	female	46.5	1400
31455	Greenland cod	20040516	longline-4	female	53	1500
31456	Greenland cod	20040516	longline-4	female	54.5	1600
31457	Greenland cod	20040516	longline-4	female	44	600
31458	Greenland cod	20040516	longline-4	female	44	1050
31459	Greenland cod	20040516	longline-4	male	46	850
31460	Greenland cod	20040516	longline-4	female	46.5	1050
31461	Greenland cod	20040516	longline-4	female	44	700
31462	Greenland cod	20040516	longline-4	female	49	1200
31463	Greenland cod	20040516	longline-4	female	45.5	1000
31464	Greenland cod	20040516	longline-4	female	42	800
31465	Greenland cod	20040516	longline-4	male	41	750
31466	Greenland cod	20040516	longline-4	female	49.5	1050
31467	Greenland cod	20040516	longline-4	female	46	1100
31468	Greenland cod	20040516	longline-4	female	46.5	1100
31469	Greenland cod	20040516	longline-4	female	41.5	500
31470	Greenland cod	20040516	longline-4	female	47.5	1100
31471	Greenland cod	20040516	longline-4	female	58	1850
31519	Greenland cod	20040517	Longline-5	female	50	1300
31520	Greenland cod	20040517	Longline-5	female	46	950
31521	Greenland cod	20040517	Longline-5	female	39	650
31522	Greenland cod	20040517	Longline-5	female	48.5	1050
31523	Greenland cod	20040517	Longline-5	female	50	1150
31524	Greenland cod	20040517	Longline-5	male	43	750
31525	Greenland cod	20040517	Longline-5	female	41.5	700
31526	Greenland cod	20040517	Longline-5	female	43	900
31527	Greenland cod	20040517	Longline-5	female	47	950
31528	Greenland cod	20040517	Longline-5	female	48	850
31529	Greenland cod	20040517	Longline-5	female	43.5	750
31530	Greenland cod	20040517	Longline-5	female	47.5	1250
31531	Greenland cod	20040517	Longline-5	male	39	500
31532	Greenland cod	20040517	Longline-5	female	33.5	350
31533	Greenland cod	20040517	Longline-5	male	37.5	550
31534	Greenland cod	20040517	Longline-5	female	41	650
31535	Greenland cod	20040517	Longline-5	female	47	850
31536	Greenland cod	20040517	Longline-5	female	42	650
31537	Greenland cod	20040517	Longline-5	male	43.5	750
31538	Greenland cod	20040517	Longline-5	female	50	1200
31292	long rough dab	20040514	Trawl-1	female	36.5	400
31293	long rough dab	20040514	Trawl-1	female	39.5	400
31294	long rough dab	20040514	Trawl-1	male	30	200
31295	long rough dab	20040514	Trawl-1	male	29.5	200
31356	long rough dab	20040513	longline-2	female	43	700
31357	long rough dab	20040513	longline-2	male	38.5	400
31358	long rough dab	20040513	longline-2	female	42.5	600
31480	long rough dab	20040516	tejne-7		43	650
31271	shorthorn sculpin	20040514	Ulk-3	female	38.5	650
31272	shorthorn sculpin	20040514	Ulk-3	male	28.5	200
31273	shorthorn sculpin	20040514	Ulk-3	female	35	350

31274	shorthorn sculpin	20040514	Ulk-3	female	36	450
31275	shorthorn sculpin	20040514	Ulk-3	female	36.5	500
31276	shorthorn sculpin	20040514	Ulk-3	female	33	350
31277	shorthorn sculpin	20040514	Ulk-3	female	32	350
31278	shorthorn sculpin	20040514	Ulk-3	female	32	350
31279	shorthorn sculpin	20040514	Ulk-3	female	32.5	350
31280	shorthorn sculpin	20040514	Ulk-3	female	36.5	550
31281	shorthorn sculpin	20040514	Ulk-3	male	26	150
31282	shorthorn sculpin	20040514	Ulk-3	female	34.5	350
31283	shorthorn sculpin	20040514	Ulk-3	female	29	200
31284	shorthorn sculpin	20040514	Ulk-3	female	33.5	350
31285	shorthorn sculpin	20040514	Ulk-3	female	28.5	200
31286	shorthorn sculpin	20040514	Ulk-3	male	26	150
31287	shorthorn sculpin	20040514	Ulk-3	male	29	250
31288	shorthorn sculpin	20040514	Ulk-3	female	24	150
31289	shorthorn sculpin	20040514	Ulk-3	male	26.5	200
31290	shorthorn sculpin	20040514	Ulk-3	female	32.5	300
31366	shorthorn sculpin	20040513	net-1	male	36	457
31367	shorthorn sculpin	20040513	Ulk-2	male	26.5	250
31368	shorthorn sculpin	20040513	Ulk-2	male	27	200
31369	shorthorn sculpin	20040513	Ulk-2	female	37	450
31370	shorthorn sculpin	20040513	Ulk-2	female	31.5	300
31371	shorthorn sculpin	20040513	Ulk-2	female	36.5	500
31372	shorthorn sculpin	20040513	Ulk-2	female	31.5	300
31373	shorthorn sculpin	20040513	Ulk-2	female	30.5	300
31374	shorthorn sculpin	20040513	Ulk-2	female	37.5	550
31375	shorthorn sculpin	20040513	Ulk-2	female	40.5	700
31376	shorthorn sculpin	20040513	Ulk-2	female	39	550
31377	shorthorn sculpin	20040513	Ulk-2	female	31	300
31378	shorthorn sculpin	20040513	Ulk-2	female	33	350
31379	shorthorn sculpin	20040513	Ulk-2	female	37	550
31380	shorthorn sculpin	20040513	Ulk-2	female	31	350
31381	shorthorn sculpin	20040513	Ulk-2	male	28	200
31382	shorthorn sculpin	20040513	Ulk-2	female	37.5	500
31383	shorthorn sculpin	20040513	Ulk-2	female	34	350
31384	shorthorn sculpin	20040513	Ulk-2	female	31	350
31385	shorthorn sculpin	20040513	Ulk-2	female	39.5	600
31386	shorthorn sculpin	20040513	Ulk-2	female	33	350
31421	shorthorn sculpin	20040514	Nordlig ø i område-2	male	26.5	210
31422	shorthorn sculpin	20040514	Nordlig ø i område-2	male	28	262
31423	shorthorn sculpin	20040514	Nordlig ø i område-2	male	30.5	302
31424	shorthorn sculpin	20040514	St 16	female	34	517
31425	shorthorn sculpin	20040514	St 16	female	29.5	315
31426	shorthorn sculpin	20040514	St 16	male	26.5	243
31427	shorthorn sculpin	20040514	St 16	male	28	228
31447	shorthorn sculpin	20040515	nordlige område-2	female	33	441.9
31448	shorthorn sculpin	20040515	nordlige område-2	female	32.5	425.5
31449	shorthorn sculpin	20040515	nordlige område-2	female	38.5	700
31450	shorthorn sculpin	20040515	nordlige område-2	female	44	850
31451	shorthorn sculpin	20040515	nordlige område-2	male	27	196
31481	shorthorn sculpin	20040516	område-3	male	24.5	150
31482	shorthorn sculpin	20040516	område-3	male	26	150
31483	shorthorn sculpin	20040516	område-3	female	28.5	250
31484	shorthorn sculpin	20040516	område-3	male	26.5	200
31485	shorthorn sculpin	20040516	område-3	male	24	150
31486	shorthorn sculpin	20040516	område-3	female	25.5	150

31487	shorthorn sculpin	20040516	område-3	female	31	300
31488	shorthorn sculpin	20040516	område-3	female	30	300
31489	shorthorn sculpin	20040516	område-3	female	33	300
31490	shorthorn sculpin	20040516	område-3	female	33	400
31491	shorthorn sculpin	20040516	område-3	female	34	500
31492	shorthorn sculpin	20040516	område-3	female	33	400
31493	shorthorn sculpin	20040516	område-3	female	43.5	1150
31494	shorthorn sculpin	20040516	område-3		18	

Appendix 2. Data for Crabs

Data for the crab samples. All crabs collected are males.

Collection date	Station	No of individu-als	Shell length mean mm	Shell length min mm	Shell length max mm	Weight of the crabs sampled g	ID No. Hepatopan-creas sample	ID No. meat sample
20040512	tejne-1	8	99	93	107	2850	31326	31327
20040512	tejne-1	10	88	85	91	2200	31329	31328
20040513	tejne-3	8	86.5	77	96	2050	31360	31359
20040513	tejne-4	5	99	97	102	1911	31362	31361
20040513	tejne-4	7	87.5	81	95	1936	31364	31363
20040515	tejne-5	10	89.5	76	101	2650	31428	31429
20040515	tejne-6	9	96.5	87	104	2900	31430	31431
20040515	tejne-6	10	85	75	91	2200	31432	31433
20040516	tejne-7	6	111	102	123	3300	31472	31473
20040516	tejne-7	6	95	91	99	2050	31474	31475
20040516	tejne-8	6	113	111	122	3400	31476	31477
20040516	tejne-8	6	95	93	101	1850	31478	31479
20040517	tejne-9	3	80	71	88	600	31543	31542
20040517	tejne-10	4	107.5	100	115	1950	31545	31544
20040517	tejne-10	6	88	83	96	1500	31547	31546

Appendix 3. Analyses of blue mussels

Chemical analyses of blue mussels µg/g dry weight.

ID No.	Station	Length	Year	% dry matter	Li	Be	Na	Mg	S	Al	Si	P	K	Ca
d.l.					**0.01**	**0.002**	**121**	**3**	**551**	**1**	**3**	**35**	**55**	**157**
31213	St 2	5-6.1 cm	2004	17.41	0.44	<d.l.	42787	4110	25102	52	242	11847	23010	2150
31210	St 1	4-5 cm	2004	13.47	0.83	0.002				115	380	9417		
31210	St 1	4-5 cm	2004	13.47	1.00	0.003				149	484	10663		
31211	St 1	5-6 cm	2004	13.04	1.20	0.006				251	627	11724		
31228	St 6	4-5 cm	2004	13.64	1.34	0.005				213	394	12148		
31229	St 6	5-6 cm	2004	11.68	1.47	0.004				219	447	9706		
31230	St 7	4-5 cm	2004	14.18	1.48	0.008				745	634	8900		
31231	St 7	5-6 cm	2004	12.73	1.39	0.006				671	655	7912		
31250	St 12	4-5 cm	2004	12.81	1.01	<d.l.				26	138	8360		
31264	St 13	5-6 cm	2004	18.10	0.68	0.003				103	175	7333		
31517	St 23	4-5 cm ref	2004	15.68	0.98	0.003				172	386	10680		
31518	St 23	5-6 cm ref	2004	15.43	1.09	0.004				189	390	9302		
31518	St 23	5-6 cm ref	2004	15.43	1.26	0.007				230	509	11953		
31215	St 3	5-6 cm	2004	14.81	0.62	<d.l.	58908	5354	24757	61	307	10495	22803	6276
31217	St 4	5-6.3 cm	2004	11.66	0.98	<d.l.	86744	8006	30416	47	306	10217	24700	3696
31219	St 5	5-6 cm	2004	12.15	1.12	<d.l.	94661	8751	33298	160	437	11036	27463	4228
31233	St 8	5-6 cm	2004	12.75	0.92	0.005	75154	7036	27316	317	452	10300	25156	4181
31245	St 9	5-6 cm	2004	15.11	0.70	0.003	59720	5548	23581	304	427	9735	22848	3626
31245	St 9	5-6 cm	2004	15.11	0.75	0.007	56738	6002	24072	397	530	10393	24635	3294
31247	St 10	5-6 cm	2004	16.81	0.56	<d.l.	47230	4815	24038	35	269	10610	24132	2882
31249	St 11	5-6 cm	2004	17.40	0.49	<d.l.	41892	4263	22737	34	233	10500	23533	2921
31266	St 14	5-6 cm	2004	18.46	0.44	<d.l.	33804	3739	20365	58	217	10496	23460	1937
31268	St 15	5-6 cm	2004	19.16	0.88	<d.l.	57323	9936	33721	101	814	16344	39686	3251
31270	St 16	5-6 cm	2004	14.09	<d.l.	<d.l.			1574		8	<d.l.	<d.l.	<d.l.
31504	St 19	5-6 cm	2004	13.92	0.60	0.004	63920	5016	25108	30	137	8524	18053	3850
31512	St 20	5-6 cm	2004	17.13	0.48	0.003	43341	4107	23951	50	254	10850	21023	2371
31514	St 21	5-6 cm	2004	17.99	0.43	0.004	34296	3825	22610	54	242	11219	20501	2781
33602	St 1	5-6 cm	2005	12.53	0.59	0.003	50478	4687	25842	134	218	10155	19623	3651
33604	St 2	5-6 cm	2005	10.94	0.70	0.004	60253	5548	27193	71	153	9529	19071	4357
33606	St 3	5-6 cm	2005	11.38	0.66	<d.l.	59964	5685	28403	43	107	9333	19239	3692
33608	St 5	5-6 cm	2005	11.96	0.63	0.003	51267	5078	26979	67	116	10364	19239	3427
33610	St 24	5-6 cm	2005	11.38	0.52	0.003	51399	4506	27036	51	109	9156	18074	4033
33610	St 24	5-6 cm	2005	11.38	0.55	0.003	53272	4734	27299	60	125	9783	18448	4280
33612	St 25	5-6 cm	2005	12.33	0.68	0.005	55478	5255	27263	307	352	10914	19023	3733
33666	St 7	5-6 cm	2005	14.13	1.05	0.013	43293	4522	24240	1326	856	9555	17940	3311
33668	St 8	5-6 cm	2005	12.02	0.63	0.005	58235	5212	26017	160	209	9632	17682	3492
33670	St 13	5-6 cm	2005	12.41	0.68	0.003	62107	5595	28845	132	201	10307	19154	3727
33676	St 20	5-6 cm	2005	14.13	0.52	0.003	47216	4627	25598	54	152	10192	19087	3207
33678	St 21	5-6 cm	2005	17.25	0.38	0.013	40485	3305	24784	45	141	8962	16288	3115
33680	St 23	5-6 cm	2005	14.26	0.52	0.006	49505	4419	27056	68	157	10510	18297	4381
33689	St 9	4-5 cm	2005	14.90	0.54	0.006	45117	4175	24838	111	177	9173	17624	3318
33691	St 10	5-6 cm	2005	12.90	0.65	0.005	54228	5122	28082	134	197	9826	19379	7184
33693	St 11	5-6 cm	2005	11.62	0.83	0.005	66958	6207	28136	104	155	9918	19691	3764

ID No.	Station	Length	year	% dry matter	Li	Be	Na	Mg	S	Al	Si	P	K	Ca
33696	St 4	5-6 cm	2005	14.27	0.51	0.003	39220	4003	27534	72	120	10989	19177	3501
33698	St 14	5-6 cm	2005	11.64	0.68	0.004	63196	5567	29851	75	125	9754	19280	4070
33700	St 15	5-6 cm	2005	11.83	0.56	<d.l.	54224	4597	27019	37	89	9869	17904	3387
33702	St 16	5-6 cm	2005	12.01	0.68	0.003	61141	5460	29102	46	152	10148	19106	3942
33704	St 18	5-6 cm	2005	15.07	0.60	0.004	49734	4639	24906	77	138	9565	18420	3271
33706	St 19	5-6 cm	2005	13.08	0.78	0.003	64777	6015	29180	38	110	9989	20856	4051
35711	St 1	0	2006	14.85	0.75	0.003		5861		82	8	9660	15943	3694
35702	St 2	0	2006	15.53	0.66	0.003		5425		48	7	8990	15157	3533
35686	St 3	0	2006	16.83	0.51	0.002		3945		99	9	8785	14389	3127
35684	St 4	0	2006	19.40	0.47	0.004		3662		47	7	9112	14439	3372
35637	St 5	0	2006	17.86	0.51	0.004		4151		33	6	8548	13738	4107
35751	St 6	0	2006	14.76	0.68	0.003		5368		42	5	9370	14829	3890
35753	St 7	0	2006	17.59	0.56	0.005		4338		40	6	8442	14441	4414
35755	St 8	0	2006	19.96	0.44	0.002		3405		74	8	9349	14650	2800
35639	St 9	0	2006	19.00	0.46	<d.l.		3735		37	6	9901	15433	3222
35639	St 9	0	2006	19.00	0.44	0.003		3588		35	6	9040	14846	3256
35643	St 10	0	2006	18.46	0.48	0.002		3782		39	7	8850	14434	3892
35641	St 11	0	2006	15.57	0.60	0.003		4809		26	6	8690	15573	6118
35645	St 12	0	2006	17.01	0.57	<d.l.		4440		51	7	8653	15163	3976
35676	St 13	0	2006	17.70	0.52	0.003		4351		33	8	9020	14992	3366
35678	St 14	0	2006	18.27	0.51	0.003		4157		60	8	9003	14576	2582
35680	St 15	0	2006	15.35	0.67	<d.l.		5301		18	5	8134	14524	2940
35682	St 16	0	2006	16.28	0.65	0.003		5168		80	10	9170	15358	3772
35661	St 17	0	2006	21.52	0.37	<d.l.		3046		27	6	8417	14739	2243
35663	St 18	0	2006	15.84	0.46	<d.l.		3894		15	5	6616	11557	2483
35665	St 19	0	2006	19.01	0.44	<d.l.		3646		20	7	8367	14390	2878
35667	St 20	0	2006	15.74	0.64	<d.l.		5173		23	7	9101	15569	2805
35669	St 21	0	2006	15.15	0.63	<d.l.		5108		29	8	9348	15566	3535
35713	St 24	0	2006	17.84	<d.l.	<d.l.				2				
35715	St 25	0	2006	14.24	0.62	0.003		4520		245	16	8540	14622	2725
37116	St. 1	4-5 cm	2007	15.74	0.67	<d.l.	54170	3530		65	13	11819	14480	2388
37117	St. 1	5-6 cm	2007	15.66	0.68	0.005	56679	3648	53280	54	11	12678	14410	2425
37118	St. 2	4-5 cm	2007	15.98	0.65	0.003	54342	3536	53161	47	12	12758	14485	3005
37119	St. 2	5-6 cm	2007	15.78	0.66	0.008	56341	3647	56989	43	11	11730	14352	2206
37120	St. 3	4-5 cm	2007	15.43	0.68	0.019	60378	3876	53869	58	12	13512	14749	2596
37121	St. 3	5-6 cm	2007	14.92	0.68	0.007	60043	3693	51622	40	9	12483	14117	2124
37121	St. 3	5-6 cm	2007	14.92	0.75	0.016	60614	3718	52005	45	9	13042	14366	2137
37139	St. 4	4-5 cm	2007	14.73	0.75	0.006	61085	3687	53504	103	13	12450	15106	3152
37140	St. 5	4-5 cm	2007	14.87	0.71	<d.l.	65783	3950	56929	37	8	13215	15226	3143
37141	St. 5	5-6 cm	2007	13.08	0.94	0.009	77092	4515	60886	188	19	11445	14868	2453
37245	St. 6	4-5 cm	2007	15.30	0.65	0.007	51101	3257	54592	110	13	13196	14379	2775
37246	St. 6	5-6 cm	2007	13.18	0.76	0.004	64157	3850	54139	100	11	12871	14212	3019
37247	St. 7	4-5 cm	2007	14.82	0.70	0.004	63276	3746	54539	39	8	12968	14598	2470
37248	St. 8	4-5 cm	2007	16.02	0.66	0.003	60128	3609	54888	70	9	14414	15470	2711
37249	St. 8	5-6 cm	2007	16.27	0.61	0.003	55490	3347	51433	93	12	14209	14830	2542
37122	St. 9	4-5 cm	2007	15.21	0.67	0.005	63216	3730	53980	263	12	11260	13974	2519
37123	St. 9	5-6 cm	2007	15.29	0.70	<d.l.	64527	3757	54184	40	10	12285	14388	2421
37142	St. 10	4-5 cm	2007	18.64	0.56	<d.l.	49691	3202	50956	185	23	15897	15440	2461
37143	St. 10	5-6 cm	2007	18.56	0.52	0.007	45088	2852	47075	123	16	14439	13912	2226
37146	St. 12	4-5 cm	2007	16.37	0.67	0.006	58460	3418	53149	58	15	12964	14106	2399
37146	St. 12	4-5 cm	2007	16.37	0.64	0.006	55305	3239	50429	70	14	12548	13480	2499
37147	St. 12	5-6 cm	2007	16.27	0.64	0.013	59085	3406	54257	47	12	11986	13877	2249

ID No.	Station	Length	year	% dry matter	Li	Be	Na	Mg	S	Al	Si	P	K	Ca
37238	St. 13	4-5 cm	2007	15.63	0.93	0.004	86573	4641	63659	18	7	12274	15026	2211
37239	St. 13	5-6 cm	2007	15.50	0.82	0.003	77842	4296	62581	40	12	12917	15711	3179
37241	St. 15	4-5 cm	2007	14.01	0.83	0.004	75730	4093	60798	25	6	11689	14709	1976
37242	St. 15	5-6 cm	2007	13.19	0.74	<d.l.	67848	3722	58224	26	8	12844	15401	2016
37192	St. 19	4-5 cm	2007	16.74	0.66	0.003	60463	3288	53616	42	9	11858	14972	2283
37193	St. 19	5-6 cm	2007	17.36	0.78	0.016	55951	3207	48859	699	7	11210	14291	2423
37198	St. 23	4-5 cm	2007	16.66	0.68	0.004	60302	3356	57647	73	18	13912	17068	2422
37199	St. 23	5-6 cm	2007	17.04	0.59	0.004	56622	3161	53563	48	14	13008	16039	2276
37250	St. 24	4-5 cm	2007	17.61	0.56	<d.l.	50594	3001	51579	57	10	15521	14040	2047
37251	St. 24	5-6 cm	2007	16.00	0.61	<d.l.	57808	3230	50670	28	6	12316	13116	2447
37252	St. 25	4-5 cm	2007	14.79	0.68	0.002	56683	4841	50165	232	49	12447	13812	2548
37253	St. 25	5-6 cm	2007	14.46	0.72	0.005	64192	4091	53581	161	23	12418	14269	2326

ID No.	Station	Length	Year	Sc	Ti	V	Cr	Mn	Fe	Ni	Cu	Zn	Ga	Co	As	Se
d.l.				**0.2**	**0.1**	**0.006**	**0.26**	**0.06**	**4**	**0.9**	**0.1**	**0.7**	**0.022**	**0.011**	**1.5**	**0.062**
31213	St 2	5-6.1 cm	2004	1.0	122.1	0.323	0.69	5.80	92	<d.l.	5.6	75.2	0.044	0.327	9.6	3.537
31210	St 1	4-5 cm	2004	0.5	29.4	0.784	1.52	6.58	199	2.2	6.4	101.0	0.075	0.613	10.0	2.869
31210	St 1	4-5 cm	2004	0.6	29.7	0.863	1.64	7.24	207	3.2	7.3	98.8	0.094	0.676	11.3	3.089
31211	St 1	5-6 cm	2004	0.8	40.3	1.086	2.27	8.01	285	4.2	8.2	107.8	0.172	0.806	13.0	3.399
31228	St 6	4-5 cm	2004	0.5	43.4	1.038	1.94	7.95	269	3.5	7.5	98.8	0.111	0.616	10.9	3.375
31229	St 6	5-6 cm	2004	0.6	38.6	0.958	2.07	7.13	272	3.8	7.1	101.8	0.119	0.660	11.0	2.907
31230	St 7	4-5 cm	2004	0.8	52.0	1.304	2.48	9.90	413	3.6	6.3	85.8	0.320	0.616	8.5	2.762
31231	St 7	5-6 cm	2004	0.9	41.4	1.028	2.06	7.97	330	3.9	5.8	91.3	0.400	0.588	8.9	2.624
31250	St 12	4-5 cm	2004	<d.l.	28.9	0.657	1.27	5.75	140	3.2	5.6	101.0	0.035	0.431	7.8	2.991
31264	St 13	5-6 cm	2004	0.2	30.3	0.744	0.99	6.06	188	2.7	5.3	93.3	0.078	0.424	6.6	2.248
31517	St 23	4-5 cm ref	2004	0.5	41.9	0.874	1.47	8.07	226	3.6	7.7	113.1	0.085	0.578	9.4	3.541
31518	St 23	5-6 cm ref	2004	0.5	38.8	0.886	1.59	9.37	218	3.4	8.0	121.2	0.088	0.595	9.2	3.379
31518	St 23	5-6 cm ref	2004	0.6	41.8	1.023	1.82	10.70	250	5.0	9.8	135.5	0.111	0.684	11.8	4.082
31215	St 3	5-6 cm	2004	1.4	110.6	0.350	0.88	4.86	97	1.1	4.8	65.3	0.044	0.339	11.3	3.694
31217	St 4	5-6.3 cm	2004	1.4	106.2	0.505	1.07	4.50	117	1.6	5.7	72.5	0.052	0.418	12.8	4.503
31219	St 5	5-6 cm	2004	2.1	124.0	0.741	1.65	5.90	205	2.4	6.1	83.0	0.076	0.512	15.0	4.591
31233	St 8	5-6 cm	2004	2.3	126.6	0.654	1.18	5.38	222	2.0	5.4	68.6	0.098	0.423	12.9	4.019
31245	St 9	5-6 cm	2004	2.1	110.8	0.516	1.84	5.67	211	2.4	4.6	54.8	0.095	0.434	12.4	3.450
31245	St 9	5-6 cm	2004	2.7	123.8	0.667	2.30	6.06	227	2.7	4.9	58.8	0.110	0.470	11.2	3.317
31247	St 10	5-6 cm	2004	1.3	104.4	0.321	0.75	4.27	76	2.0	4.8	75.6	0.060	0.356	11.7	2.862
31249	St 11	5-6 cm	2004	1.1	110.5	0.302	0.72	4.57	75	1.8	4.9	67.8	0.042	0.327	9.4	3.167
31266	St 14	5-6 cm	2004	1.1	112.3	0.352	0.78	4.44	85	1.9	4.6	60.7	0.055	0.357	10.1	2.964
31268	St 15	5-6 cm	2004	4.1	173.4	0.559	4.83	15.78	625	20.6	7.9	93.3	0.081	1.709	13.6	4.183
31270	St 16	5-6 cm	2004	0.2	0.2	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	0.098	<d.l.	<d.l.	<d.l.
31504	St 19	5-6 cm	2004	0.8	79.1	0.343	0.80	3.62	95	1.8	4.5	58.1	0.129	0.328	9.9	3.477
31512	St 20	5-6 cm	2004	1.4	111.0	0.325	0.70	4.55	88	1.9	4.9	61.1	0.129	0.318	7.6	2.982
31514	St 21	5-6 cm	2004	1.4	117.6	0.362	1.43	4.61	170	2.6	5.6	62.9	0.131	0.425	6.0	2.935
33602	St 1	5-6 cm	2005	1.3	111.2	0.442	1.17	3.49	173	2.9	6.0	60.4	0.137	0.375	11.4	4.923
33604	St 2	5-6 cm	2005	1.0	103.9	0.435	1.21	3.06	153	2.7	5.4	51.6	0.129	0.349	10.9	4.466
33606	St 3	5-6 cm	2005	0.7	96.7	0.432	1.12	3.33	145	3.0	6.0	71.0	0.123	0.397	10.4	5.035
33608	St 5	5-6 cm	2005	0.8	108.4	0.386	0.98	3.16	163	2.7	5.8	68.2	0.132	0.344	9.6	4.314
33610	St 24	5-6 cm	2005	0.7	86.4	0.395	1.04	3.65	146	2.3	5.5	61.6	0.116	0.346	10.0	4.959
33610	St 24	5-6 cm	2005	0.8	91.8	0.457	1.08	3.89	164	2.7	6.0	64.6	0.125	0.379	10.8	5.232
33612	St 25	5-6 cm	2005	1.8	114.0	0.858	1.76	5.35	404	3.4	6.4	63.9	0.181	0.459	19.9	4.971

ID No.	Station	Length	Year	Sc	Ti	V	Cr	Mn	Fe	Ni	Cu	Zn	Ga	Co	As	Se
33666	St 7	5-6 cm	2005	4.2	199.6	2.267	4.02	18.06	1161	5.0	6.8	67.8	0.432	0.782	9.4	4.192
33668	St 8	5-6 cm	2005	1.2	102.8	0.477	1.12	4.22	204	2.6	5.5	58.9	0.138	0.328	10.1	4.254
33670	St 13	5-6 cm	2005	1.2	113.8	0.471	1.61	4.56	179	3.0	6.2	83.6	0.130	0.365	10.8	4.931
33676	St 20	5-6 cm	2005	0.9	104.6	0.368	0.76	4.23	102	2.7	5.7	73.0	0.119	0.381	8.7	4.023
33678	St 21	5-6 cm	2005	0.8	86.0	0.295	0.79	4.26	125	2.0	4.6	50.1	0.111	0.399	10.3	3.851
33680	St 23	5-6 cm	2005	0.9	105.1	0.518	0.86	4.82	149	2.0	5.8	67.2	0.118	0.377	12.4	5.106
33689	St 9	4-5 cm	2005	1.0	97.5	0.441	1.17	4.47	166	2.6	5.4	56.2	0.124	0.360	8.8	4.831
33691	St 10	5-6 cm	2005	1.2	108.4	0.499	1.61	4.45	199	3.6	6.2	66.6	0.133	0.430	11.3	4.739
33693	St 11	5-6 cm	2005	0.9	107.6	0.485	1.14	3.99	180	2.8	5.8	60.4	0.128	0.360	10.4	4.464
33696	St 4	5-6 cm	2005	0.8	120.0	0.459	1.21	4.35	177	2.8	6.6	85.0	0.124	0.427	11.8	4.949
33698	St 14	5-6 cm	2005	0.8	105.6	0.396	1.11	4.32	164	2.6	5.7	65.4	0.119	0.365	12.5	4.757
33700	St 15	5-6 cm	2005	0.6	94.4	0.336	0.79	3.35	95	2.1	5.6	72.6	0.105	0.319	8.9	4.673
33702	St 16	5-6 cm	2005	0.9	102.9	0.396	1.19	5.12	236	4.3	6.6	110.9	0.114	0.534	12.2	5.444
33704	St 18	5-6 cm	2005	0.8	96.5	0.318	0.90	3.71	120	2.3	4.6	98.2	0.122	0.365	10.0	3.633
33706	St 19	5-6 cm	2005	0.7	104.1	0.388	0.89	3.59	116	2.6	4.8	109.9	0.112	0.366	12.0	4.199
35711	St 1	0	2006	<d.l.	15.7	0.563	1.38	3.86	150	2.0	6.4	64.5	0.075	0.338	12.2	4.994
35702	St 2	0	2006	<d.l.	13.6	0.462	1.22	3.35	109	1.6	5.5	61.8	0.065	0.261	10.3	4.734
35686	St 3	0	2006	<d.l.	15.1	0.496	1.16	3.80	157	1.6	5.4	59.4	0.070	0.288	9.3	5.026
35684	St 4	0	2006	<d.l.	13.2	0.412	1.04	3.01	118	1.4	5.1	64.1	0.055	0.267	9.2	4.506
35637	St 5	0	2006	<d.l.	12.0	0.370	0.97	2.86	97	1.3	5.4	62.9	0.049	0.258	9.0	4.361
35751	St 6	0	2006	<d.l.	13.7	0.469	1.17	3.36	126	1.5	5.8	60.7	0.053	0.288	9.9	5.345
35753	St 7	0	2006	<d.l.	12.6	0.445	1.14	2.91	122	1.5	5.2	63.4	0.049	0.288	9.4	4.097
35755	St 8	0	2006	<d.l.	14.3	0.368	0.74	3.26	115	1.2	4.7	56.1	0.055	0.213	8.8	3.975
35639	St 9	0	2006	<d.l.	14.7	0.368	0.69	3.21	101	1.3	5.8	78.2	0.051	0.266	9.2	4.737
35639	St 9	0	2006	<d.l.	14.6	0.379	0.85	3.01	99	1.2	5.4	71.7	0.043	0.253	8.9	4.720
35643	St 10	0	2006	<d.l.	17.8	0.417	1.15	3.00	118	2.0	5.6	73.4	0.043	0.288	9.9	4.189
35641	St 11	0	2006	<d.l.	13.4	0.519	1.46	3.07	125	1.7	5.7	66.9	0.048	0.305	11.2	4.536
35645	St 12	0	2006	<d.l.	14.3	0.390	1.01	3.29	112	1.6	5.2	61.7	0.048	0.261	8.5	4.917
35676	St 13	0	2006	<d.l.	15.5	0.406	0.88	3.40	108	1.4	5.9	69.5	0.043	0.260	9.1	4.365
35678	St 14	0	2006	<d.l.	17.6	0.436	0.95	3.40	141	1.4	5.2	64.4	0.046	0.260	8.1	4.156
35680	St 15	0	2006	<d.l.	12.6	0.386	1.00	2.61	90	1.5	4.8	67.3	0.043	0.253	9.0	4.340
35682	St 16	0	2006	<d.l.	16.6	0.543	1.96	4.16	211	4.1	5.7	59.5	0.059	0.434	10.3	5.204
35661	St 17	0	2006	<d.l.	12.9	0.362	0.82	3.74	74	1.1	5.3	55.4	0.043	0.210	8.0	3.415
35663	St 18	0	2006	<d.l.	10.0	0.286	0.75	2.83	65	1.1	4.0	56.8	0.032	0.192	7.3	2.899
35665	St 19	0	2006	<d.l.	13.0	0.386	0.81	3.31	80	1.2	4.9	48.1	0.037	0.223	10.1	3.511
35667	St 20	0	2006	<d.l.	14.2	0.359	0.94	3.33	83	1.3	5.5	66.0	0.047	0.252	8.9	3.785
35669	St 21	0	2006	<d.l.	13.8	0.407	1.16	3.32	105	1.8	6.0	72.5	0.051	0.370	10.4	3.794
35713	St 24	0	2006	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	0.2	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.
35715	St 25	0	2006	0.2	22.9	0.812	1.66	4.42	325	2.1	6.1	62.8	0.090	0.358	17.2	4.518
37116	St. 1	4-5 cm	2007	<d.l.	10.5	0.578	1.30	4.49	118	1.5	6.8	79.7	0.035	0.347	12.0	3.832
37117	St. 1	5-6 cm	2007	<d.l.	10.7	0.527	1.15	4.00	112	1.4	6.8	83.8	0.036	0.341	12.3	3.584
37118	St. 2	4-5 cm	2007	<d.l.	10.2	0.456	0.99	4.24	96	1.6	6.7	73.4	0.034	0.329	11.6	3.612
37119	St. 2	5-6 cm	2007	<d.l.	9.1	0.471	1.11	5.16	95	1.4	7.5	87.3	0.032	0.338	12.3	3.847
37120	St. 3	4-5 cm	2007	<d.l.	10.2	0.534	1.06	4.75	107	1.6	7.3	79.9	0.036	0.349	11.9	4.055
37121	St. 3	5-6 cm	2007	<d.l.	9.5	0.443	0.88	4.04	101	1.2	6.9	76.6	0.035	0.317	9.9	3.278
37121	St. 3	5-6 cm	2007	<d.l.	10.1	0.461	1.00	4.22	122	1.5	7.3	78.8	0.041	0.342	10.0	3.146
37139	St. 4	4-5 cm	2007	<d.l.	10.9	0.528	0.98	4.74	135	1.4	6.8	76.3	0.042	0.365	11.2	3.357
37140	St. 5	4-5 cm	2007	<d.l.	10.1	0.474	0.91	4.11	114	1.4	7.5	92.7	0.028	0.374	10.7	3.744
37141	St. 5	5-6 cm	2007	<d.l.	14.5	0.743	1.23	5.37	205	1.6	7.8	90.7	0.061	0.438	11.8	3.551
37245	St. 6	4-5 cm	2007	<d.l.	12.7	0.618	1.34	4.99	165	1.7	10.1	77.0	0.045	0.391	13.2	3.648
37246	St. 6	5-6 cm	2007	<d.l.	12.1	0.648	1.39	4.50	177	1.5	6.8	70.1	0.042	0.383	12.9	2.943
37247	St. 7	4-5 cm	2007	<d.l.	10.0	0.537	1.01	4.04	111	1.5	6.6	72.0	0.029	0.355	11.6	3.396

ID No.	Station	Length	Year	Sc	Ti	V	Cr	Mn	Fe	Ni	Cu	Zn	Ga	Co	As	Se
37248	St. 8	4-5 cm	2007	<d.l.	11.2	0.538	0.85	4.92	130	1.2	7.7	83.8	0.035	0.335	12.0	3.638
37249	St. 8	5-6 cm	2007	<d.l.	12.0	0.512	1.24	4.81	155	1.4	6.9	75.2	0.045	0.321	10.2	3.047
37122	St. 9	4-5 cm	2007	<d.l.	9.0	0.455	1.23	4.69	115	1.5	6.8	76.8	0.062	0.342	10.2	3.143
37123	St. 9	5-6 cm	2007	<d.l.	9.6	0.496	1.24	3.97	113	1.3	6.7	76.3	0.029	0.336	10.5	2.993
37142	St. 10	4-5 cm	2007	<d.l.	14.9	0.634	3.50	6.48	198	2.7	7.6	89.5	0.058	0.407	9.9	3.519
37143	St. 10	5-6 cm	2007	<d.l.	14.2	0.498	1.69	5.01	220	2.3	6.7	83.3	0.049	0.394	10.1	3.063
37146	St. 12	4-5 cm	2007	<d.l.	11.1	0.487	1.05	4.82	113	1.3	6.8	69.4	0.044	0.335	8.8	3.140
37146	St. 12	4-5 cm	2007	<d.l.	11.0	0.481	0.96	4.85	125	1.2	9.8	65.7	0.037	0.326	8.1	3.023
37147	St. 12	5-6 cm	2007	<d.l.	9.7	0.452	0.94	5.27	110	1.1	7.1	86.0	0.038	0.346	8.6	2.954
37238	St. 13	4-5 cm	2007	<d.l.	8.9	0.484	1.06	4.13	109	1.1	6.7	84.1	0.023	0.363	11.1	3.288
37239	St. 13	5-6 cm	2007	<d.l.	10.2	0.616	1.32	4.98	126	1.2	7.2	105.2	0.029	0.356	10.6	3.751
37241	St. 15	4-5 cm	2007	<d.l.	8.7	0.417	0.81	4.23	107	1.0	6.0	81.4	0.022	0.324	10.6	3.150
37242	St. 15	5-6 cm	2007	<d.l.	9.2	0.512	0.86	4.43	117	1.1	6.1	85.2	0.023	0.329	10.6	3.121
37192	St. 19	4-5 cm	2007	<d.l.	8.7	0.497	0.73	4.58	102	1.1	5.4	67.9	0.023	0.343	10.2	2.950
37193	St. 19	5-6 cm	2007	<d.l.	19.4	0.639	1.05	4.80	264	1.0	4.8	57.2	0.053	0.330	9.8	2.399
37198	St. 23	4-5 cm	2007	<d.l.	10.9	0.666	0.82	6.04	136	1.2	6.7	105.7	0.037	0.466	13.5	3.498
37199	St. 23	5-6 cm	2007	<d.l.	9.2	0.588	0.85	5.91	111	1.0	6.0	91.4	0.028	0.413	12.2	2.863
37250	St. 24	4-5 cm	2007	<d.l.	11.0	0.475	1.46	4.93	128	1.9	6.4	66.9	0.031	0.344	9.5	3.427
37251	St. 24	5-6 cm	2007	<d.l.	8.0	0.397	1.06	4.37	101	1.3	5.7	79.9	0.023	0.317	9.5	3.156
37252	St. 25	4-5 cm	2007	<d.l.	16.2	1.388	13.91	11.44	701	23.9	6.4	70.5	0.064	1.347	15.2	3.197
37253	St. 25	5-6 cm	2007	<d.l.	13.6	0.943	5.51	6.69	380	9.4	6.7	68.0	0.056	0.707	15.3	2.900

ID No.	Station	Length	Year	Rb	Sr	Y	Zr	Mo	Rh	Pd	Ag	Cd	Sn	Sb	Cs
d.l.				**0.008**	**0.2**	**0.001**	**0.021**	**0.345**	**0.001**	**0.012**	**0.006**	**0.039**	**0.054**	**0.014**	**0.003**
31213	St 2	5-6.1 cm	2004	6.579	25.5	0.060	0.028	0.534	0.001	<d.l.	0.085	4.196	<d.l.	<d.l.	0.018
31210	St 1	4-5 cm	2004	8.073	46.8	0.108	0.050	0.807	0.002	<d.l.	0.066	2.661	<d.l.	<d.l.	0.022
31210	St 1	4-5 cm	2004	8.789	51.8	0.121	0.039	0.907	0.002	<d.l.	0.075	3.025	<d.l.	<d.l.	0.023
31211	St 1	5-6 cm	2004	10.240	64.9	0.151	0.035	1.095	0.003	<d.l.	0.103	3.892	<d.l.	0.018	0.027
31228	St 6	4-5 cm	2004	9.611	76.3	0.160	0.045	0.954	0.002	<d.l.	0.083	2.670	<d.l.	0.014	0.025
31229	St 6	5-6 cm	2004	8.763	73.2	0.185	0.034	0.942	0.003	<d.l.	0.080	3.447	<d.l.	<d.l.	0.024
31230	St 7	4-5 cm	2004	8.671	54.0	0.131	0.112	0.738	0.002	<d.l.	0.110	1.956	<d.l.	<d.l.	0.028
31231	St 7	5-6 cm	2004	8.562	66.3	0.147	0.060	0.775	0.002	<d.l.	0.091	2.391	<d.l.	<d.l.	0.026
31250	St 12	4-5 cm	2004	8.103	52.1	0.084	<d.l.	0.641	0.002	<d.l.	0.078	2.941	<d.l.	<d.l.	0.022
31264	St 13	5-6 cm	2004	7.679	37.9	0.081	<d.l.	0.525	0.002	<d.l.	0.058	2.487	<d.l.	<d.l.	0.021
31517	St 23	4-5 cm ref	2004	9.273	43.6	0.116	0.044	0.766	0.002	<d.l.	0.058	2.021	<d.l.	<d.l.	0.028
31518	St 23	5-6 cm ref	2004	9.639	45.7	0.135	0.048	0.830	0.002	<d.l.	0.071	2.736	<d.l.	<d.l.	0.030
31518	St 23	5-6 cm ref	2004	10.375	48.2	0.143	0.055	0.917	0.002	<d.l.	0.086	3.205	<d.l.	<d.l.	0.030
31215	St 3	5-6 cm	2004	6.013	43.9	0.072	0.031	0.654	0.002	<d.l.	0.075	4.247	<d.l.	<d.l.	0.016
31217	St 4	5-6.3 cm	2004	5.760	49.8	0.111	0.027	0.849	0.002	<d.l.	0.069	5.525	<d.l.	0.017	0.018
31219	St 5	5-6 cm	2004	6.641	57.0	0.146	0.045	0.980	0.002	<d.l.	0.066	5.735	<d.l.	0.019	0.022
31233	St 8	5-6 cm	2004	6.356	50.1	0.122	0.056	0.752	0.002	<d.l.	0.072	4.076	<d.l.	<d.l.	0.021
31245	St 9	5-6 cm	2004	6.129	40.5	0.125	0.067	0.599	0.002	<d.l.	0.073	4.307	<d.l.	<d.l.	0.017
31245	St 9	5-6 cm	2004	6.547	43.5	0.140	0.069	0.649	0.002	<d.l.	0.071	4.672	<d.l.	<d.l.	0.020
31247	St 10	5-6 cm	2004	6.410	33.4	0.079	0.030	0.596	0.001	<d.l.	0.070	4.525	<d.l.	<d.l.	0.018
31249	St 11	5-6 cm	2004	6.280	31.1	0.056	<d.l.	0.537	0.002	<d.l.	0.075	5.045	<d.l.	<d.l.	0.018
31266	St 14	5-6 cm	2004	6.348	25.5	0.079	0.033	0.626	0.001	<d.l.	0.093	3.840	<d.l.	<d.l.	0.017
31268	St 15	5-6 cm	2004	10.470	46.9	0.094	0.035	0.973	0.002	<d.l.	0.112	5.688	<d.l.	<d.l.	0.029
31270	St 16	5-6 cm	2004	0.021	<d.l.	0.001	<d.l.	<d.l.	0.001	<d.l.	<d.l.	0.107	<d.l.	0.014	0.006
31504	St 19	5-6 cm	2004	4.845	35.9	0.088	0.064	0.788	0.002	0.020	0.043	4.087	<d.l.	0.026	0.020
31512	St 20	5-6 cm	2004	6.117	26.0	0.071	0.047	0.669	0.002	0.013	0.084	3.688	<d.l.	0.020	0.023

ID No.	Station	Length	Year	Rb	Sr	Y	Zr	Mo	Rh	Pd	Ag	Cd	Sn	Sb	Cs
31514	St 21	5-6 cm	2004	6.060	29.0	0.077	0.046	0.660	0.002	<d.l.	0.055	4.363	<d.l.	0.021	0.023
33602	St 1	5-6 cm	2005	5.125	34.9	0.101	0.049	0.768	0.003	0.014	0.084	4.299	<d.l.	0.027	0.020
33604	St 2	5-6 cm	2005	4.603	42.1	0.116	0.065	0.788	0.003	<d.l.	0.089	4.603	<d.l.	0.022	0.021
33606	St 3	5-6 cm	2005	4.872	38.8	0.108	0.053	0.871	0.003	0.014	2.000	4.645	<d.l.	0.025	0.022
33608	St 5	5-6 cm	2005	4.857	33.6	0.085	0.054	0.698	0.003	<d.l.	0.090	3.669	<d.l.	0.027	0.020
33610	St 24	5-6 cm	2005	4.739	35.3	0.089	0.040	0.641	0.002	<d.l.	0.105	4.721	<d.l.	0.022	0.020
33610	St 24	5-6 cm	2005	4.784	37.7	0.100	0.056	0.693	0.003	0.012	0.072	5.159	<d.l.	0.023	0.020
33612	St 25	5-6 cm	2005	4.881	39.5	0.134	0.104	0.764	0.003	<d.l.	0.090	3.039	<d.l.	0.023	0.025
33666	St 7	5-6 cm	2005	5.808	30.8	0.286	0.526	0.566	0.002	<d.l.	0.071	3.794	<d.l.	0.022	0.041
33668	St 8	5-6 cm	2005	4.563	34.2	0.107	0.069	0.621	0.003	<d.l.	0.065	3.672	<d.l.	0.019	0.021
33670	St 13	5-6 cm	2005	5.147	37.8	0.086	0.070	0.764	0.003	<d.l.	0.110	5.150	0.069	0.023	0.021
33676	St 20	5-6 cm	2005	5.071	30.5	0.063	0.030	0.797	0.003	<d.l.	0.125	5.102	<d.l.	0.019	0.021
33678	St 21	5-6 cm	2005	4.604	23.6	0.064	0.029	0.566	0.002	<d.l.	0.080	5.714	<d.l.	0.018	0.032
33680	St 23	5-6 cm	2005	4.811	41.1	0.096	0.037	0.731	0.003	0.012	0.066	3.193	<d.l.	0.018	0.029
33689	St 9	4-5 cm	2005	4.698	28.1	0.064	0.048	0.573	0.002	0.014	0.080	3.822	<d.l.	0.019	0.024
33691	St 10	5-6 cm	2005	5.041	42.8	0.105	0.050	0.692	0.003	<d.l.	0.093	3.882	<d.l.	0.020	0.025
33693	St 11	5-6 cm	2005	4.952	41.8	0.119	0.058	0.681	0.003	<d.l.	0.087	4.435	<d.l.	0.021	0.024
33696	St 4	5-6 cm	2005	4.997	28.9	0.114	0.042	0.753	0.003	<d.l.	0.102	5.952	<d.l.	0.022	0.021
33698	St 14	5-6 cm	2005	4.846	35.6	0.095	0.049	0.657	0.003	<d.l.	0.072	3.763	<d.l.	0.023	0.021
33700	St 15	5-6 cm	2005	4.540	31.3	0.063	0.051	0.578	0.003	<d.l.	0.088	4.633	<d.l.	0.019	0.019
33702	St 16	5-6 cm	2005	4.908	35.5	0.084	0.028	0.709	0.003	0.015	0.072	5.137	<d.l.	0.020	0.020
33704	St 18	5-6 cm	2005	4.766	32.8	0.074	0.034	0.606	0.003	<d.l.	0.072	4.392	<d.l.	0.017	0.021
33706	St 19	5-6 cm	2005	5.261	42.3	0.094	0.032	0.824	0.003	0.013	0.097	4.484	<d.l.	0.021	0.021
35711	St 1	0	2006	4.651	41.6	0.082	0.023	0.508	0.002	0.012	0.093	3.456	<d.l.	<d.l.	0.016
35702	St 2	0	2006	4.384	40.5	0.067	<d.l.	0.531	0.002	<d.l.	0.054	3.043	<d.l.	0.014	0.014
35686	St 3	0	2006	4.599	29.6	0.065	0.023	0.465	0.001	<d.l.	0.055	3.312	<d.l.	<d.l.	0.014
35684	St 4	0	2006	4.277	27.5	0.071	0.036	0.478	0.002	0.029	0.053	4.777	<d.l.	0.018	0.015
35637	St 5	0	2006	4.057	33.3	0.059	<d.l.	0.441	0.002	0.019	0.068	3.398	<d.l.	0.016	0.013
35751	St 6	0	2006	4.160	36.4	0.066	<d.l.	0.478	0.002	0.017	0.054	3.518	<d.l.	0.014	0.013
35753	St 7	0	2006	4.282	34.1	0.074	<d.l.	0.434	0.002	<d.l.	0.057	4.247	<d.l.	<d.l.	0.013
35755	St 8	0	2006	4.602	24.2	0.048	<d.l.	0.369	0.001	<d.l.	0.062	3.937	<d.l.	<d.l.	0.013
35639	St 9	0	2006	4.525	28.8	0.051	<d.l.	0.509	0.002	<d.l.	0.052	3.798	<d.l.	<d.l.	0.013
35639	St 9	0	2006	4.333	27.6	0.047	<d.l.	0.478	0.001	0.012	0.047	3.596	<d.l.	<d.l.	0.012
35643	St 10	0	2006	4.345	29.7	0.067	<d.l.	0.438	0.001	<d.l.	0.056	3.253	<d.l.	<d.l.	0.011
35641	St 11	0	2006	4.654	44.0	0.123	<d.l.	0.591	0.002	0.012	0.058	6.081	<d.l.	<d.l.	0.013
35645	St 12	0	2006	4.427	33.1	0.062	<d.l.	0.431	0.002	<d.l.	0.084	3.601	<d.l.	<d.l.	0.012
35676	St 13	0	2006	4.557	32.1	0.053	<d.l.	0.436	0.002	<d.l.	0.081	3.990	<d.l.	<d.l.	0.013
35678	St 14	0	2006	4.351	26.8	0.044	<d.l.	0.399	0.001	<d.l.	0.053	3.662	<d.l.	<d.l.	0.012
35680	St 15	0	2006	4.002	34.0	0.051	<d.l.	0.514	0.002	<d.l.	0.032	3.205	<d.l.	0.015	0.012
35682	St 16	0	2006	4.619	35.1	0.060	<d.l.	0.470	0.002	<d.l.	0.046	3.369	<d.l.	<d.l.	0.016
35661	St 17	0	2006	4.815	22.2	0.039	<d.l.	0.374	0.001	<d.l.	0.053	5.288	<d.l.	<d.l.	0.012
35663	St 18	0	2006	3.509	28.1	0.037	<d.l.	0.368	0.002	<d.l.	0.033	2.314	<d.l.	<d.l.	0.010
35665	St 19	0	2006	4.470	28.1	0.064	<d.l.	0.471	0.001	<d.l.	0.035	4.521	<d.l.	<d.l.	0.012
35667	St 20	0	2006	4.735	35.1	0.065	<d.l.	0.532	0.001	<d.l.	0.044	3.737	<d.l.	<d.l.	0.014
35669	St 21	0	2006	4.651	38.9	0.096	<d.l.	0.577	0.002	<d.l.	0.066	4.416	<d.l.	<d.l.	0.014
35713	St 24	0	2006	0.013	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.
35715	St 25	0	2006	4.700	32.1	0.104	0.044	0.477	0.002	<d.l.	0.231	2.098	<d.l.	<d.l.	0.016
37116	St. 1	4-5 cm	2007	7.210	29.6	0.097	0.036	0.519	<d.l.	0.040	0.072	2.517	<d.l.	<d.l.	0.022
37117	St. 1	5-6 cm	2007	6.970	36.5	0.102	0.033	0.515	<d.l.	0.023	0.071	2.998	<d.l.	<d.l.	0.024
37118	St. 2	4-5 cm	2007	6.978	35.6	0.077	0.022	0.573	0.001	0.024	0.057	2.083	<d.l.	<d.l.	0.022
37119	St. 2	5-6 cm	2007	6.946	35.9	0.088	0.049	0.599	0.001	0.030	0.078	2.544	<d.l.	<d.l.	0.024
37120	St. 3	4-5 cm	2007	7.211	37.0	0.077	<d.l.	0.544	<d.l.	0.024	0.094	2.424	<d.l.	<d.l.	0.022

ID No.	Station	Length	Year	Rb	Sr	Y	Zr	Mo	Rh	Pd	Ag	Cd	Sn	Sb	Cs
37121	St. 3	5-6 cm	2007	6.361	27.3	0.074	0.109	0.502	0.001	0.085	0.112	2.488	<d.l.	0.019	0.032
37121	St. 3	5-6 cm	2007	6.663	35.0	0.081	0.051	0.542	0.002	0.063	0.106	2.669	<d.l.	0.016	0.036
37139	St. 4	4-5 cm	2007	7.435	33.2	0.098	<d.l.	0.567	0.001	0.056	0.091	2.881	<d.l.	<d.l.	0.026
37140	St. 5	4-5 cm	2007	6.869	32.5	0.094	0.060	0.567	<d.l.	0.050	0.085	2.747	<d.l.	<d.l.	0.020
37141	St. 5	5-6 cm	2007	6.998	37.7	0.129	0.044	0.576	0.001	0.061	0.093	3.250	<d.l.	<d.l.	0.029
37245	St. 6	4-5 cm	2007	6.857	29.3	0.122	0.120	0.540	0.001	0.056	0.087	2.694	<d.l.	<d.l.	0.026
37246	St. 6	5-6 cm	2007	6.703	33.6	0.138	0.042	0.583	0.001	0.046	0.086	2.977	<d.l.	<d.l.	0.020
37247	St. 7	4-5 cm	2007	6.731	29.6	0.092	0.220	0.475	0.001	0.040	0.091	2.570	<d.l.	<d.l.	0.019
37248	St. 8	4-5 cm	2007	7.358	31.3	0.092	0.165	0.490	<d.l.	0.045	0.107	3.083	<d.l.	<d.l.	0.020
37249	St. 8	5-6 cm	2007	7.187	29.0	0.097	0.053	0.466	<d.l.	0.036	0.089	3.436	<d.l.	<d.l.	0.019
37122	St. 9	4-5 cm	2007	6.434	30.0	0.137	0.057	0.505	<d.l.	0.029	0.104	3.463	<d.l.	<d.l.	0.016
37123	St. 9	5-6 cm	2007	6.367	29.4	0.120	<d.l.	0.524	<d.l.	0.031	0.108	3.368	<d.l.	<d.l.	0.016
37142	St. 10	4-5 cm	2007	7.179	30.9	0.084	0.023	0.450	<d.l.	0.023	0.095	2.766	<d.l.	<d.l.	0.019
37143	St. 10	5-6 cm	2007	6.501	28.2	0.081	0.532	0.461	0.001	0.029	0.173	3.471	0.260	<d.l.	0.026
37146	St. 12	4-5 cm	2007	6.393	27.1	0.079	0.051	0.422	<d.l.	0.045	0.091	2.850	<d.l.	<d.l.	0.034
37146	St. 12	4-5 cm	2007	6.074	26.5	0.089	0.030	0.405	<d.l.	0.033	0.112	2.665	<d.l.	<d.l.	0.022
37147	St. 12	5-6 cm	2007	6.320	27.3	0.083	0.092	0.435	0.001	0.043	0.094	3.835	<d.l.	<d.l.	0.032
37238	St. 13	4-5 cm	2007	6.682	40.2	0.083	0.023	0.576	<d.l.	0.048	0.094	3.610	<d.l.	<d.l.	0.021
37239	St. 13	5-6 cm	2007	6.888	37.1	0.096	<d.l.	0.687	0.001	0.055	0.177	4.260	<d.l.	<d.l.	0.021
37241	St. 15	4-5 cm	2007	6.630	34.7	0.059	0.232	0.550	0.002	0.077	0.099	2.435	<d.l.	0.051	0.018
37242	St. 15	5-6 cm	2007	7.236	32.6	0.086	0.102	0.655	<d.l.	0.170	0.137	3.188	<d.l.	0.027	0.017
37192	St. 19	4-5 cm	2007	7.155	33.1	0.088	0.084	0.505	<d.l.	0.073	0.075	2.631	<d.l.	0.021	0.016
37193	St. 19	5-6 cm	2007	8.542	35.8	0.565	1.256	0.486	<d.l.	0.085	0.087	2.794	<d.l.	0.018	0.164
37198	St. 23	4-5 cm	2007	8.990	36.7	0.116	0.023	0.749	<d.l.	0.071	0.163	3.053	<d.l.	<d.l.	0.024
37199	St. 23	5-6 cm	2007	8.083	34.3	0.091	<d.l.	0.641	<d.l.	0.047	0.077	4.095	<d.l.	<d.l.	0.019
37250	St. 24	4-5 cm	2007	6.082	30.0	0.080	<d.l.	0.437	<d.l.	0.061	0.099	2.183	<d.l.	<d.l.	0.014
37251	St. 24	5-6 cm	2007	5.572	27.1	0.084	0.021	0.419	<d.l.	0.022	0.061	3.632	<d.l.	<d.l.	0.015
37252	St. 25	4-5 cm	2007	6.343	26.3	0.114	0.032	0.453	<d.l.	0.040	0.077	1.401	<d.l.	<d.l.	0.025
37253	St. 25	5-6 cm	2007	6.392	28.1	0.102	<d.l.	0.474	0.001	0.040	0.073	1.630	<d.l.	<d.l.	0.021

ID No.	Station	Length	Year	Ba	La	Ce	Nd	Ta	W	Au	Hg	Tl	Pb	Bi	Th	U
d.l.				**0.015**	**0.001**	**0.002**	**0.002**	**0.005**	**0.051**	**0.008**	**0.018**	**0.015**	**0.004**	**0.006**	**0.006**	**0.002**
31213	St 2	5-6.1 cm	2004	0.682	0.518	0.274	0.257	<d.l.	<d.l.	0.034	0.143	<d.l.	0.294	<d.l.	0.007	0.096
31210	St 1	4-5 cm	2004	1.129	0.422	0.357	0.254	<d.l.	0.110	0.025	0.094	<d.l.	0.311	0.008	0.014	0.224
31210	St 1	4-5 cm	2004	1.440	0.442	0.350	0.271	<d.l.	<d.l.	0.016	0.115	<d.l.	0.355	<d.l.	0.013	0.261
31211	St 1	5-6 cm	2004	3.217	0.779	0.499	0.379	<d.l.	<d.l.	0.016	0.145	<d.l.	0.444	<d.l.	0.015	0.341
31228	St 6	4-5 cm	2004	2.091	0.514	0.437	0.307	<d.l.	<d.l.	0.016	0.816	<d.l.	0.328	<d.l.	0.015	0.316
31229	St 6	5-6 cm	2004	2.818	0.705	0.604	0.428	<d.l.	<d.l.	0.013	0.163	<d.l.	0.479	<d.l.	0.034	0.392
31230	St 7	4-5 cm	2004	7.776	0.545	0.713	0.359	<d.l.	0.113	0.018	0.101	<d.l.	0.426	<d.l.	0.053	0.221
31231	St 7	5-6 cm	2004	13.786	0.693	0.705	0.371	<d.l.	<d.l.	0.014	0.125	<d.l.	0.549	<d.l.	0.029	0.330
31250	St 12	4-5 cm	2004	0.867	0.432	0.347	0.260	<d.l.	<d.l.	0.011	0.112	<d.l.	0.417	<d.l.	0.016	0.226
31264	St 13	5-6 cm	2004	1.871	0.249	0.242	0.184	<d.l.	<d.l.	<d.l.	0.045	<d.l.	0.252	<d.l.	<d.l.	0.183
31517	St 23	4-5 cm ref	2004	1.389	0.365	0.364	0.233	<d.l.	<d.l.	<d.l.	0.068	<d.l.	0.604	<d.l.	0.023	0.276
31518	St 23	5-6 cm ref	2004	1.497	0.429	0.400	0.266	<d.l.	<d.l.	0.010	0.083	<d.l.	0.705	<d.l.	0.026	0.275
31518	St 23	5-6 cm ref	2004	1.669	0.453	0.419	0.271	<d.l.	<d.l.	0.009	0.093	<d.l.	0.752	<d.l.	0.026	0.284
31215	St 3	5-6 cm	2004	0.807	0.315	0.223	0.213	<d.l.	<d.l.	0.008	0.168	<d.l.	0.346	<d.l.	<d.l.	0.155
31217	St 4	5-6.3 cm	2004	0.692	0.407	0.280	0.286	<d.l.	<d.l.	0.009	0.237	<d.l.	0.370	<d.l.	0.011	0.214
31219	St 5	5-6 cm	2004	1.519	0.614	0.498	0.410	<d.l.	<d.l.	<d.l.	0.264	<d.l.	0.426	<d.l.	0.021	0.289
31233	St 8	5-6 cm	2004	10.528	0.807	0.805	0.499	<d.l.	<d.l.	0.013	0.216	<d.l.	0.429	<d.l.	0.024	0.215
31245	St 9	5-6 cm	2004	3.164	0.585	0.695	0.425	<d.l.	<d.l.	0.010	0.170	<d.l.	0.350	<d.l.	0.070	0.154

ID No.	Station	Length	Year	Ba	La	Ce	Nd	Ta	W	Au	Hg	Tl	Pb	Bi	Th	U
31245	St 9	5-6 cm	2004	4.122	0.526	0.566	0.402	<d.l.	<d.l.	<d.l.	0.183	<d.l.	0.380	<d.l.	0.032	0.167
31247	St 10	5-6 cm	2004	0.486	0.331	0.223	0.207	<d.l.	<d.l.	<d.l.	0.155	<d.l.	0.378	<d.l.	0.007	0.144
31249	St 11	5-6 cm	2004	0.561	0.312	0.219	0.173	<d.l.	<d.l.	<d.l.	0.103	<d.l.	0.243	<d.l.	<d.l.	0.093
31266	St 14	5-6 cm	2004	0.832	0.534	0.274	0.290	<d.l.	<d.l.	<d.l.	0.099	<d.l.	0.239	<d.l.	0.009	0.120
31268	St 15	5-6 cm	2004	0.802	0.341	0.266	0.234	<d.l.	<d.l.	0.011	0.193	<d.l.	0.395	<d.l.	0.013	0.198
31270	St 16	5-6 cm	2004	<d.l.	<d.l.	<d.l.	0.004	<d.l.	<d.l.	0.015	0.029	<d.l.	0.005	<d.l.	<d.l.	<d.l.
31504	St 19	5-6 cm	2004	0.485	0.312	0.200	0.191	0.009	<d.l.	0.033	0.162	0.019	0.354	0.011	0.009	0.216
31512	St 20	5-6 cm	2004	0.870	0.289	0.231	0.191	0.007	<d.l.	0.018	0.138	0.015	0.292	<d.l.	0.011	0.137
31514	St 21	5-6 cm	2004	0.656	0.293	0.258	0.200	0.007	<d.l.	0.014	0.120	<d.l.	0.405	<d.l.	0.014	0.115
33602	St 1	5-6 cm	2005	1.863	0.566	0.378	0.350	0.006	<d.l.	0.018	0.308	<d.l.	0.365	<d.l.	0.023	0.203
33604	St 2	5-6 cm	2005	0.724	0.733	0.380	0.435	0.006	<d.l.	0.015	0.299	<d.l.	0.420	<d.l.	0.023	0.199
33606	St 3	5-6 cm	2005	0.505	0.499	0.335	0.333	0.006	<d.l.	0.476	0.342	<d.l.	0.376	<d.l.	0.020	0.191
33608	St 5	5-6 cm	2005	0.610	0.423	0.291	0.266	0.006	<d.l.	0.014	0.255	<d.l.	0.289	<d.l.	0.023	0.167
33610	St 24	5-6 cm	2005	0.600	0.506	0.346	0.309	<d.l.	<d.l.	0.014	0.258	<d.l.	0.292	<d.l.	0.026	0.165
33610	St 24	5-6 cm	2005	0.677	0.547	0.386	0.352	0.006	<d.l.	0.013	0.271	<d.l.	0.326	<d.l.	0.030	0.184
33612	St 25	5-6 cm	2005	2.570	0.683	0.646	0.436	0.006	<d.l.	0.068	0.307	<d.l.	0.709	<d.l.	0.040	0.193
33666	St 7	5-6 cm	2005	15.223	1.152	1.915	0.952	<d.l.	<d.l.	0.012	0.240	0.015	0.556	<d.l.	0.226	0.129
33668	St 8	5-6 cm	2005	1.484	0.526	0.463	0.357	<d.l.	<d.l.	0.011	0.244	<d.l.	0.333	<d.l.	0.030	0.184
33670	St 13	5-6 cm	2005	2.451	0.372	0.291	0.255	<d.l.	<d.l.	0.011	0.207	<d.l.	0.377	<d.l.	0.022	0.151
33676	St 20	5-6 cm	2005	0.515	0.272	0.187	0.178	<d.l.	<d.l.	0.008	0.193	<d.l.	0.353	<d.l.	0.015	0.144
33678	St 21	5-6 cm	2005	0.442	0.253	0.193	0.168	<d.l.	<d.l.	0.009	0.174	0.051	0.351	<d.l.	0.014	0.142
33680	St 23	5-6 cm	2005	0.481	0.305	0.237	0.204	<d.l.	<d.l.	<d.l.	0.219	0.024	0.614	<d.l.	0.014	0.182
33689	St 9	4-5 cm	2005	1.056	0.306	0.241	0.215	<d.l.	<d.l.	0.009	0.224	0.015	0.241	<d.l.	0.020	0.142
33691	St 10	5-6 cm	2005	1.114	0.435	0.356	0.307	0.005	<d.l.	0.015	0.252	<d.l.	0.360	<d.l.	0.026	0.182
33693	St 11	5-6 cm	2005	1.181	0.476	0.405	0.347	<d.l.	<d.l.	0.009	0.233	<d.l.	0.327	<d.l.	0.026	0.188
33696	St 4	5-6 cm	2005	0.706	0.579	0.425	0.375	<d.l.	<d.l.	0.046	0.325	<d.l.	0.397	<d.l.	0.023	0.209
33698	St 14	5-6 cm	2005	0.861	0.404	0.356	0.289	<d.l.	<d.l.	0.008	0.224	<d.l.	0.294	<d.l.	0.017	0.173
33700	St 15	5-6 cm	2005	0.368	0.281	0.205	0.204	<d.l.	<d.l.	<d.l.	0.202	<d.l.	0.265	<d.l.	0.012	0.133
33702	St 16	5-6 cm	2005	0.480	0.366	0.296	0.263	<d.l.	<d.l.	<d.l.	0.228	<d.l.	0.310	<d.l.	0.016	0.169
33704	St 18	5-6 cm	2005	0.547	0.269	0.216	0.196	<d.l.	<d.l.	<d.l.	0.165	<d.l.	0.307	<d.l.	0.011	0.142
33706	St 19	5-6 cm	2005	0.386	0.340	0.220	0.220	<d.l.	<d.l.	<d.l.	0.207	<d.l.	0.351	<d.l.	0.009	0.224
35711	St 1	0	2006	0.766	0.397	0.328	0.309	<d.l.	<d.l.	0.033	0.192	<d.l.	0.356	<d.l.	0.018	0.129
35702	St 2	0	2006	0.488	0.324	0.238	0.244	<d.l.	<d.l.	0.017	0.191	<d.l.	0.258	<d.l.	0.013	0.145
35686	St 3	0	2006	0.621	0.315	0.268	0.234	<d.l.	<d.l.	0.041	0.130	<d.l.	0.302	<d.l.	0.015	0.107
35684	St 4	0	2006	0.457	0.355	0.276	0.261	<d.l.	<d.l.	0.042	0.190	<d.l.	0.382	<d.l.	0.017	0.110
35637	St 5	0	2006	0.345	0.292	0.184	0.190	<d.l.	<d.l.	0.030	0.174	<d.l.	0.298	<d.l.	0.010	0.118
35751	St 6	0	2006	0.415	0.309	0.228	0.237	<d.l.	<d.l.	0.026	0.237	<d.l.	0.271	<d.l.	0.012	0.121
35753	St 7	0	2006	0.431	0.356	0.268	0.256	<d.l.	<d.l.	0.019	0.128	<d.l.	0.328	<d.l.	0.008	0.094
35755	St 8	0	2006	0.721	0.337	0.257	0.218	<d.l.	<d.l.	0.015	0.086	<d.l.	0.253	<d.l.	0.011	0.070
35639	St 9	0	2006	0.383	0.223	0.177	0.176	<d.l.	<d.l.	0.143	0.139	<d.l.	0.300	<d.l.	0.011	0.114
35639	St 9	0	2006	0.342	0.215	0.169	0.169	<d.l.	<d.l.	0.011	0.132	<d.l.	0.277	<d.l.	0.014	0.108
35643	St 10	0	2006	0.346	0.295	0.216	0.224	<d.l.	<d.l.	0.013	0.123	<d.l.	0.393	<d.l.	0.009	0.107
35641	St 11	0	2006	0.264	0.485	0.329	0.373	<d.l.	<d.l.	0.017	0.180	<d.l.	0.469	<d.l.	0.008	0.137
35645	St 12	0	2006	0.532	0.304	0.252	0.239	<d.l.	<d.l.	0.014	0.162	<d.l.	0.263	<d.l.	0.013	0.102
35676	St 13	0	2006	0.281	0.225	0.146	0.158	<d.l.	<d.l.	0.015	0.095	<d.l.	0.328	<d.l.	<d.l.	0.095
35678	St 14	0	2006	0.760	0.230	0.180	0.162	<d.l.	<d.l.	0.012	0.090	<d.l.	0.261	<d.l.	0.006	0.084
35680	St 15	0	2006	0.207	0.222	0.135	0.158	<d.l.	<d.l.	0.020	0.127	<d.l.	0.258	<d.l.	0.007	0.132
35682	St 16	0	2006	0.431	0.267	0.211	0.206	<d.l.	<d.l.	0.016	0.133	<d.l.	0.305	<d.l.	0.011	0.109
35661	St 17	0	2006	0.196	0.149	0.104	0.114	<d.l.	<d.l.	0.011	0.191	<d.l.	0.327	<d.l.	<d.l.	0.073
35663	St 18	0	2006	0.133	0.152	0.104	0.097	<d.l.	<d.l.	0.009	0.071	<d.l.	0.281	<d.l.	<d.l.	0.085
35665	St 19	0	2006	0.197	0.219	0.138	0.153	<d.l.	<d.l.	<d.l.	0.074	<d.l.	0.299	<d.l.	<d.l.	0.135
35667	St 20	0	2006	0.226	0.246	0.158	0.184	0.006	<d.l.	0.010	0.182	<d.l.	0.366	<d.l.	<d.l.	0.103

ID No.	Station	Length	Year	Ba	La	Ce	Nd	Ta	W	Au	Hg	Tl	Pb	Bi	Th	U
35669	St 21	0	2006	0.311	0.298	0.194	0.236	<d.l.	<d.l.	0.018	0.133	<d.l.	0.491	<d.l.	<d.l.	0.152
35713	St 24	0	2006	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	0.008	<d.l.	<d.l.	<d.l.
35715	St 25	0	2006	1.825	0.487	0.558	0.400	<d.l.	<d.l.	0.009	0.750	<d.l.	0.622	<d.l.	0.035	0.128
37116	St. 1	4-5 cm	2007	1.434	0.459	0.341	0.261	<d.l.	<d.l.	0.021	0.081	<d.l.	0.387	<d.l.	<d.l.	0.181
37117	St. 1	5-6 cm	2007	1.479	0.511	0.359	0.261	<d.l.	<d.l.	0.012	0.065	<d.l.	0.437	<d.l.	<d.l.	0.173
37118	St. 2	4-5 cm	2007	1.849	0.407	0.293	0.218	<d.l.	<d.l.	0.013	0.075	<d.l.	0.295	<d.l.	<d.l.	0.172
37119	St. 2	5-6 cm	2007	1.209	0.426	0.300	0.234	<d.l.	<d.l.	0.014	0.072	<d.l.	0.372	<d.l.	<d.l.	0.168
37120	St. 3	4-5 cm	2007	1.494	0.409	0.300	0.212	0.007	<d.l.	0.012	0.078	<d.l.	0.299	<d.l.	<d.l.	0.161
37121	St. 3	5-6 cm	2007	0.988	0.478	0.318	0.245	<d.l.	<d.l.	0.069	0.244	0.191	0.366	<d.l.	0.015	0.165
37121	St. 3	5-6 cm	2007	1.260	0.499	0.355	0.251	<d.l.	<d.l.	0.052	0.180	0.069	0.473	<d.l.	0.009	0.166
37139	St. 4	4-5 cm	2007	2.555	0.574	0.455	0.304	<d.l.	<d.l.	0.040	0.156	0.035	0.331	<d.l.	0.010	0.246
37140	St. 5	4-5 cm	2007	1.089	0.399	0.283	0.234	<d.l.	<d.l.	0.028	0.159	<d.l.	0.298	<d.l.	<d.l.	0.187
37141	St. 5	5-6 cm	2007	2.290	0.585	0.525	0.343	<d.l.	<d.l.	0.027	0.160	<d.l.	0.411	<d.l.	0.023	0.207
37245	St. 6	4-5 cm	2007	1.839	0.560	0.441	0.316	<d.l.	<d.l.	0.025	0.119	<d.l.	0.375	<d.l.	0.013	0.261
37246	St. 6	5-6 cm	2007	1.499	0.605	0.453	0.343	<d.l.	<d.l.	0.027	0.105	<d.l.	0.470	<d.l.	0.009	0.265
37247	St. 7	4-5 cm	2007	1.224	0.496	0.351	0.268	<d.l.	<d.l.	0.019	0.092	<d.l.	0.321	<d.l.	0.017	0.174
37248	St. 8	4-5 cm	2007	1.238	0.749	0.472	0.336	<d.l.	<d.l.	0.018	0.110	<d.l.	0.359	<d.l.	0.019	0.188
37249	St. 8	5-6 cm	2007	2.064	0.790	0.537	0.380	<d.l.	<d.l.	0.018	0.050	<d.l.	0.417	<d.l.	0.015	0.133
37122	St. 9	4-5 cm	2007	5.450	0.526	0.406	0.314	<d.l.	<d.l.	0.016	0.110	<d.l.	0.426	<d.l.	0.048	0.184
37123	St. 9	5-6 cm	2007	0.970	0.625	0.432	0.336	<d.l.	<d.l.	0.019	0.117	<d.l.	0.519	<d.l.	0.018	0.169
37142	St. 10	4-5 cm	2007	2.199	0.527	0.666	0.323	<d.l.	<d.l.	0.022	0.054	<d.l.	0.381	<d.l.	0.058	0.116
37143	St. 10	5-6 cm	2007	1.831	0.484	0.359	0.241	<d.l.	<d.l.	<d.l.	0.268	<d.l.	0.499	0.008	0.042	0.137
37146	St. 12	4-5 cm	2007	1.397	0.842	0.656	0.418	<d.l.	<d.l.	0.022	0.084	0.237	0.344	<d.l.	0.027	0.161
37146	St. 12	4-5 cm	2007	1.600	0.805	0.614	0.408	<d.l.	<d.l.	0.024	0.080	0.059	0.346	<d.l.	0.013	0.140
37147	St. 12	5-6 cm	2007	1.282	0.831	0.611	0.402	<d.l.	<d.l.	0.014	0.072	0.030	0.384	<d.l.	0.012	0.133
37238	St. 13	4-5 cm	2007	0.428	0.476	0.286	0.248	<d.l.	<d.l.	0.034	0.121	<d.l.	0.377	<d.l.	<d.l.	0.277
37239	St. 13	5-6 cm	2007	0.872	0.423	0.317	0.248	<d.l.	<d.l.	0.023	0.090	<d.l.	0.461	<d.l.	<d.l.	0.189
37241	St. 15	4-5 cm	2007	0.522	0.320	0.221	0.162	0.023	<d.l.	0.074	0.323	0.039	0.253	<d.l.	0.013	0.200
37242	St. 15	5-6 cm	2007	0.693	0.383	0.285	0.224	0.032	<d.l.	0.055	0.218	<d.l.	0.352	<d.l.	0.006	0.189
37192	St. 19	4-5 cm	2007	0.589	0.314	0.225	0.176	0.017	<d.l.	0.042	0.107	<d.l.	0.349	<d.l.	<d.l.	0.221
37193	St. 19	5-6 cm	2007	4.337	0.912	1.377	0.657	0.054	<d.l.	0.033	0.112	<d.l.	0.708	0.020	0.180	0.196
37198	St. 23	4-5 cm	2007	0.694	0.411	0.428	0.223	0.011	<d.l.	0.054	0.229	<d.l.	0.622	0.008	<d.l.	0.210
37199	St. 23	5-6 cm	2007	0.431	0.327	0.278	0.183	0.009	<d.l.	0.022	0.054	<d.l.	0.588	<d.l.	<d.l.	0.180
37250	St. 24	4-5 cm	2007	1.326	0.504	0.411	0.259	0.011	<d.l.	0.021	0.080	<d.l.	0.310	<d.l.	<d.l.	0.140
37251	St. 24	5-6 cm	2007	0.817	0.477	0.354	0.256	0.025	<d.l.	0.018	0.150	<d.l.	0.338	<d.l.	<d.l.	0.130
37252	St. 25	4-5 cm	2007	2.217	0.533	0.560	0.318	0.013	<d.l.	0.025	0.087	<d.l.	0.503	<d.l.	0.026	0.155
37253	St. 25	5-6 cm	2007	1.873	0.578	0.590	0.316	0.011	<d.l.	0.026	0.082	<d.l.	0.599	<d.l.	0.036	0.162

Appendix 4. Analyses of seaweed

Chemical analyses of seaweed µg/g dry weight.

ID No.	Station	Year	Li	Be	Na	Mg	S	Al	Si	P	K	Ca	Sc
d.l.		**d.l.**	**0.02**	**0.003**	**87**	**4**	**627**	**16**	**2**	**15**	**44**	**86**	**0.069**
31207	St 4	2004	0.49	d.l.	36892	7417	29769	25	190	3117	37030	22879	1.388
31207	St 4	2004	0.44	d.l.	36902	8067	30612	27	224	3442	40806	6514	1.630
31202	St 1	2004	0.98	0.005				83	440	5614			0.692
31202	St 1	2004	1.05	0.004				101	495	6198			0.820
31204	St 2	2004	1.19	0.005				55	107	5560			0.217
31206	St 3	2004	0.62	d.l.				33	76	2840			0.148
31225	St 6	2004	0.66	d.l.				26	189	4089			0.262
31222	St 7	2004	0.91	d.l.				91	429	3290			0.524
31240	St 12	2004	0.34	d.l.				d.l.	50	2564			0.081
31240	St 12	2004	0.30	0.003				20	54	3136			0.088
31253	St 14	2004	0.53	d.l.				32	64	2996			0.103
31394	St 17	2004	0.34	d.l.				d.l.	22	2948			d.l.
31399	St 19	2004	0.66	d.l.				d.l.	16	2613			d.l.
31498	St 23	2004	1.02	d.l.				17	30	2869			d.l.
31498	St 23	2004	0.79	d.l.				d.l.	26	2523			d.l.
31209	St 5	2004	0.35	d.l.	32778	7740	33799	56	67	3043	30032	6673	0.657
31226	St 6	2004	0.38	d.l.	31752	7832	34967	29	59	3088	34470	7111	0.595
31222	St 7	2004	0.41	d.l.	30785	7315	33904	63	324	2681	29810	4898	2.222
31224	St 8	2004	0.33	d.l.	23789	8817	33918	d.l.	35	3033	28966	6291	0.408
31235	St 9	2004	0.37	d.l.	30518	7744	34773	d.l.	122	3015	32237	7751	0.966
31237	St 10	2004	0.40	d.l.	32260	8019	35420	48	168	2414	34171	5366	1.210
31239	St 11	2004	0.33	d.l.	27854	8599	36510	d.l.	20	2786	33780	6375	0.305
31252	St 13	2004	0.46	d.l.	40872	8773	38032	d.l.	29	2807	39194	8159	0.366
31256	St 15	2004	0.36	d.l.	32071	8130	39674	23	66	2726	32838	6908	0.568
31258	St 16	2004	0.28	d.l.	22037	8001	28734	70	440	3340	29267	6272	2.821
31508	St 20	2004	0.43	d.l.	38679	8004	34568	d.l.	52	2417	35968	5313	0.443
31510	St 21	2004	0.38	0.004	38155	6880	29580	d.l.	31	1951	29394	4722	0.255
33614	St 1	2005	0.23	d.l.	26238	8031	36360	25	29	1597	31659	7490	0.279
33614	St 1	2005	0.22	d.l.	25443	8029	37368	27	31	1606	32106	7167	0.303
33616	St 2	2005	0.23	d.l.	23938	8086	34428	29	33	2037	34094	7085	0.330
33618	St 3	2005	0.36	d.l.	33941	7912	30808	d.l.	51	2066	43757	7044	0.417
33620	St 5	2005	0.29	d.l.	28707	7529	25558	19	71	1984	52902	7223	0.548
33622	St 24	2005	0.28	d.l.	29605	8096	29495	d.l.	41	1914	51288	7405	0.353
33624	St 25	2005	0.27	d.l.	25514	8164	32253	73	104	1758	35114	7460	0.721
33638	St 6	2005	0.34	d.l.	34322	8024	33012	21	25	1924	45244	6898	0.255
33650	St 7	2005	0.50	0.007	47606	8530	35965	181	169	1427	37726	8364	0.971
33652	St 8	2005	0.37	d.l.	37545	9795	37131	25	33	1820	42471	9142	0.259
33654	St 13	2005	0.44	d.l.	47712	9030	33619	d.l.	16	1569	42784	8257	0.175
33660	St 20	2005	0.30	d.l.	31495	9904	32639	18	48	1640	40533	8564	0.342
33662	St 21	2005	0.45	d.l.	45695	8683	29465	d.l.	35	1551	45149	8060	0.289
33664	St 23	2005	0.42	d.l.	46718	8988	33687	d.l.	64	1962	44644	8062	0.424
33682	St 9	2005	0.36	d.l.	39203	8119	35275	54	51	1697	36044	8996	0.279
33682	St 9	2005	0.39	d.l.	38987	8360	36295	63	59	1769	36653	8669	0.344
33684	St 10	2005	0.41	d.l.	46526	8535	36388	19	26	1751	54771	8628	0.197

ID No.	Station	Year	Li	Be	Na	Mg	S	Al	Si	P	K	Ca	Sc
d.l.		**d.l.**	**0.02**	**0.003**	**87**	**4**	**627**	**16**	**2**	**15**	**44**	**86**	**0.069**
33686	St 11	2005	0.46	d.l.	50131	9073	34179	d.l.	14	1876	49346	8572	0.137
33688	St 12	2005	0.41	d.l.	45884	8267	30435	20	27	1883	49188	8726	0.200
33708	St 4	2005	0.34	d.l.	36767	8282	25204	17	56	1849	45212	10076	0.348
33710	St 14	2005	0.23	d.l.	26292	7105	26905	d.l.	42	1735	44042	8616	0.264
33712	St 16	2005	0.32	d.l.	33672	9118	31125	44	110	1824	49084	10016	0.652
33714	St 19	2005	0.34	d.l.	35260	8284	30038	d.l.	76	1671	44291	8494	0.467
33716	St 15	2005	0.36	0.004	45038	8069	33829	d.l.	54	1773	45430	9477	0.281
35716	St 1	2006	0.49	0.004		7940		d.l.	d.l.	1264	29200	8722	d.l.
35688	St 2	2006	0.53	0.005		8679		d.l.	d.l.	1394	38189	9716	d.l.
35690	St 3	2006	0.34	0.004		7109		d.l.	3	1550	32280	10654	0.078
35692	St 4	2006	0.37	0.004		7343		d.l.	d.l.	1503	37500	9989	d.l.
35626	St 5	2006	0.56	0.004		8695		d.l.	2	1563	40287	9398	d.l.
35718	St 6	2006	0.46	d.l.		7902		d.l.	2	1260	34810	9288	d.l.
35720	St 7	2006	0.36	0.004		7138		d.l.	2	1488	29988	8877	d.l.
35720	St 7	2006	0.35	d.l.		7134		d.l.	2	1472	30028	8786	d.l.
35722	St 8	2006	0.50	0.011		8536		d.l.	d.l.	1429	34166	9658	d.l.
35628	St 9	2006	0.40	0.009		7601		27	2	1557	31909	9595	d.l.
35630	St 10	2006	0.56	0.007		9176		d.l.	d.l.	1885	40961	10751	d.l.
35632	St 11	2006	0.47	0.005		8261		d.l.	d.l.	1554	39428	10807	d.l.
35634	St 12	2006	0.38	0.005		7537		d.l.	5	1673	37789	10764	0.092
35694	St 13	2006	0.49	0.004		8762		d.l.	d.l.	1535	34516	10073	d.l.
35696	St 14	2006	0.35	d.l.		6750		d.l.	d.l.	1714	40727	9590	d.l.
35698	St 15	2006	0.50	0.004		8909		d.l.	2	1830	36933	11040	d.l.
35700	St 16	2006	0.46	d.l.		8641		77	9	1784	45365	10643	0.153
35650	St 17	2006	0.34	d.l.		7833		d.l.	3	1744	29569	10033	d.l.
35652	St 18	2006	0.37	d.l.		7625		d.l.	d.l.	1706	34316	10733	d.l.
35654	St 19	2006	0.41	d.l.		7835		d.l.	2	1734	36784	9944	d.l.
35656	St 20	2006	0.39	d.l.		8185		18	2	1579	33604	11112	d.l.
35656	St 20	2006	0.38	d.l.		7501		23	3	1487	30613	10525	d.l.
35658	St 21	2006	0.45	d.l.		8264		d.l.	3	1752	37401	9963	d.l.
35648	St 23	2006	0.38	d.l.		7650		d.l.	3	2000	31692	9634	d.l.
35726	St 24	2006	0.36	d.l.		7183		d.l.	3	1713	30093	10054	d.l.
35728	St 25	2006	0.30	d.l.		8154		30	3	1590	30698	11070	0.079
37108	St. 1	2007	0.56	0.004	49333	6767	81719	31	4	2103	35835	6644	d.l.
37108	St. 1	2007	0.57	0.012	50897	6997	84894	32	5	2127	36715	6810	d.l.
37109	St. 1	2007	0.54	0.010	52965	6778	74313	d.l.	3	2000	37081	6777	d.l.
37110	St. 2	2007	0.63	0.009	63831	7639	84992	d.l.	4	1996	42154	7086	d.l.
37111	St. 2	2007	0.58	0.011	60612	7651	88522	18	4	2078	43531	7342	d.l.
37112	St. 3	2007	0.99	0.005	333694	9457	92491	19	7	2192	49238	8844	0.071
37113	St. 3	2007	0.63	0.004	57966	7277	79972	d.l.	6	2569	60434	10517	d.l.
37129	St. 4	2007	0.71	0.005	60900	7624	93197	31	4	2121	35042	8045	d.l.
37130	St. 4	2007	0.65	0.003	62040	7869	79516	d.l.	4	2538	41651	7964	d.l.
37131	St. 5	2007	0.66	d.l.	58063	7557	89962	29	4	2047	35089	7407	d.l.
37132	St. 5	2007	0.70	d.l.	58021	7170	76202	d.l.	4	2170	40531	6585	d.l.
37217	St. 6	2007	0.53	0.007	49759	6634	67714	19	4	1782	42058	7371	d.l.
37218	St. 6	2007	0.43	0.006	46182	6105	65709	19	4	1807	39618	7144	d.l.
37219	St. 7	2007	0.64	0.015	57733	6827	75662	d.l.	3	1649	40754	6374	d.l.
37220	St. 7	2007	0.48	0.003	46068	6483	78215	d.l.	3	1801	33671	6404	d.l.
37220	St. 7	2007	0.49	d.l.	45435	6364	77259	d.l.	2	1773	33263	6306	d.l.
37221	St. 8	2007	0.40	0.011	40472	6898	83724	33	d.l.	1964	31050	6456	d.l.
37222	St. 8	2007	0.43	d.l.	43275	6312	71271	d.l.	d.l.	1854	35795	6341	d.l.

ID No.	Station	Year	Li	Be	Na	Mg	S	Al	Si	P	K	Ca	Sc
d.l.		**d.l.**	**0.02**	**0.003**	**87**	**4**	**627**	**16**	**2**	**15**	**44**	**86**	**0.069**
37114	St. 9	2007	0.59	0.007	50633	6152	73218	d.l.	d.l.	1951	34537	5882	d.l.
37115	St. 9	2007	0.50	d.l.	49631	6432	82595	18	3	2017	33278	6565	d.l.
37133	St. 10	2007	0.62	d.l.	57275	6421	70161	25	3	2050	49293	6614	d.l.
37134	St. 10	2007	0.68	0.015	53078	6432	63452	d.l.	3	2023	38084	6033	d.l.
37137	St. 12	2007	0.59	d.l.	54824	6571	66267	18	3	1976	39200	6592	d.l.
37138	St. 12	2007	0.58	d.l.	52256	6018	60716	22	3	1784	34890	5742	d.l.
37209	St. 13	2007	0.62	d.l.	56958	7058	76324	33	5	1858	32877	6553	d.l.
37210	St. 13	2007	0.49	d.l.	49358	6045	71432	d.l.	3	1694	28382	5467	d.l.
37213	St. 15	2007	0.52	d.l.	51055	6219	71586	d.l.	d.l.	2021	34201	5935	d.l.
37214	St. 15	2007	0.64	d.l.	60567	6833	70786	d.l.	3	2089	40956	6368	d.l.
37180	St. 19	2007	0.59	0.004	52539	6141	62623	d.l.	d.l.	2038	41324	5863	d.l.
37179	St. 19	2007	0.59	0.005	50453	6217	62023	d.l.	d.l.	1889	34361	5879	d.l.
37186	St. 23	2007	0.56	d.l.	53822	5901	58552	25	3	2072	31597	5488	d.l.
37187	St. 23	2007	0.52	0.005	52105	6039	62132	d.l.	d.l.	1920	31091	5364	d.l.
37223	St. 24	2007	0.53	d.l.	52900	6743	74733	27	2	1607	38863	7007	d.l.
37224	St. 24	2007	0.86	d.l.	50475	6745	70288	d.l.	2	1559	35309	6086	d.l.
37226	St. 25	2007	0.43	d.l.	35367	6682	59344	73	12	1677	32554	6888	d.l.
37225	St. 25	2007	0.44	d.l.	37357	6918	58583	64	16	1602	32373	6091	d.l.
37225	St. 25	2007	0.41	d.l.	36172	6720	59038	56	13	1519	30901	6092	d.l.

ID nr	Station	Ti	V	Cr	Mn	Fe	Ni	Cu	Zn	Ga	Co	As	Se
d.l.		**0.130**	**0.013**	**0.15**	**0.08**	**12**	**0.3**	**0.2**	**0.7**	**0.02**	**0.01**	**0.41**	**0.14**
31207	St 4	38.884	0.253	0.76	26.81	40	1.7	1.9	12.4	0.02	0.66	44.48	0.27
31207	St 4	44.036	0.265	0.59	26.83	39	2.0	2.4	14.4	0.02	0.68	46.64	0.24
31202	St 1	24.543	1.435	1.45	53.51	302	5.7	2.8	17.1	0.55	1.67	82.56	0.35
31202	St 1	29.408	1.733	1.74	59.42	386	6.6	3.1	19.1	0.61	1.85	87.58	0.33
31204	St 2	23.105	1.176	0.61	32.23	227	4.0	2.8	16.0	0.78	1.16	60.40	0.29
31206	St 3	13.498	0.831	0.42	19.45	146	2.8	2.1	17.7	0.47	0.94	44.85	0.27
31225	St 6	15.285	0.853	0.80	26.80	130	4.1	2.1	17.9	0.41	1.01	74.64	0.24
31222	St 7	16.899	0.731	1.27	22.73	161	3.6	1.9	14.1	0.34	1.31	57.28	0.22
31240	St 12	9.409	0.508	0.28	17.21	113	1.8	2.9	19.4	0.60	0.68	45.98	d.l.
31240	St 12	9.779	0.447	0.27	17.74	115	1.6	3.3	18.4	0.60	0.70	42.28	d.l.
31253	St 14	10.454	0.557	0.41	21.70	117	2.8	1.6	14.7	0.35	0.92	45.74	0.15
31394	St 17	9.053	0.561	0.24	17.45	107	2.2	1.4	18.5	0.30	0.77	41.17	d.l.
31399	St 19	7.745	0.438	0.21	18.45	75	2.3	1.3	14.4	0.21	0.75	33.08	d.l.
31498	St 23	10.172	0.901	0.34	22.19	114	4.4	1.3	15.4	0.29	0.73	29.83	0.45
31498	St 23	8.273	0.784	0.29	20.03	94	4.1	1.3	15.0	0.27	0.66	28.28	0.28
31209	St 5	41.989	0.436	0.25	20.77	50	1.9	2.0	13.8	0.03	0.61	46.72	0.28
31226	St 6	41.031	0.345	0.26	18.96	44	2.2	3.7	13.2	0.03	0.55	39.69	0.20
31222	St 7	37.592	0.292	0.60	13.58	48	1.8	1.9	11.6	0.04	0.70	38.13	0.22
31224	St 8	37.816	0.284	0.16	12.93	27	1.6	2.0	10.9	0.03	0.49	35.99	0.18
31235	St 9	38.728	0.317	0.48	18.52	22	1.7	2.3	13.3	0.03	0.62	41.05	0.28
31237	St 10	33.885	0.369	0.45	13.96	49	1.9	1.9	12.1	0.04	0.55	33.95	0.21
31239	St 11	34.153	0.449	0.18	13.35	33	2.1	2.0	15.3	0.04	0.52	33.41	0.25
31252	St 13	35.257	0.361	0.23	11.11	28	2.3	1.7	14.4	0.04	0.42	30.94	0.27
31256	St 15	35.633	0.472	0.30	12.50	30	2.0	1.8	10.4	0.04	0.43	39.75	0.26
31258	St 16	46.482	0.584	1.84	18.99	74	4.6	2.9	13.1	0.04	0.92	51.81	0.29
31508	St 20	30.121	0.262	0.21	10.03	19	1.7	1.7	12.7	0.03	0.46	33.76	0.18
31510	St 21	23.362	0.212	d.l.	8.40	16	1.2	1.2	10.1	0.03	0.51	30.25	0.21

ID No.	Station	Ti	V	Cr	Mn	Fe	Ni	Cu	Zn	Ga	Co	As	Se
d.l.		**0.130**	**0.013**	**0.15**	**0.08**	**12**	**0.3**	**0.2**	**0.7**	**0.02**	**0.01**	**0.41**	**0.14**
33614	St 1	20.463	0.235	0.15	10.87	28	1.5	1.8	9.0	0.03	0.33	36.37	0.18
33614	St 1	20.780	0.229	d.l.	10.67	28	1.6	1.9	9.0	0.03	0.33	34.78	d.l.
33616	St 2	26.791	0.213	0.18	12.42	31	3.9	2.3	11.0	0.04	0.39	38.53	d.l.
33618	St 3	26.501	0.185	0.21	26.51	28	1.8	2.0	12.6	0.03	0.60	41.78	0.38
33620	St 5	25.560	0.128	0.26	22.07	27	1.5	2.0	11.0	0.04	0.46	40.06	0.20
33622	St 24	23.897	0.102	d.l.	19.15	21	1.7	2.0	11.2	0.04	0.37	43.42	0.16
33624	St 25	26.401	0.380	0.35	19.49	94	2.7	2.2	14.4	0.05	0.40	35.21	0.18
33638	St 6	24.468	0.177	0.28	16.90	32	2.1	1.7	11.8	0.04	0.45	37.47	0.23
33650	St 7	30.507	0.337	0.66	13.46	152	1.3	1.7	6.9	0.07	0.39	37.05	0.41
33652	St 8	23.308	0.159	0.29	10.88	40	1.2	1.9	8.2	0.04	0.29	41.28	0.29
33654	St 13	19.621	0.154	0.16	8.24	20	1.5	1.4	7.7	0.03	0.28	35.32	0.35
33660	St 20	20.750	0.131	d.l.	8.62	20	1.5	1.8	8.1	0.03	0.27	33.57	0.17
33662	St 21	18.691	0.118	0.24	9.75	18	1.5	2.0	6.6	0.03	0.35	30.24	0.35
33664	St 23	24.399	0.228	0.30	7.91	19	1.5	1.2	8.1	0.03	0.18	28.36	0.32
33682	St 9	20.940	0.186	0.21	10.13	48	1.0	1.6	8.1	0.03	0.34	42.09	0.29
33682	St 9	25.161	0.217	0.18	10.15	54	1.3	1.6	8.6	0.03	0.36	42.06	0.21
33684	St 10	20.715	0.140	0.24	15.81	27	1.6	1.4	7.9	0.03	0.38	42.69	0.29
33686	St 11	22.007	0.132	0.30	11.20	26	1.6	1.6	8.6	0.03	0.31	43.04	0.33
33688	St 12	22.980	0.140	0.16	13.93	52	1.6	2.3	9.0	0.04	0.36	40.31	0.36
33708	St 4	22.058	0.109	d.l.	22.63	29	1.6	1.5	9.4	0.03	0.38	47.37	0.35
33710	St 14	20.060	0.121	d.l.	21.01	26	1.6	1.5	8.9	0.03	0.43	38.53	0.25
33712	St 16	24.353	0.206	0.48	14.67	59	2.8	1.7	11.0	0.03	0.49	43.88	0.22
33714	St 19	20.042	0.133	d.l.	9.07	14	1.8	1.3	7.9	0.03	0.22	29.65	0.17
33716	St 15	20.567	0.203	0.19	11.15	22	1.6	1.3	8.4	0.02	0.32	46.58	0.28
35716	St 1	2.986	0.213	0.32	15.14	35	1.2	1.7	9.2	d.l.	0.24	38.35	0.53
35688	St 2	2.769	0.209	0.33	15.96	19	0.9	2.5	7.9	d.l.	0.21	41.41	0.60
35690	St 3	3.231	0.181	0.28	29.05	31	1.0	2.5	10.0	d.l.	0.35	48.79	0.40
35692	St 4	2.763	0.214	0.36	21.01	20	0.9	1.5	7.9	d.l.	0.26	46.44	0.56
35626	St 5	2.919	0.223	0.32	13.82	14	1.0	1.6	8.2	d.l.	0.24	47.17	0.50
35718	St 6	3.087	0.192	0.28	16.29	24	1.1	1.5	7.4	d.l.	0.23	38.27	0.38
35720	St 7	3.084	0.176	0.28	22.51	32	1.0	2.9	8.8	d.l.	0.32	59.31	0.36
35720	St 7	2.760	0.158	0.31	22.51	26	1.0	2.9	8.0	d.l.	0.32	55.00	0.43
35722	St 8	2.902	0.183	0.28	13.45	23	0.8	2.7	7.4	d.l.	0.22	43.96	0.48
35628	St 9	4.186	0.209	0.29	18.02	38	1.1	1.6	8.2	d.l.	0.30	49.92	0.35
35630	St 10	4.199	0.233	0.53	16.05	30	1.3	1.7	7.8	0.02	0.30	54.03	0.60
35632	St 11	2.847	0.268	0.28	14.93	17	1.3	1.6	7.5	d.l.	0.24	42.58	0.46
35634	St 12	2.916	0.210	0.28	22.31	19	1.0	1.5	8.2	0.02	0.28	50.61	0.39
35694	St 13	3.189	0.244	0.28	12.15	18	1.3	2.7	7.7	d.l.	0.23	44.26	0.40
35696	St 14	3.586	0.203	0.35	17.56	29	1.0	2.0	6.8	d.l.	0.30	46.80	0.44
35698	St 15	4.047	0.308	0.38	14.04	27	1.3	3.0	8.2	d.l.	0.29	50.80	0.75
35700	St 16	7.544	0.290	1.52	17.87	128	3.6	2.9	7.8	0.03	0.54	57.86	0.53
35650	St 17	3.143	0.214	0.28	16.73	20	1.2	2.4	9.9	0.03	0.38	42.42	0.28
35652	St 18	3.435	0.360	0.28	14.96	18	1.3	2.1	7.5	d.l.	0.28	40.39	0.42
35654	St 19	3.981	0.258	0.42	14.64	19	1.2	2.3	7.3	d.l.	0.26	42.26	0.35
35656	St 20	3.268	0.326	0.26	14.71	18	1.5	2.1	7.3	0.02	0.30	44.59	0.44
35656	St 20	3.065	0.307	0.28	13.66	19	1.4	2.0	7.1	0.03	0.27	42.31	0.41
35658	St 21	3.164	0.266	0.30	15.61	18	1.4	3.1	6.9	0.03	0.32	44.44	0.41
35648	St 23	3.267	0.229	0.27	7.99	17	1.0	2.5	7.1	0.03	0.29	46.65	0.35
35726	St 24	3.184	0.148	0.29	38.19	21	1.1	3.0	14.6	0.03	0.34	70.70	0.45
35728	St 25	4.146	0.333	0.40	37.21	79	1.4	2.3	12.7	0.04	0.35	47.76	0.41
37108	St. 1	3.150	0.372	0.40	16.40	49	1.4	5.1	15.0	d.l.	0.46	62.67	0.20

ID No.	Station	Ti	V	Cr	Mn	Fe	Ni	Cu	Zn	Ga	Co	As	Se
d.l.		**0.130**	**0.013**	**0.15**	**0.08**	**12**	**0.3**	**0.2**	**0.7**	**0.02**	**0.01**	**0.41**	**0.14**
37108	St. 1	3.164	0.404	0.40	16.77	63	1.4	5.2	15.4	d.l.	0.48	63.92	0.28
37109	St. 1	2.317	0.318	0.29	15.62	37	1.1	6.4	14.5	d.l.	0.36	58.15	0.28
37110	St. 2	2.300	0.285	0.27	19.18	33	1.3	8.3	16.0	d.l.	0.38	56.12	0.26
37111	St. 2	2.403	0.301	0.30	20.78	37	1.2	7.1	14.8	d.l.	0.42	65.57	0.46
37112	St. 3	2.677	0.384	0.41	39.93	52	1.6	8.2	17.9	d.l.	0.66	75.16	0.77
37113	St. 3	2.608	0.259	0.36	41.50	50	1.4	6.5	20.7	d.l.	0.63	80.95	0.54
37129	St. 4	2.886	0.524	0.30	24.31	64	1.5	6.5	16.3	d.l.	0.55	59.84	0.44
37130	St. 4	2.595	0.264	0.39	28.16	52	1.3	5.1	15.9	d.l.	0.56	77.44	0.43
37131	St. 5	3.054	0.463	0.28	16.79	47	1.5	6.5	11.8	d.l.	0.42	56.94	0.38
37132	St. 5	2.405	0.263	0.27	14.09	30	1.0	5.1	10.0	d.l.	0.39	64.38	0.41
37217	St. 6	1.957	0.300	0.36	36.55	49	1.4	3.4	16.4	0.02	0.51	66.36	0.46
37218	St. 6	2.042	0.277	0.25	38.61	52	1.4	3.0	14.9	d.l.	0.51	62.36	0.39
37219	St. 7	1.994	0.239	0.21	12.88	28	0.9	4.0	10.9	d.l.	0.34	49.86	0.40
37220	St. 7	2.206	0.266	0.28	16.34	34	1.0	4.0	10.9	d.l.	0.37	53.72	0.29
37220	St. 7	2.220	0.258	0.25	16.06	33	1.0	3.5	11.0	d.l.	0.36	53.13	0.27
37221	St. 8	2.979	0.361	0.30	17.88	58	1.3	5.5	15.5	0.03	0.46	62.33	0.28
37222	St. 8	2.135	0.234	0.22	13.22	47	1.0	3.8	10.5	d.l.	0.31	61.68	0.24
37114	St. 9	2.132	0.239	0.27	15.58	24	0.9	7.3	11.7	d.l.	0.41	58.17	0.35
37115	St. 9	2.593	0.289	0.22	17.36	47	1.0	5.6	12.4	d.l.	0.43	53.55	0.33
37133	St. 10	2.755	0.227	0.35	23.32	47	1.0	3.5	11.8	d.l.	0.48	66.54	0.27
37134	St. 10	2.133	0.233	0.32	16.88	41	1.6	5.0	13.1	d.l.	0.52	54.22	0.29
37137	St. 12	2.201	0.210	0.28	26.91	58	1.3	5.1	13.3	d.l.	0.55	55.12	0.28
37138	St. 12	2.357	0.188	0.46	19.90	48	1.1	4.5	13.6	d.l.	0.43	54.13	0.30
37209	St. 13	3.206	0.288	0.30	10.06	78	1.1	3.9	8.9	d.l.	0.33	49.95	0.16
37210	St. 13	1.958	0.254	0.31	7.84	58	1.1	5.2	7.9	d.l.	0.26	41.01	d.l.
37213	St. 15	2.265	0.237	0.20	15.00	41	0.8	3.7	9.7	d.l.	0.39	67.80	0.17
37214	St. 15	2.406	0.196	0.25	15.37	55	1.0	3.2	8.6	d.l.	0.36	66.73	0.30
37180	St. 19	1.706	0.285	0.16	11.91	16	0.9	2.2	7.9	d.l.	0.30	51.49	0.26
37179	St. 19	1.705	0.318	0.16	14.86	19	1.1	4.0	7.5	d.l.	0.35	49.29	0.26
37186	St. 23	2.375	0.318	0.19	8.62	39	1.0	3.2	6.3	d.l.	0.33	51.11	0.28
37187	St. 23	1.769	0.313	0.22	7.54	18	1.0	4.0	6.7	d.l.	0.29	43.25	d.l.
37223	St. 24	2.710	0.577	0.30	23.22	64	1.6	8.2	18.9	d.l.	0.44	49.34	0.24
37224	St. 24	1.928	0.402	0.33	17.66	57	1.7	6.6	17.0	d.l.	0.38	49.50	0.16
37226	St. 25	5.320	0.463	1.80	30.54	132	4.6	3.0	17.6	0.03	0.69	54.43	0.16
37225	St. 25	4.484	0.520	3.18	30.75	190	6.3	3.4	15.5	0.02	0.83	54.08	0.23
37225	St. 25	4.282	0.425	2.89	29.41	223	5.9	3.2	15.0	d.l.	0.78	52.16	0.27

ID No.	Station	Rb	Sr	Y	Zr	Mo	Rh	Pd	Ag	Cd	Sn	Sb	Cs
d.l.		**0.01**	**0.52**	**0.003**	**0.04**	**0.11**	**0.001**	**0.007**	**0.011**	**0.020**	**0.043**	**0.027**	**0.006**
31207	St 4	6.28	640.51	0.070	0.22	0.16	0.024	0.046	0.117	2.016	d.l.	0.045	0.020
31207	St 4	6.89	629.68	0.070	0.23	0.16	0.023	0.038	0.154	2.253	d.l.	0.046	0.021
31202	St 1	12.82	1095.41	0.177	0.43	0.38	0.034		0.203	1.813	d.l.	0.036	0.045
31202	St 1	13.44	1163.65	0.182	0.44	0.42	0.038		0.213	1.819	d.l.	0.038	0.043
31204	St 2	16.74	1256.10	0.117	0.36	0.31	0.042		0.182	2.181	d.l.	0.037	0.035
31206	St 3	9.69	1084.08	0.117	0.29	0.24	0.038		0.180	1.734	d.l.	0.032	0.024
31225	St 6	12.53	930.44	0.099	0.35	0.25	0.028		0.172	2.407	d.l.	0.034	0.031
31222	St 7	11.93	796.28	0.074	0.35	0.22	0.025		0.215	1.775	d.l.	d.l.	0.032
31240	St 12	10.17	807.32	0.059	0.19	0.20	0.023		0.176	1.489	d.l.	d.l.	0.025
31240	St 12	9.84	770.73	0.061	0.18	0.21	0.022		0.177	1.449	d.l.	d.l.	0.028

ID No.	Station	Rb	Sr	Y	Zr	Mo	Rh	Pd	Ag	Cd	Sn	Sb	Cs
d.l.		**0.01**	**0.52**	**0.003**	**0.04**	**0.11**	**0.001**	**0.007**	**0.011**	**0.020**	**0.043**	**0.027**	**0.006**
31253	St 14	9.63	890.59	0.062	0.24	0.21	0.025		0.129	1.971	d.l.	0.033	0.033
31394	St 17	10.36	883.19	0.071	0.22	0.24	0.024		0.126	2.800	d.l.	0.032	0.032
31399	St 19	11.90	684.30	0.041	0.18	0.22	0.019		0.101	3.426	d.l.	d.l.	0.035
31498	St 23	16.95	968.93	0.109	0.22	0.28	0.031		0.120	3.295	d.l.	0.038	0.047
31498	St 23	15.80	901.88	0.100	0.20	0.27	0.025		0.115	3.190	d.l.	0.034	0.044
31209	St 5	5.89	724.53	0.070	0.21	0.17	0.027	0.037	0.097	2.532	d.l.	0.050	0.019
31226	St 6	6.91	725.62	0.067	0.22	0.16	0.027	0.042	0.130	2.639	d.l.	0.052	0.020
31222	St 7	6.48	480.03	0.049	0.18	0.15	0.017	0.027	0.132	1.880	d.l.	0.031	0.021
31224	St 8	6.80	554.51	0.036	0.16	0.17	0.021	0.029	0.098	3.163	d.l.	0.040	0.023
31235	St 9	7.12	487.63	0.059	0.18	0.21	0.018	0.026	0.137	2.043	d.l.	0.033	0.021
31237	St 10	7.15	459.85	0.058	0.17	0.22	0.017	0.025	0.094	1.695	d.l.	0.038	0.023
31239	St 11	6.41	656.11	0.071	0.23	0.16	0.025	0.031	0.114	2.332	d.l.	0.045	0.021
31252	St 13	8.35	621.31	0.047	0.18	0.22	0.024	0.029	0.107	3.210	d.l.	0.040	0.027
31256	St 15	6.79	805.20	0.073	0.23	0.17	0.032	0.042	0.075	2.143	d.l.	0.056	0.024
31258	St 16	5.52	631.25	0.107	0.43	0.26	0.024	0.034	0.098	1.965	d.l.	0.052	0.025
31508	St 20	7.58	457.61	0.031	0.17	0.19	0.019	0.033	0.107	3.466	d.l.	0.029	0.022
31510	St 21	6.15	342.21	0.025	0.11	0.13	0.015	0.022	0.100	2.454	d.l.	d.l.	0.026
33614	St 1	6.31	740.28	0.067	0.19	d.l.	0.031	0.045	0.047	1.215	0.201	0.029	0.020
33614	St 1	6.33	740.67	0.070	0.18	0.11	0.033	0.031	0.063	1.199	0.156	0.028	0.020
33616	St 2	6.99	756.59	0.060	0.20	0.14	0.032	0.033	0.079	1.677	0.707	0.029	0.024
33618	St 3	8.80	715.75	0.044	0.12	0.19	0.033	0.035	0.082	1.493	0.296	d.l.	0.030
33620	St 5	11.37	686.29	0.033	0.11	0.16	0.028	0.032	0.104	1.426	0.560	d.l.	0.044
33622	St 24	11.26	688.63	0.036	0.16	0.14	0.028	0.029	0.089	1.418	0.644	d.l.	0.033
33624	St 25	8.07	672.14	0.087	0.19	0.13	0.028	0.026	0.049	1.121	0.270	d.l.	0.024
33638	St 6	9.17	613.86	0.052	0.18	0.16	0.027	0.028	0.071	1.349	0.340	d.l.	0.028
33650	St 7	7.69	613.28	0.063	0.20	0.13	0.026	0.033	0.069	1.208	0.356	d.l.	0.033
33652	St 8	8.90	684.54	0.053	0.15	0.16	0.032	0.038	0.075	1.802	0.287	d.l.	0.028
33654	St 13	8.27	612.90	0.030	0.15	0.12	0.029	0.044	0.070	1.646	0.278	d.l.	0.031
33660	St 20	8.57	615.45	0.035	0.06	0.12	0.028	0.034	0.066	1.901	0.372	d.l.	0.027
33662	St 21	8.39	572.31	0.027	0.06	0.12	0.026	0.038	0.061	1.713	0.193	d.l.	0.026
33664	St 23	9.42	594.54	0.035	0.04	0.17	0.028	0.036	0.081	2.253	0.249	d.l.	0.035
33682	St 9	7.90	626.75	0.052	0.22	d.l.	0.028	0.039	0.064	1.530	0.273	d.l.	0.025
33682	St 9	7.98	627.18	0.048	0.19	d.l.	0.027	0.035	0.069	1.572	0.299	d.l.	0.027
33684	St 10	12.51	596.58	0.042	0.14	0.18	0.025	0.034	0.072	1.579	0.266	d.l.	0.038
33686	St 11	10.52	618.24	0.039	0.16	0.20	0.027	0.039	0.095	1.872	0.213	d.l.	0.029
33688	St 12	10.92	629.10	0.047	0.12	0.16	0.029	0.038	0.085	1.225	0.907	d.l.	0.030
33708	St 4	11.71	718.01	0.030	0.09	0.12	0.033	0.048	0.082	1.205	0.199	d.l.	0.044
33710	St 14	11.96	654.76	0.030	0.09	0.15	0.028	0.037	0.079	1.302	0.136	d.l.	0.039
33712	St 16	11.37	724.84	0.060	0.17	0.16	0.032	0.037	0.058	1.400	0.176	d.l.	0.033
33714	St 19	9.53	680.47	0.032	0.06	0.11	0.031	0.035	0.041	1.641	0.191	d.l.	0.030
33716	St 15	9.84	628.96	0.058	0.18	0.14	0.026	0.036	0.067	1.476	0.157	d.l.	0.040
35716	St 1	7.56	640.59	0.032	0.11	d.l.	0.027	0.147	0.023	1.185	0.377	d.l.	0.023
35688	St 2	9.49	655.97	0.034	0.10	0.12	0.029	0.129	0.047	1.280	1.387	d.l.	0.032
35690	St 3	9.09	836.59	0.035	0.09	0.13	0.034	0.155	0.055	1.150	0.717	d.l.	0.036
35692	St 4	9.87	714.96	0.030	0.09	0.12	0.030	0.126	0.042	1.209	0.854	d.l.	0.037
35626	St 5	12.65	671.93	0.037	0.09	0.12	0.030	0.122	0.043	1.374	0.313	d.l.	0.034
35718	St 6	9.63	645.60	0.029	0.10	d.l.	0.028	0.116	0.039	1.119	0.255	d.l.	0.035
35720	St 7	8.42	694.98	0.024	0.09	0.12	0.027	0.115	0.077	1.526	0.335	d.l.	0.029
35720	St 7	8.44	704.40	0.024	0.09	0.12	0.029	0.102	0.065	1.409	0.325	d.l.	0.031
35722	St 8	8.87	676.87	0.029	0.08	0.11	0.031	0.111	0.053	1.612	0.940	d.l.	0.032
35628	St 9	8.55	675.97	0.033	0.09	0.12	0.030	0.120	0.060	1.467	0.523	d.l.	0.036

ID No.	Station	Rb	Sr	Y	Zr	Mo	Rh	Pd	Ag	Cd	Sn	Sb	Cs
d.l.		**0.01**	**0.52**	**0.003**	**0.04**	**0.11**	**0.001**	**0.007**	**0.011**	**0.020**	**0.043**	**0.027**	**0.006**
35630	St 10	9.76	699.96	0.036	0.11	0.17	0.031	0.130	0.048	1.734	0.581	d.l.	0.037
35632	St 11	9.48	696.70	0.038	0.11	0.13	0.027	0.122	0.055	1.669	0.491	d.l.	0.036
35634	St 12	9.80	832.66	0.038	0.07	0.14	0.034	0.123	0.057	1.231	0.354	d.l.	0.040
35694	St 13	8.38	655.59	0.032	0.09	0.13	0.029	0.125	0.044	1.848	0.429	d.l.	0.032
35696	St 14	14.77	669.36	0.028	0.06	0.14	0.031	0.131	0.061	1.214	0.278	d.l.	0.041
35698	St 15	9.20	736.93	0.055	0.13	0.13	0.033	0.157	0.059	1.563	0.416	d.l.	0.031
35700	St 16	14.27	714.85	0.036	0.08	0.12	0.028	0.144	0.037	1.323	0.428	d.l.	0.043
35650	St 17	7.97	770.20	0.028	0.07	0.14	0.033	0.125	0.049	1.796	1.052	d.l.	0.027
35652	St 18	8.65	793.68	0.050	0.09	0.12	0.040	0.168	0.032	1.771	0.294	d.l.	0.034
35654	St 19	9.24	706.39	0.037	0.05	0.15	0.033	0.143	0.030	2.269	0.372	d.l.	0.035
35656	St 20	8.77	811.63	0.050	0.07	0.13	0.036	0.152	0.046	2.403	0.458	d.l.	0.032
35656	St 20	8.00	750.31	0.047	0.06	0.13	0.031	0.153	0.052	2.344	0.397	d.l.	0.031
35658	St 21	9.63	703.37	0.031	0.05	0.13	0.034	0.123	0.044	2.418	0.549	d.l.	0.036
35648	St 23	8.73	645.48	0.030	0.04	0.12	0.027	0.116	0.084	2.429	0.927	d.l.	0.037
35726	St 24	8.81	737.50	0.019	0.06	0.14	0.032	0.126	0.129	1.266	0.496	d.l.	0.030
35728	St 25	10.28	798.28	0.038	0.08	0.12	0.031	0.140	0.050	0.973	0.318	d.l.	0.039
37108	St. 1	16.15	732.56	0.083	0.35	0.15	0.020	0.579	0.167	1.665	0.515	0.032	0.045
37108	St. 1	16.33	750.79	0.100	0.30	0.15	0.020	0.570	0.166	1.728	0.494	d.l.	0.046
37109	St. 1	17.13	653.17	0.070	0.20	0.13	0.018	0.407	0.145	1.488	0.470	d.l.	0.050
37110	St. 2	18.19	706.29	0.061	0.22	0.15	0.021	0.453	0.128	1.491	0.313	d.l.	0.052
37111	St. 2	18.34	770.78	0.074	0.21	0.16	0.022	0.481	0.114	1.552	0.296	d.l.	0.049
37112	St. 3	22.02	927.22	0.089	0.22	0.20	0.030	0.645	0.148	1.367	0.404	d.l.	0.076
37113	St. 3	27.61	824.69	0.059	0.13	0.20	0.026	0.540	0.185	1.762	0.461	d.l.	0.085
37129	St. 4	16.19	815.83	0.112	0.23	0.17	0.024	0.517	0.222	1.850	0.271	d.l.	0.044
37130	St. 4	19.48	772.82	0.069	0.15	0.17	0.024	0.477	0.189	2.229	0.518	d.l.	0.053
37131	St. 5	16.22	788.14	0.100	0.23	0.17	0.023	0.506	0.086	1.644	0.331	d.l.	0.052
37132	St. 5	18.87	684.54	0.064	0.16	0.16	0.020	0.431	0.123	1.824	0.385	d.l.	0.058
37217	St. 6	19.63	768.91	0.066	0.15	0.15	0.022	0.456	0.123	1.401	0.243	d.l.	0.082
37218	St. 6	18.57	791.67	0.066	0.13	0.13	0.024	0.486	0.104	1.301	0.150	d.l.	0.074
37219	St. 7	18.74	655.03	0.062	0.17	0.15	0.020	0.404	0.147	1.438	0.329	d.l.	0.069
37220	St. 7	16.22	672.45	0.065	0.17	0.14	0.019	0.394	0.127	1.711	0.198	d.l.	0.050
37220	St. 7	15.84	653.71	0.065	0.17	0.14	0.018	0.390	0.135	1.678	0.238	d.l.	0.050
37221	St. 8	13.95	617.92	0.101	0.16	0.14	0.020	0.352	0.146	2.084	0.315	d.l.	0.042
37222	St. 8	16.52	687.82	0.055	0.17	0.14	0.019	0.402	0.131	1.710	0.149	d.l.	0.041
37114	St. 9	15.94	662.19	0.062	0.16	0.15	0.018	0.387	0.139	1.979	0.178	d.l.	0.051
37115	St. 9	14.93	683.63	0.067	0.16	0.14	0.020	0.404	0.136	1.801	0.213	d.l.	0.047
37133	St. 10	23.81	647.09	0.058	0.13	0.18	0.018	0.392	0.159	1.578	0.319	d.l.	0.068
37134	St. 10	20.90	617.97	0.071	0.31	0.22	0.021	0.374	0.093	1.645	0.106	0.051	0.083
37137	St. 12	19.07	698.64	0.056	0.23	0.18	0.020	0.421	0.164	1.424	0.385	0.028	0.054
37138	St. 12	17.32	574.48	0.053	0.21	0.20	0.015	0.351	0.190	1.279	0.142	d.l.	0.047
37209	St. 13	15.82	599.07	0.049	0.14	0.15	0.017	0.349	0.081	1.761	0.385	0.027	0.054
37210	St. 13	13.56	561.44	0.040	0.16	0.14	0.015	0.333	0.080	1.712	0.287	d.l.	0.042
37213	St. 15	15.80	590.68	0.053	0.13	0.12	0.017	0.342	0.094	1.473	0.171	d.l.	0.044
37214	St. 15	19.39	663.06	0.049	0.26	0.14	0.018	0.383	0.088	1.728	0.146	d.l.	0.061
37180	St. 19	18.97	587.74	0.037	0.15	0.15	0.017	0.328	0.108	2.205	0.275	d.l.	0.053
37179	St. 19	15.94	620.12	0.054	0.12	0.16	0.018	0.346	0.104	2.523	0.185	d.l.	0.048
37186	St. 23	14.80	557.62	0.044	0.09	0.15	0.015	0.300	0.076	2.335	0.134	d.l.	0.040
37187	St. 23	15.44	520.36	0.038	0.09	0.16	0.014	0.284	0.095	2.377	0.243	d.l.	0.068
37223	St. 24	15.85	705.59	0.095	0.24	0.14	0.018	0.385	0.130	1.019	0.194	d.l.	0.050
37224	St. 24	16.38	657.06	0.062	0.15	0.14	0.017	0.348	0.113	0.981	0.283	d.l.	0.050
37226	St. 25	17.42	594.86	0.064	0.13	0.12	0.014	0.304	0.106	0.885	0.100	d.l.	0.052

ID No.	Station	Rb	Sr	Y	Zr	Mo	Rh	Pd	Ag	Cd	Sn	Sb	Cs
d.l.		**0.01**	**0.52**	**0.003**	**0.04**	**0.11**	**0.001**	**0.007**	**0.011**	**0.020**	**0.043**	**0.027**	**0.006**
37225	St. 25	17.83	603.27	0.068	0.11	0.11	0.014	0.319	0.099	0.933	0.105	d.l.	0.059
37225	St. 25	17.12	611.26	0.062	0.09	d.l.	0.016	0.316	0.085	0.927	0.064	d.l.	0.054

ID No.	Station	Ba	La	Ce	Nd	Ta	W	Au	Hg	Tl	Pb	Bi	Th	U
d.l.		**0.05**	**0.005**	**0.009**	**0.004**	**0.012**	**0.028**	**0.050**	**0.05**	**0.03**	**0.03**	**0.007**	**0.012**	**0.007**
31207	St 4	8.09	0.182	0.141	0.141	d.l.	d.l.	d.l.	d.l.	d.l.	0.05	d.l.	d.l.	0.305
31207	St 4	8.38	0.178	0.139	0.143	d.l.	d.l.	d.l.	d.l.	d.l.	0.06	d.l.	d.l.	0.300
31202	St 1	12.78	0.523	0.364	0.300	<d.l.	d.l.	d.l.	<d.l.	d.l.	0.13	d.l.	0.022	0.642
31202	St 1	13.20	0.515	0.336	0.297	<d.l.	d.l.	d.l.	<d.l.	d.l.	0.12	d.l.	0.017	0.630
31204	St 2	18.40	0.567	0.335	0.258	<d.l.	d.l.	d.l.	<d.l.	d.l.	0.05	d.l.	0.016	0.417
31206	St 3	15.28	0.278	0.191	0.216	<d.l.	d.l.	d.l.	<d.l.	d.l.	0.05	d.l.	0.014	0.559
31225	St 6	10.83	0.195	0.147	0.144	<d.l.	d.l.	d.l.	<d.l.	d.l.	0.05	d.l.	d.l.	0.746
31222	St 7	9.95	0.153	0.162	0.112	<d.l.	d.l.	d.l.	<d.l.	d.l.	0.05	d.l.	0.014	0.686
31240	St 12	19.64	0.229	0.240	0.173	<d.l.	d.l.	d.l.	<d.l.	d.l.	0.07	d.l.	0.018	0.581
31240	St 12	19.30	0.222	0.226	0.165	<d.l.	d.l.	d.l.	<d.l.	d.l.	0.08	d.l.	0.017	0.543
31253	St 14	11.46	0.165	0.211	0.132	<d.l.	d.l.	d.l.	<d.l.	d.l.	0.04	d.l.	0.013	0.660
31394	St 17	11.17	0.139	0.122	0.111	<d.l.	d.l.	d.l.	<d.l.	d.l.	0.06	d.l.	d.l.	0.718
31399	St 19	7.92	0.059	0.053	0.052	<d.l.	d.l.	d.l.	<d.l.	d.l.	0.03	d.l.	d.l.	0.647
31498	St 23	10.92	0.161	0.137	0.146	<d.l.	d.l.	d.l.	<d.l.	d.l.	0.15	d.l.	d.l.	0.698
31498	St 23	10.32	0.150	0.131	0.137	<d.l.	d.l.	d.l.	<d.l.	d.l.	0.13	d.l.	d.l.	0.683
31209	St 5	9.61	0.172	0.186	0.156	d.l.	d.l.	d.l.	d.l.	d.l.	0.06	d.l.	d.l.	0.440
31226	St 6	10.35	0.145	0.120	0.136	d.l.	d.l.	d.l.	d.l.	d.l.	0.07	d.l.	d.l.	0.441
31222	St 7	6.42	0.103	0.106	0.086	d.l.	d.l.	d.l.	d.l.	d.l.	0.04	d.l.	d.l.	0.521
31224	St 8	7.93	0.076	0.068	0.075	d.l.	d.l.	d.l.	d.l.	d.l.	d.l.	d.l.	d.l.	0.578
31235	St 9	5.60	0.109	0.075	0.092	d.l.	d.l.	d.l.	d.l.	d.l.	0.08	d.l.	d.l.	0.615
31237	St 10	5.82	0.118	0.107	0.104	d.l.	d.l.	d.l.	d.l.	d.l.	0.04	d.l.	d.l.	0.762
31239	St 11	8.51	0.170	0.138	0.150	d.l.	d.l.	d.l.	d.l.	d.l.	0.06	d.l.	d.l.	0.380
31252	St 13	7.84	0.100	0.082	0.084	d.l.	d.l.	d.l.	d.l.	d.l.	0.04	d.l.	d.l.	0.389
31256	St 15	10.53	0.139	0.120	0.126	d.l.	d.l.	d.l.	d.l.	d.l.	0.04	d.l.	d.l.	0.493
31258	St 16	9.19	0.284	0.268	0.215	d.l.	d.l.	d.l.	d.l.	d.l.	0.07	d.l.	0.019	0.453
31508	St 20	5.20	0.055	0.049	0.051	d.l.	d.l.	d.l.	d.l.	d.l.	0.12	d.l.	d.l.	0.560
31510	St 21	3.67	0.037	0.034	0.038	d.l.	d.l.	d.l.	d.l.	0.04	d.l.	d.l.	d.l.	0.649
33614	St 1	12.11	0.213	0.216	0.226	d.l.	d.l.	d.l.	d.l.	d.l.	0.03	d.l.	d.l.	0.564
33614	St 1	12.08	0.213	0.220	0.225	d.l.	d.l.	d.l.	d.l.	d.l.	0.03	d.l.	d.l.	0.546
33616	St 2	11.39	0.181	0.199	0.194	d.l.	d.l.	d.l.	d.l.	d.l.	0.04	d.l.	d.l.	0.585
33618	St 3	9.60	0.129	0.113	0.126	d.l.	d.l.	d.l.	d.l.	d.l.	d.l.	d.l.	d.l.	0.644
33620	St 5	8.59	0.089	0.097	0.088	d.l.	d.l.	d.l.	0.05	d.l.	0.04	d.l.	d.l.	0.556
33622	St 24	10.12	0.098	0.118	0.113	d.l.	d.l.	d.l.	d.l.	d.l.	0.03	d.l.	d.l.	0.460
33624	St 25	14.39	0.365	0.434	0.344	d.l.	d.l.	d.l.	d.l.	d.l.	0.05	d.l.	0.021	0.432
33638	St 6	8.38	0.146	0.167	0.173	d.l.	d.l.	d.l.	d.l.	d.l.	0.04	d.l.	d.l.	0.482
33650	St 7	10.95	0.221	0.314	0.213	d.l.	d.l.	d.l.	d.l.	0.03	0.06	d.l.	0.031	0.331
33652	St 8	13.80	0.261	0.283	0.244	d.l.	d.l.	d.l.	d.l.	d.l.	0.03	d.l.	0.015	0.397
33654	St 13	7.61	0.076	0.089	0.084	d.l.	d.l.	d.l.	d.l.	d.l.	d.l.	d.l.	d.l.	0.491
33660	St 20	8.30	0.086	0.099	0.084	d.l.	d.l.	d.l.	d.l.	d.l.	d.l.	d.l.	d.l.	0.389
33662	St 21	7.34	0.056	0.066	0.062	d.l.	d.l.	d.l.	d.l.	d.l.	d.l.	d.l.	d.l.	0.369
33664	St 23	6.26	0.043	0.058	0.050	d.l.	d.l.	d.l.	d.l.	d.l.	0.04	d.l.	d.l.	0.386
33682	St 9	8.40	0.147	0.200	0.169	d.l.	d.l.	d.l.	d.l.	d.l.	0.04	d.l.	0.018	0.453
33682	St 9	8.58	0.145	0.190	0.160	d.l.	d.l.	d.l.	d.l.	d.l.	0.04	d.l.	0.016	0.445
33684	St 10	7.38	0.112	0.138	0.120	d.l.	d.l.	d.l.	d.l.	d.l.	0.03	d.l.	d.l.	0.491

ID No.	Station	Ba	La	Ce	Nd	Ta	W	Au	Hg	Tl	Pb	Bi	Th	U
d.l.		**0.05**	**0.005**	**0.009**	**0.004**	**0.012**	**0.028**	**0.050**	**0.05**	**0.03**	**0.03**	**0.007**	**0.012**	**0.007**
33686	St 11	7.63	0.097	0.113	0.111	d.l.	d.l.	d.l.	d.l.	d.l.	d.l.	d.l.	d.l.	0.401
33688	St 12	12.59	0.446	0.516	0.456	d.l.	d.l.	d.l.	d.l.	d.l.	d.l.	d.l.	0.027	0.444
33708	St 4	9.47	0.109	0.111	0.105	d.l.	d.l.	d.l.	d.l.	d.l.	d.l.	d.l.	d.l.	0.595
33710	St 14	9.09	0.100	0.109	0.097	d.l.	d.l.	d.l.	d.l.	d.l.	d.l.	d.l.	d.l.	0.644
33712	St 16	10.84	0.216	0.249	0.197	d.l.	d.l.	d.l.	d.l.	d.l.	0.05	d.l.	0.014	0.386
33714	St 19	8.00	0.052	0.069	0.059	d.l.	d.l.	d.l.	d.l.	d.l.	0.03	d.l.	d.l.	0.395
33716	St 15	8.39	0.172	0.196	0.172	d.l.	d.l.	d.l.	d.l.	0.04	0.04	d.l.	d.l.	0.439
35716	St 1	6.58	0.068	0.082	0.078	d.l.	d.l.	d.l.	0.98	d.l.	0.04	d.l.	d.l.	0.497
35688	St 2	6.50	0.067	0.071	0.073	d.l.	d.l.	d.l.	d.l.	d.l.	0.04	d.l.	d.l.	0.488
35690	St 3	9.81	0.100	0.152	0.144	d.l.	d.l.	d.l.	d.l.	d.l.	0.04	d.l.	d.l.	0.590
35692	St 4	7.36	0.058	0.066	0.075	d.l.	d.l.	d.l.	0.05	d.l.	d.l.	d.l.	d.l.	0.556
35626	St 5	6.31	0.060	0.075	0.072	d.l.	d.l.	d.l.	d.l.	d.l.	0.04	d.l.	d.l.	0.496
35718	St 6	6.55	0.057	0.071	0.065	d.l.	d.l.	d.l.	d.l.	d.l.	0.03	d.l.	d.l.	0.450
35720	St 7	7.63	0.053	0.061	0.061	d.l.	d.l.	d.l.	d.l.	d.l.	0.03	d.l.	d.l.	0.537
35720	St 7	7.79	0.051	0.063	0.063	d.l.	d.l.	d.l.	d.l.	d.l.	0.03	d.l.	d.l.	0.561
35722	St 8	8.62	0.092	0.097	0.092	d.l.	d.l.	d.l.	d.l.	0.03	0.03	d.l.	d.l.	0.472
35628	St 9	6.76	0.061	0.078	0.071	d.l.	d.l.	d.l.	d.l.	d.l.	0.04	d.l.	d.l.	0.543
35630	St 10	6.68	0.062	0.072	0.072	d.l.	d.l.	d.l.	d.l.	d.l.	0.04	d.l.	d.l.	0.528
35632	St 11	6.48	0.062	0.075	0.074	d.l.	d.l.	d.l.	d.l.	d.l.	0.04	d.l.	d.l.	0.456
35634	St 12	8.74	0.080	0.082	0.089	d.l.	d.l.	d.l.	0.09	d.l.	0.03	d.l.	d.l.	0.641
35694	St 13	5.99	0.053	0.064	0.061	d.l.	d.l.	d.l.	d.l.	d.l.	0.04	d.l.	d.l.	0.520
35696	St 14	6.85	0.058	0.074	0.065	d.l.	d.l.	d.l.	d.l.	d.l.	d.l.	d.l.	d.l.	0.539
35698	St 15	7.79	0.212	0.141	0.159	d.l.	d.l.	0.412	d.l.	d.l.	0.04	d.l.	d.l.	0.400
35700	St 16	6.92	0.129	0.209	0.118	d.l.	d.l.	d.l.	0.05	d.l.	0.04	d.l.	d.l.	0.445
35650	St 17	7.31	0.044	0.055	0.053	d.l.	d.l.	d.l.	d.l.	d.l.	0.04	d.l.	d.l.	0.425
35652	St 18	7.56	0.070	0.083	0.074	d.l.	d.l.	d.l.	d.l.	d.l.	0.04	d.l.	d.l.	0.598
35654	St 19	6.64	0.048	0.069	0.049	d.l.	d.l.	0.072	d.l.	d.l.	0.04	d.l.	d.l.	0.608
35656	St 20	7.70	0.080	0.103	0.087	d.l.	d.l.	d.l.	d.l.	d.l.	0.05	d.l.	d.l.	0.601
35656	St 20	7.22	0.076	0.100	0.079	d.l.	d.l.	d.l.	d.l.	d.l.	0.05	d.l.	d.l.	0.558
35658	St 21	6.69	0.038	0.052	0.046	d.l.	d.l.	d.l.	d.l.	d.l.	0.04	d.l.	d.l.	0.538
35648	St 23	5.54	0.038	0.045	0.043	d.l.	d.l.	d.l.	d.l.	d.l.	0.05	d.l.	d.l.	0.443
35726	St 24	8.17	0.034	0.046	0.041	d.l.	d.l.	d.l.	d.l.	d.l.	d.l.	d.l.	d.l.	0.634
35728	St 25	9.91	0.124	0.138	0.120	d.l.	d.l.	d.l.	d.l.	d.l.	d.l.	d.l.	d.l.	0.507
37108	St. 1	12.01	0.230	0.243	0.199	d.l.	d.l.	0.089	0.15	d.l.	0.07	d.l.	0.013	0.502
37108	St. 1	12.44	0.250	0.253	0.194	d.l.	d.l.	0.071	0.07	d.l.	0.06	d.l.	d.l.	0.546
37109	St. 1	10.29	0.163	0.175	0.137	d.l.	d.l.	0.054	d.l.	d.l.	0.04	d.l.	d.l.	0.538
37110	St. 2	10.73	0.150	0.167	0.134	d.l.	d.l.	d.l.	d.l.	d.l.	0.04	d.l.	d.l.	0.521
37111	St. 2	11.90	0.159	0.178	0.133	d.l.	d.l.	d.l.	d.l.	d.l.	0.05	d.l.	d.l.	0.524
37112	St. 3	13.70	0.182	0.219	0.155	d.l.	d.l.	0.059	d.l.	d.l.	0.06	d.l.	d.l.	0.730
37113	St. 3	12.41	0.133	0.141	0.112	d.l.	d.l.	d.l.	d.l.	d.l.	0.06	d.l.	d.l.	0.630
37129	St. 4	13.25	0.286	0.272	0.217	d.l.	d.l.	d.l.	d.l.	d.l.	0.07	d.l.	d.l.	0.659
37130	St. 4	10.94	0.141	0.146	0.114	d.l.	d.l.	d.l.	d.l.	d.l.	0.08	d.l.	d.l.	0.701
37131	St. 5	12.20	0.240	0.270	0.186	d.l.	d.l.	d.l.	d.l.	d.l.	0.05	d.l.	d.l.	0.660
37132	St. 5	9.73	0.118	0.142	0.096	d.l.	d.l.	d.l.	d.l.	d.l.	0.04	d.l.	d.l.	0.658
37217	St. 6	11.94	0.136	0.161	0.108	d.l.	d.l.	d.l.	d.l.	0.21	0.08	d.l.	d.l.	0.865
37218	St. 6	12.07	0.127	0.132	0.102	d.l.	d.l.	d.l.	d.l.	0.06	0.04	d.l.	d.l.	0.826
37219	St. 7	10.09	0.114	0.132	0.098	d.l.	d.l.	d.l.	d.l.	0.05	0.04	0.007	d.l.	0.472
37220	St. 7	10.14	0.140	0.151	0.120	d.l.	d.l.	d.l.	d.l.	d.l.	d.l.	d.l.	d.l.	0.570
37220	St. 7	9.98	0.135	0.148	0.115	d.l.	d.l.	d.l.	d.l.	d.l.	d.l.	d.l.	d.l.	0.571
37221	St. 8	14.78	0.469	0.492	0.332	d.l.	d.l.	d.l.	d.l.	d.l.	0.10	d.l.	d.l.	0.588
37222	St. 8	13.85	0.182	0.167	0.139	d.l.	d.l.	d.l.	d.l.	d.l.	0.04	d.l.	d.l.	0.547

ID No.	Station	Ba	La	Ce	Nd	Ta	W	Au	Hg	Tl	Pb	Bi	Th	U
d.l.		**0.05**	**0.005**	**0.009**	**0.004**	**0.012**	**0.028**	**0.050**	**0.05**	**0.03**	**0.03**	**0.007**	**0.012**	**0.007**
37114	St. 9	9.84	0.110	0.130	0.096	d.l.	d.l.	d.l.	d.l.	d.l.	0.04	d.l.	d.l.	0.634
37115	St. 9	10.16	0.179	0.189	0.151	d.l.	d.l.	d.l.	d.l.	d.l.	0.04	d.l.	d.l.	0.507
37133	St. 10	9.60	0.096	0.135	0.082	d.l.	d.l.	d.l.	d.l.	d.l.	0.44	d.l.	d.l.	0.811
37134	St. 10	9.60	0.132	0.142	0.110	d.l.	d.l.	0.061	0.19	0.07	0.13	d.l.	0.017	0.723
37137	St. 12	13.93	0.630	0.685	0.284	d.l.	d.l.	d.l.	0.06	d.l.	0.05	d.l.	d.l.	0.679
37138	St. 12	9.94	0.179	0.218	0.163	d.l.	d.l.	d.l.	d.l.	d.l.	0.05	d.l.	0.014	0.606
37209	St. 13	9.20	0.125	0.147	0.099	d.l.	d.l.	d.l.	d.l.	d.l.	0.05	d.l.	d.l.	0.469
37210	St. 13	8.65	0.082	0.094	0.070	d.l.	d.l.	d.l.	d.l.	d.l.	0.06	d.l.	d.l.	0.458
37213	St. 15	9.07	0.134	0.153	0.103	d.l.	d.l.	d.l.	d.l.	d.l.	0.06	d.l.	d.l.	0.617
37214	St. 15	9.84	0.110	0.137	0.087	d.l.	d.l.	d.l.	d.l.	d.l.	0.07	d.l.	d.l.	0.693
37180	St. 19	8.71	0.053	0.073	0.043	d.l.	d.l.	d.l.	d.l.	d.l.	0.04	d.l.	d.l.	0.654
37179	St. 19	9.24	0.086	0.107	0.071	d.l.	d.l.	d.l.	d.l.	d.l.	0.05	d.l.	d.l.	0.672
37186	St. 23	8.08	0.051	0.073	0.043	d.l.	d.l.	d.l.	d.l.	d.l.	0.08	d.l.	d.l.	0.642
37187	St. 23	7.36	0.046	0.053	0.038	d.l.	d.l.	d.l.	d.l.	0.24	0.06	d.l.	d.l.	0.604
37223	St. 24	12.81	0.252	0.274	0.222	d.l.	d.l.	d.l.	d.l.	0.07	0.06	d.l.	d.l.	0.573
37224	St. 24	12.05	0.182	0.197	0.152	d.l.	d.l.	d.l.	d.l.	0.03	0.08	d.l.	d.l.	0.522
37226	St. 25	12.89	0.239	0.280	0.166	d.l.	d.l.	d.l.	d.l.	d.l.	0.05	d.l.	d.l.	0.513
37225	St. 25	14.07	0.249	0.288	0.177	d.l.	d.l.	d.l.	d.l.	d.l.	0.04	d.l.	d.l.	0.416
37225	St. 25	14.82	0.227	0.261	0.161	d.l.	d.l.	d.l.	d.l.	d.l.	0.03	d.l.	d.l.	0.390

Appendix 5. Analyses of lichen

Chemical analyses of lichen µg/g dry weight *(Cetraria nivalis)*.

ID No.	Station	Year	Li	Be	Na	Mg	S	Al	Si	P	K	Ca	Sc	Ti
d.l.			**0.02**	**0.003**	**87**	**4**	**627**	**16**	**2**	**15**	**44**	**86**	**0.07**	**0.13**
31242	St 10	2004	0.05	0.006	1842	2201	945	220	166	674	2720	5350	0.86	20.98
31243	St 11	2004	0.05	0.004	2790	1858	834	187	155	506	2443	2855	0.74	17.64
31220	St 5	2004	0.10	0.004				247	150	826			0.23	18.39
31227	St 6	2004	0.07	<d.l.				241	145	477			0.23	16.76
31227	St 6	2004	0.07	<d.l.				257	155	564			0.24	16.80
31549	St 22	2004	0.04	<d.l.				143	92	992			0.15	12.23
31550	St 23	2004	0.03	<d.l.				115	74	648			0.11	8.94
31572	I forkomst	2004	0.03	<d.l.				166	221	411			0.31	11.91
31573	Minus GPS fil	2004	0.06	0.007				236	218	672			0.31	15.26
31574	Pkt 14	2004	<d.l.	<d.l.				107	84	390			0.12	7.68
31575	Pkt 16	2004	<d.l.	<d.l.				99	65	678			0.10	9.10
31576	Pkt 17	2004	0.02	<d.l.				134	88	470			0.13	10.82
31577	Pkt på kort	2004	0.02	<d.l.				157	106	466			0.15	10.99
31577	Pkt på kort	2004	<d.l.	<d.l.				159	106	579			0.15	11.10
31259	St 13	2004	0.03	<d.l.	2038	2126	<d.l.	150	123	639	2303	2916	0.56	16.66
31260	St 14	2004	0.04	<d.l.	1772	1889	<d.l.	176	140	876	2315	3057	0.63	20.32
31261	St 15	2004	0.04	<d.l.	2609	1713	<d.l.	174	140	855	2063	4770	0.63	20.18
31261	St 15	2004	0.06	0.004	4262	1476	<d.l.	291	231	586	1367	6012	1.07	23.82
31262	St 16	2004	0.04	<d.l.	1399	3532	<d.l.	154	243	489	2186	2614	1.06	15.21
31296	St 17	2004	0.04	<d.l.	926	1541	<d.l.	175	131	191	1803	1632	0.54	14.69
31297	St 18	2004	0.09	<d.l.	808	2261	<d.l.	305	256	431	2774	14640	1.11	23.11
31298	St 19	2004	0.03	<d.l.	2625	1898	758	145	122	678	2697	1865	0.48	15.10
31505	St 20	2004	0.04	<d.l.	2665	1899	<d.l.	200	159	550	2697	2323	0.66	17.72
31506	St 21	2004	0.05	<d.l.	1928	2031	<d.l.	209	164	497	2222	2588	0.68	17.25
31571	PKT 9	2004	<d.l.	0.005	1307	740	<d.l.	142	116	710	2228	2602	0.44	16.58
33631	Lav2	2005	0.03	0.004	956	1087	<d.l.	117	110	407	2155	2984	0.40	11.24
33632	Lav3	2005	0.04	<d.l.	1278	1931	<d.l.	123	109	439	2145	3419	0.40	11.80
33633	Lav4	2005	0.07	<d.l.	993	844	<d.l.	140	131	461	2219	6217	0.49	13.34
33634	Lav5	2005	0.04	0.004	1061	823	<d.l.	155	167	483	2410	3016	0.65	14.80
33635	Lav6	2005	0.03	<d.l.	745	1084	<d.l.	176	133	361	2377	2405	0.50	14.48
30835	St 1	2005	0.04	<d.l.	1129	1389	<d.l.	184	124	631	2319	4656	0.51	15.89
30836	St 2	2005	0.04	0.003	1539	1466	<d.l.	187	138	731	2467	5399	0.64	17.66
30836	St 2	2005	0.04	<d.l.	1622	1541	<d.l.	188	139	718	2583	5664	0.64	16.91
30837	St 3	2005	0.06	0.004	1286	1513	<d.l.	271	178	398	1845	4513	0.80	26.07
30838	St 4	2005	0.05	<d.l.	1320	1282	<d.l.	246	198	630	2443	2699	0.90	21.18
30839	St 5	2005	0.06	<d.l.	1555	1923	<d.l.	269	169	382	1884	2725	0.75	17.28
30840	St 6	2005	0.09	<d.l.	1403	1364	<d.l.	354	223	353	2106	2747	1.02	27.61
30841	St 7	2005	0.13	0.007	464	1169	<d.l.	590	433	426	1912	2537	2.13	40.19
30842	St 8	2005	0.13	0.008	942	2436	<d.l.	559	345	543	2263	6039	1.66	31.85
30843	St 9	2005	0.03	0.006	517	1854	<d.l.	168	132	274	2692	4250	0.56	15.74
30844	St 10	2005	0.02	0.004	1002	1198	<d.l.	127	116	440	2301	2920	0.48	13.58
30845	St 11	2005	0.11	0.006	823	1285	<d.l.	423	305	390	1797	2548	1.39	34.43
30846	St 12	2005	0.04	0.005	1218	1492	<d.l.	297	216	356	2103	5164	0.94	21.92
30847	St 13	2005	0.15	0.007	1761	2273	<d.l.	550	406	582	2659	3000	1.86	46.28

ID No.	Station	Year	Li	Be	Na	Mg	S	Al	Si	P	K	Ca	Sc	Ti
d.l.			**0.02**	**0.003**	**87**	**4**	**627**	**16**	**2**	**15**	**44**	**86**	**0.07**	**0.13**
30848	St 14	2005	0.03	0.004	889	969	<d.l.	192	163	779	2751	4739	0.74	21.08
30849	St 15	2005	0.02	<d.l.	690	1031	<d.l.	212	165	381	2909	1731	0.75	18.57
30849	St 15	2005	0.03	0.005	797	826	<d.l.	320	240	391	2621	1413	1.09	22.80
30850	St 16	2005	0.08	<d.l.	965	3324	<d.l.	315	415	376	2052	4255	1.96	20.65
30851	St 17	2005	0.05	0.004	806	1362	<d.l.	278	210	317	1693	2119	0.95	19.92
30852	St 18	2005	0.06	0.004	986	1655	<d.l.	312	233	442	2377	4131	1.04	22.48
30853	St 19	2005	0.02	<d.l.	1319	1503	<d.l.	143	160	474	2813	2797	0.68	14.08
30854	St 20	2005	0.03	<d.l.	900	1979	<d.l.	146	118	534	2933	4496	0.47	14.71
30855	St 22	2005	0.02	<d.l.	759	1980	<d.l.	121	100	439	2293	4019	0.38	13.16
35621	St 5	2006	0.02	<d.l.		379		130	6	165	524	1135	0.10	6.88
35622	St 9	2006	0.02	0.004		1003		107	6	475	1609	2394	0.09	7.47
35623	St 10	2006	0.02	<d.l.		1139		103	5	414	1660	3151	0.08	6.60
35624	St 11	2006	0.03	<d.l.		827		163	8	354	1429	2370	0.14	12.59
35649	St 23	2006	0.03	<d.l.		846		133	6	432	1268	3003	0.10	8.60
35649	St 23	2006	0.03	<d.l.		898		135	7	437	1155	1716	0.10	9.60
35670	St 17	2006	0.04	0.004		819		239	10	256	1191	1707	0.17	14.98
35671	St 18	2006	0.05	0.005		822		267	12	207	1298	1120	0.19	15.09
35672	St 19	2006	0.03	<d.l.		994		188	9	592	1889	1707	0.12	9.96
35673	St 20	2006	0.04	<d.l.		1221		196	9	363	1274	2179	0.14	12.83
35674	St 21	2006	0.04	0.003		888		253	11	201	1182	1276	0.17	16.07
35703	St 2	2006	0.04	<d.l.		1406		160	9	729	1687	2316	0.13	9.67
35704	St 3	2006	0.04	<d.l.		1134		212	9	528	1554	3599	0.15	13.29
35705	St 4	2006	0.04	0.004		1499		266	12	455	1544	4593	0.20	16.09
35706	St 13	2006	0.02	<d.l.		869		141	7	487	1353	1513	0.10	9.42
35707	St 14	2006	0.03	<d.l.		947		235	10	583	1561	2945	0.16	13.18
35708	St 15	2006	0.03	<d.l.		668		164	8	643	1643	3729	0.11	11.43
35709	St 16	2006	0.03	<d.l.		1140		156	8	397	1372	3161	0.12	8.21
35756	St 1	2006	0.02	<d.l.		844		106	6	542	1718	2768	0.09	7.33
35756	St 1	2006	<d.l.	<d.l.		796		94	5	589	1672	3103	0.07	6.50
35757	St 6	2006	0.03	<d.l.		785		143	7	383	1521	2843	0.10	9.72
35758	St 7	2006	0.02	<d.l.		747		119	6	327	1272	2832	0.09	7.66
35759	St 8	2006	0.05	0.004		1161		259	11	499	1710	2939	0.18	15.96
35760	St 24 (Lav 7)	2006	0.04	0.004		972		201	10	401	1340	2536	0.14	12.73
35781	St 25 (Lav 1)	2006	0.16	0.007		1240		379	21	698	2127	3582	0.31	34.74
35782	Lav 2	2006	0.11	0.004		5612		249	44	619	2090	2472	0.68	21.43
35783	Lav 3	2006	0.04	<d.l.		1203		136	11	426	1737	1553	0.15	11.08
35784	Lav 4	2006	0.04	<d.l.		1123		132	9	701	2258	2870	0.12	9.26
35785	Lav 5	2006	0.06	<d.l.		953		217	13	568	1865	2359	0.18	15.63
35786	Lav 6	2006	0.07	0.003		1092		247	12	355	1502	2279	0.19	16.35
37101	Lav 1	2007	0.28	0.008	677	4293	1354	387	102	1006	1908	1957	0.43	48.85
37273	Lav 2	2007	0.15	0.006	663	2387	1436	376	93	701	1459	1720	0.34	21.73
37274	Lav 3	2007	0.11	<d.l.	1231	2014	1750	330	66	1112	1958	3313	0.24	16.77
37275	Lav 4	2007	0.04	<d.l.	1106	1830	1796	176	39	815	2397	3211	0.13	9.52
37102	Lav 5	2007	0.13	0.009	927	2057	1276	391	69	1148	1810	2627	0.24	21.60
37103	Lav 6	2007	0.17	0.011	890	2321	1185	388	79	914	1635	1306	0.30	36.79
37276	Lav 8	2007	0.07	0.006	1092	1284	922	292	43	539	1664	1309	0.15	14.35
37277	Lav 9	2007	0.06	<d.l.	949	1342	1319	237	45	622	1758	1206	0.16	11.46
37278	Lav 10	2007	0.08	0.004	624	1965	1091	278	64	820	1575	2185	0.21	15.41
37104	St. 1	2007	0.04	<d.l.	1460	1201	1497	281	23	736	1538	1769	0.09	11.08
37105	St. 2	2007	0.04	<d.l.	756	1092	1168	289	26	595	1461	1907	0.08	11.15
37105	St. 2	2007	0.03	<d.l.	724	1176	1258	261	20	591	1463	2452	<d.l.	9.69

ID No.	Station	Year	Li	Be	Na	Mg	S	Al	Si	P	K	Ca	Sc	Ti
d.l.			**0.02**	**0.003**	**87**	**4**	**627**	**16**	**2**	**15**	**44**	**86**	**0.07**	**0.13**
37106	St. 3	2007	0.08	0.003	978	1129	1221	406	27	766	1453	1704	0.10	17.02
37125	St. 4	2007	0.05	<d.l.	1060	1051	1252	372	36	977	1471	1201	0.08	14.31
37126	St. 5	2007	0.07	0.024	1021	1031	1683	222	23	558	1596	1817	<d.l.	8.33
37205	St. 6	2007	0.08	0.011	872	1311	649	244	36	828	1426	2402	<d.l.	9.91
37206	St. 7	2007	0.08	0.013	895	1165	688	303	31	820	1356	2442	0.07	12.88
37207	St. 8	2007	0.14	0.015	1185	1048	1043	461	36	809	1539	1667	0.12	25.67
37107	St. 9	2007	0.06	0.008	1105	1228	1375	200	23	686	1634	1631	<d.l.	9.54
37127	St. 10	2007	0.05	0.007	824	1139	1315	203	22	948	1958	1449	<d.l.	9.50
37201	St. 13	2007	0.03	0.004	907	926	885	150	16	561	1557	1192	<d.l.	7.94
37201	St. 13	2007	0.04	0.007	865	1066	810	277	24	813	1581	1447	<d.l.	10.65
37203	St. 15	2007	0.03	<d.l.	970	776	798	231	19	788	1345	1059	<d.l.	8.92
37170	St. 19	2007	0.04	<d.l.	1167	941	1062	309	28	674	1601	1522	<d.l.	10.48
37173	St. 23	2007	0.03	<d.l.	724	967	920	292	21	569	1873	2554	<d.l.	9.92

ID No.	Station	Year	V	Cr	Mn	Fe	Ni	Cu	Zn	Ga	Co	As	Se	Rb
d.l.			**0.01**	**0.15**	**0.08**	**12**	**0.32**	**0.22**	**0.7**	**0.02**	**0.01**	**0.41**	**0.14**	**0.01**
31242	St 10	2004	0.30	0.22	41.34	155	1.69	1.38	10.1	0.06	0.31	0.55	<d.l.	0.90
31243	St 11	2004	0.22	0.25	42.54	98	0.67	0.66	9.2	0.04	0.06	0.46	<d.l.	0.78
31220	St 5	2004	0.38	0.56	59.89	159	4.11	0.90	39.8	0.36	0.22	<d.l.	<d.l.	2.01
31227	St 6	2004	0.32	0.47	64.25	141	0.39	0.70	20.4	0.28	0.14	<d.l.	<d.l.	1.84
31227	St 6	2004	0.32	0.45	92.84	144	0.35	0.84	28.2	0.32	0.12	<d.l.	<d.l.	1.87
31549	St 22	2004	0.28	0.28	24.67	110	<d.l.	0.99	8.9	0.10	0.10	<d.l.	<d.l.	1.50
31550	St 23	2004	0.12	0.18	2.66	67	<d.l.	0.53	6.1	0.06	0.04	<d.l.	<d.l.	0.51
31572	I forkomst	2004	0.20	1.00	26.17	151	3.57	0.58	16.5	0.23	0.25	<d.l.	<d.l.	3.90
31573	Minus GPS fil	2004	0.26	0.51	22.59	129	1.22	0.70	20.0	0.55	0.11	<d.l.	<d.l.	6.58
31574	Pkt 14	2004	0.14	0.19	113.34	72	0.78	0.48	31.4	0.32	0.17	<d.l.	<d.l.	3.44
31575	Pkt 16	2004	0.16	0.21	90.46	64	0.93	0.51	31.4	0.22	0.11	<d.l.	<d.l.	3.67
31576	Pkt 17	2004	0.19	0.23	62.17	80	<d.l.	0.45	30.5	0.29	0.09	<d.l.	<d.l.	3.34
31577	Pkt på kort	2004	0.19	0.29	55.59	88	0.51	0.59	26.5	0.34	0.09	<d.l.	<d.l.	3.93
31577	Pkt på kort	2004	0.18	0.29	60.76	84	0.67	0.57	29.0	0.38	0.09	<d.l.	<d.l.	4.26
31259	St 13	2004	0.15	<d.l.	36.14	64	0.44	0.62	7.2	0.03	0.05	0.55	<d.l.	0.63
31260	St 14	2004	0.18	<d.l.	114.38	81	0.63	0.69	35.8	0.04	0.09	0.47	<d.l.	1.73
31261	St 15	2004	0.17	0.16	22.27	78	0.33	0.63	12.8	0.03	0.07	0.53	<d.l.	1.31
31261	St 15	2004	0.27	0.29	8.52	125	0.36	0.34	7.8	0.05	0.07	<d.l.	<d.l.	0.99
31262	St 16	2004	0.19	0.42	31.85	160	3.96	0.61	16.0	0.03	0.47	<d.l.	<d.l.	2.04
31296	St 17	2004	0.23	0.28	9.91	109	0.69	2.05	9.8	0.03	0.30	<d.l.	<d.l.	1.04
31297	St 18	2004	0.35	1.96	46.35	206	4.66	2.66	16.5	0.06	0.93	<d.l.	<d.l.	4.12
31298	St 19	2004	0.13	0.15	26.64	58	<d.l.	0.50	6.2	<d.l.	0.03	0.76	<d.l.	0.75
31505	St 20	2004	0.20	0.19	26.15	90	0.52	0.69	13.2	0.03	0.18	0.66	<d.l.	1.15
31506	St 21	2004	0.21	0.21	83.49	100	0.35	0.53	10.7	0.03	0.07	<d.l.	<d.l.	1.01
31571	PKT 9	2004	0.15	<d.l.	75.71	83	<d.l.	0.54	23.9	0.02	0.10	<d.l.	<d.l.	2.47
33631	Lav2	2005	0.13	0.30	34.68	78	1.32	0.76	31.8	<d.l.	0.12	<d.l.	<d.l.	2.43
33632	Lav3	2005	0.13	<d.l.	21.02	64	0.77	0.87	29.0	<d.l.	0.07	<d.l.	<d.l.	4.24
33633	Lav4	2005	0.14	<d.l.	103.38	68	<d.l.	0.64	24.7	0.03	0.11	<d.l.	<d.l.	2.93
33634	Lav5	2005	0.15	0.15	154.40	80	<d.l.	0.83	32.7	<d.l.	0.10	<d.l.	<d.l.	3.52
33635	Lav6	2005	0.18	0.16	128.26	85	<d.l.	0.72	15.9	0.03	0.08	<d.l.	<d.l.	3.21
30835	St 1	2005	0.17	<d.l.	179.32	76	0.39	0.90	42.1	0.03	0.17	<d.l.	0.15	3.23
30836	St 2	2005	0.17	<d.l.	321.77	74	0.57	2.13	43.4	0.04	0.15	<d.l.	<d.l.	3.54
30836	St 2	2005	0.17	0.22	342.55	71	0.73	2.32	45.5	0.04	0.17	<d.l.	<d.l.	3.70

ID No.	Station	Year	V	Cr	Mn	Fe	Ni	Cu	Zn	Ga	Co	As	Se	Rb
d.l.			**0.01**	**0.15**	**0.08**	**12**	**0.32**	**0.22**	**0.7**	**0.02**	**0.01**	**0.41**	**0.14**	**0.01**
30837	St 3	2005	0.40	0.30	86.86	178	0.60	0.88	47.9	0.06	0.24	<d.l.	<d.l.	1.36
30838	St 4	2005	0.23	0.28	118.97	100	0.62	1.17	52.7	0.11	0.16	0.56	<d.l.	2.70
30839	St 5	2005	0.21	0.28	22.19	91	0.51	1.11	32.5	0.05	0.11	0.61	<d.l.	1.27
30840	St 6	2005	0.37	0.30	89.82	148	0.95	1.65	21.6	0.08	0.18	0.42	<d.l.	3.04
30841	St 7	2005	0.62	0.85	89.24	273	1.20	0.85	23.2	0.12	0.46	0.41	<d.l.	2.34
30842	St 8	2005	0.55	0.49	221.40	288	1.95	1.07	34.0	0.11	0.52	0.54	<d.l.	2.12
30843	St 9	2005	0.18	<d.l.	42.75	85	0.69	0.75	20.1	0.05	0.13	<d.l.	0.14	2.98
30844	St 10	2005	0.15	0.25	38.10	73	0.66	0.50	11.4	0.03	0.09	<d.l.	<d.l.	2.88
30845	St 11	2005	0.65	0.60	20.98	311	0.58	0.77	10.9	0.12	0.22	<d.l.	<d.l.	1.55
30846	St 12	2005	0.29	0.24	42.58	145	0.73	1.09	27.0	0.07	0.68	<d.l.	<d.l.	3.43
30847	St 13	2005	0.88	1.37	47.69	398	1.02	0.94	15.3	0.17	0.29	<d.l.	<d.l.	1.04
30848	St 14	2005	0.38	0.36	73.06	141	0.46	0.75	22.6	0.05	0.12	0.51	<d.l.	2.20
30849	St 15	2005	0.21	0.17	7.02	77	<d.l.	0.59	10.3	0.06	0.06	0.54	<d.l.	1.81
30849	St 15	2005	0.23	0.21	10.91	103	<d.l.	0.64	9.4	0.08	0.06	0.62	<d.l.	1.89
30850	St 16	2005	0.40	1.38	22.22	371	10.49	1.07	10.8	0.07	0.77	0.54	<d.l.	2.75
30851	St 17	2005	0.31	0.30	46.79	145	0.95	1.19	12.5	0.07	0.31	0.54	<d.l.	1.53
30852	St 18	2005	0.33	0.41	83.02	143	1.50	1.34	16.8	0.08	0.45	0.72	<d.l.	2.22
30853	St 19	2005	0.15	<d.l.	32.27	60	<d.l.	0.53	8.1	0.04	0.04	0.46	<d.l.	1.20
30854	St 20	2005	0.15	<d.l.	104.33	68	0.81	0.83	16.5	0.04	0.38	0.82	<d.l.	1.67
30855	St 22	2005	0.12	<d.l.	20.49	53	<d.l.	2.86	40.6	0.03	0.09	<d.l.	<d.l.	0.73
35621	St 5	2006	0.14	0.28	8.96	83	0.72	0.24	5.7	0.03	0.06	<d.l.	<d.l.	0.68
35622	St 9	2006	0.17	0.58	64.65	84	1.29	0.49	25.2	<d.l.	0.10	<d.l.	<d.l.	2.32
35623	St 10	2006	0.15	0.51	45.59	77	1.52	0.57	15.9	<d.l.	0.12	<d.l.	<d.l.	2.95
35624	St 11	2006	0.22	0.37	30.73	110	0.77	0.50	10.3	0.03	0.07	<d.l.	<d.l.	1.47
35649	St 23	2006	0.15	0.19	5.49	71	<d.l.	0.37	7.7	0.03	0.03	<d.l.	<d.l.	0.71
35649	St 23	2006	0.16	0.18	9.41	76	<d.l.	0.35	7.6	0.03	0.03	<d.l.	<d.l.	0.72
35670	St 17	2006	0.28	0.33	32.48	148	0.46	0.68	9.4	0.05	0.13	<d.l.	<d.l.	1.67
35671	St 18	2006	0.31	0.41	12.73	167	0.39	0.61	9.1	0.06	0.12	<d.l.	<d.l.	1.58
35672	St 19	2006	0.21	0.25	22.76	110	<d.l.	0.64	9.5	0.03	0.04	<d.l.	<d.l.	0.70
35673	St 20	2006	0.22	0.35	54.29	120	0.70	0.77	19.7	0.04	0.22	<d.l.	<d.l.	1.19
35674	St 21	2006	0.28	0.42	6.61	145	0.36	0.50	8.2	0.06	0.08	<d.l.	<d.l.	1.26
35703	St 2	2006	0.22	0.55	70.22	126	2.13	0.62	34.0	0.04	0.15	<d.l.	<d.l.	2.47
35704	St 3	2006	0.26	0.40	57.83	148	0.91	0.60	25.1	0.05	0.17	<d.l.	<d.l.	1.61
35705	St 4	2006	0.34	0.58	96.65	190	1.37	0.70	27.6	0.07	0.19	<d.l.	<d.l.	2.08
35706	St 13	2006	0.19	0.30	16.46	96	0.53	0.52	15.0	0.04	0.06	<d.l.	<d.l.	1.26
35707	St 14	2006	0.27	0.38	92.68	158	0.65	0.75	24.1	0.05	0.12	<d.l.	<d.l.	1.75
35708	St 15	2006	0.19	0.26	9.43	96	<d.l.	0.75	11.4	0.04	0.05	<d.l.	<d.l.	1.96
35709	St 16	2006	0.17	0.56	14.18	121	1.68	0.56	13.8	0.04	0.13	<d.l.	<d.l.	2.74
35756	St 1	2006	0.15	0.47	62.64	82	1.24	0.52	22.6	0.03	0.10	<d.l.	<d.l.	2.94
35756	St 1	2006	0.13	0.38	71.25	71	0.94	0.53	21.9	0.04	0.09	<d.l.	<d.l.	3.13
35757	St 6	2006	0.19	0.29	57.71	96	0.53	0.58	20.1	0.04	0.09	<d.l.	<d.l.	2.43
35758	St 7	2006	0.16	0.23	99.64	76	0.33	0.46	12.1	0.04	0.05	<d.l.	<d.l.	1.59
35759	St 8	2006	0.30	0.43	51.42	155	0.66	0.66	15.8	0.07	0.12	<d.l.	<d.l.	2.17
35760	St 24 (Lav 7)	2006	0.24	0.47	72.44	127	0.98	0.57	12.6	0.05	0.18	<d.l.	<d.l.	2.23
35781	St 25 (Lav 1)	2006	0.64	1.30	73.09	330	2.92	0.69	27.1	0.12	0.24	<d.l.	<d.l.	5.25
35782	Lav 2	2006	1.27	14.35	36.97	732	36.85	0.92	19.4	0.07	1.32	<d.l.	<d.l.	3.79
35783	Lav 3	2006	0.22	1.23	16.42	141	3.09	0.61	14.9	0.04	0.15	<d.l.	<d.l.	4.56
35784	Lav 4	2006	0.20	0.52	144.45	110	1.77	0.65	34.0	0.04	0.18	<d.l.	<d.l.	3.25
35785	Lav 5	2006	0.29	0.52	123.47	151	1.09	0.60	21.5	0.07	0.12	<d.l.	<d.l.	3.64
35786	Lav 6	2006	0.32	0.64	60.05	168	1.69	0.60	12.8	0.07	0.14	<d.l.	<d.l.	2.74
37101	Lav 1	2007	1.32	19.77	49.17	1399	46.81	0.71	19.9	0.21	2.60	<d.l.	0.16	6.09

ID No.	Station	Year	V	Cr	Mn	Fe	Ni	Cu	Zn	Ga	Co	As	Se	Rb
d.l.			**0.01**	**0.15**	**0.08**	**12**	**0.32**	**0.22**	**0.7**	**0.02**	**0.01**	**0.41**	**0.14**	**0.01**
37273	Lav 2	2007	0.58	13.18	24.82	592	22.74	0.81	13.9	0.10	1.12	<d.l.	<d.l.	7.95
37274	Lav 3	2007	0.54	10.24	24.57	466	16.19	0.74	17.6	0.09	0.87	<d.l.	<d.l.	8.90
37275	Lav 4	2007	0.29	4.05	105.48	260	9.85	0.47	24.7	0.05	0.63	<d.l.	<d.l.	6.54
37102	Lav 5	2007	0.65	9.04	61.06	511	19.40	0.47	23.7	0.17	1.21	<d.l.	<d.l.	6.54
37103	Lav 6	2007	1.25	10.06	32.31	769	25.63	0.68	13.4	0.18	1.54	<d.l.	0.15	4.93
37276	Lav 8	2007	0.40	5.47	49.74	341	11.99	0.44	18.2	0.08	0.72	<d.l.	<d.l.	7.37
37277	Lav 9	2007	0.34	6.91	37.04	342	13.29	0.52	17.8	0.07	0.78	<d.l.	<d.l.	6.55
37278	Lav 10	2007	0.50	10.49	64.25	524	21.58	0.51	14.5	0.08	1.18	<d.l.	<d.l.	4.56
37104	St. 1	2007	0.41	2.07	64.45	184	5.69	1.06	12.4	0.07	0.41	<d.l.	<d.l.	2.93
37105	St. 2	2007	0.35	2.51	32.17	187	4.71	1.34	12.4	0.07	0.30	<d.l.	<d.l.	2.91
37105	St. 2	2007	0.30	2.09	27.29	138	3.28	0.81	12.5	0.06	0.20	<d.l.	<d.l.	3.10
37106	St. 3	2007	0.57	2.09	35.00	224	4.18	0.98	14.4	0.11	0.39	<d.l.	<d.l.	4.21
37125	St. 4	2007	0.47	0.80	72.26	144	1.46	0.78	17.0	0.09	0.16	<d.l.	<d.l.	4.81
37126	St. 5	2007	0.29	0.63	62.78	113	2.03	2.72	13.6	0.08	0.37	<d.l.	<d.l.	4.49
37205	St. 6	2007	0.29	2.84	52.91	137	4.69	0.72	15.2	0.10	0.30	<d.l.	0.14	3.15
37206	St. 7	2007	0.44	0.77	48.48	131	1.55	0.52	16.5	0.10	0.28	<d.l.	<d.l.	2.92
37207	St. 8	2007	0.83	1.50	53.90	274	2.82	0.90	20.4	0.19	0.41	<d.l.	<d.l.	3.76
37107	St. 9	2007	0.26	0.86	51.66	80	1.68	0.52	15.8	0.07	0.19	<d.l.	0.19	4.32
37127	St. 10	2007	0.30	0.71	55.82	93	1.67	0.78	16.9	0.06	0.20	<d.l.	<d.l.	4.00
37201	St. 13	2007	0.23	0.52	27.10	80	0.76	0.79	8.4	0.04	0.08	<d.l.	<d.l.	2.06
37201	St. 13	2007	0.41	0.63	36.48	122	1.08	0.62	9.0	0.08	0.13	<d.l.	<d.l.	1.89
37203	St. 15	2007	0.24	0.53	24.86	77	0.65	1.24	9.4	0.05	0.07	<d.l.	<d.l.	2.58
37170	St. 19	2007	0.38	0.52	22.43	127	0.63	0.73	13.2	0.07	0.08	<d.l.	<d.l.	1.48
37173	St. 23	2007	0.32	0.53	8.20	98	1.21	0.72	9.8	0.06	0.07	<d.l.	<d.l.	1.24

ID No.	Station	Year	Sr	Y	Zr	Mo	Rh	Pd	Ag	Cd	Sn	Sb	Cs	Ba
d.l.			**0.5**	**0.003**	**0.04**	**0.11**	**0.001**	**0.01**	**0.01**	**0.02**	**0.04**	**0.03**	**0.01**	**0.05**
31242	St 10	2004	32.5	0.102	0.11	<d.l.	0.002	<d.l.	<d.l.	0.07	<d.l.	<d.l.	0.02	5.13
31243	St 11	2004	22.2	0.055	0.10	<d.l.	<d.l.	<d.l.	<d.l.	0.05	<d.l.	<d.l.	0.01	3.47
31220	St 5	2004	22.6	0.083	0.16	<d.l.	<d.l.		<d.l.	0.06	<d.l.	<d.l.	0.03	9.31
31227	St 6	2004	25.7	0.086	0.16	<d.l.	<d.l.		0.02	0.08	<d.l.	<d.l.	0.06	7.19
31227	St 6	2004	31.8	0.085	0.19	<d.l.	<d.l.		<d.l.	0.12	<d.l.	<d.l.	0.08	8.95
31549	St 22	2004	37.6	0.078	0.07	<d.l.	0.001		<d.l.	0.03	<d.l.	<d.l.	0.01	2.30
31550	St 23	2004	45.9	0.047	0.05	<d.l.	0.001		<d.l.	0.04	<d.l.	<d.l.	0.01	1.14
31572	I forkomst	2004	9.3	0.071	0.15	<d.l.	<d.l.		<d.l.	0.13	<d.l.	<d.l.	0.04	6.92
31573	Minus GPS fil	2004	14.8	0.077	0.14	<d.l.	<d.l.		0.01	0.11	<d.l.	<d.l.	0.07	16.31
31574	Pkt 14	2004	7.6	0.042	0.11	<d.l.	<d.l.		<d.l.	0.08	<d.l.	<d.l.	0.03	10.24
31575	Pkt 16	2004	7.4	0.042	0.06	<d.l.	<d.l.		<d.l.	0.05	<d.l.	<d.l.	0.07	6.26
31576	Pkt 17	2004	7.9	0.067	0.12	<d.l.	<d.l.		0.01	0.04	<d.l.	<d.l.	0.05	7.96
31577	Pkt på kort	2004	10.0	0.057	0.21	<d.l.	<d.l.		<d.l.	0.08	<d.l.	<d.l.	0.08	9.80
31577	Pkt på kort	2004	10.6	0.053	0.17	<d.l.	<d.l.		<d.l.	0.09	<d.l.	<d.l.	0.09	10.97
31259	St 13	2004	20.3	0.038	0.10	<d.l.	<d.l.	<d.l.	<d.l.	0.04	<d.l.	<d.l.	0.01	2.09
31260	St 14	2004	14.8	0.044	0.14	<d.l.	<d.l.	<d.l.	<d.l.	0.06	<d.l.	<d.l.	0.03	7.91
31261	St 15	2004	24.3	0.051	0.10	<d.l.	<d.l.	<d.l.	<d.l.	0.08	<d.l.	<d.l.	0.02	4.91
31261	St 15	2004	25.6	0.069	0.16	<d.l.	<d.l.	<d.l.	<d.l.	0.04	<d.l.	<d.l.	0.01	4.30
31262	St 16	2004	16.7	0.048	0.09	<d.l.	<d.l.	<d.l.	<d.l.	0.08	<d.l.	<d.l.	0.03	5.56
31296	St 17	2004	15.3	0.094	0.14	<d.l.	<d.l.	<d.l.	0.04	0.11	<d.l.	<d.l.	0.04	3.27
31297	St 18	2004	36.3	0.143	0.14	<d.l.	<d.l.	<d.l.	0.02	0.17	<d.l.	<d.l.	0.06	79.02
31298	St 19	2004	17.4	0.033	0.11	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	0.01	1.43

ID No.	Station	Year	Sr	Y	Zr	Mo	Rh	Pd	Ag	Cd	Sn	Sb	Cs	Ba
d.l.			**0.5**	**0.003**	**0.04**	**0.11**	**0.001**	**0.01**	**0.01**	**0.02**	**0.04**	**0.03**	**0.01**	**0.05**
31505	St 20	2004	18.6	0.061	0.19	<d.l.	<d.l.	<d.l.	<d.l.	0.04	<d.l.	<d.l.	0.03	9.70
31506	St 21	2004	19.3	0.053	0.10	<d.l.	<d.l.	<d.l.	<d.l.	0.06	<d.l.	<d.l.	0.03	2.62
31571	PKT 9	2004	7.3	0.044	0.09	<d.l.	<d.l.	<d.l.	<d.l.	0.06	<d.l.	<d.l.	0.03	12.55
33631	Lav2	2005	6.6	0.044	0.06	<d.l.	<d.l.	<d.l.	0.06	0.09	<d.l.	<d.l.	0.03	6.85
33632	Lav3	2005	8.4	0.039	0.06	<d.l.	<d.l.	<d.l.	0.02	0.09	<d.l.	<d.l.	0.04	9.07
33633	Lav4	2005	10.4	0.077	0.09	<d.l.	<d.l.	<d.l.	0.03	0.16	<d.l.	<d.l.	0.02	10.50
33634	Lav5	2005	10.2	0.066	0.07	<d.l.	<d.l.	<d.l.	0.04	0.05	<d.l.	<d.l.	0.04	13.62
33635	Lav6	2005	9.0	0.054	0.10	<d.l.	<d.l.	<d.l.	0.02	0.05	<d.l.	<d.l.	0.07	6.14
30835	St 1	2005	14.0	0.059	0.09	<d.l.	<d.l.	<d.l.	0.01	0.14	<d.l.	<d.l.	0.04	22.71
30836	St 2	2005	17.3	0.051	0.13	<d.l.	<d.l.	<d.l.	0.02	0.13	0.05	<d.l.	0.03	28.51
30836	St 2	2005	18.0	0.064	0.12	<d.l.	<d.l.	<d.l.	0.02	0.14	<d.l.	<d.l.	0.04	30.28
30837	St 3	2005	19.4	0.083	0.31	<d.l.	<d.l.	<d.l.	<d.l.	0.09	<d.l.	<d.l.	0.01	27.43
30838	St 4	2005	10.9	0.060	0.16	<d.l.	<d.l.	<d.l.	0.02	0.08	<d.l.	<d.l.	0.04	12.76
30839	St 5	2005	21.2	0.075	0.13	<d.l.	<d.l.	<d.l.	0.01	0.08	<d.l.	<d.l.	0.02	4.57
30840	St 6	2005	13.5	0.122	0.19	<d.l.	<d.l.	<d.l.	0.02	0.08	0.15	<d.l.	0.06	15.40
30841	St 7	2005	13.0	0.137	0.42	<d.l.	<d.l.	<d.l.	0.02	0.07	<d.l.	<d.l.	0.03	12.58
30842	St 8	2005	28.7	0.165	0.30	<d.l.	<d.l.	0.01	0.02	0.13	<d.l.	<d.l.	0.02	74.60
30843	St 9	2005	18.2	0.093	0.15	<d.l.	<d.l.	<d.l.	0.03	0.07	<d.l.	<d.l.	0.06	13.72
30844	St 10	2005	13.5	0.052	0.11	<d.l.	<d.l.	<d.l.	0.04	0.07	<d.l.	<d.l.	0.03	5.49
30845	St 11	2005	15.4	0.220	0.36	<d.l.	<d.l.	<d.l.	0.02	0.08	<d.l.	<d.l.	0.04	28.74
30846	St 12	2005	22.1	0.117	0.15	<d.l.	<d.l.	<d.l.	0.02	0.13	<d.l.	<d.l.	0.13	13.27
30847	St 13	2005	24.2	0.174	0.23	0.25	<d.l.	<d.l.	0.01	0.06	<d.l.	<d.l.	0.02	9.51
30848	St 14	2005	13.3	0.077	0.13	<d.l.	<d.l.	<d.l.	0.02	0.13	<d.l.	<d.l.	0.03	13.36
30849	St 15	2005	18.0	0.069	0.15	<d.l.	<d.l.	<d.l.	0.03	0.08	<d.l.	<d.l.	0.03	5.38
30849	St 15	2005	14.6	0.073	0.25	<d.l.	<d.l.	<d.l.	0.03	0.08	<d.l.	<d.l.	0.03	5.57
30850	St 16	2005	23.0	0.091	0.15	<d.l.	<d.l.	<d.l.	0.01	0.11	<d.l.	<d.l.	0.04	10.08
30851	St 17	2005	13.4	0.089	0.19	<d.l.	<d.l.	<d.l.	0.02	0.09	<d.l.	<d.l.	0.03	10.01
30852	St 18	2005	20.3	0.087	0.19	<d.l.	<d.l.	<d.l.	0.01	0.12	<d.l.	<d.l.	0.03	15.04
30853	St 19	2005	18.0	0.045	0.11	<d.l.	<d.l.	<d.l.	0.01	0.04	<d.l.	<d.l.	0.02	3.05
30854	St 20	2005	22.0	0.052	0.12	<d.l.	<d.l.	<d.l.	0.01	0.07	<d.l.	<d.l.	0.04	8.07
30855	St 22	2005	39.3	0.046	0.07	<d.l.	0.001	<d.l.	0.04	0.05	<d.l.	<d.l.	0.01	3.63
35621	St 5	2006	5.0	0.035	0.04	<d.l.	<d.l.	<d.l.	<d.l.	0.02	<d.l.	<d.l.	0.01	2.39
35622	St 9	2006	10.1	0.038	0.06	<d.l.	<d.l.	<d.l.	<d.l.	0.06	<d.l.	<d.l.	0.03	4.84
35623	St 10	2006	12.8	0.038	0.05	<d.l.	<d.l.	<d.l.	0.01	0.09	<d.l.	<d.l.	0.03	6.02
35624	St 11	2006	11.1	0.059	0.10	<d.l.	<d.l.	<d.l.	0.01	0.04	<d.l.	<d.l.	0.03	4.35
35649	St 23	2006	20.1	0.039	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	0.02	<d.l.	<d.l.	0.01	1.62
35649	St 23	2006	14.6	0.039	0.07	<d.l.	<d.l.	<d.l.	<d.l.	0.04	<d.l.	<d.l.	0.01	1.76
35670	St 17	2006	10.4	0.080	0.09	<d.l.	<d.l.	<d.l.	<d.l.	0.07	<d.l.	<d.l.	0.04	7.74
35671	St 18	2006	10.9	0.070	0.13	<d.l.	<d.l.	<d.l.	<d.l.	0.05	<d.l.	<d.l.	0.06	5.68
35672	St 19	2006	12.9	0.038	0.08	<d.l.	<d.l.	<d.l.	0.02	<d.l.	<d.l.	<d.l.	0.01	2.64
35673	St 20	2006	12.9	0.054	0.08	<d.l.	<d.l.	<d.l.	0.01	0.08	<d.l.	<d.l.	0.03	5.75
35674	St 21	2006	13.1	0.078	0.12	<d.l.	<d.l.	<d.l.	0.01	0.05	<d.l.	<d.l.	0.02	8.57
35703	St 2	2006	7.5	0.041	0.09	<d.l.	<d.l.	<d.l.	<d.l.	0.03	<d.l.	<d.l.	0.03	4.76
35704	St 3	2006	11.6	0.069	0.09	<d.l.	<d.l.	<d.l.	<d.l.	0.06	<d.l.	<d.l.	0.03	16.83
35705	St 4	2006	15.0	0.075	0.10	<d.l.	<d.l.	<d.l.	<d.l.	0.07	<d.l.	<d.l.	0.02	8.18
35706	St 13	2006	11.1	0.043	0.06	<d.l.	<d.l.	<d.l.	<d.l.	0.04	<d.l.	<d.l.	0.03	2.26
35707	St 14	2006	8.3	0.058	0.07	<d.l.	<d.l.	<d.l.	<d.l.	0.06	<d.l.	<d.l.	0.03	8.61
35708	St 15	2006	18.7	0.050	0.06	<d.l.	<d.l.	<d.l.	0.02	0.07	<d.l.	<d.l.	0.04	5.47
35709	St 16	2006	14.3	0.043	0.05	<d.l.	<d.l.	<d.l.	<d.l.	0.08	<d.l.	<d.l.	0.07	4.07
35756	St 1	2006	10.0	0.045	0.06	<d.l.	<d.l.	0.03	<d.l.	0.07	<d.l.	<d.l.	0.03	9.55
35756	St 1	2006	8.0	0.039	0.06	<d.l.	<d.l.	0.01	<d.l.	0.08	<d.l.	<d.l.	0.04	7.38

ID No.	Station	Year	Sr	Y	Zr	Mo	Rh	Pd	Ag	Cd	Sn	Sb	Cs	Ba
d.l.			**0.5**	**0.003**	**0.04**	**0.11**	**0.001**	**0.01**	**0.01**	**0.02**	**0.04**	**0.03**	**0.01**	**0.05**
35757	St 6	2006	8.9	0.075	0.07	<d.l.	<d.l.	0.01	<d.l.	0.07	<d.l.	<d.l.	0.05	7.22
35758	St 7	2006	6.2	0.042	0.06	<d.l.	<d.l.	0.01	<d.l.	0.03	<d.l.	<d.l.	0.03	11.10
35759	St 8	2006	16.9	0.125	0.11	<d.l.	<d.l.	0.01	0.03	0.08	<d.l.	<d.l.	0.03	24.28
35760	St 24 (Lav 7)	2006	12.4	0.079	0.08	<d.l.	<d.l.	<d.l.	<d.l.	0.03	<d.l.	<d.l.	0.03	15.26
35781	St 25 (Lav 1)	2006	16.5	0.224	0.15	<d.l.	<d.l.	0.01	<d.l.	0.06	<d.l.	<d.l.	0.16	14.30
35782	Lav 2	2006	6.3	0.125	0.10	<d.l.	<d.l.	<d.l.	0.03	0.15	<d.l.	<d.l.	0.13	8.83
35783	Lav 3	2006	5.5	0.073	0.05	<d.l.	<d.l.	<d.l.	<d.l.	0.06	<d.l.	<d.l.	0.06	7.53
35784	Lav 4	2006	5.0	0.043	0.05	<d.l.	<d.l.	<d.l.	0.02	0.10	<d.l.	<d.l.	0.03	7.23
35785	Lav 5	2006	8.6	0.084	0.10	<d.l.	<d.l.	<d.l.	<d.l.	0.04	<d.l.	<d.l.	0.04	10.38
35786	Lav 6	2006	13.2	0.080	0.15	<d.l.	<d.l.	<d.l.	<d.l.	0.05	<d.l.	<d.l.	0.04	7.71
37101	Lav 1	2007	15.1	0.447	0.25	<d.l.	<d.l.	0.01	0.01	0.07	<d.l.	<d.l.	0.13	27.17
37273	Lav 2	2007	21.9	0.249	0.20	<d.l.	<d.l.	0.01	0.02	0.07	<d.l.	<d.l.	0.20	18.32
37274	Lav 3	2007	16.6	0.194	0.13	<d.l.	<d.l.	0.01	0.04	0.17	<d.l.	<d.l.	0.12	18.39
37275	Lav 4	2007	13.5	0.093	0.11	<d.l.	0.001	0.01	0.04	0.08	<d.l.	<d.l.	0.05	13.44
37102	Lav 5	2007	17.7	0.220	0.23	<d.l.	<d.l.	0.01	0.05	0.07	<d.l.	<d.l.	0.13	18.87
37103	Lav 6	2007	20.9	0.313	0.39	<d.l.	<d.l.	0.02	0.03	0.10	<d.l.	<d.l.	0.11	11.67
37276	Lav 8	2007	10.0	0.123	0.16	<d.l.	<d.l.	0.01	0.05	0.07	<d.l.	<d.l.	0.10	8.54
37277	Lav 9	2007	15.5	0.141	0.09	0.11	<d.l.	<d.l.	0.07	0.14	<d.l.	<d.l.	0.11	12.57
37278	Lav 10	2007	13.5	0.176	0.17	<d.l.	<d.l.	<d.l.	0.02	0.04	<d.l.	<d.l.	0.08	12.33
37104	St. 1	2007	30.8	0.088	0.12	<d.l.	<d.l.	0.02	<d.l.	0.07	<d.l.	<d.l.	0.04	9.95
37105	St. 2	2007	18.1	0.088	0.13	<d.l.	<d.l.	0.01	<d.l.	0.04	<d.l.	<d.l.	0.03	6.79
37105	St. 2	2007	19.4	0.089	0.05	<d.l.	<d.l.	<d.l.	<d.l.	0.03	<d.l.	<d.l.	0.03	6.11
37106	St. 3	2007	17.6	0.146	0.17	<d.l.	<d.l.	<d.l.	0.02	0.16	0.73	<d.l.	0.05	13.33
37125	St. 4	2007	15.0	0.119	0.15	<d.l.	<d.l.	<d.l.	0.09	0.04	0.13	<d.l.	0.05	10.73
37126	St. 5	2007	23.2	0.105	0.10	<d.l.	0.005	0.01	0.03	0.08	<d.l.	<d.l.	0.06	15.47
37205	St. 6	2007	24.2	0.109	0.23	<d.l.	0.001	0.04	0.04	0.06	<d.l.	0.03	0.06	10.75
37206	St. 7	2007	19.3	0.116	0.21	<d.l.	0.002	0.04	0.02	0.08	<d.l.	<d.l.	0.06	26.34
37207	St. 8	2007	29.9	0.258	0.33	<d.l.	0.002	0.03	0.01	0.10	0.12	<d.l.	0.05	55.13
37107	St. 9	2007	23.0	0.106	0.18	<d.l.	0.002	0.03	0.03	0.06	<d.l.	<d.l.	0.05	13.53
37127	St. 10	2007	22.6	0.119	0.11	<d.l.	<d.l.	0.03	0.03	0.11	<d.l.	<d.l.	0.05	10.27
37201	St. 13	2007	17.2	0.080	0.10	<d.l.	<d.l.	<d.l.	<d.l.	0.04	<d.l.	<d.l.	0.04	3.30
37201	St. 13	2007	17.7	0.107	0.09	<d.l.	<d.l.	0.01	0.03	0.05	<d.l.	<d.l.	0.04	4.16
37203	St. 15	2007	12.7	0.081	0.07	<d.l.	<d.l.	<d.l.	<d.l.	0.05	<d.l.	<d.l.	0.04	8.89
37170	St. 19	2007	16.7	0.080	0.09	<d.l.	<d.l.	<d.l.	<d.l.	0.04	0.06	<d.l.	0.01	4.84
37173	St. 23	2007	35.2	0.088	0.16	<d.l.	<d.l.	0.01	<d.l.	0.04	<d.l.	<d.l.	0.02	2.41

ID No.	Station	Year	La	Ce	Nd	Ta	W	Au	Hg	Tl	Pb	Bi	Th	U
d.l.			**0.01**	**0.01**	**0.004**	**0.012**	**0.03**	**0.05**	**0.05**	**0.03**	**0.03**	**0.007**	**0.012**	**0.007**
31242	St 10	2004	0.28	0.60	0.272	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	0.58	<d.l.	0.016	0.013
31243	St 11	2004	0.15	0.31	0.151	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	0.37	<d.l.	<d.l.	0.009
31220	St 5	2004	0.23	0.48	0.198	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	0.51	<d.l.	0.025	0.010
31227	St 6	2004	0.24	0.51	0.212	<d.l.	<d.l.	<d.l.	0.23	<d.l.	0.62	<d.l.	0.024	0.010
31227	St 6	2004	0.22	0.48	0.199	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	0.65	<d.l.	0.022	0.011
31549	St 22	2004	0.14	0.29	0.144	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	0.44	<d.l.	<d.l.	0.019
31550	St 23	2004	0.13	0.30	0.124	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	0.32	<d.l.	0.018	0.024
31572	I forkomst	2004	0.21	0.46	0.180	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	0.67	<d.l.	0.017	<d.l.
31573	Minus GPS fil	2004	0.24	0.48	0.194	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	0.54	<d.l.	0.029	0.010
31574	Pkt 14	2004	0.12	0.25	0.101	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	0.36	0.008	<d.l.	<d.l.
31575	Pkt 16	2004	0.12	0.26	0.106	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	0.44	<d.l.	0.013	<d.l.

ID No.	Station	Year	La	Ce	Nd	Ta	W	Au	Hg	Tl	Pb	Bi	Th	U
d.l.			**0.01**	**0.01**	**0.004**	**0.012**	**0.03**	**0.05**	**0.05**	**0.03**	**0.03**	**0.007**	**0.012**	**0.007**
31576	Pkt 17	2004	0.17	0.36	0.163	<d.l.	<d.l.	<d.l.	0.07	<d.l.	0.48	<d.l.	<d.l.	<d.l.
31577	Pkt på kort	2004	0.15	0.31	0.134	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	0.53	<d.l.	0.012	<d.l.
31577	Pkt på kort	2004	0.15	0.31	0.126	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	0.53	<d.l.	<d.l.	<d.l.
31259	St 13	2004	0.11	0.23	0.104	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	0.28	<d.l.	<d.l.	0.008
31260	St 14	2004	0.13	0.28	0.132	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	0.39	<d.l.	<d.l.	<d.l.
31261	St 15	2004	0.14	0.29	0.133	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	0.40	<d.l.	<d.l.	0.012
31261	St 15	2004	0.19	0.39	0.189	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	0.42	<d.l.	0.013	0.011
31262	St 16	2004	0.15	0.31	0.134	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	0.43	<d.l.	0.015	<d.l.
31296	St 17	2004	0.28	0.57	0.249	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	0.82	<d.l.	0.030	<d.l.
31297	St 18	2004	0.64	0.90	0.498	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	0.45	<d.l.	0.032	0.009
31298	St 19	2004	0.09	0.19	0.086	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	0.24	<d.l.	<d.l.	0.010
31505	St 20	2004	0.23	0.47	0.217	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	0.37	<d.l.	0.024	0.009
31506	St 21	2004	0.17	0.36	0.166	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	0.37	<d.l.	0.018	0.008
31571	PKT 9	2004	0.13	0.27	0.125	<d.l.	<d.l.	<d.l.	<d.l.	0.03	0.50	<d.l.	<d.l.	0.009
33631	Lav2	2005	0.16	0.32	0.135	<d.l.	<d.l.	<d.l.	1.47	<d.l.	0.53	<d.l.	<d.l.	<d.l.
33632	Lav3	2005	0.12	0.24	0.111	<d.l.	<d.l.	<d.l.	1.39	<d.l.	0.40	<d.l.	<d.l.	<d.l.
33633	Lav4	2005	0.55	0.96	0.257	<d.l.	<d.l.	<d.l.	1.43	<d.l.	0.76	<d.l.	<d.l.	<d.l.
33634	Lav5	2005	0.20	0.39	0.166	<d.l.	<d.l.	<d.l.	1.57	<d.l.	0.42	<d.l.	0.013	<d.l.
33635	Lav6	2005	0.16	0.33	0.146	<d.l.	<d.l.	<d.l.	1.07	<d.l.	0.56	<d.l.	0.024	<d.l.
30835	St 1	2005	0.18	0.35	0.158	<d.l.	<d.l.	<d.l.	0.08	<d.l.	0.63	<d.l.	<d.l.	<d.l.
30836	St 2	2005	0.36	0.54	0.204	<d.l.	<d.l.	<d.l.	0.08	<d.l.	0.61	<d.l.	<d.l.	<d.l.
30836	St 2	2005	0.50	0.68	0.268	<d.l.	<d.l.	<d.l.	0.07	<d.l.	0.68	<d.l.	<d.l.	0.010
30837	St 3	2005	0.24	0.48	0.218	<d.l.	<d.l.	<d.l.	0.06	<d.l.	0.70	<d.l.	<d.l.	<d.l.
30838	St 4	2005	2.44	4.14	0.712	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	0.54	<d.l.	0.016	<d.l.
30839	St 5	2005	0.24	0.49	0.208	<d.l.	<d.l.	<d.l.	0.06	<d.l.	0.78	<d.l.	0.015	0.010
30840	St 6	2005	0.84	1.50	0.397	<d.l.	<d.l.	<d.l.	0.05	<d.l.	1.19	<d.l.	0.018	0.015
30841	St 7	2005	0.37	0.75	0.347	<d.l.	<d.l.	<d.l.	0.10	<d.l.	0.64	<d.l.	0.032	<d.l.
30842	St 8	2005	0.65	1.21	0.532	<d.l.	<d.l.	<d.l.	0.15	<d.l.	0.87	<d.l.	0.035	<d.l.
30843	St 9	2005	0.31	0.62	0.277	<d.l.	<d.l.	<d.l.	0.10	0.03	0.77	<d.l.	0.030	0.010
30844	St 10	2005	0.14	0.30	0.137	<d.l.	<d.l.	<d.l.	0.06	<d.l.	0.53	<d.l.	<d.l.	0.015
30845	St 11	2005	0.92	1.67	0.750	<d.l.	<d.l.	<d.l.	0.10	<d.l.	0.93	<d.l.	0.080	0.013
30846	St 12	2005	0.44	0.83	0.354	<d.l.	<d.l.	<d.l.	0.07	<d.l.	0.98	<d.l.	0.028	<d.l.
30847	St 13	2005	1.73	3.11	1.155	<d.l.	<d.l.	<d.l.	0.08	<d.l.	0.63	<d.l.	0.167	0.010
30848	St 14	2005	0.18	0.39	0.192	<d.l.	<d.l.	<d.l.	0.07	<d.l.	0.96	<d.l.	<d.l.	<d.l.
30849	St 15	2005	0.23	0.44	0.192	<d.l.	<d.l.	<d.l.	0.06	<d.l.	0.93	<d.l.	0.014	<d.l.
30849	St 15	2005	0.26	0.48	0.205	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	0.78	<d.l.	0.017	<d.l.
30850	St 16	2005	0.28	0.55	0.230	<d.l.	<d.l.	<d.l.	0.13	<d.l.	0.85	<d.l.	0.016	<d.l.
30851	St 17	2005	0.28	0.55	0.247	<d.l.	<d.l.	<d.l.	0.08	<d.l.	0.95	<d.l.	0.020	<d.l.
30852	St 18	2005	0.27	0.51	0.229	<d.l.	<d.l.	<d.l.	0.07	<d.l.	0.96	<d.l.	0.017	0.033
30853	St 19	2005	0.10	0.21	0.096	<d.l.	<d.l.	<d.l.	0.08	<d.l.	0.32	<d.l.	<d.l.	<d.l.
30854	St 20	2005	0.17	0.33	0.153	<d.l.	<d.l.	<d.l.	0.13	<d.l.	0.38	<d.l.	<d.l.	<d.l.
30855	St 22	2005	0.15	0.31	0.138	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	0.72	<d.l.	<d.l.	<d.l.
35621	St 5	2006	0.11	0.21	0.108	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	0.30	<d.l.	<d.l.	<d.l.
35622	St 9	2006	0.13	0.25	0.132	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	0.39	<d.l.	<d.l.	<d.l.
35623	St 10	2006	0.11	0.22	0.108	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	0.48	<d.l.	<d.l.	<d.l.
35624	St 11	2006	0.20	0.40	0.205	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	0.62	<d.l.	0.015	<d.l.
35649	St 23	2006	0.10	0.21	0.115	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	0.36	<d.l.	<d.l.	<d.l.
35649	St 23	2006	0.08	0.16	0.087	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	0.25	<d.l.	<d.l.	<d.l.
35670	St 17	2006	0.28	0.58	0.288	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	0.70	<d.l.	0.026	<d.l.
35671	St 18	2006	0.33	0.56	0.255	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	0.76	<d.l.	0.017	<d.l.
35672	St 19	2006	0.11	0.22	0.109	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	0.38	<d.l.	0.016	<d.l.

ID No.	Station	Year	La	Ce	Nd	Ta	W	Au	Hg	Tl	Pb	Bi	Th	U
d.l.			**0.01**	**0.01**	**0.004**	**0.012**	**0.03**	**0.05**	**0.05**	**0.03**	**0.03**	**0.007**	**0.012**	**0.007**
35673	St 20	2006	0.15	0.31	0.172	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	0.39	<d.l.	0.013	<d.l.
35674	St 21	2006	0.26	0.56	0.304	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	0.68	<d.l.	0.017	<d.l.
35703	St 2	2006	0.11	0.23	0.123	<d.l.	<d.l.	0.10	<d.l.	<d.l.	0.35	<d.l.	<d.l.	<d.l.
35704	St 3	2006	0.23	0.42	0.236	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	0.47	<d.l.	0.016	<d.l.
35705	St 4	2006	0.30	0.58	0.278	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	0.56	<d.l.	0.023	<d.l.
35706	St 13	2006	0.13	0.26	0.140	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	0.49	<d.l.	0.013	<d.l.
35707	St 14	2006	0.16	0.33	0.174	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	0.65	<d.l.	<d.l.	<d.l.
35708	St 15	2006	0.15	0.31	0.162	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	0.75	<d.l.	<d.l.	<d.l.
35709	St 16	2006	0.13	0.27	0.137	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	0.60	<d.l.	0.012	<d.l.
35756	St 1	2006	0.19	0.36	0.173	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	0.56	<d.l.	0.013	<d.l.
35756	St 1	2006	0.15	0.29	0.143	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	0.49	<d.l.	<d.l.	<d.l.
35757	St 6	2006	0.22	0.44	0.224	<d.l.	<d.l.	0.10	<d.l.	<d.l.	0.74	<d.l.	0.015	<d.l.
35758	St 7	2006	0.15	0.29	0.141	<d.l.	<d.l.	0.06	<d.l.	<d.l.	0.46	<d.l.	0.015	<d.l.
35759	St 8	2006	0.45	0.83	0.414	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	1.39	<d.l.	0.021	<d.l.
35760	St 24 (Lav 7)	2006	0.33	0.63	0.317	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	0.49	<d.l.	0.027	<d.l.
35781	St 25 (Lav 1)	2006	1.24	2.39	1.220	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	0.70	<d.l.	0.198	<d.l.
35782	Lav 2	2006	0.46	0.89	0.466	<d.l.	0.05	<d.l.	<d.l.	<d.l.	0.71	0.021	0.073	<d.l.
35783	Lav 3	2006	0.35	0.69	0.348	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	0.40	<d.l.	0.052	<d.l.
35784	Lav 4	2006	0.19	0.39	0.189	<d.l.	<d.l.	0.10	<d.l.	<d.l.	0.29	<d.l.	0.024	<d.l.
35785	Lav 5	2006	0.39	0.75	0.383	<d.l.	<d.l.	0.14	<d.l.	<d.l.	0.40	<d.l.	0.055	<d.l.
35786	Lav 6	2006	0.40	0.77	0.384	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	0.62	<d.l.	0.050	<d.l.
37101	Lav 1	2007	1.85	3.60	1.196	0.052	0.04	<d.l.	<d.l.	<d.l.	0.89	<d.l.	0.167	<d.l.
37273	Lav 2	2007	0.79	1.53	0.509	<d.l.	0.03	<d.l.	<d.l.	<d.l.	0.72	<d.l.	0.073	<d.l.
37274	Lav 3	2007	0.63	1.20	0.412	0.014	<d.l.	<d.l.	<d.l.	<d.l.	0.44	<d.l.	0.057	<d.l.
37275	Lav 4	2007	0.32	0.61	0.201	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	0.49	<d.l.	0.021	<d.l.
37102	Lav 5	2007	0.77	1.48	0.494	<d.l.	<d.l.	<d.l.	<d.l.	0.23	0.69	<d.l.	0.064	0.044
37103	Lav 6	2007	0.97	1.87	0.644	0.055	<d.l.	<d.l.	<d.l.	0.07	1.05	<d.l.	0.082	0.017
37276	Lav 8	2007	0.42	0.82	0.272	0.064	<d.l.	<d.l.	<d.l.	<d.l.	0.53	<d.l.	0.018	<d.l.
37277	Lav 9	2007	0.43	0.82	0.275	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	0.69	<d.l.	0.022	<d.l.
37278	Lav 10	2007	0.54	1.03	0.357	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	0.60	<d.l.	0.032	<d.l.
37104	St. 1	2007	0.26	0.52	0.174	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	0.51	<d.l.	<d.l.	<d.l.
37105	St. 2	2007	0.23	0.48	0.153	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	0.44	<d.l.	<d.l.	<d.l.
37105	St. 2	2007	0.32	0.63	0.200	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	0.46	<d.l.	<d.l.	<d.l.
37106	St. 3	2007	0.63	1.12	0.355	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	2.08	<d.l.	0.019	<d.l.
37125	St. 4	2007	0.34	0.65	0.216	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	0.63	<d.l.	<d.l.	<d.l.
37126	St. 5	2007	0.33	0.65	0.206	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	0.74	<d.l.	<d.l.	0.020
37205	St. 6	2007	0.28	0.54	0.199	<d.l.	<d.l.	<d.l.	<d.l.	0.18	0.56	0.012	0.013	0.029
37206	St. 7	2007	0.29	0.58	0.210	0.033	<d.l.	<d.l.	<d.l.	0.05	0.78	<d.l.	0.015	0.010
37207	St. 8	2007	0.71	1.39	0.524	0.020	<d.l.	<d.l.	<d.l.	0.03	1.10	0.008	0.024	0.007
37107	St. 9	2007	0.37	0.70	0.252	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	0.55	<d.l.	0.014	<d.l.
37127	St. 10	2007	0.38	0.73	0.245	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	0.71	<d.l.	<d.l.	<d.l.
37201	St. 13	2007	0.18	0.36	0.138	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	0.48	<d.l.	<d.l.	<d.l.
37201	St. 13	2007	0.26	0.53	0.196	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	0.55	<d.l.	0.015	<d.l.
37203	St. 15	2007	0.25	0.47	0.171	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	0.59	<d.l.	<d.l.	0.019
37170	St. 19	2007	0.15	0.31	0.115	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	1.38	<d.l.	<d.l.	<d.l.
37173	St. 23	2007	0.19	0.41	0.154	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	0.46	<d.l.	<d.l.	<d.l.

Appendix 6. Analyses of sculpin liver

Chemical analyses of Shorthorn sculpin liver. µg/g on a wet weight basis.

ID No.	Area	Year	d.m.%	Li	Be	Na	Mg	S	Al	Si	P	K	Ca	Sc
d.l.				**0.02**	**0.003**	**87**	**4**	**627**	**16**	**2**	**15**	**44**	**86**	**0.07**
31271	3	2004	22.86	0.05										
31271	3	2004	22.86	0.05	<d.l.	4104	207	4078	<d.l.	8	2572	3430	128	0.10
31273	3	2004	17.69	0.04	<d.l.	3932	244	3983	<d.l.	14	3167	3774	<d.l.	0.14
31274	3	2004	15.57	0.07	<d.l.	5987	256	3764	<d.l.	8	2738	2527	121	0.11
31276	3	2004	16.88	0.05	<d.l.	5370	237	3652	<d.l.	8	2942	2400	86	0.10
31277	3	2004	18.44	0.02	<d.l.	2781	228	4091	<d.l.	10	3448	4363	<d.l.	0.11
31278	3	2004	22.14	<d.l.	<d.l.	2170	174	3955	<d.l.	8	2911	4119	<d.l.	0.10
31280	3	2004	33.58	<d.l.	<d.l.	1064	118	2790	<d.l.	9	2383	3378	<d.l.	0.10
31283	3	2004	26.45	0.02	<d.l.	2028	181	4005	<d.l.	10	2928	3844	<d.l.	0.10
31284	3	2004	23.33	<d.l.	<d.l.	1998	180	3460	<d.l.	8	2929	3963	<d.l.	0.09
31290	3	2004	22.99	0.02	<d.l.	2954	204	3855	<d.l.	14	3213	4359	<d.l.	0.13
31369	2	2004	19.21	0.03	<d.l.	3828	268	4719	<d.l.	17	3808	4848	<d.l.	0.14
31370	2	2004	20.45	<d.l.	<d.l.	1394	202	4476	<d.l.	11	3483	4731	<d.l.	0.12
31370	2	2004	20.45	0.02	0.004	1608	201	4433	<d.l.	12	3266	4327	<d.l.	0.12
31371	2	2004	27.42	0.03	<d.l.	2788	211	4189	<d.l.	11	3279	4265	<d.l.	0.12
31372	2	2004	21.30	0.03	<d.l.	3195	256	4388	<d.l.	10	3188	4487	88	0.11
31373	2	2004	23.92	0.03	<d.l.	3570	247	4570	<d.l.	10	3603	4144	<d.l.	0.11
31483	3	2004	21.83	0.03	<d.l.	3383	316	4816	<d.l.	10	3481	4010	99	0.11
31487	3	2004	0.00	0.05	<d.l.	4581	274	3774	<d.l.	9	3354	4149	88	0.11
31488	3	2004	16.36	0.04	<d.l.	4100	260	4827	<d.l.	11	3088	3772	93	0.12
31489	3	2004	23.08	0.03	<d.l.	3045	198	3630	<d.l.	13	2414	3508	<d.l.	0.15
31490	3	2004	23.68	0.03	<d.l.	3118	219	3544	<d.l.	8	2720	3705	<d.l.	0.10
31490	3	2004	23.68	0.03	<d.l.	2818	227	3539	<d.l.	7	2580	3575	<d.l.	0.09
33734	2	2005	23.18	0.02	<d.l.	3231	206	3181	<d.l.	8	1933	3283	197	0.10
33735	2	2005	18.00	0.04	<d.l.	3774	361	3578	<d.l.	10	2385	2816	1091	0.11
33736	2	2005	18.49	0.02	<d.l.	2341	201	3409	<d.l.	10	2169	4158	134	0.11
33737	2	2005	24.81	<d.l.	<d.l.	2530	143	2682	<d.l.	11	2139	3835	<d.l.	0.12
33737	2	2005	24.81	<d.l.	<d.l.	1892	154	2837	<d.l.	17	2195	3860	<d.l.	0.16
33738	2	2005	30.40	0.02	<d.l.	2752	162	2953	<d.l.	6	1907	3854	141	0.09
33739	3	2005	29.41	0.04	<d.l.	4462	255	4022	<d.l.	11	3129	4911	102	0.13
33741	3	2005	26.45	0.03	<d.l.	2543	268	2837	<d.l.	9	2371	3109	320	0.11
33742	3	2005	21.49	0.02	<d.l.	3021	182	3407	<d.l.	6	2221	3686	163	0.10
33743	3	2005	26.76	0.04	<d.l.	3018	238	3476	<d.l.	8	2302	4033	614	0.11
33743	3	2005	26.76	0.03	<d.l.	3207	173	3343	<d.l.	9	2215	3972	152	0.11
33740	3	2005	20.17	0.03	<d.l.	3794	252	3444	<d.l.	13	2747	4398	109	0.13
33724	1	2005	26.02	0.02	<d.l.	2145	181	3470	<d.l.	9	2297	3387	167	0.11
33724	1	2005	26.02	0.03	<d.l.	2192	182	3449	<d.l.	8	2396	3706	142	0.10
33725	1	2005	27.27	<d.l.	<d.l.	1795	143	2593	<d.l.	6	1948	3982	<d.l.	0.09
33726	1	2005	26.57	<d.l.	<d.l.	1713	151	2999	<d.l.	6	1930	3514	133	0.08
33727	1	2005	24.07	<d.l.	<d.l.	2600	168	3650	<d.l.	7	2056	3288	186	0.09
33728	1	2005	28.37	<d.l.	<d.l.	2700	146	2966	<d.l.	7	1727	3274	116	0.09
33729	1	2005	23.13	<d.l.	<d.l.	2053	176	3467	<d.l.	8	1898	2777	320	0.09
33730	1	2005	28.57	0.02	<d.l.	2776	148	3133	<d.l.	9	2014	2929	113	0.10

ID No.	Area	Year	d.m.%	Li	Be	Na	Mg	S	Al	Si	P	K	Ca	Sc
d.l.				**0.02**	**0.003**	**87**	**4**	**627**	**16**	**2**	**15**	**44**	**86**	**0.07**
33731	1	2005	21.31	<d.l.	<d.l.	2924	170	2803	<d.l.	7	1953	3119	462	0.10
33732	1	2005	19.44	<d.l.	<d.l.	2375	196	3589	<d.l.	8	2158	3857	127	0.10
33733	1	2005	22.37	0.02	<d.l.	2199	197	2776	<d.l.	7	1805	3316	183	0.09
35602	1	2006	34.81	<d.l.	<d.l.		149		<d.l.	<d.l.	1913	2251	<d.l.	<d.l.
35602	1	2006	34.81	<d.l.	<d.l.		178		<d.l.	<d.l.	1842	2189	<d.l.	<d.l.
35603	1	2006	35.83	<d.l.	<d.l.		143		<d.l.	<d.l.	1963	2244	133	<d.l.
35606	1	2006	37.14	<d.l.	<d.l.		153		<d.l.	<d.l.	2054	2119	414	<d.l.
35607	1	2006	33.33	<d.l.	<d.l.		213		<d.l.	<d.l.	2129	1773	216	<d.l.
35608	1	2006	35.51	<d.l.	<d.l.		135		<d.l.	<d.l.	1477	2259	<d.l.	<d.l.
35609	1	2006	42.51	<d.l.	<d.l.		139		<d.l.	<d.l.	1984	2081	89	<d.l.
35610	1	2006	31.71	<d.l.	<d.l.		160		<d.l.	<d.l.	1411	1987	98	<d.l.
35617	1	2006	34.51	<d.l.	<d.l.		162		<d.l.	<d.l.	1742	1987	200	<d.l.
35619	1	2006	33.62	0.02	<d.l.		149		<d.l.	<d.l.	1633	1841	108	<d.l.
35620	1	2006	11.61	0.05	<d.l.		255		<d.l.	<d.l.	1448	1289	226	<d.l.
35739	2	2006	20.71	<d.l.	<d.l.		152		<d.l.	<d.l.	1942	2542	129	<d.l.
35736	2	2006	14.93	0.04	<d.l.		308		<d.l.	<d.l.	2211	1997	1043	<d.l.
35736	2	2006	14.93	0.04	<d.l.		319		<d.l.	<d.l.	2082	1946	1157	<d.l.
35743	2	2006	37.10	0.02	<d.l.		254		<d.l.	<d.l.	1528	1791	211	<d.l.
35745	2	2006	17.07	0.02	<d.l.		109		<d.l.	<d.l.	1329	2129	<d.l.	<d.l.
35747	2	2006	22.15	0.03	<d.l.		208		<d.l.	<d.l.	1543	1991	274	<d.l.
35764	3	2006	24.66	0.02	<d.l.		154		<d.l.	<d.l.	1544	1955	145	<d.l.
35765	3	2006	12.00	0.04	<d.l.		340		<d.l.	<d.l.	1370	1551	392	<d.l.
35767	3	2006	19.70	0.03	<d.l.		240		<d.l.	<d.l.	1913	1795	784	<d.l.
35768	3	2006	15.65	0.04	<d.l.		205		<d.l.	<d.l.	1311	2023	670	<d.l.
35772	3	2006	30.43	0.03	<d.l.		172		<d.l.	<d.l.	1501	1581	263	<d.l.
37148	2	2007	29.93	0.03	<d.l.	1552	110	4753	<d.l.	<d.l.	1907	2312	<d.l.	<d.l.
37149	2	2007	32.64	<d.l.	<d.l.	1061	108	5491	<d.l.	<d.l.	1756	2655	<d.l.	<d.l.
37150	2	2007	39.60	<d.l.	<d.l.	1196	91	2857	<d.l.	<d.l.	1765	2548	<d.l.	<d.l.
37151	2	2007	32.12	0.02	<d.l.	1361	94	4473	<d.l.	<d.l.	1609	2193	<d.l.	<d.l.
37152	2	2007	30.00	0.03	<d.l.	1609	220	3690	<d.l.	3	2168	2776	<d.l.	<d.l.
37153	2	2007	29.57	0.02	<d.l.	1152	128	5271	48	<d.l.	2238	2875	<d.l.	<d.l.
37154	2	2007	33.33	0.03	<d.l.	1036	93	4754	42	<d.l.	1509	2153	<d.l.	<d.l.
37155	2	2007	27.65	<d.l.	<d.l.	1199	111	5419	<d.l.	<d.l.	1776	2907	<d.l.	<d.l.
37156	2	2007	33.58	0.02	<d.l.	1312	106	5072	<d.l.	<d.l.	1504	2099	<d.l.	<d.l.
37157	2	2007	24.78	<d.l.	<d.l.	1326	132	4098	<d.l.	<d.l.	2489	2848	<d.l.	<d.l.
37158	2	2007	34.74	0.02	<d.l.	1347	106	2930	<d.l.	<d.l.	1798	2537	<d.l.	<d.l.
37159	2	2007	29.41	0.02	<d.l.	1585	118	5017	<d.l.	<d.l.	2014	2270	<d.l.	<d.l.
37160	2	2007	26.53	0.02	<d.l.	1420	130	5934	<d.l.	<d.l.	1902	2141	<d.l.	<d.l.
37161	2	2007	32.56	0.03	<d.l.	1700	131	5408	<d.l.	<d.l.	2131	2626	<d.l.	<d.l.
37162	2	2007	25.00	<d.l.	<d.l.	1747	120	6693	<d.l.	<d.l.	1929	2406	<d.l.	<d.l.
37163	2	2007	26.85	<d.l.	<d.l.	1179	133	6568	<d.l.	<d.l.	2207	2288	<d.l.	<d.l.
37164	2	2007	32.50	<d.l.	<d.l.	1393	110	5956	<d.l.	<d.l.	1855	1928	<d.l.	<d.l.
37165	2	2007	23.76	0.03	<d.l.	2026	131	6126	<d.l.	<d.l.	2023	1979	<d.l.	<d.l.
37166	2	2007	0.00	0.03	<d.l.	2122	146	6232	<d.l.	<d.l.	2452	2170	<d.l.	<d.l.
37167	2	2007	28.32	0.02	<d.l.	1796	104	3355	<d.l.	<d.l.	1820	2998	<d.l.	<d.l.
37167	2	2007	28.32	0.02	<d.l.	1799	90	2980	<d.l.	<d.l.	1589	2732	<d.l.	<d.l.
37236	1	2007	19.75	0.04	<d.l.	1910	138	6532	<d.l.	<d.l.	2041	2183	<d.l.	<d.l.
37237	1	2007	19.17	0.03	<d.l.	1697	129	6747	<d.l.	<d.l.	2226	2332	<d.l.	<d.l.
37255	1	2007	27.59	0.03	<d.l.	1805	173	6807	<d.l.	<d.l.	2288	2346	<d.l.	<d.l.
37256	1	2007	26.57	0.02	<d.l.	1478	120	5967	<d.l.	<d.l.	1988	2274	<d.l.	<d.l.
37257	1	2007	16.48	0.04	<d.l.	3024	161	6545	<d.l.	<d.l.	2283	2086	<d.l.	<d.l.

ID No.	Area	Year	d.m.%	Li	Be	Na	Mg	S	Al	Si	P	K	Ca	Sc
d.l.				**0.02**	**0.003**	**87**	**4**	**627**	**16**	**2**	**15**	**44**	**86**	**0.07**
37258	1	2007	16.67	0.03	<d.l.	2022	128	5555	<d.l.	<d.l.	2136	2121	<d.l.	<d.l.
37259	1	2007	16.67	0.07	<d.l.	2172	146	5100	<d.l.	<d.l.	2043	2313	<d.l.	<d.l.
37260	1	2007	25.90	0.02	<d.l.	1949	106	6108	<d.l.	<d.l.	1851	2208	<d.l.	<d.l.
37261	1	2007	15.52	0.04	<d.l.	2423	225	5630	<d.l.	4	1906	2034	<d.l.	<d.l.
37262	1	2007	21.01	0.02	<d.l.	1818	110	4705	<d.l.	<d.l.	1822	2211	<d.l.	<d.l.
37262	1	2007	21.01	0.02	<d.l.	1821	123	5312	<d.l.	<d.l.	1949	2477	<d.l.	<d.l.
37263	1	2007	18.85	0.03	<d.l.	2151	126	5982	<d.l.	<d.l.	2052	2249	<d.l.	<d.l.
37264	1	2007	27.07	<d.l.	<d.l.	1646	94	5248	<d.l.	<d.l.	1720	2169	<d.l.	<d.l.
37265	1	2007	25.22	0.02	<d.l.	1923	122	5000	<d.l.	<d.l.	1937	2313	<d.l.	<d.l.
37266	1	2007	0.00											
37267	1	2007	23.39											
37268	1	2007	0.00											
37269	1	2007	0.00											

ID No.	Area	Year	Ti	V	Cr	Mn	Fe	Ni	Cu	Zn	Ga	Co	As	Se
d.l.			**0.1**	**0.01**	**0.15**	**0.08**	**12**	**0.3**	**0.2**	**0.7**	**0.02**	**0.01**	**0.4**	**0.1**
31271	3	2004												
31271	3	2004	27.1	0.11	<d.l.	0.46	179	0.4	1.2	39.0	0.03	0.06	3.2	1.5
31273	3	2004	32.7	0.06	<d.l.	0.42	378	0.4	7.8	60.8	0.04	0.11	5.3	1.6
31274	3	2004	27.5	0.09	<d.l.	0.53	291	0.4	10.4	77.1	0.04	0.15	2.6	2.5
31276	3	2004	28.1	0.03	0.44	0.47	209	0.4	3.7	52.8	0.03	0.07	1.9	1.1
31277	3	2004	32.5	0.07	<d.l.	0.52	320	0.4	7.1	72.0	0.04	0.16	2.7	1.4
31278	3	2004	27.4	<d.l.	<d.l.	0.48	160	0.5	3.7	56.2	0.04	0.09	2.7	1.0
31280	3	2004	24.2	0.03	<d.l.	0.32	65	<d.l.	2.1	38.7	0.03	0.05	3.7	1.9
31283	3	2004	31.3	<d.l.	<d.l.	0.68	265	<d.l.	2.1	48.4	0.03	0.05	2.5	1.3
31284	3	2004	32.0	0.02	<d.l.	0.47	105	<d.l.	2.1	44.7	0.03	0.06	7.2	1.2
31290	3	2004	33.3	0.08	<d.l.	0.62	366	<d.l.	7.4	53.6	0.03	0.06	3.3	2.2
31369	2	2004	38.5	0.07	<d.l.	0.67	859	<d.l.	6.1	84.5	0.03	0.11	4.1	1.3
31370	2	2004	35.3	0.06	<d.l.	1.04	168	<d.l.	2.7	53.6	0.03	0.05	6.7	0.9
31370	2	2004	29.0	0.06	<d.l.	1.04	166	<d.l.	2.2	51.6	0.04	0.05	9.6	1.1
31371	2	2004	30.0	0.03	<d.l.	0.56	280	<d.l.	3.4	59.8	0.03	0.16	5.4	1.5
31372	2	2004	29.9	0.02	<d.l.	0.61	226	<d.l.	4.2	71.1	0.03	0.07	2.4	1.2
31373	2	2004	33.8	0.15	<d.l.	0.79	132	<d.l.	9.3	55.8	0.03	0.05	9.0	2.1
31483	3	2004	35.1	<d.l.	<d.l.	0.87	59	<d.l.	1.8	46.2	0.03	0.04	2.9	1.2
31487	3	2004	34.4	0.01	<d.l.	0.81	82	<d.l.	2.2	63.5	0.03	0.14	7.6	1.1
31488	3	2004	32.8	<d.l.	<d.l.	0.78	166	<d.l.	2.8	43.5	0.03	0.07	2.4	1.4
31489	3	2004	25.4	0.41	<d.l.	0.67	593	<d.l.	11.2	99.4	0.04	0.24	64.5	5.1
31490	3	2004	27.8	0.01	<d.l.	0.58	115	<d.l.	4.6	40.0	0.03	0.04	8.7	1.0
31490	3	2004	26.4	<d.l.	<d.l.	0.53	109	<d.l.	4.4	38.7	0.03	0.04	8.2	0.9
33734	2	2005	21.2	0.02	<d.l.	0.42	101	<d.l.	2.7	22.0	0.03	0.03	2.1	0.9
33735	2	2005	28.0	0.11	<d.l.	0.51	209	<d.l.	6.9	32.8	0.03	0.07	2.0	1.8
33736	2	2005	24.8	0.02	<d.l.	0.58	126	<d.l.	1.7	35.9	0.03	0.05	4.6	1.4
33737	2	2005	22.1	0.11	<d.l.	0.38	172	<d.l.	1.9	24.3	0.03	0.05	6.3	2.1
33737	2	2005	22.5	0.11	<d.l.	0.44	182	<d.l.	2.2	26.0	0.03	0.05	6.4	2.0
33738	2	2005	19.8	<d.l.	<d.l.	0.42	52	<d.l.	0.8	26.0	0.03	0.03	7.8	1.3
33739	3	2005	35.1	0.14	<d.l.	0.81	128	<d.l.	5.6	46.5	0.03	0.07	7.0	2.5
33741	3	2005	26.6	0.06	<d.l.	0.53	82	<d.l.	2.9	26.9	0.03	0.04	9.3	1.8
33742	3	2005	24.1	0.02	<d.l.	0.52	114	<d.l.	1.2	23.5	0.03	0.06	0.8	0.8
33743	3	2005	25.3	0.02	<d.l.	0.48	101	<d.l.	3.5	24.7	0.03	0.04	2.1	1.5

ID No.	Area	Year	Ti	V	Cr	Mn	Fe	Ni	Cu	Zn	Ga	Co	As	Se
d.l.			**0.1**	**0.01**	**0.15**	**0.08**	**12**	**0.3**	**0.2**	**0.7**	**0.02**	**0.01**	**0.4**	**0.1**
33743	3	2005	24.9	<d.l.	<d.l.	0.52	108	<d.l.	3.3	24.6	0.03	0.04	2.3	1.5
33740	3	2005	27.5	0.14	0.18	0.80	208	0.3	5.6	50.0	0.03	0.07	7.0	3.0
33724	1	2005	23.9	<d.l.	<d.l.	0.50	67	<d.l.	0.6	36.5	0.03	0.03	2.3	1.1
33724	1	2005	25.0	<d.l.	<d.l.	0.55	60	<d.l.	0.7	36.4	0.03	0.02	2.1	1.1
33725	1	2005	20.5	<d.l.	<d.l.	0.62	68	<d.l.	1.0	31.4	0.03	0.03	3.7	1.3
33726	1	2005	20.9	<d.l.	<d.l.	0.68	37	<d.l.	0.6	30.6	0.03	0.02	3.0	1.0
33727	1	2005	22.5	<d.l.	<d.l.	0.71	138	<d.l.	1.1	41.4	0.03	0.08	3.2	1.0
33728	1	2005	18.2	0.02	<d.l.	0.39	144	0.4	2.3	31.6	0.03	0.09	5.9	1.4
33729	1	2005	20.0	0.02	<d.l.	0.65	116	<d.l.	2.2	1136??	0.02	0.39	2.6	0.9
33730	1	2005	21.8	0.05	<d.l.	0.41	189	<d.l.	1.6	38.1	0.03	0.07	6.1	1.1
33731	1	2005	21.6	<d.l.	<d.l.	0.74	89	<d.l.	3.3	38.0	0.03	0.04	2.7	0.9
33732	1	2005	24.1	0.07	<d.l.	0.71	451	<d.l.	0.5	42.7	0.03	0.05	4.8	1.6
33733	1	2005	20.1	0.02	<d.l.	0.47	219	<d.l.	0.8	19.2	0.03	0.04	4.3	1.0
35602	1	2006	2.3	0.04	<d.l.	0.36	36	<d.l.	0.4	22.4	<d.l.	<d.l.	3.6	0.8
35602	1	2006	2.4	0.04	<d.l.	0.31	39	<d.l.	0.4	23.6	<d.l.	<d.l.	3.3	0.8
35603	1	2006	2.8	0.07	<d.l.	0.42	23	<d.l.	1.0	22.2	<d.l.	0.01	1.9	1.2
35606	1	2006	3.1	0.05	<d.l.	0.46	93	<d.l.	0.6	26.8	<d.l.	0.02	5.1	1.2
35607	1	2006	3.1	0.07	<d.l.	0.49	131	<d.l.	0.7	34.7	<d.l.	0.03	2.6	0.9
35608	1	2006	2.2	0.05	<d.l.	0.25	49	<d.l.	0.7	19.0	<d.l.	<d.l.	2.4	1.2
35609	1	2006	2.6	0.06	<d.l.	0.45	47	<d.l.	0.8	29.0	<d.l.	0.02	4.3	1.2
35610	1	2006	2.1	0.08	0.16	0.29	55	<d.l.	0.9	22.3	<d.l.	0.01	1.3	0.9
35617	1	2006	2.6	0.07	<d.l.	0.28	63	<d.l.	0.7	20.3	<d.l.	0.03	5.0	1.0
35619	1	2006	2.1	0.07	<d.l.	0.32	34	<d.l.	0.9	23.7	<d.l.	0.02	1.4	1.0
35620	1	2006	3.1	0.23	<d.l.	0.68	230	<d.l.	0.7	28.8	<d.l.	0.05	2.8	1.9
35739	2	2006	2.3	0.06	<d.l.	0.50	258	<d.l.	2.1	31.2	<d.l.	0.05	6.4	1.3
35736	2	2006	2.9	0.06	<d.l.	0.44	320	<d.l.	1.0	35.9	<d.l.	0.11	3.1	1.2
35736	2	2006	2.9	0.04	<d.l.	0.38	260	<d.l.	0.9	27.3	<d.l.	0.10	3.0	1.0
35743	2	2006	2.0	0.04	<d.l.	0.37	59	<d.l.	1.0	21.1	<d.l.	0.02	1.9	0.9
35745	2	2006	1.7	0.02	<d.l.	0.24	87	<d.l.	1.1	17.3	<d.l.	0.04	3.5	0.5
35747	2	2006	2.4	0.05	<d.l.	0.35	91	<d.l.	1.0	26.0	<d.l.	0.04	3.0	1.2
35764	3	2006	1.8	0.04	<d.l.	0.31	25	<d.l.	0.8	23.2	<d.l.	0.02	2.9	0.7
35765	3	2006	1.9	0.10	<d.l.	0.56	354	<d.l.	0.8	48.3	<d.l.	0.06	6.7	2.5
35767	3	2006	2.9	0.08	<d.l.	0.43	152	<d.l.	2.2	38.7	<d.l.	0.06	4.2	1.9
35768	3	2006	2.0	0.06	<d.l.	0.23	195	<d.l.	2.6	22.9	<d.l.	0.07	2.8	1.1
35772	3	2006	2.1	0.06	<d.l.	0.33	127	<d.l.	1.4	35.7	<d.l.	0.06	1.7	2.1
37148	2	2007	1.5	<d.l.	<d.l.	0.61	64	<d.l.	1.6	18.7	<d.l.	<d.l.	2.3	0.8
37149	2	2007	1.3	<d.l.	<d.l.	0.50	50	<d.l.	0.7	22.0	<d.l.	0.02	3.1	0.8
37150	2	2007	1.4	<d.l.	<d.l.	0.39	18	<d.l.	0.8	17.3	<d.l.	0.05	6.8	0.7
37151	2	2007	1.3	<d.l.	<d.l.	0.50	35	<d.l.	0.9	17.4	<d.l.	0.07	3.2	1.0
37152	2	2007	1.8	<d.l.	<d.l.	0.97	83	1.1	0.9	25.0	<d.l.	0.08	2.2	0.8
37153	2	2007	2.6	0.26	<d.l.	0.62	74	<d.l.	0.9	20.7	0.03	0.01	3.1	1.1
37154	2	2007	1.2	0.01	<d.l.	0.51	37	<d.l.	1.5	20.5	<d.l.	0.03	4.5	0.9
37155	2	2007	1.3	<d.l.	<d.l.	0.60	101	<d.l.	1.8	21.2	<d.l.	0.15	2.7	0.9
37156	2	2007	1.1	<d.l.	<d.l.	0.42	63	<d.l.	1.2	19.9	<d.l.	0.03	4.5	0.8
37157	2	2007	1.8	<d.l.	<d.l.	0.64	24	<d.l.	0.8	19.0	<d.l.	<d.l.	3.2	0.9
37158	2	2007	1.4	<d.l.	<d.l.	0.39	32	<d.l.	0.6	16.5	<d.l.	0.03	7.0	0.9
37159	2	2007	1.5	<d.l.	<d.l.	0.47	73	<d.l.	0.7	19.7	<d.l.	0.03	2.6	0.7
37160	2	2007	1.4	<d.l.	<d.l.	0.97	53	<d.l.	1.3	26.8	<d.l.	0.04	1.7	0.8
37161	2	2007	1.6	<d.l.	<d.l.	0.52	108	<d.l.	0.8	29.2	<d.l.	0.01	1.4	0.8
37162	2	2007	1.4	<d.l.	<d.l.	0.70	123	<d.l.	1.0	24.3	<d.l.	0.07	5.2	1.3
37163	2	2007	1.7	<d.l.	<d.l.	1.16	45	<d.l.	3.1	30.7	<d.l.	0.03	2.3	0.8

ID No.	Area	Year	Ti	V	Cr	Mn	Fe	Ni	Cu	Zn	Ga	Co	As	Se
d.l.			**0.1**	**0.01**	**0.15**	**0.08**	**12**	**0.3**	**0.2**	**0.7**	**0.02**	**0.01**	**0.4**	**0.1**
37164	2	2007	1.4	<d.l.	<d.l.	0.66	25	<d.l.	0.7	23.9	<d.l.	0.02	1.5	0.7
37165	2	2007	1.6	<d.l.	<d.l.	0.60	36	<d.l.	1.4	28.2	<d.l.	0.05	1.7	0.8
37166	2	2007	1.9	0.04	<d.l.	1.33	85	<d.l.	1.5	29.0	<d.l.	0.03	1.5	0.9
37167	2	2007	1.4	0.07	<d.l.	0.48	210	<d.l.	2.7	28.3	<d.l.	0.08	5.0	1.5
37167	2	2007	1.2	0.06	<d.l.	0.38	154	<d.l.	2.3	24.1	<d.l.	0.06	4.6	1.4
37236	1	2007	1.7	<d.l.	<d.l.	0.70	143	<d.l.	1.5	31.7	<d.l.	0.07	2.3	0.6
37237	1	2007	1.8	<d.l.	<d.l.	0.70	67	<d.l.	2.0	39.3	<d.l.	0.05	2.1	0.8
37255	1	2007	1.8	<d.l.	<d.l.	0.88	201	0.4	2.4	41.0	<d.l.	0.10	5.6	0.9
37256	1	2007	1.8	<d.l.	<d.l.	0.62	96	<d.l.	1.4	27.8	<d.l.	0.05	3.3	1.1
37257	1	2007	1.8	0.67	<d.l.	1.52	554	1.0	19.5	41.4	<d.l.	1.02	19.9	4.3
37258	1	2007	1.7	0.11	<d.l.	0.53	202	<d.l.	1.2	33.1	<d.l.	0.06	6.4	1.6
37259	1	2007	1.5	0.22	0.19	3.08	348	0.4	7.4	33.5	<d.l.	0.18	4.7	1.5
37260	1	2007	1.5	0.03	<d.l.	1.09	95	<d.l.	1.5	28.8	<d.l.	0.06	1.5	1.1
37261	1	2007	1.6	0.15	<d.l.	1.26	457	1.6	3.5	26.4	<d.l.	0.70	7.5	2.3
37262	1	2007	1.4	0.02	<d.l.	0.40	63	<d.l.	1.0	20.2	<d.l.	0.04	4.2	1.2
37262	1	2007	1.5	0.02	<d.l.	0.45	54	<d.l.	1.2	23.5	<d.l.	0.05	4.7	1.4
37263	1	2007	1.6	0.02	<d.l.	0.92	128	<d.l.	1.4	24.5	<d.l.	0.06	3.2	0.8
37264	1	2007	1.3	<d.l.	<d.l.	0.60	55	<d.l.	1.3	22.4	<d.l.	0.06	3.3	0.8
37265	1	2007	1.5	<d.l.	<d.l.	0.49	60	<d.l.	1.4	30.0	<d.l.	0.06	3.8	1.0
37266	1	2007			<d.l.			<d.l.	1.9	37.3		0.07	4.8	1.0
37267	1	2007			<d.l.			<d.l.	2.7	28.9		0.11	7.3	1.7
37268	1	2007			<d.l.			<d.l.	1.8	31.8		0.05	3.2	1.0
37269	1	2007			<d.l.			<d.l.	4.3	46.5		0.08	4.8	1.4

ID No.	Area	Year	Rb	Sr	Y	Zr	Mo	Rh	Pd	Ag	Cd	Sn	Sb	Cs
d.l.			**0.0**	**0.5**	**0.003**	**0.04**	**0.11**	**0.001**	**0.01**	**0.01**	**0.02**	**0.04**	**0.03**	**0.01**
31271	3	2004												
31271	3	2004	0.5	1.6	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	0.17	1.48	<d.l.	<d.l.	0.02
31273	3	2004	0.4	0.8	0.003	<d.l.	0.13	<d.l.	<d.l.	0.70	2.10	<d.l.	<d.l.	0.02
31274	3	2004	0.3	1.8	<d.l.	<d.l.	0.12	<d.l.	<d.l.	0.50	5.55	<d.l.	<d.l.	0.01
31276	3	2004	0.3	1.1	<d.l.	<d.l.	0.18	<d.l.	<d.l.	0.46	0.71	<d.l.	<d.l.	0.01
31277	3	2004	0.8	0.6	<d.l.	<d.l.	0.12	<d.l.	<d.l.	0.43	1.46	<d.l.	<d.l.	0.03
31278	3	2004	0.5	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	0.29	0.40	<d.l.	<d.l.	0.02
31280	3	2004	0.7	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	0.50	0.42	<d.l.	<d.l.	0.02
31283	3	2004	0.4	<d.l.	<d.l.	<d.l.	0.12	<d.l.	<d.l.	0.13	0.35	<d.l.	<d.l.	0.01
31284	3	2004	0.4	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	0.32	0.73	<d.l.	<d.l.	0.02
31290	3	2004	0.5	<d.l.	0.004	<d.l.	0.11	<d.l.	<d.l.	0.42	1.65	<d.l.	<d.l.	0.02
31369	2	2004	0.6	0.8	0.005	<d.l.	0.11	<d.l.	<d.l.	0.43	8.22	<d.l.	<d.l.	0.02
31370	2	2004	0.8	<d.l.	<d.l.	<d.l.	0.13	<d.l.	<d.l.	0.55	0.89	<d.l.	<d.l.	0.02
31370	2	2004	0.7	0.6	<d.l.	<d.l.	0.12	<d.l.	<d.l.	0.45	0.84	<d.l.	<d.l.	0.03
31371	2	2004	0.5	0.5	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	0.28	0.73	<d.l.	<d.l.	0.03
31372	2	2004	0.7	0.8	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	0.30	0.93	<d.l.	<d.l.	0.02
31373	2	2004	0.5	0.9	<d.l.	<d.l.	0.12	<d.l.	<d.l.	0.55	1.50	<d.l.	<d.l.	0.02
31483	3	2004	0.5	0.9	<d.l.	<d.l.	0.13	<d.l.	<d.l.	0.21	0.65	<d.l.	<d.l.	0.02
31487	3	2004	0.4	0.8	<d.l.	<d.l.	0.13	<d.l.	<d.l.	0.13	0.99	<d.l.	<d.l.	0.02
31488	3	2004	0.6	0.7	<d.l.	<d.l.	0.12	<d.l.	<d.l.	0.21	0.39	<d.l.	<d.l.	0.02
31489	3	2004	0.4	0.9	0.006	<d.l.	0.15	<d.l.	<d.l.	0.52	6.01	<d.l.	<d.l.	0.03
31490	3	2004	0.6	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	0.41	0.77	<d.l.	<d.l.	0.02

ID No.	Area	Year	Rb	Sr	Y	Zr	Mo	Rh	Pd	Ag	Cd	Sn	Sb	Cs
d.l.			**0.0**	**0.5**	**0.003**	**0.04**	**0.11**	**0.001**	**0.01**	**0.01**	**0.02**	**0.04**	**0.03**	**0.01**
31490	3	2004	0.6	0.6	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	0.39	0.71	<d.l.	<d.l.	0.02
33734	2	2005	0.5	1.5	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	0.20	0.54	<d.l.	<d.l.	0.02
33735	2	2005	0.3	12.1	<d.l.	<d.l.	0.11	<d.l.	<d.l.	0.49	1.56	<d.l.	<d.l.	0.01
33736	2	2005	0.6	1.3	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	0.22	0.49	<d.l.	<d.l.	0.01
33737	2	2005	0.7	0.6	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	0.08	0.91	<d.l.	<d.l.	0.02
33737	2	2005	0.6	0.8	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	0.11	1.08	<d.l.	<d.l.	0.02
33738	2	2005	0.7	1.1	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	0.04	0.59	<d.l.	<d.l.	0.03
33739	3	2005	0.6	1.1	<d.l.	<d.l.	0.18	<d.l.	<d.l.	0.35	1.55	<d.l.	<d.l.	0.02
33741	3	2005	0.4	2.8	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	0.31	0.56	<d.l.	<d.l.	0.02
33742	3	2005	0.5	1.0	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	0.11	0.83	<d.l.	<d.l.	0.02
33743	3	2005	0.5	6.4	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	0.27	0.42	<d.l.	<d.l.	0.01
33743	3	2005	0.5	1.4	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	0.26	0.39	<d.l.	<d.l.	0.01
33740	3	2005	0.5	1.0	<d.l.	<d.l.	0.18	<d.l.	<d.l.	0.34	1.34	<d.l.	<d.l.	0.02
33724	1	2005	0.5	1.3	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	0.02	0.11	<d.l.	<d.l.	0.01
33724	1	2005	0.5	0.9	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	0.05	0.13	<d.l.	<d.l.	0.01
33725	1	2005	0.6	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	0.14	0.13	<d.l.	<d.l.	0.02
33726	1	2005	0.6	0.5	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	0.02	0.24	<d.l.	<d.l.	0.02
33727	1	2005	0.5	0.6	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	0.04	0.51	<d.l.	<d.l.	0.01
33728	1	2005	0.5	0.7	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	0.12	0.20	<d.l.	<d.l.	0.02
33729	1	2005	0.4	1.2	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	0.24	0.63	<d.l.	<d.l.	0.01
33730	1	2005	0.4	0.7	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	0.13	0.26	<d.l.	<d.l.	0.01
33731	1	2005	0.4	1.6	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	0.22	0.56	<d.l.	<d.l.	0.01
33732	1	2005	0.6	0.9	<d.l.	<d.l.	0.11	<d.l.	<d.l.	0.02	0.88	<d.l.	<d.l.	0.02
33733	1	2005	0.6	1.7	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	0.03	0.46	<d.l.	<d.l.	0.02
35602	1	2006	0.4	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	0.17	<d.l.	<d.l.	0.01
35602	1	2006	0.3	0.6	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	0.16	<d.l.	<d.l.	0.01
35603	1	2006	0.5	0.6	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	0.10	<d.l.	<d.l.	0.01
35606	1	2006	0.4	1.6	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	0.31	<d.l.	<d.l.	0.01
35607	1	2006	0.3	1.6	0.004	<d.l.	<d.l.	<d.l.	<d.l.	0.08	0.19	<d.l.	<d.l.	0.01
35608	1	2006	0.4	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	0.11	<d.l.	<d.l.	0.01
35609	1	2006	0.4	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	0.17	<d.l.	<d.l.	0.01
35610	1	2006	0.4	0.6	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	0.02	0.16	<d.l.	<d.l.	0.01
35617	1	2006	0.3	0.9	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	0.12	<d.l.	<d.l.	0.01
35619	1	2006	0.3	0.7	<d.l.	<d.l.	<d.l.	<d.l.	0.01	0.13	0.68	<d.l.	<d.l.	0.01
35620	1	2006	0.2	3.8	0.005	<d.l.	<d.l.	<d.l.	<d.l.	0.40	0.88	<d.l.	<d.l.	0.01
35739	2	2006	0.5	1.0	<d.l.	<d.l.	<d.l.	<d.l.	0.01	0.17	2.04	<d.l.	<d.l.	0.01
35736	2	2006	0.3	9.7	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	0.32	2.48	<d.l.	<d.l.	0.01
35736	2	2006	0.3	11.8	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	0.25	1.90	<d.l.	<d.l.	0.01
35743	2	2006	0.4	1.3	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	0.03	0.20	<d.l.	<d.l.	0.01
35745	2	2006	0.5	1.2	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	0.12	0.85	<d.l.	<d.l.	0.01
35747	2	2006	0.3	1.6	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	0.04	0.30	<d.l.	<d.l.	0.01
35764	3	2006	0.3	0.7	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	0.21	<d.l.	<d.l.	0.01
35765	3	2006	0.2	4.4	0.003	<d.l.	<d.l.	<d.l.	<d.l.	0.21	0.65	<d.l.	<d.l.	0.01
35767	3	2006	0.3	8.5	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	0.33	1.28	<d.l.	<d.l.	0.01
35768	3	2006	0.3	5.3	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	0.13	0.18	<d.l.	<d.l.	0.01
35772	3	2006	0.3	2.4	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	0.11	0.31	<d.l.	<d.l.	0.01
37148	2	2007	0.7	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	0.08	0.24	<d.l.	<d.l.	0.01
37149	2	2007	1.3	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	0.23	<d.l.	<d.l.	0.02
37150	2	2007	1.1	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	0.02	0.24	<d.l.	<d.l.	0.02
37151	2	2007	0.8	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	0.04	0.25	<d.l.	<d.l.	0.01
37152	2	2007	1.0	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	0.16	<d.l.	<d.l.	0.01

ID No.	Area	Year	Rb	Sr	Y	Zr	Mo	Rh	Pd	Ag	Cd	Sn	Sb	Cs
d.l.			**0.0**	**0.5**	**0.003**	**0.04**	**0.11**	**0.001**	**0.01**	**0.01**	**0.02**	**0.04**	**0.03**	**0.01**
37153	2	2007	1.7	<d.l.	<d.l.	0.09	<d.l.	<d.l.	0.01	0.02	0.22	<d.l.	<d.l.	0.02
37154	2	2007	1.1	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	0.01	0.02	0.20	<d.l.	<d.l.	0.02
37155	2	2007	1.1	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	0.17	0.97	<d.l.	<d.l.	0.01
37156	2	2007	0.9	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	0.01	0.05	0.26	0.09	<d.l.	0.02
37157	2	2007	1.0	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	0.07	0.23	<d.l.	<d.l.	0.01
37158	2	2007	1.2	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	0.33	<d.l.	<d.l.	0.02
37159	2	2007	1.0	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	0.02	0.19	<d.l.	<d.l.	0.01
37160	2	2007	1.3	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	0.23	<d.l.	<d.l.	0.01
37161	2	2007	0.9	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	0.32	<d.l.	<d.l.	<d.l.
37162	2	2007	1.5	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	0.43	<d.l.	<d.l.	0.02
37163	2	2007	0.7	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	0.20	0.35	<d.l.	<d.l.	0.01
37164	2	2007	0.6	<d.l.	<d.l.	0.07	<d.l.	<d.l.	<d.l.	0.01	0.18	<d.l.	<d.l.	0.01
37165	2	2007	0.7	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	0.03	0.39	<d.l.	<d.l.	<d.l.
37166	2	2007	0.8	0.6	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	0.19	0.33	<d.l.	<d.l.	0.01
37167	2	2007	1.4	0.8	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	0.22	0.72	<d.l.	<d.l.	0.02
37167	2	2007	1.2	0.8	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	0.18	0.66	<d.l.	<d.l.	0.02
37236	1	2007	0.8	1.0	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	0.02	0.28	<d.l.	<d.l.	0.02
37237	1	2007	0.9	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	0.14	0.42	<d.l.	<d.l.	0.01
37255	1	2007	1.0	0.5	<d.l.	0.05	<d.l.	<d.l.	<d.l.	0.07	0.34	<d.l.	<d.l.	0.01
37256	1	2007	1.0	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	0.12	0.25	<d.l.	<d.l.	0.02
37257	1	2007	0.7	1.6	<d.l.	<d.l.	0.16	<d.l.	<d.l.	0.41	7.07	<d.l.	<d.l.	0.01
37258	1	2007	0.7	0.6	0.004	0.09	<d.l.	<d.l.	0.02	0.47	0.27	<d.l.	<d.l.	0.01
37259	1	2007	0.8	1.7	<d.l.	<d.l.	0.22	<d.l.	0.02	0.54	1.05	<d.l.	<d.l.	0.01
37260	1	2007	1.1	0.5	<d.l.	0.07	0.11	<d.l.	0.02	0.13	0.76	<d.l.	<d.l.	0.01
37261	1	2007	0.8	0.8	<d.l.	<d.l.	0.11	<d.l.	0.01	0.52	1.35	<d.l.	<d.l.	0.01
37262	1	2007	0.9	1.4	<d.l.	<d.l.	<d.l.	<d.l.	0.01	0.09	0.76	<d.l.	<d.l.	0.01
37262	1	2007	1.0	1.0	<d.l.	<d.l.	<d.l.	<d.l.	0.01	0.11	0.93	<d.l.	<d.l.	0.01
37263	1	2007	0.8	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	0.01	0.09	0.34	<d.l.	<d.l.	0.01
37264	1	2007	1.2	<d.l.	<d.l.	0.04	<d.l.	<d.l.	0.01	0.22	0.32	<d.l.	<d.l.	0.01
37265	1	2007	0.8	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	0.01	0.07	0.40	<d.l.	<d.l.	0.01
37266	1	2007					0.14				0.50			
37267	1	2007					<d.l.				0.41			
37268	1	2007					0.12				0.84			
37269	1	2007					0.15				1.05			

ID No.	Area	Year	Ba	La	Ce	Nd	Ta	W	Au	Hg	Tl	Pb	Bi	Th	U
d.l.			**0.05**	**0.005**	**0.009**	**0.004**	**0.012**	**0.03**	**0.05**	**0.05**	**0.03**	**0.03**	**0.007**	**0.012**	**0.007**
31271	3	2004													
31271	3	2004	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	0.20	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.
31273	3	2004	<d.l.	0.008	<d.l.	0.007	<d.l.	<d.l.	<d.l.	0.18	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.
31274	3	2004	<d.l.	0.007	<d.l.	0.006	<d.l.	<d.l.	<d.l.	0.27	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.
31276	3	2004	<d.l.	<d.l.	<d.l.	0.005	<d.l.	<d.l.	<d.l.	0.13	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.
31277	3	2004	<d.l.	<d.l.	<d.l.	0.004	<d.l.	<d.l.	<d.l.	0.17	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.
31278	3	2004	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	0.10	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.
31280	3	2004	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	0.07	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.
31283	3	2004	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	0.09	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.
31284	3	2004	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	0.14	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.
31290	3	2004	<d.l.	0.008	<d.l.	0.007	<d.l.	<d.l.	<d.l.	0.16	<d.l.	<d.l.	0.007	<d.l.	<d.l.
31369	2	2004	<d.l.	0.008	<d.l.	0.007	<d.l.	<d.l.	<d.l.	0.22	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.

ID No.	Area	Year	Ba	La	Ce	Nd	Ta	W	Au	Hg	Tl	Pb	Bi	Th	U
d.l.			**0.05**	**0.005**	**0.009**	**0.004**	**0.012**	**0.03**	**0.05**	**0.05**	**0.03**	**0.03**	**0.007**	**0.012**	**0.007**
31370	2	2004	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	0.16	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.
31370	2	2004	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	0.16	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.
31371	2	2004	<d.l.	<d.l.	<d.l.	0.004	<d.l.	<d.l.	<d.l.	0.23	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.
31372	2	2004	<d.l.	<d.l.	<d.l.	0.004	<d.l.	<d.l.	<d.l.	0.12	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.
31373	2	2004	<d.l.	<d.l.	<d.l.	0.004	<d.l.	<d.l.	<d.l.	0.19	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.
31483	3	2004	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	0.07	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.
31487	3	2004	<d.l.	0.043	0.039	0.015	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.
31488	3	2004	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	0.07	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.
31489	3	2004	<d.l.	0.016	0.012	0.013	<d.l.	<d.l.	<d.l.	0.21	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.
31490	3	2004	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	0.07	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.
31490	3	2004	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	0.07	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.
33734	2	2005	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	0.09	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.
33735	2	2005	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	0.20	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.
33736	2	2005	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	0.11	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.
33737	2	2005	<d.l.	<d.l.	<d.l.	0.004	<d.l.	<d.l.	<d.l.	0.10	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.
33737	2	2005	0.09	0.007	<d.l.	0.006	<d.l.	<d.l.	<d.l.	0.27	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.
33738	2	2005	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	0.12	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.
33739	3	2005	<d.l.	0.009	0.010	0.007	<d.l.	<d.l.	<d.l.	0.12	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.
33741	3	2005	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	0.24	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.
33742	3	2005	<d.l.	<d.l.	<d.l.	0.005	<d.l.	<d.l.	<d.l.	0.07	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.
33743	3	2005	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	0.08	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.
33743	3	2005	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	0.09	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.
33740	3	2005	<d.l.	0.011	0.013	0.008	<d.l.	<d.l.	<d.l.	0.13	<d.l.	<d.l.	<d.l.	<d.l.	0.008
33724	1	2005	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	0.07	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.
33724	1	2005	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	0.06	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.
33725	1	2005	<d.l.	<d.l.	<d.l.	0.004	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.
33726	1	2005	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.
33727	1	2005	<d.l.	0.006	<d.l.	0.004	<d.l.	<d.l.	<d.l.	0.09	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.
33728	1	2005	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	0.08	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.
33729	1	2005	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	0.05	<d.l.	0.07	<d.l.	<d.l.	<d.l.
33730	1	2005	<d.l.	<d.l.	<d.l.	0.004	<d.l.	<d.l.	<d.l.	0.08	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.
33731	1	2005	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.
33732	1	2005	<d.l.	0.006	<d.l.	0.005	<d.l.	<d.l.	<d.l.	0.11	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.
33733	1	2005	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	0.07	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.
35602	1	2006	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	0.11	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.
35602	1	2006	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	0.11	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.
35603	1	2006	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.
35606	1	2006	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	0.05	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.
35607	1	2006	<d.l.	0.007	<d.l.	0.007	<d.l.	<d.l.	<d.l.	0.07	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.
35608	1	2006	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.
35609	1	2006	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.
35610	1	2006	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.
35617	1	2006	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	0.06	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.
35619	1	2006	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	0.07	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.
35620	1	2006	0.20	0.013	0.023	0.014	<d.l.	<d.l.	<d.l.	0.11	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.
35739	2	2006	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	0.18	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.
35736	2	2006	<d.l.	0.007	<d.l.	0.004	<d.l.	<d.l.	<d.l.	0.20	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.
35736	2	2006	<d.l.	0.005	<d.l.	0.004	<d.l.	<d.l.	<d.l.	0.17	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.
35743	2	2006	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.
35745	2	2006	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	0.06	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.

ID No.	Area	Year	Ba	La	Ce	Nd	Ta	W	Au	Hg	Tl	Pb	Bi	Th	U
d.l.			**0.05**	**0.005**	**0.009**	**0.004**	**0.012**	**0.03**	**0.05**	**0.05**	**0.03**	**0.03**	**0.007**	**0.012**	**0.007**
35747	2	2006	0.10	0.011	0.016	0.009	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.
35764	3	2006	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	0.07	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.
35765	3	2006	<d.l.	0.005	<d.l.	0.004	<d.l.	<d.l.	<d.l.	0.28	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.
35767	3	2006	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	0.06	0.23	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.
35768	3	2006	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.
35772	3	2006	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	0.06	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.
37148	2	2007	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.
37149	2	2007	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	0.05	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.
37150	2	2007	0.06	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	0.08	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.
37151	2	2007	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	0.06	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.
37152	2	2007	0.07	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.
37153	2	2007	0.12	<d.l.	<d.l.	<d.l.	0.019	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.
37154	2	2007	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.
37155	2	2007	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.
37156	2	2007	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.
37157	2	2007	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.
37158	2	2007	0.08	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.
37159	2	2007	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.
37160	2	2007	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	0.07	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.
37161	2	2007	<d.l.	<d.l.	<d.l.	<d.l.	0.024	<d.l.	<d.l.	0.05	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.
37162	2	2007	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	0.06	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.
37163	2	2007	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	0.05	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.
37164	2	2007	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	0.05	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.
37165	2	2007	<d.l.	<d.l.	<d.l.	<d.l.	0.065	<d.l.	<d.l.	0.05	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.
37166	2	2007	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.
37167	2	2007	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	0.14	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.
37167	2	2007	0.09	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	0.12	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.
37236	1	2007	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	0.09	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.
37237	1	2007	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	0.06	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.
37255	1	2007	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	0.10	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.
37256	1	2007	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.
37257	1	2007	<d.l.	0.018	0.015	0.008	<d.l.	<d.l.	<d.l.	0.34	<d.l.	0.08	<d.l.	<d.l.	<d.l.
37258	1	2007	<d.l.	0.009	<d.l.	0.005	<d.l.	<d.l.	<d.l.	0.08	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.
37259	1	2007	<d.l.	0.007	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	0.06	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.
37260	1	2007	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	0.15	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.
37261	1	2007	<d.l.	0.023	0.031	0.014	<d.l.	<d.l.	<d.l.	0.23	<d.l.	<d.l.	0.007	<d.l.	<d.l.
37262	1	2007	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	0.07	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.
37262	1	2007	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	0.07	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.
37263	1	2007	<d.l.	0.006	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.
37264	1	2007	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	0.10	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.
37265	1	2007	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	0.08	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.
37266	1	2007							<d.l.	0.09		<d.l.			<d.l.
37267	1	2007							<d.l.	<d.l.		<d.l.			<d.l.
37268	1	2007							<d.l.	0.11		<d.l.			<d.l.
37269	1	2007							<d.l.	0.11		<d.l.			<d.l.

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