Ministry of Energy and Mineral Resources

The Hashemite Kingdom Of Jordan

JABAL BIR TANAK

"PROPOSED AREA FOR INVESTMENT OPPORTUNITY"

"Base Metals"

"Brief"

Geology and Mining Directorate

Geological and Geochemical Surveys Division

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1. OVERVIEW

1.1. Objective

The aim is to open the area for private sector investment for exploration as it has been identified through a previous regional geochemical survey as containing significant anomalies indicating the presence of zinc and lead.

1.2. Area of Interest

The proposed area is located in the Aqaba Governorate region, about 11 km east of the city of Aqaba, and encompassing approximately 150 km^2 (Table-1) (Fig. 1).

Its proximity to infrastructures such as tarmac roads, power lines, and the Aqaba port, enhances the project's development potential.

High mountains with rugged surfaces form the prominent terrain element with wide, deeply incised valleys. Elevations range from 442m to 1612m a.m.s.l (Fig. 2).

Table 1: Jabal Bir Tanak proposed investment area coordinates.

P	X (WGS 84 / UTM 36N)	Y (WGS 84 / UTM 36N)
1	716297	3261831
2	712072	3262272
3	710361	3264559
4	709169	3265532
5	705929	3269034
6	710888	3276480
7	721009	3274809
8	721520	3270839

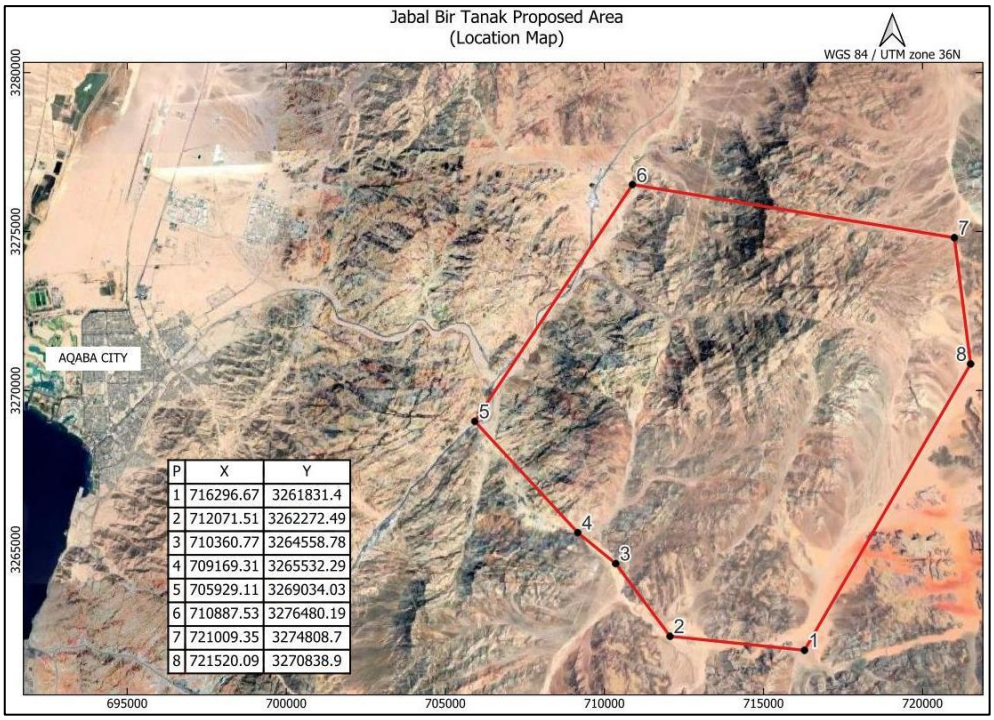

Figure 1: Location map of Jabal Bir Tanak proposed area.

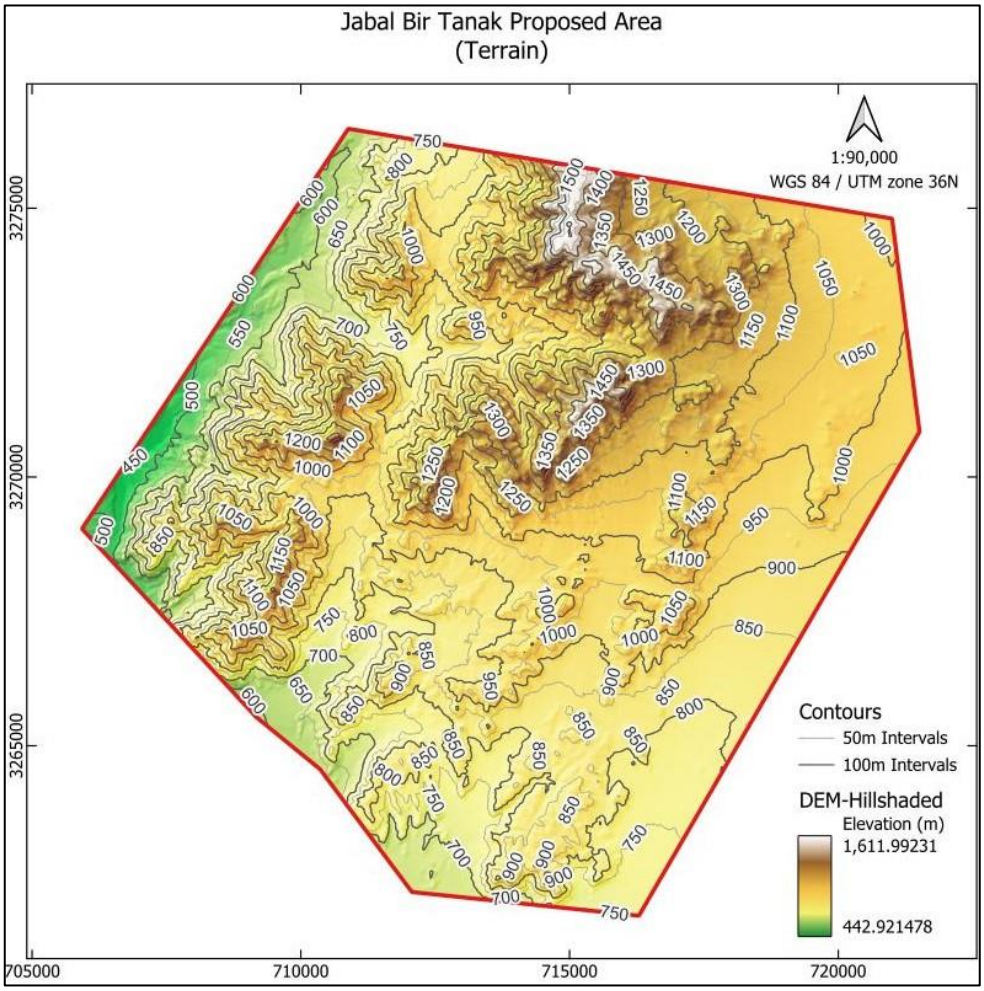

Figure 2: DEM and elevations of Jabal Bir Tanak proposed area.

1.3. Previous Work

A regional geochemical survey was conducted on the basement igneous rocks in the southern part of the Kingdom by the Geochemical Survey Division (formerly part of the Natural Resources Authority), in cooperation with the French Geological Survey (BRGM). The survey involved collecting samples of stream sediments and heavy minerals.

This survey, reported in 1994, identified several areas in the Aqaba and Wadi Araba regions that contained elements at above-normal concentrations, known as geochemical anomalies.

These elements included zinc, lead, copper, and other elements, which suggest the presence of mineralized zones.

The study recommended continued exploration in these anomaly areas in detail, including the proposed Jabal Bir Tanak area.

2. REGIONAL BACKGROUND

2.1. Geological Setting

The proposed area is underlain by basement igneous rocks, which are considered the northernmost extension of the Arabian-Nubian Shield, with a limited and isolated sedimentary cover from the Salib Arkoses Sandstone Formation in the south of the area (Fig. 3).

The igneous rocks are primarily represented by the Yutum Granite suite and the Ruman Granodiorite suite, which has a geochemical profile rich in iron group elements with a more potassic fringe of an alkaline tendency (BRGM, 1994).

The Yutum suite contains outcrops of the Imran monzogranite and the Abu Jeddah granite units, while the Ruman suite consists of the Sabil granodiorite unit, which shows Ba enrichment, and Qara granite unit.

The area is interspersed with acidic and basic dykes in two main directions: NE-SW and E-W, with other secondary directions, especially NW-SE.

The area is strongly influenced by structures associated with the Dead Sea Transform Fault System (DSTFS), which formed in the Miocene, as well as by Precambrian faults that contributed to the opening of the Red Sea and the submergence of the Aqaba Gulf by water near the end of the Miocene.

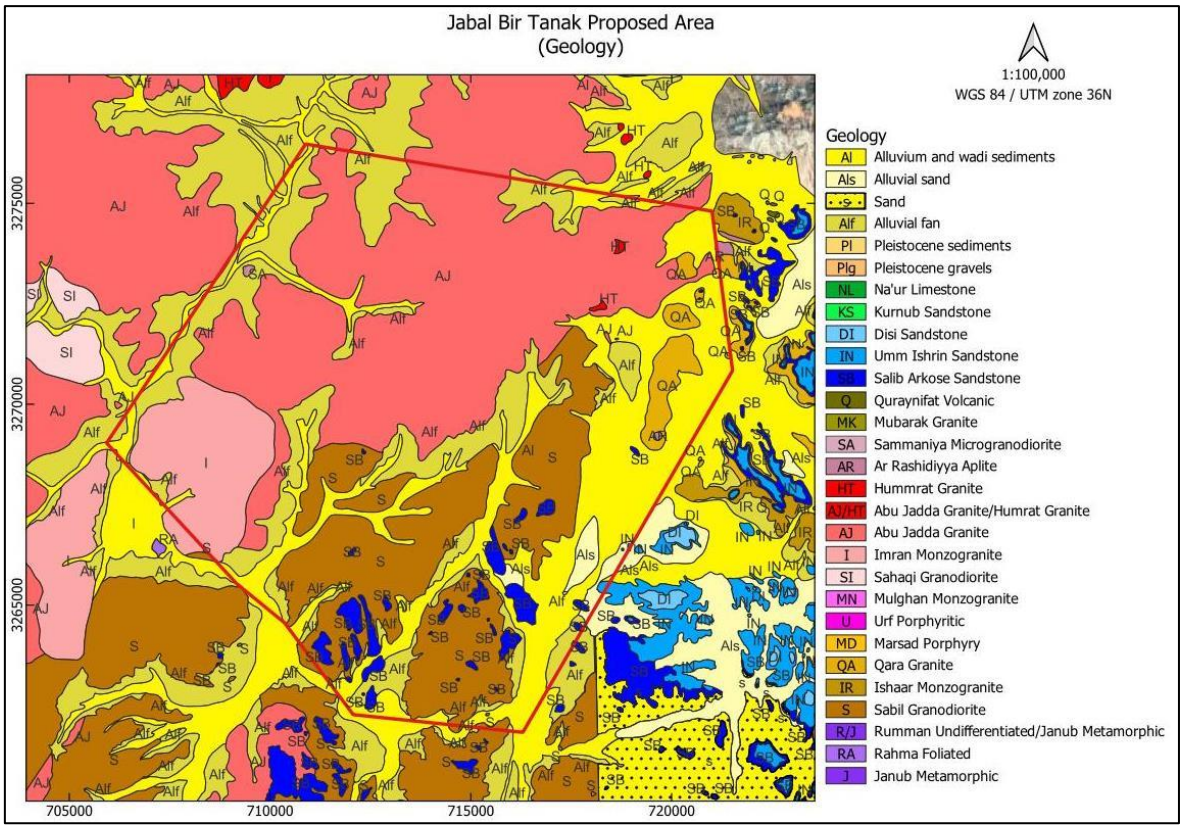

Figure 3: Geology of Jabal Bir Tanak proposed area. *Legend includes units other than those within the area's boundaries*.

2.2. Geochemical Survey Results

2.2.1. Survey Results

The Jabal Bir Tanak proposed area was surveyed by collecting stream sediment (SS) samples (Appendix 1).

The results from the BRGM regional geochemical survey provide valuable insights into the mineral potential of the proposed investment area (Table 2).

The survey identified significant geochemical anomalies that highlight prospective zones for mineral exploration (Fig. 4).

- **Zinc and Lead**

Zinc values up to 546 ppm were observed in stream sediment samples. Most of the highest values fell within the Abu Jeddah granite unit in the northern half of the area.

Lead values up to 67 ppm were observed in stream sediment samples. Most of the highest values fell within the Sabil granodiorite unit in the southern half of the area.

Table 2: Summary statistics of BRGM Zn, Pb, and Cu results.

	SS (ppm)		
	Zn	**Pb**	**Cu**
Min.	22.0	3.0	5.0
Max.	546.0	67.0	58.0
Range	524.0	64.0	53.0
Mean	136.5	37.4	16.8
St. Dev.	88.7	14.0	7.5
Qr1	97.0	30.0	13.5
Qr2	139.0	40.0	17.0
Qr3	197.0	51.0	20.0
Skew.	1.4	-0.1	1.7
kurt.	2.6	-0.8	5.9
$CI_{95\%}$	132.6-161	25.9-32.1	15.3-29.7

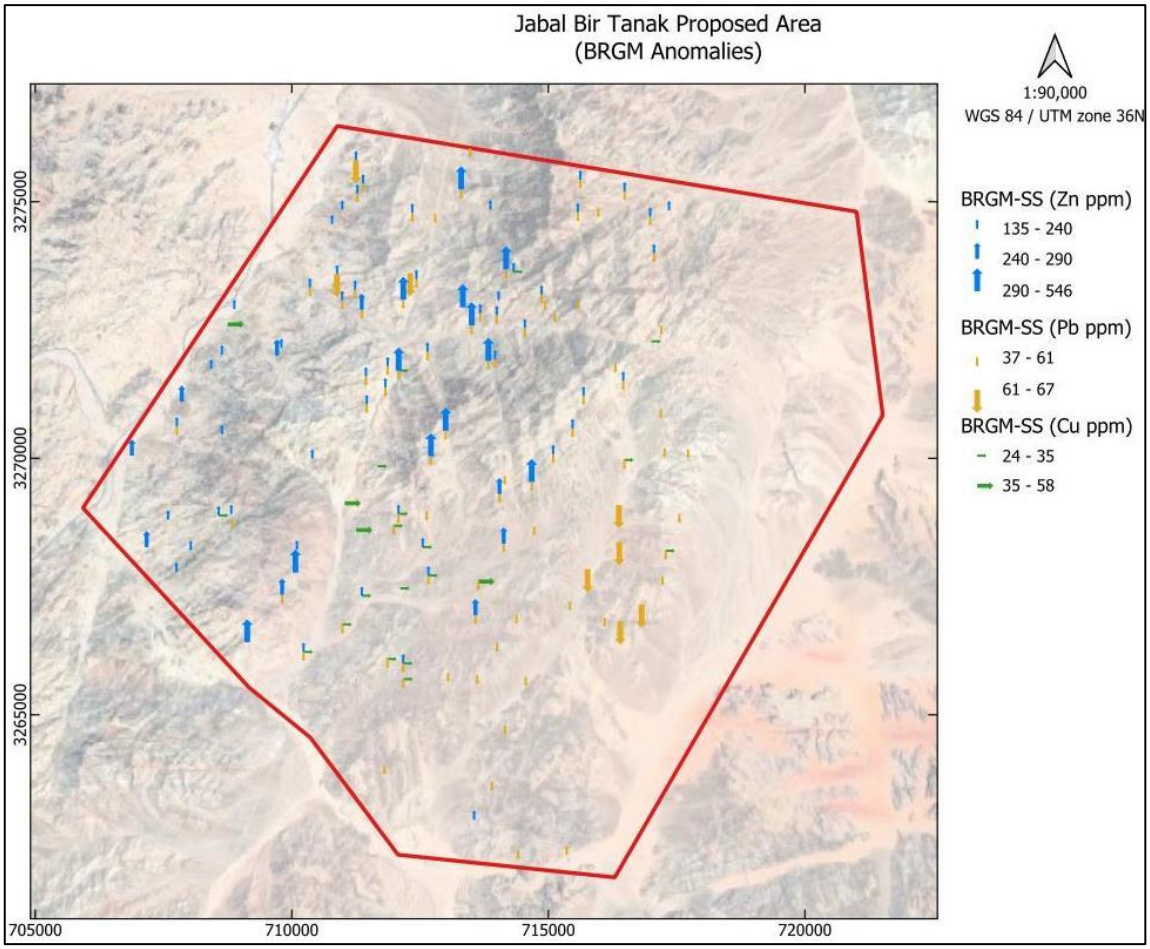

Figure 4: BRGM Zn, Pb, & Cu concentrations in SS samples.

2.2.2. Anomaly Areas

The survey results were mapped to identify three anomalous areas (Fig. 5), which are outlined as follows:

- **Anomaly-1 & 2 (western part)**

These two areas have anomalous Zn and high background Pb concentrations within the Abu Jeddah granite unit.

- **Anomaly-3 (eastern part)**

This area exhibits elevated Pb and Zn concentrations within the Sabil granodiorite unit.

Anomalous Ba values associated with high Pb were detected in two stream sediment samples (sample 425: 2765 ppm Ba & 59 ppm Pb; and sample 679: 7064 ppm Ba & 52 ppm Pb), and require further follow-up.

The identified anomaly areas were found to be almost identical to those identified by BRGM, with slight amendments (Fig. 6)

These anomalous areas represent the primary targets for further prospecting and exploration works.

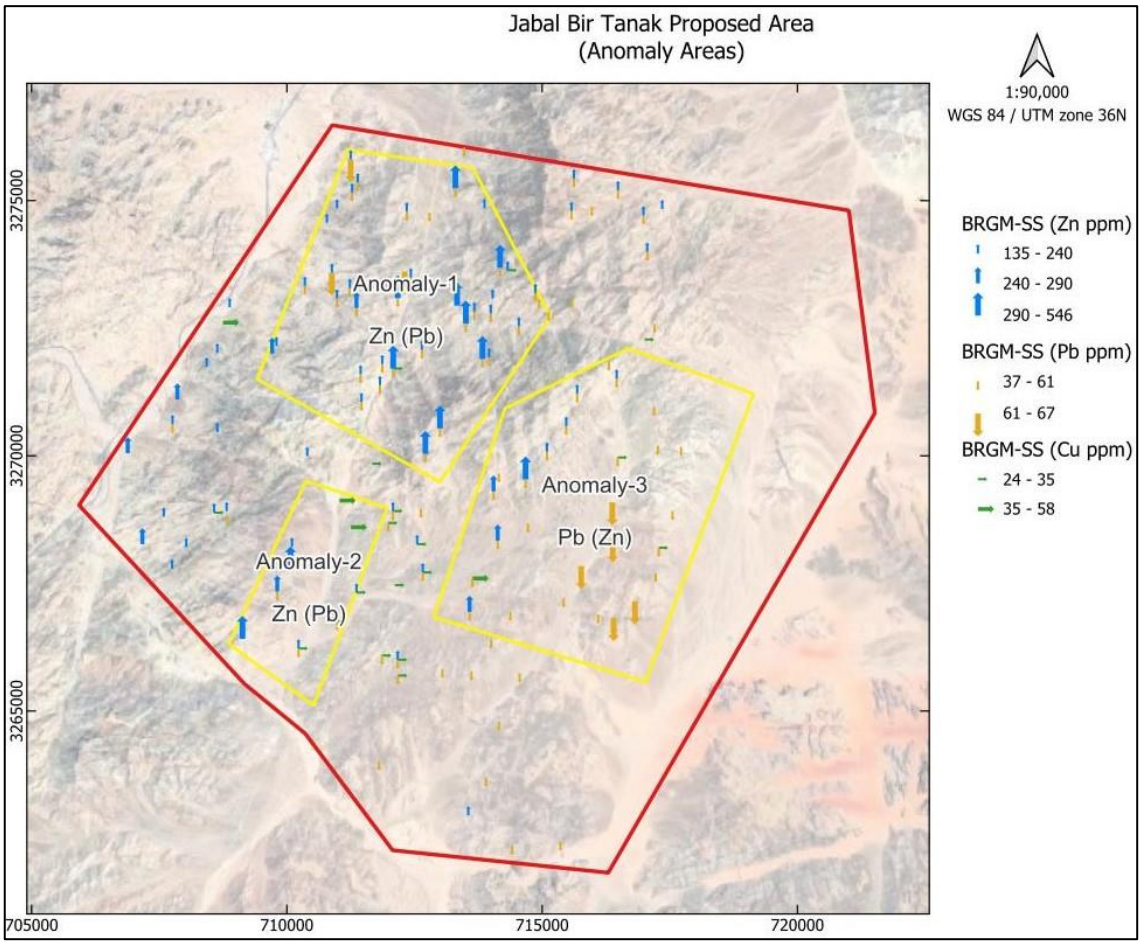

Figure 5: Anomaly areas identified in Jabal Bir Tanak proposed area.

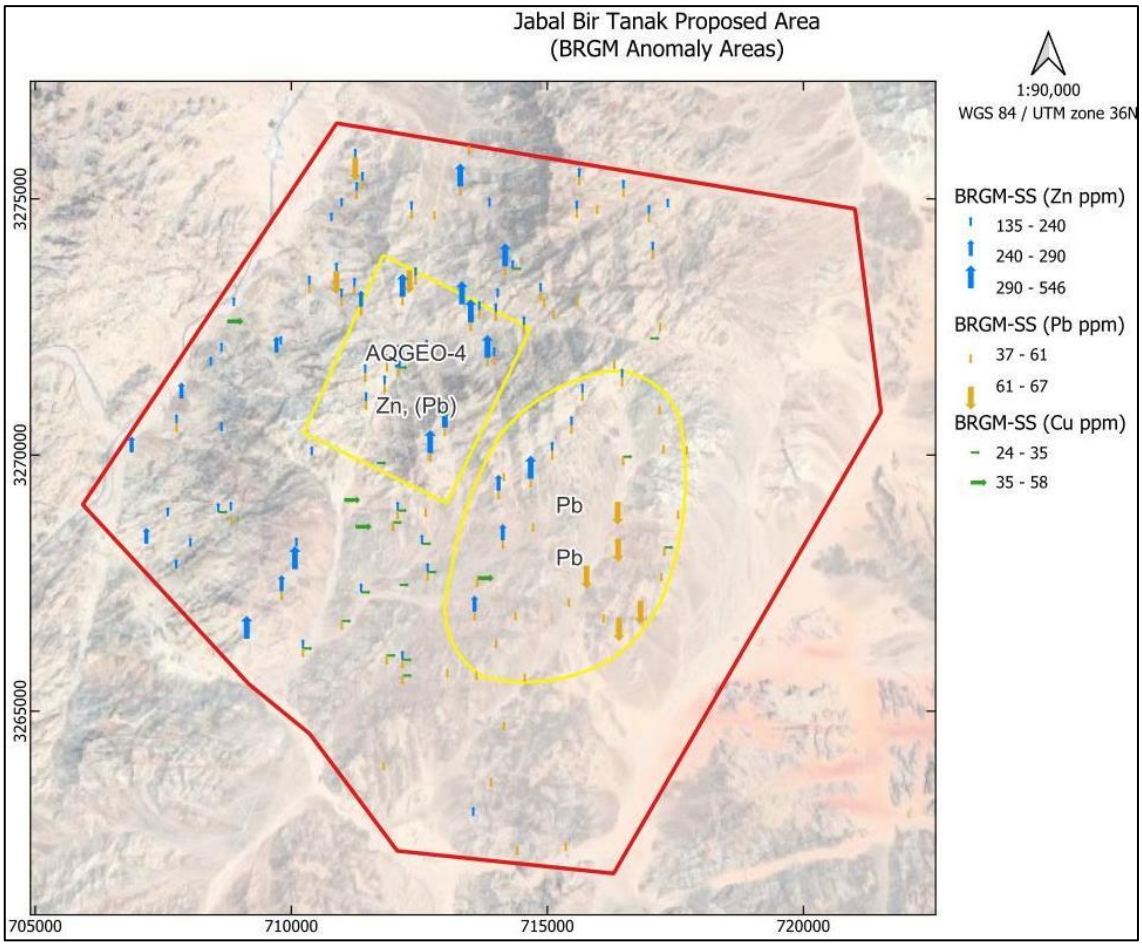

Figure 6: Anomaly areas identified by the BRGM in Jabal Bir Tanak proposed area.

3. REFERENCES

BRGM. (1994). Geochemical and Mineral Exploration of Aqaba-Araba Complex, *Ministry of Energy & Mineral Resources, Amman, Jordan. Internal Report.*

4. APPENDICES

Appendix 1: Analysis results of BRGM's stream sediment (SS) samples.

SS	X	Y	SiO2	Al_2O_3	Fe_2O_3	CaO	MgO	K_2O	MnO	TiO_2	P	Zn	Pb	Cu	Li
SID	WGS84/UTM36N	WGS84/UTM36N	%	%	%	%	%	%	%	%	ppm	ppm	ppm	ppm	ppm
343	711271	3263475	81.1	4.4	6.3	3.1	1.2	0.8	0.1	1.23	2738	62	29	8	10
344	711866	3263328	76.1	6.7	7.9	5.8	1.9	1.1	0.1	1.47	3512	77	31	16	13
345	711807	3264022	73.1	6.8	11.3	6.6	2.1	1	0.2	2.43	3896	113	38	19	14
346	712283	3263681	61	5.4	9.2	3.7	1.6	1	0.2	2.08	2789	97	27	13	13
347	712585	3263800	75.5	2.9	2.3	1.5	0.5	0.7		0.42	1230	22	18	6	6
348	712859	3264558	63.1	5.2	7.4	3.7	1.3	1	0.1	1.32	2218	73	31	9	13
349	714154	3264792	56.1	7	5.9	6.2	1.9	1.3	0.1	0.89	1902	72	37	13	19
350	714340	3264967	74.7	3.8	3.1	2.6	0.7	0.7	0.1	0.47	1281	33	24	7	11
351	713900	3263697	65.3	12.4	7.7	6	2.9	2.7	0.2	1.3	3008	109	40	17	36
352	713844	3263534	74.8	8.7	6.1	4.5	1.7	2.1	0.1	1.03	2134	66	25	14	24
353	713555	3262955	60.9	11.1	12.7	7.8	3.1	1.9	0.2	2.68	3925	137	36	22	31
354	714412	3262363	64.7	11.6	9.9	6.2	2.7	2.4	0.2	1.39	2675	112	46	18	37
357	715360	3262443	73.2	10.3	6.7	5.1	2	2.5	0.2	0.93	2374	83	46	13	30
358	715853	3263268	73.4	8.4	8.6	3.9	1.5	2	0.1	1.08	2348	77	31	12	24
359	716023	3264319	92.3	4.3	3.6	1.6	0.6	1.3	0.1	0.68	1514	37	16	7	10
392	710229	3266226	53.6	9.8	32.3	9.9	3.1	1.6	0.2	3.13	4970	147	45	35	23
393	710988	3266762	64.9	12.3	13.9	10.6	3.3	1.9	0.2	2.18	4425	117	48	31	25
394	709812	3267341	59.1	11.6	23.1	9.9	3.6	1.6	0.3	5.71	6667	248	43	20	20
395	710072	3267773	38.1	8.8	32.5	6.8	2.9	1.1	0.4	8.79	5148	398	23	20	21
396	710101	3268218	52.9	10.9	18.3	8.8	3.1	1.7	0.3	3.9	4737	183	25	18	21
397	710282	3268807	58.5	12.6	11.5	7.7	3.3	1.9	0.2	2.89	4884	121	23	22	21
398	711033	3269124	60.7	11.4	9.6	8.2	4.1	1.6	0.2	2	3495	95	22	36	21
399	711675	3269847	63.7	12	8	7.3	3.1	2	0.1	1.74	3283	83	22	26	25
400	710801	3270102	64.9	12.9	6.6	7.2	1.7	2.1	0.1	1.44	1704	74	18	10	29

401	710843	3270664	70.9	13.4	4.8	6	1.3	2.2	0.1	1.04	1647	55	19	8	27
402	710401	3269994	46.3	9.4	24.3	7.8	2.8	1.2	0.3	6.2	5832	217	26	19	26
403	711365	3267323	53.8	11.9	14.4	9.4	3.9	1.4	0.2	3.66	6006	140	21	31	22
404	712117	3267466	57.9	11.2	12.9	7.7	3.2	2	0.2	3.2	5326	116	22	29	22
405	711256	3268602	59	12.1	10.2	7.9	3.6	1.7	0.1	1.78	3382	86	18	37	23
406	712553	3268270	48.2	10.9	15.9	9.2	3.9	1.4	0.2	3.34	7307	155	23	32	24
407	711985	3268686	52.3	10.6	12	7.2	4.4	1.5	0.2	2.58	4158	134	49	35	21
408	712080	3268918	46.7	9.5	19.1	5.8	4	1.4	0.3	4.57	3911	228	45	25	22
409	712627	3268966	57.7	11.5	7.6	6.7	2.5	2.5	0.1	1.66	2994	95	54	17	19
410	712714	3270040	42.3	9.1	28.4	6.2	3.1	1.3	0.4	5.28	6129	364	51	14	18
411	713000	3270537	26.5	5.8	49.1	5	2.8	0.7	0.6	9.16	4654	546	39	13	16
412	713580	3266943	42.5	7.8	33.2	5.2	2.5	1.4	0.3	6.31	3571	259	47	23	21
413	713636	3267598	58.1	10.6	11.5	5.6	2.5	2.1	0.2	2.42	3431	125	60	43	23
414	712664	3267717	45.6	9	27.7	6.1	2.9	1.6	0.2	2.88	3982	167	47	35	21
415	714131	3268339	41.3	9.4	27.1	7.4	4.2	1	0.3	5.24	6371	272	51	22	22
416	714724	3268673	61.1	11.9	5.2	6.5	2.3	2.4	0.1	0.74	2057	93	61	23	24
417	714049	3269303	46.4	10.1	19.8	7.6	4.2	1.4	0.3	5.02	6602	252	52	20	22
418	714154	3269656	59	11.3	6.5	7.4	2.2	2.5	0.1	1.16	3350	89	59	13	18
419	714677	3269538	43.5	8.4	27	7.4	3.5	1.2	0.5	7.55	9887	345	57	16	19
420	715096	3270084	53.6	11	14.1	7.2	3.4	1.6	0.2	3.22	7663	175	51	16	25
421	715474	3270584	53.2	9.6	17.8	7.8	3.3	1.5	0.3	4.4	4109	195	58	21	20
422	715688	3271221	50.2	11.4	14.4	6.6	2.9	1.7	0.2	3.71	7756	157	42	16	22
423	716309	3271848	52.9	12.1	11.6	6.7	3.1	1.6	0.2	2.59	6552	124	48	19	25
424	716462	3271515	52.2	10.3	14.7	6.8	2.6	1.8	0.2	2.76	3214	139	47	19	22
425	717193	3270959	63.4	11.8	3.6	5.9	1.6	2.4	0.1	0.65	1386	59	59	15	21
426	716481	3269969	24.9	4.9	57.1	3.9	1.4	0.8	0.1	2.16	3082	128	46	32	15
427	716375	3269090	64.2	11.3	7.6	4.4	2.2	2.3	0.1	1.5	1981	102	67	17	28
428	716385	3268367	83.4	5.2	4.3	2.8	1	1.1	0.1	0.87	1036	51	64	11	13
429	715766	3267841	82.3	6.4	6.4	2.1	1	1.6	0.1	0.93	1373	66	63	7	17
430	715423	3267210	88.5	5.1	4.1	1.5	0.8	1.5	0.1	0.66	1094	49	61	5	13
431	714379	3266948	61.3	10.7	10.4	5.4	2.5	2.1	0.2	1.84	3246	118	60	13	27

432	714000	3266405	62.1	11.3	10	4.6	2.2	2.1	0.2	1.81	3294	121	61	12	29
433	711861	3266088	61.6	11.1	9.5	5.3	3.1	2	0.1	1.65	4524	129	59	26	32
434	712172	3266005	57.5	10.9	14.5	6.2	3.2	1.9	0.2	3.56	4953	162	59	24	28
435	712176	3265696	54.7	10.3	11.1	5.1	2.9	1.8	0.2	2.91	3055	122	38	27	24
436	713048	3265824	58.3	11.6	6.4	4.6	2.2	2.3	0.1	1.18	2684	87	39	13	25
437	713617	3265777	57.1	11.3	8.9	4.7	2.4	2.1	0.2	1.67	2876	105	40	13	28
438	714561	3265739	79	6.3	3.3	2.3	1.1	1.6	0.1	0.64	1298	38	38	9	14
439	716100	3266892	77.1	5.5	7.4	1.5	1	1.4	0.2	1.22	1627	71	50	7	15
440	716402	3266822	81	5.2	10.2	1.7	1	1.3	0.2	2.33	1771	91	63	7	14
441	716822	3267150	89.3	5.1	4.5	1.5	0.6	1.2	0.1	0.94	1272	43	65	9	12
442	717226	3267701	69.3	10.9	8.7	5.7	1.8	2	0.1	1.51	1601	68	55	19	21
443	717286	3268199	64	12.3	10.6	5.3	2.6	2.2	0.1	2.13	2400	107	45	27	30
444	717555	3268921	72.7	14.1	3.6	5.1	1.4	2.8	0.1	0.63	1192	51	45	20	21
445	717703	3269151	61.4	10.9	11.9	4.2	1.5	2.2	0.1	1.32	1534	58	34	22	21
446	717266	3270199	58.3	12.1	7.3	4.9	2.5	2.2	0.1	1.61	2223	86	45	21	26
447	717724	3270180	63.9	11.5	6.1	4.4	1.8	2.2	0.1	1.21	1861	61	42	19	23
448	717011	3272280	58.9	12	9.1	5.7	3	1.9	0.1	2	3546	93	35	24	21
449	717204	3272587	60.2	10.4	9.7	4.2	2.5	2.1	0.2	2.03	3368	97	41	15	19
450	717354	3274836	43.9	10	22.2	6.8	3.9	1.1	0.3	5.43	5519	236	35	20	17
451	716986	3274712	47.1	10.3	20.8	6.2	4	1.3	0.3	4.86	5591	218	39	22	22
452	717060	3273999	45.2	10.1	18.5	6.8	3.9	1.3	0.3	4.5	5556	186	40	23	24
476	715624	3275436	47.6	9.2	12.9	8	2.5	1.4	0.2	2.96	2286	144	52	14	13
477	716488	3275206	52	9.8	13.4	5.8	3.1	1.4	0.2	2.81	4486	146	55	16	17
478	715975	3274874	57.5	10.5	11.2	5.4	2.6	1.6	0.2	2.2	4277	123	59	14	16
479	715576	3274800	42.7	7.8	23.3	8.4	2.3	1.2	0.4	6.54	5257	235	57	11	13
677	710353	3273332	55.4	11.1	18.4	6.1	3.4	1.5	0.3	4.7	4919	221	46	18	26
678	710983	3273085	59.2	12.3	15.4	6.3	3.2	1.7	0.2	4.02	6777	192	46	16	26
679	711364	3272897	60.8	11.8	20.4	5.6	3	1.6	0.3	4.11	3801	251	52	18	28
680	712084	3271712	56.2	11.4	22.8	6.8	3.9	1.5	0.3	5.35	4732	297	49	26	22
681	711869	3271799	53.4	11.2	16.8	5.2	2.8	1.9	0.3	3.7	3149	179	51	14	24
682	711824	3271386	54.3	11.1	16.8	6.2	3.8	1.5	0.3	3.63	4119	193	55	19	22

683	711445	3271600	56.7	11.6	14.1	4.7	2.4	2	0.2	2.68	2878	141	54	15	27
684	711462	3271057	58.5	10.8	11.8	6	2.5	2	0.2	2.81	3051	145	57	13	22
685	711235	3273290	55	11	18.9	5.4	2.9	1.7	0.3	4.6	3355	196	53	19	31
686	710883	3273591	58.4	12.5	12.2	5.4	3.3	1.9	0.2	2.88	2503	135	62	18	29
687	712174	3273092	40.3	7.9	34.5	5.4	2.9	1.2	0.5	9.1	4638	359	53	15	20
688	712429	3273500	51.6	9.9	22.7	6.2	3.2	1.5	0.4	6.88	7462	226	54	13	22
689	712306	3273611	66.9	12.6	8.8	5.1	2.6	2.3	0.2	1.79	3070	98	66	16	27
690	712646	3272082	62.7	11.5	16.2	5.7	3.1	1.9	0.3	3.41	4035	186	58	15	26
691	713335	3272944	31.1	7.1	35	4.9	2.8	1	0.5	11.9	6662	355	29	11	17
692	713381	3273585	56.5	12.6	8.8	5.1	3	2	0.1	1.61	4669	103	36	14	23
693	713507	3272594	44.6	9.6	25	6.3	3.6	1.3	0.4	6.05	5039	337	40	16	23
694	713832	3271898	41.7	9.4	28.5	6.2	3.8	1.2	0.4	5.47	5430	345	42	17	24
695	713963	3271934	51.2	11.1	16.4	6.3	3.6	1.5	0.2	3.67	5517	193	40	17	25
696	713674	3272831	54.7	11.1	16.6	6.2	3.5	1.8	0.3	4.01	4888	214	41	17	23
697	713996	3272793	56.1	10.7	17.9	4.5	2.2	2	0.2	2.89	3072	178	49	14	23
698	714545	3272541	57.2	11.7	14.9	6.4	3.5	1.8	0.2	3.43	5136	193	43	17	25
699	714325	3273638	46	11.9	22.4	8.4	4.1	0.8	0.3	6.03	10059	236	35	29	18
700	714178	3273685	43.6	9	26.4	7.3	3.9	1.1	0.5	8.07	9484	302	40	12	20
701	714030	3273084	57	11.6	13.5	5.6	3.4	1.9	0.2	3.29	4503	154	35	16	23
702	714870	3273193	53.5	11.3	15.3	6.7	4.2	1.5	0.3	3.88	5355	163	40	20	23
703	714942	3273060	58.1	12.3	10.4	6	3.3	2	0.2	2.19	5663	99	37	17	23
704	715130	3272825	63.4	12.4	8.8	4.7	2.6	2.3	0.2	1.7	4343	99	41	20	27
705	715587	3273077	63	11.8	10.6	5.4	3.3	2.1	0.2	2.23	4576	106	43	18	23
1071	706712	3269326	59	11	15.2	4.7	1.7	1.7	0.2	1.97	3313	119	31	11	25
1072	706883	3270051	42.7	8.5	32.3	5.3	2.5	1	0.3	5.68	4249	259	31	17	17
1101	707170	3268269	44.8	8.9	24.7	6.8	3.9	1	0.3	5.74	4490	243	33	18	17
1102	707590	3268808	47.8	9.6	21.1	7	4	1.1	0.3	4.89	4309	220	29	19	17
1104	707753	3267787	45.7	9.4	25.1	6.1	2.7	1.1	0.2	3.71	5067	162	29	16	17
1105	708094	3268056	63.3	12.3	7.4	5.6	2.5	2	0.1	1.5	5034	91	35	13	20
1106	708030	3268212	41.3	8.8	25.5	6.9	3.9	1	0.4	7.89	10612	236	34	16	17
1107	708576	3268888	53.9	11.5	13.3	6.6	3.5	1.3	0.2	2.88	5361	141	34	25	24

1108	708836	3268803	61.6	11.8	9.8	5.9	2.4	2	0.2	1.85	4765	115	37	13	22
1109	708821	3268916	39.9	8.9	26.1	5.6	3.6	1.1	0.4	8.89	10092	204	3	16	20
1111	708152	3267077	56.4	11.2	15.1	5.8	2.7	1.6	0.2	3.27	4676	127	14	17	17
1114	709131	3266415	31.4	6.1	48.9	5.3	2.4	0.7	0.5	9.61	4044	457	29	12	13
1115	707761	3270624	55.3	9.4	22.4	5.7	1.9	1.5	0.2	2.8	3689	139	37	13	16
1116	707805	3269921	62.1	10.7	10.5	6.1	1.9	1.7	0.2	1.66	2930	93	31	12	16
1117	707855	3271106	42.4	7.5	34.8	6.1	3.2	0.9	0.5	7.79	4146	286	24	17	16
1118	708639	3270469	58	10.2	15.4	6.9	3.6	1.3	0.3	3.77	4163	148	25	18	18
1119	708429	3271747	61.7	11.3	12.9	6	3.2	1.7	0.2	2.67	4352	139	25	19	23
1121	708637	3272025	56.7	10.2	15.1	6	3.6	1.3	0.2	3.54	3939	143	20	18	19
1122	708749	3272612	55.7	10.7	13.9	6.8	3.4	1.2	0.2	3.25	3441	127	19	58	21
1123	708880	3272910	57.5	10.8	13.5	6.5	3.4	1.3	0.2	3.66	4518	136	19	17	21
1124	709454	3272820	56.3	11.7	12	6.5	3	1.4	0.2	2.74	4380	120	15	18	23
1125	709289	3272655	60	11.5	11.7	6.2	3.1	1.5	0.2	2.95	4344	119	18	15	22
1126	709713	3272004	43.2	8.6	29	5.9	2.9	1	0.4	7.29	5309	271	18	23	19
1127	709798	3272153	56	11.1	14.9	5.8	2.8	1.5	0.2	3.53	4895	145	18	15	23
1128	710785	3274568	50.6	9.1	20.3	7	3.2	1.1	0.3	6.48	3756	194	24	17	23
1129	710984	3274850	47	9	24.8	5.8	2.7	1.2	0.3	6.22	3311	196	26	18	22
1608	711280	3275165	52.9	10	20	5.5	3.1	1.7	0.3	5.38	5492	235	48	17	34
1609	711390	3275362	56.9	10.7	13	5.5	3	2.1	0.2	4.16	6444	165	51	19	28
1610	711250	3275813	65.4	12.2	7.6	4.1	1.9	2.4	0.2	2.09	2522	148	63	13	23
1612	712349	3274789	53.5	10.3	17.8	5.9	2.9	1.7	0.3	4.9	2982	206	50	16	30
1613	712797	3274769	62.3	11.4	8.5	5.9	2.5	2.1	0.2	2.41	2249	116	44	17	18
1614	713302	3275245	45.1	9.3	26.7	7.2	4.4	1.1	0.4	9.44	4554	316	41	18	22
1615	713872	3274853	58.2	11.1	15.6	6.2	3.6	1.9	0.3	4.93	4134	198	35	21	29
1616	713474	3276040	65.9	12.4	10.3	5.4	3	2.3	0.2	2.79	3616	134	38	15	34

SS	**V**	**Cr**	**Co**	**Ni**	**As**	**Sr**	**Y**	**Nb**	**Sn**	**Ba**	**La**	**Ce**	**W**	**Zr**
SID	**ppm**	**ppm**	**ppm**	**ppm**	**ppm**	**ppm**	**ppm**	**ppm**	**ppm**	**ppm**	**ppm**	**ppm**	**ppm**	**ppm**
343	103	36	25	31	54	98	13	20	30	263	26	63	44	233
344	132	40	32	50	78	161	15	26	40	377	33	81	48	222
345	218	69	36	55	74	172	18	34	42	387	36	88	56	333

346	184	57	27	42	41	121	16	27	27	326	29	67	40	311
347	38	21	18	29	20	73	6	12	25	147	17	40	31	128
348	139	58	24	34	57	140	14	22	30	283	29	67	39	342
349	105	43	27	46	64	153	11	22	35	362	32	71	39	225
350	52	27	22	38	37	78	8	15	31	174	24	55	32	174
351	110	36	17	41	35	313	16	20	29	595	35	73	19	253
352	92	30	12	50	35	215	12	16	28	458	27	55	22	236
353	204	39	25	48	37	347	21	34	35	446	38	86	24	284
354	146	61	19	43	56	267	17	23	38	524	40	89	23	356
357	90	39	23	37	66	205	14	21	38	581	35	80	31	252
358	129	51	17	31	60	187	15	24	29	424	33	73	27	374
359	40	19	14	25	37	106	13	25	28	217	23	57	19	214
392	513	525	36	97	56	373	35	46	8	532	84	198	48	464
393	248	148	35	76	87	509	24	30	39	612	52	129	39	283
394	463	137	41	67	63	355	31	56	41	444	93	188	33	351
395	799	212	41	66		295	23	57	15	294	62	114	7	366
396	331	111	28	50		312	28	49	23	341	30	158		320
397	230	71	26	64		402	20	29	27	382	39	84		214
398	189	93	26	78		413	26	25	29	408	64	145		191
399	135	55	19	62	1	368	17	20	26	433	54	102	1	197
400	97	22	10	24		336	24	26	21	370	60	133		184
401	63	16	6	14		337	20	20	16	373	53	112		166
402	471	109	27	53	3	311	62	78	28	302	122	304	10	387
403	273	85	36	65		508	27	32	25	486	51	117	7	237
404	249	117	26	60		360	27	31	24	481	63	140	4	225
405	214	97	27	70	17	465	20	19	19	456	52	110	27	189
406	309	85	30	51	35	422	28	28	28	560	54	119	30	250
407	272	104	35	82	129	430	36	35	25	414	68	141	90	212
408	463	203	40	82	94	310	36	48	14	324	80	149	80	279
409	158	52	20	55	119	251	20	32	28	344	60	106	99	231
410	571	202	35	60	92	288	40	64	7	432	79	150	87	506

411	1150	399	46	74	84	181	59	95		232	140	275	75	657
412	706	552	28	77	90	215	46	63		411	82	175	77	496
413	244	138	20	56	114	297	31	36	20	459	74	154	97	263
414	530	300	29	72	115	283	49	45		439	82	171	91	646
415	608	369	44	85	110	356	38	46		380	70	142	97	323
416	132	51	20	55	152	334	10	15	29	452	37	61	111	155
417	452	179	40	72	158	370	32	52	15	382	64	117	95	306
418	132	43	21	48	145	256	18	24	32	431	45	78	102	178
419	583	205	38	59	130	240	53	81	10	350	97	188	104	422
420	279	113	32	61	146	329	36	44	30	472	72	133	109	269
421	408	217	31	72	138	348	48	59	15	415	98	220	106	283
422	285	67	27	44	110	367	30	36	19	414	47	87	98	251
423	236	58	26	49	127	422	26	28	26	539	44	77	106	246
424	311	146	23	54	115	347	31	35	6	505	60	117	91	317
425	95	28	9	31	137	384	11	13	23	2765	34	50	105	145
426	731	860	23	92	36	120	48	41		224	96	196	64	850
427	172	92	13	47	101	307	31	31	24	515	80	170	100	248
428	88	38	7	29	74	156	17	18	24	229	49	96	88	191
429	99	33	6	25	79	145	20	26	24	342	39	78	92	388
430	68	26	6	23	71	119	16	20	25	310	29	59	94	252
431	202	66	15	37	117	286	27	27	26	611	45	83	107	332
432	192	65	14	34	119	286	32	32	25	761	57	104	110	448
433	199	63	26	53	141	301	23	23	29	582	39	70	120	275
434	314	124	26	48	164	280	32	37	25	613	56	103	121	736
435	272	69	17	50	46	311	24	28	19	518	38	72	52	309
436	151	33	8	24	37	297	21	11	16	650	36	69	54	320
437	198	60	8	28	46	288	27	25	15	622	50	90	55	361
438	82	22	2	23	14	156	12	8	11	335	21	39	44	167
439	107	43	1	13	26	111	30	43	12	464	48	99	44	477
440	165	49		16	9	136	41	61	6	635	44	90	55	823
441	50	11		5	29	111	29	36	9	347	39	81	59	441

442	188	83	3	42	81	333	31	24	8	459	83	158	65	365
443	268	129	11	51	78	305	32	24	9	520	71	132	68	314
444	99	38		32	80	399	14	9	10	559	38	62	74	171
445	190	156	7	43	102	364	30	30	1	372	68	174	63	267
446	121	53	21	46	73	441	20	21	24	392	49	86	46	174
447	157	55	9	35	120	366	17	19	18	379	45	87	81	180
448	238	69	22	46	135	435	29	24	24	608	55	110	87	201
449	228	78	21	43	137	217	22	31	23	291	52	92	80	200
450	538	159	37	59	149	301	32	46	11	361	44	86	86	194
451	473	167	37	63	140	241	42	54	9	310	115	204	88	182
452	399	137	37	61	125	261	32	42	17	359	69	112	80	111
476	278	79	25	50	154	157	27	48	17	223	70	119	112	231
477	292	97	27	49	171	189	32	40	18	309	76	131	115	232
478	239	67	24	44	200	180	28	39	26	327	63	111	128	230
479	434	136	23	43	150	128	49	91	4	286	93	173	111	360
677	362	110	28	46	151	366	50	57	25	418	86	174	84	253
678	306	56	20	38	148	419	39	42	31	439	58	110	91	221
679	376	114	26	47	99	349	63	64	28	7064	100	217	83	324
680	572	188	36	70	131	405	32	43	15	360	50	97	87	229
681	344	104	17	41	100	348	37	41	13	381	67	126	75	269
682	382	128	29	57	122	370	32	35	16	544	61	105	80	193
683	253	61	12	38	103	349	44	43	23	400	80	167	83	231
684	260	67	12	34	81	307	29	35	19	351	60	106	83	183
685	374	100	26	44	92	312	66	62	21	339	115	245	84	257
686	274	72	26	45	111	389	29	33	23	375	57	103	80	168
687	772	225	36	55	106	243	57	77	4	299	87	178	82	304
688	427	69	29	36	113	314	44	62	23	427	70	132	80	267
689	189	45	14	42	106	376	24	26	25	548	47	87	87	172
690	337	121	25	52	132	301	37	39	26	353	71	130	93	208
691	770	109	33	37	92	242	38	88	7	293	56	103	77	306
692	160	27	21	40	107	402	20	20	32	506	41	62	95	178

693	608	231	38	65	133	291	54	61	9	335	93	180	86	323
694	621	310	39	76	100	299	43	59		354	96	176	83	371
695	352	97	30	53	97	367	34	38	28	417	59	108	97	220
696	394	129	31	57	114	339	41	46	27	604	69	131	103	226
697	325	86	21	40	119	262	58	55	27	352	105	218	109	314
698	344	120	32	57	138	348	33	43	28	435	62	105	112	218
699	521	118	48	72	166	473	40	43	25	354	52	99	117	239
700	444	115	32	48	136	305	60	107	31	454	83	155	104	365
701	271	92	18	47	84	336	32	30	18	396	56	88	47	199
702	317	116	26	61	69	325	39	40	16	338	75	124	54	236
703	182	56	20	51	89	359	27	21	24	437	41	68	54	175
704	139	58	15	47	80	318	23	23	24	498	42	74	53	181
705	192	65	20	53	91	302	28	25	27	401	43	73	55	192
1071	219	37	20	30	65	312	79	48	20	538	134	323	47	972
1072	645	168	37	79	67	289	105	70		356	147	379	40	1241
1101	598	204	48	73	66	320	63	63		347	93	219	51	758
1102	530	187	43	70	87	351	56	53		373	89	203	55	388
1104	433	97	36	60	87	327	81	59	3	418	141	349	56	1027
1105	169	31	20	38	94	365	26	22	25	592	58	116	68	248
1106	622	55	35	54	79	320	36	63	20	393	50	104	60	384
1107	292	76	36	67	94	414	26	33	19	400	50	101	67	443
1108	199	54	24	45	101	286	35	33	22	459	78	153	74	530
1109	625	27	35	35		329	32	56	6	403	37	73	11	361
1111	289	53	17	39		367	68	47	3	560	127	292	18	852
1114	1120	295	50	87		154	73	94		243	127	304	24	969
1115	337	91	33	48	26	227	71	63	18	321	121	285	22	678
1116	163	47	26	44	10	258	50	41	22	360	81	197	23	610
1117	814	233	43	77		226	58	86		281	98	230	22	1968
1118	340	92	32	61		329	44	46	19	373	81	178	27	405
1119	267	102	29	67	11	374	33	31	11	539	50	107	28	307
1121	334	120	30	71	12	330	50	46	6	392	74	173	20	366

1122	303	93	27	51	8	365	49	42	9	383	76	182	20	459
1123	291	81	28	51	9	347	51	47	13	409	73	167	18	312
1124	239	64	30	56		395	33	33	12	447	54	117	19	309
1125	242	64	25	51	8	360	40	39	19	437	61	132	19	287
1126	668	162	32	66		266	61	71		331	80	192	19	449
1127	304	79	23	48		345	42	44	10	434	61	136	20	325
1128	449	175	41	66		276	155	127	9	307	209	537	20	568
1129	545	144	33	67		291	88	89		301	129	311	14	525
1608	298	177	40	60	66	249	84	69	7	340	104	237	32	331
1609	251	75	38	55	66	263	41	45	24	415	59	132	32	255
1610	141	47	29	45	61	252	29	44	27	282	51	103	33	254
1612	394	148	46	77	66	289	58	61	18	356	92	210	35	331
1613	178	76	29	51	40	311	29	28	20	436	48	109	29	231
1614	674	311	54	108	45	315	69	77		321	98	229	33	284
1615	338	115	27	67	90	308	63	59	5	352	111	242	63	239
1616	209	69	22	56	101	323	37	37	17	403	69	145	68	214

Note: *The sample locations are inaccurate as the shift can be up to a hundred meters from the actual location due to the methods adopted for conducting the regional survey in the 1990s.*