

## [Supplementary material]

### **Beyond Inca roads: archaeological mobilities from the high Andes to the Pacific in southern Peru**

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### **Indicators of mobility: analyses of obsidian artefacts**

#### *Methods*

Obsidian used in the manufacture of lithics can be traced to particular geological sources by its fingerprint of trace elements revealed through analyses such as neutron activation analysis ('NAA') and X-ray fluorescence ('XRF') analysis (Glascok *et al.* 2007). Here we analysed

obsidians using both laboratory-based XRF and portable XRF ('pXRF') equipment. While pXRF measures a more restricted number of elements than laboratory-based analyses (Craig *et al.* 2007), it is more useful for analyses of large collections, either in the field during excavations, or in museums, which cannot easily be transported to the laboratory.

The efficacy and reliability of pXRF has been shown in comparisons with other methods (e.g. Craig *et al.* 2007; Jia *et al.* 2010; Williams *et al.* 2012; Frahm 2013) and it is widely used for provenance studies of obsidian artefacts (e.g. Glascock & Giesso 2012; Goodale *et al.* 2012; Kellett *et al.* 2013). Our comprehensive study further highlights the huge potential of pXRF to analyse archaeological obsidian from the Andes. In-situ non-destructive pXRF analyses of archaeological obsidian lithics were performed using a Niton XL3t GOLDD device. In addition, 40 reference samples from the Jichja Parco quarry at Quispisisa at 4100m asl in the Ayacucho highlands were analysed using the same pXRF device and analytical procedure, but in the laboratory of the Deutsches Bergbau-Museum Bochum (Table S1).

Beyond their geochemical characterisation, an assemblage of 2351 obsidian artefacts dated to the Early Horizon were analysed according to the process of lithic reduction, revealing further information about their function, distribution and, thereby, past patterns of mobility (Odell 2004; Andrefsky 2009). Recognising that reduction stages represent a continuous process (Shott 2017), obsidian artefacts were classified and quantified using methods such as cortex analysis of flakes, to reveal where they stand along that continuum of lithic reduction, from raw material procurement at a source, to the final disposal of a used tool at a site, and in concert therefore how this reduction sequence or *chaîne opératoire* is distributed over a particular landscape (Shott 2003).

## *Results*

In this article, we have included the geochemical characterisation results of 386 obsidian artefacts from archaeological contexts dating to the Archaic and Initial Period ( $n = 65$ ); Early Horizon ( $n = 170$ ); Early Intermediate ( $n = 56$ ); Middle Horizon ( $n = 80$ ); Late Intermediate ( $n = 12$ ) and Late Horizon ( $n = 3$ ) from the northern Nasca and Ica valleys (Reindel *et al.* 2013; Gräfingholt 2016; Chauca *et al.* 2019). Tables S2 and S3 show that throughout those millennia the prime source for obsidian raw material in the combined study area was the Jichja Parco quarry at Quispisisa. One of the most important sources in the central Andes, obsidian from Quispisisa is found distributed up to 1000km distant (Tripcevich & Contreras 2011).

During the Archaic and Initial Periods (to *c.* 1500 BC) 97 per cent of the obsidians analysed were from Quispisisa. For the subsequent Early Horizon, however, of 170 obsidians analysed 93 per cent originated at Quispisisa, but others came from Puzolana and Lisahuacho in Peru and from Cerro Huenul in Argentina and Callejones in Ecuador; each some 180km, 200km, 2420km and 1660km, respectively, distant from the study area. It is also during the Early Horizon that we first perceive a systematic pattern of obsidian distribution, tool production and use across the study area (Mader 2019): first stages of lithic reduction already occurred at the quarry to transport the material to strategic centres in the highlands, such as Cutamalla—situated at a direct distance of 63km to Quispisisa/Jichja Parco—where, according to the high densities of debitage, tool manufacture largely took place and the distribution of obsidian artefacts was organised.

Despite the importance of such regional centres for the obsidian economy, further reduction stages could have happened throughout the continuous journey from Quispisisa/Jichja Parco to temporary and ultimate destinations of obsidian artefacts. A major driving force behind this exchange pattern was the demand and use of obsidian tools at coastal settlements such as Jauranga and Samaca 1004, which does not mean that only finished products arrived on the coast: final stages of tool fabrication were also made at coastal sites, yet on a limited scale. Huayuncalla is another highland regional centre significant for Paracas tool manufacture and distribution, maintaining this role into the Early Intermediate Period and Middle Horizon, although the coast ceased to be an important area of obsidian consumption during the latter period (see Mader 2019 for further details).

### **Indicators of mobility: stable isotope analyses**

#### *Methods*

Stable isotope ratios of  $\delta^{13}\text{C}$ ,  $\delta^{15}\text{N}$ ,  $^{87}\text{Sr}/^{86}\text{Sr}$  and  $\delta^{18}\text{O}$  in human and camelid remains reflect past diet and particular environments lived in, so that, interpreted against background environmental variation, they can be used to trace ancient provenance and mobility. Based on the principle that ‘you are what you eat’ these chemical signals are passed, either unchanged, or predictably altered, from food and water into the body.  $\delta^{13}\text{C}$  and  $\delta^{15}\text{N}$  data, for instance, can be used to distinguish diets from different altitudinal extremes across the Andean transect, from marine-based diets on the coast to those of high-altitude environments (Cadwallader *et al.* 2012; Szpak *et al.* 2019).  $\delta^{15}\text{N}$  values reflect only the protein component of the diet, whereas carbon in bone collagen predominantly reflects dietary protein combined

with carbon from other dietary fractions (Ambrose & Norr 1993; Tieszen & Fagre 1993).  $^{87}\text{Sr}/^{86}\text{Sr}$  and  $\delta^{18}\text{O}$  data, meanwhile, varying with water supply and local geology further contribute towards understanding mobility of humans and camelids (Hölzl *et al.* 2007; Slovak & Paytan 2011; Lightfoot & O'Connell 2016). Together, the two projects have carried out stable isotopic analyses on the remains of 537 human individuals and 154 camelids (Horn *et al.* 2009; Cadwallader 2013; Mader *et al.* 2018).

In most archaeological contexts stable isotopes can only be analysed in bone and dentine collagen because only these tissues (sometimes) preserve sufficient protein for meaningful measurement. Different tissues are synthesised at different rates and therefore reflect diet over different durations of time. Bone collagen reflects diet over the majority of adult life so that small dietary inputs or changes in diet may not be detectable (Hedges *et al.* 2007), while dentine collagen reflects diet over the time of tooth formation during childhood (Gage *et al.* 1989). On the south coast of Peru, however, aridity can sometimes also preserve faster-growing soft tissues such as hair, composed of keratin, which records dietary variation over the final months of life. If preserved hair is long enough, variations in its isotopic composition down its length can reveal short-term differences in diet and life-histories—and thereby mobilities—within and between populations and individuals which are obscured by the long-term averaging out of isotopic signatures in slow-growing hard bone and teeth tissue.

Here we emphasise new data from such rarely preserved human hair in which variation in isotopic composition reveals short-term variations in diet that are obscured by the long-term averaging out of isotopic signatures in hard bone and teeth tissue. Scalp hairs of between 140 and 500mm were analysed in 10mm segments from 22 individuals interred in Middle Horizon (cemeteries 755 and 398; Table S4) and Late Intermediate (cemetery 1003, Table S5) contexts at Samaca, Río Ica drainage (see Cadwallader *et al.* 2018 for more details on contexts and dating). Hair grows at around 10mm a month so that these represent individual dietary histories over at least one, and up to four, years (see Cadwallader 2013 for further details).

### *Results*

Segmented hair analyses of 11 Middle Horizon individuals show  $\delta^{13}\text{C}$  values ranging between  $-16.42\text{‰}$  and  $-9.96\text{‰}$ , with intra-individual variations of between  $0.77\text{‰}$  and  $4.69\text{‰}$ ; and  $\delta^{15}\text{N}$  values ranging between  $11.84\text{‰}$  and  $6.79\text{‰}$ , with intra-individual

variations between 0.55‰ and 2.06‰ (see Tables S4 and S5). These can be split into two statistically significant groups by cluster analysis of their  $\delta^{13}\text{C}$  and  $\delta^{15}\text{N}$  variation following Ward's Method: one showing relatively little intra-individual variation ( $<2.0\%$ ) in  $\delta^{13}\text{C}$  values (individuals 24, 26, 25, 34, 35 and 98); and the other showing significantly greater variations in  $\delta^{13}\text{C}$  values ( $>2.0\%$ ), often according to sinusoidal pattern, along their hair lengths (individuals 21, 22, 34e, 94 and 101). In this latter group, while both  $\delta^{13}\text{C}$  and  $\delta^{15}\text{N}$  each vary significantly along individual hairs, their intra-individual variation shows no discernible statistical relationship (failing to pass the test for the calculation of a Pearson correlation coefficient): that is, they vary independently.

The same analyses of 11 Late Intermediate individuals show  $\delta^{13}\text{C}$  values ranging between -14.03‰ and -7.93‰, with intra-individual variations of between 0.53‰ and 2.68‰; and  $\delta^{15}\text{N}$  values ranging between 11.53‰ and 6.47‰, with intra-individual variations between 0.64‰ and 2.95‰. Again these can be split into two statistically distinct groups by cluster analysis of their  $\delta^{13}\text{C}$  and  $\delta^{15}\text{N}$  variations following Ward's Method: one showing relatively little intra-individual variation ( $<1.6\%$ ,  $<1.4\%$ ) in  $\delta^{13}\text{C}$  or  $\delta^{15}\text{N}$  values, respectively (individuals 28, 36, 39, 47 and 76); and the other showing variations of  $>1.8\%$  and  $>1.4\%$  in  $\delta^{13}\text{C}$  and  $\delta^{15}\text{N}$  values, respectively (individuals 30, 41, 74, 77, 80 and 120). In contrast to the Middle Horizon individuals showing significant intra-individual isotopic variation, in this latter, Late Intermediate group intra-individual variations of  $\delta^{13}\text{C}$  and  $\delta^{15}\text{N}$  are significantly positively correlated (Pearson's  $r = 0.45$ ; for further details, see Cadwallader 2013).

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**Table S1. Concentrations of elements measured by ED-XRF in obsidian artefacts from Archaic Period sites in Ica Valley.**

Sample code	Site	Context (stratigraphic unit no.)	Mn (%)	Fe (%)	Zn (%)	Rb (%)	Sr (%)	Y (%)	Zr (%)	Nb (%)	Th (%)	Identified source
GCP001	La Yerba III	9546	329.1	4015.6	15.4	149.5	100.5	10.2	81.9	11.3	18.4	Quispisisa
GCP002	La Yerba III	9546	421.3	5563.0	22.5	184.5	124.4	12.6	93.6	13.0	21.7	Quispisisa
GCP003	La Yerba III	9536	382.3	5007.2	18.7	173.2	118.1	12.7	92.2	11.5	22.0	Quispisisa
GCP004	La Yerba III	9529	368.9	4927.5	16.0	174.0	118.3	12.0	90.5	12.9	21.7	Quispisisa
GCP005	La Yerba III	9529	368.4	4906.9	19.5	170.3	116.1	11.5	89.3	10.8	19.5	Quispisisa
GCP006	La Yerba III	9526	370.9	5598.7	21.4	185.0	125.6	12.5	95.8	11.9	21.8	Quispisisa
GCP007	La Yerba III	9523	356.8	4669.8	16.6	165.4	111.4	11.8	87.2	11.6	20.7	Quispisisa
GCP008	La Yerba III	9521	422.3	5676.5	24.4	182.3	122.3	12.7	90.9	12.0	21.9	Quispisisa
GCP009	La Yerba III	9521	380.2	4883.2	18.9	176.2	117.3	12.9	91.7	11.7	19.5	Quispisisa
GCP010	La Yerba III	9507	395.6	5269.3	21.5	175.4	117.0	11.9	89.8	10.8	22.1	Quispisisa
GCP011	La Yerba III	9505	347.9	4579.0	18.8	158.9	106.3	11.1	85.1	12.2	18.7	Quispisisa
GCP012	La Yerba III	9505	385.6	5155.2	16.9	176.4	119.0	12.6	92.1	11.8	20.7	Quispisisa
GCP013	La Yerba III	9505	376.0	5030.0	17.4	173.3	116.8	12.7	88.3	11.6	20.0	Quispisisa
GCP014	La Yerba III	9505	382.2	4963.6	19.6	166.8	113.3	11.7	88.0	11.0	18.9	Quispisisa
GCP015	La Yerba III	9505	400.6	5414.3	19.5	177.5	122.1	12.7	90.7	12.4	21.4	Quispisisa
GCP016	Amara Norte I	Surface	378.6	5504.1	19.2	175.9	119.8	11.4	91.1	12.7	18.7	Quispisisa
GCP017	Amara Norte I	Surface	371.2	5608.6	21.6	179.4	121.4	11.9	92.1	11.3	19.8	Quispisisa
GCP018	Amara Norte I	Surface	366.7	5071.0	20.0	165.9	115.0	12.0	88.4	10.9	19.3	Quispisisa
GCP019	Amara Norte I	Surface	354.8	5946.6	25.6	172.1	118.0	10.4	90.6	10.1	18.7	Quispisisa
GCP020	Amara Norte I	Surface	371.0	5023.6	16.9	163.8	110.9	11.6	85.8	11.8	18.4	Quispisisa
GCP022	Amara Norte I	Surface	395.7	5520.1	25.9	171.7	113.5	10.9	87.4	11.5	20.1	Quispisisa

GCP023	Amara Norte I	Surface	378.7	5483.0	19.3	174.3	116.6	10.7	90.7	11.9	19.9	Quispisisa
GCP024	Amara Norte I	Surface	406.9	6176.6	21.4	187.4	127.0	12.0	96.4	12.4	20.7	Quispisisa
GCP025	Amara Norte I	Surface	360.8	5041.9	19.6	168.1	115.1	12.2	90.0	11.0	18.4	Quispisisa
GCP026	Amara Norte I	Surface	429.9	4357.4	18.6	122.4	124.2	12.2	48.2	14.8	10.8	Unknown
GCP027	Amara Norte I	Surface	385.8	5484.2	18.1	173.9	118.5	9.8	91.5	11.8	18.9	Quispisisa
GCP032	La Yerba II	1015	398.8	5174.2	21.2	180.3	118.5	11.8	91.6	12.5	21.3	Quispisisa
GCP033	La Yerba II	1007	403.6	5657.3	24.1	186.8	126.9	12.4	94.8	12.9	23.2	Quispisisa
GCP034	La Yerba II	1010	378.1	5199.7	20.9	181.4	122.1	12.6	93.1	11.5	21.7	Quispisisa
GCP035	La Yerba II	Surface	402.9	5807.1	22.8	183.9	125.6	11.7	94.8	11.7	21.4	Quispisisa
GCP036	La Yerba II	Surface	388.6	5390.0	19.8	174.6	118.2	10.2	89.8	11.9	19.5	Quispisisa
GCP037	La Yerba II	Surface	412.5	5729.8	21.4	187.2	125.3	12.2	95.3	13.2	20.3	Quispisisa
GCP038	La Yerba II	Surface	405.1	5384.8	20.1	174.6	117.9	12.3	90.6	12.4	18.4	Quispisisa
GCP039	La Yerba II	Surface	373.3	5495.6	27.9	176.5	121.3	12.3	92.3	11.3	19.6	Quispisisa
GCP040	La Yerba II	Surface	378.8	5322.4	16.9	163.6	112.5	11.5	84.7	11.3	20.6	Quispisisa
GCP041	La Yerba II	Surface	338.8	4463.2	14.9	158.6	109.7	10.8	87.2	11.3	18.7	Quispisisa
GCP042	La Yerba II	Surface	427.8	6048.8	25.5	193.2	130.0	12.3	96.6	12.3	23.6	Quispisisa
GCP043	La Yerba II	Surface	362.1	4953.6	20.2	170.7	115.0	12.8	88.9	12.7	20.5	Quispisisa
GCP044	La Yerba III	7032	357.2	4550.0	17.4	159.6	110.3	11.2	86.7	10.4	17.8	Quispisisa
GCP045	La Yerba III	9522	474.3	4987.9	20.2	171.0	116.6	11.5	90.4	12.7	20.0	Quispisisa
GCP046	La Yerba III	7025	387.9	5276.1	38.2	180.1	123.8	11.7	93.4	11.8	22.3	Quispisisa
GCP047	Amara Norte I	Surface	408.4	5399.5	20.4	176.8	121.0	12.1	93.2	12.4	20.7	Quispisisa
GCP048	Amara Norte I	Surface	357.0	4828.0	19.2	156.2	106.0	11.5	81.8	11.1	18.4	Quispisisa
GCP049	Amara Norte I	Surface	404.7	6340.4	27.9	194.3	130.9	10.6	95.8	11.5	22.4	Quispisisa
GCP050	Amara Norte I	Surface	455.1	5232.7	22.1	125.3	126.7	13.4	46.4	13.9	10.0	Unknown

**Table S2. Concentrations of elements measured by pXRF in 40 obsidian reference samples from Jichja Parco Quarry at Quispisisa and standard deviations for the pXRF (LOD = limit of detection).**

Sample	Bal (%)	Ba (%)	Zr (%)	Sr (%)	Rb (%)	Bi (%)	Pb (%)	Zn (%)	Fe (%)	Cr (%)	V (%)	Ti (%)	Ca (%)	K (%)	Cl (%)	Al (%)	P (%)	Si (%)
<b>Average error pXRF</b>	0.861	0.005	0.001	0.001	0.001	0.001	0.001	0.001	0.011	0.001	0.001	0.002	0.010	0.034	0.006	0.255	0.041	0.219
Jichja Parco 80001575225	55.844	0.077	0.01	0.012	0.016	0.003	0.002	0.003	0.529	0.005	0.005	0.088	0.406	3.276	0.077	5.631	<LOD	33.90 1
Jichja Parco 80001575225	62.489	0.062	0.008	0.011	0.013	0.002	<LOD	0.002	0.403	0.005	0.004	0.07	0.354	2.742	0.088	3.916	<LOD	29.74 8
Jichja Parco 80001575225	88.606	0.058	0.007	0.008	0.01	<LOD	<LOD	<LOD	0.207	0.004	0.002	0.035	0.13	1.158	0.229	<LOD	<LOD	9.441
Jichja Parco 80001575225	46.719	0.078	0.01	0.013	0.017	0.002	0.002	0.003	0.563	0.005	0.005	0.091	0.46	3.638	0.074	7.459	<LOD	40.75 9
Jichja Parco 80001575225	57.831	0.07	0.009	0.012	0.015	0.002	0.002	0.002	0.478	0.005	0.004	0.079	0.384	2.994	0.068	5.088	< LOD	32.87 8
Jichja Parco 80001575225	60.292	0.069	0.009	0.011	0.015	0.002	<LOD	0.003	0.437	0.005	0.004	0.077	0.366	3.044	0.078	4.38	<LOD	31.13 4
Jichja Parco 80001575225	53.35	0.076	0.009	0.012	0.016	0.003	<LOD	0.002	0.513	0.005	0.004	0.084	0.43	3.239	0.061	5.727	< LOD	36.37
Jichja Parco 80001575225	52.67	0.08	0.01	0.012	0.016	0.003	0.002	0.002	0.561	0.005	0.004	0.094	0.418	3.384	0.073	6.326	<LOD	36.25 7
Jichja Parco 80001575225	63.963	0.072	0.008	0.011	0.014	<LOD	<LOD	0.002	0.427	0.005	0.004	0.071	0.351	2.735	0.117	3.58	<LOD	28.55 6

Jichja Parco 80001575225	56.511	0.077	0.01	0.013	0.015	0.002	0.002	0.003	0.612	0.005	0.004	0.093	0.405	2.839	0.055	6.478	0.053	32.74
Jichja Parco 80001575225	53.021	0.074	0.01	0.013	0.016	0.002	<LOD	0.002	0.542	0.004	0.004	0.087	0.425	3.228	0.071	6.505	0.047	35.88 1
Jichja Parco 80001575225	56.897	0.074	0.009	0.012	0.015	0.002	<LOD	0.002	0.52	0.005	0.004	0.086	0.406	3.082	0.065	5.714	<LOD	33.02 9
Jichja Parco 80001575225	52.137	0.072	0.01	0.013	0.017	0.003	<LOD	0.002	0.542	0.005	0.005	0.088	0.444	3.446	0.085	6.279	<LOD	36.73 8
Jichja Parco 80001575225	50.891	0.083	0.01	0.012	0.016	0.003	<LOD	0.003	0.57	0.005	0.004	0.086	0.415	3.26	0.066	6.785	0.061	37.67 2
Jichja Parco 80001575225	51.601	0.08	0.01	0.013	0.016	0.003	0.002	0.003	0.609	0.005	0.005	0.092	0.438	3.213	0.07	6.566	<LOD	37.16 8
Jichja Parco 80001575226	48.762	0.079	0.01	0.012	0.017	0.003	0.002	0.003	0.545	0.005	0.005	0.09	0.374	3.718	0.053	7.525	0.05	38.68
Jichja Parco 80001575226	51.297	0.077	0.01	0.013	0.016	0.003	<LOD	0.002	0.537	0.005	0.004	0.087	0.418	3.334	0.046	7.391	<LOD	36.65 7
Jichja Parco 80001575226	50.336	0.083	0.01	0.013	0.016	0.002	<LOD	0.002	0.532	0.005	0.004	0.09	0.43	3.409	0.063	6.819	<LOD	38.08 7
Jichja Parco 80001575226	47.449	0.076	0.01	0.013	0.016	0.002	<LOD	< LOD	0.515	0.005	0.004	0.087	0.432	3.249	0.055	7.712	0.054	40.25 4
Jichja Parco 80001575226	53.002	0.072	0.01	0.013	0.017	0.003	<LOD	0.002	0.603	0.005	0.004	0.095	0.432	3.257	0.06	6.477	<LOD	35.84 1
Jichja Parco 80001575226	53.962	0.08	0.009	0.012	0.015	0.002	<LOD	0.003	0.557	0.005	0.005	0.095	0.39	3.004	0.07	7.709	<LOD	33.97 4

Jichja Parco 80001575226	51.434	0.079	0.01	0.013	0.017	0.002	0.002	0.003	0.678	0.005	0.004	0.103	0.435	3.237	0.065	7.582	0.042	36.22 5
Jichja Parco 80001575227	52.722	0.077	0.01	0.013	0.016	0.003	<LOD	0.003	0.515	0.005	0.005	0.086	0.439	3.335	0.178	6.295	<LOD	36.19 1
Jichja Parco 80001575228	48.403	0.074	0.01	0.013	0.017	<LOD	<LOD	0.003	0.534	0.006	0.004	0.088	0.445	3.438	0.069	7.15	<LOD	39.62 4
Jichja Parco 80001575228	52.209	0.081	0.01	0.012	0.016	0.002	<LOD	0.002	0.539	0.005	0.005	0.091	0.409	3.186	0.054	7.024	0.053	36.24 6
Jichja Parco 80001575228	58.301	0.079	0.009	0.012	0.015	0.002	<LOD	<LOD	0.549	0.005	0.004	0.086	0.407	3.1	0.057	5.252	<LOD	32.00 4
Jichja Parco 80001575228	52.262	0.079	0.01	0.012	0.016	0.002	0.002	0.003	0.51	0.005	0.004	0.086	0.422	3.269	0.091	6.489	<LOD	36.64 6
Jichja Parco 80001575228	53.496	0.077	0.01	0.012	0.016	<LOD	<LOD	0.002	0.495	0.005	0.004	0.084	0.414	3.274	0.099	5.967	<LOD	35.93 5
Jichja Parco 80001575228	55.755	0.078	0.009	0.012	0.015	0.002	0.002	0.003	0.548	0.005	0.005	0.097	0.375	2.61	0.084	6.716	<LOD	33.57 9
Jichja Parco 80001575228	57.649	0.076	0.009	0.012	0.015	0.002	<LOD	0.003	0.514	0.005	0.004	0.085	0.395	3.119	0.087	5.439	<LOD	32.51
Jichja Parco 80001575228	55.608	0.084	0.01	0.012	0.016	0.003	<LOD	0.003	0.537	0.006	0.005	0.087	0.406	3.205	0.074	5.736	<LOD	34.11 6
Jichja Parco 80001575228	55.799	0.073	0.01	0.012	0.016	0.002	0.002	0.003	0.528	0.005	0.004	0.086	0.422	3.319	0.076	5.605	<LOD	33.95 5
Jichja Parco 80001575228	55.505	0.077	0.01	0.012	0.016	0.002	0.002	0.002	0.524	0.005	0.004	0.088	0.402	3.164	0.071	5.454	<LOD	34.56 5

Jichja Parco 80001575228	55.863	0.077	0.01	0.012	0.016	0.003	<LOD	0.003	0.568	0.005	0.005	0.089	0.428	3.286	0.079	5.488	<LOD	33.96 1
Jichja Parco 80001575228	51.459	0.075	0.01	0.012	0.016	<LOD	0.002	0.003	0.534	0.005	0.004	0.086	0.423	3.381	0.074	6.524	<LOD	37.28 4
Jichja Parco 80001575228	56.336	0.099	0.009	0.011	0.014	<LOD	<LOD	<LOD	0.441	0.005	0.004	0.079	0.359	2.662	0.073	5.702	<LOD	34.18 3
Jichja Parco 80001575228	55.217	0.078	0.009	0.012	0.016	0.002	<LOD	0.003	0.533	0.004	0.004	0.088	0.41	3.139	0.083	6.072	< LOD	34.22 9
Jichja Parco 80001575228	54.975	0.073	0.009	0.012	0.015	0.002	<LOD	0.003	0.51	0.005	0.004	0.089	0.394	2.993	0.076	5.703	<LOD	35.04 6
Jichja Parco 80001575228	45.66	0.088	0.01	0.013	0.016	0.003	0.002	0.003	0.557	0.006	0.006	0.108	0.415	2.857	0.044	10.792	0.057	39.27 4
Jichja Parco 80001575229	52.44	0.075	0.01	0.012	0.016	0.003	<LOD	0.003	0.516	0.006	0.005	0.093	0.433	3.134	0.113	6.183	0.058	36.82 7

**Table S3. Element concentration of 365 obsidian artefacts from Archaic to Late Horizon sites in the *Nazca-Palpa Archaeological Project* (PAP) and pXRF standard deviations (LOD = limit of detection).**

PAP-no.	Sub-no.	Periods	Type	Bal (%)	Zr (%)	Sr (%)	Rb (%)	Bi (%)	Pb (%)	Zn (%)	Cu (%)	Fe (%)	Mn (%)	V (%)	Ti (%)	Identified source
<b>Average error pXRF</b>				<b>0.078</b>	<b>0.001</b>	<b>0.001</b>	<b>0.001</b>	<b>0.001</b>	<b>0.001</b>	<b>0.001</b>	<b>0.001</b>	<b>0.005</b>	<b>0.003</b>	<b>0.020</b>	<b>0.078</b>	
3167		Archaic	7 A	98.30	0.01	0.013	0.017	0.002	0.002	0.003	< LOD	0.549	< LOD	0.189	0.863	Jichja Parco
3801	2	Archaic	3 H V I	97.40	0.009	0.012	0.015	0.002	< LOD	0.002	< LOD	0.48	< LOD	0.374	1.638	Jichja Parco
4375		Archaic	7 A	97.29	0.01	0.013	0.016	0.002	0.002	0.003	< LOD	0.544	< LOD	0.38	1.668	Jichja Parco
751	6	Archaic/Initial Period	4 A	95.99	0.009	0.013	0.016	0.002	0.002	0.003	< LOD	0.532	0.018	0.626	2.714	Jichja Parco
767	7	Archaic/Initial Period	4 A	94.33	0.008	0.011	0.014	0.002	0.002	0.004	0.002	0.545	0.043	0.905	4.051	Jichja Parco
783		Archaic/Initial Period	4 A	96.24	0.009	0.012	0.016	0.002	< LOD	0.003	< LOD	0.505	0.013	0.583	2.533	Jichja Parco
785	3	Archaic/Initial Period	4 A	93.76	0.008	0.011	0.013	< LOD	0.002	0.004	0.003	0.454	0.054	1.031	4.581	Jichja Parco
800	6	Archaic/Initial Period	4 A	95.98	0.01	0.013	0.016	0.002	0.002	0.003	< LOD	0.532	0.019	0.629	2.721	Jichja Parco
830	3	Archaic/Initial Period	4 A	95.80	0.009	0.012	0.015	0.002	0.002	0.003	< LOD	0.524	0.02	0.651	2.884	Jichja Parco
1032	2	Archaic/Initial Period	4 A	94.53	0.009	0.012	0.015	0.002	0.003	0.004	0.002	0.536	0.045	0.868	3.901	Jichja Parco
1779	2	Archaic/Initial Period	4 A	94.92	0.008	0.011	0.014	< LOD	< LOD	0.002	< LOD	0.474	0.03	0.785	3.675	Jichja Parco
180	1	Initial Period/Transition	5 B	95.11	0.009	0.012	0.014	0.002	0.002	0.003	< LOD	0.498	0.031	0.778	3.466	Jichja Parco
588		Initial Period/Transition	5 B	97.31	0.01	0.012	0.016	0.002	0.002	0.003	< LOD	0.517	< LOD	0.383	1.676	Jichja Parco
760	1	Initial Period/Transition	5 B	95.50	0.009	0.012	0.016	0.002	< LOD	0.003	< LOD	0.524	0.026	0.713	3.112	Jichja Parco
761		Initial Period/Transition	5 B	96.56	0.009	0.012	0.016	0.002	< LOD	0.003	< LOD	0.532	0.006	0.516	2.26	Jichja Parco
770	2	Initial Period/Transition	5 B	96.18	0.01	0.012	0.016	0.002	< LOD	0.003	< LOD	0.553	0.013	0.585	2.547	Cerro Huenul
797		Initial Period/Transition	5 B	95.10	0.009	0.012	0.015	0.002	0.002	0.003	< LOD	0.533	0.032	0.777	3.437	Jichja Parco
831	4	Initial Period/Transition	5 B	95.84	0.009	0.012	0.015	0.002	< LOD	0.002	< LOD	0.479	0.018	0.666	2.877	Jichja Parco
837		Initial Period/Transition	5 B	97.30	0.01	0.012	0.016	0.002	< LOD	0.002	< LOD	0.524	< LOD	0.383	1.677	Jichja Parco
1767		Initial Period/Transition	5 B	95.70	0.008	0.011	0.014	0.002	< LOD	0.003	< LOD	0.462	0.009	0.586	3.125	Jichja Parco

PAP-no.	Sub-no.	Periods	Type	Bal (%)	Zr (%)	Sr (%)	Rb (%)	Bi (%)	Pb (%)	Zn (%)	Cu (%)	Fe (%)	Mn (%)	V (%)	Ti (%)	Identified source
<b>Average error pXRF</b>				<b>0.078</b>	<b>0.001</b>	<b>0.001</b>	<b>0.001</b>	<b>0.001</b>	<b>0.001</b>	<b>0.001</b>	<b>0.001</b>	<b>0.005</b>	<b>0.003</b>	<b>0.020</b>	<b>0.078</b>	
4052		Initial Period/Transition	5 D V I	95.99	0.009	0.012	0.016	0.002	0.002	0.003	< LOD	0.507	0.017	0.625	2.742	Jichja Parco
526	2	Middle Paracas	2 C V I	95.21	0.009	0.011	0.014	0.002	< LOD	0.003	< LOD	0.469	0.028	0.776	3.392	Jichja Parco
1014		Middle Paracas	2 C V I	96.47	0.01	0.012	0.016	0.002	< LOD	0.003	< LOD	0.601	0.009	0.521	2.28	Jichja Parco
1037	1	Middle Paracas	2 H V III	96.56	0.01	0.013	0.016	0.002	0.002	0.003	< LOD	0.546	0.008	0.517	2.246	Jichja Parco
2430	1	Middle Paracas	3 D	96.85	0.009	0.013	0.016	0.002	0.002	0.002	< LOD	0.521	< LOD	0.46	2.041	Jichja Parco
3823	2	Middle Paracas	2 H V III	93.68	0.007	0.01	0.012	< LOD	0.002	0.004	0.004	0.409	0.05	1.038	4.709	Jichja Parco
3823	3	Middle Paracas	2 K	95.18	0.009	0.012	0.015	0.002	0.004	0.003	< LOD	0.532	0.013	0.598	2.622	Jichja Parco
3823	4	Middle Paracas	2 H V III	95.89	0.009	0.011	0.014	< LOD	0.003	0.003	< LOD	0.481	0.028	0.776	3.419	no origin
3823	5	Middle Paracas	2 K	96.11	0.009	0.012	0.016	0.002	< LOD	0.002	< LOD	0.562	0.017	0.64	2.773	Jichja Parco
3823	6	Middle Paracas	1 D	95.96	0.009	0.012	0.016	0.002	0.002	0.003	< LOD	0.521	0.02	0.634	2.743	Jichja Parco
3870		Middle Paracas		97.33	0.009	0.012	0.015	0.002	< LOD	0.002	< LOD	0.456	< LOD	0.392	1.714	Jichja Parco
3876		Middle Paracas	2 K	96.52	0.009	0.012	0.015	0.002	< LOD	0.002	< LOD	0.477	< LOD	0.54	2.335	Jichja Parco
3881		Middle Paracas	2 I V I	97.01	0.009	0.012	0.015	0.002	< LOD	0.002	< LOD	0.483	< LOD	0.446	1.948	Jichja Parco
509		Late Paracas	2 A	95.52	0.008	0.011	0.014	< LOD	0.003	0.003	< LOD	0.484	0.023	0.708	3.141	Jichja Parco
586		Late Paracas	2 F	93.79	0.007	0.01	0.011	< LOD	0.002	0.004	0.004	0.389	0.049	1.019	4.639	Cerro Huenul
628	2	Late Paracas	2 C V II	94.02	0.008	0.011	0.013	< LOD	0.002	0.004	0.003	0.451	0.05	0.981	4.381	Jichja Parco
764	1	Late Paracas	5 A V I	96.59	0.009	0.012	0.016	0.002	< LOD	0.003	< LOD	0.513	0.007	0.515	2.25	Jichja Parco
767	5	Late Paracas	5 A	97.46	0.01	0.013	0.017	0.002	< LOD	0.003	< LOD	0.554	< LOD	0.344	1.521	Jichja Parco
771	2	Late Paracas	3 F	94.97	0.009	0.011	0.014	< LOD	0.002	0.003	< LOD	0.473	0.032	0.81	3.596	Jichja Parco
774	1	Late Paracas	5 A V I	93.92	0.01	0.012	0.016	0.002	0.002	0.003	< LOD	0.535	0.007	0.522	2.28	Jichja Parco
774	2	Late Paracas	3 F	96.53	0.008	0.011	0.014	< LOD	0.003	0.004	0.003	0.484	0.054	0.986	4.433	Jichja Parco
785	4	Late Paracas	3 F	94.20	0.008	0.011	0.014	< LOD	0.003	0.004	0.003	0.505	0.047	0.927	4.197	no origin



PAP-no.	Sub-no.	Periods	Type	Bal (%)	Zr (%)	Sr (%)	Rb (%)	Bi (%)	Pb (%)	Zn (%)	Cu (%)	Fe (%)	Mn (%)	V (%)	Ti (%)	Identified source
<b>Average error pXRF</b>				<b>0.078</b>	<b>0.001</b>	<b>0.001</b>	<b>0.001</b>	<b>0.001</b>	<b>0.001</b>	<b>0.001</b>	<b>0.001</b>	<b>0.005</b>	<b>0.003</b>	<b>0.020</b>	<b>0.078</b>	
795		Late Paracas	5 A	95.68	0.009	0.012	0.015	0.002	< LOD	0.003	< LOD	0.558	0.022	0.676	2.938	Jichja Parco
800	2	Late Paracas	5 A	93.51	0.007	0.01	0.012	< LOD	0.003	0.005	0.005	0.444	0.054	1.036	4.83	Jichja Parco
800	3	Late Paracas	5 A V I	97.13	0.01	0.013	0.017	0.002	0.002	0.003	< LOD	0.608	< LOD	0.393	1.739	Jichja Parco
824		Late Paracas	5 A V I	95.56	0.009	0.012	0.015	0.003	< LOD	0.003	< LOD	0.489	0.024	0.712	3.087	Jichja Parco
914	1	Late Paracas	5 A V I	94.28	0.01	0.013	0.016	0.002	< LOD	0.002	< LOD	0.525	0.021	0.661	2.863	Jichja Parco
914	2	Late Paracas	5 A V I	95.81	0.008	0.012	0.014	0.002	0.002	0.003	< LOD	0.507	0.048	0.938	4.108	Jichja Parco
1057	2	Late Paracas	2 A	96.00	0.009	0.012	0.016	0.002	0.002	0.003	< LOD	0.525	0.017	0.625	2.707	Jichja Parco
1778		Late Paracas	2 F	97.26	0.009	0.012	0.016	0.002	< LOD	0.003	< LOD	0.516	< LOD	0.388	1.719	Jichja Parco
1902	2	Late Paracas		96.84	0.009	0.012	0.016	0.002	< LOD	0.003	< LOD	0.507	< LOD	0.474	2.062	Jichja Parco
1914	1	Late Paracas	1 A V I	96.01	0.008	0.011	0.014	< LOD	< LOD	0.002	< LOD	0.454	0.02	0.686	3.201	Jichja Parco
1914	2	Late Paracas		95.52	0.009	0.012	0.015	0.002	< LOD	0.003	< LOD	0.493	0.011	0.568	2.795	Jichja Parco
1915		Late Paracas	2 B	96.22	0.009	0.012	0.015	0.002	< LOD	0.002	< LOD	0.479	0.011	0.586	2.59	Jichja Parco
1928		Late Paracas	3 H	97.39	0.01	0.013	0.016	0.002	0.002	0.003	< LOD	0.539	< LOD	0.363	1.594	Jichja Parco
1938	2	Late Paracas	3 H	94.33	0.007	0.01	0.012	< LOD	< LOD	0.002	< LOD	0.443	0.031	0.833	4.253	Jichja Parco
1951		Late Paracas	3 H	96.75	0.009	0.012	0.016	0.002	< LOD	0.003	< LOD	0.516	< LOD	0.485	2.121	Jichja Parco
1957		Late Paracas		94.89	0.008	0.011	0.014	< LOD	< LOD	0.002	< LOD	0.451	0.027	0.767	3.745	Jichja Parco
1961	2	Late Paracas	2 B	96.36	0.009	0.012	0.015	0.002	< LOD	0.003	< LOD	0.492	0.008	0.566	2.449	Jichja Parco
1964		Late Paracas		96.28	0.009	0.012	0.015	0.002	< LOD	0.003	< LOD	0.508	0.012	0.572	2.503	Jichja Parco
1986	2	Late Paracas	2 F	95.80	0.009	0.011	0.015	0.002	< LOD	0.003	< LOD	0.474	0.014	0.632	2.965	Jichja Parco
2225	2	Late Paracas	2 F	97.53	0.01	0.013	0.016	0.002	0.002	0.003	< LOD	0.531	< LOD	0.336	1.491	Jichja Parco
2237	4	Late Paracas	2 B	97.66	0.01	0.012	0.016	0.002	< LOD	0.003	< LOD	0.506	< LOD	0.299	1.426	Jichja Parco
2257		Late Paracas		95.65	0.009	0.012	0.015	0.002	< LOD	0.002	< LOD	0.5	0.022	0.699	3.007	Jichja Parco

PAP-no.	Sub-no.	Periods	Type	Bal (%)	Zr (%)	Sr (%)	Rb (%)	Bi (%)	Pb (%)	Zn (%)	Cu (%)	Fe (%)	Mn (%)	V (%)	Ti (%)	Identified source
<b>Average error pXRF</b>				<b>0.078</b>	<b>0.001</b>	<b>0.001</b>	<b>0.001</b>	<b>0.001</b>	<b>0.001</b>	<b>0.001</b>	<b>0.001</b>	<b>0.005</b>	<b>0.003</b>	<b>0.020</b>	<b>0.078</b>	
2279		Late Paracas		95.63	0.009	0.012	0.016	0.002	< LOD	0.003	< LOD	0.505	0.023	0.699	3.024	Jichja Parco
2280		Late Paracas	3 F	94.49	0.008	0.01	0.012	< LOD	< LOD	0.002	< LOD	0.399	0.03	0.801	4.168	no origin
2282	1	Late Paracas	2 F	93.97	0.008	0.01	0.013	< LOD	< LOD	0.002	< LOD	0.437	0.041	0.901	4.534	Jichja Parco
2292		Late Paracas	5 C V II	96.28	0.009	0.012	0.016	0.002	< LOD	0.003	< LOD	0.532	0.01	0.545	2.509	Jichja Parco
2293		Late Paracas		94.78	0.008	0.01	0.013	< LOD	< LOD	0.002	< LOD	0.416	0.029	0.819	3.845	Jichja Parco
2296		Late Paracas	2 F	96.91	0.009	0.012	0.016	0.002	< LOD	0.003	< LOD	0.511	< LOD	0.451	2.001	Jichja Parco
2297		Late Paracas		97.90	0.01	0.013	0.016	0.002	0.002	0.003	< LOD	0.524	< LOD	0.271	1.202	Jichja Parco
2310		Late Paracas		97.44	0.01	0.013	0.016	0.002	< LOD	0.003	< LOD	0.503	< LOD	0.361	1.583	Jichja Parco
2322	1	Late Paracas	5 C V II	95.92	0.01	0.013	0.016	0.002	< LOD	0.003	< LOD	0.535	< LOD	0.395	1.73	Jichja Parco
2322	2	Late Paracas	1 F V II	97.22	0.009	0.012	0.016	0.002	< LOD	0.003	< LOD	0.51	0.017	0.635	2.795	Jichja Parco
2410		Late Paracas	3 F	96.38	0.009	0.012	0.015	< LOD	< LOD	0.003	< LOD	0.5	0.009	0.556	2.435	Jichja Parco
2430	2	Late Paracas	3 F	97.09	0.009	0.012	0.015	< LOD	< LOD	0.002	< LOD	0.466	< LOD	0.431	1.899	Jichja Parco
2707	6	Late Paracas	2 L	97.26	0.01	0.013	0.016	0.002	< LOD	0.003	< LOD	0.528	< LOD	0.385	1.706	Jichja Parco
2722	1	Late Paracas	2 H V II	97.75	0.009	0.012	0.016	0.002	< LOD	0.003	< LOD	0.522	0.013	0.574	2.583	Jichja Parco
2722	2	Late Paracas	2 H V IV	96.18	0.01	0.013	0.017	0.002	< LOD	0.003	< LOD	0.534	< LOD	0.294	1.309	Jichja Parco
2740	2	Late Paracas	2 F	97.38	0.01	0.012	0.016	0.002	0.002	0.003	< LOD	0.526	< LOD	0.364	1.616	Jichja Parco
2904	6	Late Paracas	5 A V I	95.60	0.009	0.012	0.015	0.002	0.002	0.003	< LOD	0.508	0.013	0.601	2.624	Jichja Parco
2904	9	Late Paracas	2 F	96.13	0.009	0.012	0.015	0.002	< LOD	0.003	< LOD	0.498	0.023	0.706	3.056	Jichja Parco
3855		Late Paracas	5 A	93.49	0.007	0.01	0.011	< LOD	0.003	0.005	0.004	0.43	0.054	1.051	4.858	Cerro Huenul
3866	2	Late Paracas	5 A	95.79	0.009	0.012	0.016	0.002	< LOD	0.003	< LOD	0.534	0.018	0.663	2.878	Jichja Parco
4155	3	Late Paracas	2 A	97.43	0.01	0.013	0.016	0.002	< LOD	0.002	< LOD	0.504	< LOD	0.364	1.594	Jichja Parco
4196	1	Late Paracas	2 A V I	95.37	0.009	0.007	0.012	< LOD	< LOD	0.004	< LOD	0.471	0.04	0.754	3.249	Jichja Parco

PAP-no.	Sub-no.	Periods	Type	Bal (%)	Zr (%)	Sr (%)	Rb (%)	Bi (%)	Pb (%)	Zn (%)	Cu (%)	Fe (%)	Mn (%)	V (%)	Ti (%)	Identified source
<b>Average error pXRF</b>				<b>0.078</b>	<b>0.001</b>	<b>0.001</b>	<b>0.001</b>	<b>0.001</b>	<b>0.001</b>	<b>0.001</b>	<b>0.001</b>	<b>0.005</b>	<b>0.003</b>	<b>0.020</b>	<b>0.078</b>	
4196	2	Late Paracas	2 A	95.79	0.01	0.012	0.016	0.002	< LOD	0.003	< LOD	0.521	< LOD	0.425	1.854	Jichja Parco
4196	3	Late Paracas	2 A	96.24	0.01	0.013	0.016	0.002	< LOD	0.003	< LOD	0.53	0.008	0.528	2.299	Jichja Parco
4196	4	Late Paracas	2 C V II	96.45	0.009	0.012	0.016	0.002	< LOD	0.002	< LOD	0.503	0.022	0.672	2.895	Jichja Parco
4196	5	Late Paracas	2 B	95.92	0.009	0.012	0.016	0.002	< LOD	0.003	< LOD	0.511	0.012	0.584	2.529	Jichja Parco
4196	6	Late Paracas	2 A	96.48	0.01	0.013	0.017	0.002	0.002	0.003	< LOD	0.565	0.01	0.526	2.292	Jichja Parco
4196	7	Late Paracas	2 A V I	97.08	0.009	0.012	0.016	0.002	< LOD	0.003	< LOD	0.513	0.008	0.545	2.363	Jichja Parco
4196	8	Late Paracas	2 A V I	97.44	0.01	0.013	0.017	0.003	0.002	0.003	< LOD	0.555	< LOD	0.348	1.533	Puzolana
4196	9	Late Paracas	2 A	96.51	0.01	0.012	0.016	0.002	< LOD	0.003	< LOD	0.526	< LOD	0.429	1.886	Jichja Parco
4196	10	Late Paracas	2 A	97.04	0.009	0.012	0.015	0.002	< LOD	0.003	< LOD	0.49	0.017	0.65	2.801	Jichja Parco
4761	4	Late Paracas	2 C V II	96.91	0.009	0.012	0.015	0.002	< LOD	0.003	< LOD	0.49	< LOD	0.445	2.032	Jichja Parco
4765		Late Paracas	2 B	97.04	0.009	0.012	0.016	0.002	< LOD	0.003	< LOD	0.515	< LOD	0.435	1.889	Jichja Parco
4819	1	Late Paracas	5 A	96.74	0.009	0.012	0.015	< LOD	< LOD	0.002	< LOD	0.512	< LOD	0.48	2.149	Jichja Parco
751	4	Early Horizon	1 G V I	93.23	0.006	0.01	0.011	< LOD	0.003	0.006	0.005	0.431	0.056	1.081	5.087	Cerro Huenul
760	2	Early Horizon	2 D	95.14	0.009	0.012	0.015	0.002	0.002	0.003	< LOD	0.5	0.033	0.787	3.418	Jichja Parco
767	1	Early Horizon	1 G	94.45	0.008	0.011	0.014	< LOD	0.002	0.003	0.002	0.456	0.042	0.914	4.024	Jichja Parco
777	2	Early Horizon	1 G	94.01	0.008	0.011	0.013	< LOD	0.003	0.004	0.004	0.487	0.048	0.951	4.379	Jichja Parco
800	5	Early Horizon	6 A	95.26	0.009	0.012	0.016	0.002	< LOD	0.003	< LOD	0.537	0.03	0.763	3.288	Jichja Parco
800	7	Early Horizon	1 G	97.46	0.01	0.013	0.016	0.002	< LOD	0.003	< LOD	0.528	< LOD	0.352	1.549	Cerro Huenul
828	2	Early Horizon	1 G	95.56	0.009	0.012	0.015	0.003	< LOD	0.003	< LOD	0.489	0.024	0.712	3.087	Jichja Parco
1780	1	Early Horizon	2 D	95.00	0.008	0.011	0.014	0.002	< LOD	0.003	< LOD	0.47	0.029	0.771	3.609	Jichja Parco
1802		Early Horizon	2 D	97.27	0.009	0.012	0.015	0.002	< LOD	0.003	< LOD	0.486	< LOD	0.395	1.741	Jichja Parco
1975		Early Horizon	2 D	96.30	0.009	0.012	0.015	< LOD	< LOD	0.003	< LOD	0.475	0.008	0.567	2.531	Jichja Parco

PAP-no.	Sub-no.	Periods	Type	Bal (%)	Zr (%)	Sr (%)	Rb (%)	Bi (%)	Pb (%)	Zn (%)	Cu (%)	Fe (%)	Mn (%)	V (%)	Ti (%)	Identified source
<b>Average error pXRF</b>				<b>0.078</b>	<b>0.001</b>	<b>0.001</b>	<b>0.001</b>	<b>0.001</b>	<b>0.001</b>	<b>0.001</b>	<b>0.001</b>	<b>0.005</b>	<b>0.003</b>	<b>0.020</b>	<b>0.078</b>	
2315	1	Early Horizon	2 F V I	97.48	0.009	0.013	0.016	0.002	< LOD	0.003	< LOD	0.497	< LOD	0.354	1.554	Jichja Parco
2403	3	Early Horizon	2 D	96.19	0.009	0.012	0.016	0.002	< LOD	0.002	< LOD	0.502	0.012	0.58	2.599	Jichja Parco
2703	2	Early Horizon	2 D	95.79	0.009	0.012	0.015	0.002	< LOD	0.003	< LOD	0.483	0.02	0.659	2.925	Jichja Parco
2707	4	Early Horizon	2 D	96.76	0.009	0.012	0.016	0.002	< LOD	0.003	< LOD	0.526	< LOD	0.48	2.113	Jichja Parco
2740	1	Early Horizon	2 D	96.86	0.01	0.013	0.016	0.002	0.002	0.003	< LOD	0.53	< LOD	0.46	2.022	Jichja Parco
3801	1	Early Horizon	2 F V I	96.54	0.01	0.012	0.016	0.002	< LOD	0.003	< LOD	0.508	0.008	0.527	2.291	Jichja Parco
3830	1	Early Horizon	1 G V I	94.48	0.008	0.012	0.014	0.002	0.002	0.004	0.003	0.524	0.043	0.889	3.945	Jichja Parco
3830	2	Early Horizon	6 A	96.81	0.009	0.012	0.016	0.002	< LOD	0.003	< LOD	0.505	< LOD	0.48	2.087	Jichja Parco
3866	1	Early Horizon	1 G	94.55	0.008	0.011	0.014	< LOD	< LOD	0.003	< LOD	0.516	0.04	0.886	3.89	Jichja Parco
4153	2	Early Horizon	1 G	94.29	0.008	0.011	0.014	< LOD	0.002	0.004	0.002	0.5	0.045	0.923	4.12	Jichja Parco
4766	1	Early Horizon	2 F V I	97.27	0.01	0.012	0.016	0.002	< LOD	0.003	< LOD	0.518	< LOD	0.389	1.706	Jichja Parco
4766	2	Early Horizon		97.99	0.01	0.013	0.016	0.002	< LOD	0.003	< LOD	0.541	< LOD	0.247	1.112	Jichja Parco
4818	2	Early Horizon	1 G	98.14	0.01	0.013	0.016	0.002	0.002	0.002	< LOD	0.523	< LOD	0.224	1.008	Jichja Parco
556	4	Initial Period/Early Intermediate Period	1 F	92.72	0.006	0.01	0.011	< LOD	0.003	0.006	0.006	0.435	0.069	1.179	5.475	Jichja Parco
2955		Initial Period/Early Intermediate Period	1 F	95.03	0.009	0.012	0.015	0.002	0.002	0.003	< LOD	0.501	0.031	0.796	3.519	Jichja Parco
11		Early Horizon/Early Intermediate Period	1 E	94.95	0.008	0.011	0.014	0.002	0.002	0.007	< LOD	0.498	0.034	0.808	3.584	Jichja Parco
19		Early Horizon/Early Intermediate Period	2 E	93.10	0.006	0.009	0.01	< LOD	0.003	0.005	0.005	0.385	0.059	1.131	5.21	Cerro Huenul
180	2	Early Horizon/Early Intermediate Period	3 G	95.03	0.009	0.012	0.015	< LOD	< LOD	0.003	< LOD	0.505	0.035	0.806	3.505	Jichja Parco
180	4	Early Horizon/Early Intermediate Period	3 G	96.57	0.009	0.012	0.015	< LOD	< LOD	0.003	< LOD	0.485	< LOD	0.528	2.293	Jichja Parco
196		Early Horizon/Early Intermediate Period	2 A V I	96.98	0.009	0.012	0.016	0.002	< LOD	0.003	< LOD	0.518	< LOD	0.443	1.933	Jichja Parco
462	1	Early Horizon/Early Intermediate Period	2 E	97.28	0.01	0.013	0.016	0.002	0.002	0.003	< LOD	0.53	< LOD	0.382	1.693	Jichja Parco
601	1	Early Horizon/Early Intermediate Period	4 B	93.57	0.007	0.011	0.012	< LOD	0.002	0.004	0.003	0.447	0.056	1.052	4.751	Jichja Parco

PAP-no.	Sub-no.	Periods	Type	Bal (%)	Zr (%)	Sr (%)	Rb (%)	Bi (%)	Pb (%)	Zn (%)	Cu (%)	Fe (%)	Mn (%)	V (%)	Ti (%)	Identified source
<b>Average error pXRF</b>				<b>0.078</b>	<b>0.001</b>	<b>0.001</b>	<b>0.001</b>	<b>0.001</b>	<b>0.001</b>	<b>0.001</b>	<b>0.001</b>	<b>0.005</b>	<b>0.003</b>	<b>0.020</b>	<b>0.078</b>	
751	1	Early Horizon/Early Intermediate Period	1 B	96.19	0.009	0.012	0.016	0.002	< LOD	0.003	< LOD	0.537	0.014	0.584	2.549	Jichja Parco
767	2	Early Horizon/Early Intermediate Period	2 H	95.01	0.009	0.012	0.016	0.002	0.002	0.003	< LOD	0.536	0.038	0.805	3.485	Jichja Parco
770	3	Early Horizon/Early Intermediate Period	1 B	95.99	0.009	0.012	0.016	0.002	0.002	0.003	< LOD	0.488	0.016	0.627	2.758	Jichja Parco
770	7	Early Horizon/Early Intermediate Period	2 E	96.02	0.009	0.013	0.016	0.002	0.002	0.003	< LOD	0.556	0.015	0.613	2.676	Jichja Parco
771	1	Early Horizon/Early Intermediate Period	1 B	96.50	0.01	0.013	0.016	0.002	0.002	0.003	< LOD	0.538	0.009	0.53	2.298	Jichja Parco
777	1	Early Horizon/Early Intermediate Period	2 H	96.83	0.01	0.013	0.016	0.002	0.002	0.003	< LOD	0.533	< LOD	0.467	2.042	Jichja Parco
814		Early Horizon/Early Intermediate Period	1 E	94.64	0.008	0.011	0.014	< LOD	0.002	0.004	0.002	0.491	0.038	0.854	3.858	Jichja Parco
819	1	Early Horizon/Early Intermediate Period	1 E	96.73	0.009	0.011	0.015	< LOD	< LOD	0.002	< LOD	0.469	< LOD	0.5	2.184	Jichja Parco
830	1	Early Horizon/Early Intermediate Period	1 E	96.02	0.01	0.012	0.016	0.002	< LOD	0.003	< LOD	0.508	0.018	0.624	2.705	Jichja Parco
843	2	Early Horizon/Early Intermediate Period	2 H V I	95.69	0.009	0.012	0.015	0.002	< LOD	0.003	< LOD	0.501	0.02	0.687	2.987	Jichja Parco
928	2	Early Horizon/Early Intermediate Period	4 B	95.27	0.009	0.012	0.015	0.002	< LOD	0.003	< LOD	0.503	0.03	0.761	3.312	Jichja Parco
1006		Early Horizon/Early Intermediate Period	1 F V I	96.89	0.01	0.013	0.016	0.002	0.002	0.002	< LOD	0.528	< LOD	0.455	2.001	Jichja Parco
1010	2	Early Horizon/Early Intermediate Period	1 B	96.93	0.01	0.013	0.016	0.002	< LOD	0.003	< LOD	0.529	< LOD	0.451	1.97	Jichja Parco
1015		Early Horizon/Early Intermediate Period	4 B	93.54	0.007	0.011	0.012	< LOD	0.003	0.005	0.004	0.447	0.054	1.053	4.788	Jichja Parco
1057	1	Early Horizon/Early Intermediate Period	1 B	96.76	0.009	0.012	0.015	0.002	< LOD	0.003	< LOD	0.506	< LOD	0.489	2.122	no origin
1057	3	Early Horizon/Early Intermediate Period	1 B	94.81	0.004	0.013	0.011	< LOD	0.002	0.003	< LOD	0.44	0.047	0.852	3.741	Jichja Parco
1902	3	Early Horizon/Early Intermediate Period	2 H	96.50	0.007	0.01	0.012	< LOD	< LOD	0.002	< LOD	0.415	0.039	0.893	4.629	Jichja Parco
1902	4	Early Horizon/Early Intermediate Period	2 H V I	93.91	0.009	0.012	0.016	0.002	< LOD	0.002	< LOD	0.513	0.008	0.533	2.322	Jichja Parco
1903		Early Horizon/Early Intermediate Period	3 G	97.10	0.01	0.012	0.016	0.002	< LOD	0.002	< LOD	0.52	< LOD	0.419	1.842	Jichja Parco
1938	1	Early Horizon/Early Intermediate Period	1 B	96.28	0.009	0.012	0.015	0.002	< LOD	0.003	< LOD	0.529	0.009	0.55	2.509	Jichja Parco
1939		Early Horizon/Early Intermediate Period	1 B	95.95	0.009	0.012	0.015	< LOD	< LOD	0.002	< LOD	0.493	0.017	0.623	2.8	Jichja Parco
1961	1	Early Horizon/Early Intermediate Period	3 G	97.02	0.009	0.012	0.015	0.002	< LOD	0.003	< LOD	0.507	< LOD	0.438	1.917	Jichja Parco

PAP-no.	Sub-no.	Periods	Type	Bal (%)	Zr (%)	Sr (%)	Rb (%)	Bi (%)	Pb (%)	Zn (%)	Cu (%)	Fe (%)	Mn (%)	V (%)	Ti (%)	Identified source
<b>Average error pXRF</b>				<b>0.078</b>	<b>0.001</b>	<b>0.001</b>	<b>0.001</b>	<b>0.001</b>	<b>0.001</b>	<b>0.001</b>	<b>0.001</b>	<b>0.005</b>	<b>0.003</b>	<b>0.020</b>	<b>0.078</b>	
1986	1	Early Horizon/Early Intermediate Period	1 F V I	96.70	0.009	0.011	0.015	0.002	< LOD	0.002	< LOD	0.486	0.025	0.717	3.375	Jichja Parco
1986	3	Early Horizon/Early Intermediate Period	1 F V I	95.28	0.009	0.012	0.016	0.002	< LOD	0.003	< LOD	0.516	< LOD	0.49	2.164	Jichja Parco
2237	3	Early Horizon/Early Intermediate Period	3 G	94.64	0.008	0.011	0.014	0.002	< LOD	0.003	< LOD	0.481	0.033	0.791	3.937	Jichja Parco
2350	2	Early Horizon/Early Intermediate Period	2 G	95.92	0.009	0.012	0.015	0.002	< LOD	0.003	< LOD	0.509	0.013	0.604	2.834	Jichja Parco
2403	1	Early Horizon/Early Intermediate Period	8 A	94.51	0.008	0.01	0.013	< LOD	< LOD	0.003	< LOD	0.448	0.024	0.739	4.014	Jichja Parco
2403	4	Early Horizon/Early Intermediate Period	2 H	94.66	0.008	0.01	0.013	< LOD	< LOD	0.003	< LOD	0.48	0.026	0.764	4.109	Jichja Parco
2702		Early Horizon/Early Intermediate Period	2 I V I	96.05	0.009	0.012	0.015	0.002	< LOD	0.003	< LOD	0.517	0.018	0.607	2.686	Jichja Parco
2703	1	Early Horizon/Early Intermediate Period	2 H	94.17	0.007	0.01	0.013	< LOD	< LOD	0.002	< LOD	0.406	0.034	0.848	4.425	Jichja Parco
2707	3	Early Horizon/Early Intermediate Period	2 H	96.91	0.01	0.012	0.016	0.002	< LOD	0.003	< LOD	0.517	< LOD	0.439	2.017	Jichja Parco
2733		Early Horizon/Early Intermediate Period	3 G	97.16	0.009	0.012	0.015	< LOD	< LOD	0.003	< LOD	0.496	< LOD	0.404	1.822	Jichja Parco
2813		Early Horizon/Early Intermediate Period	1 F V I	94.14	0.008	0.011	0.013	< LOD	0.003	0.004	0.003	0.475	0.044	0.927	4.29	Jichja Parco
3604		Early Horizon/Early Intermediate Period	1 E	96.95	0.01	0.012	0.016	0.002	< LOD	0.003	< LOD	0.528	< LOD	0.446	1.952	Jichja Parco
3856		Early Horizon/Early Intermediate Period	2 E	95.03	0.008	0.011	0.014	< LOD	0.002	0.004	0.003	0.465	0.029	0.778	3.573	Jichja Parco
4150	2	Early Horizon/Early Intermediate Period	1 E	95.84	0.009	0.012	0.016	0.002	< LOD	0.003	< LOD	0.48	0.018	0.659	2.878	Jichja Parco
4159	1	Early Horizon/Early Intermediate Period	2 H	94.74	0.008	0.011	0.014	< LOD	< LOD	0.003	< LOD	0.47	0.039	0.867	3.763	Jichja Parco
349		Middle Nasca	3 E V I	96.29	0.01	0.012	0.016	0.002	0.002	0.003	< LOD	0.517	0.013	0.57	2.481	Jichja Parco
534		Middle Nasca	2 J V I	94.76	0.009	0.012	0.015	0.002	< LOD	0.003	< LOD	0.48	0.039	0.861	3.738	Jichja Parco
1180	3	Middle Nasca	2 J V I	93.87	0.008	0.011	0.014	0.002	0.002	0.003	0.002	0.477	0.054	1.015	4.459	Jichja Parco
1180	5	Middle Nasca		97.18	0.01	0.013	0.016	0.003	< LOD	0.003	< LOD	0.533	< LOD	0.405	1.767	Jichja Parco
2416		Middle Nasca		97.12	0.01	0.013	0.016	0.002	0.002	0.003	< LOD	0.535	< LOD	0.413	1.807	Jichja Parco
556	2	Late Nasca	3 A V II	94.47	0.008	0.011	0.013	< LOD	0.002	0.003	0.003	0.44	0.04	0.897	4.036	Jichja Parco
12		Early Horizon/Middle Horizon	1 K	96.89	0.01	0.012	0.016	0.002	< LOD	0.003	< LOD	0.535	< LOD	0.458	1.996	Jichja Parco

PAP-no.	Sub-no.	Periods	Type	Bal (%)	Zr (%)	Sr (%)	Rb (%)	Bi (%)	Pb (%)	Zn (%)	Cu (%)	Fe (%)	Mn (%)	V (%)	Ti (%)	Identified source
<b>Average error pXRF</b>				<b>0.078</b>	<b>0.001</b>	<b>0.001</b>	<b>0.001</b>	<b>0.001</b>	<b>0.001</b>	<b>0.001</b>	<b>0.001</b>	<b>0.005</b>	<b>0.003</b>	<b>0.020</b>	<b>0.078</b>	
17		Early Horizon/Middle Horizon	3 D V I	93.35	0.006	0.011	0.011	< LOD	0.003	0.005	0.005	0.405	0.054	1.066	5.009	Cerro Huenul
63		Early Horizon/Middle Horizon	1 H	96.67	0.01	0.013	0.016	0.002	< LOD	0.003	< LOD	0.547	< LOD	0.495	2.161	Jichja Parco
70		Early Horizon/Middle Horizon	1 A	95.13	0.009	0.012	0.015	0.002	< LOD	0.003	< LOD	0.511	0.033	0.784	3.425	Jichja Parco
93		Early Horizon/Middle Horizon	1 C	97.09	0.01	0.012	0.016	0.002	0.002	0.003	< LOD	0.516	< LOD	0.424	1.854	Jichja Parco
365	2	Early Horizon/Middle Horizon	1 C	95.22	0.009	0.012	0.015	0.002	0.003	0.004	0.003	0.521	0.033	0.735	3.364	Jichja Parco
583	1	Early Horizon/Middle Horizon	1 K	95.18	0.009	0.012	0.016	0.002	0.002	0.003	< LOD	0.566	0.034	0.769	3.327	Jichja Parco
628	1	Early Horizon/Middle Horizon	3 D V I	97.07	0.01	0.013	0.016	0.002	0.002	0.003	< LOD	0.555	< LOD	0.417	1.832	Jichja Parco
675		Early Horizon/Middle Horizon	1 K	94.07	0.008	0.011	0.013	< LOD	0.003	0.004	0.003	0.47	0.048	0.951	4.336	Jichja Parco
752		Early Horizon/Middle Horizon	1 K	94.94	0.009	0.012	0.015	< LOD	0.002	0.003	< LOD	0.49	0.034	0.818	3.596	Jichja Parco
767	8	Early Horizon/Middle Horizon	1 C	96.60	0.01	0.012	0.016	0.002	0.002	0.002	< LOD	0.502	< LOD	0.518	2.254	Jichja Parco
780	3	Early Horizon/Middle Horizon	1 H	97.00	0.01	0.013	0.016	0.002	0.002	0.003	< LOD	0.527	< LOD	0.436	1.921	Jichja Parco
828	1	Early Horizon/Middle Horizon	3 D V I	94.88	0.009	0.012	0.015	0.002	0.002	0.003	< LOD	0.489	0.035	0.835	3.64	Jichja Parco
828	4	Early Horizon/Middle Horizon	1 K	95.58	0.007	0.01	0.011	< LOD	0.003	0.005	0.005	0.405	0.057	1.097	5.112	Jichja Parco
828	6	Early Horizon/Middle Horizon	3 D V I	93.21	0.009	0.012	0.016	0.002	0.002	0.003	< LOD	0.515	0.024	0.707	3.049	Cerro Huenul
873	4	Early Horizon/Middle Horizon	1 H	94.31	0.008	0.011	0.013	< LOD	0.002	0.003	0.003	0.442	0.041	0.923	4.169	Jichja Parco
894		Early Horizon/Middle Horizon	1 A	95.76	0.009	0.013	0.017	0.002	0.002	0.003	< LOD	0.56	0.023	0.664	2.873	Jichja Parco
907		Early Horizon/Middle Horizon	1 K	97.36	0.01	0.012	0.016	< LOD	< LOD	0.002	< LOD	0.476	< LOD	0.383	1.673	Jichja Parco
1054		Early Horizon/Middle Horizon	1 C	96.89	0.01	0.013	0.016	0.002	0.002	0.003	< LOD	0.529	< LOD	0.458	1.998	Jichja Parco
1060		Early Horizon/Middle Horizon	1 H	94.09	0.008	0.011	0.013	< LOD	0.002	0.004	0.003	0.474	0.044	0.951	4.32	Jichja Parco
1180	4	Early Horizon/Middle Horizon	1 K	94.83	0.009	0.012	0.015	0.002	0.002	0.003	0.003	0.491	0.035	0.829	3.69	Jichja Parco
1365		Early Horizon/Middle Horizon	1 A	96.21	0.01	0.012	0.016	0.002	< LOD	0.003	< LOD	0.537	0.011	0.587	2.536	Jichja Parco
1779	1	Early Horizon/Middle Horizon	1 H	95.94	0.009	0.012	0.016	0.002	< LOD	0.003	< LOD	0.552	0.016	0.616	2.759	Jichja Parco

PAP-no.	Sub-no.	Periods	Type	Bal (%)	Zr (%)	Sr (%)	Rb (%)	Bi (%)	Pb (%)	Zn (%)	Cu (%)	Fe (%)	Mn (%)	V (%)	Ti (%)	Identified source
<b>Average error pXRF</b>				<b>0.078</b>	<b>0.001</b>	<b>0.001</b>	<b>0.001</b>	<b>0.001</b>	<b>0.001</b>	<b>0.001</b>	<b>0.001</b>	<b>0.005</b>	<b>0.003</b>	<b>0.020</b>	<b>0.078</b>	
2225	1	Early Horizon/Middle Horizon	1 A	94.88	0.008	0.01	0.013	< LOD	< LOD	0.002	< LOD	0.425	0.025	0.729	3.83	Jichja Parco
2237	2	Early Horizon/Middle Horizon	3 B V I	95.01	0.008	0.011	0.013	< LOD	< LOD	0.002	< LOD	0.431	0.024	0.758	3.658	Jichja Parco
2350	1	Early Horizon/Middle Horizon	3 B V I	92.74	0.006	0.008	0.01	< LOD	< LOD	0.002	< LOD	0.348	0.053	1.043	5.705	Jichja Parco
2411		Early Horizon/Middle Horizon	1 K	97.70	0.017	0.026	0.014	< LOD	0.003	0.005	< LOD	0.869	< LOD	0.23	1.056	Lisahuacho
2707	2	Early Horizon/Middle Horizon	1 H	97.81	0.01	0.013	0.016	0.002	0.002	0.003	< LOD	0.53	< LOD	0.287	1.266	Jichja Parco
2904	7	Early Horizon/Middle Horizon	3 D V I	96.33	0.009	0.012	0.016	0.002	0.002	0.003	< LOD	0.516	0.011	0.561	2.461	Jichja Parco
3751		Early Horizon/Middle Horizon	3 D V I	94.74	0.008	0.011	0.014	< LOD	0.002	0.003	0.002	0.468	0.036	0.846	3.785	Jichja Parco
3910		Early Horizon/Middle Horizon	3 B V I	95.02	0.009	0.011	0.014	< LOD	< LOD	0.003	< LOD	0.458	0.033	0.816	3.551	Jichja Parco
4153	1	Early Horizon/Middle Horizon	1 C	95.59	0.009	0.012	0.015	0.002	< LOD	0.003	< LOD	0.489	0.023	0.703	3.075	Jichja Parco
4156	3	Early Horizon/Middle Horizon	1 K	94.95	0.009	0.012	0.014	0.002	0.002	0.004	0.002	0.499	0.033	0.794	3.6	Jichja Parco
4159	2	Early Horizon/Middle Horizon	1 A	96.60	0.009	0.012	0.015	0.002	< LOD	0.002	< LOD	0.482	< LOD	0.522	2.271	Jichja Parco
4162		Early Horizon/Middle Horizon		94.96	0.008	0.011	0.014	< LOD	< LOD	0.003	< LOD	0.478	0.035	0.824	3.59	Jichja Parco
4165	3	Early Horizon/Middle Horizon	1 K	95.91	0.01	0.013	0.016	0.002	< LOD	0.003	< LOD	0.519	0.018	0.643	2.789	Jichja Parco
4166	1	Early Horizon/Middle Horizon	1 H	95.91	0.009	0.012	0.015	0.002	< LOD	0.003	< LOD	0.497	0.027	0.744	3.211	Jichja Parco
4166	2	Early Horizon/Middle Horizon	1 K	95.40	0.01	0.012	0.016	0.002	< LOD	0.003	< LOD	0.518	0.018	0.645	2.788	Jichja Parco
4166	3	Early Horizon/Middle Horizon	1 K	96.68	0.01	0.012	0.016	0.002	< LOD	0.003	< LOD	0.53	< LOD	0.499	2.165	Jichja Parco
4167		Early Horizon/Middle Horizon	1 A	96.31	0.01	0.012	0.016	0.002	0.002	0.003	< LOD	0.524	0.014	0.569	2.464	Jichja Parco
4761	3	Early Horizon/Middle Horizon	1 A	97.59	0.009	0.011	0.015	< LOD	< LOD	0.002	< LOD	0.474	0.017	0.651	2.877	Jichja Parco
4761	7	Early Horizon/Middle Horizon	1 K	95.86	0.01	0.013	0.016	0.002	< LOD	0.003	< LOD	0.52	< LOD	0.33	1.451	Jichja Parco
4763		Early Horizon/Middle Horizon	1 H	97.80	0.01	0.012	0.016	0.002	0.002	0.003	< LOD	0.526	< LOD	0.283	1.279	Jichja Parco
4764	1	Early Horizon/Middle Horizon	1 A	95.50	0.008	0.011	0.014	0.002	< LOD	0.002	< LOD	0.443	0.017	0.674	3.247	Jichja Parco
4809	1	Early Horizon/Middle Horizon	1 K	97.31	0.01	0.013	0.016	0.002	0.002	0.003	< LOD	0.53	< LOD	0.378	1.665	Jichja Parco



PAP-no.	Sub-no.	Periods	Type	Bal (%)	Zr (%)	Sr (%)	Rb (%)	Bi (%)	Pb (%)	Zn (%)	Cu (%)	Fe (%)	Mn (%)	V (%)	Ti (%)	Identified source
<b>Average error pXRF</b>				<b>0.078</b>	<b>0.001</b>	<b>0.001</b>	<b>0.001</b>	<b>0.001</b>	<b>0.001</b>	<b>0.001</b>	<b>0.001</b>	<b>0.005</b>	<b>0.003</b>	<b>0.020</b>	<b>0.078</b>	
4810	3	Early Horizon/Middle Horizon	1 A	97.39	0.01	0.013	0.016	0.002	0.002	0.003	< LOD	0.533	< LOD	0.363	1.595	Jichja Parco
4812		Early Horizon/Middle Horizon	1 K	95.86	0.009	0.012	0.015	0.002	0.002	0.003	< LOD	0.512	0.018	0.643	2.846	Jichja Parco
4819	2	Early Horizon/Middle Horizon	1 C	97.08	0.009	0.012	0.016	0.002	< LOD	0.003	< LOD	0.516	< LOD	0.424	1.861	Jichja Parco
267		Early Intermediate Period/Middle Horizon	2 C	95.58	0.009	0.011	0.015	< LOD	< LOD	0.003	< LOD	0.46	0.023	0.718	3.095	Jichja Parco
751	2	Early Intermediate Period/Middle Horizon	5 C	95.89	0.009	0.012	0.015	0.002	< LOD	0.003	< LOD	0.543	0.015	0.631	2.797	Jichja Parco
763	1	Early Intermediate Period/Middle Horizon	2 A	93.67	0.008	0.011	0.013	0.002	0.002	0.004	0.002	0.513	0.059	1.05	4.588	Jichja Parco
785	1	Early Intermediate Period/Middle Horizon	5 C	93.57	0.007	0.01	0.012	< LOD	0.002	0.004	0.004	0.434	0.053	1.047	4.774	Jichja Parco
843	1	Early Intermediate Period/Middle Horizon	2 C	94.70	0.008	0.011	0.014	< LOD	< LOD	0.003	< LOD	0.453	0.038	0.877	3.818	Jichja Parco
928	1	Early Intermediate Period/Middle Horizon	3 E	96.79	0.01	0.012	0.016	0.002	< LOD	0.003	< LOD	0.51	< LOD	0.48	2.098	Jichja Parco
972	2	Early Intermediate Period/Middle Horizon	3 E	96.61	0.009	0.012	0.016	0.002	< LOD	0.003	< LOD	0.503	0.006	0.515	2.245	Jichja Parco
1109	1	Early Intermediate Period/Middle Horizon	2 C	96.29	0.009	0.012	0.015	0.002	< LOD	0.003	< LOD	0.498	0.011	0.577	2.507	Jichja Parco
4131	2	Early Intermediate Period/Middle Horizon	5 C	96.98	0.01	0.013	0.016	0.002	< LOD	0.003	< LOD	0.532	< LOD	0.439	1.926	Jichja Parco
4155	2	Early Intermediate Period/Middle Horizon	2 C	96.57	0.01	0.012	0.016	0.002	< LOD	0.003	< LOD	0.558	0.006	0.511	2.23	Jichja Parco
4158		Early Intermediate Period/Middle Horizon	5 C	95.12	0.009	0.012	0.015	0.002	< LOD	0.003	< LOD	0.504	0.031	0.796	3.433	Jichja Parco
4761	1	Early Intermediate Period/Middle Horizon	2 C	97.46	0.01	0.013	0.016	0.002	0.002	0.003	< LOD	0.527	< LOD	0.351	1.544	Jichja Parco
4802		Early Intermediate Period/Middle Horizon		98.04	0.01	0.013	0.016	0.002	0.002	0.003	< LOD	0.541	< LOD	0.241	1.074	Jichja Parco
4805		Early Intermediate Period/Middle Horizon	2 C	97.38	0.01	0.012	0.016	0.002	< LOD	0.002	< LOD	0.514	< LOD	0.37	1.622	Jichja Parco
4806	1	Early Intermediate Period/Middle Horizon	3 E	96.33	0.01	0.012	0.016	0.002	0.002	0.003	< LOD	0.528	0.012	0.557	2.454	Jichja Parco
4810	1	Early Intermediate Period/Middle Horizon	2 C	97.02	0.009	0.012	0.015	0.002	< LOD	0.002	< LOD	0.476	< LOD	0.446	1.941	Jichja Parco
601	2	Wari	3 C	96.07	0.01	0.013	0.016	0.002	0.002	0.003	< LOD	0.543	0.016	0.607	2.643	Jichja Parco
609	1	Wari	3 C	96.15	0.009	0.012	0.016	0.002	< LOD	0.002	< LOD	0.518	0.015	0.598	2.599	Jichja Parco
760	7	Wari	3 C	96.86	0.009	0.012	0.016	0.002	< LOD	0.003	< LOD	0.508	< LOD	0.468	2.038	Jichja Parco

PAP-no.	Sub-no.	Periods	Type	Bal (%)	Zr (%)	Sr (%)	Rb (%)	Bi (%)	Pb (%)	Zn (%)	Cu (%)	Fe (%)	Mn (%)	V (%)	Ti (%)	Identified source
<b>Average error pXRF</b>				<b>0.078</b>	<b>0.001</b>	<b>0.001</b>	<b>0.001</b>	<b>0.001</b>	<b>0.001</b>	<b>0.001</b>	<b>0.001</b>	<b>0.005</b>	<b>0.003</b>	<b>0.020</b>	<b>0.078</b>	
831	1	Wari	3 B	94.79	0.008	0.011	0.013	< LOD	< LOD	0.002	< LOD	0.441	0.035	0.863	3.755	Jichja Parco
843	3	Wari	3 B	94.96	0.01	0.012	0.016	0.002	0.002	0.003	< LOD	0.516	0.037	0.825	3.544	Jichja Parco
914	4	Wari	3 C	95.89	0.01	0.013	0.016	0.002	0.003	0.004	< LOD	0.579	0.018	0.614	2.771	Jichja Parco
972	1	Wari	3 B	96.11	0.01	0.012	0.016	0.002	0.002	0.002	< LOD	0.506	0.013	0.612	2.636	Jichja Parco
1026		Wari	3 C	94.37	0.008	0.012	0.014	< LOD	0.002	0.003	< LOD	0.484	0.046	0.924	4.055	Jichja Parco
1027	1	Wari	3 C	95.76	0.005	0.014	0.012	< LOD	0.002	0.003	< LOD	0.491	0.033	0.679	2.921	Jichja Parco
1084		Wari	3 C	96.22	0.009	0.012	0.016	0.002	0.002	0.003	< LOD	0.53	0.013	0.582	2.53	Jichja Parco
4138	1	Wari	2 F V II	96.08	0.008	0.011	0.014	< LOD	< LOD	0.003	0.003	0.447	0.039	0.9	3.989	Jichja Parco
4138	2	Wari	3 B	96.06	0.009	0.012	0.016	0.002	< LOD	0.003	< LOD	0.507	0.014	0.62	2.676	Jichja Parco
4138	3	Wari		94.51	0.01	0.012	0.016	0.002	< LOD	0.003	< LOD	0.527	0.015	0.613	2.64	Jichja Parco
4150	1	Wari	3 B	95.55	0.009	0.011	0.015	0.002	< LOD	0.003	< LOD	0.476	0.022	0.722	3.113	Jichja Parco
4154	1	Wari		94.31	0.009	0.012	0.016	0.002	< LOD	0.003	< LOD	0.532	0.009	0.544	2.366	Jichja Parco
4154	2	Wari		96.43	0.007	0.01	0.012	< LOD	0.002	0.004	0.003	0.412	0.04	0.927	4.195	Jichja Parco
4156	1	Wari	3 I V I	94.75	0.008	0.011	0.014	< LOD	< LOD	0.003	< LOD	0.449	0.036	0.863	3.787	Jichja Parco
4156	2	Wari	3 A	94.49	0.008	0.01	0.013	< LOD	0.002	0.003	0.003	0.432	0.038	0.888	4.035	Jichja Parco
4165	1	Wari	3 C	95.66	0.009	0.012	0.015	0.002	< LOD	0.003	< LOD	0.498	0.022	0.698	3.005	Jichja Parco
4165	2	Wari	3 B	95.20	0.009	0.012	0.015	0.002	< LOD	0.002	< LOD	0.485	0.03	0.782	3.381	Jichja Parco
4166	4	Wari	3 C	97.08	0.009	0.012	0.016	0.002	< LOD	0.003	< LOD	0.546	< LOD	0.419	1.835	Jichja Parco
4761	2	Wari	3 B	96.62	0.01	0.013	0.016	0.003	0.002	0.003	< LOD	0.541	< LOD	0.351	1.54	Jichja Parco
4761	5	Wari	3 A V I	97.45	0.01	0.012	0.016	0.002	< LOD	0.003	< LOD	0.513	< LOD	0.356	1.565	Jichja Parco
4761	6	Wari	3 A	97.46	0.009	0.012	0.016	0.003	< LOD	0.003	< LOD	0.517	0.006	0.512	2.228	Jichja Parco
4764	2	Wari	3 A V I	96.26	0.009	0.012	0.015	< LOD	< LOD	0.003	< LOD	0.683	0.009	0.541	2.385	Jichja Parco

PAP-no.	Sub-no.	Periods	Type	Bal (%)	Zr (%)	Sr (%)	Rb (%)	Bi (%)	Pb (%)	Zn (%)	Cu (%)	Fe (%)	Mn (%)	V (%)	Ti (%)	Identified source
<b>Average error pXRF</b>				<b>0.078</b>	<b>0.001</b>	<b>0.001</b>	<b>0.001</b>	<b>0.001</b>	<b>0.001</b>	<b>0.001</b>	<b>0.001</b>	<b>0.005</b>	<b>0.003</b>	<b>0.020</b>	<b>0.078</b>	
4767		Wari	3 I V III	95.61	0.008	0.011	0.014	< LOD	< LOD	0.003	< LOD	0.453	0.019	0.689	3.108	Jichja Parco
4769		Wari	3 A	96.86	0.01	0.012	0.016	0.002	0.002	0.003	< LOD	0.52	< LOD	0.463	2.032	Jichja Parco
4806	2	Wari	3 C	96.25	0.009	0.012	0.016	0.002	< LOD	0.003	< LOD	0.508	0.012	0.575	2.534	Jichja Parco
4807	1	Wari	2 I	97.03	0.01	0.012	0.016	0.002	0.002	0.003	< LOD	0.533	< LOD	0.431	1.883	Jichja Parco
4810	2	Wari	2 I	97.17	0.01	0.012	0.016	0.002	< LOD	0.003	< LOD	0.501	< LOD	0.412	1.798	Jichja Parco
15		Early Horizon/Late Horizon	1 J	94.99	0.009	0.012	0.015	0.002	0.002	0.004	0.002	0.535	0.035	0.787	3.532	Jichja Parco
73		Early Horizon/Late Horizon	5 A V II	95.07	0.009	0.012	0.015	0.002	< LOD	0.003	< LOD	0.483	0.032	0.798	3.496	Jichja Parco
180	3	Early Horizon/Late Horizon	5 A V II	94.40	0.008	0.011	0.013	< LOD	0.002	0.004	0.003	0.492	0.039	0.89	4.06	Jichja Parco
526	1	Early Horizon/Late Horizon	1 J	96.74	0.009	0.012	0.016	0.002	0.002	0.003	< LOD	0.513	< LOD	0.489	2.134	Jichja Parco
546		Early Horizon/Late Horizon	5 A V II	94.41	0.008	0.011	0.014	< LOD	0.003	0.005	0.003	0.48	0.042	0.891	4.057	Jichja Parco
575	2	Early Horizon/Late Horizon	1 J	93.56	0.007	0.01	0.012	< LOD	0.002	0.004	0.004	0.441	0.055	1.05	4.775	Jichja Parco
751	5	Early Horizon/Late Horizon	1 J	94.12	0.008	0.011	0.013	< LOD	0.002	0.004	0.003	0.465	0.043	0.94	4.306	Jichja Parco
760	4	Early Horizon/Late Horizon	1 J	94.52	0.008	0.012	0.014	< LOD	0.003	0.004	0.002	0.508	0.039	0.872	3.936	Jichja Parco
764	2	Early Horizon/Late Horizon	5 A V II	96.57	0.01	0.013	0.016	0.002	0.002	0.003	< LOD	0.55	0.008	0.514	2.236	Jichja Parco
770	5	Early Horizon/Late Horizon	5 A V II	93.51	0.007	0.01	0.011	< LOD	0.003	0.005	0.004	0.423	0.054	1.046	4.85	Jichja Parco
780	2	Early Horizon/Late Horizon	5 A V II	96.93	0.01	0.013	0.016	0.002	< LOD	0.002	< LOD	0.525	< LOD	0.451	1.972	Jichja Parco
828	5	Early Horizon/Late Horizon	1 J	93.67	0.008	0.011	0.013	< LOD	0.003	0.005	0.004	0.498	0.055	1.015	4.636	Jichja Parco
873	1	Early Horizon/Late Horizon	5 A V II	96.71	0.009	0.012	0.016	0.002	0.002	0.003	< LOD	0.518	< LOD	0.495	2.153	Jichja Parco
1010	1	Early Horizon/Late Horizon	5 A V II	94.42	0.008	0.011	0.013	< LOD	0.003	0.004	0.004	0.465	0.037	0.882	4.077	Jichja Parco
1108		Early Horizon/Late Horizon	1 J	96.72	0.005	0.014	0.012	< LOD	0.002	0.003	< LOD	0.459	0.015	0.505	2.184	Callejones
2403	2	Early Horizon/Late Horizon	1 J	96.58	0.009	0.012	0.016	0.002	< LOD	0.003	< LOD	0.526	< LOD	0.493	2.278	Jichja Parco
4165	4	Early Horizon/Late Horizon	1 J	95.72	0.009	0.012	0.016	0.002	0.002	0.003	< LOD	0.533	0.021	0.666	2.939	Jichja Parco

PAP-no.	Sub-no.	Periods	Type	Bal (%)	Zr (%)	Sr (%)	Rb (%)	Bi (%)	Pb (%)	Zn (%)	Cu (%)	Fe (%)	Mn (%)	V (%)	Ti (%)	Identified source
<b>Average error pXRF</b>				<b>0.078</b>	<b>0.001</b>	<b>0.001</b>	<b>0.001</b>	<b>0.001</b>	<b>0.001</b>	<b>0.001</b>	<b>0.001</b>	<b>0.005</b>	<b>0.003</b>	<b>0.020</b>	<b>0.078</b>	
556	1	Early Horizon/Late Intermediate Period	5 C V IV	96.40	0.01	0.013	0.017	0.002	0.002	0.003	< LOD	0.549	0.008	0.545	2.37	Cerro Huenul
751	7	Early Horizon/Late Intermediate Period	5 C V IV	94.92	0.008	0.013	0.014	0.002	0.003	0.004	< LOD	0.527	0.033	0.793	3.6	Jichja Parco
819	2	Early Horizon/Late Intermediate Period	5 C V IV	95.01	0.008	0.011	0.013	< LOD	< LOD	0.003	0.002	0.445	0.029	0.81	3.591	Jichja Parco
830	2	Early Horizon/Late Intermediate Period	5 C V IV	95.62	0.009	0.011	0.014	< LOD	< LOD	0.003	< LOD	0.48	0.02	0.694	3.064	Jichja Parco
3530		Early Horizon/Late Intermediate Period	5 C V IV	95.40	0.009	0.012	0.014	0.002	0.002	0.004	< LOD	0.511	0.026	0.716	3.228	Jichja Parco
1027	2	Late Horizon	5 A	95.78	0.009	0.012	0.015	0.002	0.002	0.003	< LOD	0.509	0.019	0.657	2.917	Callejones
16		Undated Obsidian artefacts	5 C V III	97.53	0.01	0.013	0.017	0.002	< LOD	0.003	< LOD	0.541	< LOD	0.335	1.478	Jichja Parco
43		Undated Obsidian artefacts	5 B V I	96.06	0.01	0.012	0.016	0.002	< LOD	0.003	< LOD	0.528	0.017	0.614	2.659	Jichja Parco
138		Undated Obsidian artefacts	3 D	96.30	0.01	0.012	0.016	0.002	0.002	0.003	< LOD	0.531	0.012	0.567	2.471	Jichja Parco
152		Undated Obsidian artefacts	3 H	95.81	0.009	0.012	0.015	0.002	< LOD	0.002	< LOD	0.484	0.019	0.67	2.896	Jichja Parco
251		Undated Obsidian artefacts	3 C V I	96.27	0.009	0.012	0.016	0.002	0.002	0.003	< LOD	0.529	0.014	0.572	2.487	Jichja Parco
278	2	Undated Obsidian artefacts	3 I	96.96	0.01	0.013	0.016	0.002	0.002	0.003	< LOD	0.523	< LOD	0.446	1.948	Jichja Parco
365	1	Undated Obsidian artefacts	3 D	93.19	0.007	0.01	0.01	< LOD	0.003	0.005	0.005	0.423	0.057	1.083	5.127	Cerro Huenul
398		Undated Obsidian artefacts	3 I V I	92.88	0.006	0.009	0.01	< LOD	0.003	0.005	0.005	0.404	0.063	1.146	5.384	Cerro Huenul
462	2	Undated Obsidian artefacts	3 I V II	94.92	0.009	0.012	0.015	0.002	0.003	0.004	< LOD	0.553	0.037	0.808	3.558	Jichja Parco
556	3	Undated Obsidian artefacts	3 I V II	95.43	0.009	0.012	0.015	< LOD	0.002	0.003	< LOD	0.51	0.027	0.721	3.185	Jichja Parco
575	1	Undated Obsidian artefacts	1 J V I	95.99	0.009	0.012	0.016	0.002	< LOD	0.002	< LOD	0.521	0.019	0.63	2.719	Jichja Parco
576		Undated Obsidian artefacts	3 I V I	94.08	0.008	0.011	0.014	0.002	0.003	0.004	0.003	0.501	0.049	0.953	4.297	Jichja Parco
582		Undated Obsidian artefacts		94.11	0.008	0.011	0.013	0.002	0.002	0.004	0.003	0.488	0.048	0.954	4.283	Jichja Parco
583	2	Undated Obsidian artefacts	3 E V I	96.51	0.01	0.012	0.016	0.002	< LOD	0.003	< LOD	0.588	0.008	0.517	2.258	Jichja Parco
591		Undated Obsidian artefacts	3 I V III	94.20	0.008	0.011	0.013	< LOD	0.002	0.004	0.003	0.471	0.045	0.941	4.224	Jichja Parco
608		Undated Obsidian artefacts		96.49	0.01	0.013	0.017	0.002	0.002	0.003	< LOD	0.556	0.009	0.526	2.291	Jichja Parco

PAP-no.	Sub-no.	Periods	Type	Bal (%)	Zr (%)	Sr (%)	Rb (%)	Bi (%)	Pb (%)	Zn (%)	Cu (%)	Fe (%)	Mn (%)	V (%)	Ti (%)	Identified source
<b>Average error pXRF</b>				<b>0.078</b>	<b>0.001</b>	<b>0.001</b>	<b>0.001</b>	<b>0.001</b>	<b>0.001</b>	<b>0.001</b>	<b>0.001</b>	<b>0.005</b>	<b>0.003</b>	<b>0.020</b>	<b>0.078</b>	
609	3	Undated Obsidian artefacts	3 C V II	96.10	0.01	0.013	0.016	0.002	0.002	0.003	< LOD	0.55	0.017	0.597	2.61	Jichja Parco
751	3	Undated Obsidian artefacts	1 D	96.54	0.01	0.013	0.016	0.002	0.002	0.003	< LOD	0.59	0.008	0.509	2.233	Jichja Parco
760	3	Undated Obsidian artefacts	3 C V II	93.81	0.009	0.012	0.015	0.002	< LOD	0.003	< LOD	0.501	0.007	0.557	2.442	Jichja Parco
760	5	Undated Obsidian artefacts	3 I V I	96.07	0.007	0.011	0.013	< LOD	0.003	0.005	0.004	0.536	0.051	0.975	4.507	Jichja Parco
760	6	Undated Obsidian artefacts	3 C V II	96.37	0.01	0.012	0.016	0.002	< LOD	0.002	< LOD	0.502	0.015	0.618	2.672	Jichja Parco
763	2	Undated Obsidian artefacts	3 I V II	95.04	0.009	0.012	0.015	0.002	0.002	0.003	< LOD	0.5	0.033	0.795	3.514	Jichja Parco
766	1	Undated Obsidian artefacts	5 B V I	96.25	0.009	0.012	0.014	0.002	0.002	0.003	< LOD	0.492	0.037	0.832	3.648	Jichja Parco
766	2	Undated Obsidian artefacts		94.87	0.009	0.013	0.016	0.002	0.002	0.003	< LOD	0.543	0.01	0.56	2.512	Jichja Parco
767	3	Undated Obsidian artefacts	8 A	97.18	0.009	0.012	0.016	0.002	< LOD	0.003	< LOD	0.523	0.026	0.719	3.102	Jichja Parco
767	6	Undated Obsidian artefacts		95.51	0.01	0.013	0.017	0.002	< LOD	0.003	< LOD	0.543	< LOD	0.398	1.753	Jichja Parco
770	1	Undated Obsidian artefacts	5 B V I	94.16	0.009	0.012	0.015	< LOD	0.002	0.003	< LOD	0.513	0.025	0.741	3.251	Jichja Parco
770	4	Undated Obsidian artefacts	3 I V II	95.35	0.009	0.012	0.015	< LOD	0.002	0.003	< LOD	0.483	0.029	0.781	3.41	Jichja Parco
770	6	Undated Obsidian artefacts		95.18	0.008	0.011	0.014	< LOD	0.003	0.005	0.003	0.475	0.045	0.927	4.272	Jichja Parco
771	3	Undated Obsidian artefacts	8 A	96.25	0.009	0.012	0.015	0.002	0.002	0.003	< LOD	0.635	0.01	0.549	2.432	Jichja Parco
774	3	Undated Obsidian artefacts		95.34	0.009	0.012	0.016	0.002	0.002	0.003	< LOD	0.545	0.028	0.744	3.218	Jichja Parco
780	1	Undated Obsidian artefacts		96.15	0.009	0.012	0.016	0.002	< LOD	0.003	< LOD	0.526	0.014	0.597	2.587	Jichja Parco
784		Undated Obsidian artefacts	5 D	95.61	0.009	0.012	0.015	0.002	< LOD	0.003	< LOD	0.477	0.021	0.709	3.067	Jichja Parco
785	2	Undated Obsidian artefacts		93.55	0.007	0.011	0.012	< LOD	0.003	0.004	0.004	0.437	0.056	1.047	4.789	no origin
791	1	Undated Obsidian artefacts	5 B V I	95.88	0.01	0.012	0.016	0.002	< LOD	0.003	< LOD	0.532	< LOD	0.457	2.003	Jichja Parco
791	3	Undated Obsidian artefacts	5 D V I	96.13	0.009	0.012	0.016	0.002	< LOD	0.003	< LOD	0.506	0.018	0.65	2.82	Jichja Parco
791	4	Undated Obsidian artefacts	3 I V II	96.88	0.009	0.013	0.016	0.002	0.002	0.003	< LOD	0.515	0.012	0.591	2.626	Jichja Parco
800	4	Undated Obsidian artefacts	5 D V I	93.71	0.007	0.011	0.012	< LOD	0.003	0.004	0.004	0.429	0.053	1.025	4.658	no origin

PAP-no.	Sub-no.	Periods	Type	Bal (%)	Zr (%)	Sr (%)	Rb (%)	Bi (%)	Pb (%)	Zn (%)	Cu (%)	Fe (%)	Mn (%)	V (%)	Ti (%)	Identified source
<b>Average error pXRF</b>				<b>0.078</b>	<b>0.001</b>	<b>0.001</b>	<b>0.001</b>	<b>0.001</b>	<b>0.001</b>	<b>0.001</b>	<b>0.001</b>	<b>0.005</b>	<b>0.003</b>	<b>0.020</b>	<b>0.078</b>	
828	3	Undated Obsidian artefacts	5 E	94.83	0.01	0.012	0.016	0.002	< LOD	0.002	< LOD	0.533	< LOD	0.472	2.051	Jichja Parco
828	7	Undated Obsidian artefacts	5 C V III	96.60	0.01	0.013	0.016	0.002	0.002	0.003	< LOD	0.54	0.006	0.507	2.221	Jichja Parco
828	9	Undated Obsidian artefacts	3 E V I	96.82	0.009	0.011	0.014	< LOD	< LOD	0.002	< LOD	0.459	0.036	0.855	3.7	Jichja Parco
831	2	Undated Obsidian artefacts	5 E	96.31	0.01	0.012	0.016	0.002	0.002	0.003	< LOD	0.516	0.014	0.571	2.468	Jichja Parco
831	3	Undated Obsidian artefacts	5 B V I	94.73	0.008	0.012	0.014	< LOD	0.002	0.004	< LOD	0.498	0.037	0.844	3.769	Jichja Parco
836		Undated Obsidian artefacts	3 I V II	96.96	0.01	0.013	0.017	0.002	0.002	0.003	< LOD	0.576	< LOD	0.435	1.904	Jichja Parco
840	1	Undated Obsidian artefacts	5 C V I	94.79	0.01	0.013	0.017	0.003	0.002	0.003	< LOD	0.566	< LOD	0.221	1.004	Jichja Parco
840	2	Undated Obsidian artefacts	3 C V II	98.10	0.008	0.012	0.014	0.002	0.002	0.003	< LOD	0.496	0.037	0.837	3.721	Jichja Parco
843	4	Undated Obsidian artefacts	3 E V I	93.97	0.008	0.011	0.014	< LOD	< LOD	0.003	< LOD	0.477	0.053	1.001	4.375	Jichja Parco
873	2	Undated Obsidian artefacts	5 C V I	96.31	0.009	0.012	0.015	0.002	< LOD	0.003	< LOD	0.476	0.008	0.577	2.507	Jichja Parco
873	3	Undated Obsidian artefacts		96.55	0.01	0.012	0.016	0.002	< LOD	0.003	< LOD	0.513	< LOD	0.526	2.286	Jichja Parco
910	2	Undated Obsidian artefacts	5 C V III	95.51	0.009	0.011	0.014	< LOD	< LOD	0.003	< LOD	0.464	0.023	0.727	3.162	Jichja Parco
912		Undated Obsidian artefacts	3 E V I	95.73	0.009	0.012	0.016	0.002	< LOD	0.003	< LOD	0.538	0.022	0.671	2.916	Jichja Parco
962		Undated Obsidian artefacts	3 I V I	95.95	0.01	0.012	0.016	0.002	0.002	0.003	< LOD	0.531	0.019	0.635	2.747	Jichja Parco
1032	1	Undated Obsidian artefacts	3 I	96.04	0.009	0.012	0.015	0.002	< LOD	0.003	< LOD	0.503	0.017	0.619	2.702	Jichja Parco
1037	2	Undated Obsidian artefacts	3 I V II	96.58	0.01	0.012	0.016	0.002	< LOD	0.003	< LOD	0.524	< LOD	0.516	2.255	Jichja Parco
1056		Undated Obsidian artefacts	1 D V I	96.12	0.01	0.013	0.016	0.002	0.002	0.004	0.003	0.54	0.016	0.598	2.597	Jichja Parco
1066		Undated Obsidian artefacts	1 D	93.63	0.008	0.011	0.014	< LOD	0.002	0.004	0.002	0.486	0.058	1.049	4.66	Jichja Parco
1067	1	Undated Obsidian artefacts	3 E V I	94.04	0.008	0.011	0.014	< LOD	0.002	0.004	< LOD	0.473	0.053	0.982	4.333	Jichja Parco
1067	2	Undated Obsidian artefacts	5 D	95.13	0.009	0.012	0.015	0.002	0.002	0.004	< LOD	0.499	0.032	0.78	3.442	Jichja Parco
1074		Undated Obsidian artefacts	3 H	94.51	0.008	0.011	0.014	0.002	0.002	0.003	< LOD	0.48	0.043	0.899	3.946	Jichja Parco
1081		Undated Obsidian artefacts	5 C V I	93.91	0.008	0.011	0.013	< LOD	0.003	0.004	0.003	0.481	0.053	0.993	4.445	Jichja Parco

PAP-no.	Sub-no.	Periods	Type	Bal (%)	Zr (%)	Sr (%)	Rb (%)	Bi (%)	Pb (%)	Zn (%)	Cu (%)	Fe (%)	Mn (%)	V (%)	Ti (%)	Identified source
<b>Average error pXRF</b>				<b>0.078</b>	<b>0.001</b>	<b>0.001</b>	<b>0.001</b>	<b>0.001</b>	<b>0.001</b>	<b>0.001</b>	<b>0.001</b>	<b>0.005</b>	<b>0.003</b>	<b>0.020</b>	<b>0.078</b>	
1109	2	Undated Obsidian artefacts	3 I	96.24	0.009	0.012	0.016	0.002	0.002	0.003	< LOD	0.504	0.013	0.583	2.534	Jichja Parco
1113		Undated Obsidian artefacts		96.80	0.01	0.012	0.016	0.002	< LOD	0.003	< LOD	0.517	< LOD	0.477	2.083	Jichja Parco
1769		Undated Obsidian artefacts	5 C V I	96.18	0.009	0.012	0.015	0.002	< LOD	0.003	< LOD	0.505	0.011	0.572	2.61	Jichja Parco
2237	1	Undated Obsidian artefacts	2 F V II	95.58	0.009	0.011	0.015	0.002	< LOD	0.002	< LOD	0.495	0.023	0.699	3.086	Jichja Parco
2707	5	Undated Obsidian artefacts		95.11	0.008	0.011	0.015	< LOD	< LOD	0.003	< LOD	0.494	0.029	0.739	3.506	Jichja Parco
2904	8	Undated Obsidian artefacts	3 E V I	96.84	0.009	0.012	0.016	0.002	< LOD	0.003	< LOD	0.518	< LOD	0.471	2.051	Jichja Parco
3551		Undated Obsidian artefacts	3 I	96.11	0.01	0.013	0.017	0.002	0.002	0.003	< LOD	0.542	0.016	0.602	2.607	Jichja Parco
4150	3	Undated Obsidian artefacts	1 I	96.80	0.01	0.013	0.016	0.002	< LOD	0.003	< LOD	0.537	< LOD	0.474	2.062	Jichja Parco
4153	3	Undated Obsidian artefacts		96.18	0.009	0.012	0.016	0.002	< LOD	0.003	< LOD	0.525	0.013	0.592	2.564	Jichja Parco
4155	1	Undated Obsidian artefacts		96.34	0.008	0.011	0.013	< LOD	< LOD	0.002	< LOD	0.421	0.006	0.581	2.54	Jichja Parco
4156	5	Undated Obsidian artefacts	2 G	96.00	0.009	0.012	0.015	0.002	< LOD	0.003	< LOD	0.499	0.017	0.63	2.73	Jichja Parco
4157	1	Undated Obsidian artefacts		92.76	0.006	0.01	0.011	< LOD	0.003	0.006	0.006	0.5	0.069	1.154	5.391	Cerro Huenul
4157	2	Undated Obsidian artefacts		92.95	0.007	0.011	0.012	< LOD	0.003	0.006	0.007	0.494	0.065	1.11	5.252	no origin
4807	2	Undated Obsidian artefacts	1 D V I	97.22	0.01	0.013	0.016	0.002	0.002	0.003	< LOD	0.538	< LOD	0.393	1.729	Jichja Parco
4809	2	Undated Obsidian artefacts	8 A	97.37	0.01	0.012	0.016	0.002	< LOD	0.003	< LOD	0.529	< LOD	0.369	1.618	Jichja Parco