

APPENDIX A

CERAMIC TYPOLOGY AND DIAGNOSTICS

Figure 61. Ceramic type descriptions

Bermann's (1993) ceramic types form the basis for the typology developed for the Jachakala wares. My analysis added several types to his list, and several others were slightly modified to include, for example, additional tempers with otherwise identical features. Technical characteristics used to classify ceramics include aspects of the surface treatment, paste, and temper. Recorded dimensions of surface treatment are the range of colors, slips and paints. Also specified is the degree of smoothness or erosion typical of a ceramic type. Aspects of pastes used in this schema include the color and thickness of both edges and cores, the average size of grains, and how well-knit sherds appear to be. Finally, temper is characterized by the range of grain sizes in millimeters, a list of colored minerals and added materials such as sand or shell, and the percent of paste visible in profile. The amount of gold mica content is also scaled from very low to very high.

Recorded technical characteristics of analyzed sherds

1. surface treatment: includes range of colors, slips and paints, degree of smoothness or erosion (scale: polished – burnished – well-smoothed – roughly smoothed – unmodified)
2. paste: color and thickness of both edges and core, size of grains, how well-knit (scale: very fine (real Tiwanaku) – fine – medium – coarse grained)
3. temper: range of grain sizes, list of colored minerals and added materials such as sand or shell, mica content (scale: tiny (1-2%) – small (2-3%) – moderate (3-4%) – high (4-6%) – very high or Inti Raymi Mica (7-8%+)), percent of paste profile

Ceramic type definitions

Niñalupita Yellow:

Surface – exteriors have a roughly- to well-smoothed light yellow slip, while unslipped interiors are the same colors as the paste and also roughly- to well-smoothed. A small proportion of the assemblage shows light red (10R-4/6) paint.

Figure 61. (cont'd)

Paste and Temper – colors range from light brown to orange, fully-fired with medium- to fine-grained, well-knit profiles. Temper usually includes small amounts of mica, and a range of soft minerals (light and dark gray, white, occasionally red).

Nonwash Yellow:

Surface – exteriors are light yellowish-brown (10YR-6/4), roughly- to well-smoothed, with no slip or wash, interiors are the same color and range of smoothness (note this type is distinguished from Niñalupita Yellow by the absence of an exterior slip treatment)

Paste and Temper – fully-fired, fine- to medium-grained, medium-knit to slightly porous, paste color is light brown to pinkish brown (5YR-6/3). Tempering materials include 0.4-0.8 mm gold mica, soft white, light and dark gray minerals.

Desaguadero Orange:

Surface – interiors and exteriors are medium to dark orange or reddish brown (2.5YR-6/8) with the same burnished slip, exteriors are well-smoothed but interiors are usually only roughly smoothed

Paste and Temper – fully-fired, fine- to medium-grained, medium knit, dark gray (1 Gley-3/N) to medium brown (5YR-4/4) paste. Tempers include soft gray and white minerals, small amounts of gold mica (note distinguishing characteristic of this type separating most examples from La Joya orange sherds is the lack of red minerals).

Redwash:

Surface – exteriors have a deep red wash (10R-5/8), well-smoothed, interior usually a dark brownish-gray (1 Gley-3/N) and roughly-smoothed

Paste and Temper – fully-fired to incomplete with a dark gray (1 Gley-3/N) to light brown core, fine- to medium-grained, fine- to medium-knit. Tempers include mica, 0.4-1.6 mm soft white and black minerals.

Figure 61. (cont'd)

La Joya Orange:

Surface – exteriors and interiors are light orange or brown, roughly- to well-smoothed, and unslipped. A small proportion of the assemblage shows orange (2.5YR-6/6) paint on otherwise unslipped sherds.

Paste and Temper – paste is very light brown (7.5YR-7/4), fully fired, fine- to medium-grained, and medium-knit. Tempering materials include small to moderate amounts of gold mica, light and dark gray, white, and red minerals (the last being perhaps its defining characteristic: see Desaguadero Orange).

Tiwanaku IV Polychrome:

Surface – exteriors are treated with a deep red (10R-5/4), burnished slip, which usually covers the rim and a few centimeters of the interior surface as well, while the rest of the interior is light orange or brown, roughly- to well-smoothed, and unslipped. Painted decorations are executed in black (10YR-3/1), white (10YR-7/1), pale yellow (?), and orange (2.5YR-6/6).

Paste and Temper – paste colors range from orange (2.5YR-6/6) to light brown with thick gray cores, fully fired, fine to very fine grained, and finely-knit. Where visible, temper usually includes tiny to small amounts of gold mica.

Tiwanaku V Polychrome:

Surface – exteriors and interiors differ from Tiwanaku IV sherds only in the exteriors' orange (2.5YR-5/6) burnished slip. The same color paints are displayed.

Paste and Temper – both paste and temper are the same as Tiwanaku IV pottery.

Smooth Brown:

Surface – exteriors have a light brown to brownish-gray (7.5YR-6/3 to 5/2), well-smoothed to burnished wash, while unwashed interiors are dark gray (1Gley-3/N) or light brown, and well-smoothed

Figure 61. (cont'd)

Paste and Temper – fully fired, fine- to medium-grained, well-knit to slightly porous, with a light pinkish-brown (7.5YR-6/3) or light gray paste. Tempers include soft black and white minerals, and small to moderate amounts of gold mica.

Inti Raymi Mica:

Surface – exteriors are usually mixes of dark brown to dark gray (5YR-4/1), roughly- to well-smoothed, with similar interiors

Paste and Temper – paste is dark reddish-brown (5YR-4/3) to black, fully fired to slightly porous, fine- to medium-grained, and moderately well-knit. This type's most recognizable characteristic is its temper, tiny grains of gold mica that make up from 7-8 up to 20% of the paste.

Other categories:

All analyzed sherds were, wherever possible, classified according to the above typological schema. Remaining unclassified sherds were simply divided into those exhibiting gold mica temper (the category “Mica”) and those lacking the same (or “Non-mica”).

Table 15. N416 E568, counts of typed ceramic sherds recovered by level.

	<i>Ninalup</i>	<i>Nonwash</i>	<i>La Joya</i>	<i>Smooth</i>	<i>Inti Raymi</i>	<i>Tiw</i>	<i>Tiw</i>	<i>Desag</i>	<i>Red-</i>	<i>Total</i>
<i>Level</i>	<i>Yellow</i>	<i>Yellow</i>	<i>Orange</i>	<i>Brown</i>	<i>Mica</i>	<i>IV</i>	<i>V</i>	<i>Orange</i>	<i>wash</i>	<i># typed</i>
Sup	74	9	101	20	148	0	11	22	8	393
1	6	0	45	48	241	0	2	2	3	347
1	1	0	1	0	0	0	0	0	0	2
2	2	3	43	44	63	0	0	5	2	162
3	2	1	36	32	45	0	0	4	2	122
4	1	2	32	43	37	0	0	5	3	123
5	0	2	24	32	34	0	0	4	6	102
5	0	0	0	0	0	1	0	0	0	1
6	0	1	14	14	14	1	2	7	4	57
7	1	1	11	7	20	0	0	3	3	46
8	0	1	16	17	31	0	0	2	2	69
9	0	1	15	12	14	1	0	4	4	51
10	2	0	8	10	15	0	0	0	1	36
11	1	1	12	3	4	0	0	2	0	23
12	0	2	5	3	14	0	0	0	1	25
13	2	0	4	5	2	0	0	0	1	14
14	2	1	2	0	4	0	0	0	0	9
15	1	0	2	0	0	0	0	0	0	3
16	<i>sterile</i>									
<i>Totals:</i>	95	25	371	290	686	3	15	60	40	1585

Level: Sup = Superficie/Surface

Types: Ninalup Yellow = Niñalupita Yellow, Tiw IV = Tiwanaku IV,

Tiw V = Tiwanaku V, Desag Orange = Desaguadero Orange

Table 16. N425 E526, counts of typed ceramic sherds recovered by level.

	<i>Ninalup</i>	<i>Nonwash</i>	<i>La Joya</i>	<i>Smooth</i>	<i>Inti Raymi</i>	<i>Tiw</i>	<i>Tiw</i>	<i>Red-</i>	<i>Desag</i>	<i>Total</i>
<i>Level</i>	<i>Yellow</i>	<i>Yellow</i>	<i>Orange</i>	<i>Brown</i>	<i>Mica</i>	<i>IV</i>	<i>V</i>	<i>wash</i>	<i>Orange</i>	<i># typed</i>
Sup	3	1	6	6	6	0	0	1	0	23
Sup	1	0	1	1	5	1	0	1	1	11
1	8	9	34	32	92	0	0	4	10	189
2	5	4	20	31	55	2	0	3	10	130
3	3	8	16	23	38	0	0	4	11	103
4	2	4	32	24	70	0	0	4	15	151
5	7	6	18	15	71	4	2	5	4	132
6	6	7	49	28	88	0	0	7	11	196
7	5	5	28	24	60	0	1	11	8	142
7	0	0	0	0	1	0	1	0	0	2
8	1	6	21	15	44	0	0	6	5	98
9	2	1	12	18	18	2	0	2	5	60
10	2	0	3	11	13	0	0	2	1	32
11	4	0	3	18	20	0	0	2	0	47
12	0	0	1	0	0	0	0	0	0	1
13	0	0	4	13	9	0	0	1	1	28
14	0	0	1	2	3	0	0	0	0	6
15	0	0	1	0	0	0	0	0	0	1
16	<i>sterile</i>									
Totals:	49	51	250	261	593	9	4	53	82	1352

Level: Sup = Superficie/Surface

Types: Ninalup Yellow = Niñalupita Yellow, Tiw IV = Tiwanaku IV,

Tiw V = Tiwanaku V, Desag Orange = Desaguadero Orange

Table 17. N465 E516, counts of typed ceramic sherds recovered by level.

	<i>Ninalup</i>	<i>Nonwash</i>	<i>La Joya</i>	<i>Smooth</i>	<i>Inti Raymi</i>	<i>Tiw</i>	<i>Tiw</i>	<i>Red-</i>	<i>Desag</i>	<i>Total</i>
<i>Level</i>	<i>Yellow</i>	<i>Yellow</i>	<i>Orange</i>	<i>Brown</i>	<i>Mica</i>	<i>IV</i>	<i>V</i>	<i>wash</i>	<i>Orange</i>	<i># typed</i>
Sup	0	0	3	0	0	0	0	0	0	3
Sup	0	0	0	2	0	0	0	0	0	2
1	7	4	52	53	54	5	0	4	19	198
1	3	3	18	22	23	0	0	6	10	85
1	4	14	85	57	79	0	2	9	20	270
1	0	0	0	0	0	0	1	0	0	1
2	0	0	4	1	0	0	0	0	0	5
2	6	9	66	67	124	2	0	15	18	307
2	5	9	69	50	85	0	2	10	24	254
2	0	0	0	0	0	0	3	0	0	3
2	0	0	1	0	0	3	0	0	0	4
2	4	4	24	34	41	3	0	6	12	128
3	12	4	71	39	104	0	1	8	13	252
3	1	0	0	0	0	1	0	0	0	2
3(Offr 1)	0	0	0	0	0	0	0	0	8	8
3	0	0	2	0	0	0	0	0	0	2
3	4	2	36	26	49	0	1	2	15	135
3	0	0	0	0	0	0	4	0	0	4
3	6	5	34	26	66	3	0	6	15	161
3	0	0	0	0	0	1	0	0	0	1
4	6	14	128	93	162	2	0	13	34	452
4	2	0	4	0	0	0	1	0	0	7
4	0	0	1	3	3	0	0	0	3	10
4	0	0	2	2	1	0	0	0	0	5
5	9	2	45	40	65	1	0	4	9	175
5	0	0	0	0	1	0	0	0	0	1
6	5	3	80	62	68	0	0	13	17	248
6	0	0	0	0	0	0	0	1	1	2
7	<i>sterile</i>									
Totals:	74	73	725	577	925	21	15	97	218	2725

Level: Sup = Superficie/Surface

Types: Ninalup Yellow = Niñalupita Yellow, Tiw IV = Tiwanaku IV,

Tiw V = Tiwanaku V, Desag Orange = Desaguadero Orange

Table 18. N511 E509, counts of typed ceramic sherds recovered by level.

	<i>Ninalup</i>	<i>Nonwash</i>	<i>La Joya</i>	<i>Smooth</i>	<i>Inti Raymi</i>	<i>Tiw</i>	<i>Tiw</i>	<i>Red-</i>	<i>Desag</i>	<i>Total</i>
<i>Level</i>	<i>Yellow</i>	<i>Yellow</i>	<i>Orange</i>	<i>Brown</i>	<i>Mica</i>	<i>IV</i>	<i>V</i>	<i>wash</i>	<i>Orange</i>	<i># typed</i>
Sup	0	0	1	0	0	0	0	0	0	1
Sup	0	0	2	0	0	0	0	0	0	2
Sup	0	0	4	0	3	0	0	0	1	8
Sup	1	0	4	0	2	0	0	0	0	7
Sup	0	0	3	0	4	0	0	0	0	7
Sup	0	0	5	0	0	0	0	0	0	5
Sup	0	0	1	2	1	0	0	0	0	4
Sup	0	0	0	0	0	1	0	0	0	1
Sup	0	0	0	1	2	0	0	0	0	3
1	6	3	18	17	56	0	0	0	19	119
1	1	0	0	0	0	0	2	0	0	3
1	3	2	30	19	25	0	0	3	12	94
1	0	0	1	0	0	0	2	0	0	3
1	2	0	18	6	25	0	0	1	4	56
1	2	0	13	9	29	0	0	1	2	56
1	6	1	30	13	25	1	0	0	5	81
1	3	1	14	9	25	0	0	2	7	61
1	4	0	28	19	25	1	0	2	6	85
1	0	0	0	0	0	0	0	0	0	0
1	4	2	11	8	16	0	0	0	3	44
2	0	0	0	0	0	0	3	0	0	3
2	8	3	14	19	55	0	0	1	9	109
2	5	0	35	19	35	1	0	1	10	106
2	0	0	0	0	0	1	1	0	0	2
2	0	0	1	0	0	0	0	0	0	1
2	2	2	48	32	46	0	0	2	10	142
2(Hrth 1)	0	0	0	0	16	0	0	0	0	16
2	9	4	26	9	28	0	0	1	5	82
2	6	5	83	68	96	2	0	8	26	294
2	0	0	0	0	0	0	3	0	0	3
2	0	0	0	0	0	0	0	0	1	1
2	8	2	33	17	42	3	0	1	11	117
2	10	0	45	28	30	0	1	7	15	136
2	3	3	15	19	18	0	0	4	5	67
3	7	8	0	3	0	0	1	0	3	22
3	0	0	0	0	0	1	0	0	0	1
3	4	1	17	9	20	0	0	1	5	57
4	9	5	6	6	67	0	0	1	6	100

Table 18 cont'd. N511 E509, counts of typed ceramic sherds recovered by level.

	<i>Ninalup</i>	<i>Nonwash</i>	<i>La Joya</i>	<i>Smooth</i>	<i>Inti Raymi</i>	<i>Tiw</i>	<i>Tiw</i>	<i>Red-</i>	<i>Desag</i>	<i>Total</i>
<i>Level</i>	<i>Yellow</i>	<i>Yellow</i>	<i>Orange</i>	<i>Brown</i>	<i>Mica</i>	<i>IV</i>	<i>V</i>	<i>wash</i>	<i>Orange</i>	<i># typed</i>
5	12	3	19	19	52	0	0	0	9	114
5	0	0	1	0	0	0	1	0	0	2
6	2	2	10	20	39	0	0	3	7	93
7	2	2	38	12	42	0	0	3	6	105
7	12	2	45	37	51	2	0	8	25	182
8	15	21	34	45	139	1	0	0	16	271
8	6	4	17	22	42	0	0	2	11	104
8	5	2	15	12	63	0	0	1	17	115
8	18	17	33	37	82	0	0	2	16	205
8	0	0	2	1	0	3	0	0	0	6
9	14	13	44	50	103	0	0	2	17	243
9	0	0	0	0	0	0	0	0	0	0
9	0	0	0	0	0	2	0	0	0	2
9	1	0	3	0	0	1	0	0	0	5
10	2	1	1	2	3	0	0	0	0	9
10	2	0	2	2	14	0	0	0	8	28
11	42	26	39	21	219	1	0	4	10	362
11	0	0	1	0	0	0	0	0	0	1
12	14	8	8	16	89	0	0	0	5	142
13	22	25	59	56	149	0	0	10	23	344
14	10	1	5	4	28	0	0	0	4	52
15	4	1	0	0	9	0	0	0	1	15
16	1	0	5	9	22	0	0	0	2	39
17	3	0	0	1	7	0	0	0	0	11
17	0	0	0	0	1	0	0	0	0	1
18	0	0	0	0	1	0	0	0	0	1
19	<i>sterile</i>									
<i>Totals:</i>	300	170	887	698	1846	21	14	71	342	4349

Level: Sup = Superficie/Surface

Types: Ninalup Yellow = Niñalupita Yellow, Tiw IV = Tiwanaku IV,

Tiw V = Tiwanaku V, Desag Orange = Desaguadero Orange

Table 19. N546 E528, counts of typed ceramic sherds recovered by level.

	<i>Ninalup</i>	<i>Nonwash</i>	<i>La Joya</i>	<i>Smooth</i>	<i>Inti Raymi</i>	<i>Tiw</i>	<i>Tiw</i>	<i>Red-</i>	<i>Desag</i>	<i>Total</i>
<i>Level</i>	<i>Yellow</i>	<i>Yellow</i>	<i>Orange</i>	<i>Brown</i>	<i>Mica</i>	<i>IV</i>	<i>V</i>	<i>wash</i>	<i>Orange</i>	<i># typed</i>
Sup	2	2	19	16	2	0	0	3	5	49
Sup	2	0	5	6	8	0	0	0	2	23
Sup	1	0	6	4	0	0	0	0	0	11
Sup	2	2	6	4	2	0	0	0	0	16
Sup	3	2	8	8	6	0	0	0	1	28
Sup	2	2	9	8	5	0	0	1	0	27
1	26	6	135	87	129	0	13	6	28	430
1	1	0	0	0	0	8	4	0	0	13
1	14	6	54	37	76	0	0	3	14	204
1	15	4	65	48	89	0	0	5	16	242
1	0	0	0	0	0	0	1	0	0	1
1	52	13	164	124	158	0	1	16	36	564
1	10	3	47	46	82	0	0	5	22	215
1(Offrg 1)	0	0	8	2	28	0	0	0	0	38
1	15	8	117	81	143	3	0	9	27	403
2	<i>sterile</i>									
<i>Totals:</i>	<i>145</i>	<i>48</i>	<i>643</i>	<i>471</i>	<i>728</i>	<i>11</i>	<i>9</i>	<i>48</i>	<i>151</i>	<i>2264</i>

Level: Sup = Superficie/Surface

Types: Ninalup Yellow = Niñalupita Yellow, Tiw IV = Tiwanaku IV,

Tiw V = Tiwanaku V, Desag Orange = Desaguadero Orange

Table 20. N517 E450, counts of typed ceramic sherds recovered by level.

	<i>Ninalup</i>	<i>Nonwash</i>	<i>La Joya</i>	<i>Smooth</i>	<i>Inti Raymi</i>	<i>Tiw</i>	<i>Tiw</i>	<i>Red-</i>	<i>Desag</i>	<i>Total</i>
<i>Level</i>	<i>Yellow</i>	<i>Yellow</i>	<i>Orange</i>	<i>Brown</i>	<i>Mica</i>	<i>IV</i>	<i>V</i>	<i>wash</i>	<i>Orange</i>	<i># typed</i>
Sup	0	0	5	1	0	0	0	0	0	6
Sup	0	0	19	6	0	0	1	2	0	28
Sup	3	0	15	11	4	0	0	3	0	36
Sup	1	0	10	4	6	0	0	0	0	21
Sup	2	0	19	13	8	0	0	3	0	45
Sup	0	0	0	0	0	2	0	0	0	2
Sup	0	0	9	3	2	0	0	0	1	15
Sup	0	0	0	0	0	1	0	0	0	1
Sup	1	0	9	4	5	1	0	0	1	21
1	18	8	61	94	21	0	4	0	16	222
1	10	0	0	0	0	0	1	0	0	11
1	0	0	0	0	0	0	1	0	0	1
1	15	10	82	60	43	0	3	2	22	237
1	0	0	0	0	0	1	0	0	0	1
1	0	0	1	0	0	0	0	0	0	1
1	12	3	63	48	88	0	1	7	14	236
1	0	0	0	0	0	1	0	0	0	1
1	10	2	83	62	135	0	0	10	11	313
1	0	0	7	0	23	0	0	0	0	30
1	17	9	138	101	102	2	1	10	15	395
1	0	0	0	0	0	0	3	0	0	3
1	26	7	128	101	144	1	5	13	21	446
1	0	0	0	0	0	0	2	0	0	2
2	15	6	85	73	77	0	0	7	6	269
2	0	0	0	0	0	6	0	0	0	6
2 (Pit 1)	0	0	3	2	5	0	0	1	0	11
2 (Pit 2)	0	0	6	5	17	0	0	1	0	29
2	19	10	111	83	110	0	3	8	19	363
2	0	0	0	0	0	2	0	0	0	2
2	15	4	93	70	154	2	0	3	15	356
2	0	0	0	0	0	0	3	0	0	3
2	0	0	1	0	0	0	2	0	0	3
2	19	6	130	96	216	4	2	19	22	514
2	0	0	0	0	0	0	0	0	0	0
2	12	3	81	78	111	3	0	8	24	320
2	0	0	0	0	0	1	0	0	0	1
2	5	8	82	64	127	0	3	14	30	333
3	0	0	0	0	0	0	4	1	0	5
3	11	11	28	47	82	2	0	5	4	190

Table 20 cont'd. N517 E450, counts of typed ceramic sherds recovered by level.

	<i>Ninalup</i>	<i>Nonwash</i>	<i>La Joya</i>	<i>Smooth</i>	<i>Inti Raymi</i>	<i>Tiw</i>	<i>Tiw</i>	<i>Red-</i>	<i>Desag</i>	<i>Total</i>
<i>Level</i>	<i>Yellow</i>	<i>Yellow</i>	<i>Orange</i>	<i>Brown</i>	<i>Mica</i>	<i>IV</i>	<i>V</i>	<i>wash</i>	<i>Orange</i>	<i># typed</i>
3	0	0	0	0	0	1	0	0	0	1
4	4	8	89	84	106	10	0	35	26	362
4	0	0	0	0	0	0	1	0	0	1
5	2	4	101	77	147	11	5	17	22	386
5	0	0	0	0	0	1	0	0	0	1
5	0	0	0	0	0	0	0	0	0	0
6	10	6	47	38	64	9	0	13	12	199
6	0	0	0	1	0	0	0	0	0	1
7	7	3	42	44	56	0	0	5	4	161
7	0	0	0	0	0	5	0	0	0	5
8	3	1	13	11	29	3	0	1	2	63
9	2	4	17	24	35	0	0	4	1	87
10	0	6	19	25	68	0	7	5	4	134
11	1	1	17	8	29	0	0	1	2	59
12	0	0	1	0	3	0	0	0	0	4
13	0	0	0	0	4	0	0	0	0	4
14	0	0	6	7	0	0	0	0	4	17
15	<i>sterile</i>									
<i>Totals:</i>	240	120	1621	1345	2021	67	54	198	298	5964

Level: Sup = Superficie/Surface

Types: Ninalup Yellow = Niñalupita Yellow, Tiw IV = Tiwanaku IV,

Tiw V = Tiwanaku V, Desag Orange = Desaguadero Orange

Table 21. N559 E589, counts of typed ceramic sherds recovered by level.

	<i>Ninalup</i>	<i>Nonwash</i>	<i>La Joya</i>	<i>Smooth</i>	<i>Inti Raymi</i>	<i>Tiw</i>	<i>Tiw</i>	<i>Red-</i>	<i>Desag</i>	<i>Total</i>
<i>Level</i>	<i>Yellow</i>	<i>Yellow</i>	<i>Orange</i>	<i>Brown</i>	<i>Mica</i>	<i>IV</i>	<i>V</i>	<i>wash</i>	<i>Orange</i>	<i># typed</i>
Sup	0	0	1	0	2	0	0	0	0	3
Sup	0	0	0	0	0	2	0	0	0	2
Sup	0	0	3	0	0	0	0	0	0	3
Sup	3	0	5	0	3	0	0	0	1	12
Sup	0	0	1	0	0	0	0	0	0	1
Sup	0	0	2	0	3	0	0	0	0	5
Sup	0	0	5	0	0	0	0	0	0	5
1	9	1	17	15	33	0	0	2	4	81
1	7	1	21	23	29	0	0	1	6	88
1	4	0	11	11	28	0	0	4	2	60
1	5	0	13	4	18	0	0	0	4	44
1	5	0	16	12	15	2	0	2	1	53
2	22	4	48	46	114	0	0	1	7	242
3	15	2	39	22	28	0	0	0	0	106
3 (Pit 1)	4	0	1	0	20	0	0	0	0	25
3	2	0	2	0	0	0	0	0	0	4
3	0	0	0	0	0	0	0	0	1	1
4	18	0	33	24	75	0	0	1	5	156
5	1	0	12	11	15	0	0	0	3	42
6	0	0	0	1	1	0	0	0	0	2
7	2	0	7	1	0	0	0	0	1	11
8	0	0	3	4	0	2	0	4	0	13
9	0	0	0	0	1	0	0	0	0	1
10	0	0	1	0	6	0	0	1	0	8
11	0	0	4	2	7	0	0	2	0	15
12	<i>sterile</i>									
Totals:	97	8	245	176	398	6	0	18	35	983

Level: Sup = Superficie/Surface

Types: Ninalup Yellow = Niñalupita Yellow, Tiw IV = Tiwanaku IV,

Tiw V = Tiwanaku V, Desag Orange = Desaguadero Orange

Table 22. N567 E418, counts of typed ceramic sherds recovered by level.

	<i>Ninalup</i>	<i>Nonwash</i>	<i>La Joya</i>	<i>Smooth</i>	<i>Inti Raymi</i>	<i>Tiw</i>	<i>Tiw</i>	<i>Red-</i>	<i>Desag</i>	<i>Total</i>
<i>Level</i>	<i>Yellow</i>	<i>Yellow</i>	<i>Orange</i>	<i>Brown</i>	<i>Mica</i>	<i>IV</i>	<i>V</i>	<i>wash</i>	<i>Orange</i>	<i># typed</i>
Sup	1	0	5	0	2	0	0	1	1	10
Sup	0	0	2	4	0	1	0	0	1	8
Sup	4	2	10	11	8	0	0	3	0	38
Sup	1	0	6	5	6	0	0	3	0	21
Sup	0	1	7	4	5	0	0	0	0	17
Sup	0	0	0	0	0	1	0	0	0	1
Sup	1	2	11	8	3	1	0	6	0	32
1	2	0	7	1	2	1	0	1	0	14
1	2	0	12	6	4	3	0	2	0	29
1	0	1	10	6	6	1	0	1	0	25
1	0	0	0	0	0	1	0	0	0	1
1	3	1	23	12	8	2	0	4	6	59
1	6	4	46	39	25	9	0	6	7	142
2	<i>sterile</i>									
<i>Totals:</i>	20	11	139	96	69	20	0	27	15	397

Level: Sup = Superficie/Surface

Types: Ninalup Yellow = Niñalupita Yellow, Tiw IV = Tiwanaku IV,

Tiw V = Tiwanaku V, Desag Orange = Desaguadero Orange

Table 23. N581 E540, counts of typed ceramic sherds recovered by level.

	<i>Ninalup</i>	<i>Nonwash</i>	<i>La Joya</i>	<i>Smooth</i>	<i>Inti Raymi</i>	<i>Tiw</i>	<i>Tiw</i>	<i>Red-</i>	<i>Desag</i>	<i>Total</i>
<i>Level</i>	<i>Yellow</i>	<i>Yellow</i>	<i>Orange</i>	<i>Brown</i>	<i>Mica</i>	<i>IV</i>	<i>V</i>	<i>wash</i>	<i>Orange</i>	<i># typed</i>
Sup	0	0	2	2	0	0	0	0	0	4
Sup	1	0	0	1	2	0	0	0	0	4
1	2	2	47	30	10	0	0	1	13	105
1	0	0	0	0	0	0	0	0	0	0
1	1	0	37	16	10	0	0	1	8	73
2	11	2	50	36	74	0	0	3	14	190
2	0	0	0	0	0	0	2	0	0	2
3	4	2	29	24	90	0	0	4	13	166
4	11	8	59	47	79	0	0	2	25	231
5	13	8	85	69	97	0	0	8	28	308
5 (Pit 1)	2	0	13	6	16	0	0	2	8	47
5	0	0	0	0	0	0	1	0	0	1
5	0	0	1	0	0	0	0	0	0	1
6	0	0	0	1	0	1	0	0	1	3
6	19	14	72	70	112	1	0	8	40	336
6	0	0	0	0	0	0	0	0	1	1
7	30	13	93	69	177	0	0	13	35	430
8	5	9	98	84	140	0	1	10	41	388
8	0	0	0	0	0	0	3	0	0	3
9	17	13	85	87	142	2	0	17	36	399
10	11	7	59	46	96	1	0	11	19	250
10	0	0	0	0	0	0	2	0	0	2
10 (Pit 1)	2	1	4	2	6	0	0	0	1	16
11	0	1	15	14	19	0	0	4	3	56
12	2	0	13	11	13	0	0	2	7	48
12	0	0	1	0	0	0	0	0	0	1
13	1	1	11	12	13	0	0	2	3	43
14	0	0	32	26	26	0	0	7	12	103
15	1	0	18	17	11	0	0	5	3	55
16	0	0	4	6	1	0	0	2	3	16
17	0	0	3	1	1	0	0	0	0	5
18	0	0	0	0	2	0	0	0	0	2
19	<i>sterile</i>									
Totals:	262	160	1576	1305	2252	13	18	202	607	6395

Level: Sup = Superficie/Surface; Types: Ninalup Yellow = Niñalupita Yellow, Tiw IV = Tiwanaku IV, Tiw V = Tiwanaku V, Desag Orange = Desaguadero Orange

Table 24. N673 E545, counts of typed ceramic sherds recovered by level.

	<i>Ninalup</i>	<i>Nonwash</i>	<i>La Joya</i>	<i>Smooth</i>	<i>Inti Raymi</i>	<i>Tiw</i>	<i>Tiw</i>	<i>Red-</i>	<i>Desag</i>	<i>Total</i>
<i>Level</i>	<i>Yellow</i>	<i>Yellow</i>	<i>Orange</i>	<i>Brown</i>	<i>Mica</i>	<i>IV</i>	<i>V</i>	<i>wash</i>	<i>Orange</i>	<i># typed</i>
Sup	0	0	18	8	2	0	0	4	1	33
1	5	0	22	12	26	3	0	0	6	74
1	0	0	0	0	0	1	0	0	0	1
2	24	3	143	162	186	2	6	29	55	610
2	0	0	0	1	0	2	11	0	0	14
3	3	0	29	21	23	0	0	8	7	91
4	9	0	13	8	3	0	0	4	3	40
5	0	0	4	2	0	0	0	0	0	6
6	<i>sterile</i>									
<i>Totals:</i>	41	3	229	214	240	8	17	45	72	869

Level: Sup = Superficie/Surface

Types: Ninalup Yellow = Niñalupita Yellow, Tiw IV = Tiwanaku IV,

Tiw V = Tiwanaku V, Desag Orange = Desaguadero Orange

Table 25. Counts of ceramic types from the three southern zone units for the Niñalupita, Isahuara, and Jachakala period.

	N416 E568				N425 E526		
Type:	Niña	Isah	Jach	Niña	Isah	Jach	
Niñalipita Yellow	5	5	85	0	29	20	
Nonwash Yellow	3	9	13	0	29	22	
La Joya Orange	13	132	226	7	166	77	
Smooth Brown	8	138	144	15	153	93	
Inti Raymi Mica	20	169	497	12	385	196	
Tiwanaku IV	0	3	0	0	6	3	
Tiwanaku V	0	2	13	0	4	0	
Redwash	2	23	15	1	39	13	
Desaguadero Orange	0	27	33	1	49	32	
Totals:	51	508	1026	36	860	456	
		N465 E516					
Type:	Niña	Isah	Jach				
Niñalipita Yellow	0	22	52				
Nonwash Yellow	0	19	54				
La Joya Orange	0	260	465				
Smooth Brown	0	200	377				
Inti Raymi Mica	0	300	625				
Tiwanaku IV	0	3	18				
Tiwanaku V	0	1	14				
Redwash	0	31	66				
Desaguadero Orange	0	64	154				
Totals:	0	900	1825				

Table 26. Counts of ceramic types from the four central zone units for the Niñalupita, Isahuara, and Jachakala period.

	N511 E509			N546 E528		
Type:	Niña	Isah	Jach	Niña	Isah	Jach
Niñalipita Yellow	54	152	94	0	0	145
Nonwash Yellow	35	98	37	0	0	48
La Joya Orange	77	310	500	0	0	643
Smooth Brown	86	286	326	0	0	471
Inti Raymi Mica	306	916	624	0	0	728
Tiwanaku IV	0	10	11	0	0	11
Tiwanaku V	0	1	13	0	0	19
Redwash	10	26	35	0	0	48
Desaguadero Orange	35	148	159	0	0	151
Totals:	603	1947	1799	0	0	2264
	N517 E450			N559 E589		
Type:	Niña	Isah	Jach	Niña	Isah	Jach
Niñalipita Yellow	0	29	211	0	21	76
Nonwash Yellow	0	33	87	0	0	8
La Joya Orange	7	345	1269	0	60	185
Smooth Brown	7	312	1026	0	43	133
Inti Raymi Mica	7	534	1480	0	105	293
Tiwanaku IV	0	39	28	0	2	4
Tiwanaku V	0	13	41	0	0	0
Redwash	0	81	117	0	8	10
Desaguadero Orange	4	73	221	0	9	26
Totals:	25	1459	4480	0	248	733

Table 27. Counts of ceramic types from the three northern zone units for the Niñalupita, Isahuara, and Jachakala period.

	N567 E418				N581 E540	
Type:	Niña	Isah	Jach	Niña	Isah	Jach
Niñalipita Yellow	0	0	20	4	110	19
Nonwash Yellow	0	0	11	1	74	6
La Joya Orange	0	0	139	82	584	165
Smooth Brown	0	0	96	73	495	109
Inti Raymi Mica	0	0	69	67	884	186
Tiwanaku IV	0	0	20	0	5	0
Tiwanaku V	0	0	0	0	7	2
Redwash	0	0	27	18	75	9
Desaguadero Orange	0	0	5	28	238	48
Totals:	0	0	397	273	2472	544
	N673 E545					
Type:	Niña	Isah	Jach			
Niñalipita Yellow	0	9	32			
Nonwash Yellow	0	0	3			
La Joya Orange	0	17	212			
Smooth Brown	0	10	204			
Inti Raymi Mica	0	3	237			
Tiwanaku IV	0	0	8			
Tiwanaku V	0	0	17			
Redwash	0	4	41			
Desaguadero Orange	0	3	69			
Totals:	0	46	823			

Table 28. Counts and proportions of ceramic types recovered from the southern zone for the Niñalupita, Isahuara, and Jachakala period.

Type:	Counts			Proportions		
	Niñalupita	Isahuara	Jachakala	Niñalupita	Isahuara	Jachakala
Niñalipita Yellow	5	56	157	5.75	2.56	4.75
Nonwash Yellow	3	57	89	3.45	2.61	2.69
La Joya Orange	20	478	768	22.99	21.87	23.22
Smooth Brown	23	491	614	26.44	22.46	18.57
Inti Raymi Mica	32	853	1318	36.78	39.02	39.85
Tiwanaku IV	0	12	18	0	0.55	0.54
Tiwanaku V	0	6	27	0	0.27	0.82
Redwash	3	93	94	3.45	4.25	2.84
Desaguadero Orange	1	140	219	1.15	6.4	6.62
Totals:	87	2186	3307	100	100	99.99

Table 29. Counts and proportions of ceramic types recovered from the central zone for the Niñalupita, Isahuara, and Jachakala period.

Type:	Counts			Proportions		
	Niñalupita	Isahuara	Jachakala	Niñalupita	Isahuara	Jachakala
Niñalipita Yellow	54	202	526	8.57	5.53	5.67
Nonwash Yellow	35	131	180	5.56	3.59	1.94
La Joya Orange	84	715	2597	13.33	19.57	28
Smooth Brown	93	641	1956	14.76	17.54	21.09
Inti Raymi Mica	313	1555	3125	49.68	42.56	33.69
Tiwanaku IV	0	51	54	0.32	1.4	0.58
Tiwanaku V	0	14	71	0	0.38	0.77
Redwash	10	115	210	1.59	3.15	2.26
Desaguadero Orange	39	230	557	6.19	6.29	6
Totals:	628	3654	9276	100	100	100

Table 30. Counts and proportions of ceramic types recovered from the northern zone for the Isahuara and Jachakala period.

Type:	Counts		Proportions	
	Isahuara	Jachakala	Isahuara	Jachakala
Niñalipita Yellow	141	252	5.01	5.24
Nonwash Yellow	75	116	2.67	2.41
La Joya Orange	670	1371	23.82	28.5
Smooth Brown	556	1009	19.77	20.98
Inti Raymi Mica	1014	1493	36.05	31.04
Tiwanaku IV	7	51	0.25	1.06
Tiwanaku V	7	21	0.25	0.44
Redwash	89	154	3.16	3.2
Desaguadero Orange	254	343	9.03	7.13
Totals:	2813	4810	100	100

Table 31. Chi squares, Niñalupita period ceramics.

a.) storage and cooking proportions.

Observed:

	Niñalupita Yellow	Nonwash Yellow	La Joya Orange	Smooth Brown	Inti Raymi Mica	Totals
South	6.02	3.61	24.10	27.71	38.55	100.0
Center	9.33	6.04	14.51	16.06	54.06	100.0
Totals	15.35	9.65	38.61	43.77	92.61	200.0

Expected:

	Niñalupita Yellow	Nonwash Yellow	La Joya Orange	Smooth Brown	Inti Raymi Mica	Totals
South	7.68	4.83	19.31	21.89	46.31	100.0
Center	7.68	4.83	19.31	21.89	46.31	100.0
Totals	15.35	9.65	38.61	43.77	92.61	200.0

b.) decorated/imported proportions.

Observed:

	Redwash	Desaguadero Orange	Totals
South	75.00	25.00	100.0
Center	19.61	76.47	100.0
Totals	94.61	101.47	200.0

Expected:

	Redwash	Desaguadero Orange	Totals
South	47.31	50.74	100.0
Center	47.31	50.74	100.0
Totals	94.61	101.47	200.0

Table 32. Chi squares, Isahuara period ceramics.

a.) storage and cooking proportions.

Observed:

	Niñalupita Yellow	Nonwash Yellow	La Joya Orange	Smooth Brown	Inti Raymi Mica	Totals
South	2.89	2.95	24.70	25.37	44.08	100.0
Center	6.23	4.04	22.04	19.76	47.93	100.0
North	5.74	3.05	27.28	22.64	41.29	100.0
Totals	14.86	10.04	74.02	67.77	133.30	300.0

Expected:

	Niñalupita Yellow	Nonwash Yellow	La Joya Orange	Smooth Brown	Inti Raymi Mica	Totals
South	4.95	3.35	24.67	22.59	44.43	100.0
Center	4.95	3.35	24.67	22.59	44.43	100.0
North	4.95	3.35	24.67	22.59	44.43	100.0
Totals	14.86	10.04	74.02	67.77	133.30	300.0

b.) decorated/imported proportions.

Observed:

	Tiwanaku IV	Tiwanaku V	Redwash	Desaguadero Orange	Totals
South	4.78	2.39	37.05	55.78	100.0
Center	12.44	3.41	28.05	56.10	100.0
North	1.96	1.96	24.93	71.15	100.0
Totals	19.18	7.76	90.03	183.03	300.0

Expected:

	Tiwanaku IV	Tiwanaku V	Redwash	Desaguadero Orange	Totals
South	6.39	2.59	30.01	61.01	100.0
Center	6.39	2.59	30.01	61.01	100.0
North	6.39	2.59	30.01	61.01	100.0
Totals	19.18	7.76	90.03	183.03	300.0

Table 33. Chi squares, Jachakala period ceramics.

a.) storage and cooking proportions.

Observed:

	Niñalupita Yellow	Nonwash Yellow	La Joya Orange	Smooth Brown	Inti Raymi Mica	Totals
South	5.33	3.02	26.07	20.84	44.74	100.0
Center	6.27	2.15	30.98	23.33	37.27	100.0
North	5.94	2.74	32.33	23.79	35.20	100.0
Totals	17.54	7.91	89.38	67.96	117.21	300.0

Expected:

	Niñalupita Yellow	Nonwash Yellow	La Joya Orange	Smooth Brown	Inti Raymi Mica	Totals
South	5.85	2.64	29.79	22.65	39.07	100.0
Center	5.85	2.64	29.79	22.65	39.07	100.0
North	5.85	2.64	29.79	22.65	39.07	100.0
Totals	17.54	7.91	89.38	67.96	117.21	300.0

b.) decorated/imported proportions.

Observed:

	Tiwanaku IV	Tiwanaku V	Redwash	Desaguadero Orange	Totals
South	5.03	7.54	26.26	61.17	100.0
Center	6.05	7.96	23.54	62.44	100.0
North	8.96	3.69	27.07	60.28	100.0
Totals	20.04	19.19	76.87	183.89	300.0

Expected:

	Tiwanaku IV	Tiwanaku V	Redwash	Desaguadero Orange	Totals
South	6.68	6.40	25.62	61.30	100.0
Center	6.68	6.40	25.62	61.30	100.0
North	6.68	6.40	25.62	61.30	100.0
Totals	20.04	19.19	76.87	183.89	300.0

Table 34. Chi squares, Niñalupita, Isahuara, and Jachakala period ceramics.

a.) storage and cooking proportions totaling one hundred percent.

Observed:

	Niñalupita Yellow	Nonwash Yellow	La Joya Orange	Smooth Brown	Inti Raymi Mica	Totals
Niñalupita	8.91	5.74	15.71	17.52	52.11	100.0
Isahuara	5.23	3.44	24.40	22.11	44.82	100.0
Jachakala	6.00	2.47	30.42	22.99	38.12	100.0
Totals	20.14	11.65	70.53	62.62	135.05	300.0

Expected:

	Niñalupita Yellow	Nonwash Yellow	La Joya Orange	Smooth Brown	Inti Raymi Mica	Totals
Niñalupita	6.71	3.88	23.51	20.87	45.02	100.0
Isahuara	6.71	3.88	23.51	20.87	45.02	100.0
Jachakala	6.71	3.88	23.51	20.87	45.02	100.0
Totals	20.14	11.65	70.53	62.62	135.05	300.0

b.) decorated/imported proportions totaling one hundred percent.

Observed:

	Tiwanaku IV	Tiwanaku V	Redwash	Desaguadero Orange	Totals
Niñalupita	0	0	24.53	75.47	100.0
Isahuara	6.88	2.65	29.17	61.30	100.0
Jachakala	6.76	6.54	25.18	61.52	100.0
Totals	13.64	9.19	78.88	198.29	300.0

Expected:

	Tiwanaku IV	Tiwanaku V	Redwash	Desaguadero Orange	Totals
Niñalupita	4.55	3.06	26.29	66.10	100.0
Isahuara	4.55	3.06	26.29	66.10	100.0
Jachakala	4.55	3.06	26.29	66.10	100.0
Totals	13.64	9.19	78.88	198.29	300.0

Table 35. Chi squares, Niñalupita, Isahuara, and Jachakala period ceramics.

a.) storage and cooking proportions over the total number of typed sherds.

Observed:

	Niñalupita Yellow	Nonwash Yellow	La Joya Orange	Smooth Brown	Inti Raymi Mica	Totals
Niñalupita	8.25	5.31	14.55	16.22	48.25	92.58
Isahuara	4.61	3.04	21.53	19.51	39.55	88.24
Jachakala	5.38	2.21	27.23	20.58	34.13	89.53
Totals	18.24	10.56	63.31	56.31	121.93	270.35

Expected:

	Niñalupita Yellow	Nonwash Yellow	La Joya Orange	Smooth Brown	Inti Raymi Mica	Totals
Niñalupita	6.25	3.62	21.68	19.28	41.75	92.58
Isahuara	5.95	3.45	20.66	18.38	39.80	88.24
Jachakala	6.04	3.50	20.97	18.65	40.38	89.53
Totals	18.24	10.56	63.31	56.31	121.93	270.35

b.) decorated/imported proportions over the total number of typed sherds.

Observed:

	Tiwanaku IV	Tiwanaku V	Redwash	Desaguadero Orange	Totals
Niñalupita	0	0	1.82	5.60	7.42
Isahuara	0.81	0.31	3.43	7.21	11.76
Jachakala	0.71	0.68	2.63	6.43	10.45
Totals	1.52	0.99	7.88	19.24	29.63

Expected:

	Tiwanaku IV	Tiwanaku V	Redwash	Desaguadero Orange	Totals
Niñalupita	0.38	0.25	1.97	4.82	7.42
Isahuara	.060	0.39	3.13	7.64	11.76
Jachakala	0.54	0.35	2.78	6.79	10.45
Totals	1.52	0.99	7.88	19.24	29.63

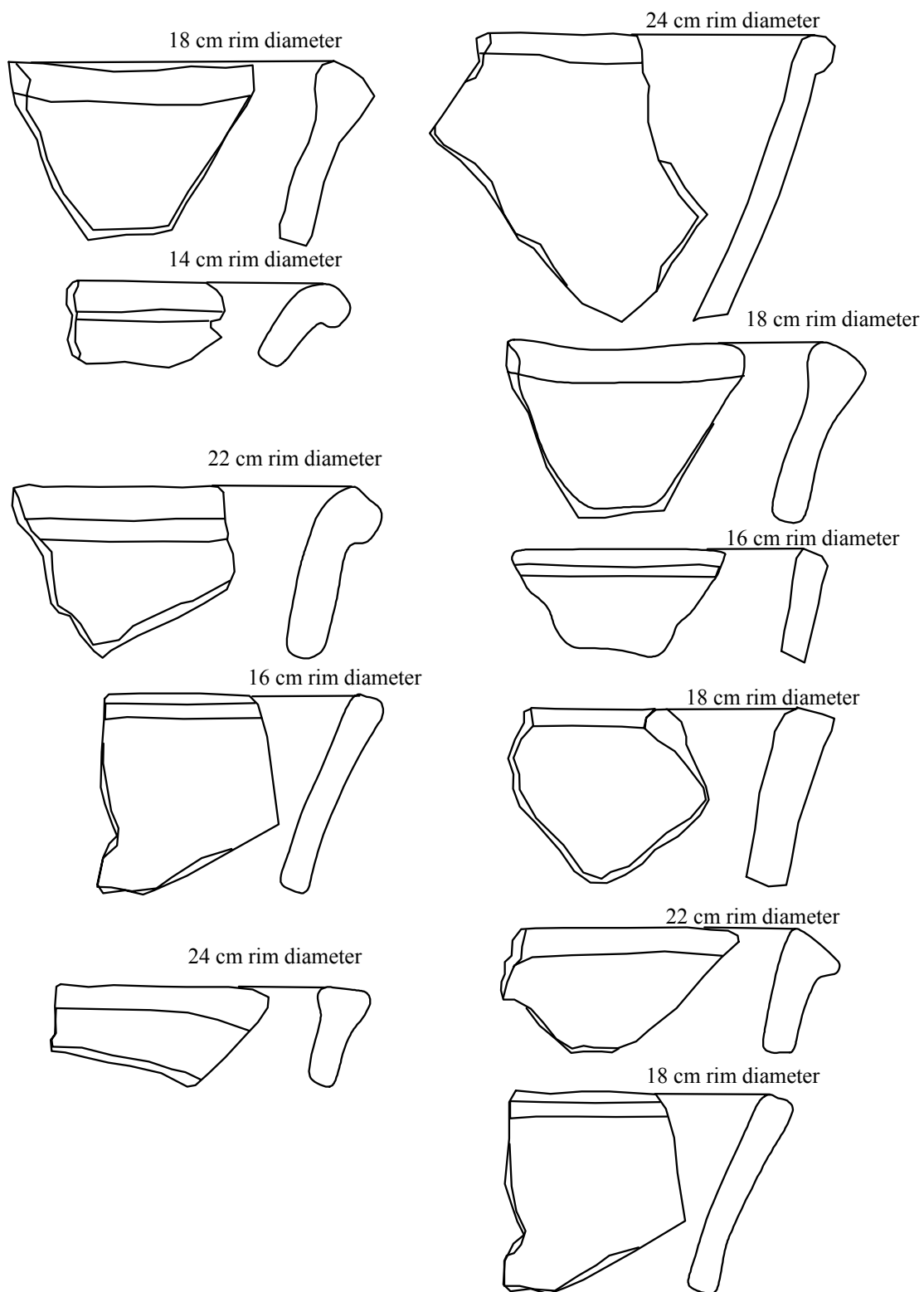


Figure 62. Illustrations of a sample of ceramic diagnostic sherds from N511 E509.

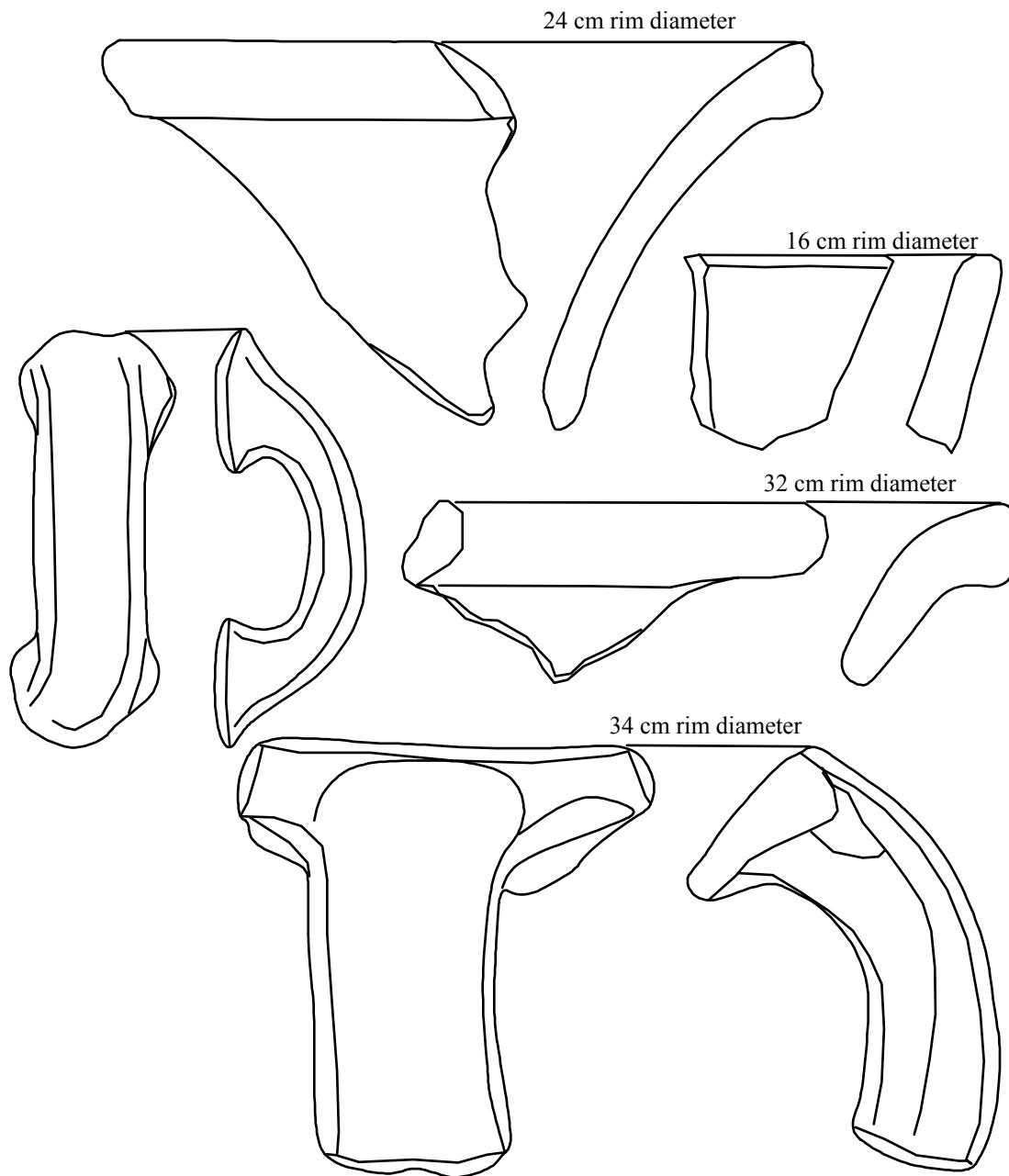


Figure 63. Illustrations of a sample of ceramic diagnostic sherds from N511 E509.

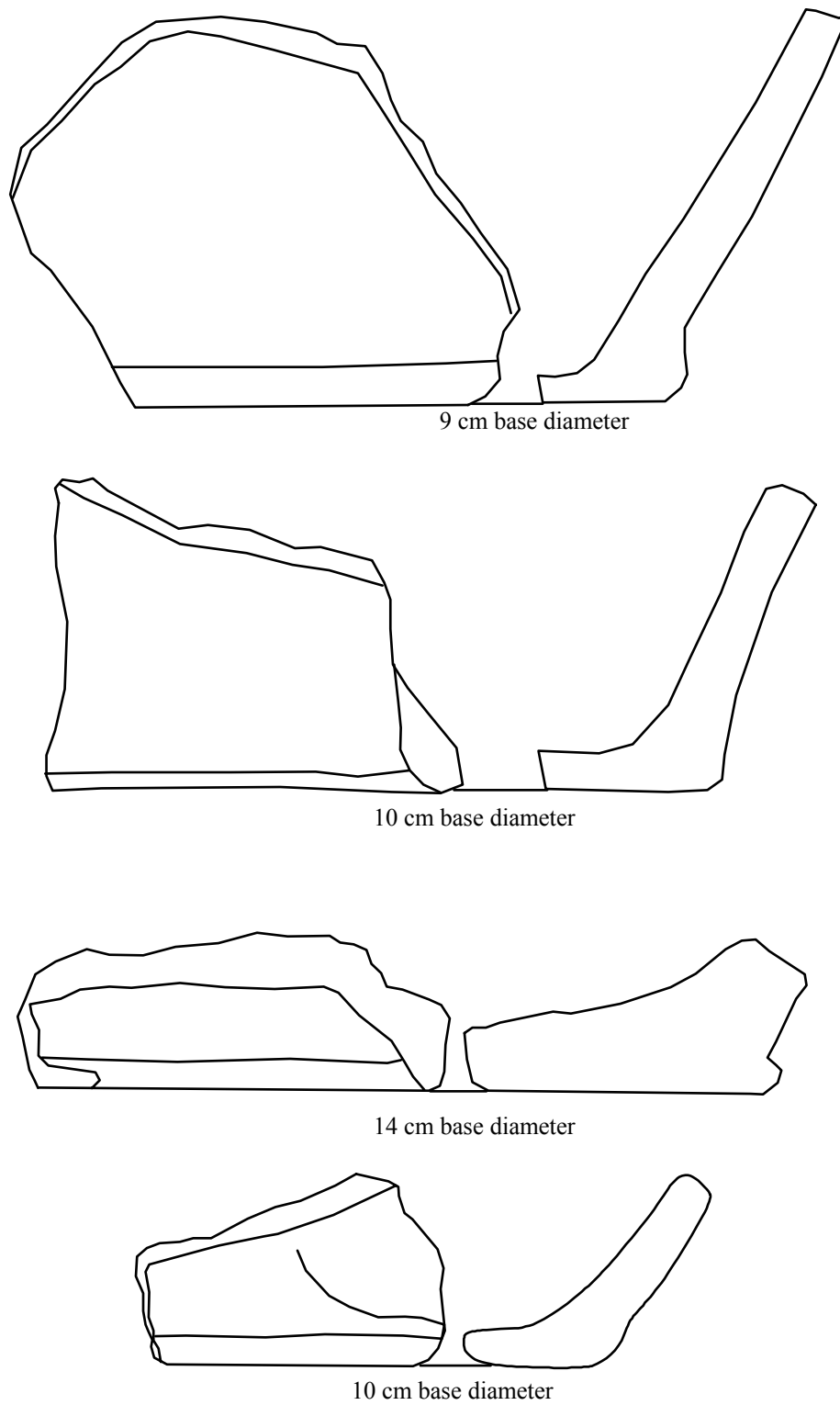


Figure 64. Illustrations of a sample of ceramic diagnostic sherds from N511 E509.

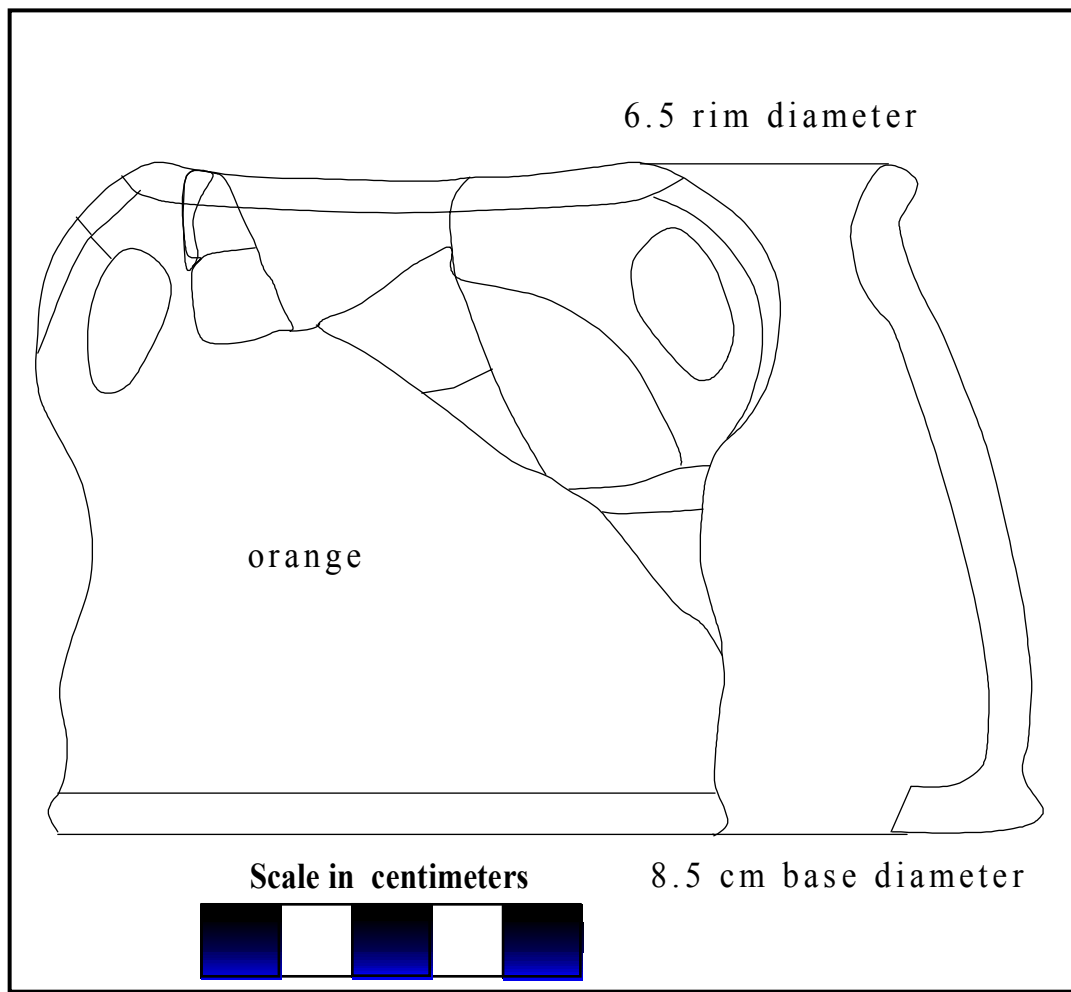


Figure 65. Illustration of a reconstructed small, undecorated, two-handled La Joya Orange pitcher.

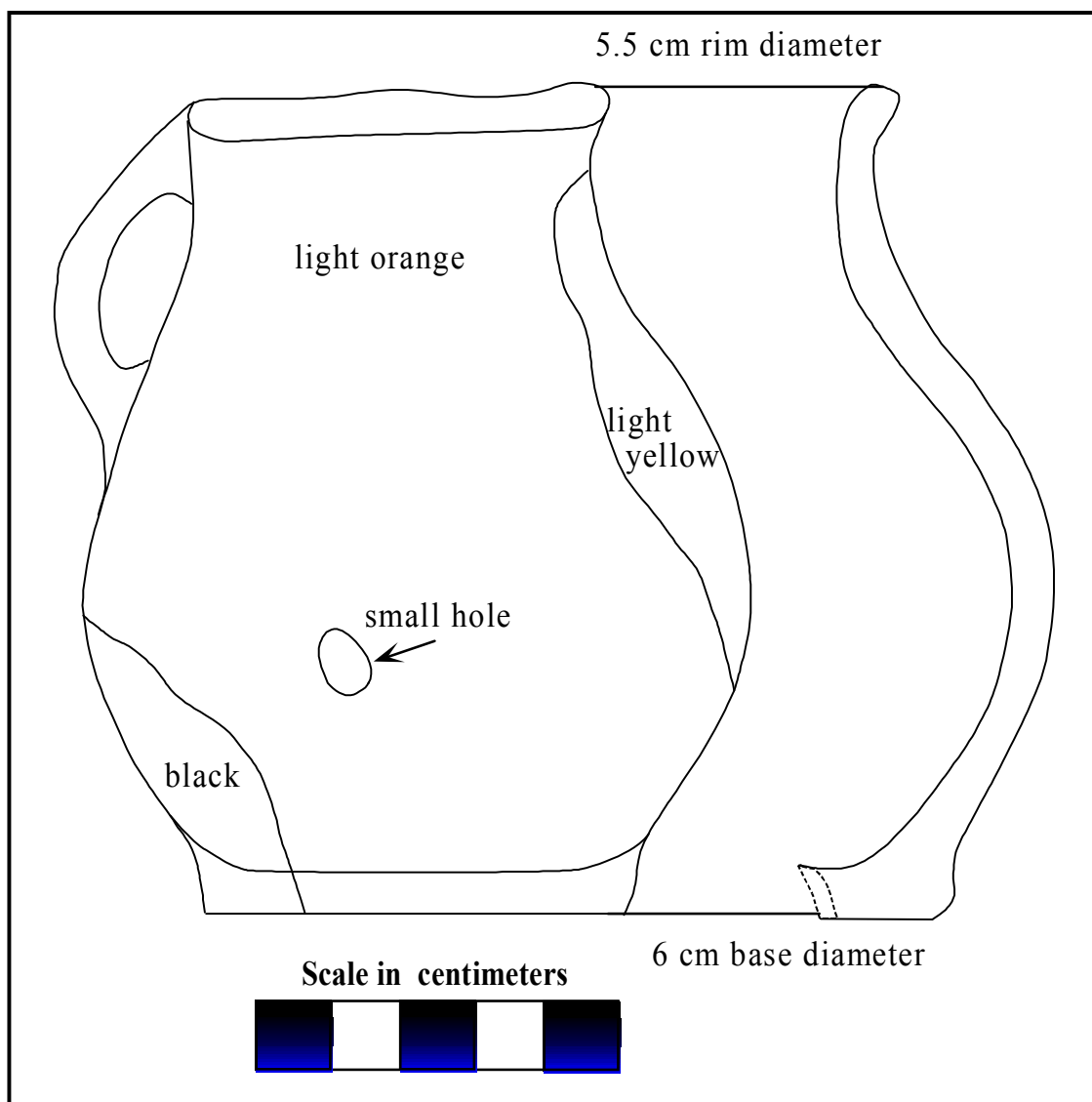


Figure 66. Illustration of a small, undecorated and unbroken La Joya Orange pitcher (note the small hole in the vessel body, perhaps the reason it was discarded).

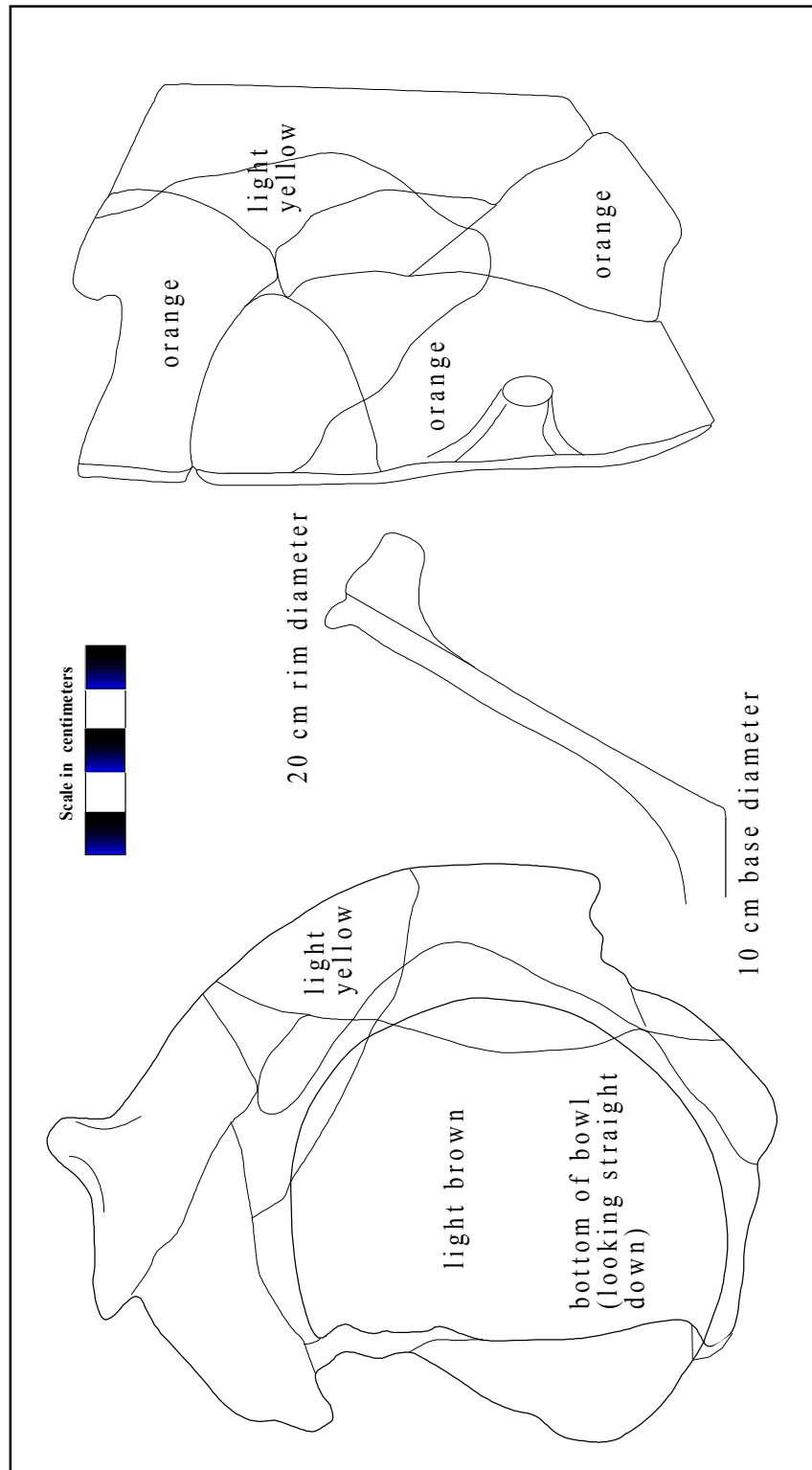


Figure 67. Illustration of a reconstructed, undecorated “nub” handled bowl of unknown ceramic type.