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City University of New York PH.D. 1986

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CERAMIC PRODUCTION AND THE DEVELOPMENT OF COMPLEX POLITIES IN LATE PREHISTORIC SOUTHWESTERN IRAN

by

JUDITH C. BERMAN

VOLUME I

A dissertation submitted to the Graduate Faculty in Anthropology in partial fulfillment of the requirements for the degree of Doctor of Philosophy, the City University of New York.

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Abstract

CERAMIC PRODUCTION AND THE DEVELOPMENT OF COMPLEX POLITIES IN LATE PREHISTORIC SOUTHWESTERN IRAN

by

Judith C. Berman

Advisor: Professor Gregory A. Johnson

The relationship between the development of complex polities and the organization of ceramic production is considered. Anthropologists have hypothesized that ceramic production becomes more specialized and administratively centralized as societies become more complex.

The fifth-fourth millennium B.C. Susiana Plain in southwestern Iran is used as a test case, as archaeological evidence suggests that more complex polities developed during that time period. Neutron activation analysis (NAA), a source characterization technique which yields the chemical composition of ceramics, was applied to over a thousand samples from the Susiana to assess the locus of ceramic production and, by extension, the way in which ceramic production was organized.

The model of production loci is constructed from statistical analyses of similarities and in

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differences in chemical composition; it is hypothesized that chemically similar ceramics are made in the same area.

The results of the study are methodologically and theoretically important. Sample size had a marked effect on results: as the sample size increased, statistical differences between samples decreased.

The NAA results suggest that bevel rim bowls were produced locally. Other types may have been manufactured in regional or local workshops. The NAA results also suggest that Susa A Necropole ceramics may have been imported from villages into Susa. All Period 12 (Susiana d) black-on-buff ceramics appear to be chemically homogeneous; possible interpretations of this result are explored.

The NAA results, along with relevant ethnohistoric and ethnographic data, are used to suggest directions for further research in Susiana and Greater Mesopotamian archaeology, and for further work on the relationship between the organization of ceramic production and socio-political organization.

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project through both his own work and his interest in mine.

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embryonic manuscript. She has asked for a very high level of scholarship; I hope I have come close to her standards.

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CONTENTS

VOLUME I

Chapter One - Introduction.....1

I. Introduction.....1
II. Complex Societies.....6
A. Chiefdoms.....7
B. States.....10
III. Overview.....14

Chapter Two - Ceramic Production in Complex Polities.....17

I. Craft Production in Complex Polities.....17
II. Ceramic Production in Complex Polities.....20
III. Archaeological Correlates of Ceramic Production.....26
A. Direct Evidence.....27
B. Indirect Evidence.....28
1. Use of Vessels.....34
2. Locus of Production.....38
a. Clay.....39
b. Temper.....46
c. Paints and Slips.....48
d. Fuel.....49
e. Production Costs.....54
i. Transport Costs.....54
ii. Administrative Costs.....57
IV. Source Characterization.....63

Reproduced with permission of the copyright owner. Further reproduction prohibited without permission.

Chapter Three - Methodology.....72

I. Neutron Activation Analysis in Archaeology.....72
II. General Principles of Neutron Activation Analysis.....74
III. Brookhaven Analytical Procedures.....76
IV. Interpretation of Neutron Activation Analysis Results.....80
A. Sources of Imprecision.....80
B. Clay and Ceramics.....83
C. Sampling.....91
D. Evaluation of Neutron Activation Analysis Data.....93

Chapter Four - The Archaeological Setting.....104

I. Location.....104
II. Geology and Geomorphology.....105
III. Environment and Land Use.....108
IV. History of Archaeological Research.....111
V. Chronology.....115

Chapter Five - The Jaffarabad Phase-Terminal Susa A.....120

I. The Archaeological Setting.....120
A. Political, Social, and Economic Organization.....120
1. The Jaffarabad Phase.....121
2. The Chogha Mish Phase.....126
3. Susa A.....131
4. Terminal Susa A.....138
5. Summary.....140
B. General Description of Ceramics.....142
1. The Jaffarabad Phase.....143
2. The Chogha Mish Phase.....144
3. Susa A.....146
4. Terminal Susa A.....148
5. Summary.....149

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II. The Neutron Activation Analysis Sample.....153
A. Black-on-Buff Ceramics.....156
B. Red Wares.....157
C. Terminal Susa A Wares.....158
III. The Neutron Activation Analysis Results.....159
A. General Remarks.....159
B. The Jaffarabad-Chogha Mish Phases.....161
1. The Jaffarabad Phase.....164
2. The Chogha Mish Phase.....165
a. Period 9-11.....166
b. Period 12.....171
c. The Chogha Mish Phase.....175
C. Susa A.....180
D. Susa A or Earlier.....186
E. Clay Samples.....188
F. Terminal Susa A.....189
IV. Conclusions.....190

Chapter Six - The Uruk.....194

I. The Archaeological Setting.....194
A. Political, Social, and Economic Organization.....194
1. Early Uruk.....201
2. Middle Uruk.....210
3. Late Uruk.....220
B. General Description of Ceramics.....224
1. Early Uruk.....225
2. Middle Uruk.....226
3. Late Uruk.....227
4. Propositions.....231
a. Early Uruk.....232
b. Middle Uruk.....234
c. Late Uruk.....235

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II. The Neutron Activation Analysis Results.....236
A. Bevel Rim Bowls.....239
B. Proto Bevel Rim Bowls.....244
C. Neckless Ledge Rim Jars.....245
D. Twist Handles.....248
E. Cross Hatch Bands.....249
F. Wide Strap Handles.....251
G. Groove and Oblique Jars.....252
H. Droop Spouts.....252
I. Miscellaneous Types.....252
J. Grooved Round Rim Jars.....253
III. Conclusions.....253

Chapter Seven - Conclusions.....261

Appendix (Tables 1-4).....278

VOLUME II

Appendix (Tables 5-401).....417

VOLUME III

Appendix (Tables 402-421; Figures 1-65).....884

Bibliography.....969

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LIST OF TABLES

VOLUME I

1. Summary of Ceramic Samples and Lenders..279
2. Elements, Half-Lives, and Gamma Ray Energies Used in Neutron Activation Analysis of Ceramics.....280
3. Final Sample Concentration Values.....281
4. All Samples By Type.....392

VOLUME II

5. All Samples By Period.....417
6. All Samples By Site.....439
7. All Samples From Johnson (1.973).....466
8. Period 7 - Susa A Chronology.....470
9. Terminal Susa A-Late Uruk Chronology....471
10. Rank-Size Indices By Period.....472
11. Summary of Per Cent Deviation Results...473
12. Per Cent Deviation Results - Period 7 Black-on-Buff, All.....485
13. Per Cent Deviation Results - Period 7 Black-on-Buff, Jaffarabad.....486
14. Per Cent Deviation Results - Period 7 Buff Common Ware.....487
15. Per Cent Deviation Results - Period 8 Red Wares, All.....488
16. Per Cent Deviation Results - Period 8 Red Wares, W-N.....489
17. Per Cent Deviation Results - Period 9-11 Red Wares, All.....490
18. Per Cent Deviation Results - Period 9-11 Red Wares, W-N.....492
19. Per Cent Deviation Results - Period 9-11 Red Wares, W-N, KS 10.....493
20. Per Cent Deviation Results - Period 9-11 Red Wares, W-N, KS 13.....494
21. Per Cent Deviation Results - Period 9-11 Red Wares, W-N, KS 17.....495
22. Per Cent Deviation Results - Period 9-11 Red Wares, W-N, KS 21.....496
23. Per Cent Deviation Results - Period 9-11 Red Wares, W-N, KS 71.....497
24. Per Cent Deviation Results - Period 9-11 Red Wares, Center.....498

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25. Per Cent Deviation Results - Period 9-11 Red Wares, Center, KS 38....499
26. Per Cent Deviation Results - Period 9-11 Red Wares, Center, KS 45....500
27. Per Cent Deviation Results - Period 9-11 Red Wares, E-N.....501
28. Per Cent Deviation Results - Period 9-11 Red Wares, E-N, KS 162.....502
29. Per Cent Deviation Results - Period 9-11 Red Wares, Unslipped.....503
30. Per Cent Deviation Results - Period 9-11 Red Wares, Unslipped, W-N...504
31. Per Cent Deviation Results - Period 9-11 Red Wares, Unslipped, KS 71.....505
32. Per Cent Deviation Results - Period 9-11 Red Wares, Gritty, Coarse...506
33. Per Cent Deviation Results - Period 9-11 Red Wares, Gritty, Coarse, W-N.....507
34. Per Cent Deviation Results - Period 9-11 Red Wares, Gritty, Coarse, W-N, KS 10.....508
35. Per Cent Deviation Results - Period 9-11 Red Wares, Porous, Chaff Tempered.....509
36. Per Cent Deviation Results - Period 9-11 Red Wares, Dark Slip.....510
37. Per Cent Deviation Results - Period 9-11 Red Wares, Dark Slip, Center.....511
38. Per Cent Deviation Results - Period 9-11 Salmon Wares, Buff Slip.....512
39. Per Cent Deviation Results - Period 9-11 Salmon Wares, Buff Slip, W-N.....513
40. Per Cent Deviation Results - Period 9-11 Salmon Wares, Buff Slip, Center.....514
41. Per Cent Deviation Results - Period 9-11 Salmon Wares, Dark Slip.....515
42. Per Cent Deviation Results - Period 9-11 Salmon Wares, Dark Slip, W-N.....516
43. Per Cent Deviation Results - Period 9-11 Salmon Wares, Dark Slip, Center.....517
44. Per Cent Deviation Results - Period 9-11 Salmon Wares, Red Slip.....518
45. Per Cent Deviation Results - Period 9-11 Salmon Wares, Red Slip, W-N.....519

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46. Per Cent Deviation Results - Period 9-11 Salmon Wares, Red Slip, Center.....520
47. Per Cent Deviation Results - Period 9-11 Salmon Wares, Red Slip, Center, KS 38.....521
48. Per Cent Deviation Results - Period 9-11 Salmon Wares, Red Slip, E-N.....522
49. Per Cent Deviation Results - Period 9-11 Black-on-Buff, All.....523
50. Per Cent Deviation Results - Period 9-11 Black-on-Buff, W-N, Jaffarabad.....524
51. Per Cent Deviation Results - Period 9-11 Black-on-Buff, Center.....525
52. Per Cent Deviation Results - Period 9-11 Black-on-Buff, Center, KS 1.....526
53. Per Cent Deviation Results - Period 12 Red Wares, All.....527
54. Per Cent Deviation Results - Period 12 Red Wares, W-S.....528
55. Per Cent Deviation Results - Period 12 Red Wares, W-S, KS 74.....529
56. Per Cent Deviation Results - Period 12 Red Wares, E-N.....530
57. Per Cent Deviation Results - Period 12 Red Wares, E-S.....531
58. Per Cent Deviation Results - Period 12 Red Wares, Porous, Chaff Tempered.....532
59. Per Cent Deviation Results - Period 12 Salmon Wares, All.....533
60. Per Cent Deviation Results - Period 12 Salmon Wares, Red Slip, W-S...534
61. Per Cent Deviation Results - Period 12 Salmon Wares, Buff Slip.....535
62. Per Cent Deviation Results - Period 12 Black-on-Buff, All.....536
63. Per Cent Deviation Results - Period 12 Black-on-Buff, W-N.....538
64. Per Cent Deviation Results - Period 12 Black-on-Buff, W-N, KS 13.....539
65. Per Cent Deviation Results - Period 12 Black-on-Buff, W-S.....540
66. Per Cent Deviation Results - Period 12 Black-on-Buff, W-S, KS 65.....541
67. Per Cent Deviation Results - Period 12 Black-on-Buff, W-S, KS 73.....542

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68. Per Cent Deviation Results - Period 12 Black-on-Buff, W-S, KS 74.....543
69. Per Cent Deviation Results - Period 12 Black-on-Buff, Center.....544
70. Per Cent Deviation Results - Period 12 Black-on-Buff, Center, KS 4...545
71. Per Cent Deviation Results - Period 12 Black-on-Buff, Center, KS 108.....546
72. Per Cent Deviation Results - Period 12 Black-on-Buff, Center, KS 118.....547
73. Per Cent Deviation Results - Period 12 Black-on-Buff, Center, KS 124.....549
74. Per Cent Deviation Results - Period 12 Black-on-Buff, E-N.....549
75. Per Cent Deviation Results - Period 12 Black-on-Buff, E-N, KS 106.....550
76. Per Cent Deviation Results - Period 12 Black-on-Buff, E-N, KS 156....551
77. Per Cent Deviation Results - Period 12 Black-on-Buff, E-N, KS 161....552
78. Per Cent Deviation Results - Period 12 Black-on-Buff, E-N, KS 168 ...553
79. Per Cent Deviation Results - Period 12 Black-on-Buff, E-N, KS 178....554
80. Per Cent Deviation Results - Period 12 Black-on-Buff, E-N, KS 180....555
81. Per Cent Deviation Results - Period 12 Black-on-Buff, E-S.....556
82. Per Cent Deviation Results - Period 12 Black-on-Buff, E-S, KS 197....557
83. Per Cent Deviation Results - Period 12 Black-on-Buff, E-S, KS 212....558
84. Per Cent Deviation Results - Period 12 Black-on-Buff, Wasters.....559
85. Per Cent Deviation Results - Period 12 Black-on-Buff, Goat Motif.....560
86. Per Cent Deviation Results - Period 12 Black-on-Buff, Goat Motif, KS 74.....561
87. Per Cent Deviation Results - Period 12 Black-on-Buff, Cylindrical Bowl, Square and Dots.....562
88. Per Cent Deviation Results - Period 12 Black-on-Buff, Cylindrical Bowl, Square and Dots, Center.....563

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89. Per Cent Deviation Results - Period 12 Black-on-Buff, Cylindrical Bowl, Square and Dots, E-N.....564
90. Per Cent Deviation Results - Period 12 Black-on-Buff, Cylindrical Bowl, Square and Dots, E-S.....565
91. Per Cent Deviation Results - Period 12 Black-on-Buff, Cylindrical Bowl, Band and Band.....566
92. Per Cent Deviation Results - Period 12 Black-on-Buff, Cylindrical Bowl, Band and Band, W-S.....567
93. Per Cent Deviation Results - Period 12 Black-on-Buff, Cylindrical Bowl, Band and Band, W-S, KS 73.....568
94. Per Cent Deviation Results - Period 12 Black-on-Buff, Cylindrical Bowl, Band and Band, Center.....569
95. Per Cent Deviation Results - Period 12 Black-on-Buff, Cylindrical Bowl, Band and Band, Center, KS 124.....570
96. Per Cent Deviation Results - Period 12 Black-on-Buff, Cylindrical Bowl, Band and Band, E-N.....571
97. Per Cent Deviation Results - Period 12 Black-on-Buff, Cylindrical Bowl, Band and Band, E-N, KS 106.....572
98. Per Cent Deviation Results - Period 12 Black-on-Buff, Cylindrical Bowl, Band and Band, E-N, KS 168.....573
99. Per Cent Deviation Results - Period 12 Black-on-Buff, Cylindrical Bowl, Band and 2 Lines.....574
100. Per Cent Deviation Results - Period 12 Black-on-Buff, Cylindrical Bowl, Band and 2 Lines, Center.....575
101. Per Cent Deviation Results - Period 12 Black-on-Buff, Cylindrical Bowl, Band and Dots.....576
102. Per Cent Deviation Results - Period 12 Black-on-Buff, Cylindrical Bowl, Band and Dots, W-S.....577
103. Per Cent Deviation Results - Period 12 Black-on-Buff, Cylindrical Bowl, Band and Dots, W-S, KS 65.....578
104. Per Cent Deviation Results - Period 12 Black-on-Buff, Cylindrical Bowl, Band and Dots, Center.....579
105. Per Cent Deviation Results - Period 12 Black-on-Buff, Cylindrical Bowl, Band and Dots, Center, KS 124.....580

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106. Per Cent Deviation Results - Period 12 Black-on-Buff, Cylindrical Bowl, Band and Line.....581
107. Per Cent Deviation Results - Period 12 Black-on-Buff, Cylindrical Bowl, Band and Line, W-S.....582
108. Per Cent Deviation Results - Period 12 Black-on-Buff, Cylindrical Bowl, Band and Line, Center.....583
109. Per Cent Deviation Results - Period 12 Black-on-Buff, Cylindrical Bowl, Band and Line, E-N.....584
110. Per Cent Deviation Results - Period 12 Black-on-Buff, Cylindrical Bowl, Band and Line, E-S.....585
111. Per Cent Deviation Results - Period 12 Black-on-Buff, Cylindrical Bowl, Dots, Indefinite.....586
112. Per Cent Deviation Results - Period 12 Black-on-Buff, Cylindrical Bowl, Dots, Indefinite, W-S.....587
113. Per Cent Deviation Results - Period 12 Black-on-Buff, Cylindrical Bowl, Dots, Indefinite, Center.....588
114. Per Cent Deviation Results - Period 12 Black-on-Buff, Cylindrical Bowl, Dots, Indefinite, Center, KS 4....589
115. Per Cent Deviation Results - Period 12 Black-on-Buff, Cylindrical Bowl, Dots, Indefinite, E-N.....590
116. Per Cent Deviation Results - Chogha Mish Phase (9-12) Red Wares.....591
117. Per Cent Deviation Results - Chogha Mish Phase (9-12) Red Wares, W-N.....592
118. Per Cent Deviation Results - Chogha Mish Phase (9-12) Red Wares, W-N, KS 12.....593
119. Per Cent Deviation Results - Chogha Mish Phase (9-12) Red Wares, W-N, KS 20.....594
120. Per Cent Deviation Results - Chogha Mish Phase (9-12) Red Wares, Center.....595
121. Per Cent Deviation Results - Chogha Mish Phase (9-12) Red Wares, Center, KS 1.....596
122. Per Cent Deviation Results - Chogha Mish Phase (9-12) Red Wares, Center, KS 4.....597

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123. Per Cent Deviation Results - Chogha Mish Phase (9-12) Red Wares, Center, KS 36.....598
124. Per Cent Deviation Results - Chogha Mish Phase (9-12) Red Wares, Center, KS 42.....599
125. Per Cent Deviation Results - Chogha Mish Phase (9-12) Red Wares, Center, KS 112.....600
126. Per Cent Deviation Results - Chogha Mish Phase (9-12) Red Wares, Center, KS 118.....601
127. Per Cent Deviation Results - Chogha Mish Phase (9-12) Red Wares, E-N.....602
128. Per Cent Deviation Results - Chogha Mish Phase (9-12) Red Wares, Unslipped.....603
129. Per Cent Deviation Results - Chogha Mish Phase (9-12) Red Wares, Unslipped, W-N.....604
130. Per Cent Deviation Results - Chogha Mish Phase (9-12) Red Wares, Unslipped, Center.....605
131. Per Cent Deviation Results - Chogha Mish Phase (9-12) Red Wares, Gritty, Coarse.....606
132. Per Cent Deviation Results - Chogha Mish Phase (9-12) Red Wares, Gritty, Coarse, W-N.....607
133. Per Cent Deviation Results - Chogha Mish Phase (9-12) Red Wares, Gritty, Coarse, Center.....608
134. Per Cent Deviation Results - Chogha Mish Phase (9-12) Red Wares, Dark Slip.....609
135. Per Cent Deviation Results - Chogha Mish Phase (9-12) Salmon Wares, Red Slip.....610
136. Per Cent Deviation Results - Chogha Mish Phase (9-12) Salmon Wares, Red Slip, W-N.....611
137. Per Cent Deviation Results - Chogha Mish Phase (9-12) Salmon Wares, Red Slip, Center.....612
138. Per Cent Deviation Results - Chogha Mish Phase (9-12) Salmon Wares, Red Slip, Center, KS 4.....613
139. Per Cent Deviation Results - Chogha Mish Phase (9-12) Salmon Wares, Dark Slip.....614

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140. Per Cent Deviation Results - Chogha Mish Phase (9-12) Salmon Wares, Dark Slip, Center, KS 4.....615
141. Per Cent Deviation Results - Chogha Mish Phase (9-12) Black on Buff Ware, Center.....616
142. Per Cent Deviation Results - Chogha Mish Phase (9-12) Black-on-Buff Ware, Center, KS 1.....617
143. Per Cent Deviation Results - Chogha Mish Phase Red Wares.....618
144. Per Cent Deviation Results - Chogha Mish Phase Red Wares, W-N.....621
145. Per Cent Deviation Results - Chogha Mish Phase Red Wares, W-N, KS 10.....622
146. Per Cent Deviation Results - Chogha Mish Phase Red Wares, W-N, KS 12.....623
147. Per Cent Deviation Results - Chogha Mish Phase Red Wares, W-N, KS 13.....624
148. Per Cent Deviation Results - Chogha Mish Phase Red Wares, W-N, KS 17.....625
149. Per Cent Deviation Results - Chogha Mish Phase Red Wares, W-N, KS 20.....626
150. Per Cent Deviation Results - Chogha Mish Phase Red Wares, W-N, KS 21.....627
151. Per Cent Deviation Results - Chogha Mish Phase Red Wares, W-N, KS 71.....628
152. Per Cent Deviation Results - Chogha Mish Phase Red Wares, W-S.....629
153. Per Cent Deviation Results - Chogha Mish Phase Red Wares, W-S KS 74.....630
154. Per Cent Deviation Results - Chogha Mish Phase Red Wares, Center.....631
155. Per Cent Deviation Results - Chogha Mish Phase Red Wares, Center, KS 1.....632
156. Per Cent Deviation Results - Chogha Mish Phase Red Wares, Center, KS 4.....633
157. Per Cent Deviation Results - Chogha Mish Phase Red Wares, Center, KS 36.....634

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158. Per Cent Deviation Results - Chogha Mish Phase Red Wares, Center, KS 38.....635
159. Per Cent Deviation Results - Chogha Mish Phase Red Wares, Center, KS 42.....636
160. Per Cent Deviation Results - Chogha Mish Phase Red Wares, Center, KS 45.....637
161. Per Cent Deviation Results - Chogha Mish Phase Red Wares, Center, KS 112.....638
162. Per Cent Deviation Results - Chogha Mish Phase Red Wares, Center, KS 118.....639
163. Per Cent Deviation Results - Chogha Mish Phase Red Wares, Center, KS 124.....640
164. Per Cent Deviation Results - Chogha Mish Phase Red Wares, E-N.....641
165. Per Cent Deviation Results - Chogha Mish Phase Red Wares, E-N, KS 161.....642
166. Per Cent Deviation Results - Chogha Mish Phase Red Wares, E-N KS 162.....643
167. Per Cent Deviation Results - Chogha Mish Phase Red Wares, E-N KS 176.....644
168. Per Cent Deviation Results - Chogha Mish Phase Red Wares, E-S.....645
169. Per Cent Deviation Results - Chogha Mish Phase Red Wares, Unslipped.....646
170. Per Cent Deviation Results - Chogha Mish Phase Red Wares, Unslipped, W-N, KS 71.....647
171. Per Cent Deviation Results - Chogha Mish Phase Red Wares, Unslipped, Center.....648
172. Per Cent Deviation Results - Chogha Mish Phase Red Wares, Porous, Chaff Tempered.....649
173. Per Cent Deviation Results - Chogha Mish Phase Red Wares, Porous, Chaff Tempered, Center.....650
174. Per Cent Deviation Results - Chogha Mish Phase Red Wares, Porous, Chaff Tempered, E-N.....651
175. Per Cent Deviation Results - Chogha Mish Phase Red Wares, Dark Slip.....652

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176. Per Cent Deviation Results - Chogha Mish Phase Red Wares, Dark Slip, Center.....653
177. Per Cent Deviation Results - Chogha Mish Phase Red Wares, Dark Slip, E-N.....654
178. Per Cent Deviation Results - Chogha Mish Phase Red Wares, Gritty, Coarse.....655
179. Per Cent Deviation Results - Chogha Mish Phase Salmon Wares, Buff Slip.....656
180. Per Cent Deviation Results - Chogha Mish Phase Salmon Wares, Buff Slip, W-N.....657
181. Per Cent Deviation Results - Chogha Mish Phase Salmon Wares, Buff Slip, Center.....658
182. Per Cent Deviation Results - Chogha Mish Phase Salmon Wares, Buff Slip, E-N.....659
183. Per Cent Deviation Results - Chogha Mish Phase Salmon Wares, Red Slip.....660
184. Per Cent Deviation Results - Chogha Mish Phase Salmon Wares, Red Slip, W-N.....661
185. Per Cent Deviation Results - Chogha Mish Phase Salmon Wares, Red Slip, W-S.....662
186. Per Cent Deviation Results - Chogha Mish Phase Salmon Wares, Red Slip, Center.....663
187. Per Cent Deviation Results - Chogha Mish Phase Salmon Wares, Red Slip, Center, KS 4.....664
188. Per Cent Deviation Results - Chogha Mish Phase Salmon Wares, Red Slip, Center, KS 38.....665
189. Per Cent Deviation Results - Chogha Mish Phase Salmon Wares, Red Slip, E-N.....666
190. Per Cent Deviation Results - Chogha Mish Phase Salmon Wares, Dark Slip.....667
191. Per Cent Deviation Results - Chogha Mish Phase Salmon Wares, Dark Slip, W-N.....668
192. Per Cent Deviation Results - Chogha Mish Phase Salmon Wares, Dark Slip, Center.....669

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193. Per Cent Deviation Results - Chogha Mish Phase Black-on-Buff Ware, All.....670
194. Per Cent Deviation Results - Chogha Mish Phase Black-on-Buff Ware, W-N.....673
195. Per Cent Deviation Results - Chogha Mish Phase Black-on-Buff Ware, W-N, KS 13.....674
196. Per Cent Deviation Results - Chogha Mish Phase Black-on-Buff Ware, W-N, KS 20.....675
197. Per Cent Deviation Results - Chogha Mish Phase Black-on-Buff Ware, W-S.....676
198. Per Cent Deviation Results - Chogha Mish Phase Black-on-Buff Ware, W-S, KS 65.....677
199. Per Cent Deviation Results - Chogha Mish Phase Black-on-Buff Ware, W-S, KS 73.....678
200. Per Cent Deviation Results - Chogha Mish Phase Black-on-Buff Ware, W-S, KS 74.....679
201. Per Cent Deviation Results - Chogha Mish Phase Black-on-Buff Ware, Center.....680
202. Per Cent Deviation Results - Chogha Mish Phase Black-on-Buff Ware, Center, KS 1.....681
203. Per Cent Deviation Results - Chogha Mish Phase Black-on-Buff Ware, Center, KS 4.....682
204. Per Cent Deviation Results - Chogha Mish Phase Black-on-Buff Ware, Center, KS 108.....683
205. Per Cent Deviation Results - Chogha Mish Phase Black-on-Buff Ware, Center, KS 118.....684
206. Per Cent Deviation Results - Chogha Mish Phase Black-on-Buff Ware, Center, KS 124.....685
207. Per Cent Deviation Results - Chogha Mish Phase Black-on-Buff Ware, E-N, ...686
208. Per Cent Deviation Results - Chogha Mish Phase Black-on-Buff Ware, E-N, KS 106.....687
209. Per Cent Deviation Results - Chogha Mish Phase Black-on-Buff Ware, E-N, KS 156.....688

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210. Per Cent Deviation Results - Chogha Mish Phase Black-on-Buff Ware, E-N, KS 161.....689
211. Per Cent Deviation Results - Chogha Mish Phase Black-on-Buff Ware, E-N, KS 168.....690
212. Per Cent Deviation Results - Chogha Mish Phase Black-on-Buff Ware, E-N, KS 180.....691
213. Per Cent Deviation Results - Chogha Mish Phase Black-on-Buff Ware, E-S.....692
214. Per Cent Deviation Results - Chogha Mish Phase Black-on-Buff Ware, E-S, KS 197.....693
215. Per Cent Deviation Results - Chogha Mish Phase Black-on-Buff Ware, E-S, KS 212.....694
216. Per Cent Deviation Results - Chogha Mish Phase Black-on-Buff Ware, Cylind. Bowl, Band and Dots.....695
217. Per Cent Deviation Results - Susa A Red Wares, All.....696
218. Per Cent Deviation Results - Susa A Red Wares, W-N.....697
219. Per Cent Deviation Results - Susa A Red Wares, W-N, KS 22.....698
220. Per Cent Deviation Results - Susa A Red Wares, W-S.....699
221. Per Cent Deviation Results - Susa A Red Wares, W-S, KS 64.....700
222. Per Cent Deviation Results - Susa A Red Wares, W-S, KS 66.....701
223. Per Cent Deviation Results - Susa A Red Wares, W-S, KS 274.....702
224. Per Cent Deviation Results - Susa A Red Wares, Far West.....703
225. Per Cent Deviation Results - Susa A Red Wares, Center.....704
226. Per Cent Deviation Results - Susa A Red Wares, Center, KS 4.....705
227. Per Cent Deviation Results - Susa A Red Wares, Center, KS 6.....706
228. Per Cent Deviation Results - Susa A Red Wares, E-N.....707
229. Per Cent Deviation Results - Susa A Red Wares, E-N, KS 101.....708
230. Per Cent Deviation Results - Susa A Red Wares, E-N, KS 106.....709
231. Per Cent Deviation Results - Susa A Red Wares, E-N, KS 157.....710

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232. Per Cent Deviation Results - Susa A Red Wares, E-N, KS 160.....711
233. Per Cent Deviation Results - Susa A Red Wares, E-N, KS 174.....712
234. Per Cent Deviation Results - Susa A Red Wares, E-N, KS 182.....713
235. Per Cent Deviation Results - Susa A Red Wares, E-S.....714
236. Per Cent Deviation Results - Susa A Red Wares, E-S, KS 186.....715
237. Per Cent Deviation Results - Susa A Red Wares, E-S, KS 204.....716
238. Per Cent Deviation Results - Susa A Red Wares, E-S, KS 215.....717
239. Per Cent Deviation Results - Susa A Red Wares, Unslipped.....718
240. Per Cent Deviation Results - Susa A Red Wares, Unslipped, W-S.....719
241. Per Cent Deviation Results - Susa A Red Wares, Unslipped, Far West...720
242. Per Cent Deviation Results - Susa A Red Wares, Unslipped, Center.....721
243. Per Cent Deviation Results - Susa A Red Wares, Unslipped, E-N.....722
244. Per Cent Deviation Results - Susa A Red Wares, Unslipped, E-S.....723
245. Per Cent Deviation Results - Susa A Red Wares, Porous, Chaff Tempered.....724
246. Per Cent Deviation Results - Susa A Red Wares, Porous, Chaff Tempered, Center.....725
247. Per Cent Deviation Results - Susa A Red Wares, Porous, Chaff Tempered, E-N.....726
248. Per Cent Deviation Results - Susa A Red Wares, Porous, Chaff Tempered, E-N, KS 182.....727
249. Per Cent Deviation Results - Susa A Red Wares, Burnished.....728
250. Per Cent Deviation Results - Susa A Red Wares, Burnished, W-N.....729
251. Per Cent Deviation Results - Susa A Red Wares, Burnished, Center.....730
252. Per Cent Deviation Results - Susa A Red Wares, Burnished, Center KS 4.....731
253. Per Cent Deviation Results - Susa A Red Wares, Burnished, E-N.....732
254. Per Cent Deviation Results - Susa A Red Wares, Dark Slip.....733

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255. Per Cent Deviation Results - Susa A Salmon Wares, Buff Slip.....734
256. Per Cent Deviation Results - Susa A Salmon Wares, Buff Slip, W-N.....735
257. Per Cent Deviation Results - Susa A Salmon Wares, Buff Slip, W-N, KS 22.....736
258. Per Cent Deviation Results - Susa A Salmon Wares, Buff Slip, W-S.....737
259. Per Cent Deviation Results - Susa A Salmon Wares, Buff Slip, W-S, KS 66.....738
260. Per Cent Deviation Results - Susa A Salmon Wares, Buff Slip, E-N.....739
261. Per Cent Deviation Results - Susa A Salmon Wares, Buff Slip, E-S.....740
262. Per Cent Deviation Results - Susa A Salmon Wares, Red Slip.....741
263. Per Cent Deviation Results - Susa A Salmon Wares, Red Slip, W-N.....742
264. Per Cent Deviation Results - Susa A Salmon Wares, Red Slip, E-N.....743
265. Per Cent Deviation Results - Susa A Salmon Wares, Red Slip, E-S.....744
266. Per Cent Deviation Results - Susa A Salmon Wares, Outside Buff Slip..745
267. Per Cent Deviation Results - Susa A Black-on-Buff Ware, All.....746
268. Per Cent Deviation Results - Susa A Black-on-Buff Ware, W-M.....748
269. Per Cent Deviation Results - Susa A Black-on-Buff Ware, W-N, Without Susa.....750
270. Per Cent Deviation Results - Susa A Black-on-Buff Ware, W-N, Without Susa and KS 20.....751
271. Per Cent Deviation Results - Susa A Black-on-Buff Ware, W-N, KS 22...752
272. Per Cent Deviation Results - Susa A Black-on-Buff Ware, W-N, KS 33...753
273. Per Cent Deviation Results - Susa A Black-on-Buff Ware, Susa.....754
274. Per Cent Deviation Results - Susa A Black-on-Buff Ware, Susa Bowls...755
275. Per Cent Deviation Results- Susa A Black-on-Buff Ware, Susa High Goblet.....756

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276. Per Cent Deviation Results - Susa A Black-on-Buff Ware, Susa Goblet.....757
277. Per Cent Deviation Results - Susa A Black-on-Buff Ware, Jaffarabad...758
278. Per Cent Deviation Results - Susa A Black-on-Buff Ware, W-N, KS 28...759
279. Per Cent Deviation Results - Susa A Black-on-Buff Ware, W-N, KS 13 Bowl.....760
280. Per Cent Deviation Results - Susa A Black-on-Buff Ware, Luristan Cups, Susa.....761
281. Per Cent Deviation Results - Susa A Black-on-Buff Ware, Luristan Imported to Susa.....762
282. Per Cent Deviation Results - Susa A Black-on-Buff Ware, Far West.....763
283. Per Cent Deviation Results - Susa A Black-on-Buff Ware, Far West, KS 239.....764
284. Per Cent Deviation Results - Susa A Black-on-Buff Ware, Center.....765
285. Per Cent Deviation Results - Susa A Black-on-Buff Ware, Center, KS 1.....766
286. Per Cent Deviation Results - Susa A Black-on-Buff Ware, Center, KS 4.....767
287. Per Cent Deviation Results - Susa A Black-on-Buff Ware, Center, KS 112.....768
288. Per Cent Deviation Results - Susa A Black-on-Buff Ware, Center, KS 113.....769
289. Per Cent Deviation Results - Susa A Black-on-Buff Ware, Center, KS 266.....770
290. Per Cent Deviation Results - Susa A Black-on-Buff Ware, E-N.....771
291. Per Cent Deviation Results - Susa A Black-on-Buff Ware, E-N KS 161.....772
292. Per Cent Deviation Results - Susa A Black-on-Buff Ware, E-N KS 181.....773
293. Per Cent Deviation Results - Susa A Black-on-Buff Ware, Cylin. Bowl, Band and Line.....774
294. Per Cent Deviation Results - Susa A Black-on-Buff Ware, Cylin. Bowl, Band and Line, W-N.....775

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295. Per Cent Deviation Results - Susa A Black-on-Buff Ware, Cylin. Bowl, Dots, Indefinite.....776
296. Per Cent Deviation Results - Susa A Black-on-Buff Ware, Cylin. Bowl, Dots, Indefinite, W-N.....777
297. Per Cent Deviation Results - Susa A Black-on-Buff Ware, Cylin. Bowl, Dots, Indefinite, W-S.....778
298. Per Cent Deviation Results - Susa A Black-on-Buff Ware, Cylin. Bowl, Dots, Indefinite, E-N.....779
299. Per Cent Deviation Results - Susa A Black-on-Buff Ware, Cylin. Bowl, Band and 2 Lines.....780
300. Per Cent Deviation Results - Susa A Black-on-Buff Ware, Cylin. Bowl, Band and 2 Lines, Center.....781
301. Per Cent Deviation Results - Susa A Black-on-Buff Ware, Greccas and Scallops.....782
302. Per Cent Deviation Results - Susa A Black-on-Buff Ware, Greccas and Scallops, W-N.....783
303. Per Cent Deviation Results - Susa A Black-on-Buff Ware, Greccas and Scallops, W-N, KS 33.....784
304. Per Cent Deviation Results - Susa A Black-on-Buff Ware, Greccas and Scallops, Center.....785
305. Per Cent Deviation Results - Susa A Black-on-Buff Ware, Greccas and Scallops, E-N, KS 181.....786
306. Per Cent Deviation Results - Susa A Black-on-Buff Ware, Cylin. Bowl, Band and Dots.....787
307. Per Cent Deviation Results - Susa A Black-on-Buff Ware, Cylin. Bowl, Band and Dots, W-N.....788
308. Per Cent Deviation Results - Susa A Black-on-Buff Ware, Cylin. Bowl, Band and Dots, Center.....789
309. Per Cent Deviation Results - Susa A Black-on-Buff Ware, Cylin. Bowl, Band and Dots, Center, KS 112.....790
310. Per Cent Deviation Results - Susa A or Earlier, Red Wares.....791
311. Per Cent Deviation Results - Susa A or Earlier, Red Wares, W-N.....792
312. Per Cent Deviation Results - Susa A or Earlier, Red Wares, W-N, KS 67.....793

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313. Per Cent Deviation Results - Susa A or Earlier, Red Wares, W-N, KS 33.....794
314. Per Cent Deviation Results - Susa A or Earlier, Red Wares, Far West.....795
315. Per Cent Deviation Results - Susa A or Earlier, Red Wares, Center....796
316. Per Cent Deviation Results - Susa A or Earlier, Red Wares, E-N.....797
317. Per Cent Deviation Results - Susa A or Earlier, Red Wares, E-S.....798
318. Per Cent Deviation Results - Susa A or Earlier, Red Wares, Unslipped.....799
319. Per Cent Deviation Results - Susa A or Earlier, Red Wares, Unslipped, W-N.....800
320. Per Cent Deviation Results - Susa A or Earlier, Red Wares, Unslipped, E-N.....801
321. Per Cent Deviation Results - Susa A or Earlier, Red Wares, Burnished.....802
322. Per Cent Deviation Results - Susa A or Earlier, Salmon Wares, Red Slip.....803
323. Per Cent Deviation Results - Susa A or Earlier, Salmon Wares, Red Slip, W-N.....804
324. Per Cent Deviation Results - Susa A or Earlier, Salmon Wares, Buff Slip.....805
325. Per Cent Deviation Results - Susa A or Earlier, Black-on-Buff Ware, All.....806
326. Per Cent Deviation Results - Susa A or Earlier, Black-on-Buff Ware, W-N.....807
327. Per Cent Deviation Results - Susa A or Earlier, Black-on-Buff Ware, W-N, KS 67.....808
328. Per Cent Deviation Results - Susa A or Earlier, Black-on-Buff Ware, Center.....809
329. Per Cent Deviation Results - Susa A or Earlier, Black-on-Buff Ware, Center, KS 4.....810
330. Per Cent Deviation Results - Susa A or Earlier, Black-on-Buff Ware, Center, KS 108.....811

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331. Per Cent Deviation Results - Susa A or Earlier, Black-on-Buff Ware, Center, KS 1112.....812
332. Per Cent Deviation Results - Susa A or Earlier, Black-on-Buff Ware, Center, KS 266.....813
333. Per Cent Deviation Results - Susa A or Earlier, Black-on-Buff Ware, E-N.....814
334. Per Cent Deviation Results - Susa A or Earlier, Black-on-Buff Ware, E-N, KS 106.....815
335. Per Cent Deviation Results - Susa A or Earlier, Black-on-Buff Ware, E-N. KS 176.....816
336. Per Cent Deviation Results - Susa A or Earlier, Black-on-Buff Ware, E-N, KS 178.....817
337. Per Cent Deviation Results - Susa A or Earlier, Black-on-Buff Ware, E-S.....818
338. Per Cent Deviation Results - Susa A or Earlier, Black-on-Buff Ware, E-S, KS 197.....819
339. Per Cent Deviation Results - Susa A or Earlier, Black-on-Buff Ware, E-S, KS 215.....820
340. Per Cent Deviation Results - Susa A or Earlier, Black-on-Buff Ware, Cylind. Bowl, Band and Dots.....821
341. Per Cent Deviation Results - Susa A or Earlier, Black-on-Buff Ware, Cylind. Bowl, Band and 2 Lines.....822
342. Per Cent Deviation Results - Susa A or Earlier, Black-on-Buff Ware, Band and Line.....823
343. Per Cent Deviation Results - Susa A or Earlier, Black-on-Buff Ware, Band and Line, E-N.....824
344. Per Cent Deviation Results - Susa A or Earlier, Black-on-Buff Ware, Dots, Indefinite.....825
345. Per Cent Deviation Results - Susa A or Earlier, Black-on-Buff Ware, Dots, Indefinite, W-N.....826
346. Per Cent Deviation Results - Susa A or Earlier, Black-on-Buff Ware, Dots, Indefinite, Center.....827
347. Per Cent Deviation Results - Susa A or Earlier, Black-on-Buff Ware, Dots, Indefinite, E-N.....828

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348. Per Cent Deviation Results - Susa A or Earlier, Black-on-Buff Ware, Band and Band.....829
349. Per Cent Deviation Results - Susa A or Earlier, Black-on-Buff Ware, Band and Band, Center.....830
350. Per Cent Deviation Results - Susa A or Earlier, Black-on-Buff Ware, Band and Band, E-N.....831
351. Per Cent Deviation Results - Susa A or Earlier, Black-on-Buff Ware, Goat Motif.....832
352. Per Cent Deviation Results - Susa A or Earlier, Black-on-Buff Ware, Goat Motif, Center.....833
353. Per Cent Deviation Results - Susa A or Earlier, Black-on-Buff Ware, Goat Motif, E-N, KS 178.....834
354. Per Cent Deviation Results - Susa A or Earlier, Black-on-Buff Ware, Goat Motif, E-S.....835
355. Per Cent Deviation Results - Susa A or Earlier, Black-on-Buff Ware, Goat Motif, E-S, KS 197.....836
356. Per Cent Deviation Results - Susa A or Earlier, Black-on-Buff Ware, Goat Motif, E-S, KS 215.....837
357. Per Cent Deviation Results - Terminal Susa A, All.....838
358. Per Cent Deviation Results - Terminal Susa A, West.....839
359. Per Cent Deviation Results - Terminal Susa A, Center.....840
360. Per Cent Deviation Results - Terminal Susa A, East.....841
361. Per Cent Deviation Results - Terminal Susa A, KS 64.....842
362. Per Cent Deviation Results - Terminal Susa A, KS 269.....843
363. Per Cent Deviation Results - Terminal Susa A, Flared Neck Jars.....844
364. Per Cent Deviation Results - Terminal Susa A, Flared Neck Jars, KS 269.....845
365. Per Cent Deviation Results - Terminal Susa A, Impressed Strip Bowls..846
366. Per Cent Deviation Results - Terminal Susa A, Impressed Strip Bowls, KS 64.....847
367. Per Cent Deviation Results - Terminal Susa A, Impressed Strip Bowls, KS 67.....848

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368. Per Cent Deviation Results - Terminal Susa A, Impressed Strip Bowls, KS 108.....849
369. Per Cent Deviation Results - Terminal Susa A, Impressed Strip Bowls, KS 182.....850
370. Per Cent Deviation Results - Terminal Susa A, Impressed Strip Bowls, KS 190.....851
371. Per Cent Deviation Results - Terminal Susa A, Impressed Strip Bowls, KS 266.....852
372. Per Cent Deviation Results - Terminal Susa A, Impressed Strip Bowls, KS 269.....853
373. Per Cent Deviation Results - Clay Samples.....854
374. Per Cent Deviation Results - Clay Samples, Susa.....855
375. Per Cent Deviation Results - Clay Samples, Jaffarabad.....856
376. Per Cent Deviation Results - Clay Samples, Fired.....857
377. Per Cent Deviation Results - Clay Samples, Susa, Fired.....858
378. Per Cent Deviation Results - Clay Samples, Jaffarabad, Fired.....859
379. Per Cent Deviation Results - Clay and Fired Clay.....860
380. Per Cent Deviation Results - Clay and Fired Clay, Susa.....861
381. Per Cent Deviation Results - Clay and Fired Clay, Jaffarabad.....862
382. Per Cent Deviation Results - Clay, Fired Clay, and Sherds.....863
383. Per Cent Deviation Results - Clay, Fired Clay, and Sherds, Susa.....864
384. Per Cent Deviation Results - Red Clay.....865
385. Per Cent Deviation Results - Red Clay, Susa.....866
386. Per Cent Deviation Results - Red Clay Samples and Sherds.....867
387. Per Cent Deviation Results - Red Sherds.....868
388. Per Cent Deviation Results - Green-Grey Clay.....869
389. Per Cent Deviation Results - Green-Grey Clay and Sherds.....870
390. Per Cent Deviation Results - Green-Grey Sherds.....871

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391. Per Cent Deviation Results - Green-Grey Clay and Sherds, Susa.....872
392. Per Cent Deviation Results - Green-Grey Clay, Susa.....873
393. Per Cent Deviation Results - Uruk Bevel Rim Bowls, All.....874
394. Per Cent Deviation Results - Uruk Proto Bevel Rim Bowls, All.....876
395. Per Cent Deviation Results - Uruk Neckless Ledge Rim Jars, All.....877
396. Per Cent Deviation Results - Uruk Droop Spouts, All.....878
397. Per Cent Deviation Results - Uruk Wide Strap Handles, All.....879
398. Per Cent Deviation Results - Uruk Grooved Round Rim Jars, All.....880
399. Per Cent Deviation Results - Uruk Groove and Oblique Jars, All.....881
400. Per Cent Deviation Results - Uruk Twist Handles, All.....882
401. Per Cent Deviation Results - Uruk Cross Hatch Bands, All.....883

VOLUME III

402. Sc-Fe Groups, BRB By Location On Plain..884
403. Sc-Fe Groups, BRB Group Boundaries.....885
404. Sc-Fe Groups, BRB, PBRB By Location On Plain.....886
405. Sc-Fe Groups, BRB, PBRB Group Boundaries.....887
406. Sc-Fe Groups, BRB, PBRB, NLR By Location On Plain.....888
407. Sc-Fe Groups, BRB, PBRB, NLR Group Boundaries.....889
408. Sc-Fe Groups, BRB, PBRB, NLR, TH By Location On Plain.....890
409. Sc-Fe Groups, BRB, PBRB, NLR, TH Group Boundaries.....891
410. Sc-Fe Groups, BRB, PBRB, XH By Location On Plain.....892
411. Sc-Fe Groups, BRB, PBRB, XH Group Boundaries.....893
412. Sc-Fe Groups, BRB, PBRB, WSH By Location On Plain.....894
413. Sc-Fe Groups, BRB, PBRB, WSH Group Boundaries.....895
414. Sc-Fe Groups, BRB, PBRB, G&O By Location On Plain.....896

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415. Sc-Fe Groups, BRB, PBRB, G&O Group Boundaries.....897
416. Sc-Fe Groups, BRB, PBRB, G&0, DS By Location On Plain.....898
417. Sc-Fe Groups, BRB, PBRB, G&O, DS Group Boundaries.....899
418. Sc-Fe Groups, BRB, PBRB, G&O, DS, Misc By Location On Plain.....900
419. Sc-Fe Groups, BRB, PBRB, G&O, DS, Misc Group Boundaries.....901
420. Sc-Fe Groups, BRB, PBRB, GRR By Location On Plain.....902
421. Sc-Fe Groups, BRB, PBRB, GRR Group Boundaries.....903

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LIST OF FIGURES

VOLUME III

1. Greater Mesopotamia, With Geographical Features and Modern Political Boundaries.....904
2. Greater Mesopotamia, With Sites Mentioned in Text.....905
3. The Susiana Plain 906
4. Period 7 Settlement Pattern.....907
5. Period 8 Settlement Pattern.....908
6. Period 9 Settlement Pattern.....909
7. Period 10 Settlement Pattern.....910
8. Period 11 Settlement Pattern.....911
9. Period 12 Settlement Pattern.....912
10. Period 12 Sites With Evidence of Ceramic Production.....913
11. Period 13 (Susa A) Settlement Pattern...914
12. Terminal Susa A Settlement Pattern.....915
13. Period 7-13 Black-on-Buff Ceramics.....916
14. Period 7-13 Black-on-Buff Ceramics.....917
15. Period 7-13 Black-on-Buff Ceramics.....918
16. Early Uruk Settlement Pattern.....919
17. Middle Uruk Settlement Pattern.....920
18. Late Uruk Settlement Pattern.....921
19. Terminal Susa A Ceramics.....922
20. Early Uruk Ceramics.....923
21. Middle Uruk Ceramics.....924
22. Late Uruk Ceramics.....925
23. ADCORR Results. KS 36 Bevel Rim Bowls Compared with Western Site Bowls.....926
24. ADCORR Results. KS 36 Bevel Rim Bowls Compared with Center Site Bowls.....927
25. ADCORR Results. KS 36 Bevel Rim Bowls Compared with Central and Western Site Bowls.....928
26. Bevel Rim Bowl Sc-Fe Correlation Matrix.....929
27. Sc-Fe Scatter Plot - All BRB.....930
28. Sc-Fe Scatter Plot - BRB Edited.....931
29. Sc-Fe Scatter Plot - BRB - High End Eliminated.....932
30. Sc-Fe Scatter Plot - All PBRB.....933
31. Sc-Fe Scatter Plot - PBRB Edited.....934
32. Sc-Fe Scatter Plot - BRB, PBRB.....935
33. Sc-Fe Scatter Plot - BRB, PBRB - High End Eliminated.....936

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34. Sc-Fe Scatter Plot - NLR.....937
35. Sc-Fe Scatter Plot - NLR Edited.....938
36. Sc-Fe Scatter Plot - Activation 21.....939
37. Sc-Fe Scatter Plot - BRB, PBRB, NLR.....940
38. Sc-Fe Scatter Plot - BRB, PBRB, NLR.....941
39. Sc-Fe Scatter Plot - BRB, PBRB, NLR - High End Eliminated.....942
40. Sc-Fe Scatter Plot - TH.....943
41. Sc-Fe Scatter Plot - TH Edited.....944
42. Sc-Fe Scatter Plot - BRB, PBRB, NLR, TH.....945
43. Sc-Fe Scatter Plot - BRB, PBRB, NLR, TH - High End Eliminated.....946
44. Sc-Fe Scatter Plot - XH.....947
45. Sc-Fe Scatter Plot - XH Edited.....948
46. Sc-Fe Scatter Plot - BRB, PBRB, XH.....949
47. Sc-Fe Scatter Plot - BRB, PBRB, XH - High End Eliminated.....950
48. Sc-Fe Scatter Plot - BRB, PBRB, XH - 2 High Ends Eliminated.....951
49. Sc-Fe Scatter Plot - WSH.....952
50. Sc-Fe Scatter Plot - WSH Edited.....953
51. Sc-Fe Scatter Plot - BRB, PBRB, WSH.....954
52. Sc-Fe Scatter Plot - BRB, PBRB, WSH - High End Eliminated.....955
53. Sc-Fe Scatter Plot - BRB, PBRB, WSH - 2 High Ends Eliminated.....956
54. Sc-Fe Scatter Plot - G&O.....957
55. Sc-Fe Scatter Plot - BRB, PBRB, G&O.....958
56. Sc-Fe Scatter Plot - BRB, PBRB, G&O - High End Eliminated.....959
57. Sc-Fe Scatter Plot - DS.....960
58. Sc-Fe Scatter Plot - BRB, PBRB, G&O, DS.....961
59. Sc-Fe Scatter Plot - BRB, PBRB, G&O, DS - High End Eliminated.....962
60. Sc-Fe Scatter Plot - BRB, PBRB, G&O, DS - 2 High Ends Eliminated.....963
61. Sc-Fe Scatter Plot - BRB, PBRB, G&O, DS, Misc.....964
62. Sc-Fe Scatter Plot - BRB, PBRB, G&O, DS, Misc - 2 High Ends Eliminated.....965
63. Sc-Fe Scatter Plot - GRR.....966
64. Sc-Fe Scatter Plot - BRB, PBRB, GRR.....967
65. Sc-Fe Scatter Plot - BRB, PBRB, GRR - 2 High Ends Eliminated.....968

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CHAPTER ONE - INTRODUCTION

I. Introduction

Ceramics are arguably the most important artifacts recovered by archaeologists interested in post-Neolithic prehistory. By sheer numbers alone, pottery plays a significant role in archaeological interpretations of past human activities. However, the relationship between pottery and society is complex, and, given a century or more of archaeological interest in this relationship, surprisingly ill-understood. While recent research (for example, Arnold 1985; Nelson 1985; van der Leeuw and Pritchard 1984) has been illuminating, sometimes questionable assumptions are still made about the relationship between ceramics and culture.

Most commonly, ceramics are used as the basis for chronologies in archaeology. Arnold notes that

> in their simplest form, these chronologies are a temporal sequence of types, but more importantly, they are believed to reflect culture historical relationships through time and are based on the similarities and differences between types, styles or attributes that are relatively contiguous in time and/or space (e.g. Egloff 1972:148ff). This belief rests on a number of assumptions. First and foremost, archaeologists believe that ceramics can reflect the culture of a people such that the main

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> forces of cultural change that affect a society are reflected in their ceramics (Grieder 1975:850-1). Secondly, typological or attribute similarities are believed to be the result of cultural contact or diffusion; people in one area acquire pots or the ideas of how to make and decorate them by trade, exchange, migration, or conquest (MacNeish, Peterson and Flannery, 1970). Conversely, differences in types, attributes or style indicate the lack of such cultural contact and diffusion [Arnold 1985:14].

However, archaeological, ethnohistorical, and ethnographic data suggest that the relationship between ceramics and societal organization may not necessarily be direct (see Arnold 1985:1-2 for a brief review): changes in ceramic types, attributes, or style may not necessarily be associated with changes in society.

More recently, archaeologists have shifted their attention from the pots themselves to examining the organization of ceramic production within the context of sociopolitical organization. Rice (1981), for example, suggests that there is a direct relationship between increasing sociopolitical complexity and the development of specialized ceramic production. The assumption of regularities in the ceramic production patterns of societies has not always been supported by ethnographic, ethnohistorical, or archaeological

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evidence, however (e.g., W. Adams 1979; Hodder 1981, 1982), and therefore should be explored on a case-by-case basis.

This dissertation was designed to assess long-term changes in the organization of ceramic production in relation to the development of early complex polities on the Susiana Plain in southwestern Iran (Figs. 1-3). Specifically, it examines shifts in pottery production strategies during the hypothesized transition from fifth millennium B.C. "chiefdoms" to the fourth millennium B.C. "state" (Johnson 1973; Wright 1984).

The fifth to fourth millennium B.C. Susiana Plain was chosen for the case study for several reasons. The plain has been the focus of archaeological excavation and survey for well over a century (see chapter four). Recent surveys of the plain by Hole (personal communication, 1979) and Wright and Johnson (in 1970-71), as well as Dollfus' reanalysis of the fifth millennium material (personal communication, 1985) have been particularly useful in establishing basic settlement patterns. The surveys and excavations have also yielded large quantities of ceramics from

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many sites on the plain, some of which have generously been made available for the research described here (Table 1).

Although there is still much work to be done, the broad outline of the archaeological history of the plain has been established, and some attempts have been made to interpret the available data. Interpretations of the fourth millennium material are currently available (see, e.g., Johnson 1973, 1976, 1983; Wright and Johnson 1975), while analyses of the fifth millennium data are also available (Dollfus 1982; Hole 1977, 1981, 1982, 1984) or are forthcoming (G. Dollfus, personal communication, 1985).

Ceramic production has been particularly interesting to scholars working in the area for several reasons. First, the dramatic shift from finely made black-on-buff vessels to cruder Uruk vessels both on the plain and throughout Greater Mesopotamia has not yet been satisfactorily explained. The ubiquitous Uruk vessel, the bevel rim bowl (Fig. 21) has been the center of extensive controversy (see chapter six). The locus and method of bowl production, as well as its use(s), has not been resolved. Additionally, there is

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scattered evidence of pottery production, with kilns found at Jaffarabad (Dollfus 1975; Dollfus and Hesse 1977), Susa (Miroschedji 1976), Chogha Mish (Alizadeh 1985) and Abu Fanduweh (Johnson 1976; for reviews of kilns in the ancient Near East see Alizadeh 1985; Delcroix and Huot 1972, Majidzadeh 1977-77).

In addition, some analysis of the fourth millennium Susiana ceramics has already been accomplished. Johnson (1973) has used microstylistic analysis of ceramics to determine the location of pottery workshops during the Uruk and to link pottery production to changes in administrative organization. I have re-examined many of the samples originally studied by Johnson (Table 7) in order to cross-check his results.

This dissertation focuses on the location of ceramic production for bevel rim bowls, several other previously examined Uruk types, as well as some fifth millennium material. The results of the ceramic studies are then placed in the context of the sociopolitical organization of fifth to fourth millennium B.C. Susiana societies.

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II. Complex Societies

It has been hypothesized that these societies developed from "chiefdoms" to "states." These terms can have a wide range of meanings, so it is useful at this point to digress a bit and specify how these terms are used in this dissertation. Certainly, the notion that there are types of sociopolitical organizations ranging from the simple to the complex is widely accepted in anthropological research. One of the most commonly used models proposes a band-tribe-chiefdom-state continuum of types (Fried 1967; Service 1962, 1972; see also Sahlins 1958, 1963, 1968, 1972), with chiefdoms and states on the complex end. In order to narrow the focus of the discussion to the particular case study, I here consider only "chiefdoms" and "states."

An enormous literature on chiefdoms and states exists. It is not my purpose here to review that material, but rather to offer some operational definitions of chiefdoms and states that can be productively applied to the archaeological case study. Note that these definitional categories are glosses covering a wide variety of organizational

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structures and behaviors. I will indicate some of that variety in my discussion of each type.

A. Chiefdoms. The concept of "...a type of society intermediate between kin-ordered tribes and class-divided states" (Wolf 1982:96; see also Service 1975), has been a part of various evolutionary models of sociopolitical organization at least since Lewis Henry Morgan's work (1963; see also Feinman and Neitzel 1984). This intermediate type covers in fact a wide range of organizations, and terminological confusion abounds (see Feinman and Neitzel 1984; Wright 1984). In this study, simple and complex chiefdoms are considered as broad characterizations including a wide range of behaviors.

General definitions of chiefdoms that rely on trait lists may not be operationalized archaeologically because not all traits appear in all chiefly societies (Feinman and Neitzel 1984). A more useful approach, in that it is both cross-culturally applicable and archaeologically testable, is one based on information processing and decision-making (see Flannery 1972; Peebles and Kus 1977; Wright 1977; Johnson 1973). From this perspective, Wright (1984:42-43) defines a chiefdom

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> as a sociopolitical entity in which overall social control activities are vested in a subsystem which is externally specialized vis-a-vis other activities, but not internally specialized in terms of different aspects of the control process (e.g. observing, deciding, coercing); there is, in short, one generalized kind of political control. Within this set, however, there is a continuum of varying complexity. Simple chiefdoms are those in which some control is exercised by figures drawn from an ascribed local elite subgroup; these chiefdoms characteristically have only one level of control hierarchy above the local community....In contrast, at the other end of the continuum, "complex chiefdoms" are those in which control is exercised by figures drawn from a class of people which cross-cuts many local subgroups, a "class" being defined as a ranked group whose members compete with each other for access to controlling position and stand together in opposition to other people. Complex chiefdoms characteristically cycle between one and two levels of control hierarchy above the level of the local community.

In chiefly societies, rank is ascribed on the basis of genealogical position (Peebles and Kus 1977:422). There are often great distinctions between the chief and his lineage and other members of society: "the office and person of the chief and of his nearest kinsmen are marked by sumptuary rules, distinctive ways of dress, prescribed modes of behavior, and, usually, compulsory ritual behavior. Power and prerogative are likewise unequally distributed" (ibid.).

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Earlier constructs of chiefdoms have argued that the chief acts as a central redistributive agency, collecting and in turn dispensing goods and services to the people (cf. Sahlins 1972:139). It has recently been argued (Peebles and Kus 1977; Earle 1977) that, at least for the complex Hawaiian chiefdoms, redistribution was not the most important mode of exchange, that only elites received redistributed goods, and that redistribution did not circulate goods around the various ecological zones of the chiefdom. Goods were extracted from the populace by the elite to support chiefly political activities (Earle 1977). Similarly, chiefs in Panama collected tribute but did not redistribute goods to the group as a whole (Helms 1979).

Craft production in chiefly societies may be conducted on the household level, or may involve part- or full-time specialists producing goods for tribute (see review in Wright 1984:45). This will be discussed further in chapter two.

The archaeological correlates of chiefdoms are related to "...the emergence of a chiefly class or nobility, members of which control generalized, polity-wide decision-making" (Wright 1984:43).

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Differences in regional settlement patterns, intra-site architecture, mortuary data, and distribution of rare or sumptuary goods (Peebles and Kus 1977; Pollock 1983; Saxe 1970; Taylor 1975; Wright 1984:43-44) have all been used as indicators of differences in rank among members of a chiefly society. These criteria are used to identify chiefdoms in the archaeological case that will be considered here.

B. States. The definition, origins, and development of state societies has been of enormous and enduring interest to anthropologists and archaeologists (see e.g., Adams 1966; Carneiro 1970; Childe 1936; Claessen and Skalnik 1978a; 1981; Cohen and Service 1978; Fried 1967; Johnson 1973; Service 1962, 1971; Webster 1976; Wittfogel 1957; Wright 1977). Although widespread consensus on many aspects of these complex polities is lacking, there has been some agreement that focussing on the administrative aspects of states is useful from both a cross-cultural and diachronic perspective (see, e.g., Cohen's 1978 review in Claessen and Skalnik, esp. pp. 34-35).

As with chiefdoms, instead of using trait lists, a definition of a state that is based on the

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organization of information processing and decision-making can be operationalized archaeologically. Thus, Wright (1977:383) has defined the state

> as a cultural development with a centralized decision-making process which is both externally specialized with regard to the local processes which it regulates, and internally specialized in that the central process is divisible into separate activities which can be performed in different places at different times.

In contrast to chiefdoms, states are seen from this perspective as both horizontally and vertically specialized in order to handle the large amount of information in the system (cf. Johnson 1973:2). Most scholars describing state-level societies mention their large populations, great territorial size, and ecological diversity; that is, some of the information sources in the system.

Horizontal specialization implies the division of various tasks among diverse, specialized, equal units; increased information in the system may lead to further specialization and/or a larger workforce (Johnson 1973:2-3). Vertical specialization is the administration and coordination of tasks at hierarchical levels above the low-level specialists. Johnson (ibid.) argues that in state

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systems at least two levels of administrators (making it a three-level hierarchy) are necessary to cope with the administrative workload. This aspect of state systems is particularly important in terms of its archaeological implications, and is discussed below.

Other aspects of states may be considered. Johnson (1973:3) further defines a state

> as having <u>institutionalized provision</u> [italics his] for the operation and maintenance of its decision-making organization, and for implementation of this organization's decisions. The term 'institutionalized provision' is used in the sense of the presence of an established and functioning mechanism.

Several of the widely agreed-upon particular characteristics of early states (Claessen and Skalnik 1978b:21) are applicable to this definition: centralized government with authority and power to maintain sovereignty; the production of a surplus used to maintain the state apparatus; a degree of social stratification, and an ideology which legitimizes the leadership.

Claessen and Skalnik (1978b:22-23) note that there is variation in the extent to which states possess particular characteristics. They suggest a continuum of types ranging from those in which kinship is the basis for political and economic

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relations; to those in which both kinship and non-kinship-based criteria are important; and finally to those early states in which kinship has little administrative importance. The specific administrative structure of particular early states has been discussed (see, for example, Webster 1976 on theocratic states). These aspects of state systems are not, however, readily testable with the limited archaeological evidence available from the Susiana.

Reciprocal, redistributional, and marketing systems are found within states (Polanyi, Arensberg, and Pearson 1957). Trade and markets become increasingly supra-local and important as states become more complex (Claessen and Skalnik 1978c:641). State systems are clearly characterized by a variety of complex economic behaviors. Craft production in the context of state societies is considered below.

The archaeological correlates of state-level societies use the same classes of data as were used for chiefdoms: regional settlement patterns, intra-site architecture, mortuary data, and the distribution of rare and sumptuary goods. States, by Johnson's (1973) definition, have complex

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settlement hierarchies of three or more levels. Centers and lower-order centers will have large-scale administrative buildings, as well as elite residences associated with rare or sumptuary goods. Differences in social class may be apparent from mortuary evidence as well as from such objects as administrative artifacts (e.g., stamps and seals) and sumptuary goods.

In this brief discussion, I have provided operational definitions of chiefdoms and states, and have sketched some of the ways these definitions might be used to identify these sociopolitical systems archaeologically. Specific application of these definitions to the data is found in chapters five and six.

III. Overview

The remainder of this dissertation is divided into six chapters. Chapter two discusses ceramic production in complex polities. First, ceramics are seen as a special case of craft production. General modes of ceramic production, such as household production, workshops, and factories, are outlined. Archaeological criteria for assessing the organization of pottery production, including

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vessel use, the location of resources, users, and producers, and labor and transport costs, are discussed in some detail. Source characterization is presented as an effective method for determining the locus of production where most direct evidence for production is lacking. Finally, general propositions regarding the organization of production using source characterization methods are presented.

The next chapter describes the methodology used in the research. Neutron activation analysis, a frequently used source characterization technique, is described in some detail. Interpretation of the analytic results involves determining the sources of imprecision in the data, which come from both the technique itself and from the ceramic paste. Next, the results are statistically analyzed, with the objective of forming groups which are chemically and archaeologically different.

The archaeological setting is introduced in chapter four. The Susiana Plain is described, and the history of archaeological research on the plain is reviewed. The problems and limitations of the

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absolute and relative chronologies are described, and a working chronology is introduced.

Chapters five and six are similarly organized. Chapter five covers the Susiana periods to Terminal Susa A; that is, most of the fifth millennium. The Uruk period is discussed in chapter six. Each chapter first establishes the archaeological setting, which encompasses the hypothesized political, social, and economic organization of the plain as well as the relevant ceramics. The propositions to be tested by neutron activation analysis are presented. The ceramic sample analyzed is described, and the results of the analysis are presented and discussed.

The last chapter reviews the conclusions generated by the research, and offers some suggestions for further work in the area and throughout the region. Methodological problems with neutron activation analysis, particularly with regard to sampling, are emphasized. Finally, the relationship between ceramic production and late prehistoric Susiana society is considered.

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CHAPTER TWO - CERAMIC PRODUCTION IN COMPLEX POLITIES

I. Craft Production in Complex Polities

The production of craft items is important at every level of sociopolitical organization. Within complex societies there are varying modes of organization of craft production. For example, in her study of middle range hierarchical societies, Taylor (1975:40) observes that among the Buganda,

> ...one of the most centrally organized societies...potters, drum-makers, smiths, and canoe-makers, often with special titles and privileges, were attached to the households of the ruler and the more important chiefs, but craft production was not coordinated throughout the country. Outside the capital, tools, weapons, and other items were made locally by peasants themselves or by part-time specialists. Even less centralized production of specialties is indicated for the Azande, the only other society in the sample that is described as having had intensive craft specialization.

Similarly, among the Lozi, a paramount chieftancy in western Zambia, pottery is produced on the household level without chiefly intervention; it is not used for tribute to the chiefs in contrast to other goods, such as those made from iron (Hodder 1981:232). In the Roman Empire, modes of pottery production ranged from

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individual households to large-scale "factories" (Peacock 1982).

Available ethnographic data suggest that there is no necessary relationship between societal complexity and the way in which craft production is organized. In addition, the technology of production of a craft item is not necessarily associated with the social function of each item. Nuba pottery, identical in types and standardization, is produced by two neighboring sub-tribes with identical social organizations. One group, however, produces pottery in house compounds, while the other produces it in specialized work areas since pottery making is made by women who, when menstruating, are regarded as "polluting" (Hodder 1981:232; 1982:146-147).

In another example, craft items which signal elite status may be produced by specialists attached to chiefly households, or may be extracted as tribute from local producers (Earle 1977, 1978; Peebles and Kus 1977; Wright 1984). Utilitarian objects in a society, such as ceramics, may be produced in an entirely different way from elite goods such as feather cloaks or whale ivory pendants (as in Hawaii -- see Earle 1978).

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This is not to say that craft specialization, centralization, and mass production of certain types of craft goods are to be found with equal intensity at all levels of sociopolitical complexity. Ethnographic and archaeological data support the association of high levels of craft specialization, centralization, and mass production of ceramics with a high degree of socio-political complexity (Rice 1981), although craft specialization also occurs in tribal societies (e.g., the Trobriand Islands; see Malinowski 1922).

Specialized, centralized mass production may occur in more complex societies with high demand levels and available distribution mechanism which favor economies of scale (see Feinman et al. 1984; Johnson 1977:493-494). Such production patterns may apply to some goods in a society, but not to others.

Archaeological data from Shahr-i Sokhta, a third to early first millennium B.C. site in Turan, east central Iran, suggests differential organization of the production of various craft items (Tosi 1984). Weaving and leather working were performed in households; other craft activities, such as copper, lapis lazuli, and

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turquoise manufacturing, performed in households at the beginning of the third millennium B.C., moved to "factories" or "craft quarters" by mid-millennium. Pottery was manufactured at regional "factories" situated on small sites.

II. Ceramic Production in Complex Polities

Ceramics are a unique craft item in that they are found in many different contexts playing many different roles. First, pottery has domestic and utilitarian value: vessels are used for cooking, storage, and transport of food, water, and other goods. Second, pottery has had value in many societies as the bearer of information (see Pollock 1983; Wobst 1977). Pottery may signal social status or membership in a group; in this way pottery resembles other specialty craft items such as Ashanti stools or Benin sculpture (Fraser and Cole 1972). Within a particular society, pottery production may be organized in different ways to serve different functions. This is an important and challenging point for many archaeologists, for whom ceramics are among the most ubiquitous artifacts encountered.

Archaeological assessment of the organization

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of ceramic production in a particular society, and thence of the relationship between ceramic production and sociopolitical organization, is a difficult problem. The different types of ceramic production, and how they might be recognized archaeologically, are reviewed below. The case study, the Susiana Plain in the fifth and fourth millennia B.C., will be used to evaluate some aspects of the relationship between society and pottery production.

There are several general ways in which ceramic production may be organized. Peacock (1982:8-11; cf. van der Leeuw 1976) outlines several organizational modes: a) household production, in which pottery-making is an extension of other domestic tasks, and pottery is produced for the use of the maker's household; b) household industry (cf. van der Leeuw 1976), in which pottery-making is a part-time activity usually occurring in the agricultural off-season, with the vessels marketed; c) individual workshops, which are similar to (b) except they are more profitable, with higher labor and technical input; d) nucleated workshops, in which several individual workshops are grouped together and production may be

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full-time and more intensive, with wider distribution of the product through middlemen; e) manufactories, which are larger-scaled nucleated workshops, which differ from f) factories only in the latter's use of mechanical power and in the scale of the operation; g) estate production, in which estates produce goods for their internal consumption and perhaps for outside marketing; and h) military and other official production, in which some governmental organizations produce goods for their own use.

Peacock's typology sets ceramic production in the context of market systems; however, it is unlikely that the prehistoric Susiana had a market economy. In such early complex societies, goods were moved around through reciprocal and redistributional networks. Often pots can be traded for other craft items and can increase the potters' reciprocal trade networks, providing a hedge against bad times.

In these early non-market economies, how did pottery producers support themselves? In many cases, pottery producers in households, household industries, and workshops solve subsistence problems by making pots in the agricultural off-

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season (Arnold 1985:99-108; Kramer 1985:80) or by dividing labor (Arnold 1985).

Before discussing subsistence for ceramic specialists, a brief definitional digression is in order. The association of ceramic and other craft specialists and the development of complex societies has a long genealogy in archaeology, going back at least to Childe (1936), but what "specialization" actually means is often unclear. Rice (1984:47-48), for example, includes standardization/elaboration, especially proficient or skilled production of vessels, mass production of vessels, and evidence for production areas as traits denoting ceramic specialization for archaeologists.

In fact, the picture is much more complex, and

> the ethnographic and ethnoarchaeological literature reveals an enormous variety of productive strategies....The terms "part time," "full time," and "specialist," are used with some abandon by archaeologists, but ethnographic descriptions suggest that this craft involves diverse forms of specialization [Kramer 1985:96].

Measures of certain parameters, such as

> ...potters' energy expenditures, seasonal differences in productivity, time devoted to other activities, number of vessels produced in a unit of time, composition, size, and distance to markets, repertoire content and diversity, as well as

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> specification of the tangible and potentially archaeologically retrievable correlates of such variations...should also help us to locate prehistoric specialists and to refine evolutionary models concerning the content and development of craft specialization [Kramer 1985:96].

For example, variability in the distribution of manufacturing facilities and equipment or in the distribution of manufacturing detritus (Tosi 1984), may roughly suggest specialization without specifying its details because the range of behaviors encompassed by "specialization" is so great.

"Specialization," in fact, may be as simple an affair as it is in tribal Yanomamo society (Chagnon 1983:149-150). Villages form alliances which are solidified by the exchange of trade items. Each of the villages "specializes" in producing a particular trade item, and does not duplicate an ally's product. For example, villagers in an alliance with a clay pot-making village denied knowing how to make clay pots. However, when that alliance dissolved, and the villagers found themselves in a new alliance with a village that wanted pots, the villagers "remembered" how to pot.

However, to many scholars ceramic

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specialization implies at least spatial concentration of facilities, and tools, and a heavy investment of time in pottery-making that significantly reduces time spent in direct subsistence activities. The development of a group of full-time potters in early complex societies may depend on the support of elites. In the classic Hawaiian chiefdoms, for example, craft specialists were supported by the elites from taxation extracted from commoners (Earle 1978, 1981). Such potters attached to elite households have been termed "master specialists" (Trigger 1974:100).

The development of a group of full-time potters in a society may depend on the further support of elites or on the growth of a market system that could support "independent specialists" (Earle 1981:230). Arnold (1975, 1985) constructed a cybernetic model which sets the origins of specialized pottery production in agriculturally marginal areas; potters become increasingly invested in pottery making in order to obtain food resources in exchange for their vessels.

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III. Archaeological Correlates of Ceramic Production

The archaeological correlates of craft production in early complex societies are difficult to assess. Ideally, we would like to determine the way in which ceramic production is organized in a particular society, with specialists distinguished from that of non-specialists, part-time production from full-time production, and the production of attached specialists distinguished from that of non-specialists or independent specialists. In addition, the production of households should be distinguished from those of household industries, individual workshops, nucleated workshops, or factories. Certainly, arguments based on several classes of data from good excavation and survey data would be the strongest, but even the best-made archaeological case may not reflect the complexities of human behavior. This disclaimer notwithstanding, there are several data classes which may be useful in aiding understanding of prehistoric ceramic production. Direct evidence for manufacture includes facilities, tools, and detritus (Tosi 1984), while indirect evidence includes ceramic attributes, ceramic use, and the

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locus of production in relation to manufacturing resources.

A. Direct evidence. First, the organization of production may be assessed from direct evidence of ceramic manufacture: tools and fixtures for processing clay and forming and firing vessels, as well as the products and detritus of production (Stark 1985; Tosi 1984). The location of a work area and its scale may indicate the type of production carried out. Small work areas located in or adjacent to living space, with few vessels, little equipment, and a firing area or small kiln may suggest household production or household industry. In another example, a larger-scaled production area with wheels, kilns, and other tools, associated with a center may suggest attached specialist workshops.

Obviously, it would be ideal to have several production areas excavated within a region so that the range of activities could be assessed; however this is rarely possible archaeologically. Often the only direct evidence for ceramic production on a site is kiln wasters, kilns, kiln furniture, and molds, all of which may be difficult to detect on archaeological survey. However, the existence of a

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number of such items on a site may be reasonably assumed to indicate ceramic production on that site.

B. Indirect evidence. The attributes of the pots themselves may have implications for production. Productive specialization has been linked to standardization of production (e.g. Rice 1981). Nonstandardized production is characterized by individual selection and use of raw materials; methods of production; energy investment; number of workers; and differences in the technical and artistic ability of potters. Rice (1981:222) notes that nonstandard vessels show differences in use, not differences in status, and that their range of distribution is narrow - generally within the household.

With the beginnings of specialization, pottery production becomes, according to Rice (ibid.), more standardized, with more consistency in paste composition, form, and design, and wider areal distribution. Increasing standardization is found with certain wares produced for elites, which should have similar pastes and forms, and greater energy investment and skill in decoration (cf. Feinman 1980). Archaeologically, these vessels

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should be more restricted in distribution than non-elite wares. In stratified societies, Rice argues, non-elite pottery is standardized in terms of manufacturing location, composition, form, and decoration, is mass produced, and is widely distributed. Elite wares are more restricted in distribution but more varied in decoration and form.

One major problem with this model is that it implies that there is a direct link between stages of pottery-making and stages of sociocultural evolution (cf. W. Adams 1979, 1981; Hodder 1981). Ceramics may not in fact be the locus of elite signaling (cf. Pollock 1983). This will be elaborated on below, when the generally undecorated plain wares of the Uruk state are discussed; this is also true for Dynastic Egyptian pottery (Bourriau 1981). Further, as noted at the beginning of this chapter, the ethnographic record indicates that several different pottery-making systems may exist within a single society.

In addition, associating standardization with specialization in ceramic production may be misleading. The Shipibo-Conibo, for example, are a Peruvian Indian group whose sociopolitical

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organization has undergone several major changes (DeBoer and Lathrap 1979; Lathrap 1976, 1983). Their ceramic tradition has been markedly stable, with ceramics produced by most women for use in their own households (DeBoer and Lathrap 1979:105). Ceramics are divided into functional categories, with strict standards for shape, size, and decoration. The clays and tempers used for these vessels vary, although less so for cookware (DeBoer and Lathrap 1979:116-121; Lathrap 1976:202).

In this case the paste composition of the vessels is not standardized, although there are clay recipes for functionally different vessels, but the sizes and forms are; decoration shows variation with certain design conventions for different vessels. Distribution is generally to the potter's household. Although there is tourist demand for Shipibo-Conibo ceramics, vessels produced for the tourist market have relaxed standards in all these dimensions. The Shipibo-Conibo example counters Rice's association of standardization with specialized pottery production. They produce standardized pots, but would not be considered specialists because ceramic production is not their primary subsistence

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activity. Further, there is no association between sociopolitical organization -- as theirs has changed through time -- and the way in which their ceramic production is organized (DeBoer and Lathrap 1979; Lathrap 1976).

If the Shipibo-Conibo were an archaeological case, the archaeologist would have to measure variation along several axes before making decisions about standardization. Further, although decoration of vessels varies with individual potters, the differences are limited by certain conventions; these differences may be further obscured by the archaeological problem of compressing long time periods (100 years or more) into single units. In addition, in workshops where several individuals are engaged in decorating vessels or where several potters are involved in the manufacture of one vessel, design differences may show up in otherwise "standardized" pottery (Hardin 1977; London 1982).

The association of craft specialization with standardization of ceramics is thus not always valid, nor is the linking of either or both to particular forms of sociopolitical organization. Evaluation of standardization should include

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measurement of several different attributes. Different classes of vessels within a society should be independently evaluated, as different classes may be differentially standardized. For example, cooking vessels may have standardized paste recipes so that they can hold liquids and withstand thermal shock, while pastes may be non-standard in storage vessels.

I suggest, with Rice (1981), that similarities in paste composition may be particularly (although not singularly) useful in determining the organization of production. Briefly, as this is a significant issue in this dissertation and will be reconsidered in great detail, potters usually get clay from nearby sources. Although ceramics may be similar in form and size, they may differ in clay or temper. This is the case, for example, among the Shipibo-Conibo (DeBoer and Lathrap 1979; but see DeBoer 1984). Differences in paste composition may reflect differences in loci of manufacture. This, in turn, may reflect differences in the organization of production. Great variation in paste composition of similar-appearing vessels within a region may suggest household production, household industries, or individual workshops,

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while a few major region-wide differences in paste may suggest nucleated workshops or other more complex and nucleated production modes. Because a household may use different clays for different vessel types, compositional analyses should cross-cut both site and type. The converse problem of all households within a region using the same clay source is admittedly a difficult one; the solution may involve recovering other kinds of evidence, such as manufacturing facilities or debris, for resolution. The problem of natural similarities and differences in clay and temper also complicates the issue, but paste composition can be used in conjunction with other kinds of evidence.

In the same way, the problem of archaeologically determining craft specialization should not rely on only one line of evidence, such as standardization. Similar paste composition, large workshops and kilns, few production loci with either widely distributed utilitarian products and/or narrowly distributed elaborated wares may support a broad argument for specialized pottery-makers. It is more difficult to sharply define the degree of specialization along the parameters outlined by Kramer (1985:96). Although

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it is often suggested that full-time craftspeople can be supported when a society produces a surplus, whether they do so in any particular society and for all crafts must be proven on a case-by-case basis. This point will be discussed further with Uruk period ceramics.

I have indicated that in assessing the organization of production of ceramics, consideration should be given to the purpose for which the vessel is produced, the location of resources, users, and producers, and labor factors. These shall now be discussed.

1. Use of vessels. As I have noted, vessel use may have important implications for production. Vessels intended for utilitarian purposes, such as cooking or storage, may be undecorated, while those used for serving or display may be highly elaborated.

Although there are large numbers of overlapping and crosscutting categories, general distinctions are often made between "common" and "fine" wares. "Fine" wares may have greater energy invested in producing them (Feinman 1980; Pollock 1983). Special clay and temper sources may be exploited and transport costs may be high. The

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clay may be carefully cleaned and treated; fine temper may be added or the clay may be untempered. Forming may be done carefully, and special shapes may be created. Decoration may be carefully and elaborately applied, and unique designs may be used. Firing may be carefully controlled; in fact, "the production of vessels that contain only small amounts of non-plastic substances require a longer time for both firing and drying" (Feinman 1980:185).

Distribution of these ""fine"" vessels may be limited, and they may be associated with public buildings or elite residences. On survey, they would be likely to be found on multi-function sites; that is, on larger sites or those with evidence of special activities, particularly administrative activities.

Pollock (1983:360), for example, suggests that vessels such as bowls and small jars used for serving and display are highly visible; such vessels may have been used by Susiana elites to signal their position. Similarly, Hole (1984) considers the highly decorated black-on-buff beakers from the Susa A Necropole at Susa to have been used for ritual and display purposes.

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However, elaborately painted vessels are not necessarily "elite" vessels. For example, Bunzel (1929) notes that Zuni and Acoma potters in the American Southwest elaborately painted all of their vessels, including water jars and storage jars. In fact, determination of "fine" vs. "common" wares cannot be done a priori; each case should be evaluated separately.

With this cautionary note in mind, many archaeologists have considered that "common" wares are vessels with markedly less energy investment in their production and distribution. Clay and temper resources may not be so carefully selected, and less attention may be given preparing the clay. However, some care is given to the fabric of cooking vessels, as they must be able to withstand cooking fires. Among the Shipibo-Conibo, for example, rules governing clay selection for serving vessels are often not followed, while "...rules for clay and temper composition in cooking ware are more consistently translated into actual behavior" (DeBoer and Lathrap 1979:117; see also Rye 1976). Energy investment in decoration of "common" wares is low. Among the Shipibo-Conibo, cooking ware is incised, punched, and finger-impressed, while

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non-cookwares are painted (DeBoer and Lathrap 1979).

In sum, two categories of ceramics -- "fine" wares and "common" wares -- are generally differentiated by the energy invested in their manufacture, which is in turn related to functional distinctions between them. Again, these distinctions may not be so clear-cut in many archaeological or ethnographic cases. The problem of identifying vessel function in archaeological cases is not easily resolved, especially if contextual clues are absent.

Certainly, the existence of well-excavated ceramics in primary contexts helps enormously, as does finding traces of grains or other substances in the vessels, or black marks from cooking fires. Survey sherds, which are frequently the only data the archaeologist has, are often too small to reveal the whole design of the vessel, lack archaeological context, and may be difficult to date. On the other hand, in some cases the organization of design space on a vessel as well as the design elements themselves may be related to specific vessel types which have specific functions (e.g., the vessels produced by the potters of

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Quinua, Peru; see Arnold 1983); under such circumstances it would be possible to acquire information on vessel function from survey data. Another tack is to examine the locus of production, which also may aid in assessing differences in function, as shall be discussed below.

2. Locus of production. I have stated above that locus of production of ceramics is a critical element in assessing the organization of pottery-making, especially in the absence of more direct pottery production evidence. There are various determinants of the location of ceramic production: proximity to raw materials and fuel, transport costs, and administrative costs.

Potters have utilized a variety of material, including sand, rocks, volcanic ash, grog, plant fibers, feathers, and dung (Shepard 1956:26) to manufacture their wares; only the raw materials used by Susiana potters -- clay; mineral, grog (ground sherds), chaff, and dung temper; paint; fuel; and water - will be considered here. It is assumed that humans will attempt to expend the least energy possible on a task to attain the maximum benefit (see Johnson 1977:479-480 for discussion).

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The application of this notion to pottery manufacture would suggest that most potters would tend to use clays near their workshops, as clay is quite heavy and often no pack animals were available, at least in prehistoric cases. However, other factors may be involved in minimizing efforts. Potters may optimize other factors besides raw materials. For example, they may reduce transport costs of the finished products by locating closer to consumers than to clay sources, or they may optimize political benefits by trading with allies for resources or locating in a militarily protected area. On the other hand, they may acquire clays from more distant sources on trips to visit kin (Bohannan and Bohannan 1958:302; DeBoer 1984). Different criteria may apply to use of pigments, which are easily transportable and are used in lesser quantities than clay, and so may be traded over great distances (DeBoer and Lathrap 1979). An examination of the ethnographic and archaeological data may help clarify these issues.

a. Clay. Clay is the basic material of pottery. In the examination of intraregional ceramic production, several questions are raised. What are the bases for the choice of clay sources?

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What clays are selected or preferred? What factors may limit access to clay resources? How is clay obtained? What is the relationship between clay procurement areas and production sites? Ethnographic examples can suggest test hypotheses for archaeological and source characterization studies (see below). Such studies are based on the notion that raw materials are secured close to the production site.

Choice of clay involves both suitability and availability. Clay quality is affected by "...mineral composition, degree of crystallinity, plasticity, particle size, and the amount of soluble salts, exchangeable cations, and non-plastics present" (Arnold 1985:21).

Arnold (1971), for example, demonstrates the relationship between potters' emic categories of clay available in Ticul, Yucatan, which he verifies by mineralogical analysis, and those clays selected for use in ceramic production. Lower-quality clays, which sag and crack, are not suitable for large vessels, but would be for small ones because the flaws could more easily be repaired or covered (Arnold 1971:31). Similarly, Amphlett Islanders in Melanesia utilize inferior local clays for small

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pots but import better clay for large commercial vessels (Nicklin 1979:440, citing Malinowski 1922:282-288). Nicklin (ibid.) observes that clays selected for hand molding versus wheel throwing may differ; gritty coarse clays may cut potters' hands if wheel thrown. Cooking pots must be able to resist thermal shock; that is, to have "...the property which allows a ceramic to withstand repeated cycles of heating and cooking without damage such as cracking or spalling" (Rye 1976:113; see also Bronitsky and Hamer 1986). Cooking pots must also be able to contain liquids and resist heat; clays and tempers are selected with these qualities in mind.

Potters will, then, attempt to select clays which are most suitable to the task at hand. However, availability of clays may vary. Given that clay is a heavy, bulky commodity, simple locational proximity to the potter is one measure of availability. In Arnold's 1985 world-wide summary of 111 pottery-producing sites, the procurement range of geodesic clay was from less than one to 50 kilometers. Of these, 33% were at one kilometer or less, and 84% inclusively at seven kilometers or less. Arnold suggests that the seven

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kilometer range "...probably represents the upper limit of the maximum range of exploitation" (1985:50). The method of transporting clay is not noted. Potters have been reported to transport clay on their own backs, or by donkey, mule, or truck; they may also buy clay from the owners of claybeds, or from itinerant sellers, or they may themselves be itinerant and pot wherever the clay is (see Nicklin 1979:443-445). Distances to clay resources are much greater where water transport is involved (Arnold 1985:50; Lathrap 1973:171; Malinowski 1922:283-284).

Rye and Evans (1976) report clay procurement distances in Pakistan of 150 meters to five kilometers. The potters carry clay themselves (25-75 kg over 150 m) or use donkeys and mules (from 135 kg to over 2250 kg, depending on type and number of animals and frequency of trips). In one case, a large pottery workshop making thousands of vessels per month bought clay from local suppliers.

In Rye and Evans' 1976 study, Pakistani potters chose as their clay source

> ...the closest deposit of suitable clay, which can be obtained free of charge. Many of the potters said that there are several deposits of clays which would produce good-quality pottery. Ultimately

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> the choice became one of cost and ease of access and transport. Clay is always obtained from open pits or on uncultivated land or sometimes from the village common....the evidence is that workshop location determines clay deposit location rather than the reverse. This is supported by clay mineralogy studies which show that a variety of clay types are suitable for making particular unglazed ware; if necessary, the working and firing characteristics of clays can be modified by the addition of a nonplastic or organic "temper." Thus the concept of a suitable clay to the Pakistani potter is mineralogically broad. There is no evidence to suggest that specific "types" of clay are chosen for making specific categories of ware. For example, potters who make both cooking vessels requiring good thermal shock characteristics, and water storage vessels, requiring appropriate porosity, do not vary the clay to produce different properties in the fired vessel. Where variations in the body are made the nonplastic, or temper, component of the body is changed [126-127].

In the Pakistani case the clay is readily available on uncultivated or village common land. Examples of limitations on access to clay resources are scarce in the ethnographic literature. Clay that is found on cultivated land may only be mined in the agricultural off-season (Arnold 1985; Kramer 1985); this may be an important factor in limiting the seasons during which potters work (Arnold 1975).

Access to clay may also be limited by the high

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fees charged to potters. In a pottery-making Zapotec village, the owners of land with good clay charged the potters so much for access to this clay that the village council stepped in and bought the land on behalf of the potters (Van de Velde and Van de Velde 1939:22).

Access to better clay sources, combined with good transportation, tends to favor centralization of pottery production. Among the Nupe in East Africa, local potters stopped producing ceramics, which were made from inferior local clays, when better pots, made from good clays, were brought in by river canoes (Nadel 1942:322). Limited access to good clays generally involves limited economic means or limited access to transportation facilities rather than political restriction.

In addition, the number of pots made by a potter, and the uses to which they are to be put, are important factors here. A potter making a few vessels per season may need to make only one or two clay-gathering trips, so distance may be a less important consideration. Especially fine clays are ubiquitous in Tivland, but fine clays are available 25 miles away from certain groups. The potters will travel together to these sources, visit nearby

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kinspeople, make a few pots there and carry them home (Bohannan and Bohannan 1958:302). In contrast, a potter making hundreds of pots per season will generally utilize local clays, thus minimizing transportation costs.

In sum, clay sources are generally close to production sites. Clay selection may involve choosing characteristics appropriate to the function of the vessel, although various techniques can be used to enhance the suitability of the clay. The addition of grog or mineral temper, for example, increases the thermal shock resistance of cooking pots because the temper is very similar to the thermal expansion of the fixed clay matrix (Rye 1976:114). Alternatively, levigation, which separates coarse and fine fractions of clay, is used to make fine clay pastes (Rye 1981). Access to clay resources is constrained by the availability of transportation, agricultural seasonality, and the cost of mining the clay, rather than by political boundaries.

If, in this study, we assume that the clays are fairly homogeneous in quality and evenly distributed throughout the study area, then what would constrain use of clay sources? For example,

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would potters producing fine wares in centers utilize the same sources as those producing domestic wares in villages? Clearly identification of clay resource procurement areas is critical for answering this and similar questions; problems in identifying procurement areas will be reviewed below (see pp. 62-70).

b. Temper. Nonplastic inclusions, or temper, in the clay paste may make the clay easier to work, will reduce shrinkage during drying and firing, stabilize the pottery during firing and heating, and may modify color (Shepard 1956:24-25). Shepard (ibid.) makes a distinction between temper, which is deliberately added by the potter, and nonplastic inclusions which occur naturally. It has been estimated that "...among the fine paste (nontempered) wares, nonplastic components represent 20 to 30% of the ceramic body; among heavily tempered wares, they may represent as much as 70%" (Bishop 1980:49). The distinction between naturally occurring and deliberately added inclusions is not often readily apparent in ceramics; therefore, in this study I follow Bishop (1980:49) in terming all nonplastic inclusions, whether natural or human-introduced, temper.

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Arnold's study of the ethnomineralogy of pottery-making in Ticul, Yucatan, suggests that the concept of "temper" is not necessarily one of the potters'. Ticul potters use both plastic and nonplastic additives in their clay to reduce sagging and cracking; they have no general term for "temper." Thus in some cases our use of "temper" may broadly include additives to the clay. Various materials are used by potters for temper: grog (ground ceramics or brick); rock; sand; volcanic ash; other minerals; and organic materials such as shells, ash, plant fibers, bark, dung, and feathers (DeBoer and Lathrap 1979:110-111; London 1982; Shepard 1956:26-27).

In Arnold's (1985) sample of 31 pottery-producing societies, the range of distances to temper sources ranges from less than one to 25 kilometers, with 52% getting their temper from a source one kilometer or less distant; 97% inclusively got their temper at six to nine kilometers or less. In Arnold's (1971) study of Ticul potters, tempers are selected and tested for their characteristics and quality. Certain tempers may be used for cooking pots but not for other purposes, while poor quality tempers will be

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strengthened by other additives. The temper sources are apparently close by the potters' community.

The type and amount of temper has important consequences for source characterization studies of ceramics, especially in research on intraregional variability, as temper may obscure fine differences in pastes (Bishop 1980:49). The picture is further complicated by the ways in which clays are processed by potters. Techniques such as levigation may further obscure similarities and differences in pastes. This problem will be considered in some detail below.

c. Paints and slips. Ethnographic evidence suggests that the range from which slips and paints are obtained may be considerably greater than that of clays or tempers: Arnold (1985:52-53) reports distances ranging from less than 10 to as many as 880 kilometers, with 36% at 10 kilometers or less, and 57% inclusively at 30 kilometers or less. The Shipibo-Conibo, for example, will generally use local clays, but pigments may be acquired from as many as 280 kilometers away. In addition, resins to glaze and waterproof vessels may also be acquired from 170 kilometers away, and

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polishing stones, which are scarce on the Ucayali River (along which their settlements are distributed), may come from 400 kilometers distant (DeBoer and Lathrap 1979). In this case, as in many others, paints and slips are traded for; potters do not always gather these resources themselves (Arnold 1981:36).

Pigments used in ceramic production are relatively few, as they "...must meet two conditions to be suitable for the decoration of unglazed pottery: it must retain a desirable color after firing and it must adhere to the vessel surface. These conditions limit stringently the number of available pigments" (Shepard 1956:31). Pigments include various carbon paints, iron-oxide paints, and manganese and iron-manganese paints (Shepard 1956:33-42).

Slips are mixtures of clay and water; temper may also be added. Slips may be locally acquired, or they may be traded for (Shepard 1956:68).

d. Fuel. There are may different fuel sources for pottery manufacture: wood, dung, straw, charcoal, coal; in fact, "virtually any combustible material can be used to fire pottery; this fact tends to reduce the locational importance

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of specific fuel types..." (Nicklin 1979:446). Like clay, fuel is selected on the basis of suitability and availability. The amount and quality of the fuel required for a firing varies with the firing method, the number and size of the vessels to be fired, the degree of firing desired, and the type of paste used (see Shepard 1956:74-93 on firing ceramics and the use of different fuel types). Arnold (1985:53) notes that while there is some variability, most fuel sources used by potters are local. The most common fuel sources in the ancient Near East are

> agricultural and industrial wastes: straw, dungcakes, grape-vine cuttings, grain stalks, cotton branches, flax straw, bean husks, sugarcane pulp, oilseed pulp, olive-pressing pulp, and sawdust (Matson 1966). Bones of birds, fishes, and animals have also been reported (Forbes 1958:13-28)....wood is the fuel most suitable for high temperature kilns, but firing below about 1100°C can employ a wide variety of waste materials [Rye 1981:104].

From the fifth millennium on in the Near East a variety of firing methods were known. One of the earliest kilns, a double-chamber vertical down-draft kiln, appears during the early part of the fifth millennium on the Susiana (Dollfus and Hesse 1977; Majidzadeh 1975-77:217; see also Alizadeh

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1985; Delcroix and Huot 1972; Ghirshman 1938:36; Majidzadeh 1975-77:216 for other kilns). There are ethnographic examples of above-ground open firing of pottery (Majidzadeh 1975-77:220).

Generally kilns or firing areas from limited excavations do not indicate the intensity of ceramic production in an area nor the total fuel requirements for such production. However, paleoethnobotanical evidence from Malyan, a late fourth to second millennium B.C. site in the Zagros Mountains of southwestern Iran (see Fig. 2) suggests that demand for wood for fuel and other purposes by a growing population gradually led to the deforestation of the area (Miller 1985; Miller and Smart 1984).

Certainly fuel costs are an important and often overlooked consideration in determining the locus of production. While some have suggested that pre-industrial potters may not be constrained by fuel availability (Arnold 1985:53; Nicklin 1979:448), fuel supplies may be significant where large-scale production is required (Arnold 1985:53). In addition, potters are not the only individuals making demands upon local fuel supplies. For example, Miller's (1985)

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paleoethnobotanical study notes that wood was used for pottery-making, metal smelting, house construction, tool manufacture, grazing, and land clearance. Potters might employ different strategies in response to increased competition for fuel by changing the fuels (e.g., using dung or animal bones, or any of the other sources cited above), by changing firing techniques, by locating workshops closer to fuel sources, and/or by arranging to acquire fuel by barter or trade.

In a modern Pakistani case, potters acquire their fuels -- principally dung, wood, and straw -- by gathering it themselves or by purchasing it (Rye and Evans 1976). Nicklin (1979:448) has observed that

> in general, the wide range of possible adaptations to problems of fuel supply in pre-industrial pottery-making displays a great opportunism which seems to indicate that the quantity and quality of fuel available do not necessarily impose severe restrictions on the location of pottery manufacturing sites. However, this discussion is greatly hampered by the paucity of objective criteria concerning traditional methods of firing....

For example, from the relative consistency in the color and cores of the Susiana wares, firings of ceramics were apparently "well-controlled"

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(Wright 1981:24); the vessels were hard-fired (Hole et al. 1969:132), although hardness does not indicate firing temperature. Matson (1971:70) found in an experimental study of Mesopotamian clays that the relative degree of hardness did not consistently vary with the firing temperature (ranging from 600°C-1000°C). Simple Near Eastern kilns generally fire to 800°C- 1050°C (Matson 1971:77). Again, the firing technology seems to be consistent throughout the fifth and fourth millennia, suggesting that fuel supplies were adequate and consistent in their results.

In sum, most pottery producers are situated close to the clay and temper resources they need to produce their wares. Pigments and slips, which are easily transportable and used in fairly limited quantities, may be acquired from more distant sources, often through trade or exchange. Although it is poorly documented, proximity to fuel resources does not appear to be a critical factor in siting for ceramic production, but more data are needed. However, other factors may constrain the clay and temper resources used: transport costs, administrative costs, and production costs.

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e. Production costs.

i. Transport costs. A major consideration in the location of ceramic production is the cost of transporting both raw materials and finished products. In the time period of interest in this dissertation, the fifth to fourth millennium B.C., on the Susiana Plain, some transportation possibilities may have existed. There was an aggrading river regime during that time span (Kirkby 1977), and the rivers may have been navigable by boat. Clay and ceramic vessels might have been moved over fairly long distances in this way. In addition, cattle may have been available for use for transport by the fifth millennium B.C. (Redding 1985).

If ceramic production is on the household level, transportation of clay, fuel, and temper may not be a problem, since amounts required may be fairly low. In modern Pakistan, for example, one potter, using a clay source up a steep mountainside 150 meters from his workshop, carries back one to three bags of 25-30 kg each of clay that has been sorted at the source. Temper -- river pebbles -- is gathered from a source 300 meters from the workshop.

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In this case pottery is seasonal, and pots are made to order. The market for his wares is limited, as people use metal, glass, and wooden containers; production is limited to 40-50 vessels per year, with 2-5 pots per firing (Rye and Evans 1976:7-13). Transportation of the finished product is apparently not a problem for the potter, as the buyers of the vessels may take them from the workshop.

Among the Shipibo-Conibo, clays and tempers are from local sources. Potters produce several vessels in a firing; "most ceramics are manufactured, used, broken, and discarded within the household...." (DeBoer and Lathrap 1979:128). Again, given the low level of demand for ceramic products and their very restricted distribution, transportation costs are very low.

With higher levels of production, pottery workshops may be located very close to clay deposits. In the Maghreb, North Africa, potters making vessels for their own household consumption collect clay once a year, and unselectively utilize nearby clay deposits, frequently exhausting them. On the other hand, Maghreb potters who are commercial producers "...are generally installed in

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the neighborhood of an important deposit of which it sometimes happens they are, collectively, owners or tenants and controllers of its use" (Balfet 1965:164).

Another strategy for reducing transport costs for pottery production is bringing the pottery to the consumers. "Peripatetic potters" travel about, making vessels on demand and often carrying clay and tools with them. There are many examples from various areas around the world (see Donnan 1971 for a Peruvian case; see also Scott 1954:406 in Nicklin 1979:443). A recent analysis suggests little textual evidence for itinerant potters in the ancient Near East (Zaccagnini 1983).

Ethnographically, potters in permanent workshops get their goods to consumers by marketing their wares or selling them to distributors who then assume the transportation costs. Transporting finished pottery, which is heavy and somewhat fragile, without ready access to means of transportation might be expensive. However, there is ethnographic evidence for large numbers of pots being carried over long distances using simple technology, with low breakage rates (see Arnold 1985:110-111 for a summary).

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In source characterization studies of intraregional ceramic production, the strategy of minimization of movement of raw materials is tested. Such studies propose that, when ceramic pastes in a given sub-area are compositionally similar, the loci of manufacture are close to the clay and temper sources. This proposition is based on ecological and locational theory, which assumes movement minimization, and ethnographic data, which show most potters getting clays and tempers from with seven and eight kilometer ranges respectively (Arnold 1985). The ethnographic literature also suggests that while movement of raw materials is minimized, the distribution area of the finished products may vary from within the household to great distances. These notions will be tested and discussed more fully below.

ii. Administrative costs. Another cost in the manufacture of pottery may be that of administering the production and distribution of vessels. Feinman's (1980) study of ceramic production and distribution in the pre-Hispanic Valley of Oaxaca, Mexico, suggests a continuum, based on regional analysis, in the cross-culturally observed pattern of

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> articulation between economic and administrative institutions. At one end of the continuum are regional systems in which there is a considerable degree of overlap between administrative and economic channels of interaction....At the other end of the continuum are regional systems marked by the segregation of administrative and economic networks....It is expected that as the extent of administrative control over economic transactions increases, the extent of such control over production, including ceramic production, should also increase [Feinman 1980:181].

Aspects of this argument will be examined more closely below. At this point it would be useful to discuss the relationship between administrators and ceramic production in complex societies.

First, as Hodder (1981) and W. Adams (1979) have pointed out, there is no necessary relationship between ceramic production and social organization. Even in societies in which some craft production is controlled by elites, this does not necessarily include ceramic production (see Taylor 1975 for examples).

However, in some societies, centralized decision-makers do administer some aspects of ceramic production. The example of the Buganda, a paramount chieftancy in which the chiefs supported their own potters and took pots as taxes (Roscoe

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1911:399), has already been noted. I have found no ethnographic examples of complete control of ceramic production by chiefs. Rather, the Buganda pattern is found among certain complex chiefdoms. In Hawaii, for example, craft producers meet their tax obligations by supplying the chief and his retinue with sumptuary goods (Earle 1978; Peebles and Kus 1977).

What are the advantages to centralizing ceramic production? Johnson (1983) has argued that centralized pottery making is a strategy of state administrators to attract the rural populace into centers. However, the reduction in administrative costs might be countered by the increased transport costs incurred by villagers having to carry pots back home, with fewer pots per villager. Reduction in administrative costs might be achieved by the state if potters were simply attracted to centers by demand for pots by central administrators. The potters would then supply the state, but there would not necessarily be a need for the state administrators to actually control the potters themselves.

On the other hand, Arnold (1975) has argued that central administrators did not attract potters

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into the city of Huari, the center of the extensive pre-Inca empire in the Ayacucho Basin, Peru, during the Middle Horizon (A.D. 600-800). Instead the city attracted potters who, forced out of both good and marginal agricultural land by population increases, sought a location where they could pot full time. Huari offered proximity to ceramic resources, access to exchange systems, and a growing market for vessels. Center administrators played no active role in bringing the potters into Huari.

Centralized, standardized ceramic production could be advantageous in a state context, because this type of production requires organization for resource gathering, workshop equipment, ceramic manufacture, and distribution, as well as a large market. The costs are high, but so are the benefits in terms of economies of scale.

In a chiefly society it would be expensive for the chief to manage all aspects of the economy. It has already been noted that a more frequent pattern might be that of attached specialists who produce for the chief, and either household production or independent specialists who produce for the use of the local populace.The ethnographic record suggests

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that in chiefdoms, ceramics are produced for a smaller population, and their area of distribution may be narrower. There are fewer benefits to be derived from centralized production, and costs may be higher: a) chiefdoms may have fewer administrators to regulate craft production; b) production may be more widely dispersed, making regulation more difficult; and c) if ceramic production is more centralized, raw material and finished product transport costs will increase.

Therefore, the importance of ceramics in any particular society must also be considered. Different production systems may be used for different types of ceramics and may involve different artisans. Vessels which are stylistically elaborated and provide information about status differences and group membership may be produced under altogether different circumstances than domestic wares. State demand for vessels for storage and transport of goods may also require a differently organized production system than other types.

For example, D'Altroy and Earle (1985) argue that the Inca state was supported by two separate systems that they term "staple finance" and "wealth

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finance"; the former consists of agricultural produce and the latter of the manufacture and procurement of special products. Craft items produced by specialists attached to the central authorities or raw materials used in the production of craft items, or craft items sent as direct payments by subservient populations were among the goods sustaining the wealth finance of the Inca state. Craft items were also produced by local populations for local use or for marketing.

In short, we are left with a variety of potential pottery-making patterns for early complex societies. The data suggest little administrative outlay for ceramic production. Furthermore, ethnographic evidence, while quite limited on this point, shows few political restrictions on access to clay or temper resources. However, constraints on access can be seen as a function of distance to the sources, which may in turn be related to the potter's residence in a particular polity or to the potter's membership in a kin group or sodality.

Archaeologically, we may expect to see a pattern of pottery-manufacturing sites producing elite wares in or near centers. Domestic wares may be produced on the household level and/or by

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independent specialists in villages or centers. However, identifying and describing this patterning presents difficulties to the archaeologist. One solution is the use of source characterization analysis.

IV. Source Characterization

Although the preceding review of the variables involved in the organization of ceramic production may appear daunting to archaeologists, several clear trends are apparent. First, potters generally use raw materials -- clay and temper -- that are close by, unless they are producing wares which call for materials with special properties. Second, this implies that different classes of ceramics, such as elite and "common" wares, must be examined separately because they may have been produced under differing circumstances. Finally, in methodological terms, archaeologists usually work with data sets that provide limited information on ceramic production in a given society: direct evidence of pottery-making is often lacking, and inferences must often be drawn from the vessels or sherds themselves. This is a particularly difficult problem if the archaeologist

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has only survey material available.

Attempts have been made to use such limited data sets to investigate ceramic production. Many archaeologists have examined stylistic (see, e.g., Hill 1970; Longacre 1970; Plog 1980) and microstylistic (see, e.g., Alden 1982; Johnson 1973) attributes of ceramics to draw inferences regarding the organization of pottery manufacture in a particular society. Such investigations have been intriguing, but several problems remain. First, many studies examining stylistic attributes concentrate on decorated wares and neglect stylistically unelaborated vessels. By ignoring whole classes of vessels, which in fact often make up the bulk of the ceramics found, the interpretive power of the analysis is considerably weakened.

Further, microstylistic differences which have been attributed to differences between workshops (cf. Johnson 1973, and chapter six below) may be accounted for by other factors. For example, a study of full-time commercial potters in Gubat, the Philippines (London 1982) indicated that variability may occur <u>within</u> workshops for several reasons. Potters with less experience may have less control in the manufacturing process over the

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vessels they produce than those potters with more experience. Random variation may be introduced because often several potters will work on a single vessel. In addition, since measurements of a pot are made by using the potter's hands, different potters in the same workshop may produce similar vessels of different size. Finally, Gubat potters recognize individual potters' work by variations in burnishing, not in other features. In sum, archaeological studies of ceramic production based on stylistic attributes of vessels may be inconclusive because such studies may not be able to account for microstylistic differences in vessel classes.

Source characterization is another approach to the problem of examining ceramic production with a restricted archaeological data set. This approach, which has been widely used in ceramic studies, has also been applied to a variety of other materials, including obsidian, copper, silver, turquoise, steatite, and jade (see Harbottle 1976, 1982a for a review). In general, the method uses petrographic, mineralogical, and/or chemical techniques to analyze the composition of the material under examination. Comparison is then made between

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groups to determine if they are compositionally similar or different.

The method is particularly useful in ceramic studies because it circumvents one of the major problems raised in the use of stylistic criteria to separate production areas: the archaeologist can examine both stylistically elaborated and unelaborated wares. For ceramics, the method yields results that are

> essentially spatial in nature because, with varying degrees of precision, the analysis distinguishes among sources of raw materials used in pottery manufacture. This may be done directly, by establishing probable relationships of pottery to geographically localized raw materials, or indirectly, by demonstrating differences in chemical pastes deemed to be sufficient to indicate the existence of geographically isolable resources. In either case, if compositional analysis is to be carried beyond the descriptive reading of similarities and differences, the resource procurement zone is a relevant concept, and it becomes operationally necessary in an attempt to infer places of ceramic production (Rands and Bishop 1980) [Bishop, Rands, and Holley 1982:275-276].

Most studies using techniques of source characterization have examined inter-regional or long-distance trade relationships. Ceramics, obsidian, and copper artifacts have been analyzed so as to distinguish between local and imported

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items. More recently, attention has turned to intra-regional artifact production (Deutchman 1980; Rands and Bishop 1980). Studies that attempt to distinguish among resource zones in a geographically limited region must take several factors into consideration.

First, there must be sufficient geological and geochemical diversity within a region to be able to construct compositional zones; however, too great a degree of heterogeneity in the geology and geochemistry of a region might also confound the analysis (Bishop et al. 1982:276). this problem may be somewhat obviated by conducting a small pilot study to explore the degree of difference in paste composition for a region before launching a major study (for further discussion, see below pp. 96-100).

In addition, potters are assumed to use clay and temper resources which are close by their workplace. The assumption has strong ethnographic support, but each case must be examined anew. For example, potters may travel some distance to acquire clay with particular qualities. Because the maximum range of exploitation of clay is usually less than 10 kilometers, potters working

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less than 14-16 kilometers apart may use the same sources, making identification of separate workshops difficult (Arnold 1981:36). However, this does not preclude the possibility of distinguishing among clay resources in a limited area.

Further, in intra-regional studies it is assumed that most vessels do not move far form their point of manufacture. This in turn assumes a gravity model. Such models predict that interaction varies directly with some function of population size and inversely with some function of distance (Johnson 1977:481). An abundance of vessels that are stylistically, petrographically, chemically, and formally similar are assumed to come from a particular manufacturing area. The number of vessels with those characteristics in assumed to decrease as distance from the manufacturing site increases. In fact, differences in the distribution of classes of ceramics in a region may indicate differences in the way production is organized. Hodder (1980:152), in his examination of exchange systems, notes that smaller and more valuable goods will tend to be more widely distributed than bulky low-value items. Sharply

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defined fall-off curves for the distribution of certain items may indicate political boundaries. I shall return to this point below. For now, I raise the issue of distribution because it complicates the interpretation of source characterization results.

I have not discussed the methods nor the many complex issues involved in applying and interpreting source characterization data here; these will be dealt with in the next chapter. I have touched on some of the problems and assumptions of source characterization for the interpretation of ceramic data. If techniques of source characterization are appropriately applied, they can yield data on the spatial differences in resource procurement areas, which may in turn indicate the location of ceramic production areas. Examination of the distribution patterns of compositionally similar ceramics may allow the archaeologist to make inferences about the organization of ceramic production.

Some general propositions about the organization of ceramic production using source characterization methods can be made at this point.

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1. If a pottery type in a region is produced on the household or village level from local clays, with each village using a different local clay and temper source, and if the pottery is distributed within the producing village only, then it is expected that there will be great variability in paste composition from site to site.

2. If a pottery type in a region is produced in a few nucleated workshops scattered throughout the area, with each workshop using local clay and temper resources, and the pottery is distributed to nearby sites, then it is expected that the distribution areas will have compositionally similar ceramics. In addition, sites located on the boundary between workshops will have more heterogeneous compositional groups than sites closer to the workshops because the boundary sites will be in the distribution area of more than one workshop.

3. If a pottery type in a region is produced in a central workshop using local clay and temper resources, and the pottery is distributed over a wide area, it is expected that the vessels will be compositionally similar over a wide area.

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These propositions will be tested on a particularly challenging case: the Susiana Plain in southwestern Iran during the fifth-fourth millennia B.C. It has been hypothesized that the transition from chiefdoms to states occurred during this period, and that changes in the organization of ceramic production are related to these sociopolitical changes (see, for example, Johnson 1973, 1983; Pollock 1983; Wright and Johnson 1975). Before examining this case in detail, I discuss the specific technique of source characterization used in this study: neutron activation analysis. I provide a brief overview of the technique and its archaeological application, and review its problems and limitations.

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CHAPTER THREE - METHODOLOGY

I. Neutron Activation Analysis in Archaeology

Neutron activation analysis (NAA) is one of the most important and powerful techniques of source characterization (see reviews by Bishop et al. 1982; Harbottle 1976, 1982a). NAA determines the elementary chemical composition of materials, and has been applied to studies in a wide variety of disciplines, including forensic science and archaeology, because it is non-destructive, rapid, and can determine the amounts of elements present at levels of parts per million.

Simply described, when a sample of a material, such as ceramic paste, metal, or stone, is examined by NAA, the resultant pattern of elements forms a chemical "fingerprint," or characteristic profile of elements present in particular concentrations. These fingerprints can then be compared with other chemical fingerprints from like artifacts. Similarities in fingerprints indicate that the artifacts may have come from the same source and vice versa.

Neutron activation analysis is based on several breakthroughs in twentieth century

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technology (Harbottle 1976:33). While the first theoretical papers in the field were written in the late 1930s, two important technical developments achieved during World War II advanced the broad application of NAA: the nuclear reactor with its high flux of neutrons, and sophisticated gamma ray detectors and pulse-height analyzers, which simplified gamma ray discrimination and measurement (DeSoete, Gijbels, and Hoste 1972:1; Harbottle 1976:34-35).

While NAA is a recent development, the use of chemical analysis of artifacts dates back to the eighteenth century, and applications of chemical techniques to provenience studies dates to the nineteenth century (Harbottle 1976:33). Modern archaeological applications of NAA date from the early 1950s (Harbottle 1976, 1982a). From the beginning, archaeological studies utilizing NAA have varied widely in scope, purpose, and geographical focus. Recent archaeological applications of NAA have considered such questions as the extent of wide-scale trade networks, and the relationship between ceramic production and the sociopolitical organization of ancient societies. In addition, there has been increasing interest in

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problems of sampling, standardization, and statistical interpretation of NAA data (see, for example, Harbottle 1982b; Lemoine et al. 1982). The archaeological applications of NAA must first be considered in the context of the advantages and limitations of the technique itself.

II. General Procedures for Neutron Activation Analysis

The fundamental procedures of the technique are very simple. A sample which has been prepared for analysis is placed in a nuclear reactor, where it is bombarded with a high flux beam of neutrons. The nuclei in the elements in the target sample form product nuclei which are excited and unstable, i.e., radioactive. These radioactive nuclei decay into a more stable state, emitting energetic particles such as beta particles, and including gamma rays characteristic of certain radioactive elements. These gamma rays are detected and counted by a gamma ray detector. A multi-channel analyzer connected to the detector records the gamma ray data in a spectrum. The energies and the heights of the gamma ray peaks on the spectrum

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indicate which elements in what absolute concentrations were present in the sample.

Before setting up a run, or group of samples to be analyzed, choices have to be made about which elements are to be determined. It is theoretically possible to analyze a large number of elements through NAA. However,

> the choice of the elements actually determined depends on practicality, relative 'goodness' (precision, repeatability, and accuracy) of determination, and the usefulness of each particular element for distinguishing between groups of pottery. Basically, in order for an element to be determined it must produce a sufficient quantity of a gamma-emitting radioisotope during a reasonable irradiation (e.g. less than 6 hours at a flux of 5 x 10^{14} neutrons/cm 2/sec) to produce a reasonable number of counts when present in the normal concentration range for pottery. Furthermore, the radioisotope produced must have a half-life sufficiently long that elaborate irradiation and counting procedures need not be used. Finally, the radioisotope must emit gamma rays in energy regions which are sufficiently removed from the gamma rays of other isotopes produced that separation of overlapping peaks may be readily accomplished [Bieber 1977:72-73; see also Perlman and Asaro 1969].

In addition, the practical limitations of scheduling use of the reactor and the counting equipment eliminates elements with very short or very long half-lives (Bieber 1977:74). The goals

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of the procedure must also be considered. The principles of numerical taxonomy suggest that the more characters used in making classifications, the better the classification will be (Bieber 1977:74; Sneath and Sokol 1973:5). However, budgetary considerations may also be important. One of the major drawbacks to the widespread application of NAA is its high cost in terms of both labor and equipment. Generally, 20-25 elements are determined in most studies of archaeological materials (see Table 2 for the elements used in this study).

III. Brookhaven Analytical Procedures

Because laboratory procedures for NAA are not uniform, the techniques used in this ceramic study at Brookhaven National Laboratory (BNL), where the research was conducted, will be described in some detail.

Each ceramic vessel or vessel part (sherd) is assigned a sample number and photographed. A description is recorded and stored permanently at the laboratory. The specimen is prepared for drilling by cleaning the surface of the vessel or broken surface of the sherd with a solid tungsten

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carbide drill or burr; the cleaned area is then drilled parallel to the artifact surface. Several drillings per sherd are made to ensure that the sample taken is more nearly representative of the whole ceramic piece. If the artifact is too thin or too hard to drill, the sample is removed by burring. The tungsten carbide drills may occasionally chip and contaminate a sample; such contamination is easily detected upon analysis of the spectrum by a large tungsten-187 gamma line (Harbottle 1976:39; see also Attas et al. 1984), and the affected element, cobalt, can be removed from further data analysis. After a sample of 100-200 mg of powder is removed from the specimen and placed in the glass vial, it is oven-dried for at least 12 hours at 45°C before weighing. Next, about 40 mg of the powder is weighed into ultrahigh purity Suprasil T-20 fused quartz ampoules (U.S. Fused Quartz Co.). Experience at BNL has shown that sample weights that are much smaller than 40 mg produce inaccurate counting statistics (Harbottle 1976:38) or may not be representative. The ampoules are hermetically sealed by fusing the quartz tubing closed. Detailed records are kept of the sample numbers and weights: the numbers are

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inscribed in India ink on the sealed ampoules before bombardment.

Geological materials, such as clay or limestone, with known chemical compositions are included with the 40-50 ceramic samples in each irradiation. These materials serve as standards against which the reliability of the analytical procedure may be checked; their primary purpose is, however, reproducible calibration of the analysis. Two standards often used in BNL ceramic studies are Ohio Red Clay and Argillaceous Limestone. They are used because their chemical compositions have the same elements in roughly the same concentrations as the ceramics being analyzed. These standards are secondary or BNL standards, which have been calibrated against well-known primary standards from the U.S. Geological Survey. Ohio Red, a commercial clay supplied by the Stewart Clay Company, was used to calibrate all the elements except calcium and strontium; these were calibrated against NBS Standard No. 1A Argillaceous Limestone. The standards are dried, weighed, and sealed in the same manner as the ceramic samples. Two or three samples of each standard type are included in each run.

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The samples are irradiated twice in BNL's High Flux Beam Reactor (HFBR). The first irradiation is for 16.5 hours in the V-11 facility at $1x10^{14}$. neutrons/cm^2; this produces the long-lived isotopes. After a 9-12 day cooling period, the samples are irradiated in the same facility for one minute in order to activate the short-lived isotopes. The irradiated samples, after two hours cooling time, are placed in glass counting vials, which are in turn placed in an automatic sample changer. The samples are counted for 66 seconds each to record the short-lived isotopes, and again for 66 minutes each for the longer-lived isotopes. The counting system consists of a Princeton Gammatech Ge-Li detector (35 cm^3 crystal, 1.82 KeV resolution for ^{60}Co gamma rays), coupled with, in the earlier stages of research, an ND2400 4096 channel analyzer with magnetic tape readout. In the later stages of the project, the multichannel analyzer was an ND66 LSI-11/2 microcomputer with floppy disk readout. The gamma spectra on magnetic tape were processed by the program BRUTAL on a CDC 7600; those on disk were processed by the program INTRAL on a Digital PDP 11/23. The in-house programs ELCALC and SMPCALC yielded the final

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element concentrations (see Abascal-M. et al. 1974:86-87; Bieber 1977:74-77; Bishop et al. 1982:417; Sayre n.d.)

IV. Interpretation of Neutron Activation Analysis Results

A. Sources of imprecision. The NAA literature contains extensive discussions of the problems and limitations of the technique. There are several major sources of variation in archaeological samples. First, the procedures themselves may be imprecise, with "errors due to counting statistics, weighing, processing the gamma-spectrum, flux variations in the reactor or particle stream, decay and background corrections, contamination, and counting geometry" (Harbottle 1976:37). The degree of analytic error can be checked "...by carrying out replicate analyses on a 'standard' substance, -- i.e. -- one which is similar to the archaeological material, but having no natural spread or sampling error" (ibid.). In this study, certain elements yielded poor counting statistics. Barium, tantalum, antimony, and strontium were not well-determined -- that is, they exhibited a high degree of analytical error -- and

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were excluded from further analytical work. Rubidium, cesium, and hafnium were also not well-determined and were used cautiously and occasionally. Of the 22 elements determined, 16 were analytically useful. Although analytical error can be measured and controlled for, other sources of variability exist.

A second source of variance is the "...'natural' spread of analytic values within a particular 'homogeneous' archaeological class" (ibid.; see also Rice 1978:514-515). For example, in a provenience study of clay and ceramics from a modern pottery-making area in Poland, Buko (1984:353) used x-ray fluorescence to chemically characterize 13 samples from a clay bed ranging over several hundred square meters. The samples were taken from different locations and different depths. The samples showed significant chemical differences in some elements. This suggests that the range of natural variability must be determined for each individual group of samples studied. Similarly, in a NAA study (Adan-Bayewitz and Perlman 1985) of Roman and Byzantine local pottery and clay from the Galilee, a valley with chemically homogeneous clays was separated by 9 kilometers

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from a valley with chemically heterogeneous clays. Furthermore, "natural" variability may be difficult for the archaeometrist working with ceramic samples only, because ceramic paste may also introduce some variability, such as the addition of temper, as part of the pottery-making process.

The problem is compounded by a third source of variability: sampling error (Harbottle 1976:37; Rice 1978:514-515). In Buko's study, for example, a few grams of clay were taken from a source that is several hundred cubic meters thick. How representative of the whole source is that sample? In fact, sampling errors occur at just about every step from the beginning of the pottery-making process to the archaeometric analysis. A potter uses only a small part of a clay source for potting clay; a small part of that extracted raw material is made into a particular vessel; only a single sherd of that vessel may be recovered by an archaeologist; only a small part of that paste is removed for analysis; and only a small portion of that is subject to NAA. Part of this problem can be dealt with through careful sampling (Harbottle 1976:38), but it is of continuing concern.

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Thus, the total variance from a "homogeneous" group of ceramics consists of variability derived from analytical imprecision, the "natural" spread of values within a single source, and sampling error. Studies have shown that the spread within a "homogeneous" group may range from as little as 2 - 7% to as high as 10 - 20% (see Harbottle 1976:37; Perlman and Asaro 1969:21). Each group must be assessed on its own. In this study, the spread for most elements from known single sources ranges from 2-10% (see, for example, Tables 62-115), with higher spreads for other groups. The spread, or per cent deviation, is calculated by dividing the standard deviation by the mean and is expressed as a per cent. Empirical data from BNL have suggested that spreads of less than 10% indicate a single clay source (Harbottle 1985 personal communication). This criterion, along with others, will be used in evaluating data from this case study.

B. Clay and ceramics. In the foregoing discussion, I noted that both clay and the ceramic manufacturing process can introduce problems in interpreting NAA results. I shall elaborate on this point.

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Clay, the chief component of ceramics, is a fine-grained mineral which is formed by weathering and low-temperature hydrothermal processes. Clays are hydrous aluminum silicates, composed mainly of aluminum, silicon, magnesium, iron, potassium, calcium, and sodium. The chemical composition of clays in a region is affected by the parent rock, as well as climate, geomorphology, and the local biota (Bishop et al. 1982:294; see also Jackson 1959); clays may also have been washed down from other regions (Krauskopf 1965:ch. 7).

Bishop et al. (1982:294) note that the major elements in clays are generally not useful in distinguishing clays inter- or intraregionally (see also Poole and Finch 1972; Ruben 1979). However, Bishop et al. note (ibid.) that during the various stages of weathering, elemental substitution takes place, with greater tendencies for some elements to be exchanged than others. Many of the trace elements (those occurring in amounts of less than 100 parts per million) tend to be fixed within a crystal structure. As minerals are broken down to finer particles, often continuing to clays, these trace elements become concentrated in the finer-sized fractions. Their proportions in a

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clay, therefore, reflect the more specific stages of weathering as well as a somewhat regional parent lithology (cf. Slatt 1974; Slatt and Sasseville 1976). For this reason, even in a region considered to be relatively homogeneous in its gross geological characteristics, significant mineralogical and chemical differences may be discerned between clay deposits.

Neutron activation analysis allows the investigator the opportunity to examine several major elements in clays (Na, K, Fe, and Ca) as well as many trace elements so that differences between clay deposits may be distinguished. There are, however, several complicating factors to be considered. These complications arise both from the fact that clays are manipulated by humans, and from the basic mechanics of the statistical analyses themselves.

Clays utilized in pottery manufacture can be modified in several ways. First, clays for use in ceramic production may not be arbitrarily chosen by the potter: they are often selected for particular physical (i.e. chemical) characteristics (see chapter five for further discussion of this point). The chosen clays may then be subjected to a variety

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of procedures which may alter their chemical composition: levigation, tempering, and firing. In addition, the ceramics may be subject to post-depositional alteration, such as ground-water saturation. The effects of these human-added factors have been generally considered, but the particular characteristics of each group of ceramic clays must be individually assessed.

Bishop (1980:49) notes that ceramic paste consists of clay minerals and small (less than 0.02 mm) naturally-occurring non-plastic particles (detritus, such as rock fragments), which compose the matrix, and temper, which is defined as non-plastic inclusions larger than 0.02 mm in diameter. Temper may also refer to human-added non-plastics (see Bromund et al. 1976; Shepard 1956:24-25, 161-168). Temper is added to clay because it acts against shrinking when clay is dried and fired; tempering agents include ground sherds, tile, brick (which are all termed grog), rock, sand, volcanic ash, shell, plant fibers, dung and feathers (Shepard 1956:24-26; also Nicklin 1979). Studies of the effects of temper on the chemical composition of ceramics have suggested that in general temper acts as a dilutant, lowering

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the concentrations of elements in the fine clay matrix (Bishop 1980:50; Bishop et al. 1982:295; Hawkins and Rasmussen 1973; Hermann 1970:57-71; Olin and Sayre 1971:200). However, some tempers may also add to element concentrations. In an example cited by Bishop et al. (1982:295):

> if...quartz sand (added as temper) contains appreciable zircon, which is noted for its high rare earth element content, a complex interplay results between elemental dilution and enrichment; the proportional lowering of trace and minor elements caused by the silicon content of the quartz is partially offset by elemental enrichment due to the presence of zircon.

The same is true of volcanic ash temper, whose composition often mimics that of the clay to which it is added (G. Harbottle, personal communication, 1985). Clearly, if distinctions are to be made among ceramic groups, the complexities of the effects of temper must be considered.

The amount and type of temper may be initially assessed through visual inspection. Further examination of the ceramics through a binocular microscope and by petrographic analysis will also aid in determining the type of temper and its relationship to the clay matrix. Inspection and statistical manipulation of NAA data are also

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useful in assessing temper effects. The statistical techniques used will be discussed below (see chapter five). Bishop et al. (1982:295) note that quartz sand, crushed limestone, and vegetable fiber tempers have less of an effect on rare earth element values than do volcanic materials and grog.

The effects of levigation, which separates coarse and fine clay fractions, on chemical composition is debated in the archaeometric literature. Attas et al. (1977) and Harbottle (personal communication, 1986) found a significant difference in both major and trace element compositions among levigated fractions, while Freeth (1967) found no significant variation. The potential effects of levigation must be considered, especially when wares with fine pastes are being analyzed.

Firing of ceramics may also affect chemical composition (see Pike 1976; Rice 1978; Rye 1976; Tubb et al. 1980). In the firing of ceramics,

> ...the contents of a kiln will be subjected to conditions which are not constant or necessarily consistent from batch to batch. Such variable conditions are kiln construction, fuel composition, position in the kiln, firing period, size of load, weather, etc. The result of the variability of conditions will produce a series of sherd which are overfired,

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> underfired, oxidised or reduced to varying degrees [Tubb et al. 1980:62].

The temperature at which an element becomes volatile is critical here. Rice (1978) found non-kiln made pottery fired below 850°C to be unaffected by firing to any significant degree. In a sample of kiln-fired ceramics, Tubb et al. (1980) used sherd color as a mark of oxidizing or reducing environments and sought a relationship between firing environment and chemical composition. The results suggested no relationship between the two. They note that overfired sherds may be less porous than those that are underfired, and underfired sherds may have soluble components leached out by weathering. Conversely, overfired sherds may more easily lose volatile elements; the two processes may balance each other out. They suggest that elements which are stable when fired, such as iron, magnesium, potassium, calcium, and manganese, are most useful in distinguishing compositionally similar ceramic groups.

One additional variable in the chemical analysis of ceramic paste needs to be considered: the changes in the chemistry of the clay sources over time. As noted above, clays are formed as the

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result of many forces, including weathering, climate, and biota. To what degree do these forces continue to act upon clays over time, and can their effects be measured? Pottery made from the same clay bed in Sparta show some gradual change through time in the chemical composition of the clays (Attas et al. 1982). However, chemical change through the long periods of time is generally not readily assessed in most archaeological studies using NAA. In most cases it is difficult to locate and sample clay sources that were used six thousand years ago, and the effects of other factors such as tempering obscure the time factor. Furthermore, the degree of post-depositional change in chemical composition may pose a problem, although a recent study (Franklin and Vitali 1985) has suggested that physically intact sherds will retain their chemical integrity; this is in keeping with standard practice at Brookhaven, where samples for NAA are taken from the inner core of the sherd after the surface material is removed.

A third set of problems in the neutron activation analysis of ceramics is the selection of the sample to be analyzed. These issues will be discussed below.

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C. Sampling. As has been noted, NAA is a rapid, powerful, and sensitive technique for determining the chemical composition of objects. It is also quite expensive. The technique must be part of a well-designed project in order to be cost-effective and yield fruitful results. A critical component of such a research program is the ceramic sample chosen for analysis.

Certainly the problem of sampling in archaeology is not unique to NAA applications (see, e.g. Cowgill 1975, Mueller 1974, 1975). Archaeologists should select their population to be sampled with "...the governing consideration ...that we neglect no observations likely to be important" (Cowgill 1975:260). What is important depends on the problem at hand.

Studies that use neutron activation analysis are particularly constrained by budgetary considerations and availability of laboratory facilities. Most NAA researchers choose a small number of samples for analysis, based on a strategy that Cowgill (1975:260) calls "purposive selection...[in which] we can define obvious criteria of relevancy and use these criteria as a basis for picking a manageable number of

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intrinsically important observations." Generally, archaeometrists will subdivide the available ceramics into groups determined by location, type, or other relevant archaeological criteria, and then select samples from that group. Most NAA studies use small sample sizes, but others have used much larger samples (e.g. Bishop and Rands 1982).

An additional consideration in the selection of samples for NAA is the availability of artifacts which can be sampled. In some cases, archaeologists can use ceramics they themselves have excavated. However, in many other cases archaeologists depend on the availability of museum collections. This is particularly problematic when samples must be taken from whole vessels. Although NAA is considered to be a non-destructive technique, objects must be drilled to collect the necessary powdered paste. Sampling from ceramics thus may be somewhat restricted by the museum or the owner of the vessel. Museum collections themselves are not statistically representative samples of survey or excavation materials. They are often biased in favor of finer, stylistically elaborate wares. This is unfortunate, since, as has been noted, NAA can be very useful in studies

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of stylistically unelaborated wares, where decorative clues to locus of production are absent.

For the purposes of this study, ceramics were selected on the basis of several criteria: (a) they were made available for sampling, (b) they were from the time periods of interest, (c) they were types that were found throughout the plain, and (d) where possible, they had been used in previous studies. See Table 1 for a summary of the ceramics and clay sampled.

D. Evaluation of neutron activation analysis data. The procedures for neutron activation analysis have been outlined above, as have problems and issues in the analytic procedure and in sampling. Attention must now be given to the interpretation of the neutron activation analysis data.

Bishop et al. (1982) review several basic postulates in the process of chemically characterizing clay resources. The "Provenience Postulate" (see Weigand et al. 1977:24) holds that "...identifiable chemical differences exist between sources of a raw material, and the analytical approach can recognize these differences. A corollary holds compositional variation within a

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source to be less than the variation between different sources" (Bishop et al. 1982:301). Problems in interpreting differences in the chemical variation of ceramics abound, as the authors discuss and I have noted earlier in this chapter. Two (or more) potters in different places may draw on the same source and vice versa, or sources may be chemically similar throughout a region.

If sets of pottery are chemically and/or archaeologically characterized and grouped, then the "Criterion of Abundance" may be applied (ibid.). This is essentially a gravity model, which assumes that if a large number of ceramics of a certain type are found on one site, then they are locally made; few examples of a particular type are held to be imports.

The goal of the analysis, based on these postulates, is the formation of Reference Units (Bishop et al. 1982). The general approach is to form distinct groups within the data set. Bishop et al. (1982:305) argue that chemical and archaeological analyses should be used interactively to interpret the data set:

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> it is inefficient and counterproductive to hold in abeyance the formal, temporal, and spatial dimensions of traditional archaeological concern until the compositional data have been fully analyzed. Using an expanded reference base to gain added perspective and feedback in the formation of compositional groups is preferable. Taking such a course, it is essential to make analytical steps explicit and to avoid the pitfalls of circular argument.

Chemical compositional data may be grouped as Chemical Paste Compositional Reference Units (Bishop and Rands 1982; Bishop et al. 1982:305) or CPCRUs. These units may be as broad or refined as one chooses, given the nature of the particular problem. CPCRUs should be statistically separable groups. Thus, a critical set of decisions for the analyst concerns the inclusion or exclusion of both elements and samples for the statistical analysis.

Bishop et al. (1982) suggest that CPCRUs can be merged with archaeological data to form Paste Compositional Reference Units (see also Bishop and Rands 1982) or PCRUs. This makes obvious sense, as two wares with chemically similar pastes but different form, style, and function would not be grouped as one. It should be noted that in this dissertation, groupings based on form, function, or vessel forming technique could not be constructed

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because the entire sample consisted of sherds rather than whole vessels. PCRU groups may not necessarily be statistically distinct, although Bishop et al. (1982:306) point out that the groupings may also become statistically more refined.

In this study, I have followed the basic principles outlined here, and have attempted to establish both CPCRUs and PCRUs. In the initial phase of the data analysis, several standard BNL procedures were followed. I shall review them briefly, as they did not in fact yield satisfactory results.

Initially, all of the samples, grouped by both period and type, were assessed by the BNL program ADSTAT (Sayre n.d.). This program simply prints out the concentration for each element in each sample, as well as the mean concentrations, group standard deviations, and 95% confidence limits for each element in the group of samples considered. The program flags values outside of the 95% confidence limits. Flagged values are meaningful when the ADSTAT group is a CPCRU or thought to be. If the samples are very diverse as to type, then the mean, and hence the flags, are irrelevant. The

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few samples in this study with several flagged values were eliminated from further analysis because such results suggested analytical error (for example, misweighing or poor counting statistics).

In almost all cases in my research, the clustering programs yielded groups that were chemically similar -- all clustering programs form groups -- but the groups had very low levels of differences separating them. Furthermore, the groups did not make much archaeological sense in terms of their locational correlates.

An attempt was made to refine the cluster-created groups using the BNL program ADCORR (Sayre n.d.) which is a multivariate technique

> which calculates the variance-covariance matrix and the centroid for any group of specimens and then determines from these the Mahalanobis Distances from the centroid of the group for all members of the group and for any additional specimens one might wish to compare to the group. From these the probabilities that the individual specimens could belong to the group and yet deviate from the centroid by as great a Mahalanobis Distance as they do are calculated. An option of the program is that group member specimens showing a low probability of belonging to the group can be deleted from it, with this elimination process being reiterated after the statistics for the reduced group are calculated until a fully internally

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> consistent group is reached [Sayre n.d.:10-11].

In fact, because all of the groups initially entered into the ADCORR program were not strongly differentiated chemically, successive iterations of the program did not refine the groups. Instead, more and more samples became part of the group, with the result that one large group with only a few outliers was formed. The final group and outliers could not be interpreted as archaeologically meaningful; the results indicated general homogeneity of clays on the plain, while the outliers appeared to be random oddballs.

I should point out that before the major project was undertaken, a small pilot study of 90 samples was executed. The procedures outlined above were followed, but the results were more encouraging. With fewer samples, greater distance between chemical groups was observed. As sample size increased, the differences between groups were reduced. This has important implications for source characterization studies, where sample size is often quite small. Certainly sample size should be of critical importance when problems of

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intraregional ceramic production are being investigated.

From the first phase of data analysis, only two results of archaeological significance were obtained. First, all of the samples from some phases of the fifth millennium black-on-buff pottery appeared to come from a single source on the plain (see chapter five for further discussion). Secondly, the fourth millennium bevel rim bowls appeared to be locally produced, as CPCRUs could be formed by site (see chapter six for further discussion). While these results were interesting, the great preponderance of ceramic samples could not be chemically grouped with any multivariate analytic technique.

The data suggested that the great similarity in ceramics throughout the plain was due to similarity in the clays, rather than the use of a single source. There are clay sources all over the plain (Dollfus, personal communication, 1984), and there is some evidence for local production of bevel rim bowls (see chapter six below). The figures for percent deviation support the notion of similarity of clays. When single sources are known, such as in the clay samples (see Tables 373-

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392), the percent deviation figure is well under 10% for most elements. However, the percent deviation figures are all over 10% for all elements for most of the other types, with the exception of the Period 12 black-on-buffs (see Tables 62-115). If one source had been used for each of the other types, it is likely that the figures would be lower than 10%, especially for untempered wares.

The use of different sources and tempering materials, then, did not obscure the underlying similarity in clay throughout the region. This result was surprising, as the plain is drained by several river systems (Fig. 3) and differences in clay chemistry were expected. The situation is somewhat like that found in the Valley of Mexico (Abascal-M. et al. 1974) where there is a single clay formation that underlies the whole valley; ceramic clays, when subjected to chemical analysis, are fairly uniform throughout the region.

For the second stage of the analysis, I decided to approach the data through the use of univariate statistics, as the multivariate techniques were too sensitive to make gross separations between groups. The multivariate techniques formed groups with a high degree of

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overlap; multivariate methods rarely work well under such circumstances. I also opted to work with the raw concentrations, rather than with the log transformations of these concentrations that are used in the BNL programs. There is a long debate in the geological literature as to whether elements are normally or log-normally distributed in nature (Ahrens 1954a, 1954b, 1957; Chayes 1954; Jackson 1959; Jizba 1959; Miller and Goldberg 1955; Shaw 1961; Vistelius 1960). Brookhaven programs work in log space because they have observed log distributions of elements in most data sets, and because it "quasistandardizes" the data without making a priori assumptions about the groupings (Sayre n.d.:2-3). For my data set, I observed normal distributions using raw concentration data, and did not transform the concentrations; also, log quasistandardization is not required for univariate techniques. Initial assessment of the data were done using the standard statistical packages, SPSS and SAS, on a mainframe computer. The final work presented here was done on a Radio Shack Model IV microcomputer using an interactive package, Data Screening Program (DSP) developed by Gregory Johnson at Hunter College.

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The results of these second-stage analyses will be discussed in detail in chapters five and six. After the failure of the multivariate methods, I strove to simply find trends in the data. Histograms of the distribution of the concentration of elements in a group were generated with the expectation that differences in the number of ceramic sources would be reflected in the shape of the curve. A single source should, for example, generate a normal distribution. Some histogram results were consistent with the per cent deviation data, suggesting a single source for some of the fifth millennium material.

In another approach to the data, correlation matrices were generated for different presumed ceramic groups. Certain elements, particularly iron and scandium, were observed to correlate very highly with one another (see Tables 402-421; Figs. 26-65); this has also been observed in several other typical Near Eastern clays (Brooks et al. 1975). Inspection of the scatter plots of these correlations revealed that there were clear breaks between groups at different concentration levels. Low iron-low scandium, middle iron-middle scandium, and high iron-high scandium groups could be formed.

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These groups had locational correlates; that is, they made sense in terms of both chemical composition and archaeological parameters. These plots were used to show trends in the data which were consistent with other kinds of archaeological evidence.

This discussion is intended as a brief review of some of the procedures and problems in the application of NAA to a particular data set. I now turn to the actual case under discussion. I begin with the archaeological background.

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CHAPTER FOUR - THE ARCHAEOLOGICAL SETTING

The Susiana Plain in southwestern Iran presents many challenges to the archaeologist conducting a source characterization study. Although the area has a long history of archaeological research, and work has been done on its geology, geomorphology, and hydrology, many problems are not easily resolved. In this chapter I offer a general description of the region, and review the history of archaeological research and the problems and limitations of the current chronology. I conclude with a general introduction to the chronology of the fifth and fourth millennia on the plain.

I. Location

The Susiana Plain is a well-defined area within the upper region of the great alluvial plain of Khuzistan, Iran, which is itself an extension of the greater Mesopotamian plain of Iraq (Figs. 1-3). Khuzistan extends over 40,000 square kilometers from the Zagros Mountains to the Persian Gulf (Ruben 1979:2). The low-lying plain, which gently slopes (0.1%) from northwest to southeast, is

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traversed by several major rivers which drain 100,000 square kilometers from the Zagros Mountains (Kirkby 1977:251). The Susiana itself is 2280 square kilometers (Wright and Johnson 1975:276) in extent, and is bounded by the Dezful Anticline in the north, the Haft Tepe Anticline in the south, the Karun River on the east, and the Karkheh River on the west. Besides the Karun and the Karkheh, the Susiana is crossed by the Dez and Shaur Rivers as well as several smaller northwest-southeast running streams (Fig. 3).

II. Geology and Geomorphology

The geomorphology of the Susiana Plain has undergone many changes since the end of the Pleistocene. There is some debate about the geological formation of the plain (Kirkby 1977; Lees and Falcon 1952; Morgan 1900a:1-54; Veenenbos 1958). The modern plain consists of Holocene deposits covered with several meters of alluvial deposits (Ruben 1979:8). Kirkby (1977:280-285) has hypothesized that this alluviation was the result of an aggrading river regime lasting from the end of the last glaciation (c. 8000 B.C.) until about A.D. 500. The aggradation was due to the drier

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climate at the end of the Pleistocene, which led to increasing erosion in the Zagros; this was later intensified by domestic sheep/goat grazing which stripped the vegetation cover and caused more gullying and flash floods, thus increasing erosion and sedimentation into rivers flowing down to the Susiana.

Ultimately, the great sedimentation rate, combined with more lowland cultivation and canal-building, decreased the discharge rate of the rivers, causing a shift to the present down-cutting river regime. Ruben's (1979) investigation of the Susiana terraces does suggest, based on dated archaeological assemblages found in erosion channels, that down-cutting may have begun as early as the fifth millennium B.C.

The ancient watercourses of the Susiana have meandered considerably to their present positions. Kirkby (1977:272-279) has used meander wavelength patterns, course freshness, and historical documents to estimate watercourse patterns from 1500 B.C. on (see his figs. 8 and 9, p. 277-278). The surface of the plain has also been transformed by major canal systems. The exact positions of the Susiana watercourses during the fifth and fourth

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millennia B.C. are not well understood; this should be kept in mind in interpreting the locational aspects of settlements considered in this research.

The surface of the modern Susiana is covered by pedimental and fluvial formations (Veenenbos 1958:12-13). The observations of Ruben (1979) and Ruben and Trichet (1980) in the region around the sites of Jaffarabad (KS 20) and Susa have provided a detailed picture of the pedology and geology of the area. The region around these two sites is composed of small hills separated by small depressions and cut by erosion channels draining towards the Shaur River. The fundamental material of the plain is a homogeneous light yellow silt; this silt, which may be the product of the aggrading river regime, shows sedimentary stratification but is not pedologically structured. In areas where the yellow silt hills have eroded, a red silty soil has developed. This represents a colluvial deposit that has undergone pedogenesis. The lower level of the red silt has little structure and has carbonate concretions, while the upper levels are well-structured and are isohumic (Ruben 1979:19-20; Ruben and Trichet 1980:130-133).

The clays, which are very common in the

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region, are composed of three types of phylletic minerals: illite, smectite, and chlorite, which are distributed throughout both the red and yellow silts (although the red silts are more clayey) (Ruben and Trichet 1980:140). The clays are chemically similar throughout the region (with the abundance of attapulgites in some Susa samples). This argument is based on the chemical analysis of the major constituents of the clay, in contrast to the trace element analysis used in this study, and will be discussed below. Their work also suggests that artisans selected and used local clays to manufacture both bricks and ceramics.

III. Environment and Land Use

The Susiana environment has been extensively reviewed (see Kirkby 1977; Veenenbos 1958; Johnson 1973:17-24; see also Hole et al. 1969 on the environment of the nearby Deh Luran Plain). Two important points must be considered. First, the Susiana environmental zone includes the Zagros Mountains. The mountains

> not only provide a topographic contrast which highlights the surface of the plain, but also provide an area of slightly higher rainfall...which is able to recharge aquifers and maintain

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> year-round flows in the Khuzistan rivers which would otherwise dry up in the summer...[Kirkby 1977:251].

Each river flowing into the Susiana drains a different area of the mountains, thereby depositing sediments from different areas in the mountains onto the plain. This would suggest that different river systems on the plain might differ in the chemical composition of the deposited soils; but as has been noted, this was not the case. The clays throughout the plain were chemically similar.

Secondly, because rainfall on the Susiana is seasonal and unreliable (Adams 1962:110; Johnson 1973:19; Kirkby 1977:269; Veenenbos 1958:27), crops must be irrigated. Although it is difficult to assess the degree to which irrigation was used during the fifth-fourth millennia B.C., the evidence suggests that the area of sedimentation of the rivers was moving downstream at that time. Agriculture may have been based on simple irrigation techniques during the first half of this period, as the water table was high and salinity low. After the climatic optimum at 4000 B.C., there may have been less aggradation, and more extensive irrigation systems along the rivers may have been necessary to raise the water to the

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fields (Kirkby 1977:286-287). The use of irrigation systems increases the salinity of the soils.

Modern studies have indicated that the rivers of the Susiana differ in their salinity levels. Soils irrigated by the Dez are less saline, while the Karun and Karkheh are somewhat more saline (Kirkby 1977:272-273; Veenenbos 1958:36). Veenenbos (ibid.) found high salt concentrations in the southerly part of the plain (the salinity does not interfere with crop growth); this is consistent with the neutron activation analysis data reported in this study.

To summarize: there are different types of clays available all over the plain, and the clays in ceramics on the southern sites may have a higher sodium count than those in the north. Furthermore, it was expected that because the different streams on the plain drained different mountain areas there would be chemical differences between the sediments deposited by each stream. However, because the watercourses have shifted through time, these differences may have been obscured. The consequences of these observations will be discussed in the next two chapters. I now turn to

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a discussion of the archaeology of the Susiana.

IV. History of Archaeological Research

Archaeological research in Khuzistan has had a long history (Carter 1984:108-110; see also Dyson 1966 for a detailed review of the early material). During the first half of the nineteenth century, European travellers -- mostly military officers, diplomats, and/or gentlemen scholars -- were attracted to the town of Shush, which contained both the tomb of Daniel and the great mound of Susa (which covers over 100 square hectares and encompasses a long occupational sequence), thought to be the Biblical city of Shushan (see, for example, Layard 1887; Long 1833, 1842; Rawlinson 1839).

The first excavations at Susa were undertaken by the British in 1851. Their two seasons of work at Susa barely scratched the surface of the site, but noted some of its major (late) occupations, and tentatively confirmed it as the Biblical Shushan (Loftus 1857:335-433). At the same time, archaeological research in the Mesopotamian heartland was being undertaken on a massive scale, providing new information on the Assyrians and

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Babylonians (Daniel 1950:71-77; Dyson 1966:124-125; Lloyd 1980:73-143).

Most of the work at Susa has been accomplished by various French teams, beginning in 1884 with the work of Marcel and Jeanne Dieulafoy (J. Dieulafoy 1890; M. Dieulafoy 1885). The major excavations, however, started in 1897 with the team headed by Jacques de Morgan (e.g., 1900b, 1900c, 1900d, 1912), and later by Roland de Mecquenem (e.g., 1928, 1943) and Roman Ghirshman (1952). The excavators removed massive amounts of earth from the site, recovered many major features, and refined and expanded the chronological sequence to include the prehistoric occupation of the site. However, fine stratigraphic control was never established, nor, due largely to the heavy overburden of later material, was the early sequence well understood.

Investigation of fifth and fourth millennium Susiana was enhanced by de Mecquenem's sondages of Tepe Jaffarabad, Bendebal, and Bouhallan (KS 28) from 1933-1939, as well as his surveys of other sites in the region (1943, 1947). Early chronologies were proposed by McCown (1942) and Vanden Berghe (1952). Le Breton's 1957 review and

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redefinition of the prehistoric periods provided a useful working chronology, which was utilized, for example, in outlining the prehistoric periods in Adams' (1962) 1960-1961 survey of 8000 years of settlement on the Susiana. Refinements of the chronology were made by Dyson's (1966) and Steve and Gasche's (1971) excavations on the Acropole of Susa, as well as by Delougaz and Kantor's (1972, 1975) and Kantor's (1972, 1975, 1976, 1977, 1978, 1979) work at Chogha Mish, and by work on the northern steppes of Khuzistan on the Deh Luran Plain (Hole, Flannery, and Neely 1969; Hole 1977; Wright 1981). Programs of excavation and survey in the regions adjacent to the Susiana have contributed to our understanding of interregional relationships, chronology, and the development of economic, social, and political systems in the area during the fifth and fourth millennia.

Several projects on the Susiana, begun within the last fifteen years, have particular relevance for this study. Beginning in 1968, the Delegation Archeologique Francaise en Iran launched a program of stratigraphic excavation at Susa, Jaffarabad, Jowi, and Bendebal with two major objectives:

a re-examination of the stratigraphy of

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> the fifth and fourth millennia levels on the Susiana...; to study the processes leading to the urbanization of this region: modifications of the technological, economic, social, and cultural order which mark the passage from small independent village communities to the more and more complex preurban and urban systems...[translation mine] [Dollfus 1978:143].

These new excavations have been supplemented by other work on the plain: Wright and Johnson's Susiana survey (Johnson 1973); Hole's Susiana survey (F. Hole, personal communication, 1979); sondages at three small Uruk sites (Johnson 1976); and excavations at Qabr Sheykheyn (Weiss 1972, 1976), Abu Fanduweh (by E. Negahban from Johnson, personal communication, 1984), and Tepe Sharafabad (Wright et al. 1980), as well as continuing work at Chogha Mish (Kantor 1975).

As a result of this massive body of research, the Susiana is among the archaeologically better-known areas of the Near East. The basic chronology and the broad framework of developments on the plain have been roughed out, and have raised some interesting questions. In the section to follow, a working chronology is outlined.

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V. Chronology

Although archaeological research has been conducted on the Susiana for over one hundred years, the chronology has not been completely resolved. I present a working chronology here, without attempting to resolve any chronological questions. This pragmatic approach is not meant to deny the fundamental importance of chronology in archaeology.

The ceramic samples borrowed for this study cannot be used to address chronological issues. Many of the sherds are from survey collections, and thus lack primary archaeological contexts. And because the vast majority of the sherds loaned to this project were quite small (NAA is not totally nondestructive), possible clues to chronological placement, such as decorative motif or method of manufacture, were not readily observed. In short, the data set was not amenable to re-evaluation for chronological assignment.

Of course, the ceramic samples did not arrive at Brookhaven without relative dates. The corpus of fifth-early fourth millennium material loaned to me by Frank Hole was also assessed by Genevieve Dollfus in the course of her study of collections

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from that time span; Dollfus provided me with additional chronological information as well as contributing additional samples to my study. Similarly, the Uruk material came largely from Henry Wright's collection from the 1970-1971 survey he conducted with Gregory Johnson. As I estimate that over 90% of the samples I analyzed by NAA came from these two sources, adopting the associated chronologies was appropriate.

In retrospect, this decision appears to have been correct to the extent that chronological problems did not affect the results. For example, there is some debate about the chronology of the Uruk, both in terms of the number of divisions and the duration of each division (e.g., Nissen 1982; Weiss 1977). Yet the NAA results showed that for the Uruk, geographic position on the plain was much more important than whether a sample was classified as Middle or Late Uruk. For example, samples from KS 108, a site in the center of the plain, are most likely to cluster with samples from other center sites, irrespective of type or chronological classification.

I have attempted to be as explicit as possible in presenting the chronological assignments I have

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used. All samples were recorded with the lender's chronological placement. I then grouped the samples for the analysis. For example, Dollfus (1983a; see Table 8) groups Periods 9-12 as the Chogha Mish Phase. I initially analyzed all samples that she classified as Period 9-10 in one group, and all samples that she classified as Period 11-12 in a separate group. A third group was formed and analyzed; it consisted of samples that Dollfus classified as Chogha Mish Phase, but without further specification. Finally, I combined all three groups for a single analysis of the entire phase. Other such cases are considered in the appropriate chapters. The chronological assignments are summarized in Table 8. In addition, all of the original concentration data and identification cards (BNL's "White Cards") are available at the Smithsonian Institution.

The fifth to early fourth millennium B.C. chronology used in my study is that presented by Dollfus (1983a:164-168, Table 41; see Table 8 here). Dollfus divides the Susiana sequence into periods based on observed changes in the painted ceramic sequence and on observed changes in the building levels.

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I have generally adopted her terminology, although I substitute "Susa A" for her "Suse Phase" or Period 13. Note also that although I frequently use the terms "fifth millennium" or "fourth millennium," I am not defining an absolute chronology for these time periods. Rather, I use these terms as a gloss; that is, a convenient way of distinguishing the early from the late periods in my study. Again, as my data are not equipped to untangle the thorny issues of the Susiana absolute chronology, I operate in the general time frames outlined in Dollfus' and Johnson's chronologies.

The Terminal Susa A-Uruk sequence used here has appeared in several publications (Johnson 1973, 1976; Wright and Johnson 1975; Wright et al. 1975); Wright and Johnson's sequence is presented here (Table 9). This scheme is based on Johnson's analysis of Wright and Johnson's survey data as well as correlations with other excavations. There are some differences with other sequences, which will doubtless be resolved by other research projects.

In the following two chapters, further details of the archaeological setting are provided,

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including interpretations of the existing data. The neutron activation analysis sample is described and the results discussed.

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CHAPTER FIVE - THE JAFFARABAD PHASE-TERMINAL SUSA A

I. The Archaeological Setting

The material discussed in this chapter dates from approximately the beginning of the fifth millennium through the first quarter of the fourth. This time period is not well understood archaeologically. There have been comparatively few excavations, and little large-scale site clearance, except for early work of limited utility, although with the final reports from Jaffarabad, Jowi, Bendebal (from Dollfus), and Chogha Mish (from Kantor) imminent, we will have more data on which to base interpretations.

In the following sections I summarize the available archaeological data and the behavioral interpretations of that data.

A. Political, social, and economic organization.

Until recently, there have been few inferences in the literature about Jaffarabad Phase-Terminal Susa A sociopolitical organization. As has been noted above, the reasons lie in the problems of establishing a chronological framework, and in the limited amount of excavated material. However,

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several surveys of the early periods provide useful settlement pattern data. The latter part of the sequence (late Chogha Mish Phase-Terminal Susa A) has received more scholarly attention than has the earlier part; it has been hypothesized that a state-level society developed in the Uruk period from the ranked societies of the Late 'Ubaid or late Chogha Mish-Susa Phases in the Susiana chronology (Hole 1981; Johnson 1973:89; Wright 1977:387; Wright and Johnson 1975:273; Wright et al. 1975:130); the earlier periods are somewhat more problematic.

1. The Jaffarabad Phase. Dollfus' Jaffarabad Phase (from the end of her Period 6 through Period 8; see 1983a:Table 41; my Table 8) covers Jaffarabad I (levels 6-4) and Jowi 17-13. This Phase corresponds in Le Breton's (1957) terminology to Susiana a and b, and is on the same cultural horizon as the end of Chogha Mish Archaic 3 - Middle Susiana 1. Dollfus (ibid.) estimates that Period 7 lasted 200 years and Period 8 lasted between 150 and 200 years. In a series of settlement pattern maps, Dollfus (1985; see Figs. 4-11) proposes 19 sites in Period 7, with known site sizes ranging from 0.2 to 8 hectares. Period

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8 had 20 sites with the same size range as Period 7 (Fig. 5).

Limited excavation and survey data make interpretation difficult. However, the excavations at Jaffarabad have revealed several successive building levels, with rectangular rooms (some with pebble or brick pavements). The corps of pottery is similar in terms of form, decoration, and technique, while other artifacts, such as stone tools and jewelry, also do not change much throughout the phase.

Jaffarabad is a small site (in terms of area) in a settlement system of small sites. Using a somewhat less refined set of settlement pattern data (subsequently superceded by Dollfus' analysis), Pollock (1983) inferred some aspects of political, social, and economic organization on the plain.

The notion that settlement size hierarchy reflects a functional hierarchy -- that is, increasing complexity of functions within a society will be reflected in an increasingly complex settlement size hierarchy -- is derived from Central Place Theory and is fundamental to Pollock's work (see Johnson 1978 for a review of

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applications of Central Place Theory and other techniques of regional analysis in archaeology). I should point out, however, that since the application of such techniques as rank size analysis to archaeological data sets assumes that all settlements in a region for the period under study have been recovered and that site sizes have been accurately determined, interpretations of archaeological data based on such analyses should be viewed with some caution.

Pollock interpretation of the settlement pattern data suggested that there was a two-level settlement hierarchy, consisting of villages and centers, during Period 7. This settlement pattern resembles that formed in chiefdoms (cf. Taylor 1975:73-74).

Pollock uses rank-size analysis to measure sociopolitical complexity. The rank-size rule relates settlement populations to one another so that when they are arranged in size order, a settlement with rank r will be 1/r of the largest settlement population size in the system. Archaeological applications of the rank-size rule assume that settlement size and population size are directly related. Regular rank-size relationships

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are linear when plotted on log paper (Johnson 1977:496). Deviations from linearity suggest different types of system integration. Concave or primate distributions are those with minimized economic competition within the system, and a center integrated into a larger system. Convex distributions suggest either little economic integration or the compounding of several smaller autonomous systems into one (Johnson 1977:496-497).

Johnson (1983:70-73) has introduced a method of calculating the degree of deviation from a log-normal distribution. The Rank Size Index (RSI) is calculated as D_{obs}/D_{max} where D_{obs} equals the observed deviation and D_{max} equals the maximum deviation. A value of 0.000 is a log-normal distribution, 1.000 is the maximum convex distribution, and -1.000 is the maximum concave distribution.

The RSI for the Period 7 settlements in Pollock's study is 0.568 (see Table 10) -- that is, convex -- suggesting little integration of settlements throughout the plain. Pollock hypothesizes that a "low-level chiefdom with a low degree of integration of its constituent units existed in the central portion of the plain"

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(1983:374). Inspection of the settlement pattern presented by Dollfus (Fig. 4) does not reveal small groupings of sites clustered around centers, which is the other interpretation of convexity.

Pollock's 1983 study also used ceramics to measure complexity on the Susiana. It has been argued that style serves as a means of marking and maintaining group boundaries (Wobst 1977). As sociopolitical complexity increases, so will stylistic markers of complexity. Artifacts which are highly visible, such as projectile points, clothing, or serving vessels, will carry information on status and/or group affiliation (Pollock 1983; Wobst 1977).

Pottery vessels of certain types are used in a variety of highly visible situations, including feasting and ceremonies. Pollock proposed that

> if, in a society which exhibits patterns of hospitality such as those found in chiefdoms, complexity of sociopolitical organization increases or decreases through time and if the messages transmitted stylistically by a class of items in that society remain similar in general content, there will be a measurable increase or decrease -- corresponding to the change in sociopolitical complexity -- in the complexity of the stylistic messages carried by these items [Pollock 1983:365].

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Serving vessels, which are used in chiefdoms to show chiefly hospitality, are "...artifacts that exhibit distinct levels of energy/labor expenditure [representing] distinct levels of social ranking" (Pollock 1983:358). Black-on-buff painted serving vessels occur throughout the Susiana sequence in fairly high and constant proportions.

Pollock's measurement and analysis of design motifs on these Period 7 black-on-buff vessels showed results consistent with those derived from the settlement pattern analysis, which indicates low levels of sociopolitical complexity. Given the limited amount of data available, these results clearly require more support. However, provisional acceptance of this analysis can be used as a basis for developing certain propositions regarding ceramic production (see section e below).

2. The Chogha Mish Phase. Dollfus' Chogha Mish Phase (Periods 9 to 12; see 1983a:Table 41) covers Jaffarabad II (levels 3 m-n), Jowi levels 12-4, and Bendebal levels 27-11. This Phase is equivalent to Le Breton's (1957) Susiana c and d phases, and Middle Susiana 2 and 3 from Chogha Mish. Period durations within the Phase are estimated by Dollfus as 60-80 years for Period 9,

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300-350 years for Period 10, 250-300 years for Period 11, and 80-100 years for Period 12.

Dollfus' (1985) settlement pattern maps show a general increase in the number of settlements from the beginning to the end of the Phase (Figs. 6-9). Period 9 consists of 21 sites, with known site sizes ranging from 0.8 to 8 hectares. There are 40 sites in Period 10, with known site sizes ranging from 0.2 to 10 hectares. Period 11 consists of 39 sites, with a range of 0.2 to 8 hectares, while there are 58 sites in Period 12, ranging from 0.2 to 10 hectares.

The distribution of sites on the plain also varies through time. In Periods 9 and 10 there are site clusters in the central and west-north portions of the plain, as well as a small cluster in the west-south in Period 10. In Period 11 there is a marked shift to the east, with a small center group. In Period 12, major clusters occur in all areas of the plain: west-north, west-south, center, and east. Preliminary examination of Dollfus' data suggest a two-level settlement hierarchy in Periods 9-11, with a possible three-level hierarchy in Period 12. The available excavation data are fairly limited.

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A Period 10 potter's workshop with two kilns was recovered at Jaffarabad (levels 3 m-n; Dollfus and Hesse 1977:147). Chogha Mish became a major center on the plain (Dollfus 1982:295; 1983a:166), although the actual extent of the Middle Susiana 3 occupation is difficult to determine (Delougaz and Kantor 1972; Dollfus 1982:295). There is evidence for domestic architecture and elaborate kilns (Delougaz and Kantor 1975:95; Kantor 1976:627-628). In the eastern part of the site there was a large building with very thick walls; its function may have been administrative, although the large amount of debitage suggests a flint manufactory (Kantor 1975, 1979; Dollfus 1982:295).

Again, the only major interpretation available for this phase comes from Pollock's (1983) work. The survey data available to her prevented separation of Susiana b and c (that is, Period 8 from Periods 9-11). Her data indicate a three-level settlement hierarchy. The rank-size indices derived from her data (Table 10) are convex for both the plain as a whole and the western subareas, suggesting that the western plain may consist of "...three smaller, relatively autonomous clusters of sites...[with] a low level of

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integration. In the eastern plain, however, the somewhat concave distribution indicates that we are dealing with a much more centralized system, centered around Chogha Mish" (Pollock 1983:371-372).

Pollock's examination of the painted bowl motifs also indicates more complexity in design, suggesting that the bowls were signaling more information. These data again support the notion of some degree of sociopolitical complexity.

There is a marked increase in the number of sites on the plain during Period 12. While Dollfus reports 58 sites (Fig. 9), Adams' (1962) survey counted 102 and Pollock (1983) notes 124. The discrepancies may be related to differences in evaluating the chronological sequence. Dollfus has recently re-examined the ceramic corpus from the Susiana; her estimates are used here.

There is little published excavated material from this period. Weiss (1972) reports a single large building on the highest part of KS 168, Qabr Sheykheyn, which Hole (1981) suggests may be a "Khan's house"; that is, the residence of a local headman. Of the other excavated Susiana d site, Dollfus (1978:155) notes that

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> Bendebal had a longer occupation during the phase than the other two sites. In effect no major change appears between level 22 and level 11. The techniques employed in construction, the method of inhumation, stay the same; the material culture (pottery, lithic and bone industries, stone and bitumen objects) do not seem to undergo any important transformation.

Pollock's (1983) survey data reports an RSI of 0.468 for the whole plain (Table 10), which is a convex distribution which suggests either little integration of settlements, or the inclusion of several autonomous units. When RSIs are done for each cluster, the convex pattern holds in the west. However, in the central portion of the plain, Pollock combines some clusters, as they have concave RSI's when calculated separately, and concave distributions make little sense in terms of what we know about Susiana d societies.

Her analysis of design redundancy on the painted bowls suggests less hierarchical complexity, but her analysis of attribute distinctions on these painted bowls suggests more distinctions were made among groups on the plain. This is consistent with her settlement pattern analysis.

In general, the highly restricted data set

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suggests shifting configurations of simple chiefdoms on the plain. These data permit the advancement of several propositions regarding the organization of pottery production (see section e below).

3. Susa A (The Suse Phase). This Phase, lasting approximately 300 years, is Period 13 in Dollfus' scheme (1983a:Table 41). It corresponds to Susa A or Susa I (levels 27-25), Susiana e in Le Breton's (1957) terminology, and is equivalent to Jaffarabad III (levels 3d-1), Bendebal III (level 10), and Late Susiana at Chogha Mish.

Dollfus (1985; see Fig. 11) indicates 64 Susa A sites. During this period the major site of Susa was founded at the western edge of the plain, along the Shaur River. The site covered at least 10 hectares. Wright and Johnson (1975:273) base this figure on the Susa A material on the Acropole; Weiss (1977:356) includes Susa A material from the Apadana and adds its 17 hectares to the estimate.

Susa had a necropolis of over 2000 burials, as well as a large step platform (Canal 1978a, 1978b; Dyson 1966; Hole 1982; Le Brun 1971; Mecquenem 1928:100, 1943:5; Morgan 1912; Perrot 1972; Steve and Gasche 1971). The Necropole burials were of

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men, women, and possibly infants (Hole 1982), many with pottery vessels (Morgan 1912; Mecquenem 1943). The Necropole was poorly excavated, with little information preserved on the graves, skeletal material, or grave goods. The typical ceramics content of the graves included a beaker, open bowl, and squat jar (Hole 1984:327); Hole (ibid.) calls some of these ceramics "...among the finest artistic products of their era."

The step platform is quite large, measuring 70 meters on each side (Wright 1984:55) and rising 15 meters above the level of the plain. The platform is surrounded by both large and smaller buildings (Canal 1978a, 1978b; Dyson 1966:173; Le Brun 1971:169-170, Pl. 31); ceramic wall cones are associated with the structures (Canal 1978a:173; Dyson 1966:269,277). Hole (1982) suggests that the platform was the foundation of a temple.

Wright (1984:55) notes that on the summit of the platform, eight meters above the surrounding settlement, was a possible residential building with massive walls, rows of chambers of a type later used for grain storage, and a smaller platform with recessed corners decorated with representations of caprid horns, a later indication

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of a shrine (Steve and Gasche 1971). The central architectural complex of the major original center was apparently planned as a series of nested cruciform constructions.

There is evidence of administrative activity from the Susa A Susiana. At Susa, stamp seals, and sealings (Amiet 1972), which were used in commodity transactions (Wright and Johnson 1975:273) were found. Additional seals are from the small site of Jaffarabad (Dollfus 1973:fig.23:3,5) and from surface collections on small sites; Wright and Johnson (ibid.) suggest that at Susa there is evidence for sealing and receiving commodities, while small sites had evidence for sealing but not receiving goods. The implication is that Susa is a redistributive center, receiving goods from the local populace.

Wright (1984) proposes that the Susa A Susiana is organized as a "complex chiefdom," and supports this by evidence from the settlement system, the existence of socially segregated housing, and the mortuary data. With Pollock (1983), Wright argues that the complexity in painted vessel designs are related to sociopolitical complexity; specifically

> the widespread use of a hitherto rare

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> symbolism in ritual performances at the center of Susa, in political action in the control of goods storage and movement, and in social display on special craft goods. This is conformable with the proposition that there would be a distinctive material marking of the noble class [Wright 1984: 58].

Wright further contends that the settlement pattern data may be suggestive of a tributary relationship between Susa and its hinterland. Some evidence does exist for conflict and political reorganization, which is part of Wright's model of complex chiefdoms, in which problems in extracting goods from local villages would lead to political instability. While there is currently no evidence for changes in production and redistribution, Wright sees some evidence of conflict. The great platform at Susa was burned, and a body was found in the debris (Canal 1978a, 1987b; Wright 1984); the platform was later restored.

Pollock's (1983) data support the notion of a complex chiefdom. Her settlement pattern data -- which differ from and are superceded by Dollfus' (1985) -- suggest a highly centralized settlement system in the west with Susa at the center (RSI=0.239), and a low level of system integration in the eastern portion of the plain (RSI=0.516)

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(Table 10). Her analysis of the painted vessels suggest that goblets were prestige items whereas the bowls were common goods. The results of her design element analysis support the settlement pattern data which show a highly centralized society (1983:382-385).

Hole (1977, 1981, 1982) views the organization of Susa A society quite differently. He notes that while the plain (or at least its western portion) appears to be a primate system with Susa the major center, the relationship of Susa to the other settlements on the plain is unclear. Hole (1981) suggests that among the small villages on the plain there were four types of specialized sites: a) "manufactories," exemplified by the ceramic production site of Jaffarabad; b) "Khan's houses," which are the residences of local headmen and are exemplified by Qabr Sheykheyn; c) trading posts for raw materials; and d) herding camps. He further argues that the manufactories, khan's houses, and trading posts constitute one level of settlement in Susa A Susiana. The second tier are the agricultural villages and herding camps, while Susa is the third level. The plain, in this view, was not economically or politically organized by a

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central authority, but was instead organized by "organic interdependence...based on periodic exchange...." (Hole 1981:12).

Susa, standing alone at the very edge of the plain, was not in a position to exert economic or political control over the villages, according to Hole. There is no evidence for redistributive activities at Susa (other than the seals, sealings, and bullae; the ceramics will be considered below), no additional centers existed on the plain, and no concentrations of individual wealth were found at the site (Hole 1982).

Hole (1981) suggests that Susa was in fact a single-function center, i.e., a sacred place. This sanctity may be related to the anomalous location of Susa, which is on the western edge of the plain. He speculates that a freshwater spring may have begun to flow at that location at the end of Susiana d (Period 12). This freshwater spring may have become a meeting and trading post for local farmers and herders who had depended on the muddy, saline, and seasonal flows of the region's rivers. Furthermore, Hole notes that the spring is near fords of the Dez and Karkheh, and is on the border of Mesopotamia.

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In accord with this view of Susa, Hole (1981) views the step platform as the base of a temple, and the Necropole as the burial grounds of a (quite large) group of high status individuals (possibly priests; Hole 1982). This burial ground included members of the group from the whole plain, not just from Susa (Hole 1982). The ceramics from the Necropole, some of which have unique designs and ritual images (Hole 1982, 1984) are found on other sites on the Susiana; these may be the places occupied by the higher status group.

In contrast to Wright, Hole thinks that for Susa A

> the evidence best conforms with a model of an aggregate society composed of numerous small semiautonomous units...that for the most part are demographically coincident with the multiplicity of villages. Both fusion and fission occur along the lines of these kin-based modules, allowing for rapid assembly and disassembly as conditions warrant. This kind of organization was based on clans or estates whose underlying logic was the cooperative work unit essential for carrying out the agricultural tasks specific to this region.... The binding force in aggregation would have been identification with the place....According to this scenario, Susa became a center by design. It was deliberately founded, probably as the sacred site for a temple....[T]he citizens of Susa perpetuated and only enlarged the form they already knew: the

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> village or tribal council....Kin-based councils, crosscutting lineages when necessary, deriving their authority from tradition and the wisdom of the aged, sought democratic consensus [Hole 1982:327-328].

Both the Wright-Pollock position that the Susa A Susiana was organized as a complex chiefdom and the Hole position that the Susa A Susiana consisted of "an acephalous, unstratified society" (1982:327) can be supported with the limited data available. And as shall be seen in section below, the neutron activation analysis data, while very provocative, do not resolve this issue.

4. Terminal Susa A. There are fewer sites reported for Terminal Susa A than for Susa A. There were 18 sites with 33.1 hectares of settlement (Johnson 1973). Susa and Abu Fanduweh (KS 59) covered about five hectares each, while villages averaged 1.22 hectares (Johnson 1973:87; Wright and Johnson 1975:273). Inspection of the settlement pattern map suggests four small clusters of sites, perhaps following ancient watercourses (Johnson 1973:89).

Explaining the drop in population in Terminal Susa A is difficult. Johnson (1973:89) notes that the ceramic assemblage is not well-defined so that

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Terminal Susa A sites may have been undercounted. Another tack is taken by Wright et al. (1975). Although there is little direct evidence, they suggest that inter-regional conflict, leading to emigration from the plain, may be the source of the population drop. In support of this argument, they note that two sites on the Deh Luran plain with highland-type ceramics were founded during this period. In addition, one of these sites was protected by rough stone walls and a steep slope (Wright et al. 1975:134; Wright and Johnson 1975:275). Similarly, they note that signs of conflict are seen at Tepe Gawra XII to XIA (Wright et al. 1975:140; but see Weiss 1977).

On the other hand, the source of the decline in Terminal Susa A may have been competition between Susa A ranked societies (Johnson 1973:89). This view focuses on internal conflict, similar to that proposed for the decline of Late Uruk societies (Johnson ibid. and 154-156). Similarly, a case could be made that the fragmented Terminal Susa A society was the result of the breakup of the semiautonomous units described by Hole (1982). Clearly, the issue cannot be resolved without better definition of the period and more

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excavation.

The rank-size index (see Table 10) for the plain as a whole shows a slightly concave distribution, suggesting low economic competition within the region, or the integration of the settlements into a greater system. There is no archaeological evidence supporting this latter conclusion. Rank-size indices of the four small clusters on the plain show low levels of economic integration (Table 10). Again, the problem may be that all Terminal Susa A sites were not recognized and counted.

5. Summary. The archaeological data for the Jaffarabad Phase through Terminal Susa A on the Susiana support the interpretation that chiefdoms developed on the plain. As has been noted, much of this interpretation is based on survey material; the available excavated data are consistent with it.

The chiefdoms grew from the small, loosely integrated enclaves in the Jaffarabad Phase to the low-level chiefdoms of the Chogha Mish Phase. The apogee of settlement occurred in Period 12 of the Chogha Mish Phase, with perhaps several chiefdoms on the plain which were loosely integrated. In

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Susa A, there may have been an increase in ranking, and the development of a highly centralized settlement system, with Susa as its focus, in the western part of the plain. Susa A has been interpreted as a complex chiefdom (Wright 1984); certainly it exhibits a number of administrative artifacts, including seals and sealings, as well as evidence of the organization of labor for large-scale projects such as the step-platform at Susa. In another view (Hole 1981, 1982), Susa A can be regarded as a loosely integrated ranked society without chiefly leadership, but with a religious elite. Finally, there is a major population drop in Terminal Susa A; this may be an artifact of our lack of understanding of Terminal Susa A ceramics, or there may have been unsettled conditions on the plain.

Ceramic analyses have been used in various arguments about the nature of societies from the Jaffarabad Phase through Terminal Susa A. In this study I use neutron activation analysis of pottery to do the same. Before discussing aspects of ceramic production in this time span, it is useful to describe the wares from each period. Included in this discussion is a review of the contexts for

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these ceramics which would permit inferences to be drawn about their use.

B. General Description of Ceramics. As noted above, the ceramics of the Jaffarabad Phase-Susa A represent a marked change from the soft wares of the preceding Archaic period (the Terminal Susa A wares are somewhat different and will be separately discussed). Again, these ceramics represent a local tradition, especially in the later part of the sequence. There are major similarities to nearby Deh Luran, however (Hole 1978:231). As extensive pottery descriptions have been published (see Dollfus 1971, 1975, 1978, 1983a, 1983b), I shall simply summarize the available data.

In general, the Jaffarabad Phase-Susa A sequence is marked by the appearance of well-fired buff-colored vessels with fine pastes, often decorated with dark paint. Common wares are also well-fired with fine pastes; they may range in color from buff to red and are sometimes slipped (Dollfus 1978). These vessels have a variety of forms, some of which appear all through the sequence, and some of which are specific to a particular period (Hole et al. 1969:114). There are few primary contexts for the ceramics, so

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determining vessel function is difficult. A phase-by-phase description of the ceramics, with remarks on vessel function, follows.

1. The Jaffarabad Phase. Black-on-buff vessels made up 25% of the total ceramics recovered from Jaffarabad I (Dollfus 1978:158). These vessels range in color from grey-buff to very pale red, with most interior and exterior surfaces slipped (Dollfus ibid.). Hole et al. (1969:135) note that both the slip and the paste appear to be made from the same clay. The paste is fine and often heavily tempered with fine minerals. The pottery is hard and well-fired (Dollfus 1978:158). The paint, at least in the Deh Luran Susiana period material, has been found to be composed of iron oxide, which can fire to different colors (Hole et al. 1969:113). The designs are painted linear motifs or reserve patterns (Dollfus 1978:158). These vessels come in a variety of forms:

> ...small cups, cups, and bowls with interior and exterior decoration, large high-footed deep cups, sometimes fenestrated and decorated both inside and and outside, small bowls, circular or oval bowls and basins with or without rim spouts, large deep bowls, and jars with external decoration [ibid.].

Even more frequent in the Jaffarabad Phase is

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Susiana buff ware. These vessels made up 62% of the ceramic production at Jaffarabad I (Dollfus ibid.). They are generally undecorated, although the exterior may have been smoothed and the interior lined with bitumen. Forms include bowls, basins, and carinated pots. These ceramics are heavily tempered with minerals and plant material. They are well-fired, but are still somewhat friable. Other groups of buff and grey wares make up the remainder of the Jaffarabad Phase sample.

2. The Chogha Mish Phase. The black-on-buff vessels make up over 20% of the Jaffarabad Period II ceramic collection. These vessels are less gritty than those of the previous period: compact, homogeneous clays with fine mineral temper; well-fired, hard, with smoothed surfaces (with the exception of the large jars). The forms include cups, bowls, goblets, and jars (Dollfus 1978:161).

Wright (1981:24) has added to the description of the Susiana Buff and Susiana Black-on-buff wares given in Hole et al. (1969). Wright notes that the inclusions in the paste are generally quartz sand, which he characterizes as a deliberate temper (as opposed to being a part of the naturally-occurring clay matrix). There is a positive correlation

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between vessel size and sand grain size.

A variety of buff wares with no decoration or just with a slip is common in this period; the pastes are generally fine, as is the mineral temper. The pottery is generally hard and well-fired. Some of the "buffware" vessels range in color from yellow-red to red (Dollfus ibid.).

For both the Jaffarabad and Chogha Mish Phase ceramics it would be extremely useful to have evidence from primary contexts. For example, are there differences in function between black-on-buff and plain ware vessels, and if so, what are they? Are certain forms and designs associated with higher status individuals? Some of the answers may be forthcoming when Dollfus completes her analysis of the ceramics.

Wright's (1981) work has given some contextual framework for ceramics. At Tepe Farukhabad on the Deh Luran plain, Wright exposed two areas, one with elaborate buildings (Excavation A), and one with "modest, insubstantial compounds [Excavation B]" (Wright 1981:61). Differences in distribution of ceramics as mean artifacts per cubic meter were measured for Excavations A and B. The only significant difference was that in plain bowl rims,

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which were three times more likely to be found in Excavation A. Interestingly, there were no statistically significant differences in distribution of decorated types, or in plainware distributions (Wright 1981:62). These data come from extremely limited exposures (the average excavated floor area is 25.1 m^2 in Excavation A and 23.6 m^2 in Excavation B [Wright 1981:74]).

3. Susa A. The ceramics of Susa A continue in the tradition of the earlier Susiana material. Ceramic production consists largely of buff or black-on-buff vessels (at Jaffarabad the former made up 60% of the collection, the latter 23% [Dollfus 1978:165]). Both types of vessels were manufactured similarly:

> the exterior of closed forms, the interior and exterior of open forms are sometimes slipped. The surfaces, save for rare exceptions, are soft to the touch, having been smoothed; that is done by a moist hand or with the aid of a a grass bundle. None are lustrous. The paste is compact and clearly porous. The clay is well-cleaned and fine, the temper when it is there is made up of fine mineral particles; their proportion is low. Very rarely and uniquely for vessels of large dimensions, basins, and jars, the paste contains chaff temper. According to the degree of homogeneity of the paste, it is possible to distinguish an ordinary pottery, a fine pottery, and a very fine ('eggshell') pottery. Certain ceramics are hand-built. More

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> often they are wheel-thrown. These carry traces of scraping caused at the end of manufacturing; these appear in the form of diagonal or vertical striations, particularly on the large basins. Bowls have on the lower part of their wall marks left by the cut made by removing the excess of paste. The forms are varied: small cups, bowls, basins, goblets, and jars [Dollfus 1978:165].

Other types include burnished red wares, burnished grey wares, red ware with dark decor, and coarse wares (Le Brun 1978:180; Dollfus ibid.).

The Susa Necropole dates from this period, and a large number of ceramic vessels were excavated in association with the burials (Morgan 1912; Mecquenem 1912, 1943). The typical complement of vessels in each grave included an open bowl, squat jar, and tall beaker (Hole 1984:327). Many vessels are of high workmanship and artistry, although some are very crude (ibid.). Vessels similar to those from the Necropole are found on other sites on the Susiana (Hole 1981, 1984). Presumably, these artifacts were used by the elite (see Hole 1981, 1984).

Were these manufactured locally or on a few locations throughout the plain? Are the clays used for these vessels from a single source? Further, to what use were these vessels put? The

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first two questions will be tested by neutron activation analysis. The last question is one that reoccurs for each time period and is difficult to answer. It would be interesting to compare the distribution of vessels in small residential buildings with the distribution of materials from other types of buildings, including an elite residence and public buildings. With more comparative material, associations of vessels and contexts could be clarified.

4. Terminal Susa A. As has been noted above, the Terminal Susa A period is not well-defined. Johnson uses as the index fossil

> heavy bowls with applied thumb-impressed strip decoration....The type, broadly defined, has a wide chronological range, from terminal Susa A through at least Elamite on the Susiana plain. Sherd temper and paste may, however, be used to differentiate the bowls of each period. Terminal Susa A bowls have a fine mineral temper....[They] are further distinguished from their Early Uruk counterparts by attributes of their rim and impression shapes....The remaining context of the Terminal Susa A assemblage is poorly defined. It includes grooved flat rim bowls, unpainted high neck jars, ring bases, and an apparently small amount of painted material [Johnson 1973:61].

A Terminal Susa A survey collection at KS 269 on the Susiana consists of two wares, buff and red;

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the bowls and jars appear to be wheel-made, either tempered with some fine sand or untempered, and well-fired (Wright et al. 1975:138). Some of these forms are similar to those reported from Susa (Steve and Gasche 1971:Pl. 34-10; Le Brun 1978:180, Level 24). There are differences in temper between the lowlands and the highlands during this period, but decoration such as the thumb-impressed strips and red slips are common to both regions (Wright et al. 1975).

There is no contextual information for Terminal Susa A artifacts, making further interpretation of the ceramic data difficult.

5. Summary. In sum, the ceramics of the Susiana period may be divided into painted or unpainted wares. The black-on-buff vessels may be stylistically differentiated through time, but geometric and, more rarely, naturalistic motifs occur in all periods. Much of the pottery, both painted and unpainted, is well-cleaned, lightly tempered or untempered, and smoothed. Painted vessels, in all size and shape classes, seem to be found throughout the plain, with the exception of the Susa A Necropole material, which appears to have a more restricted distribution. Because these

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observations are largely based on survey data, they must be interpreted cautiously.

The functions of the vessels are not obvious. Certainly storage, cooking, and serving vessels seem to be the major functional distinctions made. The use to which the various painted vessels were put is still problematic. Recall Wright's (1981:61-62) discussion of distributions of mean densities of artifacts in two different contexts: a large building versus small, modest ones. There were no significant differences in densities of painted or undecorated ceramics (nor in stone tools), with the exception of plain bowl rims, which were more frequent in the elaborate building.

The implications of this information are not clear, but further research may be fruitful. One set of questions is derived from the notion that vessels used for different purposes may have different production and distribution networks. For example, cooking wares may be manufactured and used within one village, while elaborate serving or display vessels may be made in one place and distributed to only a limited number of nearby centers or villages in the region. Below, differences between the production and distribution

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of presumed serving vessels -- the black-on-buff ware -- and presumed cooking vessels -- the red wares -- will be explored. The hypotheses to be tested are derived from both the archaeological data and the ethnographic literature on ranked societies.

The goal is to establish CPCRUs (Chemical Paste Compositional Reference Units; see above, pp. 94-96) on the basis of the neutron activation analysis, then to work with the archaeological data to further partition the data set in PCRUs (Paste Compositional Reference Units; see above, pp. 94-96). The PCRUs are used to test the hypotheses that:

1. In chiefly societies with a low level of system integration, production of domestic wares is local. Ceramic compositional groups should show a high degree of variability from site to site. Production of more elaborate vessels would be more centralized, with source groups apparent at the subregional level. These groups should reflect settlement clusters on the plain. This pattern may be characteristic of the Jaffarabad Phase.

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2. In chiefly societies with a greater degree of centralization (as reflected in the settlement pattern data), utilitarian vessels may be produced on the local or subregional level; variability may be great from site to site or between subregions respectively. Production of elaborated vessels may resemble the pattern in (1) above. However, large centers may produce more widely distributed elite wares, with a pattern of a shallow fall-off curve extending to the peripheries of the system. This may be characteristic of the Chogha Mish Phase, with the dominating center of Chogha Mish in the center of the plain, and the Susa A Phase, with the establishment of Susa on the western edge of the Susiana.

3. Within a chiefly society with a very low level of system integration, such as is found in Terminal Susa A, utilitarian pottery may be produced on a local level. The centers may produce domestic ceramics that are distributed to other sites in the cluster, while clusters without a center may produce pottery

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exclusively at the local level. It is expected that in the subregions with centers, ceramic compositional variability would be seen at both the local and subregional level, while in clusters without centers the ceramic compositions would reflect local variability. This type of pattern is proposed for Terminal Susa A.

These hypotheses were tested by neutron activation analysis. The sample and the results of the study are now discussed.

II. The Neutron Activation Analysis Sample

As noted above, the sample selected for use in this study was chosen on the basis of chronological and locational appropriateness, as well as availability. Of the total original sample size of 1021 sherds and clay, 965 (94.5%) specimens were used in the final analysis. The remainder were discarded because of problems in processing the material, such as breakage in the reactor, or poor analytical results (due to exposure to other radiation sources or possible contamination).

Of the 965 samples used, approximately half

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are from the Jaffarabad Phase-Terminal Susa A (n=492); this figure includes an additional set of six clay samples, 6 samples of the same clay fired, and 7 sherds from Susa A Susa and Jaffarabad; as well as two Luristan black-on-red jars found at Susa and one black-on-buff sherd from Tepe Giyan analyzed for comparative purposes (Tables 3-6).

Over 100 sites (n=104; with a mean of 9.82 sherds per site for the total original sample of 1021) from all parts of the plain were sampled (Table 6; Figs. 4-9). It was not possible, however, to hold the number of samples for a particular period and type constant, as there were differences in the number of sherds available for sampling. These differences were based on the number of sherds collected from a site, dated, and stored outside Iran, as well as with those permitted to be used in the analysis.

The sample is quite biased toward very small sherds. The painted sherds sampled are not representative of the more elaborately decorated ceramics. This very likely because NAA is somewhat destructive; several holes must be drilled into the ceramic paste which may damage the vessel or spoil its appearance. Hence the most elaborated artifacts

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are less frequently donated for NAA studies.

Utilizing a sample of small sherds constrains the range of problems that can be addressed in ceramic studies. First, it is generally impossible to make inferences regarding function, form, or method of manufacture of the ceramics, or to address chronological problems. For example, although some rim, base, spout, and handle forms were diagnostic of certain vessels shapes in my collection, many of the samples were body sherds or lacked diagnostic features.

Similarly, other vessel attributes could not be measured. Even when rims were available, for example, there was not enough on which to measure diameter. The sherds were also too small to infer method of manufacture. Smoothed small areas of the interior surface do not reveal much about manufacturing techniques.

In addition, the samples could not be easily stylistically classified. The black-and-buff sherds, for example, had been classified (by Frank Hole) on the basis of their visible decoration, so that they are grouped as "band and line," "band and dots," etc. (Table 4; Figs. 13-15). However, these categories do not reflect the total range of

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the motifs found on any particular vessel. Nor is it possible to know if what other design elements were included on the vessel. This would be useful in interpreting some of the groups formed by NAA. The sherds I sampled for this study were lumped and split in as many ways possible in terms of such general attributes as surface decoration and chronological and locational distinctions. The samples are now described.

A. Black-on-Buff Ceramics. (Figs. 13-15) Of the 504 Jaffarabad Phase-Terminal Susa A samples, 267 (53%) are black-on-buff or buff (n=2). Of these, 7 are from Period 7, 13 from Periods 9-11, 74 from Period 12, 1 from Periods 8-11, and 5 from the Chogha Mish Phase. There are 103 Susa A black-on-buff samples. An additional 32 samples were assigned to a Susa A or Earlier group as they could not be more clearly categorized. In addition, 32 unknown period sherds and one from Tepe Giyan were included. Several of these unknowns are wasters and not easily identifiable; in addition, in some cases two or three sherds are melted together but sampled separately, while in other cases sherds were found to be joins after having been separately analyzed.

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The sample is divided by several "motifs" or fragmentary design elements on rim sherds. Hole has suggested that the following design features appear on cylindrical bowls: band and line; dots, indefinite type; band and band; band and two lines; band and dots; band and line or band and band; square and dots; greccas and scallops; and goats (Figs. 13-15). In addition, there are several different shapes and designs come from the site of Jaffarabad and some elaborately painted forms from Susa. The Jaffarabad and Chogha Mish Phase sherds are thin-walled and well-formed. The samples are generally well-fired and hard. The Susa A samples are thicker-walled and have more temper than the samples from the earlier periods.

B. Red Wares. The total of 189 red ware samples (38% of the 504 from the early periods) is comprised of 3 from Period 8, one from Period 8-11, 45 from Periods 9-11, 12 from Period 12, 37 from the Chogha Mish Phase, 62 from Susa A, with 17 from Susa A or Earlier, and 12 unknowns.

The term "red ware" includes those sherds that are classified (by Hole) as "salmon ware," as the color ranges overlap. There are several types of surface treatment that crosscut all periods. Red

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ware subcategories include: unslipped, gritty and coarse, porous chaff tempered, dark slipped, and burnished. Salmon wares included red slipped, dark slipped, outside buff slipped, and buff slipped.

Miscellaneous red ware samples, represented by one of each, include a Chogha Mish Phase red wash sherd, a burnished red wash sherd, and a hole mouth lip sherd. Most of the red wares are made of fine red clay and are untempered or lightly tempered with minerals or quartz sand; some of the red wares are gritty or chaff tempered. The vessels are generally well-fired and hard, with the exception of the porous vessels. Walls are generally of thin to medium thickness.

C. Terminal Susa A Wares. (Fig. 19) Of the 29 samples from this period, 25 are of impressed strip bowls. These bowls are characteristic of Terminal Susa A Phase assemblages (Wright et al. 1975:138). These bowls have the general characteristics of Terminal Susa A vessels:

> the clay body of these ceramics with...very few exceptions...is untempered or tempered only with a fine sand....The firing is well-controlled and the vessels are completely oxidized. There are two distinct types of ware, as in Susa A itself: a buff ware often greenish in color and a red ware often with a light buff slip....Simple Flat Lip

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> Bowls with Impressed Strips...[are] often slipped and ... [they have] an applied strip or cordon with roughly circular impressions below the rim [Wright et al. 1975:138].

The flared neck jars are similar in paste and surface treatment description to the impressed strip bowls. Both types of vessels are thicker-walled than the Susiana period ceramics.

III. The Neutron Activation Analysis Results

A. General remarks. The analysis of the neutron activation data initially followed standard BNL procedures (see above chapter 3; Sayre n.d.). The samples, divided by period and type (red wares versus black-on-buff) were statistically described by the BNL program ADSTAT. After aberrant samples were eliminated, attempts to form chemically and archaeologically meaningful groups were made by using such multivariate techniques as cluster analysis (using the programs NADIST, written by A.M. Bieber, Jr. at Brookhaven, and AGCLUS, written by D.C. Olivier at the Department of Psychology and Social Relations, Harvard University) and multivariate correlation (BNL program ADCORR). Numerous attempts at forming groups that made both chemical and archaeological sense were fruitless.

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The Susiana clays utilized in fifth millennium ceramic production were so similar to each other that meaningful groupings were not possible.

However, this similarity raised the possibility of a single clay source for the fifth millennium pottery. The proposition was investigated using BNL's ADSTAT program for initial data screening, and the Data Screening Package developed by Gregory A. Johnson for use on Radio Shack Model IV microcomputers for the Department of Anthropology at Hunter College, C.U.N.Y.

First, the ADSTAT results were used to eliminate some samples from further data analysis. ADSTAT flags concentrations that are outside the 95% confidence limits for the group. If, by BNL's rule of thumb, three or more concentrations per sample are flagged, the sample is suspicious and may be eliminated from further data analysis. Generally there are two reasons to eliminate a flagged sample. The sample may not fit the group for archaeological reasons; for example, it might be a trade item. The sample may be excluded for technical reasons: contamination, poor counting statistics, etc. If possible, reanalysis of the sample may be carried out. However, in the

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analysis of the BNL results by ADSTAT, the samples excluded from further analysis for technical reasons were generally not reanalyzed due to constraints on time and budget.

The ADSTAT program was not used in further data analysis because it works with log concentrations rather than with the raw concentrations (Sayre n.d.:2-3). BNL uses log concentrations because in multivariate calculations using Euclidian distances, the elements present in large concentrations (such as Na, K, Fe,and Ca) would dominate, while the trace elements (such as Rb, Cs, La, and Eu) would almost be insignificant. Logs were therefore used so that all elements would be equally weighted. But here, the best results were obtained by simple univariate techniques -- multivariate methods did not work -- and thus there was no need to log-standardize the data set.

B. The Jaffarabad-Chogha Mish Phases. A total of 198 Jaffarabad Phase-Chogha Mish Phase sherds were analyzed. Of the 198, 98 are black-on-buff, 2 are buff, and 98 are red wares. The samples, which come from 55 sites (Tables 4-6), are unevenly distributed throughout the periods, with the bulk coming from the Chogha Mish Phase

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(Table 5). The original research design included Chogha Mish Phase samples only, but Genevieve Dollfus' reassessment of the chronological placement of each sample classified a small number of samples as belonging to the Jaffarabad Phase. Since this group was not purposively sampled, the Jaffarabad Phase material is small and biased. All 7 of the Period 7 samples are black-on-buff wares or buff wares (and all but one are from Jaffarabad), and all 3 Period 8 samples are red.

The groups from the Chogha Mish Phase are larger and somewhat more balanced. Of the 58 Period 9-11 samples, 45 are red and 13 black-on-buff; the one Period 8-11 sample is red; 12 of the 86 Period 12 samples are red and 74 are black-on-buff; and of the 42 Chogha Mish Phase samples 37 are red and 5 are black-on-buff.

The means, standard deviations, and per cent deviations of the samples, divided by period and type, are presented in Tables 17-216 and summarized in Table 11. Several general observations can be made about this large group. First, the mean concentrations are similar for both red wares and black-on-buffs, suggesting the overall homogeneity of clays on the Susiana Plain. Second, most

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variability occurs in some of the alkali elements (sodium, potassium, rubidium, and cesium; and the alkali earth element barium); this may be a function of post-depositional events (E.V. Sayre, personal communication, 1981). In fact, this high degree of variability in these elements occurs in all the groups analyzed in this study.

Some elements are not well-determined by NAA; this may account for the within- and between-group differences in elements such as rubidium, barium, and even hafnium. Within- and between-group differences in other elements, such as chromium, manganese, and especially calcium, may be due to differences in temper. In general, the red wares have much lower calcium concentrations (less than 10%) than do the black-on-buff pastes (which generally range from 15-20%); calcium carbonate may possibly have been included in or added to the black-on-buff pastes.

When per cent deviation figures were below 10% - the amount indicating a possible single source - the elements most likely to be included were scandium, lanthanum, cerium, europium, hafnium, thorium, iron, cobalt, samarium, and ytterbium. Chromium and manganese were often included in this

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group, while calcium showed much more variability. In fact, these observations hold true for samples through Terminal Susa A. The Uruk wares are too highly tempered to show this level of consistency. I now discuss each group.

1. The Jaffarabad Phase. The Period 7 sample consists of seven sherds, all from the site of Jaffarabad (KS 20). Of the seven, five are black-on-buff, and two are buff common wares. There is a fairly high degree of variability no matter how the samples are grouped: all seven together, all black-on-buff vessels, or both buff common wares (Tables 12-14). As shall be seen, this result is consistent with Jaffarabad ceramics throughout the periods considered. Because there are kilns at the site (Dollfus and Hesse 1977), local production is indicated for at least one period; perhaps there is unusual variability in the clay sources around the site. Certainly no other site of comparable size shows such consistent variability in ceramic composition.

There is an even tinier and more problematic sample from Period 8: three red ware samples with no common type. The samples taken together exhibit a high degree of variability (Table 15), as might

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be predicted. However, the two samples from the west-north show a great deal of homogeneity (Table 16). This is consistent with a pattern seen throughout the analyses presented here. However, the Jaffarabad Phase data base is so small that no conclusions can be drawn, other than to observe that the ceramic compositions are similar to those of the next phase.

2. The Chogha Mish Phase. The Chogha Mish Phase sample consists of 186 sherds, of which 92 are black-on-buff and 94 are red wares. The group was analyzed in several different ways. Where samples could be attributed to Jaffarabad II or Jowi 12-4 they were grouped as Period 9-11. Samples from Bendebal 12-11 were grouped as Period 11. Those samples which could not be assigned to any definite period were grouped as Chogha Mish Phase (Periods 9-12). Each grouping was analyzed separately, and also combined into a larger Chogha Mish Phase group. Analyses within each group were done on the red and black-on-buff wares separately. Each ware was also broken down into subgroups based on Hole and Dollfus' categories. For example, red wares included unslipped red ware; gritty coarse red ware; porous, chaff-tempered red ware; dark

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slipped red ware; dark slipped salmon ware; buff slipped salmon ware; and outside buff slipped salmon ware. In addition, analyses were done on groups divided by region and by site. The Period 9-11 and Period 12 results are discussed first, followed by an analysis of the samples from the whole phase.

a. Period 9-11. There are 45 red ware and 13 black-on-buff samples from this period (Tables 17-52). The black-on-buff group consisted of samples from three sites: one waster from KS 4, two samples from KS 1, and the rest from Jaffarabad (KS 20). The red ware samples, which cover a variety of types, are from all over the plain.

Initially, the red wares and the black-on-buff wares were each analyzed as a whole. For each group, the per cent deviation figures suggested that more than one clay source was used (Tables 17, 49).

The black-on-buff group was divided by site. Ten samples were from Jaffarabad. The per cent deviation figures show too high a degree of variability to suggest a single source. These results were not surprising in the context of the whole study, as Jaffarabad samples consistently

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showed a high degree of variability. However, the two samples from Chogha Mish (KS 1) showed a single source.

I briefly digress here to consider the problem of small sample size in deciding whether or not a group of sherds come from the same clay source. In the hundreds of calculations I have made, some small groups showed little variability, while others showed a great deal of variability. I can only report that my small groups are generally consistent with trends in larger groups; that is, there is often some patterning in the data. As my data set is much larger than the average NAA data set, I perhaps stand on firmer ground in the analysis. Of course, the ideal way to resolve this question would be to subject more samples to NAA or some other physicochemical test.

The red wares were also divided by type and each subgroup analyzed. With the exception of the gritty, coarse red ware group, which suggested a single source, none of the other groups showed per cent deviation figures consistent with that result (Tables 17-48).

The gritty coarse red wares were then further subdivided. Of the six samples, five were from the

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west-north sector of the plain and three of these five were from KS 10. The per cent deviation results from the west-north suggest a single clay source; this result is even stronger for KS 10 (Table 19). In fact, the west-north area for all samples indicates a single source, in contrast to the data from the center and east-north areas (Tables 18-48). Further, single west-north sources are strongly indicated for red slipped and dark slipped salmon wares (Tables 41-48) and for east-north red slipped salmon ware (Table 48).

While other groups divided by type did not indicate a single source, the results of further subdivision by region and site were varied. For unslipped red ware, the west-south group is possibly a single source, as is KS 71 (Tables 29-31). The few dark slipped red ware samples possibly suggest a single center source. For red slipped salmon ware, the results strongly indicate a single west-north source and a single east-north source, but not a single center source. Similarly, the dark slipped salmon wares may be single-source in the west-north and center areas respectively, but there is more variability here than in a single site. Buff slipped salmon wares do not indicate a

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single source in any area.

Examination of individual sites strongly indicates single sources at KS 10 and KS 21, both from the west-north, and at the center site of KS 45. Some indication of a single source was found at KS 71 and KS 17 in the west-north. More than one source was indicated in the results for KS 13 (west-north), KS 38 (center), and KS 162 (east-ncrth).

The results for the Period 9-11 red wares have several implications. First, the clays from the plain are fairly uniform. This uniformity is particularly apparent in the west-north area. The results generally indicate single sources for the west-north for several types. Greater variability was clearly present for the center of the plain. The data from individual sites are consistent with this observation. The west-north sites of KS 10 and KS 21 are clearly single source sites; KS 71 and KS 17 from the same region have more ambiguous results, while KS 13 does not show one source. KS 45, from the center of the plain, suggests a single source, while KS 38 (center) and KS 162 (east-north) do not.

Unfortunately, small sample size has limited

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further clarification of the individual site data by type. KS 13, for example, has five samples, but each is of a different type. It would be interesting to compare more samples of each type from the site.

The implications of these results for the organization of ceramic production are provocative but not definitive. The clays are similar throughout the plain, with the west-north region particularly uniform. For the west-north (Figs. 18-23), the data are consistent with local -- that is, on-site -- production of ceramics. This cannot be as well demonstrated for the other regions or sites on the plain, but that may simply be a function of sampling limitations. When types are evaluated by region, the results show regional groupings; that is, a single source is indicated for each type in the west-north, center, and east-north areas. The data cannot be broken down any further due to sample size, but the results are consistent with the interpretation that ceramic production is local.

The intriguing contrast is with the black-on-buff results. The high degree of variability shown in the Jaffarabad sample

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indicates multiple sources, which is inconsistent with the red ware results. However, sampling error is the likely culprit in the ambiguity; grouping these samples with the others from the whole Chogha Mish Phase samples solves part of the sampling problem, but the large groups formed are from a very long time span. The implications of these observations will be discussed at the conclusion of this chapter.

b. Period 12. There are 12 red ware and 74 black-on-buff samples from Period 12 (Tables 53, 59, 62). Initial evaluation of the red wares as a whole group using the per cent deviation statistic showed a high degree of variability, suggesting a number of clay sources were used in ceramic production. However, when the black-on-buff group was tested by the same statistic, the result very strongly leaned toward homogeneity, implying a single clay source.

Further breakdown of the black-on-buff gave support to the initial single-source suggestion. The per cent deviation statistic was applied to typological and locational groupings. For most types (Tables 62-115), one source was clearly indicated: this is true for band and bands, band

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and two lines, and squares and dots. Bands and lines were more questionable, but showed homogeneity for both the west-south and east-north. The exceptions was cylindrical bowls with bands and lines, but the regional subgroups showed homogeneity.

In addition, when the groups were broken down by region and by site, the same basic result obtained. Possible single sources were seen in the west-north and the west-north site of KS 13; in the center at KS 4; at KS 161, KS 178, and KS 180 in the east-north; and in the east-south area and the site of KS 212. Other regions and sites were slightly more problematic: the west-south as a whole and KS 65 and 73; the center as a whole and KS 108, 124, and 118; the east-north as a whole and KS 106 and 168; and KS 197 in the east-south. Only KS 156 in the east-north did not show any sign of homogeneity.

The small red ware sample, did not show anywhere near the same degree of homogeneity. Indeed, there was a high degree of variability when the sample was broken down into typological groups (Tables 58, 60, 61). However, regional groupings produced somewhat different results. Groups

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west-south and the site of KS 74 clearly suggested single-source production; the east-north group has multiple sources, while the east-south group weakly suggests a single source.

The implications of these results for the organization of ceramic production are problematic. The small red ware sample does not lend itself to conclusive interpretation, but in terms of local production, the results seem to be consistent with those from Periods 9-11. Regional similarities in clay are generally apparent from the areas sampled. With additional individual site data, these results might be clarified; further testing of this from the whole Chogha Mish Phase analysis will be discussed below. However, interpretation of the red ware groups by type is difficult as the sample is too small to draw conclusions.

The Period 12 red and black-on-buff wares seem to be produced in different organizational modes. From the scanty evidence, the red wares appear to be locally produced. This is consistent with the argument for the previous period, and supports the hypothesis of local production of ceramic wares.

The black-on-buff ware result is more difficult to interpret. In contrast to the results

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from other periods, the clays are remarkably homogeneous over the whole plain, a homogeneity that is also apparent in regional and site breakdowns (Tables 62-115). I do not think that this result is an artifact of sample size, as it does not appear in samples from any other time period.

One explanation may be that potters were using a single clay source, and that the relatively low degree of homogeneity is derived from later additions, such as temper. There is evidence for thirteen pottery production sites on the plain during this period (Fig. 10, from Dollfus 1985), therefore the clay would have to be moved from the source and distributed throughout the plain. This is possible, but it is perhaps the most unlikely scenario as it entails the movement of very large amounts of clay.

A second possibility is that a single source available over many kilometers was utilized. Period 12 potters specifically selected clean, very plastic clay for their buff wares. Clay with these specific characteristics may have been available along river cuts running over fairly long distances. Certainly, broad areas may have similar

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clays. Examples include valleys in the Galilee, Israel (Adan-Bayewitz and Perlman 1985), and the Valley of Mexico (Abascal-M. et al. 1974). This explanation cannot be ruled out by any currently available criterion.

It is impossible, given our present state of knowledge, to adequately explain the Period 12 results. It does seem likely that Period 12 potters were choosing their clay with some care, and that clay may have been transported over some distance from source to workshop. The strongest indication of a single source comes from the western portion of the plain; perhaps the source was in that region; however, a high degree of homogeneity in the west-north is fairly consistent throughout most periods. this trend is similar to that. It is also possible to argue that black-on-buff ceramic production was organized on a greater than local level, which cannot be described or explained with the available data.

c. The Chogha Mish Phase. Analysis of the Chogha Mish Phase material was done in two steps. A small group of samples which belonged to Period 9-12, but could not be more specifically assigned, was first statistically analyzed. After

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that, the Period 9-11 and Period 12 data and this small Chogha Mish Phase group was combined into one large single group.

The small Chogha Mish Phase sample consisted of 37 red wares and 5 black-on-buff samples (Tables 116-142). Taken as a single group, the red wares, using the per cent deviation statistic (Table 116), did not show a single source. The black-on-buff samples, four of which were from Chogha Mish, did suggest a single source (Tables 141-142).

The small red ware sample, when grouped by type, showed results somewhat similar to those of Period 12. The gritty coarse red wares indicated a single source (Tables 131-133), as did the unslipped red ware from the west-north (Table 129). No other types seemed to be single source.

Regional and site groupings for the red wares yielded uneven results. Some support for single sources could be given to west-north and east-north regional red ware groups (Table 117, 127), but not to the center group (Table 120). Consistent with this result, a good case could be made for single sources for the west-north sites of KS 12 and KS 20 (Tables 118, 119), while the center sites of KS 36, KS 42, KS 4, and KS 112 showed multiple sources

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(Tables 123-125). The center site of KS 118 (Table 126) may be single source.

The next step was to combine all of the Period 9-11, Period 12, and the Period 9-12 material into one large Chogha Mish Phase group. In total, there were 94 red ware samples and 92 black-on-buff samples (Tables 143-216). In general, the picture from the whole phase resembled that of the subperiods. The red wares as a group did not indicate a single source by use of the per cent deviation statistic (Tables 143-192). The black-on-buff wares as a group did not suggest a single source (Tables 193-216); most of the variability came from the Jaffarabad sample (Table 196) and from the cylindrical bowls with band and dot motif (Table 216).

Again, the red ware group results were consistent with those from earlier analyses. The gritty coarse red wares strongly showed a single source (Table 178). Interestingly, the dark slipped salmon ware (Tables 190-192) and possibly the dark slipped red ware (Tables 175-177) results are homogeneous, while they were not for Periods 9-10 or for the small Chogha Mish Phase samples. The red slipped salmon ware group also weakly

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indicated a single source, whereas it had not done so for the other subphases (Tables 183-189). Multiple sources were seen for unslipped red ware (Tables 169-171), porous chaff tempered red ware (Tables 172-174), and buff slipped salmon ware (Tables 179-182).

When the typological red ware groups were divided by region and site, there was little evidence of homogeneity, with the possible exceptions of buff slipped salmon ware in the west-north (Table 180), and red slipped salmon ware in the west-south (Table 185). Unslipped red ware in the west-north (KS 71) was strongly homogeneous (Table 170).

The black-on-buff samples, with the exceptions noted above, showed a great deal of homogeneity. All of the results are consistent with those from Period 12, with the exception of the 10 Jaffarabad group samples. The Jaffarabad samples do not show a single source (Table 196); the west-north regional group of all Chogha Mish Phase black-on-buffs reflects this variability (Table 194). The west-south, center, and east-north groups did not strongly suggest a single source, but the east-south group did (Tables 197, 201, 207,

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213). Most individual site results (KS 13, KS 73, KS 74, KS 106, KS 118, KS 124, KS 161, KS 168, KS 180, KS 197, and KS 212) show a high degree of homogeneity, with Jaffarabad, KS 65, KS 108, and KS 156 the major exceptions; KS 1 and KS 4 had ambiguous results (Tables 194-215).

Explanations of these results in terms of the organization of ceramic production are similar to those offered for the earlier phases. The data suggest local production of red wares, and reflect the general homogeneity of the Period 12 black-on-buff ware results. Jaffarabad had a ceramic workshop in Periods 9-10, making the variability in that sample all the more puzzling. The degree of variation in cylindrical bowls with band and dot motifs is also not readily explained. Perhaps these samples could be subdivided in some way to improve the results, but given the present limits of the data set this is not possible.

Certainly the data presented are consistent with the hypotheses offered above. However, the Chogha Mish Phase covers a long period of time, and more data for each subdivision of the Phase is necessary before drawing firmer conclusions. Again, the homogeneity of the black-on-buff ware

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pastes presents a real puzzle, which cannot be resolved with this data set.

C. Susa A. The Susa A material was also divided into a red and a black-on-buff group. Sixty-two red ware samples were analyzed, as were 103 black-on-buff samples (Tables 217-309; see Table 11 for a summary). The per cent deviation figures for the whole red ware and the whole black-on-buff group respectively show no single source for ceramic production (Tables 217, 267).

The red wares were grouped by type, region, and site. The analytic results from the typological grouping were mixed. Dark slipped red ware showed a high degree of homogeneity (Table 254). The dark slipped red ware sample consisted of two sherds from the east-north. The burnished red ware sample, which was larger and from various parts of the plain, suggested homogeneity (Table 249). When divided by region, the burnished red wares showed a possible single source for the center, and for the center site of KS 4; a possible single source for the west-north area; and more than one source for the east-north (Tables 249-254).

All of the other typological groups showed

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more than one source when divided by area. Some strong indications of a single source came from unslipped red ware from the east-south (Table 244); red slipped salmon ware from the east-north (Table 264); and buff slipped salmon ware from the east-south and from KS 66 (Tables 259,261).

Grouping all of the red wares by region showed no single source for any region on the plain. The results from the individual sites were varied, however. Single sources were indicated by the results from KS 4, and KS 6, and, less strongly, KS 101, KS 160, KS 186, and KS 204. No single source was suggested by the results from KS 22, KS 64, KS 66, KS 274, KS 106, KS 157, KS 182, KS 174, and KS 215 (Tables 218-266).

The Susa A red ware results do imply some degree of local production of ceramics, but the results are too ambiguous for more definitive interpretation. The variability in the samples may be explained by differences in temper. The Susa A material is more heavily tempered than that of the previous periods; the temper is characteristically small red, black, and white grits. Mineral temper is apparent in some sherds, and the porous chaff-tempered red wares exhibit holes where the

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chaff has burnt out.

Another explanation for the high degree of variability encountered in the sample may be the existence of a complex ceramic exchange system, in which vessels were moved from site to site. The data are somewhat consistent with local production, but stronger conclusions cannot be drawn from the current analysis.

The black-on-buff wares are equally challenging. Most of the small typological groups formed did not show single sources, with the interesting exceptions of cylindrical bowls with bands and dots, and cylindrical bowls with bands and lines (Tables 293-294, 306-307). The bowls with bands and lines from the west-north also indicated a single source (Table 294); the regional results from the band and dot bowls were mixed, with KS 112 and the west-north data suggesting a single source and the center area data suggesting more than one source (Table 306-308).

Other typological groupings yielded some interesting results. Vessels decorated with greccas and scallops as a whole group weakly indicated a single source, but regional and site groups from the west-north, center, east-north, and

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KS 33 showed a single source (Tables 301-305). Cylindrical bowls with bands and two lines did not indicate a single source (Table 299-300). However, cylindrical bowls with dots, indefinite type possibly indicated a single source for west-north and center groups, and there is a strong indication of a single source for the east-north group (Table 295-298). Again, the degree of variability in the buff wares may be accounted for by temper differences; there is much more temper in the Susa A buff wares than in those from the earlier periods.

No homogeneity was seen in the regional groupings. However, the individual site data were intriguing. A single source is strongly suggested at each of the following sites: KS 33, KS 22, KS 161, KS 181, and KS 266. A single source is weakly suggested at KS 4 and KS 239. The results indicate multiple sources from KS 1 (Chogha Mish), Bouhallan (KS 28), KS 112, KS 113, and KS 13 (Tables 267-309). Two Luristan red-on-black samples from Susa were also analyzed for comparative purposes. They are compositionally different from the Susiana Plain material and are chemically somewhat similar to one another (Tables 280-281).

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Thirty-two samples from Susa were analyzed (Tables 273-276). For the whole group, the results showed more than one source. Interestingly, the results from typological subgroups, including goblets, large and small cups, and bowls also indicated more than one source. Some of these vessels are quite elaborately decorated. The result for bowls with exterior decor was somewhat more ambiguous. Similarly, the Jaffarabad sample (n=13) showed multiple sources (Table 277).

What are the implications of these results for ceramic production during Susa A? It has been argued that Susa A Susiana was a complex chiefdom (Wright 1984). In this type of society, tribute flows from the periphery into the center. The data here suggest local production of black-on-buff vessels. The compositional variability of the Susa ceramics, a group which includes some highly decorated pieces, may indicate that the vessels are items sent from various smaller sites as tribute to the major center of Susa (Wright 1984).

It is not clear from the available archaeological evidence whether the vessels were sent to the centers as containers for some other goods or were sent in their own right. However,

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the NAA results suggest that ceramic production was decentralized. The highly decorated vessels found on Susa may not have been produced by a group of potters on the site directly engaged by the elite, but by local potters sending in their tribute (or by villagers sending goods to centers in ceramic vessels). Similarly, smaller centers may have been collection points for ceramics being sent to Susa, which, if settlement size data were available for Susa A sites, might account for the degree of variability found on some of the other sites.

Of course, the data also fit Hole's model (1982), although he specifically suggests central production of highly elaborated black-on-buff vessels. Certainly ceramic production could have taken place locally within the semiautonomous enclaves Hole hypothesizes. The elaborate vessels could have been come to Susa with the religious elite, or been sent as contributions.

Other models, such as a simple marketing system, where local producers from all over the plain come to the market center bringing their wares, might also fit the Susa A black-on-buff data.

Again, the red ware data are too problematic

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for definitive interpretation, but they are consistent with the local production model. Temper differences may account for a large portion of the variability encountered.

In sum, the NAA analytical results suggest local production of red and black-on-buff wares. The black-on-buff wares were probably not manufactured at Susa. These interpretations of the data are consistent with models of ceramic production in complex chiefdoms.

D. Susa A or Earlier. A small group of ceramics subjected to neutron activation analysis was re-examined by Dollfus, who found that original chronological placement of these samples was incorrect. They were reclassified into a separate category termed "Susa A or earlier" and analyzed as a group. The results, which are briefly presented here, were not included in any of the above analyses.

The sample consisted of 17 red ware sherds and 32 black-on-buff sherds (Tables 310-356). The whole red group results did not indicate a single source (Table 310), but the black-on-buff group showed some degree of homogeneity (Table 325). Most of the red ware typological, regional, and

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site groups also suggested more than one source, with the exceptions of the east-north and KS 33; the west-north, and red slipped salmon ware (Tables 311-324). Given the small sample size and ambiguous time frame, the results are mixed and inconclusive.

The black-on-buff results were consistent with those from other periods. All of the typological groups, with the exception of cylindrical bowls with dots, indefinite, band and dots, and the goat motif, showed some homogeneity (Tables 340-356). Possible single sources were indicated for several typological sub-groups: for the goat motif KS 178, KS 197, and KS 215; and for cylindrical bowls with band and band the center and east-north. Cylindrical bowls with dots, indefinite type weakly indicated a single source in the east-north and east-south, but not in the west-north or center. Cylindrical bowls with band and line weakly indicated a single source in the east-north (Tables 340-356).

The regional groups had mixed results, with the center possibly indicating a single source, but the west-north and east-north results were more ambiguous. The small east-south group showed

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marked homogeneity. Most of the individual sites, with the exceptions of KS 4, KS 106, and KS 108, had results suggesting a single source (KS 178, KS 176, KS 197, KS 215, KS 67, KS 112, KS 108, and KS 266) (Tables 326-339).

Again, the Susa A or earlier data are consistent with those from the other periods, and are presented here for comparative, not interpretive purposes.

E. Clay Samples. Six clay samples from the sites of Susa and Jaffarabad were also tested. These samples came from the red and green-grey clay beds at the two sites. Interestingly, the data did not show the strong degree of homogeneity found in some of the Period 12 material, for example (Table 373-392; see Table 11 for a summary). The clay samples were also formed into small disks, hardened, and fired for one hour in an electric kiln at Brookhaven at 850°C. Samples of the fired clay, along with a group of sherds from red and green-grey beds at Susa and Jaffarabad, were subjected to NAA.

The results were somewhat surprising. I had predicted a high degree of compositional identity in the clay samples themselves and when the clay

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samples were compared to the fired samples. The results (Tables 373-392) suggested homogeneity, but not as strongly as predicted. The results were somewhat stronger when the samples were compared by color and site. Firing had differing effects on the elements, with some concentrations increasing slightly and others decreasing slightly (Tables 376-383). In general, the clay samples had concentrations somewhat lower than those of the ceramics; the element concentrations for the ceramics reflect the addition of temper, and are also possibly from other clay processing activities.

F. Terminal Susa A. The ceramic sample from Terminal Susa A is fairly small and differs in character from those of the earlier periods. There are 29 samples: 25 impressed strip bowls and 4 flared neck jars from 7 sites.

The per cent deviation statistic for the whole group showed a high degree of variability (Table 357; see Table 11 for a summary). The impressed strip bowls as a whole group also showed more than one source (Table 365). However, when the impressed strip bowl group was broken down by site, KS 108 clearly showed a single source, as did KS

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269. The other sites, KS 64, KS 67, KS 182, KS 190, and KS 266, did not indicate a single source (Tables 365-372).

The small group of flared neck jars did not show a single source, but the results from KS 269 did (Tables 363-364). When the bowls and jars from KS 269 and KS 64 were combined and analyzed, the results showed more than one source (Tables 361-362). The small data set from this period make interpretation of the result difficult.

Additionally, the samples from the three regional sub-groupings, west, center, and east, were analyzed. Again, a high degree of variability was seen in all three subgroups (Tables 358-360). The Terminal Susa A material very weakly indicates local production of ceramics. However, the data base is too small to permit further generalization.

IV. Conclusions

The results of the analysis of the neutron activation data are challenging. The data generally suggest local production of ceramics, for both red and black-on-buff wares throughout the Jaffarabad Phase through Susa A, and possibly for

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Terminal Susa A. The data are consistent with the notion that in chiefly societies common wares would be produced for local use in villages.

The black-on-buff ware results are somewhat more complicated. The Period 12 material exhibits a marked degree of homogeneity for the black-on-buffs from the whole plain. This result, as noted above, is not readily interpretable. The variability in the clays from both the previous and following periods suggest that buff clays were not identical throughout the plain.

However, it is possible that Period 12 potters used local sources and that clay was fairly homogeneous throughout the plain. Perhaps the Period 12 potters mixed their clays less or cleaned them more carefully; differences in temper may obscure the basic similarities in Susiana clay. Indeed, the x-ray diffraction analyses on the major elements in the Susiana clays by Ruben (1979) and Ruben and Trichet (1980) suggested the basic homogeneity of the clays. Their work, however, was in the west-north (Susa and Jaffarabad), where there seems to be the greatest degree of homogeneity. The clay in my sample, which comes from Ruben and Trichet's collection, shows much the

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same result. The broad homogeneity of the clays on the plain is perhaps a more likely explanation for the NAA results than models suggesting transportation of large amounts of clay, or centrally-organized clay production.

Local production of black-on-buff wares can be clearly seen in Susa A. One of the most important results is that the group of more elaborated vessels in the sample from Susa show compositional variability, suggesting that they were imported from other sites. As I have suggested above, this model can be explained by complex chiefdoms, or semiautonomous enclaves, or marketing. It would certainly be worthwhile to test the Necropole ceramics from Susa and other sites by NAA. And other types of source characterization studies, perhaps of the paints, will clarify the sources of Susa A ceramics. The explanations, on the other hand, are consistent with a point made early in this dissertation: there is little relationship between the organization of ceramic production and the sociopolitical organization.

The Terminal Susa A data remain the most problematical of all. The NAA results were generally inconclusive, but did suggest some degree

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of local production of ceramics. However, the nature of Terminal Susa A society is as problematic as the relevant archaeological data. Further work on the nature of both need to be done. Certainly local production of ceramics is found in all types of simple and complex societies.

The NAA data could be strengthened by better sampling, so that more samples of each type and period were analyzed. Additional data from other archaeological sources, such as design analysis of the black-and-buff ceramics or chemical analysis of the paint, would be extremely useful in furthering our understanding of fifth millennium ceramic production and sociopolitical organization.

The material from the fourth millennium poses a different set of problems for NAA; the period and the results will now be considered.

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CHAPTER SIX - THE URUK

I. The Archaeological Setting

The Uruk period on the Susiana, which spans most of the fourth millennium B.C., has received much scholarly attention in recent years (see, for example, Alden 1982b; Beale 1978; Dittman 1985; Johnson 1973, 1976, 1980, 1983; Kantor 1972, 1975, 1976, 1977, 1978, 1979; Le Brun 1971, 1978, 1980, 1985; Nissen 1982; Surenhagen 1974/75; Weiss 1977; Weiss and Young 1975; Wright 1978b; Wright and Johnson 1975; Wright, Miller, and Redding 1980). Interpretation of the available archaeological data has suggested that there was a considerable increase in sociopolitical complexity during this period. Indeed, it has been hypothesized that one of the first primary states emerged and declined during the Uruk. In the following sections I summarize the archaeological data and the behavioral interpretations of that data.

A. Political, social, and economic organization.

The limited evidence for subsistence activities during the Uruk suggests a continuation of the trend toward increasing reliance on barley and sheep, along with exploitation of wheat, goats, and

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other plant and animal foods. Data from Tepe Farukhabad on the nearby Deh Luran plain suggest high consumption of animal proteins; the meat sources include both domesticated (goats, cattle, and probably sheep) and hunted (gazelle and onager) animals. The Middle Uruk plant remains (there were none from the Early Uruk) showed more barley than wheat was used (Wright 1981:181). The inhabitants of Late Uruk Tepe Farukhabad consumed more barley than wheat, and concentrated less effort on hunting (as measured by an overall decrease in density of wild animal bones), while the density of domestic animals (as measured by the density of bones) remained constant (ibid. p.185). Presumably this is the sedentary component of what may have been a more complex subsistence and settlement system.

While the determination of settlement size and population from archaeological data is full of assumptions and problems (see Kramer 1980), it is of critical importance in interpreting those data. A good chronology, which allows an archaeologist to assign with some confidence a site to a particular period, is of primary importance. The more refined the chronology -- that is, the smaller the blocks of time that can be distinguished archaeologically

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-- the more sensitive the monitoring of changes through time in settlement.

Unfortunately, the three Uruk periods are long and, to compound the problem, unequal in duration. According to the Wright-Johnson chronology (1975:Table 1; my Table 9), which I use in this study, both the Early and Middle Uruk last 350 years each, and the Late Uruk lasting 100 years. Although other chronologies (cf. Weiss 1977:Tables IV and V, which suggest 250 years each for the Early and Middle Uruk and 100 years for the Late Uruk) may give different time spans for the periods, they are still too long to pick up changes in settlement within each span. And although attempts have been made (G. Johnson, personal communication, 1985) to subdivide each Uruk period, none, using the small survey collections available, have as yet been successful. This renders the problem of comparing periods of different length, such as Middle against Late Uruk, unsolvable for the present.

Weiss (1977:358) points out that one cannot assume that all of the 127.6 hectares occupied in the Middle Uruk were occupied for the entire duration of that period. Weiss' solution of

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standardizing settlement areas smooths out variation in settlement by a constant -- the duration of the period -- but removes us one additional step from the basic archaeological data.

One further issue, which is currently also unresolvable, is a subset of the general problem of archaeological sampling. The number of sites recovered by archaeological survey depends on various factors, including the local terrain, the geomorphological history of the area, the type of sites, and the techniques of the surveyors. The 1970-1971 Susiana survey recovered all mounded sites (Johnson 1973:24). However, not all sites are mounded, nor are all sites detectable by most survey methods. To take the latter point first, extensive alluviation on the Susiana has covered sites; on the other hand, road-building and irrigation projects have revealed some covered sites, although none from the Uruk (Johnson 1973:25).

Sites with no elevation, such as "single house mounds, herding camps, and various special function sites..." (Johnson 1973:25) are difficult to detect with most survey methods. Even walking surveys may not yield many additional sites. Wenke (1975-76)

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found one small (under one hectare) Uruk site in his intensive walking survey.

My own limited walking survey of the Khorramabad Valley in 1978 turned up several late period sherd scatters on the valley floor. These were in areas that were heavily agricultural, so that sherd scatters were very widely spread and not terribly informative of human activities. Furthermore, the valley was highly alluviated, so that early period material without elevation was likely to have been buried under a few meters of soil; this was apparent after examining several river cuts.

With these cautions in mind, it seems likely that the Susiana survey data may be biased toward larger sedentary settlements because it is likely that smaller habitations and the nonsedentary portion of the population are for the most part invisible in the archaeological record. Given the current limitations on archaeological research in Iran however, analyses must be restricted to the available data set.

On the other hand, the available material on the Uruk has been the focus of several recent studies. Much of this research was generated by a

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general interest in problems in the origins of the state (for discussion, see, for example, Johnson 1973:v). The Susiana was attractive for several reasons to researchers interested in early states. First, the work of the French at Susa and on the plain itself showed the early beginnings of urbanization. The growth of cities was in turn linked to the origins of the state by many archaeologists (Adams 1966; Childe 1936). For example, Adams' (1962) Khuzistan survey suggested that trends toward urbanization began in the Uruk, with people deserting small villages and agglomerating in large centers.

With interest in the origins of states fueled by the work of a number of scholars (e.g. Adams 1966; Diakonov 1969; Fried 1967; Sahlins 1968; Sanders 1968; Service 1962) the Susiana was resurveyed in 1970-1971 by Wright and Johnson, with specific focus on the Uruk occupation. Adams' original assessment of Uruk sites was revised and expanded (Johnson 1973:24). Wright and Johnson's work has in turn generated a number of publications on the Susiana Uruk and its theoretical implications. Similarly, recent excavations at Susa and Chogha Mish (Dittman 1985; Kantor 1972,

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1975, 1976, 1977, 1978, 1979; Le Brun 1971, 1978, 1980, 1985; Nissen 1982; Weiss and Young 1975) have offered more archaeological data on and interpretations of the period, while work in Greater Mesopotamia has expanded the scope of Uruk studies.

In the following discussion, I rely largely upon the work of Johnson (1973, 1976, 1983), Wright (1978b) and Wright and Johnson (1975), for several reasons. As I have noted, I use material from their survey (which forms the greater part of my NAA sample) within the structure of their chronology. The reasons for this decision is discussed in chapter four. In addition, I find the Johnson-Wright approach to the Uruk useful in several ways: First, it is couched in terms I find particularly challenging in light of the issue on which I focus in this dissertation, i.e., the relationship between the organization of ceramic production and sociopolitical organization. I also had the opportunity to use NAA re-examine 162 of the sherds Johnson measured in his microstylistic analysis of Uruk ceramics (Table 7). Finally, I find the Johnson-Wright approach to the data intellectually stimulating as well as particularly

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useful for structuring the source characterization analysis. I first review their arguments; critical discussion follows my review of the NAA results.

1. Early Uruk. The Early Uruk survey data (Fig. 16) show an increase in population from Terminal Susa A: from 18 to 49 sites and from 30 to 95.18 hectares (Johnson 1973:87,90). There are three levels of settlement sizes on the plain: villages averaged 1.45 hectares (compared with 1.22 in Terminal Susa A), small centers were 6.45 hectares (from 5.08 in Terminal Susa A), and Susa grew to be a large center of 12 hectares (ibid.). Inspection of the map (see Fig. 16) indicates the western portion of the Susiana seems to have a more complex and integrated settlement system than the eastern part, which has many small villages and two widely separate small centers.

The degree to which the settlement systems on the plain are integrated may be quantitatively assessed by the Rank-Size Index (Johnson 1983:400-402; see discussion above, chapter 5). Recall that concave or primate distributions are found in systems with minimal economic competition or systems in which the largest site is involved in a still larger settlement system. Convex

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distributions suggest that there is little interaction between two or more autonomous subsystems (Johnson 1983:350).

For the Early Uruk Susiana as a whole, the RSI is quite convex (0.322); calculation of the RSI for the western portion of the plain shows less convexity (0.113) (Table 10). These figures suggest that the eastern sites were only marginally related to the western settlement system. The convexity in the western plain can be accounted for by the evidence of two administrative districts of roughly equal size. Both districts were dominated by Susa, with the southerly one clustered around the small center of Abu Fanduweh (KS 59). The Susa district showed a primate distribution (RSI=0.759), while the RSI for the Abu Fanduweh district was 0.334 (Table 10). The data suggest that Susa was a primate center, administering the western region, while Susa and Abu Fanduweh each administered their own districts (Johnson 1983:357-358).

In his original discussion of the Early Uruk, Johnson (1973:90-101) argued for a three-level settlement hierarchy, which implied a three-level administrative hierarchy. However, recent re-analysis of the data (Johnson 1983), including

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excavations at villages on the plain (Johnson 1976), have not yielded evidence for administrative activities. Johnson's most recent conclusion is that there was a "...two-level administrative hierarchy operating within a three-level settlement system." (1983:357); that is, the Early Uruk Susiana was administratively complex society, but that it was not a "state."

In support of this analysis, Johnson examines three classes of data: "...potential center requirements for rural agricultural produce, spatial variability in administrative demand for labor, and spatial variation in rural utilization of centrally produced ceramics" (1983:357).

First, estimates of agricultural sustaining areas for Susa and Abu Fanduweh suggest that these areas produced a surplus for their own populations so that these centers did not need to rely on their hinterlands for agricultural produce. If the center administrators were able to extract the surplus agricultural produce from their own populations, they did not need to control the village populations (1983:361).

If it is assumed that all the agricultural sustaining areas of each settlement were adjacent

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to one another, a calculation of area and ethnographic estimates of consumption indicate that both villages and centers would be self-sustaining. The centers, in fact, are producing above subsistence in this calculation; the surplus may go for "...maintenance of Central Place craft production, administration, and other functions" (Johnson 1973:58). Further increases in center populations would result in more need for central control over the hinterland in order to support central administrative activities (ibid.). This point will be returned to below.

Secondly, center administrators may require center and/or village populaces to make periodic contributions of labor for the common good or for center activities, such as, for example, canal cleaning or edifice-erecting.

However, "demand for labor" is a difficult concept to render archaeologically operational. Bevel rim bowls (Fig. 21) have been proposed as an indirect indicator of demand for labor. Although these bowls have been interpreted in various ways (see Le Brun 1980 for a summary); they may have been used as "ration bowls functioning in an administrated redistribution system" (Johnson

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1973:129; cf. Gelb 1965; Nissen 1970). That is, bevel rim bowls have been proposed as ration bowls given to corvee laborers by administrators. The bowl density on a site may therefore reflect the intensity of administrative demand for labor.

The limited available excavated data from Susiana Early Uruk villages show low proto bevel rim bowl (an Early Uruk version of the bevel rim bowl; see Fig. 20) percentages as compared to the bevel rim bowl densities for the Middle and Late Uruk (Johnson 1983:359-360; Wright et al. 1980), suggesting low central demand for village labor.

At the village site of Tepe Sharafabad, the bowl discard rate was much higher in summer, when agricultural work is limited but other kinds of tasks are done, than in winter, which is the agricultural season (Wright et al. 1980). It is likely that administrators would use workers in the agricultural off-season (Johnson 1983:360). However, a high density of ration bowls at Susa (H.T. Wright personal communication in Johnson 1983:361) suggests that center populations were being recruited as corvee laborers to a greater degree than were rural populations. The Susa data suggest that center administrators were using their

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own populaces as laborers instead of the rural folk; this is consistent with the notion of weak center control over the hinterland.

Additionally, the bowls are differentially distributed on eastern and western sites. Proto bevel rim bowls are much more frequently found on western rather than eastern sites, suggesting low eastern interaction with the west (Johnson 1983:361-362). That is, if the proto bevel rim bowls have administrative functions, then the eastern sites, which are loosely tied to those in the west, should have fewer bowls given out by western administrators.

The third data class, rural use of centrally produced ceramics, is used to support the notion that central administrators centralized ceramic production in order to entice villagers into centers. Some data suggest that during

> the Early Uruk period production of many craft items became a spatially centralized rather than dispersed activity. Uruk ceramics were primarily wheel-made, in quantity and in specialized workshops. Although the relevant data are of the Middle Uruk period...it appears these workshops were restricted to the major settlements [Johnson 1973:92].

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Villagers would become more dependent on goods and services produced in centers, and while in centers would then be available to meet the demands for labor made by administrators; that is, the village populations would be more controllable.

In the only test of this notion, a small sample of neckless ledge rim jars with interior rim angles plotted against rim angle showed distributional differences between the Susa and Abu Fanduweh (KS 59) areas. The assumption made is that microstylistic differences between ceramics reflect workshop differences; that is, each workshop will have its own characteristic style, or way of executing shaping and decorative tasks on a vessel. One such style group was found at sites around Susa, while the second group was found in the eastern plain and at KS 96; this latter group may have been produced at Abu Fanduweh (Johnson 1973:92-94).

A gravity model is used to measure the frequency of occurrence of each type on village sites; the predicted relationship is that frequency will vary in inverse proportion to distance from the center (Johnson 1983:362-366). In general, the model was accurate in predicting proportions of

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types on various sites. Furthermore, the eastern sites had both Susa and Abu Fanduweh types on them, indicating some interaction between east and west. Again, low levels of central administrative control over the western villages was supported by this model, while the relationship with the east remains problematic (Johnson 1983:366). The validity of these data and their implications will be tested using neutron activation analysis data.

Another measurement of increased sociopolitical complexity is use of administrative artifacts, which increases during the Early Uruk. Seals are artifacts which store and transfer information. They are used to mark containers with information about "...the origin, content, or quality, etc., of the material within a particular container" (Johnson 1973:99). Johnson and Wright propose that increases in the complexity of the seal designs would result from increases in the number of sealing agencies. The very small Early Uruk seal collection, although lacking cylinder seals and bullae, suggest such an increase in seal complexity (Johnson 1973:99-100; Wright and Johnson 1975:272).

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The Early Uruk on the Susiana has been interpreted as a complex society with three levels of settlements and differences in organization between the western and eastern portions of the plain. The western region is dominated in a general way by Susa, but both Susa and Abu Fanduweh administered their own local districts. Several lines of evidence point to weak central control over the hinterland and each of these districts. Centers provide agricultural produce and labor for their own administrators. Villages produce enough for their own subsistence, provide relatively little labor to the centers during the agricultural off-season, and acquire their ceramics from centers in relation to their distance from the centers, rather than because of central control. The eastern part of the plain is not well articulated with the west, although easterners do obtain certain ceramics from both the Susa and Abu Fanduweh workshops. The processes leading to the rise of the Middle Uruk "state" had their beginnings in the Early Uruk (Johnson 1983).

Aspects of ceramic production and distribution are critical to this argument. In particular, it is important to distinguish between local and

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centralized production of vessels. For example, is centralization of production a necessary or useful tactic on the part of central administrators to control populations? Are all aspects of ceramic production centralized? On a methodological level, how is centralization of production, or workshop variability, measured? These questions will be considered in the section on the NAA results. I now review the Middle and Late Uruk periods.

2. Middle Uruk. There is a further increase in settlements from the Early to Middle Uruk (Fig. 17). There are 52 settlements (compared to 49 in Early Uruk) occupying 126.69 hectares (compared to 95.18 hectares in Early Uruk; Johnson 1973:90,101). The mean size area of villages was 0.94 hectares; that of large villages 2.3 hectares, small centers 5.31 hectares, and large centers 14.85 hectares (ibid. pg. 103).

The population and settlement increase is reflected in the settlement size hierarchy, which

> ...expanded from three to four levels with the differentiation of villages and large villages....The four-level hierarchy consisted of villages with a mean size of 0.94 hectares; large villages with a mean size of 2.30 hectares; and large centers with a mean size of 14.85 hectares. Increase in the number and size of large centers

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> accounted for 81 percent of the total settlement area growth (31.51 hectares). Initial Uruk settlement of Chogha Mish (KS 1) contributed an estimated 10 hectares to this figure. Susa increased from 12 to 25 hectares while Abu Fanduweh (KS 59) increased slightly from 6.92 to 9.56 (7 to 9.5) hectares [Johnson 1973:101-103].

The typology of settlements is complex. Differences in the height of areas of both large and small centers suggest the existence of public buildings. There are functional differences among the large villages and villages as well. Some villages are specialized sites: KS 284, for example, is a lithic workshop. Several other village sites have wall cones, which are associated with public buildings and temples at Warka, the typesite for the Uruk period. The presence of wall cones on small sites suggests that these had public buildings and may have had administrative functions (Johnson 1973:104-105). Three sites are known to have ceramic workshops: Susa, Chogha Mish, and Abu Fanduweh; these sites all had kilns. There is no direct evidence for ceramic production at sites other than those centers, although some slag was found at Tepe Sharafabad (KS 36) (Johnson 1973:107). As shall be discussed below, neutron activation analysis was used to test for ceramic

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production on other sites; results suggest that bevel rim bowls were produced at several different locales.

A major change in the settlement pattern is the founding of the Middle Uruk center of Chogha Mish on the eastern portion of the plain. Johnson (1973:110-111) speculates that the location of Chogha Mish, which was not in the center of the eastern plain, was related to the agricultural requirements of the center's population. Using the 200 person/hectare population density figure (see Johnson 1973:66; Kramer 1980), the ten hectare center, Chogha Mish, would have had a population of 2000. If two hectares of agricultural land per person are required for subsistence (Johnson 1973:98; see also Gremliza 1962:38), then Chogha Mish needed 4000 hectares (in a 3.57 km radius from the center) to sustain its population. An unoccupied area of this size was available on the eastern plain only in the region subsequently settled by Chogha Mish.

Large settlements, such as KS 153, and several small villages, such as KS 171 and KS 240, are what Johnson calls "marginal"; that is, they are "...locationally most likely to be influenced by

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factors external to the area under consideration" (1973:140). These settlements on the edge of the plain, which average 2.50 hectares -- the large village range -- , are hypothesized as being that size because they are used for defensive purposes. The potentially hostile forces may have been pastoralist groups. Such groups may also have created demand for various products, and thus stimulated local exchange networks on the plain, which would have led in turn to increased need for administration of the exchange networks (Johnson 1973:140-141; 159-160).

The Middle Uruk Susiana, it has been proposed, had a four-level settlement hierarchy and a four-level administrative hierarchy, indicating, by Johnson's definition (1973, 1983) the presence of a "state." It has also been hypothesized that the Middle Uruk "state" developed from the complex polities of the Early Uruk. This assessment has subsequently changed after additional analysis of the data, but some discussion of Johnson's original arguments are useful here.

Again, ceramic production and local exchange are critical to the analysis. Ceramics were produced centrally; this is supported by

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microstylistic analyses of several types. In turn, the villagers sent produce and labor to the centers. The administrative hierarchy grew to manage these local exchange networks; Johnson argues that "demonstration of...increasing control of the local exchange system would...constitute indirect demonstration of increasing control of rural production" (1973:112).

Centralization of production is tested using two Middle Uruk types: cross-hatch bands and wide strap handles (Johnson 1973). The cross-hatch bands, which have a Middle-Late Uruk time frame, show bimodal distributions in measurement of both horizontal line thickness and diagonal intersection angle. Measurement of the latter attribute separates the two groups chronologically, while the former attribute divides the plain into two workshops.

Wide strap handles can be similarly divided into two groups, an eastern and a western one, on the basis of average handle thickness. The distribution of wide strap handles and that of ceramic wall cones are strongly associated; it has been proposed that this is because low-level administrators on cone sites mediated local

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exchange of the wide strap handle vessels (Johnson 1973:123).

Two other lines of evidence, similar to those used for the Early Uruk, are employed to elucidate aspects of this administrative system. First, there is some evidence for administrative artifacts, such as seals, sealings, and bullae, at Susa (summarized in Wright and Johnson 1975:272), Chogha Mish (Johnson 1973:40), and Tepe Sharafabad (Wright et al. 1980). At Tepe Sharafabad, ceramic wall cones, indicating public buildings, and cylinder and stamp seals and bullae components provide direct evidence of village-level administrative activities (Johnson 1973:127; Wright and Johnson 1975:272; Wright et al. 1980).

Cylinder seals and bullae make their first appearance during the Middle Uruk. In addition, there is a transition to naturalistic motifs on seals from the geometric designs of the Early Uruk. This suggests more information in the system and thus more administrators who have to be distinguished from one another. The use of bullae also supports the argument of increased information (Johnson 1973:139-140; Le Brun 1978; 1985; see also Dittman 1985).

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It has been suggested that administrators may have been involved in the local exchange system, and may also have mobilized and managed a corvee labor force. This can be assessed archaeologically by considering artifacts involved in labor. The most ubiquitous ceramic artifact, the bevel rim bowl, has been hypothesized as being a ration bowl for corvee laborers working for central polities. The basic argument for this has been summarized above. Johnson (1973:130) proposes that these bowls were ration containers because they are cost efficient (manufactured in workshops), and distributionally efficient (standardized sizes produced near distribution points). Several of these points have been disputed, but it is generally agreed that the bowls are easy to produce and were probably manufactured locally.

The argument about standardization is critical to the notion that the bowls were used as ration containers. Johnson measured the volume of bowls for which he had complete rim-to-base profiles and calculated their volume. His results define three size classes; a further calculation of the caloric value of grain used to fill the bowls indicate that these might meet the nutritional requirements of

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men, women, and children respectively (Johnson 1973:137-139). The widespread occurrence of the bowls on the plain supports Johnson's notion that administrative control of labor operated in both central and rural areas.

Johnson (1973:141) concludes his original analysis of the Middle Uruk by suggesting the existence of a state with administrative control over its hinterland. There is, to reiterate, a four-level administrative hierarchy and a four-level settlement hierarchy. This picture has been refined in some of Johnson's most recent work.

The overall strategy of center elites is to attract the rural populace to centers to meet center demand for labor and agricultural products. In terms of craft production, central administrators undermined rural potters by centralizing ceramic manufacturing, making the rural population more dependent on the centers (Johnson 1983:372-373). The growth of centers and an increase in the number of non-producers (i.e., administrators) led to this increased demand. It is calculated that

> ...center demand in the western area exceeded potential rural surplus production, while the opposite was the

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> case in the eastern area....This suggests that unmet demand in the western area may have been restricted by shipment of significant quantities of produce from the eastern Chogha Mish administrative district to the area of Susa and Abu Fanduweh [Johnson 1983:383].

Administrative artifacts of the Middle Uruk seem to be largely concerned with information transfer, and supporting the proposition that goods were shipped among the administrative districts. The artifacts are largely message and commodity sealings; they involve transferring information for the coordination of activities rather than transmitting information for decision-making (Johnson 1983:390). Johnson (ibid. p. 383) further suggests that the variety of jar forms with inverted rims is related to the transfer of commodities.

Another reason centers tried to attract the rural populations was to meet center demand for labor. There is an order of magnitude increase from the Early Uruk in the density of bevel rim bowls at Tepe Sharafabad (Johnson 1983:384; Wright et al. 1980). In line with the argument that the bowls contain rations given to corvee laborers by central administrators, the marked increase in

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bowls signifies increased center demand for village labor.

There are specific features of the administrative districts that refine the picture of Middle Uruk polities. Johnson's original (1973) formulation had four levels of administrative hierarchy; closer examination of the data has led him to revise that estimate. He observes (1983:376 ff.) that the village administrative sites, which are marked by the presence of wall cones, are found only along the northern periphery of the plain, leaving "...the central and southern portions of the plain devoid of lowest level administrative functions." The small centers located in the central and southern plain might be functionally equivalent with the administrative villages, implying a less complex three-level administrative hierarchy than originally proposed (1983:376-377).

There is a population shift from villages to centers during the Middle Uruk, which in this view supports the notion that the strategy of center administrators was to attract rural villagers (Johnson 1983:384-387). In fact, the size of the population increased (by 33% from the Early Uruk), as did the scale of the administered system (by

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118% from Middle Uruk) (1983:389). Johnson (ibid.) argues that while growth is important, the critical variables are the scale and integration of the system. There is an increase in vertical complexity -- the addition of a level of administrative hierarchy from that of the Early Uruk. This level, which increased control over village populations, occurred at the local or lower level. In addition, there was a growth in horizontal complexity with the founding of Chogha Mish, which administered the eastern portion of the plain (ibid., p. 387-393). By Johnson's definition, the state was formed at the end of the Early Uruk and the beginning of the Middle Uruk (ibid., p. 387).

3. Late Uruk. There is a marked change in the Late Uruk in both population size and settlement pattern (Fig. 18). Several sites were abandoned, and many contracted in size. The total settled area amounted to 53 hectares, a reduction from the 126.69 hectares of Middle Uruk settlement (Johnson 1973:143-145). Both Susa and Abu Fanduweh decreased in area, with Susa going from 25 to 9 hectares and Abu Fanduweh from 9.56 to 8.16 hectares (ibid. p. 143). Chogha Mish, on the other

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hand, increased in size from 10 to 18 hectares (ibid., p. 145). However, the increase in size of Chogha Mish does not represent the agglomeration of population at that site: the eastern plain was reduced by 28 hectares, and the west by 18.64 hectares.

Did the population of the Susiana leave the plain? It is possible that the populace dispersed into small villages and nomad camps which were not detected by archaeological survey because of the extensive alluviation of the plain. On the other hand, it has been argued that hostilities on the plain, as shall be discussed shortly, led many individuals to abandon the Susiana (Wright and Johnson 1975); however, the supporting evidence is not very strong (see below pp. 213-214). In fact, this population decline is consistent with the overall picture of the Greater Mesopotamian Late Uruk, which shows population increase in some areas and decrease in others (Adams 1981).

Nevertheless, changes in the settlement pattern of the Susiana plain are striking. The settlement size hierarchy is reduced to three levels with the elimination of the large village category. This implies less administrative

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complexity (Johnson 1973:145). There is also a major gap on the plain between the western and eastern sites. The east and west are divided by a 14 kilometer-wide zone without settlements (ibid.). Johnson suggests that this separation defines administrative boundaries and hypothesizes about the cause of the rift: "...first, that Late Uruk was a period of state fission on the plain with the emergence of Chogha Mish as an autonomous administrative center; and second, that Late Uruk was a period of major hostility on the plain" (ibid. p. 146). Defensive considerations seem to be more important than local exchange networks in determining site location (ibid.).

The ceramic data do not provide good evidence for the local exchange system. A small sample of full and flat twist handles was used to examine the local exchange of these types. Based on a cross-section index by handle ridge angle, there seems to be some separation of the handles into three groups, which may represent workshop variability, although the spatial distribution was not tested. Some differences may also be due to temporal variation (Johnson 1973:147-150).

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Evidence for hostilities on the plain comes from some of the cylinder seals. Seals from Chogha Mish depict military scenes (Delougaz and Kantor 1969:25; Johnson 1973:150), as do some from Susa (Amiet 1961:251, 312; Johnson 1973:152). It is argued that the settlement pattern data, however, provide the strongest case for hostilities on the plain (Johnson 1973:152). The growth of Chogha Mish may have generated increased competition between it and Susa.

More specifically, the hostilities between the two centers may have been related to differences in Middle Uruk agricultural productivity between the eastern and western regions. If the overcrowded western populations were not able to fulfill their own demands for produce, they might have had to import products from the east.

Thus, this argument goes, by the end of the Middle Uruk, the elites at Chogha Mish and Susa may have been competing for control over the settlements between them that were in overlapping administrative districts. Both centers would be trying to extract agricultural produce and labor from these villages, providing an incentive for them to leave the area. The abandoned area is the

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overlap zone: 11 of 14 Middle Uruk settlements were abandoned by Late Uruk (Johnson 1983:383, 396).

Source characterization is particularly suitable for testing the argument advanced here. An east-west split on the plain should be reflected in the chemical compositional data derived by NAA. Before discussing specific propositions tested by NAA, a brief overview of the Uruk ceramics used in the study is provided.

B. General Description of the Ceramics. Uruk ceramics are marked by a significant decline in painted vessels, and an increase in "...plain ware, the use of grit or straw temper, decoration by incising or applique, and the renewed use of red-slip" (Dyson 1966:315). Nissen (1982:340-341) observes in the Mesopotamian heartland both the increase in the diversity of shapes from the earlier 'Ubaid pottery and, by the Late Uruk, the tremendous increase in the number of vessels produced.

While related regional ceramic traditions can be distinguished during Susa A, by Late Uruk times similarities in ceramics and other artifacts extend

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over a broad area of Greater Mesopotamia (Carter 1984:112-113; Wright 1978:233-234). Nissen (1982:340) asserts that

> ...within a rather short period, the so-called Late Uruk, the archaeological inventories of Babylonia and Susiana were essentially the same, so much so, in fact, that we have to conclude a total cultural unity between these two adjacent areas. This is all the more astonishing because we find no such cultural congruence either before or after this brief period.

The functions of the generally plain, utilitarian Uruk vessels are not well understood, because, until fairly recently, few primary contexts had been excavated. A brief period-by-period description of the ceramics used in this dissertation follows.

1. Early Uruk. Johnson (1973) has argued, based on his analysis of his own survey data, for a tripartite division of the Susiana Uruk, and has supported this division with material from stratigraphic contexts. This chronology has been disputed. Le Brun (1971, 1978), for example, divides the Susa Acropole sequence differently, while Nissen (1982) does not think there is an Early or Middle Uruk on the Susiana.

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As I have discussed in chapter four and above in this chapter, because my research could shed no light on chronological problems, and because my Uruk ceramic samples came largely from Wright and Johnson's survey, I have here used Johnson's division of the Uruk. As in the early period research, chronology did not appear to be a factor in interpreting the NAA data.

The Early Uruk types include proto bevel rim bowls, impressed strip bowls, grooved flat rim bowls, grooved round rim jars, unpainted high neck jars, beaded rim bowls, chaff tempered thumb impressed ring bases, and flared expanded jar rims (Johnson 1973:41). The Early Uruk types sampled in this study are proto bevel rim bowls, neckless ledge rim jars, and grooved round rim jars (Fig. 16).

2. Middle Uruk. Johnson (1973:41) notes that separation of the Middle and Late Uruk is difficult as much of the difference between the two periods involves proportional change in type frequencies. Middle Uruk types include hatched strips, cross hatch bands, out turned expanded rim jars, low expanded band rims, heavy round rim jars, strap handles, impressed strip jar shoulders, expanded

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ledge rim bowls, and sinuous sided cups (Johnson 1973:56-57). Bevel rim bowls appear during Middle Uruk (Johnson 1973:58). In the present study, bevel rim bowls, wide strap handles, and cross hatch bands were sampled (Fig. 17).

3. Late Uruk. Diagnostic Late Uruk types include full twisted handles, band rim bottles, and cross hatch triangles. Other Late Uruk types include conical spouts, ledge rim bottles, beveled lip bowls, groove and oblique, flat twisted handles, droop spouts, and rim lugs, as well as bevel rim bowls (Johnson 1973:57-58). In this study, twist handles, groove and oblique, and bevel rim bowls were sampled (Fig. 18).

Of all the Uruk types, bevel rim bowls have received the most attention. Found throughout Greater Mesopotamia in a variety of contexts, they date from the second half of the fourth millennium onward (see Le Brun 1980 for a summary of the archaeological data on the bowls and interpretations of that data).

Why have the bowls sparked so much interest? The bowls have been found in very large numbers on a variety of sites in many different contexts. They are clearly mass produced, although the method

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of manufacture is not agreed on (Balfet 1980; Genouillac 1934; Johnson 1973:130-131); their crude form and paste (which includes large amounts of grits, grog, and chaff) supports the picture of rapid mass production.

Furthermore, the bowls are found in a variety of contexts: religious, non-domestic, domestic, and mortuary (see Le Brun 1980:62 for a summary). Recovered by the hundreds or thousands on the Susiana and on other sites in Greater Mesopotamia, the smaller quantities of bowls are found on sites on the periphery of the area (Le Brun 1980).

Various interpretations have been offered to explain the function of these ubiquitous artifacts. While Le Brun (1980) has grouped these explanations into three main categories -- religious, domestic, and socio-economic -- he himself suggests that since they have been found in such diverse contexts the bowls may be "polyfunctional" in character.

However, socio-economic uses of the bowls have been the most heavily debated in recent years. Gelb (1965:230-242) had, through textual evidence, shown that standardized rations were issued to workers in Mesopotamia during the second half of the third millennium B.C.; following him, Nissen

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(1970) suggested that the bowls were used by laborers to receive rations from administrators. Johnson (1973) in turn applied Nissen's concept to the Middle Uruk Susiana state, proposing that a similar ration system had been used in the Uruk state.

In his original argument, Johnson (1973:130-132) further proposed that bowls used in an administered ration system would be centrally produced, as that would be most efficient in terms of cost, production, and distribution. Standardized container size and location of production close to the distribution point would reduce distribution costs. Cost efficiency is obtained by low labor and materials input per container, the results of which are readily seen when examining a bevel rim bowl (see Fig. 21). Centralized workshop production of bowls would also reduce production costs.

However, excavations of villages did show local production of bowls (Johnson 1976). Interestingly, Adams' (1981:125-126) survey of the central Euphrates floodplain in Mesopotamia found bowls in higher frequencies on smaller sites. On the other hand, bowl production may have been

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relatively centralized, with more produced per capita on larger sites.

If bowls are produced locally -- which will be tested through NAA -- what are the implications for arguments about bowl function? I suggest that proving centralized or localized production may not necessarily shed any additional light on vessel function. For example, local production of bowls does not contradict the notion of the bowls as ration containers, just as the apparent lack of size classes of the bowls does not contradict that argument.

Bowls may have been produced in villages as central or local administrators came around and organized the local populace for their annual service to the polity. By the same token, the lack of standardized size classes of bowls (see Alden 1973; Beale 1978; Espinosa and Manzanilla 1985; Shimabaku 1976) does not necessarily refute the ration bowl argument; the critical element in rationing systems may have been standard-sized ladles, not receiving bowls.

Furthermore, production and use of the bowls as rations does not preclude their production for and use in other contexts (see Balfet 1980; Le Brun

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1980; Nissen 1980; Tosi 1980 for support for the multifunctional approach), which explains the appearance of the bowls in so many different contexts (Le Brun 1980:62).

The NAA data can be used, first of all, to provide some hard information about the organization of bowl production, and secondly, to compare bowl production to Uruk ceramic production in general. We may be able, for instance, to learn if bowl production was organized differently than production of other types of vessels. Finally, the implications of these new data for the organization of Uruk society will be considered. I now discuss the specific propositions to be tested by NAA.

4. Propositions. As with the fifth millennium material, the goal is to first establish CPCRUs (see pp. 94-96) on the basis of the NAA data, then to further refine groups into PCRUs (see pp. 94-96) using archaeological categories. In general, the Uruk data were examined to distinguish between centralized and local ceramic production. If PCRUs could be formed on a site basis then ceramic production was considered to be local and centralized production could be ruled out. If, on the other hand, good groups could be formed for

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each region then centralized production is proposed. However, if the clays are very similar throughout the plain, regional groups may not necessarily rule out local production; groups could just not be broken down any further. Finally, if no CPCRUs could be formed, then the clays and tempers would be considered to be either much too homogeneous or much too heterogeneous (depending on the direction the data take) to be of interpretive value.

a. Early Uruk. Johnson (1973, 1983; see also Wright and Johnson 1975) has proposed that the Susiana during this period was a complex society, with Susa dominating the west, but with local administration divided between Susa and Abu Fanduweh. The eastern part of the plain was not well articulated with the west. The ceramics examined from this period include neckless ledge rim jars, proto bevel rim bowls, and grooved round rim jars. The bowls and jars may have been used in administrate activities such as commodity shipment and rationing. It is proposed that:

i. In the western part of the plain, craft production is centralized. There should be a west-north group with Susa as the production

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center, and a west-south group with Abu Fanduweh as the production center. This pattern is expected for neckless ledge rim jars and grooved round rim jars.

ii. Proto bevel rim bowls were produced locally on western sites. Proto bowl production may reflect central administrative involvement with village labor.

iii. In the east, ceramics were obtained from both the Susa and Abu Fanduweh workshops. It is expected that there would be variability in the chemical composition of samples of neckless ledge rim and grooved round rim jars from eastern sites because they come from both eastern and western workshops. If, on the other hand, ceramics were produced locally, then groups could be formed on an individual site basis, with a high degree of variability in the chemical composition of ceramics from site to site. This proposition applies to neckless ledge and grooved round rim jars.

iv. If proto bevel rim bowls are ration vessels provided by western administrators, and the eastern portion of the plain was not under western control, then the few bowls in

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the east may have been brought there for various other reasons. If so, then they may be expected to show a high degree of chemical variability, both on an intra- and inter-site basis and to relate chemically to the western compositional patterns. On the other hand, if proto bevel rim bowl production is local, then groups may be formed on a site basis.

b. Middle Uruk. Johnson (1973, 1983) has proposed that a state appears on the Susiana during this period. There are three administrative centers: Susa and Abu Fanduweh in the west and Chogha Mish in the east. The ceramic types analyzed include bevel rim bowls, cross-hatch bands, and wide strap handles. These types were sampled because they are characteristic of the period, and because they had previously been analyzed by Johnson (see Table 7).

i. If bevel rim bowls are locally produced, PCRUs can be formed on a site basis. If, on the other hand, they were centrally produced, the expected pattern could be one PCRU for each administrative area.

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ii. If cross hatch bands and wide strap handles are centrally produced, each of the three administrative units will have its own PCRU. Local production of these types will yield a pattern of single-site PCRUs.

c. Late Uruk. The overall contraction of settlement in this period divided the plain into eastern and western polities (Johnson 1973, 1983). As in Middle Uruk, there are three administrative districts, but these are more contracted than between the two areas, implying separate ceramic production and distribution systems. The ceramics studied for this period include bevel rim bowls, twist handles, droop spouts, and jar shoulders with groove and oblique decoration.

i. As in the Middle Uruk, if bevel rim bowls are locally produced, compositionally similar groups can be distinguished on a site basis. If there is centralized production, the groups can be formed for each region.

ii. If the droop spouts, groove and oblique jars and twist handles were centrally produced, PCRUs can be formed on a regional basis. If, on the other hand, they were

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locally produced, the groups would be formed by site.

These propositions were tested by neutron activation analysis. The results of the analysis are reported and discussed.

II. The Neutron Activation Analysis Results

The Uruk sample selected for neutron activation analysis was largely drawn from Wright and Johnson's 1970-71 survey (Johnson 1973). Additional material came from excavations at Chogha Mish, KS 76, and KS 36 (Table 1). Of the 965 samples actually used in this study, 519 (54%) were from Early-Late Uruk (Table 5). In assembling the sample, sherds were taken from sites all over the plain. In addition, four to five sherds per type were selected for analysis so that inter-site comparisons could be made. Finally, 162 sherds analyzed in Johnson's 1973 study were also included in the sample so that the results of his microstylistic analysis could be assessed by NAA (Table 7).

The same general set of problems discussed in chapter five in utilizing a relatively small sample

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of small sherds apply here. As in the earlier periods, chronological placement is a problem with the Uruk, especially for such types as bevel rim bowls and cross hatch bands which endure for several periods. I was initially concerned that the lack of chronological distinctions would obscure compositional distinctions between groups of ceramics, but, as in the case of the early material, chronology did not seem to influence the results; bevel rim bowls, for example, grouped on the basis of location whether they came from Middle, Middle-Late, or Late Uruk sites.

The entire Uruk sample consists of unpainted common wares (Figs. 20-22). Most types are grit and mineral tempered, with twist handles having heaviest temper (largely grit). Bevel rim bowls are tempered with a variety of materials, visibly including grits, grog, and chaff; proto bevel rim bowls have much less temper in them. Two sampled types -- cross hatch bands and groove and oblique jars -- were decorated with incised lines. The other types of vessels sampled were stylistically unelaborated. In some rare cases a slip was used, but the ceramics are generally totally undecorated.

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A complete breakdown of the samples is presented in Table 4; see Figs. 20-22 for illustrations.

As with the fifth millennium material, the analysis of the neutron activation data initially followed standard BNL procedures: screening and description of the groups (using ADSTAT) was followed by multivariate analyses (using NADIST, AGCLUS, and ADCORR). The results obtained with these techniques were similar to those obtained for the earlier periods studied. With the exception of bevel rim bowls, the clays and tempers were too similar in terms of chemical composition to construct any archaeologically meaningful groups.

As discussed in the previous chapter, the next step was to return to univariate techniques of data analysis. Johnson's Data Screening Package was used to analyze the data. Similarly, the concentrations were analyzed in raw rather than log concentration form (see chapter five for further explanation).

After some time, I developed a general strategy for analyzing the data. I first established a baseline data set using the bevel rim bowl results. Next, the proto bevel rim bowl data were compared to that of the bevel rim bowls. The

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trends in the data were identical for both types, so the proto bowls became part of the baseline. I then added other types for which I had 25 or more samples (neckless ledge rim jars, cross hatch bands, twist handles, and wide strap handles). Finally, the other types, which had comparatively few samples, were compared to the bowl data.

This technique did not yield definitive results, but did suggest certain important trends in the data. The results, which are presented here in order of analysis, are interesting and challenging.

A. Bevel Rim Bowls. The 131 bevel rim bowls from the Middle-Late Uruk were the starting point of the second stage of analysis and are used as a basis for discussing the rest of the data (Fig. 21).

Initial analyses of the bowls by multivariate techniques yielded good results. The ADCORR program was able to separate the bowls into chemical compositional groups or CPCRUs; these groups, upon inspection, were PCRUs formed on the basis of sites (Figs. 23-25). That is, the bevel rim bowls from each site formed a chemical compositional group that was internally compositionally homogeneous but was compositionally

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different from each of the other groups from other sites on the plain. The result strongly suggests that the bowls were manufactured at each site, rather than centrally.

Such clear-cut results were not obtained for any other type. I suggest that the explanation for this lies in the temper used in the bowls. While the clays have been shown to be similar throughout the plain, the amount and particularly the variety of temper sets the bowls apart from the other ceramics. The intensive use of local temper resources is, I think, the major factor accounting for site-to-site variability in the chemical composition of bevel rim bowls.

Not unsurprisingly, the per cent deviation statistic, which proved to be so useful for the fifth millennium material, yielded poor results in the Uruk (Tables 393-401). The greatly increased use of temper during the fourth millennium resulted in high degrees of variability, even for fairly well-established single-site groups. The per cent deviation statistic was not used in further analysis of the Uruk materials.

Having clearly established PCRUs for the bevel rim bowls, the next step was to find a way to use

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the bowl data as a baseline against which other groups could be compared. For all of the other types, a first pass at the data using ADCORR and other multivariate techniques had proved fruitless.

However, examination of the correlation matrices for the bevel rim bowls showed that iron and scandium were highly correlated, with a Pearson's r of 0.980 (Fig. 26). Incidentally, this high degree of iron-scandium correlation is common in nature, and it has been used in other source characterization studies; see, for example, Brooks et al. 1975.) Other correlations which were not as strong as the one for Sc-Fe were also observed (Fig. 26); but ultimately scatter plots of all possible pairs of elements were generated for the entire bevel rim bowl sample. These plots were examined to see if discontinuities, break points, or clusters in the plots distinguished CPCRUs.

The clearest results of this exercise were obtained in the iron-scandium scatterplot (Fig. 27) Two samples (044 and 629) were eliminated from the plot due to outlying iron values (probably due to analytic or sampling error). The correlation of the 129 remaining samples became even higher (Fig. 28), and separation of groups even clearer. To

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further clarify the break points, the group at the highest end of the scatterplot was removed (Fig. 30).

The same procedure was followed for all of the other scatterplots generated. Outliers were deleted, then the samples at the high end were removed. The results of removing the high end can be clearly seen in Figs. 28-29. Because the dimensions of the scatterplot are fixed in the data screening program, removing the high value samples and replotting the remainder stretches the plot out and breaks between groups can be perceived more easily. This procedure was sometimes done two or three times on a data set.

The fixed dimensions of the plot also put an effective upper limit of about 250 samples per plot. Although the program can handle many more than 250 samples, the data points were so tightly clustered that the high density made it impossible to perceive any breakpoints. The basic procedure, then, was to keep comparing different types against the bevel rim bowl-proto bevel rim bowl baseline until the limit was reached, then starting the comparison over again.

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For the bevel rim bowls, a total of seven Sc-Fe groups, based on the break points in the scatterplot of the 129 bowl samples, was formed (the results are summarized in Table 402). These groups were then studied for archaeological significance. Two important trends were noted. First, group composition changes from samples from the east to samples from the west as Sc-Fe concentrations increase. Group 1, for example, is 82.4% eastern, while group 7 is 25% eastern. Secondly, the percentage of west-south sites within the western portion of samples increases as the Sc-Fe concentrations increase. In the first group, western sherds make up 17.7% of the group, with 13.8% from the west-north and 3.9% from the west-south. In contrast, group 6 is 75% western, with 12.5% from the west-north and 62.5% from the west-south.

In sum, the bevel rim bowl data yielded two important results. First, the PCRUs that were established strongly suggested local production of bowls. Secondly, the Sc-Fe scatterplot of the bowls was established as a baseline against which to compare other types. The trend is for the groups to become increasingly western and

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west-southern as concentration levels become higher. If this trend were to be established for other types, it would suggest at least regional-level ceramic production; it would not, however, specifically rule out local production.

B. Proto Bevel Rim Bowls. The 59 Early Uruk proto bevel rim bowls (Fig. 20) come from 21 sites across the Susiana. The proto bevel rim bowls are much less heavily tempered than the bevel rim bowls, and did not separate into groups in the multivariate analyses. While the correlation matrix showed iron and scandium to be highly correlated (r=0.918), the break points were somewhat obscured on the scatterplot (Fig. 30).

After one outlier (633) was eliminated from the proto bevel rim bowl group (Fig. 31), the 58 remaining proto bevel rim bowls were added to the 129 bevel rim bowls (Fig. 32). The 187 remaining samples were then grouped, using the break points on the scatterplot. The results were markedly similar to those obtained in the bevel rim bowl analysis. Six groups were formed. Significantly, the boundaries of the groups in terms of iron-scandium ranges were quite similar to those for the

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bevel rim bowls, suggesting that the groups are chemically valid (Tables 403-405; Figs.32-33).

Analysis of the groups for archaeological significance showed exactly the same trends as did the bevel rim bowls. As concentration values increase, the samples are increasingly western and increasingly from the west-south (Tables 403-405).

The proto bevel rim bowl data, however, did not permit an interpretation of local production. At this level of analysis, only regional distinctions can be made. Thus, proto bevel rim bowl production and distribution was conducted on a regional scale, but the degree to which proto bevel rim bowls are locally produced within each region cannot be ascertained, restricting further interpretation of the results in terms of organization of ceramic production.

C. Neckless Ledge Rim Jars. The analysis continued with another Early Uruk type, neckless ledge rim jars (Fig. 20). The original sample of 32 jars from 13 sites showed high Sc-Fe correlation (r=0.873). When three outliers (687, 691, and 692) were omitted the correlation was even higher (r=0.995; Figs. 34-35). To anticipate a methodological point that I will return to more

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fully in chapter seven, the anomalous values of 687 and 691 turned out to be explicable to some degree.

These two samples were activated -- that is they were put into the reactor together and were counted together -- as part of a group (called activation 21 in my project) consisting largely of cross hatch band samples, with some grooved round rim jars and wide strap handles also included. When these two neckless ledge rim jar samples were thrown against the bevel rim bowl-proto bevel rim bowl Sc-Fe scatterplot, their values floated above and parallel to the least squares regression line of the rest of the values (Fig. 36). Membership in this parallel group increased as other types were compared to the Sc-Fe baseline.

When it became apparent that the only thing all of the samples in the anomalous group had in common was that they all came from activation 21 the original data were carefully reviewed. However, all the data from that run looked perfectly normal, including the data from the standards against which all the other values are calibrated. As it turned out, all of the data were accurate with one exception. Dr. Garman Harbottle of Brookhaven selected a random sample of 15 from

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the original activation 21, and arranged to have it reactivated at the National Bureau of Standards by Dr. James Blackman. The results showed that all of the original Sc values were too high by 5%, while the original Fe values were too high by only 1.7%. Unfortunately, neither of the two neckless ledge rim jar samples were reactivated, so the two samples were deleted from the rest of the analyses. Incidentally, the reason for the inflated Sc values is probably an analytic error of some type which cannot be determined ex post facto.

To return to the analysis of the rest of the neckless ledge rim jar data set: when the sample could not be readily subdivided into archaeologically meaningful groups, the neckless ledge rim jars were added to the bevel rim bowl-proto bevel rim bowl scatterplot.

The Sc-Fe correlation of these three types was very high (r=0.993). The break points between the groups remained quite stable (Tables 406-407; Figs. 37-39), and the groups formed were totally consistent with those formed earlier. The patterning was the same: as concentration levels rose, the groups became more western and more west-southern in character. The high degree of

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robustness in the formation of chemical groups based on Sc-Fe correlations supports my belief that these are valid distinctions related to the origins of the groups.

Again, the results are consistent with ceramic production on a regional level, but do not have sufficient resolving power to distinguish local production. The results are also consistent with Johnson's (1973) data on microstylistic groupings of neckless ledge rim jars, in which the groups are formed around separate western and eastern workshops. Johnson's samples fall in broad eastern and western groups, but the scatterplots show trends rather than firm groups. Further refinement of the data to examine possible local production of vessels cannot be performed with the available data.

D. Twist Handles. At this stage of the analysis, Late Uruk twist handles (Fig. 22) were analyzed to see if the groupings held up through all the Uruk periods (Figs. 40-41). The 29 twist handles come from eight sites. Sc and Fe are highly correlated (r=0.973). The twist handles were added to the bevel rim bowl, proto bevel rim bowl, and neckless ledge rim jar data set; the results were again

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consistent with that from earlier cases (Fig. 408-409; Figs. 42-43).

The twist handle groups had break points in the same places as the earlier groups, demonstrating the groups' chemical stability in a most gratifying way. Furthermore, the data showed that the archaeologically meaningful groups had the same pattern as did the earlier groups (Tables 408-409; Figs. 42-43).

These results, once more, do not allow further distinction as to local versus regional levels of production, but rather suggest that production and distribution were conducted at least on a regional scale.

E. Cross Hatch Bands. In the original data set, 87 Middle Uruk cross hatch bands (Fig. 21), including 20 samples from KS 36 (Tepe Sharafabad), were activated. The results appear in Fig. 44. Notice that two parallel groups appear on the scatterplot. In the initial stages of the data analysis, no explanation could be found for this, although it was noted that many of the samples in the smaller upper group were from KS 36. However, it turned out that these samples were part of the activation 21 group. Samples 803, 810, 811, 812,

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814, 815, 816, 817, 818, 822, and 824 were reactivated by Blackman. Samples 797, 798, 799, 800, 801, 802, 804, 805, 806, 808, 809, 819, 820, 821, 823, 825, 826, and 827 were also part of activation 21, but were dropped from the final data analysis because they were not reanalyzed (Fig. 45).

When compared against the bowl baseline, the cross hatch band results were slightly different from those reported for other types (Table 410; Figs. 46-48). Notice that in the fourth group, 75% of the samples are from the eastern part of the plain, with most of these coming from the center. The fourth group typically has low percentages of eastern samples. The explanation probably relates to sample size. There are more samples from the center of the plain -- just over 45% of the total -- in the cross hatch band group due to the large number from KS 36.

However, the cross hatch band groups have essentially the same boundary concentration ranges as do the other samples, and the trends in the data are similar as well. The samples measured by Johnson which were analyzed by NAA showed results consistent with the east-west patterning he found.

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Nevertheless, local production at the site level is not ruled out by the NAA analysis.

F. Wide Strap Handles. The original Middle Uruk wide strap handle (Fig. 21) group consisted of 54 samples (Fig. 49). However, four samples -- 517, 641, 659, and 669 -- were part of the ill-fated activation 21, were not reactivated, and thus were dropped from further analysis (Fig. 50).

Once again, the same results were obtained as in the rest of the data (Tables 412-413; Figs. 51-53). The only small difference was an additional group at the high end; however, this group fell comfortably into the general pattern. Of the ten samples in it, nine are from the western part of the plain, with four each from the north and south and one from the far west. The boundaries of all the groups are generally consistent with those from other types.

G. Groove and Oblique Jars. The samples with this Late Uruk design (Fig. 22) fit the same pattern. Lower concentration values were found in the eastern samples; as the concentration levels increase, the groups became more western and more west-southern. The group boundaries also had similar values (Tables 414-415; Figs. 54-56).

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H. Droop Spouts. This small group of 19 Late Uruk samples (Figs. 22, 57) was added to the bevel rim bowl-proto bevel rim bowl-groove and oblique group. The range of values for the concentration for these samples fit into the middle range of the larger group; most of the droop spouts are found in group three (Tables 416-418; Figs. 58-60). This is not surprising as most of the samples (16 out of 19) come from sites in the west-south. In fact, the boundary ranges of group three with droop spouts are virtually identical to those from group three with bowls and groove and obliques (Tables 54-56). Again, the same trends in the data were apparent. The data could not specifically confirm or refute the east-west split in the plain proposed by Johnson, although they are consistent with that analysis.

I. Miscellaneous Types. Several samples did not fit into the larger type categories. These included a conical spout, a straight spout, a ceramic nail, an unfired fragment of a bevel rim bowl, and two cross hatch bands with nose lugs. These were put into the bowl-groove and oblique-droop spout group. The results were predictable; this small mixed group of samples behaved in the

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same way as did the other types (Tables 418-419; Figs. 61-62).

J. Grooved Round Rim Jars. This group of Early Uruk ceramics originally consisted of 29 samples (Figs. 16, 63). Four of these were irradiated in activation 21; of these, 526 and 677 were retired while 532 and 533 were reanalyzed. The data once again conform to the pattern observed with the other types (Tables 420-421; Figs. 63-65).

IV. Conclusions

The NAA results are provocative. The strongest conclusion is that because the bevel rim bowls form PCRUs on the basis of site, it is likely that they were produced locally, a finding that supports several of the extant arguments about bowl production (see Beale 1978; Balfet 1980; Johnson 1973;1983; Le Brun 1980).

The results for the other types are remarkably consistent. The trends in the iron-scandium data and the group boundary ranges remain persistent for material presumably encompassing several hundred years and ranging across different types. Explaining these results is very difficult in many ways. For example, they could imply that the same

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pattern in production and distribution prevailed from the Early through the Late Uruk. This may be unlikely, but it is not ruled out by the data.

On the other hand, the regularity in the results may be glossing over different production patterns. For instance, although the bevel rim bowls can be shown through multivariate analyses to be locally produced, when analyzed through the scatterplots the bowls exhibit the same trends as every other type. These other types, however, could not be broken into groups with multivariate techniques.

I have suggested that the inability to group these other types lies in the great uniformity of Susiana clays -- witness the fifth millennium results -- but perhaps the similarities in the clay have nothing to do with the results, and what we are really seeing are two different production patterns, with bowls produced locally and everything else made in regional centers.

This scenario is of course entirely suppositional given the data available. Reviewing the results, local production of Uruk ceramics has not been ruled out through this analysis, just as it has not been demonstrated. We now can say that

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production was organized at most on a regional basis.

The implications of these results for the propositions set out in this chapter are certainly not definitive; they really neither support nor controvert Wright and Johnson's (1985) contention that ceramic production was centrally organized in western and eastern workshops, although they are consistent with the east-west workshop division.

However, even if we can demonstrate the existence of regional-level pottery workshops, the data analysis cannot test whether these workshops were centrally organized by central administrators. And I could find no ethnographic nor ethnohistorical parallels for this level of centralization, even among the Romans (Peacock 1982). The Roman case, in fact, is a relevant one. Ceramic production was organized on many different levels, ranging from household production to military-run factories. And vessels in standardized dimensions were produced by independent workshops to meet state demand, and not by the states themselves (Rottlander 1966, 1967).

On the Susiana, clay is available throughout the plain, suggesting that running centralized

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ceramic production would have been an expensive policy for administrators, who would have to simultaneously manage the pottery industry, possibly arrange for and protect access to resources, and try to control ceramic production in the hinterlands. Indeed, there is evidence for village-level production of ceramics during the Middle Uruk (Johnson 1976).

On the other hand, it is quite possible that potters would be attracted to centers without the coercion of administrators. As Arnold (1975) points out for the center of Huari, potters are attracted to centers because there is a demand for their wares combined with accessible resources. With clays ubiquitous in the Susa area (Ruben 1979; Ruben and Trichet 1980) and throughout the plain, and a growing population in the Middle Uruk centers (Johnson 1973, 1983), potters would find both plentiful resources and a ready market for their wares. And if many of the Uruk vessels were used for administrative transactions involving the transfer and storage of commodities, potters would have an great deal of incentive to set up shop in centers as well as in administrative outposts.

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The lack of stylistic elaboration of vessels in the Uruk is also worth considering. It is a phenomenon widespread in contemporaneous Mesopotamia (see chapter seven). Certainly the lack of elaborate vessels in highly complex societies is not unique to this area. Egyptian pottery throughout much of the Old-New Kingdoms is also fairly unimpressive (Bourriau 1981). The massive amount of Uruk plain wares is, however, particularly striking after the millennium or more of painted wares.

I suggest that Uruk pottery, in contrast perhaps to the fifth millennium vessels, was not an information-bearer or signaler (cf. Pollock 1983; Wobst 1977) in society. Since relatively little is known about Susianan Uruk society, the items that served this function are unknown, probably because they were not archaeologically preserved. However, if pots are simple utilitarian objects rather than elite signalling devices, this may further argue against central meddling in ceramic production. The central administrators, however, may have actively intervened in other craft systems to extract high status goods.

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Finally, a few more words about bevel rim bowls and their relationship to sociopolitical organization. The NAA data present, for the first time, direct evidence that bevel rim bowls were locally produced. These data will be used, I am sure, to support or refute various arguments about the purposes to which these vessels were put.

Frankly, one can build a case for almost any use. The bowls may have been the yogurt containers for a thriving Uruk industry, or household pots, or they may have been the ration containers made and issued on the spot by a party of central or even village administrators rounding up the locals for a tour of corvee labor duty. The bowls have been measured (Alden 1973; Beale 1978; Espinosa and Manzanilla 1985; Johnson 1973; London 1982; Shimabaku 1976) and chemically analyzed. The next step is not clear, but with real refinement of the Uruk chronology, and especially with a reassessment of the Greater Mesopotamian-wide Late Uruk, some new syntheses of the data may provoke some lines of research into the problem.

Finally, what can be concluded about the relationship between the organization of ceramic production and the development of Uruk complex

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society? No argument can be based completely on the NAA results. On one hand, most of the results are not definitive. On the other hand, when the results are clear-cut, as in the case of the bevel rim bowls, their implications for Uruk society are uncertain.

On the basis of ethnographic and ethnohistoric models, I have suggested that there is no necessary relationship between modes of ceramic production and organizational complexity. In the specific Uruk case, there is no compelling evidence for central control of all aspects of ceramic production. Relevant ethnographic data, in fact, point away from such control. Administrative meddling in ceramic production could have been a factor in centers, where administrative presence and demand is great. However, potters are quite responsive to changes in demand, and could have organized new workshops without central control or coercion. There is a greater likelihood that the administrators may have been involved in regulating commodities contained in pots rather than the production of the vessels themselves.

The NAA data presented here have been used to sketch some broad trends in Uruk ceramic

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production. Further exploration will provide more detail about pottery production and its relationship to the development of complex polities.

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CHAPTER SEVEN - CONCLUSIONS

The relationship between the organization of ceramic production and sociopolitical organization was explored in this study, using fifth to fourth millennium B.C. southwest Iranian society as a test case. While the neutron activation analysis shed some light on specific aspects of ceramic production during that time, the results were also important in illuminating more general methodological and theoretical issues.

First, my research has raised some important questions about sample size in source characterization studies. Many source characterization studies using fairly small sample sizes have been successful when dealing with problems in inter-regional trade relations (e.g. Bieber et al. 1976; Brooks et al. 1974; Davidson and McKerrell 1976); but comparatively few such studies of intra-regional trade or production patterns have been undertaken (but see, e.g., Buko 1984; Deutchman 1980; Bishop and Rands 1982; Rands et al. 1982; Ruben 1979; Ruben and Trichet 1980).

Part of the reason may be that small sample sizes can present particular problems when doing

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source characterization studies of relatively restricted areas. My research is an excellent case in point. In the initial feasibility study for this project, I analyzed a small group of 90 sherds. The results from that small analysis were encouraging. Several good (that is chemically, statistically, and archaeologically sound) chemical compositional groups were formed. However, as more samples were added, distinctions between groups increasingly blurred. At the end of the myriad multivariate analyses I performed, I wound up with one very large group for most of the Uruk wares, for example, with a few outliers. Such results were totally useless for the problems I was addressing, but they raised some interesting issues.

Clearly, the problem was that the Susiana clays were chemically quite similar. The reason this did not show up in the small feasibility study deserves some attention. Simply put, when groups are formed using techniques of multivariate correlation (see chapter three), there are as many dimensions as there are variables. The boundaries of the group are defined by 95% confidence limits.

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With a small sample, group centroids are some distance apart.

However, in a situation where the clays are quite similar and sample sizes substantially increase, the centroids of the group may move closer to one another until they eventually form a single group. This can be explained by reviewing what happens when a new member close to the edge of the group boundaries (i.e., confidence limits) is added to the group. The group centroid and boundaries will shift slightly, which in turn improves the chances that samples once slightly outside the group will become group members on the next iteration. This will in turn shift the centroid and expand the boundaries even further; with a high degree of compositional similarity present, the number of separate groups will be considerably reduced.

In my research, groups were initially formed on the basis of archaeological considerations or by cluster analysis of elements. Once a group was formed, other samples were thrown into the group to see if they fit (using the program ADCORR, Sayre n.d.). In almost every case, each sample put into the group became a group member. The result was an

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enormous group with a few outliers. This occurred no matter how I began forming the groups.

Sample size is clearly the most critical variable here. There was discrimination between groups with small sample sizes; as the sample size increased, the groups merged into one enormous mass. Because many source characterization studies with constraints on time and budget use small samples sizes, the results, especially from intra-regional projects, should be regarded as provisional and pending further investigation. In evaluating such studies, the sampling methodology, the degree to which supporting studies such as petrographic examination are used, and the techniques used to interpret the results must be carefully reviewed.

Already armed with a healthy dose of caution about my own project, I was still surprised to find an additional aspect of the sampling problem arising during the last stages of the final data analysis. I have already touched on this in the previous chapter, but it is worth reviewing. In chapter six, I described how certain univariate techniques were successfully applied to the Uruk data. Because Sc and Fe were so highly correlated

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in all the Uruk types, I used Sc-Fe scatterplots to form loose regional groups, with bevel rim bowl Sc-Fe correlations as a baseline.

I then added other Uruk types. Most of the added samples fell right along the least-squares regression line, but I noticed that after adding cross hatch band, wide strap handle, neckless ledge rim jar, and grooved round rim jar data, a new group formed above and parallel to the regression line (Fig. 36). Examination of the group membership yielded no clues -- there were no commonalities in terms of location, paste, temper, or period.

The group did turn out to have one thing in common, however. All of the members were activated together (termed activation 21, this group of 44 samples, 5 standards, and one blank was sealed in a canister, irradiated in the reactor, cooled, and counted together). However, inspection of the standards and calibrations by Dr. Garman Harbottle and by me revealed no anomalies nor reason to suspect bad counting statistics. To verify the results, the samples were sent to the National Bureau of Standards, where they were re-activated by Dr. James Blackman. The results of the re-

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activation were fascinating and I think quite important. The new Sc and Fe figures were right on the original regression line. But the error in the original count was 5% for Sc and only 1.7% for Fe; both figures are well within the range of normal analytic error and would not draw any special attention. Indeed, it is likely that these erroneous data would have gone undetected if circumstances had been just slightly different. For example, if activation 21 had been constituted entirely of samples from a certain location or of a certain type or from a different period, the results might have appeared to include two groups with parallel regression lines and an archaeological rather than an experimental explanation might have been sought.

I suspect that, in fact, the error was detected and corrected because I had a very large data set yielding very homogeneous results. This observation is quite important, for in small-scale studies with more heterogeneous samples to work with, some serious misinterpretations could occur and go virtually undetected.

Given the standard problems in applying source characterization studies to archaeological cases

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(reviewed in chapter three), along with the pitfalls noted here, one might conclude that a great deal of time and money must be invested in such studies for (at best) questionable results. I agree that a good deal of time and money should be spent on a source characterization project if it is to yield meaningful results. In source characterization, as in most archaeological investigations, a sharply defined problem and a well thought-out research design with a good sample are obviously going to work best. More specifically, increasing the number of elements analyzed and the total number and variety of samples analyzed are critical for distinguishing among compositional groups.

In addition, source characterization methods are very important; they are often the only available method for dealing with certain archaeological data sets and problems such as unelaborated ceramics collected on survey; witness the bevel rim bowl results in this study. Source characterization methods may be used to confirm or interpret results from other kinds of studies. For example, because paint is generally a more "prepared" product than ceramic paste, it might

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show more characteristic chemical differences and thus could refine paste characterization studies (see, e.g., Steinberg and Kamilli's 1984 study of paint and paste of Halaf ceramics).

Ultimately, source characterization methods work best when supplemented by other archaeological data. They are a useful adjunct when archaeologists have other kinds of information available; but when little is known about the artifacts, such methods provide a useful starting point for further research.

In the Susiana case, several avenues of additional research could be profitably explored with data from collections available in North America and Europe. First, it would be interesting to analyze the paint on the fifth millennium black-on-buff ceramics. Such an investigation might distinguish among workshops, especially for the Susiana d material where the pastes are so similar chemically. Dollfus (personal communication, 1985) has been able to associate design motifs of fifth millennium black-on-buff vessels with particular areas on the plain; it would be interesting to compare the results of a paint analysis with her data.

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Another project worth pursuing is further investigation of stylistic and microstylistic variability in Susiana ceramics. Johnson (personal communication, 1985) is currently exploring microstylistic variability in some Uruk jar types; both chronological and locational distinctions are being made. Such studies, when used conjointly with other archaeological and source characterization data, may yield a clearer picture of fifth-fourth millennium B.C. ceramic production.

And -- if the area opens up again, and if it has not been totally devastated by the current war -- it would be very useful to do more archaeological research on the plain with the specific objective of recovering more evidence of ceramic production. Stark (1985) has pointed out that while there are many categories of evidence for ceramic production, such as portable tools, raw material, kiln, ash, wasters, and aberrant types and forms, the co-occurrence of these is most important in determining whether pottery production took place on a site. This sort of evidence is generally missing from the Susianan archaeological record, which largely derives from surface

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collections, but it is critical for our understanding of ceramic production there.

However, in the enforced break from field work, perhaps it is time to take what we know about ceramic production and apply it to two very interesting phenomena on a grander scale. In this dissertation, I have generally kept close to my data and confined my remarks to the Susiana, but the plain is a relatively small part of the vast area called Greater Mesopotamia, and a lot of interesting things were going on during the fifth and fourth millennia B.C.

The first of the phenomena is the shift from the fifth millennium ('Ubaid) painted wares to the coarse unelaborated Uruk wares throughout Greater Mesopotamia. This change raises many interesting questions about ceramics and their relationship to sociopolitical organization. Traditionally, archaeologists have viewed pots as a sensitive barometer of cultural change. When we monitor the shift from 'Ubaid to Uruk ceramics, are we also monitoring a major sociopolitical shift?

Many archaeologists (as reviewed in chapters five and six) would agree that we are indeed seeing a shift toward greater societal complexity during

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this period. Interestingly, ceramics apparently cease being the information-bearers in society (cf. Pollock 1983). Does the shift in the role ceramics play in society imply changes in the organization of ceramic production? My data cannot fully address this question. The NAA data very strongly suggest, for example, local production of ceramics during Susa A. But the Uruk data, while not inconsistent with local production, also do not rule out centralized production on a regional level. However, the question is worth pursuing from both the ceramic and the archaeological angles.

The second phenomenon is the widespread "cultural congruence" (Nissen 1982:340) throughout Greater Mesopotamia during the Late Uruk which is distinguished from the more regional patterns occurring both before and afterwards; there is a "...remarkable similarity of Late Uruk ceramic assemblages, administrative artifacts, and features of building construction wherever they are found" (Johnson 1982:629). Although the pottery looks the same across a wide area, the vessels, at least in the Susiana, are produced locally. Is ceramic production organized similarly everywhere

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throughout Greater Mesopotamia? And if pots are presumably not the information-bearers, what does their identical appearance over such a broad area signify?

My data set can make only a small contribution to solving this very large problem. Source characterization studies carried out in several regions of Greater Mesopotamia on the unelaborated vessels of the period, would provide a substantial basic data set that could contribute to our understanding of the Late Uruk.

My NAA study has yielded some specific information about fifth and fourth millennium B.C. Susiana ceramic production, has raised some questions, but has not resolved all of the issues. In terms of solid information, we have some new data with which to work. Taking the Uruk first, a very strong case can be made for local production of bevel rim bowls, as ceramic compositional groups could be formed on a site-by-site basis. As I have suggested (see chapter six), this result is consistent with several different models which attempt to determine the use to which the bowls were put. Local production supports the ration

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bowl argument, but does not preclude other scenarios.

The rest of the Uruk data was somewhat equivocal. Regional production of all of the plain wares was indicated, but local production could not be ruled out by any means. However, the results were consistent with those from Johnson's (1973) microstylistic study, although he was better able to separate eastern and western groups than the NAA data could. And the great homogeneous corpus of Uruk plainwares provides an excellent reference group for comparable comparative studies from other parts of Greater Mesopotamia. My NAA data clearly show, for example, that while Late Uruk pottery looks alike, it was manufactured on at least a sub-regional level.

The investigation of the Period 7-13 ceramics also yielded some interesting results. First, the Period 12 black-on-buffs are remarkably homogeneous throughout the plain. Several interpretations can be made. Although the clay appears to come from a single source, this may be a bit deceptive. The single source may in fact be a river cut that is many kilometers long. I am inclined to believe that the single source is probably a stratum of

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clay that runs throughout the plain. This phenomenon is known from other areas (see Abascal-M. et al. 1974 on the Valley of Mexico; Adan-Bayewitz and Perlman 1985 on the Galilee in Israel) and has been noted for the Susiana in other types of physiocochemical analyses (Ruben 1979; Ruben and Trichet 1980). The similarity in clays may show up during this period because the pastes are basically untempered; perhaps the clays were levigated or cleaned, or perhaps temper was added to clays in all of the other periods studied. Comparative studies of paints and designs may play nicely off this data.

On the other hand, the Susa A black-on-buff results strongly suggest that ceramics were locally produced in many villages, while the high degree of compositional variability in the center of Susa suggests that ceramic vessels may have been brought in from the villages. As the sampled collection from Susa includes some elaborately painted vessels, the result was surprising. It has been argued (see, for example, Hole 1982) that these vessels would be made in the center. However, the pattern of importing vessels into Susa fits several

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notions of how Susa A society was organized (see chapter five).

A source characterization study coupled with a stylistic analysis of Necropole ceramics would be, I think, particularly useful. The "Necropole" ceramics may have been made in villages throughout the plain, and brought as burial goods to Susa. The Necropole burials may in fact be secondary (Hole 1982). And patterning in the distribution of ceramic motifs might correspond to compositional groupings. We may learn a good deal about Susa A society from a study of this nature.

In the category of suggestive but unclear results there are many entries. The variability in the Susiana red wares does not pattern in any well-defined way, but seems to indicate local production. I think further work with red wares requires better chronological control and a more narrowly defined data set.

The Susa A red wares were the most intractable. They were more heavily tempered, and they varied in a way that could not be tied to any type or location. The Terminal Susa A wares were too small a sample from which to draw any major

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conclusions, although the results do point in the direction of local production.

At the same time, I have attempted to point out through the vehicle of the NAA case study that there is no necessary relationship between sociopolitical organization and the organization of ceramic production. That is, both simple and complex societies may have many different types of production systems, and any one society may have several different kinds of production operating at the same time. While this makes the archaeologist's task difficult, as specific evidence about the nature of ceramic production cannot be assumed but must be discovered for each case, archaeologists may in turn discover new patterns and be able to approach larger questions such as Late Uruk Greater Mesopotamian pottery production.

In this spirit, I conclude that while the NAA results were largely consistent with the propositions concerning ceramic production set forth at the beginning of the study, the patterns of ceramic production could be explained by several different models. Studies of patterns of other types of craft production might shed more light on

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sociopolitical organization than does ceramic production. While everyone needs pots, metal, stone, seals, or other narrowly distributed items might be more likely candidates for elite intervention.

The NAA analysis did not permit direct evaluation of some of the larger theoretical issues involved in the evolution of complex societies, but it did provide some strong and challenging data for research that involves those larger issues. As for the big question -- the organization of ceramic production in relation to sociopolitical organization -- it remains a problem well worth tackling by anthropologists and archaeologists. I hope I have raised more questions about this relationship than I have answered, for we have just begun.

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APPENDIX

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Table 1. Summary of Ceramic Samples and Lenders

Lender, Institution	Sample Nos.	Description
Henry Wright Museum of Anthropology University of Michigan	001-090 440-827 987-1021	Uruk ceramics: Susiana survey Sharafabad excavations
Frank Hole Department of Anthropology, Yale University	091-439 899-917	Period 7-Susa A ceramics: Susiana survey
Pierre Amiet Departement des Antiquites Orientales, Musee du Louvre	828-847 879-898	Period 7-Susa A ceramics: Susa excavations in Louvre collections
Genevieve Dollfus Centre National de la Recherche Scientifique, Research Unit No. 19, South Iran	848-878	Period 7-Period 12 ceramics: Susiana excavations
Helene Kantor Oriental Institue of Chicago, University of Chicago	918-956	Period 9 and Uruk ceramics: Chogha Mish excavations
Gregory Johnson Department of Anthropology, City University of New York Graduate School	957-967	Uruk ceramics: KS 76 excavations
Philippe Ruben and Jean Trichet Laboratoire de Geologie Appliquee, Universite d'Orleans	968-980	Clay and ceramics: Susa and Jaffarabad

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Table 2. Elements, Half-Lives, and Gamma Ray Energies Used in Neutron Activation Analysis of Ceramics

Element	Isotope Produced	Half-Life (t 1/2)		Energy Gamma Lines KeV
Antimony	Sb^{122}	2.8	d	563.9
Barium	Ba^{131}	60.3	d	496.3
Calcium	Ca^{47}	4.5	d	160.0, 1296.6
Cerium	Ce^{141}	32.8	d	145.4
Cesium	Cs^{134}	2.0	y	795.8
Chromium	Cr^{51}	27.8	d	320.1
Cobalt	Co^{60}	5.3	y	1173.2, 1332.5
Europium	Eu^{152}	12.0	y	140.0
Hafnium	Hf^{181}	44.2	d	482.0
Iron	Fe^{59}	45.1	d	1099.3, 1291.6
Lanthanum	La^{140}	40.2	h	1596.2
Lutecium	Lu^{177}	6.7	d	208.4
Manganese	Mn^{56}	2.6	h	846.8
Potassium	K^{42}	12.5	h	1524.0
Rubidium	Rb^{86}	18.7	d	1077.0
Samarium	Sm^{153}	46.7	h	103.2
Scandium	Sc^{46}	84.1	d	889.1, 1120.3
Sodium	Na^{24}	14.9	h	1368.5
Strontium	Sr^{85}	64.0	d	514.0
Tantalum	Ta^{182}	115.1	d	1221.3
Thorium	Pa^{233}	27.2	d	311.9
Ytterbium	Yb^{169}	31.8	d	198.0

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Table 3. Final Sample Concentration Values*

Id	Na (%)	K (%)	Rb (ppm)	Cs (ppm)	Ba (ppm)	Sc (ppm)
001	1.950	2.720	41.10	2.340	1620.0	25.50
002	1.130	1.460	39.10	1.990	420.0	14.30
003	1.230	1.720	48.10	1.830	554.0	16.20
004	0.777	1.870	32.90	1.600	709.0	16.50
005	1.140	1.410	40.90	1.650	478.0	14.80
006	0.934	1.650	37.70	1.660	846.0	17.00
007	0.706	2.090	24.50	3.300	288.0	22.50
008	0.960	1.610	38.50	1.760	669.0	14.50
009	0.891	1.810	29.20	1.950	703.0	18.90
010	0.921	1.960	58.20	2.600	253.0	16.20
022	0.777	2.000	45.00	2.340	474.0	17.80
023	0.636	1.670	33.70	1.610	498.0	17.60
024	0.845	1.890	51.30	1.920	609.0	15.10
025	1.010	2.140	33.70	1.810	766.0	14.60
026	0.715	2.000	47.20	1.910	420.0	14.90
027	0.724	1.900	45.40	2.320	389.0	17.50
028	0.773	2.270	44.70	2.240	373.0	15.80
029	0.854	2.050	44.60	2.060	574.0	15.80
030	0.715	2.240	48.80	2.350	238.0	19.90
041	1.200	0.971	26.00	0.833	231.0	25.00
042	0.569	1.360	40.90	1.580	661.0	24.00
043	2.390	1.110	32.30	1.900	415.0	22.80
044	1.800	0.874	16.90	0.472	1760.0	17.70
045	1.480	0.659	17.20	2.600	330.0	21.40
046	1.370	0.445	10.40	2.290	345.0	21.30
053	1.060	2.010	36.90	2.260	243.0	14.50
054	0.872	2.080	37.60	1.820	295.0	16.00
055	1.030	2.110	31.80	1.460	231.0	14.60
056	1.010	4.170	51.20	2.270	212.0	16.50
057	0.998	2.010	37.10	1.620	267.0	14.70
058	0.896	2.150	37.00	1.990	222.0	15.70
059	0.960	2.020	27.90	1.420	258.0	16.20
060	1.120	2.280	43.90	1.970	294.0	16.00
073	1.090	2.910	75.20	3.260	394.0	21.50
vvv	0.669	2.340	49.30	2.420	702.0	16.60
www	0.616	2.080	47.50	2.620	345.0	18.60
xxx	0.774	2.250	47.80	0.774	225.0	16.80
yyy	0.851	2.400	52.90	2.670	686.0	18.30
076	0.830	1.610	56.50	3.060	393.0	17.80
zzz	0.651	1.890	43.70	2.530	352.0	15.20
078	0.395	1.450	47.60	2.620	488.0	17.90

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Table 3 cont'd. Final Sample Concentration Values

Id	La (ppm)	Ce (ppm)	Eu (ppm)	Lu (ppm)	Hf (ppm)	Th (ppm)
001	32.70	73.40	1.550	0.504	5.620	9.580
002	19.30	41.60	0.865	0.306	3.050	5.410
003	19.70	43.40	0.937	0.312	2.900	5.660
004	20.20	45.30	1.060	0.348	3.430	5.730
005	19.20	41.10	0.913	0.316	3.200	5.180
006	21.30	45.30	1.040	0.344	3.560	6.160
007	25.10	55.30	1.130	0.415	3.440	7.130
008	19.30	41.50	0.993	0.341	3.810	5.690
009	22.50	49.40	1.140	0.388	3.400	6.870
010	20.20	45.30	0.973	0.325	3.070	5.590
022	21.60	47.20	1.040	0.499	3.590	6.110
023	21.30	45.00	1.070	0.400	3.020	6.020
024	19.50	42.80	0.951	0.317	3.000	5.350
025	19.90	43.30	0.855	0.341	2.930	5.330
026	18.80	39.30	0.893	0.292	3.000	5.300
027	21.20	46.50	1.040	0.432	3.310	5.800
028	18.60	39.90	0.902	0.309	2.610	5.100
029	20.90	45.20	0.990	0.316	3.700	5.740
030	30.30	61.00	1.070	0.348	2.760	5.890
041	24.40	56.10	1.220	0.405	3.490	7.580
042	24.20	54.50	1.160	0.473	3.300	7.130
043	24.30	53.00	1.220	0.408	3.590	7.140
044	23.50	50.90	1.010	0.333	3.370	5.900
045	24.80	57.30	1.270	0.379	3.720	6.630
046	24.10	54.60	1.270	0.351	3.260	6.570
053	19.00	39.80	0.865	0.382	2.900	5.380
054	22.20	46.90	0.958	0.312	3.220	6.040
055	18.70	40.00	0.876	0.293	2.430	4.980
056	18.90	41.80	0.888	0.318	3.130	5.660
057	20.90	46.30	0.949	0.301	3.070	6.580
058	20.00	43.20	0.902	0.318	3.310	5.570
059	21.00	43.70	0.955	0.350	3.170	5.510
060	19.70	42.70	0.921	0.404	4.130	5.860
073	26.70	57.50	1.220	0.455	3.910	7.970
vvv	19.60	41.30	0.892	0.313	2.470	5.890
www	22.90	48.20	1.060	0.368	3.530	6.840
xxx	20.90	43.60	0.933	0.313	3.070	5.780
yyy	24.80	56.50	1.110	0.373	3.590	6.890
076	23.80	51.50	1.070	0.479	3.650	6.980
zzz	18.20	37.50	0.817	0.283	2.420	5.180
078	20.80	45.70	1.030	0.385	3.030	6.080

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Table 3 cont'd. Final Sample Concentration Values

Id	Ta (ppm)	Cr (ppm)	Mn (ppm)	Fe (%)	Co (ppm)	Sb (ppm)
001	1.390	480.0	1140.0	6.310	29.50	0.890
002	0.666	310.0	662.0	3.470	16.60	0.540
003	0.939	254.0	722.0	3.940	17.70	0.628
004	1.010	300.0	695.0	4.030	20.40	0.684
005	0.885	246.0	638.0	3.520	16.80	0.399
006	0.866	303.0	755.0	4.080	19.70	0.561
007	1.060	377.0	749.0	5.490	25.10	0.506
008	0.924	361.0	702.0	3.490	17.10	0.633
009	0.936	328.0	756.0	4.610	19.40	0.602
010	0.950	291.0	732.0	3.900	17.90	0.539
022	0.969	338.0	780.0	4.310	20.30	0.567
023	0.862	359.0	746.0	4.260	21.60	0.379
024	0.829	338.0	669.0	3.540	16.10	0.501
025	0.832	293.0	705.0	3.490	16.10	0.573
026	0.595	316.0	648.0	3.550	16.40	0.613
027	0.867	367.0	735.0	4.150	20.40	0.415
028	0.712	272.0	661.0	3.810	18.10	0.661
029	0.859	318.0	704.0	3.740	18.20	0.565
030	1.270	321.0	716.0	4.810	24.40	0.000
041	1.090	351.0	1290.0	6.220	32.80	0.525
042	1.110	308.0	1100.0	5.900	29.00	0.232
043	1.290	390.0	1050.0	5.680	25.00	0.000
044	0.930	243.0	890.0	2.610	21.10	0.594
045	1.250	472.0	1000.0	5.190	25.00	0.718
046	1.270	378.0	849.0	5.100	24.70	0.394
053	0.815	244.0	637.0	3.450	16.00	0.443
054	0.813	312.0	687.0	3.850	18.00	0.512
055	0.715	249.0	690.0	3.510	16.50	0.428
056	0.823	260.0	785.0	4.070	18.50	0.563
057	0.732	273.0	718.0	3.580	16.80	0.429
058	0.922	259.0	726.0	3.800	17.70	0.779
059	0.738	269.0	762.0	3.890	18.50	0.574
060	0.864	287.0	699.0	3.850	17.80	0.641
073	1.320	281.0	973.0	5.130	21.50	0.603
vvv	0.860	219.0	730.0	4.010	17.40	0.741
www	0.931	256.0	756.0	4.430	19.30	0.561
xxx	0.783	243.0	811.0	4.000	17.30	0.518
yyy	0.945	289.0	874.0	4.400	18.20	0.810
076	0.913	289.0	686.0	4.220	18.00	0.844
zzz	0.642	184.0	717.0	3.680	15.40	0.477
078	0.917	226.0	562.0	4.260	18.30	0.586

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Table 3 cont'd. Final Sample Concentration Values

Id	Ca (%)	Sm (ppm)	Yb (ppm)	Sr (ppm)
001	0.000	6.340	3.120	0.0
002	0.000	3.650	1.590	0.0
003	0.000	3.840	1.940	0.0
004	0.000	4.110	2.030	0.0
005	0.000	3.590	1.790	0.0
006	0.000	3.960	2.160	0.0
007	0.000	4.750	2.310	0.0
008	0.000	3.680	1.860	0.0
009	0.000	4.360	1.920	0.0
010	0.000	3.790	1.920	0.0
022	0.000	4.100	2.910	0.0
023	0.000	4.080	2.020	0.0
024	0.000	3.730	1.820	0.0
025	0.000	3.620	1.930	0.0
026	0.000	3.620	1.650	0.0
027	0.000	4.260	2.080	0.0
028	0.000	3.580	1.730	0.0
029	0.000	4.030	1.990	0.0
030	0.000	4.150	1.900	0.0
041	0.000	4.870	2.090	0.0
042	0.000	4.630	2.080	0.0
043	0.000	4.740	2.550	0.0
044	0.000	3.930	2.000	0.0
045	0.000	4.910	2.270	0.0
046	0.000	4.700	2.180	0.0
053	0.000	3.610	1.780	0.0
054	0.000	4.080	2.000	0.0
055	0.000	3.450	1.760	0.0
056	0.000	3.710	1.900	0.0
057	0.000	3.820	1.680	0.0
058	0.000	3.770	1.860	0.0
059	0.000	3.870	1.860	0.0
060	0.000	3.980	2.300	0.0
073	0.000	5.090	2.350	0.0
vvv	0.000	3.590	1.690	0.0
www	0.000	4.330	2.030	0.0
xxx	0.000	3.750	1.910	0.0
yyy	0.000	4.480	2.280	0.0
076	0.000	4.510	2.120	0.0
zzz	0.000	3.300	1.550	0.0
078	0.000	4.280	2.180	0.0

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Table 3 cont'd. Final Sample Concentration Values

Id	Site	Loc.	Per.	Type	Site Size	GAJ No.
001	108	4	5	43	2.1	2.24
002	108	4	5	43	2.1	2.18
003	108	4	5	43	2.1	2.06
004	108	4	5	43	2.1	2.10
005	108	4	5	43	2.1	0.00
006	108	4	5	43	2.1	2.28
007	108	4	5	43	2.1	2.27
008	108	4	5	43	2.1	2.03
009	108	4	5	43	2.1	2.21
010	108	4	5	43	2.1	0.00
022	22	1	3	43	1.0	0.00
023	22	1	3	43	1.0	0.00
024	22	1	3	43	1.0	2.01
025	22	1	3	43	1.0	0.00
026	22	1	3	43	1.0	0.00
027	22	1	3	43	1.0	0.00
028	22	1	3	43	1.0	2.03
029	22	1	3	43	1.0	2.04
030	22	1	3	43	1.0	0.00
041	59	2	5	43	4.0	0.00
042	59	2	5	43	4.0	0.00
043	59	2	5	43	4.0	0.00
044	59	2	5	43	4.0	0.00
045	59	2	5	43	4.0	0.00
046	59	2	5	43	4.0	0.00
053	39	4	5	43	1.0	2.13
054	39	4	5	43	1.0	2.25
055	39	4	5	43	1.0	2.08
056	39	4	5	43	1.0	2.20
057	39	4	5	43	1.0	2.07
058	39	4	5	43	1.0	2.18
059	39	4	5	43	1.0	2.17
060	39	4	5	43	1.0	2.05
073	173	6	3	43	2.0	0.00
vvv	173	6	3	43	2.0	0.00
www	173	6	3	43	2.0	0.00
xxx	173	6	3	43	2.0	0.00
yyy	173	6	3	43	2.0	0.00
076	173	6	3	43	2.0	0.00
zzz	173	6	3	43	2.0	0.00
078	173	6	3	43	2.0	0.00

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Table 3 cont'd. Final Sample Concentration Values

Id	Na (%)	K (%)	Rb (ppm)	Cs (ppm)	Ba (ppm)	Sc (ppm)
079	0.523	1.800	42.50	2.060	452.0	14.50
080	0.579	2.000	55.00	3.120	576.0	19.10
091	1.090	2.510	96.70	5.460	360.0	29.60
092	1.020	2.170	101.00	5.270	648.0	31.60
093	1.220	2.370	50.20	4.390	458.0	26.00
094	1.200	2.530	96.20	5.350	860.0	30.40
095	1.530	2.850	91.90	5.420	1120.0	30.10
096	1.260	2.270	82.80	5.100	449.0	29.70
097	1.450	2.260	82.50	5.580	579.0	28.10
098	1.320	2.800	84.50	4.200	417.0	29.00
099	1.510	2.500	88.10	5.040	317.0	28.40
100	1.410	2.250	103.00	5.210	478.0	30.00
101	1.740	2.390	83.70	5.470	446.0	28.10
102	1.710	2.390	78.40	4.220	962.0	26.40
103	1.440	2.370	93.50	5.040	456.0	28.60
104	1.010	1.910	80.90	5.230	697.0	31.50
105	1.280	2.490	96.10	6.030	526.0	31.80
106	1.310	2.800	108.00	5.690	462.0	32.60
107	1.200	2.780	105.00	6.760	539.0	33.70
108	1.460	2.470	114.00	6.310	423.0	30.60
109	1.240	2.080	82.20	4.540	516.0	26.40
110	0.787	2.220	37.60	2.720	443.0	19.10
111	1.400	2.740	109.00	5.290	768.0	36.10
112	1.050	2.200	65.20	5.330	788.0	27.00
113	1.550	2.760	94.50	5.290	827.0	28.90
114	1.620	2.630	94.80	6.290	621.0	29.50
115	1.130	2.340	93.10	4.990	510.0	32.40
116	1.010	2.000	66.40	4.840	1140.0	32.60
117	1.380	2.480	79.40	5.290	371.0	29.40
118	1.660	2.350	87.60	4.500	293.0	26.80
119	1.280	2.650	91.60	5.800	543.0	31.80
122	0.669	1.120	0.00	1.950	736.0	12.20
123	0.603	2.130	55.40	3.750	883.0	20.50
124	1.020	1.900	89.90	5.460	1450.0	35.00
125	1.270	2.620	73.80	4.950	483.0	30.00
126	1.360	2.560	78.00	4.700	602.0	28.70
128	1.120	2.080	88.50	4.130	482.0	32.50
129	1.290	2.980	84.20	5.010	473.0	29.50
130	1.100	3.320	90.80	5.260	802.0	26.50
131	1.530	2.540	70.10	4.560	662.0	24.60
132	0.573	2.000	63.90	3.410	289.0	21.70
133	1.010	1.960	78.00	4.390	488.0	30.50
134	1.350	1.920	81.30	5.140	526.0	29.40
135	1.690	2.140	89.80	5.260	864.0	28.50
136	1.660	1.840	92.80	5.770	507.0	30.70

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Table 3 cont'd. Final Sample Concentration Values

Id	La (ppm)	Ce (ppm)	Eu (ppm)	Lu (ppm)	Hf (ppm)	Th (ppm)
079	21.40	46.30	0.831	0.308	3.490	5.210
080	21.40	46.20	0.981	0.340	2.930	6.440
091	33.50	81.50	1.650	0.586	5.190	10.700
092	39.10	86.00	2.390	0.643	5.440	11.200
093	32.70	72.10	1.620	0.547	5.440	9.580
094	37.50	80.90	1.820	0.702	5.820	10.800
095	32.60	77.90	1.770	0.613	5.800	10.000
096	36.40	79.70	1.990	0.484	0.000	16.200
097	33.90	80.30	1.660	0.548	5.470	10.700
098	34.00	74.60	1.710	0.646	5.180	10.600
099	37.90	83.40	1.620	0.722	5.690	9.990
100	32.10	70.80	1.640	0.656	5.260	9.920
101	37.00	84.00	1.810	0.702	5.940	10.800
102	31.90	74.10	1.790	0.640	6.120	10.100
103	36.30	83.30	1.700	0.600	5.930	10.400
104	36.70	86.30	1.900	0.736	5.500	9.750
105	37.30	80.40	1.830	0.608	5.430	11.200
106	40.00	92.50	2.040	0.687	6.130	11.200
107	39.10	86.50	1.810	0.631	5.760	11.600
108	30.90	68.50	1.220	0.527	5.190	10.200
109	35.20	77.70	1.690	0.697	5.870	9.650
110	25.10	54.50	1.250	0.401	3.800	6.680
111	43.20	95.20	2.140	0.707	6.780	12.000
112	31.00	69.50	1.570	0.533	4.790	8.860
113	34.50	78.20	1.570	0.629	6.740	9.990
114	37.40	84.40	1.750	0.645	6.390	10.200
115	38.50	86.00	2.180	0.589	5.340	10.200
116	37.10	85.00	2.070	0.784	5.510	10.300
117	36.20	0.00	0.000	0.814	5.190	9.880
118	34.10	74.90	1.670	0.724	5.340	9.090
119	34.20	79.70	1.690	0.608	5.630	10.500
122	38.10	0.00	0.979	0.000	6.630	13.600
123	24.90	56.30	1.170	0.413	3.840	7.120
124	41.10	91.00	2.050	0.726	5.610	10.700
125	36.10	72.20	1.660	0.602	5.530	10.200
126	37.90	86.30	1.870	0.655	6.480	10.400
128	36.60	84.20	1.900	0.000	5.440	10.400
129	37.50	83.90	1.770	0.593	6.390	10.800
130	29.30	62.80	1.380	0.514	4.720	9.620
131	28.30	61.10	1.320	0.501	4.590	8.170
132	23.50	48.40	1.070	0.425	2.700	6.870
133	35.90	77.70	1.830	0.564	5.360	9.650
134	32.20	74.60	1.520	0.567	5.050	9.360
135	35.30	75.30	1.650	0.598	5.910	9.980
136	35.80	80.60	1.660	0.630	6.030	10.800

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Table 3 cont'd. Final Sample Concentration Values

Id	Ta (ppm)	Cr (ppm)	Mn (ppm)	Fe (%)	Co (ppm)	Sb (ppm)
079	0.902	239.0	662.0	3.460	15.00	0.711
080	1.050	227.0	727.0	4.500	19.00	0.625
091	1.760	591.0	528.0	7.280	42.20	0.000
092	2.120	561.0	510.0	7.540	35.40	0.000
093	1.960	485.0	704.0	6.200	30.10	0.000
094	2.250	546.0	476.0	6.650	35.00	0.000
095	0.917	598.0	643.0	6.500	31.30	0.000
096	0.000	667.0	464.0	6.480	0.00	0.000
097	0.000	657.0	419.0	5.280	28.40	0.000
098	0.000	512.0	589.0	6.710	0.00	0.000
099	0.000	597.0	498.0	6.690	32.80	0.000
100	1.460	633.0	349.0	6.090	27.70	0.000
101	1.420	707.0	472.0	5.060	32.80	0.000
102	1.980	728.0	404.0	5.270	28.50	0.000
103	1.210	660.0	518.0	6.220	32.60	0.000
104	1.230	517.0	436.0	6.710	38.80	0.000
105	1.000	567.0	527.0	6.990	29.50	0.000
106	1.780	620.0	539.0	6.620	38.30	0.000
107	1.730	645.0	490.0	7.100	36.10	0.000
108	2.100	570.0	314.0	6.470	27.40	0.000
109	1.480	669.0	459.0	6.470	33.50	0.809
110	1.040	371.0	815.0	4.600	21.40	0.000
111	2.350	705.0	514.0	8.500	37.50	1.780
112	1.410	497.0	554.0	5.860	30.80	0.000
113	1.030	853.0	339.0	5.440	43.10	0.000
114	1.650	717.0	364.0	5.830	30.20	0.000
115	1.610	520.0	573.0	7.600	43.10	0.000
116	2.520	554.0	595.0	7.840	44.90	0.809
117	0.000	551.0	539.0	6.240	17.30	0.000
118	1.410	640.0	611.0	5.640	35.70	0.000
119	1.850	539.0	464.0	6.780	0.00	1.230
122	0.000	1020.0	655.0	2.890	16.50	0.000
123	1.220	274.0	915.0	4.830	24.40	0.893
124	2.210	552.0	490.0	8.380	47.90	1.710
125	1.520	557.0	456.0	6.420	27.20	0.000
126	2.030	854.0	433.0	6.060	37.60	2.000
128	1.790	517.0	509.0	7.520	37.70	0.000
129	1.780	708.0	1190.0	7.070	38.90	2.090
130	1.240	338.0	866.0	6.510	26.20	2.140
131	1.110	438.0	577.0	5.330	27.90	0.897
132	0.841	240.0	874.0	5.190	25.00	1.340
133	1.740	550.0	487.0	7.470	0.00	0.598
134	1.520	543.0	622.0	6.530	32.70	0.803
135	1.450	615.0	420.0	5.670	25.80	0.747
136	1.560	7.350	455.0	5.830	27.60	0.860

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Table 3 cont'd. Final Sample Concentration Values

Id	Ca (%)	Sm (ppm)	Yb (ppm)	Sr (ppm)
079	0.000	3.640	1.710	0.0
080	0.000	3.990	1.940	0.0
091	0.000	6.360	3.050	0.0
092	4.410	7.140	3.310	0.0
093	7.330	6.220	2.830	0.0
094	4.810	6.960	3.420	0.0
095	4.570	6.380	3.060	0.0
096	6.350	5.980	3.490	0.0
097	0.000	6.330	3.340	0.0
098	7.230	6.570	3.040	0.0
099	0.000	6.940	3.470	0.0
100	0.000	6.060	2.950	0.0
101	0.000	6.730	3.030	0.0
102	3.420	6.140	3.100	0.0
103	4.750	6.970	3.180	0.0
104	3.790	6.710	3.370	0.0
105	5.750	7.000	3.490	0.0
106	3.180	7.880	3.800	0.0
107	2.850	7.360	3.280	0.0
108	0.000	5.520	2.400	0.0
109	1.660	6.480	3.010	348.0
110	21.500	4.860	2.700	1300.0
111	3.990	7.980	3.720	1200.0
112	14.300	5.740	3.020	0.0
113	3.130	6.110	3.240	2170.0
114	1.920	6.980	3.440	0.0
115	2.960	7.740	3.590	0.0
116	0.000	7.090	3.060	1100.0
117	4.680	6.480	2.960	1060.0
118	5.920	6.400	3.040	0.0
119	2.840	6.480	3.330	849.0
122	0.000	9.900	2.850	0.0
123	22.600	4.800	2.510	1330.0
124	2.840	7.730	3.450	674.0
125	3.610	6.440	3.590	0.0
126	6.180	7.520	3.600	895.0
128	3.610	6.680	3.360	0.0
129	2.570	7.250	3.270	0.0
130	11.400	5.560	2.880	1050.0
131	8.110	5.220	2.720	771.0
132	18.300	4.350	2.260	391.0
133	4.120	6.600	3.200	222.0
134	7.290	6.020	3.350	754.0
135	4.510	1.840	3.180	466.0
136	3.150	6.750	3.820	385.0

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Table 3 cont'd. Final Sample Concentration Values

Id	Site	Loc.	Per.	Type	Site Size	GAJ No.
079	173	6	3	43	2.0	2.03
080	173	6	3	43	2.0	2.01
091	2	4	1	100	0.0	0.00
092	4	4	7	100	0.0	0.00
093	6	4	7	100	0.0	0.00
094	10	1	19	100	0.0	0.00
095	12	1	18	100	0.0	0.00
096	13	1	36	100	0.0	0.00
097	13	1	37	100	0.0	0.00
098	14	1	49	100	0.0	0.00
099	165	6	7	100	0.0	0.00
100	17	1	19	100	0.0	0.00
101	19	1	37	100	0.0	0.00
102	21	1	20	100	0.0	0.00
103	22	1	7	100	0.0	0.00
104	28	1	8	100	0.0	0.00
105	33	1	8	100	0.0	0.00
106	36	4	49	100	0.0	0.00
107	38	4	20	100	0.0	0.00
108	42	4	49	100	0.0	0.00
109	50	4	7	100	0.0	0.00
110	64	2	12	100	0.0	0.00
111	66	2	12	100	0.0	0.00
112	67	1	43	100	0.0	0.00
113	71	1	21	100	0.0	0.00
114	71	1	20	100	0.0	0.00
115	101	6	7	100	0.0	0.00
116	106	6	7	100	0.0	0.00
117	112	4	22	100	0.0	0.00
118	113	4	8	100	0.0	0.00
119	118	4	49	100	0.0	0.00
122	155	6	1	100	0.0	0.00
123	157	6	12	100	0.0	0.00
124	160	6	7	100	0.0	0.00
125	168	6	8	100	0.0	0.00
126	176	6	8	100	0.0	0.00
128	204	7	7	100	0.0	0.00
129	215	7	7	100	0.0	0.00
130	238	3	7	100	0.0	0.00
131	239	3	9	100	0.0	0.00
132	240	3	7	100	0.0	0.00
133	274	2	7	100	0.0	0.00
134	4	4	23	101	0.0	0.00
135	10	1	38	101	0.0	0.00
136	10	1	38	101	0.0	0.00

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Table 3 cont'd. Final Sample Concentration Values

Id	Na (%)	K (%)	Rb (ppm)	Cs (ppm)	Ba (ppm)	Sc (ppm)
137	1.560	1.920	92.10	5.720	1030.0	30.10
138	2.140	2.840	82.60	5.190	399.0	26.60
139	1.690	1.960	87.10	5.390	378.0	29.40
140	1.520	1.980	92.80	6.220	453.0	31.70
141	1.630	2.070	87.30	5.390	410.0	30.30
142	1.630	2.320	74.90	5.030	696.0	29.00
143	1.910	2.140	86.70	5.210	472.0	28.80
144	1.980	2.330	88.60	4.840	361.0	27.30
145	1.370	2.160	84.90	5.160	380.0	28.90
146	1.650	2.510	83.20	5.050	545.0	28.50
147	1.720	1.930	74.40	4.280	391.0	25.00
148	1.300	2.010	80.20	4.210	504.0	26.90
149	1.500	1.790	67.10	3.800	382.0	27.70
150	1.430	2.210	71.50	4.040	487.0	24.80
151	1.500	2.270	63.20	3.480	329.0	21.00
152	0.771	2.270	57.90	3.010	669.0	21.10
153	1.010	1.500	72.00	4.460	503.0	29.70
154	1.800	2.360	89.90	6.400	702.0	29.30
155	1.140	2.040	60.60	3.120	342.0	22.80
156	1.410	2.300	84.10	5.810	542.0	30.50
157	1.510	2.140	86.70	5.840	452.0	29.70
158	1.450	2.340	82.10	4.700	876.0	27.10
159	1.500	2.380	96.60	4.570	419.0	26.70
160	1.440	2.000	83.60	4.530	316.0	24.80
161	0.657	1.740	59.60	3.140	300.0	19.40
162	1.340	2.440	81.60	5.000	368.0	27.80
163	0.238	2.030	91.20	6.250	517.0	38.20
164	0.556	1.780	53.10	3.190	449.0	19.00
165	0.591	1.750	69.10	3.180	2820.0	23.30
166	1.100	2.410	77.70	3.900	356.0	24.20
167	1.390	2.550	78.10	4.320	436.0	24.50
168	1.090	2.880	113.00	6.570	541.0	31.60
169	2.030	2.150	104.00	5.620	415.0	30.80
170	1.350	2.390	91.70	5.310	955.0	29.30
171	1.410	2.070	85.60	4.700	448.0	28.00
172	1.690	2.120	84.80	4.070	384.0	25.00
173	1.120	2.600	110.00	6.980	752.0	30.40
174	1.150	2.470	104.00	5.880	456.0	31.50
175	1.210	2.520	76.40	4.990	711.0	27.90
176	0.994	1.780	68.80	4.270	550.0	30.40
177	1.290	2.900	95.90	5.740	386.0	32.50
178	1.430	2.370	104.00	5.830	552.0	31.70
179	1.260	2.540	92.40	6.410	457.0	31.90
180	1.030	1.810	79.90	4.430	861.0	31.30
181	1.190	2.290	104.00	6.210	438.0	32.20

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Table 3 cont'd. Final Sample Concentration Values

Id	La (ppm)	Ce (ppm)	Eu (ppm)	Lu (ppm)	Hf (ppm)	Th (ppm)
137	40.50	87.30	1.730	0.625	5.860	11.300
138	35.90	77.80	1.700	0.580	5.610	9.720
139	35.10	77.20	1.720	0.596	5.710	10.400
140	36.30	79.30	1.700	0.616	6.230	10.500
141	35.40	79.30	1.690	0.587	5.780	10.700
142	33.00	72.50	1.590	0.561	4.760	9.850
143	34.40	75.50	1.700	0.623	6.040	9.820
144	31.60	66.70	1.500	0.509	4.950	9.130
145	33.90	74.50	1.630	0.579	5.460	9.710
146	38.50	79.30	1.630	0.647	6.050	9.970
147	30.40	69.90	1.510	0.528	6.010	8.720
148	38.30	84.70	1.730	0.612	7.010	9.930
149	34.00	72.90	1.720	0.558	5.130	8.670
150	35.20	74.30	1.670	0.542	5.860	8.950
151	26.20	54.80	1.180	0.444	4.310	6.860
152	21.30	45.10	1.050	0.344	2.850	8.400
153	36.30	79.00	1.850	0.579	5.330	9.360
154	35.00	73.20	1.500	0.557	5.250	9.940
155	29.10	62.50	1.440	0.553	4.780	7.340
156	34.90	77.70	1.700	0.617	5.780	10.500
157	38.80	80.70	1.720	0.654	5.460	10.000
158	32.30	70.20	1.470	0.559	5.810	9.470
159	35.30	76.20	1.700	0.781	6.310	9.900
160	31.00	65.80	1.390	0.486	4.430	8.550
161	22.90	49.80	1.050	0.365	2.900	6.490
162	34.70	78.00	1.660	0.624	5.900	9.950
163	42.20	97.10	2.010	0.629	5.490	12.100
164	19.50	42.50	0.887	0.340	2.460	5.820
165	27.00	58.70	1.360	0.403	3.630	7.270
166	31.20	65.90	1.490	0.523	4.550	8.470
167	33.60	71.90	1.560	0.564	6.120	9.370
168	35.50	82.40	1.640	0.647	5.330	11.100
169	34.70	77.60	1.640	0.632	5.570	10.500
170	36.50	81.20	1.690	0.691	6.070	10.300
171	34.30	75.30	1.670	0.592	5.880	9.480
172	30.10	69.60	1.560	0.582	5.420	9.140
173	29.80	69.50	1.730	0.570	4.830	11.000
174	37.70	81.60	1.680	0.632	5.450	10.900
175	30.70	80.00	1.590	0.578	5.260	9.900
176	36.20	77.10	1.850	0.606	5.020	9.300
177	39.60	84.10	1.830	0.623	5.240	12.100
178	38.30	81.70	1.920	0.631	6.230	11.900
179	36.50	80.70	1.740	0.563	5.150	11.200
180	37.40	79.90	1.960	0.562	5.300	9.440
181	38.00	84.90	1.890	0.622	5.270	11.100

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Table 3 cont'd. Final Sample Concentration Values

Id	Ta (ppm)	Cr (ppm)	Mn (ppm)	Fe (%)	Co (ppm)	Sb (ppm)
137	1.720	722.0	432.0	5.870	29.60	1.160
138	1.470	612.0	363.0	5.680	30.10	0.890
139	1.600	717.0	388.0	5.610	30.20	0.958
140	1.580	665.0	410.0	6.740	32.40	0.770
141	1.530	672.0	358.0	6.110	28.20	0.976
142	1.410	500.0	590.0	7.060	31.90	0.744
143	1.520	771.0	411.0	5.520	25.20	0.854
144	1.320	454.0	631.0	5.830	28.90	0.959
145	1.360	604.0	535.0	6.380	30.90	0.507
146	1.510	739.0	0.0	5.580	27.20	0.895
147	1.290	644.0	1220.0	6.000	28.10	1.080
148	1.520	748.0	588.0	6.230	30.10	1.150
149	1.580	519.0	488.0	6.640	30.40	0.223
150	1.410	734.0	710.0	5.820	26.00	0.680
151	1.200	454.0	564.0	4.620	21.40	0.579
152	0.952	243.0	681.0	5.070	23.70	0.696
153	1.690	525.0	405.0	6.260	34.50	0.810
154	1.470	670.0	416.0	5.910	33.50	0.757
155	1.250	446.0	642.0	5.230	24.30	0.739
156	1.590	627.0	0.0	6.660	32.40	1.090
157	1.610	540.0	410.0	5.950	27.70	0.777
158	1.380	566.0	630.0	5.830	28.40	0.865
159	2.380	670.0	497.0	6.360	0.00	1.000
160	1.200	398.0	383.0	5.150	26.60	0.695
161	0.817	258.0	855.0	4.680	31.50	0.623
162	1.430	624.0	545.0	6.710	32.20	0.477
163	1.830	180.0	1810.0	8.730	35.20	0.348
164	1.020	190.0	689.0	4.610	19.40	0.563
165	1.170	415.0	976.0	5.560	29.20	0.600
166	1.280	373.0	740.0	5.390	22.20	0.569
167	1.630	685.0	528.0	5.730	25.80	0.853
168	1.450	628.0	454.0	7.990	0.00	1.070
169	1.980	521.0	565.0	6.270	33.70	0.928
170	1.650	694.0	1200.0	6.990	35.50	1.250
171	1.630	635.0	989.0	6.670	31.20	0.993
172	1.440	685.0	0.0	4.880	22.90	0.000
173	1.890	566.0	452.0	7.520	0.00	0.000
174	1.890	562.0	404.0	6.300	32.20	0.653
175	2.000	585.0	501.0	7.000	32.40	0.000
176	2.010	518.0	456.0	7.380	36.10	0.640
177	1.740	484.0	576.0	6.920	31.90	0.851
178	1.490	745.0	358.0	6.100	26.20	0.916
179	1.770	544.0	433.0	6.650	33.00	1.440
180	1.820	537.0	458.0	7.020	32.20	0.000
181	1.860	542.0	708.0	7.770	39.80	0.601

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Table 3 cont'd. Final Sample Concentration Values

Id	Ca (%)	Sm (ppm)	Yb (ppm)	Sr (ppm)
137	3.890	7.110	3.390	1110.0
138	0.000	6.500	3.550	410.0
139	3.420	6.570	3.120	315.0
140	1.430	6.670	3.140	125.0
141	1.440	6.690	2.880	494.0
142	5.940	6.060	3.240	942.0
143	2.470	6.570	3.700	329.0
144	12.200	5.700	3.080	442.0
145	7.030	6.310	3.340	554.0
146	2.480	6.830	3.280	570.0
147	4.640	5.850	2.810	538.0
148	7.460	6.900	3.290	341.0
149	6.550	6.360	2.930	924.0
150	4.190	6.570	3.300	577.0
151	16.200	4.920	2.320	626.0
152	18.800	3.930	1.730	804.0
153	4.060	6.480	2.950	636.0
154	2.100	6.010	2.760	1670.0
155	11.200	5.350	2.500	570.0
156	2.020	6.720	3.100	544.0
157	5.020	7.060	3.550	528.0
158	7.880	6.180	3.090	772.0
159	3.010	6.470	3.140	0.0
160	2.040	5.640	2.540	382.0
161	22.600	4.250	1.910	852.0
162	2.460	6.420	3.380	383.0
163	11.300	7.760	3.110	538.0
164	19.400	3.630	1.740	524.0
165	17.700	4.930	2.160	1320.0
166	8.880	5.690	2.540	627.0
167	3.340	6.410	3.040	733.0
168	1.140	6.630	3.500	0.0
169	4.150	6.490	3.310	431.0
170	3.200	7.030	3.260	420.0
171	2.160	6.360	3.170	382.0
172	5.700	5.580	2.980	0.0
173	2.130	5.640	3.000	0.0
174	2.370	6.970	3.530	849.0
175	3.810	5.950	3.400	0.0
176	5.410	6.760	3.310	0.0
177	9.840	7.150	3.640	0.0
178	1.630	7.110	3.780	0.0
179	2.990	6.500	3.320	0.0
180	4.260	7.110	3.470	0.0
181	2.360	7.090	3.390	0.0

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Table 3 cont'd. Final Sample Concentration Values

Id	Site	Loc.	Per.	Type	Site Size	GAJ No.
137	10	1	38	101	0.0	0.00
138	12	1	24	101	0.0	0.00
139	13	1	36	101	0.0	0.00
140	17	1	36	101	0.0	0.00
141	19	1	49	101	0.0	0.00
142	33	1	44	101	0.0	0.00
143	36	4	49	101	0.0	0.00
144	38	4	1	101	0.0	0.00
145	108	4	36	101	0.0	0.00
146	118	4	25	101	0.0	0.00
147	124	4	25	101	0.0	0.00
148	161	6	49	101	0.0	0.00
149	204	6	7	101	0.0	0.00
150	218	7	49	101	0.0	0.00
151	38	4	26	102	0.0	0.00
152	40	4	7	102	0.0	0.00
153	41	4	7	102	0.0	0.00
154	118	4	46	102	0.0	0.00
155	49	4	7	102	0.0	0.00
156	74	2	43	102	0.0	0.00
157	124	4	43	102	0.0	0.00
158	155	6	12	102	0.0	0.00
159	157	6	7	102	0.0	0.00
160	162	6	59	102	0.0	0.00
161	167	6	43	102	0.0	0.00
162	178	6	8	102	0.0	0.00
163	182	6	7	102	0.0	0.00
165	195	7	39	102	0.0	0.00
166	197	7	43	102	0.0	0.00
167	215	7	7	102	0.0	0.00
168	2	4	20	103	0.0	0.00
169	38	4	27	103	0.0	0.00
170	101	6	12	103	0.0	0.00
171	105	6	7	103	0.0	0.00
172	124	4	28	103	0.0	0.00
173	159	6	29	103	0.0	0.00
174	176	6	49	103	0.0	0.00
175	2	4	7	104	0.0	0.00
176	4	4	7	104	0.0	0.00
177	13	1	7	104	0.0	0.00
178	17	1	12	104	0.0	0.00
179	33	1	7	104	0.0	0.00
180	4	4	7	104	0.0	0.00
181	101	6	7	104	0.0	0.00

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Table 3 cont'd. Final Sample Concentration Values

Id	Na (%)	K (%)	Rb (ppm)	Cs (ppm)	Ba (ppm)	Sc (ppm)
182	1.210	2.340	85.50	4.410	597.0	28.00
183	1.470	2.210	107.00	5.500	462.0	31.60
184	1.330	2.330	89.00	4.640	413.0	27.50
185	0.913	2.120	90.00	5.750	472.0	33.90
186	0.976	2.880	88.10	5.280	402.0	29.20
187	1.110	2.170	67.40	3.950	342.0	23.30
188	1.530	2.390	91.20	4.770	573.0	28.50
189	1.240	2.290	100.00	4.880	515.0	29.80
190	1.040	2.430	87.80	4.810	1240.0	29.80
191	1.830	3.700	88.30	5.050	432.0	28.00
192	1.890	2.500	70.60	3.640	378.0	25.00
193	1.290	2.420	68.70	3.560	344.0	24.60
194	1.140	0.000	85.30	5.050	351.0	24.10
195	1.220	2.770	87.90	4.780	400.0	29.80
196	1.740	3.110	99.70	5.390	378.0	30.30
197	1.420	2.960	80.50	5.170	411.0	30.80
198	1.560	2.530	99.30	5.860	756.0	32.40
199	1.280	2.590	84.00	4.740	407.0	27.20
200	1.040	2.240	66.20	3.090	335.0	22.10
201	1.280	2.580	91.80	6.030	469.0	31.80
202	1.220	2.610	98.80	6.630	471.0	34.50
203	1.250	2.530	92.30	5.020	395.0	33.70
204	1.550	2.710	102.00	6.320	794.0	34.40
205	1.980	2.430	88.30	5.900	449.0	30.50
206	1.720	2.280	71.70	4.590	462.0	28.70
207	1.710	1.770	88.20	3.320	523.0	28.20
208	1.470	2.760	98.90	5.970	463.0	33.60
209	1.490	2.850	97.30	5.320	396.0	29.90
210	1.220	2.350	91.00	4.430	976.0	32.70
211	1.220	2.800	93.90	5.320	607.0	29.50
212	0.823	3.450	102.00	7.000	463.0	30.20
213	1.060	2.750	89.60	5.150	684.0	28.30
214	1.410	2.620	80.80	4.960	387.0	28.70
215	1.320	2.270	88.80	6.290	524.0	32.20
216	0.915	2.530	79.10	5.330	876.0	29.80
217	1.110	2.470	89.20	5.820	334.0	30.00
218	0.669	2.200	70.70	4.040	729.0	25.80
219	1.470	2.470	97.10	5.480	577.0	30.40
220	0.979	2.750	81.30	4.690	465.0	32.20
221	1.320	2.530	103.00	5.430	638.0	30.80
222	1.760	2.750	102.00	5.820	718.0	32.30
223	1.320	2.600	108.00	7.030	790.0	32.80
224	1.910	2.490	82.20	5.220	550.0	30.60
225	1.470	2.510	66.10	4.000	439.0	26.80
226	0.707	2.320	95.80	5.640	674.0	30.80

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Table 3 cont'd. Final Sample Concentration Values

Id	La (ppm)	Ce (ppm)	Eu (ppm)	Lu (ppm)	Hf (ppm)	Th (ppm)
182	34.60	75.90	1.690	0.569	5.640	9.390
183	36.60	80.10	1.870	0.586	4.990	9.920
184	36.90	77.80	1.880	0.612	5.560	9.750
185	38.70	82.50	1.960	0.634	5.090	10.200
186	33.10	71.30	1.620	0.558	3.960	9.830
187	29.30	68.60	1.400	0.492	4.640	8.210
188	36.10	79.80	1.730	0.593	6.090	10.400
189	34.20	75.50	1.710	0.577	5.150	10.100
190	33.20	72.00	1.570	0.623	4.930	10.100
191	34.80	71.00	1.660	0.579	4.910	9.650
192	30.20	64.80	1.520	0.495	4.710	8.460
193	29.80	64.20	1.650	0.556	4.540	8.740
194	27.50	62.40	1.410	0.489	4.700	9.130
195	32.30	71.60	1.650	0.523	5.040	9.780
196	0.00	98.40	2.230	0.719	6.040	10.900
197	35.50	78.60	1.860	0.714	5.440	10.400
198	41.70	95.60	2.000	0.714	6.210	12.100
199	33.40	75.90	1.510	0.531	4.730	9.820
200	27.80	63.60	1.530	0.435	4.310	7.810
201	38.00	81.60	1.770	0.617	5.580	10.700
202	40.60	88.00	1.900	0.645	5.770	12.100
203	38.80	83.90	1.950	0.637	4.620	10.300
204	0.00	93.00	2.130	0.765	6.610	12.500
205	34.70	80.00	1.670	0.594	6.810	10.600
206	35.20	77.80	1.810	0.518	5.090	9.440
207	37.20	79.50	1.970	0.581	5.150	9.350
208	39.70	86.10	1.840	0.749	5.950	12.200
209	36.10	80.30	1.790	0.559	5.150	10.200
210	39.10	88.90	2.040	0.595	5.800	10.600
211	35.10	77.50	1.790	0.585	5.020	10.400
212	31.80	70.60	1.580	0.525	4.660	11.100
213	33.60	74.00	1.660	0.550	4.900	9.570
214	35.60	77.70	1.690	0.576	4.940	9.850
215	39.20	84.40	1.940	0.579	5.920	10.900
216	32.20	73.30	1.630	0.506	4.250	9.550
217	29.70	66.30	1.600	0.545	4.950	10.200
218	29.80	67.20	1.460	0.463	3.840	8.540
219	34.50	73.80	1.810	0.564	5.460	9.730
220	33.70	78.40	1.790	0.568	4.690	9.710
221	36.20	84.70	1.690	0.581	6.180	10.800
222	34.90	78.70	1.880	0.583	5.270	10.500
223	37.60	83.20	1.670	0.722	5.190	11.300
224	38.40	85.90	1.980	0.599	6.670	11.400
225	34.30	77.70	1.660	0.562	5.390	9.960
226	33.80	76.70	1.640	0.527	4.020	10.700

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Table 3 cont'd. Final Sample Concentration Values

Id	Ta (ppm)	Cr (ppm)	Mn (ppm)	Fe (%)	Co (ppm)	Sb (ppm)
182	1.580	549.0	510.0	6.860	28.90	0.982
183	1.610	521.0	443.0	8.140	0.00	0.000
184	1.460	908.0	423.0	5.670	26.70	0.000
185	2.080	528.0	462.0	7.880	37.90	0.911
186	1.200	351.0	490.0	6.210	27.10	0.777
187	1.210	538.0	758.0	5.590	24.80	0.658
188	1.650	718.0	364.0	5.060	28.30	0.000
189	1.350	577.0	609.0	6.510	30.60	0.548
190	1.790	437.0	535.0	6.440	27.80	0.504
191	1.550	540.0	636.0	6.610	28.70	0.886
192	1.510	528.0	536.0	5.750	28.00	0.501
193	2.070	498.0	638.0	5.560	24.50	0.000
194	0.715	167.0	588.0	6.080	17.90	0.407
195	1.760	492.0	634.0	6.410	31.30	0.706
196	1.940	698.0	382.0	6.090	33.20	0.848
197	1.910	518.0	529.0	6.890	29.90	0.969
198	2.230	843.0	380.0	6.250	21.30	0.602
199	1.950	485.0	766.0	6.170	26.70	0.974
200	1.470	440.0	581.0	5.160	23.00	0.684
201	1.800	606.0	526.0	6.830	30.60	0.647
202	1.830	647.0	436.0	7.030	31.70	0.523
203	1.930	476.0	676.0	7.370	33.40	0.969
204	1.800	689.0	466.0	6.800	29.90	0.000
205	1.680	861.0	351.0	5.640	27.80	0.000
206	1.580	494.0	701.0	6.790	29.30	1.060
207	1.740	530.0	698.0	6.540	29.00	0.000
208	1.990	669.0	587.0	7.250	32.60	0.594
209	1.670	643.0	581.0	6.450	28.70	0.807
210	1.880	535.0	670.0	8.060	35.00	0.468
211	1.840	545.0	653.0	6.770	30.10	1.020
212	1.660	367.0	654.0	7.580	27.40	1.220
213	1.820	525.0	573.0	6.000	25.40	0.762
214	2.000	524.0	591.0	6.560	28.20	0.867
215	2.010	628.0	0.0	6.050	24.30	0.430
216	1.690	386.0	543.0	6.770	28.20	1.240
217	1.620	504.0	452.0	6.800	23.00	0.000
218	1.190	324.0	607.0	6.090	23.80	0.506
219	2.240	563.0	643.0	6.580	29.00	0.817
220	2.160	452.0	549.0	7.130	29.90	1.190
221	1.700	712.0	2880.0	7.470	0.00	1.590
222	1.880	550.0	780.0	7.460	33.10	0.898
223	2.040	495.0	443.0	6.730	38.40	1.470
224	2.040	830.0	0.0	6.040	33.30	0.000
225	0.000	759.0	522.0	5.970	25.80	0.000
226	2.580	395.0	417.0	5.790	26.00	1.280

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Table 3 cont'd. Final Sample Concentration Values

Id	Ca (%)	Sm (ppm)	Yb (ppm)	Sr (ppm)
182	5.410	6.500	3.390	0.0
183	2.600	6.850	3.310	0.0
184	3.380	6.620	3.390	0.0
185	3.820	7.240	3.360	0.0
186	6.420	6.290	3.040	0.0
187	12.600	5.760	2.830	0.0
188	1.850	6.700	3.270	0.0
189	8.370	6.550	3.030	0.0
190	9.650	5.950	3.000	0.0
191	6.860	6.420	3.070	0.0
192	9.150	5.710	2.910	0.0
193	14.600	5.550	2.800	2520.0
194	8.780	5.480	3.020	0.0
195	12.000	6.000	3.080	1010.0
196	0.000	8.350	3.840	0.0
197	6.480	6.890	3.390	966.0
198	2.090	7.930	3.970	0.0
199	7.880	6.150	2.980	1680.0
200	15.800	5.310	2.530	1180.0
201	7.180	7.040	3.500	0.0
202	1.380	7.710	4.030	747.0
203	9.360	7.270	3.420	1190.0
204	2.810	7.680	3.950	0.0
205	1.260	6.540	3.710	0.0
206	8.020	6.580	2.850	0.0
207	8.590	6.930	3.350	0.0
208	4.510	7.390	3.650	801.0
209	6.930	6.630	3.390	630.0
210	3.720	7.390	3.330	859.0
211	9.420	6.300	3.130	0.0
212	8.620	5.940	2.980	930.0
213	11.600	6.300	2.950	1260.0
214	8.880	6.400	2.890	889.0
215	0.000	7.110	3.560	711.0
216	7.930	5.960	3.080	0.0
217	7.900	5.590	2.880	0.0
218	13.800	5.590	2.800	780.0
219	9.460	6.450	3.150	1130.0
220	5.600	6.820	2.830	1180.0
221	1.110	6.610	3.510	0.0
222	9.990	6.690	3.360	0.0
223	2.240	7.240	3.370	0.0
224	0.000	7.170	3.590	0.0
225	6.950	6.560	3.110	0.0
226	4.120	6.360	3.240	0.0

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Table 3 cont'd. Final Sample Concentration Values

Id	Site	Loc.	Per.	Type	Site Size	GAJ No.
182	113	4	7	104	0.0	0.00
183	118	4	8	104	0.0	0.00
184	160	6	12	104	0.0	0.00
185	186	7	7	104	0.0	0.00
186	197	7	8	104	0.0	0.00
187	4	4	49	105	0.0	0.00
188	4	4	49	105	0.0	0.00
189	6	4	7	105	0.0	0.00
190	8	1	31	105	0.0	0.00
191	12	1	33	105	0.0	0.00
192	13	1	36	105	0.0	0.00
193	14	1	19	105	0.0	0.00
194	16	1	8	105	0.0	0.00
195	17	1	41	105	0.0	0.00
196	19	1	40	105	0.0	0.00
197	21	1	21	105	0.0	0.00
198	22	1	7	105	0.0	0.00
199	24	1	19	105	0.0	0.00
200	28	1	7	105	0.0	0.00
201	33	1	8	105	0.0	0.00
202	35	1	61	105	0.0	0.00
203	36	4	49	105	0.0	0.00
204	38	4	31	105	0.0	0.00
205	38	4	42	105	0.0	0.00
206	39	4	1	105	0.0	0.00
207	40	4	1	105	0.0	0.00
208	42	4	49	105	0.0	0.00
209	45	4	36	105	0.0	0.00
210	50	4	49	105	0.0	0.00
211	65	2	60	105	0.0	0.00
212	67	1	15	105	0.0	0.00
213	71	1	31	105	0.0	0.00
214	73	2	43	105	0.0	0.00
215	74	2	43	105	0.0	0.00
216	101	6	7	105	0.0	0.00
217	105	6	44	105	0.0	0.00
218	106	6	7	105	0.0	0.00
219	108	4	49	105	0.0	0.00
220	112	4	62	105	0.0	0.00
221	113	4	49	105	0.0	0.00
222	118	4	50	105	0.0	0.00
223	124	4	1	105	0.0	0.00
224	154	6	49	105	0.0	0.00
225	162	6	35	105	0.0	0.00
226	174	6	12	105	0.0	0.00

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Table 3 cont'd. Final Sample Concentration Values

Id	Na (%)	K (%)	Rb (ppm)	Cs (ppm)	Ba (ppm)	Sc (ppm)
227	1.450	2.510	90.00	4.920	1720.0	30.40
228	1.170	1.970	70.90	2.920	340.0	27.40
229	1.320	2.560	93.20	4.940	658.0	33.00
230	1.370	2.660	107.00	5.770	521.0	32.60
231	1.210	2.590	75.40	4.750	699.0	28.50
232	0.413	2.970	55.40	3.820	830.0	25.40
233	1.070	2.140	76.20	4.180	602.0	24.90
234	1.500	2.030	84.00	5.140	338.0	28.60
235	1.350	2.440	82.40	4.780	268.0	27.70
236	1.170	2.160	78.50	4.700	441.0	27.00
237	1.090	2.230	84.70	5.060	914.0	27.20
238	1.330	2.310	84.30	5.080	534.0	27.80
239	0.938	2.100	64.80	4.760	364.0	26.00
240	1.240	1.650	82.40	5.480	551.0	27.90
241	1.220	2.320	78.60	4.720	449.0	27.90
242	1.270	1.940	73.10	3.810	869.0	23.70
243	1.330	2.490	91.40	5.730	314.0	28.40
244	1.350	1.500	88.60	4.740	342.0	27.60
245	1.490	2.550	81.80	4.820	679.0	29.60
246	1.120	2.580	80.50	5.210	645.0	25.90
247	1.150	2.380	83.30	5.410	701.0	28.50
248	0.760	2.730	91.20	5.550	335.0	28.20
249	1.340	1.960	84.60	4.150	335.0	25.40
250	1.370	2.230	90.50	4.860	494.0	29.00
251	1.050	2.440	72.30	4.790	534.0	24.90
252	1.460	2.510	82.00	5.550	397.0	29.20
253	0.932	3.090	87.80	5.720	386.0	29.80
254	0.870	1.940	66.50	3.230	381.0	19.10
255	1.230	2.400	78.30	5.100	584.0	27.60
256	0.927	1.640	75.90	3.310	399.0	24.10
257	1.610	2.620	70.00	4.220	406.0	26.90
258	1.020	2.400	65.30	4.050	433.0	23.80
259	1.070	2.040	46.80	2.890	860.0	21.60
260	1.000	2.560	71.30	3.290	768.0	22.20
261	1.070	2.360	59.90	3.240	308.0	25.80
262	1.230	2.280	84.90	4.710	359.0	26.50
263	0.910	2.310	76.00	4.100	633.0	25.00
264	1.370	2.240	86.00	3.800	555.0	27.00
265	1.080	2.010	65.30	4.820	449.0	22.60
266	1.260	2.560	89.80	5.420	492.0	29.60
267	0.932	3.340	91.30	5.970	291.0	23.90
268	1.010	2.140	69.30	4.050	454.0	27.90
269	1.100	2.520	80.00	4.720	299.0	26.40
270	0.731	2.260	67.00	4.520	276.0	26.60
272	0.673	3.270	100.00	5.560	406.0	25.60

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Table 3 cont'd. Final Sample Concentration Values

Id	La (ppm)	Ce (ppm)	Eu (ppm)	Lu (ppm)	Hf (ppm)	Th (ppm)
227	35.40	80.40	1.840	0.622	5.160	10.800
228	33.10	72.00	1.910	0.489	4.650	8.940
229	42.60	94.90	2.000	0.698	5.210	10.800
230	39.50	87.80	1.970	0.586	5.590	11.300
231	33.90	77.80	1.610	0.562	5.220	10.100
232	25.00	54.20	1.140	0.439	3.370	7.660
233	31.00	68.20	1.520	0.476	5.080	8.800
234	35.80	76.60	1.780	0.725	5.650	10.100
235	33.40	74.30	1.690	0.647	5.510	9.370
236	31.90	66.20	1.490	0.546	4.930	9.080
237	31.90	74.30	1.440	0.492	5.170	9.520
238	34.10	69.50	1.770	0.612	5.590	9.570
239	30.80	63.90	1.600	0.515	4.340	8.850
240	32.40	71.90	1.630	0.528	4.430	9.360
241	34.70	86.30	1.760	0.548	5.460	10.300
242	30.60	67.20	1.420	0.519	4.990	9.710
243	35.70	79.30	1.640	0.804	6.130	10.100
244	32.60	74.30	1.570	0.609	5.960	9.650
245	35.10	77.90	1.720	0.587	5.630	10.800
246	30.60	67.30	1.440	0.561	5.090	9.300
247	32.50	70.00	1.610	0.590	5.350	10.300
248	31.30	70.30	1.520	0.636	4.190	10.400
249	28.30	62.50	1.370	0.630	4.470	8.010
250	35.60	75.30	1.700	0.609	5.420	10.300
251	30.60	67.90	1.470	0.570	5.490	8.470
252	34.10	75.00	1.760	0.590	5.300	9.720
253	30.20	69.40	1.440	0.659	4.370	10.500
254	23.70	49.20	1.230	0.379	3.720	6.560
255	32.80	75.80	1.700	0.501	5.000	9.600
256	29.60	62.50	1.430	0.478	4.320	7.650
257	36.30	78.40	1.890	0.567	5.680	9.950
258	28.60	59.90	1.330	0.470	4.550	7.990
259	26.20	57.60	1.320	0.449	3.850	7.800
260	29.20	64.20	1.470	0.547	4.510	8.410
261	26.70	57.30	1.320	0.478	3.780	7.920
262	34.00	77.80	1.630	0.592	6.010	9.320
263	30.50	66.70	1.500	0.615	4.730	8.910
264	28.60	65.70	1.390	0.539	5.300	9.570
265	33.60	70.10	1.670	0.516	5.730	8.130
266	36.00	81.40	1.790	0.625	6.090	10.200
267	28.80	60.40	1.350	0.465	3.720	9.570
268	32.90	70.50	1.650	0.629	5.540	8.650
269	33.80	75.00	1.710	0.548	5.240	9.910
270	30.60	69.70	1.510	0.527	4.600	8.200
272	30.50	64.00	1.470	0.587	4.310	9.890

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Table 3 cont'd. Final Sample Concentration Values

Id	Ta (ppm)	Cr (ppm)	Mn (ppm)	Fe (%)	Co (ppm)	Sb (ppm)
227	1.810	577.0	579.0	6.650	28.60	0.000
228	1.040	463.0	589.0	6.810	30.50	0.000
229	2.930	531.0	565.0	7.860	37.10	1.460
230	1.680	533.0	564.0	7.120	32.30	0.869
231	1.770	470.0	601.0	5.880	26.60	0.000
232	1.170	220.0	867.0	6.070	27.70	0.716
233	1.190	541.0	704.0	5.910	24.80	0.000
234	1.770	706.0	336.0	5.730	28.50	0.389
235	1.900	602.0	563.0	6.470	28.80	0.000
236	1.380	484.0	532.0	6.090	28.50	0.600
237	1.470	475.0	808.0	6.600	30.20	1.070
238	1.260	579.0	469.0	5.920	28.90	0.000
239	1.270	368.0	527.0	5.700	26.40	0.450
240	1.230	477.0	511.0	6.550	27.50	1.030
241	1.630	674.0	1040.0	6.690	31.10	2.220
242	1.150	488.0	497.0	5.310	22.20	0.000
243	1.350	716.0	645.0	6.950	31.00	1.110
244	1.510	627.0	1010.0	6.620	31.00	0.000
245	0.859	556.0	558.0	6.380	27.10	0.000
246	1.420	464.0	610.0	6.190	25.40	0.821
247	1.500	497.0	402.0	6.000	26.30	1.340
248	1.810	220.0	974.0	6.710	26.10	0.000
249	1.100	447.0	557.0	6.040	26.70	0.000
250	1.540	554.0	515.0	5.860	27.60	0.000
251	1.030	461.0	990.0	6.070	27.80	0.547
252	1.650	573.0	476.0	6.410	29.90	0.000
253	1.280	287.0	1040.0	7.180	39.00	1.100
254	0.968	417.0	557.0	4.680	20.30	0.716
255	0.000	607.0	915.0	6.800	29.90	1.000
256	1.150	380.0	523.0	5.960	25.00	0.931
257	1.230	552.0	540.0	6.660	27.70	0.918
258	1.340	412.0	911.0	5.750	25.40	0.907
259	1.020	305.0	726.0	5.240	23.60	1.670
260	0.000	467.0	674.0	5.340	25.00	0.000
261	1.280	262.0	1030.0	6.180	26.40	0.905
262	1.420	651.0	835.0	6.390	26.00	0.000
263	1.480	433.0	616.0	5.990	23.30	0.974
264	1.680	528.0	681.0	6.590	35.40	0.000
265	1.000	665.0	506.0	5.370	22.00	0.000
266	0.000	631.0	1030.0	7.100	34.00	0.000
267	0.913	221.0	593.0	6.390	18.30	0.579
268	1.610	586.0	613.0	6.450	28.30	1.040
269	1.450	400.0	619.0	5.960	37.70	0.000
270	1.390	472.0	796.0	6.410	29.10	1.210
272	1.020	155.0	667.0	6.080	21.70	1.370

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Table 3 cont'd. Final Sample Concentration Values

Id	Ca (%)	Sm (ppm)	Yb (ppm)	Sr (ppm)
227	5.700	6.540	3.390	0.0
228	8.200	6.320	3.030	0.0
229	4.970	8.150	3.520	0.0
230	8.150	7.240	3.510	0.0
231	8.990	6.350	3.380	0.0
232	17.800	5.000	2.280	950.0
233	13.800	5.900	2.710	924.0
234	1.080	6.810	3.160	0.0
235	7.670	6.340	2.980	0.0
236	7.660	5.940	2.910	1270.0
237	7.260	5.980	2.740	0.0
238	7.040	6.220	3.020	0.0
239	14.900	5.830	2.570	1650.0
240	10.100	6.100	3.020	273.0
241	3.420	6.590	3.300	0.0
242	10.400	5.690	2.570	2010.0
243	2.780	6.480	3.210	401.0
244	2.770	6.100	3.040	390.0
245	8.700	6.610	3.590	0.0
246	10.100	6.030	2.650	773.0
247	4.890	6.180	3.030	0.0
248	15.600	5.840	2.850	0.0
249	10.100	5.350	2.750	944.0
250	7.390	6.580	3.390	1210.0
251	15.000	5.940	2.490	1160.0
252	7.630	6.610	2.990	0.0
253	11.800	5.710	2.690	852.0
254	16.400	4.350	2.250	945.0
255	9.190	6.240	3.100	0.0
256	13.000	5.590	2.490	745.0
257	8.390	6.780	2.920	688.0
258	11.400	5.240	2.380	985.0
259	1.490	4.990	2.370	1600.0
260	12.100	5.470	2.470	1620.0
261	17.500	5.130	2.500	977.0
262	5.190	6.470	3.020	0.0
263	9.510	5.910	2.730	1010.0
264	7.770	5.840	2.740	0.0
265	10.500	6.030	2.940	0.0
266	0.000	6.590	3.450	0.0
267	12.700	5.130	2.450	1240.0
268	8.970	6.300	2.660	1090.0
269	10.500	6.520	3.010	0.0
270	12.600	5.790	2.720	0.0
272	7.750	5.600	2.840	661.0

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Table 3 cont'd. Final Sample Concentration Values

Id	Site	Loc.	Per.	Type	Site Size	GAJ No.
227	176	6	20	105	0.0	0.00
228	186	7	7	105	0.0	0.00
229	204	7	7	105	0.0	0.00
230	218	7	14	105	0.0	0.00
231	239	3	7	105	0.0	0.00
232	240	3	8	105	0.0	0.00
233	1	4	1	106	0.0	0.00
234	13	1	36	106	0.0	0.00
235	14	1	51	106	0.0	0.00
236	21	1	20	106	0.0	0.00
237	36	4	49	106	0.0	0.00
238	38	4	34	106	0.0	0.00
239	42	4	49	106	0.0	0.00
240	49	4	52	106	0.0	0.00
241	106	6	8	106	0.0	0.00
242	112	4	49	106	0.0	0.00
243	121	4	20	106	0.0	0.00
244	124	4	1	106	0.0	0.00
245	239	3	20	106	0.0	0.00
246	2	4	1	107	0.0	0.00
247	10	1	20	107	0.0	0.00
248	13	1	36	107	0.0	0.00
249	19	1	20	107	0.0	0.00
250	21	1	20	107	0.0	0.00
251	22	1	7	107	0.0	0.00
252	28	1	17	107	0.0	0.00
253	29	1	7	107	0.0	0.00
254	43	4	20	107	0.0	0.00
255	45	4	20	107	0.0	0.00
256	49	4	15	107	0.0	0.00
257	64	2	12	107	0.0	0.00
258	66	2	7	107	0.0	0.00
259	66	2	7	107	0.0	0.00
260	67	1	8	107	0.0	0.00
261	106	6	7	107	0.0	0.00
262	112	4	7	107	0.0	0.00
263	156	6	43	107	0.0	0.00
264	157	6	7	107	0.0	0.00
265	174	6	7	107	0.0	0.00
266	176	6	43	107	0.0	0.00
267	178	6	7	107	0.0	0.00
268	193	7	43	107	0.0	0.00
269	197	7	7	107	0.0	0.00
270	215	7	7	107	0.0	0.00
272	269	2	7	107	0.0	0.00

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Table 3 cont'd. Final Sample Concentration Values

Id	Na (%)	K (%)	Rb (ppm)	Cs (ppm)	Ba (ppm)	Sc (ppm)
273	0.991	2.400	84.10	5.310	343.0	25.80
274	1.330	2.370	95.50	5.240	763.0	24.70
275	1.370	2.310	88.70	4.530	547.0	24.40
276	0.944	1.920	74.80	3.610	488.0	28.60
277	1.700	2.440	83.00	6.120	473.0	30.70
278	0.897	2.790	120.00	7.490	534.0	35.60
279	1.110	2.260	66.20	4.180	430.0	25.20
280	0.928	1.360	43.30	5.440	802.0	29.50
281	1.240	1.640	0.00	4.290	265.0	26.70
282	1.050	1.780	35.80	5.210	327.0	28.40
283	1.380	0.890	59.00	4.450	1480.0	29.70
284	1.100	1.370	45.40	5.700	289.0	28.80
285	0.565	3.080	51.80	1.830	853.0	26.90
286	0.520	1.940	52.90	5.790	654.0	28.00
287	1.790	1.570	9.95	4.920	199.0	25.70
288	1.190	1.020	26.30	4.710	406.0	24.10
289	0.822	2.850	91.40	5.250	429.0	28.00
290	1.430	1.040	0.00	6.220	92.0	29.40
291	2.050	0.343	0.00	5.380	131.0	29.10
292	1.660	0.425	35.10	6.020	128.0	29.60
293	1.350	0.966	0.00	5.680	206.0	28.20
294	1.240	2.040	49.20	5.740	256.0	23.80
295	1.380	0.836	32.70	5.620	221.0	30.50
296	0.997	0.882	28.50	4.830	844.0	25.90
297	0.987	3.120	73.90	3.760	357.0	22.40
298	1.570	1.130	34.00	5.430	444.0	27.70
299	1.630	0.590	0.00	6.300	295.0	29.30
300	1.140	1.350	48.70	4.560	299.0	27.00
301	1.590	1.130	37.00	5.930	701.0	30.20
302	1.200	2.100	32.50	4.290	416.0	26.60
303	1.200	1.830	47.60	4.510	1040.0	24.40
304	1.190	1.060	43.70	5.290	659.0	31.60
305	1.200	1.910	53.20	4.120	1100.0	28.40
306	0.584	2.850	85.50	4.950	818.0	26.80
307	0.623	2.820	97.60	5.400	615.0	30.00
308	0.598	2.320	81.80	6.130	1500.0	29.80
309	0.938	2.320	48.30	4.230	280.0	23.80
310	1.130	1.540	48.20	5.690	724.0	30.20
311	1.750	0.984	28.30	4.630	872.0	26.90
312	1.230	1.870	59.50	6.230	1080.0	28.50
313	1.090	2.140	78.40	7.020	728.0	26.60
314	1.290	0.743	26.10	6.220	514.0	33.80
315	1.380	1.240	0.00	5.410	240.0	25.90
316	0.931	1.240	16.20	1.140	169.0	30.00
317	1.890	1.250	29.20	5.150	947.0	32.60

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Table 3 cont'd. Final Sample Concentration Values

Id	La (ppm)	Ce (ppm)	Eu (ppm)	Lu (ppm)	Hf (ppm)	Th (ppm)
273	31.20	65.10	1.490	0.568	4.510	8.730
274	27.40	71.20	1.330	0.500	5.460	8.870
275	30.00	65.80	1.580	0.513	5.090	8.580
276	33.90	73.00	1.690	0.516	5.010	8.810
277	37.80	86.90	1.810	0.700	6.340	11.800
278	38.20	89.00	2.100	0.649	5.080	12.800
279	30.00	69.90	1.590	0.483	4.720	8.610
280	28.70	64.40	1.430	0.499	3.730	9.300
281	29.90	62.80	1.620	0.465	3.980	8.830
282	28.70	69.70	1.570	0.462	4.070	9.450
283	31.80	68.00	1.500	0.457	4.110	10.200
284	28.50	63.90	1.340	0.404	3.750	9.310
285	28.90	63.90	1.450	0.505	4.190	9.770
286	28.60	63.20	1.340	0.437	3.610	9.430
287	27.20	60.50	1.210	0.508	3.610	8.870
288	24.90	56.10	1.280	0.370	3.430	7.970
289	29.90	67.40	1.450	0.492	4.150	9.650
290	29.10	62.40	1.350	0.456	3.550	9.850
291	29.70	64.80	1.470	0.433	3.410	9.640
292	29.50	62.60	1.520	0.393	3.500	9.670
293	29.30	67.50	1.270	0.486	3.980	9.300
294	28.30	62.00	1.290	0.538	3.840	9.370
295	28.30	66.10	1.350	0.443	3.990	9.590
296	26.40	59.80	1.270	0.420	3.210	8.770
297	27.00	56.00	1.210	0.453	3.700	7.630
298	29.10	63.10	1.380	0.583	4.010	9.240
299	26.80	58.00	1.260	0.547	3.670	9.470
300	28.00	67.60	1.380	0.459	3.850	9.050
301	33.50	73.90	1.470	0.713	4.430	12.100
302	29.10	65.00	1.530	0.453	3.920	9.360
303	27.80	65.40	1.240	0.451	3.830	8.200
304	29.90	66.40	1.570	0.459	3.920	9.100
305	28.60	63.10	1.410	0.523	3.940	9.310
306	28.90	62.80	1.480	0.444	3.410	9.220
307	30.60	67.60	1.530	0.499	4.040	9.920
308	31.80	71.50	1.530	0.493	3.830	10.200
309	28.90	63.40	1.370	0.402	3.850	8.080
310	33.50	67.30	1.520	0.526	4.060	10.100
311	30.80	63.30	1.490	0.584	4.640	8.840
312	31.10	69.80	1.480	0.612	4.400	10.700
313	32.70	66.80	1.510	0.503	4.130	10.600
314	32.20	69.60	1.480	0.706	4.200	10.500
315	27.50	56.70	1.340	0.430	3.400	8.460
316	36.00	69.70	1.660	0.611	4.020	8.560
317	29.90	71.60	1.450	0.482	4.450	10.400

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Table 3 cont'd. Final Sample Concentration Values

Id	Ta (ppm)	Cr (ppm)	Mn (ppm)	Fe (%)	Co (ppm)	Sb (ppm)
273	1.220	407.0	1220.0	6.220	27.00	0.804
274	1.340	780.0	950.0	6.090	27.00	0.000
275	0.976	514.0	563.0	5.650	24.70	0.000
276	1.540	474.0	544.0	6.990	29.70	0.000
277	1.350	730.0	430.0	5.900	29.30	1.490
278	2.770	424.0	449.0	6.390	25.20	0.000
279	1.740	467.0	831.0	6.050	25.90	1.130
280	1.400	335.0	964.0	7.130	30.70	1.150
281	1.880	382.0	973.0	6.500	26.80	0.000
282	1.190	319.0	938.0	6.820	29.00	0.000
283	1.550	325.0	977.0	7.230	28.70	1.240
284	1.430	270.0	895.0	6.890	28.30	1.380
285	1.160	341.0	895.0	6.500	22.30	0.000
286	1.210	279.0	874.0	6.810	26.00	0.000
287	1.650	281.0	933.0	6.210	24.00	0.000
288	1.080	256.0	798.0	5.690	25.10	0.000
289	1.630	344.0	1950.0	6.750	30.00	0.660
290	0.663	276.0	962.0	7.060	28.90	0.000
291	0.000	261.0	840.0	6.980	28.70	1.610
292	1.490	272.0	925.0	7.140	30.40	0.000
293	0.000	288.0	952.0	6.780	26.00	0.000
294	1.280	236.0	862.0	5.610	21.10	0.000
295	1.570	296.0	965.0	7.270	29.50	0.789
296	0.967	278.0	876.0	6.190	25.70	0.000
297	0.861	367.0	997.0	5.430	22.90	0.713
298	1.620	298.0	952.0	6.730	27.60	0.840
299	1.160	270.0	894.0	7.080	29.80	0.000
300	1.360	355.0	1000.0	6.430	27.90	0.804
301	1.570	268.0	1020.0	7.180	29.50	0.901
302	1.050	352.0	837.0	6.390	20.10	0.373
303	1.360	336.0	850.0	5.850	19.10	0.692
304	1.980	387.0	828.0	7.640	32.00	0.758
305	0.890	312.0	965.0	6.840	26.50	0.916
306	1.150	281.0	895.6	6.490	24.30	1.460
307	1.210	338.0	1170.0	7.310	30.50	1.270
308	1.270	317.0	1060.0	7.250	27.80	1.040
309	1.240	335.0	961.0	5.750	19.80	0.000
310	0.000	293.0	982.0	7.210	27.30	1.640
311	1.390	363.0	731.0	6.560	24.50	0.680
312	1.570	295.0	1080.0	6.840	27.00	0.000
313	1.090	270.0	674.0	6.980	19.50	1.720
314	1.280	303.0	1040.0	8.070	33.10	0.579
315	1.250	238.0	847.0	6.180	22.40	1.520
316	1.440	346.0	1230.0	6.820	30.80	0.000
317	1.480	366.0	948.0	7.830	29.30	0.938

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Table 3 cont'd. Final Sample Concentration Values

Id	Ca (%)	Sm (ppm)	Yb (ppm)	Sr (ppm)
273	11.100	5.890	3.090	592.0
274	7.170	5.560	2.330	0.0
275	7.720	5.610	2.710	0.0
276	7.710	6.500	2.850	1010.0
277	2.000	7.260	3.550	0.0
278	2.830	7.380	3.160	0.0
279	12.800	5.640	2.570	856.0
280	17.700	5.570	2.800	0.0
281	17.400	5.470	2.720	0.0
282	19.300	5.650	2.480	0.0
283	17.900	5.960	2.420	1190.0
284	18.100	5.820	2.520	916.0
285	17.900	5.920	2.970	1520.0
286	18.700	5.630	2.180	1690.0
287	19.900	5.470	2.420	0.0
288	21.200	4.950	2.170	1520.0
289	11.800	5.700	2.910	540.0
290	18.700	5.210	2.490	0.0
291	18.700	5.350	2.340	0.0
292	19.900	5.710	2.820	0.0
293	18.900	5.120	2.130	0.0
294	17.000	5.360	2.720	1620.0
295	20.200	5.400	2.560	1110.0
296	20.200	5.090	2.790	1910.0
297	17.500	4.950	2.310	1300.0
298	19.500	5.570	2.330	0.0
299	20.500	5.280	2.150	0.0
300	20.900	5.560	2.690	1360.0
301	18.200	6.680	2.800	0.0
302	14.500	5.890	2.950	1230.0
303	21.500	5.570	2.610	1360.0
304	17.900	6.100	2.610	1340.0
305	18.600	5.730	2.960	1450.0
306	20.600	5.330	2.250	835.0
307	15.400	5.960	2.560	1330.0
308	17.600	5.970	2.660	1250.0
309	19.600	5.630	2.560	1080.0
310	17.100	6.150	3.070	1360.0
311	16.300	5.900	2.640	1320.0
312	18.300	6.270	2.880	1650.0
313	15.600	5.960	2.700	1140.0
314	21.400	6.490	2.860	1110.0
315	20.300	5.160	2.360	1230.0
316	15.800	6.570	2.830	812.0
317	18.400	5.940	2.000	338.0

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Table 3 cont'd. Final Sample Concentration Values

Id	Site	Loc.	Per.	Type	Site Size	GAJ No.
273	272	6	1	107	0.0	0.00
274	274	2	7	107	0.0	0.00
275	2	4	1	108	0.0	0.00
276	4	4	7	108	0.0	0.00
277	161	6	32	108	0.0	0.00
278	174	6	7	108	0.0	0.00
279	273	6	1	108	0.0	0.00
280	13	1	47	200	0.0	0.00
281	22	1	7	201	0.0	0.00
282	28	1	48	201	0.0	0.00
283	33	1	12	201	0.0	0.00
284	54	2	47	201	0.0	0.00
285	65	2	47	201	0.0	0.00
286	67	1	14	201	0.0	0.00
287	73	2	47	201	0.0	0.00
288	106	6	8	201	0.0	0.00
289	108	4	43	201	0.0	0.00
290	112	4	8	201	0.0	0.00
291	118	4	7	201	0.0	0.00
292	124	4	47	201	0.0	0.00
293	161	6	47	201	0.0	0.00
294	178	6	8	201	0.0	0.00
295	180	6	44	201	0.0	0.00
296	193	7	43	201	0.0	0.00
297	197	7	47	201	0.0	0.00
298	212	7	47	201	0.0	0.00
299	4	4	43	202	0.0	0.00
300	4	4	43	202	0.0	0.00
301	12	1	16	202	0.0	0.00
302	16	1	8	202	0.0	0.00
303	22	1	7	202	0.0	0.00
304	24	1	43	202	0.0	0.00
305	33	1	12	202	0.0	0.00
306	65	2	47	202	0.0	0.00
307	66	2	7	202	0.0	0.00
308	73	2	47	202	0.0	0.00
309	74	2	47	202	0.0	0.00
310	112	4	10	202	0.0	0.00
311	118	4	43	202	0.0	0.00
312	156	6	44	202	0.0	0.00
313	159	6	14	202	0.0	0.00
314	161	6	12	202	0.0	0.00
315	162	6	16	202	0.0	0.00
316	167	6	47	202	0.0	0.00
317	167	6	12	202	0.0	0.00

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Table 3 cont'd. Final Sample Concentration Values

Id	Na (%)	K (%)	Rb (ppm)	Cs (ppm)	Ba (ppm)	Sc (ppm)
318	1.570	0.909	21.60	5.720	295.0	29.80
319	1.810	0.483	17.90	5.460	172.0	28.80
320	1.500	0.535	30.00	5.780	950.0	29.50
321	1.490	1.410	59.30	5.770	535.0	28.30
322	1.510	0.971	27.40	5.380	457.0	29.80
323	1.450	1.170	28.30	5.870	3150.0	28.70
324	1.670	0.859	24.10	7.150	773.0	31.60
325	1.430	0.544	19.50	6.100	156.0	28.50
326	1.530	0.000	16.70	5.950	204.0	29.90
327	0.951	1.610	49.70	5.100	862.0	28.00
328	1.330	1.140	28.50	5.710	534.0	29.70
329	1.230	1.150	27.00	5.460	407.0	30.00
330	1.360	1.940	27.00	4.320	493.0	29.60
331	1.250	1.740	0.00	4.690	363.0	28.40
332	1.450	0.722	0.00	5.700	152.0	28.30
333	1.200	0.874	22.10	5.200	227.0	26.80
334	1.230	0.826	10.20	3.980	214.0	31.60
335	1.140	0.818	14.20	5.440	372.0	27.90
336	1.560	1.240	35.90	4.630	388.0	28.30
337	1.600	1.210	11.60	4.280	279.0	31.80
338	1.250	2.080	28.80	5.680	785.0	31.10
339	1.800	0.305	21.30	5.790	193.0	28.70
340	0.744	1.530	45.10	4.780	671.0	28.80
341	1.080	1.000	28.80	4.640	1300.0	31.50
342	1.060	0.791	17.30	3.820	215.0	27.70
343	1.190	1.060	12.40	4.270	383.0	31.80
344	1.460	0.442	23.30	5.950	530.0	30.70
345	1.180	1.100	28.60	6.430	143.0	30.40
346	1.310	1.520	31.10	3.230	1330.0	29.20
347	1.120	2.510	29.30	4.920	352.0	27.00
348	0.841	2.390	33.90	3.550	252.0	25.10
349	1.360	1.600	22.60	5.030	946.0	27.40
350	1.140	1.310	38.90	5.310	366.0	29.50
351	1.560	0.866	12.80	4.480	126.0	32.20
352	1.600	0.673	11.00	5.920	168.0	29.50
353	0.955	2.000	32.40	3.350	362.0	21.60
354	1.830	0.989	14.00	4.470	361.0	28.70
355	1.030	1.650	34.20	3.770	403.0	29.20
356	2.140	0.109	22.30	6.360	258.0	32.90
357	0.798	1.670	21.80	3.070	212.0	25.70
358	1.880	0.690	13.30	5.770	292.0	30.60
359	1.280	1.870	33.30	5.310	469.0	29.10
360	1.440	0.911	15.90	5.050	295.0	30.10
361	1.030	2.420	27.60	2.310	820.0	21.50
362	1.170	1.620	37.60	5.650	311.0	28.20

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Table 3 cont'd. Final Sample Concentration Values

Id	La (ppm)	Ce (ppm)	Eu (ppm)	Lu (ppm)	Hf (ppm)	Th (ppm)
318	28.90	64.10	1.340	0.437	3.300	9.470
319	28.60	60.30	1.340	0.445	3.350	9.500
320	28.60	63.70	1.370	0.518	3.830	9.890
321	31.90	65.40	1.550	0.504	4.270	10.000
322	30.30	65.20	1.410	0.454	3.930	9.660
323	29.90	61.30	1.400	0.501	3.650	9.010
324	28.60	67.40	1.280	0.470	4.320	10.700
325	26.40	60.30	1.350	0.413	3.340	8.480
326	27.10	61.90	1.440	0.444	3.400	9.500
327	28.50	66.20	1.390	0.514	3.690	9.600
328	27.90	62.50	1.250	0.447	3.810	9.790
329	28.80	63.80	1.390	0.441	4.030	9.910
330	32.20	71.70	1.690	0.555	4.270	9.980
331	28.70	70.40	1.320	0.427	4.210	9.260
332	26.50	60.50	1.140	0.416	3.480	9.140
333	26.70	59.20	1.210	0.449	3.100	8.930
334	29.80	67.10	1.580	0.474	3.530	8.490
335	29.00	65.90	1.320	0.530	3.650	9.280
336	27.90	63.40	1.280	0.461	3.470	9.020
337	29.40	69.60	1.410	0.505	4.010	10.100
338	31.30	69.50	1.630	0.532	3.860	9.700
339	28.20	62.60	1.230	0.458	3.490	9.100
340	26.70	63.50	1.380	0.493	3.630	8.490
341	26.80	68.90	1.310	0.412	3.880	9.420
342	26.20	58.20	1.410	0.433	3.360	8.110
343	29.10	71.10	1.540	0.467	3.880	9.300
344	29.80	65.20	1.260	0.464	3.640	9.620
345	30.00	67.40	1.410	0.477	3.590	9.730
346	30.90	66.00	1.470	0.889	4.380	9.270
347	28.70	62.10	1.390	0.493	3.530	8.890
348	27.00	59.80	1.270	0.439	3.530	8.310
349	26.40	62.80	1.250	0.484	3.720	9.780
350	28.70	62.30	1.450	0.474	3.550	9.280
351	31.30	68.90	1.520	0.452	3.850	9.110
352	28.50	64.60	1.280	0.473	3.710	9.780
353	22.90	49.70	1.110	0.383	3.210	7.180
354	27.70	61.20	1.360	0.517	3.510	9.310
355	28.40	60.90	1.440	0.471	3.700	8.200
356	31.00	67.10	1.390	0.513	3.980	10.000
357	27.10	61.00	1.340	0.461	3.510	8.320
358	28.90	61.10	1.450	0.485	3.590	9.260
359	31.60	70.00	1.450	0.486	3.980	9.840
360	27.90	61.50	1.410	0.453	3.690	9.570
361	25.80	56.20	1.240	0.436	3.940	7.300
362	29.00	62.90	1.440	0.515	4.030	9.580

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Table 3 cont'd. Final Sample Concentration Values

Id	Ta (ppm)	Cr (ppm)	Mn (ppm)	Fe (%)	Co (ppm)	Sb (ppm)
318	1.140	269.0	895.0	7.200	28.30	0.693
319	1.650	256.0	875.0	6.900	28.60	0.814
320	1.490	273.0	903.0	7.030	28.20	0.740
321	1.630	269.0	969.0	6.690	25.40	0.728
322	1.570	305.0	846.0	7.200	25.40	1.100
323	1.390	289.0	971.0	6.910	28.90	1.190
324	1.790	376.0	1120.0	7.670	32.70	0.000
325	0.000	250.0	937.0	6.810	30.50	0.000
326	0.894	262.0	932.0	7.190	32.20	1.470
327	1.560	272.0	1000.0	6.700	28.50	1.580
328	1.380	0.0	912.0	7.220	29.50	0.000
329	2.180	358.0	821.0	7.220	27.40	0.000
330	1.570	322.0	1320.0	7.040	33.00	0.000
331	1.600	366.0	943.0	6.840	28.30	0.721
332	0.000	254.0	893.0	6.710	28.30	0.000
333	1.430	238.0	838.0	6.380	24.80	1.490
334	1.920	337.0	967.0	7.550	34.30	0.000
335	0.000	283.0	948.0	6.740	28.20	1.700
336	1.330	268.0	883.0	6.830	26.50	0.875
337	1.600	320.0	951.0	7.710	24.50	0.000
338	2.060	300.0	1100.0	7.450	26.50	0.000
339	1.060	251.0	893.0	6.830	29.60	0.000
340	1.460	373.0	864.0	6.930	23.60	0.545
341	1.390	328.0	1060.0	7.590	33.00	0.707
342	1.360	291.0	973.0	6.670	31.40	1.620
343	1.560	368.0	1200.0	7.680	35.30	0.000
344	1.320	265.0	983.0	7.340	30.00	0.919
345	1.510	277.0	929.0	7.230	26.00	0.000
346	1.740	319.0	1050.0	6.950	30.60	0.000
347	1.240	275.0	899.0	6.640	25.50	0.909
348	1.260	246.0	1020.0	5.960	22.30	0.494
349	1.360	315.0	962.0	6.610	26.60	0.000
350	1.510	324.0	998.0	7.050	26.80	0.862
351	1.480	341.0	949.0	7.730	29.60	1.330
352	1.270	270.0	1010.0	7.020	29.40	0.586
353	0.913	274.0	684.0	5.220	20.10	0.780
354	1.530	269.0	893.0	6.950	29.20	1.190
355	1.420	346.0	947.0	7.050	29.40	1.180
356	1.610	388.0	1090.0	7.780	34.30	0.850
357	1.250	266.0	972.0	6.060	24.80	1.040
358	2.180	323.0	937.0	7.190	29.70	1.150
359	1.510	301.0	885.0	7.000	25.40	0.620
360	1.480	318.0	990.0	7.110	32.80	0.980
361	1.040	395.0	856.0	5.180	22.70	0.867
362	1.470	330.0	964.0	6.760	26.10	1.240

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Table 3 cont'd. Final Sample Concentration Values

Id	Ca (%)	Sm (ppm)	Yb (ppm)	Sr (ppm)
318	18.200	5.680	3.100	890.0
319	18.400	5.680	2.760	777.0
320	20.800	5.820	2.530	1270.0
321	17.500	5.960	3.000	1790.0
322	17.400	5.790	2.550	745.0
323	21.100	5.690	2.870	736.0
324	19.400	5.300	2.460	0.0
325	20.200	4.790	2.330	0.0
326	19.300	4.980	2.700	0.0
327	17.700	5.220	2.690	0.0
328	16.500	5.090	2.330	0.0
329	17.600	5.360	2.730	0.0
330	16.300	5.950	3.160	0.0
331	15.400	5.490	2.270	0.0
332	17.500	4.910	2.240	0.0
333	18.600	4.880	2.430	0.0
334	18.200	5.510	2.650	0.0
335	17.800	5.510	2.410	0.0
336	19.500	5.060	2.450	0.0
337	18.100	5.500	2.820	0.0
338	16.400	5.960	2.690	1530.0
339	19.400	4.930	2.640	0.0
340	18.400	5.070	2.290	2080.0
341	17.000	5.150	2.310	1140.0
342	18.200	4.980	2.270	0.0
343	16.600	5.810	2.810	0.0
344	20.300	5.340	2.700	1470.0
345	17.000	5.500	2.610	1970.0
346	20.400	5.800	2.720	1170.0
347	17.100	5.420	2.500	1510.0
348	20.300	5.180	2.460	1140.0
349	17.900	5.020	2.240	1190.0
350	18.900	5.350	2.610	856.0
351	19.100	5.900	2.670	0.0
352	20.400	5.290	2.700	0.0
353	25.000	4.280	2.160	1310.0
354	16.100	5.230	2.430	0.0
355	16.600	5.270	2.630	1050.0
356	16.700	5.710	2.740	1550.0
357	20.600	5.110	2.520	1810.0
358	16.100	5.140	2.550	0.0
359	19.600	5.940	2.720	1100.0
360	17.300	5.140	2.690	0.0
361	19.500	4.700	2.450	1230.0
362	17.400	5.350	2.710	745.0

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Table 3 cont'd. Final Sample Concentration Values

Id	Site	Loc.	Per.	Type	Site Size	GAJ No.
318	168	6	43	202	0.0	0.00
319	176	6	8	202	0.0	0.00
320	177	0	16	202	0.0	0.00
321	178	6	44	202	0.0	0.00
322	212	7	47	202	0.0	0.00
323	215	7	7	202	0.0	0.00
324	274	2	7	202	0.0	0.00
325	4	4	47	203	0.0	0.00
326	6	4	8	203	0.0	0.00
327	12	1	47	203	0.0	0.00
328	65	2	47	203	0.0	0.00
329	73	2	47	203	0.0	0.00
330	73	2	47	203	0.0	0.00
331	105	6	8	203	0.0	0.00
332	106	6	44	203	0.0	0.00
333	106	6	44	203	0.0	0.00
334	108	4	14	203	0.0	0.00
335	108	4	47	203	0.0	0.00
336	113	4	44	203	0.0	0.00
337	118	4	47	203	0.0	0.00
338	124	4	47	203	0.0	0.00
339	124	4	47	203	0.0	0.00
340	156	6	47	203	0.0	0.00
341	161	6	47	203	0.0	0.00
342	168	6	47	203	0.0	0.00
343	168	6	47	203	0.0	0.00
344	176	6	8	203	0.0	0.00
345	178	6	47	203	0.0	0.00
346	215	7	8	203	0.0	0.00
347	266	4	8	203	0.0	0.00
348	4	4	47	204	0.0	0.00
349	33	1	7	204	0.0	0.00
350	73	2	47	204	0.0	0.00
351	106	6	44	204	0.0	0.00
352	106	6	8	204	0.0	0.00
353	113	4	7	204	0.0	0.00
354	118	4	43	204	0.0	0.00
355	124	4	12	204	0.0	0.00
356	124	4	47	204	0.0	0.00
357	161	6	7	204	0.0	0.00
358	225	0	44	204	0.0	0.00
359	266	4	8	204	0.0	0.00
360	4	4	47	205	0.0	0.00
361	4	4	8	205	0.0	0.00
362	13	1	44	205	0.0	0.00

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Table 3 cont'd. Final Sample Concentration Values

Id	Na (%)	K (%)	Rb (ppm)	Cs (ppm)	Ba (ppm)	Sc (ppm)
363	1.320	1.070	16.90	5.790	163.0	30.30
364	1.110	1.530	22.10	5.890	174.0	27.00
365	1.080	1.580	40.80	6.140	618.0	31.90
366	1.140	2.010	17.30	4.430	227.0	24.10
367	1.840	0.679	24.50	6.960	838.0	35.00
368	1.370	1.170	46.00	4.960	2350.0	29.50
369	1.270	1.970	38.80	4.710	1390.0	28.60
370	0.984	2.260	49.60	3.700	481.0	24.80
371	1.350	0.956	22.00	4.850	456.0	26.40
372	1.150	0.618	12.80	4.790	592.0	25.40
373	1.120	1.840	43.90	5.660	281.0	28.00
374	1.260	1.840	25.30	2.700	258.0	23.90
375	0.944	1.780	28.10	4.220	584.0	27.70
376	1.550	1.160	18.90	4.910	287.0	28.20
377	1.010	1.390	22.70	4.830	198.0	24.50
378	0.786	2.170	74.30	6.800	283.0	28.60
379	1.750	1.350	13.30	4.230	514.0	30.80
380	0.806	1.870	51.80	6.030	1350.0	31.00
381	2.830	1.280	17.50	5.370	249.0	28.00
382	2.250	1.430	30.20	5.530	269.0	32.00
383	1.000	0.761	26.10	5.650	1070.0	28.70
384	1.310	0.819	13.00	5.620	329.0	29.90
385	0.773	1.630	39.20	4.810	444.0	32.60
386	1.530	0.401	13.10	4.450	273.0	28.10
387	1.960	0.342	14.40	5.470	159.0	30.70
388	1.380	2.120	66.00	5.530	453.0	27.00
389	1.070	1.080	25.60	5.650	331.0	28.30
390	1.310	1.100	20.80	5.320	328.0	30.50
391	1.160	2.460	42.60	5.450	261.0	25.70
392	1.230	1.940	33.80	4.420	436.0	25.90
393	1.590	1.250	31.20	6.030	680.0	26.20
394	1.650	1.130	13.50	4.740	200.0	29.80
395	1.390	1.640	20.40	4.950	576.0	26.20
396	1.310	0.908	76.40	5.740	1730.0	34.10
397	1.150	1.110	28.60	5.720	597.0	27.50
398	1.850	1.790	14.10	4.000	249.0	29.50
399	1.440	2.230	42.30	6.010	300.0	25.90
400	1.460	1.340	19.00	5.450	361.0	29.50
401	1.590	0.998	10.80	6.970	130.0	29.70
402	1.230	0.929	56.40	6.100	113.0	30.10
403	0.936	2.040	18.10	3.910	168.0	24.60

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Table 3 cont'd. Final Sample Concentration Values

Id	La (ppm)	Ce (ppm)	Eu (ppm)	Lu (ppm)	Hf (ppm)	Th (ppm)
363	28.30	63.00	1.260	0.544	3.810	9.660
364	27.90	60.30	1.270	0.443	3.430	8.200
365	30.00	68.10	1.510	0.479	4.170	10.200
366	0.00	54.90	1.180	0.403	3.440	7.640
367	31.70	69.20	1.530	0.507	4.520	11.100
368	27.90	60.10	1.340	0.389	3.820	9.720
369	29.70	63.60	1.370	0.476	3.900	9.660
370	25.80	55.40	1.240	0.399	3.150	8.250
371	27.30	58.10	1.290	0.442	3.520	8.440
372	25.10	52.90	1.280	0.572	3.140	8.160
373	28.90	61.00	1.530	0.466	3.950	9.080
374	27.40	57.90	1.270	0.434	4.050	7.870
375	29.50	63.80	1.540	0.579	3.890	9.530
376	27.40	60.00	1.280	0.528	3.740	8.750
377	25.90	56.20	1.240	0.494	3.250	8.120
378	29.10	62.30	1.360	0.510	3.690	9.230
379	30.50	66.80	1.470	0.495	3.990	9.440
380	30.40	65.10	1.410	0.571	3.770	9.980
381	29.30	63.60	1.320	0.437	3.570	9.300
382	30.00	64.60	1.480	0.526	3.710	9.250
383	28.00	63.10	1.410	0.462	3.610	9.320
384	28.30	62.60	1.350	0.453	3.560	8.890
385	31.00	70.60	1.580	0.461	4.070	9.410
386	28.80	60.20	1.230	0.461	3.180	8.870
387	26.90	60.60	1.290	0.436	3.700	9.840
388	28.70	62.50	1.350	0.476	4.120	9.090
389	27.50	57.90	1.340	0.495	3.410	8.840
390	28.50	61.00	1.320	0.419	3.660	9.130
391	27.70	61.70	1.340	0.479	3.800	8.840
392	27.30	60.00	1.330	0.464	3.500	9.040
393	29.20	64.50	1.340	0.475	4.240	9.570
394	29.10	66.30	1.290	0.594	3.990	9.600
395	25.50	57.80	1.220	0.468	3.350	8.240
396	31.10	75.60	1.490	0.557	5.060	11.500
397	27.00	57.90	1.250	0.496	3.640	8.690
398	29.50	67.50	1.630	0.527	4.050	9.990
399	29.10	66.90	1.300	0.507	4.090	9.880
400	27.20	62.10	1.380	0.446	3.590	9.230
401	27.80	61.80	1.200	0.454	3.730	9.230
402	28.30	63.10	1.270	0.451	3.640	9.500
403	26.80	57.60	1.220	0.403	3.610	8.270

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Table 3 cont'd. Final Sample Concentration Values

Id	Ta (ppm)	Cr (ppm)	Mn (ppm)	Fe (%)	Co (ppm)	Sb (ppm)
363	1.500	271.0	854.0	7.200	25.50	1.590
364	1.300	295.0	890.0	6.430	25.00	1.100
365	1.510	333.0	988.0	7.720	32.80	1.670
366	1.250	292.0	779.0	5.810	21.80	0.722
367	1.680	418.0	855.0	8.510	36.30	1.350
368	1.320	323.0	895.0	7.160	28.70	1.460
369	1.370	274.0	691.0	6.880	23.10	0.000
370	1.140	292.0	1260.0	5.910	24.10	0.660
371	1.420	293.0	748.0	6.360	27.40	0.712
372	0.986	227.0	619.0	6.050	25.90	0.888
373	1.330	310.0	1150.0	6.700	24.40	0.745
374	1.180	303.0	1000.0	5.780	24.90	0.000
375	1.400	351.0	1080.0	6.610	29.40	0.747
376	1.210	313.0	970.0	6.810	27.40	0.000
377	1.140	252.0	831.0	5.830	24.30	0.966
378	1.060	303.0	991.0	7.020	29.20	1.310
379	1.600	316.0	847.0	7.120	27.30	0.000
380	1.580	313.0	957.0	7.510	28.90	1.310
381	1.140	281.0	852.0	6.680	22.60	0.000
382	1.690	384.0	1050.0	7.690	37.40	0.782
383	1.180	253.0	986.0	6.810	28.90	1.080
384	1.320	250.0	884.0	9.960	30.20	0.593
385	1.730	331.0	1050.0	7.920	32.90	1.050
386	1.150	234.0	990.0	6.750	27.60	1.100
387	1.430	270.0	1060.0	7.310	29.90	0.000
388	1.470	286.0	834.0	6.530	24.20	1.100
389	1.260	252.0	878.0	6.820	28.50	1.260
390	1.410	323.0	892.0	7.270	29.30	0.786
391	1.300	273.0	910.0	6.180	23.10	0.000
392	1.310	270.0	970.0	6.220	20.50	0.000
393	1.440	247.0	925.0	6.170	23.00	0.000
394	1.540	297.0	893.0	7.090	23.30	0.000
395	1.980	259.0	869.0	6.310	26.70	0.000
396	1.440	368.0	1080.0	8.230	30.10	0.000
397	1.390	285.0	880.0	6.600	25.00	0.000
398	1.380	294.0	1030.0	7.070	29.70	0.000
399	1.150	251.0	952.0	6.140	23.30	0.000
400	1.360	268.0	978.0	7.030	29.70	0.000
401	0.718	293.0	929.0	7.130	28.40	1.020
402	1.240	270.0	908.0	7.220	29.70	0.869
403	1.220	288.0	928.0	5.910	20.80	1.100

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Table 3 cont'd. Final Sample Concentration Values

Id	Ca (%)	Sm (ppm)	Yb (ppm)	Sr (ppm)
363	18.400	5.250	2.430	673.0
364	18.600	5.280	2.530	903.0
365	17.500	5.460	2.600	719.0
366	22.200	4.720	2.260	1170.0
367	20.700	5.890	2.760	1100.0
368	20.100	5.130	2.180	1470.0
369	17.000	5.540	2.670	1340.0
370	19.000	5.000	2.210	1140.0
371	21.300	4.890	2.440	1330.0
372	23.600	4.690	2.090	1370.0
373	16.400	5.300	2.690	1590.0
374	18.200	5.070	2.500	1180.0
375	19.500	5.650	2.600	2080.0
376	20.900	5.220	2.500	1160.0
377	21.500	4.640	2.400	1120.0
378	15.900	5.450	2.750	660.0
379	21.600	5.630	2.750	1170.0
380	18.400	5.490	2.570	1060.0
381	17.900	5.290	2.620	910.0
382	18.800	5.550	2.820	853.0
383	18.800	5.420	2.590	1840.0
384	43.600	5.330	2.540	983.0
385	17.800	5.900	2.360	953.0
386	21.300	5.190	2.620	799.0
387	21.300	5.140	2.610	818.0
388	17.300	5.350	1.980	959.0
389	19.500	5.130	2.650	898.0
390	17.800	5.220	2.690	751.0
391	17.800	5.290	2.480	276.0
392	20.100	5.250	2.100	0.0
393	17.500	5.520	2.860	0.0
394	17.800	5.740	2.650	0.0
395	18.700	4.970	2.710	0.0
396	18.300	6.260	3.020	1200.0
397	17.900	5.030	2.530	0.0
398	13.200	5.870	2.710	0.0
399	14.600	5.520	2.730	2020.0
400	15.000	4.900	2.270	231.0
401	18.200	5.130	2.570	0.0
402	17.900	5.270	2.700	262.0
403	20.300	4.960	2.420	1030.0

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Table 3 cont'd. Final Sample Concentration Values

Id	Site	Loc.	Per.	Type	Site Size	GAJ No.
363	16	1	7	205	0.0	0.00
364	33	1	7	205	0.0	0.00
365	43	4	12	205	0.0	0.00
366	45	4	17	205	0.0	0.00
367	65	2	44	205	0.0	0.00
368	65	2	43	205	0.0	0.00
369	67	1	14	205	0.0	0.00
370	73	2	48	205	0.0	0.00
371	74	2	8	205	0.0	0.00
372	108	4	43	205	0.0	0.00
373	112	4	7	205	0.0	0.00
374	124	4	47	205	0.0	0.00
375	176	6	7	205	0.0	0.00
376	218	6	43	205	0.0	0.00
377	266	4	7	205	0.0	0.00
378	13	1	47	206	0.0	0.00
379	16	1	47	206	0.0	0.00
380	73	2	47	206	0.0	0.00
381	118	4	47	206	0.0	0.00
382	124	4	47	206	0.0	0.00
383	161	6	12	206	0.0	0.00
384	179	6	47	206	0.0	0.00
385	180	6	47	206	0.0	0.00
386	197	6	47	206	0.0	0.00
387	212	7	47	206	0.0	0.00
388	225	0	47	206	0.0	0.00
389	112	4	7	205	0.0	0.00
390	124	4	47	205	0.0	0.00
391	28	1	14	207	0.0	0.00
392	74	2	47	207	0.0	0.00
393	74	2	47	207	0.0	0.00
394	105	6	44	207	0.0	0.00
395	108	4	8	207	0.0	0.00
396	110	4	8	207	0.0	0.00
397	113	4	7	207	0.0	0.00
398	124	4	47	207	0.0	0.00
399	178	6	8	207	0.0	0.00
402	178	6	8	207	0.0	0.00
401	197	7	44	207	0.0	0.00
402	197	7	8	207	0.0	0.00
403	197	7	8	207	0.0	0.00

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Table 3 cont'd. Final Sample Concentration Values

Id	Na (%)	K (%)	Rb (ppm)	Cs (ppm)	Ba (ppm)	Sc (ppm)
404	1.510	1.420	36.40	6.430	261.0	31.40
405	1.600	0.627	26.30	5.450	239.0	29.90
406	1.530	0.993	22.70	5.140	563.0	30.90
407	1.460	2.000	34.20	4.140	686.0	24.40
408	1.530	1.350	24.00	3.370	369.0	25.20
409	1.610	1.370	12.90	3.230	319.0	23.50
410	1.400	1.240	35.20	5.260	575.0	29.30
411	1.440	1.530	22.40	5.360	438.0	28.60
412	1.100	1.700	25.60	3.650	265.0	25.60
413	1.300	1.920	17.40	4.290	314.0	28.00
414	1.120	1.280	26.70	4.850	386.0	29.00
415	1.370	1.900	18.40	4.960	274.0	27.20
416	1.730	0.735	14.40	4.720	264.0	27.70
417	1.290	1.190	39.70	4.900	742.0	25.90
418	1.420	0.871	12.10	4.960	170.0	26.00
419	1.250	2.480	65.10	6.230	334.0	28.90
420	0.402	2.910	74.50	4.150	711.0	22.60
421	1.360	3.180	60.70	4.300	519.0	25.80
422	1.260	2.110	60.70	4.930	397.0	27.00
423	1.250	1.040	19.80	4.510	237.0	24.10
424	1.430	0.485	18.80	4.540	422.0	24.60
425	1.670	2.770	39.00	5.110	266.0	30.30
426	1.460	1.480	10.50	3.420	253.0	27.70
427	1.670	1.250	20.10	3.950	262.0	28.20
428	1.680	0.731	21.70	4.940	269.0	22.30
429	1.680	0.954	41.30	3.310	1270.0	26.70
430	1.270	1.320	31.80	5.950	505.0	28.80
431	2.310	1.060	15.30	4.560	267.0	27.70
432	1.830	1.510	13.90	1.550	260.0	22.80
433	1.260	0.792	25.70	4.600	807.0	29.50
434	0.610	0.612	11.90	3.220	379.0	21.70
435	0.899	1.320	30.00	4.400	841.0	26.10
436	1.390	0.568	0.00	4.830	322.0	25.70
437	1.260	1.060	35.70	4.920	1060.0	27.10
438	0.673	0.600	16.00	3.370	441.0	22.60
439	0.858	0.750	23.70	4.290	708.0	26.20
440	0.877	2.350	62.90	3.060	648.0	18.70
441	0.749	1.860	42.40	2.520	648.0	15.00
442	0.635	1.810	36.10	2.460	1400.0	14.20
443	0.439	1.920	44.60	2.950	287.0	17.60
444	0.790	2.040	42.60	2.560	261.0	16.40
445	0.605	2.610	53.50	3.850	309.0	18.40
446	0.777	2.030	47.20	2.380	298.0	16.70
447	0.762	1.890	51.70	2.520	330.0	15.30
448	1.240	1.920	41.60	2.000	292.0	15.00

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Table 3 cont'd. Final Sample Concentration Values

Id	La (ppm)	Ce (ppm)	Eu (ppm)	Lu (ppm)	Hf (ppm)	Th (ppm)
404	29.70	68.80	1.290	0.500	4.130	10.000
405	29.50	68.80	1.390	0.454	3.740	9.650
406	29.80	66.50	1.410	0.479	3.830	9.820
407	29.80	65.70	1.390	0.557	4.330	8.580
408	28.90	62.60	1.330	0.545	4.040	8.340
409	26.90	59.20	1.320	0.445	3.790	8.370
410	30.70	71.30	1.410	0.475	4.270	10.700
411	29.20	65.00	1.330	0.474	3.770	9.510
412	29.10	64.10	1.460	0.403	4.220	7.980
413	30.80	72.10	1.550	0.490	4.930	9.320
414	31.10	65.40	1.480	0.479	4.060	9.510
415	27.70	61.50	1.460	0.435	3.860	8.740
416	26.40	61.00	1.160	0.441	3.560	8.490
417	28.20	60.50	1.230	0.451	3.480	9.290
418	27.40	58.30	1.270	0.446	3.480	7.960
419	29.50	68.20	1.340	0.547	4.100	9.590
420	23.90	54.10	1.100	0.442	3.330	7.890
421	28.00	59.40	1.330	0.454	3.920	9.000
422	30.40	69.60	1.470	0.523	4.820	9.460
423	26.30	56.90	1.160	0.426	3.410	8.120
424	25.30	54.50	1.270	0.420	3.380	8.260
425	30.90	70.10	1.520	0.457	4.150	10.400
426	27.70	61.60	1.230	0.546	3.720	8.980
427	25.90	58.70	1.230	0.443	3.660	9.180
428	26.40	57.80	1.350	0.432	3.640	8.620
429	27.80	61.00	1.260	0.536	3.790	8.530
430	30.50	66.10	1.510	0.512	3.940	9.650
431	29.30	64.10	1.330	0.448	4.110	8.990
432	24.50	53.10	1.120	0.517	3.480	7.340
433	28.30	64.20	1.320	0.551	4.010	9.170
434	23.80	51.60	1.220	0.445	3.070	6.420
435	27.40	62.80	1.550	0.479	3.740	8.860
436	25.80	55.80	1.110	0.375	3.610	8.320
437	28.80	64.10	1.350	0.448	3.700	9.390
438	24.30	53.60	1.180	0.476	3.520	6.960
439	28.40	61.10	1.320	0.479	3.830	7.700
440	23.20	50.10	1.140	0.397	3.550	6.760
441	19.00	42.10	0.914	0.288	2.870	5.210
442	16.60	37.90	0.850	0.285	2.500	5.010
443	20.50	46.20	1.040	0.299	2.630	5.330
444	20.20	43.80	1.080	0.356	3.330	5.720
445	21.70	48.80	0.992	0.343	3.060	6.550
446	21.20	46.90	1.090	0.353	3.160	6.050
447	18.90	44.00	1.020	0.317	3.030	5.150
448	19.50	43.00	1.060	0.332	3.350	5.500

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Table 3 cont'd. Final Sample Concentration Values

Id	Ta (ppm)	Cr (ppm)	Mn (ppm)	Fe (%)	Co (ppm)	Sb (ppm)
404	1.630	315.0	979.0	7.580	24.20	0.923
405	1.570	269.0	913.0	7.170	29.10	0.000
406	0.979	343.0	1120.0	7.440	30.10	0.000
407	1.020	394.0	1050.0	5.900	21.80	0.000
408	1.730	358.0	1090.0	6.020	27.50	0.000
409	1.410	333.0	961.0	5.720	24.40	0.000
410	1.400	274.0	1120.0	7.010	29.50	1.290
411	1.390	295.0	927.0	6.930	25.70	1.110
412	1.620	345.0	1080.0	6.160	27.70	0.842
413	1.620	374.0	1200.0	6.730	30.20	0.648
414	1.230	376.0	1020.0	6.900	30.30	0.807
415	2.140	332.0	980.0	6.550	27.20	1.420
416	1.990	263.0	883.0	6.760	30.30	0.000
417	1.530	245.0	0.0	6.320	36.10	0.000
418	1.100	253.0	0.0	6.240	28.10	1.070
419	0.000	265.0	1080.0	6.860	26.900	0.000
420	1.570	239.0	721.0	5.470	21.500	0.000
421	1.660	320.0	999.0	6.330	27.100	0.000
422	1.370	257.0	720.0	6.710	24.100	0.000
423	1.080	289.0	1310.0	5.880	27.800	1.110
424	1.700	253.0	1020.0	5.970	26.000	0.757
425	1.330	357.0	1270.0	7.420	34.000	0.000
426	1.440	276.0	1180.0	6.670	29.000	0.000
427	1.460	293.0	982.0	6.850	32.600	0.000
428	0.000	228.0	883.0	5.260	21.900	0.000
429	1.120	371.0	1170.0	6.460	48.500	0.000
430	1.490	280.0	1040.0	6.920	30.900	0.000
431	1.210	290.0	1140.0	6.600	29.500	1.120
432	1.080	265.0	918.0	5.430	26.800	0.000
433	1.240	282.0	995.0	7.060	28.500	0.649
434	1.080	270.0	744.0	5.210	21.700	0.400
435	1.260	332.0	907.0	6.420	28.400	1.400
436	0.955	245.0	818.0	6.250	44.500	0.000
437	1.160	252.0	938.0	6.500	50.900	0.541
438	1.080	285.0	955.0	5.460	23.900	0.604
439	1.330	345.0	934.0	6.310	23.500	0.444
440	1.190	350.0	866.0	4.470	20.500	0.000
441	1.050	252.0	654.0	3.660	16.200	0.715
442	0.958	226.0	654.0	3.470	16.400	0.000
443	1.260	174.0	696.0	4.230	17.900	1.120
444	0.732	299.0	731.0	3.990	16.900	0.000
445	0.000	242.0	799.0	4.370	17.700	0.738
446	1.030	350.0	760.0	4.050	18.200	0.000
447	0.818	307.0	721.0	3.710	16.700	0.845
448	1.110	341.0	753.0	3.580	16.300	1.280

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Table 3 cont'd. Final Sample Concentration Values

Id	Ca (%)	Sm (ppm)	Yb (ppm)	Sr (ppm)
404	16.900	5.600	2.630	185.0
405	20.000	5.310	2.530	0.0
406	17.200	5.690	2.770	0.0
407	19.400	5.620	3.030	0.0
408	19.400	5.390	2.650	0.0
409	17.600	4.950	2.470	0.0
410	14.900	5.780	2.680	0.0
411	23.800	5.440	2.450	1090.0
412	19.500	5.350	2.310	1230.0
413	18.000	5.690	2.390	1120.0
414	17.700	5.740	3.220	852.0
415	24.500	5.190	2.680	0.0
416	17.400	4.950	2.290	0.0
417	18.000	5.130	2.320	729.0
418	20.300	5.040	2.440	913.0
419	11.700	5.730	2.900	0.0
420	10.000	4.500	2.350	0.0
421	16.000	5.180	2.470	0.0
422	11.900	5.830	3.140	0.0
423	20.600	4.920	2.350	819.0
424	19.500	4.600	2.440	825.0
425	14.800	5.960	2.830	0.0
426	18.100	5.390	2.410	0.0
427	17.400	5.040	2.440	908.0
428	18.100	4.750	2.500	462.0
429	19.300	5.010	2.590	812.0
430	16.500	5.650	2.780	0.0
431	19.700	5.560	2.570	1160.0
432	13.800	4.460	1.980	684.0
433	18.900	5.450	2.610	1090.0
434	15.800	4.400	2.010	1290.0
435	20.000	5.270	2.520	0.0
436	17.700	4.670	1.970	0.0
437	18.400	5.370	2.550	528.0
438	16.200	4.780	2.170	1210.0
439	18.000	5.220	2.710	987.0
440	19.500	4.490	2.210	730.0
441	26.300	3.510	1.600	1090.0
442	22.900	3.170	1.440	0.0
443	25.600	3.820	1.540	727.0
444	22.900	3.840	1.840	724.0
445	25.400	4.140	1.740	0.0
446	23.400	3.930	1.740	355.0
447	23.200	3.490	1.590	674.0
448	25.000	3.710	1.920	0.0

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Table 3 cont'd. Final Sample Concentration Values

Id	Site	Loc.	Per.	Type	Site Size	GAJ No.
404	215	7	8	207	0.0	0.00
405	215	7	8	207	0.0	0.00
406	4	4	8	208	0.0	0.00
407	33	1	7	208	0.0	0.00
408	33	1	7	208	0.0	0.00
409	33	1	7	208	0.0	0.00
410	35	1	7	208	0.0	0.00
411	49	4	7	208	0.0	0.00
412	181	6	7	208	0.0	0.00
413	181	6	7	208	0.0	0.00
414	240	3	7	208	0.0	0.00
415	266	4	7	208	0.0	0.00
416	4	4	1	209	0.0	0.00
417	12	1	1	209	0.0	0.00
418	161	6	1	209	0.0	0.00
419	4	4	57	210	0.0	0.00
420	Giyan	8	57	210	0.0	0.00
421	4	4	58	211	0.0	0.00
422	4	4	54	212	0.0	0.00
423	4	4	43	209	0.0	0.00
424	4	4	44	209	0.0	0.00
425	4	4	45	209	0.0	0.00
426	4	4	47	209	0.0	0.00
427	4	4	1	209	0.0	0.00
428	4	4	1	209	0.0	0.00
429	49	4	1	209	0.0	0.00
430	124	4	1	209	0.0	0.00
431	124	4	1	209	0.0	0.00
432	124	4	1	209	0.0	0.00
433	160	6	1	209	0.0	0.00
434	167	6	1	209	0.0	0.00
435	174	6	1	209	0.0	0.00
436	271	0	66	209	0.0	0.00
437	12	1	1	209	0.0	0.00
438	167	6	1	209	0.0	0.00
439	167	6	1	209	0.0	0.00
440	6	4	2	35	1.0	0.00
441	6	4	2	35	1.0	0.00
442	6	4	2	35	1.0	0.00
443	27	1	2	35	1.0	0.00
444	27	1	2	35	1.0	0.00
445	27	1	2	35	1.0	0.00
446	27	1	2	35	1.0	0.00
447	49	4	2	35	1.0	0.00
448	49	4	2	35	1.0	0.00

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Table 3 cont'd. Final Sample Concentration Values

Id	Na (%)	K (%)	Rb (ppm)	Cs (ppm)	Ba (ppm)	Sc (ppm)
449	1.270	2.360	35.10	1.840	397.0	15.50
450	0.487	2.260	51.20	3.620	569.0	24.10
451	0.563	2.250	56.00	2.630	633.0	25.00
452	0.912	1.920	44.50	1.880	409.0	15.00
453	1.090	2.370	36.20	3.140	567.0	15.80
454	0.787	1.950	45.80	3.290	493.0	16.20
455	0.649	2.270	49.00	3.820	678.0	17.60
456	0.585	2.130	51.80	3.310	516.0	21.00
457	0.676	2.010	57.60	3.390	738.0	24.00
458	0.643	2.360	70.30	3.980	315.0	22.40
459	0.756	2.090	50.10	4.830	1330.0	27.40
460	0.666	1.430	36.50	2.050	565.0	20.60
461	0.712	1.800	51.70	2.660	495.0	17.10
462	0.546	1.910	56.60	2.260	1480.0	17.80
463	0.541	2.370	57.70	4.160	359.0	23.20
464	0.501	2.170	55.90	3.210	231.0	19.90
465	0.496	2.340	68.00	4.020	661.0	23.30
466	0.449	2.010	54.50	3.750	636.0	20.30
467	0.589	2.720	49.70	3.830	1730.0	26.00
468	1.050	1.300	46.30	4.570	668.0	22.30
469	1.040	1.670	41.60	4.860	548.0	27.10
470	1.410	2.300	94.60	4.580	440.0	24.70
471	0.756	1.570	37.50	4.370	702.0	24.20
472	0.624	1.940	50.80	2.540	251.0	18.00
473	1.030	1.520	19.60	3.570	422.0	22.40
474	0.645	2.330	56.80	3.750	259.0	25.30
475	1.100	1.970	41.50	4.270	252.0	22.40
476	0.375	2.080	54.20	3.130	1410.0	18.10
477	0.728	2.330	57.60	3.490	1060.0	24.50
478	1.030	1.710	39.10	4.470	603.0	26.70
479	1.030	2.180	55.50	5.740	1570.0	25.70
480	0.996	2.060	60.30	3.880	371.0	19.50
481	0.510	2.880	62.80	3.030	294.0	23.00
482	0.534	2.560	57.30	3.320	259.0	23.20
483	0.548	2.260	55.00	2.940	249.0	21.00
484	0.451	2.440	66.40	3.210	423.0	25.10
485	0.575	2.390	64.10	3.060	502.0	20.50
486	1.170	0.861	14.50	4.050	233.0	27.70
487	0.660	1.670	52.00	2.640	230.0	18.80
488	0.837	1.410	44.40	2.040	276.0	14.40
489	1.020	1.150	26.40	3.490	276.0	21.80
490	0.711	1.800	52.40	2.870	410.0	17.40
491	0.916	2.090	41.10	2.070	271.0	15.20
492	0.910	2.150	52.90	2.450	236.0	16.40
493	0.889	2.090	50.40	2.330	341.0	16.10

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Table 3 cont'd. Final Sample Concentration Values

Id	La (ppm)	Ce (ppm)	Eu (ppm)	Lu (ppm)	Hf (ppm)	Th (ppm)
449	19.10	42.30	0.939	0.336	3.480	5.090
450	24.60	54.70	1.310	0.519	3.280	6.980
451	25.10	52.70	1.400	0.367	2.930	5.850
452	18.80	42.00	1.020	0.309	3.220	5.260
453	21.40	50.90	0.922	0.320	3.350	5.970
454	19.80	43.00	1.030	0.311	2.860	5.590
455	22.90	54.20	1.220	0.370	3.340	6.370
456	21.40	48.90	0.968	0.400	2.830	6.530
457	25.80	57.10	1.300	0.426	3.330	7.440
458	23.10	54.20	1.360	0.432	3.190	6.820
459	28.70	64.60	1.330	0.436	3.640	9.260
460	24.60	53.30	1.290	0.344	3.590	6.840
461	22.30	50.40	1.140	0.340	2.850	6.450
462	21.50	45.30	1.110	0.333	3.400	5.960
463	25.50	58.00	1.310	0.443	3.600	7.460
464	21.60	48.60	1.130	0.331	3.150	6.370
465	24.80	59.10	1.280	0.403	3.570	7.480
466	22.90	50.30	1.290	0.363	2.940	6.400
467	27.80	63.50	1.250	0.474	3.900	7.700
468	22.30	47.50	1.030	0.345	2.930	6.960
469	28.60	63.50	1.510	0.436	3.410	7.220
470	28.70	68.60	1.410	0.457	4.590	8.530
471	25.10	57.10	1.140	0.378	3.120	7.560
472	21.30	46.50	1.070	0.302	2.380	6.010
473	23.30	51.60	1.130	0.384	3.060	6.340
474	25.70	58.90	1.310	0.397	3.490	7.130
475	24.40	56.00	1.160	0.466	2.980	6.950
476	22.80	49.50	1.150	0.427	3.190	6.610
477	30.30	66.40	1.540	0.533	4.380	8.820
478	30.80	68.20	1.440	0.469	4.320	8.250
479	31.20	70.30	1.380	0.499	4.590	9.580
480	23.80	53.30	1.140	0.436	3.780	6.820
481	22.70	48.80	1.180	0.339	2.860	6.590
482	25.10	52.90	1.270	0.422	3.360	6.940
483	22.70	47.50	1.110	0.331	2.930	6.090
484	26.10	53.10	1.350	0.380	3.370	7.740
485	22.60	46.30	1.230	0.375	2.820	6.220
486	28.90	58.50	1.450	0.403	3.500	8.540
487	21.50	43.60	1.120	0.360	3.320	6.730
488	18.40	38.30	0.993	0.286	3.070	5.210
489	26.40	56.50	1.310	0.481	3.970	7.540
490	21.00	45.00	1.090	0.368	3.260	6.220
491	21.50	43.00	1.010	0.390	3.290	5.770
492	19.90	39.10	1.070	0.281	3.080	6.140
493	22.20	48.00	1.150	0.360	3.570	6.600

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Table 3 cont'd. Final Sample Concentration Values

Id	Ta (ppm)	Cr (ppm)	Mn (ppm)	Fe (%)	Co (ppm)	Sb (ppm)
449	0.638	370.0	781.0	3.770	17.100	0.000
450	1.150	285.0	874.0	5.850	27.400	0.782
451	1.230	227.0	1030.0	5.920	27.500	0.000
452	0.930	389.0	732.0	3.590	15.200	0.650
453	0.000	357.0	779.0	3.820	17.900	0.000
454	0.000	359.0	764.0	3.940	17.600	0.953
455	1.270	328.0	832.0	4.330	17.100	0.000
456	1.160	241.0	781.0	5.090	23.200	0.280
457	1.300	298.0	1030.0	5.680	25.800	0.000
458	0.000	290.0	882.0	5.420	25.000	0.000
459	1.540	329.0	979.0	6.580	29.200	0.000
460	1.230	385.0	807.0	4.940	22.000	0.599
461	1.320	252.0	759.0	4.100	18.600	0.000
462	1.150	293.0	763.0	4.230	19.600	1.270
463	0.601	345.0	894.0	5.580	25.800	1.110
464	1.100	431.0	784.0	4.870	20.200	0.000
465	1.780	354.0	913.0	5.670	24.800	0.821
466	1.610	305.0	727.0	5.050	24.900	0.655
467	1.920	425.0	1070.0	6.240	31.100	1.140
468	0.689	287.0	746.0	5.460	25.100	0.000
469	1.490	449.0	942.0	6.550	26.300	0.000
470	1.600	446.0	1090.0	5.930	25.300	0.000
471	1.690	247.0	904.0	5.730	26.100	0.000
472	1.020	201.0	1010.0	4.420	19.100	0.000
473	0.946	257.0	873.0	5.370	22.400	0.000
474	2.760	261.0	970.0	5.820	26.200	0.000
475	0.788	257.0	955.0	5.550	22.900	0.000
476	0.857	196.0	764.0	4.320	16.500	0.919
477	1.420	355.0	1020.0	5.850	23.900	0.000
478	1.440	365.0	801.0	6.320	26.700	0.889
479	1.360	247.0	1050.0	6.060	23.100	1.060
480	1.650	323.0	822.0	4.630	20.200	0.000
481	1.710	361.0	950.0	5.600	28.000	0.000
482	1.330	349.0	992.0	5.580	23.600	0.755
483	1.320	312.0	934.0	5.050	23.700	0.000
484	1.560	353.0	942.0	6.060	28.800	0.591
485	1.240	366.0	891.0	4.980	23.800	0.573
486	1.440	384.0	1040.0	6.640	33.900	0.408
487	1.870	389.0	805.0	4.580	22.900	0.616
488	1.040	361.0	695.0	3.480	16.400	0.440
489	1.000	461.0	937.0	5.280	24.700	0.460
490	0.829	373.0	874.0	4.280	21.200	0.000
491	1.340	342.0	797.0	3.670	17.200	0.000
492	1.200	295.0	759.0	4.040	18.400	0.000
493	1.210	373.0	848.0	3.940	18.000	0.622

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Table 3 cont'd. Final Sample Concentration Values

Id	Ca (%)	Sm (ppm)	Yb (ppm)	Sr (ppm)
449	23.600	3.770	1.810	833.0
450	20.500	4.700	2.200	1600.0
451	22.400	4.700	1.880	0.0
452	25.800	3.740	1.640	1170.0
453	22.900	4.030	1.840	1360.0
454	24.300	3.700	1.700	0.0
455	19.800	4.370	2.000	1520.0
456	23.900	3.890	1.940	2480.0
457	17.300	4.800	2.210	795.0
458	20.900	4.470	1.920	0.0
459	18.000	5.420	2.630	0.0
460	22.100	4.440	2.050	1270.0
461	24.100	4.190	1.880	1440.0
462	26.700	3.980	1.970	1430.0
463	17.200	4.720	2.130	0.0
464	19.400	4.220	1.980	0.0
465	19.500	4.870	2.240	750.0
466	17.000	4.260	1.890	792.0
467	30.700	5.300	2.420	1210.0
468	20.500	4.150	1.780	1810.0
469	22.900	5.430	2.420	984.0
470	12.300	5.450	2.450	0.0
471	18.500	4.700	1.990	0.0
472	19.500	3.960	1.690	793.0
473	16.800	4.350	1.930	0.0
474	19.100	4.860	2.100	0.0
475	16.800	4.550	2.360	858.0
476	19.300	4.110	1.950	1140.0
477	19.700	5.670	2.780	0.0
478	16.900	5.430	2.520	1010.0
479	18.900	5.960	2.690	0.0
480	24.000	4.570	2.030	0.0
481	15.400	4.620	2.120	1070.0
482	17.600	4.810	2.200	1100.0
483	19.200	4.440	2.060	1180.0
484	19.500	4.980	2.300	1320.0
485	18.900	4.350	1.960	285.0
486	22.000	5.600	2.700	1140.0
487	22.300	4.220	2.000	1180.0
488	25.000	3.590	1.770	1140.0
489	27.800	5.040	2.530	1800.0
490	24.500	4.110	1.990	1500.0
491	21.100	3.990	1.950	0.0
492	24.500	3.860	1.820	0.0
493	22.000	4.360	1.970	1000.0

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Table 3 cont'd. Final Sample Concentration Values

Id	Site	Loc.	Per.	Type	Site Size	GAJ No.
449	49	4	2	35	1.0	0.00
450	61	2	2	35	1.0	0.00
451	64	2	2	35	1.0	0.00
452	64	2	2	35	1.0	0.00
453	64	2	2	35	1.0	0.00
454	90	2	2	35	1.0	0.00
455	90	2	2	35	1.0	0.00
456	96	2	2	35	1.0	0.00
457	96	2	2	35	1.0	0.00
458	96	2	2	35	1.0	0.00
459	96	2	2	35	1.0	0.00
460	96	2	2	35	1.0	0.00
461	165	6	2	35	1.0	0.00
462	165	6	2	35	1.0	0.00
463	240	3	2	35	1.0	0.00
464	7	1	3	38	1.0	6.01
465	7	1	3	38	1.0	6.02
466	7	1	3	38	1.0	6.03
467	7	1	3	38	1.0	0.00
468	22	1	3	38	1.0	6.02
469	22	1	3	38	1.0	6.01
470	61	2	3	38	1.0	0.00
471	113	4	3	38	3.0	6.04
472	113	4	3	38	3.0	6.09
473	113	4	3	38	3.0	6.06
474	113	4	3	38	3.0	6.07
475	113	4	3	38	3.0	0.00
476	165	6	3	38	2.0	6.02
477	165	6	3	38	2.0	6.02
478	165	6	3	38	2.0	6.01
479	165	6	3	38	2.0	6.02
480	269	2	1	44	1.0	0.00
481	7	1	3	43	1.0	0.00
482	7	1	3	43	1.0	0.00
483	7	1	3	43	1.0	0.00
484	7	1	3	43	1.0	0.00
485	7	1	3	43	1.0	0.00
486	96	2	5	43	3.0	0.00
487	96	2	5	43	3.0	0.00
488	96	2	5	43	3.0	2.02
489	96	2	5	43	3.0	0.00
490	96	2	5	43	3.0	0.00
491	113	4	5	43	3.1	0.00
492	113	4	5	43	3.1	0.00
493	113	4	5	43	3.1	0.00

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Table 3 cont'd. Final Sample Concentration Values

Id	Na (%)	K (%)	Rb (ppm)	Cs (ppm)	Ba (ppm)	Sc (ppm)
494	0.821	2.260	53.10	2.690	417.0	16.80
495	0.865	2.210	65.10	3.770	307.0	21.30
496	1.140	1.340	27.40	3.670	388.0	20.90
497	0.667	1.830	50.50	2.490	665.0	15.90
498	0.725	1.380	37.90	1.950	671.0	14.00
499	0.609	2.070	47.30	3.510	278.0	20.10
500	0.672	2.000	48.50	2.750	392.0	16.80
501	0.925	1.260	51.80	4.930	767.0	29.50
502	0.492	1.700	50.10	2.620	454.0	19.00
503	0.789	1.900	77.70	3.640	697.0	20.60
504	0.966	1.630	54.80	2.570	894.0	20.40
505	0.626	2.020	60.90	3.240	433.0	21.80
506	0.660	2.560	68.10	3.720	322.0	23.70
507	0.576	1.440	52.80	2.690	476.0	18.70
508	1.060	1.950	67.70	3.520	582.0	22.00
509	0.660	2.420	54.60	3.020	294.0	21.50
510	0.584	1.720	52.50	1.960	506.0	17.40
511	0.497	1.920	56.20	2.390	390.0	18.20
512	0.477	1.660	36.40	3.600	371.0	20.40
513	0.556	1.700	50.10	2.490	576.0	19.20
514	0.603	1.710	48.00	2.520	369.0	15.70
515	1.420	2.440	30.90	3.800	242.0	20.10
516	1.340	2.060	58.20	2.540	268.0	19.10
517	1.390	1.680	20.10	5.060	660.0	22.30
518	0.657	2.430	59.90	3.340	486.0	19.30
519	0.532	1.700	46.40	3.120	545.0	19.70
520	0.484	2.300	52.90	3.570	415.0	19.40
521	0.440	1.640	42.10	1.870	445.0	13.40
522	0.711	1.520	30.90	3.290	277.0	17.90
523	0.577	2.010	65.70	3.560	1310.0	21.10
524	0.572	1.620	51.40	2.730	1060.0	17.50
525	0.599	2.030	47.80	2.360	1630.0	17.50
526	0.904	2.120	59.50	4.200	525.0	23.40
527	0.515	2.200	53.40	2.710	661.0	21.60
528	0.509	2.020	52.40	3.250	810.0	19.60
529	1.410	2.130	76.30	3.980	614.0	24.20
530	0.730	2.430	47.50	2.600	355.0	17.00
531	0.644	1.950	38.10	3.360	398.0	20.00
532	1.500	1.110	22.90	4.220	302.0	23.90
533	0.935	1.940	62.30	3.650	333.0	19.00
534	0.413	1.910	47.80	1.820	724.0	16.90
535	0.577	2.450	66.80	3.790	652.0	22.50
536	0.618	1.750	31.90	1.710	955.0	17.60
537	0.745	1.700	36.90	2.150	782.0	17.30
538	0.477	2.130	55.90	3.270	302.0	22.20

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Table 3 cont'd. Final Sample Concentration Values

Id	La (ppm)	Ce (ppm)	Eu (ppm)	Lu (ppm)	Hf (ppm)	Th (ppm)
494	20.90	44.30	1.020	0.337	3.530	6.180
495	27.30	59.30	1.380	0.388	4.050	8.570
496	26.40	54.20	1.350	0.508	4.320	7.570
497	19.30	39.40	1.070	0.276	2.710	5.900
498	19.00	39.80	0.901	0.315	3.490	5.960
499	23.60	48.60	1.380	0.342	3.020	6.570
500	20.40	42.80	1.020	0.298	3.160	5.790
501	30.00	65.10	1.630	0.496	3.820	9.550
502	20.60	44.10	1.150	0.371	2.730	6.180
503	23.20	47.40	1.220	0.345	3.270	7.070
504	21.90	45.50	1.200	0.335	3.030	6.630
505	24.50	47.20	1.210	0.367	3.730	6.860
506	24.20	52.20	1.240	0.341	3.040	7.000
507	20.90	43.90	1.010	0.303	2.810	5.760
508	25.00	52.50	1.560	0.356	3.200	7.260
509	23.90	48.40	1.150	0.403	3.130	6.680
510	20.50	39.70	1.110	0.287	2.560	5.690
511	20.70	41.20	1.070	0.287	2.320	5.820
512	22.90	43.50	1.100	0.289	2.620	5.970
513	21.30	43.40	1.110	0.282	2.870	5.790
514	20.70	40.40	0.980	0.293	2.700	5.780
515	23.40	45.90	1.120	0.342	3.440	7.020
516	28.40	57.80	1.380	0.379	4.300	7.830
517	23.80	59.60	1.540	0.522	6.110	7.990
518	21.90	44.50	1.140	0.328	2.910	6.230
519	21.60	45.70	1.040	0.302	2.480	6.000
520	23.00	48.60	1.070	0.336	2.810	6.620
521	16.80	33.80	0.837	0.238	2.270	4.620
522	21.80	44.20	1.060	0.312	3.050	5.830
523	24.80	50.50	1.260	0.414	2.910	7.530
524	21.10	43.60	1.120	0.297	3.120	6.040
525	20.50	42.70	1.080	0.325	2.680	6.080
526	23.50	62.50	1.600	0.490	5.900	7.200
527	23.80	47.50	1.250	0.333	3.060	7.520
528	20.70	42.40	1.060	0.289	2.510	6.120
529	28.60	56.90	1.510	0.399	3.810	8.300
530	19.50	39.50	0.900	0.273	2.500	5.980
531	22.90	45.50	1.110	0.296	3.030	6.940
532	27.50	63.00	1.630	0.562	6.350	8.590
533	22.40	54.50	1.490	0.486	6.500	7.000
534	19.80	38.20	0.959	0.277	2.590	5.580
535	24.10	46.40	1.150	0.444	0.000	8.150
536	20.70	43.40	1.100	0.288	2.860	6.030
537	22.20	45.30	1.120	0.343	3.400	6.040
538	22.80	45.40	1.130	0.303	2.640	6.860

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Table 3 cont'd. Final Sample Concentration Values

Id	Ta (ppm)	Cr (ppm)	Mn (ppm)	Fe (%)	Co (ppm)	Sb (ppm)
494	0.802	339.0	773.0	4.060	15.500	0.000
495	1.500	455.0	677.0	5.100	22.400	0.000
496	0.000	450.0	962.0	5.060	24.400	0.000
497	1.040	200.0	698.0	3.860	16.500	0.580
498	0.665	332.0	697.0	3.360	15.500	0.678
499	1.230	271.0	865.0	4.910	23.100	0.494
500	1.180	305.0	856.0	4.100	19.700	0.960
501	1.170	381.0	1140.0	7.180	33.500	0.000
502	0.658	324.0	846.0	4.640	24.100	0.397
503	1.150	413.0	976.0	5.080	24.000	0.725
504	1.370	319.0	865.0	4.950	24.400	0.332
505	1.390	363.0	762.0	5.300	23.700	0.000
506	1.180	326.0	891.0	5.670	28.600	0.000
507	1.980	536.0	710.0	4.580	24.700	0.363
508	1.650	299.0	732.0	5.310	22.800	1.080
509	1.390	282.0	777.0	5.170	22.700	0.000
510	0.000	243.0	771.0	4.180	19.500	0.000
511	1.190	223.0	843.0	4.430	20.500	0.731
512	0.000	208.0	835.0	5.010	21.200	0.000
513	1.110	312.0	749.0	4.730	23.600	0.473
514	1.200	265.0	584.0	3.990	17.500	0.000
515	1.250	319.0	835.0	4.960	20.800	0.000
516	1.600	492.0	539.0	4.380	19.100	0.000
517	1.380	437.0	653.0	5.020	25.800	0.272
518	0.806	283.0	803.0	4.870	22.300	0.000
519	0.946	318.0	775.0	4.910	25.400	0.768
520	1.060	282.0	849.0	4.840	27.300	0.554
521	0.653	221.0	576.0	3.360	15.900	0.601
522	1.300	279.0	803.0	4.480	20.300	0.000
523	1.320	276.0	886.0	5.350	25.200	0.623
524	1.190	321.0	849.0	4.240	19.300	0.157
525	0.939	267.0	678.0	4.320	23.300	0.442
526	1.400	695.0	1100.0	5.200	30.200	0.280
527	1.110	319.0	867.0	5.290	25.000	0.000
528	0.795	291.0	802.0	4.790	29.600	0.774
529	1.670	408.0	620.0	5.910	26.800	0.000
530	1.020	303.0	749.0	4.310	17.700	0.000
531	1.340	383.0	719.0	4.910	25.400	0.707
532	1.660	504.0	1060.0	5.850	29.300	0.224
533	1.220	510.0	866.0	4.520	19.800	0.335
534	0.826	220.0	726.0	4.120	20.300	0.000
535	2.310	241.0	858.0	5.450	0.000	1.010
536	0.916	304.0	637.0	4.330	19.000	0.000
537	1.340	350.0	718.0	4.200	19.400	0.000
538	1.160	282.0	777.0	5.510	26.300	0.000

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Table 3 cont'd. Final Sample Concentration Values

Id	Ca (%)	Sm (ppm)	Yb (ppm)	Sr (ppm)
494	22.700	4.250	2.120	1910.0
495	14.700	5.270	2.360	1190.0
496	23.200	5.090	2.440	1670.0
497	24.200	3.870	1.800	1320.0
498	25.700	3.650	1.790	1050.0
499	22.100	4.740	2.120	1560.0
500	24.100	4.010	1.930	1440.0
501	18.600	5.800	2.710	0.0
502	23.600	4.060	1.860	1730.0
503	20.400	4.500	2.340	2320.0
504	20.800	4.370	1.880	1410.0
505	21.200	4.670	2.170	724.0
506	20.200	4.670	2.170	1230.0
507	21.200	4.000	2.140	1800.0
508	20.600	5.080	2.240	1620.0
509	16.800	4.530	1.910	1400.0
510	19.200	3.910	1.830	1490.0
511	22.500	3.970	1.750	1050.0
512	22.100	4.250	1.950	1510.0
513	16.100	3.970	1.820	1050.0
514	15.300	3.880	1.710	0.0
515	17.200	4.580	2.190	1300.0
516	9.920	5.400	2.420	0.0
517	17.200	5.380	2.210	1080.0
518	17.700	4.160	1.900	1160.0
519	15.900	4.060	2.100	868.0
520	15.100	4.510	2.020	1750.0
521	20.000	3.280	1.530	769.0
522	17.400	4.110	2.040	1140.0
523	17.100	4.710	2.320	0.0
524	22.100	4.210	1.930	1090.0
525	22.600	3.990	1.840	1150.0
526	14.600	4.920	2.180	803.0
527	18.900	4.580	2.190	1100.0
528	21.400	3.910	1.840	1260.0
529	10.800	5.580	2.680	939.0
530	21.000	3.810	1.850	1290.0
531	18.100	4.380	2.220	1400.0
532	17.600	5.490	2.460	570.0
533	18.400	5.040	2.340	456.0
534	24.700	3.900	1.890	866.0
535	19.600	4.610	2.260	1600.0
536	24.800	4.080	2.000	1520.0
537	19.700	4.310	2.060	1150.0
538	19.100	4.220	1.890	801.0

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Table 3 cont'd. Final Sample Concentration Values

Id	Site	Loc.	Per.	Type	Site Size	GAJ No.
494	113	4	5	43	3.1	0.00
495	113	4	5	43	3.1	0.00
496	165	6	3	43	2.0	0.00
497	165	6	3	43	2.0	0.00
498	165	6	3	43	2.0	0.00
499	165	6	3	43	2.0	0.00
500	165	6	3	43	2.0	0.00
501	240	3	3	43	2.0	0.00
502	240	3	3	43	2.0	0.00
503	240	3	3	43	2.0	0.00
504	240	3	3	43	2.0	0.00
505	22	1	3	39	1.0	3.01
506	22	1	3	39	1.0	3.02
507	22	1	3	39	1.0	3.03
508	39	4	3	39	1.0	3.05
509	39	4	3	39	1.0	3.04
510	39	4	3	39	1.0	0.00
511	39	4	3	39	1.0	3.03
512	39	4	3	39	1.0	3.02
513	61	2	3	39	1.0	3.02
514	113	4	3	39	3.0	3.09
515	113	4	3	39	3.0	3.05
516	113	4	3	39	3.0	3.02
517	113	4	3	39	3.0	3.03
518	113	4	3	39	3.0	3.01
519	165	6	3	39	2.0	3.01
520	165	6	3	39	2.0	3.03
521	165	6	3	39	2.0	3.07
522	165	6	3	39	2.0	3.04
523	165	6	3	39	2.0	3.05
524	165	6	3	39	2.0	3.06
525	6	4	2	37	1.0	0.00
526	22	1	2	37	1.0	0.00
527	22	1	2	37	1.0	0.00
528	27	1	2	37	1.0	0.00
529	49	4	2	37	1.0	0.00
530	49	4	2	37	1.0	0.00
531	64	2	2	37	1.0	0.00
532	64	2	2	37	1.0	0.00
533	96	2	2	37	1.0	0.00
534	99	5	2	37	1.0	0.00
535	165	6	2	37	1.0	0.00
536	6	4	2	36	1.0	8.02
537	6	4	2	36	1.0	8.01
538	22	1	2	36	1.0	8.01

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Table 3 cont'd. Final Sample Concentration Values

Id	Na (%)	K (%)	Rb (ppm)	Cs (ppm)	Ba (ppm)	Sc (ppm)
539	0.704	2.620	59.10	4.110	961.0	23.00
540	0.780	2.130	53.80	3.090	427.0	19.00
541	1.040	1.840	58.40	3.610	530.0	20.60
542	0.555	2.010	55.70	3.540	708.0	23.10
543	0.772	2.360	88.40	4.350	317.0	23.80
544	0.678	1.730	55.00	2.750	730.0	18.30
545	0.559	2.030	55.90	3.300	741.0	22.80
546	0.599	2.280	49.40	2.890	626.0	19.70
547	0.562	1.830	41.70	2.310	353.0	18.30
548	0.520	2.300	64.80	4.120	849.0	21.10
549	0.219	1.770	52.80	2.640	755.0	20.30
550	0.311	2.410	70.70	3.910	833.0	21.60
551	0.536	2.190	64.40	3.570	1040.0	22.10
552	0.480	1.700	46.40	2.120	223.0	18.20
553	0.668	1.820	49.20	1.960	398.0	16.30
554	0.483	2.180	0.00	2.740	605.0	19.40
555	0.864	1.500	41.00	3.670	320.0	23.80
556	0.510	1.510	40.80	2.510	249.0	16.80
557	0.743	1.550	55.10	3.280	1160.0	19.40
558	0.450	1.460	37.10	1.630	375.0	19.60
559	0.442	1.360	47.30	2.400	633.0	18.20
560	0.609	1.790	54.30	2.100	839.0	18.00
561	0.480	1.590	48.70	2.400	521.0	17.90
562	0.484	1.890	59.40	3.540	711.0	21.70
563	0.521	1.600	57.70	2.550	735.0	17.90
564	0.697	1.480	62.80	4.470	870.0	22.40
565	0.484	1.510	51.90	2.390	260.0	17.20
566	0.546	2.270	60.90	3.260	1420.0	23.50
567	0.568	1.620	48.80	2.440	283.0	17.70
568	0.546	2.080	57.00	2.140	522.0	20.80
569	0.763	1.230	38.40	4.050	396.0	19.80
570	0.762	1.370	47.00	3.920	432.0	22.90
571	0.474	1.620	55.00	2.650	436.0	19.50
572	0.609	1.940	43.80	2.340	695.0	21.90
573	0.609	2.020	65.30	3.350	847.0	21.60
574	0.978	2.130	63.50	2.940	529.0	19.50
575	1.030	2.130	75.00	3.850	459.0	24.10
576	1.380	2.900	67.40	4.170	491.0	22.40
577	1.000	2.440	76.00	3.800	354.0	23.70
578	0.871	2.090	73.10	3.410	512.0	22.20
579	0.914	2.240	49.20	3.550	536.0	22.40
580	0.985	2.340	79.80	4.130	435.0	23.50
581	0.995	1.870	47.20	3.050	395.0	19.90
582	0.678	1.970	47.30	2.590	604.0	18.00
583	1.060	2.420	77.40	4.190	437.0	25.40

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Table 3 cont'd. Final Sample Concentration Values

Id	La (ppm)	Ce (ppm)	Eu (ppm)	Lu (ppm)	Hf (ppm)	Th (ppm)
539	27.10	55.50	1.180	0.393	3.870	8.810
540	23.80	46.40	1.190	0.347	3.450	7.010
541	23.80	51.00	1.150	0.353	3.980	7.580
542	22.10	44.70	1.210	0.317	3.060	7.100
543	25.40	53.70	1.180	0.406	3.470	9.650
544	21.70	43.70	1.160	0.288	3.210	6.550
545	22.90	47.50	1.130	0.316	2.910	6.500
546	23.00	45.50	1.110	0.310	2.700	6.660
547	20.60	43.30	1.380	0.263	2.580	6.200
548	25.10	53.10	1.310	0.331	3.100	8.600
549	22.80	48.40	1.240	0.370	3.060	6.510
550	24.60	48.90	0.984	0.307	2.750	7.940
551	23.60	44.90	1.180	0.442	3.100	7.080
552	19.30	36.90	0.948	0.273	2.570	7.640
553	19.00	41.60	0.933	0.255	2.400	5.150
554	21.90	42.30	1.030	0.322	2.500	6.560
555	26.70	54.00	1.340	0.355	3.150	6.900
556	18.60	38.00	0.968	0.259	2.510	5.590
557	22.00	43.80	1.030	0.304	2.880	6.370
558	21.50	42.70	1.100	0.302	2.790	9.200
559	20.00	35.20	0.844	0.287	2.570	6.180
560	19.70	34.70	1.010	0.313	3.090	5.670
561	19.60	32.10	0.979	0.336	2.830	5.320
562	23.20	44.90	1.120	0.386	3.720	7.040
563	20.50	40.60	1.030	0.325	2.710	5.780
564	24.00	43.50	1.090	0.411	0.000	7.670
565	18.90	32.80	0.989	0.282	2.380	5.500
566	26.70	46.80	1.250	0.429	3.090	7.690
567	22.70	40.00	0.891	0.292	2.590	5.730
568	22.80	46.50	1.130	0.409	3.060	6.000
569	22.90	47.10	0.979	0.292	3.040	6.530
570	24.70	45.10	1.160	0.346	3.250	7.160
571	22.00	38.30	0.963	0.313	2.510	6.170
572	24.80	51.60	1.140	0.358	3.470	7.110
573	23.90	41.80	1.110	0.340	3.040	6.800
574	27.90	48.70	1.180	0.365	3.960	7.680
575	29.50	53.60	1.210	0.522	4.660	8.900
576	27.70	50.20	1.300	0.410	4.510	8.130
577	28.90	52.30	1.480	0.404	4.190	8.530
578	27.70	52.00	1.370	0.545	4.230	7.890
579	28.50	51.40	1.350	0.501	3.960	8.020
580	28.30	52.40	1.320	0.404	4.340	8.350
581	25.10	42.40	1.130	0.367	3.620	7.470
582	23.00	41.10	0.870	0.333	3.640	6.260
583	31.10	59.00	1.510	0.469	4.680	9.380

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Table 3 cont'd. Final Sample Concentration Values

Id	Ta (ppm)	Cr (ppm)	Mn (ppm)	Fe (%)	Co (ppm)	Sb (ppm)
539	1.260	368.0	876.0	5.600	26.000	0.000
540	1.360	370.0	684.0	4.650	23.200	1.170
541	0.837	440.0	838.0	5.040	25.100	0.818
542	1.430	330.0	860.0	5.710	30.600	0.000
543	0.000	297.0	915.0	5.760	25.500	0.000
544	0.924	348.0	790.0	4.490	23.600	0.000
545	1.170	340.0	913.0	5.540	30.100	1.280
546	1.360	354.0	814.0	4.860	25.400	1.020
547	0.901	342.0	792.0	4.460	22.300	0.744
548	1.100	233.0	784.0	5.210	22.400	0.921
549	1.250	292.0	724.0	5.000	24.200	0.426
550	0.646	208.0	843.0	5.240	29.000	0.684
551	1.080	265.0	752.0	5.410	25.300	1.150
552	0.667	300.0	760.0	4.430	32.600	0.952
553	0.729	352.0	705.0	4.070	0.000	0.000
554	1.280	207.0	865.0	4.750	27.400	0.000
555	1.650	298.0	774.0	5.740	28.800	0.657
556	1.120	404.0	708.0	4.170	22.800	0.550
557	1.060	388.0	824.0	4.870	30.300	0.000
558	1.400	353.0	809.0	4.850	30.700	0.000
559	0.978	301.0	712.0	4.560	37.300	0.000
560	0.867	420.0	738.0	4.540	22.700	0.000
561	1.590	316.0	712.0	4.390	40.400	0.000
562	1.310	463.0	822.0	5.470	51.100	0.000
563	1.020	389.0	740.0	4.520	32.400	0.000
564	1.680	322.0	810.0	5.600	0.000	0.000
565	1.390	323.0	689.0	4.310	23.200	0.000
566	1.310	377.0	933.0	5.900	0.000	0.779
567	1.200	567.0	752.0	4.480	27.600	0.000
568	0.936	356.0	829.0	5.110	0.000	0.737
569	0.000	251.0	768.0	4.910	28.600	0.000
570	1.140	402.0	913.0	5.780	28.900	0.000
571	0.782	295.0	713.0	4.940	25.800	1.320
572	1.810	366.0	883.0	5.450	39.300	0.000
573	1.070	336.0	865.0	5.510	29.300	0.000
574	1.010	468.0	777.0	4.810	22.000	0.824
575	0.000	552.0	675.0	5.900	28.300	2.480
576	1.040	443.0	1060.0	5.540	25.300	0.000
577	1.600	530.0	961.0	5.910	26.200	0.000
578	1.080	446.0	946.0	5.510	26.600	0.000
579	1.400	460.0	855.0	5.540	24.900	0.000
580	1.310	483.0	930.0	5.800	26.000	0.595
581	1.020	389.0	756.0	4.940	22.500	0.000
582	0.000	381.0	828.0	4.520	21.500	0.000
583	1.490	522.0	1140.0	6.320	30.400	1.020

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Table 3 cont'd. Final Sample Concentration Values

Id	Ca (%)	Sm (ppm)	Yb (ppm)	Sr (ppm)
539	18.000	5.240	2.600	1370.0
540	17.500	4.600	2.350	838.0
541	12.700	4.650	2.420	1500.0
542	18.300	4.280	2.100	1570.0
543	17.100	4.890	2.570	0.0
544	19.700	4.320	2.040	1230.0
545	18.500	4.330	2.010	1060.0
546	16.300	4.260	2.060	1020.0
547	20.400	4.010	1.960	1100.0
548	16.400	4.780	2.240	605.0
549	19.200	4.620	2.140	591.0
550	16.200	4.380	2.170	881.0
551	19.400	4.500	2.340	0.0
552	19.000	3.730	2.050	0.0
553	23.300	3.630	1.470	1190.0
554	18.900	4.060	1.820	1160.0
555	19.800	5.020	2.270	950.0
556	18.300	3.520	1.670	858.0
557	16.600	4.170	2.120	1310.0
558	0.000	0.000	0.000	0.0
559	19.400	4.030	1.790	1070.0
560	24.300	4.040	1.850	1000.0
561	21.200	3.810	1.710	0.0
562	18.800	4.540	2.070	0.0
563	22.400	3.980	1.980	993.0
564	14.700	4.690	2.290	0.0
565	19.200	3.730	1.730	1260.0
566	17.800	5.260	2.390	1650.0
567	22.500	4.020	1.850	1100.0
568	19.300	4.340	2.130	896.0
569	20.800	4.360	2.050	0.0
570	19.800	4.840	2.260	1160.0
571	18.400	4.140	1.940	1050.0
572	19.800	4.940	2.280	1380.0
573	22.300	4.520	2.180	1240.0
574	17.000	5.390	2.410	919.0
575	16.500	5.690	2.640	0.0
576	16.100	5.360	2.840	1100.0
577	15.300	5.680	2.610	1050.0
578	16.700	5.390	2.630	1240.0
579	22.300	5.670	2.560	1390.0
580	14.500	5.520	2.610	0.0
581	22.600	4.920	2.370	1110.0
582	21.000	4.500	2.190	0.0
583	13.300	6.190	3.070	737.0

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Table 3 cont'd. Final Sample Concentration Values

Id	Site	Loc.	Per.	Type	Site Size	GAJ No.
539	27	1	2	36	1.0	0.00
540	27	1	2	36	1.0	8.01
541	61	2	2	36	1.0	0.00
542	96	2	2	36	1.0	8.01
543	96	2	2	36	1.0	8.07
544	96	2	2	36	1.0	8.04
545	96	2	2	36	1.0	8.08
546	96	2	2	36	1.0	8.06
547	96	2	2	36	1.0	8.03
548	99	5	2	36	1.0	0.00
549	99	5	2	36	1.0	8.01
550	99	5	2	36	1.0	0.00
551	99	5	2	36	1.0	8.02
552	34	1	4	40	1.0	6.02
553	34	1	4	40	1.0	6.01
554	39	4	4	40	1.0	6.01
555	39	4	4	40	1.0	6.01
556	96	2	4	40	3.0	6.01
557	96	2	4	40	3.0	6.03
558	96	2	4	40	3.0	6.04
559	96	2	4	40	3.0	6.06
560	96	2	4	40	3.0	6.07
561	96	2	4	42	3.0	0.00
562	96	2	4	42	3.0	0.00
563	96	2	4	42	3.0	0.00
564	96	2	4	42	3.0	0.00
565	96	2	4	42	3.0	0.00
566	34	1	4	42	1.0	0.00
567	34	1	4	42	1.0	0.00
568	96	2	4	41	3.0	0.00
569	96	2	4	41	3.0	0.00
570	96	2	4	41	3.0	0.00
571	96	2	4	41	3.0	0.00
572	96	2	4	41	3.0	0.00
573	96	2	4	41	3.0	0.00
574	64	2	6	33	1.0	5.01
575	64	2	6	33	1.0	5.02
576	64	2	6	33	1.0	5.03
577	269	2	6	33	1.0	5.11
578	269	2	6	33	1.0	5.07
579	269	2	6	33	1.0	5.05
580	269	2	6	33	1.0	5.09
581	269	2	6	33	1.0	5.06
582	64	2	6	34	1.0	0.00
583	269	2	6	34	1.0	0.00

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Table 3 cont'd. Final Sample Concentration Values

Id	Na (%)	K (%)	Rb (ppm)	Cs (ppm)	Ba (ppm)	Sc (ppm)
584	1.100	1.930	80.00	4.410	478.0	25.80
585	0.988	2.500	86.80	4.930	684.0	11.80
586	1.160	2.870	74.30	4.640	385.0	28.00
587	0.714	2.980	50.90	2.410	445.0	18.90
588	0.916	2.990	51.30	2.250	515.0	22.90
589	0.598	2.460	56.70	3.170	360.0	21.90
590	0.936	2.970	48.20	2.450	254.0	18.40
591	0.776	1.940	55.40	2.850	480.0	19.10
592	0.452	1.500	37.10	1.570	743.0	18.30
593	0.550	2.260	61.30	2.620	346.0	20.70
594	0.726	2.320	55.10	2.600	363.0	17.20
595	0.795	2.200	51.10	2.560	760.0	18.80
596	0.619	2.330	70.10	3.980	454.0	26.80
597	0.740	2.470	70.10	3.530	424.0	22.60
598	0.604	1.900	46.50	2.860	884.0	19.60
599	1.170	1.910	35.70	1.930	550.0	16.80
600	1.130	1.970	45.90	2.050	391.0	14.30
601	0.739	1.740	44.20	2.530	575.0	18.30
602	1.030	2.030	71.50	3.240	559.0	22.60
603	1.550	1.470	24.60	2.800	654.0	27.80
604	1.020	2.510	41.30	1.660	639.0	13.50
605	1.160	2.520	40.50	3.020	1960.0	19.90
606	0.866	1.880	41.40	1.470	451.0	13.80
607	0.817	1.940	32.50	1.100	834.0	14.00
608	1.110	2.150	39.60	2.270	325.0	14.30
609	0.541	2.470	71.30	3.360	750.0	17.80
610	0.826	2.380	43.50	2.420	381.0	16.40
611	2.030	1.800	13.50	3.800	185.0	26.00
612	0.690	2.040	44.10	2.260	427.0	14.00
613	0.602	2.270	49.70	2.840	202.0	18.20
614	0.633	1.720	44.50	2.320	417.0	19.20
615	1.290	2.560	43.90	2.570	248.0	20.40
616	0.721	2.590	50.20	2.400	264.0	20.80
617	1.190	1.770	16.90	3.710	324.0	19.40
618	0.606	1.870	57.00	2.390	737.0	19.80
619	0.605	1.940	42.40	1.980	590.0	16.60
620	0.648	1.810	47.90	2.510	642.0	17.90
621	0.660	1.600	37.70	1.770	305.0	14.40
622	0.778	2.140	69.70	2.750	253.0	20.40
623	0.382	1.740	58.30	2.900	1630.0	16.70
624	0.365	2.130	47.60	2.620	2620.0	16.60
625	0.374	1.900	44.90	2.690	1300.0	15.80
626	0.386	1.550	27.60	1.430	2880.0	14.60
627	0.383	2.250	53.70	3.280	1870.0	16.70
629	0.572	1.410	30.10	1.540	274.0	10.40

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Table 3 cont'd. Final Sample Concentration Values

Id	La (ppm)	Ce (ppm)	Eu (ppm)	Lu (ppm)	Hf (ppm)	Th (ppm)
584	30.70	56.70	1.480	0.485	4.680	9.730
585	32.50	62.20	1.430	0.588	5.030	9.520
586	27.90	67.90	1.390	0.465	3.690	8.060
587	22.70	47.60	1.070	0.358	3.090	6.810
588	26.10	58.30	1.230	0.433	4.000	7.640
589	25.60	58.70	1.380	0.383	3.120	7.500
590	20.50	42.30	1.090	0.341	2.770	5.600
591	19.80	44.20	0.995	0.315	2.520	5.750
592	19.10	43.60	1.030	0.323	2.700	6.080
593	21.80	50.30	1.000	0.387	3.230	6.750
594	19.40	44.20	0.998	0.301	2.510	5.720
595	20.90	46.40	1.010	0.325	2.760	6.390
596	27.40	61.20	1.440	0.451	3.440	8.120
597	24.00	56.60	1.220	0.407	3.110	7.390
598	22.10	47.80	1.060	0.413	2.740	6.620
599	21.10	49.70	1.070	0.332	3.080	5.810
600	17.90	39.70	0.844	0.317	3.110	5.560
601	20.80	46.20	0.987	0.367	3.070	6.140
602	26.10	61.40	1.340	0.480	3.710	7.390
603	28.30	62.50	1.470	0.451	4.210	8.620
604	17.70	37.70	0.898	0.308	2.850	4.790
605	24.90	59.90	1.130	0.426	4.600	7.180
606	17.40	38.30	0.881	0.305	3.100	4.830
607	18.00	40.20	0.958	0.288	3.300	5.070
608	20.10	45.20	1.030	0.320	3.230	5.730
609	22.80	50.10	1.110	0.390	3.370	6.700
610	19.50	44.70	0.823	0.316	2.600	5.920
611	29.00	64.10	1.480	0.462	3.770	9.400
612	17.60	37.90	0.954	0.297	2.660	5.100
613	21.00	47.90	0.998	0.318	2.600	6.250
614	23.00	50.70	1.170	0.340	2.970	6.360
615	21.20	47.90	1.160	0.365	3.120	5.920
616	22.60	51.00	1.220	0.390	3.010	6.430
617	21.80	46.60	1.110	0.344	3.340	6.330
618	21.90	47.50	1.110	0.413	2.880	6.170
619	20.50	44.40	0.886	0.321	3.110	5.850
620	19.70	44.40	1.040	0.322	3.370	5.780
621	19.30	40.30	0.887	0.300	3.380	5.300
622	22.50	49.80	1.120	0.367	3.260	6.830
623	19.70	43.10	0.877	0.348	2.740	5.860
624	19.30	42.70	0.890	0.419	2.720	6.280
625	19.00	39.90	0.948	0.288	2.560	6.170
626	19.00	41.70	0.930	0.328	2.830	5.960
627	20.90	45.20	1.040	0.369	3.190	6.540
629	12.80	28.90	0.590	0.222	1.960	3.510

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Table 3 cont'd. Final Sample Concentration Values

Id	Ta (ppm)	Cr (ppm)	Mn (ppm)	Fe (%)	Co (ppm)	Sb (ppm)
584	1.580	565.0	1030.0	6.360	29.100	1.240
585	1.370	532.0	1090.0	6.490	28.400	0.000
586	1.620	375.0	967.0	6.820	31.600	0.000
587	0.842	280.0	863.0	4.660	21.800	0.000
588	1.370	391.0	998.0	5.590	25.100	0.650
589	1.130	295.0	879.0	5.320	24.400	1.390
590	0.682	274.0	641.0	4.440	19.600	0.621
591	0.936	268.0	749.0	4.720	22.700	0.000
592	1.230	265.0	715.0	4.530	22.000	0.000
593	1.240	323.0	814.0	5.070	23.100	0.947
594	0.989	278.0	724.0	4.230	18.100	0.926
595	0.950	295.0	666.0	4.540	19.100	0.612
596	1.480	333.0	986.0	6.520	32.000	0.811
597	1.180	337.0	871.0	5.500	12.700	0.000
598	0.962	307.0	707.0	4.730	21.800	0.594
599	0.619	346.0	740.0	4.100	20.300	0.836
600	0.989	362.0	688.0	3.510	15.700	0.000
601	0.918	353.0	807.0	4.400	20.400	0.000
602	1.010	376.0	1100.0	5.540	24.700	0.000
603	1.110	447.0	921.0	6.780	28.900	0.000
604	0.000	318.0	592.0	3.410	15.400	0.628
605	0.949	482.0	770.0	4.860	20.500	0.000
606	0.000	320.0	622.0	3.300	15.100	0.000
607	0.638	322.0	595.0	3.370	15.200	0.345
608	0.327	376.0	637.0	3.450	14.800	0.000
609	1.020	257.0	717.0	4.270	18.600	0.000
610	0.835	265.0	654.0	3.970	17.500	0.587
611	0.000	305.0	1070.0	6.280	27.500	0.000
612	0.000	248.0	641.0	3.420	16.900	0.000
613	0.828	251.0	754.0	4.380	21.600	0.751
614	0.948	351.0	573.0	4.560	21.500	0.000
615	1.120	410.0	787.0	4.950	25.000	0.000
616	1.850	358.0	918.0	5.140	26.200	0.595
617	0.749	307.0	714.0	4.630	19.200	0.000
618	1.200	362.0	827.0	4.870	24.000	0.000
619	0.922	284.0	707.0	4.040	19.300	0.808
620	0.000	350.0	658.0	4.360	20.200	0.000
621	0.726	301.0	654.0	3.500	15.900	0.000
622	0.000	397.0	877.0	5.000	23.700	0.000
623	1.030	255.0	700.0	4.010	18.000	0.000
624	0.739	263.0	644.0	4.040	16.000	0.401
625	0.000	188.0	612.0	3.780	15.400	0.000
626	0.685	201.0	651.0	3.530	20.700	0.564
627	0.830	264.0	816.0	3.98	19.100	0.601
629	0.000	193.00	0.000	2.530	11.100	0.000

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Table 3 cont'd. Final Sample Concentration Values

Id	Ca (%)	Sm (ppm)	Yb (ppm)	Sr (ppm)
584	12.800	6.030	3.080	843.0
585	14.300	6.340	2.970	954.0
586	16.300	5.400	2.830	746.0
587	23.900	4.450	2.030	1510.0
588	21.700	5.310	2.410	1580.0
589	19.500	5.000	2.290	950.0
590	21.600	3.840	1.870	1180.0
591	23.500	3.960	1.900	1120.0
592	15.800	3.720	1.720	1080.0
593	18.800	4.330	2.090	985.0
594	22.800	3.840	1.840	960.0
595	21.100	4.230	1.820	1080.0
596	18.100	5.410	2.520	770.0
597	19.700	4.630	2.160	1490.0
598	17.700	4.390	1.890	507.0
599	19.700	4.140	1.860	1040.0
600	15.400	3.500	1.730	0.0
601	20.700	4.110	2.040	1150.0
602	15.600	5.120	2.330	1300.0
603	17.000	5.560	2.380	0.0
604	23.800	3.520	1.480	2130.0
605	16.100	5.050	2.320	1330.0
606	24.700	3.600	1.640	2810.0
607	24.000	3.560	1.670	1150.0
608	21.500	4.060	1.890	1200.0
609	21.700	4.490	2.200	1650.0
610	25.700	3.980	1.780	1190.0
611	17.400	5.730	2.600	1210.0
612	24.900	3.520	1.670	1330.0
613	25.400	4.190	1.850	672.0
614	20.100	4.550	2.160	816.0
615	16.700	4.270	1.990	0.0
616	19.300	4.550	2.190	913.0
617	23.300	4.240	1.910	1570.0
618	21.400	4.410	2.090	713.0
619	23.800	3.900	1.790	1390.0
620	24.600	3.930	1.820	1470.0
621	24.600	3.710	1.840	726.0
622	18.900	4.560	2.010	1360.0
623	20.300	3.940	1.830	1540.0
624	21.700	3.880	2.160	1010.0
625	18.700	3.790	1.690	1100.0
626	28.200	3.780	1.670	2020.0
627	24.900	4.300	2.080	883.0
629	16.900	2.580	1.220	1160.0

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Table 3 cont'd. Final Sample Concentration Values

Id	Site	Loc.	Per.	Type	Site Size	GAJ No.
584	269	2	6	34	1.0	0.00
585	269	2	6	34	1.0	0.00
586	16	1	2	35	1.0	0.00
587	16	1	2	35	1.0	0.00
588	16	1	2	35	1.0	0.00
589	16	1	2	35	1.0	0.00
590	16	1	2	35	1.0	0.00
591	24	1	2	35	1.0	0.00
592	24	1	2	35	1.0	0.00
593	24	1	2	35	1.0	0.00
594	32	2	2	35	1.0	0.00
595	32	2	2	35	1.0	0.00
596	52	1	2	35	1.0	0.00
597	52	1	2	35	1.0	0.00
598	52	1	2	35	1.0	0.00
599	52	1	2	35	1.0	0.00
600	76	2	2	35	1.0	0.00
601	93	2	2	35	1.0	0.00
602	93	2	2	35	1.0	0.00
603	93	2	2	35	1.0	0.00
604	121	4	2	35	1.0	0.00
605	121	4	2	35	1.0	0.00
606	121	4	2	35	1.0	0.00
607	121	4	2	35	1.0	0.00
608	121	4	2	35	1.0	0.00
609	153	6	2	35	3.0	0.00
610	266	4	2	35	1.0	0.00
611	266	4	2	35	1.0	0.00
612	284	4	2	35	1.0	0.00
613	16	1	3	43	1.0	0.00
614	16	1	3	43	1.0	2.06
615	16	1	3	43	1.0	0.00
616	16	1	3	43	1.0	0.00
617	16	1	3	43	1.0	0.00
618	24	1	3	43	1.0	0.00
619	24	1	3	43	1.0	0.00
620	24	1	3	43	1.0	0.00
621	24	1	3	43	1.0	0.00
622	24	1	3	43	1.0	0.00
623	153	6	3	43	3.0	0.00
624	153	6	3	43	3.0	0.00
625	153	6	3	43	3.0	0.00
626	153	6	3	43	3.0	0.00
627	153	6	3	43	3.0	0.00
629	266	4	3	43	1.0	0.00

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Table 3 cont'd. Final Sample Concentration Values

Id	Na (%)	K (%)	Rb (ppm)	Cs (ppm)	Ba (ppm)	Sc (ppm)
630	1.010	2.430	46.40	2.200	252.0	16.40
631	0.969	1.550	25.30	0.910	283.0	13.90
632	1.120	2.320	36.10	3.400	348.0	19.80
633	1.150	2.110	22.70	3.520	524.0	35.30
634	1.100	2.420	45.90	3.150	328.0	18.30
635	0.546	2.310	56.80	2.420	203.0	22.70
636	0.844	1.500	37.70	1.880	247.0	14.40
637	0.767	1.380	37.70	1.750	634.0	14.90
638	0.748	1.740	44.40	2.150	362.0	16.00
639	0.782	1.540	36.00	1.610	317.0	13.60
640	0.805	2.750	56.50	4.050	281.0	24.10
641	0.470	2.130	64.70	4.240	1120.0	25.30
642	1.320	1.450	41.80	3.840	686.0	33.30
643	0.452	1.890	57.10	2.770	356.0	18.90
644	0.598	1.900	53.10	2.840	235.0	18.30
645	0.493	1.990	55.30	2.750	873.0	18.30
646	0.741	2.110	33.50	4.530	494.0	22.80
647	0.456	1.520	44.80	2.040	435.0	18.30
648	0.740	1.900	34.10	3.290	270.0	18.50
649	0.958	2.160	67.60	4.180	361.0	24.10
650	0.859	2.170	36.90	4.710	654.0	25.80
651	1.360	0.738	14.60	4.470	210.0	28.00
652	1.170	2.560	79.30	3.470	1830.0	24.60
653	0.516	0.815	35.80	0.792	555.0	25.10
654	0.680	2.310	56.80	3.090	356.0	22.30
655	0.651	2.490	64.40	4.010	412.0	24.20
656	1.040	0.971	28.20	3.600	306.0	21.90
657	0.776	2.630	90.00	3.750	435.0	24.00
658	0.561	1.470	42.10	2.040	807.0	14.20
659	1.050	1.530	30.50	3.930	2070.0	18.70
660	0.965	2.050	30.80	2.790	450.0	18.90
661	1.010	1.340	27.70	2.640	672.0	16.10
662	0.468	1.780	44.40	2.620	780.0	16.50
663	1.120	1.340	29.80	3.790	374.0	21.60
664	0.287	1.580	47.60	2.420	2690.0	14.10
665	0.400	2.120	53.10	2.940	968.0	16.40
666	0.666	2.540	55.30	4.980	1240.0	23.20
667	0.543	1.930	47.00	2.600	1580.0	17.40
668	0.426	1.750	49.60	2.670	993.0	18.00
669	0.628	1.890	53.60	2.950	608.0	17.70
670	0.451	1.960	62.80	3.420	404.0	18.10
671	0.387	2.070	62.70	3.410	320.0	22.50
672	0.929	1.620	29.40	3.710	281.0	22.60
673	0.879	2.580	60.50	3.570	242.0	20.60
674	1.120	1.980	34.30	2.110	228.0	14.80

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Table 3 cont'd. Final Sample Concentration Values

Id	La (ppm)	Ce (ppm)	Eu (ppm)	Lu (ppm)	Hf (ppm)	Th (ppm)
630	19.90	35.90	1.010	0.302	3.320	5.430
631	18.30	35.20	0.860	0.268	3.400	4.580
632	23.10	39.00	1.050	0.346	3.260	6.220
633	27.30	48.60	1.280	0.417	4.270	7.340
634	22.10	41.50	1.080	0.356	3.740	6.100
635	23.00	40.60	1.020	0.335	3.210	6.640
636	19.20	36.80	0.937	0.297	3.390	5.360
637	19.20	35.90	0.891	0.309	3.280	5.210
638	21.00	39.20	1.020	0.330	3.630	5.680
639	19.00	35.20	0.901	0.267	3.150	4.880
640	24.10	46.70	1.110	0.348	2.740	6.640
641	23.50	60.70	1.540	0.536	5.570	8.010
642	26.90	50.70	1.430	0.471	3.760	7.730
643	22.50	40.70	1.070	0.354	3.270	5.910
644	20.20	37.80	0.939	0.296	2.750	5.570
645	20.20	37.80	0.967	0.293	2.850	6.000
646	25.60	47.80	1.190	0.371	3.690	6.630
647	20.80	39.50	0.956	0.292	2.960	5.150
648	24.50	44.10	1.060	0.333	3.650	7.020
649	29.00	66.10	1.240	0.413	4.440	8.030
650	28.60	55.50	1.400	0.409	3.540	8.150
651	27.60	49.60	1.300	0.402	3.720	7.580
652	28.40	64.80	1.260	0.521	4.330	7.470
653	23.70	45.00	1.160	0.387	3.030	7.200
654	23.80	45.70	1.120	0.375	3.090	6.540
655	24.20	43.90	1.160	0.376	2.850	6.940
656	24.50	45.00	1.140	0.386	3.320	6.650
657	24.80	46.80	1.070	0.378	3.500	7.150
658	19.40	34.70	0.836	0.231	2.590	4.770
659	27.10	58.70	1.520	0.452	5.620	7.030
660	23.20	42.50	1.080	0.343	3.250	6.120
661	19.90	36.80	1.040	0.319	3.410	5.460
662	20.60	36.90	0.862	0.271	2.390	5.130
663	26.10	48.50	1.290	0.379	3.340	7.380
664	18.10	41.60	0.766	0.307	2.350	5.460
665	21.00	39.70	1.020	0.316	2.740	5.870
666	28.00	51.80	1.340	0.617	3.780	8.220
667	21.50	40.70	0.967	0.394	2.790	5.850
668	24.10	45.80	1.380	0.371	3.170	5.880
669	19.20	48.60	1.280	0.399	4.570	6.410
670	21.80	40.50	0.997	0.294	2.660	6.100
671	24.20	43.80	1.050	0.330	2.640	6.090
672	24.60	44.40	1.240	0.352	3.040	5.840
673	22.20	41.30	1.030	0.358	2.700	6.550
674	19.50	32.90	0.821	0.335	2.980	5.230

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Table 3 cont'd. Final Sample Concentration Values

Id	Ta (ppm)	Cr (ppm)	Mn (ppm)	Fe (%)	Co (ppm)	Sb (ppm)
630	0.992	282.0	716.0	3.930	18.700	0.920
631	0.972	322.0	577.0	3.390	15.200	0.000
632	0.994	321.0	829.0	4.660	20.200	0.000
633	0.759	446.0	920.0	5.240	22.200	1.010
634	1.090	336.0	795.0	4.510	22.100	0.000
635	1.100	272.0	754.0	5.530	26.700	1.200
636	0.883	292.0	673.0	3.510	16.700	0.000
637	0.923	310.0	640.0	3.620	17.500	0.594
638	0.618	326.0	673.0	3.910	17.800	0.000
639	0.879	262.0	643.0	3.280	15.900	0.000
640	0.880	289.0	745.0	5.820	31.500	1.630
641	1.940	420.0	971.0	5.660	32.300	0.270
642	1.300	561.0	1300.0	7.740	40.400	0.589
643	1.080	253.0	829.0	4.660	25.700	0.000
644	0.000	250.0	705.0	4.590	26.400	0.882
645	1.080	327.0	760.0	4.460	25.700	0.000
646	1.450	392.0	901.0	5.610	29.300	0.859
647	1.370	242.0	770.0	4.540	28.100	0.000
648	1.010	346.0	786.0	4.560	23.700	0.000
649	1.330	422.0	598.0	5.600	93.300	0.000
650	1.110	379.0	1060.0	6.210	30.000	0.000
651	1.330	366.0	1080.0	6.700	34.100	0.000
652	1.290	458.0	781.0	5.550	26.800	0.000
653	1.380	312.0	850.0	6.230	31.800	0.788
654	1.020	317.0	846.0	5.560	30.400	0.000
655	1.050	343.0	816.0	5.980	31.100	1.520
656	1.110	429.0	808.0	5.510	28.500	0.000
657	0.888	359.0	920.0	5.630	27.400	0.629
658	0.746	212.0	611.0	3.720	19.700	0.574
659	0.000	320.0	908.0	4.130	28.600	0.384
660	0.461	262.0	903.0	4.560	21.600	0.000
661	0.807	293.0	674.0	3.950	18.900	0.652
662	1.050	188.0	755.0	4.270	21.700	0.000
663	1.010	292.0	925.0	5.380	27.900	0.000
664	0.760	165.0	522.0	3.560	29.100	0.000
665	0.715	180.0	666.0	4.020	17.600	0.637
666	0.837	257.0	847.0	5.570	22.700	0.000
667	1.090	214.0	828.0	4.370	31.800	1.050
668	1.360	285.0	732.0	4.410	27.200	0.957
669	0.898	336.0	828.0	3.770	21.700	0.382
670	1.140	198.0	687.0	4.470	21.100	0.606
671	1.350	208.0	739.0	5.440	29.700	0.000
672	1.740	227.0	822.0	5.480	26.300	0.000
673	0.000	218.0	753.0	5.050	23.700	0.000
674	0.683	275.0	687.0	3.520	16.800	0.613

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Table 3 cont'd. Final Sample Concentration Values

Id	Ca (%)	Sm (ppm)	Yb (ppm)	Sr (ppm)
630	24.900	4.210	1.860	1290.0
631	24.700	3.920	1.680	1930.0
632	22.200	4.540	2.130	838.0
633	21.000	5.470	2.420	1250.0
634	19.400	4.670	2.030	1350.0
635	16.500	4.810	2.030	0.0
636	27.500	4.120	1.770	1390.0
637	25.200	4.230	1.910	1580.0
638	23.200	4.480	1.920	1480.0
639	26.900	3.940	1.670	1420.0
640	17.000	4.760	2.000	1230.0
641	14.800	5.140	2.550	596.0
642	17.800	5.470	2.840	653.0
643	19.700	4.570	2.030	582.0
644	19.200	4.240	2.080	1050.0
645	21.700	4.140	1.810	3430.0
646	20.400	5.200	2.170	941.0
647	18.600	4.260	1.790	895.0
648	18.900	4.870	2.070	1710.0
649	8.860	5.720	2.760	0.0
650	19.700	6.120	2.500	1030.0
651	21.700	5.310	2.450	0.0
652	14.700	5.370	2.630	999.0
653	20.100	5.050	2.000	1950.0
654	18.500	4.930	2.080	1640.0
655	16.900	4.810	2.170	978.0
656	17.400	4.770	2.180	392.0
657	18.700	5.010	2.170	1300.0
658	16.400	3.750	1.470	735.0
659	16.100	5.690	2.220	1170.0
660	19.200	4.660	2.020	1080.0
661	25.400	4.240	1.890	1490.0
662	16.100	3.840	1.700	1420.0
663	18.200	5.350	2.240	389.0
664	19.000	3.680	1.710	1340.0
665	18.400	4.300	1.840	1150.0
666	20.200	5.500	2.490	1520.0
667	20.000	4.560	1.760	420.0
668	19.000	5.720	1.880	991.0
669	18.800	4.650	1.910	1250.0
670	18.900	4.300	1.980	832.0
671	19.900	4.640	1.950	1320.0
672	18.000	4.810	1.840	1030.0
673	15.100	4.410	1.940	0.0
674	23.100	3.700	1.640	650.0

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Table 3 cont'd. Final Sample Concentration Values

Id	Site	Loc.	Per.	Type	Site Size	GAJ No.
630	266	4	3	43	1.0	0.00
631	266	4	3	43	1.0	2.03
632	266	4	3	43	1.0	2.04
633	266	4	2	35	1.0	0.00
634	59	2	2	35	1.0	0.00
635	59	2	2	35	1.0	0.00
636	108	4	2	35	1.0	0.00
637	108	4	2	35	1.0	0.00
638	108	4	2	35	1.0	0.00
639	108	4	2	35	1.0	0.00
640	16	1	3	39	1.0	3.02
641	16	1	3	39	1.0	3.05
642	16	1	3	39	1.0	0.00
643	16	1	3	39	1.0	3.03
644	16	1	3	39	1.0	3.02
645	16	1	3	39	1.0	3.04
646	24	1	3	39	1.0	3.02
647	24	1	3	39	1.0	3.01
648	24	1	3	39	1.0	3.03
649	52	1	3	39	1.0	3.02
650	52	1	3	39	1.0	3.01
651	52	1	3	39	1.0	3.03
652	52	1	3	39	1.0	0.00
653	59	2	3	39	4.0	3.47
654	76	2	3	39	2.0	3.02
655	76	2	3	39	2.0	3.03
656	76	2	3	39	2.0	3.04
657	76	2	3	39	2.0	3.01
658	108	4	3	39	2.0	3.20
659	108	4	3	39	2.0	3.21
660	108	4	3	39	2.0	3.12
661	108	4	3	39	2.0	3.16
662	108	4	3	39	2.0	3.18
663	108	4	3	39	2.0	3.13
664	153	6	3	39	3.0	0.00
665	153	6	3	39	3.0	3.02
666	153	6	3	39	3.0	0.00
667	153	6	3	39	3.0	3.01
668	153	6	3	39	3.0	0.00
669	165	6	3	39	2.0	3.02
670	173	6	3	39	2.0	3.02
671	266	4	3	39	1.0	3.01
672	266	4	3	39	1.0	3.02
673	16	1	2	37	1.0	0.00
674	16	1	2	37	1.0	0.00

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Table 3 cont'd. Final Sample Concentration Values

Id	Na (%)	K (%)	Rb (ppm)	Cs (ppm)	Ba (ppm)	Sc (ppm)
675	1.360	1.120	24.00	4.650	175.0	25.20
676	0.441	1.750	50.50	2.530	708.0	20.00
677	0.000	0.000	57.70	5.140	492.0	21.90
678	1.120	1.690	26.70	3.970	363.0	21.40
679	0.910	1.980	28.10	2.730	348.0	21.30
680	2.140	1.950	68.30	3.680	390.0	21.30
681	0.629	2.270	61.10	3.400	321.0	24.50
682	0.738	1.690	45.30	2.690	434.0	17.20
683	0.408	2.650	72.60	3.910	1100.0	22.00
684	0.713	2.140	53.30	3.130	247.0	19.70
685	1.010	2.520	77.70	4.630	326.0	25.80
686	1.160	1.180	22.30	4.670	395.0	24.40
687	0.777	1.590	59.60	3.450	802.0	18.10
688	1.020	1.410	50.90	4.240	416.0	23.00
689	0.670	2.410	75.90	4.100	1360.0	30.00
690	0.738	1.670	48.30	2.400	304.0	18.90
691	0.580	2.590	89.90	6.070	1280.0	23.60
692	1.030	2.000	82.10	0.000	914.0	25.00
693	0.392	2.140	67.20	3.800	1200.0	20.10
694	0.869	2.290	55.30	2.850	756.0	19.20
695	0.807	2.390	78.70	3.570	613.0	23.30
696	0.702	1.990	47.30	2.880	805.0	18.90
697	0.509	1.990	42.50	2.500	268.0	18.20
698	0.763	2.310	62.60	4.100	334.0	24.80
699	2.050	2.170	45.70	2.400	253.0	19.50
700	1.510	2.290	67.10	3.190	325.0	20.80
701	1.510	1.620	50.80	3.890	441.0	24.80
702	0.860	1.360	30.20	3.100	563.0	18.60
703	0.901	2.310	50.00	3.840	338.0	21.00
704	0.799	2.020	36.30	3.480	647.0	19.00
705	1.100	1.530	51.90	3.650	912.0	22.20
706	1.380	1.910	63.90	3.320	469.0	20.50
707	1.760	1.690	49.30	3.390	514.0	20.60
708	0.857	1.740	34.00	3.550	878.0	19.10
709	1.050	2.080	65.50	4.610	526.0	24.20
710	1.030	2.290	68.30	4.430	316.0	21.70
711	0.647	1.980	49.90	3.120	410.0	19.60
712	1.190	1.580	14.40	3.590	262.0	24.20
713	1.180	1.530	34.40	4.310	271.0	22.50
714	1.110	2.030	19.10	1.710	510.0	23.40
715	0.663	2.130	45.10	3.160	395.0	21.70
716	1.270	0.869	0.00	2.320	0.0	19.00
717	1.040	2.450	43.20	3.530	431.0	21.30
718	0.514	2.340	51.70	3.230	1160.0	24.20

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Table 3 cont'd. Final Sample Concentration Values

Id	La (ppm)	Ce (ppm)	Eu (ppm)	Lu (ppm)	Hf (ppm)	Th (ppm)
675	25.20	42.00	1.240	0.439	2.980	6.650
676	21.00	37.30	1.080	0.355	2.330	5.730
677	23.00	53.40	1.420	0.451	4.240	7.360
678	25.40	46.80	1.190	0.491	3.790	7.590
679	22.30	38.80	1.090	0.496	2.990	6.340
680	23.00	40.40	1.100	0.396	3.010	7.370
681	26.80	51.60	1.330	0.491	3.050	8.360
682	21.20	38.40	1.160	0.397	3.210	6.900
683	24.30	42.70	1.190	0.408	2.830	8.750
684	21.10	39.10	1.120	0.459	2.920	6.400
685	31.40	40.80	1.610	0.511	4.310	8.610
686	24.90	45.10	1.220	0.530	3.200	7.440
687	20.60	52.90	1.460	0.432	6.200	7.020
688	28.00	50.90	1.320	0.496	3.480	7.950
689	34.70	63.00	1.670	0.715	4.320	9.290
690	22.30	39.80	1.160	0.362	2.980	6.620
691	25.50	66.80	1.520	0.574	6.040	10.200
692	32.70	74.10	1.680	0.596	5.250	9.800
693	21.90	40.90	1.040	0.392	2.650	6.900
694	24.80	43.90	1.190	0.499	3.060	6.970
695	27.10	49.10	1.420	0.441	3.620	7.430
696	21.70	38.40	1.030	0.380	2.860	7.090
697	19.90	36.30	1.080	0.312	2.410	5.810
698	27.70	52.00	1.440	0.448	3.760	7.530
699	24.70	46.20	1.160	0.426	3.690	7.420
700	26.70	48.20	1.290	0.444	3.530	7.410
701	30.30	54.70	1.560	0.483	4.590	8.730
702	22.50	41.40	1.190	0.397	3.470	6.300
703	26.50	47.50	1.360	0.444	4.840	7.740
704	23.70	39.50	1.190	0.587	3.700	7.040
705	26.40	61.40	1.340	0.438	4.220	7.950
706	26.50	42.00	1.270	0.435	4.110	7.520
707	25.60	36.90	1.220	0.487	4.000	7.990
708	24.20	45.80	1.290	0.426	3.910	7.110
709	30.40	53.90	1.680	0.571	5.090	9.280
710	26.70	47.60	1.430	0.536	4.060	7.820
711	21.70	37.80	1.040	0.360	2.870	6.460
712	28.70	48.80	1.430	0.450	4.170	8.080
713	26.20	45.80	1.390	0.467	3.580	8.260
714	27.80	43.60	1.510	0.622	3.990	8.520
715	25.40	45.60	1.300	0.495	3.410	7.650
716	23.00	36.80	0.998	0.345	3.050	6.550
717	27.50	45.90	1.480	0.467	4.520	8.080
718	25.10	47.40	1.240	0.409	3.070	7.070

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Table 3 cont'd. Final Sample Concentration Values

Id	Ta (ppm)	Cr (ppm)	Mn (ppm)	Fe (%)	Co (ppm)	Sb (ppm)
675	1.160	329.0	947.0	6.140	28.400	0.000
676	0.925	299.0	778.0	4.860	24.900	1.020
677	0.911	391.0	899.0	4.830	26.400	0.246
678	1.430	363.0	725.0	5.260	20.200	0.659
679	1.010	295.0	915.0	5.220	24.000	0.000
680	1.340	350.0	775.0	5.060	21.800	0.000
681	0.957	251.0	916.0	6.050	25.200	0.000
682	0.503	310.0	809.0	4.250	19.900	0.992
683	1.040	210.0	799.0	5.250	20.200	1.040
684	0.000	270.0	775.0	4.790	20.700	0.000
685	1.660	455.0	776.0	6.150	26.800	0.828
686	0.000	401.0	799.0	5.940	25.800	0.604
687	1.050	435.0	680.0	3.870	21.100	0.000
688	0.936	347.0	926.0	5.550	26.400	0.000
689	1.630	370.0	1050.0	7.190	31.500	1.110
690	1.220	340.0	729.0	4.640	21.500	0.000
691	1.700	323.0	922.0	5.140	22.900	0.446
692	1.460	889.0	0.0	4.360	18.800	0.000
693	1.180	190.0	681.0	4.800	19.600	0.000
694	1.120	301.0	798.0	4.730	20.200	0.885
695	1.520	379.0	668.0	5.490	23.300	0.000
696	1.410	334.0	835.0	4.630	21.000	0.707
697	1.210	220.0	844.0	4.340	19.100	1.270
698	1.650	366.0	791.0	5.910	25.600	0.000
699	0.781	371.0	721.0	4.770	20.300	0.000
700	0.765	315.0	745.0	5.120	22.200	0.884
701	1.460	546.0	764.0	6.020	28.600	0.000
702	0.939	370.0	899.0	4.430	20.900	0.779
703	1.180	449.0	1020.0	5.080	23.400	1.470
704	76.700	417.0	838.0	4.610	19.900	0.000
705	0.000	451.0	1170.0	5.310	23.100	0.000
706	1.220	440.0	786.0	4.910	22.600	0.000
707	1.120	492.0	858.0	4.990	21.000	0.820
708	0.000	424.0	824.0	4.500	20.300	0.000
709	0.791	542.0	1120.0	5.790	24.800	0.000
710	1.120	442.0	956.0	5.190	22.200	0.471
711	1.410	302.0	915.0	4.820	18.800	0.000
712	1.140	429.0	972.0	5.810	26.800	0.000
713	1.650	356.0	843.0	5.530	21.600	0.000
714	1.180	359.0	980.0	5.720	20.600	0.000
715	0.945	339.0	1110.0	5.300	22.700	0.638
716	1.040	317.0	1020.0	4.630	20.600	0.728
717	1.030	532.0	909.0	5.100	21.400	0.938
718	1.120	368.0	1070.0	5.950	30.100	0.000

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Table 3 cont'd. Final Sample Concentration Values

Id	Ca (%)	Sm (ppm)	Yb (ppm)	Sr (ppm)
675	19.300	4.760	2.070	0.0
676	21.200	4.180	1.800	1390.0
677	17.500	4.670	2.150	871.0
678	21.200	4.740	2.200	675.0
679	19.200	4.450	2.100	1210.0
680	14.000	4.330	2.040	604.0
681	20.100	5.260	2.390	0.0
682	19.000	4.130	1.650	2370.0
683	17.700	4.800	2.210	770.0
684	14.700	4.080	1.960	0.0
685	10.900	6.030	2.610	0.0
686	21.100	4.690	2.110	654.0
687	18.000	4.870	2.080	886.0
688	18.300	5.370	2.320	1430.0
689	26.200	6.910	2.650	945.0
690	21.400	4.370	1.910	1590.0
691	16.200	6.080	2.630	943.0
692	9.960	6.480	3.290	0.0
693	22.900	4.250	2.030	564.0
694	20.300	4.750	2.040	850.0
695	14.100	5.090	2.290	0.0
696	18.500	4.440	2.050	1330.0
697	25.700	3.810	1.690	1600.0
698	13.200	5.480	2.220	647.0
699	16.700	4.910	1.940	0.0
700	17.000	5.000	2.130	0.0
701	15.900	5.850	2.840	0.0
702	25.700	4.560	2.110	1030.0
703	17.400	5.180	2.350	934.0
704	24.800	4.750	2.320	1330.0
705	19.500	5.210	2.460	0.0
706	18.800	5.140	2.260	1890.0
707	17.300	5.090	2.240	1900.0
708	23.500	4.810	2.040	0.0
709	17.500	5.810	2.860	0.0
710	15.300	5.230	2.470	977.0
711	19.800	4.270	1.710	1050.0
712	18.300	5.440	2.360	1180.0
713	17.300	5.000	2.320	909.0
714	22.500	5.400	2.240	0.0
715	20.800	4.960	2.270	940.0
716	23.000	4.490	1.780	0.0
717	18.900	5.430	2.430	0.0
718	17.300	5.010	2.120	1200.0

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Table 3 cont'd. Final Sample Concentration Values

Id	Site	Loc.	Per.	Type	Site Size	GAJ No.
675	16	1	2	37	1.0	0.00
676	24	1	2	37	1.0	0.00
677	24	1	2	37	1.0	0.00
678	32	2	2	37	1.0	0.00
679	76	2	2	37	1.0	0.00
680	76	2	2	37	1.0	0.00
681	108	4	2	37	1.0	0.00
682	108	4	2	37	1.0	0.00
683	153	6	2	37	3.0	0.00
684	266	4	2	37	1.0	0.00
685	266	4	2	37	1.0	0.00
686	16	1	2	36	1.0	0.00
687	52	1	2	36	1.0	0.00
688	108	4	2	36	1.0	0.00
689	108	4	2	36	1.0	0.00
690	108	4	2	36	1.0	8.01
691	153	6	2	36	3.0	0.00
692	153	6	2	36	3.0	0.00
693	153	6	2	36	3.0	0.00
694	266	4	2	36	1.0	0.00
695	266	4	2	36	1.0	0.00
696	266	4	2	36	1.0	0.00
697	266	4	2	36	1.0	0.00
698	266	4	2	36	1.0	0.00
699	284	4	2	36	1.0	0.00
700	284	4	2	36	1.0	0.00
701	67	1	6	33	1.0	5.03
702	67	1	6	33	1.0	5.06
703	67	1	6	33	1.0	5.01
704	67	1	6	33	1.0	5.02
705	67	1	6	33	1.0	0.00
706	108	4	6	33	1.0	5.02
707	108	4	6	33	1.0	5.01
708	182	6	6	33	1.0	5.02
709	182	6	6	33	1.0	5.01
710	182	6	6	33	1.0	0.00
711	190	7	6	33	1.0	0.00
712	190	7	6	33	1.0	0.00
713	190	7	6	33	1.0	0.00
714	190	7	6	33	1.0	0.00
715	190	7	6	33	1.0	0.00
716	266	4	6	33	1.0	5.03
717	266	4	6	33	1.0	5.02
718	16	1	3	38	1.0	6.01

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Table 3 cont'd. Final Sample Concentration Values

Id	Na (%)	K (%)	Rb (ppm)	Cs (ppm)	Ba (ppm)	Sc (ppm)
719	1.190	3.140	91.10	4.800	253.0	28.10
720	1.500	1.230	24.200	3.350	366.0	22.40
721	0.603	2.240	67.300	3.770	340.0	22.80
722	0.812	2.500	64.600	4.270	367.0	27.40
723	0.677	2.120	64.900	3.790	610.0	23.40
724	0.758	1.740	47.000	3.850	544.0	23.90
725	0.890	1.490	16.100	4.030	687.0	26.90
726	1.380	1.470	0.000	4.420	296.0	24.50
727	0.901	1.460	40.900	3.580	1040.0	20.90
728	0.936	2.280	75.400	2.880	640.0	21.70
729	1.100	1.810	42.400	4.010	297.0	23.60
730	1.210	2.430	47.100	4.470	420.0	27.40
731	0.476	2.370	60.900	4.560	416.0	20.40
732	0.709	2.450	51.100	5.600	690.0	26.20
733	1.220	0.592	10.300	4.840	108.0	24.80
734	1.200	1.590	39.000	5.390	455.0	24.70
735	0.724	2.340	70.700	4.650	373.0	21.00
736	0.766	2.330	58.800	3.980	344.0	21.70
737	0.943	2.040	63.700	3.970	513.0	25.20
738	0.623	1.450	46.300	3.680	973.0	23.10
739	0.578	1.890	39.900	2.150	720.0	18.20
740	0.505	1.850	58.900	3.560	1620.0	21.60
741	0.879	2.320	51.600	2.910	275.0	19.30
742	1.200	1.210	14.900	3.690	315.0	22.50
743	1.190	2.140	55.800	3.330	292.0	22.20
744	0.560	1.770	49.100	2.730	305.0	17.20
745	1.450	2.360	69.800	3.300	462.0	21.00
746	0.751	2.310	53.700	3.150	382.0	20.60
747	0.719	1.460	45.900	1.900	358.0	17.00
748	0.653	2.430	83.900	4.190	459.0	25.60
749	0.806	2.150	56.000	2.800	587.0	20.50
750	0.494	1.800	63.400	3.080	476.0	20.70
751	0.350	1.780	52.700	2.440	491.0	20.30
752	0.478	1.790	39.700	1.990	470.0	17.80
753	0.601	1.700	41.100	2.670	391.0	19.80
754	0.626	1.660	44.200	2.470	601.0	18.10
755	0.783	0.962	29.600	3.380	453.0	18.70
756	0.965	2.350	37.300	1.670	315.0	17.70
757	0.857	2.240	47.100	2.930	607.0	20.90
758	0.558	1.880	57.600	3.010	253.0	21.60
759	1.070	0.966	10.800	3.230	2690.0	18.60

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Table 3 cont'd. Final Sample Concentration Values

Id	La (ppm)	Ce (ppm)	Eu (ppm)	Lu (ppm)	Hf (ppm)	Th (ppm)
719	29.00	46.20	1.460	0.510	3.620	8.620
720	25.40	44.40	1.340	0.444	3.120	6.980
721	37.90	91.80	1.880	0.399	3.340	9.110
722	27.20	50.30	1.310	0.403	3.400	7.430
723	26.20	48.30	1.260	0.364	3.300	6.840
724	25.60	40.00	1.290	0.569	3.610	7.400
725	26.20	62.10	1.330	0.509	3.390	6.870
726	23.70	41.20	1.220	0.523	3.170	6.700
727	24.20	39.00	1.120	0.573	0.000	6.620
728	25.60	45.50	1.220	0.406	3.470	6.460
729	27.90	47.60	1.300	0.403	3.720	7.450
730	31.00	56.90	1.410	0.475	4.090	8.400
731	23.70	39.90	1.080	0.521	3.050	7.030
732	29.20	69.60	1.350	0.505	3.960	8.320
733	24.80	45.90	1.160	0.451	2.810	7.220
734	26.60	46.50	1.200	0.420	2.360	8.000
735	22.80	42.20	1.140	0.354	3.170	6.750
736	24.60	42.10	1.210	0.401	3.080	7.370
737	29.10	53.30	1.470	0.408	3.950	8.140
738	24.90	42.20	1.270	0.360	3.050	5.790
739	19.40	34.50	1.040	0.284	2.100	4.790
740	21.20	28.60	1.130	0.400	2.830	5.650
741	20.80	38.60	1.030	0.317	3.370	5.370
742	25.00	41.80	1.140	0.395	3.440	6.440
743	24.40	45.30	1.240	0.471	3.010	6.460
744	18.90	34.20	0.970	0.282	2.550	5.110
745	24.60	41.90	1.070	0.383	3.360	6.300
746	22.80	41.10	1.080	0.387	3.010	5.550
747	17.90	28.00	0.963	0.283	2.170	4.770
748	26.70	47.00	1.340	0.420	3.280	6.750
749	23.50	58.90	1.060	0.403	2.760	5.820
750	21.90	39.20	1.100	0.339	2.870	5.860
751	21.40	47.00	1.130	0.350	2.560	5.610
752	18.70	36.60	0.930	0.310	2.440	4.850
753	19.80	46.80	0.953	0.360	2.680	5.950
754	22.30	40.70	1.070	0.355	3.280	5.830
755	22.60	37.80	1.120	0.326	2.810	5.580
756	20.60	36.00	1.210	0.330	2.540	5.170
757	22.80	44.30	1.160	0.336	2.970	6.120
758	24.90	45.80	1.250	0.390	3.010	6.640
759	20.00	27.10	1.200	0.293	2.890	5.120

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Table 3 cont'd. Final Sample Concentration Values

Id	Ta (ppm)	Cr (ppm)	Mn (ppm)	Fe (%)	Co (ppm)	Sb (ppm)
719	1.230	303.0	798.0	6.700	29.400	0.000
720	1.010	413.0	822.0	5.480	25.600	0.712
721	1.560	262.0	1340.0	5.660	24.200	1.350
722	1.700	396.0	865.0	6.580	30.900	0.708
723	1.370	282.0	574.0	5.390	23.100	0.825
724	1.480	384.0	856.0	5.790	32.800	1.610
725	1.450	434.0	896.0	6.450	31.900	0.000
726	0.895	297.0	740.0	5.940	29.300	0.795
727	1.380	232.0	767.0	5.120	0.000	0.000
728	1.240	326.0	716.0	5.270	23.800	0.000
729	1.320	364.0	683.0	5.750	23.200	0.000
730	1.180	386.0	858.0	6.670	28.100	0.596
731	0.407	233.0	722.0	4.890	19.700	0.566
732	0.000	307.0	901.0	6.240	20.100	0.000
733	1.130	231.0	760.0	5.980	25.600	1.400
734	0.780	271.0	815.0	5.930	27.400	1.080
735	1.580	247.0	731.0	5.100	22.300	0.000
736	0.864	232.0	834.0	5.270	24.100	0.861
737	1.440	371.0	766.0	6.100	26.400	0.772
738	0.801	261.0	742.0	5.720	26.000	0.000
739	1.170	341.0	696.0	4.510	21.900	0.000
740	1.300	346.0	734.0	5.240	25.500	0.733
741	0.681	298.0	792.0	4.790	24.600	0.556
742	0.000	383.0	863.0	5.400	26.800	1.230
743	1.010	403.0	800.0	5.520	27.000	0.000
744	0.921	357.0	664.0	4.240	22.000	0.718
745	0.724	413.0	842.0	5.240	25.100	1.060
746	0.000	315.0	824.0	5.200	28.100	0.000
747	0.891	348.0	684.0	4.130	20.500	0.000
748	0.000	367.0	871.0	6.270	31.200	1.140
749	1.290	322.0	701.0	5.010	32.000	0.000
750	1.010	301.0	738.0	4.990	22.300	0.920
751	0.000	300.0	800.0	4.750	24.400	0.000
752	0.964	337.0	795.0	4.440	23.300	0.000
753	1.230	454.0	880.0	4.320	23.500	0.000
754	1.100	395.0	783.0	4.460	23.800	0.000
755	1.220	454.0	731.0	4.560	23.400	0.703
756	0.000	367.0	698.0	4.340	19.400	0.000
757	0.000	497.0	828.0	5.100	27.000	0.000
758	1.220	345.0	792.0	5.230	25.800	0.919
759	0.818	308.0	1060.0	4.480	22.300	0.000

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Table 3 cont'd. Final Sample Concentration Values

Id	Ca (%)	Sm (ppm)	Yb (ppm)	Sr (ppm)
719	17.000	5.740	2.760	0.0
720	20.900	5.050	2.290	970.0
721	20.100	9.150	2.490	0.0
722	19.100	5.370	2.500	1090.0
723	18.700	5.140	2.170	0.0
724	20.500	5.030	2.120	1990.0
725	19.400	5.050	2.260	0.0
726	16.900	4.730	2.000	994.0
727	20.100	4.690	1.750	0.0
728	17.700	4.970	2.190	1160.0
729	14.500	5.300	2.260	384.0
730	14.300	6.020	2.850	739.0
731	21.400	4.660	2.240	1290.0
732	18.100	5.630	2.450	0.0
733	20.400	4.790	2.230	290.0
734	18.000	5.280	2.410	1010.0
735	21.200	4.600	2.070	867.0
736	20.400	4.860	2.290	481.0
737	12.600	5.840	2.490	0.0
738	16.300	4.930	2.040	1010.0
739	18.600	3.940	1.640	1440.0
740	22.500	4.280	1.820	1200.0
741	14.100	4.230	1.890	844.0
742	17.600	5.080	2.090	0.0
743	16.600	4.860	2.130	903.0
744	21.600	3.790	1.490	0.0
745	14.800	4.880	2.280	0.0
746	15.600	4.450	1.810	1200.0
747	20.800	3.660	1.720	0.0
748	16.400	5.310	2.290	1010.0
749	17.000	4.500	1.930	1550.0
750	20.700	4.380	2.000	735.0
751	16.500	4.190	2.010	1650.0
752	20.000	3.660	1.660	2360.0
753	19.600	4.840	1.760	1400.0
754	20.500	4.470	2.010	1840.0
755	21.300	4.300	1.800	854.0
756	15.500	4.150	1.760	0.0
757	21.100	4.640	1.990	0.0
758	16.400	4.900	2.010	0.0
759	21.300	4.040	1.640	2490.0

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Table 3 cont'd. Final Sample Concentration Values

Id	Site	Loc.	Per.	Type	Site Size	GAJ No.
719	16	1	3	38	1.0	6.04
720	16	1	3	38	1.0	6.03
721	16	1	3	38	1.0	6.02
722	52	1	3	38	1.0	6.01
723	52	1	3	38	1.0	6.02
724	24	1	3	38	1.0	6.01
725	76	2	3	38	2.0	6.01
726	76	2	3	38	2.0	6.02
727	108	4	3	38	2.0	6.02
728	108	4	3	38	2.0	6.04
729	108	4	3	38	2.0	6.01
730	121	4	3	38	1.0	6.01
731	153	6	3	38	3.0	6.01
732	153	6	3	38	3.0	6.03
733	173	6	3	38	2.0	6.03
734	173	6	3	38	2.0	6.06
735	173	6	3	38	2.0	6.04
736	173	6	3	38	2.0	6.07
737	266	4	3	38	1.0	6.03
738	266	4	3	38	1.0	6.01
739	32	2	4	40	1.0	6.01
740	32	2	4	40	1.0	0.00
741	54	2	4	40	1.0	6.07
742	54	2	4	40	1.0	6.01
743	54	2	4	40	1.0	0.00
744	54	2	4	40	1.0	6.02
745	54	2	4	40	1.0	6.05
746	59	2	4	40	4.0	0.00
747	59	2	4	40	4.0	0.00
748	59	2	4	40	4.0	0.00
749	59	2	4	40	4.0	6.01
750	79	2	4	40	1.0	6.04
751	79	2	4	40	1.0	6.06
752	79	2	4	40	1.0	6.05
753	79	2	4	40	1.0	6.01
754	79	2	4	40	1.0	6.02
755	79	2	4	40	1.0	6.03
756	79	2	4	40	1.0	6.01
757	32	2	4	42	1.0	0.00
758	54	2	4	42	1.0	0.00
759	54	2	4	42	1.0	0.00

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Table 3 cont'd. Final Sample Concentration Values

Id	Na (%)	K (%)	Rb (ppm)	Cs (ppm)	Ba (ppm)	Sc (ppm)
760	0.585	2.260	62.400	2.560	1120.0	18.40
761	0.863	2.290	66.500	3.570	360.0	21.10
762	0.521	1.870	46.100	2.930	281.0	19.70
763	1.180	2.920	52.500	3.540	266.0	21.00
764	0.927	1.960	57.300	2.460	290.0	19.90
765	0.828	1.900	71.400	3.230	357.0	21.20
766	1.170	1.090	23.600	4.070	351.0	24.00
767	0.525	1.870	49.000	3.190	411.0	19.20
768	0.486	1.920	55.500	3.190	1690.0	21.70
769	0.927	1.460	36.600	4.200	617.0	22.40
770	0.824	1.390	40.500	3.310	417.0	22.40
771	0.724	2.310	43.100	3.040	817.0	20.50
772	0.791	1.970	61.500	2.870	309.0	18.10
773	1.090	2.310	31.600	3.840	296.0	24.00
774	1.380	1.910	0.000	3.270	1320.0	25.10
775	0.741	2.210	46.400	1.640	1090.0	21.50
776	0.662	1.720	50.100	2.750	686.0	17.30
777	0.573	2.100	55.100	2.940	532.0	23.00
778	0.519	2.090	0.000	2.470	406.0	18.70
779	1.260	2.170	96.900	4.530	1220.0	24.00
780	0.759	1.320	23.200	3.820	416.0	20.60
781	1.310	1.360	43.200	5.700	470.0	26.50
782	1.240	1.050	26.600	4.240	363.0	22.40
783	0.971	2.240	54.000	3.160	294.0	19.80
784	0.916	1.750	53.000	3.060	179.0	18.60
785	0.935	2.090	31.100	2.240	228.0	20.10
786	1.020	1.760	54.000	2.700	238.0	18.60
787	0.982	1.710	58.900	3.380	348.0	19.20
788	1.110	1.800	40.200	2.160	209.0	19.60
789	0.815	1.580	47.800	2.940	192.0	16.90
790	1.220	2.040	56.900	3.000	326.0	20.20
791	0.918	1.540	65.500	2.940	277.0	20.00
792	1.340	2.360	47.700	2.870	305.0	19.60
793	0.820	1.220	35.000	2.250	403.0	19.20
794	1.080	1.560	26.500	4.090	255.0	20.20
795	0.946	1.770	63.000	3.510	245.0	21.50
796	0.839	1.910	48.900	0.839	1.9	19.90
797	1.210	1.600	37.500	5.450	320.0	25.20
798	1.090	2.460	48.900	3.000	202.0	22.10
799	1.640	2.420	89.400	4.880	391.0	31.00
800	1.550	2.220	70.100	3.770	453.0	22.00
801	1.260	1.240	23.800	4.000	252.0	22.30
802	1.940	2.340	66.800	3.780	316.0	25.20
803	1.120	1.970	73.100	4.710	424.0	22.40
804	1.040	2.360	77.300	4.240	161.0	26.30

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Table 3 cont'd. Final Sample Concentration Values

Id	La (ppm)	Ce (ppm)	Eu (ppm)	Lu (ppm)	Hf (ppm)	Th (ppm)
760	21.60	39.10	1.180	0.343	3.480	5.640
761	26.30	48.00	1.290	0.373	3.210	6.100
762	20.50	47.00	0.991	0.372	2.590	6.230
763	21.40	50.10	1.150	0.346	2.550	6.590
764	20.40	46.10	1.070	0.358	2.570	5.960
765	21.50	47.00	1.220	0.417	4.290	7.000
766	27.20	63.40	1.170	0.419	2.800	8.050
767	21.10	44.80	1.090	0.353	4.550	6.470
768	21.90	49.70	1.050	0.423	2.940	6.570
769	22.70	51.20	1.100	0.420	3.230	6.420
770	21.70	48.40	1.140	0.421	2.650	6.370
771	21.70	48.90	1.100	0.470	2.770	6.370
772	19.50	45.10	0.857	0.347	2.600	6.320
773	25.70	61.20	1.200	0.453	4.180	7.650
774	25.00	58.00	1.330	0.410	3.890	7.240
775	23.30	52.60	1.250	0.416	3.000	6.940
776	18.50	58.70	1.040	0.354	2.730	5.360
777	21.30	50.90	1.140	0.451	2.960	6.790
778	20.90	46.80	1.070	0.374	2.820	7.000
779	28.30	66.80	1.370	0.540	3.930	8.200
780	22.50	48.60	1.150	0.351	2.340	6.310
781	27.10	62.80	1.310	0.486	3.460	9.770
782	24.70	56.10	1.240	0.418	2.710	7.060
783	21.90	51.60	1.170	0.408	3.020	6.510
784	21.60	47.10	0.703	0.377	5.320	6.090
785	23.60	52.90	1.260	0.402	2.700	6.600
786	19.90	61.50	0.979	0.374	2.880	5.570
787	22.80	49.50	1.160	0.357	2.930	6.400
788	28.40	56.90	1.190	0.375	2.490	6.030
789	20.00	45.20	1.050	0.333	2.800	5.420
790	22.10	49.00	1.090	0.358	2.410	6.300
791	23.30	52.70	1.280	0.405	3.130	6.560
792	23.20	50.70	1.150	0.453	3.450	6.910
793	22.30	51.60	1.080	0.377	2.870	5.610
794	23.60	51.60	1.200	0.389	3.010	6.210
795	24.20	52.70	1.290	0.428	2.920	6.850
796	23.30	52.60	1.180	0.399	3.290	6.610
797	24.30	58.00	1.440	0.470	4.250	7.600
798	23.80	59.40	1.530	0.505	5.750	7.710
799	25.50	58.00	1.820	0.616	5.470	9.740
800	22.00	57.40	1.440	0.486	5.290	7.630
801	24.00	59.60	1.590	0.430	4.850	7.320
802	25.90	61.60	1.690	0.488	5.130	7.580
803	24.10	58.50	1.520	0.495	4.530	7.630
804	26.20	52.30	1.570	0.488	5.430	7.930

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Table 3 cont'd. Final Sample Concentration Values

Id	Ta (ppm)	Cr (ppm)	Mn (ppm)	Fe (%)	Co (ppm)	Sb (ppm)
760	1.320	350.0	789.0	4.460	24.900	0.000
761	1.180	368.0	836.0	5.210	25.800	0.000
762	0.874	336.0	850.0	4.640	24.800	0.000
763	1.130	339.0	930.0	5.000	26.200	0.000
764	0.796	299.0	820.0	4.650	24.400	1.270
765	2.290	427.0	800.0	4.920	55.800	1.300
766	0.532	365.0	970.0	5.690	27.500	0.000
767	2.330	379.0	740.0	4.590	0.000	0.846
768	1.100	313.0	1020.0	5.170	27.000	0.000
769	1.260	475.0	890.0	5.250	24.600	0.712
770	1.320	349.0	820.0	5.180	30.800	0.000
771	1.130	381.0	860.0	4.650	26.100	0.490
772	1.030	273.0	760.0	4.260	24.700	0.514
773	0.937	408.0	1120.0	5.520	28.600	0.000
774	1.320	485.0	1110.0	5.870	29.300	0.000
775	1.000	396.0	950.0	5.180	24.500	0.000
776	1.290	321.0	740.0	4.090	18.700	0.000
777	1.000	332.0	1100.0	5.650	30.800	0.000
778	1.410	208.0	940.0	4.530	25.300	0.929
779	1.370	394.0	790.0	5.430	24.800	0.000
780	1.070	342.0	890.0	4.740	22.900	0.348
781	1.770	351.0	810.0	6.310	25.400	1.100
782	1.370	224.0	770.0	5.080	20.000	0.572
783	1.340	347.0	840.0	4.580	24.800	0.000
784	0.993	331.0	740.0	4.490	32.800	0.000
785	1.670	209.0	780.0	4.760	25.400	0.598
786	1.580	323.0	850.0	4.400	22.100	0.913
787	1.010	351.0	770.0	4.570	24.100	0.000
788	1.340	204.0	940.0	4.620	23.100	0.563
789	1.180	228.0	840.0	3.990	19.900	0.516
790	1.420	216.0	840.0	4.840	21.500	0.000
791	1.020	255.0	860.0	4.760	21.700	0.849
792	1.290	298.0	820.0	4.690	17.500	0.000
793	1.260	251.0	710.0	4.630	20.000	0.000
794	0.969	225.0	830.0	4.730	21.300	0.000
795	1.190	244.0	820.0	5.150	21.800	0.000
796	1.320	268.0	790.0	4.650	21.100	0.499
797	1.740	360.0	990.0	5.670	30.700	0.240
798	1.340	354.0	885.0	4.700	25.500	0.453
799	1.410	538.0	1310.0	6.870	36.400	0.770
800	1.170	418.0	896.0	4.860	22.000	0.364
801	1.290	288.0	756.0	4.840	22.000	0.230
802	2.310	328.0	1010.0	5.290	27.000	0.348
803	1.470	391.0	860.0	5.360	23.600	0.000
804	1.350	337.0	724.0	5.980	27.100	0.296

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Table 3 cont'd. Final Sample Concentration Values

Id	Ca (%)	Sm (ppm)	Yb (ppm)	Sr (ppm)
760	15.000	4.390	1.900	0.0
761	15.300	5.130	1.960	1020.0
762	17.300	4.100	2.010	1500.0
763	18.600	4.800	2.070	2810.0
764	18.400	3.740	1.690	0.0
765	18.900	4.640	1.900	0.0
766	13.800	6.390	2.450	1920.0
767	12.500	3.970	2.050	1600.0
768	20.700	4.340	1.970	1790.0
769	20.200	4.920	2.080	1580.0
770	15.900	2.730	1.800	1390.0
771	18.600	4.350	2.720	1200.0
772	16.400	3.730	1.810	1030.0
773	15.500	5.330	2.170	1240.0
774	18.200	5.380	2.280	1660.0
775	15.000	3.240	2.240	1300.0
776	22.000	3.900	1.660	1450.0
777	12.200	3.240	2.330	947.0
778	19.600	5.280	2.020	1180.0
779	14.000	4.300	2.630	1600.0
780	20.700	5.120	2.010	1280.0
781	13.400	6.900	2.400	1010.0
782	18.800	5.860	2.090	3590.0
783	18.800	5.240	1.980	817.0
784	19.100	4.720	2.100	0.0
785	17.000	5.780	1.990	954.0
786	15.900	5.040	1.800	792.0
787	18.600	4.910	2.280	848.0
788	18.900	5.100	1.940	1080.0
789	22.700	4.350	1.600	2420.0
790	18.200	5.410	2.230	766.0
791	21.000	5.650	1.830	863.0
792	18.500	4.340	2.320	845.0
793	18.000	4.840	1.790	995.0
794	19.000	4.930	2.230	2790.0
795	16.500	5.860	2.180	651.0
796	21.900	5.530	1.940	883.0
797	18.400	6.290	2.410	471.0
798	22.500	5.420	2.260	695.0
799	14.100	6.330	2.660	393.0
800	18.200	5.300	2.350	701.0
801	20.800	5.500	2.160	581.0
802	19.300	5.470	2.280	451.0
803	19.900	5.380	2.120	669.0
804	15.500	5.920	2.260	590.0

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Table 3 cont'd. Final Sample Concentration Values

Id	Site	Loc.	Per.	Type	Site Size	GAJ No.
760	54	2	4	42	1.0	0.00
761	54	2	4	42	1.0	0.00
762	59	2	4	42	4.0	0.00
763	59	2	4	42	4.0	0.00
764	59	2	4	42	4.0	0.00
765	59	2	4	42	4.0	0.00
766	59	2	4	42	4.0	0.00
767	79	2	4	42	1.0	0.00
768	79	2	4	42	1.0	0.00
769	32	2	4	41	1.0	0.00
770	32	2	4	41	1.0	0.00
771	32	2	4	41	1.0	0.00
772	32	2	4	41	1.0	0.00
773	54	2	4	41	1.0	0.00
774	54	2	4	41	1.0	0.00
775	54	2	4	41	1.0	0.00
776	59	2	4	41	4.0	0.00
777	59	2	4	41	4.0	0.00
778	79	2	4	41	1.0	0.00
779	108	4	4	41	1.0	0.00
780	16	1	4	52	1.0	1.05
781	121	4	4	52	1.0	1.01
782	36	4	3	38	1.0	0.00
783	36	4	3	38	1.0	0.00
784	36	4	3	38	1.0	0.00
785	36	4	3	38	1.0	0.00
786	36	4	3	38	1.0	0.00
787	36	4	3	38	1.0	0.00
788	36	4	3	38	1.0	0.00
789	36	4	3	38	1.0	0.00
790	36	4	3	38	1.0	0.00
791	36	4	3	38	1.0	0.00
792	36	4	3	38	1.0	0.00
793	36	4	3	38	1.0	0.00
794	36	4	3	38	1.0	0.00
795	36	4	3	38	1.0	0.00
796	36	4	3	38	1.0	0.00
797	36	4	3	38	1.0	0.00
798	36	4	3	38	1.0	0.00
799	36	4	3	38	1.0	0.00
800	36	4	3	38	1.0	0.00
801	36	4	3	38	1.0	0.00
802	36	4	3	38	1.0	0.00
803	36	4	3	38	1.0	0.00
804	36	4	3	38	1.0	0.00

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Table 3 cont'd. Final Sample Concentration Values

Id	Na (%)	K (%)	Rb (ppm)	Cs (ppm)	Ba (ppm)	Sc (ppm)
805	1.000	1.790	43.300	2.910	272.0	20.60
806	1.220	2.440	79.200	3.730	307.0	22.60
808	1.010	2.330	49.000	2.840	285.0	18.40
809	1.320	2.440	58.200	2.640	346.0	21.40
810	1.790	2.700	60.600	4.140	239.0	21.50
811	1.020	2.990	58.600	2.920	328.0	20.80
812	0.972	2.600	59.800	4.860	358.0	22.60
813	0.866	3.320	82.000	5.020	347.0	25.90
814	0.985	2.350	58.200	4.110	322.0	24.00
815	1.570	2.270	93.700	4.960	2140.0	24.10
816	1.460	2.520	69.000	4.200	232.0	23.60
817	1.230	2.920	63.200	3.980	546.0	22.40
818	1.330	2.720	65.000	4.550	740.0	23.40
819	0.757	2.280	72.300	4.970	463.0	24.10
820	1.190	2.590	67.000	5.050	356.0	24.70
821	1.190	2.910	78.000	4.550	381.0	25.30
822	1.320	2.480	26.000	4.000	251.0	22.10
823	1.020	2.220	70.100	4.290	378.0	23.60
824	1.520	1.490	30.600	5.700	325.0	26.10
825	1.700	2.600	71.600	4.600	610.0	23.50
826	1.550	2.630	64.200	4.010	366.0	23.30
827	1.620	1.840	27.800	4.470	370.0	24.00
828	0.852	3.310	73.400	4.860	267.0	26.90
829	0.895	3.670	149.00	10.300	493.0	33.20
830	0.659	2.690	49.000	3.460	292.0	27.80
831	0.976	2.250	36.400	5.400	245.0	24.30
832	1.230	1.250	56.000	6.210	311.0	30.10
833	0.438	2.520	82.000	4.860	271.0	31.10
834	0.692	2.000	74.700	5.390	351.0	29.50
835	1.620	2.180	27.900	7.340	107.0	34.00
836	0.997	2.360	39.600	4.140	219.0	28.20
837	1.020	1.400	39.000	5.450	270.0	25.90
838	1.040	1.310	42.200	3.880	260.0	21.40
839	1.520	2.020	60.000	5.550	375.0	30.70
840	1.470	1.550	40.600	7.700	470.0	31.40
841	1.310	1.010	35.300	4.280	116.0	24.90
842	1.020	1.380	64.400	7.120	489.0	32.70
843	1.520	1.230	34.400	6.410	162.0	29.90
844	1.160	1.890	77.400	6.500	432.0	29.70
845	0.976	1.760	61.400	8.980	247.0	29.50
846	1.230	2.330	48.300	6.840	269.0	28.90
847	1.370	2.290	86.800	5.430	297.0	31.40
849	1.720	0.949	21.000	6.840	222.0	31.80
850	0.617	2.500	72.200	6.350	383.0	30.70
851	1.280	2.910	105.00	9.390	392.0	33.60

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Table 3 cont'd. Final Sample Concentration Values

Id	La (ppm)	Ce (ppm)	Eu (ppm)	Lu (ppm)	Hf (ppm)	Th (ppm)
805	22.40	44.30	1.410	0.426	4.130	6.700
806	24.90	58.00	1.760	0.469	4.890	7.380
808	19.90	49.50	1.440	0.384	4.400	6.380
809	22.70	55.60	1.440	0.413	5.350	7.100
810	24.90	60.70	1.650	0.430	4.750	6.960
811	24.80	59.80	1.610	0.478	7.070	7.950
812	24.90	61.60	1.680	0.466	4.500	7.950
813	28.50	75.20	1.960	0.655	6.620	9.490
814	25.90	63.40	1.700	0.515	5.150	7.960
815	30.60	72.40	2.040	0.622	8.080	9.660
816	26.70	65.30	1.730	0.471	4.810	7.650
817	25.00	59.70	1.760	0.515	5.860	7.450
818	26.30	66.50	1.700	0.556	6.670	8.340
819	25.60	65.30	1.720	0.481	5.270	8.050
820	24.30	64.60	1.720	0.493	4.640	7.890
821	27.90	70.80	1.700	0.516	4.590	8.850
822	26.00	63.80	1.560	0.509	6.710	7.970
823	25.60	64.90	1.590	0.520	4.820	7.630
824	30.00	71.90	1.840	0.521	5.280	8.940
825	24.90	53.80	1.720	0.465	4.690	8.120
826	24.40	62.30	1.530	0.491	4.790	7.300
827	26.70	62.30	1.680	0.490	4.960	7.840
828	28.90	77.10	2.050	0.694	9.360	10.700
829	33.40	83.10	1.970	0.658	8.020	14.800
830	28.30	48.70	1.460	0.511	3.880	8.040
831	24.40	60.20	1.280	0.500	3.860	7.510
832	29.50	71.90	1.570	0.557	4.700	8.780
833	28.50	74.20	1.380	0.440	4.210	9.570
834	32.20	69.50	1.760	0.557	4.520	8.900
835	30.80	76.70	1.620	0.611	5.170	9.900
836	31.50	80.60	1.580	0.601	5.220	9.420
837	26.50	67.00	1.380	0.550	4.850	8.450
838	24.60	67.50	1.330	0.515	4.470	7.170
839	29.50	72.50	1.570	0.580	5.250	9.800
840	31.00	70.40	1.650	0.592	4.840	9.680
841	23.40	54.00	1.110	0.430	3.480	7.590
842	31.20	77.80	1.450	0.612	4.950	10.700
843	28.50	66.10	1.420	0.554	4.010	8.890
844	29.70	77.10	1.540	0.536	4.580	10.100
845	32.70	70.20	1.610	0.664	5.020	9.870
846	32.40	78.00	1.640	0.599	4.770	9.430
847	29.90	72.30	1.460	0.601	5.100	10.200
849	31.20	72.00	1.620	0.522	4.910	9.520
850	29.60	67.80	1.740	0.570	4.270	7.870
851	33.70	74.80	1.730	0.682	6.210	11.300

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Table 3 cont'd. Final Sample Concentration Values

Id	Ta (ppm)	Cr (ppm)	Mn (ppm)	Fe (%)	Co (ppm)	Sb (ppm)
805	1.600	257.0	866.0	4.280	22.700	0.000
806	1.490	281.0	847.0	4.930	22.100	0.163
808	0.218	371.0	896.0	3.840	20.500	0.381
809	1.090	266.0	837.0	4.470	30.400	0.259
810	1.610	336.0	937.0	5.130	25.900	0.379
811	1.900	299.0	803.0	5.000	0.000	0.216
812	1.970	291.0	942.0	5.320	24.900	0.000
813	2.090	543.0	1060.0	6.300	33.200	0.660
814	1.660	332.0	1080.0	5.690	26.300	0.150
815	0.000	628.0	705.0	5.510	29.100	0.000
816	0.000	328.0	938.0	5.620	28.300	0.000
817	1.180	438.0	1050.0	5.410	27.600	0.134
818	2.460	707.0	993.0	5.590	26.900	0.224
819	1.830	305.0	920.0	5.020	29.500	0.415
820	1.660	290.0	883.0	5.230	26.500	0.439
821	1.730	332.0	936.0	5.410	26.200	0.000
822	1.310	301.0	991.0	5.230	30.800	0.332
823	1.730	307.0	1000.0	4.890	24.000	0.243
824	2.170	357.0	988.0	6.150	33.600	0.443
825	1.950	310.0	916.0	5.070	27.700	0.000
826	0.846	324.0	1000.0	4.920	25.900	0.347
827	1.670	328.0	911.0	5.120	26.400	0.441
828	0.000	586.0	724.0	6.760	29.600	0.532
829	0.662	316.0	705.0	7.890	30.800	0.000
830	1.750	364.0	1020.0	5.880	28.600	0.000
831	1.460	369.0	953.0	6.000	22.700	1.790
832	1.880	393.0	1220.0	7.070	31.900	0.000
833	2.110	400.0	827.0	7.530	31.800	1.100
834	1.760	465.0	1160.0	6.980	32.400	0.000
835	2.170	431.0	1020.0	7.890	30.700	1.180
836	4.750	457.0	1060.0	6.690	27.400	0.885
837	1.650	395.0	1020.0	6.060	29.200	1.760
838	1.400	416.0	818.0	5.110	22.300	0.966
839	2.160	424.0	1100.0	7.240	31.200	2.280
840	1.890	467.0	1270.0	7.280	31.100	1.460
841	1.740	316.0	649.0	6.060	27.200	1.140
842	1.620	446.0	1040.0	7.630	35.900	0.735
843	1.910	325.0	961.0	7.020	27.900	0.000
844	0.000	420.0	1160.0	7.030	30.200	0.000
845	1.500	308.0	737.0	6.600	23.700	1.410
846	1.880	425.0	1020.0	6.800	29.800	2.090
847	1.660	350.0	1240.0	7.390	28.800	2.220
849	2.200	414.0	892.0	7.490	27.600	2.090
850	2.230	419.0	1230.0	7.180	34.200	1.310
851	1.720	344.0	801.0	8.020	30.700	2.130

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Table 3 cont'd. Final Sample Concentration Values

Id	Ca (%)	Sm (ppm)	Yb (ppm)	Sr (ppm)
805	21.000	4.360	2.070	619.0
806	15.000	5.450	2.090	416.0
808	22.400	4.600	1.980	955.0
809	18.100	5.140	1.980	636.0
810	15.100	5.290	2.360	498.0
811	18.300	5.440	2.520	351.0
812	18.700	5.350	2.250	660.0
813	16.500	6.450	3.020	631.0
814	17.300	5.780	2.170	720.0
815	9.860	6.140	2.890	641.0
816	16.800	5.670	2.340	571.0
817	12.800	5.520	2.450	703.0
818	12.000	5.890	2.560	444.0
819	20.600	5.430	2.410	710.0
820	20.100	5.420	2.350	461.0
821	20.900	6.630	2.460	720.0
822	20.200	5.900	2.220	600.0
823	20.100	4.890	2.400	441.0
824	16.400	6.450	2.610	526.0
825	15.700	5.130	2.260	351.0
826	16.900	5.650	2.070	563.0
827	19.600	5.850	2.480	772.0
828	6.870	7.470	3.410	74.4
829	6.570	7.140	3.770	0.0
830	18.900	5.120	2.440	519.0
831	22.300	4.530	2.320	622.0
832	15.300	5.050	2.710	466.0
833	19.400	6.080	2.830	927.0
834	13.800	4.950	2.910	465.0
835	15.200	7.450	3.010	595.0
836	18.900	6.010	2.720	813.0
837	18.200	4.530	2.610	482.0
838	17.200	5.140	2.190	956.0
839	14.800	4.410	2.950	441.0
840	17.800	5.780	2.870	444.0
841	15.600	3.270	2.190	537.0
842	18.600	6.230	3.050	647.0
843	18.100	5.710	2.520	300.0
844	12.800	6.880	2.760	0.0
845	17.400	5.610	3.080	523.0
846	19.700	5.720	3.010	669.0
847	15.500	4.220	3.170	816.0
849	17.200	4.070	2.470	0.0
850	16.000	4.150	2.870	3140.0
851	8.483	5.780	3.240	275.0

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Table 3 cont'd. Final Sample Concentration Values

Id	Site	Loc.	Per.	Type	Site Size	GAJ No.
805	36	4	3	38	1.0	0.00
806	36	4	3	38	1.0	0.00
808	36	4	3	38	1.0	0.00
809	36	4	3	38	1.0	0.00
810	36	4	3	38	1.0	0.00
811	36	4	3	38	1.0	0.00
812	36	4	3	38	1.0	0.00
813	36	4	3	38	1.0	0.00
814	36	4	3	38	1.0	0.00
815	36	4	3	38	1.0	0.00
816	36	4	3	38	1.0	0.00
817	36	4	3	38	1.0	0.00
818	36	4	3	38	1.0	0.00
819	36	4	3	38	1.0	0.00
820	36	4	3	38	1.0	0.00
821	36	4	3	38	1.0	0.00
822	36	4	3	38	1.0	0.00
823	36	4	3	38	1.0	0.00
824	36	4	3	38	1.0	0.00
825	36	4	3	38	1.0	0.00
826	36	4	3	38	1.0	0.00
827	36	4	3	38	1.0	0.00
828	Susa	1	55	400	0.0	0.00
829	Susa	1	55	400	0.0	0.00
830	Susa	1	7	300	0.0	0.00
831	Susa	1	7	300	0.0	0.00
832	Susa	1	7	300	0.0	0.00
833	Susa	1	7	301	0.0	0.00
834	Susa	1	7	301	0.0	0.00
835	Susa	1	7	301	0.0	0.00
836	Susa	1	7	302	0.0	0.00
837	Susa	1	7	302	0.0	0.00
838	Susa	1	7	302	0.0	0.00
839	Susa	1	7	302	0.0	0.00
840	Susa	1	7	302	0.0	0.00
841	Susa	1	7	302	0.0	0.00
842	Susa	1	7	302	0.0	0.00
843	Susa	1	7	302	0.0	0.00
844	Susa	1	7	301	0.0	0.00
845	Susa	1	7	301	0.0	0.00
846	Susa	1	7	301	0.0	0.00
847	Susa	1	7	303	0.0	0.00
849	20	1	7	304	0.0	0.00
850	20	1	7	351	0.0	0.00
851	20	1	7	305	0.0	0.00

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Table 3 cont'd. Final Sample Concentration Values

Id	Na (%)	K (%)	Rb (ppm)	Cs (ppm)	Ba (ppm)	Sc (ppm)
852	1.650	1.550	20.500	5.770	214.0	27.40
853	0.866	2.410	65.800	5.270	360.0	21.10
854	1.070	1.770	63.500	4.400	340.0	24.80
855	1.770	1.420	11.500	5.290	193.0	29.90
856	1.510	0.768	17.600	3.180	185.0	27.20
857	1.660	1.770	37.500	6.100	355.0	30.90
858	2.480	1.260	16.600	7.290	191.0	30.80
859	1.820	2.330	0.000	5.410	497.0	31.40
860	1.690	0.976	0.000	3.400	200.0	31.80
861	1.690	1.430	22.900	5.730	124.0	30.30
862	1.640	1.770	24.000	2.950	120.0	30.20
863	1.880	1.130	22.900	5.760	226.0	30.70
864	1.590	1.300	23.200	3.070	182.0	30.50
865	0.889	2.720	84.000	6.360	399.0	29.20
866	1.660	2.440	77.500	4.950	400.0	28.00
867	1.270	1.870	37.700	4.660	265.0	22.60
868	1.970	0.000	24.100	7.160	324.0	31.80
869	0.931	2.290	63.600	3.250	313.0	21.10
870	0.638	2.520	79.700	3.500	432.0	28.20
871	0.854	2.400	90.200	6.140	434.0	29.00
872	0.940	2.140	67.400	4.010	323.0	19.90
873	0.703	1.830	82.400	5.940	376.0	25.80
874	1.010	2.650	0.000	0.000	146.0	20.80
875	0.975	2.590	68.800	4.770	341.0	22.20
876	0.626	2.210	77.000	5.430	286.0	23.20
877	0.823	2.360	63.500	4.160	272.0	23.20
878	0.562	1.560	68.000	4.970	271.0	24.30
879	0.941	2.790	38.700	3.190	506.0	21.00
880	1.190	1.960	48.400	4.790	195.0	28.10
881	1.080	1.790	57.500	5.930	375.0	27.60
882	0.771	2.810	40.800	3.660	202.0	23.70
883	1.500	2.090	31.900	4.770	323.0	23.60
884	1.410	1.480	51.200	6.080	228.0	31.70
885	1.590	1.400	0.000	4.360	170.0	26.40
886	0.682	2.220	41.900	4.470	424.0	20.80
887	1.370	2.630	35.300	4.440	123.0	27.60
888	1.260	1.010	31.100	6.620	437.0	31.50
889	0.689	2.490	65.300	5.380	293.0	25.60
890	1.460	1.050	52.400	6.210	136.0	29.20
891	1.260	1.740	49.500	5.400	300.0	25.90
892	1.610	3.000	28.600	5.340	247.0	27.50
893	1.200	2.340	41.300	4.980	203.0	24.30
894	2.020	0.000	27.900	7.590	202.0	25.50
896	0.956	3.070	61.600	3.450	363.0	27.80
897	1.580	0.817	0.000	4.120	392.0	23.50

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Table 3 cont'd. Final Sample Concentration Values

Id	La (ppm)	Ce (ppm)	Eu (ppm)	Lu (ppm)	Hf (ppm)	Th (ppm)
852	28.30	65.00	1.450	0.526	4.270	8.080
853	22.10	35.60	1.150	0.429	3.510	6.250
854	23.30	52.50	1.220	0.465	3.650	7.250
855	29.70	79.20	1.610	0.497	2.790	10.300
856	28.20	62.80	1.470	0.516	4.190	8.020
857	31.30	64.00	1.620	0.575	5.500	9.650
858	30.40	70.70	1.520	0.586	4.880	10.100
859	31.50	87.50	1.540	0.560	1.930	11.100
860	29.40	62.50	1.470	0.505	4.330	9.090
861	33.40	53.30	1.540	0.608	4.690	10.200
862	28.90	60.50	1.500	0.535	4.550	8.650
863	30.60	72.30	1.460	0.569	4.020	9.660
864	29.10	64.80	1.440	0.555	3.670	8.330
865	28.40	50.80	1.490	0.575	4.040	9.860
866	31.50	63.50	1.660	0.610	6.400	8.550
867	26.50	57.50	0.901	0.462	3.540	6.670
868	29.10	68.00	1.290	0.545	4.590	9.750
869	22.20	52.30	1.120	0.422	3.160	6.390
870	31.90	76.20	1.460	0.529	4.360	8.620
871	29.90	69.80	1.390	0.582	4.300	9.630
872	22.90	52.70	1.030	0.392	3.020	5.890
873	33.00	75.20	1.330	0.548	4.450	9.130
874	22.60	50.20	0.621	0.349	0.000	6.410
875	24.80	55.50	1.160	0.444	3.110	7.670
876	24.60	56.60	1.170	0.507	4.340	7.770
877	26.70	61.40	1.110	0.411	3.310	6.950
878	26.90	73.90	1.070	0.373	3.740	7.300
879	23.30	56.70	0.966	0.413	3.050	7.080
880	27.40	60.00	0.971	0.419	3.250	7.840
881	27.90	66.90	0.957	0.478	3.050	9.440
882	25.40	62.30	1.040	0.432	2.670	7.610
883	24.90	59.40	1.060	0.420	3.730	7.820
884	30.80	75.10	1.390	0.468	3.680	9.060
885	26.90	69.80	1.130	0.495	2.710	8.460
886	21.20	51.30	0.886	0.385	2.490	6.500
887	27.30	65.40	1.050	0.506	4.030	8.510
888	28.50	69.10	1.290	0.497	3.260	9.840
889	24.30	56.80	0.861	0.417	3.460	7.760
890	27.50	35.30	0.996	0.489	3.550	9.960
891	25.70	63.20	1.160	0.426	2.940	8.870
892	30.30	80.00	1.410	0.483	3.940	9.330
893	25.30	59.30	1.140	0.410	4.490	8.030
894	25.30	72.30	1.440	0.502	2.600	9.640
896	27.80	68.10	1.050	0.449	2.950	8.340
897	23.10	57.90	0.804	0.377	2.820	7.920

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Table 3 cont'd. Final Sample Concentration Values

Id	Ta (ppm)	Cr (ppm)	Mn (ppm)	Fe (%)	Co (ppm)	Sb (ppm)
852	1.480	394.0	758.0	6.280	24.900	1.590
853	1.120	299.0	722.0	4.690	19.500	1.040
854	1.410	346.0	830.0	5.890	29.800	1.130
855	0.000	394.0	968.0	6.910	28.400	1.430
856	1.020	342.0	779.0	6.210	22.700	1.160
857	1.590	458.0	1220.0	7.270	32.800	1.480
858	1.920	318.0	934.0	7.060	26.900	1.460
859	0.000	450.0	1220.0	7.420	36.600	0.000
860	1.940	441.0	784.0	7.240	24.000	0.000
861	1.500	299.0	1140.0	7.060	30.300	0.929
862	2.110	383.0	957.0	6.990	26.500	0.630
863	1.780	352.0	981.0	7.160	28.100	1.980
864	1.870	366.0	875.0	6.810	29.000	0.000
865	1.740	367.0	1220.0	6.950	29.000	1.370
866	2.030	587.0	830.0	6.160	29.100	1.010
867	1.350	338.0	1030.0	5.430	24.000	0.777
868	1.860	420.0	1040.0	7.500	34.400	2.510
869	1.350	263.0	771.0	5.020	26.300	0.859
870	1.690	364.0	1180.0	6.610	30.700	1.690
871	2.300	297.0	1060.0	6.790	29.800	1.150
872	1.670	330.0	791.0	4.860	21.500	0.782
873	1.360	342.0	936.0	6.120	27.300	0.000
874	0.000	228.0	761.0	5.180	28.200	0.000
875	0.769	383.0	922.0	5.460	24.200	0.000
876	1.360	363.0	888.0	5.520	33.200	0.000
877	0.000	386.0	1090.0	5.690	23.800	0.000
878	1.350	286.0	723.0	5.940	25.600	0.769
879	1.410	377.0	1390.0	5.120	22.500	0.000
880	3.420	303.0	762.0	6.680	20.000	0.000
881	1.650	315.0	970.0	6.570	26.900	1.860
882	1.560	319.0	780.0	5.920	19.600	1.790
883	0.983	303.0	955.0	5.500	21.700	0.000
884	0.957	432.0	1070.0	7.660	0.000	0.000
885	1.410	350.0	796.0	6.220	26.200	1.040
886	1.110	254.0	1020.0	5.180	22.500	1.120
887	0.884	410.0	748.0	6.770	19.800	0.000
888	1.030	347.0	1190.0	7.630	37.000	2.300
889	0.000	286.0	1070.0	6.320	25.700	0.000
890	1.430	258.0	928.0	6.810	26.700	0.000
891	1.240	302.0	990.0	6.340	25.300	1.030
892	1.400	384.0	1120.0	6.340	35.700	0.000
893	0.000	313.0	917.0	5.820	18.700	0.982
894	3.590	245.0	928.0	6.130	23.800	0.000
896	1.470	331.0	999.0	6.880	23.300	1.230
897	0.000	252.0	771.0	5.630	20.900	0.000

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Table 3 cont'd. Final Sample Concentration Values

Id	Ca (%)	Sm (ppm)	Yb (ppm)	Sr (ppm)
852	18.900	5.160	2.680	556.0
853	19.000	4.620	1.920	465.0
854	13.100	4.530	2.320	702.0
855	18.500	7.070	2.830	0.0
856	20.400	5.480	2.620	575.0
857	13.900	1.510	2.990	349.0
858	16.900	5.090	2.830	426.0
859	16.000	7.820	2.950	0.0
860	17.500	5.250	2.360	302.0
861	15.400	4.900	3.140	302.0
862	18.600	3.660	2.780	588.0
863	17.200	5.070	2.710	397.0
864	18.200	3.460	2.680	525.0
865	16.900	5.350	2.850	629.0
866	9.710	5.840	3.190	459.0
867	11.900	5.660	2.490	433.0
868	18.800	5.310	2.680	408.0
869	18.200	3.050	1.970	560.0
870	12.100	5.710	3.000	398.0
871	17.500	4.430	2.890	318.0
872	21.200	3.650	1.940	740.0
873	13.100	4.410	2.750	577.0
874	14.800	4.580	1.940	0.0
875	12.300	4.650	2.530	330.0
876	12.100	2.500	2.630	0.0
877	11.800	5.350	2.300	0.0
878	8.440	3.380	2.160	0.0
879	21.500	4.060	2.250	658.0
880	15.800	4.860	2.530	0.0
881	19.000	5.490	2.640	3650.0
882	21.600	2.950	2.460	501.0
883	17.900	5.070	2.440	949.0
884	18.900	5.380	2.830	349.0
885	20.700	3.560	2.630	926.0
886	20.300	4.130	2.090	465.0
887	15.800	4.590	2.620	742.0
888	15.200	5.080	2.880	337.0
889	19.800	4.890	2.250	0.0
890	17.600	4.500	2.770	829.0
891	15.900	3.970	2.530	498.0
892	15.900	3.230	2.770	887.0
893	17.300	5.460	2.270	0.0
894	19.000	3.690	3.040	1200.0
896	18.600	3.840	2.610	480.0
897	14.700	4.070	2.140	0.0

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Table 3 cont'd. Final Sample Concentration Values

Id	Site	Loc.	Per.	Type	Site Size	GAJ No.
852	20	1	7	300	0.0	0.00
853	20	1	7	352	0.0	0.00
854	20	1	7	353	0.0	0.00
855	20	1	7	301	0.0	0.00
856	20	1	7	301	0.0	0.00
857	20	1	7	301	0.0	0.00
858	20	1	7	301	0.0	0.00
859	20	1	7	301	0.0	0.00
860	20	1	7	304	0.0	0.00
861	20	1	20	370	0.0	0.00
862	20	1	20	370	0.0	0.00
863	20	1	20	370	0.0	0.00
864	20	1	20	370	0.0	0.00
865	20	1	20	370	0.0	0.00
866	20	1	20	371	0.0	0.00
867	20	1	20	372	0.0	0.00
868	20	1	20	373	0.0	0.00
869	20	1	20	374	0.0	0.00
870	20	1	20	370	0.0	0.00
871	20	1	20	370	0.0	0.00
872	20	1	63	380	0.0	0.00
873	20	1	63	381	0.0	0.00
874	20	1	63	382	0.0	0.00
875	20	1	63	383	0.0	0.00
876	20	1	63	384	0.0	0.00
877	20	1	63	385	0.0	0.00
878	20	1	63	381	0.0	0.00
879	Susa	1	7	306	0.0	0.00
880	Susa	1	7	306	0.0	0.00
881	Susa	1	7	306	0.0	0.00
882	Susa	1	7	300	0.0	0.00
883	Susa	1	7	307	0.0	0.00
884	Susa	1	7	301	0.0	0.00
885	Susa	1	7	301	0.0	0.00
886	Susa	1	7	308	0.0	0.00
887	Susa	1	7	309	0.0	0.00
888	Susa	1	7	301	0.0	0.00
889	Susa	1	7	301	0.0	0.00
890	Susa	1	7	301	0.0	0.00
891	28	1	7	301	0.0	0.00
892	28	1	7	301	0.0	0.00
893	28	1	7	301	0.0	0.00
894	28	1	7	301	0.0	0.00
896	13	1	7	301	0.0	0.00
897	13	1	7	301	0.0	0.00

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Table 3 cont'd. Final Sample Concentration Values

Id	Na (%)	K (%)	Rb (ppm)	Cs (ppm)	Ba (ppm)	Sc (ppm)
898	0.849	3.210	63.400	2.600	281.0	28.70
899	1.420	0.457	28.100	5.530	1010.0	28.30
900	1.070	1.380	22.500	4.060	266.0	24.10
901	1.180	2.740	31.900	4.910	495.0	28.80
902	1.510	0.961	16.400	4.580	413.0	30.70
903	1.220	2.410	50.900	5.360	92.6	25.90
904	0.794	2.630	35.500	1.530	450.0	25.50
905	1.360	1.420	39.300	5.930	327.0	32.30
906	1.120	1.020	0.000	3.600	358.0	24.90
907	1.310	1.430	33.900	5.650	378.0	27.00
908	1.470	1.180	30.000	4.990	270.0	27.00
909	0.978	0.880	35.000	3.380	731.0	28.60
910	0.494	2.360	61.900	4.770	389.0	24.40
911	1.680	1.000	20.900	4.970	310.0	29.60
912	1.510	1.090	0.000	4.500	314.0	29.70
913	1.280	1.620	29.700	2.450	258.0	16.20
914	1.040	1.900	34.000	2.810	157.0	16.30
915	1.160	0.819	35.600	7.250	402.0	24.90
916	1.110	1.660	26.900	4.330	643.0	22.90
917	0.930	3.000	47.000	4.070	249.0	23.10
918	1.370	1.300	0.000	3.710	465.0	20.20
919	0.727	1.990	39.000	2.500	348.0	21.10
920	0.520	1.850	57.900	4.210	232.0	26.10
921	0.000	0.000	50.400	2.990	500.0	22.40
922	0.516	0.803	36.500	2.060	478.0	18.30
923	0.600	1.760	61.200	3.250	300.0	16.80
924	0.835	1.570	29.300	3.150	702.0	15.30
925	0.898	0.872	15.400	3.900	343.0	23.40
926	0.620	1.300	48.100	2.010	543.0	14.70
927	0.000	0.000	37.200	2.710	451.0	21.60
928	1.930	2.870	24.200	2.030	205.0	29.90
929	1.560	1.410	20.400	5.150	212.0	29.70
930	1.530	1.640	0.000	5.390	331.0	29.70
931	1.810	1.950	48.400	5.470	192.0	29.20
932	1.510	0.889	5.310	4.440	261.0	27.10
933	1.380	2.460	77.800	4.830	513.0	28.40
934	1.120	1.890	75.200	4.020	367.0	30.20
936	1.300	2.290	78.100	5.290	355.0	32.00
937	1.760	2.180	96.900	4.270	384.0	30.75
938	0.967	1.850	38.500	1.950	266.0	14.60
939	0.703	1.600	25.800	2.060	659.0	15.00
940	1.060	0.745	0.000	4.220	552.0	21.70
941	0.601	1.330	37.500	2.160	551.0	15.90
942	1.800	2.300	22.200	2.940	161.0	20.30
943	0.434	1.580	60.100	3.790	769.0	22.10

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Table 3 cont'd. Final Sample Concentration Values

Id	La (ppm)	Ce (ppm)	Eu (ppm)	Lu (ppm)	Hf (ppm)	Th (ppm)
898	29.40	69.60	1.190	0.475	2.030	8.290
899	29.00	70.40	1.190	0.460	4.320	9.430
900	25.50	60.20	0.538	0.439	3.360	6.730
901	27.00	86.70	1.310	0.462	3.210	8.910
902	28.10	70.60	1.100	0.413	4.910	10.200
903	28.80	66.90	1.130	0.387	4.550	7.450
904	26.00	61.70	0.878	0.418	2.870	8.470
905	32.30	77.00	1.180	0.557	3.650	11.000
906	25.40	58.00	1.160	0.388	3.340	7.350
907	25.10	69.30	1.350	0.509	3.750	8.940
908	26.20	64.40	1.190	0.426	4.350	8.340
909	28.80	66.20	1.230	0.548	3.250	9.150
910	24.60	60.00	1.080	0.413	2.740	7.950
911	28.90	70.60	1.230	0.463	3.450	9.370
912	29.00	65.90	1.190	0.444	3.520	8.840
913	20.70	49.60	0.956	0.347	3.000	5.660
914	19.70	56.00	0.763	0.298	2.600	5.690
915	28.40	66.20	1.280	0.463	3.150	8.670
916	26.20	61.50	1.410	0.430	3.250	7.140
917	25.50	62.30	1.180	0.398	2.730	7.390
918	23.60	48.30	1.330	0.425	3.840	5.690
919	23.30	37.40	1.260	0.358	0.000	5.350
920	24.90	45.90	1.310	0.418	0.000	5.080
921	24.60	48.20	1.290	0.373	2.280	5.630
922	19.80	43.00	1.120	0.297	4.410	5.240
923	19.30	41.90	1.020	0.339	3.940	5.190
924	19.50	38.70	0.872	0.309	2.470	4.550
925	25.50	50.90	1.040	0.378	3.230	5.580
926	18.80	38.30	0.903	0.309	1.890	4.470
927	27.00	51.60	1.260	0.429	2.600	6.160
928	29.60	58.90	1.410	0.461	2.790	8.580
929	30.20	59.60	1.840	0.497	3.250	8.710
930	27.90	58.10	1.620	0.468	4.040	7.740
931	30.30	59.90	1.610	0.503	2.820	9.280
932	29.60	59.70	1.590	0.491	2.610	7.350
933	33.60	70.40	1.370	0.562	4.220	8.270
934	36.00	66.30	2.300	0.543	3.950	6.910
936	40.70	80.90	1.840	0.582	3.830	8.040
937	40.00	72.10	2.510	0.649	4.690	8.590
938	20.00	64.90	1.260	0.331	2.610	4.230
939	18.80	37.90	1.010	0.290	2.380	4.370
940	25.20	49.90	0.909	0.396	4.130	6.110
941	19.40	40.70	0.857	0.315	6.110	4.830
942	23.50	42.10	1.180	0.000	2.720	5.660
943	24.20	47.20	1.270	0.340	6.030	5.260

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Table 3 cont'd. Final Sample Concentration Values

Id	Ta (ppm)	Cr (ppm)	Mn (ppm)	Fe (%)	Co (ppm)	Sb (ppm)
898	1.440	333.0	882.0	6.930	25.900	1.040
899	2.280	351.0	966.0	6.690	27.000	0.000
900	0.000	278.0	1040.0	5.800	25.800	0.000
901	1.110	338.0	830.0	7.070	23.700	0.000
902	0.000	336.0	795.0	7.250	27.500	0.000
903	0.000	436.0	727.0	6.070	20.900	0.000
904	1.440	279.0	902.0	6.320	23.200	0.000
905	1.200	334.0	1100.0	7.810	33.100	0.680
906	1.400	290.0	756.0	5.750	23.400	0.000
907	1.850	346.0	1030.0	6.440	24.300	1.150
908	0.000	304.0	838.0	6.630	20.600	1.150
909	1.740	340.0	1040.0	6.860	29.300	0.000
910	1.510	304.0	1080.0	5.900	27.300	0.000
911	1.360	332.0	856.0	7.280	29.200	0.000
912	2.830	309.0	1130.0	7.200	33.000	0.000
913	0.933	367.0	886.0	3.910	17.200	1.160
914	0.000	292.0	811.0	3.760	14.900	0.000
915	1.270	371.0	858.0	6.000	22.200	0.000
916	1.220	328.0	974.0	5.560	22.200	0.642
917	1.540	328.0	1010.0	5.630	26.200	0.000
918	0.825	364.0	982.0	4.840	29.500	0.000
919	0.848	425.0	959.0	4.950	0.000	0.000
920	1.120	364.0	1040.0	6.130	0.000	0.000
921	1.350	298.0	0.0	5.540	30.900	0.984
922	0.864	206.0	805.0	4.440	24.700	0.000
923	0.000	274.0	724.0	4.140	23.000	0.000
924	0.000	295.0	808.0	3.470	18.700	0.000
925	0.000	319.0	883.0	5.590	31.200	0.000
926	0.000	285.0	632.0	3.680	19.000	0.000
927	1.280	516.0	0.0	5.210	23.000	0.000
928	0.000	382.0	888.0	7.320	26.600	0.000
929	0.000	375.0	923.0	7.190	24.400	2.220
930	0.000	376.0	1060.0	7.310	33.400	0.000
931	0.000	373.0	1130.0	6.980	36.700	1.030
932	1.470	363.0	1210.0	6.610	32.200	0.000
933	1.240	756.0	675.0	7.510	29.800	0.000
934	0.993	679.0	525.0	6.900	34.000	0.000
936	2.360	710.0	616.0	7.600	34.000	0.000
937	1.730	101.0	374.0	5.170	26.700	0.000
938	0.000	398.0	711.0	3.460	15.400	0.000
939	0.000	334.0	764.0	3.620	16.100	0.000
940	0.000	338.0	957.0	5.330	27.100	0.000
941	1.040	302.0	676.0	3.910	30.900	0.000
942	0.000	390.0	961.0	4.910	21.400	0.000
943	0.000	290.0	849.0	5.390	33.200	0.000

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Table 3 cont'd. Final Sample Concentration Values

Id	Ca (%)	Sm (ppm)	Yb (ppm)	Sr (ppm)
898	17.100	6.160	2.600	4330.0
899	17.100	5.690	2.470	1240.0
900	20.300	5.400	2.550	0.0
901	16.000	5.510	2.640	1160.0
902	17.600	6.280	2.430	0.0
903	13.500	5.640	2.330	0.0
904	15.300	4.780	2.200	0.0
905	17.300	6.160	3.060	945.0
906	18.400	5.410	2.490	965.0
907	15.700	6.350	2.750	665.0
908	18.300	5.610	2.420	1660.0
909	16.200	6.000	3.080	662.0
910	16.500	3.250	2.480	710.0
911	16.600	5.530	2.900	672.0
912	19.400	5.220	2.630	0.0
913	25.700	2.420	2.150	370.0
914	18.700	3.760	1.780	0.0
915	16.600	5.270	2.820	497.0
916	19.600	6.160	2.470	976.0
917	14.800	5.170	2.470	407.0
918	19.000	4.840	1.810	0.0
919	19.900	5.790	1.610	0.0
920	13.100	5.820	1.860	0.0
921	16.300	4.220	1.790	353.0
922	25.800	4.080	1.430	0.0
923	16.500	4.720	1.660	0.0
924	22.600	3.890	1.460	0.0
925	17.600	4.990	1.820	0.0
926	20.400	4.430	1.550	0.0
927	15.700	5.860	2.260	0.0
928	14.100	5.050	2.340	0.0
929	16.700	7.400	2.340	494.0
930	18.600	5.430	2.380	0.0
931	16.500	5.120	2.590	0.0
932	18.300	6.190	2.740	0.0
933	0.000	7.200	2.640	0.0
934	0.000	7.130	2.370	280.0
936	0.000	9.160	3.030	0.0
937	0.000	8.710	3.230	0.0
938	21.700	4.150	1.620	0.0
939	24.700	4.520	1.620	0.0
940	21.100	6.360	2.020	0.0
941	25.700	4.200	1.640	0.0
942	13.600	5.300	1.840	0.0
943	20.700	5.300	1.790	0.0

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Table 3 cont'd. Final Sample Concentration Values

Id	Site	Loc.	Per.	Type	Site Size	GAJ No.
898	20	1	7	306	0.0	0.00
899	4	4	7	310	0.0	0.00
900	4	4	7	310	0.0	0.00
901	6	4	7	310	0.0	0.00
902	16	1	7	310	0.0	0.00
903	28	1	7	310	0.0	0.00
904	101	6	7	310	0.0	0.00
905	112	4	7	310	0.0	0.00
906	112	4	7	310	0.0	0.00
907	113	4	7	310	0.0	0.00
908	204	6	7	310	0.0	0.00
909	239	3	7	310	0.0	0.00
910	239	3	7	310	0.0	0.00
911	266	4	7	310	0.0	0.00
912	266	4	7	310	0.0	0.00
913	1	4	4	43	4.0	0.00
914	1	4	4	43	4.0	0.00
915	1	4	4	37	0.0	0.00
916	1	4	4	41	4.0	0.00
917	1	4	4	45	0.0	0.00
918	1	4	56	37	0.0	0.00
919	1	4	56	37	0.0	0.00
920	1	4	56	38	4.0	0.00
921	1	4	56	38	4.0	0.00
922	1	4	56	38	4.0	0.00
923	1	4	56	42	4.0	0.00
924	1	4	4	42	4.0	0.00
925	1	4	56	42	4.0	0.00
926	1	4	56	42	4.0	0.00
927	1	4	64	213	0.0	0.00
928	1	4	67	214	0.0	0.00
929	1	4	65	215	0.0	0.00
930	1	4	64	216	0.0	0.00
931	1	4	69	217	0.0	0.00
932	1	4	65	215	0.0	0.00
933	1	4	65	109	0.0	0.00
934	1	4	69	104	0.0	0.00
936	1	4	69	110	0.0	0.00
937	1	4	65	111	0.0	0.00
938	1	4	56	43	4.0	0.00
939	1	4	56	43	4.0	0.00
940	1	4	56	43	4.0	0.00
941	1	4	56	43	4.0	0.00
942	1	4	56	43	4.0	0.00
943	1	4	56	39	4.0	0.00

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Table 3 cont'd. Final Sample Concentration Values

Id	Na (%)	K (%)	Rb (ppm)	Cs (ppm)	Ba (ppm)	Sc (ppm)
944	0.713	1.420	44.900	2.120	263.0	16.20
945	0.713	1.720	33.500	2.020	235.0	15.40
946	0.739	2.150	50.500	2.780	401.0	22.70
947	0.531	2.080	46.800	2.480	578.0	20.30
948	1.080	0.983	19.800	4.890	361.0	25.20
949	0.735	1.960	65.500	2.780	732.0	22.10
950	1.800	1.160	0.000	4.690	156.0	25.50
951	2.190	0.897	7.160	5.510	218.0	24.60
952	2.250	1.100	0.000	6.300	138.0	30.90
953	1.620	1.270	31.700	6.010	220.0	29.20
954	1.530	1.340	22.300	3.420	192.0	28.30
955	1.840	1.230	16.400	5.650	320.0	31.30
956	0.658	1.810	47.500	3.380	308.0	15.80
957	0.994	1.520	51.400	2.790	295.0	20.80
958	0.000	0.000	62.400	2.650	363.0	22.00
959	1.220	2.500	61.000	3.260	394.0	20.60
960	1.140	2.020	40.400	2.410	286.0	19.50
961	0.788	2.560	86.700	4.450	277.0	24.50
962	0.835	2.480	67.600	3.540	237.0	21.70
963	1.090	2.260	0.000	3.230	259.0	19.90
964	0.771	2.920	73.100	3.760	373.0	27.00
965	0.665	2.420	87.600	3.550	350.0	20.50
966	0.919	2.860	48.700	4.620	322.0	24.80
967	1.060	2.630	52.100	3.280	271.0	21.10
968	1.490	2.770	40.500	0.000	431.0	16.30
969	2.160	2.380	58.200	3.770	294.0	16.50
970	1.460	3.180	98.700	2.790	353.0	16.00
971	2.160	3.430	60.500	4.030	272.0	17.50
972	1.980	2.770	0.000	4.670	346.0	19.20
973	1.960	2.610	46.300	4.320	434.0	20.60
974	1.880	2.270	49.000	3.240	335.0	18.90
975	1.760	1.600	33.400	1.650	151.0	13.10
976	1.990	2.040	27.500	2.220	339.0	14.80
977	1.530	1.800	50.000	3.840	242.0	16.30
978	1.620	2.050	47.900	3.180	313.0	13.80
979	1.530	2.540	30.200	3.370	233.0	15.00
980	1.660	2.510	49.700	2.520	356.0	13.50
981	1.510	1.870	52.200	3.620	226.0	14.80
982	1.970	2.160	60.100	3.060	251.0	16.30
983	1.660	2.000	32.700	3.080	224.0	16.40
984	1.780	1.970	35.600	2.450	290.0	13.80
985	1.510	2.620	54.900	2.460	347.0	15.00
986	2.100	2.770	75.100	3.470	234.0	13.80
987	1.610	0.663	8.340	2.030	256.0	18.60
988	1.980	0.872	20.000	0.657	382.0	21.60

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Table 3 cont'd. Final Sample Concentration Values

Id	La (ppm)	Ce (ppm)	Eu (ppm)	Lu (ppm)	Hf (ppm)	Th (ppm)
944	20.30	41.40	0.758	0.367	4.900	5.070
945	17.50	36.10	1.090	0.276	1.750	4.350
946	24.80	52.10	1.310	0.421	3.460	6.690
947	21.50	39.40	0.000	0.731	0.000	4.210
948	25.60	52.70	1.710	0.366	2.530	6.020
949	24.30	51.60	1.270	0.361	2.470	6.320
950	26.00	53.70	1.420	0.445	2.620	6.990
951	27.40	55.10	1.470	0.505	2.610	7.880
952	30.20	64.10	1.620	0.499	2.640	8.280
953	28.20	58.80	1.350	0.433	2.960	8.850
954	27.70	56.80	1.590	0.396	2.940	7.950
955	30.30	64.30	1.250	0.478	2.750	9.200
956	18.40	37.40	0.886	0.292	2.220	4.560
957	22.50	45.30	1.260	0.388	1.980	5.160
958	22.40	43.90	0.974	0.355	3.280	5.620
959	24.60	49.60	1.080	0.408	2.650	5.940
960	22.30	44.40	1.380	0.336	1.940	4.780
961	26.20	66.40	1.180	0.422	3.320	6.540
962	21.10	57.90	1.160	0.338	2.710	7.140
963	21.30	72.90	1.230	0.289	1.590	6.100
964	26.60	68.30	1.380	0.471	2.100	8.000
965	22.20	55.10	1.060	0.405	3.280	6.750
966	25.50	67.90	1.240	0.447	2.100	7.780
967	21.60	69.30	1.140	0.408	4.230	5.870
968	20.20	59.20	0.768	0.282	2.270	6.450
969	19.80	51.90	1.140	0.360	1.500	6.320
970	18.10	48.90	1.090	0.324	3.660	6.350
971	19.50	52.40	1.080	0.341	2.650	6.490
972	23.60	74.30	1.130	0.388	3.190	6.390
973	23.90	62.40	1.220	0.401	2.380	7.070
974	22.20	60.50	1.080	0.372	2.400	6.570
975	15.70	38.60	0.890	0.279	1.770	4.500
976	16.20	41.10	0.898	0.258	2.150	4.510
977	18.30	43.00	0.947	0.269	2.670	4.370
978	15.40	38.30	0.841	0.257	1.620	4.060
979	17.20	42.50	0.907	0.286	1.960	4.800
980	16.30	45.80	0.855	0.305	1.630	4.200
981	16.70	54.20	0.909	0.297	1.750	5.100
982	20.40	37.60	1.040	0.325	3.120	5.510
983	20.80	52.60	0.975	0.330	2.110	5.380
984	18.80	49.00	1.110	0.285	1.640	5.590
985	17.60	52.80	0.934	0.308	1.530	5.310
986	16.90	40.00	0.849	0.279	2.580	5.030
987	23.80	59.30	1.220	0.404	2.320	7.260
988	24.90	60.10	1.180	0.415	1.610	6.610

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Table 3 cont'd. Final Sample Concentration Values

Id	Ta (ppm)	Cr (ppm)	Mn (ppm)	Fe (%)	Co (ppm)	Sb (ppm)
944	0.000	300.0	675.0	3.980	28.600	0.000
945	0.000	264.0	660.0	3.710	15.200	0.000
946	1.290	381.0	940.0	5.580	30.800	0.000
947	1.220	249.0	729.0	4.910	47.900	0.000
948	0.000	306.0	830.0	5.990	28.400	0.000
949	0.000	321.0	866.0	5.450	23.200	0.000
950	0.000	361.0	941.0	6.170	24.800	0.000
951	1.150	301.0	836.0	5.830	24.000	0.000
952	1.560	439.0	1140.0	7.620	28.800	1.970
953	0.000	338.0	1200.0	7.110	27.100	3.110
954	0.614	395.0	969.0	6.980	28.000	0.000
955	1.080	400.0	1010.0	7.670	32.300	1.400
956	0.000	298.0	725.0	3.650	17.200	0.000
957	0.000	374.0	878.0	5.070	23.900	0.000
958	1.120	338.0	0.0	5.370	25.000	0.926
959	0.841	496.0	912.0	5.020	23.100	0.000
960	0.000	315.0	741.0	4.790	20.400	0.000
961	0.000	376.0	1100.0	5.860	27.600	0.000
962	0.000	313.0	944.0	5.000	26.300	0.000
963	0.000	361.0	875.0	4.640	22.800	0.000
964	1.560	434.0	1240.0	5.950	34.900	0.000
965	0.000	356.0	931.0	4.940	25.500	0.000
966	1.350	397.0	1090.0	5.930	27.000	0.000
967	0.000	403.0	930.0	5.040	33.400	0.000
968	0.000	340.0	881.0	3.640	17.100	0.000
969	0.000	268.0	660.0	4.020	19.100	1.390
970	0.000	268.0	793.0	3.970	21.100	0.000
971	0.000	297.0	764.0	4.130	21.600	0.000
972	0.000	478.0	944.0	4.540	25.100	2.130
973	0.000	540.0	998.0	4.710	25.900	0.000
974	0.000	464.0	962.0	4.510	22.600	0.000
975	0.000	341.0	724.0	3.080	13.800	0.000
976	0.000	295.0	738.0	3.520	16.200	1.090
977	0.000	317.0	730.0	3.820	17.900	0.000
978	0.000	316.0	715.0	4.380	14.300	0.000
979	0.000	376.0	734.0	3.540	16.900	0.000
980	0.000	405.0	769.0	3.100	15.500	0.000
981	0.000	322.0	721.0	3.560	17.100	0.000
982	0.000	309.0	813.0	3.770	18.400	0.000
983	0.000	343.0	678.0	3.790	17.800	0.000
984	0.000	364.0	674.0	3.290	16.900	0.000
985	0.000	359.0	791.0	3.610	18.300	0.000
986	0.000	394.0	788.0	3.230	15.000	0.000
987	1.520	446.0	736.0	4.460	24.000	0.000
988	0.000	410.0	1020.0	5.140	27.800	0.000

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Table 3 cont'd. Final Sample Concentration Values

Id	Ca (%)	Sm (ppm)	Yb (ppm)	Sr (ppm)
944	22.200	2.600	1.750	0.0
945	16.800	4.190	1.370	0.0
946	15.800	5.070	2.020	0.0
947	37.300	5.160	1.880	0.0
948	20.400	6.210	1.970	1190.0
949	19.900	5.810	1.840	0.0
950	17.400	5.890	2.240	0.0
951	18.600	6.970	2.610	0.0
952	16.200	6.310	2.420	0.0
953	15.700	6.370	2.120	0.0
954	16.800	6.310	2.140	0.0
955	17.600	5.710	2.230	0.0
956	19.500	3.770	1.580	0.0
957	17.100	4.420	1.850	0.0
958	16.700	5.010	1.770	0.0
959	18.100	6.080	2.140	0.0
960	16.100	4.980	1.730	710.0
961	13.900	5.260	1.950	0.0
962	18.000	3.540	1.900	0.0
963	17.900	5.030	1.860	0.0
964	14.400	6.730	2.470	0.0
965	15.000	2.990	1.970	0.0
966	16.100	6.650	2.380	0.0
967	13.800	4.900	2.110	0.0
968	18.700	4.800	1.800	2540.0
969	23.500	5.630	1.910	0.0
970	20.200	4.620	1.910	0.0
971	19.300	5.210	1.750	0.0
972	17.400	5.610	2.000	0.0
973	17.400	5.040	2.250	0.0
974	17.700	6.410	2.140	0.0
975	19.900	3.560	1.310	0.0
976	17.300	4.150	1.500	0.0
977	20.100	4.300	1.490	0.0
978	19.100	4.000	1.250	0.0
979	19.700	4.490	1.770	0.0
980	20.200	3.980	1.370	0.0
981	21.900	3.630	1.620	0.0
982	21.000	4.770	1.720	0.0
983	20.700	5.870	1.450	0.0
984	23.000	4.310	1.620	0.0
985	20.400	4.300	1.460	0.0
986	20.400	4.340	1.310	0.0
987	22.800	2.800	2.170	0.0
988	17.600	5.240	2.240	1500.0

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Table 3 cont'd. Final Sample Concentration Values

Id	Site	Loc.	Per.	Type	Site Size	GAJ No.
944	1	4	56	39	4.0	0.00
945	1	4	56	39	4.0	0.00
946	1	4	56	41	4.0	0.00
947	1	4	56	40	4.0	0.00
948	1	4	56	40	4.0	0.00
949	1	4	56	46	4.0	0.00
950	1	4	74	218	0.0	0.00
951	1	4	74	205	0.0	0.00
952	1	4	64	217	0.0	0.00
953	1	4	64	217	0.0	0.00
954	1	4	64	217	0.0	0.00
955	1	4	64	217	0.0	0.00
956	1	4	56	47	4.0	0.00
957	76	2	3	43	2.0	0.00
958	76	2	3	43	2.0	0.00
959	76	2	3	43	2.0	0.00
960	76	2	3	38	2.0	0.00
961	76	2	3	38	2.0	0.00
962	76	2	2	35	1.0	0.00
963	76	2	2	37	1.0	0.00
964	76	2	2	37	1.0	0.00
965	76	2	3	39	2.0	0.00
966	76	2	3	39	2.0	0.00
967	76	2	2	36	1.0	0.00
968	Susa	1	5	48	0.0	0.00
969	Susa	1	5	48	0.0	0.00
970	Susa	1	5	48	0.0	0.00
971	Susa	1	5	48	0.0	0.00
972	Susa	1	5	48	0.0	0.00
973	Susa	1	5	48	0.0	0.00
974	Susa	1	5	48	0.0	0.00
975	Susa	1	5	49	0.0	0.00
976	Susa	1	5	49	0.0	0.00
977	20	1	1	49	0.0	0.00
978	20	1	1	49	0.0	0.00
979	Susa	1	5	49	0.0	0.00
980	Susa	1	5	49	0.0	0.00
981	Susa	1	5	50	0.0	0.00
982	Susa	1	5	50	0.0	0.00
983	20	1	1	50	0.0	0.00
984	20	1	1	50	0.0	0.00
985	Susa	1	5	50	0.0	0.00
986	Susa	1	5	50	0.0	0.00
987	59	2	5	43	4.0	0.00
988	59	2	5	43	4.0	0.00

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Table 3 cont'd. Final Sample Concentration Values

Id	Na (%)	K (%)	Rb (ppm)	Cs (ppm)	Ba (ppm)	Sc (ppm)
989	1.670	0.000	10.600	2.830	256.0	21.00
990	0.580	1.120	0.000	1.210	441.0	23.90
991	0.674	1.000	20.800	0.000	273.0	24.70
992	1.370	0.152	15.700	3.630	826.0	28.30
993	1.450	0.926	21.900	2.060	837.0	17.80
994	0.816	0.949	43.300	0.869	858.0	21.20
995	1.620	0.779	21.800	1.850	282.0	16.80
996	1.360	0.513	0.000	3.440	381.0	24.40
997	0.774	1.770	57.500	3.120	290.0	17.70
998	1.490	1.240	36.700	3.490	395.0	22.00
999	1.170	2.460	45.900	3.490	253.0	22.00
1000	1.070	2.310	46.000	1.260	352.0	20.70
1001	1.010	2.230	50.100	1.860	473.0	18.50
1002	1.790	1.890	17.200	3.620	225.0	24.30
1003	1.600	2.230	52.400	2.330	224.0	21.50
1004	1.020	1.940	44.700	2.410	317.0	17.20
1005	0.870	1.930	44.300	2.670	242.0	20.40
1006	0.854	1.680	54.600	2.990	346.0	19.10
1007	1.020	1.970	45.300	2.350	754.0	18.00
1008	0.836	1.740	39.900	2.040	265.0	16.50
1009	0.917	1.840	32.200	1.860	350.0	16.80
1010	1.160	2.400	33.900	2.450	425.0	20.50
1011	0.836	1.930	41.300	2.600	158.0	18.40
1012	1.160	1.920	28.900	1.860	319.0	20.90
1013	1.380	1.590	32.800	3.080	241.0	22.20
1014	0.916	2.070	32.000	2.770	266.0	18.30
1015	0.806	1.860	0.000	1.890	237.0	15.70
1016	1.670	2.820	37.100	3.030	512.0	28.00
1017	1.610	1.960	38.900	2.240	484.0	18.70
1018	1.590	2.590	39.400	3.330	308.0	22.70
1019	1.770	1.440	18.400	2.500	400.0	22.80
1020	1.520	2.160	33.500	3.030	256.0	19.20
1021	1.520	2.440	42.500	3.220	292.0	21.00

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Table 3 cont'd. Final Sample Concentration Values

Id	La (ppm)	Ce (ppm)	Eu (ppm)	Lu (ppm)	Hf (ppm)	Th (ppm)
989	24.60	65.90	1.320	0.424	1.830	6.240
990	24.20	73.20	1.110	0.430	3.060	7.210
991	23.90	60.50	1.140	0.465	3.020	7.300
992	29.40	74.40	1.470	0.514	2.610	8.270
993	22.70	53.20	0.757	0.343	2.550	5.790
994	23.80	55.20	1.120	0.403	2.270	6.150
995	21.30	63.90	1.170	0.385	2.230	6.100
996	23.70	65.10	0.000	0.362	2.040	7.170
997	20.50	79.20	1.200	0.322	2.250	5.740
998	25.40	58.70	1.240	0.429	2.000	6.480
999	23.90	59.60	1.170	0.397	3.110	6.250
1000	23.80	57.10	1.100	0.387	3.540	6.340
1001	20.30	62.60	0.935	0.336	1.460	5.700
1002	26.40	66.50	1.290	0.446	2.020	6.790
1003	24.20	56.20	0.960	0.393	1.610	6.700
1004	17.90	58.20	1.020	0.322	1.790	5.130
1005	22.10	56.10	0.690	0.380	2.220	6.420
1006	20.70	65.70	0.971	0.341	1.940	5.690
1007	21.30	52.00	0.951	0.360	1.480	5.450
1008	20.00	0.00	0.983	0.320	1.850	5.180
1009	21.40	61.40	0.000	0.307	1.390	6.190
1010	22.50	54.20	1.090	0.351	2.130	6.680
1011	19.80	50.60	1.190	0.330	3.070	5.750
1012	23.00	0.00	0.987	0.383	1.780	5.850
1013	25.60	60.50	1.170	0.403	2.590	6.500
1014	20.80	51.20	0.781	0.351	1.680	6.130
1015	17.20	43.20	0.597	0.279	1.610	4.820
1016	31.70	75.80	1.100	0.471	3.450	9.360
1017	23.00	55.10	0.904	0.309	1.820	5.830
1018	25.90	63.30	1.300	0.427	1.700	7.220
1019	25.80	62.70	0.976	0.433	1.830	6.980
1020	20.40	50.90	0.991	0.357	1.530	5.780
1021	23.10	53.00	1.180	0.376	1.540	6.130

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Table 3 cont'd. Final Sample Concentration Values

Id	Ta (ppm)	Cr (ppm)	Mn (ppm)	Fe (%)	Co (ppm)	Sb (ppm)
989	1.610	451.0	1070.0	5.050	28.700	0.000
990	1.460	379.0	938.0	5.630	32.200	0.000
991	0.000	353.0	1010.0	5.740	30.900	0.000
992	2.280	583.0	1300.0	6.610	36.500	0.000
993	0.000	403.0	939.0	4.250	19.500	0.000
994	1.200	376.0	953.0	5.110	26.500	0.000
995	0.000	441.0	813.0	4.070	19.700	2.530
996	1.520	252.0	777.0	5.860	22.500	0.000
997	0.000	214.0	637.0	4.210	18.200	0.000
998	0.000	315.0	935.0	5.090	25.800	0.000
999	0.000	248.0	783.0	5.040	24.100	0.000
1000	0.000	241.0	871.0	4.930	21.800	0.000
1001	0.953	236.0	760.0	4.270	18.900	0.000
1002	1.020	283.0	931.0	5.790	22.600	0.000
1003	0.000	215.0	916.0	4.890	21.600	1.850
1004	1.700	232.0	759.0	4.020	19.200	0.000
1005	0.000	224.0	764.0	4.820	20.200	3.160
1006	0.000	210.0	673.0	4.430	19.100	0.000
1007	1.840	259.0	754.0	4.280	19.500	0.000
1008	0.000	205.0	713.0	3.920	18.600	0.000
1009	0.000	203.0	722.0	4.010	18.400	0.000
1010	0.000	232.0	898.0	4.790	19.400	0.000
1011	0.000	209.0	819.0	4.300	19.400	0.000
1012	0.000	229.0	1080.0	4.960	26.300	0.000
1013	2.870	254.0	804.0	5.350	20.800	0.000
1014	0.000	184.0	949.0	4.270	21.600	0.000
1015	0.000	186.0	638.0	3.650	16.800	0.000
1016	3.630	260.0	1320.0	6.560	31.700	0.000
1017	1.460	247.0	913.0	4.470	20.500	0.000
1018	2.170	249.0	816.0	5.390	23.500	0.000
1019	0.000	319.0	1010.0	5.260	24.000	0.000
1020	0.000	200.0	862.0	4.570	21.300	0.000
1021	1.730	236.0	922.0	4.910	22.800	0.000

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Table 3 cont'd. Final Sample Concentration Values

Id	Ca (%)	Sm (ppm)	Yb (ppm)	Sr (ppm)
989	20.700	5.290	2.220	0.0
990	14.700	5.580	2.020	0.0
991	15.400	5.560	2.450	0.0
992	22.000	6.180	3.000	1810.0
993	21.900	4.490	1.920	0.0
994	19.100	5.480	2.310	2000.0
995	20.200	4.970	2.140	0.0
996	24.100	5.540	1.940	0.0
997	21.100	4.580	1.580	0.0
998	21.900	5.620	1.820	0.0
999	22.800	4.060	2.160	0.0
1000	18.700	5.580	1.800	0.0
1001	19.900	4.060	1.740	0.0
1002	16.900	0.000	2.360	0.0
1003	17.800	5.690	1.920	1900.0
1004	21.300	4.210	1.600	0.0
1005	21.100	4.620	1.830	0.0
1006	19.500	3.200	1.680	0.0
1007	24.700	4.510	1.530	965.0
1008	23.200	3.950	1.620	0.0
1009	20.700	4.470	1.530	0.0
1010	20.300	4.700	1.940	0.0
1011	22.500	4.690	1.470	0.0
1012	18.300	4.920	1.860	0.0
1013	20.000	6.320	2.040	0.0
1014	18.800	3.220	1.880	0.0
1015	16.400	3.040	1.310	0.0
1016	20.100	6.650	2.430	0.0
1017	21.200	4.970	1.770	0.0
1018	20.200	6.550	2.010	0.0
1019	18.300	5.060	2.200	0.0
1020	20.100	4.600	1.790	0.0
1021	20.700	5.650	1.980	0.0

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Table 3 cont'd. Final Sample Concentration Values

Id	Site	Loc.	Per.	Type	Site Size	GAJ No.
989	59	2	5	43	4.0	0.00
990	59	2	5	43	4.0	0.00
991	59	2	5	43	4.0	0.00
992	59	2	5	43	4.0	0.00
993	59	2	5	43	4.0	0.00
994	59	2	5	43	4.0	0.00
995	59	2	5	43	4.0	0.00
996	59	2	5	43	4.0	0.00
997	36	4	5	43	4.0	0.00
998	36	4	5	43	1.0	0.00
999	36	4	5	43	1.0	0.00
1000	36	4	5	43	1.0	0.00
1001	36	4	5	43	1.0	0.00
1002	36	4	5	43	1.0	0.00
1003	36	4	5	43	1.0	0.00
1004	36	4	5	43	1.0	0.00
1005	36	4	5	43	1.0	0.00
1006	36	4	5	43	1.0	0.00
1007	36	4	5	43	1.0	0.00
1008	36	4	5	43	1.0	0.00
1009	36	4	5	43	1.0	0.00
1010	36	4	5	43	1.0	0.00
1011	36	4	5	43	1.0	0.00
1012	36	4	5	43	1.0	0.00
1013	36	4	5	43	1.0	0.00
1014	36	4	5	43	1.0	0.00
1015	36	4	5	43	1.0	0.00
1016	36	4	5	43	1.0	0.00
1017	36	4	5	43	1.0	0.00
1018	36	4	5	43	1.0	0.00
1019	36	4	5	43	1.0	0.00
1020	36	4	5	43	1.0	0.00
1021	36	4	5	43	1.0	0.00

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*NOTES:

Table 3 presents the final oxide concentration values in percentages (%) or parts per million (ppm) for the 965 samples used in the study. The new iron and scandium values for the 15 samples (532, 533, 803, 810, 811, 812, 813, 814, 815, 816, 817, 818, 822, 824, and 829) reactivated at the Smithsonian replace the original BNL values. The final five columns of Table 3 provide codes for site location, period, type, site size (SiSize), and Johnson (1973) sample number (GAJ No.).

Table 4 presents samples by type; the code numbers refer to the original code designations in Table 3.

Table 5 presents samples and their code numbers by period. The code numbers refer to the codes in Table 3.

Table 6 lists samples by site; n = the number of samples per site.

Table 7 lists samples from Johnson's 1973 study used here. The GAJ numbers cross-reference Johnson's original designations.

Additional Codes: The location codes designate the area on the plain where each site is located. The site size code is from Johnson (1973) and applies to Terminal Susa A-Late Uruk sites. The location and site size codes are:

Location:	0	=	Unknown	5	= North
	1	=	West-North	6	= East-North
	2	=	West-South	7	= East-South
	3	=	Far West	8	= Not on Plain
	4	=	Center		

Site Size:	1	=	Village
	2	=	Large Village
	3	=	Small Center
	4	=	Large Center
	5	=	Special Function
	2.1	=	Large then Small Village (Middle-Late Uruk)
	3.1	=	Small Center then Village (Middle-Late Uruk)

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CERAMIC PRODUCTION AND THE DEVELOPMENT OF COMPLEX POLITIES IN LATE PREHISTORIC SOUTHWESTERN IRAN

by

JUDITH C. BERMAN

VOLUME II

A dissertation submitted to the Graduate Faculty in Anthropology in partial fulfillment of the requirements for the degree of Doctor of Philosophy, the City University of New York.

1986

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Table 4. All Samples By Type

Type	Code	Id	Site	Loc.	Per.
Impressed Strip Bowl	33	574	64	2	6
	33	575	64	2	6
	33	576	64	2	6
	33	577	269	2	6
	33	578	269	2	6
	33	579	269	2	6
	33	580	269	2	6
	33	581	269	2	6
	33	701	67	1	6
	33	702	67	1	6
	33	703	67	1	6
	33	704	67	1	6
	33	705	67	1	6
	33	706	108	4	6
	33	707	108	4	6
	33	708	182	6	6
	33	709	182	6	6
	33	710	182	6	6
	33	711	190	7	6
	33	712	190	7	6
	33	713	190	7	6
	33	714	190	7	6
	33	715	190	7	6
	33	716	266	4	6
	33	717	266	4	6
Flared Neck Jar	34	582	64	2	6
	34	583	269	2	6
	34	584	269	2	6
	34	585	269	2	6
Proto Bevel Rim Bowl	35	440	6	4	2
	35	441	6	4	2
	35	442	6	4	2
	35	443	27	1	2
	35	444	27	1	2
	35	445	27	1	2
	35	446	27	1	2
	35	447	49	4	2
	35	448	49	4	2
	35	449	49	4	2
	35	450	61	2	2
	35	451	64	2	2
	35	452	64	2	2

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Table 4 cont'd. All Samples By Type

Type	Code	Id	Site	Loc.	Per.
	35	453	64	2	2
	35	454	90	2	2
	35	455	90	2	2
	35	456	96	2	2
	35	457	96	2	2
	35	458	96	2	2
	35	459	96	2	2
	35	460	96	2	2
	35	461	165	6	2
	35	462	165	6	2
	35	463	240	3	2
	35	586	16	1	2
	35	587	16	1	2
	35	588	16	1	2
	35	589	16	1	2
	35	590	16	1	2
	35	591	24	1	2
	35	592	24	1	2
	35	593	24	1	2
	35	594	32	2	2
	35	595	32	2	2
	35	596	52	1	2
	35	597	52	1	2
	35	598	52	1	2
	35	599	52	1	2
	35	600	76	2	2
	35	601	93	2	2
	35	602	93	2	2
	35	603	93	2	2
	35	604	121	4	2
	35	605	121	4	2
	35	606	121	4	2
	35	607	121	4	2
	35	608	121	4	2
	35	609	153	6	2
	35	610	266	4	2
	35	611	266	4	2
	35	612	284	4	2
	35	633	266	4	2
	35	634	59	2	2
	35	635	59	2	2
	35	636	108	4	2
	35	637	108	4	2
	35	638	108	4	2
	35	639	108	4	2
	35	962	76	2	2

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Table 4 cont'd. All Samples By Type

Type	Code	Id	Site	Loc.	Per.
Neckless Ledge Rim Jar	36	536	6	4	2
	36	537	6	4	2
	36	538	22	1	2
	36	539	27	1	2
	36	540	27	1	2
	36	541	61	2	2
	36	542	96	2	2
	36	543	96	2	2
	36	544	96	2	2
	36	545	96	2	2
	36	546	96	2	2
	36	547	96	2	2
	36	548	99	5	2
	36	549	99	5	2
	36	550	99	5	2
	36	551	99	5	2
	36	686	16	1	2
	36	687	52	1	2
	36	688	108	4	2
	36	689	108	4	2
	36	690	108	4	2
	36	691	153	6	2
	36	692	153	6	2
	36	693	153	6	2
	36	694	266	4	2
	36	695	266	4	2
	36	696	266	4	2
	36	697	266	4	2
	36	698	266	4	2
	36	699	284	4	2
	36	700	284	4	2
	36	967	76	2	2
Grooved Round Rim Jar	37	525	6	4	2
	37	526	22	1	2
	37	527	22	1	2
	37	528	27	1	2
	37	529	49	4	2
	37	530	49	4	2
	37	531	64	2	2
	37	532	64	2	2
	37	533	96	2	2
	37	534	99	5	2

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Table 4 cont'd. All Samples By Type

Type	Code	Id	Site	Loc.	Per.
	37	535	165	6	2
	37	673	16	1	2
	37	674	16	1	2
	37	675	16	1	2
	37	676	24	1	2
	37	677	24	1	2
	37	678	32	2	2
	37	679	76	2	2
	37	680	76	2	2
	37	681	108	4	2
	37	682	108	4	2
	37	683	153	6	2
	37	684	266	4	2
	37	685	266	4	2
	37	915	1	4	4
	37	918	1	4	56
	37	919	1	4	56
	37	963	76	2	2
	37	964	76	2	2
Cross Hatch Band	38	464	7	1	3
	38	465	7	1	3
	38	466	7	1	3
	38	467	7	1	3
	38	468	22	1	3
	38	469	22	1	3
	38	470	61	2	3
	38	471	113	4	3
	38	472	113	4	3
	38	473	113	4	3
	38	474	113	4	3
	38	475	113	4	3
	38	476	165	6	3
	38	477	165	6	3
	38	478	165	6	3
	38	479	165	6	3
	38	718	16	1	3
	38	719	16	1	3
	38	720	16	1	3
	38	721	16	1	3
	38	722	52	1	3
	38	723	52	1	3
	38	724	24	1	3
	38	725	76	2	3
	38	726	76	2	3

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Table 4 cont'd. All Samples By Type

Type	Code	Id	Site	Loc.	Per.
	38	727	108	4	3
	38	728	108	4	3
	38	729	108	4	3
	38	730	121	4	3
	38	731	153	6	3
	38	732	153	6	3
	38	733	173	6	3
	38	734	173	6	3
	38	735	173	6	3
	38	736	173	6	3
	38	737	266	4	3
	38	738	266	4	3
	38	782	36	4	3
	38	783	36	4	3
	38	784	36	4	3
	38	785	36	4	3
	38	786	36	4	3
	38	787	36	4	3
	38	788	36	4	3
	38	789	36	4	3
	38	790	36	4	3
	38	791	36	4	3
	38	792	36	4	3
	38	793	36	4	3
	38	794	36	4	3
	38	795	36	4	3
	38	796	36	4	3
	38	797	36	4	3
	38	798	36	4	3
	38	799	36	4	3
	38	800	36	4	3
	38	801	36	4	3
	38	802	36	4	3
	38	803	36	4	3
	38	804	36	4	3
	38	805	36	4	3
	38	806	36	4	3
	38	808	36	4	3
	38	809	36	4	3
	38	810	36	4	3
	38	811	36	4	3
	38	812	36	4	3
	38	813	36	4	3
	38	814	36	4	3
	38	815	36	4	3
	38	816	36	4	3

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Table 4 cont'd. All Samples By Type

Type	Code	Id	Site	Loc.	Per.
	38	817	36	4	3
	38	818	36	4	3
	38	819	36	4	3
	38	820	36	4	3
	38	821	36	4	3
	38	822	36	4	3
	38	823	36	4	3
	38	824	36	4	3
	38	825	36	4	3
	38	826	36	4	3
	38	827	36	4	3
	38	920	1	4	56
	38	921	1	4	56
	38	922	1	4	56
	38	960	76	2	3
	38	961	76	2	3
Wide Strap Handle	39	505	22	1	3
	39	506	22	1	3
	39	507	22	1	3
	39	508	39	4	3
	39	509	39	4	3
	39	510	39	4	3
	39	511	39	4	3
	39	512	39	4	3
	39	513	61	2	3
	39	514	113	4	3
	39	515	113	4	3
	39	516	113	4	3
	39	517	113	4	3
	39	518	113	4	3
	39	519	165	6	3
	39	520	165	6	3
	39	521	165	6	3
	39	522	165	6	3
	39	523	165	6	3
	39	524	165	6	3
	39	640	16	1	3
	39	641	16	1	3
	39	642	16	1	3
	39	643	16	1	3
	39	644	16	1	3
	39	645	16	1	3
	39	646	24	1	3
	39	647	24	1	3

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Table 4 cont'd. All Samples By Type

Type	Code	Id	Site	Loc.	Per.
	39	648	24	1	3
	39	649	52	1	3
	39	650	52	1	3
	39	651	52	1	3
	39	652	52	1	3
	39	653	59	2	3
	39	654	76	2	3
	39	655	76	2	3
	39	656	76	2	3
	39	657	76	2	3
	39	658	108	4	3
	39	659	108	4	3
	39	660	108	4	3
	39	661	108	4	3
	39	662	108	4	3
	39	663	108	4	3
	39	664	153	6	3
	39	665	153	6	3
	39	666	153	6	3
	39	667	153	6	3
	39	668	153	6	3
	39	669	165	6	3
	39	670	173	6	3
	39	671	266	4	3
	39	672	266	4	3
	39	943	1	4	56
	39	944	1	4	56
	39	945	1	4	56
	39	965	76	2	3
	39	966	76	2	3
Twist Handle	40	552	34	1	4
	40	553	34	1	4
	40	554	39	4	4
	40	555	39	4	4
	40	556	96	2	4
	40	557	96	2	4
	40	558	96	2	4
	40	559	96	2	4
	40	560	96	2	4
	40	739	32	2	4
	40	740	32	2	4
	40	741	54	2	4
	40	742	54	2	4
	40	743	54	2	4

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Table 4 cont'd. All Samples By Type

Type	Code	Id	Site	Loc.	Per.
	40	744	54	2	4
	40	745	54	2	4
	40	746	59	2	4
	40	747	59	2	4
	40	748	59	2	4
	40	749	59	2	4
	40	750	79	2	4
	40	751	79	2	4
	40	752	79	2	4
	40	753	79	2	4
	40	754	79	2	4
	40	755	79	2	4
	40	756	79	2	4
	40	947	1	4	56
	40	948	1	4	56
Droop Spout	41	568	96	2	4
	41	569	96	2	4
	41	570	96	2	4
	41	571	96	2	4
	41	572	96	2	4
	41	573	96	2	4
	41	769	32	2	4
	41	770	32	2	4
	41	771	32	2	4
	41	772	32	2	4
	41	773	54	2	4
	41	774	54	2	4
	41	775	54	2	4
	41	776	59	2	4
	41	777	59	2	4
	41	778	79	2	4
	41	779	108	4	4
	41	916	1	4	4
	41	946	1	4	56
Groove and Oblique Jar	42	561	96	2	4
	42	562	96	2	4
	42	563	96	2	4
	42	564	96	2	4
	42	565	96	2	4
	42	566	34	1	4
	42	567	34	1	4
	42	757	32	2	4

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Table 4 cont'd. All Samples By Type

Type	Code	Id	Site	Loc.	Per.
	42	758	54	2	4
	42	759	54	2	4
	42	760	54	2	4
	42	761	54	2	4
	42	762	59	2	4
	42	763	59	2	4
	42	764	59	2	4
	42	765	59	2	4
	42	766	59	2	4
	42	767	79	2	4
	42	768	79	2	4
	42	923	1	4	56
	42	924	1	4	4
	42	925	1	4	56
	42	926	1	4	56
Bevel Rim Bowl	43	vvv	173	6	3
	43	www	173	6	3
	43	xxx	173	6	3
	43	yyy	173	6	3
	43	zzz	173	6	3
	43	001	108	4	5
	43	002	108	4	5
	43	003	108	4	5
	43	004	108	4	5
	43	005	108	4	5
	43	006	108	4	5
	43	007	108	4	5
	43	008	108	4	5
	43	009	108	4	5
	43	010	108	4	5
	43	022	22	1	3
	43	023	22	1	3
	43	024	22	1	3
	43	025	22	1	3
	43	026	22	1	3
	43	027	22	1	3
	43	028	22	1	3
	43	029	22	1	3
	43	030	22	1	3
	43	041	59	2	5
	43	042	59	2	5
	43	043	59	2	5
	43	044	59	2	5
	43	045	59	2	5

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Table 4 cont'd. All Samples By Type

Type	Code	Id	Site	Loc.	Per.
	43	046	59	2	5
	43	053	39	4	5
	43	054	39	4	5
	43	055	39	4	5
	43	056	39	4	5
	43	057	39	4	5
	43	058	39	4	5
	43	059	39	4	5
	43	060	39	4	5
	43	073	173	6	3
	43	076	173	6	3
	43	078	173	6	3
	43	079	173	6	3
	43	080	173	6	3
	43	481	7	1	3
	43	482	7	1	3
	43	483	7	1	3
	43	484	7	1	3
	43	485	7	1	3
	43	486	96	2	5
	43	487	96	2	5
	43	488	96	2	5
	43	489	96	2	5
	43	490	96	2	5
	43	491	113	4	5
	43	492	113	4	5
	43	493	113	4	5
	43	494	113	4	5
	43	495	113	4	5
	43	496	165	6	3
	43	497	165	6	3
	43	498	165	6	3
	43	499	165	6	3
	43	500	165	6	3
	43	501	240	3	3
	43	502	240	3	3
	43	503	240	3	3
	43	504	240	3	3
	43	613	16	1	3
	43	614	16	1	3
	43	615	16	1	3
	43	616	16	1	3
	43	617	16	1	3
	43	618	24	1	3
	43	619	24	1	3
	43	620	24	1	3

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Table 4 cont'd. All Samples By Type

Type	Code	Id	Site	Loc.	Per.
	43	621	24	1	3
	43	622	24	1	3
	43	623	153	6	3
	43	624	153	6	3
	43	625	153	6	3
	43	626	153	6	3
	43	627	153	6	3
	43	629	266	4	3
	43	630	266	4	3
	43	631	266	4	3
	43	632	266	4	3
	43	913	1	4	4
	43	914	1	4	4
	43	938	1	4	56
	43	939	1	4	56
	43	940	1	4	56
	43	941	1	4	56
	43	942	1	4	56
	43	957	76	2	3
	43	958	76	2	3
	43	959	76	2	3
	43	987	59	2	5
	43	988	59	2	5
	43	989	59	2	5
	43	990	59	2	5
	43	991	59	2	5
	43	992	59	2	5
	43	993	59	2	5
	43	994	59	2	5
	43	995	59	2	5
	43	996	59	2	5
	43	997	36	4	5
	43	998	36	4	5
	43	999	36	4	5
	43	1000	36	4	5
	43	1001	36	4	5
	43	1002	36	4	5
	43	1003	36	4	5
	43	1004	36	4	5
	43	1005	36	4	5
	43	1006	36	4	5
	43	1007	36	4	5
	43	1008	36	4	5
	43	1009	36	4	5
	43	1010	36	4	5
	43	1011	36	4	5

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Table 4 cont'd. All Samples By Type

Type	Code	Id	Site	Loc.	Per.
	43	1012	36	4	5
	43	1013	36	4	5
	43	1014	36	4	5
	43	1015	36	4	5
	43	1016	36	4	5
	43	1017	36	4	5
	43	1018	36	4	5
	43	1019	36	4	5
	43	1020	36	4	5
	43	1021	36	4	5
Nail	44	480	269	2	1
Straight Spout	45	917	1	4	4
Conical Spout	46	949	1	4	56
Unfired BRB Fragment	47	956	1	4	56
Clay Sample - Sherd	48	968	Susa	1	5
	48	969	Susa	1	5
	48	970	Susa	1	5
	48	971	Susa	1	5
	48	972	Susa	1	5
	48	973	Susa	1	5
	48	974	Susa	1	5
Clay Sample	49	975	Susa	1	5
	49	976	Susa	1	5
	49	977	20	1	1
	49	978	20	1	1
	49	979	Susa	1	5
	49	980	Susa	1	5
Clay Sample - Fired	50	981	Susa	1	5
	50	982	Susa	1	5
	50	983	20	1	1
	50	984	20	1	1
	50	985	Susa	1	5
	50	986	Susa	1	5

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Table 4 cont'd. All Samples By Type

Type	Code	Id	Site	Loc.	Per.
Luristan Red-on-Black	52	780	16	1	4
	52	781	121	4	4
Red Ware, Unslipped	100	091	2	4	1
	100	092	4	4	7
	100	093	6	4	7
	100	094	10	1	19
	100	095	12	1	18
	100	096	13	1	36
	100	097	13	1	37
	100	098	14	1	49
	100	099	165	6	7
	100	100	17	1	19
	100	101	19	1	37
	100	102	21	1	20
	100	103	22	1	7
	100	104	28	1	8
	100	105	33	1	8
	100	106	36	4	49
	100	107	38	4	20
	100	108	42	4	49
	100	109	50	4	7
	100	110	64	2	12
	100	111	66	2	12
	100	112	67	1	43
	100	113	71	1	21
	100	114	71	1	20
	100	115	101	6	7
	100	116	106	6	7
	100	117	112	4	22
	100	118	113	4	8
	100	119	118	4	49
	100	122	155	6	1
	100	123	157	6	12
	100	124	160	6	7
	100	125	168	6	8
	100	126	176	6	8
	100	128	204	7	7
	100	129	215	7	7
	100	130	238	3	7
	100	131	239	3	9
	100	132	240	3	7

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Table 4 cont'd. All Samples By Type

Type	Code	Id	Site	Loc.	Per.
	100	133	274	2	7
Red Ware, Gritty, Coarse	101	134	4	4	23
	101	135	10	1	38
	101	136	10	1	38
	101	137	10	1	38
	101	138	12	1	24
	101	139	13	1	36
	101	140	17	1	36
	101	141	19	1	49
	101	142	33	1	44
	101	143	36	4	49
	101	144	38	4	1
	101	145	108	4	36
	101	146	118	4	25
	101	147	124	4	25
	101	148	161	6	49
	101	149	204	6	7
	101	150	218	7	49
Red Ware, Porous, Chaff Tempered	102	151	38	4	26
	102	152	40	4	7
	102	153	41	4	7
	102	154	118	4	46
	102	155	49	4	7
	102	156	74	2	43
	102	157	124	4	43
	102	158	155	6	12
	102	159	157	6	7
	102	160	162	6	59
	102	161	167	6	43
	102	162	178	6	8
	102	163	182	6	7
	102	164	182	6	7
	102	165	195	7	39
	102	166	197	7	43
	102	167	215	7	7
Red Ware, Dark Slip	103	168	2	4	20
	103	169	38	4	27
	103	170	101	6	12
	103	171	105	6	7
	103	172	124	4	28

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Table 4 cont'd. All Samples By Type

Type	Code	Id	Site	Loc.	Per.
	103	173	159	6	29
	103	174	176	6	49
Red Ware, Burnished	104	175	2	4	7
	104	176	4	4	7
	104	177	13	1	7
	104	178	17	1	12
	104	179	33	1	7
	104	180	4	4	7
	104	181	101	6	7
	104	182	113	4	7
	104	183	118	4	8
	104	184	160	6	12
	104	185	186	7	7
	104	186	197	7	8
	104	934	1	4	69
Salmon Ware, Red Slip	105	187	4	4	49
	105	188	4	4	49
	105	189	6	4	7
	105	190	8	1	31
	105	191	12	1	33
	105	192	13	1	36
	105	193	14	1	19
	105	194	16	1	8
	105	195	17	1	41
	105	196	19	1	40
	105	197	21	1	21
	105	198	22	1	7
	105	199	24	1	19
	105	200	28	1	7
	105	201	33	1	8
	105	202	35	1	61
	105	203	36	4	49
	105	204	38	4	31
	105	205	38	4	42
	105	206	39	4	1
	105	207	40	4	1
	105	208	42	4	49
	105	209	45	4	36
	105	210	50	4	49
	105	211	65	2	60
	105	212	67	1	15
	105	213	71	1	31

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Table 4 cont'd. All Samples By Type

Type	Code	Id	Site	Loc.	Per.
	105	214	73	2	43
	105	215	74	2	43
	105	216	101	6	7
	105	217	105	6	44
	105	218	106	6	7
	105	219	108	4	49
	105	220	112	4	62
	105	221	113	4	49
	105	222	118	4	50
	105	223	124	4	1
	105	224	154	6	49
	105	225	162	6	35
	105	226	174	6	12
	105	227	176	6	20
	105	228	186	7	7
	105	229	204	7	7
	105	230	218	7	14
	105	231	239	3	7
	105	232	240	3	8
Salmon Ware, Dark Slip	106	233	1	4	1
	106	234	13	1	36
	106	235	14	1	51
	106	236	21	1	20
	106	237	36	4	49
	106	238	38	4	34
	106	239	42	4	49
	106	240	49	4	52
	106	241	106	6	8
	106	242	112	4	49
	106	243	121	4	20
	106	244	124	4	1
	106	245	239	3	20
Salmon Ware, Buff Slip	107	246	2	4	1
	107	247	10	1	20
	107	248	13	1	36
	107	249	19	1	20
	107	250	21	1	20
	107	251	22	1	7
	107	252	28	1	17
	107	253	29	1	7
	107	254	43	4	20
	107	255	45	4	20

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Table 4 cont'd. All Samples By Type

Type	Code	Id	Site	Loc.	Per.
	107	256	49	4	15
	107	257	64	2	12
	107	258	66	2	7
	107	259	66	2	7
	107	260	67	1	8
	107	261	106	6	7
	107	262	112	4	7
	107	263	156	6	43
	107	264	157	6	7
	107	265	174	6	7
	107	266	176	6	43
	107	267	178	6	7
	107	268	193	7	43
	107	269	197	7	7
	107	270	215	7	7
	107	272	269	2	7
	107	273	272	6	1
	107	274	274	2	7
Salmon Ware,	108	275	2	4	1
Outside Buff Slip	108	276	4	4	7
	108	277	161	6	32
	108	278	174	6	7
	108	279	273	6	1
Red Ware, Red Wash	109	933	1	4	65
Red Ware, Red Wash, Burnished	110	936	1	4	69
Red Ware, Hole Mouth Lip	111	937	1	4	65
Black-on-Buff Cyl. Bowl	200	280	13	1	47
Black-on-Buff	201	281	22	1	7
Cyl. Bowl,	201	282	28	1	48
Band & Line	201	283	33	1	12
	201	284	54	2	47

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Table 4 cont'd. All Samples By Type

Type	Code	Id	Site	Loc.	Per.
	201	285	65	2	47
	201	286	67	1	14
	201	287	73	2	47
	201	288	106	6	8
	201	289	108	4	43
	201	290	112	4	8
	201	291	118	4	7
	201	292	124	4	47
	201	293	161	6	47
	201	294	178	6	8
	201	295	180	6	44
	201	296	193	7	43
	201	297	197	7	47
	201	298	212	7	47
Black-on-Buff	202	299	4	4	43
Cyl. Bowl,	202	300	4	4	43
Dots, Indef.	202	301	12	1	16
	202	302	16	1	8
	202	303	22	1	7
	202	304	24	1	43
	202	305	33	1	12
	202	306	65	2	47
	202	307	66	2	7
	202	308	73	2	47
	202	309	74	2	47
	202	310	112	4	10
	202	311	118	4	43
	202	312	156	6	44
	202	313	159	6	14
	202	314	161	6	12
	202	315	162	6	16
	202	316	167	6	47
	202	317	167	6	12
	202	318	168	6	43
	202	319	176	6	8
	202	320	177	0	16
	202	321	178	6	44
	202	322	212	7	47
	202	323	215	7	7
	202	324	274	2	7
Black-on-Buff	203	325	4	4	47
Cyl. Bowl,	203	326	6	4	8

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Table 4 cont'd. All Samples By Type

Type	Code	Id	Site	Loc.	Per.
Band & Band	203	327	12	1	47
	203	328	65	2	47
	203	329	73	2	47
	203	330	73	2	47
	203	331	105	6	8
	203	332	106	6	44
	203	333	106	6	44
	203	334	108	4	14
	203	335	108	4	47
	203	336	113	4	44
	203	337	118	4	47
	203	338	124	4	47
	203	339	124	4	47
	203	340	156	6	47
	203	341	161	6	47
	203	342	168	6	47
	203	343	168	6	47
	203	344	176	6	8
	203	345	178	6	47
	203	346	215	7	8
	203	347	266	4	8
Black-on-Buff Cyl. Bowl, Band & 2 Lines	204	348	4	4	47
	204	349	33	1	7
	204	350	73	2	47
	204	351	106	6	44
	204	352	106	6	8
	204	353	113	4	7
	204	354	118	4	43
	204	355	124	4	12
	204	356	124	4	47
	204	357	161	6	7
	204	358	225	0	44
	204	359	266	4	8
Black-on-Buff Cyl. Bowl, Band & Dots	205	360	4	4	47
	205	361	4	4	8
	205	362	13	1	44
	205	363	16	1	7
	205	364	33	1	7
	205	365	43	4	12
	205	366	45	4	17
	205	367	65	2	44
	205	368	65	2	43

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Table 4 cont'd. All Samples By Type

Type	Code	Id	Site	Loc.	Per.
	205	369	67	1	14
	205	370	73	2	48
	205	371	74	2	8
	205	372	108	4	43
	205	373	112	4	7
	205	374	124	4	47
	205	375	176	6	7
	205	376	218	6	43
	205	377	266	4	7
	205	389	112	4	7
	205	390	124	4	47
	205	951	1	4	74
Black-on-Buff	206	378	13	1	47
Cyl. Bowl,	206	379	16	1	47
Square & Dots	206	380	73	2	47
	206	381	118	4	47
	206	382	124	4	47
	206	383	161	6	12
	206	384	179	6	47
	206	385	180	6	47
	206	386	197	6	47
	206	387	212	6	47
	206	388	225	0	47
Black-on-Buff	207	391	28	1	14
Goat Motif	207	392	74	2	47
	207	393	74	2	47
	207	394	105	6	44
	207	395	108	4	8
	207	396	110	4	8
	207	397	113	4	7
	207	398	124	4	47
	207	399	178	6	8
	207	400	178	6	8
	207	401	197	6	44
	207	402	197	6	8
	207	403	197	6	8
	207	404	215	6	8
	207	405	215	6	8
Black-on-Buff	208	406	4	4	8
Greccas & Scallops	208	407	33	1	7

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Table 4 cont'd. All Samples By Type

Type	Code	Id	Site	Loc.	Per.
	208	408	33	1	7
	208	409	33	1	7
	208	410	35	1	7
	208	411	49	4	7
	208	412	181	6	7
	208	413	181	6	7
	208	414	240	3	7
	208	415	266	4	7
Black-on-Buff Kiln Waster	209	416	4	4	1
	209	417	12	1	1
	209	418	161	6	1
	209	423	4	4	43
	209	424	4	4	44
	209	425	4	4	45
	209	426	4	4	47
	209	427	4	4	1
	209	428	4	4	1
	209	429	49	4	1
	209	430	124	4	1
	209	431	124	4	1
	209	432	124	4	1
	209	433	160	6	1
	209	434	167	6	1
	209	435	174	6	1
	209	436	271	0	66
	209	437	12	1	1
	209	438	167	6	1
	209	439	167	6	1
Black-on-Buff with Giyan Type Lug	210	419	4	4	57
	210	420	Giyan	8	57
Black-on-Buff, Fars or Bakun Type	211	421	4	4	58
Black-on-Buff, Non-Susiana Ware	212	422	4	4	54
Black-on-Buff Jar	213	927	1	4	64

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Table 4 cont'd. All Samples By Type

Type	Code	Id	Site	Loc.	Per.
Black-on-Buff, Bands & Chevron	214	928	1	4	67
Black-on-Buff	215	929	1	4	65
Band & Line	215	932	1	4	65
Black-on-Buff Beaker	216	930	1	4	64
Black-on-Buff Bowl	217	931	1	4	69
	217	952	1	4	64
	217	953	1	4	64
	217	954	1	4	64
	217	955	1	4	64
Black-on-Buff, Dots & Ibex Legs	218	950	1	4	74
Black-on-Buff,	300	830	Susa	1	7
Susa A Cup	300	831	Susa	1	7
	300	832	Susa	1	7
	300	852	20	1	7
	300	882	Susa	1	7
Black-on-Buff,	301	833	Susa	1	7
Susa A Bowl	301	834	Susa	1	7
	301	835	Susa	1	7
	301	844	Susa	1	7
	301	845	Susa	1	7
	301	846	Susa	1	7
	301	855	20	1	7
	301	856	20	1	7
	301	857	20	1	7
	301	858	20	1	7
	301	859	20	1	7
	301	884	Susa	1	7
	301	885	Susa	1	7
	301	888	Susa	1	7
	301	889	Susa	1	7

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Table 4 cont'd. All Samples By Type

Type	Code	Id	Site	Loc.	Per.
	301	890	Susa	1	7
	301	891	28	1	7
	301	892	28	1	7
	301	893	28	1	7
	301	894	28	1	7
	301	896	13	1	7
	301	897	13	1	7
Black-on-Buff, Susa A Goblet	302	836	Susa	1	7
	302	837	Susa	1	7
	302	838	Susa	1	7
	302	839	Susa	1	7
	302	840	Susa	1	7
	302	841	Susa	1	7
	302	842	Susa	1	7
	302	843	Susa	1	7
Black-on-Buff, Susa A Basin	303	847	Susa	1	7
Black-on-Buff, Susa A Large Goblet	304	849	20	1	7
	304	860	20	1	7
Black-on-Buff, Susa A Large Basin	305	851	20	1	7
Black-on-Buff, Susa A High Goblet	306	879	Susa	1	7
	306	880	Susa	1	7
	306	881	Susa	1	7
	306	898	20	1	7
Black-on-Buff, Susa A Small Bowl	307	883	Susa	1	7
Black-on-Buff, Susa A Jar	308	886	Susa	1	7

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Table 4 cont'd. All Samples By Type

Type	Code	Id	Site	Loc.	Per.
Black-on-Buff, Susa A Small Krater	309	887	Susa	1	7
Black-on-Buff, Susa A	310	899	4	4	7
	310	900	4	4	7
	310	901	6	4	7
	310	902	16	1	7
	310	903	28	1	7
	310	904	101	6	7
	310	905	112	4	7
	310	906	112	4	7
	310	907	113	4	7
	310	908	204	6	7
	310	909	239	3	7
	310	910	239	3	7
	310	911	266	4	7
	310	912	266	4	7
Susa A Buff Jar	351	850	20	1	7
Susa A Grey Bowl	352	853	20	1	7
Susa A Buff Cooking Pot	353	854	20	1	7
Black-on-Buff Bowl Chogha Mish Phase	370	861	20	1	20
	370	862	20	1	20
	370	863	20	1	20
	370	864	20	1	20
	370	865	20	1	20
	370	870	20	1	20
	370	871	20	1	20
Red Basin, Chogha Mish Phase	371	866	20	1	20
Buff Basin, Chogha Mish Phase	372	867	20	1	20

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Table 4 cont'd. All Samples By Type

Type	Code	Id	Site	Loc.	Per.
Eggshell Goblet, Chogha Mish Phase	373	868	20	1	20
Black-on-Buff Goblet, Chogha Mish Phase	374	869	20	1	20
Carinated Pot, Chaff Temper, Jaffarabad Phase	380	872	20	1	63
Black-on-Buff Cup, Jaffarabad Phase	381	873	20	1	63
	381	878	20	1	63
Common Pot, Chaff Temper, Jaffarabad Phase	382	874	20	1	63
Bowl, Rim Spout, Jaffarabad Phase	383	875	20	1	63
Black-on-Buff Bowl, Jaffarabad Phase	384	876	20	1	63
Black-on-Buff Large Bowl, Jaffarabad Phase	385	877	20	1	63
Luristan Black-on-Red Jar	400	828	Susa	1	55
	400	829	Susa	1	55

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Table 5. All Samples By Period

Period	Code	Id	Site	Loc.	Type
Not Known	1	091	2	4	100
	1	122	155	6	100
	1	144	38	4	101
	1	206	39	4	105
	1	207	40	4	105
	1	223	124	4	105
	1	233	1	4	106
	1	244	124	4	106
	1	246	2	4	107
	1	273	272	6	107
	1	275	2	4	108
	1	279	273	6	108
	1	416	4	4	209
	1	417	12	1	209
	1	418	161	6	209
	1	427	4	4	209
	1	428	4	4	209
	1	429	49	4	209
	1	430	124	4	209
	1	431	124	4	209
	1	432	124	4	209
	1	433	160	6	209
	1	434	167	6	209
	1	435	174	6	209
	1	437	12	1	209
	1	438	167	6	209
	1	439	167	6	209
	1	480	269	2	44
	1	977	20	1	49
	1	978	20	1	49
	1	983	20	1	50
	1	984	20	1	50
Early Uruk	2	440	6	4	35
	2	441	6	4	35
	2	442	6	4	35
	2	443	27	1	35
	2	444	27	1	35
	2	445	27	1	35
	2	446	27	1	35
	2	447	49	4	35
	2	448	49	4	35
	2	449	49	4	35
	2	450	61	2	35
	2	451	64	2	35

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Table 5 cont'd. All Samples By Period

Period	Code	Id	Site	Loc.	Type
	2	452	64	2	35
	2	453	64	2	35
	2	454	90	2	35
	2	455	90	2	35
	2	456	96	2	35
	2	457	96	2	35
	2	458	96	2	35
	2	459	96	2	35
	2	460	96	2	35
	2	461	165	6	35
	2	462	165	6	35
	2	463	240	3	35
	2	525	6	4	37
	2	526	22	1	37
	2	527	22	1	37
	2	528	27	1	37
	2	529	49	4	37
	2	530	49	4	37
	2	531	64	2	37
	2	532	64	2	37
	2	533	96	2	37
	2	534	99	5	37
	2	535	165	6	37
	2	536	6	4	36
	2	537	6	4	36
	2	538	22	1	36
	2	539	27	1	36
	2	540	27	1	36
	2	541	61	2	36
	2	542	96	2	36
	2	543	96	2	36
	2	544	96	2	36
	2	545	96	2	36
	2	546	96	2	36
	2	547	96	2	36
	2	548	99	5	36
	2	549	99	5	36
	2	550	99	5	36
	2	551	99	5	36
	2	586	16	1	35
	2	587	16	1	35
	2	588	16	1	35
	2	589	16	1	35
	2	590	16	1	35
	2	591	24	1	35
	2	592	24	1	35

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Table 5 cont'd. All Samples By Period

Period	Code	Id	Site	Loc.	Type
	2	593	24	1	35
	2	594	32	2	35
	2	595	32	2	35
	2	596	52	1	35
	2	597	52	1	35
	2	598	52	1	35
	2	599	52	1	35
	2	600	76	2	35
	2	601	93	2	35
	2	602	93	2	35
	2	603	93	2	35
	2	604	121	4	35
	2	605	121	4	35
	2	606	121	4	35
	2	607	121	4	35
	2	608	121	4	35
	2	609	153	6	35
	2	610	266	4	35
	2	611	266	4	35
	2	612	284	4	35
	2	633	266	4	35
	2	634	59	2	35
	2	635	59	2	35
	2	636	108	4	35
	2	637	108	4	35
	2	638	108	4	35
	2	639	108	4	35
	2	673	16	1	37
	2	674	16	1	37
	2	675	16	1	37
	2	676	24	1	37
	2	677	24	1	37
	2	678	32	2	37
	2	679	76	2	37
	2	680	76	2	37
	2	681	108	4	37
	2	682	108	4	37
	2	683	153	6	37
	2	684	266	4	37
	2	685	266	4	37
	2	686	16	1	36
	2	687	52	1	36
	2	688	108	4	36
	2	689	108	4	36
	2	690	108	4	36
	2	691	153	6	36

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Table 5 cont'd. All Samples By Period

Period	Code	Id	Site	Loc.	Type
	2	692	153	6	36
	2	693	153	6	36
	2	694	266	4	36
	2	695	266	4	36
	2	696	266	4	36
	2	697	266	4	36
	2	698	266	4	36
	2	699	284	4	36
	2	700	284	4	36
	2	962	76	2	35
	2	963	76	2	37
	2	964	76	2	37
	2	967	76	2	36
Middle Uruk	3	vvv	173	6	43
	3	www	173	6	43
	3	xxx	173	6	43
	3	yyy	173	6	43
	3	zzz	173	6	43
	3	022	22	1	43
	3	023	22	1	43
	3	024	22	1	43
	3	025	22	1	43
	3	026	22	1	43
	3	027	22	1	43
	3	028	22	1	43
	3	029	22	1	43
	3	030	22	1	43
	3	073	173	6	43
	3	076	173	6	43
	3	078	173	6	43
	3	079	173	6	43
	3	080	173	6	43
	3	464	7	1	38
	3	465	7	1	38
	3	466	7	1	38
	3	467	7	1	38
	3	468	22	1	38
	3	469	22	1	38
	3	470	61	2	38
	3	471	113	4	38
	3	472	113	4	38
	3	473	113	4	38
	3	474	113	4	38
	3	475	113	4	38

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Table 5 cont'd. All Samples By Period

Period	Code	Id	Site	Loc.	Type
	3	476	165	6	38
	3	477	165	6	38
	3	478	165	6	38
	3	479	165	6	38
	3	481	7	1	43
	3	482	7	1	43
	3	483	7	1	43
	3	484	7	1	43
	3	485	7	1	43
	3	496	165	6	43
	3	497	165	6	43
	3	498	165	6	43
	3	499	165	6	43
	3	500	165	6	43
	3	501	240	3	43
	3	502	240	3	43
	3	503	240	3	43
	3	504	240	3	43
	3	505	22	1	39
	3	506	22	1	39
	3	507	22	1	39
	3	508	39	4	39
	3	509	39	4	39
	3	510	39	4	39
	3	511	39	4	39
	3	512	39	4	39
	3	513	61	2	39
	3	514	113	4	39
	3	515	113	4	39
	3	516	113	4	39
	3	517	113	4	39
	3	518	113	4	39
	3	519	165	6	39
	3	520	165	6	39
	3	521	165	6	39
	3	522	165	6	39
	3	523	165	6	39
	3	524	165	6	39
	3	613	16	1	43
	3	614	16	1	43
	3	615	16	1	43
	3	616	16	1	43
	3	617	16	1	43
	3	618	24	1	43
	3	619	24	1	43
	3	620	24	1	43

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Table 5 cont'd. All Samples By Period

Period	Code	Id	Site	Loc.	Type
	3	621	24	1	43
	3	622	24	1	43
	3	623	153	6	43
	3	624	153	6	43
	3	625	153	6	43
	3	626	153	6	43
	3	627	153	6	43
	3	629	266	4	43
	3	630	266	4	43
	3	631	266	4	43
	3	632	266	4	43
	3	640	16	1	39
	3	641	16	1	39
	3	642	16	1	39
	3	643	16	1	39
	3	644	16	1	39
	3	645	16	1	39
	3	646	24	1	39
	3	647	24	1	39
	3	648	24	1	39
	3	649	52	1	39
	3	650	52	1	39
	3	651	52	1	39
	3	652	52	1	39
	3	653	59	2	39
	3	654	76	2	39
	3	655	76	2	39
	3	656	76	2	39
	3	657	76	2	39
	3	658	108	4	39
	3	659	108	4	39
	3	660	108	4	39
	3	661	108	4	39
	3	662	108	4	39
	3	663	108	4	39
	3	664	153	6	39
	3	665	153	6	39
	3	666	153	6	39
	3	667	153	6	39
	3	668	153	6	39
	3	669	165	6	39
	3	670	173	6	39
	3	671	266	4	39
	3	672	266	4	39
	3	718	16	1	38
	3	719	16	1	38

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Table 5 cont'd. All Samples By Period

Period	Code	Id	Site	Loc.	Type
	3	720	16	1	38
	3	721	16	1	38
	3	722	52	1	38
	3	723	52	1	38
	3	724	24	1	38
	3	725	76	2	38
	3	726	76	2	38
	3	727	108	4	38
	3	728	108	4	38
	3	729	108	4	38
	3	730	121	4	38
	3	731	153	6	38
	3	732	153	6	38
	3	733	173	6	38
	3	734	173	6	38
	3	735	173	6	38
	3	736	173	6	38
	3	737	266	4	38
	3	738	266	4	38
	3	782	36	4	38
	3	783	36	4	38
	3	784	36	4	38
	3	785	36	4	38
	3	786	36	4	38
	3	787	36	4	38
	3	788	36	4	38
	3	789	36	4	38
	3	790	36	4	38
	3	791	36	4	38
	3	792	36	4	38
	3	793	36	4	38
	3	794	36	4	38
	3	795	36	4	38
	3	796	36	4	38
	3	797	36	4	38
	3	798	36	4	38
	3	799	36	4	38
	3	800	36	4	38
	3	801	36	4	38
	3	802	36	4	38
	3	803	36	4	38
	3	804	36	4	38
	3	805	36	4	38
	3	806	36	4	38
	3	808	36	4	38
	3	809	36	4	38

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Table 5 cont'd. All Samples By Period

Period	Code	Id	Site	Loc.	Type
	3	810	36	4	38
	3	811	36	4	38
	3	812	36	4	38
	3	813	36	4	38
	3	814	36	4	38
	3	815	36	4	38
	3	816	36	4	38
	3	817	36	4	38
	3	818	36	4	38
	3	819	36	4	38
	3	820	36	4	38
	3	821	36	4	38
	3	822	36	4	38
	3	823	36	4	38
	3	824	36	4	38
	3	825	36	4	38
	3	826	36	4	38
	3	827	36	4	38
	3	957	76	2	43
	3	958	76	2	43
	3	959	76	2	43
	3	960	76	2	38
	3	961	76	2	38
	3	965	76	2	39
	3	966	76	2	39
	56	920	1	4	38
	56	921	1	4	38
	56	922	1	4	38
	56	943	1	4	39
	56	944	1	4	39
	56	945	1	4	39
Late Uruk	4	552	34	1	40
	4	553	34	1	40
	4	554	39	4	40
	4	555	39	4	40
	4	556	96	2	40
	4	557	96	2	40
	4	558	96	2	40
	4	559	96	2	40
	4	560	96	2	40
	4	561	96	2	42
	4	562	96	2	42
	4	563	96	2	42
	4	564	96	2	42

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Table 5 cont'd. All Samples By Period

Period	Code	Id	Site	Loc.	Type
	4	565	96	2	42
	4	566	34	1	42
	4	567	34	1	42
	4	568	96	2	41
	4	569	96	2	41
	4	570	96	2	41
	4	571	96	2	41
	4	572	96	2	41
	4	573	96	2	41
	4	739	32	2	40
	4	740	32	2	40
	4	741	54	2	40
	4	742	54	2	40
	4	743	54	2	40
	4	744	54	2	40
	4	745	54	2	40
	4	746	59	2	40
	4	747	59	2	40
	4	748	59	2	40
	4	749	59	2	40
	4	750	79	2	40
	4	751	79	2	40
	4	752	79	2	40
	4	753	79	2	40
	4	754	79	2	40
	4	755	79	2	40
	4	756	79	2	40
	4	757	32	2	42
	4	758	54	2	42
	4	759	54	2	42
	4	760	54	2	42
	4	761	54	2	42
	4	762	59	2	42
	4	763	59	2	42
	4	764	59	2	42
	4	765	59	2	42
	4	766	59	2	42
	4	767	79	2	42
	4	768	79	2	42
	4	769	32	2	41
	4	770	32	2	41
	4	771	32	2	41
	4	772	32	2	41
	4	773	54	2	41
	4	774	54	2	41
	4	775	54	2	41

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Table 5 cont'd. All Samples By Period

Period	Code	Id	Site	Loc.	Type
	4	776	59	2	41
	4	777	59	2	41
	4	778	79	2	41
	4	779	108	4	41
	4	780	16	1	52
	4	781	121	4	52
	4	913	1	4	43
	4	914	1	4	43
	4	915	1	4	37
	4	916	1	4	41
	4	917	1	4	45
	4	924	1	4	42
	56	923	1	4	42
	56	925	1	4	42
	56	926	1	4	42
	56	946	1	4	41
	56	947	1	4	40
	56	948	1	4	40
Middle-Late Uruk	5	001	108	4	43
	5	002	108	4	43
	5	003	108	4	43
	5	004	108	4	43
	5	005	108	4	43
	5	006	108	4	43
	5	007	108	4	43
	5	008	108	4	43
	5	009	108	4	43
	5	010	108	4	43
	5	041	59	2	43
	5	042	59	2	43
	5	043	59	2	43
	5	044	59	2	43
	5	045	59	2	43
	5	046	59	2	43
	5	053	39	4	43
	5	054	39	4	43
	5	055	39	4	43
	5	056	39	4	43
	5	057	39	4	43
	5	058	39	4	43
	5	059	39	4	43
	5	060	39	4	43
	5	486	96	2	43
	5	487	96	2	43

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Table 5 cont'd. All Samples By Period

Period	Code	Id	Site	Loc.	Type
	5	488	96	2	43
	5	489	96	2	43
	5	490	96	2	43
	5	491	113	4	43
	5	492	113	4	43
	5	493	113	4	43
	5	494	113	4	43
	5	495	113	4	43
	5	968	Susa	1	48
	5	969	Susa	1	48
	5	970	Susa	1	48
	5	971	Susa	1	48
	5	972	Susa	1	48
	5	973	Susa	1	48
	5	974	Susa	1	48
	5	975	Susa	1	49
	5	976	Susa	1	49
	5	979	Susa	1	49
	5	980	Susa	1	49
	5	981	Susa	1	50
	5	982	Susa	1	50
	5	985	Susa	1	50
	5	986	Susa	1	50
	5	987	59	2	43
	5	988	59	2	43
	5	989	59	2	43
	5	990	59	2	43
	5	991	59	2	43
	5	992	59	2	43
	5	993	59	2	43
	5	994	59	2	43
	5	995	59	2	43
	5	996	59	2	43
	5	997	36	4	43
	5	998	36	4	43
	5	999	36	4	43
	5	1000	36	4	43
	5	1001	36	4	43
	5	1002	36	4	43
	5	1003	36	4	43
	5	1004	36	4	43
	5	1005	36	4	43
	5	1006	36	4	43
	5	1007	36	4	43
	5	1008	36	4	43
	5	1009	36	4	43

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Table 5 cont'd. All Samples By Period

Period	Code	Id	Site	Loc.	Type
	5	1010	36	4	43
	5	1011	36	4	43
	5	1012	36	4	43
	5	1013	36	4	43
	5	1014	36	4	43
	5	1015	36	4	43
	5	1016	36	4	43
	5	1017	36	4	43
	5	1018	36	4	43
	5	1019	36	4	43
	5	1020	36	4	43
	5	1021	36	4	43
	64	927	1	4	213
	64	930	1	4	216
	64	952	1	4	217
	64	953	1	4	217
	64	954	1	4	217
	64	955	1	4	217
	56	938	1	4	43
	56	939	1	4	43
	56	940	1	4	43
	56	941	1	4	43
	56	942	1	4	43
	56	949	1	4	46
	56	956	1	4	47
Terminal Susa A	6	574	64	2	33
	6	575	64	2	33
	6	576	64	2	33
	6	577	269	2	33
	6	578	269	2	33
	6	579	269	2	33
	6	580	269	2	33
	6	581	269	2	33
	6	582	64	2	34
	6	583	269	2	34
	6	584	269	2	34
	6	585	269	2	34
	6	701	67	1	33
	6	702	67	1	33
	6	703	67	1	33
	6	704	67	1	33
	6	705	67	1	33
	6	706	108	4	33
	6	707	108	4	33

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Table 5 cont'd. All Samples By Period

Period	Code	Id	Site	Loc.	Type
	6	708	182	6	33
	6	709	182	6	33
	6	710	182	6	33
	6	711	190	7	33
	6	712	190	7	33
	6	713	190	7	33
	6	714	190	7	33
	6	715	190	7	33
	6	716	266	4	33
	6	717	266	4	33
Susa A	7	092	4	4	100
	7	093	6	4	100
	7	099	165	6	100
	7	103	22	1	100
	7	109	50	4	100
	7	115	101	6	100
	7	116	106	6	100
	7	124	160	6	100
	7	128	204	7	100
	7	129	215	7	100
	7	130	238	3	100
	7	132	240	3	100
	7	133	274	2	100
	7	149	204	6	101
	7	152	40	4	102
	7	153	41	4	102
	7	155	49	4	102
	7	159	157	6	102
	7	163	182	6	102
	7	164	182	6	102
	7	167	215	7	102
	7	171	105	6	103
	7	175	2	4	104
	7	176	4	4	104
	7	177	13	1	104
	7	179	33	1	104
	7	180	4	4	104
	7	181	101	6	104
	7	182	113	4	104
	7	185	186	7	104
	7	189	6	4	105
	7	198	22	1	105
	7	200	28	1	105
	7	216	101	6	105

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Table 5 cont'd. All Samples By Period

Period	Code	Id	Site	Loc.	Type
	7	218	106	6	105
	7	228	186	7	105
	7	229	204	7	105
	7	231	239	3	105
	7	251	22	1	107
	7	253	29	1	107
	7	258	66	2	107
	7	259	66	2	107
	7	261	106	6	107
	7	262	112	4	107
	7	264	157	6	107
	7	265	174	6	107
	7	267	178	6	107
	7	269	197	7	107
	7	270	215	7	107
	7	272	269	2	107
	7	274	274	2	107
	7	276	4	4	108
	7	278	174	6	108
	7	281	22	1	201
	7	291	118	4	201
	7	303	22	1	202
	7	307	66	2	202
	7	323	215	7	202
	7	324	274	2	202
	7	349	33	1	204
	7	353	113	4	204
	7	357	161	6	204
	7	363	16	1	205
	7	364	33	1	205
	7	373	112	4	205
	7	375	176	6	205
	7	377	266	4	205
	7	389	112	4	205
	7	397	113	4	207
	7	407	33	1	208
	7	408	33	1	208
	7	409	33	1	208
	7	410	35	1	208
	7	411	49	4	208
	7	412	181	6	208
	7	413	181	6	208
	7	414	240	3	208
	7	415	266	4	208
	7	830	Susa	1	300
	7	831	Susa	1	300

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Table 5 cont'd. All Samples By Period

Period	Code	Id	Site	Loc.	Type
	7	832	Susa	1	300
	7	833	Susa	1	301
	7	834	Susa	1	301
	7	835	Susa	1	301
	7	836	Susa	1	302
	7	837	Susa	1	302
	7	838	Susa	1	302
	7	839	Susa	1	302
	7	840	Susa	1	302
	7	841	Susa	1	302
	7	842	Susa	1	302
	7	843	Susa	1	302
	7	844	Susa	1	301
	7	845	Susa	1	301
	7	846	Susa	1	301
	7	847	Susa	1	303
	7	849	20	1	304
	7	850	20	1	351
	7	851	20	1	305
	7	852	20	1	300
	7	853	20	1	352
	7	854	20	1	353
	7	855	20	1	301
	7	856	20	1	301
	7	857	20	1	301
	7	858	20	1	301
	7	859	20	1	301
	7	860	20	1	304
	7	879	Susa	1	306
	7	880	Susa	1	306
	7	881	Susa	1	306
	7	882	Susa	1	300
	7	883	Susa	1	307
	7	884	Susa	1	301
	7	885	Susa	1	301
	7	886	Susa	1	308
	7	887	Susa	1	309
	7	888	Susa	1	301
	7	889	Susa	1	301
	7	890	Susa	1	301
	7	891	28	1	301
	7	892	28	1	301
	7	893	28	1	301
	7	894	28	1	301
	7	896	13	1	301
	7	897	13	1	301

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Table 5 cont'd. All Samples By Period

Period	Code	Id	Site	Loc.	Type
	7	898	20	1	306
	7	899	4	4	310
	7	900	4	4	310
	7	901	6	4	310
	7	902	16	1	310
	7	903	28	1	310
	7	904	101	6	310
	7	905	112	4	310
	7	906	112	4	310
	7	907	113	4	310
	7	908	204	6	310
	7	909	239	3	310
	7	910	239	3	310
	7	911	266	4	310
	7	912	266	4	310
	12	110	64	2	100
	12	111	66	2	100
	12	123	157	6	100
	12	158	155	6	102
	12	170	101	6	103
	12	178	17	1	104
	12	184	160	6	104
	12	226	174	6	105
	12	257	64	2	107
	12	283	33	1	201
	12	305	33	1	202
	12	314	161	6	202
	12	317	167	6	202
	12	355	124	4	204
	12	365	43	4	205
	12	383	161	6	206
	55	828	Susa	1	400
	55	829	Susa	1	400
Susa A or Earlier	8	104	28	1	100
	8	105	33	1	100
	8	118	113	4	100
	8	125	168	6	100
	8	126	176	6	100
	8	162	178	6	102
	8	183	118	4	104
	8	186	197	7	104
	8	194	16	1	105
	8	201	33	1	105
	8	232	240	3	105

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Table 5 cont'd. All Samples By Period

Period	Code	Id	Site	Loc.	Type
	8	241	106	6	106
	8	260	67	1	107
	8	288	106	6	201
	8	290	112	4	201
	8	294	178	6	201
	8	302	16	1	202
	8	319	176	6	202
	8	326	6	4	203
	8	331	105	6	203
	8	344	176	6	203
	8	346	215	7	203
	8	347	266	4	203
	8	352	106	6	204
	8	359	266	4	204
	8	361	4	4	205
	8	371	74	2	205
	8	395	108	4	207
	8	396	110	4	207
	8	399	178	6	207
	8	400	178	6	207
	8	402	197	6	207
	8	403	197	6	207
	8	404	215	6	207
	8	405	215	6	207
	8	406	4	4	208
	9	131	239	3	100
	10	310	112	4	202
	14	230	218	7	105
	14	286	67	1	201
	14	313	159	6	202
	14	334	108	4	203
	14	369	67	1	205
	14	391	28	1	207
	15	212	67	1	105
	15	256	49	4	107
	16	301	12	1	202
	16	315	162	6	202
	16	320	177	0	202
Period 7	63	872	20	1	380
	63	873	20	1	381
	63	874	20	1	382
	63	875	20	1	383
	63	876	20	1	384
	63	877	20	1	385

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Table 5 cont'd. All Samples By Period

Period	Code	Id	Site	Loc.	Type
	63	878	20	1	381
	66	436	271	0	209
Period 8	37	097	13	1	100
	37	101	19	1	100
	39	165	195	7	102
Period 8-11	40	196	19	7	105
Period 9-11	19	094	10	1	100
	19	100	17	1	100
	19	193	14	1	105
	19	199	24	1	105
	20	102	21	1	100
	20	107	38	4	100
	20	114	71	1	100
	20	168	2	4	103
	20	227	176	6	105
	20	236	21	1	106
	20	243	121	4	106
	20	245	239	3	106
	20	247	10	1	107
	20	249	19	1	107
	20	250	21	1	107
	20	254	43	4	107
	20	255	45	4	107
	20	861	20	1	370
	20	862	20	1	370
	20	863	20	1	370
	20	864	20	1	370
	20	865	20	1	370
	20	866	20	1	371
	20	867	20	1	372
	20	868	20	1	373
	20	869	20	1	374
	20	870	20	1	370
	20	871	20	1	370
	21	113	71	1	100
	21	197	21	1	105
	22	117	112	4	100
	26	151	38	4	102
	27	169	38	4	103
	29	173	159	6	103
	31	190	8	1	105
	31	204	38	4	105

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Table 5 cont'd. All Samples By Period

Period	Code	Id	Site	Loc.	Type
	31	213	71	1	105
	32	277	161	6	108
	34	238	38	4	106
	35	225	162	6	105
	36	096	13	1	100
	36	139	13	1	101
	36	140	17	1	101
	36	145	108	4	101
	36	192	13	1	105
	36	209	45	4	105
	36	234	13	1	106
	36	248	13	1	107
	38	135	10	1	101
	38	136	10	1	101
	38	137	10	1	101
	41	195	17	1	105
	42	205	38	4	105
	45	425	4	4	209
	59	160	162	6	102
	60	211	65	2	105
	74	950	1	4	218
	74	951	1	4	205
Period 12	43	112	67	1	100
	43	156	74	2	102
	43	157	124	4	102
	43	161	167	6	102
	43	166	197	7	102
	43	214	73	2	105
	43	215	74	2	105
	43	263	156	6	107
	43	266	176	6	107
	43	268	193	7	107
	43	289	108	4	201
	43	296	193	7	201
	43	299	4	4	202
	43	300	4	4	202
	43	304	24	1	202
	43	311	118	4	202
	43	318	168	6	202
	43	354	118	4	204
	43	368	65	2	205
	43	372	108	4	205
	43	376	218	6	205
	43	423	4	4	209

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Table 5 cont'd. All Samples By Period

Period	Code	Id	Site	Loc.	Type
	44	142	33	1	101
	44	217	105	6	105
	44	295	180	6	201
	44	312	156	6	202
	44	321	178	6	202
	44	332	106	6	203
	44	333	106	6	203
	44	336	113	4	203
	44	351	106	6	204
	44	358	225	0	204
	44	362	13	1	205
	44	367	65	2	205
	44	394	105	6	207
	44	401	197	6	207
	44	424	4	4	209
	47	280	13	1	200
	47	284	54	2	201
	47	285	65	2	201
	47	287	73	2	201
	47	292	124	4	201
	47	293	161	6	201
	47	297	197	7	201
	47	298	212	7	201
	47	306	65	2	202
	47	308	73	2	202
	47	309	74	2	202
	47	316	167	6	202
	47	322	212	7	202
	47	325	4	4	203
	47	327	12	1	203
	47	328	65	2	203
	47	329	73	2	203
	47	330	73	2	203
	47	335	108	4	203
	47	337	118	4	203
	47	338	124	4	203
	47	339	124	4	203
	47	340	156	6	203
	47	341	161	6	203
	47	342	168	6	203
	47	343	168	6	203
	47	345	178	6	203
	47	348	4	4	204
	47	350	73	2	204
	47	356	124	4	204
	47	360	4	4	205

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Table 5 cont'd. All Samples By Period

Period	Code	Id	Site	Loc.	Type
	47	374	124	4	205
	47	378	13	1	206
	47	379	16	1	206
	47	380	73	2	206
	47	381	118	4	206
	47	382	124	4	206
	47	384	179	6	206
	47	385	180	6	206
	47	386	197	6	206
	47	387	212	6	206
	47	388	225	0	206
	47	390	124	4	205
	47	392	74	2	207
	47	393	74	2	207
	47	398	124	4	207
	47	426	4	4	209
	48	282	28	1	201
	48	370	73	2	205
Chogha Mish Phase	17	252	28	1	107
	17	366	45	4	205
	18	095	12	1	100
	23	134	4	4	101
	24	138	12	1	101
	25	146	118	4	101
	25	147	124	4	101
	28	172	124	4	103
	33	191	12	1	105
	46	154	118	4	102
	49	098	14	1	100
	49	106	36	4	100
	49	108	42	4	100
	49	119	118	4	100
	49	141	19	1	101
	49	143	36	4	101
	49	148	161	6	101
	49	150	218	7	101
	49	174	176	6	103
	49	187	4	4	105
	49	188	4	4	105
	49	203	36	4	105
	49	208	42	4	105
	49	210	50	4	105
	49	219	108	4	105
	49	221	113	4	105

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Table 5 cont'd. All Samples By Period

Period	Code	Id	Site	Loc.	Type
	49	224	154	6	105
	49	237	36	4	106
	49	239	42	4	106
	49	242	112	4	106
	50	222	118	4	105
	51	235	14	1	106
	61	202	35	1	105
	62	220	112	4	105
	65	929	1	4	215
	65	932	1	4	215
	65	933	1	4	109
	65	937	1	4	111
	67	928	1	4	214
	69	931	1	4	217
	69	934	1	4	104
	69	936	1	4	110
Late or Off Plain	52	240	49	4	106
	54	422	4	4	212
	57	419	4	4	210
	57	420	Giyan	8	210
	58	421	4	4	211
	56	918	1	4	37
	56	919	1	4	37

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Table 6. All Samples By Site

Site	Id	Loc.	Per.	Type
KS 1	233	4	1	106
n=44	913	4	4	43
	914	4	4	43
	915	4	4	37
	916	4	4	41
	917	4	4	45
	918	4	56	37
	919	4	56	37
	920	4	56	38
	921	4	56	38
	922	4	56	38
	923	4	56	42
	924	4	4	42
	925	4	56	42
	926	4	56	42
	927	4	64	213
	928	4	67	214
	929	4	65	215
	930	4	64	216
	931	4	69	217
	932	4	65	215
	933	4	65	109
	934	4	69	104
	936	4	69	110
	937	4	65	111
	938	4	56	43
	939	4	56	43
	940	4	56	43
	941	4	56	43
	942	4	56	43
	943	4	56	39
	944	4	56	39
	945	4	56	39
	946	4	56	41
	947	4	56	40
	948	4	56	40
	949	4	56	46
	950	4	74	218
	951	4	74	205
	952	4	64	217
	953	4	64	217
	954	4	64	217
	955	4	64	217
	956	4	56	47

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Table 6 cont'd. All Samples By Site

Site	Id	Loc.	Per.	Type
KS 2	091	4	1	100
n=5	168	4	20	103
	175	4	7	104
	246	4	1	107
	275	4	1	108
KS 4	092	4	7	100
n=26	134	4	23	101
	176	4	7	104
	180	4	7	104
	187	4	49	105
	188	4	49	105
	276	4	7	108
	299	4	43	202
	300	4	43	202
	325	4	47	203
	348	4	47	204
	360	4	47	205
	361	4	8	205
	406	4	8	208
	416	4	1	209
	419	4	57	210
	421	4	58	211
	422	4	54	212
	423	4	43	209
	424	4	44	209
	425	4	45	209
	426	4	47	209
	427	4	1	209
	428	4	1	209
	899	4	7	310
	900	4	7	310
KS 6	093	4	7	100
n=10	189	4	7	105
	326	4	8	203
	440	4	2	35
	441	4	2	35
	442	4	2	35
	525	4	2	37
	536	4	2	36
	537	4	2	36
	901	4	7	310

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Table 6 cont'd. All Samples By Site

Site	Id	Loc.	Per.	Type
KS 7	464	1	3	38
n=9	465	1	3	38
	466	1	3	38
	467	1	3	38
	481	1	3	43
	482	1	3	43
	483	1	3	43
	484	1	3	43
	485	1	3	43
KS 8	190	1	31	105
KS 10	094	1	19	100
n=5	135	1	38	101
	136	1	38	101
	137	1	38	101
	247	1	20	107
KS 12	095	1	18	100
n=7	138	1	24	101
	191	1	33	105
	301	1	16	202
	327	1	47	203
	417	1	1	209
	437	1	1	209
KS 13	096	1	36	100
n=12	097	1	37	100
	139	1	36	101
	177	1	7	104
	192	1	36	105
	234	1	36	106
	248	1	36	107
	280	1	47	200
	362	1	44	205
	378	1	47	206
	896	1	7	301
	897	1	7	301

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Table 6 cont'd. All Samples By Site

Site	Id	Loc.	Per.	Type
KS 14	098	1	49	100
n=3	193	1	19	105
	235	1	51	106
KS 16	194	1	8	105
n=30	302	1	8	202
	363	1	7	205
	379	1	47	206
	586	1	2	35
	587	1	2	35
	588	1	2	35
	589	1	2	35
	590	1	2	35
	613	1	3	43
	614	1	3	43
	615	1	3	43
	616	1	3	43
	617	1	3	43
	640	1	3	39
	641	1	3	39
	642	1	3	39
	643	1	3	39
	644	1	3	39
	645	1	3	39
	673	1	2	37
	674	1	2	37
	675	1	2	37
	686	1	2	36
	718	1	3	38
	719	1	3	38
	720	1	3	38
	721	1	3	38
	780	1	4	52
	902	1	7	310
KS 17	100	1	19	100
n=4	140	1	36	101
	178	1	12	104
	195	1	41	105

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Table 6 cont'd. All Samples By Site

Site	Id	Loc.	Per.	Type
KS 19	101	1	37	100
n=4	141	1	49	101
	196	1	40	105
	249	1	20	107
KS 20	849	1	7	304
n=35	850	1	7	351
	851	1	7	305
	852	1	7	300
	853	1	7	352
	854	1	7	353
	855	1	7	301
	856	1	7	301
	857	1	7	301
	858	1	7	301
	859	1	7	301
	860	1	7	304
	861	1	20	370
	862	1	20	370
	863	1	20	370
	864	1	20	370
	865	1	20	370
	866	1	20	371
	867	1	20	372
	868	1	20	373
	869	1	20	374
	870	1	20	370
	871	1	20	370
	872	1	63	380
	873	1	63	381
	874	1	63	382
	875	1	63	383
	876	1	63	384
	877	1	63	385
	878	1	63	381
	898	1	7	306
	977	1	1	49
	978	1	1	49
	983	1	1	50
	984	1	1	50

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Table 6 cont'd. All Samples By Site

Site	Id	Loc.	Per.	Type
KS 21	102	1	20	100
n=4	197	1	21	105
	236	1	20	106
	250	1	20	107
KS 22	022	1	3	43
n=22	023	1	3	43
	024	1	3	43
	025	1	3	43
	026	1	3	43
	027	1	3	43
	028	1	3	43
	029	1	3	43
	030	1	3	43
	103	1	7	100
	198	1	7	105
	251	1	7	107
	281	1	7	201
	303	1	7	202
	468	1	3	38
	469	1	3	38
	505	1	3	39
	506	1	3	39
	507	1	3	39
	526	1	2	37
	527	1	2	37
	538	1	2	36
KS 24	199	1	19	105
n=16	304	1	43	202
	591	1	2	35
	592	1	2	35
	593	1	2	35
	618	1	3	43
	619	1	3	43
	620	1	3	43
	621	1	3	43
	622	1	3	43
	646	1	3	39
	647	1	3	39
	648	1	3	39
	676	1	2	37
	677	1	2	37
	724	1	3	38

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Table 6 cont'd. All Samples By Site

Site	Id	Loc.	Per.	Type
KS 27	443	1	2	35
n=7	444	1	2	35
	445	1	2	35
	446	1	2	35
	528	1	2	37
	539	1	2	36
	540	1	2	36
KS 28	104	1	8	100
n=6	200	1	7	105
	252	1	17	107
	282	1	48	201
	391	1	14	207
	903	1	7	310
KS 29	253	1	7	107
KS 32	594	2	2	35
n=10	595	2	2	35
	678	2	2	37
	739	2	4	40
	740	2	4	40
	757	2	4	42
	769	2	4	41
	770	2	4	41
	771	2	4	41
	772	2	4	41
KS 33	105	1	8	100
n=11	142	1	44	101
	179	1	7	104
	201	1	8	105
	283	1	12	201
	305	1	12	202
	349	1	7	204
	364	1	7	205
	407	1	7	208
	408	1	7	208
	409	1	7	208

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Table 6 cont'd. All Samples By Site

Site	Id	Loc.	Per.	Type
KS 34	552	1	4	40
n=4	553	1	4	40
	566	1	4	42
	567	1	4	42
KS 35	202	1	61	105
n=2	410	1	7	208
KS 36	106	4	49	100
n=74	143	4	49	101
	203	4	49	105
	237	4	49	106
	782	4	3	38
	783	4	3	38
	784	4	3	38
	785	4	3	38
	786	4	3	38
	787	4	3	38
	788	4	3	38
	789	4	3	38
	790	4	3	38
	791	4	3	38
	792	4	3	38
	793	4	3	38
	794	4	3	38
	795	4	3	38
	796	4	3	38
	797	4	3	38
	798	4	3	38
	799	4	3	38
	800	4	3	38
	801	4	3	38
	802	4	3	38
	803	4	3	38
	804	4	3	38
	805	4	3	38
	806	4	3	38
	808	4	3	38
	809	4	3	38
	810	4	3	38
	811	4	3	38
	812	4	3	38
	813	4	3	38

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Table 6 cont'd. All Samples By Site

Site	Id	Loc.	Per.	Type
	814	4	3	38
	815	4	3	38
	816	4	3	38
	817	4	3	38
	818	4	3	38
	819	4	3	38
	820	4	3	38
	821	4	3	38
	822	4	3	38
	823	4	3	38
	824	4	3	38
	825	4	3	38
	826	4	3	38
	827	4	3	38
	997	4	5	43
	998	4	5	43
	999	4	5	43
	1000	4	5	43
	1001	4	5	43
	1002	4	5	43
	1003	4	5	43
	1004	4	5	43
	1005	4	5	43
	1006	4	5	43
	1007	4	5	43
	1008	4	5	43
	1009	4	5	43
	1010	4	5	43
	1011	4	5	43
	1012	4	5	43
	1013	4	5	43
	1014	4	5	43
	1015	4	5	43
	1016	4	5	43
	1017	4	5	43
	1018	4	5	43
	1019	4	5	43
	1020	4	5	43
	1021	4	5	43

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Table 6 cont'd. All Samples By Site

Site	Id	Loc.	Per.	Type
KS 38	107	4	20	100
n=7	144	4	1	101
	151	4	26	102
	169	4	27	103
	204	4	31	105
	205	4	42	105
	238	4	34	106
KS 39	053	4	5	43
n=16	054	4	5	43
	055	4	5	43
	056	4	5	43
	057	4	5	43
	058	4	5	43
	059	4	5	43
	060	4	5	43
	206	4	1	105
	508	4	3	39
	509	4	3	39
	510	4	3	39
	511	4	3	39
	512	4	3	39
	554	4	4	40
	555	4	4	40
KS 40	152	4	7	102
n=2	207	4	1	105
KS 41	153	4	7	102
KS 42	108	4	49	100
n=3	208	4	49	105
	239	4	49	106
KS 43	254	4	20	107
n=2	365	4	12	205
KS 45	209	4	36	105
n=3	255	4	20	107
	366	4	17	205

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Table 6 cont'd. All Samples By Site

Site	Id	Loc.	Per.	Type
KS 49	155	4	7	102
n=10	240	4	52	106
	256	4	15	107
	411	4	7	208
	429	4	1	209
	447	4	2	35
	448	4	2	35
	449	4	2	35
	529	4	2	37
	530	4	2	37
KS 50	109	4	7	100
n=2	210	4	49	105
KS 52	596	1	2	35
n=11	597	1	2	35
	598	1	2	35
	599	1	2	35
	649	1	3	39
	650	1	3	39
	651	1	3	39
	652	1	3	39
	687	1	2	36
	722	1	3	38
	723	1	3	38
KS 54	284	2	47	201
n=13	741	2	4	40
	742	2	4	40
	743	2	4	40
	744	2	4	40
	745	2	4	40
	758	2	4	42
	759	2	4	42
	760	2	4	42
	761	2	4	42
	773	2	4	41
	774	2	4	41
	775	2	4	41

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Table 6 cont'd. All Samples By Site

Site	Id	Loc.	Per.	Type
KS 59	041	2	5	43
n=30	042	2	5	43
	043	2	5	43
	044	2	5	43
	045	2	5	43
	046	2	5	43
	634	2	2	35
	635	2	2	35
	653	2	3	39
	746	2	4	40
	747	2	4	40
	748	2	4	40
	749	2	4	40
	762	2	4	42
	763	2	4	42
	764	2	4	42
	765	2	4	42
	766	2	4	42
	776	2	4	41
	777	2	4	41
	987	2	5	43
	988	2	5	43
	989	2	5	43
	990	2	5	43
	991	2	5	43
	992	2	5	43
	993	2	5	43
	994	2	5	43
	995	2	5	43
	996	2	5	43
KS 61	450	2	2	35
n=4	470	2	3	38
	513	2	3	39
	541	2	2	36
KS 64	110	2	12	100
n=11	257	2	12	107
	451	2	2	35
	452	2	2	35
	453	2	2	35
	531	2	2	37
	532	2	2	37
	574	2	6	33

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Table 6 cont'd. All Samples By Site

Site	Id	Loc.	Per.	Type
	575	2	6	33
	576	2	6	33
	582	2	6	34
KS 65	211	2	60	105
n=6	285	2	47	201
	306	2	47	202
	328	2	47	203
	367	2	44	205
	368	2	43	205
KS 66	111	2	12	100
n=4	258	2	7	107
	259	2	7	107
	307	2	7	202
KS 67	112	1	43	100
n=10	212	1	15	105
	260	1	8	107
	286	1	14	201
	369	1	14	205
	701	1	6	33
	702	1	6	33
	703	1	6	33
	704	1	6	33
	705	1	6	33
KS 71	113	1	21	100
n=3	114	1	20	100
	213	1	31	105
KS 73	214	2	43	105
n=8	287	2	47	201
	308	2	47	202
	329	2	47	203
	330	2	47	203
	350	2	47	204
	370	2	48	205
	380	2	47	206

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Table 6 cont'd. All Samples By Site

Site	Id	Loc.	Per.	Type
KS 74	156	2	43	102
n=6	215	2	43	105
	309	2	47	202
	371	2	8	205
	392	2	47	207
	393	2	47	207
KS 76	600	2	2	35
n=20	654	2	3	39
	655	2	3	39
	656	2	3	39
	657	2	3	39
	679	2	2	37
	680	2	2	37
	725	2	3	38
	726	2	3	38
	957	2	3	43
	958	2	3	43
	959	2	3	43
	960	2	3	38
	961	2	3	38
	962	2	2	35
	963	2	2	37
	964	2	2	37
	965	2	3	39
	966	2	3	39
	967	2	2	36
KS 79	750	2	4	40
n=10	751	2	4	40
	752	2	4	40
	753	2	4	40
	754	2	4	40
	755	2	4	40
	756	2	4	40
	767	2	4	42
	768	2	4	42
	778	2	4	41
KS 90	454	2	2	35
n=2	455	2	2	35

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Table 6 cont'd. All Samples By Site

Site	Id	Loc.	Per.	Type
KS 93	601	2	2	35
n=3	602	2	2	35
	603	2	2	35
KS 96	456	2	2	35
n=33	457	2	2	35
	458	2	2	35
	459	2	2	35
	460	2	2	35
	486	2	5	43
	487	2	5	43
	488	2	5	43
	489	2	5	43
	490	2	5	43
	533	2	2	37
	542	2	2	36
	543	2	2	36
	544	2	2	36
	545	2	2	36
	546	2	2	36
	547	2	2	36
	556	2	4	40
	557	2	4	40
	558	2	4	40
	559	2	4	40
	560	2	4	40
	561	2	4	42
	562	2	4	42
	563	2	4	42
	564	2	4	42
	565	2	4	42
	568	2	4	41
	569	2	4	41
	570	2	4	41
	571	2	4	41
	572	2	4	41
	573	2	4	41
KS 99	534	5	2	37
n=5	548	5	2	36
	549	5	2	36
	550	5	2	36
	551	5	2	36

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Table 6 cont'd. All Samples By Site

Site	Id	Loc.	Per.	Type
KS 101	115	6	7	100
n=5	170	6	12	103
	181	6	7	104
	216	6	7	105
	904	6	7	310
KS 105	171	6	7	103
n=4	217	6	44	105
	331	6	8	203
	394	6	44	207
KS 106	116	6	7	100
n=9	218	6	7	105
	241	6	8	106
	261	6	7	107
	288	6	8	201
	332	6	44	203
	333	6	44	203
	351	6	44	204
	352	6	8	204
KS 108	001	4	5	43
n=38	002	4	5	43
	003	4	5	43
	004	4	5	43
	005	4	5	43
	006	4	5	43
	007	4	5	43
	008	4	5	43
	009	4	5	43
	010	4	5	43
	145	4	36	101
	219	4	49	105
	289	4	43	201
	334	4	14	203
	335	4	47	203
	372	4	43	205
	395	4	8	207
	636	4	2	35
	637	4	2	35
	638	4	2	35
	639	4	2	35

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Table 6 cont'd. All Samples By Site

Site	Id	Loc.	Per.	Type
	658	4	3	39
	659	4	3	39
	660	4	3	39
	661	4	3	39
	662	4	3	39
	663	4	3	39
	681	4	2	37
	682	4	2	37
	688	4	2	36
	689	4	2	36
	690	4	2	36
	706	4	6	33
	707	4	6	33
	727	4	3	38
	728	4	3	38
	729	4	3	38
	779	4	4	41
KS 110	396	4	8	207
KS 112	117	4	22	100
n=10	220	4	62	105
	242	4	49	106
	262	4	7	107
	290	4	8	201
	310	4	10	202
	373	4	7	205
	389	4	7	205
	905	4	7	310
	906	4	7	310
KS 113	118	4	8	100
n=22	182	4	7	104
	221	4	49	105
	336	4	44	203
	353	4	7	204
	397	4	7	207
	471	4	3	38
	472	4	3	38
	473	4	3	38
	474	4	3	38
	475	4	3	38

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Table 6 cont'd. All Samples By Site

Site	Id	Loc.	Per.	Type
	491	4	5	43
	492	4	5	43
	493	4	5	43
	494	4	5	43
	495	4	5	43
	514	4	3	39
	515	4	3	39
	516	4	3	39
	517	4	3	39
	518	4	3	39
	907	4	7	310
KS 118	119	4	49	100
n=10	146	4	25	101
	154	4	46	102
	183	4	8	104
	222	4	50	105
	291	4	7	201
	311	4	43	202
	337	4	47	203
	354	4	43	204
	381	4	47	206
KS 121	243	4	20	106
n=8	604	4	2	35
	605	4	2	35
	606	4	2	35
	607	4	2	35
	608	4	2	35
	730	4	3	38
	781	4	4	52
KS 124	147	4	25	101
n=17	157	4	43	102
	172	4	28	103
	223	4	1	105
	244	4	1	106
	292	4	47	201
	338	4	47	203
	339	4	47	203
	355	4	12	204
	356	4	47	204
	374	4	47	205
	382	4	47	206

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Table 6 cont'd. All Samples By Site

Site	Id	Loc.	Per.	Type
	390	4	47	205
	398	4	47	207
	430	4	1	209
	431	4	1	209
	432	4	1	209
KS 153	609	6	2	35
n=17	623	6	3	43
	624	6	3	43
	625	6	3	43
	626	6	3	43
	627	6	3	43
	664	6	3	39
	665	6	3	39
	666	6	3	39
	667	6	3	39
	668	6	3	39
	683	6	2	37
	691	6	2	36
	692	6	2	36
	693	6	2	36
	731	6	3	38
	732	6	3	38
KS 154	224	6	49	105
KS 155	122	6	1	100
n=2	158	6	12	102
KS 156	263	6	43	107
n=3	312	6	44	202
	340	6	47	203
KS 157	123	6	12	100
n=3	159	6	7	102
	264	6	7	107
KS 159	173	6	29	103
n=2	313	6	14	202

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Table 6 cont'd. All Samples By Site

Site	Id	Loc.	Per.	Type
KS 160	124	6	7	100
n=3	184	6	12	104
	433	6	1	209
KS 161	148	6	49	101
n=8	277	6	32	108
	293	6	47	201
	314	6	12	202
	341	6	47	203
	357	6	7	204
	383	6	12	206
	418	6	1	209
KS 162	160	6	59	102
n=3	225	6	35	105
	315	6	16	202
KS 165	099	6	7	100
n=20	461	6	2	35
	462	6	2	35
	476	6	3	38
	477	6	3	38
	478	6	3	38
	479	6	3	38
	496	6	3	43
	497	6	3	43
	498	6	3	43
	499	6	3	43
	500	6	3	43
	519	6	3	39
	520	6	3	39
	521	6	3	39
	522	6	3	39
	523	6	3	39
	524	6	3	39
	535	6	2	37
	669	6	3	39

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Table 6 cont'd. All Samples By Site

Site	Id	Loc.	Per.	Type
KS 167	161	6	43	102
n=6	316	6	47	202
	317	6	12	202
	434	6	1	209
	438	6	1	209
	439	6	1	209
KS 168	125	6	8	100
n=4	318	6	43	202
	342	6	47	203
	343	6	47	203
KS 173	vvv	6	3	43
n=15	www	6	3	43
	xxx	6	3	43
	yyy	6	3	43
	zzz	6	3	43
	073	6	3	43
	076	6	3	43
	078	6	3	43
	079	6	3	43
	080	6	3	43
	670	6	3	39
	733	6	3	38
	734	6	3	38
	735	6	3	38
	736	6	3	38
KS 174	226	6	12	105
n=4	265	6	7	107
	278	6	7	108
	435	6	1	209
KS 176	126	6	8	100
n=8	174	6	49	103
	227	6	20	105
	266	6	43	107
	319	6	8	202
	344	6	8	203
	375	6	7	205

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Table 6 cont'd. All Samples By Site

Site	Id	Loc.	Per.	Type
KS 177	320	0	16	202
KS 178	162	6	8	102
n=7	267	6	7	107
	294	6	8	201
	321	6	44	202
	345	6	47	203
	399	6	8	207
	400	6	8	207
KS 179	384	6	47	206
KS 180	295	6	44	201
n=2	385	6	47	206
KS 181	412	6	7	208
n=2	413	6	7	208
KS 182	163	6	7	102
n=5	164	6	7	102
	708	6	6	33
	709	6	6	33
	710	6	6	33
KS 186	185	7	7	104
n=2	228	7	7	105
KS 190	711	7	6	33
n=5	712	7	6	33
	713	7	6	33
	714	7	6	33
	715	7	6	33
KS 193	268	7	43	107
n=2	296	7	43	201
KS 195	165	7	39	102

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Table 6 cont'd. All Samples By Site

Site	Id	Loc.	Per.	Type
KS 197	166	7	43	102
n=8	186	7	8	104
	269	7	7	107
	297	7	47	201
	386	7	47	206
	401	7	44	207
	402	7	8	207
	403	7	8	207
KS 204	128	7	7	100
n=4	149	6	7	101
	229	7	7	105
	908	6	7	310
KS 212	298	7	47	201
n=3	322	7	47	202
	387	7	47	206
KS 215	129	7	7	100
n=7	167	7	7	102
	270	7	7	107
	323	7	7	202
	346	7	8	203
	404	7	8	207
	405	7	8	207
KS 218	150	7	49	101
n=3	230	7	14	105
	376	7	43	205
KS 225	358	0	44	204
n=2	388	0	47	206
KS 238	130	3	7	100

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Table 6 cont'd. All Samples By Site

Site	Id	Loc.	Per.	Type
KS 239	131	3	9	100
n=5	231	3	7	105
	245	3	20	106
	909	3	7	310
	910	3	7	310
KS 240	132	3	7	100
n=8	232	3	8	105
	414	3	7	208
	463	3	2	35
	501	3	3	43
	502	3	3	43
	503	3	3	43
	504	3	3	43
KS 266	347	4	8	203
n=26	359	4	8	204
	377	4	7	205
	415	4	7	208
	610	4	2	35
	611	4	2	35
	629	4	3	43
	630	4	3	43
	631	4	3	43
	632	4	3	43
	633	4	2	35
	671	4	3	39
	672	4	3	39
	684	4	2	37
	685	4	2	37
	694	4	2	36
	695	4	2	36
	696	4	2	36
	697	4	2	36
	698	4	2	36
	716	4	6	33
	717	4	6	33
	737	4	3	38
	738	4	3	38
	911	4	7	310
	912	4	7	310

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Table 6 cont'd. All Samples By Site

Site	Id	Loc.	Per.	Type
KS 269	272	2	7	107
n=10	480	2	1	44
	577	2	6	33
	578	2	6	33
	579	2	6	33
	580	2	6	33
	581	2	6	33
	583	2	6	34
	584	2	6	34
	585	2	6	34
KS 271	436	0	66	209
KS 272	273	6	1	107
KS 273	279	6	1	108
KS 274	133	2	7	100
n=3	274	2	7	107
	324	2	7	202
KS 284	612	4	2	35
n=3	699	4	2	36
	700	4	2	36
Bouhallan	891	1	7	301
(KS 28)	892	1	7	301
n=4	893	1	7	301
	894	1	7	301
Giyan	420	8	57	210

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Table 6 cont'd. All Samples By Site

Site	Id	Loc.	Per.	Type
Susa n=47	828	1	55	400
	829	1	55	400
	830	1	7	300
	831	1	7	300
	832	1	7	300
	833	1	7	301
	834	1	7	301
	835	1	7	301
	836	1	7	302
	837	1	7	302
	838	1	7	302
	839	1	7	302
	840	1	7	302
	841	1	7	302
	842	1	7	302
	843	1	7	302
	844	1	7	301
	845	1	7	301
	846	1	7	301
	847	1	7	303
	879	1	7	306
	880	1	7	306
	881	1	7	306
	882	1	7	300
	883	1	7	307
	884	1	7	301
	885	1	7	301
	886	1	7	308
	887	1	7	309
	888	1	7	301
	889	1	7	301
	890	1	7	301
	968	1	5	48
	969	1	5	48
	970	1	5	48
	971	1	5	48
	972	1	5	48
	973	1	5	48
	974	1	5	48
	975	1	5	49
	976	1	5	49

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Table 6 cont'd. All Samples By Site

Site	Id	Loc.	Per.	Type
	979	1	5	49
	980	1	5	49
	981	1	5	50
	982	1	5	50
	985	1	5	50
	986	1	5	50

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Table 7. All Samples From Johnson (1973)

Id	GAJ No	Site	Loc	Per	Type
001	2.24	108	4	5	43
002	2.18	108	4	5	43
003	2.06	108	4	5	43
004	2.10	108	4	5	43
006	2.28	108	4	5	43
007	2.27	108	4	5	43
008	2.03	108	4	5	43
009	2.21	108	4	5	43
024	2.01	22	1	3	43
028	2.03	22	1	3	43
029	2.04	22	1	3	43
053	2.13	39	4	5	43
054	2.25	39	4	5	43
055	2.08	39	4	5	43
056	2.20	39	4	5	43
057	2.07	39	4	5	43
058	2.18	39	4	5	43
059	2.17	39	4	5	43
060	2.05	39	4	5	43
078	2.02	173	6	3	43
079	2.03	173	6	3	43
080	2.01	173	6	3	43
464	6.01	7	1	3	38
465	6.02	7	1	3	38
466	6.03	7	1	3	38
468	6.02	22	1	3	38
469	6.01	22	1	3	38
471	6.04	113	4	3	38
472	6.09	113	4	3	38
473	6.06	113	4	3	38
474	6.07	113	4	3	38
476	6.02	165	6	3	38
477	6.02	165	6	3	38
478	6.01	165	6	3	38
479	6.02	165	6	3	38
488	2.02	96	2	5	43
505	3.01	22	1	3	39
506	3.02	22	1	3	39
507	3.03	22	1	3	39
508	3.05	39	4	3	39
509	3.04	39	4	3	39
511	3.03	39	4	3	39
512	3.02	39	4	3	39
513	3.02	61	2	3	39
514	3.09	113	4	3	39
515	3.05	113	4	3	39

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Table 7 cont'd. All Samples From Johnson (1973)

Id	GAJ No	Site	Loc	Per	Type
515	3.05	113	4	3	39
516	3.02	113	4	3	39
517	3.03	113	4	3	39
518	3.01	113	4	3	39
519	3.01	165	6	3	39
520	3.03	165	6	3	39
521	3.07	165	6	3	39
522	3.04	165	6	3	39
523	3.05	165	6	3	39
524	3.06	165	6	3	39
536	8.02	6	4	2	36
537	8.01	6	4	2	36
538	8.01	22	1	2	36
540	8.01	27	1	2	36
542	8.01	96	2	2	36
543	8.07	96	2	2	36
544	8.04	96	2	2	36
545	8.08	96	2	2	36
546	8.06	96	2	2	36
547	8.03	96	2	2	36
549	8.01	99	5	2	36
551	8.02	99	5	2	36
552	6.02	34	1	4	40
553	6.01	34	1	4	40
554	6.01	39	4	4	40
555	6.01	39	4	4	40
556	6.01	96	2	4	40
557	6.03	96	2	4	40
558	6.04	96	2	4	40
559	6.06	96	2	4	40
560	6.07	96	2	4	40
574	5.01	64	2	6	33
575	5.02	64	2	6	33
576	5.03	64	2	6	33
577	5.11	269	2	6	33
578	5.07	269	2	6	33
579	5.05	269	2	6	33
580	5.09	269	2	6	33
581	5.06	269	2	6	33
614	2.06	16	1	3	43
631	2.03	266	4	3	43
632	2.04	266	4	3	43
640	3.02	16	1	3	39
641	3.05	16	1	3	39
643	3.03	16	1	3	39
644	3.02	16	1	3	39

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Table 7 cont'd. All Samples From Johnson (1973)

Id	GAJ No	Site	Loc	Per	Type
645	3.04	16	1	3	39
646	3.02	24	1	3	39
647	3.01	24	1	3	39
648	3.03	24	1	3	39
649	3.02	52	1	3	39
650	3.01	52	1	3	39
651	3.03	52	1	3	39
653	3.47	59	2	3	39
654	3.02	76	2	3	39
655	3.03	76	2	3	39
656	3.04	76	2	3	39
657	3.01	76	2	3	39
658	3.20	108	4	3	39
659	3.21	108	4	3	39
660	3.12	108	4	3	39
661	3.16	108	4	3	39
662	3.18	108	4	3	39
663	3.13	108	4	3	39
665	3.02	153	6	3	39
667	3.01	153	6	3	39
669	3.02	165	6	3	39
670	3.02	173	6	3	39
671	3.01	266	4	3	39
672	3.02	266	4	3	39
690	8.01	108	4	2	36
701	5.03	67	1	6	33
702	5.06	67	1	6	33
703	5.01	67	1	6	33
704	5.02	67	1	6	33
706	5.02	108	4	6	33
707	5.01	108	4	6	33
708	5.02	182	6	6	33
709	5.01	182	6	6	33
716	5.03	266	4	6	33
717	5.02	266	4	6	33
718	6.01	16	1	3	38
719	6.04	16	1	3	38
720	6.03	16	1	3	38
721	6.02	16	1	3	38
722	6.01	52	1	3	38
723	6.02	52	1	3	38
724	6.01	24	1	3	38
725	6.01	76	2	3	38
726	6.02	76	2	3	38
727	6.02	108	4	3	38
728	6.04	108	4	3	38

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Table 7 cont'd. All Samples From Johnson (1973)

Id	GAJ No	Site	Loc	Per	Type
729	6.01	108	4	3	38
730	6.01	121	4	3	38
731	6.01	153	6	3	38
732	6.03	153	6	3	38
733	6.03	173	6	3	38
734	6.06	173	6	3	38
735	6.04	173	6	3	38
736	6.07	173	6	3	38
737	6.03	266	4	3	38
738	6.01	266	4	3	38
739	6.01	32	2	4	40
741	6.07	54	2	4	40
742	6.01	54	2	4	40
744	6.02	54	2	4	40
745	6.05	54	2	4	40
749	6.01	59	2	4	40
750	6.04	79	2	4	40
751	6.06	79	2	4	40
752	6.05	79	2	4	40
753	6.01	79	2	4	40
754	6.02	79	2	4	40
755	6.03	79	2	4	40
756	6.01	79	2	4	40
780	1.05	16	1	4	52
781	1.01	121	4	4	52

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Table 8. Period 7-Susa A Chronology[1]

Period	Date	Jaffarabad	Jowi	Bendebal	Susa	Chogha Mish
Susa A (13)	3900	1 2 a III 3d		10 III 11	25 26 I 27	Late Susiana
12	4100			12 13 14		
11	4400			15 16		
		GAP		17 18 II 19		
10	4500			20 21		Middle Susiana 3
			4 5 II	22 23		
		3m-n (II)	|	24 25		
			10	26 27		
9	4800		11 12 13	28 I | |		Middle Susiana 2 ?
8	4900		14 15 16 I	?		Middle Susiana 1
		4	17			
7	5100	5 I 6				Early Susiana

Period 13 = Susa A or Suse Phase
Periods 9-12 = Chogha Mish Phase
Periods 7-8 = Jaffarabad Phase

[1]Adapted from Dollfus 1983a:167, Table 41.

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Table 9. Terminal Susa A-Late Uruk Chronology[1]

Date	Period
3200	Late Uruk
3300	
3400	Middle Uruk
3500	
3600	
	Early Uruk
3700	
3800	
3900	Terminal Susa A
4000	

[1]Adapted from Wright and Johnson 1975:269, Table 1; Johnson 1973:65, Table 16 and 1973:45, Table 7.

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Table 10. Rank-Size Indices by Period

Period	RSI - Whole Plain	RSI -Subareas	
Susiana a[1]	0.568		
Susiana b/c[1]	0.144	West Susiana:	0.620
		A:	0.607
		B:	0.358
		C:	0.503
		East Susiana:	-0.165
Susiana d[1]	0.468	West Susiana:	0.658
		A:	0.273
		B:	0.370
		C:	0.602
		D:	0.510
		E:	0.374
		East Susiana:	0.358
		F+G:	0.047
		H+I:	0.120
		J:	0.170
		K:	0.227
Susa A[1]	0.223	West Susiana:	-0.239
		East Susiana:	0.516
		A+B:	0.432
		C+D:	0.219
Terminal Susa A[2]	0.329	Susa Cluster:	0.402
		Center :	0.068
		East :	0.667
Early Uruk[3]	0.322	West :	0.113
		Susa Dist. :	-0.759
		KS59 Dist. :	0.334
		East :	0.415
Middle Uruk[3]	0.084	Susa Dist. :	-0.869
		KS59 Dist. :	0.058
		East :	0.082
Late Uruk[2]	-0.121	West :	0.152
		East :	-0.267

[1]From Pollock 1983:371, Table 2. See Pollock for her settlement pattern maps and chronology.

[2]Calculated by Berman; sites < 1.0 ha eliminated from calculation.

[3]From Johnson 1983.

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Table 11. Summary of Per Cent Deviation Results

Period/ Group/(Table Number)	N Samp.	Source[1]
PERIOD 7		
Black-on-Buff, All (12)	5	-
Jaffarabad (13)	7	-
Jaffarabad Buff Common Ware (14)	2	-
PERIOD 8		
Red Wares, All (15)	3	-
Red Wares, W-N (16)	2	*
PERIOD 9-11		
Red Wares		
All, (17)	45	-
W-N (18)	25	-
W-N, KS 10 (19)	5	*
W-N, KS 13 (20)	5	-
W-N, KS 17 (21)	3	*?
W-N, KS 21 (22)	4	*?
W-N, KS 71 (23)	3	*?
Center, (24)	13	-
Center, KS 38 (25)	6	-
Center, KS 45 (26)	2	*
E-N, (27)	5	-
E-N, KS 162 (28)	2	-
Unslipped, (29)	8	-
Unslipped, W-N (30)	6	-
Unslipped, W-N, KS 71 (31)	2	*
Gritty, Coarse, (32)	6	*
Gritty, Coarse, W-N (33)	5	*
Gritty, Coarse, W-N, KS 10 (34)	5	*
Porous, Chaff Temp, (35)	2	-?
Dark Slip, (36)	3	*?
Dark Slip, Center, (37)	2	?
Salmon Wares		
Buff Slip, (38)	6	-
Buff Slip, W-N (39)	4	-?

[1]* = single source; - = more than one source;
-?, *?, ? = number of sources undetermined.

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Table 11 cont'd. Summary of Per Cent Deviation Results

Period/ Group/(Table Number)	N Samp.	Source[1]
PERIOD 9-11		
Salmon Wares		
Buff Slip, Center (40)	2	-
Dark Slip, (41)	5	*
Dark Slip, W-N (42)	2	*?
Dark Slip, Center (43)	2	*?
Red Slip, (44)	13	-
Red Slip, W-N (45)	7	*
Red Slip, Center (46)	3	-
Red Slip, Center, KS 38 (47)	2	-
Red Slip, E-N (48)	2	*
Black-on-Buff Ware		
All (49)	13	-
W-N, Jaffarabad (50)	10	-
Center (51)	3	-
Center, KS 1 (52)	2	*
PERIOD 12		
Red Wares		
All (53)	12	-
W-S (54)	3	*?
W-S, KS 74 (55)	2	*
E-N (56)	4	-
E-S (57)	2	-?
Porous, Chaff Temp (58)	4	-
Salmon Wares		
All (59)	3	-
Red Slip, W-S (60)	2	-?
Buff Slip (61)	3	-?
Black-on-Buff Ware		
All (62)	74	-?
W-N (63)	7	*
W-N, KS 13 (64)	3	*
W-S (65)	16	-?
W-S, KS 65 (66)	5	-?
W-S, KS 73 (67)	7	*?
W-S, KS 74 (68)	3	*
Center (69)	24	*?
Center, KS 4 (70)	8	*
Center, KS 108 (71)	3	-?

[1]* = single source; - = more than one source; -?, *?, ? = number of sources undetermined.

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Table 11 cont'd. Summary of Per Cent Deviation Results

Period/ Group/(Table Number)	N Samp.	Source[1]
PERIOD 12		
Black-on-Buff Ware		
Center, KS 118 (72)	4	*?
Center, KS 124 (73)	8	*?
E-N (74)	18	-
E-N, KS 106 (75)	3	*?
E-N, KS 156 (76)	2	-
E-N, KS 161 (77)	2	*
E-N, KS 168 (78)	3	*?
E-N, KS 178 (79)	2	*
E-N, KS 180 (80)	2	*
E-S (81)	7	*
E-S, KS 197 (82)	3	*?
E-S, KS 212 (83)	3	*
Wasters (84)	3	*
Goat Motif (85)	5	*
Goat Motif, KS 74 (86)	2	*
Cyl. Bowl, Sq.& Dots (87)	9	*
Cyl. Bowl, Sq.& Dots, Center (88)	2	*
Cyl. Bowl, Sq.& Dots, E-N (89)	2	*?
Cyl. Bowl, Sq.& Dots, E-S (90)	2	*
Cyl. Bowl, Bnd & Bnd (91)	17	*
Cyl. Bowl, Bnd & Bnd, W-S (92)	3	*?
Cyl. Bowl, Bnd & Bnd, W-S, KS 73 (93)	2	*?
Cyl. Bowl, Bnd & Bnd, Center (94)	6	*
Cyl. Bowl, Bnd & Bnd, Center, KS 124 (95)	2	*?
Cyl. Bowl, Bnd & Bnd, E-N (96)	7	*
Cyl. Bowl, Bnd & Bnd, E-N, KS 106 (97)	2	*
Cyl. Bowl, Bnd & Bnd, E-N, KS 168 (98)	2	*?
Cyl. Bowl, Bnd & 2 Lines, (99)	6	*
Cyl. Bowl, Bnd & 2 Lines, Center (100)	3	*?
Cyl. Bowl, Bnd & Dots (101)	9	-
Cyl. Bowl, Bnd & Dots, W-S (102)	3	-
Cyl. Bowl, Bnd & Dots, W-S, KS 65 (103)	2	-
Cyl. Bowl, Bnd & Dots, Center (104)	4	-

[1]* = single source; - = more than one source; -?, *?, ? = number of sources undetermined.

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Table 11 cont'd. Summary of Per Cent Deviation Results

Period/ Group/(Table Number)	N Samp.	Source[1]
PERIOD 12		
Black-on-Buff Ware		
Cyl. Bowl, Bnd & Dots, Center, KS 124 (105)	2	*
Cyl. Bowl, Bnd & Line, (106)	11	-?
Cyl. Bowl, Bnd & Line, W-S (107)	3	*
Cyl. Bowl, Bnd & Line, Center (108)	2	*?
Cyl. Bowl, Bnd & Line, E-N (109)	2	*
Cyl. Bowl, Bnd & Line, E-S (110)	3	-?
Cyl. Bowl, Dots, Indef. (111)	12	*?
Cyl. Bowl, Dots, Indef., W-S (112)	3	*?
Cyl. Bowl, Dots, Indef., Center (113)	3	-?
Cyl. Bowl, Dots, Indef., Center, KS 4 (114)	2	*
Cyl. Bowl, Dots, Indef., E-N (115)	4	*
CHOGHA MISH PHASE (PERIODS 9-12)		
Red Wares		
All (116)	37	-
W-N (117)	8	*
W-N, KS 12 (118)	3	*
W-N, KS 20 (119)	20	*
Center (120)	26	-
Center, KS 1 (121)	4	-
Center, KS 4 (122)	3	-
Center, KS 36 (123)	4	-
Center, KS 42 (124)	3	-
Center, KS 112 (125)	2	-
Center, KS 118 (126)	4	*?
E-N (127)	3	*
Unslipped (128)	5	-
Unslipped, W-N (129)	2	*
Unslipped, Center (130)	3	-
Gritty, Coarse (131)	8	*
Gritty, Coarse, W-N (132)	2	*
Gritty, Coarse, Center (133)	4	*?
Dark Slip (134)	2	-
Red Slip (135)	12	-

[1]* = single source; - = more than one source; -?, *?, ? = number of sources undetermined.

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Table 11 cont'd. Summary of Per Cent Deviation Results

Period/ Group/(Table Number)	N Samp.	Source[1]
CHOGHA MISH PHASE (PERIODS 9-12)		
Red Wares		
Red Slip, W-N (136)	2	-
Red Slip, Center (137)	9	-
Red Slip, Center, KS 4 (138)	2	-
Dark Slip (139)	4	-?
Dark Slip, Center, KS 4 (140)	3	*?
Black-on-Buff Ware		
Center (141)	5	-
Center, KS 1 (142)	4	*?
CHOGHA MISH PHASE		
Red Wares		
Red Wares (143)	94	-
W-N (144)	34	-
W-N, KS 10 (145)	5	*
W-N, KS 12 (146)	3	*
W-N, KS 13 (147)	5	-
W-N, KS 17 (148)	3	*
W-N, KS 20 (149)	4	*?
W-N, KS 21 (150)	4	*?
W-N, KS 71 (151)	3	*?
W-S, (152)	4	*
W-S, KS 74 (153)	2	*
Center (154)	38	-
Center, KS 1 (155)	4	-
Center, KS 4 (156)	3	-
Center, KS 36 (157)	4	-
Center, KS 38 (158)	6	-
Center, KS 42 (159)	3	-
Center, KS 45 (160)	2	*
Center, KS 112 (161)	3	-
Center, KS 118 (162)	4	*?
Center, KS 124 (163)	3	-
E-N (164)	12	-
E-N, KS 161 (165)	2	*
E-N, KS 162 (166)	2	-

[1] * = single source; - = more than one source; -?, *?, ? = number of sources undetermined.

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Table 11 cont'd. Summary of Per Cent Deviation Results

Period/ Group/(Table Number)	N Samp.	Source[1]
CHOGHA MISH PHASE		
Red Wares		
E-N, KS 176 (167)	3	*
E-S (168)	3	-?
Unslipped (169)	14	-
Unslipped, W-N, KS 71 (170)	2	*
Unslipped, Center (171)	5	-
Porous, Chaff Temp. (172)	7	-
Porous, Chaff Temp., Center (173)	3	-
Porous, Chaff Temp., E-N (174)	2	-
Dark Slip (175)	5	-?
Dark Slip, Center (176)	3	-?
Dark Slip, E-N (177)	2	-?
Gritty, Coarse (178)	15	*
Salmon Wares		
Buff Slip (179)	10	-
Buff Slip, W-N (180)	5	*?
Buff Slip, Center (181)	2	-
Buff Slip, E-N (182)	2	-
Red Slip (183)	28	-
Red Slip, W-N (184)	9	-
Red Slip, W-S (185)	3	*?
Red Slip, Center (186)	12	-
Red Slip, Center, KS 4 (187)	2	-
Red Slip, Center, KS 38 (188)	2	-
Red Slip, E-N (189)	4	-
Dark Slip (190)	9	*?
Dark Slip, W-N (191)	3	*
Dark Slip, Center (192)	5	-
Black-on-Buff Ware		
All (193)	92	-
W-N (194)	17	-
W-N, KS 13 (195)	3	*
W-N, KS 20 (196)	10	-
W-S (197)	16	-?
W-S, KS 65 (198)	5	-?
W-S, KS 73 (199)	7	*?
W-S, KS 74 (200)	3	*
Center (201)	32	-
Center, KS 1 (202)	6	*?
Center, KS 4 (203)	9	*?

[1] * = single source; - = more than one source; -?, *?, ? = number of sources undetermined.

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Table 11 cont'd. Summary of Per Cent Deviation Results

Period/ Group/(Table Number)	N Samp.	Source[1]
CHOGHA MISH PHASE		
Black-on-Buff Ware		
Center, KS 108 (204)	3	-?
Center, KS 118 (205)	4	*?
Center, KS 124 (206)	8	*?
E-N (207)	18	-?
E-N, KS 106 (208)	3	*?
E-N, KS 156 (209)	2	-
E-N, KS 161 (210)	2	*
E-N, KS 168 (211)	3	*?
E-N, KS 180 (212)	2	*
E-S (213)	7	*
E-S, KS 197 (214)	3	*?
E-S, KS 212 (215)	3	*
Cyl. Bowl, Bnd & Dots (216)	11	-
SUSA A		
Red Wares		
All (217)	62	-
W-N (218)	8	-
W-N, KS 22 (219)	3	-
W-S (220)	8	-
W-S, KS 64 (221)	2	-
W-S, KS 66 (222)	3	-
W-S, KS 274 (223)	2	-
Far West (224)	3	-
Center (225)	13	-
Center, KS 4 (226)	4	*
Center, KS 6 (227)	4	*
E-N (228)	21	-
E-N, KS 101 (229)	4	-
E-N, KS 106 (230)	3	-
E-N, KS 157 (231)	3	-
E-N, KS 160 (232)	2	-
E-N, KS 174 (233)	3	-
E-N, KS 182 (234)	2	-
E-S (235)	9	-
E-S, KS 186 (236)	2	-?
E-S, KS 204 (237)	3	-?

[1] * = single source; - = more than one source; -?, *?, ? = number of sources undetermined.

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Table 11 cont'd. Summary of Per Cent Deviation Results

Period/ Group/(Table Number)	N Samp.	Source[1]
SUSA A		
Red Wares		
E-S, KS 215 (238)	3	-
Unslipped (239)	15	-
Unslipped, W-S (240)	3	-
Unslipped, Far West (241)	2	-
Unslipped, Center (242)	3	-?
Unslipped, E-N (243)	5	-
Unslipped, E-S (244)	2	-?
Porous, Chaff Temp. (245)	8	-
Porous, Chaff Temp., Center (246)	3	-
Porous, Chaff Temp., E-N (247)	4	-
Porous, Chaff Temp., E-N, KS 182 (248)	2	-
Burnished (249)	10	*?
Burnished, W-N (250)	3	*?
Burnished, Center (251)	4	*
Burnished, Center, KS 4 (252)	2	*
Burnished, E-N (253)	2	-?
Dark Slip (254)	2	*
Salmon Wares		
Buff Slip (255)	15	-
Buff Slip, W-N (256)	3	-
Buff Slip, W-N, KS 22 (257)	2	-
Buff Slip, W-S (258)	5	-
Buff Slip, W-S, KS 66 (259)	2	*
Buff Slip, E-N (260)	4	-?
Buff Slip, E-S (261)	2	*?
Red Slip (262)	9	-
Red Slip, W-N (263)	2	-
Red Slip, E-N (264)	3	*
Red Slip, E-S (265)	2	-
Outside Buff Slip (266)	2	-
Black-on-Buff Ware		
All (267)	103	-
W-N (268)	64	-
W-N Without Susa (269)	32	-
W-N Without Susa and KS 20 (270)	19	-
W-N, KS 22 (271)	22	*
W-N, KS 33 (272)	7	*
Susa (273)	32	-

[1] * = single source; - = more than one source; -?, *?, ? = number of sources undetermined.

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Table 11 cont'd. Summary of Per Cent Deviation Results

Period/ Group/(Table Number)	N Samp.	Source[1]
SUSA A		
Black-on-Buff Ware		
Susa Bowls (274)	14	-
Susa High Goblet (275)	3	-
Susa Goblet (276)	8	*
Jaffarabad (KS 20) (277)	13	-
Bouhallan (KS 28) (278)	4	-
Bowl, KS 13 (279)	2	-
Luristan Cups (280)	4	-
Luristan Cups Imported to Susa (281)	2	-?
Far West (282)	3	-?
Far West, KS 239 (283)	2	-?
Center (284)	24	-
Center, KS 1 (285)	6	-
Center, KS 4 (286)	2	-
Center, KS 112 (287)	4	-
Center, KS 113 (288)	3	-
Center, KS 266 (289)	4	*?
E-N (290)	9	-
E-N, KS 161 (291)	3	*?
E-N, KS 181 (292)	2	*
Cyl.Bowl, Bnd & Line (293)	3	*
Cyl.Bowl, Bnd & Line, W-N (294)	2	*
Cyl.Bowl, Dots, Indef. (295)	7	-
Cyl.Bowl, Dots, Indef., W-N (296)	2	*?
Cyl.Bowl, Dots, Indef., W-S (297)	2	*
Cyl.Bowl, Dots, Indef., E-N (298)	2	*
Cyl.Bowl, Bnd & 2 Lines (299)	4	-
Cyl.Bowl, Bnd & 2 Lines, Center (300)	2	-
Greccas & Scallops (301)	9	*?
Greccas & Scallops, W-N (302)	4	*?
Greccas & Scallops, W-N, KS 33 (303)	3	*
Greccas & Scallops, Center (304)	2	*
Greccas & Scallops, E-N, KS 181 (305)	2	*
Cyl.Bowl, Bnd & Dots (306)	7	*
Cyl.Bowl, Bnd & Dots, W-N (307)	2	-

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Table 11 cont'd. Summary of Per Cent Deviation Results

Period/ Group/(Table Number)	N Samp.	Source[1]
SUSA A		
Black-on-Buff Ware		
Cyl.Bowl, Bnd & Dots, Center (308)	4	-
Cyl.Bowl, Bnd & Dots, Center, KS 112 (309)	2	-?
SUSA A or EARLIER		
Red Wares		
All (310)	17	-
W-N (311)	6	-
W-N, KS 67 (312)	2	-?
W-N, KS 33 (313)	2	*
Far West (314)	2	-?
Center (315)	3	-
E-N (316)	4	*
E-S (317)	2	-
Unslipped (318)	6	-
Unslipped, W-N (319)	2	*
Unslipped, E-N (320)	2	-
Burnished (321)	2	-?
Salmon Wares		
Red Slip (322)	5	-
Red Slip (323)	3	-
Buff Slip (324)	2	*
Black-on-Buff Ware		
All (325)	32	-?
W-N (326)	5	-?
W-N, KS 67 (327)	2	*
Center (328)	10	-?
Center, KS 4 (329)	2	-
Center, KS 108 (330)	2	-?
Center, KS 112 (331)	2	*
Center, KS 266 (332)	2	*
E-N (333)	10	*?
E-N, KS 106 (334)	2	-
E-N, KS 176 (335)	2	*
E-N, KS 178 (336)	3	*
E-S (337)	5	*
E-S, KS 197 (338)	2	*
E-S, KS 215 (339)	3	*

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Table 11 cont'd. Summary of Per Cent Deviation Results

Period/ Group/(Table Number)	N Samp.	Source[1]
SUSA A or EARLIER		
Black-on-Buff Ware		
Cyl.Bowl, Bnd & Dots (340)	3	-?
Cyl.Bowl, Bnd & 2 Lines (341)	2	*
Cyl.Bowl, Bnd & Line (342)	4	*?
Cyl.Bowl, Bnd & Line, E-N (343)	2	*?
Cyl.Bowl, Dots, Indef. (344)	8	-?
Cyl.Bowl, Dots, Indef., W-N (345)	2	-?
Cyl.Bowl, Dots, Indef., Center (346)	2	-?
Cyl.Bowl, Dots, Indef., E-N (347)	3	*?
Cyl.Bowl, Bnd & Bnd (348)	5	*?
Cyl.Bowl, Bnd & Bnd, Center (349)	2	*
Cyl.Bowl, Bnd & Bnd, E-N (350)	2	*
Goat Motif (351)	9	-?
Goat Motif, Center (352)	2	-
Goat Motif, E-N, KS 178 (353)	2	*
Goat Motif, E-S (354)	4	*
Goat Motif, E-S, KS 197 (355)	2	*
Goat Motif, E-S, KS 215 (356)	2	*
TERMINAL SUSA A		
All (357)	29	-
West (358)	17	-
Center (359)	4	-
East (360)	8	-
KS 64 (361)	4	-
KS 269 (362)	8	-?
Flared Neck Jars (363)	4	-
Flared Neck Jars, KS 269 (364)	3	*
Impressed Strip Bowls (365)	25	-
Impressed Strip Bowls, KS 64 (366)	3	-?
Impressed Strip Bowls, KS 67 (367)	5	-
Impressed Strip Bowls, KS 108 (368)	2	*
Impressed Strip Bowls, KS 182 (369)	3	-
Impressed Strip Bowls, KS 190 (370)	5	-
Impressed Strip Bowls, KS 266 (371)	2	-
Impressed Strip Bowls, KS 269 (372)	5	*

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Table 11 cont'd. Summary of Per Cent Deviation Results

Period/ Group/(Table Number)	N Samp.	Source[1]
CLAY SAMPLES		
Clay Samples (373)	6	*
Susa (374)	4	*
Jaffarabad (KS 20) (375)	2	*?
Fired Clay (376)	6	*
Fired Clay, Susa (377)	4	*?
Fired Clay, Jaffarabad (KS 20) (378)	2	*?
Clay and Fired Clay (379)	12	-?
Susa Clay and Fired Clay (380)	8	*?
Jaffarabad Clay and Fired Clay (381)	4	-
Clay, Fired Clay, Sherds (382)	19	-
Susa Clay, Fired Clay, and Sherds (383)	15	-
Red Clay (384)	3	-?
Susa Red Clay (385)	2	*
Red Clay and Sherds (386)	7	-
Red Sherds (387)	4	-?
Green-Grey Clay (388)	3	*
Susa Green-Grey Clay and Sherds (389)	5	-
Green-Grey Sherds (390)	3	*
Susa Green-Grey Clay and Sherds (391)	6	-
Susa Green-Grey Clay (392)	2	*
URUK		
Bevel Rim Bowls (393)	131	-
Proto Bevel Rim Bowls (394)	59	-
Neckless Ledge Rim Jars (395)	32	-
Droop Spouts (396)	19	-
Wide Strap Handles (397)	52	-
Grooved Round Rim Jars (398)	27	-
Groove and Oblique Jars (399)	22	-
Twist Handles (400)	29	-
Cross Hatch Bands (401)	87	-

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Table 12. Per Cent Deviation Results - Period 7, All Black-on-Buff Vessels n=5

ELEMENT	STD. DEV.	MEAN	% DEV.		SAMPLE	SITE
Na	0.164	0.738	22.22%		873	KS 20
K	0.413	2.110	19.57%		875	KS 20
Rb	7.610	71.940	10.58%		876	KS 20
Cs	0.673	5.054	13.32%		877	KS 20
Ba	47.050	309.200	15.22%		878	KS 20
Sc	1.370	23.740	5.77%	*		
La	3.400	27.380	12.42%			
Ce	9.432	64.520	14.62%			
Eu	0.099	1.168	8.48%	*		
Lu	0.071	0.457	15.54%			
Hf	0.599	3.790	15.80%			
Th	0.830	7.764	10.69%			
Cr	40.908	352.000	11.62%			
Mn	131.012	911.800	14.37%			
Fe	0.280	5.746	4.87%	*		
Co	3.821	26.820	14.25%			
Ca	1.803	11.548	15.61%			
Sm	1.121	4.058	27.62%			
Yb	0.241	2.474	9.74%	*		

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Table 13. Per Cent Deviation Results - Period 7, All Black-on-Buff Vessels, Jaffarabad, n=7

ELE-MENT	STD. DEV.	MEAN	% DEV.		SAM-PLE	SITE
Na	0.169	0.771	21.92%		872	KS 20
K	0.370	2.115	17.49%		873	KS 20
Rb	7.054	71.183	9.91%	*	875	KS 20
Cs	0.738	4.880	15.12%		876	KS 20
Ba	42.458	311.500	13.63%		877	KS 20
Sc	1.990	23.100	8.61%	*	878	KS 20
La	3.549	26.633	13.33%			
Ce	9.719	62.550	15.54%			
Eu	0.105	1.145	9.17%	*		
Lu	0.069	0.446	15.47%			
Hf	0.621	3.662	16.96%			
Th	1.066	7.452	14.30%			
Cr	37.676	348.333	10.82%			
Mn	127.136	891.667	14.26%			
Fe	0.440	5.598	7.86%	*		
Co	4.050	25.933	15.62%			
Ca	4.258	13.157	32.36%			
Sm	1.017	3.990	25.49%			
Yb	0.307	2.385	12.87%			

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Table 14. Per Cent Deviation Results - Period 7, Jaffarabad Buff Common Wares, n=2

ELE-MENT	STD. DEV.	MEAN	% DEV.		SAM-PLE	SITE
Na	0.049	0.975	5.03%	*	872	KS 20
K	0.361	2.395	15.07%		874	KS 20
Rb	47.659	33.700	141.42%			
Cs	2.835	2.005	141.40%			
Ba	125.158	234.500	53.37%			
Sc	0.636	20.350	3.13%	*		
La	0.212	22.750	0.93%	*		
Ce	1.768	51.450	3.44%	*		
Eu	0.289	0.826	34.99%			
Lu	0.030	0.371	8.09%	*		
Hf	2.135	1.510	141.39%			
Th	0.368	6.150	5.98%	*		
Cr	72.125	279.000	25.85%			
Mn	21.213	776.000	2.73%	*		
Fe	0.226	5.020	4.50%	*		
Co	4.738	24.850	19.07%			
Ca	4.525	18.000	25.14%			
Sm	0.658	4.115	15.99%			
Yb	0.000	1.940	0.00%			

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Table 15. Per Cent Deviation Results - Period 8, All Red Wares, n=3

ELEMENT	STD. DEV.	MEAN	% DEV.		SAMPLE	SITE
Na	0.598	1.260	47.46%		097	KS 13
K	0.338	2.133	15.85%		101	KS 19
Rb	8.105	78.433	10.33%		165	KS 195
Cs	1.355	4.743	28.57%			
Ba	1333.890	1281.670	104.07%			
Sc	2.771	26.500	10.46%			
La	5.119	32.633	15.69%			
Ce	13.665	74.333	18.38%			
Eu	0.229	1.610	14.22%			
Lu	0.150	0.551	27.22%			
Hf	1.221	5.013	24.36%			
Th	2.010	9.590	20.96%			
Cr	156.167	593.000	26.34%			
Mn	307.429	622.333	49.40%			
Fe	0.251	5.300	4.74%	*		
Co	2.344	30.133	7.78%	*		
Ca	10.219	5.900	173.20%			
Sm	0.945	5.997	15.76%			
Yb	0.612	2.843	21.53%			

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Table 16. Per Cent Deviation Results - Period 8, Red Ware, West-North n=2

ELEMENT	STD. DEV.	MEAN	% DEV.		SAMPLE	SITE
Na	0.205	1.595	12.85%		097	KS 13
K	0.092	2.325	3.96%	*	101	KS 19
Rb	0.848	83.100	1.02%	*		
Cs	0.078	5.525	1.41%	*		
Ba	94.045	512.500	18.35%			
Sc	0.000	28.100	0.00%			
La	2.192	35.450	6.18%	*		
Ce	2.616	82.150	3.18%	*		
Eu	0.106	1.735	6.11%	*		
Lu	0.109	0.625	17.44%			
Hf	0.332	5.705	5.82%	*		
Th	0.071	10.750	0.66%	*		
Cr	35.355	682.000	5.18%	*		
Mn	37.477	445.500	8.41%	*		
Fe	0.156	5.170	3.02%	*		
Co	3.111	30.600	10.17%			
Ca	0.000	0.000	0.00%			
Sm	0.283	6.530	4.33%	*		
Yb	0.219	3.185	6.88%	*		

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Table 17. Per Cent Deviation Results - Period 9-11 - Red Wares, All n=45

ELEMENT	STD. DEV.	MEAN	% DEV.		SAMPLE	SITE
Na	0.265	1.406	18.85%		094	KS 10
K	0.295	2.406	12.26%		096	KS 13
Rb	11.058	87.311	12.67%		100	KS 17
Cs	0.836	5.171	16.17%		102	KS 21
Ba	276.374	563.333	49.06%		107	KS 38
Sc	2.782	28.684	9.70%	*	113	KS 71
La	5.959	33.087	18.01%		114	KS 71
Ce	13.919	73.153	19.03%		117	KS 112
Eu	0.301	1.630	18.47%		135	KS 10
Lu	0.086	0.605	14.21%		136	KS 10
Hf	1.072	5.293	20.25%		137	KS 10
Th	1.457	10.131	14.38%		139	KS 13
Cr	124.606	591.600	21.06%		140	KS 17
Mn	140.843	523.689	26.89%		145	KS 108
Fe	0.658	6.166	10.67%		151	KS 38
Co	8.239	26.664	30.90%		160	KS 162
Ca	4.271	6.294	67.86%		168	KS 2
Sm	0.906	6.203	14.61%		169	KS 38
Yb	0.341	3.163	10.78%		173	KS 159
					190	KS 8
					192	KS 13
					193	KS 20
					195	KS 17
					197	KS 21
					199	KS 24
					204	KS 38
					205	KS 38
					209	KS 45
					211	KS 65
					213	KS 71
					225	KS 162
					227	KS 176
					234	KS 13
					236	KS 21

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Table 17 cont'd. Per Cent Deviation Results - Period 9-11 - Red Wares, All n=45

SAMPLE	SITE	
238	KS	38
243	KS	121
245	KS	239
247	KS	10
248	KS	13
249	KS	19
250	KS	21
254	KS	43
255	KS	45
277	KS	161
866	KS	20

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Table 18. Per Cent Deviation Results - Period 9-11 Red Wares, West-North n=25

ELEMENT	STD. DEV.	MEAN	% DEV.		SAMPLE	SITE
Na	0.263	1.401	18.77%		094	KS 10
K	0.312	2.361	13.21%		096	KS 13
Rb	7.981	86.520	9.22%	*	100	KS 17
Cs	0.668	5.057	13.21%		102	KS 21
Ba	253.732	573.480	44.24%		113	KS 71
Sc	1.840	28.620	6.43%	*	114	KS 71
La	2.800	33.908	8.26%	*	135	KS 10
Ce	6.560	74.132	8.85%	*	136	KS 10
Eu	0.132	1.633	8.08%	*	137	KS 10
Lu	0.062	0.606	10.23%		139	KS 13
Hf	1.282	5.231	24.51%		140	KS 17
Th	1.485	10.152	14.63%		190	KS 8
Cr	134.074	583.040	23.00%		192	KS 13
Mn	157.836	514.320	30.69%		193	KS 14
Fe	0.428	6.052	7.07%	*	195	KS 17
Co	6.900	27.860	24.77%		197	KS 21
Ca	4.208	6.553	64.21%		199	KS 24
Sm	1.006	6.090	16.52%		213	KS 71
Yb	0.254	3.147	8.07%	*	234	KS 13
					236	KS 21
					247	KS 10
					248	KS 13
					249	KS 19
					250	KS 21
					866	KS 20

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Table 19. Per Cent Deviation Results - Period 9-11 Red Wares, West-North, KS 10, n=5

ELE-MENT	STD. DEV.	MEAN	% DEV.		SAM-PLE	SITE
Na	0.258	1.452	17.77%		094	KS 10
K	0.294	2.162	13.60%		135	KS 10
Rb	4.798	90.840	5.28%	*	136	KS 10
Cs	0.229	5.502	4.16%	*	137	KS 10
Ba	197.457	792.400	24.92%		247	KS 10
Sc	1.062	29.640	3.58%	*		
La	2.948	36.320	8.12%	*		
Ce	6.511	78.820	8.26%	*		
Eu	0.083	1.694	4.90%	*		
Lu	0.044	0.629	7.00%	*		
Hf	0.260	5.794	4.49%	*		
Th	0.509	10.636	4.79%	*		
Cr	105.136	623.000	16.88%			
Mn	29.086	437.000	6.66%	*		
Fe	0.380	6.004	6.33%	*		
Co	3.733	28.860	12.93%			
Ca	0.730	4.250	17.18%			
Sm	2.224	5.768	38.56%			
Yb	0.299	3.368	8.88%	*		

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Table 20. Per Cent Deviation Results - Period 9-11 Red Wares, West-North, KS 13, n=5

ELEMENT	STD. DEV.	MEAN	% DEV.		SAMPLE	SITE
Na	0.436	1.420	30.70%		096	KS 13
K	0.322	2.298	14.01%		139	KS 13
Rb	7.726	83.140	9.29%	*	192	KS 13
Cs	0.763	4.964	15.37%		234	KS 13
Ba	45.992	375.600	12.24%		248	KS 13
Sc	1.877	28.180	6.66%	*		
La	2.813	33.760	8.33%	*		
Ce	6.071	73.720	8.24%	*		
Eu	0.197	1.706	11.55%			
Lu	0.101	0.587	17.21%			
Hf	2.354	4.052	58.09%			
Th	2.956	11.112	26.60%			
Cr	208.416	567.600	36.72%			
Mn	254.395	539.600	47.15%			
Fe	0.502	6.056	8.29%	*		
Co	12.696	22.560	56.28%			
Ca	5.630	7.120	79.07%			
Sm	0.481	6.182	7.78%	*		
Yb	0.252	3.106	8.11%	*		

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Table 21. Per Cent Deviation Results - Period 9-11 Red Wares, West-North, KS 17, n=3

ELEMENT	STD. DEV.	MEAN	% DEV.		SAMPLE	SITE
Na	0.152	1.383	10.99%		100	KS 17
K	0.402	2.333	17.23%		140	KS 17
Rb	7.703	94.567	8.15%	*	195	KS 17
Cs	0.739	5.403	13.68%			
Ba	39.829	443.667	8.98%	*		
Sc	1.044	30.500	3.42%	*		
La	2.369	33.567	7.06%	*		
Ce	4.694	73.900	6.35%	*		
Eu	0.032	1.663	1.92%	*		
Lu	0.068	0.598	11.37%			
Hf	0.633	5.510	11.49%			
Th	0.382	10.067	3.79%	*		
Cr	92.045	596.667	15.43%			
Mn	150.068	464.333	32.32%			
Fe	0.325	6.413	5.07%	*		
Co	2.458	30.467	8.07%	*		
Ca	6.555	4.477	146.42%			
Sm	0.371	6.243	5.94%	*		
Yb	0.097	3.057	3.17%	*		

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Table 22. Per Cent Deviation Results - Period 9-11 Red Wares, West-North, KS 21, n=4

ELE-MENT	STD. DEV.	MEAN	% DEV.		SAM-PLE	SITE
Na	0.223	1.418	15.73%		102	KS 21
K	0.363	2.435	14.91%		197	KS 21
Rb	5.765	81.975	7.03%	*	236	KS 21
Cs	0.396	4.738	8.36%	*	250	KS 21
Ba	258.950	577.000	44.88%			
Sc	2.003	28.300	7.08%	*		
La	2.108	33.725	6.25%	*		
Ce	5.256	73.550	7.15%	*		
Eu	0.161	1.710	9.42%	*		
Lu	0.070	0.627	11.16%			
Hf	0.489	5.478	8.93%	*		
Th	0.606	9.970	6.08%	*		
Cr	108.499	571.000	19.00%			
Mn	61.117	495.000	12.35%			
Fe	0.671	6.028	11.13%			
Co	0.950	28.625	3.32%	*		
Ca	1.945	6.238	31.18%			
Sm	0.429	6.388	6.72%	*		
Yb	0.235	3.198	7.35%	*		

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Table 23. Per Cent Deviation Results - Period 9-11 Red Wares, West-North, KS 71, n=3

ELEMENT	STD. DEV.	MEAN	% DEV.		SAMPLE	SITE
Na	0.305	1.410	21.63%		113	KS 71
K	0.072	2.713	2.65%	*	114	KS 71
Rb	2.920	92.967	3.14%	*	213	KS 71
Cs	0.622	5.577	11.15%			
Ba	105.557	710.667	14.85%			
Sc	0.600	28.900	2.08%	*		
La	1.986	35.167	5.65%	*		
Ce	5.232	78.867	6.63%	*		
Eu	0.090	1.660	5.42%	*		
Lu	0.051	0.608	8.39%	*		
Hf	0.977	6.010	16.26%			
Th	0.321	9.920	3.24%	*		
Cr	164.795	698.333	23.60%			
Mn	128.493	425.333	30.21%			
Fe	0.287	5.757	4.99%	*		
Co	9.154	32.900	27.82%			
Ca	5.274	5.550	95.03%			
Sm	0.457	6.463	7.07%	*		
Yb	0.246	3.210	7.66%	*		

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Table 24. Per Cent Deviation Results - Period 9-11 Red Wares, Center, n=13

ELEMENT	STD. DEV.	MEAN	% DEV.	SAMPLE	SITE
Na	0.320	1.412	22.66%	107	KS 38
K	0.291	2.450	11.88%	117	KS 112
Rb	15.051	89.046	16.90%	145	KS 108
Cs	1.045	5.351	19.53%	151	KS 38
Ba	132.389	463.615	28.56%	168	KS 2
Sc	4.369	28.700	15.22%	169	KS 38
La	10.194	30.977	32.91%	204	KS 38
Ce	24.013	69.454	34.57%	205	KS 38
Eu	0.517	1.525	33.90%	209	KS 45
Lu	0.130	0.612	21.24%	238	KS 38
Hf	0.839	5.433	15.44%	243	KS 121
Th	1.651	9.906	16.67%	254	KS 43
Cr	114.416	608.846	18.79%	255	KS 45
Mn	132.298	548.539	24.12%		
Fe	0.934	6.295	14.84%		
Co	9.419	25.838	36.45%		
Ca	5.046	6.343	79.55%		
Sm	0.871	6.333	13.75%		
Yb	0.479	3.180	15.06%		

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Table 25. Per Cent Deviation Results - Period 9-11 Red Wares, Center, KS 38, n=6

ELEMENT	STD. DEV.	MEAN	% DEV.	SAMPLE	SITE
Na	0.339	1.598	21.21%	107	KS 38
K	0.252	2.442	10.32%	151	KS 38
Rb	16.192	91.133	17.77%	169	KS 38
Cs	1.156	5.527	20.92%	204	KS 38
Ba	159.737	510.000	31.32%	205	KS 38
Sc	4.883	29.700	16.44%	238	KS 38
La	14.404	28.133	51.20%		
Ce	13.451	76.900	17.49%		
Eu	0.309	1.700	18.18%		
Lu	0.103	0.613	16.80%		
Hf	0.893	5.775	15.46%		
Th	1.950	10.272	18.98%		
Cr	143.084	624.833	22.90%		
Mn	79.038	484.167	16.32%		
Fe	0.888	6.058	14.66%		
Co	5.101	29.633	17.21%		
Ca	5.489	5.718	96.00%		
Sm	0.970	6.535	14.84%		
Yb	0.570	3.265	17.46%		

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Table 26. Per Cent Deviation Results - Period 9-11 Red Wares, Center, KS 45, n=2

ELEMENT	STD. DEV.	MEAN	% DEV.		SAMPLE	SITE
Na	0.184	1.360	13.53%		209	KS 45
K	0.318	2.625	12.11%		255	KS 45
Rb	13.435	87.800	15.30%			
Cs	0.156	5.210	2.99%	*		
Ba	132.936	490.000	27.13%			
Sc	1.626	28.750	5.66%	*		
La	2.333	34.450	6.77%	*		
Ce	3.182	78.050	4.08%	*		
Eu	0.064	1.745	3.67%	*		
Lu	0.041	0.530	7.74%	*		
Hf	0.106	5.075	2.09%	*		
Th	0.424	9.900	4.28%	*		
Cr	25.456	625.000	4.07%	*		
Mn	236.174	748.000	31.57%			
Fe	0.247	6.625	3.73%	*		
Co	0.849	29.300	2.90%	*		
Ca	1.598	8.060	19.83%			
Sm	0.276	6.435	4.29%	*		
Yb	0.205	3.245	6.32%	*		

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Table 27. Per Cent Deviation Results - Period 9-11 Red Wares, East-North, All, n=5

ELEMENT	STD. DEV.	MEAN	% DEV.		SAMPLE	SITE
Na	0.207	1.436	14.42%		160	KS 162
K	0.237	2.412	9.83%	*	173	KS 159
Rb	15.822	86.540	18.28%		225	KS 162
Cs	1.217	5.310	22.92%		227	KS 176
Ba	570.572	740.000	77.10%		277	KS 161
Sc	2.672	28.620	9.34%	*		
La	3.262	33.660	9.69%	*		
Ce	8.476	76.060	11.14%			
Eu	0.180	1.686	10.68%			
Lu	0.079	0.588	13.44%			
Hf	0.718	5.230	13.73%			
Th	1.234	10.422	11.84%			
Cr	145.336	606.000	23.98%			
Mn	77.503	473.200	16.38%			
Fe	0.892	6.238	14.30%			
Co	12.414	22.060	56.27%			
Ca	2.380	3.764	63.23%			
Sm	0.692	6.328	10.94%			
Yb	0.390	3.118	12.51%			

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Table 28. Per Cent Deviation Results - Period 9-11 Red Wares, East-North, KS 162, n=2

ELEMENT	STD. DEV.	MEAN	% DEV.		SAMPLE	SITE
Na	0.021	1.455	1.44%	*	160	KS 162
K	0.361	2.255	16.01%		225	KS 162
Rb	12.374	74.850	16.53%			
Cs	0.375	4.265	8.79%	*		
Ba	86.974	377.500	23.04%			
Sc	1.414	25.800	5.48%	*		
La	2.333	32.650	7.15%	*		
Ce	8.415	71.750	11.73%			
Eu	0.191	1.525	12.52%			
Lu	0.054	0.524	10.31%			
Hf	0.679	4.910	13.83%			
Th	0.997	9.255	10.77%			
Cr	255.265	578.500	44.13%			
Mn	98.288	452.500	21.72%			
Fe	0.580	5.560	10.43%			
Co	0.566	26.200	2.16%	*		
Ca	3.472	4.495	77.24%			
Sm	0.651	6.100	10.67%			
Yb	0.403	2.825	14.27%			

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Table 29. Per Cent Deviation Results - Period 9-11 Red Ware, Unslipped, All, n=8

ELEMENT	STD. DEV.	MEAN	% DEV.		SAMPLE	SITE	
Na	0.195	1.416	13.77%		094	KS	10
K	0.204	2.511	8.12%	*	096	KS	13
Rb	10.348	91.763	11.28%		100	KS	17
Cs	0.772	5.439	14.19%		102	KS	21
Ba	218.004	638.375	34.15%		107	KS	38
Sc	2.008	29.750	6.75%	*	113	KS	71
La	2.598	35.638	7.29%	*	114	KS	71
Ce	28.469	69.325	41.07%		117	KS	112
Eu	0.637	1.546	41.20%				
Lu	0.091	0.650	14.00%				
Hf	2.150	5.160	41.67%				
Th	2.147	11.086	19.37%				
Cr	100.393	667.500	15.04%				
Mn	74.257	428.125	17.34%				
Fe	0.616	6.138	10.04%				
Co	13.318	27.238	48.89%				
Ca	1.944	3.395	57.26%				
Sm	0.525	6.509	8.07%	*			
Yb	0.213	3.235	6.58%	*			

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Table 30. Per Cent Deviation Results - Period 9-11 Red Ware, Unslipped, West-North, n=6

ELEMENT	STD. DEV.	MEAN	% DEV.		SAMPLE	SITE	
Na	0.203	1.458	13.92%		094	KS	10
K	0.204	2.472	8.25%	*	096	KS	13
Rb	9.181	91.617	10.02%		100	KS	17
Cs	0.660	5.243	12.59%		102	KS	21
Ba	213.961	699.500	30.59%		113	KS	71
Sc	1.438	29.150	4.93%	*	114	KS	71
La	2.539	34.967	7.26%	*			
Ce	4.886	78.017	6.26%	*			
Eu	0.147	1.760	8.35%	*			
Lu	0.074	0.626	11.82%				
Hf	2.527	5.055	49.99%				
Th	2.469	11.202	22.04%				
Cr	103.202	690.667	14.94%				
Mn	59.166	399.333	14.82%				
Fe	0.553	5.960	9.28%	*			
Co	14.589	27.417	53.21%				
Ca	2.210	3.272	67.54%				
Sm	0.467	6.372	7.33%	*			
Yb	0.215	3.273	6.57%	*			

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Table 31. Per Cent Deviation Results - Period 9-11 Red Ware, Unslipped, West-North, KS 71, n=2

ELEMENT	STD. DEV.	MEAN	% DEV.		SAMPLE	SITE
Na	0.049	1.585	3.09%	*	113	KS 71
K	0.092	2.695	3.41%	*	114	KS 71
Rb	0.212	94.650	0.22%	*		
Cs	0.707	5.790	12.21%			
Ba	145.664	724.000	20.12%			
Sc	0.424	29.200	1.45%	*		
La	2.051	35.950	5.71%	*		
Ce	4.384	81.300	5.39%	*		
Eu	0.127	1.660	7.65%	*		
Lu	0.011	0.637	1.73%	*		
Hf	0.247	6.565	3.76%	*		
Th	0.148	10.095	1.47%	*		
Cr	96.167	785.000	12.25%			
Mn	17.678	351.500	5.03%	*		
Fe	0.276	5.635	4.90%	*		
Co	9.122	36.650	24.89%			
Ca	0.856	2.525	33.90%			
Sm	0.615	6.545	9.40%	*		
Yb	0.141	3.340	4.22%	*		

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Table 32. Per Cent Deviation Results - Period 9-11 Red Ware, Gritty, Coarse, n=6

ELEMENT	STD. DEV.	MEAN	% DEV.		SAMPLE	SITE
Na	0.125	1.582	7.90%	*	135	KS 10
K	0.126	2.000	6.30%	*	136	KS 10
Rb	3.302	89.917	3.67%	*	137	KS 10
Cs	0.395	5.587	7.07%	*	139	KS 13
Ba	276.591	602.000	45.95%		140	KS 17
Sc	1.194	29.883	4.00%	*	145	KS 108
La	2.278	36.150	6.30%	*		
Ce	4.663	79.033	5.90%	*		
Eu	0.041	1.682	2.44%	*		
Lu	0.020	0.607	3.29%	*		
Hf	0.265	5.867	4.52%	*		
Th	0.569	10.448	5.45%	*		
Cr	57.102	676.333	8.44%	*		
Mn	51.610	440.000	11.73%			
Fe	0.447	6.017	7.43%	*		
Co	2.372	29.417	8.06%	*		
Ca	1.847	3.905	47.30%			
Sm	1.994	5.875	33.94%			
Yb	0.263	3.332	7.89%	*		

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Table 33. Per Cent Deviation Results - Period 9-11 Red Ware, Gritty, Coarse, West-North, n=5

ELEMENT	STD. DEV.	MEAN	% DEV.		SAMPLE	SITE
Na	0.079	1.624	4.86%	*	135	KS 10
K	0.110	1.968	5.59%	*	136	KS 10
Rb	2.465	90.920	2.71%	*	137	KS 10
Cs	0.375	5.672	6.61%	*	139	KS 13
Ba	284.330	646.400	43.99%		140	KS 17
Sc	1.221	60.080	2.03%	*		
La	2.229	36.600	6.09%	*		
Ce	4.584	79.940	5.73%	*		
Eu	0.036	1.692	2.13%	*		
Lu	0.015	0.613	2.45%	*		
Hf	0.195	5.948	3.28%	*		
Th	0.491	10.596	4.63%	*		
Cr	50.062	690.800	7.25%	*		
Mn	24.940	421.000	5.92%	*		
Fe	0.458	5.944	7.71%	*		
Co	2.524	29.120	8.67%	*		
Ca	1.156	3.280	35.24%			
Sm	2.216	5.788	38.29%			
Yb	0.294	3.330	8.83%	*		

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Table 34. Per Cent Deviation Results - Period 9-11 Red Ware, Gritty, Coarse, West-North, KS 10, n=3

ELEMENT	STD. DEV.	MEAN	% DEV.		SAMPLE	SITE
Na	0.068	1.637	4.15%	*	135	KS 10
K	0.155	1.967	7.88%	*	136	KS 10
Rb	1.570	91.567	1.71%	*	137	KS 10
Cs	0.281	5.583	5.03%	*		
Ba	267.250	800.333	33.39%			
Sc	1.137	29.767	3.82%	*		
La	2.869	37.200	7.71%	*		
Ce	6.014	81.067	7.42%	*		
Eu	0.044	1.680	2.62%	*		
Lu	0.017	0.618	2.75%	*		
Hf	0.087	5.933	1.47%	*		
Th	0.666	10.693	6.23%	*		
Cr	65.851	690.667	9.53%	*		
Mn	17.786	435.667	4.08%	*		
Fe	0.106	5.790	1.83%	*		
Co	1.901	27.667	6.87%	*		
Ca	0.681	3.850	17.69%			
Sm	2.944	5.233	56.26%			
Yb	0.326	3.463	9.41%	*		

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Table 35. Per Cent Deviation Results - Period 9-11 Red Wares, Porous, Chaff Tempered, All, n=2

ELEMENT	STD. DEV.	MEAN	% DEV.		SAMPLE	SITE
Na	0.042	1.470	2.86%	*	151	KS 38
K	0.191	2.135	8.95%	*	160	KS 162
Rb	14.425	73.400	19.65%			
Cs	0.742	4.005	18.53%			
Ba	9.192	322.500	2.85%	*		
Sc	2.687	22.900	11.73%			
La	3.394	28.600	11.87%			
Ce	7.778	60.300	12.90%			
Eu	0.148	1.285	11.52%			
Lu	0.030	0.465	6.45%	*		
Hf	0.085	4.370	1.95%	*		
Th	1.195	7.705	15.51%			
Cr	39.598	426.000	9.30%	*		
Mn	127.986	473.500	27.03%			
Fe	0.375	4.885	7.68%	*		
Co	3.677	24.000	15.32%			
Ca	10.013	9.120	109.79%			
Sm	0.509	5.280	9.64%	*		
Yb	0.156	2.430	6.42%	*		

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Table 36. Per Cent Deviation Results - Period 9-11 Red Ware, Dark Slip, All, n=3

ELEMENT	STD. DEV.	MEAN	% DEV.		SAMPLE	SITE
Na	0.534	1.413	37.79%		168	KS 2
K	0.368	2.543	14.47%		169	KS 38
Rb	4.583	109.000	4.20%	*	173	KS 159
Cs	0.698	6.390	10.92%			
Ba	170.277	569.333	29.91%			
Sc	0.611	30.933	1.98%	*		
La	3.086	33.333	9.26%	*		
Ce	6.520	76.500	8.52%	*		
Eu	0.052	1.670	3.11%	*		
Lu	0.041	0.616	6.66%	*		
Hf	0.378	5.243	7.21%	*		
Th	0.321	10.867	2.95%	*		
Cr	53.725	571.667	9.40%	*		
Mn	64.671	490.333	13.19%			
Fe	0.889	7.260	12.25%			
Co	19.457	11.233	173.21%			
Ca	1.534	2.473	62.03%			
Sm	0.536	6.253	8.57%	*		
Yb	0.252	3.270	7.71%	*		

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Table 37. Per Cent Deviation Results - Period 9-11 Red Wares, Dark Slip, Center, n=2

ELEMENT	STD. DEV.	MEAN	% DEV.		SAMPLE	SITE
Na	0.665	1.560	42.63%		168	KS 2
K	0.516	2.515	20.52%		169	KS 38
Rb	6.364	108.500	5.87%	*		
Cs	0.672	6.095	11.03%			
Ba	89.095	478.000	18.64%			
Sc	0.566	31.200	1.81%	*		
La	0.566	35.100	1.61%	*		
Ce	3.394	80.000	4.24%	*		
Eu	0.000	1.640	0.00%			
Lu	0.011	0.640	1.72%	*		
Hf	0.170	5.450	3.12%	*		
Th	0.424	10.800	3.93%	*		
Cr	75.660	574.500	13.17%			
Mn	78.489	509.500	15.41%			
Fe	1.216	7.130	17.05%			
Co	23.829	16.850	141.42%			
Ca	2.128	2.645	80.45%			
Sm	0.099	6.560	1.51%	*		
Yb	0.134	3.405	3.94%	*		

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Table 38. Per Cent Deviation Results - Period 9-11 Salmon Ware, Buff Slip, All, n=6

ELEMENT	STD. DEV.	MEAN	% DEV.	SAMPLE	SITE
Na	0.251	1.120	22.41%	247	KS 10
K	0.299	2.273	13.15%	248	KS 13
Rb	9.147	82.400	11.10%	249	KS 19
Cs	0.880	4.717	18.66%	250	KS 21
Ba	149.189	471.667	31.63%	254	KS 43
Sc	3.744	26.300	14.24%	255	KS 45
La	4.166	30.700	13.57%		
Ce	10.031	67.183	14.93%		
Eu	0.189	1.522	12.42%		
Lu	0.100	0.558	17.92%		
Hf	0.679	4.692	14.47%		
Th	1.575	9.195	17.13%		
Cr	135.187	457.000	29.58%		
Mn	233.307	653.333	35.71%		
Fe	0.762	6.015	12.67%		
Co	3.185	26.150	12.18%		
Ca	4.556	10.595	43.00%		
Sm	0.805	5.757	13.98%		
Yb	0.386	2.895	13.33%		

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Table 39. Per Cent Deviation Results - Period 9-11 Salmon Ware, Buff Slip, West-North, n=4

ELEMENT	STD. DEV.	MEAN	% DEV.		SAMPLE	SITE
Na	0.281	1.155	24.33%		247	KS 10
K	0.321	2.325	13.81%		248	KS 13
Rb	4.029	87.400	4.61%	*	249	KS 19
Cs	0.636	4.993	12.74%		250	KS 21
Ba	173.523	466.250	37.22%			
Sc	1.617	27.775	5.82%	*		
La	3.020	31.925	9.46%	*		
Ce	5.277	69.525	7.59%	*		
Eu	0.141	1.550	9.10%	*		
Lu	0.021	0.616	3.41%	*		
Hf	0.620	4.858	12.76%			
Th	1.163	9.753	11.92%			
Cr	146.348	429.500	34.07%			
Mn	250.052	612.000	40.86%			
Fe	0.380	6.153	6.18%	*		
Co	0.665	26.675	2.49%	*		
Ca	4.593	9.495	48.37%			
Sm	0.522	5.988	8.72%	*		
Yb	0.282	3.005	9.38%	*		

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Table 40. Per Cent Deviation Results - Period 9-11 Salmon Ware, Buff Slip, Center, n=2

ELEMENT	STD. DEV.	MEAN	% DEV.	SAMPLE	SITE
Na	0.255	1.050	24.29%	254	KS 43
K	0.325	2.170	14.98%	255	KS 45
Rb	8.344	72.400	11.52%		
Cs	1.332	4.165	31.98%		
Ba	143.543	482.500	29.75%		
Sc	6.010	23.350	25.74%		
La	6.435	28.250	22.78%		
Ce	18.809	62.500	30.09%		
Eu	0.332	1.465	22.66%		
Lu	0.086	0.440	19.55%		
Hf	0.905	4.360	20.76%		
Th	2.150	8.080	26.61%		
Cr	134.350	512.000	26.24%		
Mn	253.144	736.000	34.39%		
Fe	1.499	5.740	26.11%		
Co	6.788	25.100	27.04%		
Ca	5.098	12.795	39.84%		
Sm	1.336	5.295	25.23%		
Yb	0.601	2.675	22.47%		

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Table 41. Per Cent Deviation Results - Period 9-11 Salmon Ware, Dark Slip, All, n=5

ELEMENT	STD. DEV.	MEAN	% DEV.		SAMPLE	SITE
Na	0.136	1.364	9.97%	*	234	KS 13
K	0.218	2.308	9.45%	*	236	KS 21
Rb	4.742	84.000	5.65%	*	238	KS 38
Cs	0.399	5.094	7.83%	*	243	KS 121
Ba	149.992	461.200	32.52%		245	KS 239
Sc	0.965	28.280	3.41%	*		
La	1.613	34.520	4.67%	*		
Ce	5.725	73.900	7.75%	*		
Eu	0.120	1.680	7.14%	*		
Lu	0.107	0.655	16.34%			
Hf	0.428	5.586	7.66%	*		
Th	0.646	9.930	6.51%	*		
Cr	100.236	608.200	16.48%			
Mn	115.054	508.000	22.65%			
Fe	0.476	6.214	7.66%	*		
Co	1.407	28.800	4.89%	*		
Ca	3.324	5.452	60.97%			
Sm	0.340	6.412	5.30%	*		
Yb	0.259	3.178	8.15%	*		

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Table 42. Per Cent Deviation Results - Period 9-11 Salmon Ware, Dark Slip, West-North, n=2

ELEMENT	STD. DEV.	MEAN	% DEV.		SAMPLE	SITE
Na	0.233	1.335	17.45%		234	KS 13
K	0.092	2.095	4.39%	*	236	KS 21
Rb	3.889	81.250	4.79%	*		
Cs	0.311	4.920	6.32%	*		
Ba	72.832	389.500	18.70%			
Sc	1.131	27.800	4.07%	*		
La	2.758	33.850	8.15%	*		
Ce	7.354	71.400	10.30%			
Eu	0.205	1.635	12.54%			
Lu	0.127	0.636	19.97%			
Hf	0.509	5.290	9.62%	*		
Th	0.721	9.590	7.52%	*		
Cr	156.978	595.000	26.38%			
Mn	138.593	434.000	31.93%			
Fe	0.255	5.910	4.31%	*		
Co	0.000	28.500	0.00%			
Ca	4.653	4.370	106.48%			
Sm	0.615	6.375	9.65%	*		
Yb	0.177	3.035	5.83%	*		

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Table 43. Per Cent Deviation Results - Period 9-11 Salmon Ware, Dark Slip, Center, n=2

ELEMENT	STD. DEV.	MEAN	% DEV.		SAMPLE	SITE
Na	0.000	1.330	0.00%		238	KS 38
K	0.127	2.400	5.29%	*	243	KS 121
Rb	5.020	87.850	5.71%	*		
Cs	0.460	5.405	8.51%	*		
Ba	155.563	424.000	36.69%			
Sc	0.424	28.100	1.51%	*		
La	1.131	34.900	3.24%	*		
Ce	6.930	74.400	9.31%	*		
Eu	0.092	1.705	5.40%	*		
Lu	0.136	0.708	19.21%			
Hf	0.382	5.860	6.52%	*		
Th	0.375	9.835	3.81%	*		
Cr	96.874	647.500	14.96%			
Mn	124.451	557.000	22.34%			
Fe	0.728	6.435	11.31%			
Co	1.485	29.950	4.96%	*		
Ca	3.012	4.910	61.34%			
Sm	0.184	6.350	2.90%	*		
Yb	0.134	3.115	4.30%	*		

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Table 44. Per Cent Deviation Results - Period 9-11 Salmon Ware, Red Slip, All, n=13

ELEMENT	STD. DEV.	MEAN	% DEV.		SAMPLE	SITE	
Na	0.281	1.412	19.90%		190	KS	8
K	0.182	2.633	6.91%	*	192	KS	13
Rb	10.970	85.131	12.89%		193	KS	20
Cs	0.803	4.895	16.40%		195	KS	17
Ba	409.263	636.077	64.34%		197	KS	21
Sc	2.628	29.000	9.06%	*	199	KS	24
La	9.527	31.046	30.69%		204	KS	38
Ce	7.408	76.154	9.73%	*	205	KS	38
Eu	0.168	1.715	9.80%	*	209	KS	45
Lu	0.076	0.591	12.86%		211	KS	65
Hf	0.692	5.264	13.15%		213	KS	71
Th	0.988	10.102	9.78%	*	225	KS	162
Cr	123.010	581.308	21.16%		227	KS	176
Mn	99.670	566.385	17.60%				
Fe	0.455	6.269	7.26%	*			
Co	2.020	28.038	7.20%	*			
Ca	3.661	8.033	45.57%				
Sm	0.550	6.369	8.64%	*			
Yb	0.335	3.215	10.42%				

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Table 45. Per Cent Deviation Results - Period 9-11 Salmon Ware, Red Slip, West-North, n=7

ELEMENT	STD. DEV.	MEAN	% DEV.		SAMPLE	SITE	
Na	0.287	1.314	21.84%		190	KS	8
K	0.202	2.631	7.68%	*	192	KS	13
Rb	8.523	81.300	10.48%		193	KS	20
Cs	0.672	4.550	14.77%		195	KS	17
Ba	323.604	552.000	58.62%		197	KS	21
Sc	2.435	27.929	8.72%	*	199	KS	24
La	2.004	32.571	6.15%	*	213	KS	71
Ce	5.391	71.586	7.53%	*			
Eu	0.119	1.631	7.30%	*			
Lu	0.075	0.570	13.16%				
Hf	0.291	4.899	5.94%	*			
Th	0.707	9.553	7.40%	*			
Cr	31.501	497.571	6.33%	*			
Mn	85.858	601.571	14.27%				
Fe	0.452	6.174	7.32%	*			
Co	2.395	27.657	8.66%	*			
Ca	2.744	10.194	26.92%				
Sm	0.438	6.079	7.21%	*			
Yb	0.186	3.016	6.17%	*			

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Table 46. Per Cent Deviation Results - Period 9-11 Salmon Ware, Red Slip, Center, n=3

ELEMENT	STD. DEV.	MEAN	% DEV.		SAMPLE	SITE
Na	0.267	1.673	15.96%		204	KS 38
K	0.214	2.663	8.04%	*	205	KS 38
Rb	6.962	95.867	7.26%	*	209	KS 45
Cs	0.502	5.847	8.59%	*		
Ba	216.117	546.333	39.56%			
Sc	2.443	31.600	7.73%	*		
La	20.450	23.600	86.65%			
Ce	7.420	84.433	8.79%	*		
Eu	0.239	1.863	12.83%			
Lu	0.110	0.639	17.21%			
Hf	0.906	6.190	14.64%			
Th	1.229	11.100	11.07%			
Cr	114.909	731.000	15.72%			
Mn	115.000	466.000	24.68%			
Fe	0.595	6.297	9.45%	*		
Co	1.054	28.800	3.66%	*		
Ca	2.930	3.667	79.90%			
Sm	0.634	6.950	9.12%	*		
Yb	0.281	3.683	7.63%	*		

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Table 47. Per Cent Deviation Results - Period 9-11 Salmon Ware, Red Slip, Center, KS 38, n=2

ELEMENT	STD. DEV.	MEAN	% DEV.		SAMPLE	SITE
Na	0.304	1.765	17.22%		204	KS 38
K	0.198	2.570	7.70%	*	205	KS 38
Rb	9.687	95.150	10.18%			
Cs	0.297	6.110	4.86%	*		
Ba	243.952	621.500	39.25%			
Sc	2.758	32.450	8.50%	*		
La	24.537	17.350	141.42%			
Ce	9.192	86.500	10.63%			
Eu	0.325	1.900	17.11%			
Lu	0.121	0.680	17.79%			
Hf	0.141	6.710	2.10%	*		
Th	1.344	11.550	11.64%			
Cr	121.622	775.000	15.69%			
Mn	81.317	408.500	19.91%			
Fe	0.820	6.220	13.18%			
Co	1.485	28.850	5.15%	*		
Ca	1.096	2.035	53.86%			
Sm	0.806	7.110	11.34%			
Yb	0.170	3.830	4.44%	*		

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Table 48. Per Cent Deviation Results - Period 9-11 Salmon Ware, Red Slip, East-North, n=2

ELEMENT	STD. DEV.	MEAN	% DEV.		SAMPLE	SITE
Na	0.014	1.460	0.96%	*	225	KS 162
K	0.000	2.510	0.00%		227	KS 176
Rb	16.900	78.050	21.65%			
Cs	0.651	4.460	14.60%			
Ba	905.804	1079.500	83.91%			
Sc	2.546	28.600	8.90%	*		
La	0.778	34.850	2.23%	*		
Ce	1.909	79.050	2.41%	*		
Eu	0.127	1.750	7.26%	*		
Lu	0.042	0.592	7.09%	*		
Hf	0.163	5.275	3.09%	*		
Th	0.594	10.380	5.72%	*		
Cr	128.693	668.000	19.27%			
Mn	40.305	550.500	7.32%	*		
Fe	0.481	6.310	7.62%	*		
Co	1.980	27.200	7.28%	*		
Ca	0.884	6.325	13.98%			
Sm	0.014	6.550	0.21%	*		
Yb	0.198	3.250	6.09%	*		

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Table 49. Per Cent Deviation Results - Period 9-11 Buff Ware, All, n=13

ELEMENT	STD. DEV.	MEAN	% DEV.	SAMPLE	SITE
Na	0.466	1.366	34.11%	425	KS 4
K	0.835	1.836	45.48%	861	KS 20
Rb	27.403	46.482	58.95%	862	KS 20
Cs	1.488	4.881	30.49%	863	KS 20
Ba	112.641	280.455	40.16%	864	KS 20
Sc	3.457	28.536	12.11%	865	KS 20
La	2.955	29.173	10.13%	867	KS 20
Ce	8.826	63.236	13.96%	868	KS 20
Eu	0.198	1.374	14.41%	869	KS 20
Lu	0.059	0.531	11.11%	871	KS 20
Hf	0.479	4.097	11.69%		
Th	1.357	8.924	15.21%		
Cr	46.381	340.727	13.61%		
Mn	152.061	1046.000	14.54%		
Fe	0.782	6.704	11.66%		
Co	3.128	29.282	10.68%		
Ca	2.478	16.327	15.18%		
Sm	0.992	4.778	20.76%		
Yb	0.306	2.729	11.21%		

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Table 50. Per Cent Deviation Results - Period 9-11 Buff Ware, Jaffarabad, West-North, n=10

ELEMENT	STD. DEV.	MEAN	% DEV.	SAMPLE	SITE
Na	0.479	1.335	35.88%	861	KS 20
K	0.817	1.743	46.87%	862	KS 20
Rb	28.766	47.230	60.91%	863	KS 20
Cs	1.566	4.858	32.24%	864	KS 20
Ba	118.627	281.900	42.08%	865	KS 20
Sc	3.591	28.360	12.66%	867	KS 20
La	3.055	29.000	10.53%	868	KS 20
Ce	8.988	62.550	14.37%	869	KS 20
Eu	0.203	1.359	14.94%	870	KS 20
Lu	0.057	0.538	10.59%	871	KS 20
Hf	0.504	4.092	12.32%		
Th	1.335	8.776	15.21%		
Cr	46.663	344.900	13.53%		
Mn	139.853	1023.600	13.66%		
Fe	0.785	6.632	11.84%		
Co	2.855	28.810	9.91% *		
Ca	2.557	16.480	15.52%		
Sm	0.961	4.660	20.62%		
Yb	0.320	2.719	11.77%		

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Table 51. Per Cent Deviation Results - Period 9-11 Buff Ware, Center, n=3

ELEMENT	STD. DEV.	MEAN	% DEV.		SAMPLE	SITE
Na	0.271	1.887	14.36%		425	KS 4
K	1.014	1.609	63.02%		950	KS 1
Rb	20.761	15.387	134.93%		951	KS 1
Cs	0.410	5.103	8.03%	*		
Ba	55.148	213.333	25.85%			
Sc	3.064	26.800	11.43%			
La	2.524	28.100	8.98%	*		
Ce	9.091	59.633	15.24%			
Eu	0.050	1.470	3.40%	*		
Lu	0.032	0.469	6.82%	*		
Hf	0.886	3.127	28.33%			
Th	1.769	8.423	21.00%			
Cr	35.233	320.333	11.00%			
Mn	226.430	1015.670	22.29%			
Fe	0.837	6.473	12.93%			
Co	5.557	27.600	20.13%			
Ca	1.942	16.933	11.47%			
Sm	0.604	6.273	9.63%	*		
Yb	0.298	2.560	11.64%			

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Table 52. Per Cent Deviation Results - Period 9-11 Buff Ware, Center, n=2

ELEMENT	STD. DEV.	MEAN	% DEV.		SAMPLE	SITE
Na	0.276	1.995	13.83%		950	KS 1
K	0.186	1.029	18.08%		951	KS 1
Rb	5.063	3.580	141.42%			
Cs	0.580	5.100	11.37%			
Ba	43.841	187.000	23.44%			
Sc	0.636	25.050	2.54%	*		
La	0.990	26.700	3.71%	*		
Ce	0.990	54.400	1.82%	*		
Eu	0.035	1.445	2.42%	*		
Lu	0.042	0.475	8.84%	*		
Hf	0.007	2.615	0.27%	*		
Th	0.629	7.435	8.46%	*		
Cr	42.426	331.000	12.82%			
Mn	74.246	888.500	8.36%	*		
Fe	0.240	6.000	4.00%	*		
Co	0.566	24.400	2.32%	*		
Ca	0.849	18.000	4.72%	*		
Sm	0.764	6.430	11.88%			
Yb	0.262	2.425	10.80%			

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Table 53. Per Cent Deviation Results - Period 12 Red Wares, All, n=12

ELEMENT	STD. DEV.	MEAN	% DEV.	SAMPLE	SITE
Na	0.277	1.198	23.12%	112	KS 67
K	0.231	2.290	10.09%	142	KS 33
Rb	9.958	78.508	12.68%	156	KS 74
Cs	0.970	4.974	19.50%	157	KS 124
Ba	149.784	496.500	30.17%	161	KS 167
Sc	3.472	27.767	12.50%	166	KS 197
La	4.450	32.975	13.50%	214	KS 73
Ce	9.449	71.925	13.14%	215	KS 74
Eu	0.216	1.608	13.43%	217	KS 105
Lu	0.076	0.569	13.36%	263	KS 156
Hf	0.849	5.034	16.87%	266	KS 176
Th	1.203	9.407	12.79%	268	KS 193
Cr	111.845	508.417	22.00%		
Mn	302.039	537.583	56.18%		
Fe	0.709	6.213	11.41%		
Co	4.102	18.133	22.62%		
Ca	6.283	7.835	80.19%		
Sm	0.781	6.118	12.77%		
Yb	0.475	2.961	16.04%		

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Table 54. Per Cent Deviation Results - Period 12 Red Wares, West-South, n=3

ELEMENT	STD. DEV.	MEAN	% DEV.		SAMPLE	SITE	
Na	0.052	1.380	3.77%	*	156	KS	74
K	0.194	2.397	8.09%	*	214	KS	73
Rb	4.020	84.567	4.75%	*	215	KS	74
Cs	0.674	5.687	11.85%				
Ba	84.772	484.333	17.50%				
Sc	1.750	30.467	5.74%	*			
La	2.307	36.567	6.31%	*			
Ce	3.868	79.933	4.84%	*			
Eu	0.142	1.777	7.99%	*			
Lu	0.023	0.591	3.89%	*			
Hf	0.530	5.547	9.55%	*			
Th	0.530	10.417	5.09%	*			
Cr	459.758	593.000	77.53%				
Mn	341.214	197.000	173.21%				
Fe	0.327	6.423	5.09%	*			
Co	4.051	28.300	14.31%				
Ca	4.655	3.633	128.13%				
Sm	0.356	6.743	5.28%	*			
Yb	0.343	3.183	10.78%				

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Table 55. Per Cent Deviation Results - Period 12 Red Wares, West-South, KS 74, n=2

ELEMENT	STD. DEV.	MEAN	% DEV.		SAMPLE	SITE
Na	0.064	1.365	4.69%	*	156	KS 74
K	0.021	2.285	0.92%	*	215	KS 74
Rb	3.323	86.450	3.84%	*		
Cs	0.339	6.050	5.60%	*		
Ba	12.728	533.000	2.39%	*		
Sc	1.202	31.350	3.83%	*		
La	3.040	37.050	8.21%	*		
Ce	4.738	81.050	5.85%	*		
Eu	0.170	1.820	9.34%	*		
Lu	0.027	0.598	4.52%	*		
Hf	0.099	5.850	1.69%	*		
Th	0.283	10.700	2.64%	*		
Cr	0.707	627.500	0.11%	*		
Mn	0.000	0.000	0.00%	*		
Fe	0.431	6.355	6.78%	*		
Co	5.728	28.350	20.20%			
Ca	1.428	1.010	141.39%			
Sm	0.276	6.915	3.99%	*		
Yb	0.325	3.330	9.76%	*		

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Table 56. Per Cent Deviation Results - Period 12 Red Wares, East-North, All, n=4

ELEMENT	STD. DEV.	MEAN	% DEV.	SAMPLE	SITE
Na	0.261	0.984	26.52%	161	KS 167
K	0.368	2.270	16.21%	217	KS 105
Rb	14.207	78.650	18.06%	263	KS 156
Cs	1.230	4.620	26.62%	266	KS 176
Ba	153.611	439.750	34.93%		
Sc	4.950	26.000	19.04%		
La	5.371	29.775	18.04%		
Ce	12.912	66.050	19.55%		
Eu	0.314	1.485	21.14%		
Lu	0.120	0.538	22.30%		
Hf	1.321	4.668	28.30%		
Th	1.749	8.950	19.54%		
Cr	155.629	456.500	34.09%		
Mn	255.364	738.250	34.59%		
Fe	1.082	6.143	17.61%		
Co	5.637	27.950	20.17%		
Ca	9.370	10.003	93.67%		
Sm	0.983	5.585	17.60%		
Yb	0.636	2.743	23.19%		

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Table 57. Per Cent Deviation Results - Period 12 Red Wares, East-South, All, n=2

ELEMENT	STD. DEV.	MEAN	% DEV.		SAMPLE	SITE
Na	0.064	1.055	6.07%	*	166	KS 197
K	0.191	2.275	8.40%	*	268	KS 193
Rb	5.940	73.500	8.08%	*		
Cs	0.106	3.975	2.67%	*		
Ba	69.296	405.000	17.11%			
Sc	2.616	26.050	10.04%			
La	1.202	32.050	3.75%	*		
Ce	3.253	68.200	4.77%	*		
Eu	0.113	1.570	7.20%	*		
Lu	0.075	0.576	13.02%			
Hf	0.700	5.045	13.88%			
Th	0.127	8.560	1.48%	*		
Cr	150.614	479.500	31.41%			
Mn	89.803	676.500	13.27%			
Fe	0.750	5.920	12.67%			
Co	4.313	25.250	17.08%			
Ca	0.063	8.925	0.71%	*		
Sm	0.431	5.995	7.19%	*		
Yb	0.085	2.600	3.27%	*		

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Table 58. Per Cent Deviation Results - Period 12 Red Ware, Porous, Chaff Tempered, All, n=4

ELEMENT	STD. DEV.	MEAN	% DEV.	SAMPLE	SITE
Na	0.384	1.169	32.85%	156	KS 74
K	0.293	2.148	13.64%	157	KS 124
Rb	12.217	77.025	15.86%	161	KS 167
Cs	1.367	4.673	29.25%	166	KS 197
Ba	106.738	412.500	25.88%		
Sc	5.187	25.950	19.99%		
La	6.785	31.950	21.24%		
Ce	14.023	68.525	20.46%		
Eu	0.311	1.490	20.87%		
Lu	0.129	0.540	23.89%		
Hf	1.291	1.673	77.17%		
Th	1.804	8.865	20.35%		
Cr	165.551	449.500	36.83%		
Mn	383.718	501.250	76.55%		
Fe	0.840	5.670	14.81%		
Co	4.638	28.450	16.30%		
Ca	9.091	9.630	94.40%		
Sm	1.262	5.930	21.28%		
Yb	0.709	2.775	25.55%		

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Table 59. Per Cent Deviation Results - Period 12 Salmon Ware, Red Slip, All, n=3

ELEMENT	STD. DEV.	MEAN	% DEV.		SAMPLE	SITE
Na	0.154	1.280	12.03%		214	KS 73
K	0.176	2.453	7.17%	*	215	KS 74
Rb	4.738	86.267	5.49%	*	217	KS 105
Cs	0.674	5.690	11.85%			
Ba	98.046	415.000	23.63%			
Sc	1.769	30.300	5.84%	*		
La	4.796	34.833	13.77%			
Ce	9.151	76.133	12.02%			
Eu	0.176	1.743	10.10%			
Lu	0.019	0.567	3.35%	*		
Hf	0.563	5.270	10.68%			
Th	0.535	10.317	5.19%	*		
Cr	66.573	552.000	12.06%			
Mn	309.005	347.667	88.88%			
Fe	0.383	6.470	5.92%	*		
Co	2.706	25.167	10.75%			
Ca	4.869	5.593	87.06%			
Sm	0.761	6.367	11.95%			
Yb	0.390	3.110	12.54%			

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Table 60. Per Cent Deviation Results - Period 12 Salmon Ware, Red Slip, West-South, n=2

ELEMENT	STD. DEV.	MEAN	% DEV.		SAMPLE	SITE
Na	0.064	1.365	4.69%	*	214	KS 73
K	0.247	2.445	10.10%	*	215	KS 74
Rb	5.657	84.800	6.67%	*		
Cs	0.940	5.625	16.71%			
Ba	96.874	455.500	21.27%			
Sc	2.475	30.450	8.13%	*		
La	2.546	37.400	6.81%	*		
Ce	4.738	81.050	5.85%	*		
Eu	0.177	1.815	9.75%	*		
Lu	0.002	0.578	0.35%	*		
Hf	0.693	5.430	12.76%			
Th	0.742	10.375	7.15%	*		
Cr	73.539	576.000	12.77%			
Mn	417.900	295.500	141.42%			
Fe	0.361	6.305	5.73%	*		
Co	2.758	26.250	10.51%			
Ca	6.279	4.440	141.42%			
Sm	0.502	6.755	7.43%	*		
Yb	0.474	3.225	14.70%			

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Table 61. Per Cent Deviation Results - Period 12 Salmon Ware, Buff Slip, All, n=3

ELEMENT	STD. DEV.	MEAN	% DEV.		SAMPLE	SITE
Na	0.180	1.060	16.98%		263	KS 156
K	0.211	2.337	9.03%	*	266	KS 176
Rb	10.453	78.367	13.34%		268	KS 193
Cs	0.777	4.523	17.18%			
Ba	94.310	526.333	17.92%			
Sc	2.326	27.500	8.46%	*		
La	2.757	33.133	8.32%	*		
Ce	7.630	72.867	10.47%			
Eu	0.145	1.647	8.80%	*		
Lu	0.007	0.623	1.12%	*		
Hf	0.684	5.453	12.54%			
Th	0.830	9.253	8.97%	*		
Cr	103.793	550.000	18.87%			
Mn	239.894	753.000	31.86%			
Fe	0.558	6.513	8.57%	*		
Co	5.354	28.533	18.76%			
Ca	5.342	6.160	86.72%			
Sm	0.341	6.267	5.44%	*		
Yb	0.437	2.947	14.83%			

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Table 62. Per Cent Deviation Results - Period 12 Buff Ware, All, n=74

ELEMENT	STD. DEV.	MEAN	% DEV.		SAMPLE	SITE
Na	0.403	1.341	30.05%		280	KS 13
K	0.654	1.319	49.58%		282	KS 28
Rb	21.421	32.181	66.56%		284	KS 54
Cs	1.029	5.052	20.37%		285	KS 65
Ba	368.223	460.432	79.97%		287	KS 73
Sc	2.349	28.688	8.19%	*	289	KS 108
La	1.836	28.742	6.39%	*	292	KS 124
Ce	4.195	63.645	6.59%	*	293	KS 161
Eu	0.123	1.380	8.91%	*	295	KS 180
Lu	0.054	0.480	11.25%		296	KS 193
Hf	0.322	3.766	8.55%	*	297	KS 197
Th	0.630	9.250	6.81%	*	298	KS 212
Cr	53.890	299.446	18.00%		299	KS 4
Mn	164.326	976.454	16.83%		300	KS 4
Fe	0.666	6.922	9.62%	*	304	KS 24
Co	3.514	27.855	12.62%		306	KS 65
Ca	3.469	18.722	18.53%		308	KS 73
Sm	0.387	5.427	7.13%	*	309	KS 74
Yb	0.240	2.571	9.33%	*	311	KS 118
					312	KS 156
					316	KS 167
					318	KS 168
					321	KS 178
					322	KS 212
					325	KS 4
					327	KS 12
					328	KS 65
					329	KS 73
					330	KS 73
					332	KS 106
					333	KS 106
					335	KS 108
					336	KS 113
					337	KS 118
					338	KS 124
					339	KS 124
					340	KS 156
					341	KS 161

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Table 62, cont'd. Per Cent Deviation Results - Period 12 Buff Ware, All, n=74

SAMPLE	SITE
342	KS 168
343	KS 168
345	KS 178
348	KS 4
350	KS 73
351	KS 106
354	KS 118
356	KS 124
358	KS 225
360	KS 4
362	KS 13
367	KS 65
368	KS 65
370	KS 73
372	KS 108
374	KS 124
376	KS 218
378	KS 13
379	KS 16
380	KS 73
381	KS 118
382	KS 124
384	KS 179
385	KS 180
386	KS 197
387	KS 212
388	KS 225
390	KS 124
392	KS 74
393	KS 74
394	KS 105
398	KS 124
401	KS 197
423	KS 4
424	KS 4
426	KS 4

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Table 63. Per Cent Deviation Results - Period 12 Buff Ware, West-North, All, n=7

ELEMENT	STD. DEV.	MEAN	% DEV.		SAMPLE	SITE
Na	0.313	1.118	28.00%		280	KS 13
K	0.356	1.564	22.76%		282	KS 28
Rb	18.197	42.529	42.79%		304	KS 24
Cs	0.767	5.389	14.23%		327	KS 12
Ba	241.852	536.857	45.05%		362	KS 13
Sc	1.401	29.300	4.78%	*	378	KS 13
La	0.733	29.200	2.51%	*	379	KS 16
Ce	2.544	65.529	3.88%	*		
Eu	0.082	1.461	5.61%	*		
Lu	0.024	0.493	4.87%	*		
Hf	0.167	3.874	4.31%	*		
Th	0.184	9.386	1.96%	*		
Cr	35.012	323.143	10.83%			
Mn	68.582	933.143	7.35%	*		
Fe	0.320	7.027	4.55%	*		
Co	1.978	28.971	6.83%	*		
Ca	1.793	18.214	9.84%	*		
Sm	0.282	5.567	5.07%	*		
Yb	0.108	2.684	4.02%	*		

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Table 64. Per Cent Deviation Results - Period 12 Buff Ware, West-North, KS 13, n=37

ELEMENT	STD. DEV.	MEAN	% DEV.		SAMPLE	SITE
Na	0.194	0.961	20.19%		280	KS 13
K	0.414	1.717	24.11%		362	KS 13
Rb	19.750	51.733	38.18%		378	KS 13
Cs	0.732	5.963	12.28%			
Ba	291.898	465.333	62.73%			
Sc	0.666	28.767	2.32%	*		
La	0.208	28.933	0.72%	*		
Ce	1.082	63.200	1.71%	*		
Eu	0.044	1.410	3.12%	*		
Lu	0.008	0.508	1.57%	*		
Hf	0.186	3.817	4.87%	*		
Th	0.185	9.370	1.97%	*		
Cr	17.214	322.667	5.33%	*		
Mn	15.588	973.000	1.60%	*		
Fe	0.190	6.970	2.73%	*		
Co	2.346	28.667	8.18%	*		
Ca	0.964	17.000	5.67%	*		
Sm	0.110	5.457	2.02%	*		
Yb	0.045	2.753	1.63%	*		

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Table 65. Per Cent Deviation Results - Period 12 Buff Ware, West-South, All, n=16

ELEMENT	STD. DEV.	MEAN	% DEV.		SAMPLE	SITE
Na	0.398	1.153	34.52%		284	KS 54
K	0.674	1.764	38.21%		285	KS 65
Rb	22.545	48.163	46.81%		287	KS 73
Cs	1.202	5.041	23.84%		306	KS 65
Ba	565.401	742.125	76.19%		308	KS 73
Sc	2.802	28.313	9.90%	*	309	KS 74
La	1.762	29.006	6.07%	*	328	KS 65
Ce	4.225	63.788	6.62%	*	329	KS 73
Eu	0.124	1.397	8.88%	*	330	KS 73
Lu	0.055	0.467	11.78%		350	KS 73
Hf	0.355	3.831	9.27%	*	367	KS 65
Th	0.741	9.504	7.80%	*	368	KS 65
Cr	88.282	293.250	30.10%		370	KS 73
Mn	136.690	972.038	14.06%		380	KS 73
Fe	0.702	6.819	10.29%		392	KS 74
Co	4.407	26.544	16.60%		393	KS 74
Ca	1.401	18.675	7.50%	*		
Sm	0.322	5.511	5.84%	*		
Yb	0.276	2.594	10.64%			

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Table 66. Per Cent Deviation Results - Period 12 Buff Ware, West-South, KS 65, n=5

ELEMENT	STD. DEV.	MEAN	% DEV.		SAMPLE	SITE
Na	0.552	1.138	48.51%		285	KS 65
K	1.099	1.784	61.60%		306	KS 65
Rb	24.261	47.260	51.34%		328	KS 65
Cs	1.893	4.882	38.78%		367	KS 65
Ba	722.797	1078.600	67.01%		368	KS 65
Sc	3.328	29.580	11.25%			
La	1.558	29.060	5.36%	*		
Ce	3.373	63.700	5.30%	*		
Eu	0.113	1.410	8.01%	*		
Lu	0.049	0.458	10.70%			
Hf	0.421	3.950	10.66%			
Th	0.700	9.920	7.06%	*		
Cr	160.266	272.600	58.79%			
Mn	21.147	890.520	2.37%	*		
Fe	0.823	7.176	11.47%			
Co	5.421	28.220	19.21%			
Ca	1.870	19.160	9.76%	*		
Sm	0.406	5.472	7.42%	*		
Yb	0.347	2.498	13.89%			

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Table 67. Per Cent Deviation Results - Period 12 Buff Ware, West-South, KS 73, n=7

ELE-MENT	STD. DEV.	MEAN	% DEV.		SAM-PLE	SITE
Na	0.389	1.130	34.42%		287	KS 73
K	0.450	1.774	25.37%		308	KS 73
Rb	27.545	53.657	51.34%		329	KS 73
Cs	0.885	5.124	17.27%		330	KS 73
Ba	516.425	685.143	75.37%		350	KS 73
Sc	2.374	28.629	8.29%	*	370	KS 73
La	2.350	29.271	8.03%	*	380	KS 73
Ce	5.847	64.329	9.09%	*		
Eu	0.165	1.417	11.64%			
Lu	0.061	0.492	12.40%			
Hf	0.359	3.744	9.59%	*		
Th	0.722	9.496	7.60%	*		
Cr	24.737	315.286	7.85%	*		
Mn	180.085	1049.860	17.15%			
Fe	0.591	6.884	8.59%	±		
Co	3.071	27.429	11.20%			
Ca	1.182	18.243	6.48%	*		
Sm	0.345	5.513	6.26%	*		
Yb	0.293	2.623	11.17%			

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Table 68. Per Cent Deviation Results - Period 12 Buff Ware, West-South, KS 74, n=3

ELEMENT	STD. DEV.	MEAN	% DEV.		SAMPLE	SITE
Na	0.327	1.253	26.10%		309	KS 74
K	0.542	1.837	29.50%		392	KS 74
Rb	9.214	37.767	24.40%		393	KS 74
Cs	0.989	4.893	20.21%			
Ba	201.607	465.333	43.33%			
Sc	1.308	25.300	5.17%	*		
La	1.021	28.467	3.59%	*		
Ce	2.346	62.633	3.75%	*		
Eu	0.021	1.347	1.56%	*		
Lu	0.039	0.447	8.72%	*		
Hf	0.370	3.863	9.58%	*		
Th	0.755	8.897	8.49%	*		
Cr	45.640	284.000	16.07%			
Mn	23.812	952.000	2.50%	*		
Fe	0.258	6.047	4.27%	*		
Co	1.682	21.100	7.97%	*		
Ca	1.380	19.067	7.24%	*		
Sm	0.196	5.467	3.59%	*		
Yb	0.150	2.710	5.54%	*		

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Table 69. Per Cent Deviation Results - Period 12 Buff Ware, Center, All, n=24

ELE-MENT	STD. DEV.	MEAN	% DEV.		SAM-PLE	SITE
Na	0.450	1.534	29.34%		289	KS 108
K	0.672	1.161	57.88%		292	KS 124
Rb	17.586	24.612	71.45%		299	KS 4
Cs	0.937	4.929	19.01%		300	KS 4
Ba	178.618	342.458	52.16%		311	KS 118
Sc	2.478	28.317	8.75%	*	325	KS 4
La	1.698	28.329	5.99%	*	335	KS 108
Ce	4.477	62.513	7.16%	*	336	KS 113
Eu	0.122	1.363	8.95%	*	337	KS 118
Lu	0.055	0.483	11.39%		338	KS 124
Hf	0.323	3.710	8.71%	*	339	KS 124
Th	0.634	9.109	6.96%	*	348	KS 4
Cr	44.320	296.958	14.92%		354	KS 118
Mn	243.701	1006.580	24.21%		356	KS 124
Fe	0.578	6.800	8.50%	*	360	KS 4
Co	3.528	28.317	12.46%		372	KS 108
Ca	2.507	18.288	13.71%		374	KS 124
Sm	0.384	5.323	7.21%	*	381	KS 118
Yb	0.214	2.562	8.35%	*	382	KS 124
					390	KS 124
					398	KS 124
					423	KS 4
					424	KS 4
					426	KS 4

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Table 70. Per Cent Deviation Results - Period 12 Buff Ware, Center, KS 4, n=8

ELEMENT	STD. DEV.	MEAN	% DEV.		SAMPLE	SITE
Na	0.245	1.328	18.45%	*	299	KS 4
K	0.639	1.099	58.14%	*	300	KS 4
Rb	14.733	20.888	70.53%		325	KS 4
Cs	1.046	4.754	22.00%		348	KS 4
Ba	75.207	276.125	27.24%		360	KS 4
Sc	2.249	27.050	8.31%	*	423	KS 4
La	0.929	26.925	3.45%	*	424	KS 4
Ce	3.902	60.025	6.50%	*	426	KS 4
Eu	0.083	1.291	6.43%	*		
Lu	0.054	0.463	11.66%			
Hf	0.186	3.574	5.20%	*		
Th	0.564	8.780	6.42%	*		
Cr	37.825	282.125	13.41%	*		
Mn	135.860	1043.880	13.01%			
Fe	0.506	6.489	7.80%	*		
Co	3.151	28.263	11.15%			
Ca	1.301	19.675	6.61%	*		
Sm	0.319	5.108	6.25%	*		
Yb	0.182	2.440	7.46%	*		

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Table 71. Per Cent Deviation Results - Period 12 Buff Ware, Center, KS 108, n=3

ELEMENT	STD. DEV.	MEAN	% DEV.		SAMPLE	SITE
Na	0.187	1.037	18.03%		289	KS 108
K	1.235	1.429	86.42%		335	KS 108
Rb	44.981	39.467	113.97%		372	KS 108
Cs	0.334	5.160	6.47%	*		
Ba	114.177	464.333	24.59%			
Sc	1.473	27.100	5.44%	*		
La	2.551	28.000	9.11%	*		
Ce	7.974	62.067	12.85%			
Eu	0.089	1.350	6.59%	*		
Lu	0.040	0.531	7.53%	*		
Hf	0.505	3.647	13.85%			
Th	0.776	9.030	8.59%	*		
Cr	58.518	284.667	20.56%			
Mn	693.278	1172.330	59.14%			
Fe	0.401	6.513	6.16%	*		
Co	2.055	28.033	7.33%	*		
Ca	5.900	17.733	33.27%			
Sm	0.537	5.300	10.13%			
Yb	0.413	2.470	16.72%			

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Table 72. Per Cent Deviation Results - Period 12 Buff Ware, Center, KS 118, n=4

ELEMENT	STD. DEV.	MEAN	% DEV.		SAMPLE	SITE
Na	0.560	2.003	27.96%		311	KS 118
K	0.152	1.116	13.62%		337	KS 118
Rb	7.376	17.850	41.32%		354	KS 118
Cs	0.477	4.688	10.17%		381	KS 118
Ba	291.700	440.250	66.26%			
Sc	2.102	28.850	7.29%	*		
La	1.268	29.300	4.33%	*		
Ce	3.612	64.425	5.61%	*		
Eu	0.073	1.395	5.23%	*		
Lu	0.060	0.511	11.74%			
Hf	0.522	3.933	13.27%			
Th	0.523	9.388	5.57%	*		
Cr	42.500	308.250	13.79%			
Mn	93.154	856.750	10.87%			
Fe	0.516	6.975	7.40%	*		
Co	2.813	25.200	11.16%			
Ca	1.046	17.100	6.12%	*		
Sm	0.303	5.480	5.53%	*		
Yb	0.159	2.628	6.05%	*		

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Table 73. Per Cent Deviation Results - Period 12 Buff Ware, Center, KS 124, n=8

ELEMENT	STD. DEV.	MEAN	% DEV.		SAMPLE	SITE
Na	0.392	1.690	23.20%		292	KS 124
K	0.770	1.135	67.84%		338	KS 124
Rb	6.552	24.738	26.49%		339	KS 124
Cs	1.219	5.175	23.56%		356	KS 124
Ba	201.265	308.500	65.24%		374	KS 124
Sc	2.746	29.775	9.22%	*	382	KS 124
La	1.352	29.425	4.59%	*	390	KS 124
Ce	3.827	64.100	5.97%	*	398	KS 124
Eu	0.156	1.434	10.88%			
Lu	0.056	0.475	11.79%			
Hf	0.231	3.788	6.10%	*		
Th	0.694	9.339	7.43%	*		
Cr	49.144	314.375	15.63%			
Mn	84.674	997.500	8.49%	*		
Fe	0.630	7.126	8.84%	*		
Co	3.997	30.263	13.21%			
Ca	2.137	17.550	12.18%			
Sm	0.383	5.503	6.96%	*		
Yb	0.103	2.701	3.81%	*		

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Table 74. Per Cent Deviation Results - Period 12 Buff Ware, East-North, All, n=18

ELE-MENT	STD. DEV.	MEAN	% DEV.		SAM-PLE	SITE
Na	0.270	1.261	21.41%		293	KS 161
K	0.320	1.106	28.93%		295	KS 180
Rb	17.290	24.500	70.57%		312	KS 156
Cs	1.183	4.976	23.77%		316	KS 167
Ba	328.166	378.444	86.71%		318	KS 168
Sc	1.655	29.628	5.59%	*	321	KS 178
La	2.484	29.144	8.52%	*	332	KS 106
Ce	4.115	65.544	6.28%	*	333	KS 106
Eu	0.139	1.393	9.98%	*	340	KS 156
Lu	0.063	0.485	12.99%		341	KS 161
Hf	0.342	3.783	9.04%	*	342	KS 168
Th	0.599	9.250	6.48%	*	343	KS 168
Cr	39.718	301.333	13.18%		345	KS 178
Mn	109.039	977.444	11.16%		351	KS 106
Fe	0.801	7.239	11.07%		376	KS 218
Co	3.387	28.489	11.89%		384	KS 179
Ca	6.131	19.522	31.41%		385	KS 180
Sm	0.486	5.522	8.80%	*	394	KS 105
Yb	0.278	2.566	10.83%			

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Table 75. Per Cent Deviation Results - Period 12 Buff Ware, East-North, KS 106, n=3

ELEMENT	STD. DEV.	MEAN	% DEV.		SAMPLE	SITE
Na	0.184	1.403	13.11%		332	KS 106
K	0.086	0.821	10.48%		333	KS 106
Rb	11.096	11.633	95.38%		351	KS 106
Cs	0.613	5.127	11.96%			
Ba	52.444	168.333	31.15%			
Sc	2.787	29.100	9.58%	*		
La	2.715	28.167	9.64%	*		
Ce	5.265	62.867	8.37%	*		
Eu	0.202	1.290	15.66%			
Lu	0.020	0.439	4.56%	*		
Hf	0.375	3.477	10.79%			
Th	0.114	9.060	1.26%	*		
Cr	55.429	277.667	19.96%			
Mn	55.501	893.333	6.21%	*		
Fe	0.704	6.940	10.14%			
Co	2.483	27.567	9.01%	*		
Ca	0.819	18.400	4.45%	*		
Sm	0.580	5.230	11.09%			
Yb	0.215	2.447	8.79%	*		

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Table 76. Per Cent Deviation Results - Period 12 Buff Ware, East-North, KS 156, n=2

ELEMENT	STD. DEV.	MEAN	% DEV.		SAMPLE	SITE
Na	0.344	0.987	34.85%		312	KS 156
K	0.240	1.700	14.12%		340	KS 156
Rb	10.182	52.300	19.47%			
Cs	1.025	5.505	18.62%			
Ba	289.207	875.500	33.03%			
Sc	0.212	28.650	0.74%	*		
La	3.111	28.900	10.76%			
Ce	4.455	66.650	6.68%	*		
Eu	0.071	1.430	4.97%	*		
Lu	0.084	0.553	15.19%			
Hf	0.544	4.015	13.55%			
Th	1.563	9.595	16.29%			
Cr	55.154	334.000	16.51%			
Mn	152.735	972.000	15.71%			
Fe	0.064	6.885	0.93%	*		
Co	2.404	25.300	9.50%	*		
Ca	0.071	18.350	0.39%	*		
Sm	0.849	5.670	14.97%			
Yb	0.417	2.585	16.13%			

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Table 77. Per Cent Deviation Results - Period 12 Buff Ware, East-North, KS 161, n=2

ELEMENT	STD. DEV.	MEAN	% DEV.		SAMPLE	SITE
Na	0.191	1.215	15.72%		293	KS 161
K	0.024	0.983	2.44%	*	341	KS 161
Rb	20.365	14.400	141.42%			
Cs	0.735	5.160	14.24%			
Ba	773.575	753.000	102.73%			
Sc	2.333	29.850	7.82%	*		
La	1.768	28.050	6.30%	*		
Ce	0.990	68.200	1.45%	*		
Eu	0.028	1.290	2.17%	*		
Lu	0.052	0.449	11.58%			
Hf	0.071	3.930	1.81%	*		
Th	0.085	9.360	0.91%	*		
Cr	28.284	308.000	9.18%	*		
Mn	76.368	1006.000	7.59%	*		
Fe	0.573	7.185	7.97%	*		
Co	4.950	29.500	16.78%	*		
Ca	1.344	17.950	7.49%			
Sm	0.021	5.135	0.41%	*		
Yb	0.127	2.220	5.72%	*		

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Table 78. Per Cent Deviation Results - Period 12 Buff Ware, East-North, KS 168, n=3

ELEMENT	STD. DEV.	MEAN	% DEV.		SAMPLE	SITE
Na	0.265	1.273	20.82%		318	KS 168
K	0.135	0.920	14.67%		342	KS 168
Rb	4.603	17.100	26.92%		343	KS 168
Cs	0.993	4.603	21.57%			
Ba	84.032	297.667	28.23%			
Sc	2.050	29.767	6.89%	*		
La	1.620	28.067	5.77%	*		
Ce	6.458	64.467	10.02%			
Eu	0.101	1.430	7.06%	*		
Lu	0.019	0.446	4.26%	*		
Hf	0.319	3.513	9.08%	*		
Th	0.741	8.960	8.27%	*		
Cr	51.984	309.333	16.81%			
Mn	158.450	1022.670	15.49%			
Fe	0.505	7.183	7.03%	*		
Co	3.508	31.667	11.08%			
Ca	0.924	17.667	5.23%	*		
Sm	0.446	5.490	8.12%	*		
Yb	0.421	2.727	15.44%			

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Table 79. Per Cent Deviation Results - Period 12 Buff Ware, East-North, KS 178, n=2

ELEMENT	STD. DEV.	MEAN	% DEV.		SAMPLE	SITE
Na	0.219	1.335	16.40%		321	KS 178
K	0.219	1.255	17.45%		345	KS 178
Rb	21.708	43.950	49.39%			
Cs	0.467	6.100	7.66%	*		
Ba	277.186	339.000	81.77%			
Sc	1.485	29.350	5.06%	*		
La	1.343	30.950	4.34%	*		
Ce	1.415	66.400	2.13%	*		
Eu	0.099	1.480	6.69%	*		
Lu	0.019	0.491	3.87%	*		
Hf	0.481	3.930	12.24%			
Th	0.191	9.860	1.94%	*		
Cr	5.657	273.000	2.07%	*		
Mn	28.284	949.000	2.98%	*		
Fe	0.382	6.960	5.49%	*		
Co	0.424	25.700	1.65%	*		
Ca	0.354	17.250	2.05%	*		
Sm	0.325	5.730	5.67%	*		
Yb	0.276	2.805	9.84%	*		

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Table 80. Per Cent Deviation Results - Period 12 Buff Ware, East-North, KS 180, n=2

ELEMENT	STD. DEV.	MEAN	% DEV.		SAMPLE	SITE
Na	0.429	1.077	39.83%		295	KS 180
K	0.561	1.233	45.50%		385	KS 180
Rb	4.596	35.950	12.78%			
Cs	0.573	2.215	25.87%			
Ba	36.770	247.000	14.89%			
Sc	1.485	31.550	4.71%	*		
La	1.909	29.650	6.44%	*		
Ce	3.182	68.350	4.66%	*		
Eu	0.163	1.465	11.13%			
Lu	0.013	0.452	2.88%	*		
Hf	0.057	4.030	1.41%	*		
Th	0.127	9.500	1.34%	*		
Cr	24.749	313.500	7.89%	*		
Mn	60.104	1007.500	5.97%	*		
Fe	0.460	7.595	6.06%	*		
Co	2.404	31.200	7.71%	*		
Ca	1.697	19.000	8.93%	*		
Sm	0.354	5.650	6.27%	*		
Yb	0.141	2.460	5.73%	*		

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Table 81. Per Cent Deviation Results - Period 12 Buff Ware, East-South, All, n=7

ELEMENT	STD. DEV.	MEAN	% DEV.		SAMPLE	SITE
Na	0.347	1.449	23.95%		296	KS 193
K	0.932	1.121	83.14%		297	KS 197
Rb	21.760	28.871	75.37%		298	KS 212
Cs	1.005	5.184	19.39%		322	KS 212
Ba	241.052	380.571	63.34%		386	KS 197
Sc	2.854	27.757	10.28%		387	KS 212
La	1.410	28.043	5.03%	*	401	KS 197
Ce	2.884	60.957	4.73%	*		
Eu	0.082	1.284	6.39%	*		
Lu	0.054	0.466	11.59%			
Hf	0.325	3.637	8.94%	*		
Th	0.729	9.034	8.07%	*		
Cr	40.569	292.143	13.89%			
Mn	73.763	950.000	7.76%	*		
Fe	0.668	6.677	10.00%			
Co	2.303	26.786	8.60%	*		
Ca	1.678	19.343	8.67%	*		
Sm	0.301	5.261	5.72%	*		
Yb	0.169	2.540	6.65%	*		

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Table 82. Per Cent Deviation Results - Period 12 Buff Ware, East-South, KS 197, n=3

ELEMENT	STD. DEV.	MEAN	% DEV.		SAMPLE	SITE
Na	0.332	1.369	24.25%		297	KS 197
K	1.429	1.506	94.89%		386	KS 197
Rb	35.785	32.600	109.77%		401	KS 197
Cs	1.690	5.060	33.40%			
Ba	114.771	253.333	45.30%			
Sc	3.837	26.733	14.35%			
La	0.902	27.867	3.24%	*		
Ce	2.996	59.333	5.05%	*		
Eu	0.015	1.213	1.24%	*		
Lu	0.004	0.456	0.88%	*		
Hf	0.309	3.537	8.74%	*		
Th	0.839	8.577	9.78%	*		
Cr	66.641	298.000	22.36%			
Mn	37.403	972.000	3.85%	*		
Fe	0.892	6.437	13.86%			
Co	2.972	26.300	11.30%			
Ca	2.022	19.000	10.64%			
Sm	0.114	5.080	2.24%	*		
Yb	0.166	2.500	6.64%	*		

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Table 83. Per Cent Deviation Results - Period 12 Buff Ware, East-South, KS 212, n=3

ELEMENT	STD. DEV.	MEAN	% DEV.		SAMPLE	SITE
Na	0.244	1.680	14.52%		298	KS 212
K	0.417	0.814	51.23%		322	KS 212
Rb	9.973	25.267	39.47%		387	KS 212
Cs	0.045	5.427	0.83%	*		
Ba	168.423	353.333	47.67%			
Sc	1.539	29.400	5.23%	*		
La	1.724	28.767	5.99%	*		
Ce	2.303	62.967	3.66%	*		
Eu	0.062	1.360	4.56%	*		
Lu	0.080	0.491	16.29%			
Hf	0.161	3.880	4.15%	*		
Th	0.308	9.580	3.22%	*		
Cr	18.520	291.000	6.36%	*		
Mn	107.002	952.667	11.23%			
Fe	0.308	7.080	4.35%	*		
Co	2.250	27.633	8.14%	*		
Ca	1.952	19.400	10.06%			
Sm	0.331	5.500	6.02%	*		
Yb	0.147	2.497	5.89%	*		

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Table 84. Per Cent Deviation Results - Period 12 Buff Ware, Black-on-Buff Wasters, All, n=3

ELEMENT	STD. DEV.	MEAN	% DEV.		SAMPLE	SITE
Na	0.114	1.380	8.26%	*	423	KS 4
K	0.499	1.002	49.80%		424	KS 4
Rb	5.105	16.367	31.19%		426	KS 4
Cs	0.638	4.157	15.35%			
Ba	102.504	304.000	33.72%			
Sc	1.950	25.467	7.66%	*		
La	1.206	26.433	4.56%	*		
Ce	3.612	57.667	6.26%	*		
Eu	0.056	1.220	4.59%	*		
Lu	0.071	0.464	15.30%			
Hf	0.188	3.503	5.37%	*		
Th	0.461	8.453	5.45%	*		
Cr	18.230	272.667	6.69%	*		
Mn	145.258	1170.000	12.42%			
Fe	0.432	6.173	7.00%	*		
Co	1.510	27.600	5.47%	*		
Ca	1.253	19.400	6.46%	*		
Sm	0.397	4.970	7.99%	*		
Yb	0.046	2.400	1.92%	*		

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Table 85. Per Cent Deviation Results - Period 12 Buff Ware, Goat Motif, All, n=5

ELEMENT	STD. DEV.	MEAN	% DEV.		SAMPLE	SITE
Na	0.244	1.582	15.42%	*	392	KS 74
K	0.418	1.422	29.40%		393	KS 74
Rb	10.900	20.680	52.71%		394	KS 105
Cs	1.233	5.232	23.57%		398	KS 124
Ba	221.806	339.000	65.43%		401	KS 197
Sc	1.987	28.220	7.04%	*		
La	0.968	28.580	3.39%	*		
Ce	3.108	64.020	4.85%	*		
Eu	0.162	1.358	11.93%			
Lu	0.058	0.503	11.53%			
Hf	0.289	3.902	7.41%	*		
Th	0.367	9.486	3.87%	*		
Cr	21.464	280.200	7.66%	*		
Mn	52.710	949.400	5.55%	*		
Fe	0.495	6.736	7.35%	*		
Co	3.898	24.980	15.60%			
Ca	2.536	17.360	14.61%			
Sm	0.314	5.502	5.71%	*		
Yb	0.106	2.700	3.93%	*		

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Table 86. Per Cent Deviation Results - Period 12 Buff Ware, Goat Motif, KS 74, n=2

ELEMENT	STD. DEV.	MEAN	% DEV.		SAMPLE	SITE
Na	0.255	1.410	18.09%		392	KS 74
K	0.488	1.595	30.60%		393	KS 74
Rb	1.839	32.500	5.66%	*		
Cs	1.138	5.225	21.78%			
Ba	172.534	558.000	30.92%			
Sc	0.212	26.050	0.81%	*		
La	1.344	28.250	4.76%	*		
Ce	3.182	62.250	5.11%	*		
Eu	0.007	1.335	0.52%	*		
Lu	0.008	0.470	1.70%	*		
Hf	0.523	3.870	13.51%			
Th	0.375	9.305	4.03%	*		
Cr	16.263	258.500	6.29%	*		
Mn	31.820	947.500	3.36%	*		
Fe	0.035	6.195	0.56%	*		
Co	1.768	21.750	8.13%	*		
Ca	1.838	18.800	9.78%	*		
Sm	0.191	5.385	3.55%	*		
Yb	0.106	2.785	3.81%	*		

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Table 87. Per Cent Deviation Results - Period 12 Buff Ware, Cylindrical Bowl, Square and Dots, All, n=9

ELEMENT	STD. DEV.	MEAN	% DEV.		SAMPLE	SITE
Na	0.717	1.514	47.36%		378	KS 13
K	0.691	1.340	51.57%		380	KS 73
Rb	23.771	35.500	66.96%		381	KS 118
Cs	0.669	5.512	12.14%		382	KS 124
Ba	363.005	404.222	89.80%		384	KS 179
Sc	1.947	29.767	6.54%	*	385	KS 180
La	1.217	29.167	4.17%	*	386	KS 197
Ce	3.096	63.567	4.87%	*	387	KS 212
Eu	0.104	1.374	7.57%	*	388	KS 225
Lu	0.045	0.481	9.36%	*		
Hf	0.279	3.708	7.52%	*		
Th	0.382	9.318	4.10%	*		
Cr	45.072	294.667	15.30%			
Mn	87.535	963.111	9.09%	*		
Fe	1.043	7.486	13.93%			
Co	4.382	29.211	15.00%			
Ca	8.521	21.367	39.88%			
Sm	0.231	5.407	4.27%	*		
Yb	0.247	2.541	9.72%	*		

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Table 88. Per Cent Deviation Results - Period 12 Buff Ware, Cylindrical Bowl, Square and Dots, Center, n=2

ELEMENT	STD. DEV.	MEAN	% DEV.		SAMPLE	SITE
Na	0.410	2.540	16.14%		381	KS 118
K	0.106	1.355	7.82%	*	382	KS 124
Rb	8.980	23.850	37.65%			
Cs	0.113	5.450	2.07%	*		
Ba	14.142	259.000	5.46%	*		
Sc	2.828	30.000	9.43%	*		
La	0.495	29.650	1.67%	*		
Ce	0.707	64.100	1.10%	*		
Eu	0.113	1.400	8.07%	*		
Lu	0.063	0.481	13.10%			
Hf	0.099	3.640	2.72%	*		
Th	0.035	9.275	0.38%	*		
Cr	72.832	332.500	21.90%			
Mn	140.007	951.000	14.72%			
Fe	0.714	7.185	9.94%	*		
Co	10.465	30.000	34.88%			
Ca	0.636	18.350	3.47%	*		
Sm	0.184	5.420	3.39%	*		
Yb	0.141	2.720	5.18%	*		

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Table 89. Per Cent Deviation Results - Period 12 Buff Ware, Cylindrical Bowl, Square and Dots, East-North, n=2

ELEMENT	STD. DEV.	MEAN	% DEV.		SAMPLE	SITE
Na	0.380	1.042	36.47%		384	KS 179
K	0.573	1.355	7.82%	*	385	KS 180
Rb	18.526	26.100	70.98%			
Cs	0.573	5.215	10.99%			
Ba	39.598	301.000	13.16	*		
Sc	1.909	31.250	6.11%	*		
La	1.909	29.650	6.44%	*		
Ce	5.657	66.600	8.49%	*		
Eu	0.163	1.465	11.13%			
Lu	0.006	0.457	1.31%	*		
Hf	0.361	3.815	9.46%	*		
Th	0.368	9.150	4.02%	*		
Cr	57.276	290.500	19.72%			
Mn	117.380	967.000	12.14%			
Fe	1.443	8.945	16.14%			
Co	1.909	31.550	6.05%	*		
Ca	18.243	30.700	59.42%			
Sm	0.403	5.615	7.18%	*		
Yb	0.127	2.450	5.18%	*		

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Table 90. Per Cent Deviation Results - Period 12 Buff Ware, Cylindrical Bowl, Square and Dots, East-South, n=2

ELEMENT	STD. DEV.	MEAN	% DEV.		SAMPLE	SITE
Na	0.304	1.745	17.42%		386	KS 197
K	0.042	0.371	11.32%		387	KS 212
Rb	0.919	13.750	6.68%	*		
Cs	0.721	4.960	14.54%			
Ba	80.610	216.000	37.32%			
Sc	1.838	29.400	6.25%	*		
La	1.343	27.850	4.82%	*		
Ce	0.282	60.400	0.47%	*		
Eu	0.042	1.260	3.33%	*		
Lu	0.018	0.449	4.01%	*		
Hf	0.368	3.440	10.70%			
Th	0.686	9.355	7.33%	*		
Cr	25.456	252.000	10.10%			
Mn	49.497	1025.000	4.83%	*		
Fe	0.396	7.030	5.63%	*		
Co	1.626	28.750	5.66%	*		
Ca	0.000	21.300	0.00%			
Sm	0.014	5.150	0.27%	*		
Yb	0.007	2.615	0.27%	*		

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Table 91. Per Cent Deviation Results - Period 12 Buff Ware, Cylindrical Bowl, Band and Band, All, n=17

ELEMENT	STD. DEV.	MEAN	% DEV.		SAMPLE	SITE
Na	0.255	1.268	20.11%		325	KS 4
K	0.465	1.124	41.37%		327	KS 12
Rb	12.205	24.576	49.66%		328	KS 65
Cs	0.737	5.138	14.34%		329	KS 73
Ba	311.020	444.706	69.94%		330	KS 73
Sc	1.545	29.347	5.26%	*	332	KS 106
La	1.744	28.329	6.16%	*	333	KS 106
Ce	4.237	64.959	6.52%	*	335	KS 108
Eu	0.144	1.373	10.49%		336	KS 113
Lu	0.044	0.471	9.34%	*	337	KS 118
Hf	0.295	3.679	8.02%	*	338	KS 124
Th	0.570	9.299	6.13%	*	339	KS 124
Cr	83.468	279.588	29.85%		340	KS 156
Mn	131.937	971.882	13.58%		341	KS 161
Fe	0.393	7.044	5.58%	*	342	KS 168
Co	3.263	28.624	11.40%		343	KS 168
Ca	1.152	17.812	6.47%	*	345	KS 178
Sm	0.375	5.275	7.11%	*		
Yb	0.254	2.542	9.99%	*		

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Table 92. Per Cent Deviation Results - Period 12 Buff Ware, Cylindrical Bowl, Band and Band, West-South, n=3

ELE-MENT	STD. DEV.	MEAN	% DEV.		SAM-PLE	SITE	
Na	0.068	1.307	5.20%	*	328	KS	65
K	0.459	1.410	32.55%		329	KS	73
Rb	0.866	27.500	3.15%	*	330	KS	73
Cs	0.741	5.163	14.35%				
Ba	64.815	478.000	13.56%				
Sc	0.208	29.767	0.70%	*			
La	2.268	29.633	7.65%	*			
Ce	4.979	66.000	7.54%	*			
Eu	0.225	1.443	15.59%				
Lu	0.064	0.481	13.31%				
Hf	0.230	4.037	5.70%	*			
Th	0.096	9.893	0.97%	*			
Cr	197.123	226.667	86.97%				
Mn	265.752	1017.670	26.11%				
Fe	0.104	7.160	1.45%	*			
Co	2.829	29.967	9.44%	*			
Ca	0.700	16.800	4.17%	*			
Sm	0.440	5.467	8.05%	*			
Yb	0.415	2.740	15.15%				

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Table 93. Per Cent Deviation Results - Period 12 Buff Ware, Cylindrical Bowl, Band and Band, West-South, KS 73, n=2

ELEMENT	STD. DEV.	MEAN	% DEV.		SAMPLE	SITE
Na	0.092	1.295	7.10%	*	329	KS 73
K	0.559	1.545	36.18%		330	KS 73
Rb	0.000	27.000	0.00%			
Cs	0.806	4.890	16.48%			
Ba	60.811	450.000	13.51%			
Sc	0.283	29.800	0.95%	*		
La	2.404	30.500	7.88%	*		
Ce	5.586	67.750	8.25%	*		
Eu	0.212	1.540	13.77%			
Lu	0.081	0.498	16.27%			
Hf	0.170	4.150	4.10%	*		
Th	0.049	9.945	0.49%	*		
Cr	25.456	340.000	7.49%	*		
Mn	352.846	1070.500	32.96%			
Fe	0.127	7.130	1.78%	*		
Co	3.960	30.200	13.11%			
Ca	0.919	16.950	5.42%	*		
Sm	0.417	5.655	7.37%	*		
Yb	0.304	2.945	10.32%			

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Table 94. Per Cent Deviation Results - Period 12 Buff Ware, Cylindrical Bowl, Band and Band, Center, All, n=6

ELEMENT	STD. DEV.	MEAN	% DEV.		SAMPLE	SITE
Na	0.242	1.463	16.54%		325	KS 4
K	0.630	1.033	60.99%		335	KS 108
Rb	9.112	21.883	41.64%		336	KS 113
Cs	0.711	5.320	13.36%		337	KS 118
Ba	226.976	362.167	62.67%		338	KS 124
Sc	1.638	29.383	5.57%	*	339	KS 124
La	1.644	28.700	5.73%	*		
Ce	3.804	65.217	5.83%	*		
Eu	0.141	1.370	10.29%			
Lu	0.047	0.483	9.73%	*		
Hf	0.256	3.637	7.04%	*		
Th	0.564	9.280	6.08%	*		
Cr	27.869	278.667	10.00%			
Mn	77.959	952.000	8.19%	*		
Fe	0.411	7.062	5.82%	*		
Co	2.227	27.633	8.06%	*		
Ca	1.395	18.567	7.51%	*		
Sm	0.441	5.292	8.33%	*		
Yb	0.189	2.557	7.39%	*		

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Table 95. Per Cent Deviation Results - Period 12 Buff Ware, Cylindrical Bowl, Band and Band, Center, KS 124, n=2

ELE-MENT	STD. DEV.	MEAN	% DEV.		SAM-PLE	SITE
Na	0.389	1.525	25.51%		338	KS 124
K	1.255	1.193	105.20%		339	KS 124
Rb	5.303	25.050	21.17%			
Cs	0.078	5.735	1.36%	*		
Ba	418.607	489.000	85.60%			
Sc	1.697	29.900	5.68%	*		
La	2.192	29.750	7.37%	*		
Ce	4.879	66.050	7.39%	*		
Eu	0.283	1.430	19.79%			
Lu	0.052	0.495	10.51%			
Hf	0.262	3.675	7.13%	*		
Th	0.424	9.400	4.51%	*		
Cr	34.648	275.500	12.58%			
Mn	146.371	996.500	14.69%			
Fe	0.438	7.140	6.13%	*		
Co	2.192	28.050	7.81%	*		
Ca	2.121	17.900	11.85%			
Sm	0.728	5.445	13.37%			
Yb	0.035	2.665	1.31%	*		

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Table 96. Per Cent Deviation Results - Period 12 Buff Ware, Cylindrical Bowl, Band and Band, East-North, n=7

ELEMENT	STD. DEV.	MEAN	% DEV.		SAMPLE	SITE
Na	0.212	1.129	18.78%		332	KS 106
K	0.268	1.011	26.51%		333	KS 106
Rb	14.269	22.043	64.73%		340	KS 156
Cs	0.883	4.977	17.74%		341	KS 161
Ba	420.979	441.571	95.34%		342	KS 168
Sc	1.930	29.329	6.58%	*	343	KS 168
La	1.485	27.429	5.41%	*	345	KS 178
Ce	5.084	64.114	7.93%	*		
Eu	0.135	1.343	10.05%			
Lu	0.031	0.450	6.89%	*		
Hf	0.279	3.560	7.84%	*		
Th	0.559	9.017	6.20%	*		
Cr	53.521	304.143	17.60%			
Mn	127.229	965.286	13.18%			
Fe	0.490	7.027	6.97%	*		
Co	4.429	28.914	15.32%			
Ca	0.788	17.614	4.47%	*		
Sm	0.345	5.186	6.65%	*		
Yb	0.213	2.423	8.79%	*		

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Table 97. Per Cent Deviation Results - Period 12 Buff Ware, Cylindrical Bowl, Band and Band, East-North, n=2

ELEMENT	STD. DEV.	MEAN	% DEV.		SAMPLE	SITE
Na	0.042	1.170	3.59%	*	332	KS 106
K	0.040	0.846	4.73%	*	333	KS 106
Rb	5.586	18.150	30.78%			
Cs	0.170	5.320	3.20%	*		
Ba	102.531	299.500	34.23%			
Sc	0.778	27.350	2.84%	*		
La	1.626	27.850	5.84%	*		
Ce	4.738	62.550	7.57%	*		
Eu	0.078	1.265	6.17%	*		
Lu	0.057	0.490	11.63%			
Hf	0.389	3.375	11.53%			
Th	0.248	9.105	2.72%	*		
Cr	31.820	260.500	12.21%			
Mn	77.782	893.000	8.71%	*		
Fe	0.255	6.560	3.89%	*		
Co	2.404	26.500	9.07%	*		
Ca	0.566	18.200	3.11%	*		
Sm	0.445	5.195	8.57%	*		
Yb	0.014	2.420	0.58%	*		

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Table 98. Per Cent Deviation Results - Period 12 Buff Ware, Cylindrical Bowl, Band and Band, East-North, n=2

ELEMENT	STD. DEV.	MEAN	% DEV.		SAMPLE	SITE
Na	0.092	1.125	8.18%	*	342	KS 168
K	0.190	0.926	20.52%		343	KS 168
Rb	3.465	14.850	23.33%			
Cs	0.318	4.045	7.86%	*		
Ba	118.794	299.000	39.73%			
Sc	2.899	29.750	9.74%	*		
La	2.051	27.650	7.42%	*		
Ce	9.122	64.650	14.11%			
Eu	0.092	1.475	6.24%	*		
Lu	0.024	0.450	5.33%	*		
Hf	0.368	3.620	10.17%			
Th	0.841	8.705	9.66%	*		
Cr	54.447	329.500	16.52%			
Mn	160.513	1086.500	14.77%			
Fe	0.714	7.175	9.95%	*		
Co	2.758	33.350	8.27%	*		
Ca	1.131	17.400	6.50%	*		
Sm	0.587	5.395	10.88%			
Yb	0.382	2.540	15.04%			

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Table 99. Per Cent Deviation Results - Period 12 Buff Ware, Cylindrical Bowl, Band and 2 Lines, All, n=6

ELEMENT	STD. DEV.	MEAN	% DEV.		SAMPLE	SITE
Na	0.491	1.565	31.37%		348	KS 4
K	0.764	1.059	72.14%		350	KS 73
Rb	11.401	22.533	50.60%		351	KS 106
Cs	1.019	4.990	20.42%		354	KS 118
Ba	88.296	275.833	32.01%		356	KS 124
Sc	2.807	29.833	9.41%	*	358	KS 225
La	1.733	29.100	5.96%	*		
Ce	3.694	63.400	5.83%	*		
Eu	0.087	1.407	6.18%	*		
Lu	0.032	0.480	6.67%	*		
Hf	0.197	3.668	5.37%	*		
Th	0.541	9.212	5.87%	*		
Cr	51.043	315.167	16.20%			
Mn	69.850	981.167	7.12%	*		
Fe	0.662	7.110	9.31%	*		
Co	3.949	28.650	13.78%			
Ca	1.795	17.867	10.05%			
Sm	0.314	5.418	5.80%	*		
Yb	0.120	2.577	4.66%	*		

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Table 100. Per Cent Deviation Results - Period 12 Buff Ware, Cylindrical Bowl, Band and 2 Lines, Center, n=3

ELEMENT	STD. DEV.	MEAN	% DEV.		SAMPLE	SITE
Na	0.678	1.604	42.27%		348	KS 4
K	1.150	1.163	98.88%		354	KS 118
Rb	9.995	23.400	42.71%		356	KS 124
Cs	1.433	4.793	29.90%			
Ba	61.273	290.333	21.10%			
Sc	3.904	28.900	13.51%			
La	2.136	28.567	7.48%	*		
Ce	3.874	62.700	6.18%	*		
Eu	0.062	1.340	4.63%	*		
Lu	0.044	0.490	8.98%	*		
Hf	0.266	3.673	7.24%	*		
Th	0.850	9.207	9.23%	*		
Cr	76.217	301.000	25.32%			
Mn	99.865	1001.000	9.98%	*		
Fe	0.911	6.897	13.21%			
Co	6.022	28.600	21.06%			
Ca	2.272	17.700	12.84%			
Sm	0.293	5.373	5.45%	*		
Yb	0.171	2.543	6.72%	*		

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Table 101. Per Cent Deviation Results - Period 12 Buff Ware, Cylindrical Bowl, Band and Dots, All, n=9

ELEMENT	STD. DEV.	MEAN	% DEV.		SAMPLE	SITE	
Na	0.251	1.342	18.70%		360	KS	4
K	0.546	1.262	43.26%		362	KS	13
Rb	13.296	27.933	47.60%		367	KS	65
Cs	1.189	4.893	24.30%		368	KS	65
Ba	669.514	637.778	104.98%		370	KS	73
Sc	3.434	28.400	12.09%		372	KS	108
La	1.895	27.856	6.80%	*	374	KS	124
Ce	4.639	60.100	7.72%	*	376	KS	218
Eu	0.096	1.346	7.13%	*	390	KS	124
Lu	0.064	0.468	13.68%				
Hf	0.434	3.756	11.55%				
Th	1.005	9.126	11.01%				
Cr	49.214	316.333	15.56%				
Mn	167.536	938.333	17.85%				
Fe	0.849	6.818	12.45%				
Co	3.968	28.389	13.98%				
Ca	2.080	19.444	10.70%				
Sm	0.321	5.190	6.18%	*			
Yb	0.259	2.481	10.44%				

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Table 102. Per Cent Deviation Results - Period 12 Buff Ware, Cylindrical Bowl, Band and Dots, West-South, n=39

ELEMENT	STD. DEV.	MEAN	% DEV.		SAMPLE	SITE	
Na	0.429	1.398	30.69%		367	KS	65
K	0.809	1.370	59.05%		368	KS	65
Rb	13.572	40.033	33.90%		370	KS	73
Cs	1.644	5.207	31.57%				
Ba	992.199	1223.000	81.13%				
Sc	5.105	29.767	17.15%				
La	2.991	28.467	10.51%				
Ce	7.016	61.567	11.40%				
Eu	0.147	1.370	10.73%				
Lu	0.065	0.432	15.05%				
Hf	0.685	3.830	17.89%				
Th	1.425	9.690	14.71%				
Cr	65.653	344.333	19.07%				
Mn	223.178	1003.330	22.24%				
Fe	1.300	7.193	18.07%				
Co	6.161	29.700	20.74%				
Ca	0.862	19.933	4.32%	*			
Sm	0.481	5.340	9.01%	*			
Yb	0.327	2.383	13.72%				

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Table 103. Per Cent Deviation Results - Period 12 Buff Ware, Cylindrical Bowl, Band and Dots, West-South, KS 65, n=2

ELEMENT	STD. DEV.	MEAN	% DEV.		SAMPLE	SITE
Na	0.332	1.605	20.69%		367	KS 65
K	0.347	0.925	37.51%		368	KS 65
Rb	15.203	35.250	43.13%			
Cs	1.414	5.960	23.72%			
Ba	1069.150	1594.000	67.07%			
Sc	3.889	32.250	12.06%			
La	2.687	29.800	9.02%	*		
Ce	6.435	64.650	9.95%	*		
Eu	0.134	1.435	9.34%	*		
Lu	0.083	0.448	18.53%			
Hf	0.495	4.170	11.87%			
Th	0.976	10.410	9.38%	*		
Cr	67.175	370.500	18.13%			
Mn	28.284	875.000	3.23%	*		
Fe	0.955	7.835	12.19%			
Co	5.374	32.500	16.54%			
Ca	0.424	20.400	2.08%	*		
Sm	0.537	5.510	9.75%	*		
Yb	0.410	2.470	16.60%			

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Table 104. Per Cent Deviation Results - Period 12 Buff Ware, Cylindrical Bowl, Band and Dots, Center, n=49

ELEMENT	STD. DEV.	MEAN	% DEV.		SAMPLE	SITE
Na	0.120	1.290	9.30%	*	360	KS 4
K	0.521	1.117	46.64%		372	KS 108
Rb	5.496	18.700	29.39%		374	KS 124
Cs	1.196	4.465	26.79%		390	KS 124
Ba	151.882	368.250	41.24%			
Sc	3.323	27.475	12.09%			
La	1.486	27.225	5.46%	*		
Ce	3.952	58.325	6.78%	*		
Eu	0.064	1.320	4.85%	*		
Lu	0.070	0.470	14.89%			
Hf	0.375	3.635	10.32%			
Th	0.800	8.683	9.21%	*		
Cr	44.650	292.750	15.25%			
Mn	177.646	875.250	20.30%			
Fe	0.747	6.553	11.40%			
Co	3.585	28.225	12.70%			
Ca	2.940	19.225	15.29%			
Sm	0.235	5.030	4.67%	*		
Yb	0.283	2.493	11.35%			

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Table 105. Per Cent Deviation Results - Period 12 Buff Ware, Cylindrical Bowl, Band and Dots, Center, KS 124, n=2

ELEMENT	STD. DEV.	MEAN	% DEV.		SAMPLE	SITE
Na	0.035	1.285	2.72%	*	374	KS 124
K	0.523	1.470	35.58%		390	KS 124
Rb	3.182	23.050	13.80%			
Cs	1.853	4.010	46.21%			
Ba	49.497	293.000	16.89%			
Sc	4.667	27.200	17.16%			
La	0.778	27.950	2.78%	*		
Ce	2.192	59.450	3.69%	*		
Eu	0.035	1.295	2.70%	*		
Lu	0.011	0.427	2.58%	*		
Hf	0.276	3.855	7.16%	*		
Th	0.891	8.500	10.48%	*		
Cr	14.142	313.000	4.52%	*		
Mn	76.368	946.000	8.07%	*		
Fe	1.054	6.525	16.15%			
Co	3.111	27.100	11.48%			
Ca	0.283	18.000	1.57%	*		
Sm	0.106	5.145	2.06%	*		
Yb	0.134	2.595	5.16%	*		

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Table 106. Per Cent Deviation Results - Period 12 Buff Ware, Cylindrical Bowl, Band and Line, All, n=11

ELEMENT	STD. DEV.	MEAN	% DEV.		SAMPLE	SITE
Na	0.376	1.206	31.18%		282	KS 28
K	0.961	1.637	58.70%		284	KS 54
Rb	29.423	48.009	61.29%		285	KS 65
Cs	1.193	4.932	24.19%		287	KS 73
Ba	246.519	390.636	63.11%		289	KS 108
Sc	2.210	27.464	8.05%	*	292	KS 124
La	1.118	28.436	3.93%	*	293	KS 161
Ce	3.953	63.682	6.21%	*	295	KS 180
Eu	0.122	1.365	8.94%	*	296	KS 193
Lu	0.055	0.468	11.75%		297	KS 197
Hf	0.306	3.833	7.98%	*	298	KS 212
Th	0.612	9.205	6.65%	*		
Cr	33.007	304.909	10.83%			
Mn	308.659	1025.270	30.11%			
Fe	0.514	6.610	7.78%	*		
Co	2.886	26.882	10.74%			
Ca	2.406	18.473	13.02%			
Sm	0.319	5.491	5.81%	*		
Yb	0.272	2.567	10.60%			

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Table 107. Per Cent Deviation Results - Period 12 Buff Ware, Cylindrical Bowl, Band and Line, West-South, n=3

ELEMENT	STD. DEV.	MEAN	% DEV.		SAMPLE	SITE	
Na	0.614	1.152	53.30%		284	KS	54
K	0.935	2.007	46.59%		285	KS	65
Rb	29.561	65.567	45.09%		287	KS	73
Cs	2.047	4.150	49.33%				
Ba	354.474	447.000	79.30%				
Sc	1.563	27.133	5.76%	*			
La	0.889	28.200	3.15%	*			
Ce	1.963	62.767	3.13%	*			
Eu	0.120	1.333	9.00%	*			
Lu	0.059	0.472	12.50%				
Hf	0.303	3.850	7.87%	*			
Th	0.450	9.317	4.83%	*			
Cr	38.214	297.333	12.85%				
Mn	21.939	907.667	2.42%	*			
Fe	0.341	6.533	5.22%	*			
Co	3.092	24.867	12.43%				
Ca	1.102	18.633	5.91%	*			
Sm	0.236	5.737	4.11%	*			
Yb	0.293	2.637	11.11%				

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Table 108. Per Cent Deviation Results - Period 12 Buff Ware, Cylindrical Bowl, Band and Line, Center, n=2

ELEMENT	STD. DEV.	MEAN	% DEV.		SAMPLE	SITE
Na	0.593	1.241	47.78%		289	KS 108
K	1.715	1.638	104.70%		292	KS 124
Rb	39.810	63.250	62.94%			
Cs	0.544	5.635	9.65%	*		
Ba	212.839	278.500	76.42%			
Sc	1.131	28.800	3.93%	*		
La	0.283	29.700	0.95%	*		
Ce	3.394	65.000	5.22%	*		
Eu	0.050	1.485	3.37%	*		
Lu	0.070	0.443	15.80%			
Hf	0.460	3.825	12.03%			
Th	0.014	9.660	0.14%	*		
Cr	50.912	308.000	16.53%			
Mn	724.785	1437.500	50.42%			
Fe	0.276	6.945	3.97%	*		
Co	0.283	30.200	0.94%	*		
Ca	5.728	15.850	36.14%			
Sm	0.007	5.705	0.12%	*		
Yb	0.064	2.865	2.23%	*		

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Table 109. Per Cent Deviation Results - Period 12 Buff Ware, Cylindrical Bowl, Band and Line, East-North, n=2

ELEMENT	STD. DEV.	MEAN	% DEV.	SAMPLE	SITE
Na	0.021	1.365	1.54% *	293	KS 161
K	0.092	0.901	10.21%	295	KS 180
Rb	23.122	16.350	141.42%		
Cs	0.042	5.650	0.74% *		
Ba	10.607	213.500	4.97% *		
Sc	1.626	29.350	5.54% *		
La	0.707	28.800	2.45% *		
Ce	0.990	66.800	1.48% *		
Eu	0.057	1.310	4.35% *		
Lu	0.030	0.465	6.45% *		
Hf	0.077	3.985	1.93% *		
Th	0.205	9.445	2.17% *		
Cr	5.657	292.000	1.94% *		
Mn	9.192	958.500	0.96% *		
Fe	0.346	7.025	4.93% *		
Co	2.475	27.750	8.92% *		
Ca	0.919	19.550	4.70% *		
Sm	0.198	5.260	3.76% *		
Yb	0.304	2.345	12.96%		

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Table 110. Per Cent Deviation Results - Period 12 Buff Ware, Cylindrical Bowl, Band and Line, East-South, n=3

ELEMENT	STD. DEV.	MEAN	% DEV.		SAMPLE	SITE
Na	0.334	1.185	28.19%		296	KS 193
K	1.227	1.711	71.71%		297	KS 197
Rb	24.777	45.467	54.49%		298	KS 212
Cs	0.846	4.673	18.10%			
Ba	259.724	548.333	47.37%			
Sc	2.695	25.333	10.64%			
La	1.418	27.500	5.16%	*		
Ce	3.553	59.633	5.96%	*		
Eu	0.086	1.287	6.68%	*		
Lu	0.086	0.485	17.73%			
Hf	0.403	3.640	11.07%			
Th	0.828	8.547	9.69%	*		
Cr	46.694	314.333	14.85%			
Mn	61.158	941.667	6.49%	*		
Fe	0.653	6.117	10.68%			
Co	2.364	25.400	9.31%	*		
Ca	1.401	19.067	7.35%	*		
Sm	0.325	5.203	6.25%	*		
Yb	0.272	2.477	10.98%			

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Table 111. Per Cent Deviation Results - Period 12 Buff Ware, Cylindrical Bowl, Dots, Indefinite, All, n=12

ELEMENT	STD. DEV.	MEAN	% DEV.		SAMPLE	SITE	
Na	0.392	1.213	32.32%		299	KS	4
K	0.695	1.490	46.64%		300	KS	4
Rb	25.926	43.358	59.80%		304	KS	24
Cs	1.402	5.028	27.88%		306	KS	65
Ba	399.384	604.917	66.02%		308	KS	73
Sc	2.076	28.467	7.29%	*	309	KS	74
La	2.370	30.275	7.83%	*	311	KS	118
Ce	3.718	65.600	5.67%	*	312	KS	156
Eu	0.112	1.460	7.67%	*	316	KS	167
Lu	0.072	0.501	14.37%		318	KS	168
Hf	0.382	3.924	9.73%	*	321	KS	178
Th	0.723	9.363	7.72%	*	322	KS	212
Cr	40.848	316.000	12.93%				
Mn	132.512	949.133	13.96%				
Fe	0.496	6.829	7.26%	*			
Co	3.314	26.917	12.31%				
Ca	1.675	18.383	9.11%	*			
Sm	0.375	5.837	6.42%	*			
Yb	0.276	2.660	10.38%				

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Table 112. Per Cent Deviation Results - Period 12 Buff Ware, Cylindrical Bowl, Dots, Indefinite, West-South, n=3

ELEMENT	STD. DEV.	MEAN	% DEV.		SAMPLE	SITE	
Na	0.200	0.707	28.29%		306	KS	65
K	0.306	2.497	12.25%		308	KS	73
Rb	20.493	71.867	28.52%		309	KS	74
Cs	0.959	5.103	18.79%				
Ba	611.415	866.000	70.60%				
Sc	3.000	26.800	11.19%				
La	1.674	29.867	5.60%	*			
Ce	4.859	65.900	7.37%	*			
Eu	0.082	1.460	5.62%	*			
Lu	0.046	0.446	10.31%				
Hf	0.248	3.697	6.71%	*			
Th	1.061	9.167	11.57%				
Cr	27.495	311.000	8.84%	*			
Mn	82.771	972.200	8.51%	*			
Fe	0.750	6.497	11.54%				
Co	4.010	23.967	16.73%				
Ca	1.528	19.267	7.93%	*			
Sm	0.320	5.643	5.67%	*			
Yb	0.214	2.490	8.59%	*			

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Table 113. Per Cent Deviation Results - Period 12 Buff Ware, Cylindrical Bowl, Dots, Indefinite, Center, n=3

ELEMENT	STD. DEV.	MEAN	% DEV.		SAMPLE	SITE
Na	0.323	1.507	21.43%		299	KS 4
K	0.380	0.975	38.97%		300	KS 4
Rb	24.457	25.667	95.29%		311	KS 118
Cs	0.985	5.163	19.08%			
Ba	331.982	488.667	67.94%			
Sc	1.358	27.733	4.90%	*		
La	2.053	28.533	7.20%	*		
Ce	4.809	62.967	7.64%	*		
Eu	0.115	1.377	8.35%	*		
Lu	0.064	0.530	12.08%			
Hf	0.516	4.053	12.73%			
Th	0.321	9.120	3.52%	*		
Cr	51.540	329.333	15.65%			
Mn	135.503	975.000	13.90%			
Fe	0.344	6.690	5.14%	*		
Co	2.685	27.400	9.80%	*		
Ca	2.548	19.233	13.25%			
Sm	0.310	5.580	5.56%	*		
Yb	0.298	2.493	11.95%			

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Table 114. Per Cent Deviation Results - Period 12 Buff Ware, Cylindrical Bowl, Dots, Indefinite, East-North, KS 4, n=2

ELEMENT	STD. DEV.	MEAN	% DEV.		SAMPLE	SITE	
Na	0.346	1.385	24.98%		299	KS	4
K	0.537	0.970	55.36%		300	KS	4
Rb	34.436	24.350	141.42%				
Cs	1.230	5.430	22.65%				
Ba	2.828	297.000	0.95%	*			
Sc	1.626	28.150	5.78%	*			
La	0.849	27.400	3.10%	*			
Ce	6.788	62.800	10.81%				
Eu	0.085	1.320	6.44%	*			
Lu	0.062	0.503	12.33%				
Hf	0.127	3.760	3.38%	*			
Th	0.297	9.260	3.21%	*			
Cr	60.104	312.500	19.23%				
Mn	74.953	947.000	7.91%	*			
Fe	0.460	6.755	6.81%	*			
Co	1.343	28.850	4.66%	*			
Ca	0.283	20.700	1.37%	*			
Sm	0.198	5.420	3.65%	*			
Yb	0.382	2.420	15.79%				

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Table 115. Per Cent Deviation Results - Period 12 Buff Ware, Cylindrical Bowl, Dots, Indefinite, East-North, n=4

ELEMENT	STD. DEV.	MEAN	% DEV.		SAMPLE	SITE
Na	0.289	1.305	22.15%		312	KS 156
K	0.400	1.357	29.48%		316	KS 167
Rb	23.487	39.150	59.99%		318	KS 168
Cs	2.394	4.715	50.77%		321	KS 178
Ba	403.175	519.750	77.57%			
Sc	0.874	29.150	3.00%	*		
La	2.968	31.975	9.28%	*		
Ce	2.935	67.250	4.36%	*		
Eu	0.134	1.508	8.89%	*		
Lu	0.086	0.541	15.90%			
Hf	0.491	3.998	12.28%			
Th	0.902	9.683	9.32%	*		
Cr	36.299	294.750	12.32%			
Mn	145.736	1043.500	13.97%			
Fe	0.219	6.888	3.18%	*		
Co	2.282	27.875	8.19%	*		
Ca	1.156	17.450	6.62%	*		
Sm	0.385	6.120	6.29%	*		
Yb	0.121	2.953	4.10%	*		

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Table 116. Per Cent Deviation Results.
Chogha Mish Phase (Periods 9-12)
Red Wares, All, n=39

ELEMENT	STD. DEV.	MEAN	% DEV.	SAMPLE	SITE	
Na	0.282	1.452	19.42%	095	KS	12
K	0.356	2.424	14.69%	098	KS	20
Rb	11.230	87.146	12.89%	106	KS	36
Cs	0.730	5.057	14.44%	107	KS	42
Ba	187.693	520.865	36.03%	119	KS	118
Sc	2.858	29.350	9.74%	134	KS	4
La	3.234	35.189	9.19%	138	KS	12
Ce	6.866	76.897	8.93%	141	KS	19
Eu	0.249	1.728	14.41%	143	KS	36
Lu	0.054	0.590	9.15%	146	KS	118
Hf	0.712	5.392	13.20%	147	KS	124
Th	1.095	9.844	11.12%	148	KS	161
Cr	133.212	600.027	22.20%	150	KS	218
Mn	450.063	585.973	76.81%	154	KS	118
Fe	0.780	6.404	12.18%	172	KS	124
Co	8.944	27.432	32.60%	174	KS	176
Ca	3.904	4.656	83.85%	187	KS	4
Sm	0.792	6.712	11.80%	188	KS	4
Yb	0.395	3.141	12.58%	191	KS	12
				202	KS	35
				203	KS	36
				208	KS	42
				210	KS	50
				219	KS	108
				220	KS	112
				221	KS	113
				222	KS	118
				224	KS	154
				235	KS	20
				237	KS	36
				239	KS	42
				242	KS	112
				252	KS	28
				933	KS	1
				934	KS	1
				936	KS	1
				937	KS	1

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Table 117. Per Cent Deviation Results.
Chogha Mish Phase (Periods 9-12)
Red Wares, West-North, n=8

ELEMENT	STD. DEV.	MEAN	% DEV.		SAMPLE	SITE
Na	0.303	1.560	19.42%		095	KS 12
K	0.471	2.728	17.27%		098	KS 20
Rb	5.811	87.225	6.66%	*	138	KS 12
Cs	0.697	5.276	13.21%		141	KS 19
Ba	261.469	489.250	53.44%		191	KS 12
Sc	2.396	29.425	8.14%	*	202	KS 35
La	2.462	35.100	7.01%	*	235	KS 20
Ce	5.076	77.238	6.57%	*	252	KS 28
Eu	0.076	1.735	4.38%	*		
Lu	0.031	0.611	5.07%	*		
Hf	0.325	5.483	5.93%	*		
Th	0.887	10.233	8.67%	*		
Cr	52.612	594.500	8.85%	*		
Mn	115.837	508.000	22.80%			
Fe	0.404	6.440	6.27%	*		
Co	10.613	26.088	40.68%			
Ca	3.210	4.598	69.81%			
Sm	0.444	6.653	6.67%	*		
Yb	0.391	3.200	12.22%			

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Table 118. Per Cent Deviation Results.
Chogha Mish Phase (Periods 9-12)
Red Wares, West-North, KS 12, n=3

ELEMENT	STD. DEV.	MEAN	% DEV.		SAMPLE	SITE
Na	0.305	1.833	16.64%		095	KS 12
K	0.494	3.130	15.78%		138	KS 12
Rb	4.689	87.600	5.35%	*	191	KS 12
Cs	0.187	5.220	3.58%	*		
Ba	407.078	650.333	62.60%			
Sc	1.762	28.233	6.24%	*		
La	1.680	34.433	4.88%	*		
Ce	3.955	75.567	5.23%	*		
Eu	0.056	1.710	3.27%	*		
Lu	0.019	0.591	3.21%	*		
Hf	0.469	5.440	8.62%	*		
Th	0.185	9.790	1.89%	*		
Cr	38.175	583.333	6.54%	*		
Mn	159.676	547.333	29.17%			
Fe	0.508	6.263	8.11%	*		
Co	1.301	30.033	4.33%	*		
Ca	3.493	3.810	91.68%			
Sm	0.061	6.433	0.95%	*		
Yb	0.280	3.227	8.68%	*		

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Table 119. Per Cent Deviation Results.
Chogha Mish Phase (Periods 9-12)
Red Wares, West-North, KS 20, n=2

ELE-MENT	STD. DEV.	MEAN	% DEV.	SAM-PLE	SITE
Na	0.021	1.335	1.57% *	098	KS 20
K	0.255	2.620	9.73% *	235	KS 20
Rb	1.485	83.450	1.78% *		
Cs	0.410	4.490	9.13% *		
Ba	105.359	342.500	30.76%		
Sc	0.919	28.350	3.24% *		
La	0.424	33.700	1.26% *		
Ce	0.210	74.450	0.28% *		
Eu	0.014	1.700	0.82% *		
Lu	0.001	0.647	0.15% *		
Hf	0.233	5.345	4.36% *		
Th	0.870	9.985	8.71% *		
Cr	63.640	557.000	11.43%		
Mn	18.385	576.000	3.19% *		
Fe	0.170	6.590	2.58% *		
Co	20.365	14.400	141.42%		
Ca	0.311	7.450	4.17% *		
Sm	0.163	6.455	2.53% *		
Yb	0.042	3.010	1.40% *		

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Table 120. Per Cent Deviation Results.
Chogha Mish Phase (Periods 9-12)
Red Wares, Center, n=2639

ELEMENT	STD. DEV.	MEAN	% DEV.		SAMPLE	SITE	
Na	0.272	1.417	19.20%		106	KS	36
K	0.281	2.348	11.97%		107	KS	38
Rb	12.413	87.548	14.18%		108	KS	42
Cs	0.734	5.022	14.62%		119	KS	118
Ba	179.185	534.440	33.53%		134	KS	4
Sc	3.032	29.470	10.29%		143	KS	36
La	3.565	34.864	10.23%		146	KS	118
Ce	7.434	76.032	9.78%	*	147	KS	124
Eu	0.297	1.719	17.28%		154	KS	118
Lu	0.060	0.582	10.31%		172	KS	124
Hf	0.716	5.226	13.70%		187	KS	4
Th	1.139	9.648	11.81%		188	KS	4
Cr	146.863	582.840	25.20%		203	KS	36
Mn	528.107	636.600	82.96%		208	KS	42
Fe	0.917	6.442	14.23%		210	KS	50
Co	9.152	27.388	33.42%		219	KS	108
Ca	4.285	4.858	88.21%		220	KS	112
Sm	0.932	6.701	13.91%		221	KS	113
Yb	0.409	3.076	13.30%		222	KS	118
					237	KS	36
					239	KS	42
					242	KS	112
					933	KS	1
					934	KS	1
					936	KS	1
					937	KS	1

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Table 121. Per Cent Deviation Results.
Chogha Mish Phase (Periods 9-12)
Red Wares, Center, KS 1, n=4

ELEMENT	STD. DEV.	MEAN	% DEV.		SAMPLE	SITE
Na	0.270	1.390	19.42%		933	KS 1
K	0.240	2.205	10.88%		934	KS 1
Rb	10.018	82.000	12.22%		936	KS 1
Cs	0.570	4.603	12.38%		937	KS 1
Ba	73.141	404.750	18.07%			
Sc	1.495	30.338	4.93%	*		
La	3.363	37.575	8.95%	*		
Ce	6.152	72.425	8.49%	*		
Eu	0.507	2.005	25.29%			
Lu	0.046	0.584	7.88%	*		
Hf	0.382	4.173	9.15%	*		
Th	0.731	7.953	9.19%	*		
Cr	308.626	561.500	54.96%			
Mn	131.094	547.500	23.94%			
Fe	1.127	6.795	16.59%			
Co	3.553	31.125	11.42%			
Ca	0.000	0.000	0.00%			
Sm	1.039	8.050	12.91%			
Yb	0.386	2.818	13.70%			

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Table 122. Per Cent Deviation Results.
Chogha Mish Phase (Periods 9-12)
Red Wares, Center, KS 4, n=3

ELE-MENT	STD. DEV.	MEAN	% DEV.		SAM-PLE	SITE
Na	0.284	1.430	19.86%		134	KS 4
K	0.235	2.160	10.88%		187	KS 4
Rb	11.956	79.967	14.95%		188	KS 4
Cs	0.609	4.620	13.18%			
Ba	122.083	480.333	25.42%			
Sc	3.293	27.067	12.17%			
La	3.412	32.533	10.49%			
Ce	5.605	74.333	7.54%	*		
Eu	0.167	1.550	10.77%			
Lu	0.052	0.551	9.44%	*		
Hf	0.747	5.260	14.20%			
Th	1.095	9.323	11.75%			
Cr	102.510	599.667	17.09%			
Mn	200.123	581.333	34.42%			
Fe	0.744	5.727	12.99%			
Co	3.959	28.600	13.84%			
Ca	5.375	7.247	74.17%			
Sm	0.485	6.160	7.87%	*		
Yb	0.280	3.150	8.89%	*		

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Table 123. Per Cent Deviation Results.
Chogha Mish Phase (Periods 9-12)
Red Wares, Center, KS 36, n=4

ELE-MENT	STD. DEV.	MEAN	% DEV.		SAM-PLE	SITE
Na	0.359	1.390	25.83%		106	KS 36
K	0.300	2.425	12.37%		143	KS 36
Rb	10.552	92.925	11.36%		203	KS 36
Cs	0.308	5.245	5.87%	*	237	KS 36
Ba	237.968	560.750	42.44%			
Sc	3.077	30.575	10.06%			
La	3.782	36.275	10.43%			
Ce	8.458	81.550	10.37%			
Eu	0.270	1.783	15.14%			
Lu	0.083	0.610	13.61%			
Hf	0.724	5.490	13.19%			
Th	0.734	10.210	7.19%	*		
Cr	141.187	585.500	24.11%			
Mn	171.457	608.500	28.18%			
Fe	0.761	6.528	11.66%			
Co	5.505	31.775	17.32%			
Ca	3.294	5.568	59.16%			
Sm	0.827	6.925	11.94%			
Yb	0.478	3.415	14.00%			

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Table 124. Per Cent Deviation Results.
Chogha Mish Phase (Periods 9-12)
Red Wares, Center, KS 42, n=3

ELE-MENT	STD. DEV.	MEAN	% DEV.	SAM-PLE	SITE
Na	0.304	1.289	23.58%	108	KS 42
K	0.331	2.443	13.55%	208	KS 42
Rb	25.204	92.567	27.23%	209	KS 42
Cs	0.815	5.680	14.35%		
Ba	49.803	416.667	11.95%		
Sc	3.828	30.067	12.73%		
La	5.110	33.800	15.12%		
Ce	11.717	72.833	16.09%		
Eu	0.313	1.553	20.15%		
Lu	0.132	0.597	22.11%		
Hf	0.805	5.160	15.60%		
Th	1.685	10.417	16.18%		
Cr	153.409	535.667	28.64%		
Mn	143.468	476.000	30.14%		
Fe	0.775	6.473	11.97%		
Co	3.329	28.800	11.56%		
Ca	7.641	6.470	118.10%		
Sm	1.002	6.247	16.04%		
Yb	0.678	2.873	23.60%		

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Table 125. Per Cent Deviation Results.
Chogha Mish Phase (Periods 9-12)
Red Wares, Center, KS 112, n=2
Period 9-11, W-N, KS 10 cmr112

ELE-MENT	STD. DEV.	MEAN	% DEV.		SAM-PLE	SITE
Na	0.206	1.125	18.31%		220	KS 112
K	0.573	2.345	24.43%		242	KS 112
Rb	5.798	77.200	7.51%	*		
Cs	0.622	4.250	14.64%			
Ba	285.671	667.000	42.83%			
Sc	6.010	27.950	21.50%			
La	2.192	32.150	6.82%	*		
Ce	7.920	72.800	10.88%			
Eu	0.262	1.605	16.32%			
Lu	0.035	0.544	6.43%	*		
Hf	0.212	4.840	4.38%	*		
Th	0.000	9.710	0.00%			
Cr	25.456	470.000	5.42%	*		
Mn	36.770	523.000	7.03%	*		
Fe	1.287	6.220	20.69%			
Co	5.445	26.050	20.90%			
Ca	3.394	8.000	42.43%			
Sm	0.799	6.255	12.77%			
Yb	0.184	2.700	6.81%	*		

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Table 126. Per Cent Deviation Results.
Chogha Mish Phase (Periods 9-12)
Red Wares, Center, KS 118, n=4

ELE-MENT	STD. DEV.	MEAN	% DEV.		SAM-PLE	SITE
Na	0.237	1.623	14.60%		119	KS 118
K	0.170	2.568	6.62%	*	146	KS 118
Rb	7.780	91.675	8.49%	*	154	KS 118
Cs	0.553	5.768	9.59%	*	222	KS 118
Ba	96.066	627.000	15.32%			
Sc	1.859	30.475	6.10%	*		
La	1.933	35.650	5.42%	*		
Ce	3.045	77.725	3.92%	*		
Eu	0.158	1.675	9.43%	*		
Lu	0.038	0.599	6.34%	*		
Hf	0.376	5.550	6.77%	*		
Th	0.315	10.558	2.98%	*		
Cr	96.680	624.500	15.48%			
Mn	320.339	415.000	77.19%			
Fe	0.852	6.433	13.24%			
Co	15.896	23.450	67.79%			
Ca	3.770	4.353	86.61%			
Sm	0.358	6.503	5.51%	*		
Yb	0.284	3.183	8.92%	*		

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Table 127. Per Cent Deviation Results.
Chogha Mish Phase (Periods 9-12)
Red Wares, East-North, n=3

ELEMENT	STD. DEV.	MEAN	% DEV.		SAMPLE	SITE
Na	0.403	1.453	27.74%		148	KS 161
K	0.272	2.323	11.71%		174	KS 176
Rb	13.202	88.800	14.87%		224	KS 154
Cs	0.841	5.103	16.48%			
Ba	47.004	503.333	9.34%	*		
Sc	2.438	29.667	8.22%	*		
La	0.379	28.133	1.35%	*		
Ce	2.219	84.067	2.64%	*		
Eu	0.161	1.797	8.96%	*		
Lu	0.017	0.614	2.77%	*		
Hf	0.820	6.377	12.86%			
Th	0.747	10.743	6.95%	*		
Cr	137.322	713.333	19.25%			
Mn	300.781	330.667	90.96%			
Fe	0.135	6.190	2.18%	*		
Co	1.626	31.867	5.10%	*		
Ca	3.812	3.277	116.33%			
Sm	0.140	7.013	2.00%	*		
Yb	0.159	3.470	4.58%	*		

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Table 128. Per Cent Deviation Results.
Chogha Mish Phase (Periods 9-12)
Red Ware, Unslipped, All, n=5

ELE-MENT	STD. DEV.	MEAN	% DEV.		SAM-PLE	SITE
Na	0.109	1.380	7.90%	*	095	KS 12
K	0.156	2.714	5.75%	*	098	KS 20
Rb	12.414	98.000	12.67%		106	KS 36
Cs	0.787	5.484	14.35%		108	KS 42
Ba	298.859	593.000	50.40%		119	KS 118
Sc	1.415	30.820	4.59%	*		
La	3.429	34.340	9.99%	*		
Ce	8.845	78.640	11.25%			
Eu	0.296	1.686	17.56%			
Lu	0.059	0.616	9.58%	*		
Hf	0.408	5.586	7.30%	*		
Th	0.458	10.500	4.36%	*		
Cr	43.545	567.800	7.67%	*		
Mn	127.772	509.800	25.06%			
Fe	0.133	6.616	2.01%	*		
Co	18.135	19.400	93.48%			
Ca	2.637	3.564	73.99%			
Sm	0.846	6.566	12.88%			
Yb	0.509	3.126	16.28%			

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Table 129. Per Cent Deviation Results.
Chogha Mish Phase (Periods 9-12)
Red Ware, Unslipped, West-North, n=2

ELEMENT	STD. DEV.	MEAN	% DEV.		SAMPLE	SITE
Na	0.148	1.425	10.39%		095	KS 12
K	0.035	2.825	1.24%	*	098	KS 20
Rb	5.232	88.200	5.93%	*		
Cs	0.863	4.810	17.94%			
Ba	497.096	768.500	64.68%			
Sc	0.778	29.550	2.63%	*		
La	0.990	33.300	2.97%	*		
Ce	2.334	76.250	3.06%	*		
Eu	0.042	1.740	2.41%	*		
Lu	0.023	0.630	3.65%	*		
Hf	0.438	5.490	7.98%	*		
Th	0.424	10.300	4.12%	*		
Cr	60.811	555.000	10.96%			
Mn	38.184	616.000	6.20%	*		
Fe	0.148	6.605	2.24%	*		
Co	22.132	15.650	141.42%			
Ca	1.881	5.900	31.88%			
Sm	0.134	6.475	2.07%	*		
Yb	0.014	3.050	0.46%	*		

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Table 130. Per Cent Deviation Results.
Chogha Mish Phase (Periods 9-12)
Red Ware, Unslipped, Center, n=3

ELEMENT	STD. DEV.	MEAN	% DEV.		SAMPLE	SITE
Na	0.096	1.350	7.11%	*	106	KS 36
K	0.165	2.640	6.25%	*	107	KS 42
Rb	11.595	104.533	11.09%		119	KS 118
Cs	0.331	5.933	5.58%	*		
Ba	61.213	476.000	12.86%			
Sc	1.007	31.667	3.18%	*		
La	4.607	35.033	13.15%			
Ce	12.009	80.233	14.97%			
Eu	0.411	1.650	24.91%			
Lu	0.080	0.607	13.18%			
Hf	0.470	5.650	8.32%	*		
Th	0.513	10.633	4.82%	*		
Cr	40.870	576.333	7.09%	*		
Mn	114.564	439.000	26.10%			
Fe	0.155	6.623	2.34%	*		
Co	19.733	21.900	90.11%			
Ca	1.746	2.007	87.00%			
Sm	1.187	6.627	17.91%			
Yb	0.712	3.177	22.41%			

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Table 131. Per Cent Deviation Results.
Chogha Mish Phase (Periods 9-12)
Red Ware, Gritty, Coarse, All, n=8

ELE-MENT	STD. DEV.	MEAN	% DEV.		SAM-PLE	SITE
Na	0.261	1.679	15.54%		134	KS 4
K	0.319	2.204	14.47%		138	KS 12
Rb	5.530	80.900	6.84%	*	141	KS 19
Cs	0.540	4.814	11.22%		143	KS 36
Ba	59.770	466.750	12.81%		146	KS 118
Sc	2.030	27.538	7.37%	*	147	KS 124
La	2.765	35.038	7.89%	*	148	KS 161
Ce	4.411	76.925	5.73%	*	150	KS 218
Eu	0.085	1.644	5.17%	*		
Lu	0.040	0.586	6.83%	*		
Hf	0.548	5.926	9.25%	*		
Th	0.627	9.646	6.50%	*		
Cr	79.272	682.875	11.61%			
Mn	353.095	534.000	66.12%			
Fe	0.349	5.934	5.88%	*		
Co	2.444	28.450	8.59%	*		
Ca	2.671	3.746	71.30%			
Sm	0.372	6.491	5.73%	*		
Yb	0.301	3.270	9.20%	*		

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Table 132. Per Cent Deviation Results.
Chogha Mish Phase (Periods 9-12)
Red Ware, Gritty, Coarse, West-North,
n=2

ELEMENT	STD. DEV.	MEAN	% DEV.		SAMPLE	SITE
Na	0.361	1.885	19.15%		138	KS 12
K	0.544	2.455	22.16%		141	KS 19
Rb	3.323	84.950	3.91%	*		
Cs	0.141	5.290	2.67%	*		
Ba	7.778	404.500	1.92%	*		
Sc	2.616	28.450	9.20%	*		
La	0.354	35.650	0.99%	*		
Ce	1.061	78.550	1.35%	*		
Eu	0.007	1.695	0.41%	*		
Lu	0.005	0.584	0.86%	*		
Hf	0.120	5.695	2.11%	*		
Th	0.693	10.210	6.79%	*		
Cr	42.426	642.000	6.61%	*		
Mn	3.536	360.000	0.98%	*		
Fe	0.304	5.895	5.16%	*		
Co	1.343	29.150	4.61%	*		
Ca	1.018	0.720	141.39%			
Sm	0.134	6.595	2.03%	*		
Yb	0.474	3.215	14.74%			

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Table 133. Per Cent Deviation Results - Chogha Mish Phase (Periods 9-12) Red Ware, Gritty, Coarse, Center, n=4

ELE-MENT	STD. DEV.	MEAN	% DEV.		SAM-PLE	SITE
Na	0.123	1.733	7.10%	*	134	KS 4
K	0.276	2.125	12.99%		143	KS 36
Rb	5.175	81.400	6.36%	*	146	KS 118
Cs	0.432	4.920	8.78%	*	147	KS 124
Ba	68.986	483.500	14.27%			
Sc	1.986	27.925	7.11%	*		
La	3.490	33.875	10.30%			
Ce	3.864	74.825	5.16%	*		
Eu	0.091	1.590	5.72%	*		
Lu	0.054	0.591	9.14%	*		
Hf	0.492	5.788	8.50%	*		
Th	0.562	9.467	5.94%	*		
Cr	102.786	674.250	15.24%			
Mn	508.332	563.250	90.25%			
Fe	0.467	5.908	7.90%	*		
Co	3.174	28.300	11.22%			
Ca	2.287	4.220	54.19%			
Sm	0.460	6.318	7.28%	*		
Yb	0.366	3.285	11.14%			

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Table 134. Per Cent Deviation Results - Chogha Mish Phase (Periods 9-12) Red Ware, Dark Slip, All, n=2

ELEMENT	STD. DEV.	MEAN	% DEV.		SAMPLE	SITE
Na	0.382	1.420	26.90%		172	KS 124
K	0.247	2.295	10.76%		174	KS 176
Rb	13.576	94.400	14.38%			
Cs	1.280	4.975	25.73%			
Ba	50.912	420.000	12.12%			
Sc	4.596	28.250	16.27%			
La	5.374	33.900	15.85%			
Ce	8.485	75.600	11.22%			
Eu	0.085	1.620	5.25%	*		
Lu	0.035	0.607	5.77%	*		
Hf	0.021	5.435	0.39%	*		
Th	1.245	10.020	12.43%			
Cr	86.974	623.500	13.95%			
Mn	285.671	202.000	141.42%			
Fe	1.004	5.590	17.96%			
Co	6.576	27.550	23.87%			
Ca	2.355	4.035	58.36%			
Sm	0.983	6.275	15.67%			
Yb	0.389	3.255	11.95%			

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Table 135. Per Cent Deviation Results - Chogha Mish Phase (Periods 9-12) Salmon Ware, Red Slip, All, n=12

ELEMENT	STD. DEV.	MEAN	% DEV.		SAMPLE	SITE	
Na	0.294	1.422	20.68%		187	KS	4
K	0.382	2.625	14.55%		188	KS	4
Rb	10.281	91.125	11.28%		191	KS	12
Cs	0.727	5.205	13.97%		202	KS	35
Ba	170.814	550.000	31.06%		203	KS	36
Sc	3.123	30.883	10.11%		208	KS	42
La	3.188	36.342	8.77%	*	210	KS	50
Ce	6.750	80.650	8.37%	*	219	KS	108
Eu	0.172	1.806	9.52%	*	220	KS	112
Lu	0.061	0.599	10.18%		221	KS	113
Hf	0.682	5.504	12.39%		222	KS	118
Th	1.111	10.467	10.61%		224	KS	154
Cr	112.444	602.500	18.66%				
Mn	703.963	748.250	94.08%				
Fe	0.869	6.804	12.77%				
Co	9.368	28.317	33.08%				
Ca	4.123	5.537	74.46%				
Sm	0.543	6.865	7.91%	*			
Yb	0.344	3.337	10.31%				

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Table 136. Per Cent Deviation Results - Chogha Mish Phase (Periods 9-12) Salmon Ware, Red Slip, West-North, n=2

ELEMENT	STD. DEV.	MEAN	% DEV.		SAMPLE	SITE
Na	0.431	1.525	28.26%		191	KS 12
K	0.771	3.155	24.44%		202	KS 35
Rb	7.425	93.550	7.94%	*		
Cs	1.117	5.840	19.13%			
Ba	27.577	451.500	6.11%	*		
Sc	4.596	31.250	14.71%			
La	4.101	37.700	10.88%			
Ce	12.021	79.500	15.12%			
Eu	0.170	1.780	9.55%	*		
Lu	0.047	0.612	7.68%	*		
Hf	0.608	5.340	11.39%			
Th	1.732	10.875	15.93%			
Cr	75.660	593.500	12.75%			
Mn	141.421	536.000	26.38%			
Fe	0.297	6.820	4.35%	*		
Co	2.121	30.200	7.02%	*		
Ca	3.875	4.120	94.05%			
Sm	0.912	7.065	12.91%			
Yb	0.679	3.550	19.13%			

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Table 137. Per Cent Deviation Results - Chogha Mish Phase (Periods 9-12) Salmon Ware, Red Slip, Center, n=9

ELEMENT	STD. DEV.	MEAN	% DEV.		SAMPLE	SITE	
Na	0.238	1.345	17.70%		187	KS	4
K	0.204	2.522	8.09%	*	188	KS	4
Rb	11.261	91.578	12.30%		203	KS	36
Cs	0.668	5.062	13.20%		208	KS	42
Ba	192.507	571.889	33.66%		210	KS	50
Sc	2.274	30.833	10.62%		219	KS	108
La	3.250	35.811	9.08%	*	220	KS	112
Ce	6.378	80.322	7.94%	*	221	KS	113
Eu	0.182	1.792	10.16%		222	KS	118
Lu	0.069	0.596	11.58%				
Hf	0.638	5.411	11.79%				
Th	1.063	10.272	10.35%				
Cr	97.827	579.222	16.89%				
Mn	760.626	878.566	86.58%				
Fe	0.974	6.886	14.14%				
Co	10.726	27.344	39.23%				
Ca	4.023	6.467	62.21%				
Sm	0.522	6.787	7.69%	*			
Yb	0.282	3.261	8.65%	*			

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Table 138. Per Cent Deviation Results - Chogha Mish Phase (Periods 9-12) Salmon Ware, Red Slip, Center, KS 4, n=2

ELEMENT	STD. DEV.	MEAN	% DEV.		SAMPLE	SITE	
Na	0.297	1.320	22.50%		187	KS	4
K	0.156	2.280	6.84%	*	188	KS	4
Rb	16.829	79.300	21.22%				
Cs	0.580	4.360	13.30%				
Ba	163.342	457.500	35.70%				
Sc	3.677	25.900	14.20%				
La	4.808	32.700	14.70%				
Ce	7.920	74.200	10.67%				
Eu	0.233	1.565	14.89%				
Lu	0.071	0.543	13.08%				
Hf	1.025	5.365	19.11%				
Th	1.549	9.305	16.65%				
Cr	127.279	628.000	20.27%				
Mn	278.600	561.000	49.66%				
Fe	0.375	5.325	7.04%	*			
Co	2.475	26.550	9.32%	*			
Ca	7.601	7.225	105.20%				
Sm	0.665	6.230	10.67%				
Yb	0.311	3.050	10.20%				

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Table 139. Per Cent Deviation Results - Chogha Mish Phase (Periods 9-12) Salmon Ware, Dark Slip, All, n=4

ELEMENT	STD. DEV.	MEAN	% DEV.		SAMPLE	SITE	
Na	0.185	1.162	15.92%		235	KS	1
K	0.211	2.178	9.69%	*	237	KS	4
Rb	9.133	76.250	11.98%		239	KS	4
Cs	0.546	4.603	11.86%		242	KS	4
Ba	335.073	603.750	55.50%				
Sc	1.782	26.150	6.81%	*			
La	1.284	31.675	4.05%	*			
Ce	5.228	69.925	7.48%	*			
Eu	0.130	1.538	8.45%	*			
Lu	0.070	0.543	12.89%				
Hf	0.491	5.003	9.81%	*			
Th	0.369	9.363	3.94%	*			
Cr	95.699	483.250	19.80%				
Mn	142.085	598.750	23.73%				
Fe	0.618	6.020	10.27%				
Co	3.504	26.900	13.03%				
Ca	3.516	10.058	34.96%				
Sm	0.280	5.960	4.70%	*			
Yb	0.194	2.715	7.15%	*			

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Table 140. Per Cent Deviation Results - Chogha Mish Phase (Periods 9-12) Salmon Ware, Red Slip, Center, KS 4, n=9

ELEMENT	STD. DEV.	MEAN	% DEV.		SAMPLE	SITE	
Na	0.166	1.099	15.10%		237	KS	4
K	0.145	2.090	6.94%	*	239	KS	4
Rb	9.996	74.200	13.47%		242	KS	4
Cs	0.653	4.543	14.37%				
Ba	305.382	715.667	42.67%				
Sc	1.779	25.633	6.94%	*			
La	0.700	31.100	2.25%	*			
Ce	5.314	68.467	7.76%	*			
Eu	0.099	1.487	6.66%	*			
Lu	0.015	0.509	2.95%	*			
Hf	0.437	4.833	9.04%	*			
Th	0.452	9.360	4.83%	*			
Cr	65.851	443.667	14.84%				
Mn	171.553	610.667	28.09%				
Fe	0.662	5.870	11.28%				
Co	4.002	26.267	15.24%				
Ca	3.840	10.853	35.38%				
Sm	0.145	5.833	2.49%	*			
Yb	0.098	2.627	3.73%	*			

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Table 141. Per Cent Deviation Results - Chogha Mish Phase (Periods 9-12) Buff Ware, All, n=5

ELEMENT	STD. DEV.	MEAN	% DEV.		SAMPLE	SITE
Na	0.306	1.590	19.25%		366	KS 45
K	0.740	1.826	40.53%		928	KS 1
Rb	16.758	32.680	51.28%		929	KS 1
Cs	1.349	4.304	31.34%		931	KS 1
Ba	26.463	219.400	12.06%		932	KS 1
Sc	2.447	28.000	8.74%	*		
La	13.387	23.940	55.92%			
Ce	2.102	58.600	3.59%	*		
Eu	0.246	1.526	16.12%			
Lu	0.041	0.471	8.70%	*		
Hf	0.348	2.982	11.67%			
Th	0.798	8.312	9.60%	*		
Cr	36.966	357.000	10.35%			
Mn	178.420	986.000	18.10%			
Fe	0.606	6.782	8.94%	*		
Co	6.044	28.340	21.33%			
Ca	2.996	17.560	17.06%			
Sm	1.101	5.696	19.33%			
Yb	0.202	2.454	8.23%	*		

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Table 142. Per Cent Deviation Results - Chogha Mish Phase (Periods 9-12) Buff Ware, Center, KS 1, n=4

ELEMENT	STD. DEV.	MEAN	% DEV.		SAMPLE	SITE
Na	0.201	1.703	11.80%		928	KS 1
K	0.846	1.780	47.53%		929	KS 1
Rb	16.610	36.525	45.48%		931	KS 1
Cs	1.556	4.273	36.41%		932	KS 1
Ba	30.161	217.500	13.87%			
Sc	1.284	28.975	4.43%	*		
La	0.377	29.925	1.26%	*		
Ce	0.435	59.525	0.73%	*		
Eu	0.176	1.613	10.91%			
Lu	0.019	0.488	3.89%	*		
Hf	0.271	2.868	9.45%	*		
Th	0.812	8.480	9.58%	*		
Cr	7.848	373.250	2.10%	*		
Mn	156.815	1037.750	15.11%			
Fe	0.310	7.025	4.41%	*		
Co	5.557	29.975	18.54%			
Ca	1.732	16.400	10.56%			
Sm	1.104	5.940	18.59%			
Yb	0.197	2.503	7.87%	*		

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Table 143. Per Cent Deviation Results - Chogha Mish Phase Red Wares, All, n=94

ELEMENT	STD. DEV.	MEAN	% DEV.	SAMPLE	SITE
Na	0.282	1.397	20.19%	095	KS 12
K	0.313	2.398	13.05%	098	KS 20
Rb	11.269	86.122	13.08%	106	KS 36
Cs	0.808	5.101	15.84%	107	KS 42
Ba	230.387	538.085	42.82%	119	KS 118
Sc	2.918	28.829	10.12%	134	KS 4
La	4.928	33.900	14.54%	138	KS 12
Ce	11.158	74.470	14.98%	141	KS 19
Eu	0.273	1.665	16.40%	143	KS 36
Lu	0.074	0.594	12.46%	146	KS 118
Hf	0.915	5.299	17.27%	147	KS 124
Th	1.303	9.926	13.13%	148	KS 161
Cr	128.694	584.298	22.03%	150	KS 218
Mn	315.364	549.979	57.34%	154	KS 118
Fe	0.716	6.266	11.43%	172	KS 124
Co	8.083	27.154	29.77%	174	KS 176
Ca	4.513	5.846	77.20%	187	KS 4
Sm	0.878	6.393	13.73%	188	KS 4
Yb	0.383	3.129	12.24%	191	KS 12

SAMPLE	SITE
094	KS 10
096	KS 13
100	KS 17
102	KS 21
107	KS 38
112	KS 67
113	KS 71
114	KS 71
117	KS 112
135	KS 10
136	KS 10
137	KS 10
139	KS 13
140	KS 17

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Table 143 cont'd. Per Cent Deviation Results - Chogha Mish Phase Red Wares, All, n=94

SAMPLE	SITE	
142	KS	33
145	KS	108
151	KS	38
156	KS	74
157	KS	124
160	KS	162
161	KS	167
166	KS	197
168	KS	2
169	KS	38
173	KS	159
190	KS	8
193	KS	20
195	KS	17
197	KS	21
199	KS	24
202	KS	35
203	KS	36
204	KS	38
205	KS	38
208	KS	42
209	KS	45
210	KS	50
211	KS	65
213	KS	71
214	KS	73
215	KS	74
217	KS	105
219	KS	108
220	KS	112
221	KS	113
222	KS	118
224	KS	154
225	KS	162
227		176
234	KS	13
235	KS	20
236	KS	21
237	KS	36
238	KS	38
239	KS	42

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Table 143 cont'd. Per Cent Deviation Results - Chogha Mish Phase Red Wares, All, n=94

SAMPLE	SITE	
242	KS	112
243	KS	121
245	KS	239
247	KS	10
248	KS	13
249	KS	19
250	KS	21
252	KS	28
254	KS	43
255	KS	45
263	KS	156
266	KS	176
268	KS	193
277	KS	161
866	KS	20
933	KS	1
934	KS	1
936	KS	1
937	KS	1

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Table 144. Per Cent Deviation Results - Chogha Mish Phase Red Wares, West-North, n=34

ELEMENT	STD. DEV.	MEAN	% DEV.		SAMPLE	SITE
Na	0.278	1.434	19.39%		095	KS 12
K	0.375	2.439	15.38%		098	KS 20
Rb	8.291	85.740	9.67%		138	KS 12
Cs	0.652	5.114	12.75%		141	KS 19
Ba	250.777	563.857	44.48%		191	KS 12
Sc	1.945	28.769	6.76%	*	202	KS 35
La	2.713	34.071	7.96%	*	235	KS 20
Ce	6.194	74.663	8.30%	*	252	KS 28
Eu	0.123	1.675	7.34%	*	094	KS 10
Lu	0.056	0.604	9.27%	*	096	KS 13
Hf	1.099	5.262	20.89%		100	KS 17
Th	1.331	10.125	13.15%		102	KS 21
Cr	117.069	580.829	20.16%		113	KS 71
Mn	143.471	516.171	27.78%		114	KS 71
Fe	0.465	6.164	7.54%	*	135	KS 10
Co	7.631	27.654	27.59%		137	KS 10
Ca	4.152	6.310	65.80%		139	KS 13
Sm	0.905	6.208	14.58%	*	140	KS 17
Yb	0.280	3.158	8.87%	*	190	KS 8
					192	KS 13
					193	KS 20
					195	KS 17
					197	KS 21
					199	KS 24
					213	KS 71
					234	KS 13
					236	KS 21
					247	KS 10
					248	KS 13
					249	KS 19
					250	KS 21
					866	KS 20
					112	KS 67
					142	KS 33

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Table 145. Per Cent Deviation Results - Chogha Mish Phase Red Ware, West-North, KS 10, n=5

ELEMENT	STD. DEV.	MEAN	% DEV.		SAMPLE	SITE
Na	0.258	1.452	17.77%		094	KS 10
K	0.294	2.162	13.60%		135	KS 10
Rb	4.798	90.840	5.28%	*	135	KS 10
Cs	0.229	5.502	4.16%	*	137	KS 10
Ba	197.457	792.400	24.92%		247	KS 10
Sc	1.062	29.640	3.58%	*		
La	2.948	36.320	8.12%	*		
Ce	6.511	78.820	8.26%	*		
Eu	0.083	1.694	4.90%	*		
Lu	0.044	0.629	7.00%	*		
Hf	0.260	5.794	4.49%	*		
Th	0.509	10.636	4.79%	*		
Cr	105.136	623.000	16.88%			
Mn	29.086	437.000	6.66%	*		
Fe	0.380	6.004	6.33%	*		
Co	3.733	28.860	12.93%			
Ca	0.730	4.250	17.18%			
Sm	2.224	5.768	38.56%			
Yb	0.299	3.368	8.88%			

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Table 146. Per Cent Deviation Results - Chogha Mish Phase Red Ware, West-North, KS 12, n=3

ELE-MENT	STD. DEV.	MEAN	% DEV.		SAM-PLE	SITE
Na	0.305	1.833	16.64%		095	KS 12
K	0.494	3.130	15.78%		138	KS 12
Rb	4.689	87.600	5.35%	*	191	KS 12
Cs	0.187	5.220	3.58%	*		
Ba	407.078	650.333	62.60%			
Sc	1.762	28.233	6.24%	*		
La	1.680	34.433	4.88%	*		
Ce	3.955	75.567	5.23%	*		
Eu	0.056	1.710	3.27%	*		
Lu	0.019	0.591	3.21%	*		
Hf	0.469	5.440	8.62%	*		
Th	0.185	9.790	1.89%	*		
Cr	38.175	583.333	6.54%	*		
Mn	159.676	547.333	29.17%			
Fe	0.508	6.263	8.11%	*		
Co	1.301	60.033	2.17%	*		
Ca	3.493	3.810	91.68%			
Sm	0.061	6.433	0.95%	*		
Yb	0.280	3.227	8.68%	*		

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Table 147. Per Cent Deviation Results - Chogha Mish Phase Red Ware, West-North, KS 13, n=5

ELE-MENT	STD. DEV.	MEAN	% DEV.		SAM-PLE	SITE
Na	0.436	1.420	30.70%		096	KS 13
K	0.322	2.298	14.01%		139	KS 13
Rb	7.726	83.140	9.29%	*	192	KS 13
Cs	0.763	4.964	15.37%		234	KS 13
Ba	45.992	375.600	12.24%		248	KS 13
Sc	1.877	28.180	6.66%	*		
La	2.813	33.760	8.33%	*		
Ce	6.071	73.720	8.24%	*		
Eu	0.197	1.706	11.55%			
Lu	0.101	0.587	17.21%			
Hf	2.354	4.052	58.09%			
Th	2.956	11.112	26.60%			
Cr	208.416	567.600	36.72%			
Mn	254.395	539.600	47.15%			
Fe	0.502	6.056	8.29%	*		
Co	12.696	22.560	56.28%			
Ca	5.630	7.120	79.07%			
Sm	0.481	6.182	7.78%	*		
Yb	0.252	3.106	8.11%	*		

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Table 148. Per Cent Deviation Results - Chogha Mish Phase Red Ware, West-North, KS 17, n=3

ELEMENT	STD. DEV.	MEAN	% DEV.		SAMPLE	SITE
Na	0.152	1.383	10.99%		100	KS 17
K	0.402	2.333	17.23%		140	KS 17
Rb	7.703	94.567	8.15%	*	195	KS 17
Cs	0.739	5.403	13.68%			
Ba	39.829	443.667	8.98%	*		
Sc	1.044	30.500	3.42%	*		
La	2.369	33.567	7.06%	*		
Ce	4.694	73.900	6.35%	*		
Eu	0.032	1.663	1.92%	*		
Lu	0.068	0.598	11.37%	*		
Hf	0.633	5.510	11.49%			
Th	0.382	10.067	3.79%	*		
Cr	92.045	596.667	15.43%			
Mn	150.068	464.333	32.32%			
Fe	0.325	6.413	5.07%	*		
Co	2.458	30.467	8.07%	*		
Ca	6.555	4.477	146.42%			
Sm	0.371	6.243	5.94%	*		
Yb	0.097	3.057	3.17%	*		

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Table 149. Per Cent Deviation Results - Chogha Mish Phase Red Ware, West-North, KS 20, n=4

ELEMENT	STD. DEV.	MEAN	% DEV.		SAMPLE	SITE
Na	0.172	1.405	12.24%		098	KS 20
K	0.184	2.525	7.29%	*	235	KS 20
Rb	7.025	78.275	8.97%	*	193	KS 20
Cs	0.630	4.373	14.41%		866	KS 20
Ba	67.178	357.250	18.80%			
Sc	1.900	27.325	6.95%	*		
La	1.908	32.175	5.93%	*		
Ce	6.128	69.150	8.86%	*		
Eu	0.028	1.678	1.67%	*		
Lu	0.043	0.615	6.99%	*		
Hf	0.775	5.408	14.33%			
Th	0.926	9.315	9.94%	*		
Cr	52.347	549.750	9.52%	*		
Mn	120.739	655.000	18.43%			
Fe	0.497	6.225	7.98%	*		
Co	13.893	20.600	67.44%			
Ca	3.376	9.803	34.44%			
Sm	0.464	6.075	7.64%	*		
Yb	0.161	3.003	5.36%	*		

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Table 150. Per Cent Deviation Results - Chogha Mish Phase Red Ware, West-North, KS 21, n=4

ELEMENT	STD. DEV.	MEAN	% DEV.		SAMPLE	SITE
Na	0.223	1.418	15.73%		102	KS 21
K	0.363	2.435	14.91%		197	KS 21
Rb	5.765	81.975	7.03%	*	236	KS 21
Cs	0.396	4.738	8.36%	*	250	KS 21
Ba	258.950	577.000	44.88%			
Sc	2.003	28.300	7.08%	*		
La	2.108	33.725	6.25%	*		
Ce	5.256	73.550	7.15%	*		
Eu	0.161	1.710	9.42%	*		
Lu	0.070	0.627	11.16%			
Hf	0.489	5.478	8.93%	*		
Th	0.606	9.970	6.08%	*		
Cr	108.499	571.000	19.00%			
Mn	61.117	495.000	12.35%			
Fe	0.671	6.028	11.13%			
Co	0.950	28.625	3.32%	*		
Ca	1.945	6.238	31.18%			
Sm	0.429	6.388	6.72%	*		
Yb	0.235	3.198	7.35%	*		

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Table 151. Per Cent Deviation Results - Chogha Mish Phase Red Ware, West-North, KS 71, n=3

ELEMENT	STD. DEV.	MEAN	% DEV.		SAMPLE	SITE
Na	0.305	1.410	21.63%		113	KS 71
K	0.072	2.713	2.65%	*	114	KS 71
Rb	2.920	92.967	3.14%	*	213	KS 71
Cs	0.622	5.577	11.15%			
Ba	105.557	710.667	14.85%			
Sc	0.600	28.900	2.08%	*		
La	1.986	35.167	5.65%	*		
Ce	5.232	78.867	6.63%	*		
Eu	0.090	1.660	5.42%	*		
Lu	0.051	0.608	8.39%	*		
Hf	0.977	6.010	16.26%			
Th	0.321	9.920	3.24%	*		
Cr	164.795	698.333	23.60%			
Mn	128.493	425.333	30.21%			
Fe	0.287	5.757	4.99%	*		
Co	9.154	32.900	27.82%			
Ca	5.274	5.550	95.03%			
Sm	0.457	6.463	7.07%	*		
Yb	0.246	3.210	7.66%	*		

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Table 152. Per Cent Deviation Results - Chogha Mish Phase Red Ware, West-South, All, n=4

ELEMENT	STD. DEV.	MEAN	% DEV.		SAMPLE	SITE
Na	0.091	1.340	6.79%	*	211	KS 65
K	0.256	2.498	10.25%		156	KS 74
Rb	5.705	86.900	6.57%	*	214	KS 73
Cs	0.580	5.595	10.37%		215	KS 74
Ba	92.481	515.000	17.96%			
Sc	1.509	30.225	4.99%	*		
La	2.022	36.200	5.59%	*		
Ce	3.385	79.325	4.27%	*		
Eu	0.116	1.780	6.52%	*		
Lu	0.019	0.589	3.23%	*		
Hf	0.507	5.415	9.36%	*		
Th	0.433	10.413	4.16%	*		
Cr	54.375	581.000	9.36%	*		
Mn	360.003	311.000	115.76%			
Fe	0.318	6.510	4.88%	*		
Co	3.428	28.750	11.92%			
Ca	4.777	5.080	94.04%			
Sm	0.365	6.633	5.50%	*		
Yb	0.281	3.170	8.86%	*		

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Table 153. Per Cent Deviation Results - Chogha Mish Phase Red Ware, West-South, KS 74, n=2

ELEMENT	STD. DEV.	MEAN	% DEV.	SAMPLE	SITE
Na	0.064	1.365	4.69% *	156	KS 74
K	0.021	2.285	0.92% *	215	KS 74
Rb	3.323	86.450	3.84% *		
Cs	0.339	6.050	5.60% *		
Ba	12.728	533.000	2.39% *		
Sc	1.202	31.350	3.83% *		
La	3.040	37.050	8.21% *		
Ce	4.730	81.050	5.84% *		
Eu	0.170	1.820	9.34% *		
Lu	0.027	0.598	4.52% *		
Hf	0.099	5.850	1.69% *		
Th	0.283	10.700	2.64% *		
Cr	0.707	627.500	0.11% *		
Mn	0.000	0.00%	0.00%		
Fe	0.431	6.355	6.78% *		
Co	5.728	28.350	20.20%		
Ca	1.428	1.010	141.39%		
Sm	0.276	6.915	3.99% *		
Yb	0.325	3.330	9.76% *		

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Table 154. Per Cent Deviation Results - Chogha Mish Phase Red Ware, Center, All, n=38

ELEMENT	STD. DEV.	MEAN	% DEV.	SAMPLE	SITE
Na	0.282	1.418	19.89%	106	KS 36
K	0.283	2.376	11.91%	107	KS 38
Rb	13.016	88.026	14.79%	119	KS 118
Cs	0.850	5.153	16.50%	134	KS 4
Ba	164.405	508.718	32.32%	143	KS 36
Sc	3.460	29.219	11.84%	146	KS 118
La	6.705	33.669	19.91%	147	KS 124
Ce	15.098	73.959	20.41%	154	KS 118
Eu	0.386	1.655	23.32%	172	KS 124
Lu	0.089	0.594	14.98%	187	KS 4
Hf	0.746	5.301	14.07%	188	KS 4
Th	1.303	9.743	13.37%	203	KS 36
Cr	134.079	590.410	22.71%	208	KS 42
Mn	429.428	601.436	71.40%	210	KS 50
Fe	0.904	6.381	14.17%	219	KS 108
Co	9.026	26.879	33.58%	220	KS 112
Ca	4.487	5.357	83.76%	221	KS 113
Sm	0.908	6.587	13.78%	222	KS 118
Yb	0.431	3.123	13.80%	237	KS 36
				239	KS 42
				242	KS 112
				933	KS 1
				934	KS 1
				936	KS 1
				937	KS 1
				117	KS 112
				145	KS 108
				151	KS 38
				168	KS 2
				169	KS 38
				204	KS 38
				205	KS 38
				209	KS 45
				238	KS 38
				243	KS 121
				254	KS 43
				255	KS 45
				157	KS 124
				108	KS 42

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Table 155. Per Cent Deviation Results - Chogha Mish Phase Red Ware, Center, KS 1, n=4

ELEMENT	STD. DEV.	MEAN	% DEV.		SAMPLE	SITE	
Na	0.270	1.390	19.42%		933	KS	1
K	0.240	2.205	10.88%		934	KS	1
Rb	10.081	82.000	12.29%		936	KS	1
Cs	0.570	4.603	12.38%		937	KS	1
Ba	73.141	404.750	18.07%				
Sc	1.495	30.338	4.93%	*			
La	3.363	37.575	8.95%	*			
Ce	6.152	72.425	8.49%	*			
Eu	0.507	2.005	25.29%				
Lu	0.046	0.584	7.88%	*			
Hf	0.382	4.173	9.15%	*			
Th	0.731	7.953	9.19%	*			
Cr	308.626	561.500	54.96%				
Mn	131.094	547.500	23.94%				
Fe	1.127	6.795	16.59%				
Co	3.553	31.125	11.42%				
Ca	0.000	0.000	0.00%				
Sm	1.039	8.050	12.91%				
Yb	0.386	2.818	13.70%				

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Table 156. Per Cent Deviation Results - Chogha Mish Phase Red Ware, Center, KS 4, n=3

ELEMENT	STD. DEV.	MEAN	% DEV.		SAMPLE	SITE
Na	0.284	1.430	19.86%		134	KS 4
K	0.235	2.160	10.88%		187	KS 4
Rb	11.956	79.967	14.95%		188	KS 4
Cs	0.609	4.620	13.18%			
Ba	122.083	480.333	25.42%			
Sc	3.293	27.067	12.17%			
La	3.412	32.533	10.49%			
Ce	5.605	74.333	7.54%	*		
Eu	0.167	1.550	10.77%			
Lu	0.052	0.551	9.44%	*		
Hf	0.747	5.260	14.20%			
Th	1.095	9.323	11.75%			
Cr	102.510	599.667	17.09%			
Mn	200.123	581.333	34.42%			
Fe	0.744	5.727	12.99%			
Co	3.959	28.600	13.84%			
Ca	5.375	7.247	74.17%			
Sm	0.485	6.160	7.87%	*		
Yb	0.280	3.150	8.89%	*		

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Table 157. Per Cent Deviation Results - Chogha Mish Phase Red Ware, Center, KS 36, n=4

ELEMENT	STD. DEV.	MEAN	% DEV.		SAMPLE	SITE
Na	0.359	1.390	25.83%		106	KS 36
K	0.300	2.425	12.37%		143	KS 36
Rb	10.552	92.925	11.36%		203	KS 36
Cs	0.308	5.245	5.87%	*	237	KS 36
Ba	237.968	560.750	42.44%			
Sc	3.077	30.575	10.06%			
La	3.782	36.275	10.43%			
Ce	8.458	81.550	10.37%			
Eu	0.270	1.783	15.14%			
Lu	0.083	0.610	13.61%			
Hf	0.724	5.490	13.19%			
Th	0.734	10.210	7.19%	*		
Cr	141.187	585.500	24.11%			
Mn	171.457	608.500	28.18%			
Fe	0.761	6.528	11.66%			
Co	5.505	31.775	17.32%			
Ca	3.294	5.568	59.16%			
Sm	0.827	6.925	11.94%			
Yb	0.478	3.415	14.00%			

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Table 158. Per Cent Deviation Results - Chogha Mish Phase Red Ware, Center, KS 38, n=6

ELEMENT	STD. DEV.	MEAN	% DEV.	SAMPLE	SITE
Na	0.339	1.598	21.21%	151	KS 38
K	0.252	2.442	10.32%	169	KS 38
Rb	16.192	91.133	17.77%	204	KS 38
Cs	1.156	5.527	20.92%	205	KS 38
Ba	159.737	510.000	31.32%	238	KS 38
Sc	4.883	29.700	16.44%	107	KS 38
La	14.404	28.133	51.20%		
Ce	13.451	76.900	17.49%		
Eu	0.309	1.700	18.18%		
Lu	0.103	0.613	16.80%		
Hf	0.893	5.775	15.46%		
Th	1.950	10.272	18.98%		
Cr	143.084	624.833	22.90%		
Mn	79.038	484.167	16.32%		
Fe	0.888	6.058	14.66%		
Co	5.101	29.633	17.21%		
Ca	5.489	5.718	96.00%		
Sm	0.970	6.535	14.84%		
Yb	0.570	3.265	17.46%		

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Table 159. Per Cent Deviation Results - Chogha Mish Phase Red Ware, Center, KS 42, n=3

ELEMENT	STD. DEV.	MEAN	% DEV.	SAMPLE	SITE
Na	0.304	1.289	23.58%	107	KS 42
K	0.331	2.443	13.55%	208	KS 42
Rb	25.204	92.567	27.23%	239	KS 42
Cs	0.815	5.680	14.35%		
Ba	49.803	416.667	11.95%		
Sc	3.828	30.067	12.73%		
La	5.110	33.800	15.12%		
Ce	11.717	72.833	16.09%		
Eu	0.313	1.553	20.15%		
Lu	0.132	0.597	22.11%		
Hf	0.805	5.160	15.60%		
Th	1.685	10.417	16.18%		
Cr	153.409	535.667	28.64%		
Mn	143.468	476.000	30.14%		
Fe	0.775	6.473	11.97%		
Co	3.329	28.800	11.56%		
Ca	7.641	6.470	118.10%		
Sm	1.002	6.247	16.04%		
Yb	0.678	2.873	23.60%		

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Table 160. Per Cent Deviation Results - Chogha Mish Phase Red Ware, Center, KS 45, n=2

ELEMENT	STD. DEV.	MEAN	% DEV.	SAMPLE	SITE
Na	0.184	1.360	13.53%	209	KS 45
K	0.318	2.625	12.11%	255	KS 45
Rb	13.435	87.800	15.30%		
Cs	0.156	5.210	2.99% *		
Ba	132.936	490.000	27.13%		
Sc	1.626	28.750	5.66% *		
La	2.333	34.450	6.77% *		
Ce	3.182	78.050	4.08% *		
Eu	0.064	1.745	3.67% *		
Lu	0.041	0.530	7.74% *		
Hf	0.106	5.075	2.09% *		
Th	0.424	9.900	4.28% *		
Cr	25.456	625.000	4.07% *		
Mn	236.174	748.000	31.57%		
Fe	0.247	6.625	3.73% *		
Co	0.849	29.300	2.90% *		
Ca	1.598	8.060	19.83%		
Sm	0.276	6.435	4.29% *		
Yb	0.205	3.245	6.32% *		

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Table 161. Per Cent Deviation Results - Chogha Mish Phase Red Ware, Center, KS 112, n=3

ELEMENT	STD. DEV.	MEAN	% DEV.		SAMPLE	SITE
Na	0.207	1.210	17.11%		220	KS 112
K	0.412	2.390	17.24%		242	KS 112
Rb	4.292	77.933	5.51%	*	117	KS 112
Cs	0.744	4.597	16.18%			
Ba	264.593	568.333	46.56%			
Sc	4.332	28.433	15.24%			
La	2.805	33.500	8.37%	*		
Ce	42.403	48.533	87.37%			
Eu	0.945	1.070	88.32%			
Lu	0.158	0.634	24.92%			
Hf	0.252	4.957	5.08%	*		
Th	0.098	9.767	1.00%	*		
Cr	50.110	497.000	10.08%			
Mn	27.592	528.333	5.22%	*		
Fe	0.910	6.227	14.61%			
Co	6.352	23.133	27.46%			
Ca	3.072	6.893	44.57%			
Sm	0.580	6.330	9.16%	*		
Yb	0.199	2.787	7.14%	*		

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Table 162. Per Cent Deviation Results - Chogha Mish Phase Red Ware, Center, KS 118, n=4

ELEMENT	STD. DEV.	MEAN	% DEV.		SAMPLE	SITE
Na	0.237	1.623	14.60%		119	KS 118
K	0.170	2.568	6.62%	*	146	KS 118
Rb	7.780	91.675	8.49%	*	154	KS 118
Cs	0.553	5.768	9.59%	*	222	KS 118
Ba	96.066	627.000	15.32%			
Sc	1.859	30.475	6.10%	*		
La	1.933	35.650	5.42%	*		
Ce	3.045	77.725	3.92%	*		
Eu	0.158	1.675	9.43%	*		
Lu	0.038	0.599	6.34%	*		
Hf	0.376	5.550	6.77%	*		
Th	0.315	10.228	3.08%	*		
Cr	96.680	624.500	15.48%			
Mn	320.339	415.000	77.19%			
Fe	0.852	6.433	13.24%			
Co	15.896	23.450	67.79%			
Ca	3.770	4.353	86.61%			
Sm	0.358	6.503	5.51%	*		
Yb	0.284	3.183	8.92%	*		

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Table 163. Per Cent Deviation Results - Chogha Mish Phase Red Ware, Center, KS 124, n=3

ELEMENT	STD. DEV.	MEAN	% DEV.		SAMPLE	SITE
Na	0.114	1.640	6.95%	*	147	KS 124
K	0.116	2.063	5.62%	*	172	KS 124
Rb	6.621	81.967	8.08%	*	157	KS 124
Cs	0.967	4.730	20.44%			
Ba	37.403	409.000	9.14%	*		
Sc	2.714	26.567	10.22%			
La	4.939	33.100	14.92%			
Ce	6.324	73.400	8.62%	*		
Eu	0.110	1.597	6.89%	*		
Lu	0.063	0.588	10.71%			
Hf	0.330	5.630	5.86%	*		
Th	0.652	9.287	7.02%	*		
Cr	74.746	623.000	12.00%			
Mn	620.833	543.333	114.26%			
Fe	0.633	5.610	11.28%			
Co	2.894	26.233	11.03%			
Ca	0.537	5.120	10.49%			
Sm	0.788	6.163	12.79%			
Yb	0.388	3.113	12.46%			

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Table 164. Per Cent Deviation Results - Chogha Mish Phase Red Ware, East-North, All, n=12

ELEMENT	STD. DEV.	MEAN	% DEV.	SAMPLE	SITE
Na	0.338	1.290	26.20%	148	KS 161
K	0.274	2.343	11.69%	174	KS 176
Rb	14.041	84.475	16.62%	224	KS 154
Cs	1.085	5.028	21.58%	160	KS 162
Ba	381.591	580.750	65.71%	173	KS 159
Sc	3.570	28.008	12.75%	225	KS 162
La	4.762	33.483	14.22%	227	KS 176
Ce	11.156	74.725	14.93%	277	KS 161
Eu	0.244	1.647	14.81%	161	KS 167
Lu	0.085	0.578	14.71%	217	KS 105
Hf	1.117	5.329	20.96%	263	KS 156
Th	1.457	10.012	14.55%	266	KS 176
Cr	168.545	583.000	28.91%		
Mn	253.915	525.917	48.28%		
Fe	0.783	6.194	12.64%		
Co	9.098	26.475	34.36%		
Ca	6.220	5.722	108.70%		
Sm	0.874	6.252	13.98%		
Yb	0.504	3.081	16.36%		

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Table 165. Per Cent Deviation Results - Chogha Mish Phase Red Ware, East-North, KS 161, n=2

ELEMENT	STD. DEV.	MEAN	% DEV.		SAMPLE	SITE
Na	0.283	1.500	18.87%		148	KS 161
K	0.304	2.225	13.66%		277	KS 161
Rb	1.980	81.600	2.43%	*		
Cs	1.351	5.165	26.16%			
Ba	21.920	488.500	4.49%	*		
Sc	2.687	28.800	9.33%	*		
La	0.354	38.050	0.93%	*		
Ce	1.555	85.800	1.81%	*		
Eu	0.057	1.770	3.22%	*		
Lu	0.062	0.656	9.45%	*		
Hf	0.474	6.675	7.10%	*		
Th	1.322	10.865	12.17%			
Cr	12.728	739.000	1.72%	*		
Mn	111.723	509.000	21.95%			
Fe	0.233	6.065	3.84%	*		
Co	0.566	29.700	1.91%	*		
Ca	3.861	4.730	81.63%			
Sm	0.255	7.080	3.60%	*		
Yb	0.184	3.420	5.38%	*		

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Table 166. Per Cent Deviation Results - Chogha Mish Phase Red Ware, East-North, KS 162, n=2

ELEMENT	STD. DEV.	MEAN	% DEV.		SAMPLE	SITE
Na	0.021	1.455	1.44%	*	160	KS 162
K	0.361	2.255	16.01%		225	KS 162
Rb	12.374	74.850	16.53%			
Cs	0.375	4.265	8.79%	*		
Ba	86.974	377.500	23.04%			
Sc	1.414	25.800	5.48%	*		
La	2.333	32.650	7.15%	*		
Ce	8.415	71.750	11.73%			
Eu	0.191	1.525	12.52%			
Lu	0.054	0.524	10.31%			
Hf	0.679	4.910	13.83%			
Th	0.997	9.255	10.77%			
Cr	255.265	578.500	44.13%			
Mn	98.288	452.500	21.72%			
Fe	0.580	5.560	10.43%			
Co	0.566	26.200	2.16%	*		
Ca	3.472	4.495	77.24%			
Sm	0.651	6.100	10.67%			
Yb	0.403	2.825	14.27%			

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Table 167. Per Cent Deviation Results - Chogha Mish Phase Red Ware, East-North, KS 176, n=3

ELEMENT	STD. DEV.	MEAN	% DEV.		SAMPLE	SITE
Na	0.152	1.287	11.81%		174	KS 176
K	0.045	2.513	1.79%	*	227	KS 176
Rb	8.141	94.600	8.61%	*	266	KS 176
Cs	0.480	5.407	8.88%	*		
Ba	719.604	889.333	80.92%			
Sc	0.954	30.500	3.13%	*		
La	1.193	36.367	3.28%	*		
Ce	0.642	81.133	0.79%	*		
Eu	0.082	1.770	4.63%	*		
Lu	0.005	0.626	0.80%	*		
Hf	0.476	5.567	8.55%	*		
Th	0.379	10.633	3.56%	*		
Cr	36.291	590.000	6.15%	*		
Mn	322.981	671.000	48.13%			
Fe	0.401	6.683	6.00%	*		
Co	2.750	31.600	8.70%	*		
Ca	2.863	2.690	106.43%			
Sm	0.235	6.700	3.51%	*		
Yb	0.070	3.457	2.02%	*		

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Table 168. Per Cent Deviation Results - Chogha Mish Phase Red Ware, East-South, All, n=3

ELEMENT	STD. DEV.	MEAN	% DEV.		SAMPLE	SITE
Na	0.221	1.180	18.73%		150	KS 218
K	0.140	2.253	6.21%	*	166	KS 197
Rb	4.356	72.833	5.98%	*	268	KS 193
Cs	0.084	3.997	2.10%	*		
Ba	68.135	432.333	15.76%			
Sc	1.986	25.633	7.75%	*		
La	2.008	33.100	6.07%	*		
Ce	4.206	70.233	5.99%	*		
Eu	0.099	1.603	6.18%	*		
Lu	0.057	0.565	10.09%			
Hf	0.683	5.317	12.85%			
Th	0.242	8.690	2.78%	*		
Cr	181.473	564.333	32.16%			
Mn	66.380	687.667	9.65%	*		
Fe	0.533	5.887	9.05%	*		
Co	3.081	25.500	12.08%			
Ca	2.734	7.347	37.21%			
Sm	0.451	6.187	7.29%	*		
Yb	0.409	2.833	14.44%			

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Table 169. Per Cent Deviation Results - Chogha Mish Phase Red Ware, Unslipped, All, n=14

ELEMENT	STD. DEV.	MEAN	% DEV.		SAMPLE	SITE	
Na	0.182	1.377	13.22%		094	KS	10
K	0.224	2.561	8.75%	*	096	KS	13
Rb	13.199	92.093	14.33%		100	KS	17
Cs	0.716	5.447	13.14%		102	KS	21
Ba	235.699	632.857	37.24%		107	KS	38
Sc	1.942	29.936	6.49%	*	113	KS	71
La	2.979	34.843	8.55%	*	114	KS	71
Ce	21.951	72.664	30.21%		117	KS	112
Eu	0.500	1.598	31.29%		113	KS	67
Lu	0.081	0.630	12.86%		095	KS	12
Hf	1.614	5.286	30.53%		098	KS	20
Th	1.707	10.718	15.93%		106	KS	36
Cr	98.034	619.714	15.82%		107	KS	42
Mn	101.038	466.286	21.67%		119	KS	118
Fe	0.528	6.289	8.40%	*			
Co	14.640	24.693	59.29%				
Ca	3.546	4.234	83.75%				
Sm	0.643	6.474	9.93%	*			
Yb	0.330	3.181	10.37%				

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Table 170. Per Cent Deviation Results - Chogha Mish Phase Red Ware, Unslipped, West-North, KS 71, n=2

ELEMENT	STD. DEV.	MEAN	% DEV.		SAMPLE	SITE
Na	0.049	1.585	3.09%	*	113	KS 71
K	0.092	2.695	3.41%	*	114	KS 71
Rb	0.212	94.650	0.22%	*		
Cs	0.707	5.790	12.21%			
Ba	145.664	724.000	20.12%			
Sc	0.424	29.200	1.45%	*		
La	2.052	35.950	5.71%	*		
Ce	4.384	81.300	5.39%	*		
Eu	0.127	1.660	7.65%	*		
Lu	0.011	0.637	1.73%	*		
Hf	0.247	6.565	3.76%	*		
Th	0.148	10.095	1.47%	*		
Cr	96.167	785.000	12.25%			
Mn	17.678	351.500	5.03%	*		
Fe	0.276	5.635	4.90%	*		
Co	9.122	36.650	24.89%			
Ca	0.856	2.525	33.90%			
Sm	0.615	6.545	9.40%	*		
Yb	0.141	3.340	4.22%	*		

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Table 171. Per Cent Deviation Results - Chogha Mish Phase Red Ware, Unslipped, Center, All, n=5

ELEMENT	STD. DEV.	MEAN	% DEV.		SAMPLE	SITE
Na	0.099	1.236	7.47%	*	107	KS 38
K	0.158	2.636	5.99%	*	117	KS 112
Rb	13.956	99.600	14.01%		106	KS 36
Cs	0.572	5.970	9.58%	*	108	KS 42
Ba	74.389	467.600	15.91%		119	KS 118
Sc	1.680	31.620	5.31%	*		
La	3.704	36.080	10.27%			
Ce	37.635	65.440	57.54%			
Eu	0.813	1.352	60.13%			
Lu	0.107	0.653	16.39%			
Hf	0.400	5.580	7.17%	*		
Th	0.711	10.676	6.66%	*		
Cr	45.613	585.000	7.80%	*		
Mn	92.589	469.200	19.73%			
Fe	0.324	6.642	4.88%	*		
Co	15.678	23.820	65.82%			
Ca	1.694	2.710	62.51%			
Sm	0.909	6.744	13.48%			
Yb	0.517	3.154	16.39%			

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Table 172. Per Cent Deviation Results - Chogha Mish Phase Red Ware, Porous, Chaff Tempered, All, n=7

ELE-MENT	STD. DEV.	MEAN	% DEV.	SAM-PLE	SITE
Na	0.366	1.345	27.21%	151	KS 38
K	0.236	2.174	10.86%	160	KS 162
Rb	11.856	77.829	15.23%	156	KS 74
Cs	1.291	4.729	27.30%	157	KS 124
Ba	148.639	428.143	34.72%	161	KS 167
Sc	4.410	25.557	17.26%	166	KS 197
La	5.169	31.429	16.45%	154	KS 118
Ce	11.458	66.843	17.14%		
Eu	0.250	1.433	17.45%		
Lu	0.100	0.521	19.19%		
Hf	0.960	4.669	20.56%		
Th	1.571	8.687	18.08%		
Cr	146.750	474.186	30.95%		
Mn	278.112	481.143	57.80%		
Fe	0.741	5.480	13.52%		
Co	4.848	27.900	17.38%		
Ca	8.114	8.409	96.49%		
Sm	0.973	5.756	16.90%		
Yb	0.532	2.674	19.90%		

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Table 173. Per Cent Deviation Results - Chogha Mish Phase Red Ware, Porous, CHaff Tempered, Center, n=3

ELEMENT	STD. DEV.	MEAN	% DEV.		SAMPLE	SITE
Na	0.170	1.603	10.61%		151	KS 38
K	0.111	2.257	4.92%	*	157	KS 124
Rb	14.580	79.933	18.24%		154	KS 118
Cs	1.550	5.240	29.58%			
Ba	190.069	494.333	38.45%			
Sc	4.912	26.667	18.42%			
La	6.463	33.333	19.39%			
Ce	13.327	69.567	19.16%			
Eu	0.272	1.467	18.54%			
Lu	0.105	0.552	19.02%			
Hf	0.612	5.007	12.22%			
Th	1.796	8.933	20.11%			
Cr	108.744	554.667	19.61%			
Mn	87.232	463.333	18.83%			
Fe	0.757	5.493	13.78%			
Co	6.052	27.533	21.98%			
Ca	7.442	7.773	95.74%			
Sm	1.070	5.997	17.84%			
Yb	0.623	2.877	21.65%			

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Table 174. Per Cent Deviation Results - Chogha Mish Phase Red Ware, Porous, Chaff Tempered, East-North, n=2

ELEMENT	STD. DEV.	MEAN	% DEV.		SAMPLE	SITE
Na	0.554	1.049	52.81%		160	KS 162
K	0.184	1.870	9.84%	*	161	KS 167
Rb	16.971	71.600	23.70%			
Cs	0.983	3.835	25.63%			
Ba	11.314	308.000	3.67%	*		
Sc	3.818	22.100	17.28%			
La	5.728	26.950	21.25%			
Ce	11.314	57.800	19.57%			
Eu	0.240	1.220	19.67%			
Lu	0.086	0.426	20.19%			
Hf	1.082	3.665	29.52%			
Th	1.457	7.520	19.38%			
Cr	98.995	328.000	30.18%			
Mn	333.754	619.000	53.92%			
Fe	0.332	4.915	6.75%	*		
Co	3.465	29.050	11.93%			
Ca	14.538	12.320	118.00%			
Sm	0.983	4.945	19.88%			
Yb	0.445	2.225	20.00%			

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Table 175. Per Cent Deviation Results - Chogha Mish Phase Red Ware, Dark Slip, All, n=5

ELEMENT	STD. DEV.	MEAN	% DEV.		SAMPLE	SITE
Na	0.423	1.416	29.87%		168	KS 2
K	0.319	2.444	13.05%		169	KS 38
Rb	10.979	103.160	10.64%		173	KS 159
Cs	1.120	5.824	19.23%		174	KS 176
Ba	147.768	509.600	29.00%		172	KS 124
Sc	2.762	29.860	9.25%	*		
La	3.475	33.560	10.35%			
Ce	6.285	76.140	8.25%	*		
Eu	0.062	1.650	3.76%	*		
Lu	0.034	0.613	5.55%	*		
Hf	0.287	5.320	5.39%	*		
Th	0.809	10.528	7.68%	*		
Cr	64.345	592.400	10.86%			
Mn	217.794	375.000	58.08%			
Fe	1.218	6.592	18.48%			
Co	16.732	17.760	94.21%			
Ca	1.815	3.098	58.59%			
Sm	0.621	6.262	9.92%	*		
Yb	0.264	3.264	8.09%	*		

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Table 176. Per Cent Deviation Results - Chogha Mish Phase Red Ware, Dark Slip, Center, n=3

ELEMENT	STD. DEV.	MEAN	% DEV.		SAMPLE	SITE
Na	0.476	1.603	29.69%		168	KS 2
K	0.430	2.383	18.04%		169	KS 38
Rb	14.404	100.600	14.32%		172	KS 124
Cs	1.262	5.420	23.28%			
Ba	83.152	446.667	18.62%			
Sc	3.602	29.133	12.36%			
La	2.914	33.433	8.72%	*		
Ce	6.466	76.533	8.45%	*		
Eu	0.046	1.613	2.85%	*		
Lu	0.034	0.620	5.48%	*		
Hf	0.121	5.440	2.22%	*		
Th	1.004	10.247	9.80%	*		
Cr	83.261	611.333	13.62%			
Mn	299.350	339.667	88.13%			
Fe	1.558	6.380	24.42%			
Co	17.208	18.867	91.21%			
Ca	2.319	3.663	63.31%			
Sm	0.570	6.233	9.14%	*		
Yb	0.263	3.263	8.06%	*		

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Table 177. Per Cent Deviation Results - Chogha Mish Phase Red Ware, Dark Slip, East-North, n=2

ELEMENT	STD. DEV.	MEAN	% DEV.		SAMPLE	SITE
Na	0.021	1.135	1.85%	*	173	KS 159
K	0.092	2.535	3.63%	*	174	KS 176
Rb	4.243	107.000	3.97%	*		
Cs	0.778	6.430	12.10%			
Ba	209.304	604.000	34.65%			
Sc	0.778	30.950	2.51%	*		
La	5.586	33.750	16.55%			
Ce	8.556	75.550	11.32%			
Eu	0.035	1.705	2.05%	*		
Lu	0.044	0.601	7.32%	*		
Hf	0.438	5.140	8.52%	*		
Th	0.071	10.950	0.65%	*		
Cr	2.828	564.000	0.50%	*		
Mn	33.941	428.000	7.93%	*		
Fe	0.863	6.910	12.49%			
Co	22.769	16.100	141.42%			
Ca	0.170	2.250	7.56%	*		
Sm	0.940	6.305	14.91%			
Yb	0.375	3.265	11.49%			

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Table 178. Per Cent Deviation Results - Chogha Mish Phase Red Ware, Gritty, Coarse, All, n=15

ELEMENT	STD. DEV.	MEAN	% DEV.		SAMPLE	SITE	
Na	0.205	1.637	12.52%		135	KS	10
K	0.264	2.130	12.39%		136	KS	10
Rb	6.751	84.107	8.03%	*	137	KS	10
Cs	0.590	5.137	11.49%		139	KS	13
Ba	188.532	536.133	35.17%		140	KS	17
Sc	1.983	28.573	6.94%	*	145	KS	108
La	2.530	35.347	7.16%	*	142	KS	33
Ce	4.525	77.473	5.84%	*	134	KS	4
Eu	0.070	1.655	4.23%	*	138	KS	12
Lu	0.034	0.593	5.73%	*	141	KS	19
Hf	0.513	5.825	8.81%	*	143	KS	36
Th	0.687	9.981	6.88%	*	146	KS	118
Cr	80.491	668.067	12.05%		147	KS	124
Mn	257.044	500.133	51.40%		148	KS	161
Fe	0.462	6.042	7.65%	*	150	KS	218
Co	2.416	29.067	8.31%	*			
Ca	2.257	3.956	57.05%				
Sm	1.258	6.216	20.24%				
Yb	0.267	3.293	8.11%	*			

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Table 179. Per Cent Deviation Results - Chogha Mish Phase Salmon Ware, Buff Slip, All, n=10

ELEMENT	STD. DEV.	MEAN	% DEV.	SAMPLE	SITE
Na	0.237	1.136	20.86%	247	KS 10
K	0.255	2.316	11.01%	248	KS 13
Rb	8.629	81.150	10.63%	249	KS 19
Cs	0.808	4.742	17.04%	250	KS 21
Ba	125.971	480.600	26.21%	254	KS 43
Sc	3.152	26.950	11.70%	255	KS 45
La	3.649	31.770	11.49%	263	KS 156
Ce	8.918	69.670	12.80%	266	KS 176
Eu	0.179	1.583	11.31%	268	KS 193
Lu	0.081	0.580	13.97%	252	KS 28
Hf	0.708	4.981	14.21%		
Th	1.248	9.265	13.47%		
Cr	123.254	496.500	24.82%		
Mn	222.867	665.500	33.49%		
Fe	0.673	6.204	10.85%		
Co	3.760	27.240	13.80%		
Ca	4.740	8.968	52.85%		
Sm	0.700	5.995	11.68%		
Yb	0.356	2.920	12.19%		

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Table 180. Per Cent Deviation Results - Chogha Mish Phase Salmon Ware, Buff Slip, West-North, n=5

ELEMENT	STD. DEV.	MEAN	% DEV.		SAMPLE	SITE
Na	0.279	1.216	22.94%		247	KS 10
K	0.290	2.362	12.28%		248	KS 13
Rb	4.244	86.320	4.92%	*	249	KS 19
Cs	0.604	5.104	11.83%		250	KS 21
Ba	153.433	452.400	33.92%		252	KS 28
Sc	1.539	28.060	5.48%	*		
La	2.791	32.360	8.62%	*		
Ce	5.184	70.620	7.34%	*		
Eu	0.154	1.592	9.67%	*		
Lu	0.022	0.611	3.60%	*		
Hf	0.573	4.946	11.59%			
Th	1.007	9.746	10.33%			
Cr	142.062	458.200	31.00%			
Mn	224.930	584.800	38.46%			
Fe	0.348	6.204	5.61%	*		
Co	1.553	27.320	5.68%	*		
Ca	4.064	9.122	44.55%			
Sm	0.531	6.112	8.69%	*		
Yb	0.244	3.002	8.13%	*		

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Table 181. Per Cent Deviation Results - Chogha Mish Phase Salmon Ware, Buff Slip, Center, n=2

ELEMENT	STD. DEV.	MEAN	% DEV.	SAMPLE	SITE
Na	0.255	1.050	24.29%	254	KS 43
K	0.325	2.170	14.98%	255	KS 45
Rb	8.344	72.400	11.52%		
Cs	1.322	4.165	31.74%		
Ba	143.543	482.500	29.75%		
Sc	6.010	23.350	25.74%		
La	6.435	28.250	22.78%		
Ce	18.809	62.500	30.09%		
Eu	0.332	1.465	22.66%		
Lu	0.086	0.440	19.55%		
Hf	0.905	4.360	20.76%		
Th	2.150	8.080	26.61%		
Cr	134.350	512.000	26.24%		
Mn	253.144	736.000	34.39%		
Fe	1.499	5.740	26.11%		
Co	6.788	25.100	27.04%		
Ca	5.098	12.795	39.84%		
Sm	1.336	5.295	25.23%		
Yb	0.601	2.675	22.47%		

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Table 182. Per Cent Deviation Results - Chogha Mish Phase Salmon Ware, Buff Slip, East-North, n=2

ELEMENT	STD. DEV.	MEAN	% DEV.		SAMPLE	SITE
Na	0.247	1.085	22.76%		263	KS 156
K	0.177	2.435	7.27%	*	266	KS 176
Rb	9.758	82.900	11.77%			
Cs	0.933	4.760	19.60%			
Ba	99.702	562.500	17.72%			
Sc	3.253	27.300	11.92%			
La	3.889	33.250	11.70%			
Ce	10.394	74.050	14.04%			
Eu	0.205	1.645	12.46%			
Lu	0.007	0.620	1.13%	*		
Hf	0.962	5.410	17.78%			
Th	0.912	9.555	9.54%	*		
Cr	140.007	532.000	26.32%			
Mn	292.742	823.000	35.57%			
Fe	0.785	6.545	11.99%			
Co	7.566	28.650	26.41%			
Ca	6.725	4.755	141.43%			
Sm	0.481	6.250	7.70%	*		
Yb	0.509	3.090	16.47%			

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Table 183. Per Cent Deviation Results - Chogha Mish Phase Salmon Ware, Red Slip, All, n=28

ELEMENT	STD. DEV.	MEAN	% DEV.		SAMPLE	SITE	
Na	0.272	1.412	19.40%		190	KS	8
K	0.282	2.610	10.80%		192	KS	13
Rb	10.335	87.821	11.77%		193	KS	20
Cs	0.774	5.113	15.14%		195	KS	17
Ba	303.249	575.500	52.69%		197	KS	21
Sc	2.848	29.946	9.51%	*	199	KS	24
La	7.267	33.721	21.55%		204	KS	38
Ce	7.368	78.079	9.44%	*	205	KS	38
Eu	0.170	1.757	9.68%	*	209	KS	45
Lu	0.065	0.592	10.98%		211	KS	65
Hf	0.663	5.368	12.35%		213	KS	71
Th	0.994	10.281	9.67%	*	225	KS	162
Cr	111.638	587.250	19.01%		187	KS	4
Mn	479.915	620.893	77.29%		188	KS	4
Fe	0.691	6.520	10.60%		191	KS	12
Co	6.247	27.850	22.43%		202	KS	35
Ca	1.029	6.702	15.35%		203	KS	36
Sm	0.600	6.581	9.12%	*	208	KS	42
Yb	0.340	3.256	10.44%		210	KS	50
					219	KS	108
					220	KS	112
					221	KS	113
					222	KS	118
					224	KS	154
					227	KS	176
					214	KS	73
					215	KS	74
					217	KS	105

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Table 184. Per Cent Deviation Results - Chogha Mish Phase Salmon Ware, Red Slip, West-North, n=9

ELEMENT	STD. DEV.	MEAN	% DEV.		SAMPLE	SITE	
Na	0.306	1.361	22.48%		190	KS	8
K	0.398	2.748	14.48%		192	KS	13
Rb	9.516	84.022	11.33%		193	KS	20
Cs	0.905	4.837	18.71%		195	KS	17
Ba	283.899	529.667	53.60%		197	KS	21
Sc	3.039	28.667	10.60%		199	KS	24
La	3.198	33.711	9.49%	*	213	KS	71
Ce	7.214	73.344	9.84%	*	191	KS	12
Eu	0.136	1.664	8.17%	*	202	KS	35
Lu	0.069	0.580	11.90%				
Hf	0.384	4.997	7.68%	*			
Th	1.044	9.847	10.60%				
Cr	57.001	518.889	10.99%				
Mn	94.153	587.000	16.04%				
Fe	0.495	6.318	7.83%	*			
Co	2.474	28.222	8.77%	*			
Ca	3.834	8.844	43.35%				
Sm	0.661	6.298	10.50%				
Yb	0.373	3.134	11.90%				

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Table 185. Per Cent Deviation Results - Chogha Mish Phase Salmon Ware, Red Slip, West-South, n=3

ELEMENT	STD. DEV.	MEAN	% DEV.		SAMPLE	SITE	
Na	0.095	1.317	7.21%	*	211	KS	65
K	0.270	2.563	10.53%		214	KS	73
Rb	6.603	87.833	7.52%	*	215	KS	74
Cs	0.688	5.523	12.46%				
Ba	111.099	506.000	21.96%				
Sc	1.834	30.133	6.09%	*			
La	2.237	36.633	6.11%	*			
Ce	3.927	79.867	4.92%	*			
Eu	0.126	1.807	6.97%	*			
Lu	0.005	0.580	0.86%	*			
Hf	0.544	5.293	10.28%				
Th	0.525	10.383	5.06%	*			
Cr	54.994	565.667	9.72%	*			
Mn	360.447	414.667	86.92%				
Fe	0.370	6.460	5.73%	*			
Co	2.957	27.533	10.74%				
Ca	5.290	6.100	86.72%				
Sm	0.442	6.603	6.69%	*			
Yb	0.339	3.193	10.62%				

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Table 186. Per Cent Deviation Results - Chogha Mish Phase Salmon Ware, Red Slip, Center, n=12

ELEMENT	STD. DEV.	MEAN	% DEV.		SAMPLE	SITE	
Na	0.276	1.427	19.34%		204	KS	38
K	0.207	2.558	8.09%	*	205	KS	38
Rb	10.237	92.650	11.05%		209	KS	45
Cs	0.704	5.258	13.39%		187	KS	4
Ba	188.621	565.500	33.35%		188	KS	4
Sc	3.000	31.025	9.67%	*	203	KS	36
La	10.687	32.758	32.62%		208	KS	42
Ce	6.562	81.350	8.07%	*	210	KS	50
Eu	0.188	1.810	10.39%		219	KS	108
Lu	0.078	0.607	12.85%		220	KS	112
Hf	0.755	5.606	13.47%		221	KS	113
Th	1.112	10.479	10.61%		222	KS	118
Cr	118.629	617.167	19.22%				
Mn	676.745	775.417	87.27%				
Fe	0.908	6.738	13.48%				
Co	9.182	27.708	33.14%				
Ca	3.865	5.767	67.02%				
Sm	0.526	6.828	7.70%	*			
Yb	0.330	3.367	9.80%	*			

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Table 187. Per Cent Deviation Results - Chogha Mish Phase Salmon Ware, Red Slip, Center, KS 4, n=2

ELEMENT	STD. DEV.	MEAN	% DEV.		SAMPLE	SITE	
Na	0.297	1.320	22.50%		187	KS	4
K	0.156	2.280	6.84%	*	188	KS	4
Rb	16.829	79.300	21.22%				
Cs	0.580	4.360	13.30%				
Ba	163.342	457.500	35.70%				
Sc	3.677	25.900	14.20%				
La	4.808	32.700	14.70%				
Ce	7.920	74.200	10.67%				
Eu	0.233	1.565	14.89%				
Lu	0.071	0.543	13.08%				
Hf	1.025	5.365	19.11%				
Th	1.549	9.305	16.65%				
Cr	127.279	628.000	20.27%				
Mn	278.600	561.000	49.66%				
Fe	0.375	5.325	7.04%	*			
Co	2.475	26.550	9.32%	*			
Ca	7.601	7.225	105.20%				
Sm	0.665	6.230	10.67%				
Yb	0.311	3.050	10.20%				

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Table 188. Per Cent Deviation Results - Chogha Mish Phase Salmon Ware, Red Slip, Center, KS 38, n=2

ELE-MENT	STD. DEV.	MEAN	% DEV.		SAM-PLE	SITE
Na	0.304	1.765	1.93%	*	204	KS 38
K	0.198	2.570	7.70%	*	205	KS 38
Rb	9.687	95.150	10.18%			
Cs	0.297	6.110	4.86%	*		
Ba	243.952	621.500	39.25%			
Sc	2.758	32.450	8.50%	*		
La	24.537	17.350	141.42%			
Ce	9.192	86.500	10.63%			
Eu	0.325	1.900	17.11%			
Lu	0.121	0.680	17.79%			
Hf	0.141	6.710	2.10%	*		
Th	1.344	11.550	11.64%			
Cr	121.622	775.000	15.69%			
Mn	81.317	408.500	19.91%			
Fe	0.820	6.220	13.18%			
Co	1.485	28.850	5.15%	*		
Ca	1.096	2.035	53.86%			
Sm	0.806	7.110	11.34%			
Yb	0.170	3.830	4.44%	*		

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Table 189. Per Cent Deviation Results - Chogha Mish Phase Salmon Ware, Red Slip, East-North, n=4

ELEMENT	STD. DEV.	MEAN	% DEV.		SAMPLE	SITE
Na	0.328	1.485	22.09%		225	KS 162
K	0.019	2.495	0.76%	*	227	KS 176
Rb	11.085	81.875	13.54%		217	KS 105
Cs	0.759	4.990	15.21%		224	KS 154
Ba	645.553	760.750	84.86%			
Sc	1.784	29.450	6.06%	*		
La	3.610	34.450	10.48%			
Ce	8.255	77.575	10.64%			
Eu	0.173	1.770	9.77%	*		
Lu	0.035	0.582	6.01%	*		
Hf	0.773	5.543	13.95%			
Th	0.645	10.590	6.09%	*		
Cr	152.426	667.500	22.84%			
Mn	263.993	388.250	68.00%			
Fe	0.421	6.365	6.61%	*		
Co	4.392	27.675	15.87%			
Ca	3.542	5.138	68.94%			
Sm	0.653	6.465	10.10%			
Yb	0.312	3.243	9.62%	*		

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Table 190. Per Cent Deviation Results - Chogha Mish Phase Salmon Ware, Dark Slip, All, n=9

ELEMENT	STD. DEV.	MEAN	% DEV.		SAMPLE	SITE
Na	0.245	1.380	17.75%		234	KS 13
K	0.366	2.483	14.74%		236	KS 21
Rb	9.493	87.685	10.83%		238	KS 38
Cs	0.662	5.079	13.03%		243	KS 121
Ba	200.533	547.850	36.60%		245	KS 239
Sc	3.108	29.530	10.52%		187	KS 4
La	3.038	35.230	8.62%	*	188	KS 4
Ce	7.042	77.655	9.07%	*	191	KS 12
Eu	0.185	1.731	10.69%		202	KS 35
Lu	0.080	0.606	13.20%		203	KS 36
Hf	0.574	5.483	10.47%		208	KS 42
Th	0.969	10.193	9.51%	*	210	KS 50
Cr	104.254	591.800	17.62%		219	KS 108
Mn	551.041	669.350	82.32%		220	KS 112
Fe	0.798	6.555	12.17%		221	KS 113
Co	7.311	28.250	25.88%		222	KS 118
Ca	3.692	5.952	62.03%		224	KS 154
Sm	0.561	6.623	8.47%	*	235	KS 20
Yb	0.359	3.211	11.18%		237	KS 36
					242	KS 112

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Table 191. Per Cent Deviation Results - Chogha Mish Phase Salmon Ware, Dark Slip, West-North, n=3

ELEMENT	STD. DEV.	MEAN	% DEV.		SAMPLE	SITE
Na	0.265	1.414	18.74%		234	KS 13
K	0.662	2.588	25.58%		236	KS 21
Rb	7.771	86.400	8.99%	*	191	KS 12
Cs	0.787	5.260	14.96%		202	KS 35
Ba	84.430	390.000	21.65%		235	KS 20
Sc	3.040	29.160	10.43%			
La	3.308	35.300	9.37%	*		
Ce	8.143	75.220	10.83%			
Eu	0.152	1.704	8.92%	*		
Lu	0.069	0.628	10.99%			
Hf	0.407	5.354	7.60%	*		
Th	1.201	10.060	11.94%			
Cr	87.202	595.800	14.64%			
Mn	116.704	500.600	23.31%			
Fe	0.497	6.386	7.78%	*		
Co	1.381	29.240	4.72%	*		
Ca	3.395	4.930	68.86%			
Sm	0.671	6.644	10.10%			
Yb	0.457	3.230	14.15%			

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Table 192. Per Cent Deviation Results - Chogha Mish Phase Salmon Ware, Dark Slip, Center, n=5

ELEMENT	STD. DEV.	MEAN	% DEV.		SAMPLE	SITE
Na	0.173	1.192	14.51%		237	KS 36
K	0.208	2.214	9.39%	*	239	KS 42
Rb	10.590	79.660	13.29%		242	KS 112
Cs	0.669	4.888	13.69%		238	KS 38
Ba	279.643	599.000	46.68%		243	KS 121
Sc	1.858	26.620	6.98%	*		
La	2.213	32.620	6.78%	*		
Ce	6.057	70.840	8.55%	*		
Eu	0.146	1.574	9.28%			
Lu	0.129	0.588	21.94%			
Hf	0.669	5.244	12.76%			
Th	0.453	9.550	4.74%	*		
Cr	130.302	525.200	24.81%			
Mn	139.468	589.200	23.67%			
Fe	0.669	6.096	10.97%			
Co	3.554	27.740	12.81%			
Ca	4.499	8.476	53.08%			
Sm	0.315	6.040	5.22%	*		
Yb	0.284	2.822	10.06%			

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Table 193. Per Cent Deviation Results - Period 12 Black-on-Buff Ware, All, n=92

ELEMENT	STD. DEV.	MEAN	% DEV.		SAMPLE	SITE	
Na	0.414	1.371	30.20%		426	KS	4
K	0.697	1.402	49.71%		861	KS	20
Rb	22.465	33.296	67.47%		862	KS	20
Cs	1.099	4.992	22.02%		863	KS	20
Ba	324.494	419.870	77.28%		864	KS	20
Sc	2.512	28.553	8.80%	*	865	KS	20
La	3.587	28.488	12.59%		867	KS	20
Ce	5.089	63.121	8.06%	*	868	KS	20
Eu	0.143	1.389	10.30%		869	KS	20
Lu	0.055	0.485	11.34%		870	KS	20
Hf	0.435	3.738	11.64%		871	KS	20
Th	0.818	9.120	8.97%	*	280	KS	13
Cr	54.575	308.196	17.71%		282	KS	28
Mn	162.400	983.376	16.51%		284	KS	54
Fe	0.680	6.868	9.90%	*	285	KS	65
Co	3.619	27.977	12.94%		287	KS	73
Ca	3.373	18.357	18.37%		289	KS	108
Sm	0.603	5.386	11.20%		292	KS	124
Yb	0.251	2.581	9.72%	*	293	KS	161
					295	KS	180
					296	KS	193
					297	KS	197
					298	KS	212
					299	KS	4
					300	KS	4
					304	KS	24

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Table 193 cont'd. Per Cent Deviation Results - Period 12 Black-on-Buff Ware, All, n=92

SAMPLE	SITE	
306	KS	65
308	KS	73
309	KS	74
311	KS	118
312	KS	156
316	KS	167
318	KS	168
321	KS	178
322	KS	212
325	KS	4
327	KS	12
328	KS	65
329	KS	73
330	KS	73
332	KS	106
333	KS	106
335	KS	108
336	KS	113
337	KS	118
338	KS	124
339	KS	124
340	KS	156
341	KS	161
342	KS	168
343	KS	168
345	KS	178
348	KS	4
350	KS	73
351	KS	106
354	KS	118
356	KS	124
358	KS	225
360	KS	4
362	KS	13

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Table 193 cont'd. Per Cent Deviation Results - Period 12 Black-on-Buff Ware, All, n=92

SAMPLE	SITE	
367	KS	65
368	KS	65
370	KS	73
372	KS	108
374	KS	124
376	KS	218
378	KS	13
379	KS	16
380	KS	73
381	KS	118
382	KS	124
384	KS	179
385	KS	180
386	KS	197
387	KS	212
388	KS	225
390	KS	124
392	KS	74
393	KS	74
394	KS	105
398	KS	124
401	KS	124
423	KS	197
424	KS	4
426	KS	4
950	KS	4
951	KS	1
366	KS	1
928	KS	45
929	KS	1
931	KS	1
932	KS	1

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Table 194. Per Cent Deviation Results - Period 12 Black-on-Buff Ware, West-North, n=17

ELEMENT	STD. DEV.	MEAN	% DEV.		SAMPLE	SITE
Na	0.422	1.246	33.87%		861	KS 20
K	0.657	1.669	39.36%		862	KS 20
Rb	24.399	45.294	53.87%		863	KS 20
Cs	1.293	5.076	25.47%		864	KS 20
Ba	215.822	386.882	55.78%		865	KS 20
Sc	2.867	28.747	9.97%	*	867	KS 20
La	2.337	29.082	8.04%	*	868	KS 20
Ce	7.082	63.776	11.10%		869	KS 20
Eu	0.168	1.401	11.99%		870	KS 20
Lu	0.050	0.520	9.62%	*	871	KS 20
Hf	0.407	4.002	10.17%		280	KS 13
Th	1.054	9.027	11.68%		282	KS 28
Cr	42.501	335.941	12.65%		304	KS 24
Mn	121.949	986.353	12.36%		327	KS 12
Fe	0.652	6.795	9.60%	*	362	KS 13
Co	2.462	28.876	8.53%	*	378	KS 13
Ca	2.379	17.194	13.84%		379	KS 16
Sm	0.872	5.034	17.32%			
Yb	0.250	2.705	9.24%	*		

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Table 195. Per Cent Deviation Results - Period 12 Black-on-Buff Ware, West-North, KS 13, n=3

ELEMENT	STD. DEV.	MEAN	% DEV.		SAMPLE	SITE
Na	0.194	0.961	20.19%		378	KS 13
K	0.414	1.717	24.11%		362	KS 13
Rb	19.750	51.733	38.18%		280	KS 13
Cs	0.732	5.963	12.28%			
Ba	291.898	465.333	62.73%			
Sc	0.666	28.767	2.32%	*		
La	0.208	28.933	0.72%	*		
Ce	1.082	63.200	1.71%	*		
Eu	0.044	1.410	3.12%	*		
Lu	0.008	0.508	1.57%	*		
Hf	0.186	3.817	4.87%	*		
Th	0.185	9.370	1.97%	*		
Cr	17.214	322.667	5.33%	*		
Mn	15.588	973.000	1.60%	*		
Fe	0.190	6.970	2.73%	*		
Co	2.346	28.667	8.18%	*		
Ca	0.964	17.000	5.67%	*		
Sm	0.110	5.457	2.02%	*		
Yb	0.045	2.753	1.63%	*		

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Table 196. Per Cent Deviation Results - Period 12 Black-on-Buff Ware, West-North, KS 20, n=10

ELEMENT	STD. DEV.	MEAN	% DEV.		SAMPLE	SITE
Na	0.479	1.335	35.88%		861	KS 20
K	0.817	1.743	46.87%		862	KS 20
Rb	28.766	47.230	60.91%		863	KS 20
Cs	1.566	4.858	32.24%		864	KS 20
Ba	118.627	281.900	42.08%		865	KS 20
Sc	3.591	28.360	12.66%		867	KS 20
La	3.055	29.000	10.53%		868	KS 20
Ce	8.988	62.550	14.37%		869	KS 20
Eu	0.203	1.359	14.94%		870	KS 20
Lu	0.057	0.538	10.59%		871	KS 20
Hf	0.504	4.092	12.32%			
Th	1.335	8.776	15.21%			
Cr	46.663	344.900	13.53%			
Mn	139.853	1023.600	13.66%			
Fe	0.785	6.632	11.84%			
Co	2.855	28.810	9.91%	*		
Ca	2.557	16.480	15.52%			
Sm	0.961	4.660	20.62%			
Yb	0.320	2.719	11.77%			

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Table 197. Per Cent Deviation Results - Period 12 Black-on-Buff Ware, West-South, All, n=16

ELE-MENT	STD. DEV.	MEAN	% DEV.		SAM-PLE	SITE
Na	0.398	1.153	34.52%		284	KS 54
K	0.674	1.764	38.21%		285	KS 65
Rb	22.545	48.163	46.81%		287	KS 73
Cs	1.202	5.041	23.84%		306	KS 65
Ba	565.401	742.125	76.19%		308	KS 73
Sc	2.802	28.313	9.90%	*	309	KS 74
La	1.762	29.006	6.07%	*	328	KS 65
Ce	4.225	63.788	6.62%	*	329	KS 73
Eu	0.124	1.397	8.88%	*	330	KS 73
Lu	0.055	0.467	11.78%		350	KS 73
Hf	0.355	3.831	9.27%	*	367	KS 65
Th	0.741	9.504	7.80%	*	368	KS 65
Cr	88.282	293.250	30.10%		370	KS 73
Mn	136.690	972.038	14.06%		380	KS 73
Fe	0.702	6.819	10.29%		392	KS 74
Co	4.407	26.544	16.60%		393	KS 74
Ca	1.401	18.675	7.50%	*		
Sm	0.322	5.511	5.84%	*		
Yb	0.276	2.594	10.64%			

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Table 198. Per Cent Deviation Results - Period 12 Black-on-Buff Ware, West-South, KS 65, n=5

ELE-MENT	STD. DEV.	MEAN	% DEV.		SAM-PLE	SITE
Na	0.552	1.138	48.51%		285	KS 65
K	1.099	1.784	61.60%		306	KS 65
Rb	24.261	47.260	51.34%		328	KS 65
Cs	1.893	4.882	38.78%		367	KS 65
Ba	722.797	1078.600	67.01%		368	KS 65
Sc	3.328	29.580	11.25%			
La	1.558	29.060	5.36%	*		
Ce	3.373	63.700	5.30%	*		
Eu	0.113	1.410	8.01%	*		
Lu	0.049	0.458	10.70%			
Hf	0.421	3.950	10.66%			
Th	0.700	9.920	7.06%	*		
Cr	160.266	272.600	58.79%			
Mn	21.147	890.520	2.37%	*		
Fe	0.823	7.176	11.47%			
Co	5.421	28.220	19.21%			
Ca	1.870	19.160	9.76%	*		
Sm	0.406	5.472	7.42%	*		
Yb	0.347	2.498	13.89%			

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Table 199. Per Cent Deviation Results - Period 12 Black-on-Buff Ware, West-South, KS 73, n=7

ELE-MENT	STD. DEV.	MEAN	% DEV.		SAM-PLE	SITE
Na	0.389	1.130	34.42%		287	KS 73
K	0.450	1.774	25.37%		308	KS 73
Rb	27.545	53.657	51.34%		329	KS 73
Cs	0.885	5.124	17.27%		330	KS 73
Ba	516.425	685.143	75.37%		350	KS 73
Sc	2.374	28.629	8.29%	*	370	KS 73
La	2.350	29.271	8.03%	*	380	KS 73
Ce	5.847	64.329	9.09%	*		
Eu	0.165	1.417	11.64%			
Lu	0.061	0.492	12.40%			
Hf	0.359	3.744	9.59%	*		
Th	0.722	9.496	7.60%	*		
Cr	24.737	315.286	7.85%	*		
Mn	180.085	1049.860	17.15%			
Fe	0.591	6.884	8.59%	*		
Co	3.071	27.429	11.20%			
Ca	1.182	18.243	6.48%	*		
Sm	0.345	5.513	6.26%	*		
Yb	0.293	2.623	11.17%			

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Table 200. Per Cent Deviation Results - Period 12 Black-on-Buff Ware, West-South, KS 74, n=3

ELEMENT	STD. DEV.	MEAN	% DEV.		SAMPLE	SITE
Na	0.327	1.253	26.10%		309	KS 74
K	0.542	1.837	29.50%		392	KS 74
Rb	9.214	37.767	24.40%		393	KS 74
Cs	0.989	4.893	20.21%			
Ba	201.607	465.333	43.33%			
Sc	1.308	25.300	5.17%	*		
La	1.021	28.467	3.59%	*		
Ce	2.346	62.633	3.75%	*		
Eu	0.021	1.347	1.56%	*		
Lu	0.039	0.447	8.72%	*		
Hf	0.370	3.863	9.58%	*		
Th	0.755	8.897	8.49%	*		
Cr	45.640	284.000	16.07%			
Mn	23.812	952.000	2.50%	*		
Fe	0.258	6.047	4.27%	*		
Co	1.682	21.100	7.97%	*		
Ca	1.380	19.067	7.24%	*		
Sm	0.196	5.467	3.59%	*		
Yb	0.150	2.710	5.54%	*		

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Table 201. Per Cent Deviation Results - Period 12 Black-on-Buff Ware, Center, All, n=32

ELEMENT	STD. DEV.	MEAN	% DEV.		SAMPLE	SITE	
Na	0.422	1.576	26.78%		425	KS	4
K	0.736	1.307	56.31%		289	KS	108
Rb	17.666	25.008	70.64%		292	KS	124
Cs	0.978	4.848	20.17%		299	KS	4
Ba	164.317	311.125	52.81%		300	KS	4
Sc	2.477	28.125	8.81%	*	311	KS	118
La	5.317	27.622	19.25%		325	KS	4
Ce	4.821	61.631	7.82%	*	335	KS	108
Eu	0.152	1.398	10.87%		336	KS	113
Lu	0.051	0.480	10.63%		337	KS	118
Hf	0.483	3.541	13.64%		338	KS	124
Th	0.833	8.920	9.34%	*	339	KS	124
Cr	47.009	308.531	15.24%		348	KS	4
Mn	227.045	1004.220	22.61%		354	KS	118
Fe	0.591	6.766	8.73%	*	356	KS	124
Co	3.998	28.253	14.15%		360	KS	4
Ca	2.503	18.047	13.87%		372	KS	108
Sm	0.614	5.471	11.22%		374	KS	124
Yb	0.216	2.545	8.49%	*	381	KS	118
					382	KS	124
					390	KS	124
					398	KS	124
					423	KS	4
					424	KS	4
					426	KS	4
					950	KS	1
					951	KS	1
					366	KS	45
					928	KS	1
					929	KS	1
					931	KS	1
					932	KS	1

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Table 202. Per Cent Deviation Results - Period 12 Black-on-Buff Ware, Center, KS 1, n=6

ELEMENT	STD. DEV.	MEAN	% DEV.		SAMPLE	SITE	
Na	0.249	1.800	13.83%		928	KS	1
K	0.766	1.529	50.10%		929	KS	1
Rb	21.450	25.543	83.98%		931	KS	1
Cs	1.305	4.548	28.69%		932	KS	1
Ba	34.326	207.333	16.56%		950	KS	1
Sc	2.276	27.667	8.23%	*	951	KS	1
La	1.748	28.850	6.06%	*			
Ce	2.704	57.817	4.68%	*			
Eu	0.162	1.557	10.40%				
Lu	0.025	0.484	5.17%	*			
Hf	0.247	2.783	8.88%	*			
Th	0.875	8.132	10.76%				
Cr	29.546	359.167	8.23%	*			
Mn	147.639	988.000	14.94%				
Fe	0.591	6.683	8.84%	*			
Co	5.185	28.117	18.44%				
Ca	1.621	16.933	9.57%	*			
Sm	0.955	6.103	15.65%				
Yb	0.197	2.477	7.95%	*			

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Table 203. Per Cent Deviation Results - Period 12 Black-on-Buff Ware, Center, KS 4, n=9

ELEMENT	STD. DEV.	MEAN	% DEV.		SAMPLE	SITE	
Na	0.256	1.366	18.74%		425	KS	4
K	0.817	1.284	63.63%		299	KS	4
Rb	15.046	22.900	65.70%		300	KS	4
Cs	0.986	4.793	20.57%		325	KS	4
Ba	70.431	275.000	25.61%		348	KS	4
Sc	2.366	27.411	8.63%	*	360	KS	4
La	1.584	27.367	5.79%	*	423	KS	4
Ce	4.960	61.144	8.11%	*	424	KS	4
Eu	0.109	1.317	8.28%	*	426	KS	4
Lu	0.050	0.462	10.82%				
Hf	0.259	3.638	7.12%	*			
Th	0.755	8.960	8.43%	*			
Cr	35.826	284.000	12.61%				
Mn	147.757	1069.000	13.82%				
Fe	0.566	6.592	8.59%	*			
Co	3.514	28.900	12.16%				
Ca	2.030	19.133	10.61%				
Sm	0.412	5.202	7.92%	*			
Yb	0.214	2.483	8.62%	*			

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Table 204. Per Cent Deviation Results - Period 12 Black-on-Buff Ware, Center, KS 108, n=3

ELEMENT	STD. DEV.	MEAN	% DEV.		SAMPLE	SITE
Na	0.187	1.037	18.03%		289	KS 108
K	1.235	1.429	86.42%		335	KS 108
Rb	44.981	39.467	113.97%		372	KS 108
Cs	0.334	5.160	6.47%	*		
Ba	114.177	464.333	24.59%			
Sc	1.473	27.100	5.44%	*		
La	2.551	28.000	9.11%	*		
Ce	7.974	62.067	12.85%			
Eu	0.089	1.350	6.59%	*		
Lu	0.040	0.531	7.53%	*		
Hf	0.505	3.647	13.85%			
Th	0.776	9.030	8.59%	*		
Cr	58.518	284.667	20.56%			
Mn	693.278	1172.330	59.14%			
Fe	0.401	6.513	6.16%	*		
Co	2.055	28.033	7.33%	*		
Ca	5.900	17.733	33.27%			
Sm	0.537	5.300	10.13%			
Yb	0.413	2.470	16.72%			

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Table 205. Per Cent Deviation Results - Period 12 Black-on-Buff Ware, Center, KS 118, n=4

ELEMENT	STD. DEV.	MEAN	% DEV.		SAMPLE	SITE
Na	0.560	2.003	27.96%		311	KS 118
K	0.152	1.116	13.62%		337	KS 118
Rb	7.376	17.850	41.32%		354	KS 118
Cs	0.477	4.688	10.17%		381	KS 118
Ba	291.700	440.250	66.26%			
Sc	2.102	28.850	7.29%	*		
La	1.268	29.300	4.33%	*		
Ce	3.612	64.425	5.61%	*		
Eu	0.073	1.395	5.23%	*		
Lu	0.060	0.511	11.74%			
Hf	0.522	3.933	13.27%			
Th	0.523	9.388	5.57%	*		
Cr	42.500	308.250	13.79%			
Mn	93.154	856.750	10.87%			
Fe	0.516	6.975	7.40%	*		
Co	2.813	25.200	11.16%			
Ca	1.046	17.100	6.12%	*		
Sm	0.303	5.480	5.53%	*		
Yb	0.159	2.620	6.07%	*		

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Table 206. Per Cent Deviation Results - Period 12 Black-on-Buff Ware, Center, KS 124, n=8

ELEMENT	STD. DEV.	MEAN	% DEV.		SAMPLE	SITE
Na	0.392	1.690	23.20%		292	KS 124
K	0.770	1.135	67.84%		338	KS 124
Rb	6.552	24.738	26.49%		339	KS 124
Cs	1.219	5.175	23.56%		356	KS 124
Ba	201.265	308.500	65.24%		374	KS 124
Sc	2.746	29.775	9.22%	*	382	KS 124
La	1.352	29.425	4.59%	*	390	KS 124
Ce	3.827	64.100	5.97%	*	398	KS 124
Eu	0.156	1.434	10.88%			
Lu	0.056	0.475	11.79%			
Hf	0.231	3.788	6.10%	*		
Th	0.694	9.339	7.43%	*		
Cr	49.144	314.375	15.63%			
Mn	84.674	997.500	8.49%	*		
Fe	0.630	7.126	8.84%	*		
Co	3.997	30.263	13.21%			
Ca	2.137	17.550	12.18%			
Sm	0.383	5.503	6.96%	*		
Yb	0.103	2.701	3.81%	*		

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Table 207. Per Cent Deviation Results - Period 12 Black-on-Buff Ware, East-North, All, n=18

ELEMENT	STD. DEV.	MEAN	% DEV.		SAMPLE	SITE
Na	0.270	1.261	21.41%		293	KS 161
K	0.320	1.106	28.93%		295	KS 180
Rb	17.290	24.500	70.57%		312	KS 156
Cs	1.183	4.976	23.77%		316	KS 167
Ba	328.166	378.444	86.71%		318	KS 168
Sc	1.655	29.628	5.59%	*	321	KS 178
La	2.484	29.144	8.52%	*	332	KS 106
Ce	4.115	65.544	6.28%	*	333	KS 106
Eu	0.139	1.393	9.98%	*	340	KS 156
Lu	0.063	0.485	12.99%		341	KS 161
Hf	0.342	3.783	9.04%	*	342	KS 168
Th	0.599	9.250	6.48%	*	343	KS 168
Cr	39.718	301.333	13.18%		345	KS 178
Mn	109.039	977.444	11.16%		351	KS 106
Fe	0.801	7.239	11.07%		376	KS 218
Co	3.387	28.489	11.89%		384	KS 179
Ca	6.131	19.522	31.41%		385	KS 180
Sm	0.486	5.522	8.80%	*	394	KS 105
Yb	0.278	2.566	10.83%			

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Table 208. Per Cent Deviation Results - Period 12 Black-on-Buff Ware, East-North, KS 106, n=3

ELEMENT	STD. DEV.	MEAN	% DEV.		SAMPLE	SITE
Na	0.184	1.403	13.11%		332	KS 106
K	0.086	0.821	10.48%		333	KS 106
Rb	11.096	11.633	95.38%		351	KS 106
Cs	0.613	5.127	11.96%			
Ba	52.444	168.333	31.15%			
Sc	2.787	29.100	9.58%	*		
La	2.715	28.167	9.64%	*		
Ce	5.265	62.867	8.37%	*		
Eu	0.202	1.290	15.66%			
Lu	0.020	0.439	4.56%	*		
Hf	0.375	3.477	10.79%			
Th	0.114	9.060	1.26%	*		
Cr	55.429	277.667	19.96%			
Mn	55.501	893.333	6.21%	*		
Fe	0.704	6.940	10.14%			
Co	2.483	27.567	9.01%	*		
Ca	0.819	18.400	4.45%	*		
Sm	0.580	5.230	11.09%			
Yb	0.215	2.447	8.79%	*		

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Table 209. Per Cent Deviation Results - Period 12 Black-on-Buff Ware, East-North, KS 156, n=2

ELEMENT	STD. DEV.	MEAN	% DEV.		SAMPLE	SITE
Na	0.344	0.987	34.85%		312	KS 156
K	0.240	1.700	14.12%		340	KS 156
Rb	10.182	52.300	19.47%			
Cs	1.025	5.505	18.62%			
Ba	289.207	875.500	33.03%			
Sc	0.212	28.650	0.74%	*		
La	3.111	28.900	10.76%			
Ce	4.455	66.650	6.68%	*		
Eu	0.071	1.430	4.97%	*		
Lu	0.084	0.553	15.19%			
Hf	0.544	4.015	13.55%			
Th	1.563	9.595	16.29%			
Cr	55.154	334.000	16.51%			
Mn	152.735	972.000	15.71%			
Fe	0.064	6.885	0.93%	*		
Co	2.404	25.300	9.50%	*		
Ca	0.071	18.350	0.39%	*		
Sm	0.849	5.670	14.97%			
Yb	0.417	2.585	16.13%			

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Table 210. Per Cent Deviation Results - Period 12 Black-on-Buff Ware, East-North, KS 161, n=2

ELEMENT	STD. DEV.	MEAN	% DEV.		SAMPLE	SITE
Na	0.191	1.215	15.72%		293	KS 161
K	0.024	0.983	2.44%	*	341	KS 161
Rb	20.365	14.400	141.42%			
Cs	0.735	5.160	14.24%			
Ba	773.575	753.000	102.73%			
Sc	2.333	29.850	7.82%	*		
La	1.768	28.050	6.30%	*		
Ce	0.990	68.200	1.45%	*		
Eu	0.028	1.290	2.17%	*		
Lu	0.052	0.449	11.58%			
Hf	0.071	3.930	1.81%	*		
Th	0.085	9.360	0.91%	*		
Cr	28.284	308.000	9.18%	*		
Mn	76.368	1006.000	7.59%	*		
Fe	0.573	7.185	7.97%	*		
Co	4.950	29.500	16.78%	*		
Ca	1.344	17.950	7.49%	*		
Sm	0.021	5.135	0.41%	*		
Yb	0.127	2.220	5.72%	*		

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Table 211. Per Cent Deviation Results - Period 12 Black-on-Buff Ware, East-North, KS 168, n=3

ELEMENT	STD. DEV.	MEAN	% DEV.		SAMPLE	SITE
Na	0.265	1.273	20.82%		318	KS 168
K	0.135	0.920	14.67%		342	KS 168
Rb	4.603	17.100	26.92%		343	KS 168
Cs	0.993	4.603	21.57%			
Ba	84.032	297.667	28.23%			
Sc	2.050	29.767	6.89%	*		
La	1.620	28.067	5.77%	*		
Ce	6.458	64.467	10.02%			
Eu	0.101	1.430	7.06%	*		
Lu	0.019	0.446	4.26%	*		
Hf	0.319	3.513	9.08%	*		
Th	0.741	8.960	8.27%	*		
Cr	51.984	309.333	16.81%			
Mn	158.450	1022.670	15.49%			
Fe	0.505	7.183	7.03%	*		
Co	3.508	31.667	11.08%			
Ca	0.924	17.667	5.23%	*		
Sm	0.446	5.490	8.12%	*		
Yb	0.421	2.727	15.44%			

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Table 212. Per Cent Deviation Results - Period 12 Black-on-Buff Ware, East-North, KS 180, n=2

ELE-MENT	STD. DEV.	MEAN	% DEV.		SAM-PLE	SITE
Na	0.429	1.077	39.83%		295	KS 180
K	0.561	1.233	45.50%		385	KS 180
Rb	4.596	35.950	12.78%			
Cs	0.573	5.215	10.99%			
Ba	36.770	247.000	14.89%			
Sc	1.485	31.550	4.71%	*		
La	1.909	29.650	6.44%	*		
Ce	3.182	68.350	4.66%	*		
Eu	0.163	1.465	11.13%			
Lu	0.013	0.452	2.88%	*		
Hf	0.057	4.030	1.41%	*		
Th	0.127	9.500	1.34%	*		
Cr	24.749	313.500	7.89%	*		
Mn	60.104	1007.500	5.97%	*		
Fe	0.460	7.595	6.06%	*		
Co	2.404	31.200	7.71%	*		
Ca	1.697	19.000	8.93%	*		
Sm	0.354	5.650	6.27%	*		
Yb	0.141	2.460	5.73%	*		

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Table 213. Per Cent Deviation Results - Period 12 Black-on-Buff Ware, East-South, All, n=7

ELE-MENT	STD. DEV.	MEAN	% DEV.		SAM-PLE	SITE
Na	0.347	1.449	23.95%		296	KS 193
K	0.932	1.121	83.14%		297	KS 197
Rb	21.760	28.871	75.37%		298	KS 212
Cs	1.005	5.184	19.39%		322	KS 212
Ba	241.052	380.571	63.34%		386	KS 197
Sc	2.854	27.757	10.28%		387	KS 212
La	1.410	28.043	5.03%	*	401	KS 197
Ce	2.884	60.957	4.73%	*		
Eu	0.082	1.284	6.39%	*		
Lu	0.054	0.466	11.59%			
Hf	0.325	3.637	8.94%	*		
Th	0.729	9.034	8.07%	*		
Cr	40.569	292.143	13.89%			
Mn	73.763	950.000	7.76%	*		
Fe	0.668	6.677	10.00%			
Co	2.303	26.786	8.60%	*		
Ca	1.678	19.343	8.67%	*		
Sm	0.301	5.261	5.72%	*		
Yb	0.169	2.540	6.65%	*		

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Table 214. Per Cent Deviation Results - Period 12 Black-on-Buff Ware, East-South, KS 197, n=3

ELEMENT	STD. DEV.	MEAN	% DEV.		SAMPLE	SITE
Na	0.332	1.369	24.25%		297	KS 197
K	1.429	1.506	94.89%		386	KS 197
Rb	35.785	32.600	109.77%		401	KS 197
Cs	1.690	5.060	33.40%			
Ba	114.771	253.333	45.30%			
Sc	3.837	26.733	14.35%			
La	0.902	27.867	3.24%	*		
Ce	2.996	59.333	5.05%	*		
Eu	0.015	1.213	1.24%	*		
Lu	0.004	0.456	0.88%	*		
Hf	0.309	3.537	8.74%	*		
Th	0.839	8.577	9.78%	*		
Cr	66.641	298.000	22.36%			
Mn	37.403	972.000	3.85%	*		
Fe	0.892	6.437	13.86%			
Co	2.972	26.300	11.30%			
Ca	2.022	19.000	10.64%			
Sm	0.114	5.080	2.24%	*		
Yb	0.166	2.500	6.64%	*		

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Table 215. Per Cent Deviation Results - Period 12 Black-on-Buff Ware, East-South, KS 212, n=3

ELEMENT	STD. DEV.	MEAN	% DEV.		SAMPLE	SITE
Na	0.244	1.680	14.52%		298	KS 212
K	0.417	0.814	51.23%		322	KS 212
Rb	9.973	25.267	39.47%		387	KS 212
Cs	0.045	5.427	0.83%	*		
Ba	168.423	353.333	47.67%			
Sc	1.539	29.400	5.23%	*		
La	1.724	28.767	5.99%	*		
Ce	2.303	62.967	3.66%	*		
Eu	0.062	1.360	4.56%	*		
Lu	0.080	0.491	16.29%			
Hf	0.161	3.880	4.15%	*		
Th	0.308	9.580	3.22%	*		
Cr	18.520	291.000	6.36%	*		
Mn	107.002	952.667	11.23%			
Fe	0.308	7.080	4.35%	*		
Co	2.250	27.633	8.14%	*		
Ca	1.952	19.400	10.06%			
Sm	0.331	5.500	6.02%	*		
Yb	0.147	2.497	5.89%	*		

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Table 216. Per Cent Deviation Results - Period 12 Black-on-Buff Ware, Cylindrical Bowl, Band and Dots, All, n=11

ELEMENT	STD. DEV.	MEAN	% DEV.		SAMPLE	SITE	
Na	0.350	1.400	25.00%		360	KS	4
K	0.553	1.297	42.64%		362	KS	13
Rb	13.672	25.078	54.52%		367	KS	65
Cs	1.091	4.907	22.23%		368	KS	65
Ba	621.951	562.273	110.61%		370	KS	73
Sc	3.483	27.664	12.59%		372	KS	108
La	8.556	25.282	33.84%		374	KS	124
Ce	4.634	59.173	7.83%	*	376	KS	218
Eu	0.108	1.342	8.05%	*	390	KS	124
Lu	0.062	0.466	13.30%		951	KS	1
Hf	0.522	3.623	14.41%		366	KS	45
Th	1.056	8.877	11.90%				
Cr	44.789	312.727	14.32%				
Mn	159.431	914.546	17.43%				
Fe	0.860	6.636	12.96%				
Co	4.215	27.391	15.39%				
Ca	2.064	19.618	10.52%				
Sm	0.637	5.309	12.00%				
Yb	0.245	2.473	9.91%	*			

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Table 217. Per Cent Deviation Results - Susa A Red Wares, All, n=62

ELEMENT	STD. DEV.	MEAN	% DEV.
Na	0.280	1.105	25.34%
K	0.374	2.330	16.05%
Rb	16.383	80.826	20.27%
Cs	0.975	4.685	20.81%
Ba	222.623	556.210	40.02%
Sc	4.215	28.044	15.03%
La	5.185	33.585	15.44%
Ce	11.917	74.339	16.03%
Eu	0.295	1.666	17.71%
Lu	0.119	0.560	21.25%
Hf	0.900	5.079	17.72%
Th	1.413	9.613	14.70%
Cr	163.875	501.161	32.70%
Mn	249.543	656.936	37.99%
Fe	0.923	6.498	14.20%
Co	8.314	29.252	28.42%
Ca	5.513	7.587	72.66%
Sm	0.961	6.315	15.22%
Yb	0.451	3.015	14.96%

SAMPLE	SITE	SAMPLE	SITE	SAMPLE	SITE
092	KS 4	149	KS 204	180	KS 4
093	KS 6	152	KS 40	181	KS 101
099	KS 165	153	KS 41	182	KS 113
103	KS 22	155	KS 49	184	KS 160
109	KS 50	158	KS 155	185	KS 186
110	KS 64	159	KS 157	189	KS 6
111	KS 66	163	KS 182	198	KS 22
115	KS 101	164	KS 182	200	KS 28
116	KS 106	167	KS 215	216	KS 101
123	KS 157	170	KS 101	218	KS 106
124	KS 160	171	KS 105	226	KS 174
128	KS 204	175	KS 2	228	KS 186
129	KS 215	176	KS 4	229	KS 204
130	KS 238	177	KS 13	231	KS 239
132	KS 240	178	KS 17	251	KS 22
133	KS 274	179	KS 33	253	KS 29
				257	KS 64
				258	KS 66
				259	KS 66
				261	KS 106
				262	KS 112
				264	KS 157
				265	KS 174
				267	KS 178
				269	KS 197
				270	KS 215
				272	KS 269
				274	KS 274
				276	KS 4
				278	KS 174

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Table 218. Per Cent Deviation Results - Susa A Red Wares, West-North, n=8

ELEMENT	STD. DEV.	MEAN	% DEV.		SAMPLE	SITE
Na	0.224	1.250	17.92%		103	KS 22
K	0.290	2.560	11.33%		177	KS 13
Rb	13.151	88.925	14.79%		178	KS 17
Cs	1.029	5.310	19.38%		179	KS 33
Ba	133.104	482.750	27.57%		198	KS 22
Sc	3.860	29.238	13.20%		200	KS 28
La	5.000	35.125	14.23%		251	KS 22
Ce	10.547	78.288	13.47%		253	KS 29
Eu	0.209	1.704	12.27%			
Lu	0.082	0.599	13.69%			
Hf	0.752	5.366	14.01%			
Th	1.644	10.560	15.57%			
Cr	180.888	558.000	32.42%			
Mn	263.897	609.500	43.30%			
Fe	0.619	6.350	9.75%	*		
Co	5.867	29.350	19.99%			
Ca	5.841	7.988	73.12%			
Sm	0.876	6.578	13.32%			
Yb	0.580	3.200	18.12%			

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Table 219. Per Cent Deviation Results - Susa A Red Wares, West-North, KS 22, n=8

ELE-MENT	STD. DEV.	MEAN	% DEV.		SAM-PLE	SITE
Na	0.267	1.350	19.78%		103	KS 22
K	0.080	2.447	3.27%	*	198	KS 22
Rb	14.213	88.367	16.08%		251	KS 22
Cs	0.560	5.230	10.71%			
Ba	155.653	582.000	26.74%			
Sc	3.750	28.633	13.10%			
La	5.551	36.200	15.33%			
Ce	13.879	82.267	16.87%			
Eu	0.266	1.723	15.44%			
Lu	0.076	0.628	12.10%			
Hf	0.363	5.877	6.18%	*		
Th	1.816	10.323	17.59%			
Cr	191.056	654.667	29.18%			
Mn	319.877	629.333	50.83%			
Fe	0.096	6.180	1.55%	*		
Co	5.671	27.233	20.82%			
Ca	6.817	7.280	93.64%			
Sm	0.995	6.947	14.32%			
Yb	0.741	3.213	23.06%			

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Table 220. Per Cent Deviation Results - Susa A Red Wares, West-South, All, n=8

ELEMENT	STD. DEV.	MEAN	% DEV.	SAMPLE	SITE
Na	0.316	1.113	28.39%	110	KS 64
K	0.423	2.453	17.24%	111	KS 66
Rb	25.419	75.275	33.77%	133	KS 274
Cs	1.070	4.295	24.91%	257	KS 64
Ba	191.222	570.875	33.50%	258	KS 66
Sc	5.301	26.038	20.36%	259	KS 66
La	6.261	31.650	19.78%	272	KS 269
Ce	13.618	69.813	19.51%	274	KS 274
Eu	0.335	1.570	21.34%		
Lu	0.096	0.531	18.08%		
Hf	1.029	4.974	20.69%		
Th	1.643	9.104	18.05%		
Cr	208.207	478.750	43.49%		
Mn	180.303	701.250	25.71%		
Fe	1.239	6.299	19.67%		
Co	10.608	23.038	46.05%		
Ca	6.185	8.226	75.19%		
Sm	1.077	5.951	18.10%		
Yb	0.480	2.808	17.09%		

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Table 221. Per Cent Deviation Results - Susa A Red Wares, West-South, KS 64 , n=2

ELEMENT	STD. DEV.	MEAN	% DEV.		SAMPLE	SITE
Na	0.582	1.199	48.54%		110	KS 64
K	0.283	2.420	11.69%		257	KS 64
Rb	22.910	53.800	42.58%			
Cs	1.061	3.470	30.58%			
Ba	26.163	424.500	6.16%	*		
Sc	5.515	23.000	23.98%			
La	7.920	30.700	25.80%			
Ce	16.900	66.450	25.43%			
Eu	0.453	1.570	28.85%			
Lu	0.117	0.484	24.17%			
Hf	1.329	4.740	28.04%			
Th	2.312	8.315	27.81%			
Cr	127.986	461.500	27.73%			
Mn	194.454	677.500	28.70%			
Fe	1.457	5.630	25.88%			
Co	4.455	24.550	18.15%			
Ca	9.270	14.945	62.03%			
Sm	1.358	5.820	23.33%			
Yb	0.156	2.810	5.55%	*		

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Table 222. Per Cent Deviation Results - Susa A Red Wares, West-South, KS 66 , n=3

ELE-MENT	STD. DEV.	MEAN	% DEV.	SAM-PLE	SITE
Na	0.206	1.163	17.71%	111	KS 66
K	0.350	2.393	14.63%	258	KS 66
Rb	31.939	73.700	43.34%	259	KS 66
Cs	1.200	4.077	29.43%		
Ba	224.729	687.000	32.71%		
Sc	7.814	27.167	28.76%		
La	9.201	32.667	28.17%		
Ce	21.076	70.900	29.73%		
Eu	0.471	1.597	29.49%		
Lu	0.143	0.542	26.38%		
Hf	1.530	5.060	30.24%		
Th	2.372	9.263	25.61%		
Cr	207.082	474.000	43.69%		
Mn	198.653	717.000	27.71%		
Fe	1.754	6.497	27.00%		
Co	7.559	28.833	26.22%		
Ca	5.154	5.627	91.59%		
Sm	1.659	6.070	27.33%		
Yb	0.777	2.823	27.52%		

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Table 223. Per Cent Deviation Results - Susa A Red Wares, West-South, KS 274 , n=2

ELE-MENT	STD. DEV.	MEAN	% DEV.		SAM-PLE	SITE
Na	0.226	1.170	19.32%		133	KS 274
K	0.290	2.165	13.39%		274	KS 274
Rb	12.374	86.750	14.26%			
Cs	0.601	4.815	12.48%			
Ba	194.454	625.500	31.09%			
Sc	4.101	27.600	14.86%			
La	6.010	31.650	18.99%			
Ce	4.596	74.450	6.17%	*		
Eu	0.354	1.580	22.41%			
Lu	0.045	0.532	8.46%	*		
Hf	0.071	5.410	1.31%	*		
Th	0.552	9.260	5.96%	*		
Cr	162.635	665.000	24.46%			
Mn	327.390	718.500	45.57%			
Fe	0.976	6.780	14.40%			
Co	19.092	13.500	141.42%			
Ca	2.157	5.645	38.21%			
Sm	0.735	6.080	12.09%			
Yb	0.615	2.765	22.24%			

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Table 224. Per Cent Deviation Results - Susa A Red Wares, Far West, All, n=3

ELEMENT	STD. DEV.	MEAN	% DEV.		SAMPLE	SITE
Na	0.340	0.961	35.38%		130	KS 238
K	0.661	2.637	25.07%		132	KS 240
Rb	13.497	76.700	17.60%		231	KS 239
Cs	0.956	4.473	21.37%			
Ba	271.379	596.667	45.48%			
Sc	3.495	25.567	13.67%			
La	5.212	28.900	18.03%			
Ce	14.701	63.000	23.33%			
Eu	0.271	1.353	20.03%			
Lu	0.070	0.500	14.00%			
Hf	1.334	4.213	31.66%			
Th	1.743	8.863	19.67%			
Cr	115.418	349.333	33.04%			
Mn	155.359	780.333	19.91%			
Fe	0.660	5.860	11.26%			
Co	0.833	25.933	3.21%	*		
Ca	4.832	12.897	37.47%			
Sm	1.007	5.420	18.58%			
Yb	0.561	2.840	19.75%			

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Table 225. Per Cent Deviation Results - Susa A Red Wares, Center, All, n=13

ELEMENT	STD. DEV.	MEAN	% DEV.		SAMPLE	SITE	
Na	0.147	1.097	13.40%		092	KS	4
K	0.287	2.105	13.63%		093	KS	6
Rb	15.058	76.477	19.69%		109	KS	50
Cs	0.681	4.315	15.78%		152	KS	40
Ba	142.862	555.154	25.73%		153	KS	41
Sc	3.141	27.700	11.34%		155	KS	49
La	4.503	33.438	13.47%		175	KS	2
Ce	10.229	73.969	13.83%		176	KS	4
Eu	0.303	1.705	17.77%		180	KS	4
Lu	0.081	0.566	14.31%		182	KS	113
Hf	0.774	5.162	14.99%		189	KS	6
Th	0.898	9.368	9.59%	*	262	KS	112
Cr	106.045	524.615	20.21%		276	KS	4
Mn	123.902	562.615	22.02%				
Fe	0.739	6.532	11.31%				
Co	4.032	30.569	13.19%				
Ca	4.362	6.740	64.72%				
Sm	0.839	6.265	13.39%				
Yb	0.469	2.985	15.71%				

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Table 226. Per Cent Deviation Results - Susa A Red Wares, Center, KS 4, n=4

ELEMENT	STD. DEV.	MEAN	% DEV.		SAMPLE	SITE
Na	0.038	0.997	3.81%	*	092	KS 4
K	0.177	1.920	9.22%	*	176	KS 4
Rb	14.005	81.125	17.26%		180	KS 4
Cs	0.683	4.395	15.54%		276	KS 4
Ba	163.367	636.750	25.66%			
Sc	1.350	30.475	4.43%	*		
La	2.186	36.650	5.96%	*		
Ce	5.459	79.000	6.91%	*		
Eu	0.300	1.973	15.21%			
Lu	0.055	0.582	9.45%	*		
Hf	0.213	5.193	4.10%	*		
Th	1.044	9.688	10.78%			
Cr	36.810	522.500	7.04%	*		
Mn	42.740	492.000	8.69%	*		
Fe	0.271	7.233	3.75%	*		
Co	2.967	33.350	8.90%	*		
Ca	1.592	5.448	29.22%			
Sm	0.305	6.878	4.43%	*		
Yb	0.268	3.235	8.28%	*		

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Table 227. Per Cent Deviation Results - Susa A Red Wares, Center, KS 6, n=4

ELE-MENT	STD. DEV.	MEAN	% DEV.	SAM-PLE	SITE
Na	0.014	1.230	1.14% *	093	KS 6
K	0.057	2.330	2.45% *	189	KS 6
Rb	35.214	75.100	46.89%		
Cs	0.346	4.635	7.46% *		
Ba	40.305	486.500	8.28% *		
Sc	2.687	27.900	9.63% *		
La	1.061	33.450	3.17% *		
Ce	2.404	73.800	3.26% *		
Eu	0.064	1.665	3.84% *		
Lu	0.021	0.562	3.74% *		
Hf	0.205	5.295	3.87% *		
Th	0.368	9.840	3.74% *		
Cr	65.054	531.000	12.25%		
Mn	67.175	656.500	10.23%		
Fe	0.219	6.355	3.45% *		
Co	0.354	30.350	1.17% *		
Ca	0.735	7.850	9.36% *		
Sm	0.233	6.385	3.65% *		
Yb	0.141	2.930	4.81% *		

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Table 228. Per Cent Deviation Results - Susa A Red Wares, East-North, All, n=21

ELEMENT	STD. DEV.	MEAN	% DEV.	SAMPLE	SITE
Na	0.348	1.045	33.30%	099	KS 165
K	0.332	2.299	14.44%	115	KS 101
Rb	16.640	83.538	19.92%	116	KS 106
Cs	1.044	4.951	21.09%	123	KS 157
Ba	301.712	630.048	47.89%	124	KS 160
Sc	4.866	28.486	17.08%	158	KS 155
La	5.641	33.629	16.77%	159	KS 157
Ce	13.242	74.600	17.75%	163	KS 182
Eu	0.333	1.659	20.07%	164	KS 182
Lu	0.119	0.581	20.48%	170	KS 101
Hf	1.014	4.979	20.37%	171	KS 105
Th	1.569	9.667	16.23%	181	KS 101
Cr	192.028	480.333	39.98%	184	KS 160
Mn	330.203	706.810	46.72%	216	KS 101
Fe	1.074	6.550	16.40%	218	KS 106
Co	10.598	29.267	36.21%	226	KS 174
Ca	6.553	7.535	86.97%	261	KS 106
Sm	1.067	6.327	16.86%	264	KS 157
Yb	0.435	3.013	14.44%	265	KS 174
				267	KS 178
				278	KS 174

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Table 229. Per Cent Deviation Results - Susa A Red Wares, East-North, KS 101, n=4

ELEMENT	STD. DEV.	MEAN	% DEV.		SAMPLE	SITE
Na	0.180	1.146	15.71%		115	KS 101
K	0.103	2.388	4.31%	*	170	KS 101
Rb	10.193	91.975	11.08%		181	KS 101
Cs	0.524	5.460	9.60%	*	216	KS 101
Ba	258.608	694.750	37.22%			
Sc	1.603	30.925	5.18%	*		
La	2.862	36.300	7.88%	*		
Ce	5.746	81.350	7.06%	*		
Eu	0.248	1.848	13.42%			
Lu	0.077	0.602	12.79%			
Hf	0.748	5.233	14.29%			
Th	0.636	10.288	6.18%	*		
Cr	126.168	535.500	23.56%			
Mn	304.575	756.000	40.29%			
Fe	0.478	7.283	6.56%	*		
Co	6.436	36.650	17.56%			
Ca	2.569	4.113	62.46%			
Sm	0.737	6.955	10.60%			
Yb	0.215	3.330	6.46%	*		

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Table 230. Per Cent Deviation Results - Susa A Red Wares, East-North, KS 106, n=3

ELEMENT	STD. DEV.	MEAN	% DEV.		SAMPLE	SITE
Na	0.216	0.916	23.58%		116	KS 106
K	0.180	2.187	8.23%	*	218	KS 106
Rb	5.437	65.667	8.28%	*	261	KS 106
Cs	0.800	4.040	19.80%			
Ba	416.010	725.667	57.33%			
Sc	3.926	28.067	13.99%			
La	5.339	31.200	17.11%			
Ce	14.037	69.833	20.10%			
Eu	0.399	1.617	24.68%			
Lu	0.181	0.575	31.48%			
Hf	0.982	4.377	22.44%			
Th	1.235	8.920	13.85%			
Cr	153.844	380.000	40.49%			
Mn	247.756	744.000	33.30%			
Fe	0.985	6.703	14.69%			
Co	11.505	31.700	36.29%			
Ca	9.223	10.433	88.40%			
Sm	1.025	5.937	17.26%			
Yb	0.280	2.787	10.05%			

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Table 231. Per Cent Deviation Results - Susa A Red Wares, East-North, KS 157, n=3

ELEMENT	STD. DEV.	MEAN	% DEV.		SAMPLE	SITE
Na	0.485	1.158	41.88%		123	KS 157
K	0.125	2.250	5.56%	*	159	KS 157
Rb	21.394	79.333	26.97%		264	KS 157
Cs	0.460	4.040	11.39%			
Ba	238.529	619.000	38.53%			
Sc	3.669	24.733	14.83%			
La	5.272	29.600	17.81%			
Ce	9.955	66.067	15.07%			
Eu	0.266	1.420	18.73%			
Lu	0.187	0.578	32.35%			
Hf	1.242	5.150	24.12%			
Th	1.519	8.863	17.14%			
Cr	200.622	490.667	40.89%			
Mn	209.498	697.667	30.03%			
Fe	0.957	5.927	16.15%			
Co	18.118	19.933	90.89%			
Ca	10.217	11.127	91.82%			
Sm	0.843	5.703	14.78%			
Yb	0.319	2.797	11.41%			

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Table 232. Per Cent Deviation Results - Susa A Red Wares, East-North, KS 160, n=2

ELEMENT	STD. DEV.	MEAN	% DEV.		SAMPLE	SITE
Na	0.219	1.175	18.64%		124	KS 160
K	0.304	2.115	14.37%		184	KS 160
Rb	0.636	89.450	0.71%	*		
Cs	0.580	5.050	11.49%			
Ba	733.270	931.500	78.72%			
Sc	5.303	31.250	16.97%			
La	2.970	39.000	7.62%	*		
Ce	9.334	84.400	11.06%			
Eu	0.120	1.965	6.11%	*		
Lu	0.081	0.669	12.11%			
Hf	0.035	5.585	0.63%	*		
Th	0.672	10.225	6.57%	*		
Cr	251.730	730.000	34.48%			
Mn	47.376	456.500	10.38%			
Fe	1.916	7.025	27.27%			
Co	14.991	37.300	40.19%			
Ca	0.382	3.110	12.28%			
Sm	0.785	7.175	10.94%			
Yb	0.042	3.420	1.23%	*		

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Table 233. Per Cent Deviation Results - Susa A Red Wares, East-North, KS 174, n=3

ELE-MENT	STD. DEV.	MEAN	% DEV.		SAM-PLE	SITE
Na	0.187	0.895	20.89%		226	KS 174
K	0.393	2.373	16.56%		265	KS 174
Rb	27.410	93.700	29.25%		278	KS 174
Cs	1.368	5.983	22.86%			
Ba	113.615	552.333	20.57%			
Sc	6.574	29.667	22.16%			
La	2.600	35.200	7.39%	*		
Ce	9.592	78.600	12.20%			
Eu	0.257	1.803	14.25%			
Lu	0.074	0.564	13.12%			
Hf	0.863	4.943	17.46%			
Th	2.339	10.543	22.19%			
Cr	148.224	494.667	29.96%			
Mn	45.081	457.333	9.86%	*		
Fe	0.513	5.850	8.77%	*		
Co	2.117	24.400	8.68%	*		
Ca	4.107	5.817	70.60%			
Sm	0.704	6.590	10.68%			
Yb	0.155	3.003	5.16%	*		

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Table 234. Per Cent Deviation Results - Susa A Red Wares, East-North, KS 182, n=2

ELEMENT	STD. DEV.	MEAN	% DEV.		SAMPLE	SITE
Na	0.225	0.397	56.68%		163	KS 182
K	0.177	1.905	9.29%	*	164	KS 182
Rb	26.941	72.150	37.34%			
Cs	2.164	4.720	45.85%			
Ba	48.083	483.000	9.96%	*		
Sc	13.576	28.600	47.47%			
La	16.051	30.850	52.03%			
Ce	38.608	69.800	55.31%			
Eu	0.794	1.449	54.80%			
Lu	0.204	0.485	42.06%			
Hf	2.143	3.975	53.91%			
Th	4.441	8.960	49.56%			
Cr	7.071	185.000	3.82%	*		
Mn	792.667	1249.500	63.44%			
Fe	2.913	6.670	43.67%			
Co	11.172	27.300	40.92%			
Ca	5.728	15.350	37.32%			
Sm	2.920	5.695	51.27%			
Yb	0.969	2.425	39.96%			

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Table 235. Per Cent Deviation Results - Susa A Red Wares, East-South, All, n=9

ELEMENT	STD. DEV.	MEAN	% DEV.		SAMPLE	SITE
Na	0.240	1.170	20.51%		128	KS 204
K	0.369	2.314	15.95%		129	KS 215
Rb	9.911	79.889	12.41%		149	KS 204
Cs	0.807	4.457	18.11%		167	KS 215
Ba	116.896	424.222	27.56%		185	KS 186
Sc	3.345	29.056	11.51%		228	KS 186
La	3.610	35.611	10.14%		229	KS 204
Ce	8.317	78.556	10.59%		269	KS 197
Eu	0.174	1.782	9.76%	*	270	KS 215
Lu	0.202	0.512	39.45%			
Hf	0.599	5.319	11.26%			
Th	0.949	9.699	9.78%	*		
Cr	100.278	535.889	18.71%			
Mn	229.122	638.445	35.89%			
Fe	0.779	6.876	11.33%			
Co	4.869	33.856	14.38%			
Ca	3.514	6.240	56.31%			
Sm	0.697	6.747	10.33%			
Yb	0.254	3.138	8.09%	*		

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Table 236. Per Cent Deviation Results - Susa A Red Wares, East-South, KS 186, n=2

ELEMENT	STD. DEV.	MEAN	% DEV.		SAMPLE	SITE
Na	0.182	1.042	17.47%		185	KS 186
K	0.106	2.045	5.18%	*	228	KS 186
Rb	13.506	80.450	16.79%			
Cs	2.001	4.335	46.16%			
Ba	93.338	406.000	22.99%			
Sc	4.596	30.650	15.00%			
La	3.960	35.900	11.03%			
Ce	7.425	77.250	9.61%	*		
Eu	0.035	1.935	1.81%	*		
Lu	0.103	0.562	18.33%			
Hf	0.311	4.870	6.39%	*		
Th	0.891	9.570	9.31%	*		
Cr	45.962	495.500	9.28%	*		
Mn	89.803	525.500	17.09%			
Fe	0.757	7.345	10.31%			
Co	5.233	34.200	15.30%			
Ca	3.097	6.010	51.53%			
Sm	0.651	6.780	9.60%	*		
Yb	0.233	3.195	7.29%	*		

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Table 237. Per Cent Deviation Results - Susa A Red Wares, East-South, KS 204, n=3

ELEMENT	STD. DEV.	MEAN	% DEV.		SAMPLE	SITE
Na	0.190	1.313	14.47%		128	KS 204
K	0.389	2.143	18.15%		149	KS 204
Rb	13.912	82.933	16.77%		229	KS 204
Cs	0.587	4.290	13.68%			
Ba	139.733	507.333	27.54%			
Sc	2.926	31.067	9.42%	*		
La	4.411	37.733	11.69%			
Ce	11.001	84.000	13.10%			
Eu	0.142	1.873	7.58%	*		
Lu	0.369	0.419	88.07%			
Hf	0.161	5.260	3.06%	*		
Th	1.132	9.957	11.37%			
Cr	7.572	522.333	1.45%	*		
Mn	39.804	520.667	7.64%	*		
Fe	0.630	7.340	8.58%	*		
Co	3.927	34.933	11.24%			
Ca	1.471	5.043	29.17%			
Sm	0.955	7.063	13.52%			
Yb	0.305	3.270	9.33%	*		

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Table 238. Per Cent Deviation Results - Susa A Red Wares, East-South, KS 215, n=3

ELEMENT	STD. DEV.	MEAN	% DEV.		SAMPLE	SITE
Na	0.355	1.137	31.22%		129	KS 215
K	0.362	2.597	13.94%		167	KS 215
Rb	8.720	76.433	11.41%		270	KS 215
Cs	0.355	4.617	7.69%	*		
Ba	104.704	395.000	26.51%			
Sc	2.511	26.867	9.35%	*		
La	3.460	33.900	10.21%			
Ce	7.643	75.167	10.17%			
Eu	0.138	1.613	8.56%	*		
Lu	0.033	0.561	5.88%	*		
Hf	0.965	5.703	16.92%			
Th	1.302	9.457	13.77%			
Cr	130.124	621.667	20.93%			
Mn	332.993	838.000	39.74%			
Fe	0.670	6.403	10.46%			
Co	6.813	31.267	21.79%			
Ca	5.582	6.170	90.47%			
Sm	0.733	6.483	11.31%			
Yb	0.276	3.010	9.17%	*		

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Table 239. Per Cent Deviation Results - Susa A Red Ware, Unslipped, All, n=15

ELEMENT	STD. DEV.	MEAN	% DEV.		SAMPLE	SITE
Na	0.263	1.069	24.60%		092	KS 4
K	0.409	2.319	17.64%		093	KS 6
Rb	19.886	78.553	25.32%		099	KS 165
Cs	0.786	4.566	17.21%		109	KS 50
Ba	317.944	644.467	49.33%		110	KS 64
Sc	5.181	58.587	8.84%	*	111	KS 66
La	6.108	34.507	17.70%		115	KS 101
Ce	14.306	76.280	18.75%		116	KS 106
Eu	0.396	1.742	22.73%		123	KS 157
Lu	0.195	0.555	35.14%		124	KS 160
Hf	1.048	5.195	20.17%		128	KS 204
Th	1.575	9.651	16.32%		129	KS 215
Cr	145.467	509.400	28.56%		130	KS 239
Mn	217.674	666.600	32.65%		132	KS 240
Fe	1.212	6.827	17.75%		133	KS 274
Co	11.781	31.893	36.94%			
Ca	7.633	7.153	106.71%			
Sm	1.133	6.495	17.44%			
Yb	0.412	3.108	13.26%			

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Table 240. Per Cent Deviation Results - Susa A Red Ware, Unslipped, West-South, n=3

ELE-MENT	STD. DEV.	MEAN	% DEV.	SAM-PLE	SITE
Na	0.310	1.066	29.08%	110	KS 64
K	0.397	2.307	17.21%	111	KS 66
Rb	35.803	74.867	47.82%	133	KS 274
Cs	1.304	4.133	31.55%		
Ba	176.092	566.333	31.09%		
Sc	8.663	28.567	30.33%		
La	9.106	34.733	26.22%		
Ce	20.416	75.800	26.93%		
Eu	0.452	1.740	25.98%		
Lu	0.153	0.557	27.47%		
Hf	1.491	5.313	28.06%		
Th	2.666	9.443	28.23%		
Cr	167.144	542.000	30.84%		
Mn	182.078	605.333	30.08%		
Fe	2.021	6.857	29.47%		
Co	18.812	19.633	95.82%		
Ca	10.072	9.870	102.05%		
Sm	1.563	6.480	24.12%		
Yb	0.510	3.207	15.90%		

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Table 241. Per Cent Deviation Results - Susa A Red Ware, Unslipped, Far West, All, n=2

ELE-MENT	STD. DEV.	MEAN	% DEV.		SAM-PLE	SITE
Na	0.373	0.837	44.56%		130	KS 238
K	0.933	2.660	35.08%		132	KS 240
Rb	19.021	77.350	24.59%			
Cs	1.308	4.335	30.17%			
Ba	362.746	545.500	66.50%			
Sc	3.394	24.100	14.08%			
La	4.101	26.400	15.53%			
Ce	10.182	55.600	18.31%			
Eu	0.219	1.225	17.88%			
Lu	0.063	0.470	13.40%			
Hf	1.428	3.710	38.49%			
Th	1.945	8.245	23.59%			
Cr	69.296	289.000	23.98%			
Mn	5.657	870.000	0.65%	*		
Fe	0.933	5.850	15.95%			
Co	0.849	25.600	3.32%	*		
Ca	4.879	14.850	32.86%			
Sm	0.856	4.955	17.28%			
Yb	0.438	2.570	17.04%			

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Table 242. Per Cent Deviation Results - Susa A Red Ware, Unslipped, Center, All, n=3

ELE-MENT	STD. DEV.	MEAN	% DEV.		SAM-PLE	SITE
Na	0.122	1.160	10.52%		092	KS 4
K	0.148	2.207	6.71%	*	093	KS 6
Rb	25.684	77.800	33.01%		109	KS 50
Cs	0.471	4.733	9.95%	*		
Ba	97.372	540.667	18.01%			
Sc	3.124	28.000	11.16%			
La	3.225	35.667	9.04%	*		
Ce	6.994	78.600	8.90%	*		
Eu	0.426	1.900	22.42%			
Lu	0.076	0.629	12.08%			
Hf	0.248	5.583	4.44%	*		
Th	0.916	10.143	9.03%	*		
Cr	92.463	571.667	16.17%			
Mn	129.268	557.667	23.18%			
Fe	0.709	6.737	10.52%			
Co	2.685	33.000	8.14%	*		
Ca	2.835	4.467	63.47%			
Sm	0.474	6.613	7.17%	*		
Yb	0.242	3.050	7.93%	*		

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Table 243. Per Cent Deviation Results - Susa A Red Ware, Unslipped, East-North, All, n=5

ELEMENT	STD. DEV.	MEAN	% DEV.	SAMPLE	SITE
Na	0.324	1.055	30.71%	099	KS 165
K	0.246	2.174	11.32%	115	KS 101
Rb	16.698	78.580	21.25%	116	KS 106
Cs	0.639	4.816	13.27%	123	KS 157
Ba	459.450	860.000	53.42%	124	KS 160
Sc	5.703	29.780	19.15%		
La	6.329	35.900	17.63%		
Ce	13.736	80.340	17.10%		
Eu	0.421	1.818	23.16%		
Lu	0.149	0.647	23.03%		
Hf	0.770	5.198	14.81%		
Th	1.444	9.662	14.95%		
Cr	128.941	499.400	25.82%		
Mn	174.266	614.200	28.37%		
Fe	1.392	7.068	19.69%		
Co	9.769	38.620	25.30%		
Ca	9.569	5.680	168.47%		
Sm	1.208	6.860	17.61%		
Yb	0.442	3.216	13.74%		

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Table 244. Per Cent Deviation Results - Susa A Red Ware, Unslipped, East-South, All, n=2

ELE-MENT	STD. DEV.	MEAN	% DEV.		SAM-PLE	SITE
Na	0.120	1.205	9.96%		128	KS 204
K	0.636	2.530	25.14%		129	KS 215
Rb	3.041	86.350	3.52%	*		
Cs	0.622	4.570	13.61%			
Ba	6.364	447.500	1.42%	*		
Sc	2.121	31.000	6.84%	*		
La	0.637	37.050	1.72%	*		
Ce	0.212	84.050	0.25%	*		
Eu	0.092	1.835	5.01%	*		
Lu	0.419	0.297	141.08%			
Hf	0.672	5.915	11.36%			
Th	0.283	10.600	2.67%	*		
Cr	135.057	612.500	22.05%			
Mn	481.540	849.500	56.69%			
Fe	0.318	7.295	4.36%	*		
Co	1.131	38.100	2.97%	*		
Ca	0.735	3.090	23.79%			
Sm	0.403	6.965	5.79%	*		
Yb	0.064	3.315	1.93%	*		

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Table 245. Per Cent Deviation Results - Susa A Red Ware, Porous, Chaff Tempered, All, n=8

ELEMENT	STD. DEV.	MEAN	% DEV.	SAMPLE	SITE
Na	0.456	1.007	45.28%	152	KS 40
K	0.346	2.111	16.39%	153	KS 41
Rb	15.895	73.950	21.49%	155	KS 49
Cs	1.087	4.203	25.86%	158	KS 155
Ba	170.248	526.375	32.34%	159	KS 157
Sc	5.971	26.138	22.84%	163	KS 182
La	7.654	31.200	24.53%	164	KS 182
Ce	17.968	68.063	26.40%	167	KS 215
Eu	0.380	1.496	25.40%		
Lu	0.145	0.544	26.65%		
Hf	1.464	4.894	29.91%		
Th	1.857	8.970	20.70%		
Cr	208.718	438.125	47.64%		
Mn	445.409	735.250	60.58%		
Fe	1.261	5.978	21.09%		
Co	11.056	23.913	46.23%		
Ca	6.566	9.874	66.50%		
Sm	1.398	5.776	24.20%		
Yb	0.607	2.663	22.79%		

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Table 246. Per Cent Deviation Results - Susa A Red Ware, Porous, Chaff Tempered, Center, n=3

ELEMENT	STD. DEV.	MEAN	% DEV.	SAMPLE	SITE
Na	0.187	0.974	19.20%	152	KS 40
K	0.395	1.937	20.39%	153	KS 41
Rb	7.484	63.500	11.79%	155	KS 49
Cs	0.807	3.530	22.86%		
Ba	163.506	504.667	32.40%		
Sc	4.554	24.533	18.56%		
La	7.502	28.900	25.96%		
Ce	16.952	62.200	27.25%		
Eu	0.400	1.447	27.64%		
Lu	0.129	0.492	26.22%		
Hf	1.302	4.320	30.14%		
Th	1.010	8.367	12.07%		
Cr	145.473	404.667	35.95%		
Mn	149.369	576.000	25.93%		
Fe	0.646	5.520	11.70%		
Co	6.070	27.500	22.07%		
Ca	7.371	11.353	64.93%		
Sm	1.278	5.253	24.33%		
Yb	0.617	2.393	25.78%		

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Table 247. Per Cent Deviation Results - Susa A Red Ware, Porous, Chaff Tempered, East-North, n=4

ELEMENT	STD. DEV.	MEAN	% DEV.	SAMPLE	SITE
Na	0.636	0.936	67.95%	158	KS 155
K	0.282	2.132	13.23%	159	KS 157
Rb	19.380	80.750	24.00%	163	KS 182
Cs	1.251	4.678	26.74%	164	KS 182
Ba	211.185	565.250	37.36%		
Sc	7.901	27.750	28.47%		
La	9.502	32.325	29.40%		
Ce	22.510	71.500	31.48%		
Eu	0.475	1.517	31.31%		
Lu	0.183	0.577	31.72%		
Hf	1.738	5.018	34.64%		
Th	2.604	9.323	27.93%		
Cr	253.605	401.500	63.16%		
Mn	607.663	906.500	67.03%		
Fe	1.728	6.383	27.07%		
Co	15.272	20.750	73.60%		
Ca	6.899	10.398	66.35%		
Sm	1.729	6.010	28.77%		
Yb	0.687	2.770	24.80%		

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Table 248. Per Cent Deviation Results - Susa A Red Ware, Porous, Chaff Tempered, East-North, n=2

ELEMENT	STD. DEV.	MEAN	% DEV.		SAMPLE	SITE
Na	0.225	0.397	56.68%		163	KS 182
K	0.177	1.905	9.29%	*	164	KS 182
Rb	26.941	72.150	37.34%			
Cs	2.164	4.720	45.85%			
Ba	48.083	483.000	9.96%	*		
Sc	13.576	28.600	47.47%			
La	16.051	30.850	52.03%			
Ce	38.608	69.800	55.31%			
Eu	0.794	1.449	54.80%			
Lu	0.204	0.485	42.06%			
Hf	2.143	3.975	53.91%			
Th	4.441	8.960	49.56%			
Cr	7.071	185.000	3.82%	*		
Mn	792.667	1249.500	63.44%			
Fe	2.913	6.670	43.67%			
Co	11.172	27.300	40.92%			
Ca	5.728	15.350	37.32%			
Sm	2.920	5.695	51.27%			
Yb	0.969	2.425	39.96%			

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Table 249. Per Cent Deviation Results - Susa A Red Ware, Burnished, All, n=10

ELEMENT	STD. DEV.	MEAN	% DEV.		SAMPLE	SITE	
Na	0.161	1.186	13.58%		175	KS	2
K	0.336	2.300	14.61%		176	KS	4
Rb	11.403	88.590	12.87%		177	KS	13
Cs	0.808	5.268	15.34%		178	KS	17
Ba	148.099	543.700	27.24%		179	KS	33
Sc	2.211	30.730	7.19%	*	180	KS	4
La	2.536	36.690	6.91%	*	181	KS	101
Ce	2.951	80.460	3.67%	*	182	KS	113
Eu	0.122	1.831	6.66%	*	184	KS	160
Lu	0.029	0.600	4.83%	*	185	KS	186
Hf	0.356	5.376	6.62%	*			
Th	1.061	10.428	10.17%				
Cr	130.889	594.000	22.04%				
Mn	96.347	488.500	19.72%				
Fe	0.682	6.925	9.85%	*			
Co	4.502	32.510	13.85%				
Ca	2.287	4.291	53.30%				
Sm	0.412	6.803	6.06%	*			
Yb	0.150	3.445	4.35%	*			

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Table 250. Per Cent Deviation Results - Susa A Red Ware, Burnished, West-North, n=3

ELEMENT	STD. DEV.	MEAN	% DEV.		SAMPLE	SITE
Na	0.091	1.327	6.86%	*	177	KS 13
K	0.271	2.603	10.41%		178	KS 17
Rb	5.950	97.433	6.11%	*	179	KS 33
Cs	0.364	5.993	6.07%	*		
Ba	83.289	465.000	17.91%			
Sc	0.416	32.033	1.30%	*		
La	1.557	38.133	4.08%	*		
Ce	1.747	82.167	2.13%	*		
Eu	0.090	1.830	4.92%	*		
Lu	0.037	0.606	6.11%	*		
Hf	0.599	5.540	10.81%			
Th	0.473	11.733	4.03%	*		
Cr	136.700	591.000	23.13%			
Mn	110.754	455.667	24.31%			
Fe	0.418	6.557	6.37%	*		
Co	3.650	30.367	12.02%			
Ca	4.400	4.820	91.29%			
Sm	0.364	6.920	5.26%	*		
Yb	0.236	3.580	6.59%	*		

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Table 251. Per Cent Deviation Results - Susa A Red Ware, Burnished, Center, n=4

ELEMENT	STD. DEV.	MEAN	% DEV.		SAMPLE	SITE	
Na	0.115	1.111	10.35%		175	KS	2
K	0.374	2.113	17.70%		176	KS	4
Rb	6.990	77.650	9.00%	*	180	KS	4
Cs	0.318	4.525	7.03%	*	182	KS	113
Ba	138.457	679.750	20.37%				
Sc	1.715	29.400	5.83%	*			
La	2.918	34.725	8.40%	*			
Ce	2.051	78.225	2.62%	*			
Eu	0.165	1.773	9.31%	*			
Lu	0.019	0.579	3.28%	*			
Hf	0.255	5.305	4.81%	*			
Th	0.268	9.508	2.82%	*			
Cr	28.218	547.250	5.16%	*			
Mn	28.253	481.250	5.87%	*			
Fe	0.222	7.065	3.14%	*			
Co	2.943	32.400	9.08%	*			
Ca	0.815	4.723	17.26%				
Sm	0.489	6.580	7.43%	*			
Yb	0.066	3.393	1.95%	*			

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Table 252. Per Cent Deviation Results - Susa A Red Ware, Burnished, Center, KS 4, n=2

ELEMENT	STD. DEV.	MEAN	% DEV.		SAMPLE	SITE
Na	0.025	1.012	2.47%	*	176	KS 4
K	0.021	1.795	1.17%	*	180	KS 4
Rb	7.849	74.350	10.56%			
Cs	0.113	4.350	2.60%	*		
Ba	219.910	705.500	31.17%			
Sc	0.636	30.850	2.06%	*		
La	0.848	36.800	2.30%	*		
Ce	1.980	78.500	2.52%	*		
Eu	0.078	1.905	4.09%	*		
Lu	0.031	0.584	5.31%	*		
Hf	0.198	5.160	3.84%	*		
Th	0.099	9.370	1.06%	*		
Cr	13.435	527.500	2.55%	*		
Mn	1.414	457.000	0.31%	*		
Fe	0.255	7.200	3.54%	*		
Co	2.758	34.150	8.08%	*		
Ca	0.813	4.835	16.81%			
Sm	0.247	6.935	3.56%	*		
Yb	0.113	3.390	3.33%	*		

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Table 253. Per Cent Deviation Results - Susa A Red Ware, Burnished, East-North, n=2

ELEMENT	STD. DEV.	MEAN	% DEV.		SAMPLE	SITE
Na	0.099	1.260	7.86%	*	181	KS 101
K	0.028	2.310	1.21%	*	184	KS 160
Rb	10.607	96.500	10.99%			
Cs	1.110	5.425	20.46%			
Ba	17.678	425.500	4.15%	*		
Sc	3.323	29.850	11.13%			
La	0.778	37.450	2.08%	*		
Ce	5.020	81.350	6.17%	*		
Eu	0.007	1.885	0.37%	*		
Lu	0.007	0.617	1.13%	*		
Hf	0.205	5.415	3.79%	*		
Th	0.955	10.425	9.16%	*		
Cr	258.801	725.000	35.70%			
Mn	201.525	565.500	35.64%			
Fe	1.485	6.720	22.10%			
Co	9.263	33.250	27.86%			
Ca	0.721	2.870	25.12%			
Sm	0.332	6.855	4.84%	*		
Yb	0.000	3.390	0.00%			

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Table 254. Per Cent Deviation Results - Susa A Red Ware, Dark Slip, All, n=2

ELEMENT	STD. DEV.	MEAN	% DEV.		SAMPLE	SITE
Na	0.042	1.380	3.04%	*	170	KS 101
K	0.226	2.230	10.13%		171	KS 105
Rb	4.313	88.650	4.87%	*		
Cs	0.431	5.005	8.61%	*		
Ba	358.503	701.500	51.11%			
Sc	0.919	28.650	3.21%	*		
La	1.556	35.400	4.40%	*		
Ce	4.172	78.250	5.33%	*		
Eu	0.014	1.680	0.83%	*		
Lu	0.070	0.642	10.90%			
Hf	0.134	5.975	2.24%	*		
Th	0.580	9.890	5.86%	*		
Cr	41.719	664.500	6.28%	*		
Mn	149.200	1094.500	13.63%			
Fe	0.226	6.830	3.31%	*		
Co	3.041	33.350	9.12%	*		
Ca	0.735	2.680	27.43%			
Sm	0.474	6.695	7.08%	*		
Yb	0.064	3.215	1.99%	*		

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Table 255. Per Cent Deviation Results - Susa A Salmon Ware, Buff Slip, All, n=15

ELEMENT	STD. DEV.	MEAN	% DEV.		SAMPLE	SITE
Na	0.254	1.109	22.90%		103	KS 22
K	0.410	2.507	16.35%		251	KS 22
Rb	15.257	77.707	19.63%		253	KS 29
Cs	0.871	4.619	18.86%		257	KS 64
Ba	168.858	452.067	37.35%		258	KS 66
Sc	2.158	25.647	8.41%	*	259	KS 66
La	3.288	30.813	10.67%		261	KS 106
Ce	7.884	68.513	11.51%		262	KS 112
Eu	0.178	1.502	11.85%		264	KS 157
Lu	0.059	0.538	10.97%		265	KS 174
Hf	0.806	4.935	16.33%		267	KS 178
Th	0.951	9.099	10.45%		269	KS 197
Cr	185.707	454.067	40.90%		270	KS 215
Mn	189.985	760.133	24.99%		272	KS 269
Fe	0.489	6.172	7.92%	*	274	KS 274
Co	5.951	27.980	21.27%			
Ca	4.164	9.634	43.22%			
Sm	0.616	5.847	10.54%			
Yb	0.274	2.705	10.13%			

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Table 256. Per Cent Deviation Results - Susa A Salmon Ware, Buff Slip, West-North, n=3

ELEMENT	STD. DEV.	MEAN	% DEV.		SAMPLE	SITE
Na	0.266	1.141	23.31%		103	KS 22
K	0.397	2.633	15.08%		251	KS 22
Rb	10.971	84.533	12.98%		253	KS 29
Cs	0.481	5.183	9.28%	*		
Ba	74.036	458.667	16.14%			
Sc	2.554	27.767	9.20%	*		
La	3.412	32.367	10.54%			
Ce	8.491	73.533	11.55%			
Eu	0.142	1.537	9.24%	*		
Lu	0.045	0.610	7.38%	*		
Hf	0.804	5.263	15.28%			
Th	1.144	9.790	11.69%			
Cr	186.640	469.333	39.77%			
Mn	288.030	849.333	33.91%			
Fe	0.602	6.490	9.28%	*		
Co	5.619	33.133	16.96%			
Ca	5.244	10.517	49.86%			
Sm	0.671	6.207	10.81%			
Yb	0.355	2.787	12.74%			

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Table 257. Per Cent Deviation Results - Susa A Salmon Ware, Buff Slip, West-North, KS 22, n=2

ELEMENT	STD. DEV.	MEAN	% DEV.		SAMPLE	SITE
Na	0.276	1.245	22.17%		103	KS 22
K	0.049	2.405	2.04%	*	251	KS 22
Rb	14.991	82.900	18.08%			
Cs	0.177	4.915	3.60%	*		
Ba	55.154	495.000	11.14%			
Sc	2.616	26.750	9.78%	*		
La	4.030	33.450	12.05%			
Ce	10.889	75.600	14.40%			
Eu	0.163	1.585	10.28%			
Lu	0.021	0.585	3.59%	*		
Hf	0.311	5.710	5.45%	*		
Th	1.365	9.435	14.47%			
Cr	140.714	560.500	25.11%			
Mn	333.754	754.000	44.26%			
Fe	0.106	6.145	1.72%	*		
Co	3.394	30.200	11.24%			
Ca	7.248	9.875	73.40%			
Sm	0.728	6.455	11.28%			
Yb	0.488	2.835	17.21%			

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Table 258. Per Cent Deviation Results - Susa A Salmon Ware, Buff Slip, West-South, n=5

ELEMENT	STD. DEV.	MEAN	% DEV.		SAMPLE	SITE
Na	0.352	1.141	30.85%		257	KS 64
K	0.458	2.540	18.03%		258	KS 66
Rb	22.126	75.520	29.30%		259	KS 66
Cs	1.059	4.392	24.11%		272	KS 269
Ba	220.139	573.600	38.38%		274	KS 274
Sc	1.994	24.520	8.13%	*		
La	3.965	29.800	13.31%			
Ce	8.549	66.220	12.91%			
Eu	0.244	1.468	16.62%			
Lu	0.060	0.515	11.65%			
Hf	0.776	4.770	16.27%			
Th	1.015	8.900	11.40%			
Cr	238.943	440.800	54.21%			
Mn	171.099	758.800	22.55%			
Fe	0.521	5.964	8.74%	*		
Co	2.463	25.080	9.82%	*		
Ca	3.604	7.240	49.78%			
Sm	0.687	5.634	12.19%			
Yb	0.287	2.568	11.18%			

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Table 259. Per Cent Deviation Results - Susa A Salmon Ware, Buff Slip, West-South, KS 66, n=2

ELEMENT	STD. DEV.	MEAN	% DEV.		SAMPLE	SITE
Na	0.035	1.045	3.35%	*	258	KS 66
K	0.255	2.220	11.49%		259	KS 66
Rb	13.081	56.050	23.34%			
Cs	0.820	3.470	23.63%			
Ba	301.935	646.500	46.70%			
Sc	1.556	22.700	6.85%	*		
La	1.697	27.400	6.19%	*		
Ce	1.626	58.750	2.77%	*		
Eu	0.007	1.325	0.53%	*		
Lu	0.015	0.460	3.26%	*		
Hf	0.495	4.200	11.79%			
Th	0.134	7.895	1.70%	*		
Cr	75.660	358.500	21.10%			
Mn	130.815	818.500	15.98%			
Fe	0.361	5.495	6.57%	*		
Co	1.273	24.500	5.20%	*		
Ca	7.007	6.445	108.72%			
Sm	0.177	5.115	3.46%	*		
Yb	0.007	2.375	0.29%	*		

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Table 260. Per Cent Deviation Results - Susa A Salmon Ware, Buff Slip, East-North, n=4

ELEMENT	STD. DEV.	MEAN	% DEV.		SAMPLE	SITE
Na	0.184	1.113	16.53%		261	KS 106
K	0.587	2.488	23.59%		264	KS 157
Rb	15.354	75.625	20.30%		265	KS 174
Cs	1.202	4.458	26.96%		267	KS 178
Ba	124.858	400.750	31.16%			
Sc	1.957	24.825	7.88%	*		
La	2.940	29.425	9.99%	*		
Ce	5.668	63.375	8.94%	*		
Eu	0.161	1.433	11.24%			
Lu	0.034	0.500	6.80%	*		
Hf	1.034	4.633	22.32%			
Th	0.896	8.798	10.18%			
Cr	213.112	419.000	50.86%			
Mn	229.725	702.500	32.70%			
Fe	0.535	6.133	8.72%	*		
Co	7.369	25.525	28.87%			
Ca	4.116	12.118	33.97%			
Sm	0.471	5.533	8.51%	*		
Yb	0.227	2.658	8.54%	*		

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Table 261. Per Cent Deviation Results - Susa A Salmon Ware, Buff Slip, East-South, n=2

ELEMENT	STD. DEV.	MEAN	% DEV.		SAMPLE	SITE
Na	0.261	0.916	28.49%		269	KS 197
K	0.184	2.390	7.70%	*	270	KS 215
Rb	9.192	73.500	12.51%			
Cs	0.141	4.620	3.05%	*		
Ba	16.263	287.500	5.66%	*		
Sc	0.141	26.500	0.53%	*		
La	2.263	32.200	7.03%	*		
Ce	3.748	72.350	5.18%	*		
Eu	0.141	1.610	8.76%	*		
Lu	0.015	0.538	2.79%	*		
Hf	0.453	4.920	9.21%	*		
Th	1.209	9.055	13.35%			
Cr	50.912	436.000	11.68%			
Mn	125.158	707.500	17.69%			
Fe	0.318	6.185	5.14%	*		
Co	6.081	33.400	18.21%			
Ca	1.485	11.550	12.86%			
Sm	0.516	6.155	8.38%	*		
Yb	0.205	2.865	7.16%	*		

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Table 262. Per Cent Deviation Results - Susa A Salmon Ware, Red Slip, All, n=9

ELEMENT	STD. DEV.	MEAN	% DEV.		SAMPLE	SITE
Na	0.290	1.092	26.56%		189	KS 6
K	0.209	2.359	8.86%	*	198	KS 22
Rb	13.574	83.400	16.28%		200	KS 28
Cs	1.051	4.606	22.82%		216	KS 101
Ba	186.133	620.222	30.01%		218	KS 106
Sc	3.401	28.844	11.79%		226	KS 174
La	4.904	34.344	14.28%		228	KS 186
Ce	11.080	77.400	14.32%		229	KS 204
Eu	0.201	1.721	11.68%		231	KS 239
Lu	0.098	0.552	17.75%			
Hf	0.753	4.762	15.81%			
Th	1.304	9.849	13.24%			
Cr	152.005	492.111	30.89%			
Mn	85.369	543.556	15.71%			
Fe	0.768	6.347	12.10%			
Co	4.831	27.456	17.60%			
Ca	4.391	8.252	53.21%			
Sm	0.960	6.502	14.76%			
Yb	0.419	3.176	13.19%			

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Table 263. Per Cent Deviation Results - Susa A Salmon Ware, Red Slip, West-North, n=2

ELEMENT	STD. DEV.	MEAN	% DEV.		SAMPLE	SITE
Na	0.368	1.300	28.31%		198	KS 22
K	0.205	2.385	8.60%	*	200	KS 28
Rb	23.405	82.750	28.28%			
Cs	1.959	4.475	43.78%			
Ba	297.692	545.500	54.57%			
Sc	7.283	27.250	26.73%			
La	9.829	34.750	28.28%			
Ce	22.627	79.600	28.43%			
Eu	0.332	1.765	18.81%			
Lu	0.197	0.575	34.26%			
Hf	1.344	5.260	25.55%			
Th	3.033	9.955	30.47%			
Cr	284.964	641.500	44.42%			
Mn	142.128	480.500	29.58%			
Fe	0.771	5.705	13.51%			
Co	1.202	22.150	5.43%	*		
Ca	9.694	8.945	108.37%			
Sm	1.853	6.620	27.99%			
Yb	1.018	3.250	31.32%			

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Table 264. Per Cent Deviation Results - Susa A Salmon Ware, Red Slip, East-North, n=3

ELEMENT	STD. DEV.	MEAN	% DEV.		SAMPLE	SITE
Na	0.132	0.764	17.28%		216	KS 101
K	0.167	2.350	7.11%	*	218	KS 106
Rb	12.777	81.867	15.61%		226	KS 174
Cs	0.849	5.003	16.97%			
Ba	104.433	759.667	13.75%			
Sc	2.646	28.800	9.19%	*		
La	2.013	31.933	6.30%	*		
Ce	4.814	72.400	6.65%	*		
Eu	0.101	1.577	6.40%	*		
Lu	0.033	0.499	6.61%	*		
Hf	0.206	4.037	5.10%	*		
Th	1.081	9.597	11.26%			
Cr	38.657	368.333	10.50%			
Mn	96.671	522.333	18.51%			
Fe	0.502	6.217	8.07%	*		
Co	2.200	26.000	8.46%	*		
Ca	4.876	8.617	56.59%			
Sm	0.385	5.970	6.45%	*		
Yb	0.223	3.040	7.34%	*		

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Table 265. Per Cent Deviation Results - Susa A Salmon Ware, Red Slip, East-South, n=2

ELEMENT	STD. DEV.	MEAN	% DEV.		SAMPLE	SITE
Na	0.106	1.245	8.51%	*	228	KS 186
K	0.417	2.265	18.41%		229	KS 204
Rb	15.768	82.050	19.22%			
Cs	1.428	3.930	36.34%			
Ba	224.860	499.000	45.06%			
Sc	3.960	30.200	13.11%			
La	6.718	37.850	17.75%			
Ce	16.193	83.450	19.40%			
Eu	0.064	1.955	3.27%	*		
Lu	0.148	0.594	24.92%			
Hf	0.396	4.930	8.03%	*		
Th	1.315	9.870	13.32%			
Cr	48.083	497.000	9.67%	*		
Mn	16.971	577.000	2.94%	*		
Fe	0.742	7.335	10.12%			
Co	4.667	33.800	13.81%			
Ca	2.284	6.585	34.68%			
Sm	1.294	7.235	17.89%			
Yb	0.346	3.275	10.56%			

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Table 266. Per Cent Deviation Results - Susa A Salmon Ware, Outside Buff Slip, All, n=2

ELEMENT	STD. DEV.	MEAN	% DEV.		SAMPLE	SITE
Na	0.033	0.921	3.58%	*	276	KS 4
K	0.615	2.355	26.11%		279	KS 174
Rb	31.961	97.400	32.81%			
Cs	2.744	5.550	49.44%			
Ba	32.527	511.000	6.37%	*		
Sc	4.950	32.100	15.42%			
La	3.041	36.050	8.44%	*		
Ce	11.314	81.000	13.97%			
Eu	0.290	1.895	15.30%			
Lu	0.094	0.583	16.12%			
Hf	0.049	5.045	0.97%	*		
Th	2.821	10.805	26.11%			
Cr	35.355	449.000	7.87%	*		
Mn	67.175	496.500	13.53%			
Fe	0.424	6.690	6.34%	*		
Co	3.182	27.450	11.59%			
Ca	3.451	5.270	65.48%			
Sm	0.622	6.940	8.96%	*		
Yb	0.219	3.005	7.29%	*		

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Table 267. Per Cent Deviation Results - Susa A Black-on-Buff Ware, All, n=103

ELEMENT	STD. DEV.	MEAN	% DEV.	SAMPLE	SITE
Na	0.389	1.259	30.90%	834	Susa
K	0.716	1.682	42.57%	835	Susa
Rb	24.627	37.259	66.10%	836	Susa
Cs	1.407	5.163	27.25%	837	Susa
Ba	364.949	414.990	87.94%	838	Susa
Sc	3.094	28.014	11.04%	839	Susa
La	2.578	28.300	9.11% *	840	Susa
Ce	8.699	65.472	13.29%	841	Susa
Eu	0.245	1.348	18.18%	842	Susa
Lu	0.071	0.494	14.37%	843	Susa
Hf	1.034	3.933	26.29%	844	Susa
Th	1.242	8.947	13.88%	845	Susa
Cr	63.536	349.699	18.17%	846	Susa
Mn	178.681	960.981	18.59%	847	Susa
Fe	0.736	6.691	11.00%	849	KS 20
Co	4.961	26.968	18.40%	850	KS 20
Ca	2.907	17.602	16.52%	851	KS 20
Sm	0.983	5.263	18.68%	852	KS 20
Yb	0.318	2.613	12.17%	853	KS 20
				854	KS 20
				855	KS 20
				856	KS 20
281	KS 22	377	KS 266	857	KS 20
283	KS 33	383	KS 161	858	KS 20
291	KS 118	389	KS 112	859	KS 20
303	KS 22	397	KS 113	860	KS 20
305	KS 33	407	KS 33	879	Susa
307	KS 66	408	KS 33	880	Susa
314	KS 161	409	KS 33	881	Susa
317	KS 167	410	KS 35	882	Susa
323	KS 215	411	KS 49	883	Susa
324	KS 274	412	KS 181	884	Susa
349	KS 33	413	KS 181	885	Susa
353	KS 113	414	KS 240	886	Susa
355	KS 124	415	KS 266	887	Susa
357	KS 161	828	Susa	888	Susa
363	KS 16	829	Susa	889	Susa
364	KS 33	830	Susa	890	Susa
365	KS 43	831	Susa	891	KS 28
373	KS 112	832	Susa	892	KS 28
375	KS 176	833	Susa	893	KS 28

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Table 267 cont'd. Per Cent Deviation Results - Susa A Black-on-Buff Ware, All, n=103

SAMPLE	SITE	
894	KS	28
896	KS	13
897	KS	13
898	KS	20
899	KS	4
900	KS	4
901	KS	6
902	KS	16
903	KS	28
904	KS	101
905	KS	112
906	KS	112
907	KS	113
908	KS	204
909	KS	239
910	KS	239
911	KS	266
912	KS	266
927	KS	1
930	KS	1
952	KS	1
953	KS	1
954	KS	1
955	KS	1

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Table 268. Per Cent Deviation Results - Susa A Black-on-Buff Ware, West-North, n=64

ELE-MENT	STD. DEV.	MEAN	% DEV.	SAM-PLE	SITE
Na	0.368	1.267	29.04%	281	KS 22
K	0.726	1.855	39.14%	283	KS 33
Rb	26.533	43.298	61.28%	303	KS 22
Cs	1.518	5.347	28.39%	305	KS 33
Ba	251.262	364.547	68.92%	349	KS 33
Sc	3.292	27.920	11.79%	363	KS 16
La	2.851	28.309	10.07%	364	KS 33
Ce	9.634	66.398	14.51%	407	KS 33
Eu	0.265	1.359	19.50%	408	KS 33
Lu	0.076	0.508	14.96%	409	KS 33
Hf	1.203	4.127	29.15%	410	KS 35
Th	1.351	9.002	15.01%	828	Susa
Cr	65.935	362.078	18.21%	829	Susa
Mn	166.093	958.469	17.33%	830	Susa
Fe	0.757	6.626	11.42%	831	Susa
Co	5.623	26.458	21.25%	832	Susa
Ca	3.062	17.096	17.91%	833	Susa
Sm	1.129	5.137	21.98%	834	Susa
Yb	0.336	2.663	12.62%	835	Susa
				836	Susa
				837	Susa
				838	Susa
				839	Susa
				840	Susa
				841	Susa
				842	Susa
				843	Susa
				844	Susa

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Table 268 cont'd. Per Cent Deviation Results - Susa A Black-on-Buff Ware, West-North, n=64

SAMPLE	SITE
845	Susa
846	Susa
847	Susa
849	KS 20
850	KS 20
851	KS 20
852	KS 20
853	KS 20
854	KS 20
855	KS 20
856	KS 20
857	KS 20
858	KS 20
859	KS 20
860	KS 20
879	Susa
880	Susa
881	Susa
882	Susa
883	Susa
884	Susa
885	Susa
886	Susa
887	Susa
888	Susa
889	Susa
890	Susa
891	KS 28
892	KS 28
893	KS 28
894	KS 28
896	KS 13
897	KS 13
898	KS 20
902	KS 16
903	KS 28

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Table 269. Per Cent Deviation Results - Susa A Black-on-Buff Ware, West-North, Without Susa, n=32

ELEMENT	STD. DEV.	MEAN	% DEV.		SAMPLE	SITE	
Na	0.366	1.411	25.94%		281	KS	22
K	0.761	1.706	44.61%		283	KS	33
Rb	24.961	34.328	72.71%		303	KS	22
Cs	1.437	5.068	28.35%		305	KS	33
Ba	322.600	436.750	73.86%		349	KS	33
Sc	3.004	27.734	10.83%		363	KS	16
La	2.639	28.422	9.29%	*	364	KS	33
Ce	8.912	65.828	13.54%		407	KS	33
Eu	0.214	1.361	15.72%		408	KS	33
Lu	0.066	0.492	13.41%		409	KS	33
Hf	0.923	3.904	23.64%		410	KS	35
Th	1.166	8.962	13.01%		849	KS	20
Cr	57.324	348.313	16.46%		850	KS	20
Mn	142.814	936.219	15.25%		851	KS	20
Fe	0.704	6.574	10.71%		852	KS	20
Co	4.520	26.297	17.19%		853	KS	20
Ca	2.497	17.096	14.61%		854	KS	20
Sm	1.165	5.090	22.89%		855	KS	20
Yb	0.294	2.611	11.26%		856	KS	20
					857	KS	20
					858	KS	20
					859	KS	20
					860	KS	20
					891	KS	20
					892	KS	20
					893	KS	20
					894	KS	20
					896	KS	13
					897	KS	13
					898	KS	20
					902	KS	16
					903	KS	28

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Table 270. Per Cent Deviation Results - Susa A Black-on-Buff Ware, West-North, Without Susa and Jaffarabad, n=19

ELEMENT	STD. DEV.	MEAN	% DEV.		SAMPLE	SITE	
Na	0.237	1.377	17.21%		281	KS	22
K	0.755	1.619	46.63%		283	KS	33
Rb	18.597	31.784	58.51%		303	KS	22
Cs	1.039	4.784	21.72%		305	KS	33
Ba	383.948	534.985	71.77%		349	KS	33
Sc	2.259	26.705	8.46%	*	363	KS	16
La	2.154	27.968	7.70%	*	364	KS	33
Ce	5.448	65.395	8.33%	*	407	KS	33
Eu	0.187	1.275	14.67%		408	KS	33
Lu	0.052	0.465	11.18%		409	KS	33
Hf	0.624	3.813	16.37%		410	KS	35
Th	0.902	8.945	10.08%		891	KS	20
Cr	49.616	326.000	15.22%		892	KS	28
Mn	111.227	944.158	11.78%		893	KS	28
Fe	0.536	6.409	8.36%	*	894	KS	28
Co	4.028	25.132	16.03%		896	KS	13
Ca	1.913	17.584	10.88%		897	KS	13
Sm	0.869	5.063	17.16%		902	KS	16
Yb	0.257	2.572	9.99%	*	903	KS	28

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Table 271. Per Cent Deviation Results - Susa A Black-on-Buff Ware, West-North, KS 22, n=2

ELE-MENT	STD. DEV.	MEAN	% DEV.		SAM-PLE	SITE
Na	0.267	1.350	19.78%		103	KS 22
K	0.080	2.447	3.27%	*	198	KS 22
Rb	14.213	88.367	16.08%		251	KS 22
Cs	0.560	5.230	10.71%			
Ba	155.653	582.000	26.74%			
Sc	3.750	28.633	13.10%			
La	5.551	36.200	15.33%			
Ce	13.879	82.267	16.87%			
Eu	0.266	1.723	15.44%			
Lu	0.076	0.628	12.10%			
Hf	0.363	5.877	6.18%	*		
Th	1.816	10.323	17.59%			
Cr	191.056	654.667	29.18%			
Mn	319.877	629.333	50.83%			
Fe	0.096	6.180	1.55%	*		
Co	5.671	27.233	20.82%			
Ca	6.817	7.280	93.64%			
Sm	0.995	6.947	14.32%			
Yb	0.741	3.213	23.06%			

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Table 272. Per Cent Deviation Results - Susa A Black-on-Buff Ware, West-North, KS 33, n=7

ELEMENT	STD. DEV.	MEAN	% DEV.		SAMPLE	SITE
Na	0.177	1.379	12.84%		283	KS 33
K	0.374	1.521	24.59%		305	KS 33
Rb	17.302	32.571	53.12%		349	KS 33
Cs	0.926	4.319	21.44%		364	KS 33
Ba	475.427	724.857	65.59%		407	KS 33
Sc	2.236	26.514	8.43%	*	408	KS 33
La	1.825	28.614	6.38%	*	409	KS 33
Ce	3.004	63.100	4.76%	*		
Eu	0.087	1.353	6.43%	*		
Lu	0.048	0.493	9.74%	*		
Hf	0.293	3.909	7.50%	*		
Th	0.794	8.969	8.85%	*		
Cr	33.214	333.143	9.97%	*		
Mn	65.630	985.000	6.66%	*		
Fe	0.545	6.393	8.52%	*		
Co	2.274	25.786	8.82%	*		
Ca	0.727	18.486	3.93%	*		
Sm	0.372	5.421	6.86%	*		
Yb	0.288	2.614	11.02%			

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Table 273. Per Cent Deviation Results - Susa A Black-on-Buff Ware, Susa, n=32

ELEMENT	STD. DEV.	MEAN	% DEV.	SAMPLE	SITE
Na	0.315	1.123	28.05%	828	Susa
K	0.668	2.004	33.33%	829	Susa
Rb	25.330	52.269	48.46%	830	Susa
Cs	1.567	5.625	27.86%	831	Susa
Ba	116.050	292.344	39.70%	832	Susa
Sc	3.596	28.106	12.79%	833	Susa
La	3.087	28.197	10.95%	834	Susa
Ce	10.417	66.969	15.55%	835	Susa
Eu	0.311	1.357	22.92%	836	Susa
Lu	0.082	0.524	15.65%	837	Susa
Hf	1.409	4.350	32.39%	838	Susa
Th	1.532	9.043	16.94%	839	Susa
Cr	71.818	375.844	19.11%	840	Susa
Mn	186.135	980.719	18.98%	841	Susa
Fe	0.815	6.678	12.20%	842	Susa
Co	6.616	26.619	24.85%	843	Susa
Ca	3.580	17.095	20.94%	844	Susa
Sm	1.108	5.183	21.38%	845	Susa
Yb	0.370	2.716	13.62%	846	Susa
				847	Susa
				879	Susa
				880	Susa
				881	Susa
				882	Susa
				883	Susa
				884	Susa
				885	Susa
				886	Susa
				887	Susa
				888	Susa
				889	Susa
				890	Susa

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Table 274. Per Cent Deviation Results - Susa A Black-on-Buff Ware, Bowls, Susa, n=14

ELEMENT	STD. DEV.	MEAN	% DEV.		SAMPLE	SITE
Na	0.364	1.146	31.76%		833	Susa
K	0.514	1.854	27.72%		834	Susa
Rb	22.598	48.729	46.37%		835	Susa
Cs	1.301	5.923	21.97%		836	Susa
Ba	97.429	268.071	36.34%		837	Susa
Sc	2.796	28.914	9.67%	*	844	Susa
La	2.786	29.086	9.58%	*	845	Susa
Ce	11.715	68.486	17.11%		846	Susa
Eu	0.274	1.374	19.94%		883	Susa
Lu	0.076	0.525	14.48%		884	Susa
Hf	0.795	4.195	18.95%		885	Susa
Th	0.793	9.181	8.64%	*	888	Susa
Cr	67.595	376.929	17.93%		889	Susa
Mn	138.622	1000.930	13.85%		890	Susa
Fe	0.683	6.837	9.99%	*		
Co	8.581	26.607	32.25%			
Ca	2.401	17.536	13.69%			
Sm	1.000	5.408	18.49%			
Yb	0.228	2.766	8.24%	*		

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Table 275. Per Cent Deviation Results - Susa A Black-on-Buff Ware, High Goblet, Susa, n=3

ELEMENT	STD. DEV.	MEAN	% DEV.		SAMPLE	SITE
Na	0.125	1.070	11.68%		879	Susa
K	0.535	2.180	24.54%		880	Susa
Rb	9.406	48.300	19.47%		881	Susa
Cs	1.376	4.637	29.67%			
Ba	156.142	358.667	43.53%			
Sc	3.963	25.567	15.50%			
La	2.524	26.200	9.63%	*		
Ce	5.205	61.200	8.50%	*		
Eu	0.007	0.965	0.73%	*		
Lu	0.036	0.437	8.24%	*		
Hf	0.115	3.117	3.69%	*		
Th	1.205	8.120	14.84%			
Cr	39.716	331.667	11.97%			
Mn	319.908	1040.670	30.74%			
Fe	0.871	6.123	14.23%			
Co	3.493	23.133	15.10%			
Ca	2.857	18.767	15.22%			
Sm	0.717	4.803	14.93%			
Yb	0.201	2.473	8.13%	*		

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Table 276. Per Cent Deviation Results - Susa A Black-on-Buff Ware, Goblet, Susa, n=8

ELEMENT	STD. DEV.	MEAN	% DEV.	SAMPLE	SITE
Na	0.242	1.237	19.56%	836	Susa
K	0.444	1.533	28.96%	837	Susa
Rb	11.324	44.438	25.48%	838	Susa
Cs	1.426	5.566	25.62%	839	Susa
Ba	137.330	295.125	46.53%	840	Susa
Sc	3.818	28.138	13.57%	841	Susa
La	3.125	28.275	11.05%	842	Susa
Ce	8.141	69.488	11.72%	843	Susa
Eu	0.171	1.436	11.91%		
Lu	0.059	0.554	10.65%		
Hf	0.616	4.634	13.29%		
Th	1.184	8.963	13.21%		
Cr	57.480	405.750	14.17%		
Mn	187.276	989.750	18.92%		
Fe	0.838	6.636	12.63%		
Co	3.942	29.025	13.58%		
Ca	1.465	17.400	8.42% *		
Sm	1.006	5.135	19.59%		
Yb	0.326	2.638	12.36%		

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Table 277. Per Cent Deviation Results - Susa A Black-on-Buff Ware, West-North, Jaffarabad (KS 20), n=13

ELE-MENT	STD. DEV.	MEAN	% DEV.	SAM-PLE	SITE
Na	0.507	1.460	34.73%	849	KS 20
K	0.781	1.833	42.61%	850	KS 20
Rb	32.643	38.046	85.80%	851	KS 20
Cs	1.844	5.484	33.63%	852	KS 20
Ba	100.913	293.308	34.41%	853	KS 20
Sc	3.396	29.238	11.62%	854	KS 20
La	3.198	29.085	11.00%	855	KS 20
Ce	12.647	66.462	19.03%	856	KS 20
Eu	0.194	1.487	13.05%	857	KS 20
Lu	0.065	0.531	12.24%	858	KS 20
Hf	1.258	4.036	31.17%	859	KS 20
Th	1.514	8.986	16.85%	860	KS 20
Cr	53.442	380.923	14.03%	898	KS 20
Mn	184.083	924.615	19.91%		
Fe	0.861	6.815	12.63%		
Co	4.812	28.000	17.19%		
Ca	3.112	16.383	19.00%		
Sm	1.539	5.130	30.00%		
Yb	0.345	2.668	12.93%		

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Table 278. Per Cent Deviation Results - Susa A Black-on-Buff Ware, West-North, Bouhallan (KS 28), n=4

ELEMENT	STD. DEV.	MEAN	% DEV.		SAMPLE	SITE
Na	0.378	1.523	24.82%		891	KS 28
K	1.287	1.770	72.71%		892	KS 28
Rb	10.456	36.825	28.39%		893	KS 28
Cs	1.190	5.828	20.42%		894	KS 28
Ba	46.354	238.000	19.48%			
Sc	1.322	25.800	5.12%	*		
La	2.441	26.650	9.16%	*		
Ce	9.296	68.700	13.53%			
Eu	0.159	1.288	12.34%			
Lu	0.044	0.455	9.67%	*		
Hf	0.875	3.493	25.05%			
Th	0.700	8.968	7.81%	*		
Cr	57.067	311.000	18.35%			
Mn	93.214	988.750	9.43%	*		
Fe	0.246	6.158	3.99%	*		
Co	7.133	25.875	27.57%			
Ca	1.473	17.025	8.65%	*		
Sm	0.965	4.088	23.61%			
Yb	0.329	2.653	12.40%			

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Table 279. Per Cent Deviation Results - Susa A Black-on-Buff Ware, Bowls, KS 13, n=2

ELEMENT	STD. DEV.	MEAN	% DEV.		SAMPLE	SITE
Na	0.441	1.268	34.78%		896	KS 13
K	1.593	1.944	81.94%		897	KS 13
Rb	43.558	30.800	141.42%			
Cs	0.474	3.785	12.52%			
Ba	20.506	377.500	5.43%	*		
Sc	3.041	25.650	11.86%			
La	3.323	25.450	13.06%			
Ce	7.212	63.000	11.45%			
Eu	0.174	0.927	18.77%			
Lu	0.051	0.413	12.35%			
Hf	0.092	2.885	3.19%	*		
Th	0.297	8.130	3.65%	*		
Cr	55.861	291.500	19.16%			
Mn	161.220	885.000	18.22%			
Fe	0.884	6.255	14.13%			
Co	1.697	22.100	7.68%	*		
Ca	2.758	16.650	16.56%			
Sm	0.163	3.955	4.12%	*		
Yb	0.332	2.375	13.98%			

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Table 280. Per Cent Deviation Results - Susa A Black-on-Buff Ware, Luristan Cups from Susa, n=4

ELEMENT	STD. DEV.	MEAN	% DEV.	SAMPLE	SITE
Na	0.104	0.794	13.10%	828	Susa
K	0.454	3.120	14.55%	829	Susa
Rb	49.285	78.050	63.15%	830	Susa
Cs	3.213	5.570	57.68%	882	Susa
Ba	125.535	313.500	40.04%		
Sc	4.446	28.175	15.78%		
La	3.308	29.000	11.41%		
Ce	15.445	67.800	22.78%		
Eu	0.472	1.630	28.96%		
Lu	0.123	0.574	21.43%		
Hf	3.212	5.983	53.69%		
Th	3.304	10.288	32.12%		
Cr	128.391	396.250	32.40%		
Mn	145.362	807.250	18.01%		
Fe	1.127	6.713	16.79%		
Co	5.113	27.150	18.83%		
Ca	7.890	13.485	58.51%		
Sm	2.090	5.670	36.86%		
Yb	0.674	3.020	22.32%		

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Table 281. Per Cent Deviation Results - Susa A Black-on-Buff Ware, Luristan Imports from Susa, n=4

ELEMENT	STD. DEV.	MEAN	% DEV.		SAMPLE	SITE
Na	0.030	0.874	3.43%	*	828	Susa
K	0.255	3.490	7.31%	*	829	Susa
Rb	53.457	111.200	48.07%			
Cs	3.847	7.580	50.75%			
Ba	159.806	380.000	42.05%			
Sc	5.233	30.600	17.10%			
La	3.182	31.150	10.22%			
Ce	4.243	80.100	5.30%	*		
Eu	0.057	2.010	2.84%	*		
Lu	0.025	0.676	3.70%	*		
Hf	0.948	8.690	10.91%			
Th	2.899	12.750	22.74%			
Cr	190.919	451.000	42.33%			
Mn	13.435	714.500	1.88%	*		
Fe	1.082	7.525	14.38%			
Co	0.849	30.200	2.81%	*		
Ca	0.212	6.720	3.15%	*		
Sm	0.233	7.305	3.19%	*		
Yb	0.255	3.590	7.10%	*		

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Table 282. Per Cent Deviation Results - Susa A Black-on-Buff Ware, Far West, n=3

ELE-MENT	STD. DEV.	MEAN	% DEV.		SAM-PLE	SITE
Na	0.328	0.864	37.96%		414	KS 240
K	0.766	1.507	50.83%		909	KS 239
Rb	18.401	41.200	44.66%		910	KS 239
Cs	0.827	4.333	19.09%			
Ba	198.325	502.000	39.51%			
Sc	2.548	27.333	9.32%	*		
La	3.296	28.167	11.70%			
Ce	3.372	63.867	5.28%	*		
Eu	0.202	1.263	15.99%			
Lu	0.068	0.480	14.17%			
Hf	0.666	3.350	19.88%			
Th	0.817	8.870	9.21%	*		
Cr	36.000	340.000	10.59%			
Mn	30.551	1046.670	2.92%	*		
Fe	0.566	6.553	8.64%	*		
Co	1.527	28.967	5.27%	*		
Ca	0.794	16.800	4.73%	*		
Sm	1.518	4.997	30.38%	*		
Yb	0.393	2.927	13.43%			

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Table 283. Per Cent Deviation Results - Susa A Black-on-Buff Ware, Far West, KS 239, n=2

ELEMENT	STD. DEV.	MEAN	% DEV.		SAMPLE	SITE
Na	0.342	0.736	46.47%		909	KS 239
K	1.047	1.620	64.63%		910	KS 239
Rb	19.021	48.450	39.26%			
Cs	0.983	4.075	24.12%			
Ba	241.830	560.000	43.18%			
Sc	2.970	26.500	11.21%			
La	2.970	26.700	11.12%			
Ce	4.834	63.100	7.66%	*		
Eu	0.106	1.155	9.18%	*		
Lu	0.095	0.481	19.75%			
Hf	0.361	2.995	12.05%			
Th	0.849	8.550	9.93%	*		
Cr	25.456	322.000	7.91%	*		
Mn	28.284	1060.000	2.67%	*		
Fe	0.679	6.380	10.64%			
Co	1.414	28.300	5.00%	*		
Ca	0.212	16.350	1.30%	*		
Sm	1.945	4.625	42.05%			
Yb	0.424	2.780	15.25%			

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Table 284. Per Cent Deviation Results - Susa A Black-on-Buff Ware, Center, n=24

ELEMENT	STD. DEV.	MEAN	% DEV.		SAMPLE	SITE
Na	0.438	1.321	33.16%		291	KS 118
K	0.563	1.314	42.85%		353	KS 113
Rb	13.969	23.050	60.60%		355	KS 124
Cs	0.998	4.977	20.05%		365	KS 43
Ba	184.958	364.292	50.77%		373	KS 112
Sc	2.856	27.983	10.21%		377	KS 266
La	2.043	27.946	7.31%	*	389	KS 112
Ce	8.029	63.117	12.72%		397	KS 113
Eu	0.224	1.313	17.06%		411	KS 49
Lu	0.040	0.460	8.70%	*	415	KS 266
Hf	0.463	3.454	13.40%		899	KS 4
Th	1.087	8.623	12.61%		900	KS 4
Cr	61.549	332.583	18.51%		901	KS 6
Mn	236.116	924.667	25.54%		905	KS 112
Fe	0.739	6.764	10.93%		906	KS 112
Co	3.657	27.425	13.33%		907	KS 113
Ca	2.763	18.450	14.98%		911	KS 266
Sm	0.592	5.473	10.82%		912	KS 266
Yb	0.235	2.507	9.37%	*	927	KS 1
					930	KS 1
					952	KS 1
					953	KS 1
					954	KS 1
					955	KS 1

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Table 285. Per Cent Deviation Results - Susa A Black-on-Buff Ware, Center, KS 1, n=6

ELEMENT	STD. DEV.	MEAN	% DEV.		SAMPLE	SITE
Na	0.766	1.462	52.39%			
K	0.567	1.097	51.69%		927	KS 1
Rb	15.655	17.933	87.30%		930	KS 1
Cs	1.482	4.913	30.16%		952	KS 1
Ba	113.859	275.333	41.35%		953	KS 1
Sc	3.555	28.500	12.47%		954	KS 1
La	1.375	28.550	4.82%	*	955	KS 1
Ce	4.786	58.950	8.12%	*		
Eu	0.181	1.448	12.50%			
Lu	0.038	0.450	8.44%	*		
Hf	0.536	2.988	17.94%			
Th	1.067	8.030	13.29%			
Cr	61.220	410.667	14.91%			
Mn	447.211	896.500	49.88%			
Fe	0.910	6.983	13.03%			
Co	3.757	28.767	13.06%			
Ca	1.154	16.767	6.88%	*		
Sm	0.389	5.998	6.49%	*		
Yb	0.122	2.258	5.40%	*		

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Table 286. Per Cent Deviation Results - Susa A Black-on-Buff Ware, Center, KS 4, n=2

ELEMENT	STD. DEV.	MEAN	% DEV.		SAMPLE	SITE
Na	0.247	1.245	19.84%		899	KS 4
K	0.653	0.919	71.06%	*	900	KS 4
Rb	3.960	25.300	15.65%			
Cs	1.039	4.795	21.67%			
Ba	526.087	638.000	82.46%			
Sc	2.970	26.200	11.34%			
La	2.475	27.250	9.08%	*		
Ce	7.212	65.300	11.04%			
Eu	0.461	0.864	53.36%			
Lu	0.015	0.450	3.33%	*		
Hf	0.679	3.840	17.68%			
Th	1.909	8.080	23.63%			
Cr	51.619	314.500	16.41%			
Mn	52.326	1003.000	5.22%	*		
Fe	0.629	6.245	10.07%			
Co	0.849	26.400	3.22%	*		
Ca	2.263	18.700	12.10%			
Sm	0.205	5.545	3.70%	*		
Yb	0.057	2.510	2.27%	*		

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Table 287. Per Cent Deviation Results - Susa A Black-on-Buff Ware, Center, KS 112, n=4

ELEMENT	STD. DEV.	MEAN	% DEV.		SAMPLE	SITE
Na	0.130	1.168	11.13%		373	KS 112
K	0.377	1.340	28.13%		389	KS 112
Rb	19.729	27.200	72.53%		905	KS 112
Cs	1.081	5.210	20.75%		906	KS 112
Ba	31.952	324.250	9.85%	*		
Sc	3.035	28.375	10.70%			
La	2.899	28.525	10.16%			
Ce	9.131	63.475	14.39%			
Eu	0.172	1.303	13.20%			
Lu	0.070	0.476	14.71%			
Hf	0.276	3.588	7.69%	*		
Th	1.498	9.068	16.52%			
Cr	34.694	296.500	11.70%			
Mn	185.792	971.000	19.13%			
Fe	0.842	6.770	12.44%			
Co	4.423	27.350	16.17%			
Ca	1.344	17.900	7.51%	*		
Sm	0.839	5.250	15.98%			
Yb	0.241	2.723	8.85%	*		

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Table 288. Per Cent Deviation Results - Susa A Black-on-Buff Ware, Center, KS 113, n=3

ELEMENT	STD. DEV.	MEAN	% DEV.		SAMPLE	SITE
Na	0.178	1.138	15.64%		353	KS 113
K	0.451	1.513	29.81%		397	KS 113
Rb	2.732	31.633	8.64%	*	907	KS 113
Cs	1.349	4.907	27.49%			
Ba	131.302	445.667	29.46%			
Sc	3.272	25.367	12.90%			
La	2.052	25.000	8.21%	*		
Ce	9.843	58.967	16.69%			
Eu	0.121	1.237	9.78%	*		
Lu	0.069	0.463	14.90%			
Hf	0.285	3.533	8.07%	*		
Th	0.952	8.270	11.51%			
Cr	38.786	301.667	12.86%			
Mn	173.509	864.667	20.07%			
Fe	0.755	6.087	12.40%			
Co	2.650	23.133	11.46%			
Ca	4.860	19.533	24.88%			
Sm	1.048	5.220	20.08%			
Yb	0.298	2.480	12.02%			

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Table 289. Per Cent Deviation Results - Susa A Black-on-Buff Ware, Center, KS 266, n=4

ELEMENT	STD. DEV.	MEAN	% DEV.		SAMPLE	SITE
Na	0.285	1.393	20.46%		377	KS 266
K	0.406	1.345	30.19%		415	KS 266
Rb	10.483	15.500	67.63%		911	KS 266
Cs	0.219	4.815	4.55%	*	912	KS 266
Ba	53.765	274.000	19.62%			
Sc	2.456	27.750	8.85%	*		
La	1.443	27.875	5.18%	*		
Ce	6.150	63.550	9.68%	*		
Eu	0.122	1.280	9.53%	*		
Lu	0.026	0.459	5.66%	*		
Hf	0.254	3.520	7.22%	*		
Th	0.513	8.768	5.85%	*		
Cr	37.757	306.250	12.33%			
Mn	136.985	949.250	14.43%			
Fe	0.675	6.715	10.05%			
Co	3.654	28.425	12.85%			
Ca	3.338	20.500	16.28%			
Sm	0.370	5.145	7.19%	*		
Yb	0.205	2.653	7.73%	*		

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Table 290. Per Cent Deviation Results - Susa A Black-on-Buff Ware, East-North, n=9

ELEMENT	STD. DEV.	MEAN	% DEV.		SAMPLE	SITE
Na	0.354	1.176	30.10%		314	KS 161
K	0.600	1.515	39.60%		317	KS 167
Rb	5.111	26.644	19.18%		357	KS 161
Cs	1.428	4.308	33.15%		375	KS 176
Ba	307.888	514.000	59.90%		383	KS 161
Sc	3.019	28.289	10.67%		412	KS 181
La	2.105	28.756	7.32%	*	413	KS 181
Ce	4.238	65.711	6.45%	*	904	KS 101
Eu	0.214	1.366	15.67%		908	KS 204
Lu	0.096	0.492	19.51%			
Hf	0.608	4.003	15.19%			
Th	0.919	9.131	10.06%			
Cr	44.833	315.667	14.20%			
Mn	108.223	1005.110	10.77%			
Fe	0.701	6.802	10.31%			
Co	3.887	27.467	14.15%			
Ca	1.741	18.867	9.23%	*		
Sm	0.489	5.560	8.79%	*		
Yb	0.250	2.432	10.28%			

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Table 291. Per Cent Deviation Results - Susa A Black-on-Buff Ware, East-North, KS 161, n=3

ELEMENT	STD. DEV.	MEAN	% DEV.		SAMPLE	SITE
Na	0.247	1.029	24.00%		314	KS 161
K	0.530	1.058	50.09%		357	KS 161
Rb	2.483	24.667	10.07%		383	KS 161
Cs	1.678	4.980	33.69%			
Ba	435.221	598.667	72.70%			
Sc	4.095	29.400	13.93%			
La	2.722	29.100	9.35%	*		
Ce	4.484	64.567	6.94%	*		
Eu	0.070	1.410	4.96%	*		
Lu	0.141	0.543	25.97%			
Hf	0.373	3.773	9.89%	*		
Th	1.091	9.380	11.63%			
Cr	25.942	274.000	9.47%	*		
Mn	35.907	999.333	3.59%	*		
Fe	1.016	6.980	14.56%			
Co	4.150	728.933	0.57%	*		
Ca	1.332	20.267	6.57%	*		
Sm	0.724	5.673	12.76%			
Yb	0.180	2.673	6.73%	*		

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Table 292. Per Cent Deviation Results - Susa A Black-on-Buff Ware, East-North, KS 181, n=2

ELEMENT	STD. DEV.	MEAN	% DEV.		SAMPLE	SITE
Na	0.141	1.200	11.75%		412	KS 181
K	0.156	1.810	8.62%	*	413	KS 181
Rb	5.798	21.500	26.97%			
Cs	0.453	3.970	11.41%			
Ba	34.648	289.500	11.97%			
Sc	1.697	26.800	6.33%	*		
La	1.202	29.950	4.01%	*		
Ce	5.657	68.100	8.31%	*		
Eu	0.064	1.505	4.25%	*		
Lu	0.062	0.447	13.87%			
Hf	0.502	4.575	10.97%			
Th	0.948	8.650	10.96%			
Cr	20.506	359.500	5.70%	*		
Mn	84.853	1140.000	7.44%	*		
Fe	0.403	6.445	6.25%	*		
Co	1.768	28.950	6.11%	*		
Ca	1.061	18.750	5.66%	*		
Sm	0.240	5.520	4.35%	*		
Yb	0.057	2.350	2.43%	*		

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Table 293. Per Cent Deviation Results - Susa A Black-on-Buff Ware, Cylindrical Bowl, Band and Line, All, n=3

ELEMENT	STD. DEV.	MEAN	% DEV.		SAMPLE	SITE
Na	0.433	1.557	27.81%		281	KS 22
K	0.651	0.958	67.95%		283	KS 33
Rb	34.064	19.667	173.20%		291	KS 118
Cs	0.589	4.707	12.51%			
Ba	743.189	625.333	118.85%			
Sc	1.587	28.500	5.57%	*		
La	1.159	30.467	3.80%	*		
Ce	2.623	65.200	4.02%	*		
Eu	0.079	1.530	5.16%	*		
Lu	0.017	0.452	3.76%	*		
Hf	0.372	3.833	9.71%	*		
Th	0.689	9.557	7.21%	*		
Cr	60.534	322.667	18.76%			
Mn	77.968	930.000	8.38%	*		
Fe	0.371	6.903	5.37%	*		
Co	1.097	28.067	3.91%	*		
Ca	0.656	18.000	3.64%	*		
Sm	0.323	5.593	5.78%	*		
Yb	0.200	2.493	8.02%	*		

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Table 294. Per Cent Deviation Results - Susa A Black-on-Buff Ware, Cylindrical Bowl, Band and Line, West-North, n=2

ELEMENT	STD. DEV.	MEAN	% DEV.		SAMPLE	SITE
Na	0.099	1.310	7.56%	*	281	KS 22
K	0.530	1.265	41.90%		283	KS 33
Rb	41.719	29.500	141.42%			
Cs	0.133	4.370	3.04%	*		
Ba	859.135	872.500	98.47%			
Sc	2.121	28.200	7.52%	*		
La	1.343	30.850	4.35%	*		
Ce	3.677	65.400	5.62%	*		
Eu	0.085	1.560	5.45%	*		
Lu	0.006	0.461	1.30%	*		
Hf	0.092	4.045	2.27%	*		
Th	0.969	9.515	10.18%			
Cr	40.305	353.500	11.40%			
Mn	2.828	975.000	0.29%	*		
Fe	0.516	6.865	7.52%	*		
Co	1.344	27.750	4.84%	*		
Ca	0.354	17.650	2.01%	*		
Sm	0.346	5.715	6.05%	*		
Yb	0.212	2.570	8.25%	*		

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Table 295. Per Cent Deviation Results - Susa A Black-on-Buff Ware, Cylindrical Bowl, Dots, Indefinite, All, n=7

ELEMENT	STD. DEV.	MEAN	% DEV.		SAMPLE	SITE
Na	0.404	1.332	30.33%		303	KS 22
K	0.727	1.512	48.08%		305	KS 33
Rb	26.306	43.729	60.16%		307	KS 66
Cs	1.032	5.489	18.80%		314	KS 161
Ba	902.546	1162.710	77.62%		317	KS 167
Sc	3.145	29.929	10.51%		323	KS 215
La	1.481	29.657	4.99%	*	324	KS 274
Ce	3.592	66.571	5.40%	*		
Eu	0.105	1.399	7.51%	*		
Lu	0.086	0.519	16.57%			
Hf	0.281	4.061	6.92%	*		
Th	0.918	9.720	9.44%	*		
Cr	32.338	331.429	9.76%	*		
Mn	109.229	1009.140	10.82%			
Fe	0.755	7.211	10.47%			
Co	4.759	28.586	16.65%			
Ca	2.196	19.400	11.32%			
Sm	0.374	5.811	6.44%	*		
Yb	0.329	2.617	12.57%			

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Table 296. Per Cent Deviation Results - Susa A Black-on-Buff Ware, Cylindrical Bowl, Dots, Indefinite, West-North, n=2

ELEMENT	STD. DEV.	MEAN	% DEV.		SAMPLE	SITE
Na	0.000	1.200	0.00%		303	KS 22
K	0.057	1.870	3.05%	*	305	KS 33
Rb	3.960	50.400	7.86%	*		
Cs	0.276	4.315	6.40%	*		
Ba	42.426	1070.000	3.97%	*		
Sc	2.828	26.400	10.71%			
La	0.566	28.200	2.01%	*		
Ce	1.627	64.250	2.53%	*		
Eu	0.120	1.325	9.06%	*		
Lu	0.051	0.487	10.47%			
Hf	0.078	3.885	2.01%	*		
Th	0.785	8.755	8.97%	*		
Cr	16.971	324.000	5.24%	*		
Mn	81.317	907.500	8.96%	*		
Fe	0.700	6.345	11.03%			
Co	5.233	22.800	22.95%			
Ca	2.051	20.050	10.23%			
Sm	0.113	5.650	2.00%	*		
Yb	0.247	2.785	8.87%	*		

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Table 297. Per Cent Deviation Results - Susa A Black-on-Buff Ware, Cylindrical Bowl, Dots, Indefinite, West-South, n=2

ELEMENT	STD. DEV.	MEAN	% DEV.		SAMPLE	SITE
Na	0.740	1.147	64.52%		307	KS 66
K	1.387	1.840	75.38%		324	KS 274
Rb	51.972	60.850	85.41%			
Cs	1.237	6.275	19.71%			
Ba	111.723	694.000	16.10%			
Sc	1.131	30.800	3.67%	*		
La	1.414	29.600	4.78%	*		
Ce	0.143	67.500	0.21%	*		
Eu	0.177	1.405	12.60%			
Lu	0.021	0.484	4.34%	*		
Hf	0.198	4.180	4.74%	*		
Th	0.552	10.310	5.35%	*		
Cr	26.870	357.000	7.53%	*		
Mn	35.355	1145.000	3.09%	*		
Fe	0.255	7.490	3.40%	*		
Co	1.556	31.600	4.92%	*		
Ca	2.828	17.400	16.25%			
Sm	0.467	5.630	8.29%	*		
Yb	0.071	2.510	2.83%	*		

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Table 298. Per Cent Deviation Results - Susa A Black-on-Buff Ware, Cylindrical Bowl, Dots, Indefinite, East-North, n=2

ELEMENT	STD. DEV.	MEAN	% DEV.		SAMPLE	SITE
Na	0.424	1.590	26.67%		314	KS 161
K	0.359	0.997	36.01%		317	KS 167
Rb	2.192	27.650	7.93%	*		
Cs	0.757	5.685	13.32%			
Ba	306.177	730.500	41.91%			
Sc	0.849	33.200	2.56%	*		
La	1.626	31.050	5.24%	*		
Ce	1.414	70.600	2.00%	*		
Eu	0.021	1.465	1.43%	*		
Lu	0.158	0.594	26.60%			
Hf	0.177	4.325	4.09%	*		
Th	0.071	10.450	0.68%	*		
Cr	44.548	334.500	13.32%			
Mn	65.054	994.000	6.54%	*		
Fe	0.170	7.950	2.14%	*		
Co	2.687	31.200	8.61%	*		
Ca	2.121	19.900	10.66%			
Sm	0.389	6.215	6.26%	*		
Yb	0.608	2.430	25.02%			

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Table 299. Per Cent Deviation Results - Susa A Black-on-Buff Ware, Cylindrical Bowl, Band and 2 Lines, All, n=4

ELEMENT	STD. DEV.	MEAN	% DEV.		SAMPLE	SITE
Na	0.237	1.036	22.88%		349	KS 33
K	0.182	1.730	10.52%		353	KS 113
Rb	6.459	27.750	23.28%		355	KS 124
Cs	0.866	3.805	22.76%		357	KS 161
Ba	320.848	480.750	66.74%			
Sc	3.248	25.975	12.50%			
La	2.351	26.200	8.97%	*		
Ce	5.997	58.600	10.23%			
Eu	0.140	1.285	10.89%			
Lu	0.045	0.450	10.00%			
Hf	0.236	3.535	6.68%	*		
Th	1.070	8.370	12.78%			
Cr	37.295	300.250	12.42%			
Mn	138.548	891.250	15.55%			
Fe	0.789	6.235	12.65%			
Co	3.906	25.225	15.48%			
Ca	3.712	20.025	18.54%			
Sm	0.439	4.920	8.92%	*		
Yb	0.224	2.388	9.38%	*		

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Table 300. Per Cent Deviation Results - Susa A Black-on-Buff Ware, Cylindrical Bowl, Band and 2 Lines, Center, n=2

ELEMENT	STD. DEV.	MEAN	% DEV.		SAMPLE	SITE
Na	0.053	0.993	5.34%	*	353	KS 113
K	0.247	1.825	13.53%		355	KS 124
Rb	1.273	33.300	3.82%	*		
Cs	0.297	3.560	8.34%	*		
Ba	28.991	382.500	7.58%	*		
Sc	5.374	25.400	21.16%			
La	3.889	25.650	15.16%			
Ce	7.920	55.300	14.32%			
Eu	0.233	1.275	18.27%			
Lu	0.062	0.427	14.52%			
Hf	0.346	3.455	10.01%			
Th	0.721	7.690	9.38%	*		
Cr	50.912	310.000	16.42%			
Mn	185.969	815.500	22.80%			
Fe	1.294	6.135	21.09%			
Co	6.576	24.750	26.57%			
Ca	5.940	20.800	28.56%			
Sm	0.700	4.775	14.66%			
Yb	0.332	2.395	13.86%			

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Table 301. Per Cent Deviation Results - Susa A Black-on-Buff Ware, Greccas and Scallops, All, n=9

ELEMENT	STD. DEV.	MEAN	% DEV.		SAMPLE	SITE
Na	0.172	1.370	12.55%		407	KS 33
K	0.299	1.588	18.83%		408	KS 33
Rb	7.416	24.089	30.79%		409	KS 33
Cs	0.808	4.346	18.59%		410	KS 35
Ba	142.743	402.889	35.43%		411	KS 49
Sc	2.138	26.756	7.99%	*	412	KS 181
La	1.423	29.356	4.85%	*	413	KS 181
Ce	4.225	65.211	6.48%	*	414	KS 240
Eu	0.080	1.414	5.66%	*	415	KS 266
Lu	0.049	0.478	10.25%			
Hf	0.360	4.141	8.69%	*		
Th	0.839	9.006	9.32%	*		
Cr	38.990	342.333	11.39%			
Mn	85.656	1047.560	8.18%	*		
Fe	0.492	6.436	7.64%	*		
Co	2.817	27.144	10.38%			
Ca	3.036	19.422	15.63%			
Sm	0.276	5.461	5.05%	*		
Yb	0.301	2.653	11.35%			

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Table 302. Per Cent Deviation Results - Susa A Black-on-Buff Ware, Greccas and Scallops, West-North, n=4

ELEMENT	STD. DEV.	MEAN	% DEV.		SAMPLE	SITE
Na	0.091	1.500	6.07%	*	407	KS 33
K	0.345	1.490	23.15%		408	KS 33
Rb	10.427	26.575	39.24%		409	KS 33
Cs	0.930	4.000	23.25%		410	KS 35
Ba	172.716	487.250	35.45%			
Sc	2.563	25.600	10.01%			
La	1.626	29.075	5.59%	*		
Ce	5.139	64.700	7.94%	*		
Eu	0.044	1.363	3.23%	*		
Lu	0.054	0.506	10.67%	*		
Hf	0.246	4.108	5.99%	*		
Th	1.140	8.998	12.67%			
Cr	50.480	339.750	14.86%			
Mn	69.066	1055.250	6.54%	*		
Fe	0.578	6.163	9.38%	*		
Co	3.393	25.800	13.15%			
Ca	2.127	17.825	11.93%			
Sm	0.361	5.435	6.64%	*		
Yb	0.234	2.708	8.64%	*		

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Table 303. Per Cent Deviation Results - Susa A Black-on-Buff Ware, Greccas and Scallops, West-North, KS 33, n=9

ELEMENT	STD. DEV.	MEAN	% DEV.		SAMPLE	SITE
Na	0.750	1.533	48.92%		407	KS 33
K	0.370	1.573	23.52%		408	KS 33
Rb	10.653	23.700	44.95%		409	KS 33
Cs	0.490	3.580	13.69%			
Ba	199.030	458.000	43.46%			
Sc	0.850	24.367	3.49%	*		
La	1.484	28.533	5.20%	*		
Ce	3.251	62.500	5.20%	*		
Eu	0.038	1.347	2.82%	*		
Lu	0.061	0.516	11.82%			
Hf	0.270	4.053	6.66%	*		
Th	0.131	8.430	1.55%	*		
Cr	30.665	361.667	8.48%	*		
Mn	66.033	1033.670	6.39%	*		
Fe	0.151	5.880	2.57%	*		
Co	2.854	24.567	11.62%			
Ca	1.039	18.800	5.53%	*		
Sm	0.340	5.320	6.39%	*		
Yb	0.286	2.717	10.53%			

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Table 304. Per Cent Deviation Results - Susa A Black-on-Buff Ware, Greccas and Scallops, Center, n=2

ELEMENT	STD. DEV.	MEAN	% DEV.		SAMPLE	SITE
Na	0.049	1.405	3.49%	*	411	KS 49
K	0.262	1.715	15.28%		415	KS 266
Rb	2.828	20.400	13.86%			
Cs	0.283	5.160	5.48%	*		
Ba	115.966	356.000	32.57%			
Sc	0.990	27.900	3.55%	*		
La	1.061	28.400	3.74%	*		
Ce	2.475	63.250	3.91%	*		
Eu	0.092	1.395	6.59%	*		
Lu	0.028	0.455	6.15%	*		
Hf	0.064	3.815	1.68%	*		
Th	0.544	9.125	5.96%	*		
Cr	26.163	313.500	8.35%	*		
Mn	37.477	953.500	3.93%	*		
Fe	0.269	6.740	3.99%	*		
Co	1.061	26.450	4.01%	*		
Ca	0.495	24.150	2.05%	*		
Sm	0.177	5.315	3.33%	*		
Yb	0.163	2.565	6.35%	*		

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Table 305. Per Cent Deviation Results - Susa A Black-on-Buff Ware, Greccas and Scallops, East-North, n=2

ELEMENT	STD. DEV.	MEAN	% DEV.		SAMPLE	SITE
Na	0.141	1.200	11.75%		412	KS 181
K	0.156	1.810	8.62%	*	413	KS 181
Rb	5.798	21.500	26.97%			
Cs	0.453	3.970	11.41%			
Ba	34.648	289.500	11.97%			
Sc	1.697	26.800	6.33%	*		
La	1.202	29.950	4.01%	*		
Ce	5.657	68.100	8.31%	*		
Eu	0.064	1.505	4.25%	*		
Lu	0.062	0.447	13.87%			
Hf	0.502	4.575	10.97%			
Th	0.948	8.650	10.96%			
Cr	20.506	359.500	5.70%	*		
Mn	84.853	1140.000	7.44%	*		
Fe	0.403	6.445	6.25%	*		
Co	1.768	28.950	6.11%	*		
Ca	1.061	18.750	5.66%	*		
Sm	0.240	5.520	4.35%	*		
Yb	0.057	2.350	2.43%	*		

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Table 306. Per Cent Deviation Results - Susa A Black-on-Buff Ware, Cylinder Bowl, Band and Dots, All, n=7

ELEMENT	STD. DEV.	MEAN	% DEV.		SAMPLE	SITE
Na	0.117	1.093	10.70%		363	KS 16
K	0.307	1.467	20.93%		364	KS 33
Rb	10.051	28.586	35.16%		365	KS 43
Cs	0.679	5.454	12.45%		373	KS 112
Ba	191.178	335.571	56.97%		375	KS 176
Sc	2.364	28.243	8.37%	*	377	KS 266
La	1.369	28.286	4.84%	*	389	KS 112
Ce	3.955	61.471	6.43%	*		
Eu	0.137	1.384	9.90%	*		
Lu	0.047	0.500	9.40%	*		
Hf	0.339	3.701	9.16%	*		
Th	0.769	9.090	8.46%	*		
Cr	38.899	294.857	13.19%			
Mn	122.775	953.000	12.88%			
Fe	0.594	6.759	8.79%	*		
Co	3.210	27.129	11.83%			
Ca	1.629	18.771	8.68%	*		
Sm	0.529	5.101	10.37%			
Yb	0.109	2.557	4.26%	*		

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Table 307. Per Cent Deviation Results - Susa A Black-on-Buff Ware, Cylinder Bowl, Band and Dots, West-North, n=2

ELEMENT	STD. DEV.	MEAN	% DEV.		SAMPLE	SITE
Na	0.148	1.215	12.18%		363	KS 16
K	0.325	1.300	25.00%		364	KS 33
Rb	3.677	19.500	18.86%			
Cs	0.071	5.840	1.22%	*		
Ba	7.778	168.500	4.62%	*		
Sc	2.333	28.650	8.14%	*		
La	0.283	28.100	1.01%	*		
Ce	1.909	61.650	3.10%	*		
Eu	0.007	1.265	0.55%	*		
Lu	0.071	0.494	14.37%			
Hf	0.269	3.620	7.43%	*		
Th	1.032	8.930	11.56%			
Cr	16.971	283.000	6.00%	*		
Mn	25.456	872.000	2.92%	*		
Fe	0.544	6.815	7.98%	*		
Co	0.354	25.250	1.40%	*		
Ca	0.141	18.500	0.76%	*		
Sm	0.021	5.265	0.40%	*		
Yb	0.071	2.480	2.86%	*		

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Table 308. Per Cent Deviation Results - Susa A Black-on-Buff Ware, Cylinder Bowl, Band and Dots, Center, n=4

ELEMENT	STD. DEV.	MEAN	% DEV.		SAMPLE	SITE
Na	0.045	1.070	4.21%	*	377	KS 266
K	0.320	1.473	21.72%		389	KS 112
Rb	10.650	33.250	32.03%		365	KS 43
Cs	0.544	5.570	9.77%	*	373	KS 112
Ba	182.441	357.000	51.10%			
Sc	3.024	28.175	10.73%			
La	1.775	28.075	6.32%	*		
Ce	5.257	60.800	8.65%	*		
Eu	0.139	1.405	9.89%	*		
Lu	0.014	0.484	2.89%	*		
Hf	0.436	3.695	11.80%			
Th	0.863	9.060	9.53%	*		
Cr	41.210	286.750	14.37%			
Mn	141.700	961.750	14.73%			
Fe	0.773	6.768	11.42%			
Co	4.039	27.500	14.69%			
Ca	2.251	18.725	12.02%			
Sm	0.615	4.883	12.59%			
Yb	0.129	2.585	4.99%	*		

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Table 309. Per Cent Deviation Results - Susa A Black-on-Buff Ware, Cylinder Bowl, Band and Dots, Center, KS 112, n=2

ELEMENT	STD. DEV.	MEAN	% DEV.		SAMPLE	SITE
Na	0.035	1.095	3.20%	*	389	KS 112
K	0.537	1.460	36.78%		373	KS 112
Rb	12.940	34.750	37.24%			
Cs	0.007	5.655	0.12%	*		
Ba	35.355	306.000	11.55%			
Sc	0.212	28.150	0.75%	*		
La	0.990	28.200	3.51%	*		
Ce	2.192	59.450	3.69%	*		
Eu	0.134	1.435	9.34%	*		
Lu	0.021	0.481	4.37%	*		
Hf	0.382	3.680	10.38%			
Th	0.170	8.960	1.90%	*		
Cr	41.012	281.000	14.60%			
Mn	192.333	1014.000	18.97%			
Fe	0.085	6.760	1.26%	*		
Co	2.899	26.450	10.96%			
Ca	2.192	17.950	12.21%			
Sm	0.827	4.715	17.54%			
Yb	0.028	2.670	1.05%	*		

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Table 310. Per Cent Deviation Results - Susa A or Earlier Red Wares, All, n=17

ELEMENT	STD. DEV.	MEAN	% DEV.	SAMPLE	SITE
Na	0.301	1.181	25.49%	104	KS 28
K	0.728	2.364	30.80%	105	KS 33
Rb	13.791	84.147	16.39%	118	KS 113
Cs	0.964	4.985	19.34%	125	KS 168
Ba	150.564	514.412	29.27%	126	KS 176
Sc	3.248	28.253	11.50%	131	KS 239
La	4.271	33.535	12.74%	162	KS 178
Ce	10.429	74.129	14.07%	183	KS 118
Eu	0.228	1.643	13.88%	186	KS 197
Lu	0.081	0.578	14.01%	194	KS 16
Hf	0.770	5.054	15.24%	201	KS 33
Th	1.174	9.692	12.11%	212	KS 67
Cr	169.532	499.000	33.97%	230	KS 218
Mn	158.871	585.529	27.13%	232	KS 240
Fe	0.753	6.464	11.65%	241	KS 106
Co	8.762	27.824	31.49%	256	KS 49
Ca	4.062	7.288	55.74%	260	KS 67
Sm	0.744	6.306	11.80%		
Yb	0.419	3.123	13.42%		

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Table 311. Per Cent Deviation Results - Susa A or Earlier Red Wares, West-North, n=6

ELEMENT	STD. DEV.	MEAN	% DEV.		SAMPLE	SITE	
Na	0.179	1.089	16.44%		104	KS	28
K	1.169	2.165	54.00%		105	KS	33
Rb	11.069	87.900	12.59%		194	KS	16
Cs	1.261	5.438	23.19%		201	KS	33
Ba	157.052	545.667	28.78%		212	KS	67
Sc	4.305	28.600	15.05%		260	KS	67
La	4.523	33.417	13.54%				
Ce	9.918	74.250	13.36%				
Eu	0.202	1.660	12.17%				
Lu	0.088	0.587	14.99%				
Hf	0.488	5.063	9.64%	*			
Th	1.138	10.048	11.33%				
Cr	161.101	448.500	35.92%				
Mn	89.330	567.500	15.74%				
Fe	0.779	6.588	11.82%				
Co	6.882	28.200	24.40%				
Ca	2.854	77.703	3.67%	*			
Sm	0.734	6.273	11.70%				
Yb	0.398	3.138	12.68%				

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Table 312. Per Cent Deviation Results - Susa A or Earlier Red Wares, West-North, KS 67, n=2

ELEMENT	STD. DEV.	MEAN	% DEV.		SAMPLE	SITE
Na	0.125	0.912	13.71%		212	KS 67
K	0.629	3.005	20.93%		260	KS 67
Rb	21.708	86.650	25.05%			
Cs	2.623	5.145	50.98%			
Ba	215.668	615.500	35.04%			
Sc	5.657	26.200	21.59%			
La	1.838	30.500	6.03%	*		
Ce	4.525	67.400	6.71%	*		
Eu	0.078	1.525	5.11%	*		
Lu	0.016	0.536	2.99%	*		
Hf	0.106	4.585	2.31%	*		
Th	1.902	9.755	19.50%			
Cr	70.711	417.000	16.96%			
Mn	14.142	664.000	2.13%	*		
Fe	1.584	6.460	24.52%			
Co	1.697	26.200	6.48%	*		
Ca	2.461	10.360	23.75%			
Sm	0.332	5.705	5.82%	*		
Yb	0.361	2.725	13.25%			

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Table 313. Per Cent Deviation Results - Susa A or Earlier Red Wares, West-North, KS 33, n=2

ELEMENT	STD. DEV.	MEAN	% DEV.		SAMPLE	SITE
Na	0.000	1.280	0.00%		105	KS 33
K	0.064	2.535	2.52%	*	201	KS 33
Rb	3.040	93.950	3.24%	*		
Cs	0.000	6.030	0.00%			
Ba	40.305	497.500	8.10%	*		
Sc	0.000	31.800	0.00%	*		
La	0.495	37.650	1.31%	*		
Ce	0.848	81.000	1.05%	*		
Eu	0.042	1.800	2.33%	*		
Lu	0.006	0.613	0.98%	*		
Hf	0.106	5.505	1.93%	*		
Th	0.354	10.950	3.23%	*		
Cr	27.578	586.500	4.70%	*		
Mn	0.707	526.500	0.13%	*		
Fe	0.113	6.910	1.64%	*		
Co	0.778	30.050	2.59%	*		
Ca	1.011	6.465	15.64%			
Sm	0.028	7.020	0.40%	*		
Yb	0.007	3.495	0.20%	*		

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Table 314. Per Cent Deviation Results - Susa A or Earlier Red Wares, Far West, n=2

ELEMENT	STD. DEV.	MEAN	% DEV.		SAMPLE	SITE
Na	0.790	0.972	81.28%		131	KS 239
K	0.304	2.755	11.03%		232	KS 240
Rb	10.394	62.750	16.56%			
Cs	0.523	4.190	12.48%			
Ba	118.794	746.000	15.92%			
Sc	0.566	25.000	2.26%	*		
La	2.333	26.650	8.75%	*		
Ce	4.879	57.650	8.46%	*		
Eu	0.127	1.230	10.33%			
Lu	0.044	0.470	9.36%	*		
Hf	0.863	3.980	21.68%			
Th	0.361	7.915	4.56%	*		
Cr	154.149	329.000	46.85%			
Mn	205.061	722.000	28.40%			
Fe	0.523	5.700	9.18%	*		
Co	0.141	27.800	0.51%	*		
Ca	6.852	12.955	52.89%			
Sm	0.156	5.110	3.05%	*		
Yb	0.311	2.500	12.44%			

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Table 315. Per Cent Deviation Results - Susa A or Earlier Red Wares, Center, n=3

ELEMENT	STD. DEV.	MEAN	% DEV.	SAMPLE	SITE
Na	0.380	1.352	28.11%	118	KS 113
K	0.376	2.067	18.19%	183	KS 118
Rb	15.708	90.167	17.42%	256	KS 49
Cs	1.096	4.437	24.70%		
Ba	85.407	384.667	22.20%		
Sc	3.799	27.500	13.81%		
La	3.547	33.433	10.61%		
Ce	9.042	72.500	12.47%		
Eu	0.220	1.657	13.28%		
Lu	0.123	0.596	20.64%		
Hf	0.518	4.883	10.61%		
Th	1.149	8.887	12.93%		
Cr	130.155	513.667	25.34%		
Mn	84.032	525.667	15.99%		
Fe	1.360	6.580	20.67%		
Co	18.321	20.233	90.55%		
Ca	5.312	7.173	74.06%		
Sm	0.639	6.280	10.18%		
Yb	0.418	2.947	14.18%		

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Table 316. Per Cent Deviation Results - Susa A or Earlier Red Wares, East-North, n=4

ELEMENT	STD. DEV.	MEAN	% DEV.		SAMPLE	SITE
Na	0.064	1.298	4.93%	*	125	KS 168
K	0.133	2.485	5.35%	*	126	KS 176
Rb	3.213	78.000	4.12%	*	162	KS 178
Cs	0.155	4.843	3.20%	*	241	KS 106
Ba	97.155	475.500	20.43%			
Sc	1.017	28.600	3.56%	*		
La	1.518	35.850	4.23%	*		
Ce	6.886	80.700	8.53%	*		
Eu	0.100	1.738	5.75%	*		
Lu	0.045	0.607	7.41%	*		
Hf	0.467	5.843	7.99%	*		
Th	0.193	10.213	1.89%	*		
Cr	127.209	677.250	18.78%			
Mn	285.121	618.500	46.10%			
Fe	0.304	6.470	4.70%	*		
Co	4.291	32.025	13.40%			
Ca	1.590	6.918	22.98%			
Sm	0.524	6.742	7.77%	*		
Yb	0.151	3.468	4.35%	*		

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Table 317. Per Cent Deviation Results - Susa A or Earlier Red Wares, East-South, n=2

ELE-MENT	STD. DEV.	MEAN	% DEV.		SAM-PLE	SITE
Na	0.279	1.173	23.79%		186	KS 197
K	0.156	2.770	5.63%	*	230	KS 218
Rb	13.364	97.550	13.70%			
Cs	0.346	5.525	6.26%	*		
Ba	84.146	461.500	18.23%			
Sc	2.404	30.900	7.78%	*		
La	4.525	36.300	12.47%			
Ce	11.667	79.550	14.67%			
Eu	0.247	1.795	13.76%			
Lu	0.020	0.572	3.50%	*		
Hf	1.153	4.775	24.15%			
Th	1.039	10.565	9.83%	*		
Cr	128.693	442.000	29.12%			
Mn	52.326	527.000	9.93%	*		
Fe	0.643	6.665	9.65%	*		
Co	3.677	29.700	12.38%			
Ca	1.223	7.285	16.79%			
Sm	0.672	6.765	9.93%	*		
Yb	0.332	3.275	10.14%			

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Table 318. Per Cent Deviation Results - Susa A or Earlier Red Ware, Unslipped, All, n=6

ELEMENT	STD. DEV.	MEAN	% DEV.		SAMPLE	SITE
Na	0.226	1.352	16.72%		104	KS 28
K	0.262	2.412	10.86%		105	KS 33
Rb	9.499	81.083	11.72%		118	KS 113
Cs	0.574	4.995	11.49%		125	KS 168
Ba	146.794	543.833	26.99%		126	KS 176
Sc	2.804	28.900	9.70%	*	131	KS 239
La	3.563	35.067	10.16%			
Ce	9.640	76.867	12.54%			
Eu	0.216	1.708	12.65%			
Lu	0.087	0.638	13.64%			
Hf	0.603	5.478	11.01%			
Th	1.062	9.802	10.83%			
Cr	142.874	595.500	23.99%			
Mn	76.463	506.667	15.09%			
Fe	0.636	6.192	10.27%			
Co	5.171	32.783	15.77%			
Ca	1.673	5.560	30.09%			
Sm	0.771	6.548	11.77%			
Yb	0.352	3.302	10.66%			

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Table 319. Per Cent Deviation Results - Susa A or Earlier Red Ware, Unslipped, West-North, n=2

ELEMENT	STD. DEV.	MEAN	% DEV.		SAMPLE	SITE
Na	0.191	1.145	16.68%		104	KS 28
K	0.410	2.200	18.64%		105	KS 33
Rb	10.748	88.500	12.14%			
Cs	0.566	5.630	10.05%			
Ba	120.915	611.500	19.77%			
Sc	0.212	31.650	0.67%	*		
La	0.424	37.000	1.15%	*		
Ce	4.172	83.350	5.01%	*		
Eu	0.049	1.865	2.63%	*		
Lu	0.091	0.672	13.54%			
Hf	0.049	5.465	0.90%	*		
Th	1.025	10.475	9.79%	*		
Cr	35.355	542.000	6.52%	*		
Mn	64.347	481.500	13.36%			
Fe	0.198	6.850	2.89%	*		
Co	6.576	34.150	19.26%			
Ca	1.386	4.770	29.06%			
Sm	0.205	6.855	2.99%	*		
Yb	0.085	3.430	2.48%	*		

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Table 320. Per Cent Deviation Results - Susa A or Earlier Red Ware, Unslipped, East-North, n=2

ELEMENT	STD. DEV.	MEAN	% DEV.		SAMPLE	SITE
Na	0.064	1.315	4.87%	*	125	KS 168
K	0.042	2.590	1.62%	*	126	KS 176
Rb	2.970	75.900	3.91%	*		
Cs	0.177	4.825	3.67%	*		
Ba	84.146	542.500	15.51%			
Sc	0.919	29.350	3.13%	*		
La	1.273	37.000	3.44%	*		
Ce	9.970	79.250	12.58%			
Eu	0.148	1.765	8.39%	*		
Lu	0.037	0.629	5.88%	*		
Hf	0.672	6.005	11.19%			
Th	0.141	10.300	1.37%	*		
Cr	210.011	705.500	29.77%			
Mn	16.263	44.500	36.55%			
Fe	0.255	6.240	4.09%	*		
Co	7.354	32.400	22.70%			
Ca	1.817	4.895	37.12%			
Sm	0.764	6.980	10.95%			
Yb	0.007	3.595	0.19%			

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Table 321. Per Cent Deviation Results - Susa A or Earlier Red Ware, Burnished, All, n=2

ELEMENT	STD. DEV.	MEAN	% DEV.		SAMPLE	SITE
Na	0.349	1.223	28.54%		183	KS 118
K	0.474	2.545	18.62%		186	KS 197
Rb	13.364	97.550	13.70%			
Cs	0.156	5.390	2.89%	*		
Ba	42.426	432.000	9.82%	*		
Sc	1.697	30.400	5.58%	*		
La	2.475	34.850	7.10%	*		
Ce	6.222	75.700	8.22%	*		
Eu	0.177	1.745	10.14%			
Lu	0.020	0.572	3.50%	*		
Hf	0.728	4.475	16.27%			
Th	0.064	9.875	0.65%	*		
Cr	120.208	436.000	27.57%			
Mn	33.234	466.000	7.13%	*		
Fe	1.365	7.175	19.02%			
Co	19.163	13.550	141.42%			
Ca	2.701	4.510	59.89%			
Sm	0.396	6.570	6.03%	*		
Yb	0.191	3.175	6.02%	*		

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Table 322. Per Cent Deviation Results - Susa A or Earlier Salmon Ware, Red Slip, All, n=5

ELEMENT	STD. DEV.	MEAN	% DEV.		SAMPLE	SITE
Na	0.391	1.005	38.91%		194	KS 16
K	1.348	2.332	57.80%		201	KS 33
Rb	20.255	88.300	22.94%		212	KS 67
Cs	1.186	5.534	21.43%		230	KS 218
Ba	180.472	526.800	34.26%		232	KS 240
Sc	3.842	28.820	13.33%			
La	6.342	32.260	19.66%			
Ce	13.697	71.320	19.20%			
Eu	0.320	1.574	20.33%			
Lu	0.072	0.531	13.56%			
Hf	0.909	1.780	51.07%			
Th	1.551	9.978	15.54%			
Cr	190.796	378.600	50.40%			
Mn	135.278	639.800	21.14%			
Fe	0.660	6.736	9.80%	*		
Co	5.576	27.180	20.52%			
Ca	4.346	10.106	43.00%			
Sm	0.974	6.140	15.86%			
Yb	0.503	3.058	16.45%			

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Table 323. Per Cent Deviaticn Results - Susa A or Earlier Salmon Ware, Red Slip, West-North, n=3

ELE-MENT	STD. DEV.	MEAN	% DEV.		SAM-PLE	SITE	
Na	0.234	1.081	21.65%		194	KS	16
K	1.794	2.010	89.25%		201	KS	33
Rb	8.418	93.033	9.05%	*	212	KS	67
Cs	0.975	6.027	16.18%				
Ba	66.463	427.667	15.54%				
Sc	4.063	28.700	14.16%				
La	5.279	32.700	16.14%				
Ce	9.634	71.533	13.47%				
Eu	0.180	1.587	11.34%				
Lu	0.066	0.544	12.13%				
Hf	0.520	4.980	10.44%				
Th	1.041	10.310	10.10%				
Cr	219.789	380.000	57.84%				
Mn	64.010	589.333	10.86%				
Fe	0.750	6.830	10.98%				
Co	6.605	25.300	26.11%				
Ca	0.881	8.193	10.75%				
Sm	0.802	6.153	13.03%				
Yb	0.289	3.167	9.13%	*			

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Table 324. Per Cent Deviation Results - Susa A or Earlier Salmon Ware, Buff Slip, All, n=2

ELEMENT	STD. DEV.	MEAN	% DEV.		SAMPLE	SITE	
Na	0.052	0.963	5.40%	*	256	KS	49
K	0.651	2.100	31.00%		260	KS	67
Rb	3.253	73.600	4.42%	*			
Cs	0.014	3.300	0.42%	*			
Ba	260.922	583.500	44.72%				
Sc	1.343	23.150	5.80%	*			
La	0.283	29.400	0.96%	*			
Ce	1.202	63.350	1.90%	*			
Eu	0.028	1.450	1.93%	*			
Lu	0.049	0.513	9.55%	*			
Hf	0.134	4.415	3.04%	*			
Th	0.537	8.030	6.69%	*			
Cr	61.518	423.500	14.53%				
Mn	106.773	598.500	17.84%				
Fe	0.438	5.650	7.75%	*			
Co	0.000	25.000	0.00%	*			
Ca	0.636	12.550	5.07%	*			
Sm	0.085	5.530	1.54%	*			
Yb	0.014	2.480	0.56%	*			

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Table 325. Per Cent Deviation Results - Susa A or Earlier Black-on-Buff Ware, All, n=32

ELEMENT	STD. DEV.	MEAN	% DEV.		SAMPLE	SITE
Na	0.240	1.315	18.25%		286	KS 67
K	0.675	1.398	48.28%		288	KS 106
Rb	19.034	30.509	62.39%		290	KS 112
Cs	0.957	5.265	18.18%		294	KS 178
Ba	390.051	506.469	77.01%		301	KS 12
Sc	2.671	28.228	9.46%	*	302	KS 16
La	2.062	28.969	7.12%	*	310	KS 112
Ce	4.868	64.109	7.59%	*	313	KS 159
Eu	0.097	1.367	7.10%	*	315	KS 162
Lu	0.093	0.489	19.02%		319	KS 176
Hf	0.371	3.817	9.72%	*	320	KS 177
Th	0.946	9.425	10.04%		326	KS 6
Cr	39.818	289.313	13.76%		331	KS 105
Mn	99.316	913.594	10.87%		334	KS 108
Fe	0.646	6.788	9.52%	*	344	KS 176
Co	3.751	26.638	14.08%		346	KS 215
Ca	1.939	18.303	10.59%		347	KS 266
Sm	0.446	5.474	8.15%	*	352	KS 106
Yb	0.220	6.610	3.33%	*	359	KS 266
					361	KS 4
					369	KS 67
					371	KS 74
					391	KS 28
					395	KS 108
					396	KS 110
					399	KS 178
					400	KS 178
					402	KS 197
					403	KS 197
					404	KS 215
					405	KS 215
					406	KS 4

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Table 326. Per Cent Deviation Results - Susa A or Earlier Black-on-Buff Ware, West-North, n=5

ELEMENT	STD. DEV.	MEAN	% DEV.		SAMPLE	SITE
Na	0.390	1.148	33.97%		286	KS 67
K	0.488	1.920	25.42%		301	KS 12
Rb	7.697	40.760	18.88%		302	KS 16
Cs	0.708	5.234	13.53%		369	KS 67
Ba	433.122	684.400	63.28%		391	KS 28
Sc	1.753	27.820	6.30%	*		
La	2.237	29.720	7.53%	*		
Ce	4.851	65.480	7.41%	*		
Eu	0.086	1.410	6.10%	*		
Lu	0.114	0.512	22.27%			
Hf	0.304	3.932	7.73%	*		
Th	1.278	9.878	12.94%			
Cr	35.323	289.200	12.21%			
Mn	119.563	866.400	13.80%			
Fe	0.400	6.688	5.98%	*		
Co	3.551	24.360	14.58%			
Ca	1.653	17.240	9.59%	*		
Sm	0.534	5.806	9.20%	*		
Yb	0.299	2.616	11.43%			

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Table 327. Per Cent Deviation Results - Susa A or Earlier Black-on-Buff Ware, West-North, KS 67, n=2

ELE-MENT	STD. DEV.	MEAN	% DEV.		SAM-PLE	SITE
Na	0.530	0.895	59.22%		286	KS 67
K	0.021	1.955	1.07%	*	369	KS 67
Rb	9.970	45.850	21.74%			
Cs	0.764	5.250	14.55%			
Ba	520.430	1022.000	50.92%			
Sc	0.424	28.300	1.50%	*		
La	0.778	29.150	2.67%	*		
Ce	0.281	63.400	0.44%	*		
Eu	0.021	1.355	1.55%	*		
Lu	0.028	0.457	6.13%	*		
Hf	0.205	3.755	5.46%	*		
Th	0.163	9.545	1.71%	*		
Cr	3.536	276.500	1.28%	*		
Mn	129.401	782.500	16.54%			
Fe	0.049	6.845	0.72%	*		
Co	2.051	24.550	8.35%	*		
Ca	1.202	17.850	6.73%	*		
Sm	0.064	5.585	1.15%	*		
Yb	0.346	2.425	14.27%			

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Table 328. Per Cent Deviation Results - Susa A or Earlier Black-on-Buff Ware, Center, n=10

ELEMENT	STD. DEV.	MEAN	% DEV.		SAMPLE	SITE
Na	0.173	1.298	13.33%		290	KS 112
K	0.774	1.375	56.29%		310	KS 112
Rb	21.325	28.480	74.88%		326	KS 6
Cs	1.146	5.021	22.82%		334	KS 108
Ba	468.877	574.400	81.63%		347	KS 266
Sc	3.446	28.990	11.89%		359	KS 266
La	2.550	29.200	8.73%	*	361	KS 4
Ce	5.797	64.690	8.96%	*	395	KS 108
Eu	0.115	1.409	8.16%	*	396	KS 110
Lu	0.037	0.482	7.68%	*	406	KS 4
Hf	0.503	3.823	13.16%			
Th	1.169	9.353	12.50%			
Cr	47.205	310.900	15.18%			
Mn	87.897	955.200	9.20%	*		
Fe	0.817	6.981	11.70%			
Co	3.484	28.320	12.30%			
Ca	0.972	18.370	5.29%	*		
Sm	0.528	5.483	9.63%	*		
Yb	0.209	2.708	7.72%	*		

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Table 329. Per Cent Deviation Results - Susa A or Earlier Black-on-Buff Ware, Center, n=2

ELEMENT	STD. DEV.	MEAN	% DEV.		SAMPLE	SITE
Na	0.354	1.280	27.66%		361	KS 4
K	1.009	1.707	59.11%		406	KS 4
Rb	3.465	25.150	13.78%			
Cs	2.001	3.725	53.72%			
Ba	181.726	691.500	26.28%			
Sc	6.647	26.200	25.37%			
La	2.828	27.800	10.17%			
Ce	7.283	61.350	11.87%			
Eu	0.120	1.325	9.06%	*		
Lu	0.030	0.458	6.55%	*		
Hf	0.078	3.885	2.01%	*		
Th	1.782	8.560	20.82%			
Cr	36.770	369.000	9.96%	*		
Mn	186.676	988.000	18.89%			
Fe	1.598	6.310	25.32%			
Co	5.233	26.400	19.82%			
Ca	1.626	18.350	8.86%	*		
Sm	0.700	5.195	13.47%			
Yb	0.226	2.610	8.66%	*		

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Table 330. Per Cent Deviation Results - Susa A or Earlier Black-on-Buff Ware, Center, KS 108, n=2

ELEMENT	STD. DEV.	MEAN	% DEV.		SAMPLE	SITE
Na	0.113	1.310	8.63%	*	334	KS 108
K	0.576	1.233	46.72%		395	KS 108
Rb	7.212	15.300	47.14%			
Cs	0.686	4.465	15.36%			
Ba	255.973	395.000	64.80%			
Sc	3.818	28.900	13.21%			
La	3.041	27.650	11.00%			
Ce	6.576	62.450	10.53%			
Eu	0.255	1.400	18.21%			
Lu	0.004	0.471	0.85%	*		
Hf	0.127	3.440	3.69%	*		
Th	0.177	8.365	2.12%	*		
Cr	55.154	298.000	18.51%			
Mn	69.296	918.000	7.55%	*		
Fe	0.877	6.930	12.66%			
Co	5.374	30.500	17.62%			
Ca	0.354	18.450	1.92%	*		
Sm	0.382	5.240	7.29%	*		
Yb	0.042	2.680	1.57%	*		

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Table 331. Per Cent Deviation Results - Susa A or Earlier Black-on-Buff Ware, Center, KS 112, n=2

ELEMENT	STD. DEV.	MEAN	% DEV.		SAMPLE	SITE
Na	0.212	1.280	16.56%		290	KS 112
K	0.354	1.290	27.44%		310	KS 112
Rb	34.083	24.100	141.42%			
Cs	0.375	5.955	6.30%	*		
Ba	446.891	408.000	109.53%			
Sc	0.566	29.800	1.90%	*		
La	3.111	31.300	9.94%	*		
Ce	3.465	64.850	5.34%	*		
Eu	0.120	1.435	8.36%	*		
Lu	0.049	0.491	9.98%	*		
Hf	0.361	3.805	9.49%	*		
Th	0.177	9.975	1.77%	*		
Cr	12.021	284.500	4.23%	*		
Mn	14.142	972.000	1.45%	*		
Fe	0.106	7.135	1.49%	*		
Co	1.131	28.100	4.02%	*		
Ca	1.131	17.900	6.32%	*		
Sm	0.665	5.680	11.71%			
Yb	0.410	2.780	14.75%			

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Table 332. Per Cent Deviation Results - Susa A or Earlier Black-on-Buff Ware, Center, KS 266, n=2

ELEMENT	STD. DEV.	MEAN	% DEV.		SAMPLE	SITE
Na	0.113	1.200	9.42%	*	347	KS 266
K	0.453	2.190	20.68%		359	KS 266
Rb	2.828	31.300	9.04%	*		
Cs	0.276	5.115	5.40%	*		
Ba	82.731	410.500	20.15%			
Sc	1.485	28.050	5.29%	*		
La	2.051	30.150	6.80%	*		
Ce	5.586	66.050	8.46%	*		
Eu	0.042	1.420	2.96%	*		
Lu	0.005	0.490	1.02%	*		
Hf	0.318	3.755	8.47%	*		
Th	0.672	9.365	7.18%	*		
Cr	18.385	288.000	6.38%	*		
Mn	9.899	892.000	1.11%	*		
Fe	0.255	6.820	3.74%	*		
Co	0.071	25.450	0.28%	*		
Ca	1.768	18.350	9.63%	*		
Sm	0.368	5.680	6.48%	*		
Yb	0.156	2.610	5.98%	*		

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Table 333. Per Cent Deviation Results - Susa A or Earlier Black-on-Buff Ware, East-North, n=10

ELEMENT	STD. DEV.	MEAN	% DEV.		SAMPLE	SITE
Na	0.212	1.392	15.23%		288	KS 106
K	0.681	1.335	51.01%		294	KS 178
Rb	24.137	26.740	90.27%		313	KS 159
Cs	0.676	5.636	11.99%		315	KS 162
Ba	172.207	352.400	48.87%		319	KS 176
Sc	2.394	27.320	8.76%	*	331	KS 105
La	1.984	28.530	6.95%	*	344	KS 176
Ce	4.572	63.110	7.24%	*	352	KS 106
Eu	0.073	1.330	5.49%	*	399	KS 178
Lu	0.048	0.460	10.43%		400	KS 178
Hf	0.317	3.739	8.48%	*		
Th	0.733	9.367	7.83%	*		
Cr	36.698	267.600	13.71%			
Mn	102.943	892.200	11.54%			
Fe	0.614	6.573	9.34%	*		
Co	3.943	25.740	15.32%			
Ca	2.593	17.820	14.55%			
Sm	0.321	5.365	5.98%	*		
Yb	0.238	2.538	9.38%	*		

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Table 334. Per Cent Deviation Results - Susa A or Earlier Black-on-Buff Ware, East-North, KS 106, n=2

ELEMENT	STD. DEV.	MEAN	% DEV.		SAMPLE	SITE
Na	0.290	1.395	20.79%		288	KS 106
K	0.245	0.847	28.93%		352	KS 106
Rb	10.819	18.650	58.01%			
Cs	0.856	5.315	16.11%			
Ba	168.291	287.000	58.64%			
Sc	3.818	26.800	14.25%			
La	2.546	26.700	9.54%	*		
Ce	6.010	60.350	9.96%	*		
Eu	0.000	1.280	0.00%			
Lu	0.073	0.422	17.30%			
Hf	0.198	3.570	5.55%	*		
Th	1.280	8.875	14.42%			
Cr	9.899	263.000	3.76%	*		
Mn	149.907	904.000	16.58%			
Fe	0.940	6.355	14.79%			
Co	3.041	27.250	11.16%			
Ca	0.566	20.800	2.72%	*		
Sm	0.240	5.120	4.69%	*		
Yb	0.375	2.435	15.40%			

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Table 335. Per Cent Deviation Results - Susa A or Earlier Black-on-Buff Ware, East-North, KS 176, n=2

ELEMENT	STD. DEV.	MEAN	% DEV.		SAMPLE	SITE
Na	0.122	1.380	8.84%	*	294	KS 178
K	0.469	1.870	25.08%		399	KS 178
Rb	15.825	36.833	42.96%		400	KS 178
Cs	0.280	5.733	4.88%	*		
Ba	52.729	305.667	17.25%			
Sc	2.883	26.400	10.92%			
La	0.954	28.200	3.38%	*		
Ce	2.801	63.667	4.40%	*		
Eu	0.049	1.323	3.70%	*		
Lu	0.047	0.497	9.46%	*		
Hf	0.250	3.840	6.51%	*		
Th	0.342	9.493	3.60%	*		
Cr	16.010	251.667	6.36%	*		
Mn	60.871	930.667	6.54%	*		
Fe	0.718	6.260	11.47%			
Co	4.468	24.700	18.09%			
Ca	1.286	15.533	8.28%	*		
Sm	0.322	5.260	6.12%	*		
Yb	0.263	2.573	10.22%			

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Table 336. Per Cent Deviation Results - Susa A or Earlier Black-on-Buff Ware, East-North, KS 178, n=3

ELEMENT	STD. DEV.	MEAN	% DEV.		SAMPLE	SITE
Na	0.122	1.380	8.84%	*	294	KS 178
K	0.469	1.870	25.08%		399	KS 178
Rb	15.825	36.833	42.96%		400	KS 178
Cs	0.280	5.733	4.88%	*		
Ba	52.729	305.667	17.25%			
Sc	2.883	26.400	10.92%			
La	0.954	28.200	3.38%	*		
Ce	2.801	63.667	4.40%	*		
Eu	0.049	1.323	3.70%	*		
Lu	0.047	0.497	9.46%	*		
Hf	0.250	3.840	6.51%	*		
Th	0.342	9.493	3.60%	*		
Cr	16.010	251.667	6.36%	*		
Mn	60.871	930.667	6.54%	*		
Fe	0.718	6.260	11.47%			
Co	4.468	24.700	18.09%			
Ca	1.286	15.533	8.28%	*		
Sm	0.322	5.260	6.12%	*		
Yb	0.263	2.573	10.22%			

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Table 337. Per Cent Deviation Results - Susa A or Earlier Black-on-Buff Ware, East-South, All, n=5

ELEMENT	STD. DEV.	MEAN	% DEV.		SAMPLE	SITE
Na	0.260	1.317	19.74%		346	KS 215
K	0.548	1.307	41.93%		402	KS 197
Rb	14.383	33.660	42.73%		403	KS 197
Cs	1.394	5.024	27.75%		404	KS 215
Ba	510.850	422.200	121.00%		405	KS 215
Sc	2.606	29.040	8.97%	*		
La	1.555	29.040	5.35%	*		
Ce	4.694	64.860	7.24%	*		
Eu	0.101	1.328	7.61%	*		
Lu	0.198	0.539	36.73%			
Hf	0.339	3.900	8.69%	*		
Th	0.653	9.338	6.99%	*		
Cr	23.910	292.200	8.18%	*		
Mn	59.794	955.600	6.26%	*		
Fe	0.632	6.966	9.07%	*		
Co	4.209	26.880	15.66%			
Ca	1.598	19.100	8.37%	*		
Sm	0.323	5.388	5.99%	*		
Yb	0.125	2.600	4.81%	*		

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Table 338. Per Cent Deviation Results - Susa A or Earlier Black-on-Buff Ware, East-South, KS 197, n=2

ELE-MENT	STD. DEV.	MEAN	% DEV.		SAM-PLE	SITE
Na	0.208	1.083	19.21%		402	KS 197
K	0.786	1.485	52.93%		403	KS 197
Rb	27.082	37.250	72.70%			
Cs	1.549	5.005	30.95%			
Ba	38.891	140.500	27.68%			
Sc	3.889	27.350	14.22%			
La	1.061	27.550	3.85%	*		
Ce	3.889	60.350	6.44%	*		
Eu	0.035	1.245	2.81%	*		
Lu	0.034	0.427	7.96%	*		
Hf	0.021	3.625	0.58%	*		
Th	0.870	8.885	9.79%	*		
Cr	12.728	279.000	4.56%	*		
Mn	14.142	918.000	1.54%	*		
Fe	0.926	6.565	14.11%			
Co	6.293	25.250	24.92%			
Ca	1.697	19.100	8.88%	*		
Sm	0.219	5.115	4.28%	*		
Yb	0.198	2.560	7.73%	*		

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Table 339. Per Cent Deviation Results - Susa A or Earlier Black-on-Buff Ware, East-South, KS 215, n=3

ELEMENT	STD. DEV.	MEAN	% DEV.		SAMPLE	SITE
Na	0.148	1.473	10.05%		346	KS 215
K	0.489	1.189	41.13%		404	KS 215
Rb	5.052	31.267	16.16%		405	KS 215
Cs	1.640	5.037	32.56%			
Ba	623.636	610.000	102.24%			
Sc	1.124	30.167	3.73%	*		
La	0.757	30.033	2.52%	*		
Ce	1.617	67.867	2.38%	*		
Eu	0.090	1.383	6.51%	*		
Lu	0.239	0.614	38.93%			
Hf	0.323	4.083	7.91%	*		
Th	0.365	9.640	3.79%	*		
Cr	27.785	301.000	9.23%	*		
Mn	68.515	980.667	6.99%	*		
Fe	0.320	7.233	4.42%	*		
Co	3.347	27.967	11.97%			
Ca	1.916	19.100	10.03%			
Sm	0.246	5.570	4.42%	*		
Yb	0.095	2.627	3.62%	*		

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Table 340. Per Cent Deviation Results - Susa A or Earlier Black-on-Buff Ware, Cylindrical Bowl, Band and Dots, All, n=3

ELEMENT	STD. DEV.	MEAN	% DEV.		SAMPLE	SITE
Na	0.167	1.217	13.72%		361	KS 4
K	0.750	1.782	42.09%		369	KS 67
Rb	8.554	29.467	29.03%		371	KS 74
Cs	1.428	3.957	36.09%			
Ba	470.771	888.667	52.97%			
Sc	3.635	25.500	14.25%			
La	1.967	27.600	7.13%	*		
Ce	3.843	59.300	6.48%	*		
Eu	0.066	1.300	5.08%	*		
Lu	0.022	0.451	4.88%	*		
Hf	0.232	3.787	6.13%	*		
Th	1.180	8.467	13.94%			
Cr	65.072	320.667	20.29%			
Mn	83.803	765.000	10.95%			
Fe	0.871	6.140	14.19%			
Co	2.606	24.400	10.68%			
Ca	2.159	19.267	11.21%			
Sm	0.440	5.043	8.72%	*		
Yb	0.130	2.520	5.16%	*		

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Table 341. Per Cent Deviation Results = Susa A or Earlier Black-on-Buff Ware, Cylindrical Bowl, Band and 2 Lines, All, n=2

ELEMENT	STD. DEV.	MEAN	% DEV.		SAMPLE	SITE
Na	0.226	1.440	15.69%		352	KS 106
K	0.846	1.272	66.51%		359	KS 266
Rb	15.768	22.150	71.19%			
Cs	0.431	5.615	7.68%	*		
Ba	212.839	318.500	66.83%			
Sc	0.283	29.300	0.97%	*		
La	2.192	30.050	7.29%	*		
Ce	3.818	67.300	5.67%	*		
Eu	0.120	1.365	8.79%	*		
Lu	0.009	0.480	1.88%	*		
Hf	0.191	3.845	4.97%	*		
Th	0.042	9.810	0.43%	*		
Cr	21.920	285.500	7.68%	*		
Mn	88.388	947.500	9.33%	*		
Fe	0.014	7.010	0.20%	*		
Co	2.828	27.400	10.32%			
Ca	0.566	20.000	2.83%	*		
Sm	0.460	5.615	8.19%	*		
Yb	0.014	2.710	0.52%	*		

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Table 342. Per Cent Deviation Results - Susa A or Earlier Black-on-Buff Ware, Cylindrical Bowl, Band and Line, All, n=4

ELEMENT	STD. DEV.	MEAN	% DEV.		SAMPLE	SITE
Na	0.397	1.095	36.26%		286	KS 67
K	0.556	1.510	36.82%		288	KS 106
Rb	24.421	32.100	76.08%		290	KS 112
Cs	0.641	5.615	11.42%		294	KS 178
Ba	238.702	352.000	67.81%			
Sc	2.804	26.325	10.65%			
La	1.912	27.725	6.90%	*		
Ce	3.255	60.925	5.34%	*		
Eu	0.035	1.315	2.66%	*		
Lu	0.069	0.450	15.33%			
Hf	0.172	3.608	4.77%	*		
Th	0.818	9.155	8.94%	*		
Cr	19.973	261.750	7.63%	*		
Mn	67.488	874.000	7.72%	*		
Fe	0.750	6.293	11.92%			
Co	3.221	25.275	12.74%			
Ca	1.730	18.900	9.15%	*		
Sm	0.284	5.288	5.37%	*		
Yb	0.265	2.390	11.09%			

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Table 343. Per Cent Deviation Results - Susa A or Earlier Black-on-Buff Ware, Cylindrical Bowl, Dots, Indefinite, East-North, n=2

ELEMENT	STD. DEV.	MEAN	% DEV.		SAMPLE	SITE
Na	0.035	1.215	2.88%	*	288	KS 106
K	0.721	1.530	47.12%		294	KS 178
Rb	16.193	37.750	42.90%			
Cs	0.728	5.225	13.93%			
Ba	106.066	331.000	32.04%			
Sc	0.212	23.950	0.89%	*		
La	2.404	26.600	9.04%	*		
Ce	4.172	59.050	7.07%	*		
Eu	0.007	1.285	0.54%	*		
Lu	0.119	0.454	26.21%			
Hf	0.290	3.635	7.98%	*		
Th	0.990	8.670	11.42%			
Cr	14.142	246.000	5.75%	*		
Mn	45.255	830.000	5.45%	*		
Fe	0.057	5.650	1.01%	*		
Co	2.828	23.100	12.24%			
Ca	2.970	19.100	15.55%			
Sm	0.290	5.155	5.63%	*		
Yb	0.389	2.445	15.91%			

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Table 344. Per Cent Deviation Results - Susa A or Earlier Black-on-Buff Ware, Cylindrical Bowl, Dots, Indefinite, All, n=3

ELEMENT	STD. DEV.	MEAN	% DEV.		SAMPLE	SITE
Na	0.251	1.404	17.88%		301	KS 12
K	0.774	1.146	67.54%		302	KS 16
Rb	23.600	32.588	72.42%		310	KS 112
Cs	0.755	5.691	13.27%		313	KS 159
Ba	295.838	516.875	57.24%		315	KS 162
Sc	1.805	28.463	6.34%	*	319	KS 176
La	2.703	30.075	8.99%	*	320	KS 177
Ce	5.177	64.450	8.03%	*	326	KS 6
Eu	0.080	1.440	5.56%	*		
Lu	0.092	0.504	18.25%			
Hf	0.398	3.815	10.43%			
Th	1.072	9.939	10.79%			
Cr	34.251	276.500	12.39%			
Mn	105.913	883.750	11.98%			
Fe	0.389	6.883	5.65%	*		
Co	4.690	25.975	18.06%			
Ca	2.199	18.025	12.20%			
Sm	0.538	5.790	9.29%	*		
Yb	0.223	2.734	8.16%	*		

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Table 345. Per Cent Deviation Results - Susa A or Earlier Black-on-Buff Ware, Cylindrical Bowl, Dots, Indefinite, West-North, n=2

ELEMENT	STD. DEV.	MEAN	% DEV.		SAMPLE	SITE
Na	0.283	1.330	21.28%		310	KS 112
K	1.089	0.770	141.43%		326	KS 6
Rb	22.274	32.450	68.64%			
Cs	0.184	5.820	3.16%	*		
Ba	367.695	464.000	79.24%			
Sc	0.212	30.050	0.71%	*		
La	4.525	30.300	14.93%			
Ce	3.818	64.600	5.91%	*		
Eu	0.057	1.480	3.85%	*		
Lu	0.058	0.485	11.96%			
Hf	0.467	3.730	12.52%			
Th	0.424	9.800	4.33%	*		
Cr	21.920	277.500	7.90%	*		
Mn	35.355	957.000	3.69%	*		
Fe	0.014	7.200	0.19%	*		
Co	3.465	29.750	11.65%			
Ca	1.556	18.200	8.55%	*		
Sm	0.827	5.565	14.86%			
Yb	0.262	2.885	9.08%	*		

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Table 346. Per Cent Deviation Results - Susa A or Earlier Black-on-Buff Ware, Cylindrical Bowl, Dots, Indefinite, Center, n=2

ELEMENT	STD. DEV.	MEAN	% DEV.		SAMPLE	SITE
Na	0.362	1.427	25.37%		313	KS 159
K	0.830	1.288	64.44%		315	KS 162
Rb	41.084	32.100	127.99%		319	KS 176
Cs	0.915	5.963	15.34%			
Ba	303.289	380.000	79.81%			
Sc	1.513	27.100	5.58%	*		
La	2.740	29.600	9.26%	*		
Ce	5.119	61.267	8.36%	*		
Eu	0.098	1.397	7.02%	*		
Lu	0.039	0.459	8.50%	*		
Hf	0.437	3.627	12.05%			
Th	1.070	9.520	11.24%			
Cr	16.042	254.667	6.30%	*		
Mn	108.868	798.667	13.63%			
Fe	0.441	6.687	6.59%	*		
Co	4.649	23.500	19.78%			
Ca	2.364	18.100	13.06%			
Sm	0.406	5.600	7.25%	*		
Yb	0.216	2.607	8.29%	*		

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Table 347. Per Cent Deviation Results - Susa A or Earlier Black-on-Buff Ware, Cylindrical Bowl, Dots, Indefinite, East-North, n=5

ELEMENT	STD. DEV.	MEAN	% DEV.		SAMPLE	SITE
Na	0.362	1.427	25.37%		313	KS 159
K	0.830	1.288	64.44%		315	KS 162
Rb	41.084	32.100	127.99%		319	KS 176
Cs	0.915	5.963	15.34%			
Ba	303.289	380.000	79.81%			
Sc	1.513	27.100	5.58%	*		
La	2.740	29.600	9.26%	*		
Ce	5.119	61.267	8.36%	*		
Eu	0.098	1.397	7.02%	*		
Lu	0.039	0.459	8.50%	*		
Hf	0.437	3.627	12.05%			
Th	1.070	9.520	11.24%			
Cr	16.042	254.667	6.30%	*		
Mn	108.868	798.667	13.63%			
Fe	0.441	6.687	6.59%	*		
Co	4.649	23.500	19.78%			
Ca	2.364	18.100	13.06%			
Sm	0.406	5.600	7.25%	*		
Yb	0.216	2.607	8.29%	*		

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Table 348. Per Cent Deviation Results - Susa A or Earlier Black-on-Buff Ware, Cylindrical Bowl, Band and Band, All, n=5

ELEMENT	STD. DEV.	MEAN	% DEV.		SAMPLE	SITE
Na	0.125	1.274	9.81%	*	331	KS 105
K	0.808	1.408	57.39%		334	KS 108
Rb	13.315	18.780	70.90%		344	KS 176
Cs	1.023	4.554	22.46%		346	KS 215
Ba	445.972	557.800	79.95%		347	KS 266
Sc	1.825	29.380	6.21%	*		
La	0.920	29.580	3.11%	*		
Ce	3.012	66.160	4.55%	*		
Eu	0.126	1.404	8.97%	*		
Lu	0.191	0.549	34.79%			
Hf	0.406	3.858	10.52%			
Th	0.430	9.106	4.72%	*		
Cr	42.330	312.400	13.55%			
Mn	55.532	968.400	5.73%	*		
Fe	0.373	7.064	5.28%	*		
Co	3.227	29.740	10.85%			
Ca	2.137	18.280	11.69%			
Sm	0.174	5.512	3.16%	*		
Yb	0.188	2.568	7.32%	*		

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Table 349. Per Cent Deviation Results - Susa A or Earlier Black-on-Buff Ware, Cylindrical Bowl, Band and Band, Center, n=2

ELEMENT	STD. DEV.	MEAN	% DEV.		SAMPLE	SITE
Na	0.078	1.175	6.64%	*	334	KS 108
K	1.191	1.668	71.40%		347	KS 266
Rb	13.506	19.750	68.38%			
Cs	0.067	4.450	1.49%	*		
Ba	97.581	283.000	34.48%			
Sc	3.253	29.300	11.10%			
La	0.778	29.250	2.66%	*		
Ce	3.536	64.600	5.47%	*		
Eu	0.134	1.485	9.02%	*		
Lu	0.013	0.484	2.69%	*		
Hf	0.000	3.530	0.00%			
Th	0.283	8.690	3.26%	*		
Cr	43.841	306.000	14.33%			
Mn	48.083	933.000	5.15%	*		
Fe	0.643	7.095	9.06%	*		
Co	6.223	29.900	20.81%			
Ca	0.778	17.600	4.42%	*		
Sm	0.064	5.465	1.17%	*		
Yb	0.106	2.575	4.12%	*		

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Table 350. Per Cent Deviation Results - Susa A or Earlier Black-on-Buff Ware, Cylindrical Bowl, Band and Band, East-North, n=2

ELEMENT	STD. DEV.	MEAN	% DEV.		SAMPLE	SITE
Na	0.148	1.355	10.92%		331	KS 105
K	0.918	1.091	84.14%		344	KS 176
Rb	16.476	11.650	141.42%			
Cs	0.891	5.320	16.75%			
Ba	118.087	446.500	26.45%			
Sc	1.626	29.550	5.50%	*		
La	0.778	29.250	2.66%	*		
Ce	3.677	67.800	5.42%	*		
Eu	0.042	1.290	3.26%	*		
Lu	0.026	0.446	5.83%	*		
Hf	0.403	3.925	10.27%			
Th	0.255	9.440	2.70%	*		
Cr	71.418	315.500	22.64%			
Mn	28.284	963.000	2.94%	*		
Fe	0.354	7.090	4.99%	*		
Co	1.202	29.150	4.12%	*		
Ca	3.465	17.850	19.41%			
Sm	0.106	5.415	1.96%	*		
Yb	0.304	2.485	12.23%			

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Table 351. Per Cent Deviation Results - Susa A or Earlier Black-on-Buff Ware, Goat Motif, All, n=9

ELEMENT	STD. DEV.	MEAN	% DEV.		SAMPLE	SITE
Na	0.204	1.337	15.26%		391	KS 28
K	0.636	1.510	42.12%		395	KS 108
Rb	19.548	37.544	52.07%		396	KS 110
Cs	0.740	5.499	13.46%		399	KS 178
Ba	499.195	445.445	112.07%		400	KS 178
Sc	3.168	28.600	11.08%		402	KS 197
La	1.715	28.322	6.06%	*	403	KS 197
Ce	5.848	64.711	9.04%	*	404	KS 215
Eu	0.088	1.322	6.66%	*	405	KS 215
Lu	0.044	0.474	9.28%	*		
Hf	0.502	3.890	12.90%			
Th	1.001	9.457	10.58%			
Cr	36.301	284.556	12.76%			
Mn	61.427	946.333	6.49%	*		
Fe	0.777	6.863	11.32%			
Co	3.526	26.300	13.41%			
Ca	1.968	17.722	11.10%			
Sm	0.423	5.342	7.92%	*		
Yb	0.217	2.610	8.31%	*		

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Table 352. Per Cent Deviation Results - Susa A or Earlier Black-on-Buff Ware, Goat Motif, Center, n=2

ELEMENT	STD. DEV.	MEAN	% DEV.		SAMPLE	SITE
Na	0.057	1.350	4.22%	*	395	KS 108
K	0.518	1.274	40.66%		396	KS 110
Rb	39.598	48.400	81.81%			
Cs	0.559	5.345	10.46%			
Ba	816.001	1153.000	70.77%			
Sc	5.586	30.150	18.53%			
La	3.960	28.300	13.99%			
Ce	12.587	66.700	18.87%			
Eu	0.191	1.355	14.10%			
Lu	0.063	0.513	12.28%			
Hf	1.209	4.205	28.75%			
Th	2.305	9.870	23.35%			
Cr	77.075	313.500	24.59%			
Mn	149.200	974.500	15.31%			
Fe	1.358	7.270	18.68%			
Co	2.404	28.400	8.46%	*		
Ca	0.283	18.500	1.53%	*		
Sm	0.912	5.615	16.24%			
Yb	0.219	2.865	7.64%	*		

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Table 353. Per Cent Deviation Results - Susa A or Earlier Black-on-Buff Ware, Goat Motif, Center, KS 178, n=2

ELEMENT	STD. DEV.	MEAN	% DEV.		SAMPLE	SITE
Na	0.014	1.450	0.97%	*	399	KS 178
K	0.629	1.785	35.24%		400	KS 178
Rb	16.476	30.650	53.76%			
Cs	0.396	5.730	6.91%	*		
Ba	43.134	330.500	13.05%			
Sc	2.546	27.700	9.19%	*		
La	1.343	28.150	4.77%	*		
Ce	3.394	64.500	5.26%	*		
Eu	0.057	1.340	4.25%	*		
Lu	0.043	0.477	9.01%	*		
Hf	0.354	3.840	9.22%	*		
Th	0.460	9.555	4.81%	*		
Cr	12.021	259.500	4.63%	*		
Mn	18.385	965.000	1.91%	*		
Fe	0.629	6.585	9.55%	*		
Co	4.525	26.500	17.08%			
Ca	0.283	14.800	1.91%	*		
Sm	0.438	5.210	8.41%	*		
Yb	0.325	2.500	13.00%			

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Table 354. Per Cent Deviation Results - Susa A or Earlier Black-on-Buff Ware, Goat Motif, East-South, n=4

ELEMENT	STD. DEV.	MEAN	% DEV.		SAMPLE	SITE
Na	0.300	1.319	22.74%		402	KS 197
K	0.618	1.254	49.28%		403	KS 197
Rb	16.525	34.300	48.18%		404	KS 215
Cs	1.118	5.473	20.43%		405	KS 215
Ba	67.687	195.250	34.67%			
Sc	3.008	29.000	10.37%			
La	1.335	28.575	4.67%	*		
Ce	5.371	64.575	8.32%	*		
Eu	0.071	1.293	5.49%	*		
Lu	0.040	0.452	8.85%	*		
Hf	0.240	3.780	6.35%	*		
Th	0.753	9.355	8.05%	*		
Cr	21.517	285.500	7.54%	*		
Mn	32.465	932.000	3.48%	*		
Fe	0.730	6.970	10.47%			
Co	4.226	25.950	16.29%			
Ca	1.644	18.775	8.76%	*		
Sm	0.262	5.285	4.96%	*		
Yb	0.122	2.570	4.75%	*		

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Table 355. Per Cent Deviation Results - Susa A or Earlier Black-on-Buff Ware, Goat Motif, East-South, KS 197, n=2

ELEMENT	STD. DEV.	MEAN	% DEV.		SAMPLE	SITE
Na	0.208	1.083	19.21%		402	KS 197
K	0.786	1.485	52.93%		403	KS 197
Rb	27.082	37.250	72.70%			
Cs	1.549	5.005	30.95%			
Ba	38.891	140.500	27.68%			
Sc	3.889	27.350	14.22%			
La	1.061	27.550	3.85%	*		
Ce	3.889	60.350	6.44%	*		
Eu	0.035	1.245	2.81%	*		
Lu	0.034	0.427	7.96%	*		
Hf	0.021	3.625	0.58%	*		
Th	0.870	8.885	9.79%	*		
Cr	12.728	279.000	4.56%	*		
Mn	14.142	918.000	1.54%	*		
Fe	0.926	6.565	14.11%			
Co	6.293	25.250	24.92%			
Ca	1.697	19.100	8.88%	*		
Sm	0.219	5.115	4.28%	*		
Yb	0.198	2.560	7.73%	*		

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Table 356. Per Cent Deviation Results - Susa A or Earlier Black-on-Buff Ware, Goat Motif, East-South, n=2

ELE-MENT	STD. DEV.	MEAN	% DEV.		SAM-PLE	SITE
Na	0.064	1.555	4.12%	*	404	KS 215
K	0.561	1.024	54.79%		405	KS 215
Rb	7.142	31.350	22.78%			
Cs	0.693	5.940	11.67%			
Ba	15.556	250.000	6.22%	*		
Sc	1.061	30.650	3.46%	*		
La	0.141	29.600	0.48%	*		
Ce	0.000	68.800	0.00%			
Eu	0.071	1.340	5.30%	*		
Lu	0.033	0.477	6.92%	*		
Hf	0.276	3.935	7.01%	*		
Th	0.247	9.825	2.51%	*		
Cr	32.527	292.000	11.14%			
Mn	46.669	946.000	4.93%	*		
Fe	0.290	7.375	3.93%	*		
Co	3.465	26.650	13.00%			
Ca	2.192	18.450	11.88%			
Sm	0.205	5.455	3.76%	*		
Yb	0.071	2.580	2.75%	*		

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Table 357. Per Cent Deviation Results - Terminal Susa A, All, n=29

ELEMENT	STD. DEV.	MEAN	% DEV.		SAMPLE	SITE
Na	0.247	1.046	23.61%		574	KS 64
K	0.410	2.003	20.47%		575	KS 64
Rb	21.262	52.724	40.33%		576	KS 64
Cs	0.698	3.587	19.46%		577	KS 269
Ba	175.192	475.759	36.82%		578	KS 269
Sc	2.849	21.452	13.28%		579	KS 269
La	2.747	27.034	10.16%		580	KS 269
Ce	7.027	48.172	14.59%		581	KS 269
Eu	0.178	1.321	13.47%		582	KS 64
Lu	0.077	0.462	16.67%		583	KS 269
Hf	0.552	4.106	13.44%		584	KS 269
Th	0.923	7.963	11.59%		585	KS 269
Cr	74.592	447.517	16.67%		701	KS 67
Mn	128.458	932.138	13.78%		702	KS 67
Fe	0.590	5.358	11.01%		703	KS 67
Co	3.184	23.810	13.37%		704	KS 67
Ca	3.480	18.576	18.73%		705	KS 67
Sm	0.514	5.286	9.72%	*	706	KS 108
Yb	0.339	2.450	13.84%		707	KS 108
					708	KS 182
					709	KS 182
					710	KS 182
					711	KS 190
					712	KS 190
					713	KS 190
					714	KS 190
					715	KS 190
					716	KS 266
					717	KS 266

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Table 358. Per Cent Deviation Results - Terminal Susa A, West, n=17

ELE-MENT	STD. DEV.	MEAN	% DEV.	SAM-PLE	SITE
Na	0.198	1.009	19.62%	574	KS 64
K	0.383	2.106	18.19%	575	KS 64
Rb	17.041	61.288	27.80%	576	KS 64
Cs	0.586	3.705	15.82%	577	KS 269
Ba	138.957	518.529	26.80%	578	KS 269
Sc	3.451	21.429	16.10%	579	KS 269
La	2.862	27.665	10.35%	580	KS 269
Ce	6.937	50.971	13.61%	581	KS 269
Eu	0.171	1.310	13.05%	582	KS 64
Lu	0.076	0.455	16.70%	583	KS 269
Hf	0.470	4.254	11.05%	584	KS 269
Th	1.004	8.095	12.40%	585	KS 269
Cr	61.913	470.824	13.15%	701	KS 67
Mn	144.685	925.824	15.63%	702	KS 67
Fe	0.660	5.476	12.05%	703	KS 67
Co	3.189	25.124	12.69%	704	KS 67
Ca	3.969	17.982	22.07%	705	KS 67
Sm	0.536	5.425	9.88% *		
Yb	0.292	2.592	11.27%		

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Table 359. Per Cent Deviation Results - Terminal Susa A, Center, n=4

ELEMENT	STD. DEV.	MEAN	% DEV.		SAMPLE	SITE
Na	0.300	1.363	22.01%		706	KS 108
K	0.657	1.730	37.98%		707	KS 108
Rb	27.475	39.100	70.27%		716	KS 266
Cs	0.554	3.140	17.64%		717	KS 266
Ba	238.096	353.500	67.35%			
Sc	0.968	20.350	4.76%	*		
La	1.930	25.650	7.52%	*		
Ce	4.398	40.400	10.89%			
Eu	0.198	1.242	15.94%			
Lu	0.063	0.434	14.52%			
Hf	0.622	3.920	15.87%			
Th	0.701	7.535	9.30%	*		
Cr	93.429	445.250	20.98%			
Mn	98.419	893.250	11.02%			
Fe	0.201	4.908	4.10%	*		
Co	0.864	21.400	4.04%	*		
Ca	2.445	19.500	12.54%			
Sm	0.395	5.038	7.84%	*		
Yb	0.278	2.178	12.76%			

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Table 360. Per Cent Deviation Results - Terminal Susa A, West, n=8

ELEMENT	STD. DEV.	MEAN	% DEV.		SAMPLE	SITE
Na	0.218	0.966	22.57%		708	KS 182
K	0.273	1.920	14.22%		709	KS 182
Rb	19.714	41.338	47.69%		710	KS 182
Cs	0.941	3.560	26.43%		711	KS 190
Ba	200.855	446.000	45.03%		712	KS 190
Sc	1.935	22.050	8.78%	*	713	KS 190
La	2.707	26.388	10.26%		714	KS 190
Ce	4.566	46.113	9.90%	*	715	KS 190
Eu	0.186	1.384	13.44%			
Lu	0.084	0.491	17.11%			
Hf	0.646	3.885	16.63%			
Th	0.863	7.898	10.93%			
Cr	75.858	399.125	19.01%			
Mn	108.674	965.000	11.26%			
Fe	0.479	5.333	8.98%	*		
Co	2.571	22.225	11.57%			
Ca	2.792	19.375	14.41%			
Sm	0.467	5.115	9.13%	*		
Yb	0.330	2.284	14.45%			

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Table 361. Per Cent Deviation Results - Terminal Susa A, KS 64, n=4

ELEMENT	STD. DEV.	MEAN	% DEV.		SAMPLE	SITE
Na	0.288	1.017	28.32%		574	KS 64
K	0.419	2.283	18.35%		575	KS 64
Rb	11.687	63.300	18.46%		576	KS 64
Cs	0.744	3.388	21.96%		582	KS 64
Ba	62.441	520.750	11.99%			
Sc	2.758	21.000	13.13%			
La	2.802	27.025	10.37%			
Ce	5.281	48.400	10.91%			
Eu	0.187	1.140	16.40%			
Lu	0.083	0.408	20.34%			
Hf	0.476	4.193	11.35%			
Th	1.109	7.743	14.32%			
Cr	70.838	461.000	15.37%			
Mn	162.929	835.000	19.51%			
Fe	0.638	5.193	12.29%			
Co	3.169	24.275	13.05%			
Ca	2.263	17.650	12.82%			
Sm	0.512	5.235	9.78%	*		
Yb	0.282	2.520	11.19%			

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Table 362. Per Cent Deviation Results - Terminal Susa A, KS 362, n=8

ELEMENT	STD. DEV.	MEAN	% DEV.		SAMPLE	SITE
Na	0.073	0.989	7.38%	*	577	KS 269
K	0.240	2.229	10.77%		578	KS 269
Rb	14.735	71.188	20.70%		579	KS 269
Cs	0.603	3.934	15.33%		580	KS 269
Ba	101.942	478.875	21.29%		581	KS 269
Sc	4.465	21.838	20.45%		583	KS 269
La	2.303	29.100	7.91%	*	584	KS 269
Ce	5.960	53.550	11.13%		585	KS 269
Eu	0.123	1.384	8.89%	*		
Lu	0.076	0.470	16.17%			
Hf	0.448	4.341	10.32%			
Th	0.838	8.611	9.73%	*		
Cr	57.437	490.875	11.70%			
Mn	124.120	963.500	12.88%			
Fe	0.526	5.859	8.98%	*		
Co	2.505	26.763	9.36%	*		
Ca	3.875	16.475	23.52%			
Sm	0.462	5.718	8.08%	*		
Yb	0.265	2.738	9.68%	*		

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Table 363. Per Cent Deviation Results - Terminal Susa A, Flared Neck Jars, n=4

ELEMENT	STD. DEV.	MEAN	% DEV.	SAMPLE	SITE
Na	0.191	0.957	19.96%	582	KS 64
K	0.297	2.205	13.47%	583	KS 269
Rb	17.505	72.875	24.02%	584	KS 269
Cs	1.009	4.030	25.04%	585	KS 269
Ba	113.758	550.750	20.66%		
Sc	6.678	20.250	32.98%		
La	4.287	29.325	14.62%		
Ce	9.375	54.750	17.12%		
Eu	0.303	1.323	22.90%		
Lu	0.105	0.469	22.39%		
Hf	0.601	4.508	13.33%		
Th	1.648	8.723	18.89%		
Cr	81.433	500.000	16.29%		
Mn	136.928	1022.000	13.40%		
Fe	0.938	5.923	15.84%		
Co	3.987	27.350	14.58%		
Ca	3.818	15.350	24.87%		
Sm	0.853	5.765	14.80%		
Yb	0.428	2.828	15.13%		

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Table 364. Per Cent Deviation Results - Terminal Susa A, Flared Neck Jars, KS 269, n=3

ELEMENT	STD. DEV.	MEAN	% DEV.		SAMPLE	SITE
Na	0.057	1.049	5.43%	*	583	KS 269
K	0.309	2.283	13.53%		584	KS 269
Rb	4.854	81.400	5.96%	*	585	KS 269
Cs	0.380	4.510	8.43%	*		
Ba	132.367	533.000	24.83%			
Sc	7.970	21.000	37.95%			
La	0.945	31.433	3.01%	*		
Ce	2.762	59.300	4.66%	*		
Eu	0.040	1.473	2.72%	*		
Lu	0.065	0.514	12.65%			
Hf	0.202	4.797	4.21%	*		
Th	0.176	9.543	1.84%	*		
Cr	22.502	539.667	4.17%	*		
Mn	55.076	1086.670	5.07%	*		
Fe	0.089	6.390	1.39%	*		
Co	1.015	29.300	3.46%	*		
Ca	0.764	13.467	5.67%	*		
Sm	0.155	6.187	2.51%	*		
Yb	0.061	3.040	2.01%	*		

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Table 365. Per Cent Deviation Results - Terminal Susa A, Impressed Strip Bowls, All, n=25

ELEMENT	STD. DEV.	MEAN	% DEV.		SAMPLE	SITE
Na	0.255	1.060	24.06%		574	KS 64
K	0.421	1.970	21.37%		575	KS 64
Rb	20.263	49.500	40.94%		576	KS 64
Cs	0.636	3.516	18.09%		577	KS 269
Ba	181.942	463.760	39.23%		578	KS 269
Sc	1.902	21.644	8.79%	*	579	KS 269
La	2.344	26.668	8.79%	*	580	KS 269
Ce	6.185	47.120	13.13%		581	KS 269
Eu	0.159	1.321	12.04%		701	KS 67
Lu	0.074	0.461	16.05%		702	KS 67
Hf	0.528	4.042	13.06%		703	KS 67
Th	0.738	7.842	9.41%	*	704	KS 67
Cr	71.622	439.120	16.31%		705	KS 67
Mn	123.882	917.760	13.50%		706	KS 108
Fe	0.485	5.268	9.21%	*	707	KS 108
Co	2.724	23.244	11.72%		708	KS 182
Ca	3.209	19.092	16.81%		709	KS 182
Sm	0.416	5.210	7.98%	*	710	KS 182
Yb	0.289	2.389	12.10%		711	KS 190
					712	KS 190
					713	KS 190
					714	KS 190
					715	KS 190
					716	KS 266
					717	KS 266

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Table 366. Per Cent Deviation Results - Terminal Susa A, Impressed Strip Bowls, KS 64, n=3

ELEMENT	STD. DEV.	MEAN	% DEV.		SAMPLE	SITE
Na	0.219	1.129	19.40%		574	KS 64
K	0.445	2.387	18.64%		575	KS 64
Rb	5.848	68.633	8.52%	*	576	KS 64
Cs	0.638	3.653	17.47%			
Ba	35.043	493.000	7.11%	*		
Sc	2.326	22.000	10.57%			
La	0.987	28.367	3.48%	*		
Ce	2.511	50.833	4.94%	*		
Eu	0.062	1.230	5.04%	*		
Lu	0.081	0.432	18.75%			
Hf	0.369	4.377	8.43%	*		
Th	0.617	8.237	7.49%	*		
Cr	57.099	487.667	11.71%			
Mn	199.465	837.333	23.82%			
Fe	0.555	5.417	10.25%			
Co	3.151	25.200	12.50%			
Ca	0.451	16.533	2.73%	*		
Sm	0.182	5.480	3.32%	*		
Yb	0.215	2.630	8.17%	*		

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Table 367. Per Cent Deviation Results - Terminal Susa A, Impressed Strip Bowls, KS 67, n=5

ELEMENT	STD. DEV.	MEAN	% DEV.		SAMPLE	SITE
Na	0.289	1.034	27.95%		701	KS 67
K	0.388	1.768	21.95%		702	KS 67
Rb	9.928	43.840	22.65%		703	KS 67
Cs	0.319	3.592	8.88%	*	704	KS 67
Ba	219.594	580.200	37.85%		705	KS 67
Sc	2.528	21.120	11.97%			
La	3.015	25.880	11.65%			
Ce	9.171	48.900	18.75%			
Eu	0.153	1.328	11.52%			
Lu	0.072	0.470	15.32%			
Hf	0.578	4.164	13.88%			
Th	0.923	7.552	12.22%			
Cr	64.516	446.600	14.45%			
Mn	159.957	938.200	17.05%			
Fe	0.628	5.090	12.34%			
Co	3.369	23.180	14.53%			
Ca	4.392	20.660	21.26%			
Sm	0.499	5.110	9.77%	*		
Yb	0.269	2.416	11.13%			

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Table 368. Per Cent Deviation Results - Terminal Susa A, Impressed Strip Bowls, KS 108, n=2

ELEMENT	STD. DEV.	MEAN	% DEV.		SAMPLE	SITE
Na	0.269	1.570	17.13%		706	KS 108
K	0.156	1.800	8.67%	*	707	KS 108
Rb	10.324	56.600	18.24%			
Cs	0.049	3.355	1.46%	*		
Ba	31.820	491.500	6.47%	*		
Sc	0.070	20.550	0.34%	*		
La	0.636	26.050	2.44%	*		
Ce	3.606	39.450	9.14%	*		
Eu	0.035	1.245	2.81%	*		
Lu	0.037	0.461	8.03%	*		
Hf	0.078	4.055	1.92%	*		
Th	0.332	7.755	4.28%	*		
Cr	36.770	466.000	7.89%	*		
Mn	50.912	822.000	6.19%	*		
Fe	0.057	4.950	1.15%	*		
Co	1.131	21.800	5.19%	*		
Ca	1.061	18.050	5.88%	*		
Sm	0.035	5.115	0.68%	*		
Yb	0.014	2.250	0.62%	*		

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Table 369. Per Cent Deviation Results - Terminal Susa A, Impressed Strip Bowls, KS 182, n=3

ELEMENT	STD. DEV.	MEAN	% DEV.		SAMPLE	SITE
Na	0.106	0.979	10.83%		708	KS 182
K	0.278	2.037	13.65%		709	KS 182
Rb	19.046	55.933	34.05%		710	KS 182
Cs	0.567	4.197	13.51%			
Ba	283.974	573.333	49.53%			
Sc	2.550	21.667	11.77%			
La	3.119	27.100	11.51%			
Ce	4.253	49.100	8.66%	*		
Eu	0.198	1.467	13.50%			
Lu	0.076	0.511	14.87%			
Hf	0.642	4.353	14.75%			
Th	1.106	8.070	13.71%			
Cr	63.571	469.333	13.54%			
Mn	148.288	966.667	15.34%			
Fe	0.646	5.160	12.52%			
Co	2.259	22.433	10.07%			
Ca	4.244	18.767	22.61%			
Sm	0.502	5.283	9.50%	*		
Yb	0.410	2.457	16.69%			

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Table 370. Per Cent Deviation Results - Terminal Susa A, Impressed Strip Bowls, KS 190, n=5

ELEMENT	STD. DEV.	MEAN	% DEV.		SAMPLE	SITE
Na	0.278	0.958	29.02%		711	KS 190
K	0.275	1.850	14.86%		712	KS 190
Rb	15.591	32.580	47.85%		713	KS 190
Cs	0.950	3.178	29.89%		714	KS 190
Ba	104.030	369.600	28.15%		715	KS 190
Sc	1.768	22.280	7.94%	*		
La	2.712	25.960	10.45%			
Ce	4.090	44.320	9.23%	*		
Eu	0.181	1.334	13.57%			
Lu	0.095	0.479	19.83%			
Hf	0.511	3.604	14.18%			
Th	0.810	7.794	10.39%			
Cr	46.201	357.000	12.94%			
Mn	98.334	964.000	10.20%			
Fe	0.396	5.436	7.28%	*		
Co	2.993	22.100	13.54%			
Ca	2.048	19.740	10.37%			
Sm	0.471	5.014	9.39%	*		
Yb	0.267	2.180	12.25%			

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Table 371. Per Cent Deviation Results - Terminal Susa A, Impressed Strip Bowls, KS 266, n=2

ELEMENT	STD. DEV.	MEAN	% DEV.		SAMPLE	SITE
Na	0.163	1.155	14.11%		716	KS 266
K	1.118	1.660	67.35%		717	KS 266
Rb	30.547	21.600	141.42%			
Cs	0.856	2.925	29.26%			
Ba	304.763	215.500	141.42%			
Sc	1.626	20.150	8.07%	*		
La	3.182	25.250	12.60%			
Ce	6.435	41.350	15.56%			
Eu	0.341	1.239	27.52%			
Lu	0.086	0.406	21.18%			
Hf	1.039	3.785	27.45%			
Th	1.082	7.315	14.79%			
Cr	152.028	424.500	35.81%			
Mn	78.489	964.500	8.14%	*		
Fe	0.332	4.865	6.82%	*		
Co	0.566	21.000	2.70%	*		
Ca	2.899	20.950	13.84%			
Sm	0.665	4.960	13.41%			
Yb	0.460	2.105	21.85%			

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Table 372. Per Cent Deviation Results - Terminal Susa A, Impressed Strip Bowls, KS 269, n=5

ELEMENT	STD. DEV.	MEAN	% DEV.		SAMPLE	SITE
Na	0.058	0.953	6.09%	*	577	KS 269
K	0.223	2.196	10.15%		578	KS 269
Rb	15.589	65.060	23.96%		579	KS 269
Cs	0.407	3.588	11.34%		580	KS 269
Ba	76.878	446.400	17.22%		581	KS 269
Sc	1.514	22.340	6.78%	*		
La	1.517	27.700	5.48%	*		
Ce	4.322	50.100	8.63%	*		
Eu	0.127	1.330	9.55%	*		
Lu	0.075	0.444	16.89%			
Hf	0.286	4.068	7.03%	*		
Th	0.413	8.052	5.13%	*		
Cr	51.607	461.600	11.18%			
Mn	85.084	889.600	9.56%	*		
Fe	0.376	5.540	6.79%	*		
Co	1.656	25.240	6.56%	*		
Ca	3.889	18.280	21.27%			
Sm	0.312	5.436	5.74%	*		
Yb	0.107	2.556	4.19%	*		

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Table 373. Per Cent Deviation Results - Clay Samples, All, n=6

ELEMENT	STD. DEV.	MEAN	% DEV.		SAMPLE	SITE
Na	0.174	1.682	10.34%		975	Susa
K	0.376	2.090	17.99%		976	Susa
Rb	10.508	39.783	26.41%		977	KS 20
Cs	0.811	2.797	29.00%		978	KS 20
Ba	77.830	272.333	28.58%		979	Susa
Sc	1.182	14.417	8.20%	*	980	Susa
La	1.068	16.517	6.47%	*		
Ce	2.847	41.550	6.85%	*		
Eu	0.038	0.890	4.27%	*		
Lu	0.018	0.276	6.52%	*		
Hf	0.400	1.967	20.34%			
Th	0.260	4.407	5.90%	*		
Cr	41.558	341.667	12.16%			
Mn	18.504	735.000	2.52%	*		
Fe	0.486	3.573	13.60%			
Co	1.556	15.767	9.87%	*		
Ca	1.093	19.383	5.64%	*		
Sm	0.319	4.080	7.82%	*		
Yb	0.186	1.448	12.85%			

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Table 374. Per Cent Deviation Results - Clay Samples, Susa, n=4

ELEMENT	STD. DEV.	MEAN	% DEV.		SAMPLE	SITE
Na	0.194	1.735	11.18%		975	Susa
K	0.445	2.173	20.48%		976	Susa
Rb	9.963	35.200	28.30%		979	Susa
Cs	0.717	2.440	29.39%		980	Susa
Ba	96.067	269.750	35.61%			
Sc	0.942	14.100	6.68%	*		
La	0.625	16.350	3.82%	*		
Ce	3.003	42.000	7.15%	*		
Eu	0.023	0.888	2.59%	*		
Lu	0.019	0.282	6.74%	*		
Hf	0.226	1.878	12.03%			
Th	0.245	4.503	5.44%	*		
Cr	47.381	354.250	13.38%			
Mn	19.414	741.250	2.62%	*		
Fe	0.254	3.310	7.67%	*		
Co	1.329	15.600	8.52%	*		
Ca	1.333	19.275	6.92%	*		
Sm	0.387	4.045	9.57%	*		
Yb	0.204	1.488	13.71%			

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Table 375. Per Cent Deviation Results - Clay Samples, Jaffarabad, n=2

ELEMENT	STD. DEV.	MEAN	% DEV.		SAMPLE	SITE
Na	0.064	1.575	4.06%	*	977	KS 20
K	0.177	1.925	9.19%	*	978	KS 20
Rb	1.485	48.950	3.03%	*		
Cs	0.467	3.510	13.30%			
Ba	50.205	277.500	18.09%			
Sc	1.768	15.050	11.75%			
La	2.051	16.850	12.17%			
Ce	3.323	40.650	8.17%	*		
Eu	0.075	0.894	8.39%	*		
Lu	0.008	0.263	3.04%	*		
Hf	0.742	2.145	34.59%			
Th	0.219	4.125	5.31%	*		
Cr	0.707	316.500	0.22%	*		
Mn	10.607	722.500	1.47%	*		
Fe	0.396	4.100	9.66%	*		
Co	2.546	16.100	15.81%			
Ca	0.707	19.600	3.61%	*		
Sm	0.212	4.150	5.11%	*		
Yb	0.170	1.370	12.41%			

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Table 376. Per Cent Deviation Results - Fired Clay Samples, All, n=6

ELEMENT	STD. DEV.	MEAN	% DEV.		SAMPLE	SITE
Na	0.243	1.755	13.85%		981	Susa
K	0.374	2.232	16.76%		982	Susa
Rb	15.804	51.767	30.53%		983	KS 20
Cs	0.491	3.023	16.24%		984	KS 20
Ba	48.278	262.000	18.43%		985	Susa
Sc	1.146	15.017	7.63%	*	986	Susa
La	1.766	18.533	9.53%	*		
Ce	7.145	47.700	14.98%			
Eu	0.094	0.970	9.69%	*		
Lu	0.021	0.304	6.91%	*		
Hf	0.621	2.122	29.26%			
Th	0.221	5.320	4.15%	*		
Cr	30.703	348.500	8.81%	*		
Mn	61.140	744.167	8.22%	*		
Fe	0.236	3.542	6.66%	*		
Co	1.260	17.250	7.30%	*		
Ca	1.029	21.233	4.85%	*		
Sm	0.748	4.537	16.49%			
Yb	0.150	1.530	9.80%	*		

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Table 377. Per Cent Deviation Results - Fired Clay Samples, Susa, n=4

ELEMENT	STD. DEV.	MEAN	% DEV.		SAMPLE	SITE
Na	0.308	1.773	17.37%		981	Susa
K	0.415	2.355	17.62%		982	Susa
Rb	10.223	60.575	16.88%		985	Susa
Cs	0.519	3.153	16.46%		986	Susa
Ba	55.979	264.500	21.16%			
Sc	1.028	14.975	6.86%	*		
La	1.771	17.900	9.89%	*		
Ce	8.562	46.150	18.55%			
Eu	0.080	0.933	8.57%	*		
Lu	0.019	0.302	6.29%	*		
Hf	0.738	2.245	32.87%			
Th	0.217	5.238	4.14%	*		
Cr	38.375	346.000	11.09%			
Mn	39.761	778.250	5.11%	*		
Fe	0.227	3.543	6.41%	*		
Co	1.581	17.200	9.19%	*		
Ca	0.709	20.925	3.39%	*		
Sm	0.471	4.260	11.06%			
Yb	0.180	1.528	11.78%			

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Table 378. Per Cent Deviation Results - Fired Clay Samples, Jaffarabad, n=2

ELEMENT	STD. DEV.	MEAN	% DEV.		SAMPLE	SITE
Na	0.085	1.720	4.94%	*	983	KS 20
K	0.021	1.985	1.06%	*	984	KS 20
Rb	2.051	34.150	6.01%	*		
Cs	0.445	2.765	16.09%			
Ba	46.669	257.000	18.16%			
Sc	1.838	15.100	12.17%			
La	1.414	19.800	7.14%	*		
Ce	2.546	50.800	5.01%	*		
Eu	0.095	1.043	9.11%	*		
Lu	0.032	0.308	10.39%			
Hf	0.332	1.875	17.71%			
Th	0.149	5.485	2.72%	*		
Cr	14.849	353.500	4.20%	*		
Mn	2.828	676.000	0.42%	*		
Fe	0.354	3.540	10.00%			
Co	0.636	17.350	3.67%	*		
Ca	1.626	21.850	7.44%	*		
Sm	1.103	5.090	21.67%			
Yb	0.120	1.535	7.82%	*		

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Table 379. Per Cent Deviation Results - Clay Samples and Fired Clay, All, n=12

ELEMENT	STD. DEV.	MEAN	% DEV.		SAMPLE	SITE
Na	0.205	1.718	11.93%		975	Susa
K	0.365	2.161	16.89%		976	Susa
Rb	14.365	45.775	31.38%		977	KS 20
Cs	0.650	2.910	22.34%		978	KS 20
Ba	61.984	267.167	23.20%		979	Susa
Sc	1.156	14.717	7.85%	*	980	Susa
La	1.745	17.525	9.96%	*	981	Susa
Ce	6.100	44.625	13.67%		982	Susa
Eu	0.080	0.930	8.60%	*	983	KS 20
Lu	0.024	0.290	8.28%	*	984	KS 20
Hf	0.504	2.044	24.66%		985	Susa
Th	0.530	4.863	10.90%		986	Susa
Cr	35.018	345.083	10.15%			
Mn	43.333	739.583	5.86%	*		
Fe	0.365	3.558	10.26%			
Co	1.557	16.508	9.43%	*		
Ca	1.399	20.308	6.89%	*		
Sm	0.598	4.308	13.88%			
Yb	0.166	1.489	11.15%			

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Table 380. Per Cent Deviation Results - Clay Samples and Fired Clay, Susa, n=8

ELEMENT	STD. DEV.	MEAN	% DEV.		SAMPLE	SITE
Na	0.239	1.754	13.63%		975	Susa
K	0.410	2.264	18.11%		976	Susa
Rb	16.471	47.888	34.39%		977	Susa
Cs	0.693	2.796	24.79%		980	Susa
Ba	72.843	267.125	27.27%		981	Susa
Sc	1.025	14.538	7.05%	*	982	Susa
La	1.452	17.125	8.48%		985	Susa
Ce	6.341	44.075	14.39%		986	Susa
Eu	0.059	0.910	6.48%	*		
Lu	0.021	0.292	7.19%	*		
Hf	0.542	2.610	20.77%			
Th	0.448	4.870	9.20%	*		
Cr	40.158	350.125	11.47%			
Mn	35.074	759.750	4.62%	*		
Fe	0.255	3.426	7.44%	*		
Co	1.600	16.400	9.76%	*		
Ca	1.324	20.100	6.59%	*		
Sm	0.415	4.153	9.99%	*		
Yb	0.180	1.508	11.94%			

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Table 381. Per Cent Deviation Results - Clay Samples and Fired Clay, Jaffarabad, n=4

ELEMENT	STD. DEV.	MEAN	% DEV.		SAMPLE	SITE
Na	0.104	1.648	6.31%		977	KS 20
K	0.108	1.955	5.52%		978	KS 20
Rb	8.669	41.550	20.86%		983	KS 20
Cs	0.569	3.138	18.13%		984	KS 20
Ba	41.307	267.250	15.46%			
Sc	1.473	15.075	9.77%	*		
La	2.229	18.325	12.16%			
Ce	6.339	45.725	13.86%			
Eu	0.111	0.968	11.47%			
Lu	0.032	0.285	11.23%			
Hf	0.495	2.010	24.63%			
Th	0.749	4.850	15.44%			
Cr	23.022	335.000	6.87%	*		
Mn	27.585	699.250	3.94%	*		
Fe	0.445	3.820	11.65%			
Co	1.678	16.725	10.03%			
Ca	1.654	20.725	7.98%	*		
Sm	0.846	4.620	18.31%			
Yb	0.153	1.453	10.53%			

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Table 382. Per Cent Deviation Results - Clay Samples, Fired Clay, and Associated Sherds, All, n=19

ELE-MENT	STD. DEV.	MEAN	% DEV.	SAM-PLE	SITE
Na	0.243	1.774	13.70%	968	Susa
K	0.480	2.386	20.12%	969	Susa
Rb	20.387	47.500	42.92%	970	Susa
Cs	1.054	3.039	34.68%	971	Susa
Ba	73.500	298.474	24.63%	972	Susa
Sc	2.062	15.874	12.99%	973	Susa
La	2.555	18.821	13.58%	974	Susa
Ce	9.731	49.742	19.56%	975	Susa
Eu	0.126	0.982	12.83%	976	Susa
Lu	0.043	0.313	13.74%	977	KS 20
Hf	0.621	2.241	27.71%	978	KS 20
Th	0.931	5.474	17.01%	979	Susa
Cr	72.455	357.684	20.26%	980	Susa
Mn	97.939	783.000	12.51%	981	Susa
Fe	0.487	3.801	12.81%	982	Susa
Co	3.400	18.453	18.43%	983	KS 20
Ca	1.759	19.889	8.84% *	984	KS 20
Sm	0.774	4.685	16.52%	985	Susa
Yb	0.289	1.665	17.36%	986	Susa

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Table 383. Per Cent Deviation Results - Clay Samples, Fired Clay, and Associated Sherds, Susa, n=15

ELEMENT	STD. DEV.	MEAN	% DEV.	SAMPLE	SITE
Na	0.261	1.808	14.44%	968	Susa
K	0.476	2.501	19.03%	969	Susa
Rb	22.482	49.087	45.80%	970	Susa
Cs	1.164	3.013	38.63%	971	Susa
Ba	78.913	306.800	25.72%	972	Susa
Sc	2.184	16.087	13.58%	973	Susa
La	2.691	18.953	14.20%	974	Susa
Ce	10.358	50.813	20.38%	975	Susa
Eu	0.133	0.986	13.49%	976	Susa
Lu	0.044	0.320	13.75%	979	Susa
Hf	0.651	2.303	28.27%	980	Susa
Th	0.924	5.640	16.38%	981	Susa
Cr	80.311	363.733	22.08%	982	Susa
Mn	98.138	805.333	12.19%	985	Susa
Fe	0.512	3.795	13.49%	986	Susa
Co	3.630	18.913	19.19%		
Ca	1.772	19.667	9.01%		
Sm	0.784	4.703	16.67%		
Yb	0.293	1.721	17.02%		

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Table 384. Per Cent Deviation Results - Red Clay Samples, All, n=3

ELEMENT	STD. DEV.	MEAN	% DEV.		SAMPLE	SITE
Na	0.133	1.607	8.28%	*	975	Susa
K	0.495	1.980	25.00%		977	KS 20
Rb	10.629	37.867	28.07%		979	Susa
Cs	1.153	2.953	39.05%			
Ba	50.143	208.667	24.03%			
Sc	1.609	14.800	10.87%			
La	1.305	17.067	7.65%	*		
Ce	2.409	41.367	5.82%	*		
Eu	0.029	0.915	3.17%	*		
Lu	0.009	0.278	3.24%	*		
Hf	0.474	2.133	22.22%			
Th	0.221	4.557	4.85%	*		
Cr	29.670	344.667	8.61%	*		
Mn	5.033	729.333	0.69%	*		
Fe	0.374	3.480	10.75%			
Co	2.138	16.200	13.20%			
Ca	0.200	19.900	1.01%	*		
Sm	0.491	4.117	11.93%			
Yb	0.232	1.523	15.23%			

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Table 385. Per Cent Deviation Results - Red Clay Samples, Susa, n=2

ELEMENT	STD. DEV.	MEAN	% DEV.		SAMPLE	SITE
Na	0.163	1.645	9.91%	*	975	Susa
K	0.665	2.070	32.13%		979	Susa
Rb	2.263	31.800	7.12%	*		
Cs	1.216	2.510	48.45%			
Ba	57.983	192.000	30.20%			
Sc	1.344	14.050	9.57%	*		
La	1.061	16.450	6.45%	*		
Ce	2.758	40.550	6.80%	*		
Eu	0.012	0.899	1.33%	*		
Lu	0.005	0.283	1.77%	*		
Hf	0.134	1.865	7.18%	*		
Th	0.212	4.650	4.56%	*		
Cr	24.749	358.500	6.90%	*		
Mn	7.071	729.000	0.97%	*		
Fe	0.325	3.310	9.82%	*		
Co	2.192	15.350	14.28%			
Ca	0.141	19.800	0.71%	*		
Sm	0.658	4.025	16.35%			
Yb	0.325	1.540	21.10%			

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Table 386. Per Cent Deviation Results - Red Clay Samples and Sherds, n=7

ELEMENT	STD. DEV.	MEAN	% DEV.		SAMPLE	SITE
Na	0.311	1.727	18.01%		975	Susa
K	0.672	2.529	26.57%		977	KS 20
Rb	23.241	53.071	43.79%		979	Susa
Cs	1.473	2.779	53.00%		968	Susa
Ba	90.044	282.286	31.90%		969	Susa
Sc	1.405	15.814	8.88%	*	970	Susa
La	1.594	18.400	8.66%	*	971	Susa
Ce	7.123	48.071	14.82%			
Eu	0.134	0.975	13.74%			
Lu	0.035	0.306	11.44%			
Hf	0.722	2.354	30.67%			
Th	0.996	5.611	17.75%			
Cr	40.347	315.286	12.80%			
Mn	68.863	755.143	9.12%	*		
Fe	0.359	3.743	9.59%	*		
Co	2.681	18.214	14.72%			
Ca	1.544	20.200	7.64%	*		
Sm	0.662	4.659	14.21%			
Yb	0.224	1.706	13.13%			

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Table 387. Per Cent Deviation Results - Red Clay Samples and Sherds, Susa, n=4

ELEMENT	STD. DEV.	MEAN	% DEV.		SAMPLE	SITE
Na	0.396	1.818	21.78%		968	Susa
K	0.462	2.940	15.71%		969	Susa
Rb	24.504	64.475	38.01%		970	Susa
Cs	1.844	2.648	69.64%		971	Susa
Ba	71.099	337.500	21.07%			
Sc	0.650	16.575	3.92%	*		
La	0.913	19.400	4.71%	*		
Ce	4.350	53.100	8.19%	*		
Eu	0.170	1.020	16.67%			
Lu	0.033	0.327	10.09%			
Hf	0.898	2.520	35.63%			
Th	0.081	6.403	1.27%	*		
Cr	34.033	293.250	11.61%			
Mn	91.114	774.500	11.76%			
Fe	0.211	3.940	5.36%	*		
Co	2.056	19.725	10.42%			
Ca	2.141	20.425	10.48%			
Sm	0.450	5.065	8.88%	*		
Yb	0.081	1.843	4.40%	*		

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Table 388. Per Cent Deviation Results - Green-Grey Clay Samples, All, n=3

ELEMENT	STD. DEV.	MEAN	% DEV.		SAMPLE	SITE
Na	0.203	1.757	11.55%		976	Susa
K	0.269	2.200	12.23%		978	KS 20
Rb	12.330	41.700	29.57%		980	Susa
Cs	0.491	2.640	18.60%			
Ba	21.656	336.000	6.45%	*		
Sc	0.681	14.033	4.85%	*		
La	0.493	15.967	3.09%	*		
Ce	3.790	41.733	9.08%	*		
Eu	0.030	0.865	3.47%	*		
Lu	0.027	0.273	9.89%	*		
Hf	0.303	1.800	16.83%			
Th	0.230	4.257	5.40%	*		
Cr	58.398	338.667	17.24%			
Mn	27.099	740.667	3.66%	*		
Fe	0.652	3.667	17.78%			
Co	0.961	15.333	6.27%	*		
Ca	1.464	18.867	7.76%	*		
Sm	0.093	4.043	2.30%	*		
Yb	0.125	1.373	9.10%	*		

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Table 389. Per Cent Deviation Results - Green-Grey Clay Samples and Sherds, Susa, n=5

ELEMENT	STD. DEV.	MEAN	% DEV.	SAMPLE	SITE
Na	0.138	1.894	7.29% *	976	Susa
K	0.288	2.440	11.80%	980	Susa
Rb	21.329	34.500	61.82%	972	Susa
Cs	1.078	3.394	31.76%	973	Susa
Ba	41.030	362.000	11.33%	974	Susa
Sc	3.070	17.400	17.64%		
La	3.879	20.440	18.98%		
Ce	13.405	56.820	23.59%		
Eu	0.155	1.037	14.95%		
Lu	0.061	0.345	17.68%		
Hf	0.563	2.350	23.96%		
Th	1.300	5.748	22.62%		
Cr	92.473	436.400	21.19%		
Mn	119.588	882.200	13.56%		
Fe	0.719	4.076	17.64%		
Co	4.916	21.060	23.34%		
Ca	1.239	18.000	6.88% *		
Sm	1.015	5.038	20.15%		
Yb	0.394	1.852	21.27%		

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Table 390. Per Cent Deviation Results - Green-Grey Sherds, Susa, n=3

ELEMENT	STD. DEV.	MEAN	% DEV.		SAMPLE	SITE
Na	0.053	1.940	2.73%	*	972	Susa
K	0.255	2.550	10.00%		973	Susa
Rb	27.544	31.767	86.71%		974	Susa
Cs	0.745	4.077	18.27%			
Ba	54.262	371.667	14.60%			
Sc	0.907	19.567	4.64%	*		
La	0.907	23.233	3.90%	*		
Ce	7.480	65.733	11.38%			
Eu	0.071	1.143	6.21%	*		
Lu	0.015	0.387	3.88%	*		
Hf	0.462	2.657	17.39%			
Th	0.352	6.677	5.27%	*		
Cr	40.447	494.000	8.19%	*		
Mn	27.495	968.000	2.84%	*		
Fe	0.108	4.587	2.35%	*		
Co	1.721	24.533	7.02%	*		
Ca	0.173	17.500	0.99%	*		
Sm	0.688	5.687	12.10%			
Yb	0.125	2.130	5.87%	*		

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Table 391. Per Cent Deviation Results - Green-Grey Clay Samples and Sherds, All, n=5

ELEMENT	STD. DEV.	MEAN	% DEV.		SAMPLE	SITE
Na	0.166	1.848	8.98%	*	972	Susa
K	0.303	2.375	12.76%		973	Susa
Rb	19.846	36.733	54.03%		974	Susa
Cs	0.968	6.658	14.54%		976	Susa
Ba	41.797	353.833	11.81%		978	KS 20
Sc	3.114	16.800	18.54%		980	Susa
La	4.033	19.600	20.58%			
Ce	14.175	53.733	26.38%			
Eu	0.160	1.004	15.94%			
Lu	0.065	0.330	19.70%			
Hf	0.585	2.228	26.26%			
Th	1.352	5.467	24.73%			
Cr	96.214	416.333	23.11%			
Mn	126.887	854.333	14.85%			
Fe	0.655	4.127	15.87%			
Co	5.191	19.933	26.04%			
Ca	1.196	18.183	6.58%	*		
Sm	1.002	4.865	20.60%			
Yb	0.429	1.752	24.49%			

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Table 392. Per Cent Deviation Results - Green-Grey Clay Samples, Susa, n=2

ELEMENT	STD. DEV.	MEAN	% DEV.		SAMPLE	SITE
Na	0.233	1.825	12.77%		976	Susa
K	0.332	2.275	14.59%		980	Susa
Rb	15.698	38.600	40.67%			
Cs	0.212	2.370	8.95%	*		
Ba	12.021	347.500	3.46%	*		
Sc	0.919	14.150	6.49%	*		
La	0.071	16.250	0.44%	*		
Ce	3.323	43.450	7.65%	*		
Eu	0.030	0.877	3.42%	*		
Lu	0.033	0.282	11.70%			
Hf	0.368	1.890	19.47%			
Th	0.219	4.355	5.03%	*		
Cr	77.782	350.000	22.22%			
Mn	21.920	753.500	2.91%	*		
Fe	0.297	3.310	8.97%	*		
Co	0.495	15.850	3.12%	*		
Ca	2.051	18.750	10.94%			
Sm	0.120	4.065	2.95%	*		
Yb	0.092	1.435	6.41%	*		

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Table 393. Per Cent Deviation Results - Uruk Bevel Rim Bowls, All, n=131

ELEMENT	STD. DEV.	MEAN	% DEV.	SAMPLE	SITE
Na	0.396	0.964	41.08%	484	KS 7
K	0.606	1.810	33.48%	485	KS 7
Rb	15.273	40.106	38.08%	486	KS 96
Cs	0.784	2.430	32.26%	487	KS 96
Ba	410.540	484.420	84.75%	488	KS 96
Sc	3.426	18.831	18.19%	489	KS 96
La	3.005	22.143	13.57%	490	KS 96
Ce	11.112	49.424	22.48%	491	KS 113
Eu	0.218	1.045	20.86%	492	KS 113
Lu	0.065	0.360	18.06%	493	KS 113
Hf	0.757	2.935	25.79%	494	KS 113
Th	0.952	6.213	15.32%	495	KS 113
Cr	76.456	310.695	24.61%	496	KS 165
Mn	178.040	805.267	22.11%	497	KS 165
Fe	0.836	4.506	18.55%	498	KS 165
Co	4.666	21.242	21.97%	499	KS 165
Ca	10.216	14.111	72.40%	500	KS 165
Sm	0.884	4.377	20.20%	501	KS 240
Yb	0.303	1.986	15.26%	502	KS 240
				503	KS 240
SAMPLE	SITE	SAMPLE	SITE	504	KS 240
				613	KS 16
001	KS 108	045	KS 59	614	KS 16
002	KS 108	046	KS 59	615	KS 16
003	KS 108	053	KS 39	616	KS 16
004	KS 108	054	KS 39	617	KS 16
005	KS 108	055	KS 39	618	KS 24
006	KS 108	056	KS 39	619	KS 24
007	KS 108	057	KS 39	620	KS 24
008	KS 108	058	KS 39	621	KS 24
009	KS 108	059	KS 39	622	KS 24
010	KS 108	060	KS 39	623	KS 153
022	KS 22	073	KS 173	624	KS 153
023	KS 22	vvv	KS 173	625	KS 153
024	KS 22	www	KS 173	626	KS 153
025	KS 22	xxx	KS 173	627	KS 153
026	KS 22	yyy	KS 173	629	KS 266
027	KS 22	076	KS 173	630	KS 266
028	KS 22	zzz	KS 173	631	KS 266
029	KS 22	078	KS 173	632	KS 266
030	KS 22	079	KS 173	913	KS 1
041	KS 59	080	KS 173	914	KS 1
042	KS 59	481	KS 7	938	KS 1
043	KS 59	482	KS 7	939	KS 1
044	KS 59	483	KS 7	940	KS 1

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Table 393 cont'd. Per Cent Deviation Results - Uruk Bevel Rim Bowls, All, n=131

SAMPLE	SITE	
941	KS	1
942	KS	1
957	KS	76
958	KS	76
959	KS	76
987	KS	59
988	KS	59
989	KS	59
990	KS	59
991	KS	59
992	KS	59
993	KS	59
994	KS	59
995	KS	59
996	KS	59
997	KS	36
998	KS	36
999	KS	36
1000	KS	36
1001	KS	36
1002	KS	36
1003	KS	36
1004	KS	36
1005	KS	36
1006	KS	36
1007	KS	36
1008	KS	36
1009	KS	36
1010	KS	36
1011	KS	36
1012	KS	36
1013	KS	36
1014	KS	36
1015	KS	36
1016	KS	36
1017	KS	36
1018	KS	36
1019	KS	36
1020	KS	36
1021	KS	36

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Table 394. Per Cent Deviation Results - Uruk Proto Bevel Rim Bowls, All, n=59

ELEMENT	STD. DEV.	MEAN	% DEV.	SAMPLE	SITE
Na	0.281	0.827	33.98%	459	KS 96
K	0.376	2.125	17.69%	460	KS 96
Rb	12.431	48.103	25.84%	461	KS 165
Cs	0.802	2.756	29.10%	462	KS 165
Ba	324.635	541.746	59.92%	463	KS 240
Sc	4.516	19.146	23.59%	586	KS 16
La	3.159	21.963	14.38%	587	KS 16
Ce	8.152	48.420	16.84%	588	KS 16
Eu	0.174	1.102	15.79%	589	KS 16
Lu	0.058	0.360	16.11%	590	KS 16
Hf	0.442	3.222	13.72%	591	KS 24
Th	1.076	6.342	16.97%	592	KS 24
Cr	57.127	316.000	18.08%	593	KS 24
Mn	126.655	788.085	16.07%	594	KS 32
Fe	0.960	4.581	20.96%	595	KS 32
Co	4.620	20.619	22.41%	596	KS 52
Ca	3.312	21.527	15.39%	597	KS 52
Sm	0.622	4.284	14.52%	598	KS 52
Yb	0.298	1.967	15.15%	599	KS 52
				600	KS 76

SAMPLE	SITE		SAMPLE	SITE
440	KS	6	601	KS 93
441	KS	6	602	KS 93
442	KS	6	603	KS 93
443	KS	27	604	KS 121
444	KS	27	605	KS 121
445	KS	27	606	KS 121
443	KS	27	607	KS 121
447	KS	49	608	KS 121
448	KS	49	609	KS 153
449	KS	49	610	KS 266
450	KS	61	611	KS 266
451	KS	64	612	KS 284
452	KS	64	633	KS 266
453	KS	64	634	KS 59
454	KS	90	634	KS 59
455	KS	90	636	KS 108
456	KS	96	637	KS 108
457	KS	96	638	KS 108
458	KS	96	639	KS 108
			962	KS 76

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Table 395. Per Cent Deviation Results - Uruk Neckless Ledge Rim Jars, All, n=32

ELEMENT	STD. DEV.	MEAN	% DEV.	SAMPLE	SITE	
Na	0.351	0.760	46.18%	536	KS	6
K	0.350	2.067	16.93%	537	KS	6
Rb	15.248	57.572	26.49%	538	KS	22
Cs	1.053	3.276	32.14%	539	KS	27
Ba	314.504	662.656	47.46%	540	KS	27
Sc	2.767	21.241	13.03%	541	KS	61
La	3.303	24.281	13.60%	542	KS	96
Ce	8.640	49.300	17.53%	543	KS	96
Eu	0.172	1.237	13.90%	544	KS	96
Lu	0.102	0.401	25.44%	545	KS	96
Hf	0.911	3.482	26.16%	546	KS	96
Th	1.152	7.371	15.63%	547	KS	96
Cr	115.764	347.094	33.35%	548	KS	99
Mn	169.449	776.125	21.83%	549	KS	99
Fe	0.660	5.079	12.99%	550	KS	99
Co	3.843	24.066	15.97%	551	KS	99
Ca	3.595	18.333	19.61%	686	KS	16
Sm	0.690	4.777	14.44%	687	KS	52
Yb	0.302	2.201	13.72%	688	KS	108
				689	KS	108
				690	KS	108
				691	KS	153
				692	KS	153
				693	KS	153
				694	KS	266
				695	KS	266
				696	KS	266
				697	KS	266
				698	KS	266
				699	KS	284
				700	KS	284
				967	KS	76

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Table 396. Per Cent Deviation Results - Uruk Droop Spouts, All, n=19

ELEMENT	STD. DEV.	MEAN	% DEV.		SAMPLE	SITE	
Na	0.253	0.795	31.82%		568	KS	96
K	0.337	1.879	17.94%		569	KS	96
Rb	21.703	44.511	48.76%		570	KS	96
Cs	0.797	3.180	25.06%		571	KS	96
Ba	301.878	635.895	47.47%		572	KS	96
Sc	2.112	21.532	9.81%	*	573	KS	96
La	2.398	23.195	10.34%		769	KS	32
Ce	7.286	51.189	14.23%		770	KS	32
Eu	0.142	1.147	12.38%		771	KS	32
Lu	0.060	0.398	15.08%		772	KS	32
Hf	0.467	3.149	14.83%		773	KS	54
Th	0.631	6.751	9.35%	*	774	KS	54
Cr	69.342	354.579	19.56%		775	KS	54
Mn	121.845	892.895	13.65%		776	KS	59
Fe	0.496	5.192	9.55%	*	777	KS	59
Co	7.606	25.953	29.31%		778	KS	79
Ca	2.766	18.075	15.30%		779	KS	108
Sm	0.853	4.462	19.12%		915	KS	1
Yb	0.270	2.162	12.49%		945	KS	1

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Table 397. Per Cent Deviation Results - Uruk Wide Strap Handles, All, n=52

ELEMENT	STD. DEV.	MEAN	% DEV.
Na	0.274	0.709	38.65%
K	0.465	1.902	24.45%
Rb	45.114	49.863	90.48%
Cs	0.825	3.173	26.00%
Ba	450.789	585.445	77.00%
Sc	3.730	20.319	18.36%
La	2.850	23.133	12.32%
Ce	7.242	45.739	15.83%
Eu	0.165	1.119	14.75%
Lu	0.067	0.350	19.14%
Hf	0.719	3.148	22.84%
Th	0.914	6.372	14.34%
Cr	85.410	305.204	27.98%
Mn	139.332	797.037	17.48%
Fe	0.836	4.960	16.85%
Co	10.547	26.470	39.85%
Ca	2.857	18.463	15.47%
Sm	0.743	4.586	16.20%
Yb	0.299	2.035	14.69%

SAMPLE	SITE
505	KS 22
506	KS 22
507	KS 22
508	KS 39
509	KS 39
510	KS 39
511	KS 39
512	KS 39
513	KS 61

SAMPLE	SITE
514	KS 113
515	KS 113
516	KS 113
518	KS 113
520	KS 165
521	KS 165
522	KS 165
523	KS 165
524	KS 165
640	KS 16
642	KS 16
643	KS 16
644	KS 16
645	KS 16
646	KS 24
647	KS 24
648	KS 24
649	KS 52
650	KS 52
651	KS 52
652	KS 52
653	KS 59
654	KS 76
655	KS 76
657	KS 76
658	KS 108
660	KS 108
661	KS 108
662	KS 108
663	KS 108
664	KS 153
665	KS 153
666	KS 153
667	KS 153
668	KS 153
670	KS 173
671	KS 266
672	KS 266
943	KS 1
944	KS 1
945	KS 1
965	KS 76
966	KS 76

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Table 398. Per Cent Deviation Results - Uruk Grooved Round Rim Jars, All, n=27

ELEMENT	STD. DEV.	MEAN	% DEV.	SAMPLE	SITE	
Na	0.405	0.904	44.80%	525	KS	6
K	0.488	1.992	24.50%	527	KS	22
Rb	20.991	46.867	44.79%	528	KS	27
Cs	1.056	3.451	30.60%	529	KS	49
Ba	311.497	489.185	63.68%	530	KS	49
Sc	3.014	21.078	14.30%	531	KS	64
La	3.076	23.570	13.05%	532	KS	64
Ce	10.465	46.733	22.39%	533	KS	96
Eu	0.198	1.207	16.40%	534	KS	99
Lu	0.082	0.401	20.45%	535	KS	165
Hf	1.378	2.993	46.04%	673	KS	16
Th	1.133	6.983	16.23%	674	KS	16
Cr	83.339	334.296	24.93%	675	KS	16
Mn	130.543	833.852	15.66%	676	KS	24
Fe	0.690	5.091	13.55%	678	KS	32
Co	7.601	22.193	34.25%	679	KS	76
Ca	3.388	18.385	18.43%	680	KS	76
Sm	0.741	4.734	15.65%	681	KS	108
Yb	0.326	2.102	15.51%	682	KS	108
				683	KS	153
				684	KS	266
				685	KS	266
				915	KS	1
				918	KS	1
				919	KS	1
				963	KS	76
				964	KS	76

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Table 399. Per Cent Deviation Results - Uruk Groove and Oblique Jars, All, n=22

ELEMENT	STD. DEV.	MEAN	% DEV.	SAMPLE	SITE	
Na	0.227	0.709	32.02%	561	KS	96
K	0.469	1.766	26.56%	562	KS	96
Rb	15.782	49.739	31.73%	563	KS	96
Cs	0.597	3.099	19.26%	564	KS	96
Ba	585.133	668.000	87.59%	565	KS	96
Sc	2.569	19.817	12.96%	566	KS	34
La	2.580	22.100	11.67%	567	KS	34
Ce	7.409	43.583	17.00%	757	KS	32
Eu	0.119	1.087	10.95%	758	KS	54
Lu	0.045	0.357	12.61%	759	KS	54
Hf	0.888	2.900	30.62%	760	KS	54
Th	0.952	6.131	15.53%	761	KS	54
Cr	71.326	358.957	19.87%	763	KS	59
Mn	105.115	823.478	12.76%	764	KS	59
Fe	0.629	4.812	13.07%	765	KS	59
Co	13.398	25.135	53.30%	766	KS	59
Ca	2.900	18.391	15.77%	767	KS	79
Sm	0.617	4.484	13.76%	768	KS	79
Yb	0.250	1.920	13.02%	923	KS	1
				824	KS	1
				925	KS	1
				926	KS	1

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Table 400. Per Cent Deviation Results - Uruk Twist Handles, All, n=29

ELEMENT	STD. DEV.	MEAN	% DEV.		SAMPLE	SITE	
Na	0.264	0.705	37.45%		552	KS	34
K	0.398	1.788	22.26%		553	KS	34
Rb	16.171	45.710	35.38%		554	KS	39
Cs	0.690	2.800	24.64%		555	KS	39
Ba	291.243	507.345	57.41%		556	KS	96
Sc	2.382	19.793	12.03%		557	KS	96
La	2.462	21.660	11.37%		558	KS	96
Ce	6.920	40.872	16.93%		559	KS	96
Eu	0.261	1.051	24.83%		560	KS	96
Lu	0.090	0.350	25.71%		739	KS	32
Hf	0.628	2.691	23.34%		740	KS	32
Th	0.967	5.909	16.36%		741	KS	54
Cr	57.111	347.552	16.43%		742	KS	54
Mn	63.055	770.690	8.18%	*	743	KS	54
Fe	0.558	4.838	11.53%		744	KS	54
Co	7.616	25.990	29.30%		745	KS	54
Ca	5.591	18.862	29.64%		746	KS	59
Sm	1.013	4.226	23.97%		747	KS	59
Yb	0.411	1.827	22.50%		748	KS	59
					749	KS	59
					750	KS	79
					751	KS	79
					752	KS	79
					753	KS	79
					754	KS	79
					755	KS	79
					756	KS	79
					947	KS	1
					948	KS	1

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Table 401. Per Cent Deviation Results - Uruk Cross Hatch Bands, All, n=87

ELEMENT	STD. DEV.	MEAN	% DEV.
Na	0.351	1.020	34.41%
K	0.558	2.048	27.25%
Rb	18.759	53.701	34.93%
Cs	0.915	3.875	23.61%
Ba	345.853	467.149	74.03%
Sc	2.833	23.025	12.30%
La	2.959	25.215	11.74%
Ce	9.671	55.564	17.41%
Eu	0.253	1.383	18.29%
Lu	0.072	0.444	16.22%
Hf	1.346	3.900	34.51%
Th	1.045	7.255	14.40%
Cr	89.902	323.690	27.77%
Mn	161.389	870.012	18.55%
Fe	0.681	5.337	12.76%
Co	6.077	24.507	24.80%
Ca	6.045	18.320	33.00%
Sm	0.730	5.277	13.83%
Yb	0.299	2.215	13.50%

SAMPLE	SITE
464	KS 7
465	KS 7
466	KS 7
467	KS 7
468	KS 22
469	KS 22
470	KS 61
471	KS 113
472	KS 113
473	KS 113
474	KS 113
475	KS 113
476	KS 165
477	KS 165
478	KS 165
479	KS 165
718	KS 16

SAMPLE	SITE
719	KS 16
720	KS 16
721	KS 16
722	KS 52
732	KS 52
724	KS 24
725	KS 76
726	KS 76
727	KS 108
728	KS 108
729	KS 108
730	KS 121
731	KS 153
732	KS 153
733	KS 173
734	KS 173
735	KS 173
736	KS 173
737	KS 266
738	KS 266
783	KS 36
784	KS 36
785	KS 36
786	KS 36
787	KS 36
788	KS 36
789	KS 36
790	KS 36
791	KS 36
792	KS 36
793	KS 36
794	KS 36
795	KS 36
796	KS 36
797	KS 36
799	KS 36
804	KS 36
813	KS 36
815	KS 36
818	KS 36
920	KS 1
921	KS 1
922	KS 1
960	KS 76
961	KS 76

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CERAMIC PRODUCTION AND THE DEVELOPMENT OF COMPLEX POLITIES IN LATE PREHISTORIC SOUTHWESTERN IRAN

by

JUDITH C. BERMAN

VOLUME III

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1986

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Table 402. Iron-Scandium Groups. Bevel Rim Bowls By Location on Plain

Group	N Samp	West N/%	W-N N/%	W-S N/%	FrW N/%	East N/%	Cen N/%	E-N N/%	Nor N/%
All	129	51 39.5	24 18.6	23 17.8	4 3.1	78 60.5	58 45.0	20 15.5	0 0.0
1	51	9 17.7	7 13.7	2 3.9	0 0.0	42 82.4	30 58.8	12 23.3	0 0.0
2	15	7 46.7	5 33.3	2 13.3	0 0.0	8 53.3	5 33.3	3 20.0	0 0.0
3	12	5 41.7	2 16.7	2 16.7	1 8.3	7 58.3	5 41.7	2 16.7	0 0.0
4	29	16 55.2	7 24.1	7 24.1	2 6.9	13 44.8	10 34.5	3 10.4	0 0.0
5	10	5 50.0	2 20.0	3 30.0	0 0.0	5 50.0	5 50.0	0 0.0	0 0.0
6	8	6 75.0	1 12.5	5 62.5	0 0.0	2 25.0	2 25.0	0 0.0	0 0.0
7	4	3 75.0	0 0.0	2 50.0	1 25.0	1 25.0	1 25.0	0 0.0	0 0.0

Table 403. Iron-Scandium Groups.
Bevel Rim Bowls, Group Boundaries

Group	Low Sc ppm	High Sc ppm	Low Fe %	High Fe %
All	13.9	29.5	3.36	7.18
1	13.9	17.2	3.36	4.10
2	17.4	18.5	4.15	4.40
3	18.6	19.8	4.43	4.66
4	19.8	22.0	5.26	5.19
5	21.7	23.2	5.63	5.68
6	23.9	25.5	5.63	6.22
7	27.9	29.5	6.56	7.18

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Table 404. Iron-Scandium Groups. Bevel Rim Bowls and Proto Bevel Rim Bowls By Location on Plain

Group	N Samp	West N/%	W-N N/%	W-S N/%	FrW N/%	East N/%	Cen N/%	E-N N/%	Nor N/%
All	187	88 47.1	40 21.4	43 23.0	5 2.7	99 52.9	79 40.6	23 12.3	0 0.0
1	74	16 21.6	10 13.5	6 8.1	0 0.0	58 78.4	45 60.8	13 17.6	0 0.0
2	42	24 57.1	14 33.3	9 21.4	1 2.4	18 42.9	11 26.2	7 16.7	0 0.0
3	34	20 58.8	8 23.5	10 29.4	2 5.9	14 41.2	11 32.4	3 8.8	0 0.0
4	17	16 70.6	5 29.4	6 35.3	1 5.9	5 29.4	5 29.4	0 0.0	0 0.0
5	12	9 75.0	1 8.3	8 66.7	0 0.0	3 25.0	3 25.0	0 0.0	0 0.0
6	8	7 87.5	2 25.0	4 50.0	1 12.5	1 12.5	1 12.5	0 0.0	0 0.0

Table 405. Iron-Scandium Groups.
Bevel Rim Bowls and Proto Bevel Rim Bowls,
Group Boundaries

Group	Low Sc ppm	High Sc ppm	Low Fe %	High Fe %
All	13.5	29.5	3.28	7.18
1	13.5	17.2	3.28	4.10
2	17.2	19.8	4.15	4.73
3	19.8	22.0	4.79	5.19
4	21.7	23.2	5.26	5.68
5	23.9	26.0	5.63	6.28
6	26.8	29.5	6.52	7.18

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Table 406. Iron-Scandium Groups. Bevel Rim Bowls, Proto Bevel Rim Bowls, and Neckless Ledge Rim Jars By Location on Plain

Group	N Samp	West N/%	W-N N/%	W-S N/%	FrW N/%	East N/%	Cen N/%	E-N N/%	Nor N/%
All	211	99 47.0	43 20.4	51 24.2	5 2.4	112 51.2	86 40.8	22 10.4	4 1.9
1	70	16 22.9	10 14.3	6 8.6	0 0.0	54 77.1	43 61.4	11 15.7	0 0.0
2	49	25 51.0	13 26.5	6 22.5	0 2.0	24 49.0	17 34.7	7 14.3	0 0.0
3	68	39 57.4	15 22.1	21 30.9	3 4.4	25 36.8	21 30.9	4 5.9	4 5.9
4	15	11 73.3	2 13.3	9 60.0	0 0.0	4 26.7	4 26.7	0 0.0	0 0.0
5	9	7 77.8	2 22.2	4 44.4	1 11.1	4 22.2	4 22.2	0 0.0	0 0.0

Table 407. Iron-Scandium Groups. Bevel Rim Bowls, Proto Bevel Rim Bowls, and Neckless Ledge Rim Jar Group Boundaries

Group	Low Sc ppm	High Sc ppm	Low Fe %	High Fe %
All	13.5	30.0	3.28	7.19
1	13.5	17.2	3.28	4.10
2	17.2	19.8	4.15	4.66
3	19.1	23.3	4.72	5.71
4	23.8	26.0	5.63	6.28
5	26.8	30.0	6.52	7.19

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Table 408. Iron-Scandium Groups. Bevel Rim Bowls, Proto Bevel Rim Bowls, Neckless Ledge Rim Jars, and Twist Handles By Location on Plain

Group	N Samp	West N/%	W-N N/%	W-S N/%	FrW N/%	East N/%	Cen N/%	E-N N/%	Nor N/%
All	244	124 51.7	45 18.8	74 30.8	5 2.1	116 46.7	90 37.5	22 9.2	4 1.7
1	77	19 26.0	11 15.1	8 11.0	0 0.0	58 74.0	45 77.5	13 22.4	0 0.0
2	57	34 59.7	14 24.6	9 33.3	1 1.8	23 40.0	16 27.6	7 12.1	0 0.0
3	83	52 62.7	17 20.9	32 36.8	3 3.6	31 32.9	27 32.5	4 4.8	4 4.8
4	18	12 66.7	2 11.1	10 55.6	0 0.0	6 33.3	6 33.3	0 0.0	0 0.0
5	9	7 77.8	2 22.2	4 44.4	1 11.1	2 22.2	2 22.2	0 0.0	0 0.0

Table 409. Iron-Scandium Groups. Bevel Rim Bowls, Proto Bevel Rim Bowls, Neckless Ledge Rim Jar, and Twist Handle Group Boundaries

Group	Low Sc ppm	High Sc ppm	Low Fe %	High Fe %
All	13.5	30.0	3.28	7.19
1	13.5	17.2	3.28	4.17
2	17.2	19.8	4.15	4.66
3	19.1	23.3	4.72	5.71
4	23.8	26.0	5.63	6.28
5	26.8	30.0	6.52	7.19

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Table 410. Iron-Scandium Groups. Bevel Rim Bowls, Proto Bevel Rim Bowls, and Cross Hatch Bands By Location on Plain

Group	N Samp	West N/%	W-N N/%	W-S N/%	FrW N/%	East N/%	Cen N/%	E-N N/%	Nor N/%
All	256	106 41.4	53 20.7	48 18.8	5 2.0	150 58.6	117 45.7	33 12.9	0 0.0
1	77	16 21.3	10 13.3	6 8.0	0 0.0	59 78.7	46 61.3	13 17.3	0 0.0
2	101	47 46.5	24 23.8	20 19.8	3 2.8	54 53.5	41 40.6	13 12.9	0 0.0
3	55	29 52.7	12 21.8	16 29.1	1 1.8	26 47.3	22 40.0	4 7.3	0 0.0
4	12	3 25.0	2 16.7	1 8.3	0 0.0	9 75.0	6 50.0	3 25.0	0 0.0
5	13	11 84.6	5 38.5	5 38.5	1 7.7	2 15.4	2 15.4	0 0.0	0 0.0

Table 411. Iron-Scandium Groups. Bevel Rim Bowls, Proto Bevel Rim Bowls, and Cross Hatch Band Group Boundaries

Group	Low Sc ppm	High Sc ppm	Low Fe %	High Fe %
All	13.5	29.5	3.28	7.18
1	13.5	17.2	3.28	4.10
2	17.4	22.4	4.15	5.19
3	21.7	25.3	5.23	5.98
4	25.0	26.7	6.06	6.32
5	26.8	29.5	6.45	7.18

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Table 412. Iron-Scandium Groups. Bevel Rim Bowls, Proto Bevel Rim Bowls and Wide Strap Handles By Location on Plain

Group	N Samp	West N/%	W-N N/%	W-S N/%	FrW N/%	East N/%	Cen N/%	E-N N/%	Nor N/%
All	241	111 46.1	55 22.8	51 21.2	5 2.1	130 53.9	95 39.4	35 14.5	0 0.0
1	82	16 19.5	10 12.2	6 7.3	0 0.0	66 80.5	50 61.0	16 19.5	0 0.0
2	59	31 52.5	20 33.9	10 16.9	1 1.7	28 47.5	16 27.1	12 20.3	0 0.0
3	41	21 51.2	8 19.5	11 26.8	2 4.8	20 48.8	15 36.6	5 12.2	0 0.0
4	28	16 57.1	7 25.0	8 28.6	1 3.6	12 42.6	10 35.7	2 7.1	0 0.0
5	21	18 85.7	6 28.6	12 57.1	0 0.0	3 14.3	3 14.3	0 0.0	0 0.0
6	10	9 90.0	4 40.0	4 40.0	1 10.5	1 10.0	1 10.0	0 0.0	0 0.0

Table 413. Iron-Scandium Groups.
Bevel Rim Bowls, Proto Bevel Rim Bowls,
and Wide Strap Handles Group Boundaries

Group	Low Sc ppm	High Sc ppm	Low Fe %	High Fe %
All	13.4	33.3	3.28	7.74
1	13.4	17.2	3.28	4.10
2	16.5	19.8	4.15	4.73
3	19.3	22.0	4.79	5.19
4	21.1	23.2	5.26	5.68
5	23.7	26.0	5.55	6.28
6	26.8	33.3	6.52	7.74

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Table 414. Iron-Scandium Groups. Bevel Rim Bowls, Proto Bevel Rim Bowls, and Groove and Oblique Jars By Location on Plain

Group	N Samp	West N/%	W-N N/%	W-S N/%	FrW N/%	East N/%	Cen N/%	E-N N/%	Nor N/%
All	210	102 48.6	42 20.0	60 28.6	5 2.4	103 49.1	80 38.1	23 11.0	0 0.0
1	78	17 21.8	11 14.1	6 7.7	0 0.0	61 78.2	48 61.5	13 16.7	0 0.0
2	50	32 64.0	14 28.0	17 34.0	2 2.0	18 36.0	11 22.0	7 14.0	0 0.0
3	63	43 68.3	13 20.6	27 42.9	3 4.8	20 31.8	17 27.0	3 4.8	0 0.0
4	11	8 72.7	2 18.2	6 54.5	0 0.0	3 27.3	3 27.3	0 0.0	0 0.0
5	8	7 87.5	2 25.0	4 50.0	1 12.5	1 12.5	1 12.5	0 0.0	0 0.0

Table 415. Iron-Scandium Groups. Bevel Rim Bowls, Proto Bevel Rim Bowls, and Groove and Oblique Jars Group Boundaries

Group	Low Sc ppm	High Sc ppm	Low Fe %	High Fe %
All	13.5	29.5	3.28	7.18
1	13.5	17.5	3.28	4.15
2	17.2	19.9	4.21	4.73
3	19.8	24.0	4.79	5.69
4	23.5	26.0	5.74	6.28
5	26.8	29.5	6.52	7.18

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Table 416. Iron-Scandium Groups. Bevel Rim Bowls, Proto Bevel Rim Bowls, Groove and Oblique Jars, and Droop Spouts By Location on Plain

Group	N Samp	West N/%	W-N N/%	W-S N/%	FrW N/%	East N/%	Cen N/%	E-N N/%	Nor N/%
All	229	123 53.7	42 18.3	76 33.2	5 2.2	106 46.3	83 36.2	23 10.0	0 0.0
1	79	18 22.8	11 13.9	7 8.9	0 0.0	61 77.2	48 60.8	13 16.5	0 0.0
2	52	34 65.4	14 26.9	19 36.5	1 1.9	18 34.6	11 21.2	7 13.5	0 0.0
3	78	55 70.5	13 16.7	39 50.0	3 3.9	23 29.5	20 25.6	3 3.9	0 0.0
4	12	9 75.0	2 16.7	7 58.3	0 0.0	3 25.0	3 25.0	0 0.0	0 0.0
5	8	7 87.5	2 25.0	4 50.0	1 12.5	1 12.5	1 12.5	0 0.0	0 0.0

Table 417. Iron-Scandium Groups. Bevel Rim Bowls, Proto Bevel Rim Bowls, Groove and Oblique Jars, and Droop Spouts Group Boundaries

Group	Low Sc ppm	High Sc ppm	Low Fe %	High Fe %
All	13.5	29.5	3.28	7.18
1	13.5	17.5	3.28	4.15
2	17.2	19.9	4.21	4.73
3	19.5	24.0	4.79	5.78
4	23.5	26.0	5.74	6.29
5	26.8	29.5	6.52	7.18

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Table 418. Iron-Scandium Groups. Bevel Rim Bowls, Proto Bevel Rim Bowls, Groove and Oblique Jars, Droop Spouts, and Miscellaneous Types By Location on Plain

Group	N Samp	West N/%	W-N N/%	W-S N/%	FrW N/%	East N/%	Cen N/%	E-N N/%	Nor N/%
All	235	125 53.2	43 18.3	77 32.8	5 2.1	110 46.8	87 27.0	23 9.8	0 0.0
1	80	18 22.5	11 13.6	7 8.6	0 0.0	62 77.5	49 61.3	13 16.3	0 0.0
2	53	35 66.0	14 26.4	20 37.7	1 1.9	18 34.0	11 20.8	7 13.2	0 0.0
3	81	56 60.1	14 17.3	39 48.2	3 3.7	25 30.9	22 27.2	3 3.7	0 0.0
4	13	9 69.2	2 15.4	7 52.9	0 0.0	4 30.8	4 30.8	0 0.0	0 0.0
5	8	7 87.5	2 25.0	4 50.0	1 12.5	1 12.5	1 12.5	0 0.0	0 0.0

Table 419. Iron-Scandium Groups. Bevel Rim Bowls, Proto Bevel Rim Bowls, Groove and Oblique Jars, Droop Spouts, and Miscellaneous Types Group Boundaries

Group	Low Sc ppm	High Sc ppm	Low Fe %	High Fe %
All	13.5	29.5	3.28	7.18
1	13.5	17.5	3.28	4.15
2	17.2	19.9	4.21	4.73
3	19.5	24.0	4.74	5.78
4	23.5	26.5	5.74	6.31
5	26.8	29.5	6.52	7.18

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Table 420. Iron-Scandium Groups. Bevel Rim Bowls, Proto Bevel Rim Bowls, and Grooved Round Rim Jars By Location on Plain

Group	N Samp	West N/%	W-N N/%	W-S N/%	FrW N/%	East N/%	Cen N/%	E-N N/%	Nor N/%
All	214	103 48.1	46 21.5	51 23.8	6 2.8	111 51.9	86 40.2	25 11.7	0 0.0
1	76	18 23.7	11 14.5	6 7.9	1 1.3	58 76.3	45 59.2	13 17.1	0 0.0
2	43	23 53.5	12 27.9	10 23.3	1 2.3	58 46.5	45 30.2	13 16.3	0 0.0
3	68	43 63.2	19 27.9	21 30.9	3 4.4	25 36.8	20 29.4	5 7.4	0 0.0
4	19	12 63.2	2 10.5	10 52.6	0 0.0	7 36.8	7 36.8	0 0.0	0 0.0
5	8	7 87.5	2 25.0	4 50.0	1 12.5	1 12.5	1 12.5	0 0.0	0 0.0

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Table 421. Iron-Scandium Groups. Bevel Rim Bowls, Proto Bevel Rim Bowls, and Grooved Round Rim Jar Group Boundaries

Group	Low Sc ppm	High Sc ppm	Low Fe %	High Fe %
All	13.5	29.5	3.28	7.18
1	13.5	17.2	3.28	4.12
2	17.0	19.4	4.21	4.72
3	19.4	23.2	4.63	5.68
4	23.9	27.0	5.63	6.28
5	26.8	29.5	6.53	7.18

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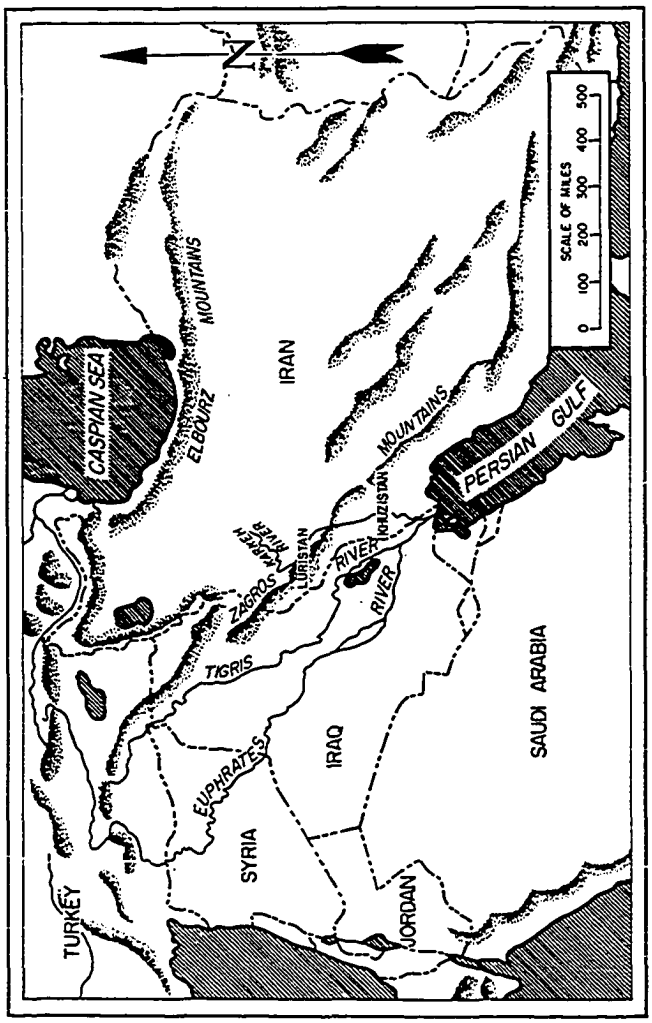


Fig. 1. Greater Mesopotamia, with Geographical Features and Modern Political Boundaries

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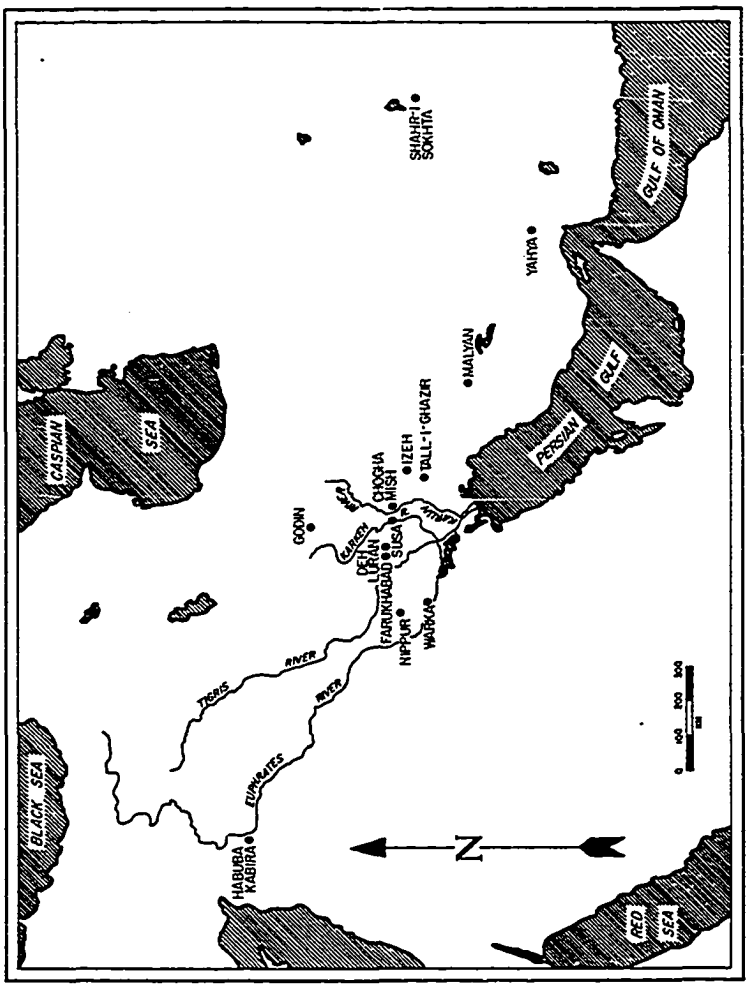


Fig. 2. Greater Mesopotamia, with Sites Mentioned in Text (After Alden 1982b:Fig. 1)

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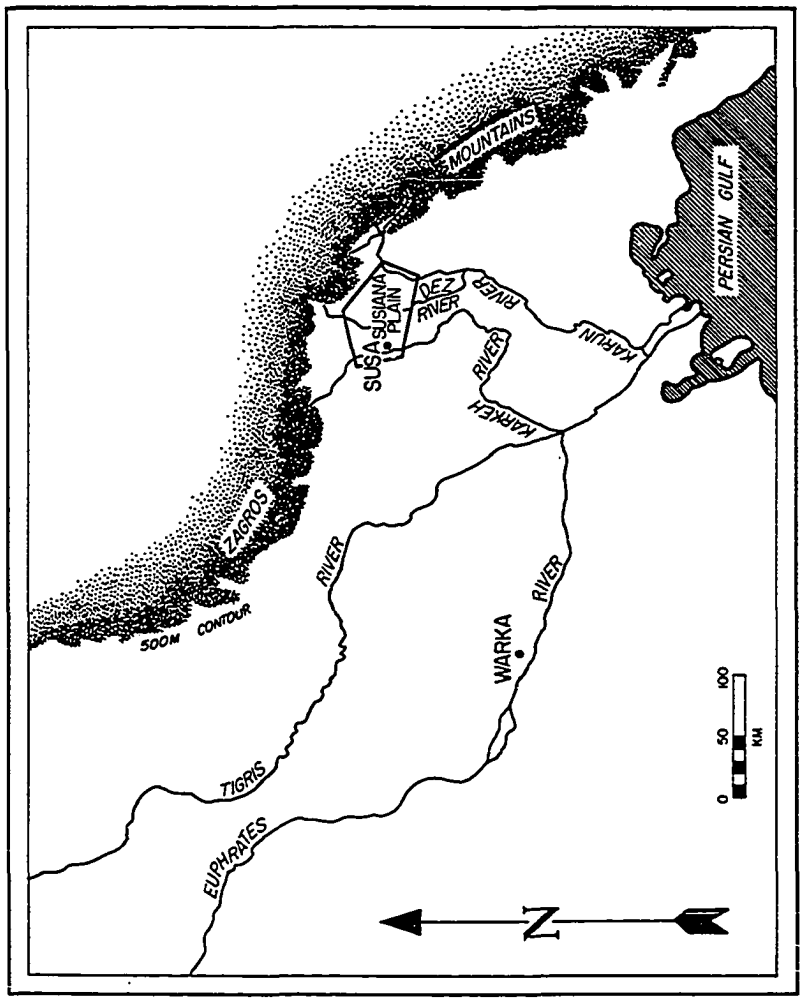


Fig. 3. The Susiana Plain (after Johnson 1973:Fig.2)

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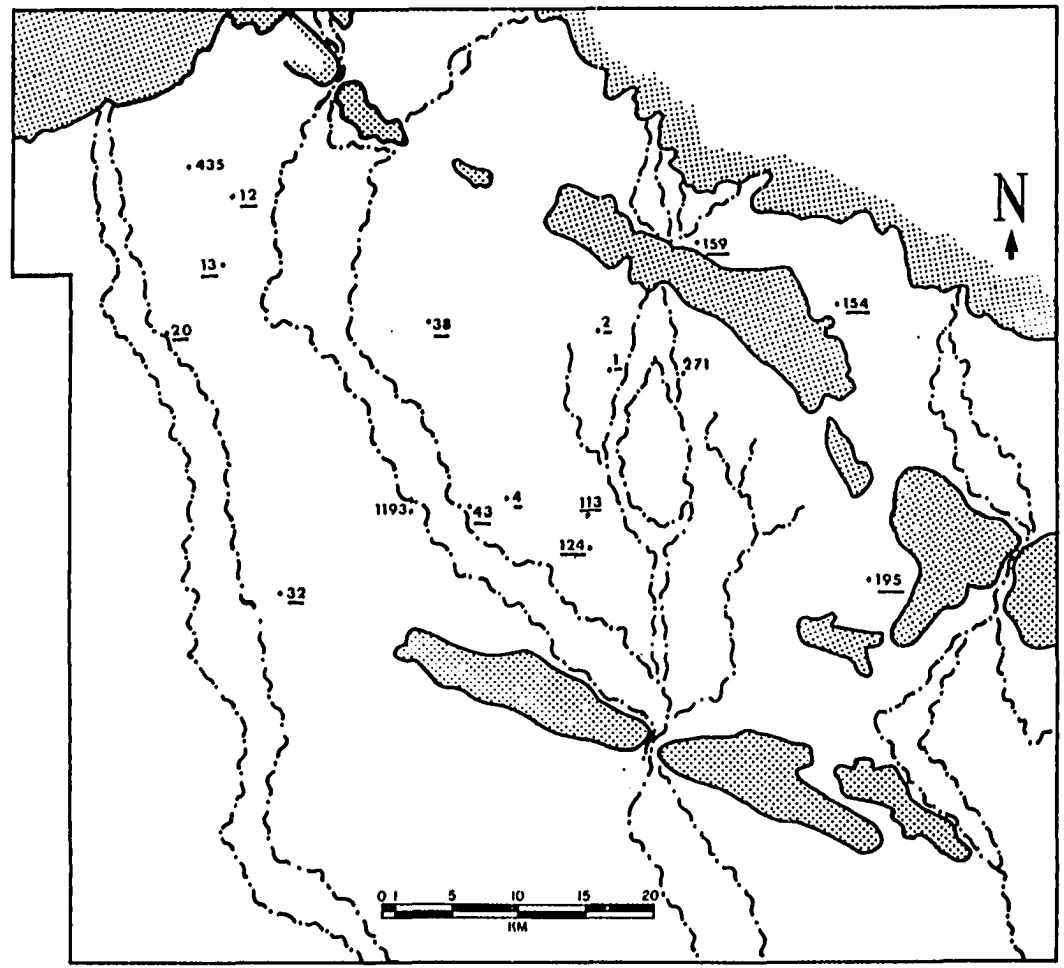


Fig. 4. Period 7 Settlement Pattern (after Dollfus 1985)

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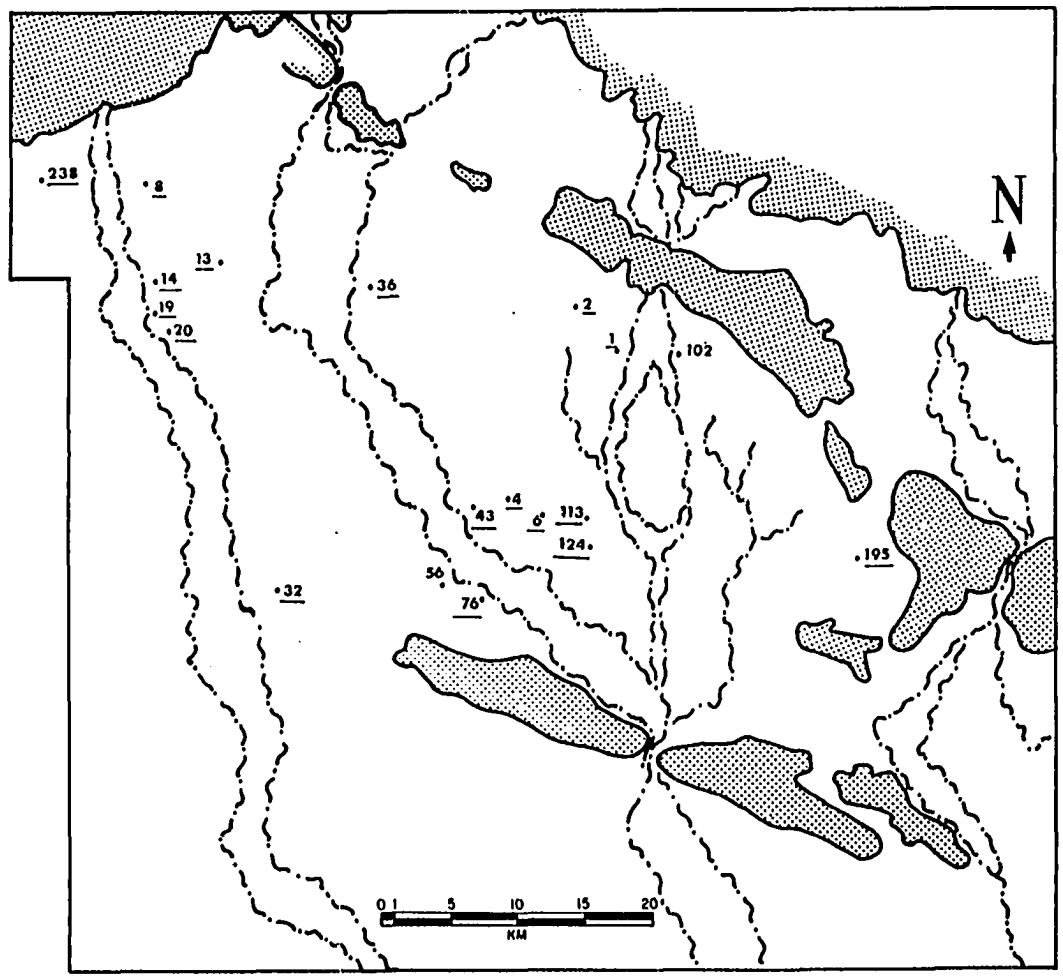


Fig. 5. Period 8 Settlement Pattern (after Dollfus 1985)

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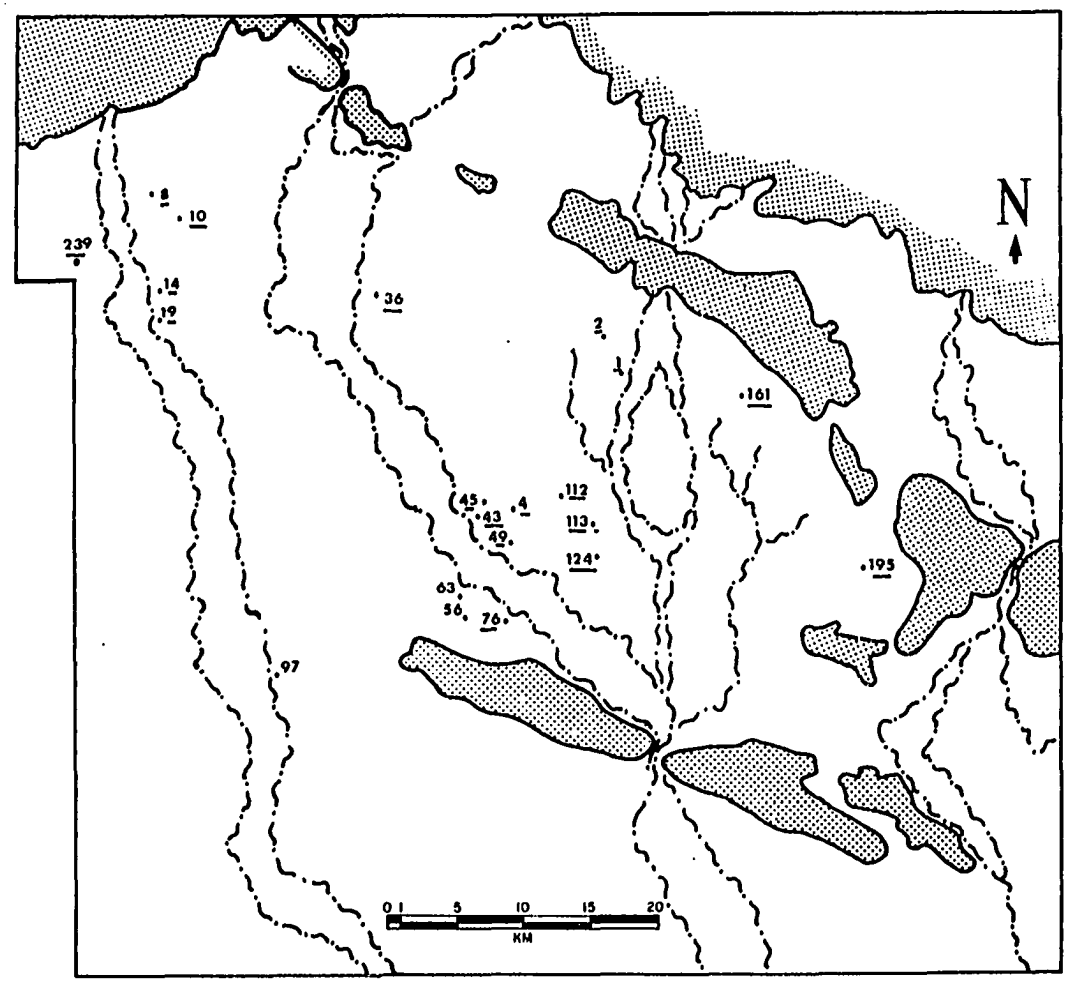


Fig. 6. Period 9 Settlement Pattern (after Dollfus 1985)

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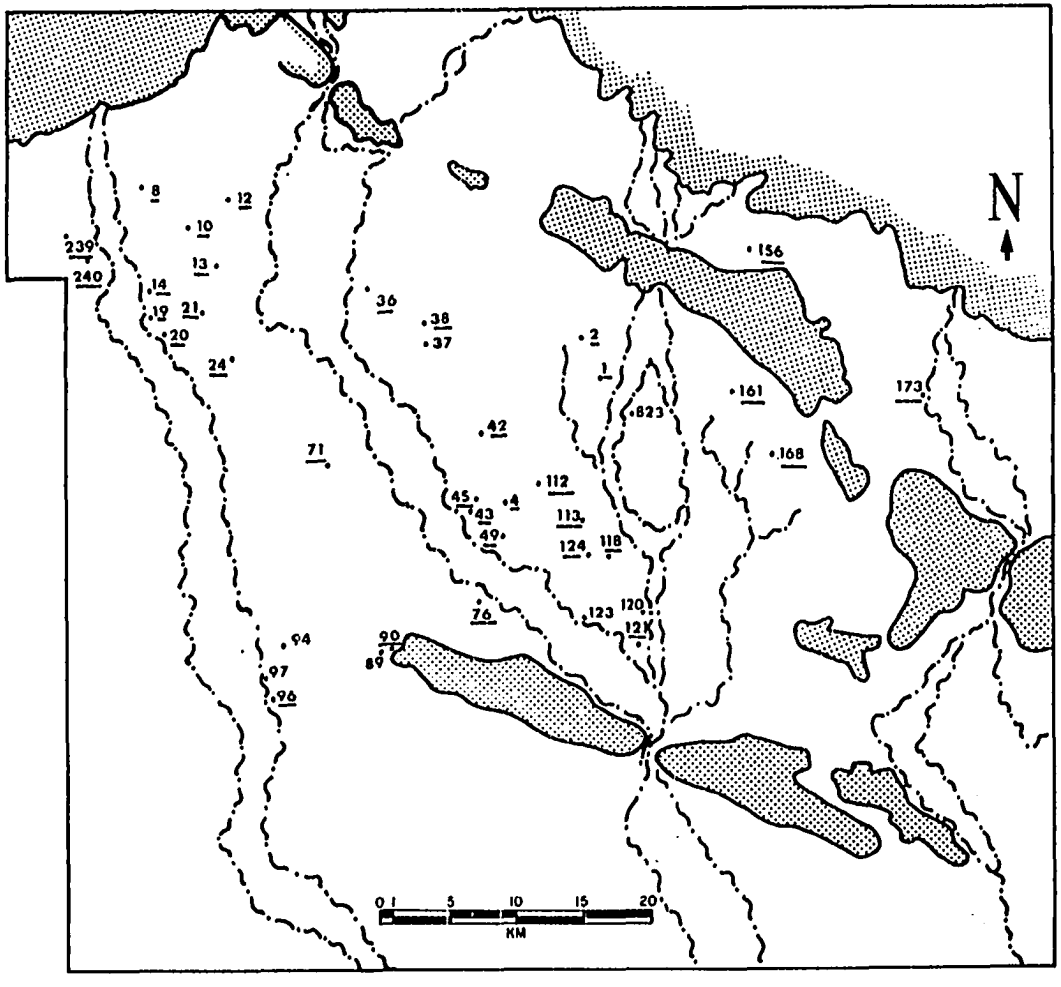


Fig. 7. Period 10 Settlement Pattern (after Dollfus 1985)

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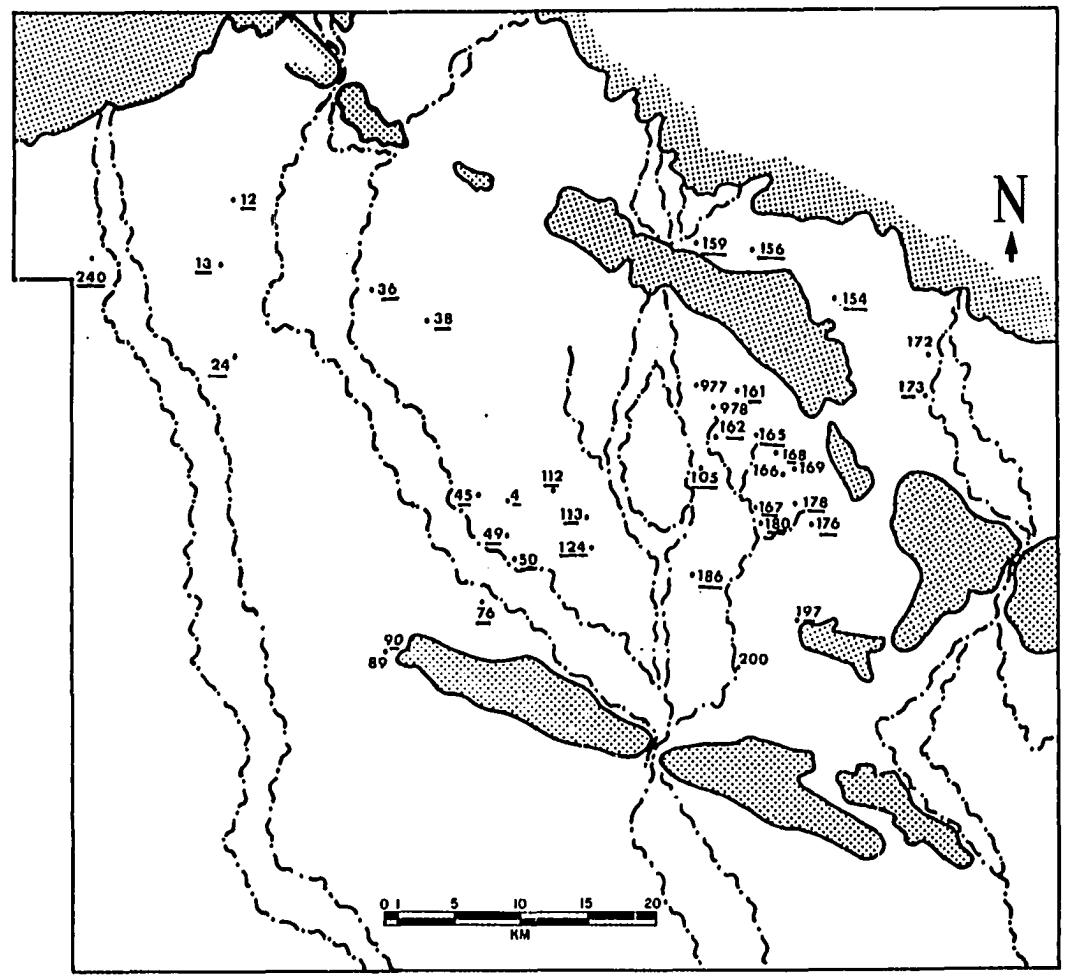


Fig. 8. Period 11 Settlement Pattern (after Dollfus 1985)

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KEY

59 Site Number

59 Ceramic Sample Taken

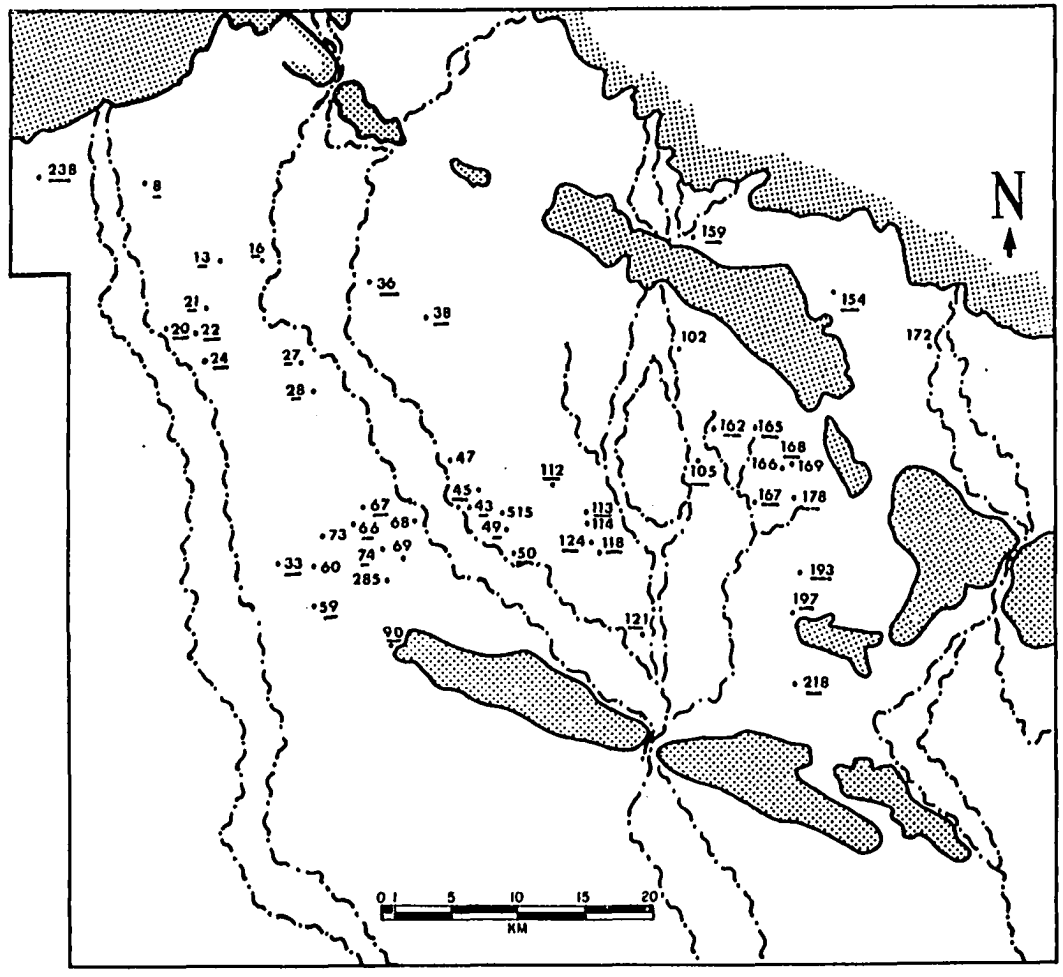


Fig. 9. Period 12 Settlement Pattern (after Dollfus 1985)

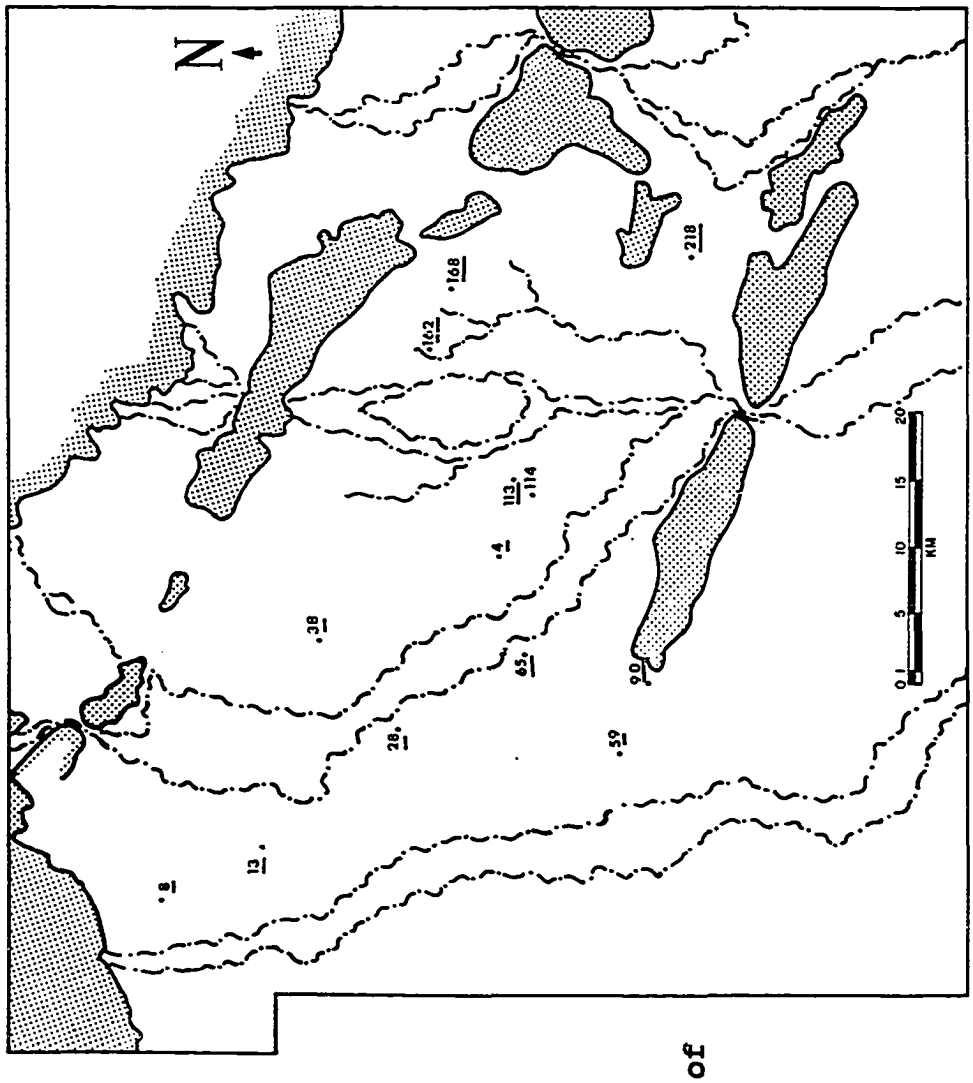


Fig. 10. Period 12 Sites With Evidence of Ceramic Production (after Dollfus 1985)

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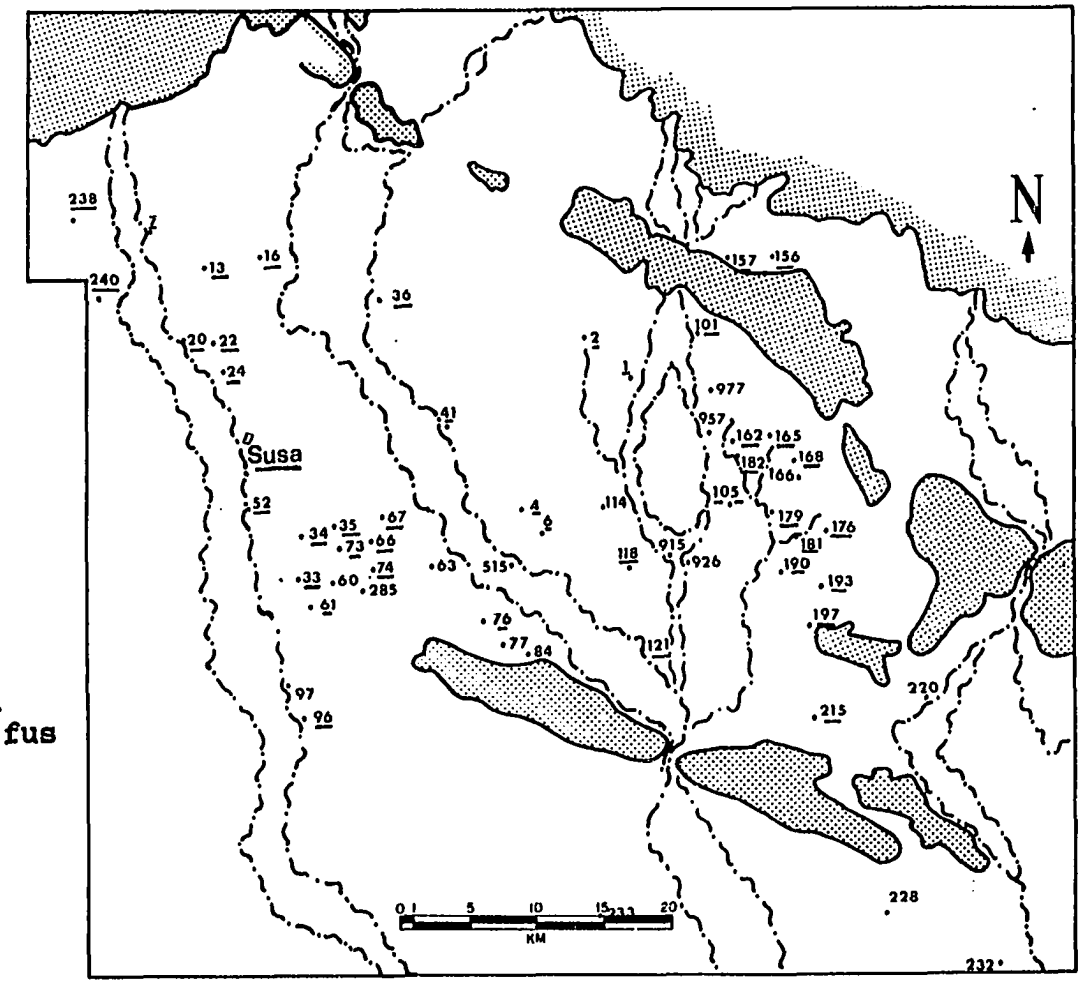


Fig. 11. Period 13 (Susa A) Settlement Pattern (after Dollfus 1985)

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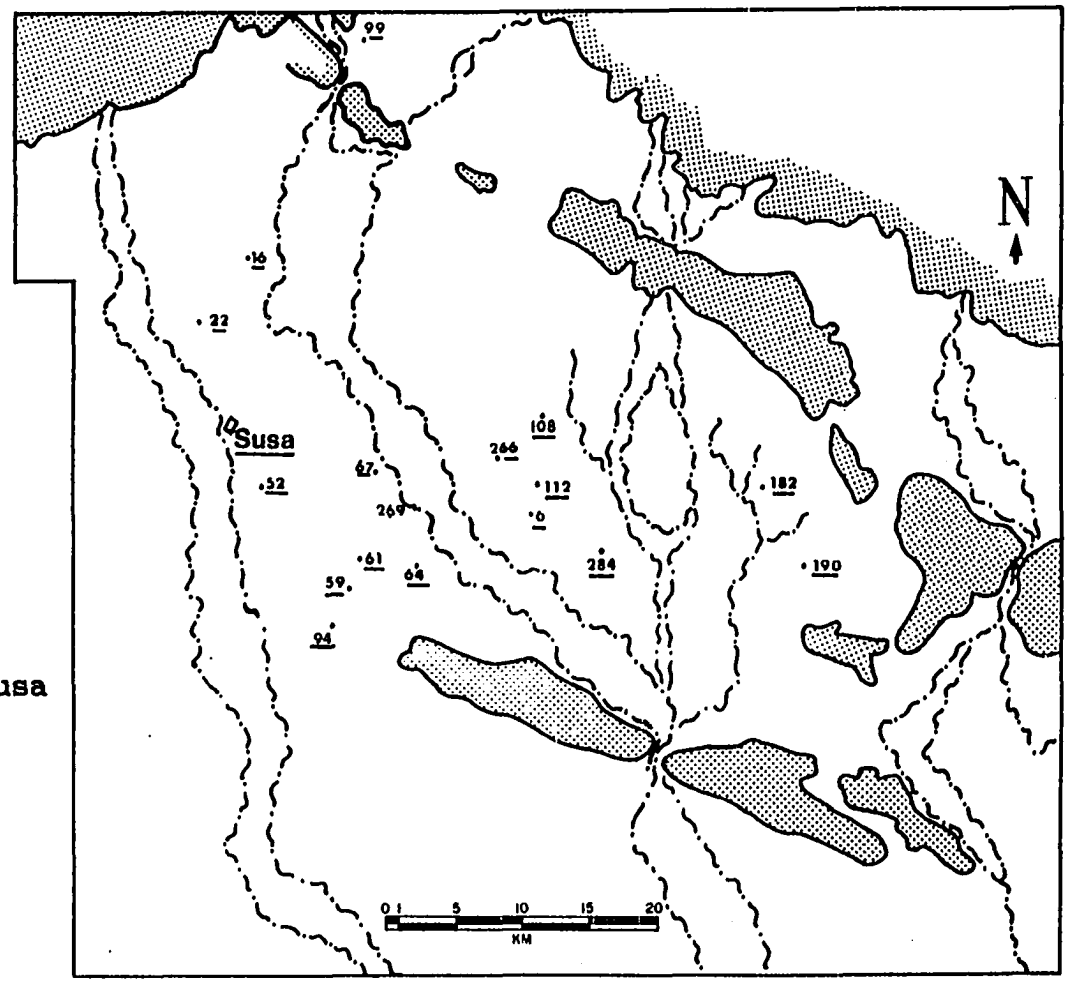


Fig. 12. Terminal Susa A Settlement Pattern (after Johnson 1973:Fig.11)

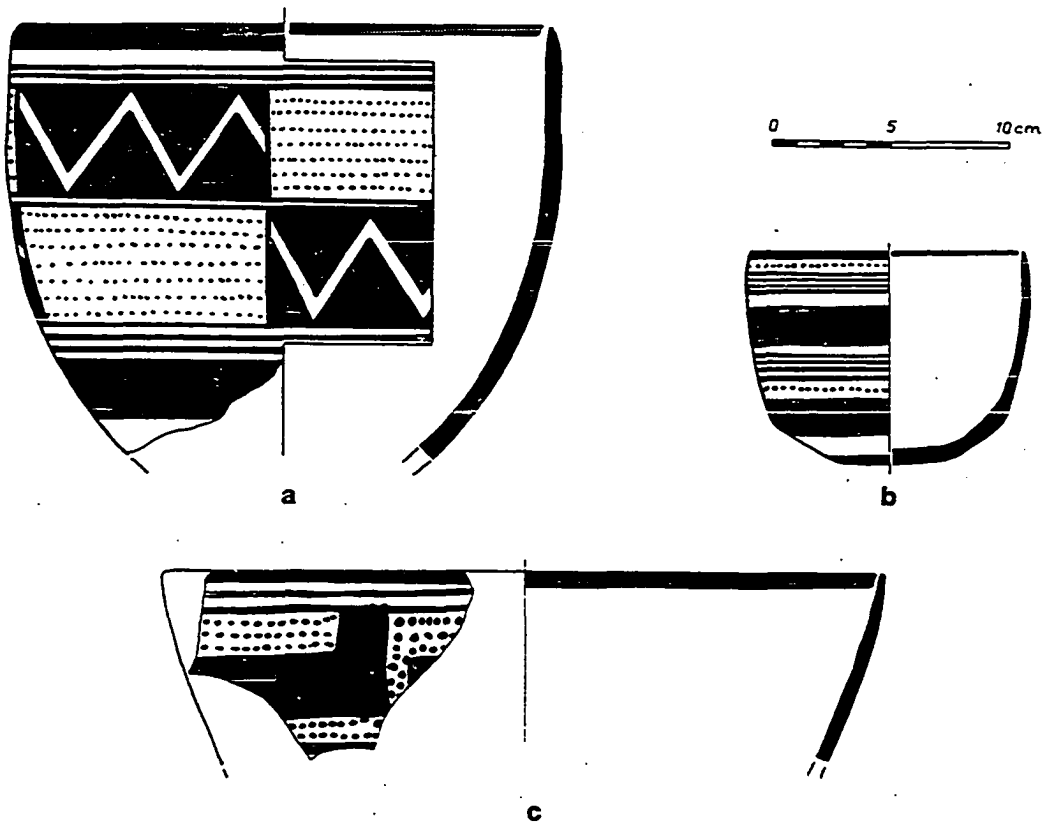


Fig. 13. Period 7-13 Black-on-Buff Ceramics.

a. Band and Dots Motif. Dollfus 1983a: Fig. 86:11
b. Band and Line Motif. Dollfus 1983a: Fig. 83:9
c. Dots, Indefinite Type Motif. Dollfus 1983a:Fig. 83:8

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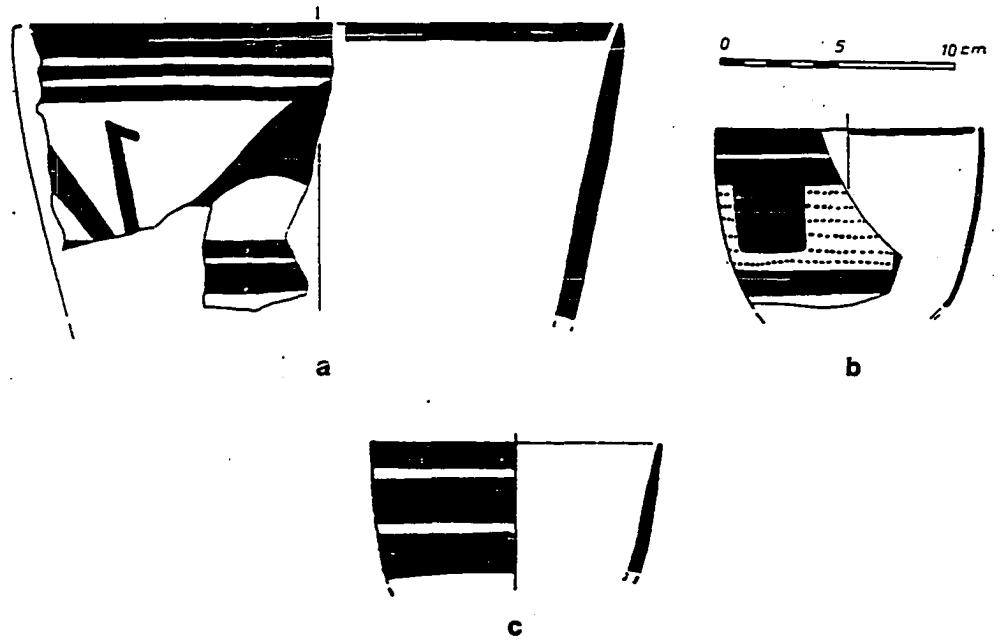


Fig. 14. Period 7-13 Black-on-Buff Ceramics.

a. Band and Two Lines Motif. Dollfus 1983a: Fig. 86:7
b. Square and Dots Motif. Dollfus 1983a: Fig. 86:9
c. Band and Band Motif. Dollfus 1983a: Fig. 86:4

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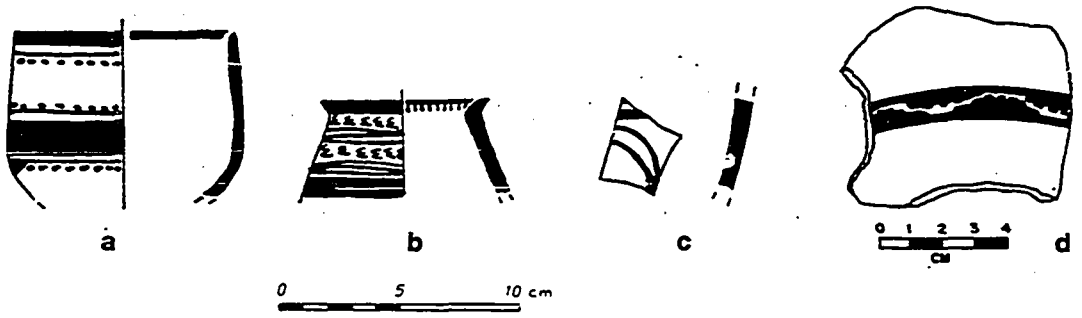


Fig. 15. Period 7-13 Black-on-Buff Ceramics.

a. Band and Line, Band and Band Motif. Dollfus 1983a:Fig. 86:10
b. Sigma Motif on Wasters. Dollfus 1983a: Fig. 75:9
c. Goat Motif. Dollfus 1983b:Fig. 35:1
d. Greccas and Scallops Motif. Drawn from sample in Hole collection

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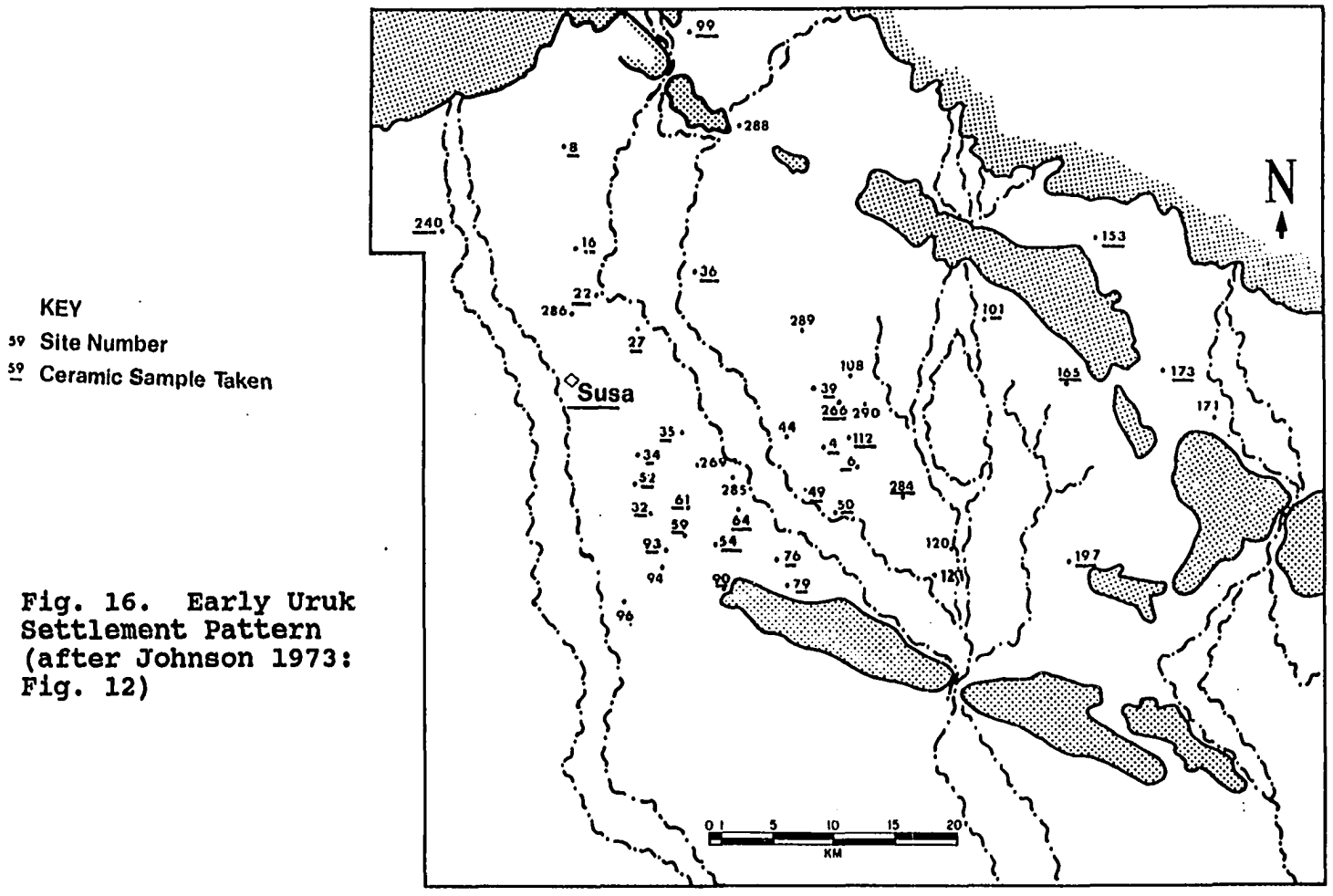


Fig. 16. Early Uruk Settlement Pattern (after Johnson 1973: Fig. 12)

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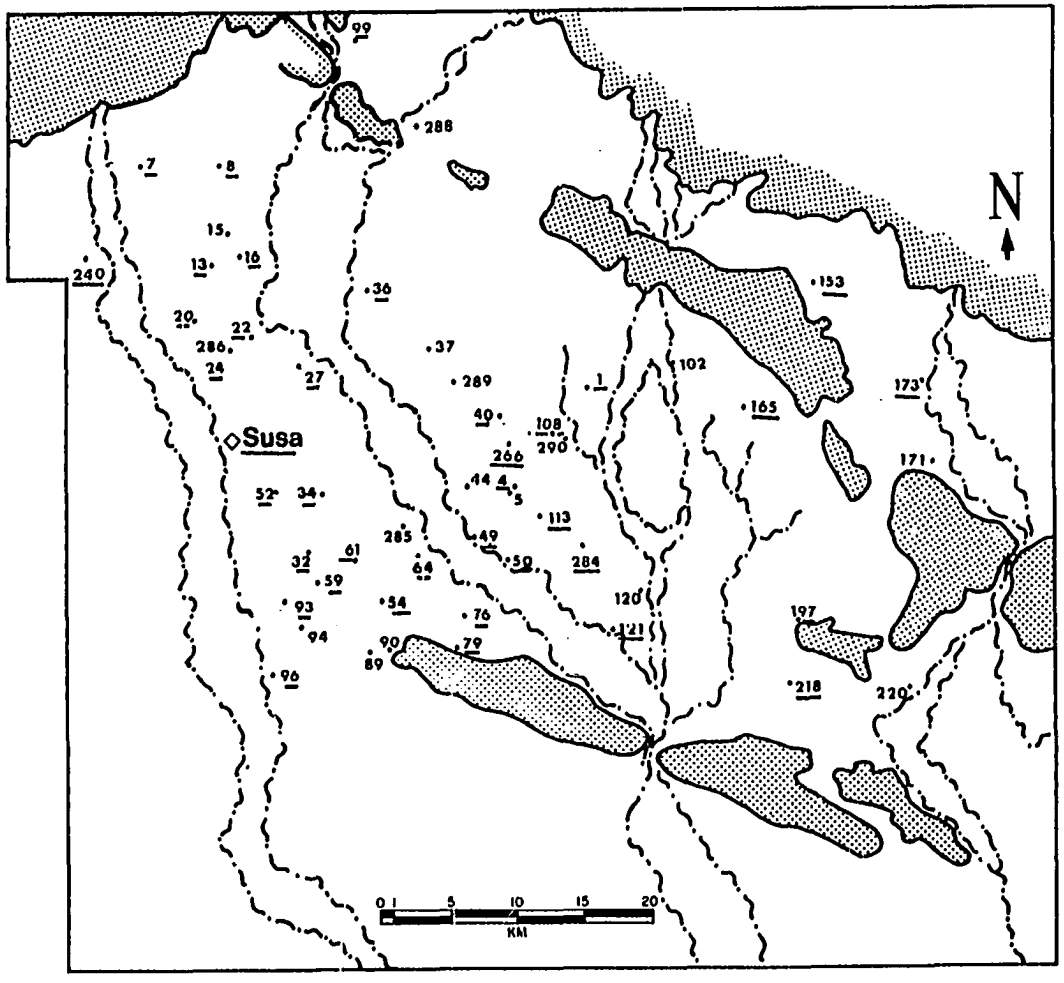


Fig. 17. Middle Uruk Settlement Pattern (after Johnson 1973: Fig. 13)

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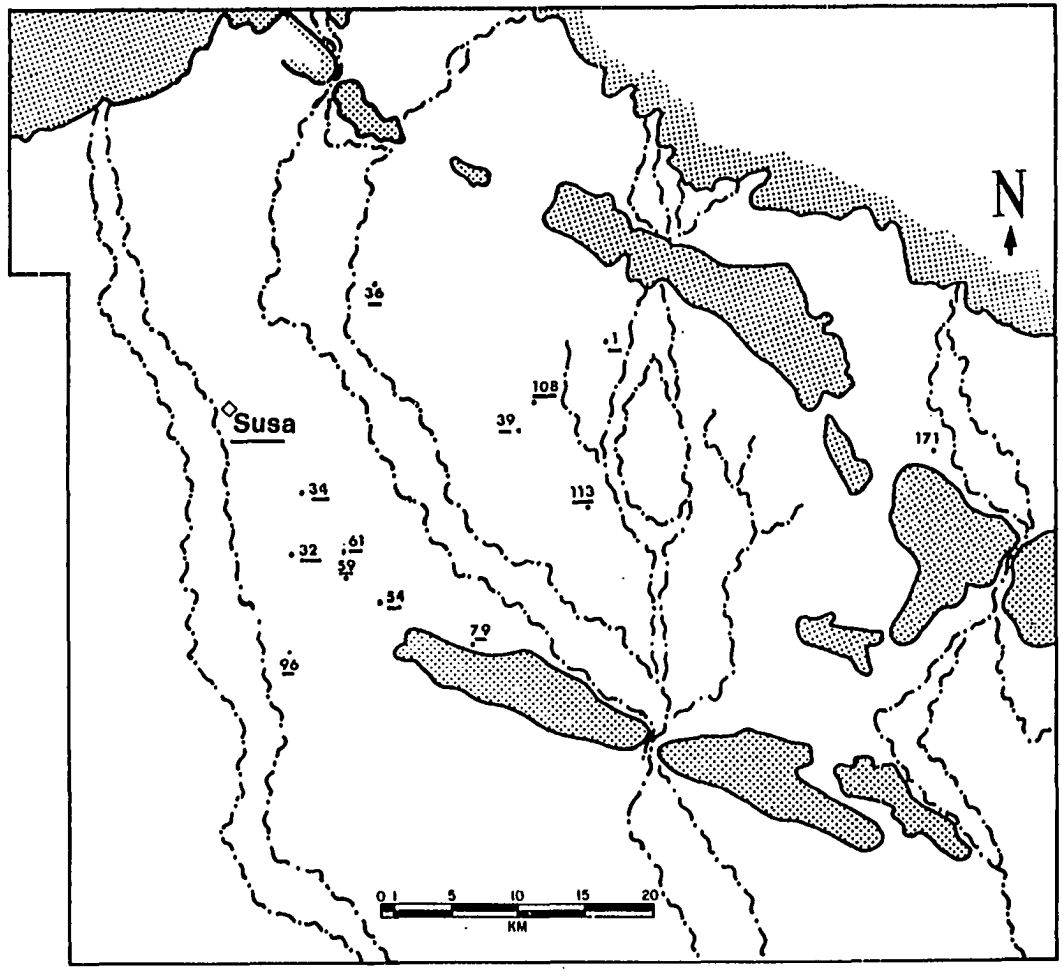


Fig. 18. Late Uruk Settlement Pattern (after Johnson 1973: Fig. 14)

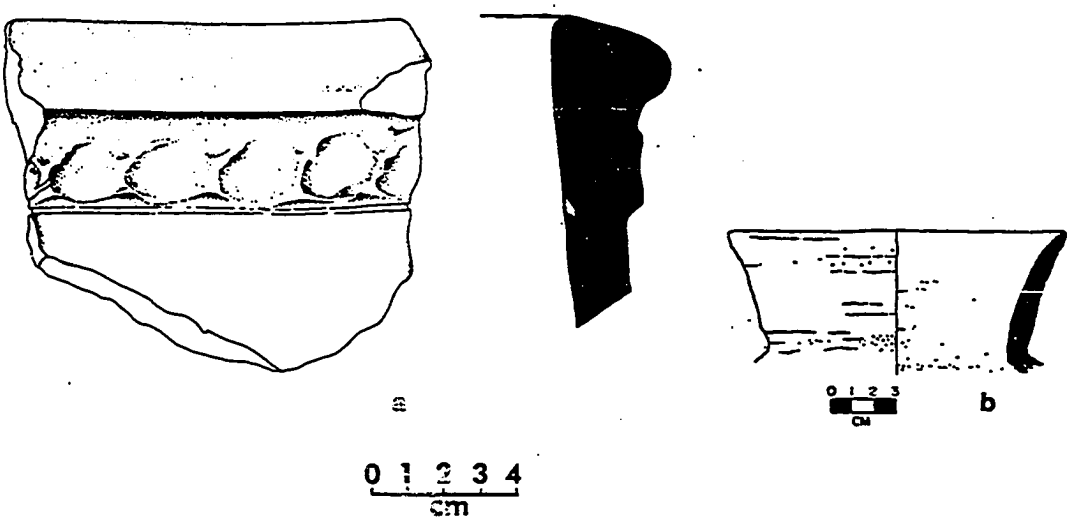


Fig. 19. Terminal Susa A Ceramics.

a. Impressed Strip Bowl. Johnson 1973:Pl. II:d
b. Flared Neck Jar. Wright, Neely, Johnson, and Speth 1975:Fig. 9:1

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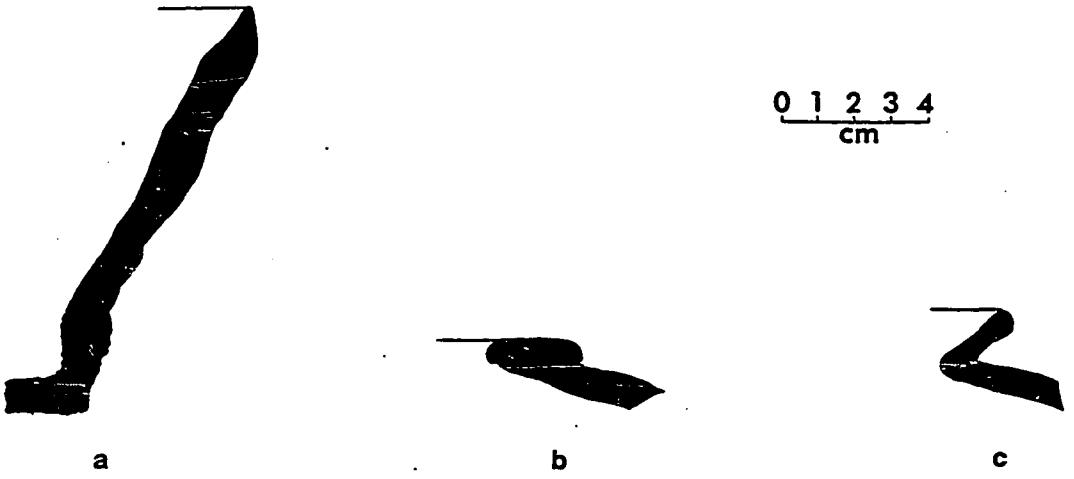


Fig. 20. Early Uruk Ceramics.

a. Proto Bevel Rim Bowl. Johnson 1973:Pl. I:b
b. Neckless Ledge Rim Jar. Johnson 1973: Pl. III:1
c. Grooved Round Rim Jar. Johnson 1973:Pl. III:c

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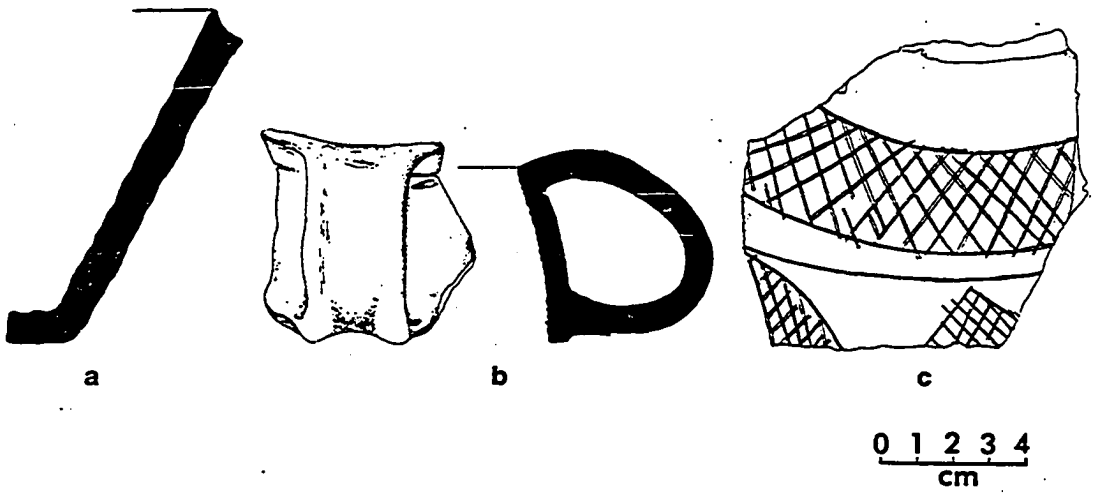


Fig. 21. Middle Uruk Ceramics.

a. Bevel Rim Bowl. Johnson 1973:Pl. I: I:a
b. Wide Strap Handle. Johnson 1973:Pl. VII:c
c. Cross Hatch Band. Johnson 1973:Pl. IV:b

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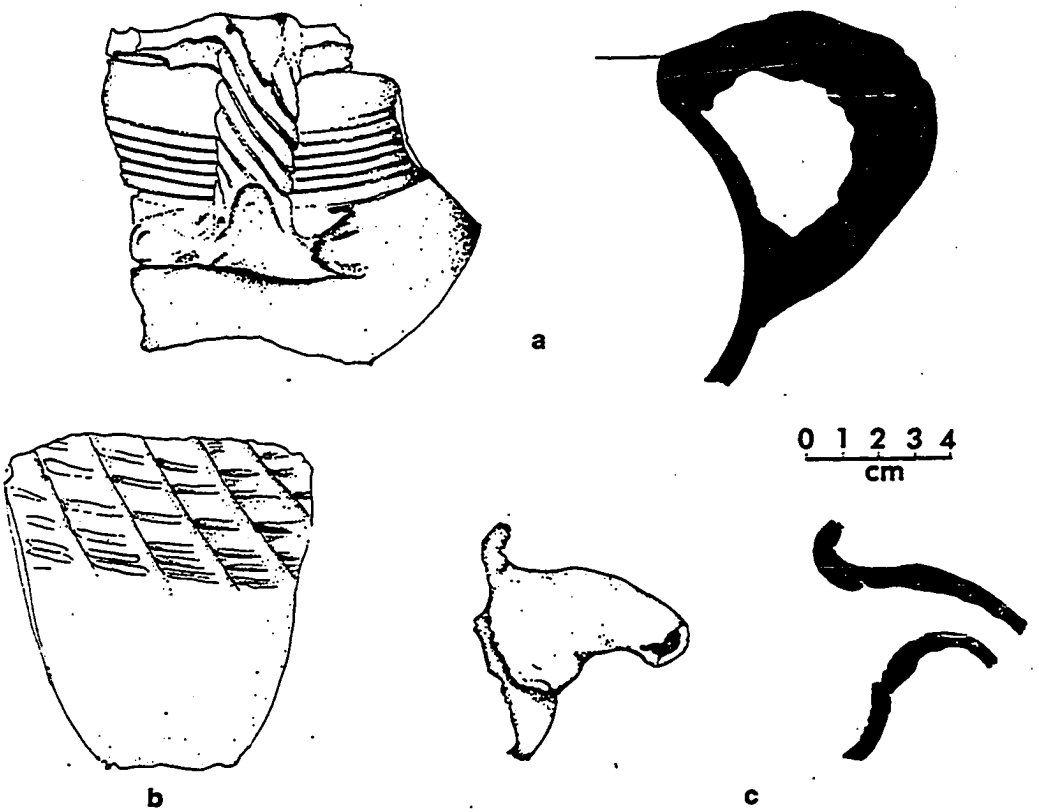


Fig. 22. Late Uruk Ceramics.

a. Twist Handle. Johnson 1973:Pl. VIII:a
b. Groove and Oblique Jar. Johnson 1973: Pl. IV:d
c. Droop Spout. Johnson 1973:Pl. VI:a

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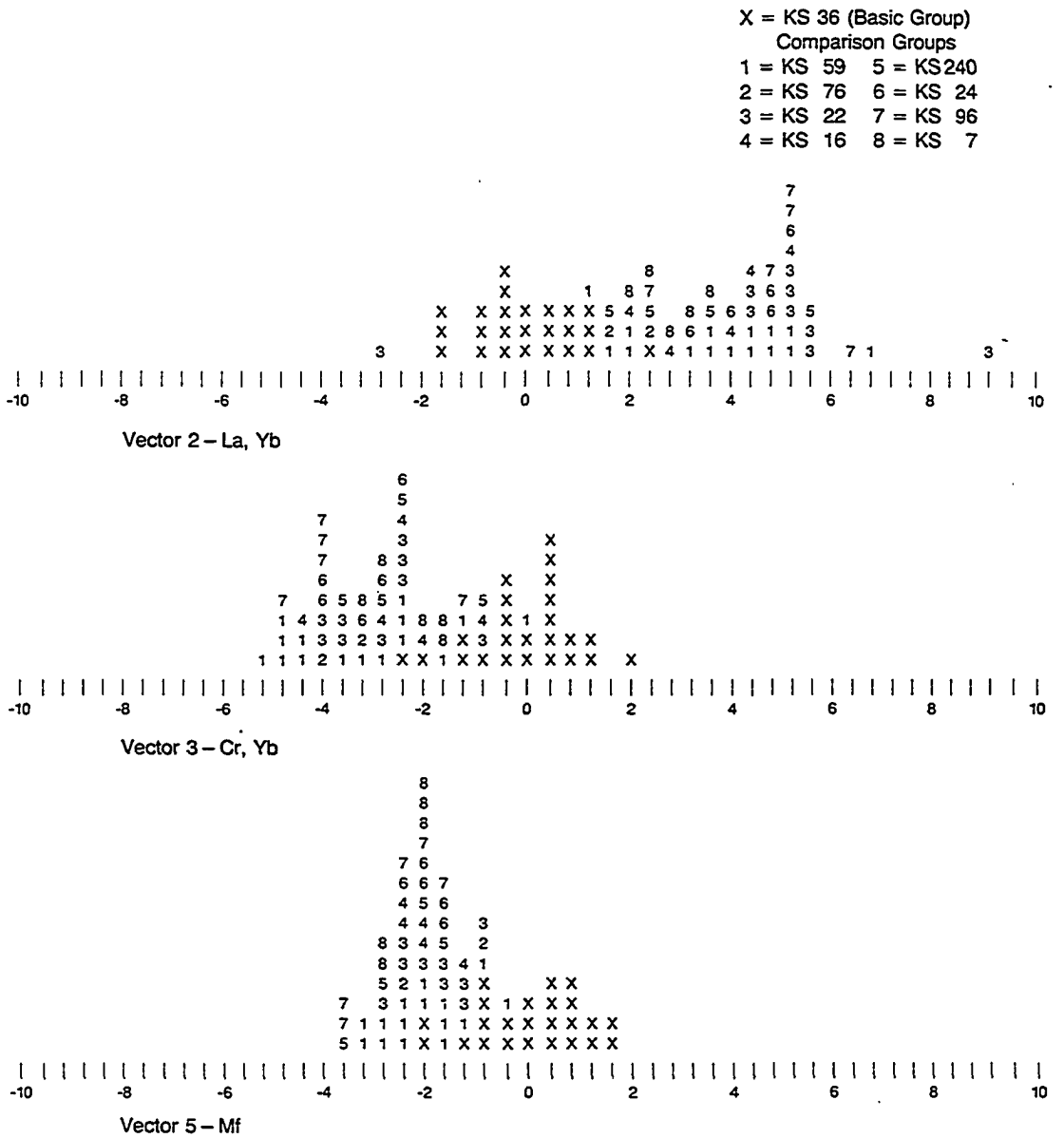


Fig. 23. ADCORR Results. KS 36 Bevel Rim Bowls Compared with Bevel Rim Bowls from Western Sites. Histograms of Standardized Coordinates of Characteristic Vectors Relative to the Basic Group.

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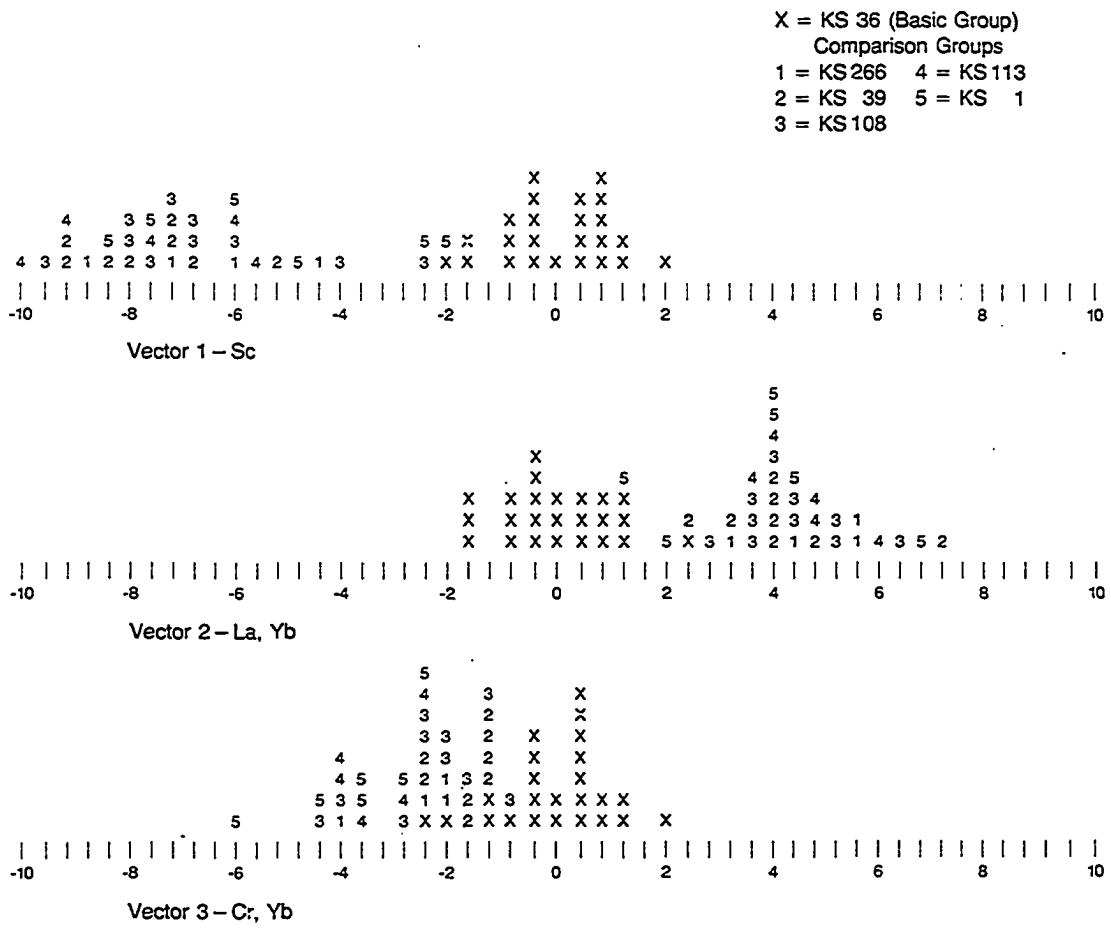


Fig. 24. ADCORR Results. KS 36 Bevel Rim Bowls Compared with Bevel Rim Bowls from Center Sites. Histograms of Standardized Coordinates of Characteristic Vectors Relative to the Basic Group.

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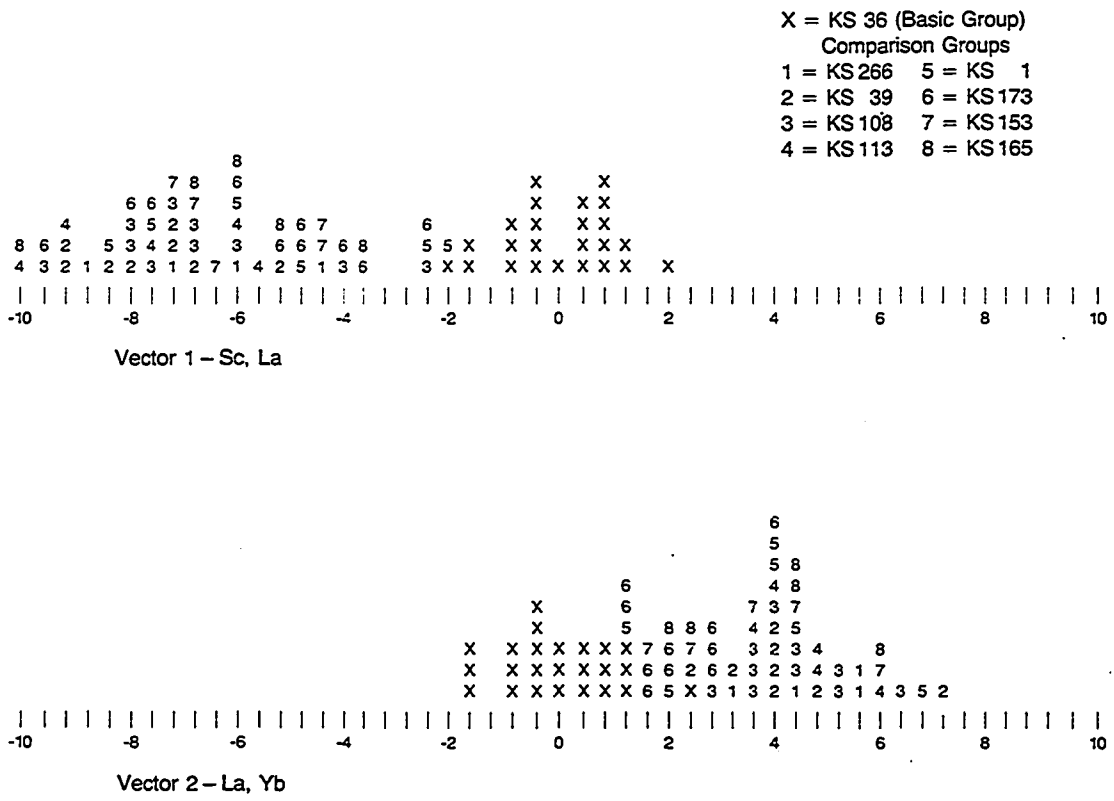


Fig. 25. ADCORR Results. KS 36 Bevel Rim Bowls Compared with Bevel Rim Bowls from Center and Eastern Sites. Histograms of Standardized Coordinates of Characteristic Vectors Relative to the Basic Group.

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1	1.000								
2	-0.161	1.000							
3	-0.460	0.552	1.000						
4	0.004	0.131	0.220	1.000					
5	-0.176	-0.063	0.042	-0.089	1.000				
6	0.325	-0.158	-0.109	0.432	-0.085	1.000			
7	0.416	-0.104	-0.099	0.402	-0.028	0.863	1.000		
8	0.366	-0.166	-0.163	0.238	-0.041	0.582	0.611	1.000	
9	0.177	-0.023	0.158	0.316	-0.019	0.536	0.574	0.302	1.000
10	0.176	-0.171	-0.044	0.232	0.092	0.620	0.643	0.477	0.443
11	-0.172	0.037	0.141	0.062	0.133	0.048	0.215	-0.029	0.299
12	0.258	-0.043	0.003	0.409	0.101	0.810	0.846	0.560	0.527
13	0.234	-0.337	-0.112	0.142	-0.068	0.387	0.478	0.298	0.550
14	0.488	-0.013	-0.169	0.188	-0.021	0.694	0.678	0.414	0.472
15	0.266	-0.136	-0.067	0.461	-0.122	0.980	0.834	0.544	0.542
16	0.237	-0.268	-0.179	0.240	-0.027	0.882	0.755	0.464	0.546
17	-0.030	-0.118	-0.033	0.319	0.040	0.154	0.021	0.075	0.049
18	0.262	-0.121	-0.047	0.249	-0.003	0.646	0.640	0.407	0.349
19	0.301	-0.109	-0.040	0.298	0.098	0.674	0.750	0.434	0.601
	1	2	3	4	5	6	7	8	9

10	1.000								
11	0.189	1.000							
12	0.660	0.300	1.000						
13	0.379	0.371	0.397	1.000					
14	0.483	0.053	0.640	0.389	1.000				
15	0.608	0.081	0.800	0.425	0.672	1.000			
16	0.582	0.173	0.689	0.499	0.680	0.875	1.000		
17	-0.018	-0.266	0.027	0.074	0.093	0.161	0.161	1.000	
18	0.411	0.101	0.552	0.336	0.495	0.635	0.608	0.170	1.000
19	0.707	0.409	0.777	0.616	0.594	0.670	0.622	-0.096	0.423
	10	11	12	13	14	15	16	17	18

19	1.000
	19

CORRELATION MATRIX FILE = brb N = 131

1 = na	2 = k	3 = rb	4 = cs	5 = ba
6 = sc	7 = la	8 = ce	9 = eu	10 = lu
11 = hf	12 = th	13 = cr	14 = mn	15 = fe
16 = co	17 = ca	18 = sm	19 = yb	

Fig. 26. Bevel Rim Bowl Iron-Scandium Correlation Matrix

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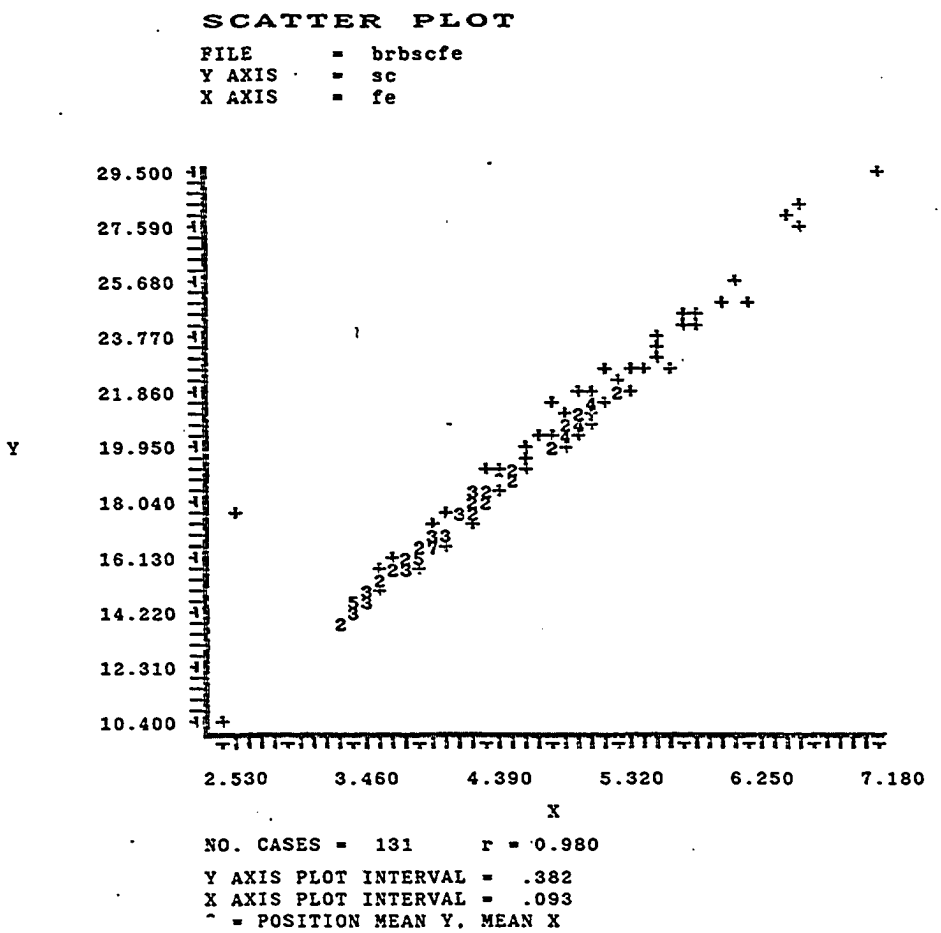


Fig. 27. Sc-Fe Scatter Plot - Bevel Rim Bowls

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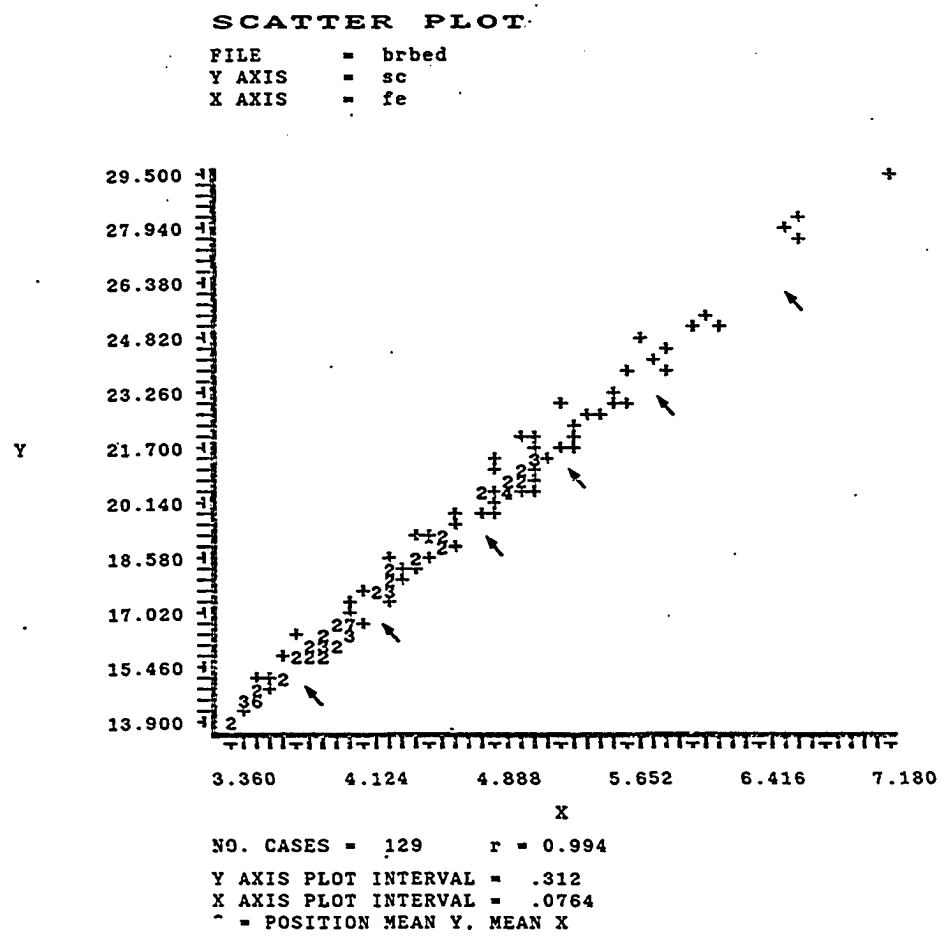


Fig. 28. Sc-Fe Scatter Plot - Bevel Rim Bowls, Edited

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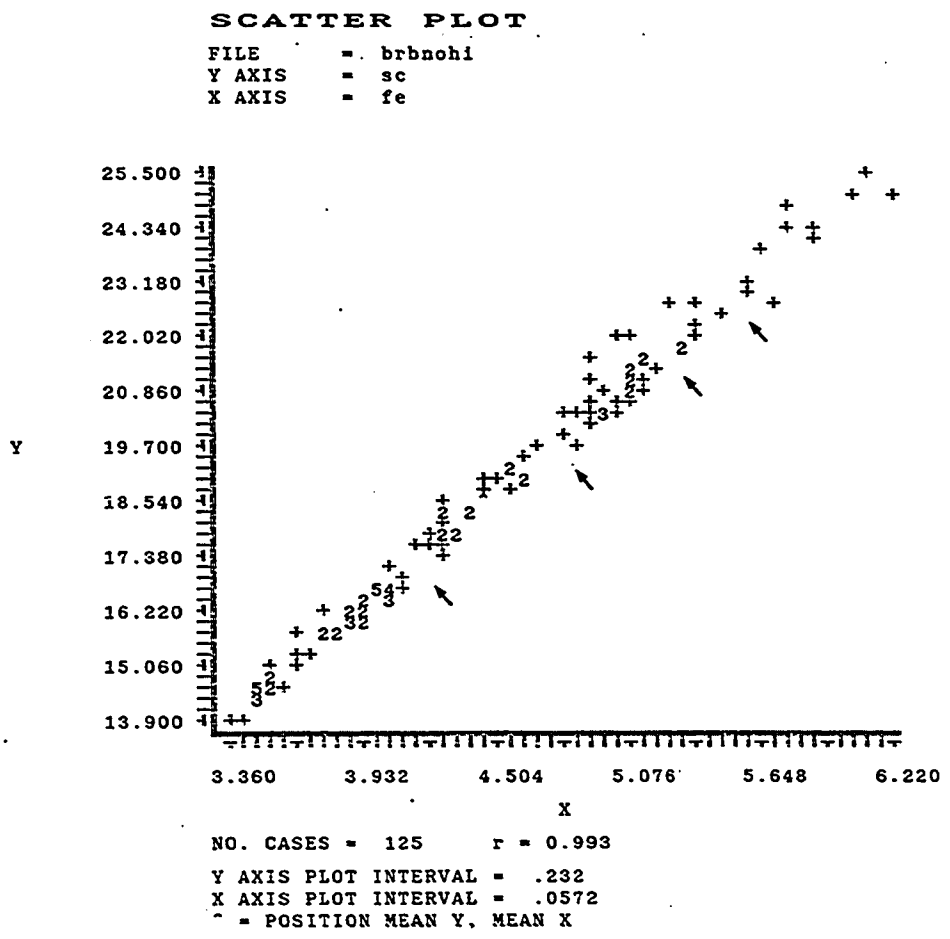


Fig. 29. Sc-Fe Scatter Plot - Bevel Rim Bowls, High End Eliminated

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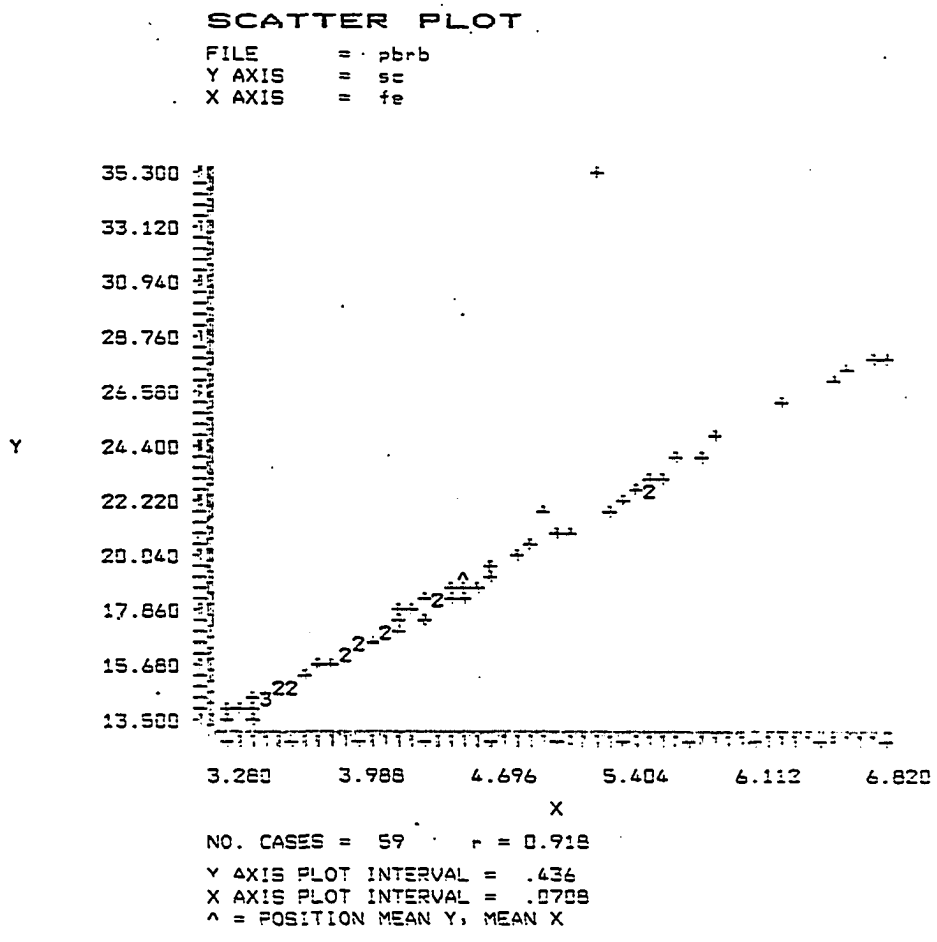


Fig. 30. Sc-Fe Scatter Plot - Proto Bevel Rim Bowls

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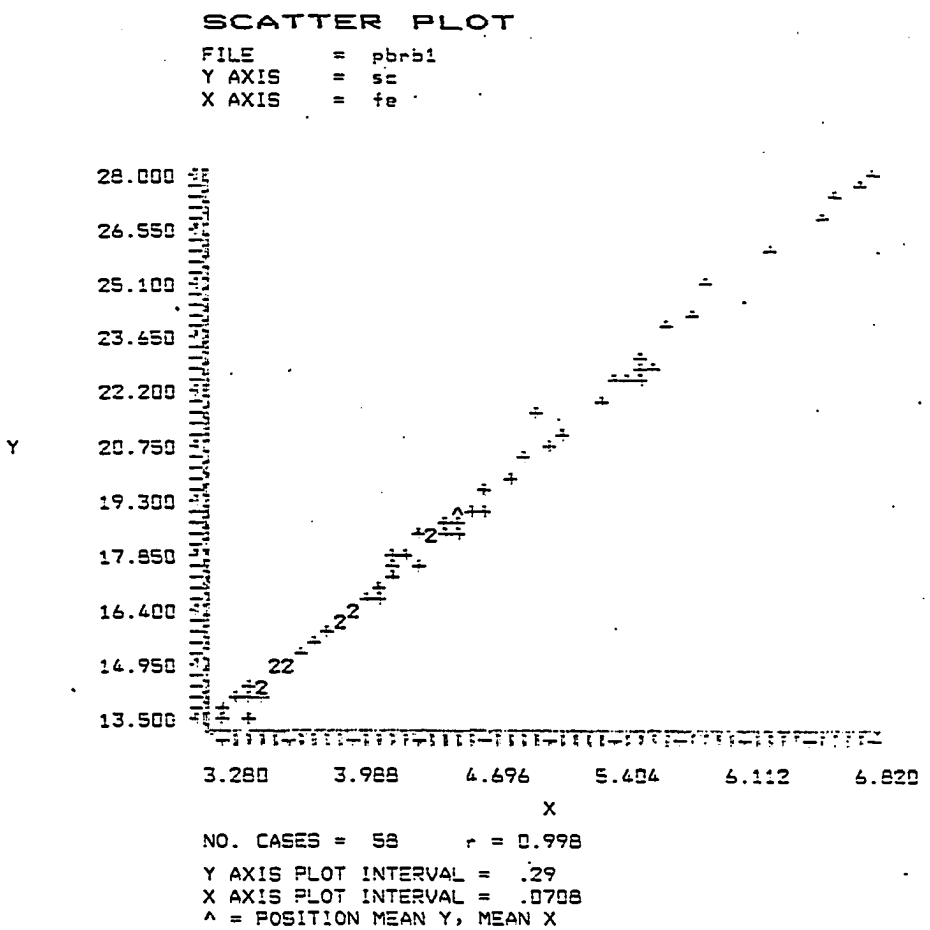


Fig. 31. Sc-Fe Scatter Plot -- Proto Bevel Rim Bowls, Edited

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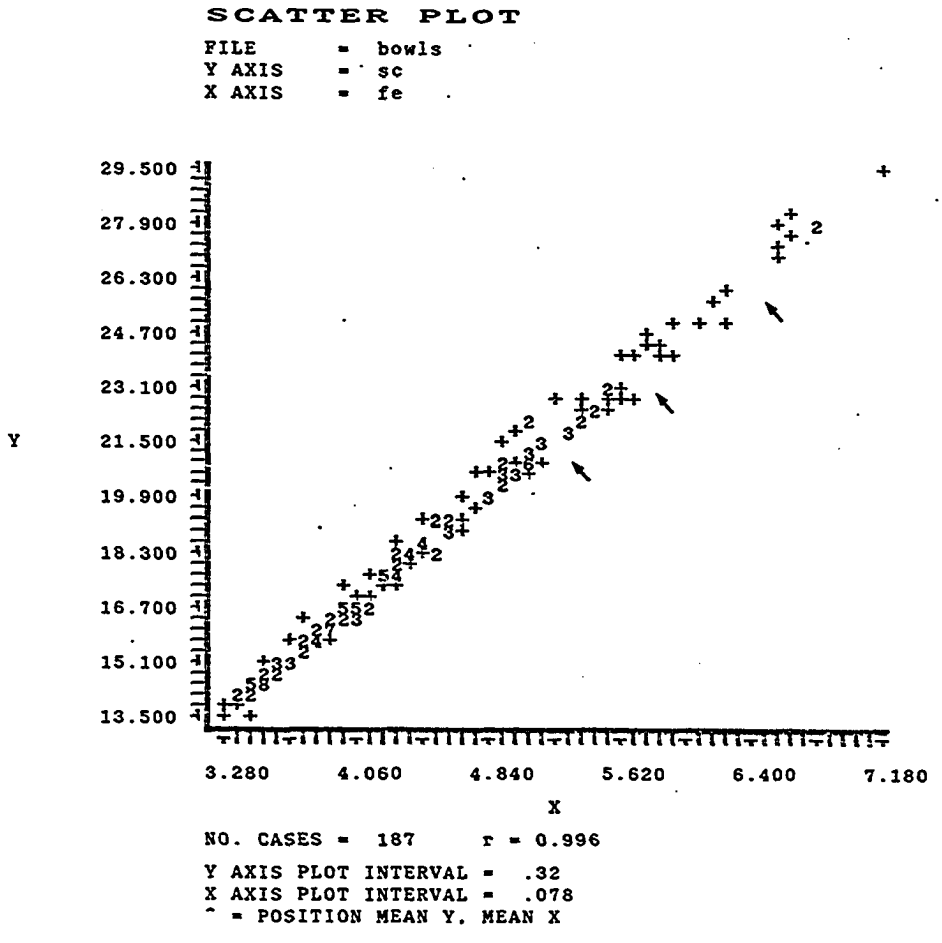


Fig. 32. Sc-Fe Scatter Plot - Bevel Rim Bowls, Proto Bevel Rim Bowls

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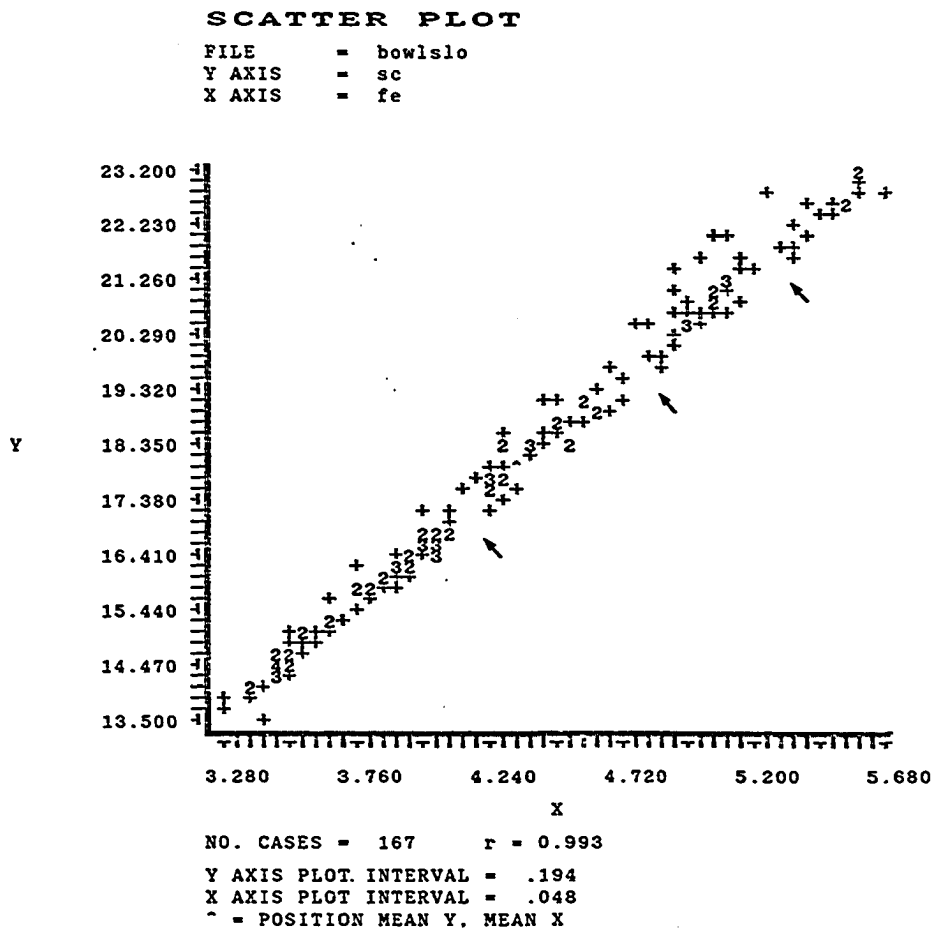


Fig. 33. Sc-Fe Scatter Plot - Bevel Rim Bowls, Proto Bevel Rim Bowls - High End Eliminated

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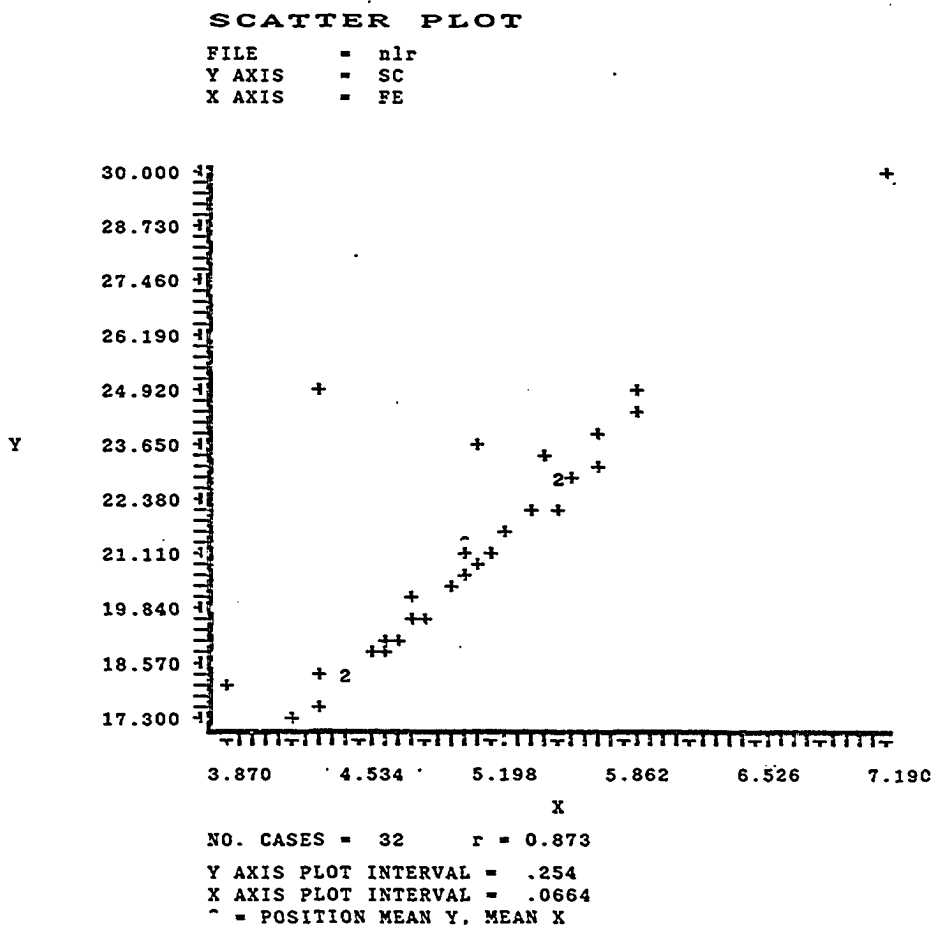


Fig. 34. Sc-Fe Scatter Plot - Neckless Ledge Rim Jars

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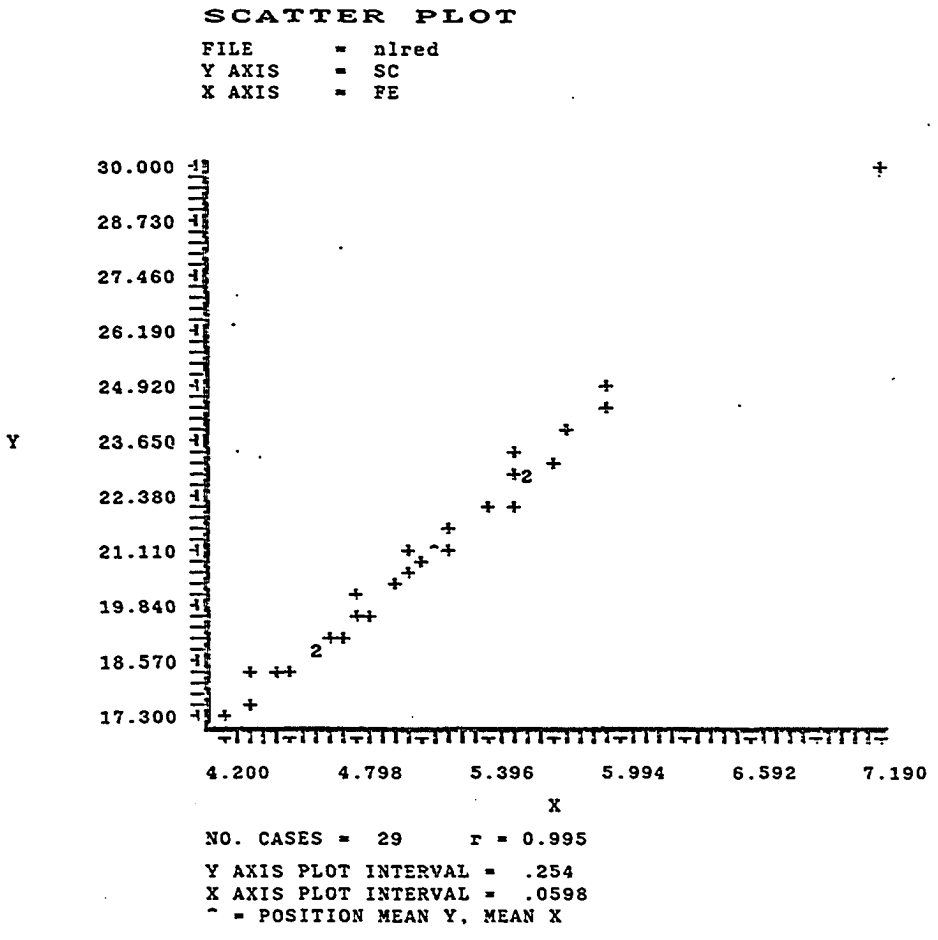


Fig. 35. Sc-Fe Scatter Plot - Neckless Ledge Rim Jars, Edited

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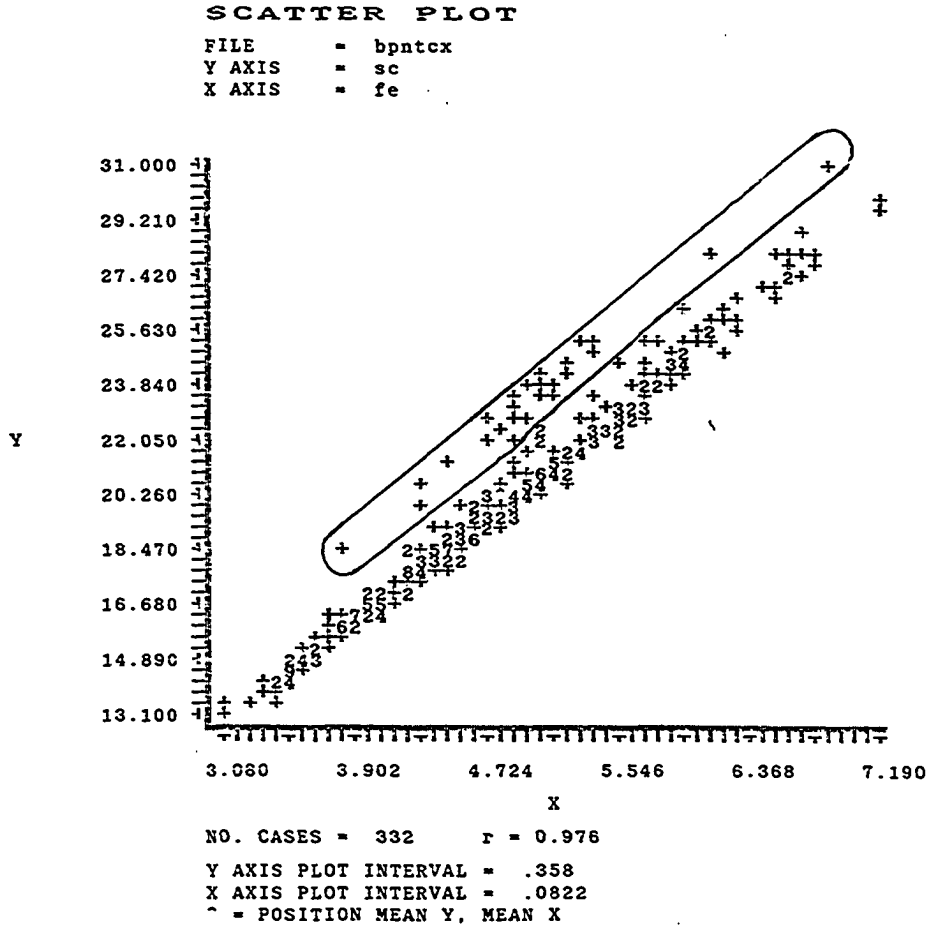


Fig. 36. Sc-Fe Scatter Plot - Activation 21

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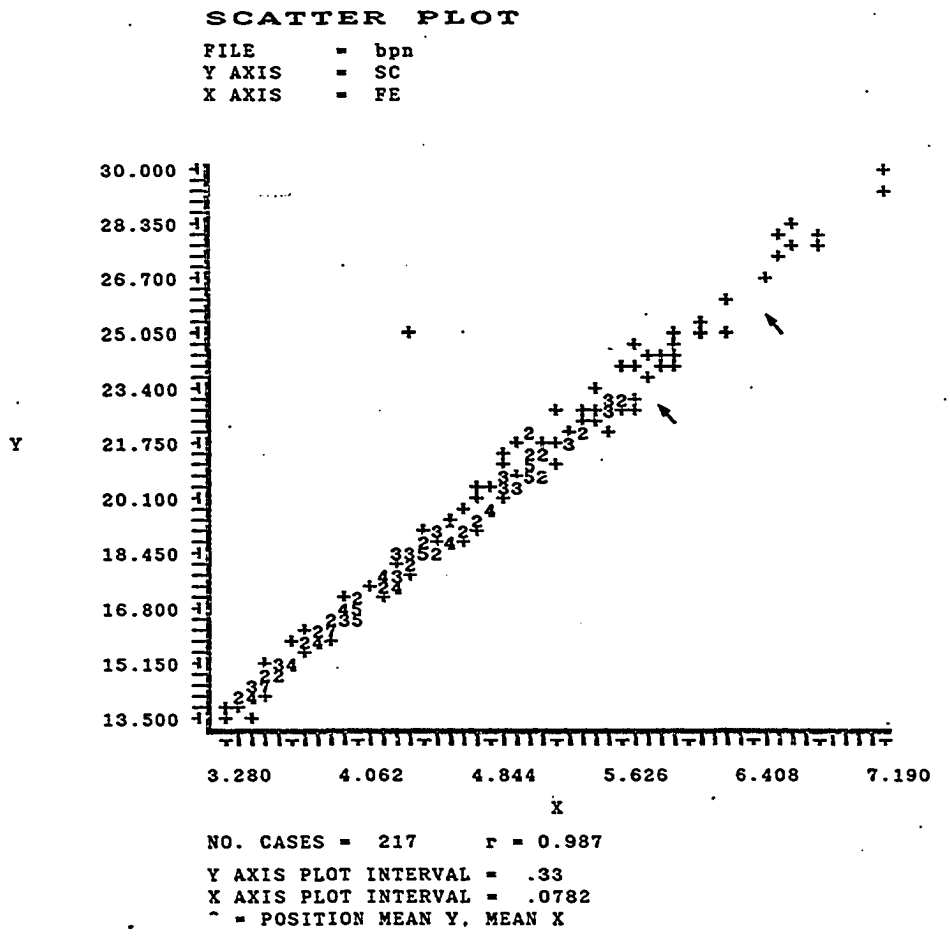


Fig. 37. Sc-Fe Scatter Plot - Bevel Rim Bowls, Proto Bevel Rim Bowls, Neckless Ledge Rim Jars

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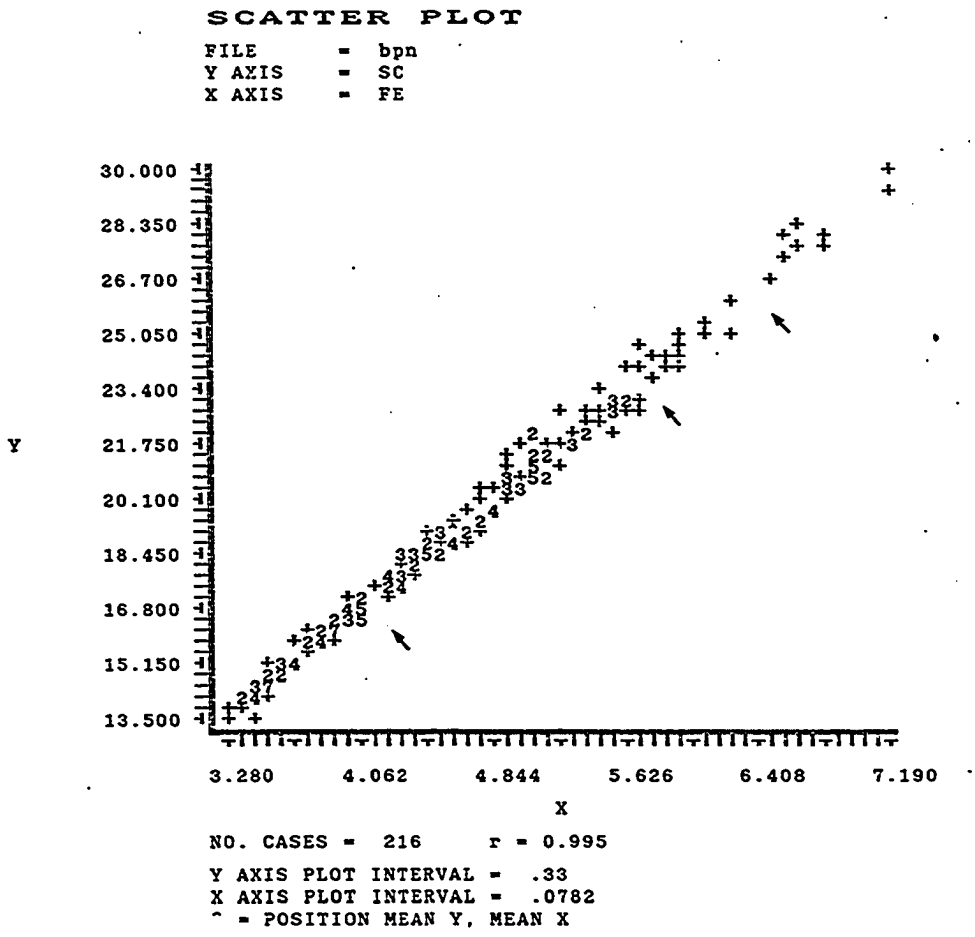


Fig. 38. Sc-Fe Scatter Plot - Bevel Rim Bowls, Proto Bevel Rim Bowls, Neckless Ledge Rim Jars

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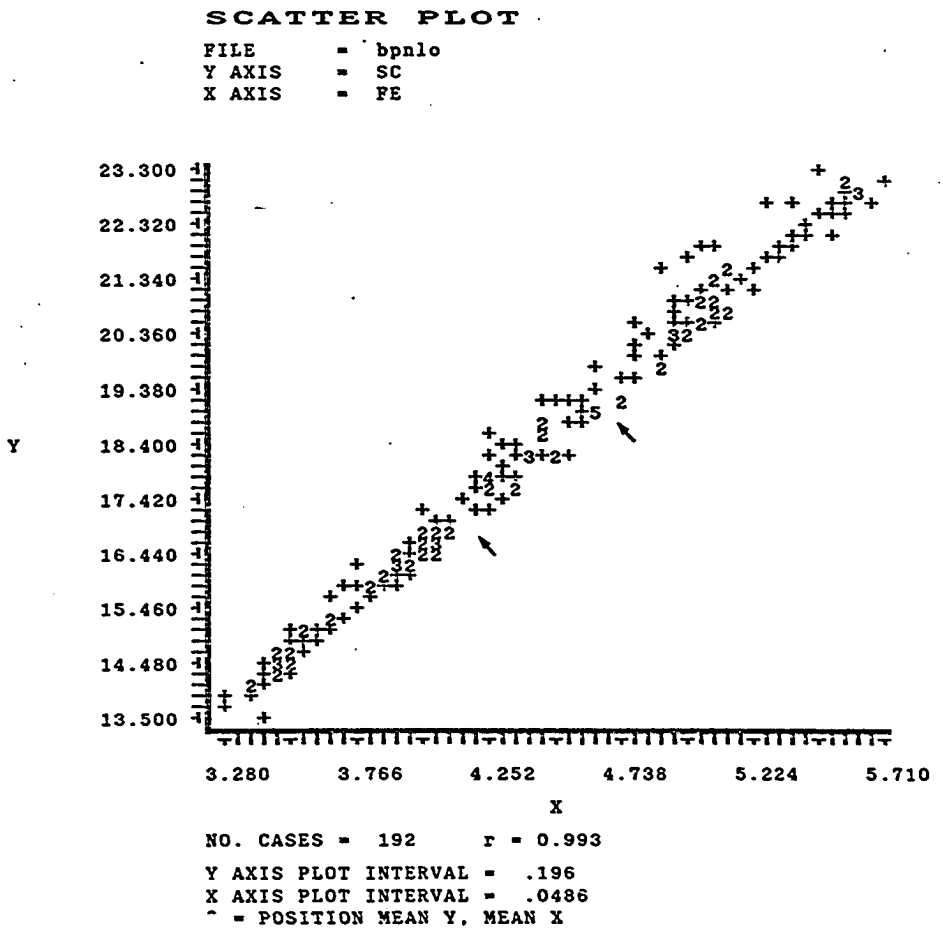


Fig. 39. Sc-Fe Scatter Plot - Bevel Rim Bowls, Proto Bevel Rim Bowls, Neckless Ledge Rim Jars - High End Eliminated

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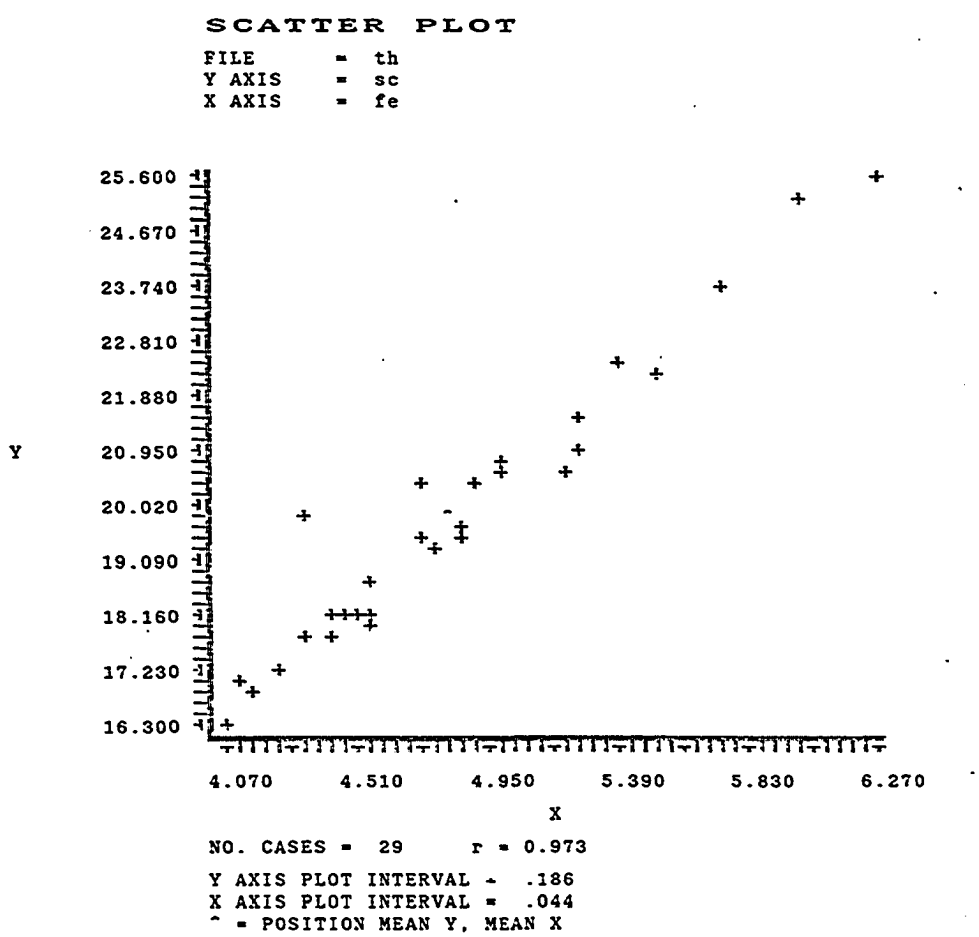


Fig. 40. Sc-Fe Scatter Plot - Twist Handles

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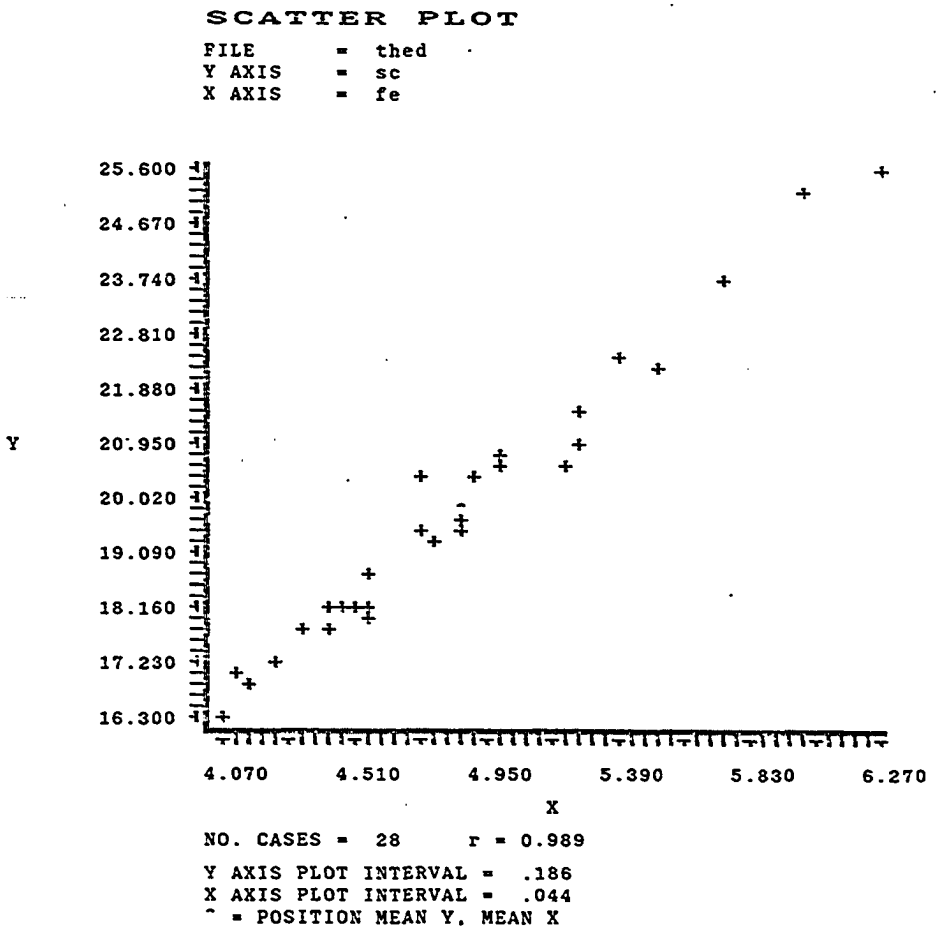


Fig. 41. Sc-Fe Scatter Plot - Twist Handles, Edited

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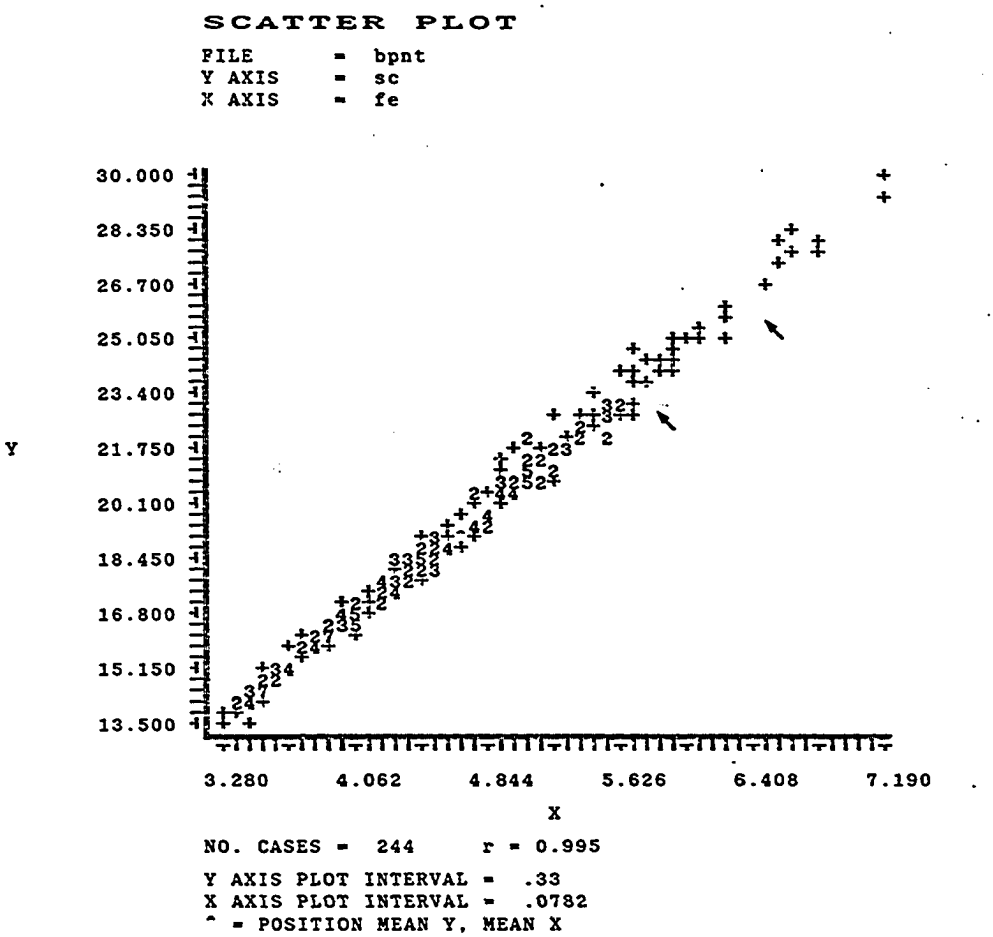


Fig. 42. Sc-Fe Scatter Plot - Bevel Rim Bowls, Proto Bevel Rim Bowls, Neckless Ledge Rim Jars, Twist Handles

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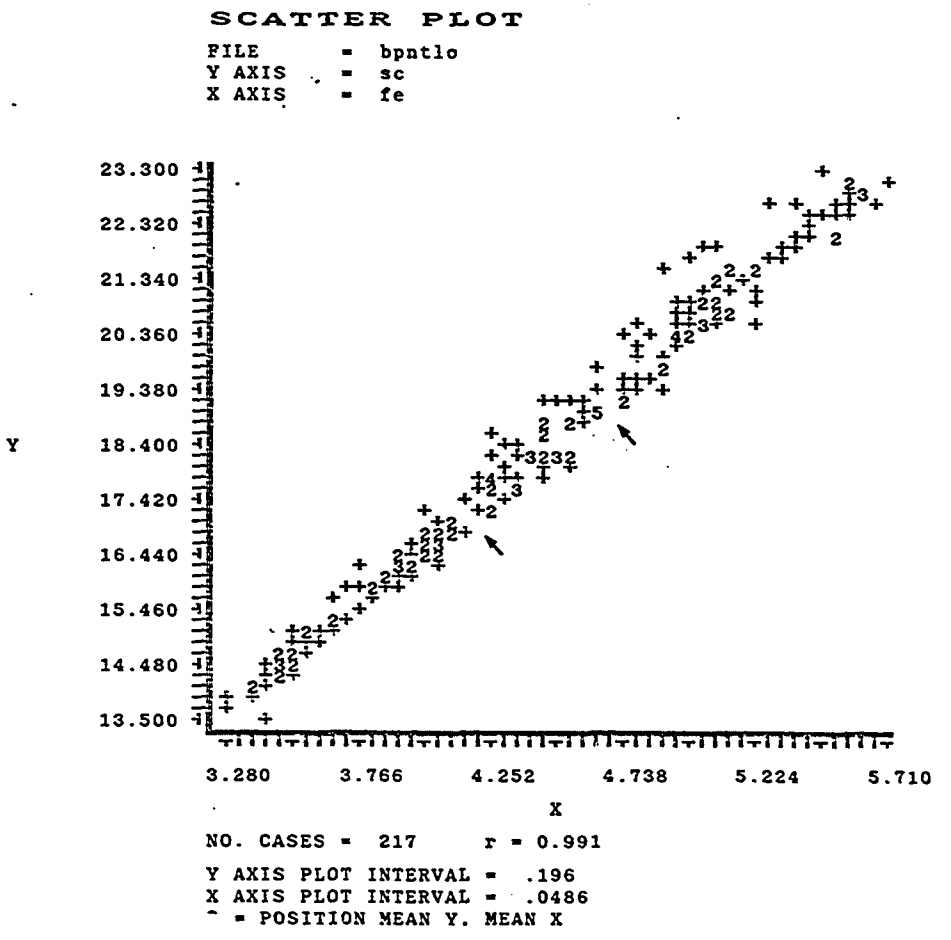


Fig. 43. Sc-Fe Scatter Plot - Bevel Rim Bowls, Proto Bevel Rim Bowls, Neckless Ledge Rim Jars, Twist Handles - High End Eliminated

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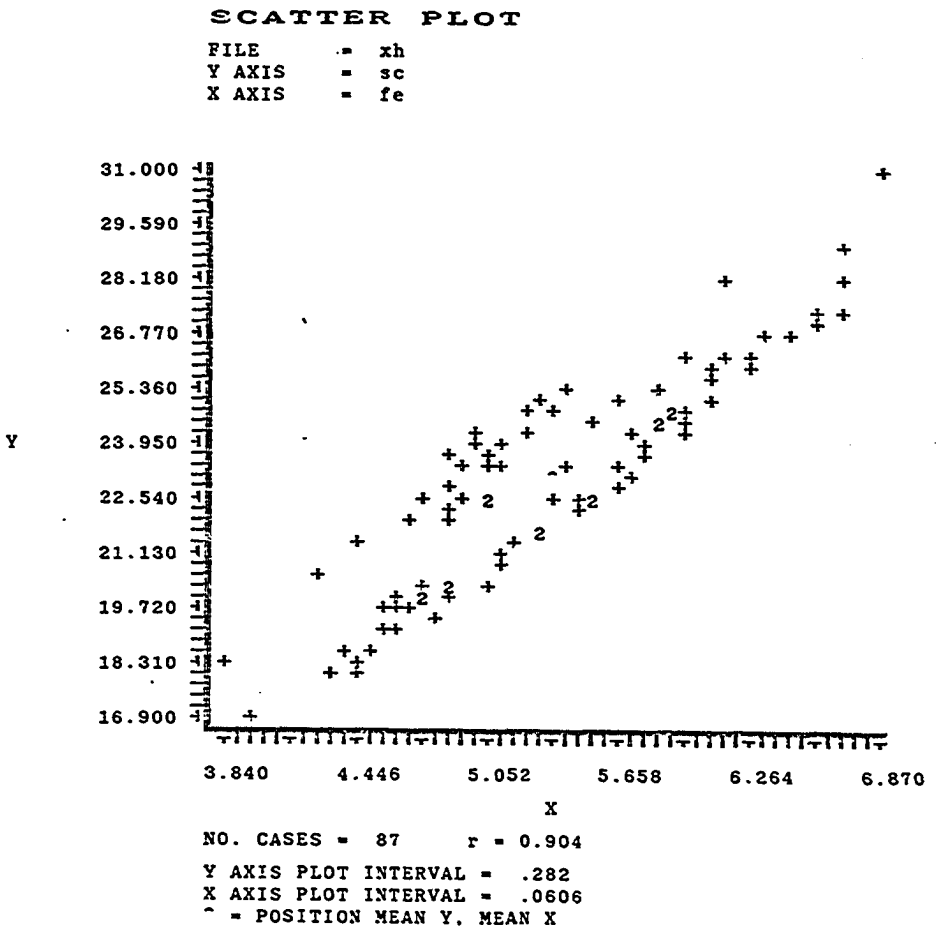


Fig. 44. Sc-Fe Scatter Plot - Cross Hatch Bands

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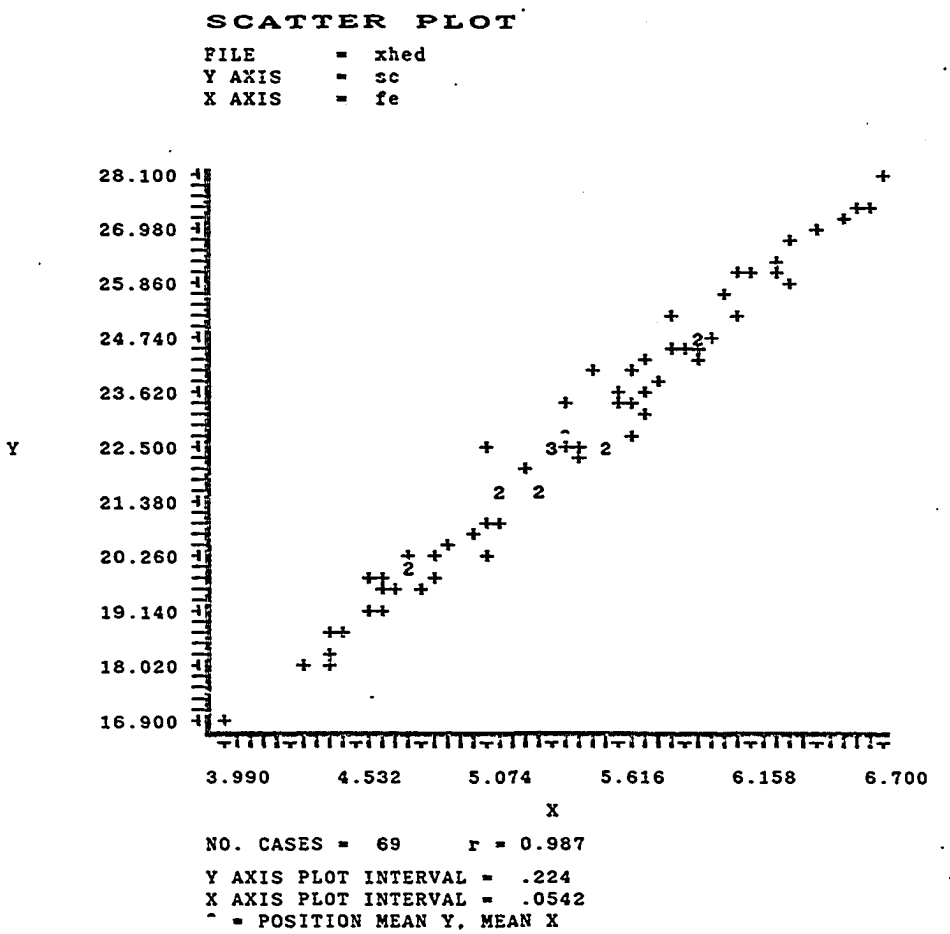


Fig. 45. Sc-Fe Scatter Plot - Cross Hatch Bands, Edited

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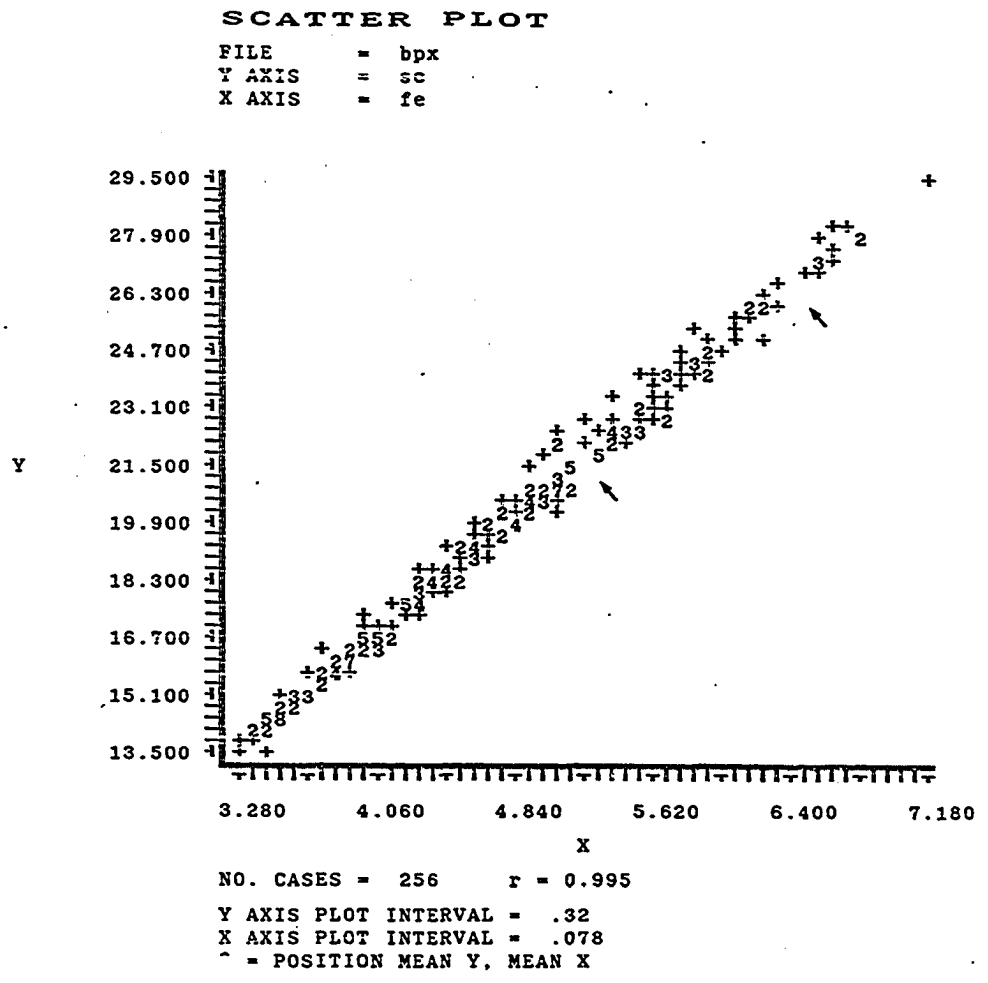


Fig. 46. Sc-Fe Scatter Plot - Bevel Rim Bowls, Proto Bevel Rim Bowls, Cross Hatch Bands

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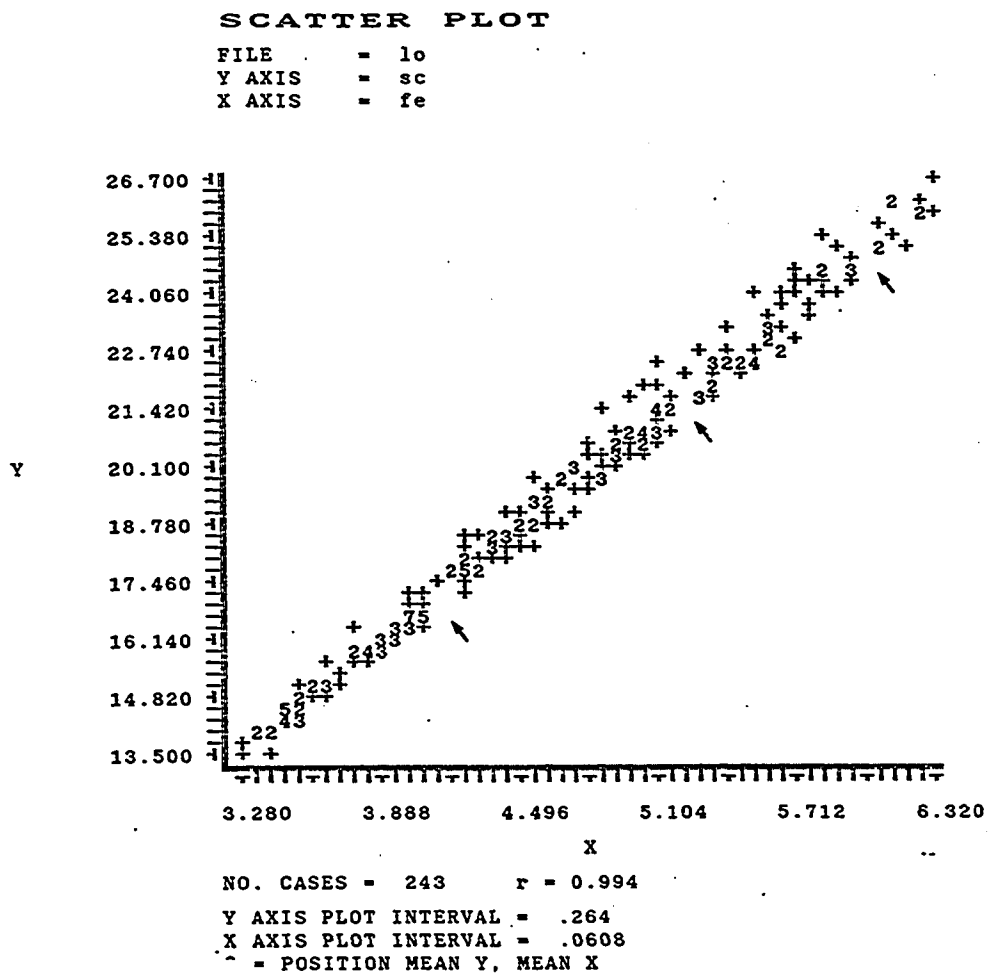


Fig. 47. Sc-Fe Scatter Plot - Bevel Rim Bowls, Proto Bevel Rim Bowls, Cross Hatch Bands - High End Eliminated

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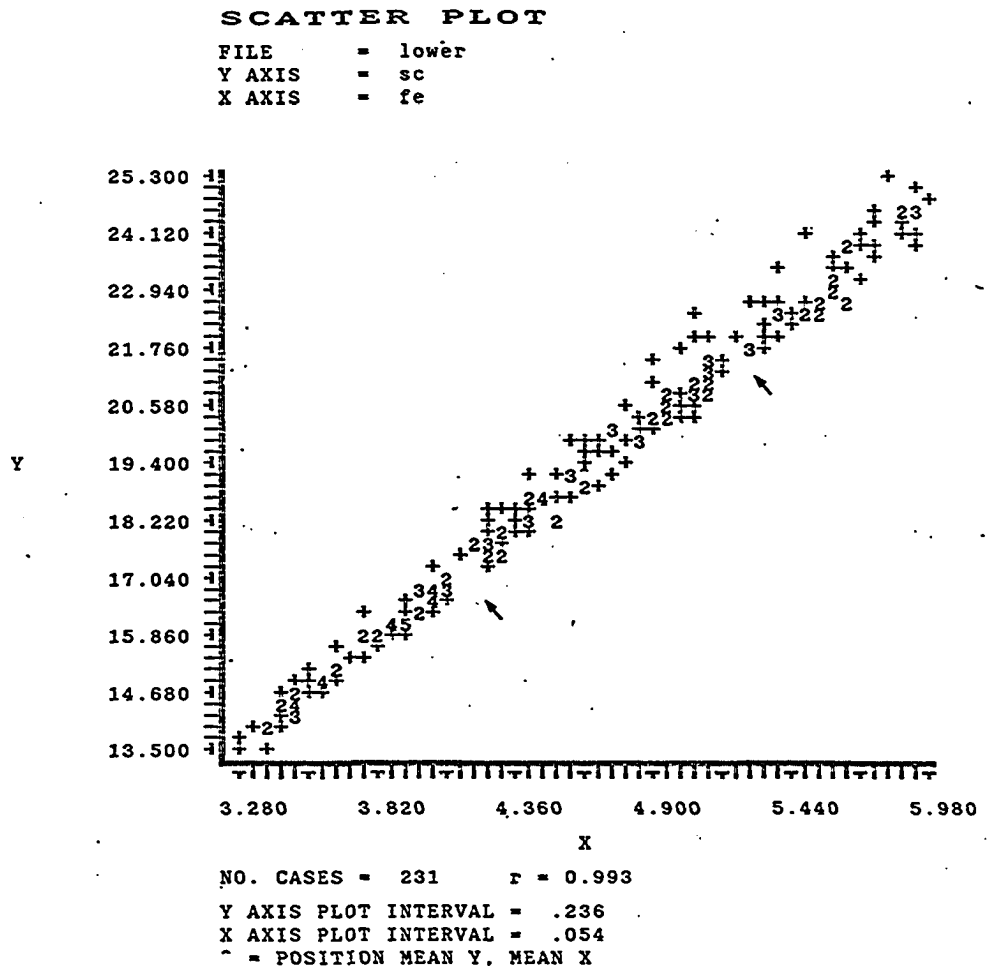


Fig. 48. Sc-Fe Scatter Plot - Bevel Rim Bowls, Proto Bevel Rim Bowls, Cross Hatch Bands - 2 High Ends Eliminated

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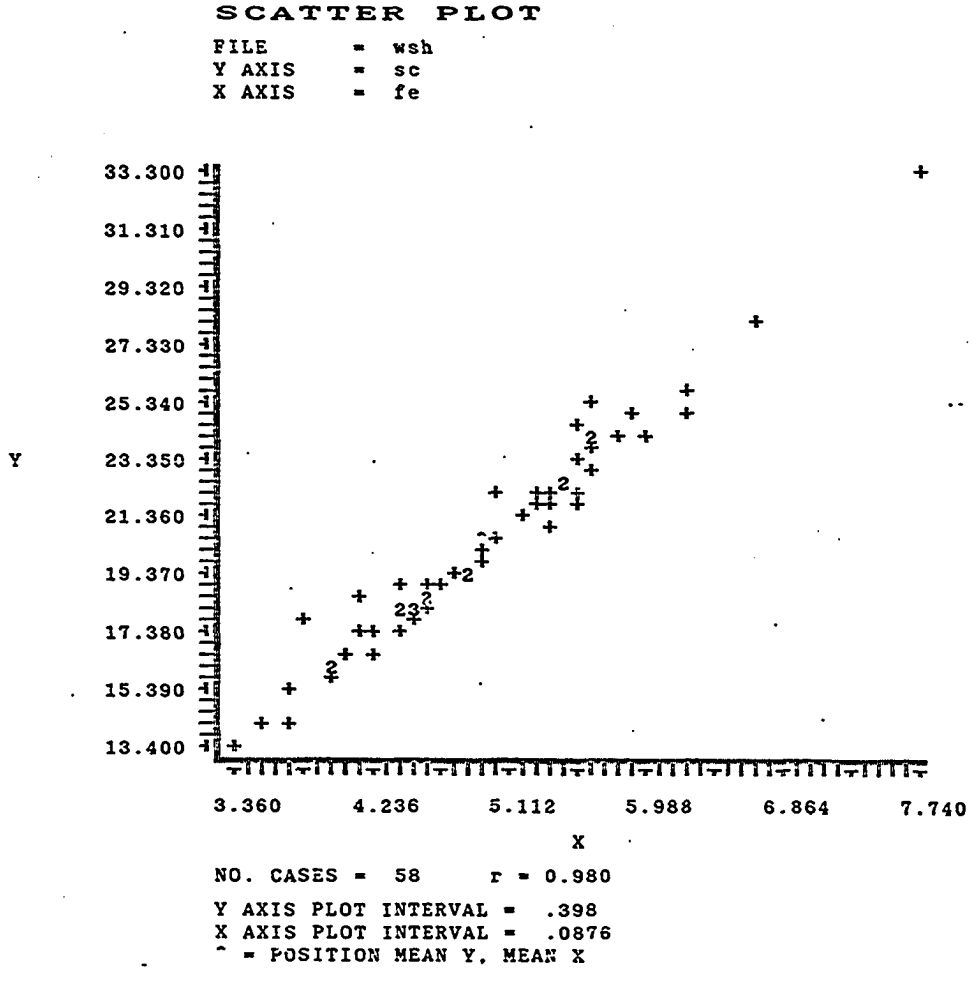


Fig. 49. Sc-Fe Scatter Plot - Wide Strap Handles

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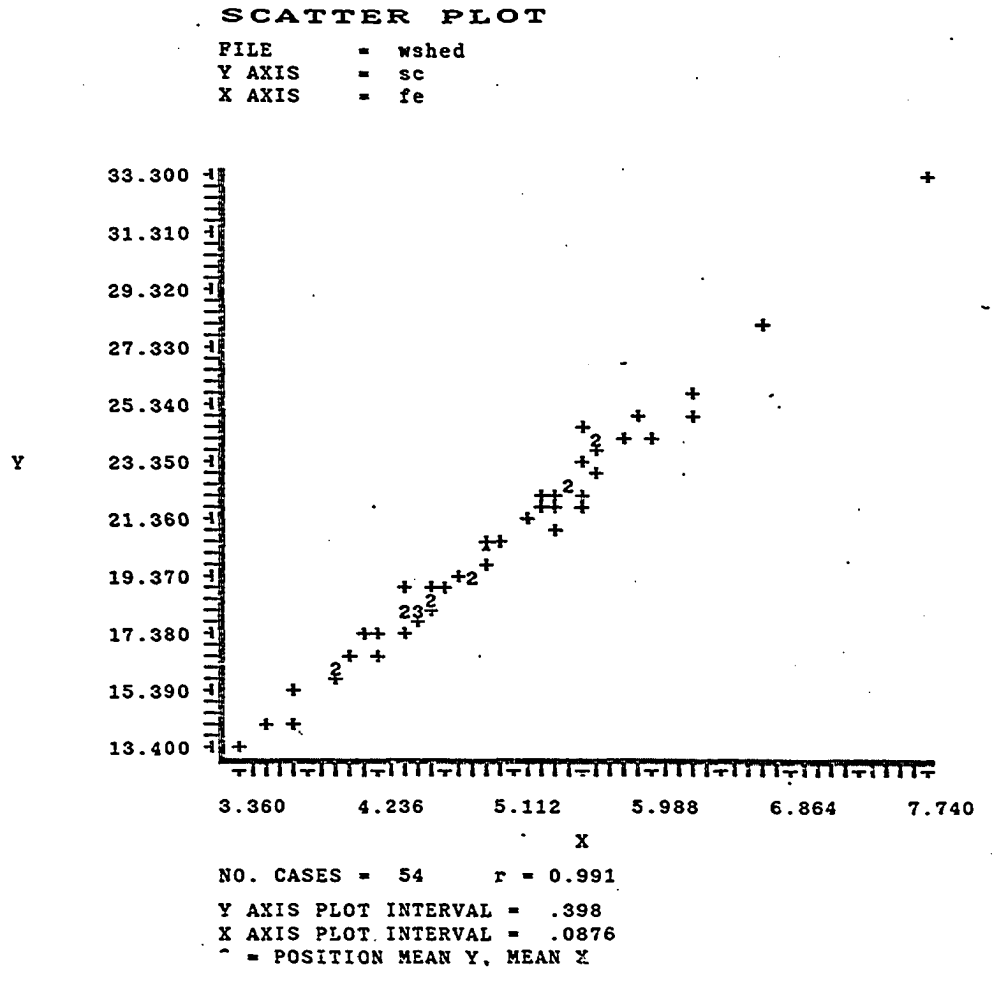


Fig. 50. Sc-Fe Scatter Plot - Wide Strap Handles, Edited

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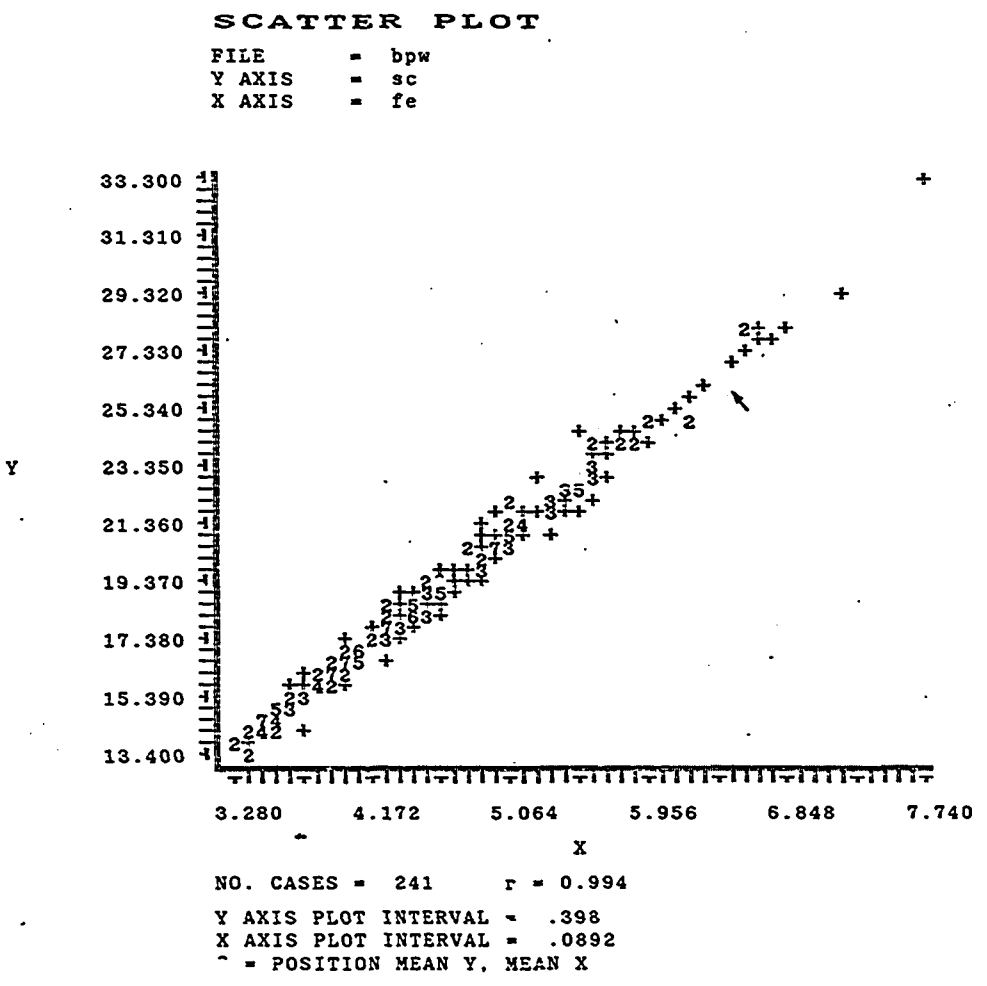


Fig. 51. Sc-Fe Scatter Plot - Bevel Rim Bowls, Proto Bevel Rim Bowls, Wide Strap Handles

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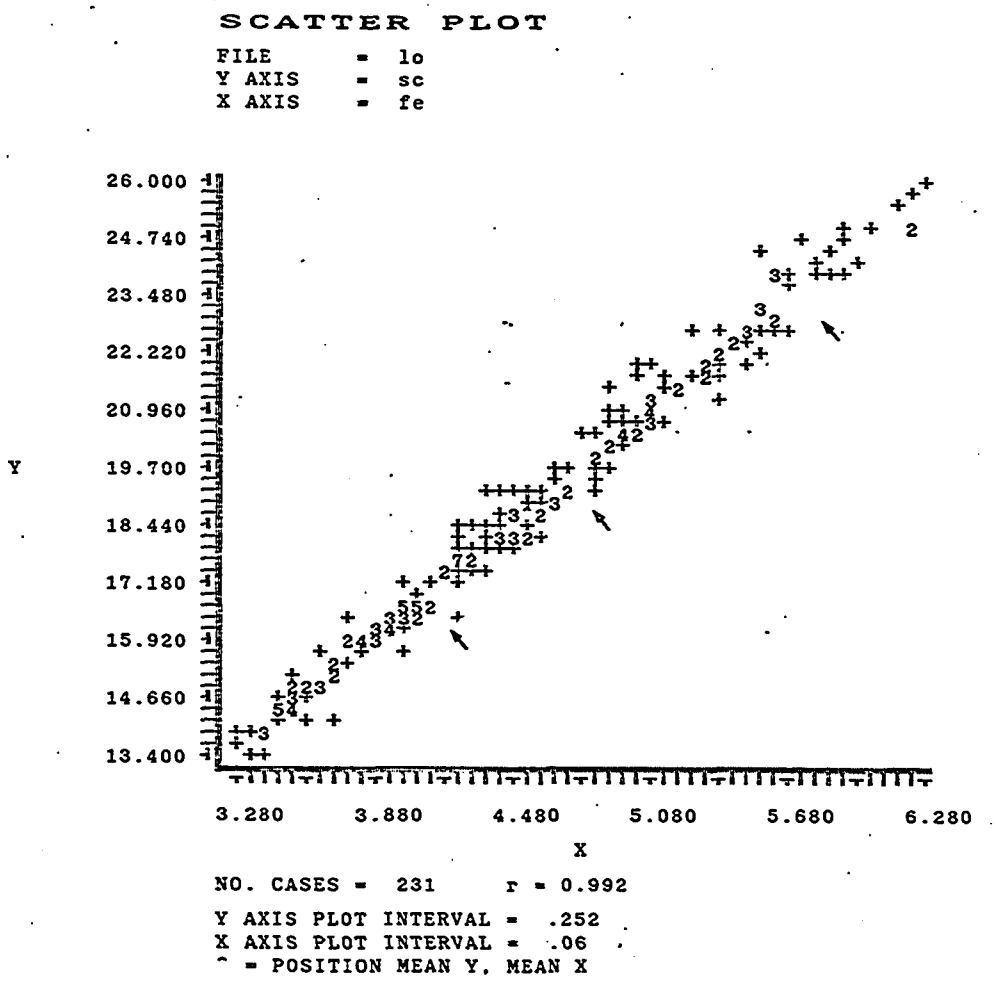


Fig. 52. Sc-Fe Scatter Plot - Bevel Rim Bowls, Proto Bevel Rim Bowls, Wide Strap Handles - High End Eliminated

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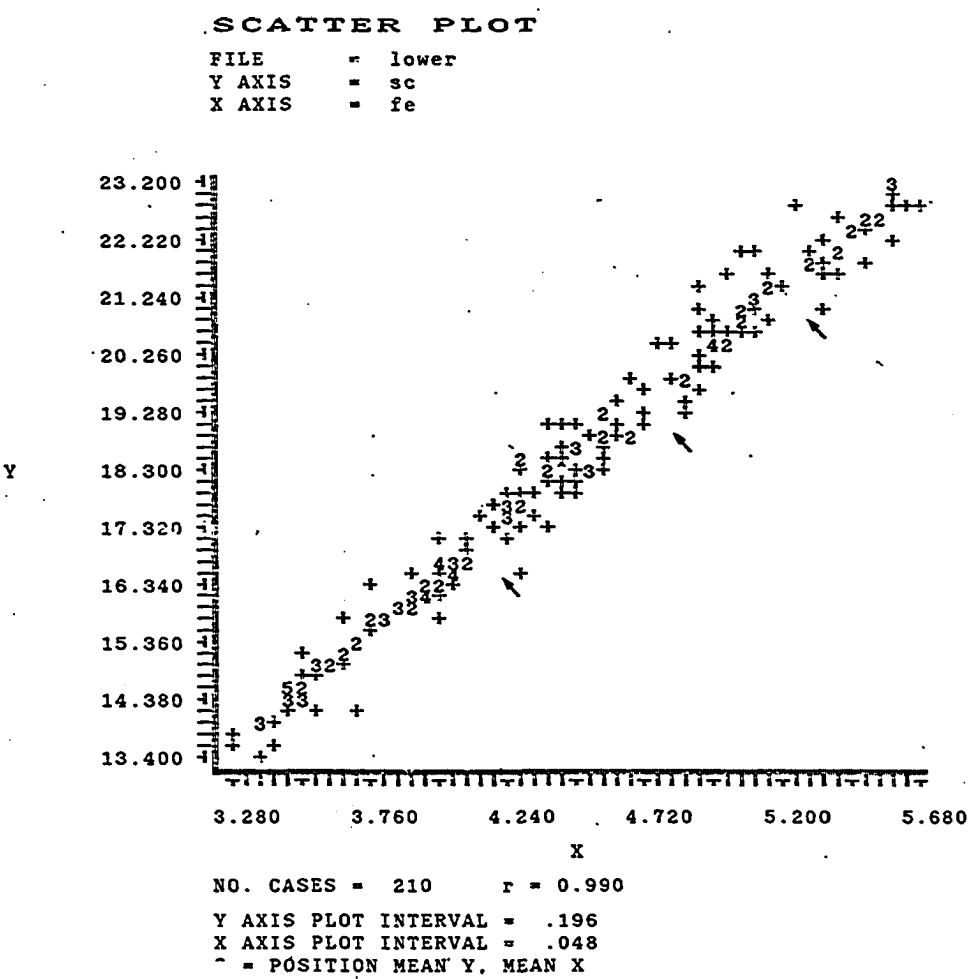


Fig. 53. Sc-Fe Scatter Plot - Bevel Rim Bowls, Proto Bevel Rim Bowls, Wide Strap Handles - 2 High Ends Eliminated

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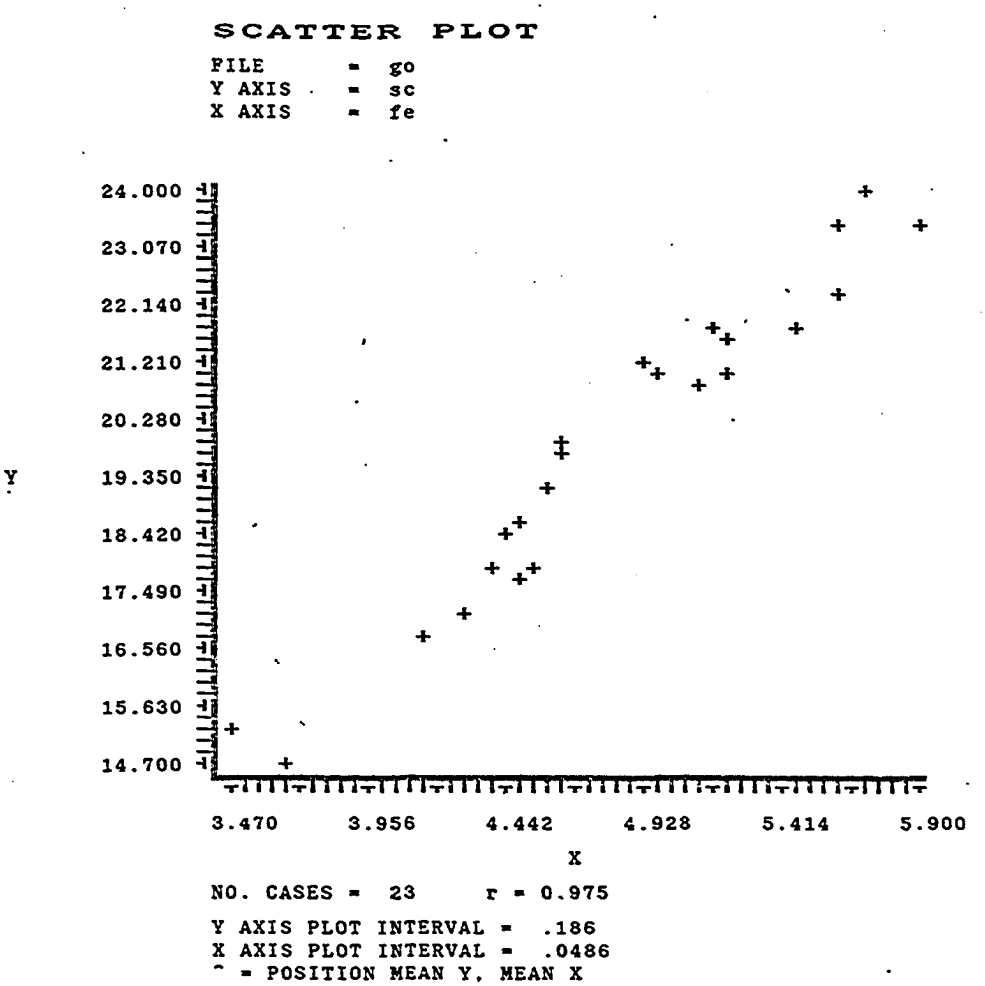


Fig. 54. Sc-Fe Scatter Plot - Groove and Oblique Jars

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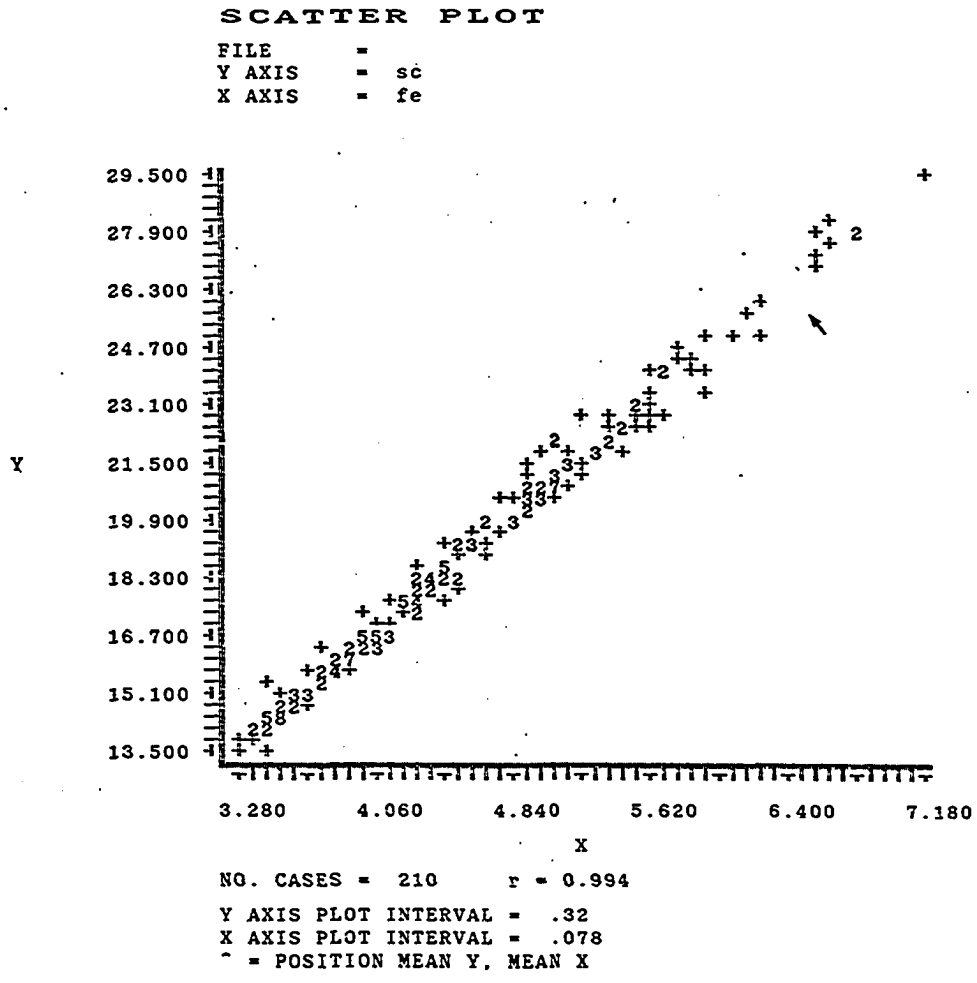


Fig. 55. Sc-Fe Scatter Plot - Bevel Rim Bowls, Proto Bevel Rim Bowls, Groove and Oblique Jars

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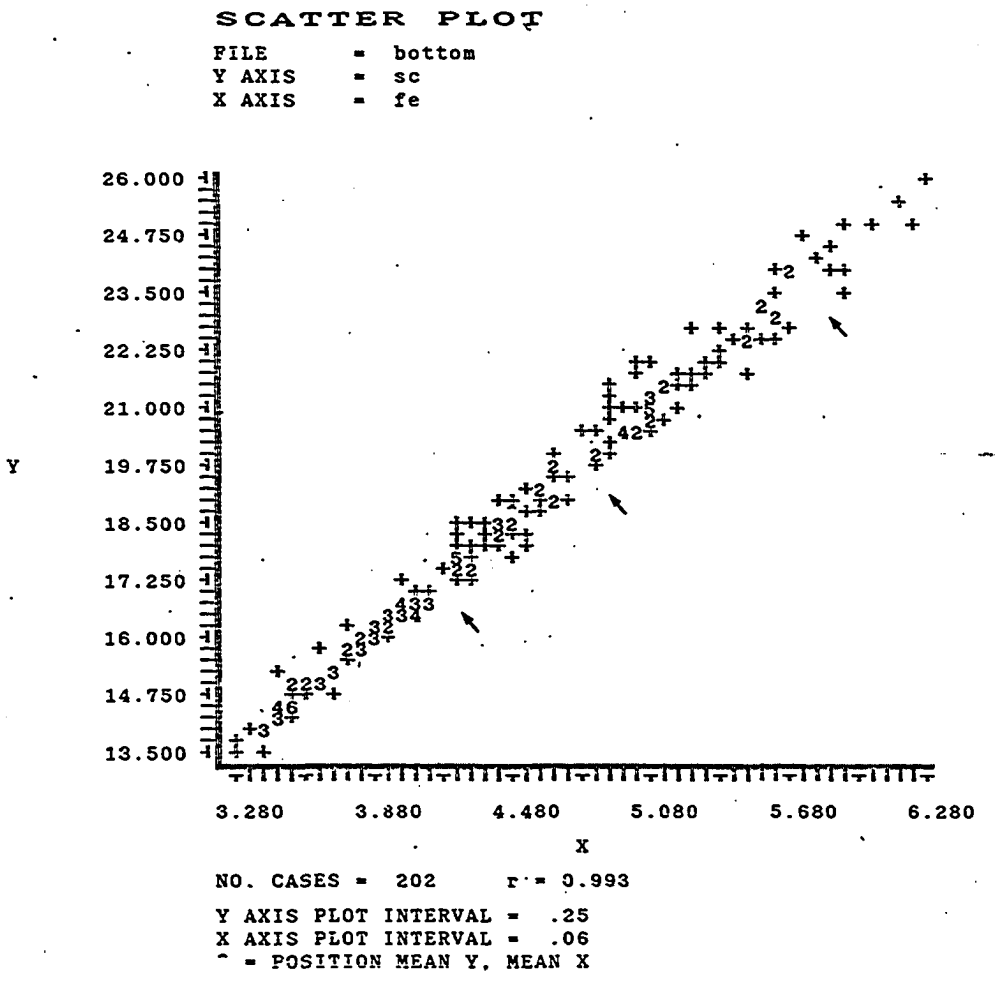


Fig. 56. Sc-Fe Scatter Plot - Bevel Rim Bowls, Proto Bevel Rim Bowls, Groove and Oblique Jars - High End Eliminated

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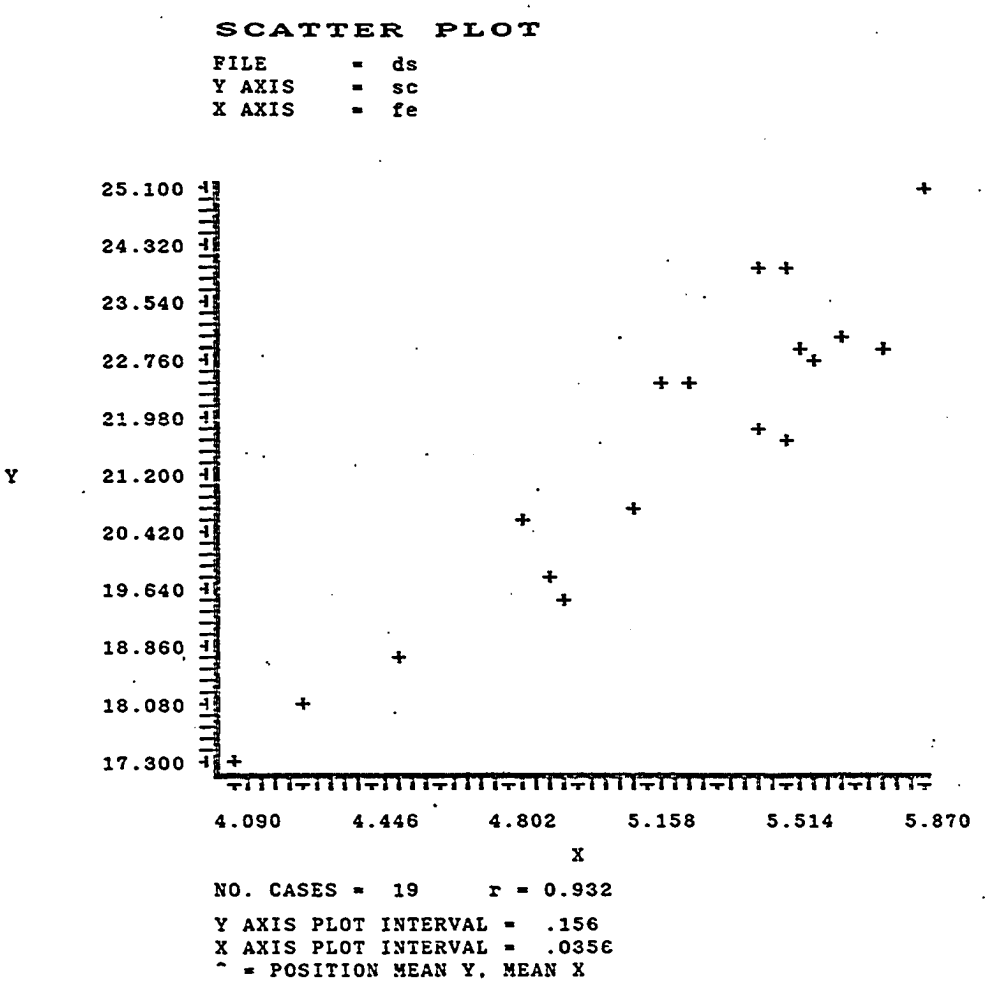


Fig. 57. Sc-Fe Scatter Plot - Droop Spouts

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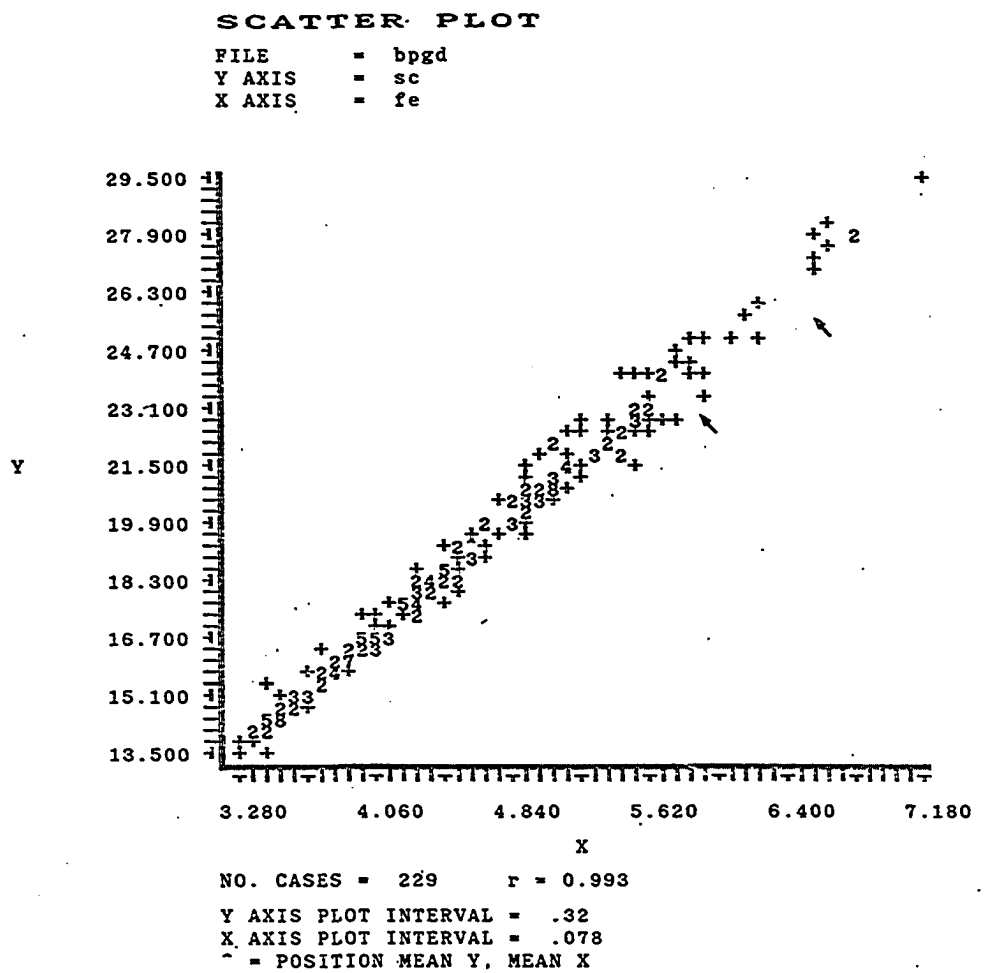


Fig. 58. Sc-Fe Scatter Plot - Bevel Rim Bowls, Proto Bevel Rim Bowls, Groove and Oblique Jars, Droop Spouts

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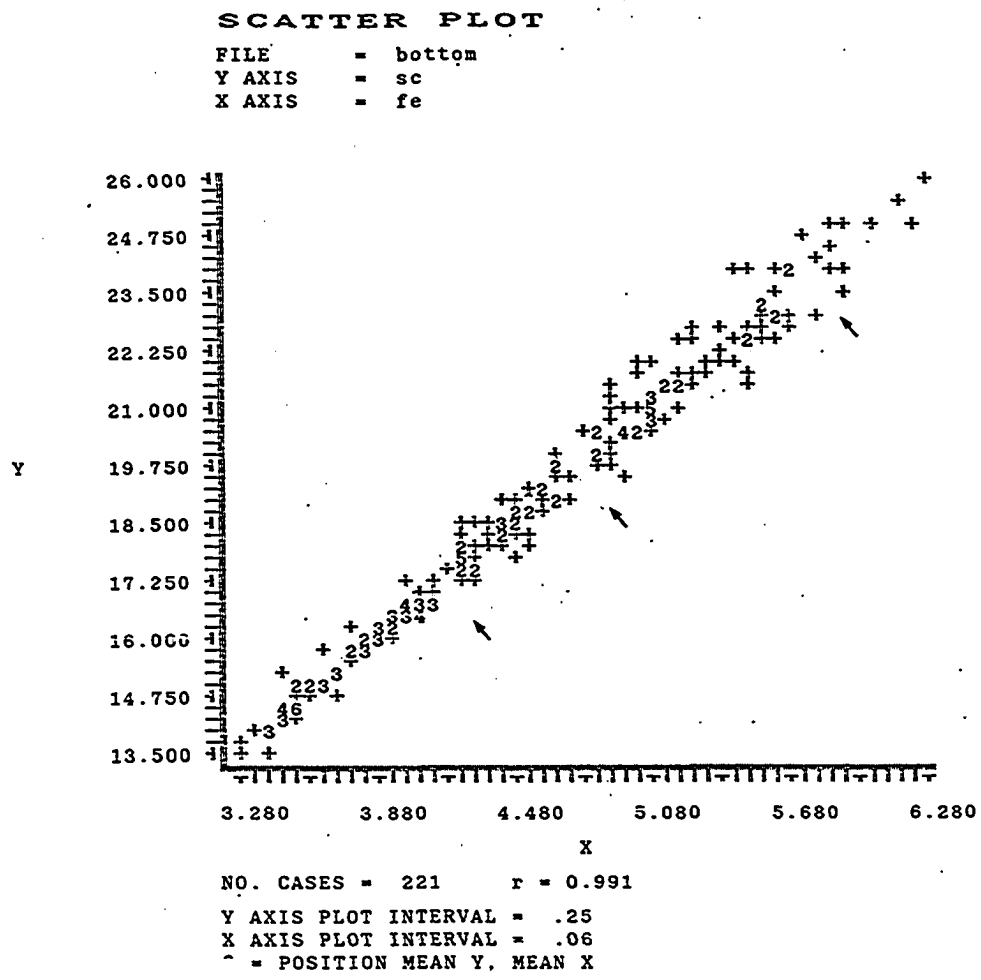


Fig. 59. Sc-Fe Scatter Plot - Bevel Rim Bowls, Proto Bevel Rim Bowls, Groove and Oblique Jars, Droop Spouts - High End Eliminated

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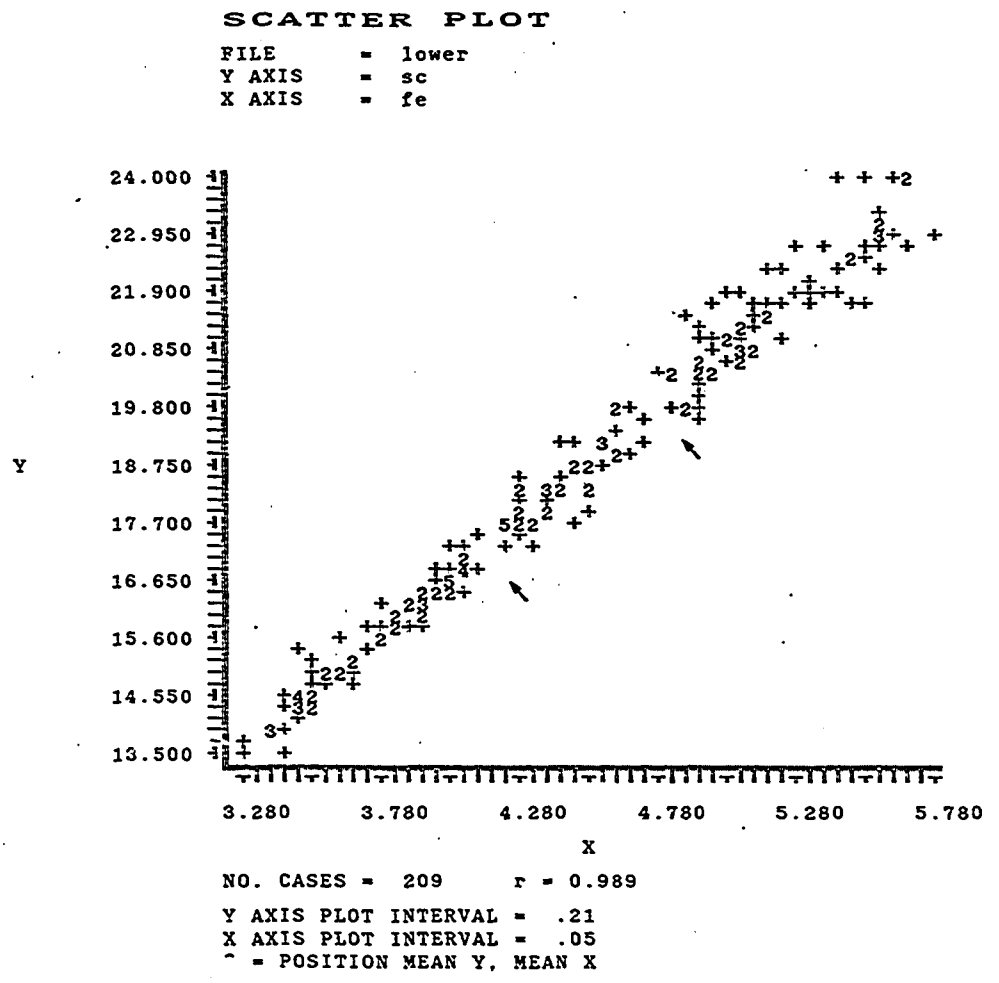


Fig. 60. Sc-Fe Scatter Plot - Bevel Rim Bowls, Proto Bevel Rim Bowls, Groove and Oblique Jars, Droop Spouts-2 High Ends Eliminated

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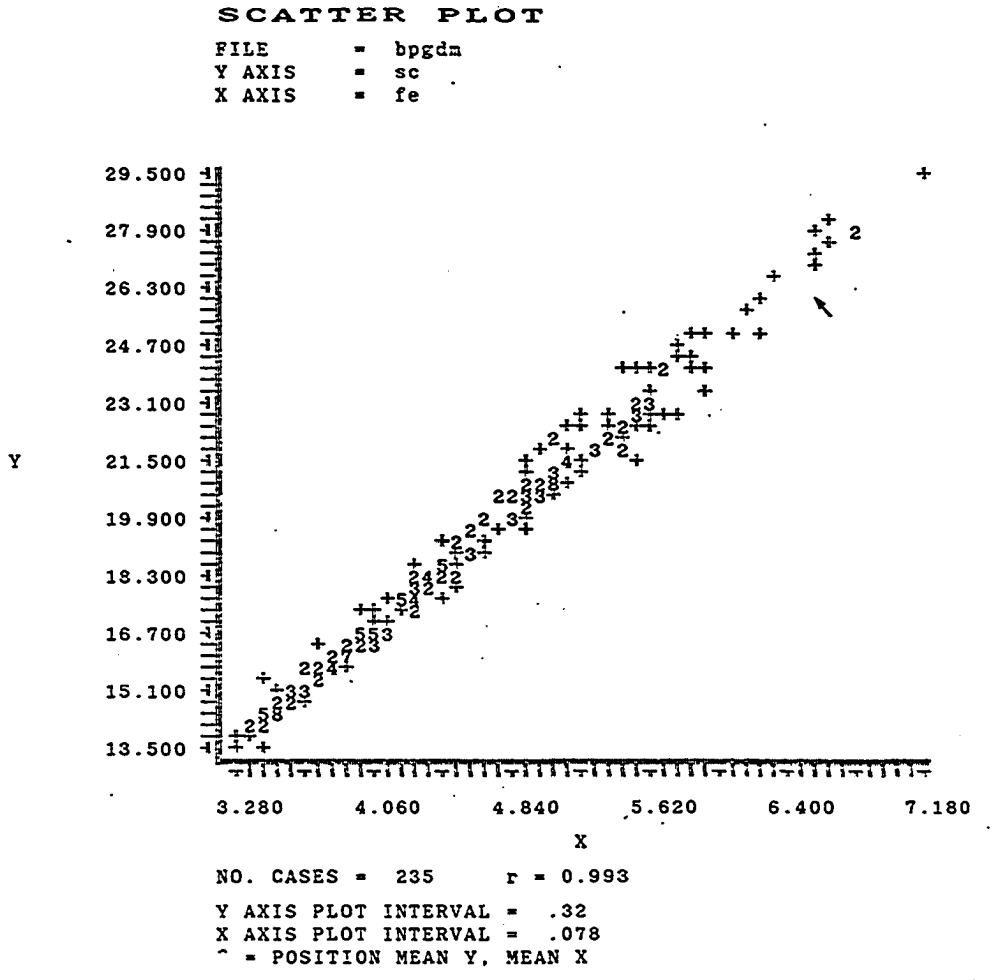


Fig. 61. Sc-Fe Scatter Plot - Bevel Rim Bowls, Proto Bevel Rim Bowls, Groove and Oblique Jars, Droop Spouts, Miscellaneous

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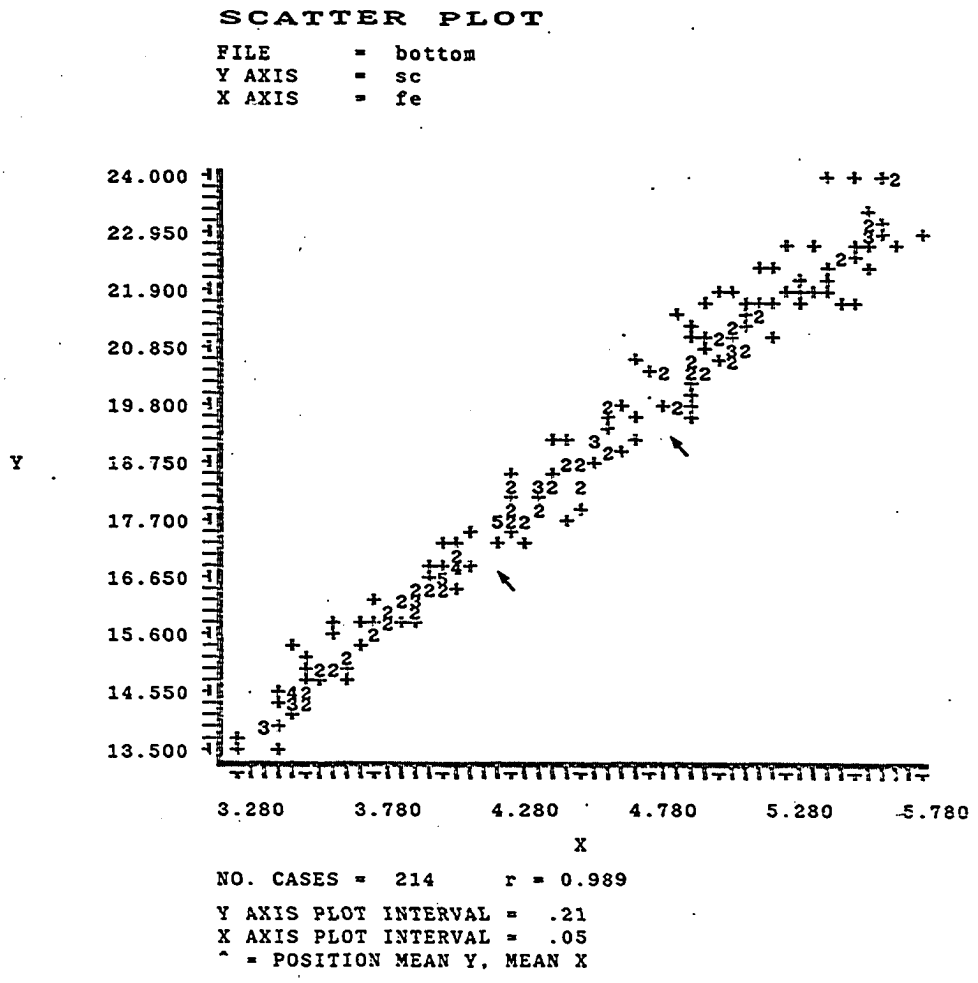


Fig. 62. Sc-Fe Scatter Plot - Bevel Rim Bowls, Proto Bevel Rim Bowls, Groove and Oblique Jars, Droop Spouts, Miscellaneous - 2 High Ends Eliminated

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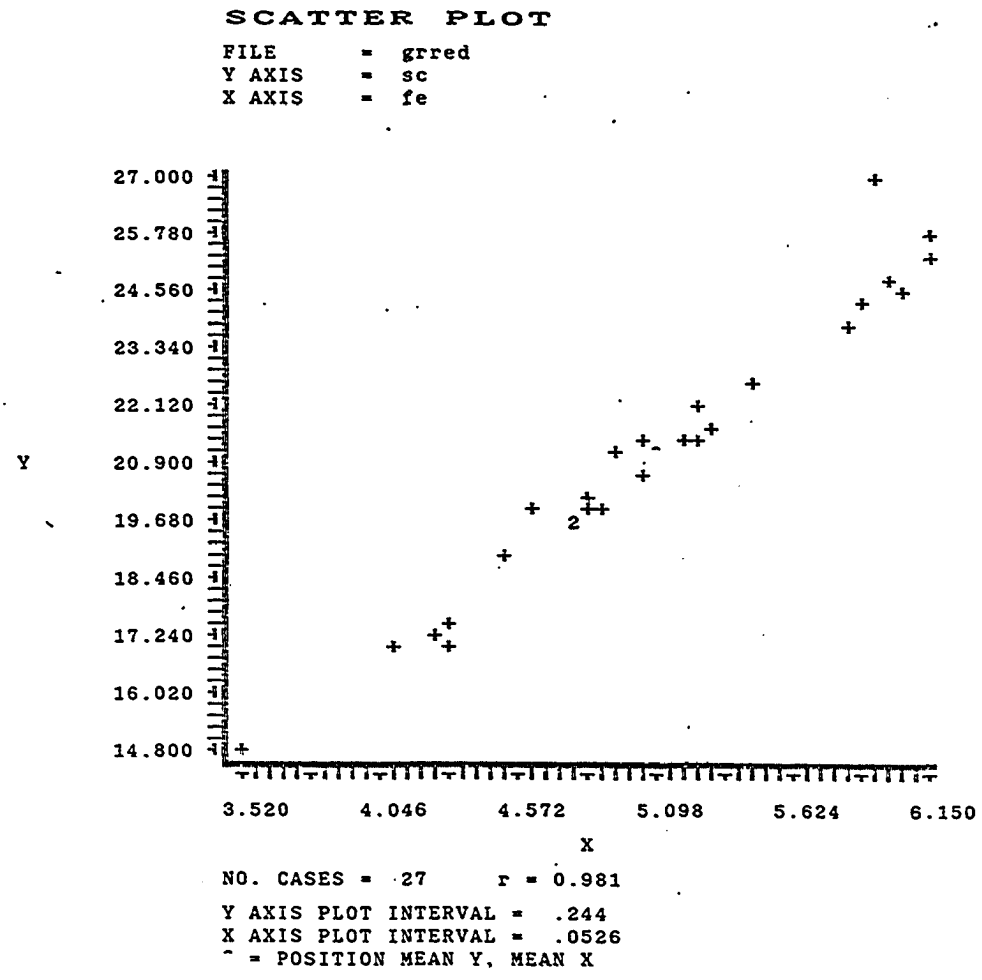


Fig. 63. Sc-Fe Scatter Plot - Grooved Round Rim Jar

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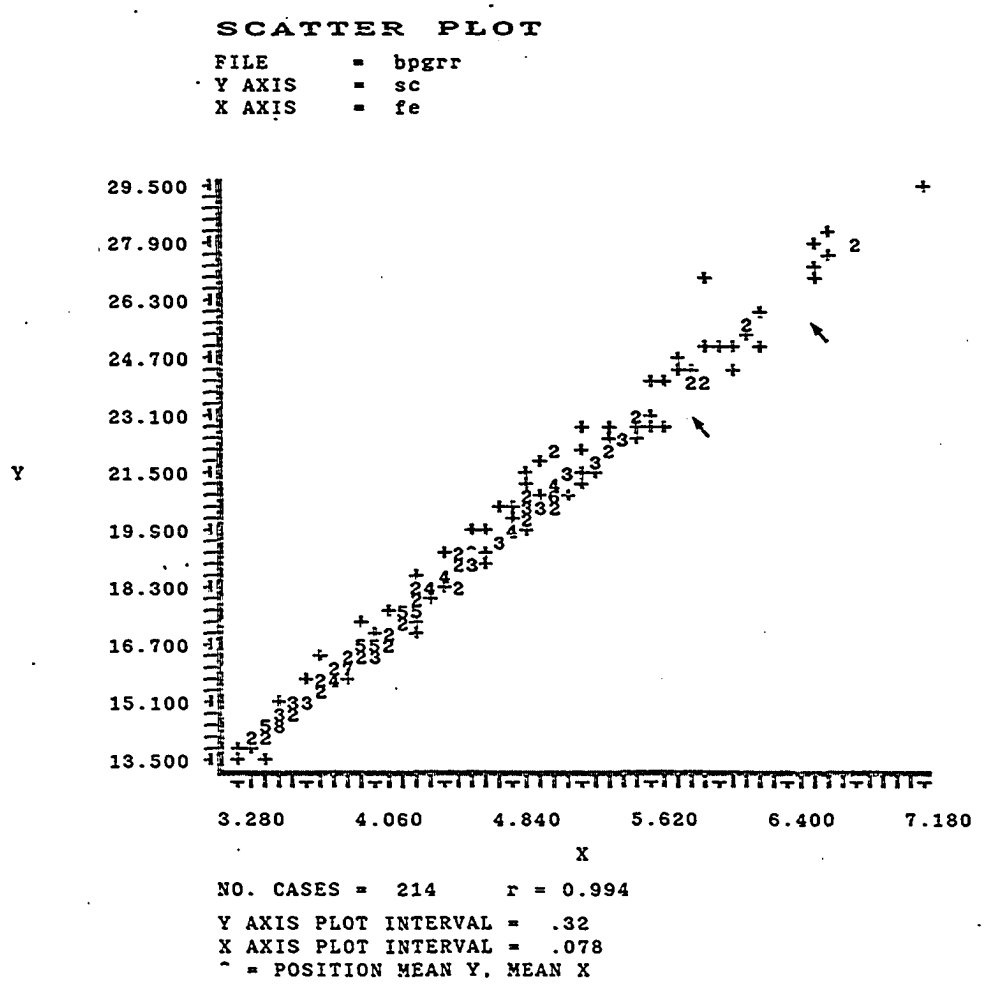


Fig. 64. Sc-Fe Scatter Plot - Bevel Rim Bowls, Proto Bevel Rim Bowls, Grooved Round Rim Jar

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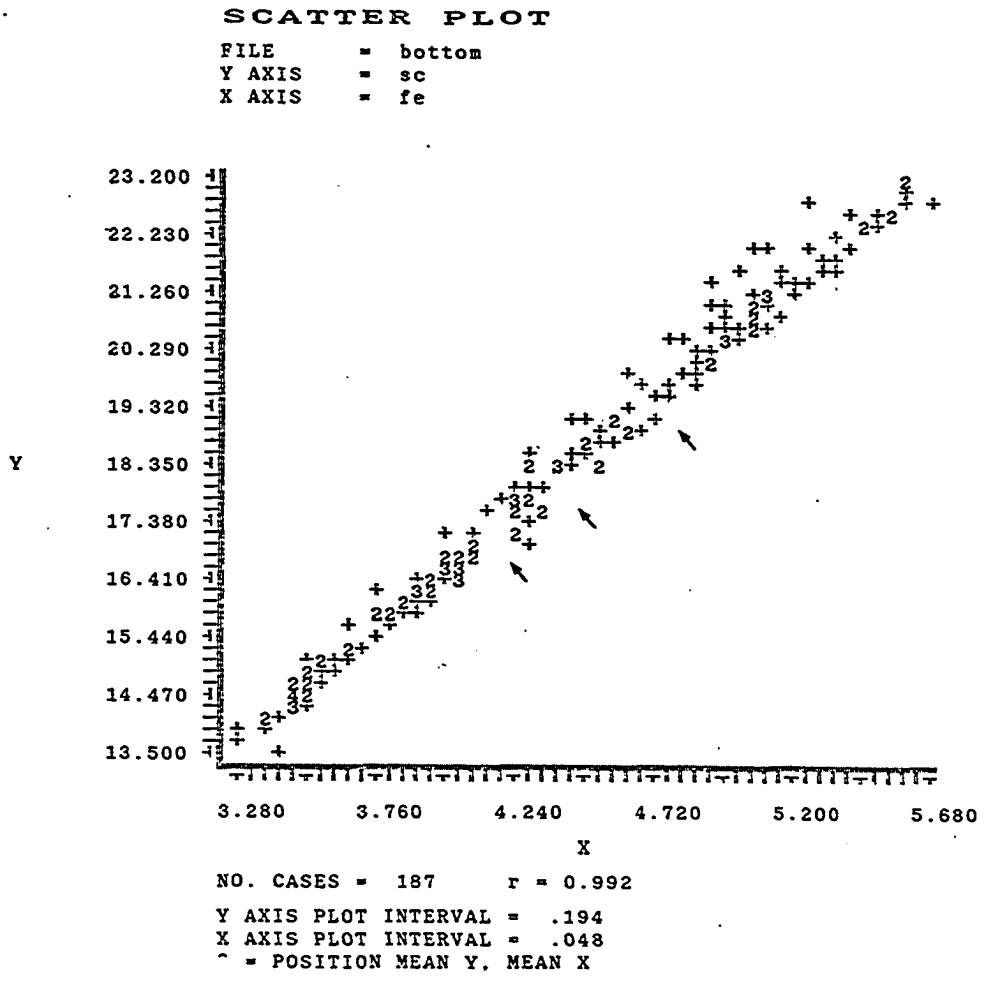


Fig. 65. Sc-Fe Scatter Plot - Bevel Rim Bowls, Proto Bevel Rim Bowls, Grooved Round Rim Jar - 2 High Ends Eliminated

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