**APPENDIX 3**

**Appendix 3.** OxCal code used to establish the Bayesian-modelled chronology for the boundaries for the different phases of Ligüiqui. The KDE distribution of the Manteño phase by means of the KDE\_Model function was also calculated.

// Delta\_R values updated for Marine20

Options()

{

SD1=FALSE;

SD2=TRUE;

SD3=FALSE;

};

Plot()

{

Outlier\_Model("General",T(5),U(0,4),"t");

Outlier\_Model("Charcoal",Exp(1,-10,0),U(0,3),"t");

Curve("Marine20","marine20.14c");

Delta\_R("LocalMarine",11,55);

Curve("SHCal20","shcal20.14c");

Sequence("Ligüiqui")

{

Boundary("Start Chácara 1-S2");

Sequence("Chácara 1 S2")

{

Curve("=SHCal20");

R\_Date("Beta-552216", 4250, 30)

{

Outlier("General", 0.05);

};

R\_Date("Beta-552215", 2350, 30)

{

Outlier("General", 0.05);

};

R\_Date("Beta-552214", 1960, 30)

{

Outlier("Beta-General", 0.05);

};

};

Boundary("End Chácara 1 S2");

Boundary("Start Manteño");

KDE\_Model("Manteño")

{

Sequence("Lower Chácara")

{

Curve("=SHCal20");

After()

{

R\_Date("Beta-509526", 800, 30)

{

Outlier("Charcoal", 1);

};

R\_Date("Beta-507224", 1760, 30)

{

Outlier("General", 0.05);

};

};

R\_Date("Beta-613277", 660, 30)

{

Outlier("Charcoal", 1);

};

R\_Date("Beta-613276", 560, 30)

{

Outlier("Charcoal", 1);

};

Phase( )

{

R\_Date("Beta-509525", 630, 30)

{

Outlier("Charcoal", 1);

};

R\_Date("Beta-507223", 860, 30)

{

Outlier("General", 0.05);

};

};

};

Phase("Chárcara 1-S1")

{

Curve("=LocalMarine");

R\_Date("Beta-613360", 1160, 30)

{

Outlier("General", 0.05);

};

R\_Date("Beta-613362", 1370, 30)

{

Outlier("General", 0.05);

};

R\_Date("Beta-613359", 1350, 30)

{

Outlier("General", 0.05);

};

Before()

{

R\_Date("Beta-613356", 850, 30)

{

Outlier("General", 0.05);

};

};

R\_Date("Beta-613361", 1320, 30)

{

Outlier("General", 0.05);

};

R\_Date("Beta-606847", 1360, 30)

{

Outlier("General", 0.05);

};

R\_Date("Beta-613358", 1270, 30)

{

Outlier("General", 0.05);

};

R\_Date("Beta-613357", 1280, 30)

{

Outlier("General", 0.05);

};

Curve("=SHCal20");

R\_Date("Beta-538425", 950, 30)

{

Outlier("General", 0.05);

};

R\_Date("Beta-538427", 1710, 30)

{

Outlier("General", 0.05);

};

R\_Date("Beta-538428", 1300, 30)

{

Outlier("General", 0.05);

};

R\_Date("Beta-538426", 1190, 30)

{

Outlier("General", 0.05);

};

R\_Date("LP 3269", 1390, 70)

{

Outlier("Charcoal", 1);

};

};

};

Boundary("End Manteño");

};

};