# 4. DATA REPORT: INORGANIC GEOCHEMISTRY AND MINERALOGY OF THE CRETACEOUS/TERTIARY BOUNDARY SECTION IN HOLE 1049C<sup>1</sup>

C.D. Speed<sup>2</sup> and D. Kroon<sup>3</sup>

# ABSTRACT

Inorganic geochemistry and mineralogy of Core 171B-1049C-8X, containing a Cretaceous/Tertiary boundary section, was investigated by X-ray fluorescence (XRF) and X-ray diffraction (XRD). The ages of samples analyzed stretched from the latest Maastrichtian into the Danian. XRD measurements were made using the peak height method. A reduction in low-magnesium calcite and an increase in quartz were found above the spherule layer. Substantial amounts of dolomite were noted just above the spherule layer. XRF analyses were performed using the RHSMALL program to measure the abundance of major and minor elements. Replicate analyses for each technique were performed to assess the precision of the results. The section above the spherule bed was found to be characterized by peaks in many elements, including Si, Al, Fe, and Mg, as well as the following elemental ratios: Fe/Al, Ni/Al, Zr/ Rb, and Rb/Sr'. Above the spherule bed, there were significant reductions in Ca, Sr/Ca, Ti/Al, K/Al, Rb/Al, Cr/Al, Ba/Al, biogenic Ba, and excess P.

# INTRODUCTION

The core to be analyzed in this study, Core 171B-1049C-8X, contains a well-preserved Cretaceous/Tertiary (K/T) boundary section (Shipboard Scientific Party, 1998). Above the boundary, the Danian sediments con-

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sist of white nannofossil ooze or chalk. This is separated from the underlying Maastrichtian gray nannofossil ooze by an olive-green impactspherule bed comprised mostly of clay. This is interpreted as containing ejecta debris from the Chicxulub (northern Yucatan) impact, which slumped or flowed into deeper water following deposition (Bellier et al., 1997).

The inorganic geochemistry of the sediment was investigated to provide information about sedimentology and paleoproductivity of the K/T section. Mineralogical data is provided to help account for changes in inorganic geochemistry.

## **METHODS**

Samples 171B-1049C-8X-1, 2–4 cm, to 171B-1049C-8X-5, 126–128 cm, were received as dried and sieved sediment of <40-µm grain size. Of the 107 samples analyzed, 104 were of Danian age, taken from above the spherule layer, and 3 were of latest Maastrichtian age, taken from below the spherule layer. The spherule layer was not analyzed in this study.

The samples were analyzed using X-ray diffraction (XRD) to determine which mineral phases were present. Samples were prepared by grinding a spatula-full of sample with acetone using a pestle and mortar. Six drops of this were transferred with a pipette onto a glass slide for analysis. Each sample was run over a period of 50 min. Peak heights associated with a particular mineral were measured.

This XRD method was used instead of using nonoriented powders because of the limited quantity of sediment available per sample. For this reason, neither acid digestion nor flotation could be used to determine the abundance of aluminosilicate minerals; therefore, these were not measured because of the difficulty in distinguishing the peaks from background values and deciphering cumulative peaks.

Precision data were collected for XRD by making three preparations of Sample 171B-1049C-8X-5, 106–108 cm, and running them separately. The results representing both instrumental precision and sample preparation precision are presented in Table **T1**. Standard errors were used to plot error bars on depth plots. Although accuracy data for the XRD analysis vary depending on the number of minerals present in a sample, for a two- or three-component sample, the accuracy has been estimated at  $\pm 10\%$  of the result for each component.

Abundance of minerals (in weight percent) was calculated from XRD data (Table T2) using Equation 1 and plotted against core depth (Fig. F1):

Abundance of mineral (in weight percent) =  $(corrected number of counts of mineral/total corrected counts) \times 100, (1)$ 

where corrected numbers of counts of minerals = counts of mineral/correction factor (quartz = 121.68; low-magnesium calcite = 68.87; dolomite = 58.82; from Alexander, 1996).

Elemental composition of the sediment samples was determined by X-ray fluorescence (XRF). For each sample, 3.00 g of dry sediment was hydraulically pressed (9 t of pressure for 2 min) into a pellet surrounded by boric acid ( $H_3BO_3$ ) powder. Some samples in the 630- to 680-cm high-resolution interval had to be combined to provide sufficient mate-

T1. Instrumental and sample preparation precision figures for Sample 171B-1049C-8X-5, 106–108 cm, p. 14.



F1. Plot of mineralogy of Core 171B-1049C-8X, p. 7.



rial. Sample pellets were run sequentially, using the RHSMALL program, to measure the abundance of major and minor elements.

The level of instrumental precision for XRF was investigated by running five replicate analyses (Tables **T3**, **T4**). From this, standard errors were used to plot error bars for depth curves. However, sample preparation precision could not be investigated as sufficient sample material was not available to make pressed pellets for replicates. Precision for major elements is considered to be better than accuracy, and vice-versa for minor elements. Accuracy data were unavailable for pressed pellet samples run on RHSMALL.

Manganese was found to have variation less than its level of combined precision and accuracy because of its steplike curve, so it can be considered a low, invariant concentration. The variation of combined precision for other elements is believed to be lower than the variation of elemental abundance, as a steplike trend is not present.

Major element raw data are given in Table **T5**. XRF data were calculated according to the following equation:

Weight percent element = 
$$[(weight percent oxide \times correction factor)/100].$$
 (2)

Calculated values are presented on an oxide-free basis using the correction factors given in Table **T6**, and the abundance of each element was plotted against core depth (Tables **T7**, **T8**; Figs. **F2**, **F3**, **F4**).

Elemental abundances normalized against Al abundance are presented in Table **T9** and plotted with depth in Figures **F5** and **F6**. Other elemental ratios are presented in Table **T10** and Figure **F7**. In addition to the Ba/Al ratio, the biogenic barium content of the sediment was calculated according to the normative relationship of Dymond et al., (1992):

$$Ba_{bio} = Ba_{total} - (AI_{total} \times Ba/AI_{AS}), \qquad (3)$$

where  $Ba_{bio}$  is the biogenic barium mainly exported from surface waters,  $Ba_{total}$  is the concentration of barium measured by XRF,  $Al_{total}$  is the concentration of aluminium measured by XRF, and  $Ba/Al_{AS}$  is the lower limit of aluminosilicate barium (0.005) given in Dymond et al. (1992). This calculation corrects for the detrital component of barium, which had previously been measured in aluminosilicates.

Excess phosphorus was calculated according to Patience (1992):

$$P_{ex} = P_{total} - (P_{pt} + P_{det}), \qquad (4)$$

where  $P_{ex}$  is the phosphorus not represented by a mineral phase,  $P_{total}$  is the concentration measured by XRF,  $P_{pt} = (Y_{measured} \times [26.9 \times 10^{-4}])$ , and  $P_{det}$  is detrital P from the world average shale (0.00875 × Al).

Rb/Sr' ratios were calculated using normalized calcium (Ca') to remove the component of strontium associated with carbonate material, from the desired aluminosilicate signature (S. Harley, pers. comm., 1998):

$$Rb/Sr' = (Rb/Sr) \times Ca',$$
 (5)

XRF analyses, p. 19.
T6. Correction factors of oxides to the weight percentage of elements, p. 20.
T7. Corrected major element abundance, p. 21.

**T3.** XRF major element precision

**T4.** XRF minor element precision

T5. Major element raw data from

figures for Sample 171B-1049C-

figures for Sample 171B-1049C-

8X-5, 88–90 cm, p. 17.

8X-5, 88-90 cm, p. 18.

**T8.** Minor element abundance, p. 22.

F2. Major element abundance with depth in Core 171B-1049C-8X, p. 8.



F3. Minor element abundance with depth in Core 171B-1049C-8X, p. 9.



where  $Ca' = (Ca_{measured}/Ca_{normalized}) \times Ca_{measured}$  is the weight percentage of Ca from XRF results and  $Ca_{normalized}$  is the average Ca percent value during "normal" Ca abundances (from Table T7).

## RESULTS

XRD results suggest that the dominant minerals present in the sediments are low-magnesium calcite and quartz (Fig. F1). Quartz and calcite curves were antithetic. Quartz shows larger peaks at 639- and 657cm depth compared to 688.5 cm. Dolomite was present only in one interval, between 675.75 and 688.50 cm, with abundance decreasing upward.

Elements analyzed by XRF for the whole core show two opposing distribution patterns. First, Si, Al, Fe, Mg, Ti, Rb, Zr, Zn, Cu, Ni, Cr, and V show three main peaks of abundance at 81-, 241-, and 688-cm core depth (Figs. F2, F3, F4). Although aluminosilicate mineral abundance could not be measured by XRF, these elements suggest an increased abundance of clays at these intervals. Second, the curve for Ca and Sr shows the opposite trend with troughs at these core depths. Mn, U, Ba, Mo, and P shows curves that cannot be classified by these end-members.

The plots for major elements (Fig. F2) do not match the plots of mineralogy (Fig. F1) completely in interval 171B-1049C-8X-5, 60.0–60.5 cm, to 171B-1049C-8X-5, 87.5–88.0 cm, because samples were analyzed at a lower resolution for XRF because of the need for combining samples.

Redox sensitive metals (e.g., U, Ni, Zn, Cu, V, Cr, and Fe) (Patience, 1992) plotted for the whole core showed similar trends to those of Si (Figs. **F3**, **F4**). Fe was detected throughout the core (>1  $\pm$  0.032%) as Fe<sub>2</sub>O<sub>3</sub>, with a significant peak above the spherule layer. The plots of Zn/Al, Th/Al, U/Al, Cu/Al, Cr/Al, and V/Al (Figs. **F5**, **F6**) all show a similar trend of lowest values just above the spherule layer. Zn/Al and V/Al increase to a peak directly above these lowest values. This suggests that Zn, V, and Fe have been remobilized from the spherule layer and precipitated in the 18 cm above it. In the case of Fe, this has resulted in the orange-brown limonitic layer (Shipboard Scientific Party, 1998). Mn/Al was not plotted because the plot of Mn abundance with depth had variation less than its level of combined precision and accuracy. Pb/Al and Mo/Al ratios showed oscillating values throughout the core (Fig. **F6**).

K/Al and Rb/Al (Fig. F5) both show a decrease to the lowest values just above the spherule bed and have almost invariate values throughout the rest of the core. Mg/Al shows an increase in the value above the spherule bed, and above this, the ratio displays a similar curve to V/Al and Zn/Al.

Sr/Ca ratios plotted for the core show that Sr is present in calcium carbonate in varying amounts (Fig. F7). Sr/Ca ratios have been found to decrease with increasing diagenesis (Kinsman, 1969; Baker et al., 1982). Between 707 and 727 cm, Sr/Ca ratios are ~0.0032, whereas normal values above 665 cm are ~0.0025. There is a substantial reduction in the ratio at 670.5–685.25 cm to 0.00117, corresponding with the peak in Si. This is followed by a sudden return to normal values. The other two peaks in Si, however, were represented by peaks in Sr/Ca.

To detect any terrigenous material, the Rb/Sr', Ti/Al, Zr/Rb, and Cr/Zr ratios may be used (Patience, 1992). Ti/Al shows lowest values just above the spherule bed (Fig. F5). Using the Sr/Ca ratio, a Rb/Sr ratio cor-

F4. Minor element abundance with depth in Core 171B-1049C-8X, p. 10.



**T9.** Elemental abundances normalized against Al abundance, p. 24.

F5. Elemental abundances normalized against Al abundance, with depth in Core 171B-1049C-8X, p. 11.



F6. Elemental abundances normalized against Al abundance, with depth in Core 171B-1049C-8X, p. 12.



**T10.** Elemental ratios,  $Ba_{bio}$  and  $P_{ex}$ , calculated from XRF data, p. 26.

rected for significant fluctuations in Ca was calculated. The plot of Rb/ Sr' (Fig. F7) shows three main peaks in the ratio, which correspond to increases in Si concentration. The Zr/Rb record shows similar peaks, with the largest at 665.5–688.0 cm (Fig. F7). Ti/Al and Cr/Zr ratios used for proxies of sediment texture and degree of transport (Patience, 1992) showed the opposite trend above the spherule bed when compared to one another (Fig. F7). Zr/Al displays a sudden increase in value above the spherule layer and peaks at 61- and 221-cm depth (Fig. F5).

The concentration of biogenic Ba in marine sediments has been suggested to be a function of surface primary productivity (Dymond et al., 1992; Dehairs et al., 1991), particularly that associated with diatoms (Stroobants et al., 1991), and a function of preservation (Dymond et al., 1992). Preservation of biogenic Ba is enhanced by two main factors: (1) rapid accumulation rate which reduces the exposure of surface sediments to bottom waters that are undersaturated with respect to barium and (2) a greater barium-rain rate that increases the barium saturation of the sediment pore waters (Dymond et al., 1992). The Ba/Al (Fig. F6) and Ba<sub>bio</sub> (Fig. F7) show a noticeable decrease between 680.25 and 688.0 cm. In general, these plots oppose that of Si and resemble those of Zn/Al, Rb/Al, and V/Al. The values calculated for Ba<sub>bio</sub> were negative. This suggests that the Ba/Al<sub>As</sub> ratio given by Dymond et al. (1992) was not applicable to the aluminosilicates in these sediments.

Patience (1992) suggested that phosphorus is an important constituent of organic matter, so it is potentially a useful indicator of paleoproductivity. P (Fig. F2) and P<sub>ex</sub> (Fig. F7) plotted with depth did not show similar curves to each other. P showed a peak at 121 cm and 639 cm, whereas P<sub>ex</sub> had a curve like that of Ca and Ba<sub>bio</sub>. The values calculated for P<sub>ex</sub> were negative because either the Y/P or P/Al correction factors (Patience, 1992) were not applicable to these sediments.

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## REFERENCES

- Alexander, I.T., 1996. Late Quaternary sedimentation off the Queensland continental margin (northeast Australia) in response to sea level fluctuations [Ph.D. thesis]. Edinburgh Univ., Edinburgh, Scotland.
- Baker, P.A., Gieskes, J.M., and Elderfield, H., 1982. Diagenesis of carbonates in deepsea sediments: evidence from Sr<sup>2+</sup>/Ca<sup>2+</sup> ratios and interstitial dissolved Sr<sup>2+</sup> data. *J. Sediment. Petrol.*, 52:71–82.
- Bellier, J.P., Marca, S., Norris, R.D., Kroon, D., Klaus, A., Alexander, I.T., Bardot, L.P., Barker, C.E., Blome, C.D., Clarke, L.J., Erbacher, J., Faul, K.L., Holmes, M.A., Huber, B.T., Katz, M.E., MacLeod, K.G., MartinezRuiz, F.C., Mita, I., Nakai, M., Ogg, J.G., Pak, D.K., Pletsch, T.K., SelfTrail, J.M., Shackleton, N.J., Smit, J., Ussler, W., Watkins, D.K., Widmark, J., and Wilson, P.A., 1997. The Blake Nose Cretaceous-Paleogene (Florida Atlantic margin, ODP Leg 171B): an exemplar record of the Maastrichtian-Danian transition. *C. R. Acad. Sci. Serie II: Sci. Terre Planetes*, 325:499–504.
- Dehairs, F., Stroobants, N., and Goeyens, L., 1991. Suspended barite as a tracer of biological activity in the Southern Ocean. *Mar. Chem.*, 35:399–410.
- Dymond, J., Suess, E., and Lyle, M., 1992. Barium in deep-sea sediment: a geochemical proxy for paleoproductivity. *Paleoceanography*, 7:163–181.
- Kinsman, D.J.J., 1969. Interpretation of Sr<sup>2+</sup> concentrations in carbonate minerals and rocks. *J. Sediment. Petrol.*, 39:486–508.
- Patience, A.J., 1992. Geochemical indicators of palaeoproductivity and palaeoclimate in eastern equatorial Pacific Sediments [Ph.D. thesis]. Edinburgh Univ.
- Shipboard Scientific Party, 1998. Site 1049. *In* Norris, R.D., Kroon, D., Klaus, A., et al., *Proc. ODP, Init. Repts.*, 171B: College Station, TX (Ocean Drilling Program), 47–91.
- Stroobants, N., Dehairs, F., Goeyens, L., Vanderheijeden, N., and Van Grieken, R., 1991. Barite formation in the Southern Ocean water column. *Mar. Chem.*, 35:411–421.

**Figure F1.** Plot of mineralogy of Core 171B-1049C-8X. The shaded area = the spherule layer, which overlies the K/T boundary (Shipboard Scientific Party, 1998). In the age scale, Mstr = the latest Maastrichtian.





Figure F2. Major element abundance with depth in Core 171B-1049C-8X. The shaded area = the spherule layer, which overlies the K/T boundary



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**Figure F3.** Minor element abundance with depth in Core 171B-1049C-8X. The shaded area = the spherule layer, which overlies the K/T boundary (Shipboard Scientific Party, 1998).



**Figure F4.** Minor element abundance with depth in Core 171B-1049C-8X. The shaded area = the spherule layer, which overlies the K/T boundary (Shipboard Scientific Party, 1998).



**Figure F5.** Elemental abundances normalized against Al abundance, with depth in Core 171B-1049C-8X. The shaded area = the spherule layer, which overlies the K/T boundary (Shipboard Scientific Party, 1998).



**Figure F6.** Elemental abundances normalized against Al abundance, with depth in Core 171B-1049C-8X. The shaded area = the spherule layer, which overlies the K/T boundary (Shipboard Scientific Party, 1998).



**Figure F7.** Elemental ratios, Ba<sub>bio</sub> and P<sub>ex</sub>, with depth in Core 171B-1049C-8X. The shaded area = the spherule layer, which overlies the K/T boundary (Shipboard Scientific Party, 1998).



**Table T1.** Instrumental and sample preparation precision figures for three runs of Sample 171B-1049C-8X-5, 106–108 cm.

	Quartz (wt%)	Low-magnesium calcite (wt%)
Mean ( <i>N</i> = 3)	4.222	95.778
Standard deviation*	0.277	0.277
Standard error	0.160	0.160
95% confidence	0.687	0.687
99% confidence	1.565	1.565

Note: \* = in standard deviation units; all other values are reported in weight percent.

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 Table T2. XRD data for Core 171B-1049C-8X. (See table note. Continued on next page.)

			Low-				Low-			*Low-	
		-	magnesium			_	magnesium			magnesium	
Core, section,	Depth (cm)	Quartz	calcite	Dolomite (counts)	lotal (counts)	Quartz (corrected)	calcite (corrected)	Dolomite (corrected)	*Quartz	calcite	*Dolomite
Interval (cm)	(cm)	(counts)	(counts)	(counts)	(counts)	(conected)	(conected)	(conected)	(WU/0)	(WU70)	(WU/0)
171B-1049C-											
8X-1, 2-4	3.00	306	7,552	0	7,858	3	110	0	2	98	0
8X-1, 20-22	21.00	177	8,317	0	8,494	1	121	0	1	99	0
8X-1, 40-42	41.00	600 499	10,262	0	10,862	5	149	0	5	97	0
8X-1, 60-62	81.00	400 1 / 8 2	9,083	0	7 7 3 9	4	01	0	5 12	97	0
8X-1, 80-82 8X-1 100-102	101.00	524	6 8 3 9	0	7 363	4	100	0	4	96	0
8X-1, 120-122	121.00	522	8.317	0 0	8.839	4	121	õ	3	97	ů 0
8X-1, 140-142	141.00	576	10,120	0	10,696	5	147	0	3	97	0
8X-2, 10-12	161.00	228	7,656	0	7,884	2	111	0	2	98	0
8X-2, 20-22	171.00	502	8,391	0	8,893	4	122	0	3	97	0
8X-2, 30-32	181.00	372	8,608	0	8,980	3	125	0	2	98	0
8X-2, 50-52	201.00	1,102	7,430	0	8,532	9	108	0	8	92	0
8X-2, 70-72	221.00	829	7,157	0	7,986	7	104	0	6	94	0
8X-2, 90-92	241.00	1,197	5,084	0	6,281	10	/4	0	12	88	0
8X-2, 110-112	201.00	576	8,705	0	9,787	9	127	0	/	95	0
8X-2, 130-132 8X-3 0-4	301.00	420	9 390	0	9,200	3	120	0	4	90	0
8X-3, 20-22	321.00	462	7,225	0	7.687	4	105	õ	3	97	0 0
8X-3, 40-42	341.00	361	10.161	0 0	10.522	3	148	0 0	2	98	0 0
8X-3, 60-62	361.00	708	10,650	0	11,358	6	155	0	4	96	0
8X-3, 80-82	381.00	581	9,312	0	9,893	5	136	0	3	97	0
8X-3, 100-102	401.00	400	10,568	0	10,968	3	154	0	2	98	0
8X-3, 120-122	421.00	266	8,593	0	8,859	2	125	0	2	98	0
8X-3, 140-142	441.00	566	9,761	0	10,327	5	142	0	3	97	0
8X-4, 10-12	461.00	480	7,073	0	7,553	4	103	0	4	96	0
8X-4, 30-32	481.00	566	9,428	0	9,994	5	13/	0	3	97	0
8X-4, 50-52 8X 4 70 72	501.00	340 102	9,722	0	10,068	3	142	0	2	98	0
8X-4, 70-72	541.00	376	6,490	0	7 035	2	93	0	2	90	0
8X-4, 110-112	561.00	365	8,836	0	9,201	3	129	0	2	98	0
8X-4, 130-132	581.00	328	9.624	0 0	9.952	3	140	õ	2	98	ů 0
8X-5, 5-7	606.00	575	7,090	0	7,665	5	103	0	4	96	0
8X-5, 15-17	616.00	681	9,960	0	10,641	6	145	0	4	96	0
8X-5, 25-27	626.00	493	10,161	0	10,654	4	148	0	3	97	0
8X-5, 33-35	634.00	713	10,282	0	10,995	6	150	0	4	96	0
8X-5, 36-38	637.00	396	7,056	0	7,452	3	103	0	3	97	0
8X-5, 38-40	639.00	2,098	7,500	0	9,598	17	109	0	14	86	0
8X-5, 40-42	641.00	5/6	7,413 5 271	0	7,989 5 704	5	108	0	4	96	0
8X-5, 42-44 8X-5, 11-16	645.00	505	9.467	0	3,700	4	138	0	3	93	0
8X-5, 46-48	647.00	408	7 344	0	7 7 5 2	3	107	0	3	97	0
8X-5, 48-50	649.00	784	10,100	0 0	10.884	6	147	0 0	4	96	0 0
8X-5, 50-52	651.00	412	8,686	0	9,098	3	126	0	3	97	0
8X-5, 52-54	653.00	600	9,312	0	9,912	5	136	0	4	96	0
8X-5, 54-56	655.00	538	8,263	0	8,801	4	120	0	4	96	0
8X-5, 56-58	657.00	1,136	7,056	0	8,192	9	103	0	8	92	0
8X-5, 58-60	659.00	502	7,939	0	8,441	4	116	0	3	97	0
8X-5, 60-60.5	660.25	534	7,327	0	7,861	4	107	0	4	96	0
8X-3, 6U.3-61	660.75	635	7,090	0	/,/25 0 254	5	103	0	2	95	0
8X-5, 61-61.5	661 75	337 171	8 668	0	0,334	3	114	0	4	90	0
8X-5, 62-62.5	662.25	524	6.384	0	6,908	4	93	Ő	4	96	0 0
8X-5, 62.5-63	662.75	740	8.724	0 0	9,464	6	127	0 0	5	95	0 0
8X-5, 63-63.5	663.25	600	8,742	0	9,342	5	127	0	4	96	0
8X-5, 63.5-64	663.75	702	9,216	0	9,918	6	134	0	4	96	0
8X-5, 64-64.5	664.25	557	9,044	0	9,601	5	132	0	3	97	0
8X-5, 64.5-65	664.75	615	8,780	0	9,395	5	128	0	4	96	0
8X-5, 65-65.5	665.25	751	7,517	0	8,268	6	109	0	5	95	0
8X-5, 65.5-66	665.75	576	9,409	0	9,985	5	137	0	3	97	0
8X-5, 66-66.5	666.25	625	9,/42	0	10,367	5	142	0	3	9/	0
0A-3, 00.3-0/ 88-5 67 67 5	000./J	384 605	0,299 8 61 2	0	0,005 0,017	5	121	0	5 ∕	9/ 06	0
8X-5, 67 5-68	667 75	372	8 780	0	9,217 9,152	נ ג	123	0	4 2	90 98	0
8X-5, 68-68-5	668.25	365	9,940	0	10.305	3	145	0	2	98	0
8X-5, 68.5-69	668.75	272	8,263	õ	8,535	2	120	Ő	2	98	õ
8X-5, 69-69.5	669.25	380	10,899	0	11,279	3	159	0	2	98	0

## Table T2 (continued).

Core, section, interval (cm)	Depth (cm)	Quartz (counts)	Low- magnesium calcite (counts)	Dolomite (counts)	Total (counts)	Quartz (corrected)	Low- magnesium calcite (corrected)	Dolomite (corrected)	*Quartz (wt%)	*Low- magnesium calcite (wt%)	*Dolomite (wt%)
8X-5, 69,5-70	669.75	400	10.774	0	11.174	3	157	0	2	98	0
8X-5, 70-70.5	670.25	493	10.343	0 0	10.836	4	151	0	3	97	0 0
8X-5, 70, 5-71	670.75	801	10,486	Ő	11,287	7	153	0	4	96	0 0
8X-5, 71-71,5	671.25	279	8,949	Ő	9,228	2	130	0	2	98	0 0
8X-5, 71, 5-72	671.75	380	8,968	Ő	9.348	3	131	0	2	98	0 0
8X-5, 72-72,5	672.25	420	11,968	Ő	12,388	3	174	0	2	98	0 0
8X-5, 72, 5-73	672.75	196	7,225	Ő	7,421	2	105	0	2	98	0 0
8X-5 73-73 5	673 25	807	11 151	Ő	11 958	7	162	0	4	96	Ő
8X-5 73 5-74	673 75	317	11 881	Ő	12 198	, 3	173	õ	1	99	ů 0
8X-5 74-74 5	674 25	421	11 385	Ő	11 806	3	166	õ	2	98	ů 0
8X-5 74 5-75	674 75	458	11 428	Ő	11 886	4	166	õ	2	98	ů 0
8X-5 75-75 5	675 25	361	10 445	Ő	10 806	3	152	õ	2	98	ů 0
8X-5 75 5-76	675 75	493	11 278	48	11 819	4	164	1	2	97	ů 0
8X-5 76-76 5	676 25	416	10 040	58	10 514	3	146	1	2	97	1
8X-5 76 5-77	676 75	361	10,795	61	11 217	3	157	1	2	98	1
8X-5 77-77 5	677 25	328	9 467	36	9.831	3	138	1	2	98	0
8X-5 77 5-78	677 75	299	8 668	41	9 008	2	126	1	2	98	1
8X-5 78-78 5	678 25	324	7 656	52	8 032	3	111	1	2	97	1
8X-5 78 5-79	678 75	289	10 384	61	10 734	2	151	1	2	98	1
8X-5 79-79 5	679.25	454	9 604	76	10,734	4	140	1	3	97	1
8X-5 79 5-80	679 75	600	10 486	69	11 155	5	153	1	3	96	1
8X-5 80-80 5	680.25	756	9 4 2 8	72	10 256	6	135	1	4	95	1
8X-5 80 5-81	680.75	520	0 1 0 7	182	0 008	4	13/	3	3	95	2
8X-5 81-81 5	681 25	557	10 221	161	10 030	5	1/10	3	3	95	2
8X-5 81 5-82	681 75	103	0 1 3 0	144	9 776	1	133	2	3	95	2
8X-5 82-82 5	682.25	3/6	6 9 2 2	231	7 / 99	3	101	4	3	94	4
8X-5 82 5-83	682 75	671	8 761	/37	9 869	6	128	7	1	01	5
8X-5 83-83 5	683.25	610	9 216	204	10.030	5	120	3	4	94	2
8X-5 83 5-84	683 75	445	8 4 0 9	117	8 971	4	122	2	3	96	2
8X-5 84-84 5	684 25	520	8 317	228	9.065	4	122	4	3	94	2
8X-5 84 5-85	684 75	576	8 664	310	9 5 50	5	126	5	3	93	4
8X-5 85-85 5	685 25	595	6 384	388	7 367	5	93	7	5	89	6
8X-5 85 5-86	685 75	874	6 3 5 2	412	7 588	7	93	7	6	87	7
8X-5 86-86 5	686.25	876	6 3 5 2	396	7,500	7	93	7	7	87	6
8X-5 86 5-87	686 75	645	5 3 5 8	524	6 5 2 7	5	78	, 0	6	85	10
88-5 87-87 5	687.25	702	5,550	388	6 245	5	75	7	7	86	8
88-5 87 5-88	687 75	552	4 844	458	5 85/	5	75	, 8	5	85	9
88-5 88-90	688 50	400	4 5 5 6	299	5 255	3	66	5	4	89	7
88-5 106-108	707.00	400	9 584	0	10 020	4	140	0	ד 2	97	,
88-5 116-118	717.00	462	7 3 2 7	0	7 780	т 4	107	0	2	97	0
88-5 126-128	727.00	445	10 712	0	11 157	4	156	0	2	98	0
0/-5, 120-120	, 27.00	Стт	10,712	U	11,137	т	150	0	~	20	v

Note: Depth refers to depth in Core 171B-1049C-8X. \* = reported weight percent values are rounded to the nearest percent.

**Table T3.** Major element precision figures for five XRF runsof Sample 171B-1049C-8X-5, 88–90 cm.

Element (wt%)	Mean $(N = 5)$	Standard deviation*	Standard error	95% confidence	99% confidence
Si	17.031	0.157	0.070	0.195	0.323
Al	5.575	0.071	0.032	0.088	0.146
Fe	5.420	0.071	0.032	0.089	0.147
Mg	2.055	0.018	7.955 × 10-3	0.022	0.037
Ca	12.141	0.127	0.057	0.158	0.262
Na	1.782	0.567	0.254	0.705	1.168
К	0.897	0.010	4.547 × 10 <sup>-3</sup>	0.013	0.021
Mn	0.015	7.276 × 10 <sup>-12</sup>	3.254 × 10 <sup>-12</sup>	9.034 × 10 <sup>-12</sup>	1.498 × 10 <sup>-11</sup>
Ti	0.278	5.362 × 10 <sup>-3</sup>	2.398 × 10 <sup>-3</sup>	6.658 × 10 <sup>-3</sup>	0.011
Р	0.017	0.000	0.000	0.000	0.000

Note: \* = in standard deviation units; all other units are the same as elemental abundance.

**Table T4.** Minor element precision figures for five XRF runs of Sample 171B-1049C-8X-5, 88–90 cm.

Element (ppm)	Mean (N = 5)	Standard deviation*	Standard error	95% confidence	99% confidence
Nb	7.800	0.316	0.141	0.393	0.651
Zr	92.820	4.194	1.875	5.207	8.633
Y	9.580	0.268	0.120	0.333	0.552
Sr	308.720	8.574	3.834	10.645	17.649
U	5.160	1.742	0.779	2.162	3.585
Rb	29.380	1.499	0.670	1.861	3.086
Th	7.200	0.515	0.230	0.639	1.060
Pb	7.600	1.725	0.771	2.142	3.551
Zn	64.640	2.134	0.954	2.649	4.392
Cu	31.140	1.587	0.710	1.970	3.266
Ni	232.440	3.890	1.740	4.830	8.008
Cr	49.760	0.961	0.430	1.193	1.978
Ce	27.860	6.222	2.783	7.726	12.809
Nd	6.360	3.088	1.381	3.834	6.356
La	11.600	10.034	4.487	12.458	20.655
V	79.760	2.855	1.277	3.545	5.878
Ва	36.860	4.028	1.801	5.001	8.291
Sc	14.580	2.030	0.908	2.521	4.179
I	7.200	3.641	1.628	4.520	7.494
Br	19.220	1.506	0.673	1.869	3.099
Мо	1.540	0.230	0.103	0.286	0.474

Note: \* = in standard deviation units; all other units are the same as elemental abundance.

 Table T5. Major element raw data from XRF analyses.

Core, section, interval (cm)	Depth (cm)	SiO <sub>2</sub> (%)	Al <sub>2</sub> O <sub>3</sub> (%)	Fe <sub>2</sub> O <sub>3</sub> (%)	MgO (%)	CaO (%)	Na <sub>2</sub> O (%)	K <sub>2</sub> O (%)	MnO (%)	TiO <sub>2</sub> (%)	P <sub>2</sub> O <sub>5</sub> (%)	Total (%)
171B-1049C-												
8X-1, 2	3.00	11.38	4.17	1.77	1.46	34.49	0.71	0.84	0.04	0.22	0.09	55.17
8X-1, 20	21.00	5.21	2.72	1.30	1.15	38.78	0.21	0.51	0.04	0.15	0.07	50.13
8X-1, 40	41.00	8.32	3.52	1.68	1.26	37.43	0.26	0.65	0.04	0.18	0.08	53.40
8X-1, 60	61.00	10.84	4.27	1.76	1.39	35.65	0.25	0.77	0.03	0.23	0.08	55.27
8X-1,80	81.00	28.68	8.32	3.94	2.30	24.68	0.49	1.56	0.04	0.51	0.17	70.70
8X-1, 100	101.00	13.29	4.87	2.11	1.66	34.49	0.27	0.87	0.05	0.26	0.12	57.99
8X-1, 120	121.00	11.61	4.39	2.09	1.60	35.28	0.23	0.77	0.04	0.24	0.19	56.44
8X-1, 140	141.00	7.67	3.48	1.57	1.39	37.26	0.19	0.62	0.04	0.19	0.09	52.50
8X-2, 10	161.00	4.76	2.70	1.25	1.29	39.01	0.15	0.46	0.04	0.15	0.08	49.89
8X-2, 20	171.00	10.89	4.28	1.96	1.54	35.65	0.26	0.75	0.05	0.23	0.10	55.71
8X-2, 30	181.00	10.67	4.18	1.85	1.58	35.75	0.24	0.73	0.04	0.23	0.11	55.39
8X-2, 50	201.00	19.63	6.26	3.03	1.96	29.88	0.43	1.15	0.05	0.38	0.14	62.89
8X-2, 70	221.00	12.79	4.61	2.19	1.61	34.29	0.25	0.82	0.04	0.26	0.11	56.97
8X-2, 90	241.00	29.24	8.75	3.26	2.35	24.68	0.47	1.52	0.05	0.54	0.14	71.00
8X-2, 110	261.00	17.65	6.17	2.19	1.81	31.40	0.27	1.03	0.04	0.36	0.12	61.05
8X-2, 130	281.00	14.37	5.38	1.97	1.63	33.69	0.25	0.90	0.03	0.29	0.09	58.62
8X-3, 0	301.00	7.91	3.64	1.30	1.42	37.26	0.18	0.58	0.04	0.20	0.09	52.61
8X-3, 20	321.00	9.51	4.09	1.56	1.48	36.4/	0.16	0.65	0.05	0.23	0.10	54.30
8X-3, 40	341.00	4.49	2.73	1.23	1.26	38.81	0.14	0.44	0.04	0.15	0.08	49.38
8X-3, 60	361.00	4.52	2.//	1.02	1.19	38.39	0.12	0.45	0.04	0.15	0.07	48.73
8X-3, 80	381.00	6.81	3.4/	1.21	1.34	37.58	0.20	0.56	0.04	0.20	0.09	51.49
8X-3, 100	401.00	6.ZZ	3.21	1.29	1.33	37.94	0.15	0.52	0.04	0.17	0.11	50.99
8X-3, 120	421.00	5.28	2.85	1.24	1.2/	38.22 26.01	0.15	0.47	0.05	0.16	0.09	49.77
8X-3, 140	441.00	0.04 11 20	5.70	1.29	1.54	24.00	0.15	0.01	0.04	0.21	0.09	55 44
8X-4, 10	401.00	0.20	4.00	1.05	1.33	24.90	0.19	0.77	0.04	0.27	0.12	52.00
8X 4 50	401.00 501.00	9.30	4.1Z	1.49	1.44	20.32 28.08	0.17	0.07	0.04	0.24	0.12	JJ.90 19 01
8X-4, 30 8X-4, 70	521.00	6.01	2.07	1.00	1.25	37.01	0.17	0.43	0.04	0.15	0.07	50.50
8X-4,70 8X-4,90	541.00	7 36	3.64	1.10	1.20	37.21	0.22	0.54	0.04	0.19	0.07	51 00
8X-4, 20 8X-4, 110	561.00	5.03	3.03	1.20	1.55	38 54	0.17	0.32	0.04	0.21	0.02	49.92
8X_4 130	581.00	3.56	2 51	0.95	1.20	39.50	0.12	0.42	0.04	0.17	0.02	49.92
8X-5 5	606.00	10 47	4 50	1.60	1 39	36.14	0.15	0.74	0.04	0.14	0.00	55 46
8X-5 15	616.00	9.09	4 15	1.00	1.32	37 13	0.17	0.67	0.03	0.22	0.12	54 37
8X-5, 25	626.00	8.27	3.92	1.38	1.28	37.40	0.18	0.64	0.04	0.22	0.12	53.45
8X-5, 33	634.00	9.75	4.31	1.51	1.36	36.81	0.17	0.70	0.05	0.24	0.12	55.02
8X-5, 36	637.00	9.70	4.35	1.52	1.34	36.77	0.16	0.71	0.04	0.25	0.13	54.97
8X-5, 38	639.00	15.71	5.99	2.12	1.60	33.98	0.21	0.95	0.05	0.34	0.17	61.11
8X-5, 40	641.00	11.94	4.94	1.73	1.42	35.66	0.20	0.81	0.05	0.28	0.14	57.18
8X-5, 42	643.00	9.77	4.29	1.52	1.37	36.54	0.16	0.70	0.04	0.24	0.13	54.77
8X-5, 44	645.00	9.47	4.33	1.52	1.36	37.26	0.15	0.69	0.04	0.23	0.13	55.19
8X-5, 46	647.00	9.49	4.30	1.50	1.33	37.03	0.19	0.70	0.04	0.23	0.13	54.95
8X-5, 48	649.00	9.84	4.41	1.53	1.34	36.77	0.15	0.71	0.04	0.24	0.13	55.18
8X-5, 50	651.00	10.38	4.47	1.57	1.38	36.22	0.21	0.74	0.04	0.24	0.13	55.38
8X-5, 52	653.00	10.24	4.47	1.57	1.35	36.59	0.17	0.74	0.04	0.25	0.13	55.55
8X-5, 54	655.00	10.13	4.48	1.56	1.36	36.41	0.17	0.73	0.04	0.24	0.13	55.26
8X-5, 56	657.00	10.31	4.45	1.57	1.36	36.39	0.18	0.74	0.04	0.24	0.13	55.41
8X-5, 58	659.00	10.36	4.59	1.60	1.37	36.45	0.17	0.75	0.04	0.26	0.13	55.72
8X-5, 61	661.50	10.53	4.62	1.61	1.33	36.47	0.14	0.73	0.04	0.25	0.14	55.88
8X-5, 65	665.50	10.83	4.66	1.64	1.34	36.27	0.17	0.74	0.04	0.26	0.14	56.10
8X-5, 70	670.50	3.23	2.59	0.93	0.93	40.32	0.14	0.41	0.05	0.14	0.10	48.85
8X-5, 75	675.50	5.06	3.16	1.15	1.00	39.58	0.13	0.48	0.05	0.17	0.10	50.88
8X-5, 80	680.25	9.94	4.67	1.70	1.35	37.08	0.16	0.67	0.04	0.26	0.10	55.96
8X-5, 84.5	685.25	21.84	8.02	2.98	2.33	29.07	0.27	1.06	0.04	0.43	0.10	66.15
8X-5, 88	688.00	35.84	10.30	7.57	3.36	16.68	3.77	1.06	0.02	0.45	0.06	79.11
8X-5, 106	707.00	10.46	4.96	1.88	0.92	36.81	0.19	0.73	0.04	0.25	0.06	56.31
8X-5, 116	717.00	10.03	4.71	1.82	0.90	37.10	0.21	0.73	0.05	0.25	0.06	55.86
8X-5, 126	727.00	8.93	4.38	1.67	0.84	37.59	0.19	0.72	0.05	0.23	0.06	54.66

Note: Depth refers to depth in Core 171B-1049C-8X.

#### C.D. Speed and D. Kroon Data Report: K/T Boundary Inorganic Geochemistry and Mineralogy

**Table T6.** Correction factors for converting the weight percentage of oxides to the weight percentage of elements.

Conversion	Correction factor
SiO <sub>2</sub> ⇒Si	46.74
Al <sub>2</sub> O <sub>3</sub> ⇒Al	52.92
Fe <sub>2</sub> O <sub>3</sub> ⇒Fe	69.94
MgO⇒Mg	60.31
CaO⇒Ca	71.47
Na₂O⇒Na	74.19
K₂O⇒K	83.02
MnO₂⇒Mn	77.45
TiO <sub>2</sub> ⇒Ti	59.95
$P_2O_5 \Rightarrow P$	27.91

#### C.D. Speed and D. Kroon Data Report: K/T Boundary Inorganic Geochemistry and Mineralogy

 Table T7. Corrected major element abundance.

1718-1049C-       8X-1, 2       3.00       5.319       2.207       1.238       0.881       24.650       0.527       0.697       0.031       0.132       0.023       35.706         8X-1, 40       41.00       3.889       1.681       1.175       0.642       2.716       0.136       0.421       0.031       0.020       33.913         8X-1, 40       41.00       3.889       1.681       1.715       0.638       2.747       0.185       0.340       0.231       0.188       0.022       35.883         8X-1, 100       10.01       6.212       2.757       1.476       1.061       0.522       0.031       0.186       0.023       37.067         8X-1, 100       10.00       6.212       2.757       1.476       1.012       2.630       0.111       0.523       0.031       0.144       0.022       3.848         8X-2, 10       16.100       2.225       1.429       0.838       2.630       0.111       0.523       0.031       0.144       0.023       3.841         8X-2, 10       16.100       2.225       1.427       0.224       0.839       0.224       0.831       5.900         8X-2, 20       0.010       9.175       3.133       <	Core, section, interval (cm)	Depth (cm)	Si (%)	Al (%)	Fe (%)	Mg (%)	Ca (%)	Na (%)	K (%)	Mn (%)	Ti (%)	P (%)	Total (%)
8X-1,2         3.00         5.19         2.07         1.28         0.81         2.4650         0.271         0.31         0.121         0.023         3.3913           8X-1,40         41.00         3.883         1.635         1.75         0.76         0.156         0.340         0.031         0.040         0.031         0.040         0.031         0.040         0.031         0.040         0.031         0.040         0.031         0.040         0.031         0.040         0.031         0.040         0.031         0.040         0.031         0.040         0.031         0.047         4.632           8X-1,100         10.10         6.212         2.257         1.467         1.004         0.021         3.342           8X-2,10         11.00         5.212         2.257         1.076         0.350         0.111         0.023         3.823           8X-2,00         11.00         5.052         1.272         0.274         0.331         0.119         0.114         0.513         0.031         0.114         0.023         3.823           8X-2,00         11.00         9.072         2.121         1.242         0.703         0.124         0.030         0.138         0.031         0.138	171B-1049C-												
8X1, 20         21.00         2.435         1.439         0.909         0.694         2.716         0.156         0.420         0.011         0.002         33.91           8X1, 40         61.00         5.067         2.260         1.211         0.838         2.5479         0.185         0.420         0.181         0.220         0.138         0.022         3.531           8X1, 80         61.00         5.407         2.227         1.476         1.082         0.200         0.722         0.039         0.164         0.033         3.6429           8X1, 100         110.10         2.225         1.420         0.832         2.649         0.141         0.532         0.642         3.823           8X2, 20         171.00         5.090         2.265         1.371         0.226         3.5511         0.339         0.338         0.039         3.838           8X2, 20         171.00         5.907         2.265         1.371         0.252         5.511         0.178         0.666         0.031         0.186         0.039         3.824           8X2, 20         2.100         5.976         3.265         1.429         0.250         3.518         5.711         0.221         0.339         0.	8X-1, 2	3.00	5.319	2.207	1.238	0.881	24.650	0.527	0.697	0.031	0.132	0.025	35.706
8X1, 60         41.00         3.889         1.862         1.75         0.760         2.671         0.813         0.639         0.022         0.138         0.022         5.883           8X1, 100         11.000         2.257         1.887         1.769         0.364         1.295         0.031         0.136         0.022         5.383           8X1, 100         11.00         5.427         2.257         1.476         1.001         6.212         0.031         0.114         0.032         3.842           8X1, 100         5.457         1.812         1.763         0.623         0.611         0.512         0.031         0.114         0.022         3.848           8X2, 20         111.00         2.255         1.472         0.874         0.874         0.111         0.955         0.039         0.128         0.031         5.184           8X2, 20         111.00         4.997         2.121         1.914         1.152         0.135         0.191         0.681         0.031         0.136         0.031         0.138         0.022         3.874           8X2, 20         21.00         5.978         2.440         1.532         0.971         2.440         0.0455         0.031         0.1	8X-1, 20	21.00	2.435	1.439	0.909	0.694	27.716	0.156	0.423	0.031	0.090	0.020	33.913
bx1, 60         61.00         5.067         2.680         1.231         0.838         2.5479         0.165         0.123         0.123         0.138         0.022         0.138         0.022         0.138         0.021         0.138         0.021         0.138         0.021         0.138         0.021         0.138         0.021         0.138         0.021         0.138         0.021         0.138         0.022         3.542           8X-1, 100         1.100         5.227         1.242         1.046         0.633         2.630         0.141         0.135         0.030         0.144         0.023         3.823           8X-2, 10         1.100         5.900         2.265         1.371         0.222         2.549         0.193         0.656         0.031         0.138         0.023         8.187           8X-2, 00         1.010         4.997         2.212         1.249         0.912         2.457         0.176         0.666         0.031         0.138         0.031         8.174           8X-2, 00         1.910         5.313         2.119         1.142         2.4407         0.185         0.640         0.031         0.120         0.331         3.163         3.6429           8	8X-1, 40	41.00	3.889	1.863	1.175	0.760	26.751	0.193	0.540	0.031	0.108	0.022	35.331
8X-1, 100         81.00         13.405         2.756         1.387         1.7639         0.364         1.295         0.31         0.308         0.136         0.030         0.156         0.033         37.667           8X-1, 100         110.00         5.427         2.323         1.462         0.965         2.5215         0.171         0.519         0.031         0.114         0.022         3.848           8X-2, 10         161.00         2.255         1.471         0.929         2.551         0.111         0.828         0.031         0.138         0.022         3.823           8X-2, 20         171.00         5.000         2.265         1.371         0.929         2.551         0.178         0.666         0.031         0.138         0.031         3.598           8X-2, 20         211.00         5.978         2.440         1.522         0.971         2.4407         1.80         0.666         0.031         0.138         0.031         3.511           8X-2, 100         2.810         3.266         0.560         0.760         0.778         0.144         0.363         0.629         3.610         3.715           8X-3, 00         3.61.00         7.176         7.778         0.146	8X-1, 60	61.00	5.067	2.260	1.231	0.838	25.479	0.185	0.639	0.023	0.138	0.022	35.883
8X-1, 120       1010       6.212       2.237       1.476       1.001       24.650       0.200       0.722       0.031       0.145       0.033       36.467         8X-1, 120       121.00       5.525       1.429       0.838       26.530       0.111       0.515       0.031       0.144       0.023       34.818         8X-2, 10       161.00       2.225       1.429       0.937       0.787       0.787       0.788       0.031       0.090       0.022       34.838         8X-2, 20       171.00       5.976       2.2440       1.352       0.317       0.185       0.031       0.138       0.028       36.154         8X-2, 30       211.00       5.976       2.440       1.352       0.971       2.4507       0.185       0.681       0.031       0.156       0.031       0.158       0.033       0.324       0.033       1.016       0.349       1.262       0.039       0.324       0.223       0.116       0.033       3.915       8.4.3       0.310       0.349       1.262       0.039       0.324       0.223       0.116       0.033       0.311       0.460       0.331       0.126       0.233       3.103       8.4.3       0.311       0.460	8X-1, 80	81.00	13.405	4.403	2.756	1.387	17.639	0.364	1.295	0.031	0.306	0.047	41.632
8X-1, 120       121.00       5.427       2.323       1.462       0.965       25.215       0.171       0.639       0.031       0.114       0.053       36.429         8X-1, 140       161.00       2.225       1.429       0.874       0.778       27.880       0.111       0.382       0.031       0.114       0.053       3.823         8X-2, 20       171.00       5.978       2.121       1.294       0.953       25.579       0.178       0.666       0.031       0.138       0.033       3.5790         8X-2, 50       201.00       9.778       2.440       1.532       0.971       24.507       0.185       0.681       0.031       0.126       0.033       3.5790         8X-2, 10       2.61.00       8.250       3.265       1.147       17.639       0.494       1.262       0.031       0.216       0.033       3.715         8X-3, 010       0.160       6.771       2.847       1.378       0.983       2.6650       0.119       0.443       0.126       0.031       0.216       0.033       3.715         8X-3, 0       31.00       4.445       2.164       1.991       0.823       2.6650       0.119       0.444       0.031       0.126	8X-1, 100	101.00	6.212	2.577	1.476	1.001	24.650	0.200	0.722	0.039	0.156	0.033	37.067
8X-1,140       141.00       3.585       1.842       1.098       0.874       0.78       27.880       0.111       0.315       0.031       0.092       3.84.818         8X-2,10       171.00       5.090       2.255       1.371       0.929       25.479       0.193       0.623       0.031       0.188       0.028       3.61.54         8X-2,30       201.00       9.175       3.313       2.119       1.182       2.155       0.178       0.663       0.031       0.156       0.039       1.242         8X-2,90       221.00       5.978       2.440       1.352       0.971       2.4507       0.185       0.631       0.156       0.031       0.156       0.031       0.156       0.031       0.164       0.324       0.223       0.174       0.023       0.174       0.023       0.174       0.023       0.174       0.023       0.174       0.023       0.174       0.023       3.131         8X-3,0       301.00       3.697       1.296       0.990       0.282       0.626       0.114       0.435       0.031       0.102       0.023       3.131         8X-3,0       310.00       31.18       1.445       0.640       0.766       2.7316       0.111	8X-1, 120	121.00	5.427	2.323	1.462	0.965	25.215	0.171	0.639	0.031	0.144	0.053	36.429
8X-2, 10       161.00       2.225       1.429       0.874       0.778       27.880       0.111       0.382       0.039       0.039       0.128       0.028       35.823         8X-2, 20       181.00       4.987       2.212       1.294       0.953       25.551       0.178       0.606       0.039       0.138       0.039       35.823         8X-2, 50       201.00       5.978       2.440       1.532       0.971       24.507       0.185       0.681       0.039       0.124       0.039       0.124       0.039       1.646         8X-2, 70       221.00       5.978       2.440       1.532       1.072       2.447       1.039       1.245       0.039       0.124       0.039       0.124       0.039       1.246       0.039       1.245       0.039       1.245       0.039       1.245       0.039       1.245       0.039       1.245       0.039       1.245       0.039       1.245       0.031       0.228       0.311       0.228       0.311       0.228       0.311       0.242       0.311       0.242       0.324       0.318       0.324       0.318       0.324       0.318       0.324       0.318       0.228       0.324       0.318       0.324	8X-1, 140	141.00	3.585	1.842	1.098	0.838	26.630	0.141	0.515	0.031	0.114	0.025	34.818
8X-2, 20       171.00       5.090       2.265       1.371       0.929       25.479       0.178       0.662       0.138       0.228       0.033       5.980         8X-2, 30       201.00       9.175       3.313       2.119       1.182       21.355       0.319       0.955       0.030       0.128       0.681       0.631       0.138       0.621       0.031       0.156       0.319       0.2628       0.039       38.724         8X-2, 70       241.00       1.3667       4.631       2.280       1.417       1.7639       0.349       1.262       0.033       0.021       0.023       0.174       0.022       3.7155         8X-3, 10       201.00       4.445       2.164       1.098       2.8062       0.610       0.119       0.440       0.033       0.120       0.223       3.521         8X-3, 40       361.00       2.113       1.466       0.713       2.718       0.119       0.342       0.031       0.020       3.521         8X-3, 40       381.00       3.183       1.836       0.846       0.880       2.6485       0.114       0.342       0.031       0.120       0.223       3.1521         8X-3, 100       41.00       3.7815	8X-2, 10	161.00	2.225	1.429	0.874	0.778	27.880	0.111	0.382	0.031	0.090	0.022	33.823
8X-2, 30       181.00       4.987       2.212       1.219       1.122       21.35       0.319       0.555       0.039       0.228       0.039       38.724         8X-2, 70       221.00       5.978       2.440       1.532       0.971       24.507       0.185       0.681       0.031       0.216       0.039       38.724         8X-2, 70       221.00       3.667       4.631       2.280       1.417       1.7639       0.449       1.262       0.039       0.324       0.039       0.324       0.025       37.158         8X-3, 0       301.00       3.697       1.2847       1.378       0.983       24.078       0.185       0.747       0.021       0.174       0.025       34.810         8X-3, 40       361.00       3.1697       1.686       0.760       2.738       0.104       0.635       0.031       0.020       0.223       3.513         8X-3, 60       361.00       2.113       1.466       0.713       0.718       2.7437       0.089       0.374       0.031       0.120       0.223       3.543         8X-3, 100       401.00       2.579       1.699       0.902       0.808       2.6380       0.111       0.350       0.031	8X-2, 20	171.00	5.090	2.265	1.371	0.929	25.479	0.193	0.623	0.039	0.138	0.028	36.154
8X-2, 70       201.00       9.175       3.313       2.119       1.182       21.355       0.319       0.955       0.319       0.228       0.039       38.724         8X-2, 70       241.00       13.667       4.631       2.280       1.417       17.639       0.349       1.262       0.030       0.324       0.039       41.646         8X-2, 110       281.00       6.717       2.847       1.378       0.983       24.078       0.185       0.617       0.023       0.174       0.025       37.158         8X-3, 0       301.00       3.697       1.926       0.999       0.856       26.650       0.119       0.440       0.039       0.138       0.022       33.153         8X-3, 40       341.00       2.999       1.445       0.860       0.760       27.738       0.104       0.355       0.031       0.102       0.022       33.153         8X-3, 60       381.00       3.183       1.836       0.846       0.880       26.858       0.118       0.436       0.031       0.102       0.022       33.158         8X-3, 100       401.00       2.468       1.508       0.867       0.766       27.316       0.111       0.432       0.31       0.126	8X-2, 30	181.00	4.987	2.212	1.294	0.953	25.551	0.178	0.606	0.031	0.138	0.031	35.980
8X-2, 70       221.00       5.978       2.440       1.532       0.971       24.507       0.185       0.681       0.031       0.156       0.033       36.51         8X-2, 90       241.00       3.667       4.631       2.280       1.417       17.639       0.499       1.262       0.039       0.324       0.226       0.033       3.755         8X-3, 10       301.00       3.677       1.926       0.990       0.865       2.630       0.134       0.422       0.013       0.120       0.023       3.518         8X-3, 0       301.00       3.697       1.926       0.990       0.866       2.738       0.104       0.365       0.031       0.020       0.325       3.511         8X-3, 60       361.00       2.113       1.466       0.713       0.718       2.7437       0.080       0.374       0.031       0.102       0.31       4.120         8X-3, 80       381.00       3.181       1.836       0.862       2.788       0.148       0.465       0.310       0.102       0.313       4.132         8X-3, 100       401.00       2.597       1.699       0.902       0.802       2.7116       0.111       0.390       0.090       0.022       3	8X-2, 50	201.00	9.175	3.313	2.119	1.182	21.355	0.319	0.955	0.039	0.228	0.039	38.724
8X.2, 90       241.00       13.667       4.631       2.280       1.417       17.639       0.349       1.262       0.039       0.244       0.039       41.646         8X.2, 110       281.00       6.717       2.844       1.378       0.983       24.078       0.185       0.747       0.023       0.174       0.025       37.158         8X.3, 0       301.00       3.677       1.262       0.990       0.865       26.630       0.114       0.365       0.031       0.090       0.022       3.151         8X.3, 40       341.00       2.097       1.686       0.760       27.738       0.104       0.355       0.031       0.090       0.022       33.150         8X.3, 80       381.00       3.183       1.836       0.846       0.802       2.7116       0.111       0.342       0.031       0.102       0.031       0.102       0.313       4.133         8X.3, 100       401.00       2.758       1.990       0.902       0.808       2.6380       0.111       0.590       0.331       0.162       0.033       3.881         8X.4, 10       461.00       3.784       1.890       0.922       2.888       2.598       0.126       0.556       0.031	8X-2, 70	221.00	5.978	2.440	1.532	0.971	24.507	0.185	0.681	0.031	0.156	0.031	36.511
bx2, 110       261.00       6.250       3.265       1.522       1.092       22.442       0.200       0.855       0.035       0.016       0.035       37.915         8x.3, 0       301.00       3.677       1.926       0.909       0.866       26.630       0.134       0.442       0.025       34.810         8x.3, 20       321.00       4.445       2.164       0.910       0.893       26.056       0.119       0.540       0.039       0.025       34.810         8x.3, 60       361.00       2.113       1.466       0.713       0.718       27.437       0.089       0.374       0.031       0.090       0.022       33.521         8x.3, 100       401.00       2.907       1.699       0.902       0.802       27.116       0.111       0.455       0.031       0.102       0.025       34.631         8x.3, 100       401.00       3.758       1.990       0.902       0.802       27.116       0.111       0.455       0.331       0.102       0.025       34.637         8x.4, 10       461.00       5.319       2.466       1.154       0.955       0.260       0.311       0.126       0.025       34.518         8x.4, 10       461.00 </td <td>8X-2, 90</td> <td>241.00</td> <td>13.667</td> <td>4.631</td> <td>2.280</td> <td>1.417</td> <td>17.639</td> <td>0.349</td> <td>1.262</td> <td>0.039</td> <td>0.324</td> <td>0.039</td> <td>41.646</td>	8X-2, 90	241.00	13.667	4.631	2.280	1.417	17.639	0.349	1.262	0.039	0.324	0.039	41.646
8X-2, 130       281.00       6.717       2.847       1.378       0.963       24.078       0.144       0.124       0.174       0.122       0.174       0.122       0.174       0.122       0.174       0.122       0.174       0.122       0.174       0.122       0.174       0.122       0.123       0.124       0.031       0.124       0.021       0.012       0.023       3.613         8X-3, 40       341.00       2.113       1.466       0.713       0.718       2.7437       0.089       0.374       0.031       0.090       0.022       3.133         8X-3, 10       401.00       2.907       1.699       0.902       2.6828       0.148       0.465       0.031       0.120       0.023       3.431         8X-3, 120       421.00       2.466       1.584       0.867       0.766       2.7316       0.111       0.399       0.902       0.023       3.4631         8X-4, 10       461.00       5.319       2.466       1.544       0.935       2.5000       0.111       0.536       0.031       0.142       0.023       3.289         8X-4, 70       521.00       1.441       0.493       0.289       1.715       0.769       2.7.999       0.163	8X-2, 110	261.00	8.250	3.265	1.532	1.092	22.442	0.200	0.855	0.031	0.216	0.033	37.915
8X-3, 0       301.00       5.697       1.926       0.909       0.883       26.630       0.134       0.424       0.031       0.120       0.025       34.810         8X-3, 40       341.00       2.099       1.445       0.680       0.760       27.738       0.104       0.364       0.031       0.090       0.022       33.513         8X-3, 60       361.00       2.113       1.466       0.713       0.748       7.473       0.089       0.374       0.031       0.012       0.025       34.321         8X-3, 100       401.00       2.907       1.669       0.902       0.802       27.116       0.111       0.425       0.031       0.120       0.025       33.586         8X-3, 100       401.00       2.907       1.669       0.762       27.316       0.111       0.453       0.031       0.162       0.025       33.586         8X-4, 10       461.00       3.788       1.990       0.902       0.808       25.958       0.126       0.351       0.011       0.162       0.023       3.289         8X-4, 50       501.00       1.940       1.413       0.699       0.754       27.89       0.126       0.351       0.1014       0.020       33.289	8X-2, 130	281.00	6./1/	2.84/	1.3/8	0.983	24.078	0.185	0./4/	0.023	0.174	0.025	37.158
8X-3, 20       341.00       4.443       2.164       1.091       0.853       20.065       0.119       0.349       0.0139       0.138       0.022       33.512         8X-3, 60       361.00       2.113       1.466       0.713       0.778       27.378       0.104       0.035       0.031       0.090       0.022       33.513         8X-3, 80       381.00       3.183       1.836       0.846       0.802       27.116       0.111       0.432       0.031       0.120       0.022       33.586         8X-3, 100       401.00       2.907       1.699       0.902       0.808       2.608       0.111       0.432       0.031       0.126       0.022       33.586         8X-3, 140       441.00       3.758       1.990       0.902       0.808       2.6380       0.111       0.639       0.031       0.126       0.023       3.588         8X-4, 10       461.00       5.319       2.466       1.154       0.952       0.126       0.0357       0.031       0.144       0.033       3.524         8X-4, 70       521.00       2.809       1.715       0.769       0.764       27.859       0.126       0.0357       0.031       0.114       0.020	8X-3, 0	301.00	3.697	1.926	0.909	0.856	26.630	0.134	0.482	0.031	0.120	0.025	34.810
$ \begin{array}{c} 3a, 3, 40 & 31, 100 & 2.097 & 1.443 & 0.800 & 0.780 & 27.738 & 0.104 & 0.331 & 0.031 & 0.090 & 0.022 & 33.510 \\ 8X, 3, 80 & 381.00 & 3.183 & 1.836 & 0.846 & 0.808 & 26.858 & 0.148 & 0.465 & 0.031 & 0.120 & 0.025 & 34.321 \\ 8X, 3, 100 & 401.00 & 2.468 & 1.508 & 0.867 & 0.766 & 27.316 & 0.111 & 0.432 & 0.031 & 0.126 & 0.025 & 33.586 \\ 8X, 3, 110 & 411.00 & 3.758 & 1.990 & 0.902 & 0.802 & 27.16 & 0.111 & 0.452 & 0.031 & 0.126 & 0.025 & 33.586 \\ 8X, 4, 10 & 461.00 & 3.758 & 1.990 & 0.902 & 0.808 & 26.380 & 0.111 & 0.569 & 0.031 & 0.126 & 0.023 & 35.881 \\ 8X, 4, 30 & 481.00 & 4.384 & 2.180 & 1.042 & 0.868 & 25.958 & 0.126 & 0.556 & 0.031 & 0.144 & 0.033 & 35.841 \\ 8X, 4, 50 & 501.00 & 1.940 & 1.413 & 0.699 & 0.760 & 27.094 & 0.163 & 0.448 & 0.031 & 0.114 & 0.020 & 33.293 \\ 8X, 4, 90 & 541.00 & 3.440 & 1.926 & 0.895 & 0.814 & 26.644 & 0.126 & 0.499 & 0.031 & 0.126 & 0.025 & 33.758 \\ 8X, 4, 10 & 561.00 & 2.351 & 1.603 & 0.788 & 0.772 & 27.54 & 0.141 & 0.407 & 0.031 & 0.122 & 0.023 & 32.891 \\ 8X, 4, 10 & 561.00 & 3.440 & 1.926 & 0.895 & 0.814 & 26.644 & 0.126 & 0.499 & 0.031 & 0.122 & 0.023 & 33.526 \\ 8X, 4, 130 & 581.00 & 1.664 & 1.328 & 0.664 & 0.706 & 28.231 & 0.096 & 0.349 & 0.031 & 0.122 & 0.023 & 33.526 \\ 8X, 5, 51 & 616.00 & 4.894 & 2.381 & 1.119 & 0.838 & 25.829 & 0.134 & 0.614 & 0.039 & 0.150 & 0.033 & 35.671 \\ 8X, 5, 25 & 626.00 & 3.865 & 2.074 & 0.965 & 0.772 & 26.730 & 0.124 & 0.531 & 0.031 & 0.132 & 0.033 & 35.268 \\ 8X, 5, 36 & 637.00 & 4.534 & 2.302 & 1.063 & 0.820 & 2.636 & 0.119 & 0.581 & 0.039 & 0.164 & 0.033 & 35.942 \\ 8X, 5, 46 & 647.00 & 4.549 & 2.276 & 1.049 & 0.820 & 2.6465 & 0.118 & 0.631 & 0.134 & 0.036 & 35.792 \\ 8X, 5, 46 & 647.00 & 4.426 & 2.270 & 1.063 & 0.820 & 2.6465 & 0.114 & 0.581 & 0.031 & 0.144 & 0.036 & 35.752 \\ 8X, 5, 46 & 647.00 & 4.426 & 2.276 & 1.049 & 0.820 & 2.6465 & 0.114 & 0.581 & 0.031 & 0.144 & 0.036 & 35.955 \\ 8X, 5, 56 & 657.00 & 4.819 & 2.355 & 1.098 & 0.820 & 2.6465 & 0.111 & 0.581 & 0.031 & 0.144 & 0.036 & 35.752 \\ 8X, 5, 58 & 649.00 & 5.581 & 2.646 & 1.049 & 0.$	8X-3, 20	321.00	4.445	2.164	1.091	0.893	26.065	0.119	0.540	0.039	0.138	0.028	33.321
bx3, b0       381.00       2.113       1.480       0.713       0.713       0.743       0.032       0.031       0.030       0.020       33.231         bx3, s0       401.00       2.907       1.699       0.902       0.802       27.116       0.111       0.432       0.031       0.102       0.023       34.321         bx3, s120       421.00       2.468       1.580       0.867       0.766       27.316       0.111       0.506       0.031       0.122       34.321         bx4, s10       461.00       5.319       2.466       1.154       0.935       25.000       0.141       0.506       0.031       0.162       0.033       35.824         bx4, s0       501.00       1.940       1.413       0.699       0.754       27.859       0.126       0.357       0.031       0.162       0.033       35.248         bx4, s0       511.00       2.466       1.715       0.769       0.760       27.094       0.163       0.448       0.031       0.126       0.323       33.524         bx4, s10       561.00       2.381       1.199       0.838       2.528       0.141       0.464       0.030       0.031       0.126       0.33       36.52 <td>8X-3, 40</td> <td>261.00</td> <td>2.099</td> <td>1.445</td> <td>0.800</td> <td>0.760</td> <td>27.730</td> <td>0.104</td> <td>0.303</td> <td>0.031</td> <td>0.090</td> <td>0.022</td> <td>22.050</td>	8X-3, 40	261.00	2.099	1.445	0.800	0.760	27.730	0.104	0.303	0.031	0.090	0.022	22.050
bx3,3 100       b1.00       b1.00       b1.00       b1.00       b1.00       b1.00       b1.00       b1.00       b1.20       b1.21       b1.20       b1.21       b1.22	8X 3 80	281.00	2.113	1.400	0.715	0.710	27.437	0.069	0.374	0.031	0.090	0.020	24 221
bx3, 120       421.00       2.468       1.508       0.502       0.766       27.176       0.111       0.509       0.039       0.002       0.023       3.586         8X-3, 120       441.00       3.758       1.990       0.902       0.888       2.5360       0.011       0.509       0.031       0.126       0.023       3.586         8X-4, 10       461.00       5.319       2.466       1.154       0.935       2.500       0.141       0.639       0.031       0.126       0.033       35.881         8X-4, 50       501.00       1.940       1.413       0.699       0.769       27.694       0.163       0.448       0.031       0.114       0.000       0.020       33.923         8X-4, 70       521.00       2.809       1.715       0.769       0.769       27.944       0.163       0.448       0.031       0.114       0.020       33.923         8X-4, 110       561.00       2.351       1.664       0.726       27.944       0.161       0.449       0.031       0.122       0.022       33.175         8X-5, 15       616.00       4.249       2.381       1.119       0.838       25.826       0.134       0.614       0.039       0.104	8X-3, 00	401.00	2 907	1.650	0.040	0.808	20.030	0.140	0.403	0.031	0.120	0.025	34.321
31,120       411.00       2.100       1.900       0.001       0.100       2.111       0.500       0.001       0.102       0.002       3.000       0.111       0.500       0.001       0.112       0.001       0.011       0.101       0.101       0.010       0.011       0.101       0.011       0.101       0.011       0.101       0.011       0.101       0.011       0.101       0.011       0.101       0.011       0.101       0.011       0.012       0.003       3.524         8X.4, 10       481.00       1.441       0.699       0.754       27.859       0.126       0.357       0.031       0.102       0.022       33.289         8X.4, 70       521.00       2.809       1.715       0.760       27.094       0.163       0.448       0.031       0.112       0.023       3.328         8X.4, 70       521.00       2.809       1.715       0.760       27.094       0.163       0.448       0.031       0.126       0.023       3.528         8X.4, 10       561.00       2.451       1.664       0.722       27.545       0.141       0.407       0.031       0.122       0.033       3.6022         8X.4, 10       561.00       1.229       1.	8X-3, 100	421.00	2.207	1.022	0.902	0.002	27.110	0.111	0.390	0.031	0.102	0.025	33 586
8X-4, 10       461.00       5.319       2.466       1.154       0.932       25.000       0.114       0.639       0.031       0.162       0.033       35.881         8X-4, 30       481.00       4.384       2.180       1.042       0.868       25.958       0.126       0.556       0.031       0.162       0.033       35.324         8X-4, 50       501.00       1.940       1.413       0.699       0.754       27.859       0.126       0.357       0.031       0.090       0.020       33.289         8X-4, 90       541.00       3.440       1.926       0.895       0.814       26.644       0.126       0.490       0.031       0.112       0.022       33.725         8X-4, 10       561.00       1.664       1.328       0.664       0.706       28.231       0.096       0.349       0.031       0.168       0.022       33.175         8X-5, 5       606.00       4.894       2.381       1.014       0.792       26.537       0.126       0.556       0.031       0.132       0.033       35.671         8X-5, 53       636.00       4.544       2.302       1.066       0.820       26.337       0.126       0.581       0.039       0.244	8X-3 140	441.00	3 758	1 990	0.007	0.808	26 380	0.111	0.570	0.031	0.020	0.025	34 637
8X.4, 30       481.00       4.384       2.180       1.042       0.863       25.958       0.1126       0.555       0.031       0.144       0.033       35.324         8X.4, 50       501.00       1.940       1.413       0.699       0.754       27.859       0.126       0.357       0.031       0.144       0.033       35.324         8X.4, 70       521.00       2.809       1.715       0.760       27.094       0.163       0.448       0.031       0.114       0.020       33.923         8X.4, 90       541.00       2.3401       1.663       0.748       0.772       27.545       0.141       0.407       0.031       0.126       0.022       33.175         8X-5, 5       606.00       4.894       2.318       1.119       0.838       2.829       0.134       0.614       0.039       0.150       0.033       35.322         8X-5, 5       666.00       4.894       2.216       1.014       0.796       26.537       0.134       0.614       0.039       0.144       0.033       35.946         8X-5, 35       637.00       4.534       2.302       1.663       0.808       26.280       0.119       0.589       0.031       0.144       0.036	8X-4 10	461.00	5 319	2 466	1 1 5 4	0.000	25,000	0.141	0.500	0.031	0.120	0.023	35 881
8X.4, 50       501.00       1.940       1.413       0.699       0.754       27.859       0.126       0.357       0.031       0.090       0.020       33.228         8X.4, 70       521.00       2.809       1.715       0.769       0.760       27.094       0.163       0.448       0.031       0.114       0.020       33.228         8X.4, 90       541.00       3.440       1.926       0.895       0.814       26.644       0.126       0.490       0.031       0.126       0.025       33.728         8X.4, 130       581.00       1.664       1.328       0.664       0.766       28.231       0.096       0.349       0.031       0.084       0.022       33.175         8X-5, 5       606.00       4.894       2.381       1.119       0.838       25.829       0.134       0.614       0.039       0.150       0.033       35.671         8X-5, 5       606.00       4.894       2.381       1.014       0.796       26.537       0.126       0.581       0.031       0.132       0.033       35.671         8X-5, 52       626.00       3.865       2.074       0.965       0.772       26.730       0.134       0.510       0.033       55.468	8X-4, 30	481.00	4.384	2.180	1.042	0.868	25.958	0.126	0.556	0.031	0.144	0.033	35.324
8X.4, 70       521.00       2.809       1.715       0.760       27.094       0.163       0.448       0.031       0.114       0.020       33.923         8X.4, 90       541.00       3.440       1.926       0.895       0.814       26.644       0.126       0.490       0.031       0.126       0.025       33.723         8X.4, 110       561.00       2.351       1.663       0.748       0.772       27.545       0.141       0.407       0.031       0.120       0.022       33.725         8X.4, 130       581.00       1.664       1.328       0.664       0.706       28.231       0.096       0.349       0.031       0.122       0.033       36.032         8X.5, 5       606.00       4.894       2.381       1.119       0.726       26.737       0.126       0.556       0.031       0.132       0.033       35.678         8X.5, 3       637.00       4.534       2.302       1.063       0.808       26.280       0.119       0.581       0.039       0.144       0.033       35.946         8X.5, 36       637.00       4.534       2.302       1.063       0.820       26.480       0.119       0.581       0.031       0.138       0.36	8X-4, 50	501.00	1.940	1.413	0.699	0.754	27.859	0.126	0.357	0.031	0.090	0.020	33.289
8X-4,90       541.00       3.440       1.926       0.895       0.814       26.644       0.126       0.490       0.031       0.126       0.025       34.518         8X-4,110       561.00       2.351       1.603       0.748       0.772       27.545       0.141       0.407       0.031       0.102       0.025       33.725         8X-4,130       581.00       1.664       1.328       0.664       0.706       28.231       0.096       0.349       0.031       0.126       0.025       33.725         8X-5,15       616.00       4.894       2.381       1.119       0.838       25.829       0.134       0.614       0.039       0.130       0.132       0.033       35.671         8X-5,35       626.00       3.865       2.074       0.965       0.772       26.730       0.134       0.531       0.031       0.132       0.033       35.676         8X-5,36       637.00       4.534       2.302       1.063       0.806       26.280       0.119       0.581       0.031       0.144       0.036       35.946         8X-5,40       641.00       4.566       2.270       1.063       0.826       26.115       0.119       0.581       0.031	8X-4, 70	521.00	2.809	1.715	0.769	0.760	27.094	0.163	0.448	0.031	0.114	0.020	33.923
8X-4, 110       561.00       2.351       1.603       0.748       0.772       27.545       0.141       0.407       0.031       0.102       0.025       33.725         8X-4, 130       581.00       1.664       1.328       0.664       0.706       28.231       0.096       0.349       0.031       0.084       0.022       33.725         8X-5, 5       606.00       4.844       2.381       1.119       0.838       25.829       0.134       0.614       0.039       0.150       0.033       35.671         8X-5, 15       616.00       4.249       2.181       1.014       0.722       26.537       0.126       0.556       0.031       0.132       0.033       35.671         8X-5, 36       637.00       4.534       2.302       1.063       0.808       26.280       0.119       0.589       0.031       0.144       0.033       35.942         8X-5, 36       637.00       7.343       3.170       1.483       0.965       2.2486       0.156       0.789       0.039       0.244       0.047       38.480         8X-5, 40       641.00       5.581       2.614       1.210       0.862       25.486       0.148       0.672       0.031       0.148	8X-4, 90	541.00	3.440	1.926	0.895	0.814	26.644	0.126	0.490	0.031	0.126	0.025	34.518
8X-4, 130       581.00       1.664       1.328       0.664       0.706       28.231       0.096       0.349       0.031       0.084       0.022       33.175         8X-5, 5       606.00       4.894       2.381       1.119       0.838       25.829       0.134       0.614       0.039       0.150       0.033       35.671         8X-5, 15       616.00       4.249       2.196       1.014       0.796       26.537       0.134       0.511       0.013       0.132       0.033       35.268         8X-5, 36       637.00       4.557       2.281       1.056       0.820       26.308       0.126       0.581       0.039       0.144       0.033       35.912         8X-5, 38       639.00       7.343       3.170       1.483       0.965       24.286       0.119       0.589       0.031       0.144       0.036       35.912         8X-5, 40       641.00       5.581       2.614       1.210       0.862       2.6486       0.148       0.672       0.039       0.168       0.393       6.614         8X-5, 44       645.00       4.426       2.291       1.063       0.820       26.630       0.111       0.573       0.031       0.144	8X-4, 110	561.00	2.351	1.603	0.748	0.772	27.545	0.141	0.407	0.031	0.102	0.025	33.725
8X-5, 5       606.00       4.894       2.381       1.119       0.838       25.829       0.134       0.614       0.039       0.150       0.033       36.032         8X-5, 15       616.00       4.249       2.196       1.014       0.796       26.537       0.126       0.556       0.031       0.132       0.033       35.671         8X-5, 13       634.00       4.557       2.281       1.056       0.820       26.308       0.126       0.581       0.039       0.144       0.033       35.946         8X-5, 33       637.00       4.534       2.302       1.063       0.808       26.280       0.119       0.589       0.031       0.150       0.036       35.912         8X-5, 38       639.00       7.343       3.170       1.483       0.965       24.286       0.156       0.789       0.039       0.204       0.047       38.480         8X-5, 42       643.00       4.566       2.270       1.063       0.820       26.465       0.111       0.581       0.031       0.144       0.036       35.955         8X-5, 44       645.00       4.426       2.291       1.063       0.820       26.465       0.111       0.589       0.031       0.144	8X-4, 130	581.00	1.664	1.328	0.664	0.706	28.231	0.096	0.349	0.031	0.084	0.022	33.175
8X-5, 15       616.00       4.249       2.196       1.014       0.796       26.537       0.126       0.556       0.031       0.132       0.033       35.671         8X-5, 25       626.00       3.865       2.074       0.965       0.772       26.730       0.134       0.531       0.031       0.132       0.033       35.268         8X-5, 36       637.00       4.534       2.302       1.063       0.820       0.6180       0.126       0.581       0.039       0.144       0.033       35.946         8X-5, 36       637.00       4.534       2.302       1.063       0.820       26.280       0.119       0.589       0.039       0.144       0.036       35.912         8X-5, 40       641.00       5.581       2.614       1.210       0.856       25.486       0.148       0.672       0.039       0.168       0.039       36.814         8X-5, 44       645.00       4.426       2.270       1.063       0.820       26.465       0.111       0.581       0.031       0.144       0.036       35.752         8X-5, 46       647.00       4.436       2.276       1.049       0.802       26.465       0.141       0.811       0.31       0.144	8X-5, 5	606.00	4.894	2.381	1.119	0.838	25.829	0.134	0.614	0.039	0.150	0.033	36.032
8X-5, 25       626.00       3.865       2.074       0.965       0.772       26.730       0.134       0.531       0.031       0.132       0.033       35.268         8X-5, 33       634.00       4.557       2.281       1.056       0.820       26.308       0.126       0.581       0.039       0.144       0.033       35.946         8X-5, 36       637.00       4.534       2.302       1.063       0.808       26.280       0.119       0.589       0.031       0.150       0.036       35.912         8X-5, 40       641.00       5.581       2.614       1.210       0.856       25.486       0.148       0.672       0.039       0.168       0.033       36.181         8X-5, 44       643.00       4.566       2.270       1.063       0.820       26.630       0.111       0.573       0.031       0.144       0.036       35.952         8X-5, 46       647.00       4.432       2.276       1.049       0.802       25.486       0.111       0.581       0.031       0.144       0.036       36.012         8X-5, 50       651.00       4.822       2.366       1.098       0.812       2.586       0.516       0.614       0.031       0.144	8X-5, 15	616.00	4.249	2.196	1.014	0.796	26.537	0.126	0.556	0.031	0.132	0.033	35.671
8X-5, 33       634.00       4.557       2.281       1.056       0.820       26.308       0.126       0.581       0.039       0.144       0.033       35.946         8X-5, 36       637.00       4.534       2.302       1.063       0.808       26.280       0.119       0.589       0.031       0.150       0.036       35.912         8X-5, 38       639.00       7.343       3.170       1.483       0.965       24.286       0.114       0.039       0.164       0.039       36.814         8X-5, 40       641.00       5.581       2.614       1.210       0.852       24.866       0.114       0.031       0.144       0.036       35.752         8X-5, 44       645.00       4.426       2.291       1.063       0.820       26.630       0.111       0.581       0.031       0.144       0.036       35.752         8X-5, 46       647.00       4.436       2.276       1.049       0.802       26.460       0.141       0.581       0.031       0.144       0.036       36.120         8X-5, 50       651.00       4.852       2.366       1.098       0.832       2.886       0.156       0.614       0.031       0.144       0.036       36.172	8X-5, 25	626.00	3.865	2.074	0.965	0.772	26.730	0.134	0.531	0.031	0.132	0.033	35.268
8X-5, 36       637.00       4.534       2.302       1.063       0.808       26.280       0.119       0.589       0.031       0.150       0.036       35.912         8X-5, 38       639.00       7.343       3.170       1.483       0.965       24.286       0.156       0.789       0.039       0.204       0.047       38.480         8X-5, 40       641.00       5.581       2.614       1.210       0.856       25.486       0.148       0.672       0.039       0.168       0.039       36.814         8X-5, 42       643.00       4.566       2.270       1.063       0.820       26.630       0.111       0.573       0.031       0.144       0.036       35.752         8X-5, 46       647.00       4.436       2.276       1.049       0.802       26.465       0.141       0.581       0.031       0.144       0.036       36.012         8X-5, 50       651.00       4.852       2.366       1.098       0.832       25.886       0.156       0.614       0.031       0.144       0.036       36.015         8X-5, 52       653.00       4.785       2.371       1.091       0.820       26.022       0.126       0.606       0.031       0.144	8X-5, 33	634.00	4.557	2.281	1.056	0.820	26.308	0.126	0.581	0.039	0.144	0.033	35.946
8X-5, 38       639.00       7.343       3.170       1.483       0.965       24.286       0.156       0.789       0.039       0.204       0.047       38.480         8X-5, 40       641.00       5.581       2.614       1.210       0.856       25.486       0.148       0.672       0.039       0.168       0.039       36.814         8X-5, 42       643.00       4.566       2.270       1.063       0.820       26.630       0.111       0.573       0.031       0.144       0.036       35.752         8X-5, 46       647.00       4.436       2.276       1.049       0.802       26.465       0.111       0.573       0.031       0.144       0.036       36.015         8X-5, 48       649.00       4.599       2.334       1.070       0.808       26.280       0.111       0.589       0.031       0.144       0.036       36.015         8X-5, 50       651.00       4.852       2.366       1.098       0.814       26.151       0.126       0.614       0.031       0.144       0.036       36.172         8X-5, 54       655.00       4.735       2.371       1.091       0.820       26.002       0.126       0.614       0.031       0.144	8X-5, 36	637.00	4.534	2.302	1.063	0.808	26.280	0.119	0.589	0.031	0.150	0.036	35.912
8X.5, 40       641.00       5.581       2.614       1.210       0.856       25.486       0.148       0.672       0.039       0.168       0.039       36.814         8X-5, 42       643.00       4.566       2.270       1.063       0.826       26.115       0.119       0.581       0.031       0.144       0.036       35.752         8X-5, 44       645.00       4.426       2.291       1.063       0.820       26.630       0.111       0.573       0.031       0.138       0.036       35.752         8X-5, 46       647.00       4.436       2.276       1.049       0.802       26.465       0.111       0.581       0.031       0.144       0.036       36.003         8X-5, 48       649.00       4.599       2.334       1.070       0.808       26.280       0.111       0.589       0.031       0.144       0.036       36.003         8X-5, 52       653.00       4.786       2.366       1.098       0.814       26.151       0.126       0.614       0.031       0.144       0.036       36.059         8X-5, 54       655.00       4.735       2.371       1.091       0.820       26.022       0.126       0.606       0.031       0.144	8X-5, 38	639.00	7.343	3.170	1.483	0.965	24.286	0.156	0.789	0.039	0.204	0.047	38.480
8X-5, 42       643.00       4.566       2.270       1.063       0.826       26.115       0.119       0.581       0.031       0.144       0.036       35.752         8X-5, 44       645.00       4.426       2.291       1.063       0.820       26.630       0.111       0.573       0.031       0.138       0.036       35.955         8X-5, 46       647.00       4.436       2.276       1.049       0.802       26.630       0.111       0.581       0.031       0.138       0.036       35.955         8X-5, 48       649.00       4.599       2.334       1.070       0.802       26.80       0.111       0.589       0.031       0.144       0.036       36.015         8X-5, 50       651.00       4.852       2.366       1.098       0.812       25.866       0.614       0.031       0.144       0.036       36.015         8X-5, 54       655.00       4.735       2.371       1.091       0.820       26.022       0.126       0.606       0.031       0.144       0.036       35.982         8X-5, 54       655.00       4.735       2.371       1.091       0.820       26.021       0.126       0.623       0.031       0.144       0.036	8X-5, 40	641.00	5.581	2.614	1.210	0.856	25.486	0.148	0.672	0.039	0.168	0.039	36.814
8X-5, 44       645.00       4.426       2.291       1.063       0.820       26.630       0.111       0.573       0.031       0.138       0.036       36.120         8X-5, 46       647.00       4.436       2.276       1.049       0.802       26.465       0.141       0.581       0.031       0.138       0.036       35.955         8X-5, 48       649.00       4.599       2.334       1.070       0.808       26.280       0.111       0.589       0.031       0.144       0.036       36.003         8X-5, 52       653.00       4.786       2.366       1.098       0.812       25.886       0.156       0.614       0.031       0.144       0.036       36.015         8X-5, 54       655.00       4.735       2.371       1.091       0.820       26.022       0.126       0.606       0.031       0.144       0.036       35.982         8X-5, 56       657.00       4.819       2.355       1.098       0.820       26.008       0.134       0.614       0.031       0.144       0.036       36.059         8X-5, 56       657.00       4.812       2.429       1.119       0.826       26.051       0.126       0.623       0.031       0.156	8X-5, 42	643.00	4.566	2.270	1.063	0.826	26.115	0.119	0.581	0.031	0.144	0.036	35.752
8X-5, 46       647.00       4.436       2.276       1.049       0.802       26.465       0.141       0.581       0.031       0.138       0.036       35.955         8X-5, 48       649.00       4.599       2.334       1.070       0.808       26.280       0.111       0.589       0.031       0.144       0.036       36.003         8X-5, 50       651.00       4.852       2.366       1.098       0.832       25.886       0.156       0.614       0.031       0.144       0.036       36.003         8X-5, 54       655.00       4.735       2.371       1.091       0.820       26.022       0.126       0.606       0.031       0.144       0.036       36.079         8X-5, 56       657.00       4.819       2.355       1.098       0.820       26.002       0.126       0.606       0.031       0.144       0.036       36.239         8X-5, 58       659.00       4.842       2.429       1.119       0.826       26.051       0.126       0.623       0.031       0.144       0.036       36.239         8X-5, 61       661.50       4.922       2.445       1.126       0.802       26.065       0.104       0.606       0.031       0.156	8X-5, 44	645.00	4.426	2.291	1.063	0.820	26.630	0.111	0.573	0.031	0.138	0.036	36.120
8X-5, 48       649.00       4.599       2.334       1.070       0.808       26.280       0.111       0.589       0.031       0.144       0.036       36.003         8X-5, 50       651.00       4.852       2.366       1.098       0.832       25.886       0.156       0.614       0.031       0.144       0.036       36.015         8X-5, 52       653.00       4.786       2.366       1.098       0.814       26.151       0.126       0.614       0.031       0.144       0.036       36.015         8X-5, 54       655.00       4.735       2.371       1.091       0.820       26.022       0.126       0.606       0.031       0.144       0.036       36.059         8X-5, 58       657.00       4.819       2.355       1.098       0.820       26.008       0.134       0.614       0.031       0.144       0.036       36.239         8X-5, 56       657.00       4.819       2.355       1.098       0.820       26.005       0.104       0.606       0.031       0.156       0.036       36.239         8X-5, 56       665.50       5.062       2.466       1.147       0.808       25.922       0.126       0.614       0.031       0.156	8X-5, 46	647.00	4.436	2.276	1.049	0.802	26.465	0.141	0.581	0.031	0.138	0.036	35.955
8X-5, 50       651.00       4.852       2.366       1.098       0.832       25.886       0.156       0.614       0.031       0.144       0.036       36.015         8X-5, 52       653.00       4.786       2.366       1.098       0.814       26.151       0.126       0.614       0.031       0.150       0.036       36.172         8X-5, 54       655.00       4.735       2.371       1.091       0.820       26.022       0.126       0.606       0.031       0.144       0.036       35.982         8X-5, 56       657.00       4.819       2.355       1.098       0.820       26.002       0.126       0.606       0.031       0.144       0.036       36.959         8X-5, 56       657.00       4.819       2.355       1.098       0.820       26.005       0.126       0.623       0.031       0.156       0.036       36.239         8X-5, 56       665.50       5.062       2.446       1.147       0.808       25.922       0.126       0.614       0.031       0.156       0.363       36.372         8X-5, 75       675.50       2.365       1.672       0.804       0.603       28.288       0.096       0.398       0.039       0.102	8X-5, 48	649.00	4.599	2.334	1.070	0.808	26.280	0.111	0.589	0.031	0.144	0.036	36.003
8x-5, 52       653.00       4.786       2.366       1.098       0.814       26.151       0.126       0.614       0.031       0.150       0.036       36.172         8x-5, 54       655.00       4.735       2.371       1.091       0.820       26.022       0.126       0.666       0.031       0.144       0.036       35.982         8x-5, 56       657.00       4.819       2.355       1.098       0.820       26.002       0.126       0.664       0.031       0.144       0.036       36.959         8x-5, 58       659.00       4.842       2.429       1.119       0.826       26.051       0.126       0.623       0.031       0.156       0.036       36.239         8x-5, 65       665.50       5.062       2.446       1.147       0.808       25.922       0.126       0.614       0.031       0.156       0.039       36.272         8x-5, 65       665.50       5.062       2.466       1.147       0.808       25.922       0.126       0.614       0.031       0.150       0.39       36.272         8x-5, 75       675.50       2.365       1.672       0.804       0.603       28.288       0.096       0.398       0.039       0.102	8X-5, 50	651.00	4.852	2.366	1.098	0.832	25.886	0.156	0.614	0.031	0.144	0.036	36.015
8x-5, 54       655.00       4.735       2.371       1.091       0.820       26.022       0.126       0.606       0.031       0.144       0.036       35.982         8x-5, 56       657.00       4.819       2.355       1.098       0.820       26.008       0.134       0.614       0.031       0.144       0.036       36.059         8x-5, 56       657.00       4.842       2.429       1.119       0.826       26.051       0.126       0.623       0.031       0.144       0.036       36.239         8x-5, 61       661.50       4.922       2.445       1.126       0.802       26.065       0.104       0.606       0.031       0.150       0.039       36.290         8x-5, 65       665.50       5.062       2.466       1.147       0.808       25.922       0.126       0.614       0.031       0.156       0.039       36.372         8x-5, 70       670.50       1.510       1.371       0.650       0.561       28.817       0.104       0.340       0.039       0.084       0.028       33.503         8x-5, 75       675.50       2.365       1.672       0.804       0.603       28.288       0.096       0.398       0.039       0.102	8X-5, 52	653.00	4./86	2.366	1.098	0.814	26.151	0.126	0.614	0.031	0.150	0.036	36.1/2
8x-5, 56       657.00       4.819       2.355       1.098       0.820       26.008       0.134       0.614       0.031       0.144       0.036       36.059         8x-5, 58       659.00       4.842       2.429       1.119       0.826       26.051       0.126       0.623       0.031       0.156       0.036       36.239         8x-5, 61       661.50       4.922       2.445       1.126       0.802       26.065       0.104       0.606       0.031       0.156       0.039       36.239         8x-5, 65       665.50       5.062       2.466       1.147       0.808       25.922       0.126       0.614       0.031       0.156       0.039       36.372         8x-5, 75       675.50       2.365       1.672       0.804       0.603       28.288       0.096       0.398       0.039       0.084       0.028       33.503         8x-5, 75       675.50       2.365       1.672       0.804       0.603       28.288       0.096       0.398       0.039       0.102       0.028       34.396         8x-5, 80       680.25       4.646       2.471       1.189       0.814       26.501       0.119       0.556       0.031       0.156	8X-5, 54	655.00	4./35	2.3/1	1.091	0.820	26.022	0.126	0.606	0.031	0.144	0.036	35.982
8x-5, 65       661.50       4.922       2.425       1.119       0.626       26.051       0.126       0.023       0.031       0.136       0.030       36.299         8x-5, 61       661.50       4.922       2.445       1.126       0.802       26.065       0.104       0.606       0.031       0.156       0.039       36.299         8x-5, 65       665.50       5.062       2.466       1.147       0.808       25.922       0.126       0.614       0.031       0.156       0.039       36.372         8x-5, 75       675.50       2.365       1.672       0.804       0.603       28.288       0.096       0.398       0.039       0.084       0.028       33.503         8x-5, 75       675.50       2.365       1.672       0.804       0.603       28.288       0.096       0.398       0.039       0.102       0.028       34.396         8x-5, 80       680.25       4.646       2.471       1.189       0.814       26.501       0.119       0.556       0.031       0.156       0.028       36.511         8x-5, 88       688.00       16.752       5.451       5.294       2.026       1.921       2.797       0.880       0.015       0.270	8A-3, 30 8V 5 50	657.00	4.019	2.333	1.098	0.820	20.000	0.134	0.014	0.031	0.144	0.030	30.039
8X-5, 61       661.50       4.922       2.443       1.126       0.802       28.063       0.104       0.006       0.031       0.130       0.039       36.3290         8X-5, 65       665.50       5.062       2.466       1.147       0.808       25.922       0.126       0.614       0.031       0.156       0.039       36.372         8X-5, 70       670.50       1.510       1.371       0.650       0.561       28.817       0.104       0.340       0.039       0.084       0.028       34.396         8X-5, 75       675.50       2.365       1.672       0.804       0.603       28.288       0.096       0.398       0.039       0.102       0.028       34.396         8X-5, 75       675.50       2.365       1.672       0.804       0.603       28.288       0.096       0.398       0.039       0.102       0.028       34.396         8X-5, 80       680.25       4.646       2.471       1.189       0.814       26.501       0.119       0.556       0.031       0.156       0.028       36.511         8X-5, 88       688.00       16.752       5.451       5.294       2.026       11.921       2.797       0.880       0.015       0.270	8X-3, 38	659.00	4.842	2.429	1.119	0.826	26.051	0.126	0.623	0.031	0.150	0.036	36.239
8X-5, 63       605.30       3.062       2.466       1.147       0.686       23.922       0.126       0.614       0.031       0.136       0.039       36.372         8X-5, 70       670.50       1.510       1.371       0.650       0.561       28.817       0.104       0.340       0.039       0.084       0.028       33.503         8X-5, 75       675.50       2.365       1.672       0.804       0.603       28.288       0.096       0.398       0.039       0.102       0.028       34.396         8X-5, 80       680.25       4.646       2.471       1.189       0.814       26.501       0.119       0.556       0.031       0.156       0.028       36.511         8X-5, 84.5       685.25       10.208       4.244       2.084       1.405       20.776       0.200       0.880       0.031       0.258       0.028       40.115         8X-5, 88       688.00       16.752       5.451       5.294       2.026       11.921       2.797       0.880       0.015       0.270       0.017       36.636         8X-5, 116       717.00       4.889       2.625       1.315       0.555       26.308       0.141       0.606       0.039       0.150 </td <td>87-3, 01 87 5 25</td> <td>665 50</td> <td>4.9ZZ</td> <td>2.445</td> <td>1.120</td> <td>0.802</td> <td>20.000</td> <td>0.104</td> <td>0.606</td> <td>0.031</td> <td>0.150</td> <td>0.039</td> <td>30.290</td>	87-3, 01 87 5 25	665 50	4.9ZZ	2.445	1.120	0.802	20.000	0.104	0.606	0.031	0.150	0.039	30.290
8X-5, 75       675.50       2.365       1.672       0.804       0.603       28.288       0.096       0.398       0.039       0.102       0.028       34.396         8X-5, 75       675.50       2.365       1.672       0.804       0.603       28.288       0.096       0.398       0.039       0.102       0.028       34.396         8X-5, 80       680.25       4.646       2.471       1.189       0.814       26.501       0.119       0.556       0.031       0.156       0.028       36.511         8X-5, 84.5       685.25       10.208       4.244       2.084       1.405       20.776       0.200       0.880       0.031       0.258       0.028       40.115         8X-5, 88       688.00       16.752       5.451       5.294       2.026       11.921       2.797       0.880       0.015       0.270       0.017       45.423         8X-5, 106       707.00       4.889       2.625       1.315       0.555       26.308       0.141       0.606       0.031       0.150       0.017       36.479         8X-5, 116       717.00       4.688       2.493       1.273       0.543       26.515       0.156       0.606       0.039       0.150<	8X 5 70	670.50	1 510	2.400	0.650	0.606	23.922	0.120	0.014	0.031	0.130	0.039	30.372
8X-5, 80       680.25       4.646       2.471       1.189       0.814       26.501       0.199       0.556       0.039       0.162       0.028       34.396         8X-5, 80       680.25       4.646       2.471       1.189       0.814       26.501       0.119       0.556       0.031       0.156       0.028       36.511         8X-5, 84.5       685.25       10.208       4.244       2.084       1.405       20.776       0.200       0.880       0.031       0.156       0.028       40.115         8X-5, 88       688.00       16.752       5.451       5.294       2.026       11.921       2.797       0.880       0.015       0.270       0.017       45.423         8X-5, 106       707.00       4.889       2.625       1.315       0.555       26.308       0.141       0.606       0.031       0.150       0.017       36.439         8X-5, 116       717.00       4.688       2.493       1.273       0.543       26.515       0.156       0.606       0.039       0.150       0.017       36.439         8X-5, 126       727.00       4.174       2.318       1.168       0.507       26.866       0.141       0.598       0.039       0.138	8X-5,70	675 50	2 345	1.571	0.030	0.301	20.017	0.104	0.340	0.039	0.004	0.020	32 206
8X-5, 68       685.25       10.208       4.244       2.084       1.405       20.776       0.200       0.880       0.031       0.258       0.028       40.115         8X-5, 84.5       685.25       10.208       4.244       2.084       1.405       20.776       0.200       0.880       0.031       0.258       0.028       40.115         8X-5, 88       688.00       16.752       5.451       5.294       2.026       11.921       2.797       0.880       0.015       0.270       0.174       45.423         8X-5, 106       707.00       4.889       2.625       1.315       0.555       26.308       0.141       0.606       0.031       0.150       0.017       36.636         8X-5, 116       717.00       4.688       2.493       1.273       0.543       26.515       0.156       0.606       0.039       0.150       0.017       36.479         8X-5, 126       727.00       4.174       2.318       1.168       0.507       26.866       0.141       0.598       0.039       0.138       0.017       35.964         Ca (normalized) = 23.749       23.749       24.249       24.249       24.249       24.248       24.248       24.248       24.249       24.	8X-5 20	680.25	2.303	1.072	1 1 20	0.005	20.200	0.090	0.376	0.039	0.102	0.028	34.370
8X-5, 88       688.00       16.752       5.451       5.294       2.026       11.921       2.797       0.880       0.015       0.270       0.017       45.423         8X-5, 106       707.00       4.889       2.625       1.315       0.555       26.308       0.141       0.666       0.031       0.150       0.017       36.636         8X-5, 116       717.00       4.688       2.493       1.273       0.543       26.515       0.156       0.606       0.039       0.150       0.017       36.479         8X-5, 126       727.00       4.174       2.318       1.168       0.507       26.866       0.141       0.598       0.039       0.138       0.017       35.964         Ca (normalized) = 23.749       23.749       24.886       24.893       26.866       0.141       0.598       0.039       0.138       0.017       35.964	8X-5 81 5	685 25	10 202	2.4/I 1 211	1.107 2 021	1 /05	20.301	0.119	0.220	0.031	0.130	0.020	JO.JTT 40 115
8X-5, 106       707.00       4.889       2.625       1.315       0.555       26.308       0.141       0.606       0.031       0.150       0.017       45.423         8X-5, 116       717.00       4.688       2.493       1.273       0.543       26.515       0.156       0.606       0.039       0.150       0.017       36.636         8X-5, 116       717.00       4.688       2.493       1.273       0.543       26.515       0.156       0.606       0.039       0.150       0.017       36.479         8X-5, 126       727.00       4.174       2.318       1.168       0.507       26.866       0.141       0.598       0.039       0.138       0.017       35.964         Ca (normalized) = 23.749       23.749       23.749       24.864       24.866       0.141       0.598       0.039       0.138       0.017       35.964	07-J, 04.J 88-5 88	688 00	16 752	4.244 5 / 51	2.004 5.201	1.403 2.024	20.770	2 707	0.000	0.031	0.230	0.020	45 / 22
8X-5, 126         727.00         4.688         2.493         1.273         0.543         26.515         0.156         0.606         0.039         0.150         0.017         36.686           8X-5, 126         727.00         4.174         2.318         1.168         0.507         26.866         0.141         0.598         0.039         0.138         0.017         36.479           8X-5, 126         727.00         4.174         2.318         1.168         0.507         26.866         0.141         0.598         0.039         0.138         0.017         35.964           Ca (normalized) = 23.749         23.749         24.749         24.749         24.749         24.749         25.766         0.141         0.598         0.039         0.138         0.017         35.964	8X-5,00	707.00	10.732	2 625	J.294	2.020	26 308	2.797	0.000	0.013	0.270	0.017	-10.420 36 636
8X-5, 126 727.00 4.174 2.318 1.168 0.507 26.866 0.141 0.598 0.039 0.138 0.017 35.964 Ca (normalized) = 23.749	8X-5, 100	717.00	4 699	2.023	1 272	0.555	20.300	0.141	0.000	0.031	0.150	0.017	36 / 70
Ca (normalized) = 23.749	8X-5, 176	727.00	4 1 7 4	2.775 2 218	1 1 6 8	0.545	20.313	0.150	0.508	0.039	0.130	0.017	35 964
	Ca (normalize	d) = 23.74	<i>,</i> 1	2.510		0.007	20.000		0.070	0.007	050	0.017	55.701

Notes: Depth refers to depth in Core 171B-1049C-8X. Shaded area = values used to calculate Ca normalized.

Core, section, interval (cm)	Depth (cm)	Nb (ppm)	Zr (ppm)	Y (ppm)	Sr (ppm)	U (ppm)	Rb (ppm)	Th (ppm)	Pb (ppm)	Zn (ppm)	Cu (ppm)	Ni (ppm)	Cr (ppm)	Ce (ppm)	Nd (ppm)	La (ppm)	V (ppm)	Ba (ppm)	Sc (ppm)	l (ppm)	Br (ppm)	Mo (ppm)
171B-1049C-																						
8X-1, 2	3.00	4.7	21.0	15.0	614.7	2.7	32.6	4.6	39.8	101.0	23.5	19.3	76.1	10.5	9.1	13.7	45.1	71.1	9.6	19.6	23.10	0.90
8X-1, 20	21.00	2.5	9.6	14.3	664.7	3.9	22.9	3.2	9.4	47.6	20.8	12.3	51.0	8.0	9.8	0.8	31.5	41.5	12.3	18.0	-1.60	0.50
8X-1, 40	41.00	2.4	19.2	15.9	655.1	2.7	26.8	4.6	7.5	48.9	21.3	15.8	62.5	16.9	11.3	6.3	38.6	67.6	11.9	16.4	-0.70	0.10
8X-1, 60	61.00	4.4	28.8	15.8	636.8	3.3	33.9	5.9	6.2	52.2	16.9	16.0	75.4	16.8	12.8	8.6	54.5	76.1	15.0	16.1	-1.30	0.50
8X-1, 80	81.00	8.4	84.4	24.0	529.1	4.3	65.6	6.6	26.7	87.2	44.8	31.5	168.5	30.3	19.3	16.1	83.3	152.6	12.3	15.8	1.10	0.60
8X-1, 100	101.00	5.1	37.8	19.8	583.5	4.7	37.1	4.7	6.1	58.6	17.6	19.2	86.2	13.2	13.7	12.9	51.1	89.1	11.8	19.8	-1.90	0.50
8X-1, 120	121.00	5.0	28.9	17.9	637.4	5.0	35.4	2.7	9.1	56.0	31.3	16.1	88.4	21.5	14.4	9.2	51.1	81.4	11.3	27.3	-1.70	0.60
8X-1, 140	141.00	3.7	18.5	14.0	680.7	2.6	28.9	3.4	5.4	45.6	15.7	13.8	66.1	6.7	5.0	7.5	40.1	58.1	12.4	20.0	-2.00	0.60
8X-2, 10	161.00	3.1	9.0	14.1	706.3	2.8	22.3	3.9	5.2	42.8	13.5	12.7	52.6	10.5	5.7	10.3	34.6	49.4	10.6	26.0	-2.70	0.60
8X-2, 20	171.00	4.9	29.2	16.8	620.8	4.7	34.2	4.5	5.7	55.2	19.0	17.2	81.1	10.7	9.4	10.2	53.0	77.2	12.4	19.8	-0.50	0.40
8X-2, 30	181.00	4.3	27.2	18.7	615.8	6.1	33.6	5.7	8.5	50.4	17.6	16.5	76.3	16.0	13.3	3.4	57.0	66.5	12.5	31.9	-0.80	0.60
8X-2, 50	201.00	6.4	57.5	21.0	637.2	4.5	51.3	6.6	7.0	70.9	24.1	23.5	128.5	27.1	18.4	13.3	76.7	119.1	7.3	22.2	1.70	0.20
8X-2, 70	221.00	5.1	33.5	18.1	660.6	3.1	38.1	5.3	8.8	53.3	22.8	16.8	93.8	10.1	16.4	6.3	65.6	101.1	11.2	33.0	-0.20	0.20
8X-2, 90	241.00	9.7	84.9	23.1	511.3	4.5	65.1	5.6	8.5	75.6	43.4	26.5	197.0	40.0	23.6	25.8	155.7	176.5	7.6	40.3	3.20	0.70
8X-2, 110	261.00	6.0	50.2	19.3	623.2	7.2	46.5	5.5	8.2	61.4	27.8	19.6	113.3	22.5	19.5	17.8	64.0	111.8	7.9	34.7	0.80	0.40
8X-2, 130	281.00	4.6	39.0	17.2	644.0	5.7	40.4	5.4	6.2	57.7	26.0	14.3	91.9	25.4	14.3	19.9	46.1	90.0	9.5	34.3	0.00	1.10
8X-3. 0	301.00	3.6	21.2	14.0	688.4	5.1	28.5	6.1	9.7	43.9	24.6	12.9	67.5	10.6	9.1	4.4	32.5	65.4	15.4	29.3	-0.80	0.00
8X-3, 20	321.00	4.3	22.5	17.1	665.9	3.4	32.0	3.9	8.1	42.1	22.1	13.9	70.7	8.3	8.7	3.4	45.2	99.8	4.1	20.9	-1.90	0.60
8X-3, 40	341.00	2.8	13.7	14.8	730.9	5.4	21.4	2.3	6.2	35.2	20.8	10.7	52.6	0.5	4.4	6.1	34.9	57.4	13.9	19.2	-3.30	0.60
8X-3, 60	361.00	3.7	11.5	13.8	730.9	3.6	23	4.5	4.3	32.5	16.5	10.0	46.6	1.7	4.6	6.5	25.9	59.7	10.3	29.6	-3.20	0.50
8X-3, 80	381.00	3.1	17.4	14.4	725.7	5.4	28.3	4.3	6.1	37.0	19.1	10.4	61.8	12.6	3.4	-0.6	39.1	62.9	11.7	19.9	-0.40	0.70
8X-3, 100	401.00	2.4	17.6	17.2	721.9	3.8	25.6	3.6	3.1	36.5	19.3	11.3	58.5	10.0	6.8	7.3	31.9	51.5	8.2	17.9	-2.60	0.70
8X-3, 120	421.00	3.3	17.1	14.8	709.4	3.0	23.4	3.7	5.0	33.7	26.7	12.2	51.9	-0.7	6.3	9.9	37.1	67.2	8.5	12.1	-1.80	0.40
8X-3, 140	441.00	3.6	23.8	15.2	723.2	3.4	30.1	4.8	2.2	40.4	20.2	16.8	64.0	9.2	9.7	4.8	44.2	73.2	7.4	11.4	-3.20	0.00
8X-4, 10	461.00	5.8	29.0	18.7	699.3	4.5	36.2	5.6	7.8	46.5	18.0	27.1	89.6	19.0	17.6	12.5	59.8	88.4	12.3	11.6	-2.50	0.80
8X-4, 30	481.00	4.2	24.8	16.4	702.2	4.1	32.3	5.1	5.8	40.5	16.7	18.0	77.0	15.6	14.0	11.9	52.5	75.5	7.4	17.6	-3.80	0.50
8X-4, 50	501.00	1.5	10.5	14.9	715.5	3.6	21.5	3.8	6.4	40.3	14.0	11.9	46.9	10.0	9.5	5.7	29.8	52.0	8.1	14.0	-1.60	0.20
8X-4, 70	521.00	3.0	19.1	13.9	703.1	2.8	26.5	3.2	9.7	36.6	24.9	10.7	49.9	-1.4	5.0	6.1	38.7	47.0	15.7	31.3	-0.80	0.90
8X-4, 90	541.00	4.0	22.8	15.3	694.7	3.6	28.9	6.4	5.8	37.8	15.0	13.0	66.8	9.5	7.2	4.4	37.4	62.9	15.7	16.6	-3.40	0.50
8X-4, 110	561.00	2.7	14.0	13.1	685.7	5.8	25.1	4.8	2.4	38.8	13.8	12.9	53.3	11.5	8.3	0.8	34.3	48.7	16.4	12.1	-3.10	0.90
8X-4, 130	581.00	1.9	10.8	12.6	692.4	4.0	21.7	5.4	3.0	30.2	11.4	11.6	43.7	0.5	3.7	-4.5	25.6	47.5	16.3	13.1	-2.50	0.50
8X-5, 5	606.00	4.3	34.0	19.1	675.1	3.9	33.7	4.4	4.7	44.5	18.8	25.0	76.4	16.6	10.2	15.0	47.3	74.1	6.2	20.0	-3.40	0.30
8X-5, 15	616.00	5.7	25.9	18.8	669.5	4.4	30.8	3.8	5.9	44.3	16.4	24.9	65.6	19.3	10.9	15.7	41.1	84.0	8.8	18.6	-3.10	0.30
8X-5, 25	626.00	3.8	23.8	16.9	668.5	4.3	29.6	5.3	5.0	51.2	16.2	23.4	63.6	13.3	10.7	11.6	40.6	83.7	8.8	23.2	-3.00	0.30
8X-5, 33	634.00	3.9	29.1	17.4	657.4	5.8	31.9	6.6	7.1	60.3	18.5	26.7	68.0	16.3	10.8	7.7	47	66.8	16.0	14.5	-3.50	0.70
8X-5, 36	637.00	3.5	32.3	18.0	646.9	2.7	32.0	6.5	6.5	61.8	16.8	24.3	66.8	9.7	8.2	14.3	41.7	69.5	14.7	15.5	-4.00	0.50
8X-5, 38	639.00	5.5	39.3	22.5	562.6	4.9	43.4	6.0	9.7	79.7	22.0	33.0	92.3	24.7	14.4	18.3	61.5	103.3	13.0	15.0	-3.30	0.70
8X-5, 40	641.00	4.9	36.8	20.4	625.8	5.8	37.3	5.9	7.8	70.2	19.5	28.5	78.3	22.4	10.8	11.7	51.1	84.4	9.6	20.1	-3.80	0.40
8X-5, 42	643.00	3.9	32.6	19.1	654.4	3.7	33.7	6.4	8.3	65.3	17.4	26.1	69.5	12.0	15.0	9.9	42.2	59.8	6.8	12.0	-3.90	0.40
8X-5, 44	645.00	3.4	26.0	18.5	661.6	4.9	30.8	4.2	10.6	58.8	23.3	25.4	68.5	15.1	9.5	6.0	41.6	92.5	5.5	24.0	-3.10	0.50
8X-5, 46	647.00	3.9	27.5	19.5	648.6	6.5	33.7	4.8	8.0	60.6	20.0	25.1	67.1	12.5	5.5	3.5	38.9	68.9	12.1	14.5	-3.00	0.90
8X-5, 48	649.00	4.8	28.7	18.4	648.5	4.5	32.1	6.0	8.5	55.2	22.8	25.2	72.2	22.5	14.7	3.3	45.8	77.0	14.9	17.1	-2.50	0.40
8X-5, 50	651.00	4.7	34.5	18.7	645	4.2	32.7	4.2	6.1	66.8	20.5	23.4	69.3	20.0	13.0	4.6	50.4	80.2	8.8	18.5	-2.50	0.40
8X-5, 52	653.00	4.2	29.9	18.9	648.7	1.7	32.8	7.6	9.0	62.9	20.2	24.6	71.1	24.4	14.3	12.0	41.5	81.4	13.5	26.7	-3.90	0.30
8X-5, 54	655.00	4.4	36.0	18.2	652.7	4.4	34.6	5.1	10.1	58.7	21.1	28.8	74.0	18.5	16.7	11.0	43.3	80.1	9.0	21.0	-3.00	0.50
8X-5, 56	657.00	4.8	33.0	19.3	651.7	6.1	33.7	5.1	11.1	50.1	21.3	26.4	71.2	9.2	4.9	8.5	39.4	93.1	7.7	19.7	-3.30	-0.10
8X-5, 58	659.00	4.3	33.3	18.7	649.6	5.0	33.4	6.2	6.3	52.0	21.6	26.0	73.2	17.7	11.7	12.8	47.4	83.9	18.5	15.2	-3.90	0.60
8X-5, 61	661.50	5.0	32.5	19.1	640.4	2.5	33.7	4.8	10.8	45.3	30.6	23.2	74.0	20.1	12.2	11.0	42.5	102.5	11.3	20.0	-3.20	0.10

# Table T8. Minor element abundance. (See table note. Continued on next page.)

Table	T8	(continu	ed).
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Core, section, interval (cm)	Depth (cm)	Nb (ppm)	Zr (ppm)	Y (ppm)	Sr (ppm)	U (ppm)	Rb (ppm)	Th (ppm)	Pb (ppm)	Zn (ppm)	Cu (ppm)	Ni (ppm)	Cr (ppm)	Ce (ppm)	Nd (ppm)	La (ppm)	V (ppm)	Ba (ppm)	Sc (ppm)	l (ppm)	Br (ppm)	Mo (ppm)
8X-5, 65	665.50	4.7	35.4	19.5	639.8	4.0	35.0	4.9	7.7	47.1	29.0	20.7	74.8	14.4	9.8	14.4	50.1	79.5	11.0	13.9	-3.60	0.60
8X-5, 70	670.50	3.3	21.1	16.0	338.6	4.7	19.5	5.0	3.3	32.0	14.3	8.7	32.2	8.3	9.4	11.8	33.7	51.8	6.6	13.7	-3.80	0.30
8X-5, 75	675.50	3.3	25.6	16.9	331.8	3.8	22.1	4.2	4.8	34.2	13.5	10.1	35.6	20.2	12.1	4.8	36.4	52.5	15.3	11.9	-2.90	0.60
8X-5, 80	680.25	4.2	33.4	18.7	350.5	2.6	29.5	5.3	5.0	37.3	25.3	16.2	46.1	26.6	14.5	21.2	45.2	67.6	14.1	13.3	-3.20	0.50
8X-5, 84.5	685.25	7.7	62.3	21.4	394.1	2.0	46.2	8.5	11.2	54.1	45.4	59.3	71.0	27.2	20.4	18.6	59.7	85.8	17.6	18.5	-2.30	0.80
8X-5, 88	688.00	7.3	86.0	9.2	300.8	3.7	27.5	6.8	4.9	62.1	28.4	226.4	49.7	20.8	8.2	-4.1	79.5	39.1	15.4	6.5	21.4	1.20
8X-5, 106	707.00	3.7	17.6	12.5	833.4	4.5	38.5	5.3	7.6	38.4	29.1	16.5	50.3	17.4	9.7	10.1	43.8	86.0	12.9	12.4	-4.30	0.10
8X-5, 116	717.00	3.6	18.1	11.3	853.7	2.3	39.5	6.4	8.4	44.6	37.5	18.6	49.2	27.6	8.6	6.2	39.3	84.5	12.5	6.7	-3.60	-0.40
8X-5, 126	727.00	4.2	15.0	11.2	857.1	6.2	40.2	4.5	2.4	44.4	28.3	13.5	46.0	25.1	11.6	10.5	36.9	79.2	11.5	9.6	-4.10	0.60

Note: Depth refers to depth in Core 171B-1049C-8X.

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 Table T9. Elemental abundances normalized against Al abundance. (See table note. Continued on next page.)

Core, section, interval (cm)	Depth (cm)	Fe/Al	Mg/Al	K/Al	Zn/Al	Ti/Al	Zr/Al	Rb/Al	U/Al	Th/Al	Pb/Al	Cu/Al	Ni/Al	Cr/Al	V/Al	Ba/Al	Mo/Al
171B-1049C-																	
8X-1, 2	3.00	0.632	0.482	0.294	0.0046	0.0625	0.00067	0.00159	0.000271	0.000222	0.000653	0.00145	0.000855	0.00354	0.00219	0.00288	0.0000347
8X-1, 20	21.00	0.631	0.408	0.290	0.0033	0.0579	0.00103	0.00144	0.000145	0.000247	0.000403	0.00114	0.000848	0.00336	0.00207	0.00363	0.0000054
8X-1, 40	41.00	0.545	0.371	0.283	0.0026	0.0610	0.00127	0.00150	0.000146	0.000261	0.000274	0.00075	0.000708	0.00334	0.00241	0.00337	0.0000221
8X-1, 60	61.00	0.626	0.315	0.294	0.0023	0.0694	0.00192	0.00149	0.000098	0.000150	0.000606	0.00102	0.000715	0.00383	0.00189	0.00347	0.0000136
8X-1, 80	81.00	0.573	0.388	0.280	0.0020	0.0605	0.00147	0.00144	0.000182	0.000182	0.000237	0.00068	0.000745	0.00334	0.00198	0.00346	0.0000194
8X-1, 100	101.00	0.629	0.415	0.275	0.0023	0.0619	0.00124	0.00152	0.000215	0.000116	0.000392	0.00135	0.000693	0.00381	0.00220	0.00350	0.0000258
8X-1, 120	121.00	0.596	0.455	0.279	0.0024	0.0619	0.00100	0.00157	0.000141	0.000185	0.000293	0.00085	0.000749	0.00359	0.00218	0.00315	0.0000326
8X-1, 140	141.00	0.612	0.544	0.267	0.0025	0.0629	0.00063	0.00156	0.000196	0.000273	0.000364	0.00094	0.000889	0.00368	0.00242	0.00346	0.0000420
8X-2, 10	161.00	0.605	0.410	0.275	0.0030	0.0609	0.00129	0.00151	0.000208	0.000199	0.000252	0.00084	0.000759	0.00358	0.00234	0.00341	0.0000177
8X-2, 20	171.00	0.585	0.431	0.274	0.0024	0.0623	0.00123	0.00152	0.000276	0.000258	0.000384	0.00080	0.000746	0.00345	0.00258	0.00301	0.0000271
8X-2, 30	181.00	0.640	0.357	0.288	0.0023	0.0688	0.00174	0.00155	0.000136	0.000199	0.000211	0.00073	0.000709	0.00388	0.00232	0.00360	0.0000060
8X-2, 50	201.00	0.628	0.398	0.279	0.0021	0.0639	0.00137	0.00156	0.000127	0.000217	0.000361	0.00093	0.000689	0.00384	0.00269	0.00414	0.0000082
8X-2, 70	221.00	0.492	0.306	0.273	0.0022	0.0699	0.00183	0.00141	0.000097	0.000121	0.000184	0.00094	0.000572	0.00425	0.00336	0.00381	0.0000151
8X-2, 90	241.00	0.469	0.334	0.262	0.0016	0.0661	0.00154	0.00142	0.000221	0.000168	0.000251	0.00085	0.000600	0.00347	0.00196	0.00342	0.0000123
8X-2, 110	261.00	0.484	0.345	0.262	0.0019	0.0611	0.00137	0.00142	0.000200	0.000190	0.000218	0.00091	0.000502	0.00323	0.00162	0.00316	0.0000386
8X-2, 130	281.00	0.472	0.445	0.250	0.0020	0.0622	0.00110	0.00148	0.000265	0.000317	0.000504	0.00128	0.000670	0.00350	0.00169	0.00340	0.0000000
8X-3, 0	301.00	0.504	0.412	0.249	0.0023	0.0637	0.00104	0.00148	0.000157	0.000180	0.000374	0.00102	0.000642	0.00327	0.00209	0.00461	0.0000277
8X-3, 20	321.00	0.595	0.526	0.253	0.0019	0.0622	0.00095	0.00148	0.000374	0.000159	0.000429	0.00144	0.000741	0.00364	0.00242	0.00397	0.0000415
8X-3, 40	341.00	0.487	0.490	0.255	0.0024	0.0613	0.00078	0.00157	0.000246	0.000307	0.000293	0.00113	0.000682	0.00318	0.00177	0.00407	0.0000341
8X-3, 60	361.00	0.461	0.440	0.253	0.0022	0.0653	0.00095	0.00154	0.000294	0.000234	0.000332	0.00104	0.000566	0.00337	0.00213	0.00343	0.0000381
8X-3, 80	381.00	0.531	0.472	0.254	0.0020	0.0600	0.00104	0.00151	0.000224	0.000212	0.000182	0.00114	0.000665	0.00344	0.00188	0.00303	0.0000412
8X-3, 100	401.00	0.575	0.508	0.259	0.0021	0.0636	0.00113	0.00155	0.000199	0.000245	0.000332	0.00177	0.000809	0.00344	0.00246	0.00446	0.0000265
8X-3, 120	421.00	0.453	0.406	0.255	0.0022	0.0633	0.00120	0.00151	0.000171	0.000241	0.000111	0.00102	0.000844	0.00322	0.00222	0.00368	0.0000000
8X-3, 140	441.00	0.468	0.379	0.259	0.0020	0.0656	0.00118	0.00147	0.000182	0.000227	0.000316	0.00073	0.001099	0.00363	0.00242	0.00358	0.0000324
8X-4, 10	461.00	0.478	0.398	0.255	0.0019	0.0660	0.00114	0.00148	0.000188	0.000234	0.000266	0.00077	0.000826	0.00353	0.00241	0.00346	0.0000229
8X-4, 30	481.00	0.495	0.534	0.253	0.0019	0.0636	0.00074	0.00152	0.000255	0.000269	0.000453	0.00099	0.000842	0.00332	0.00211	0.00368	0.0000142
8X-4, 50	501.00	0.449	0.443	0.261	0.0029	0.0664	0.00111	0.00155	0.000163	0.000187	0.000566	0.00145	0.000624	0.00291	0.00226	0.00274	0.0000525
8X-4, 70	521.00	0.465	0.423	0.254	0.0021	0.0654	0.00118	0.00150	0.000187	0.000332	0.000301	0.00078	0.000675	0.00347	0.00194	0.00327	0.0000260
8X-4, 90	541.00	0.467	0.481	0.254	0.0020	0.0636	0.00087	0.00157	0.000362	0.000299	0.000150	0.00086	0.000805	0.00332	0.00214	0.00304	0.0000561
8X-4, 110	561.00	0.500	0.531	0.263	0.0024	0.0632	0.00081	0.00163	0.000301	0.000407	0.000226	0.00086	0.000873	0.00329	0.00193	0.00358	0.0000376
8X-4, 130	581.00	0.470	0.352	0.258	0.0023	0.0629	0.00143	0.00142	0.000164	0.000185	0.000197	0.00079	0.001050	0.00321	0.00199	0.00311	0.0000126
8X-5, 5	606.00	0.462	0.362	0.253	0.0019	0.0601	0.00118	0.00140	0.000200	0.000173	0.000269	0.00075	0.001134	0.00299	0.00187	0.00382	0.0000137
8X-5, 15	616.00	0.465	0.372	0.256	0.0020	0.0636	0.00115	0.00143	0.000207	0.000255	0.000241	0.00078	0.001128	0.00307	0.00196	0.00403	0.0000145
8X-5, 25	626.00	0.463	0.360	0.255	0.0025	0.0631	0.00128	0.00140	0.000254	0.000289	0.000311	0.00081	0.001171	0.00298	0.00206	0.00293	0.0000307
8X-5, 33	634.00	0.462	0.351	0.256	0.0026	0.0651	0.00140	0.00139	0.000117	0.000282	0.000282	0.00073	0.001056	0.00290	0.00181	0.00302	0.0000217
8X-5, 36	637.00	0.468	0.304	0.249	0.002/	0.0643	0.00124	0.00137	0.000155	0.000189	0.000306	0.00069	0.001041	0.00291	0.00194	0.00326	0.0000221
8X-5, 38	639.00	0.463	0.328	0.25/	0.0025	0.0642	0.00141	0.00143	0.000222	0.000226	0.000298	0.00075	0.001090	0.00300	0.00195	0.00323	0.0000153
8X-5, 40	641.00	0.468	0.364	0.256	0.0027	0.0634	0.00144	0.00148	0.000163	0.000282	0.000366	0.000//	0.001150	0.00306	0.00186	0.00263	0.0000176
8X-5, 42	643.00	0.464	0.358	0.250	0.0029	0.0602	0.00113	0.00134	0.000214	0.000183	0.000463	0.00102	0.001108	0.00299	0.00182	0.00404	0.0000218
8X-5, 44	645.00	0.461	0.352	0.255	0.0026	0.0606	0.00121	0.00148	0.000286	0.000211	0.000352	0.00088	0.001103	0.00295	0.001/1	0.00303	0.0000396
8X-5, 46	647.00	0.459	0.346	0.253	0.002/	0.0617	0.00123	0.00138	0.000193	0.000257	0.000364	0.00098	0.001080	0.00309	0.00196	0.00330	0.0000171
8X-5, 48	649.00	0.464	0.352	0.260	0.0024	0.0608	0.00146	0.00138	0.000178	0.000178	0.000258	0.00087	0.000989	0.00293	0.00213	0.00339	0.0000169
8X-5, 5U	651.00	0.464	0.344	0.260	0.0028	0.0634	0.00126	0.00139	0.0000/2	0.000321	0.000380	0.00085	0.001040	0.00301	0.001/5	0.00344	0.000012/
8X-5, 52	653.00	0.460	0.346	0.256	0.002/	0.060/	0.00152	0.00146	0.000186	0.000215	0.000426	0.00089	0.001215	0.00312	0.00183	0.00338	0.0000211
۵۸- <i>۵, 54</i>	655.00	0.466	0.348	0.261	0.0025	0.0611	0.00127	0.00130	0.000259	0.00021/	0.0004/1	0.00090	0.001121	0.00302	0.00167	0.00395	-0.0000042
٥٨->, >٥	057.00	0.461	0.340	0.236	0.0021	0.0642	0.00137	0.00138	0.000206	0.000255	0.000259	0.00089	0.0010/0	0.00301	0.00174	0.00345	0.0000247
۵۸-3, 38 ۵۷ ۶ (1	039.00	0.461	0.328	0.248	0.0021	0.0613	0.00144	0.00142	0.000102	0.000196	0.000442	0.00125	0.000949	0.00303	0.001/4	0.00419	0.0000041
ŏX-3, 61	661.50	0.465	0.328	0.249	0.0019	0.0632	0.00144	0.00142	0.000162	0.000199	0.000312	0.00118	0.000839	0.00303	0.00203	0.00322	0.0000243

Table	T9	(continued)	•
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Core, section, interval (cm)	Depth (cm)	Fe/Al	Mg/Al	K/Al	Zn/Al	Ti/Al	Zr/Al	Rb/Al	U/Al	Th/Al	Pb/Al	Cu/Al	Ni/Al	Cr/Al	V/AI	Ba/Al	Mo/Al
8X-5, 65	665.50	0.475	0.409	0.248	0.0019	0.0612	0.00154	0.00142	0.000343	0.000365	0.000241	0.00104	0.000635	0.00235	0.00246	0.00378	0.0000219
8X-5, 70	670.50	0.481	0.361	0.238	0.0023	0.0609	0.00153	0.00132	0.000227	0.000251	0.000287	0.00081	0.000604	0.00213	0.00218	0.00314	0.0000359
8X-5, 75	675.50	0.481	0.329	0.225	0.0020	0.0631	0.00135	0.00119	0.000105	0.000214	0.000202	0.00102	0.000656	0.00187	0.00183	0.00274	0.0000202
8X-5, 80	680.25	0.491	0.331	0.207	0.0015	0.0607	0.00147	0.00109	0.000047	0.000200	0.000264	0.00107	0.001397	0.00167	0.00141	0.00202	0.0000188
8X-5, 84.5	685.25	0.971	0.372	0.161	0.0013	0.0495	0.00158	0.00050	0.000068	0.000125	0.000090	0.00052	0.004154	0.00091	0.00146	0.00072	0.0000220
8X-5, 88	688.00	0.501	0.211	0.231	0.0011	0.0571	0.00067	0.00147	0.000171	0.000202	0.000290	0.00111	0.000629	0.00192	0.00167	0.00328	0.0000038
8X-5, 106	707.00	0.511	0.218	0.243	0.0015	0.0601	0.00073	0.00158	0.000092	0.000257	0.000337	0.00150	0.000746	0.00197	0.00158	0.00339	-0.0000160
8X-5, 116	717.00	0.504	0.219	0.258	0.0018	0.0595	0.00065	0.00173	0.000267	0.000194	0.000104	0.00122	0.000582	0.00198	0.00159	0.00342	0.0000259
8X-5, 126	727.00	0.504	0.219	0.258	0.0019	0.0595	0.00065	0.00173	0.000267	0.000194	0.000104	0.00122	0.000582	0.00198	0.00159	0.00342	0.0000259

Note: Depth refers to depth in Core 171B-1049C-8X.

Table T10. Elemental ratios,  $Ba_{\text{bio}}$  and  $P_{\text{ex}}$  calculated from XRF data.

Core, section, interval (cm)	Depth (cm)	U/Th	Cr/Zr	Zr/Rb	Sr/Ca	Ca'	Rb/Sr	Rb/Sr'	Ba <sub>hio</sub> (ppm)	P <sub>nt</sub> (ppm)	P <sub>det</sub> (ppm)	P <sub>ex</sub> (ppm)
171B-1049C-												
8X-1, 2	3.00	0.587	3.62	0.64	0.00249	1.04	0.0530	0.0550	-39	0.0404	0.0193	-0.034540185
8X-1, 20	21.00	1.219	5.31	0.42	0.00240	1.17	0.0345	0.0402	-30	0.0385	0.0126	-0.03152496
8X-1, 40	41.00	0.587	3.26	0.72	0.00245	1.13	0.0409	0.0461	-26	0.0428	0.0163	-0.03674236
8X-1, 60	61.00	0.559	2.62	0.85	0.00250	1.07	0.0532	0.0571	-37	0.0425	0.0198	-0.039946235
8X-1, 80	81.00	0.652	2.00	1.29	0.00300	0.74	0.1240	0.0921	-68	0.0646	0.0385	-0.05563876
8X-1, 100	101.00	1.000	2.28	1.02	0.00237	1.04	0.0636	0.0660	-40	0.0533	0.0226	-0.042320535
8X-1, 120	121.00	1.852	3.06	0.82	0.00253	1.06	0.0555	0.0590	-35	0.0482	0.0203	-0.015449895
8X-1, 140	141.00	0.765	3.57	0.64	0.00256	1.12	0.0425	0.0476	-34	0.0377	0.0161	-0.02865514
8X-2, 10	161.00	0.718	5.84	0.40	0.00253	1.17	0.0316	0.0371	-22	0.0379	0.0125	-0.02810335
8X-2, 20	171.00	1.044	2.78	0.85	0.00244	1.07	0.0551	0.0591	-36	0.0452	0.0198	-0.03710054
8X-2, 30	181.00	1.070	2.81	0.81	0.00241	1.08	0.0546	0.0587	-44	0.0503	0.0194	-0.03895749
8X-2, 50	201.00	0.682	2.23	1.12	0.00298	0.90	0.0805	0.0724	-47	0.0565	0.0290	-0.04640293
8X-2, 70	221.00	0.585	2.80	0.88	0.00270	1.03	0.0577	0.0595	-21	0.0487	0.0213	-0.039334605
8X-2, 90	241.00	0.804	2.32	1.30	0.00290	0.74	0.1273	0.0946	-55	0.0621	0.0405	-0.063581875
8X-2, 110	261.00	1.309	2.26	1.08	0.00278	0.94	0.0746	0.0705	-51	0.0519	0.0286	-0.046995185
8X-2, 130	281.00	1.056	2.36	0.97	0.00267	1.01	0.0627	0.0636	-52	0.0463	0.0249	-0.04606109
8X-3, 0	301.00	0.836	3.18	0.74	0.00259	1.12	0.0414	0.0464	-31	0.0377	0.0169	-0.02939602
8X-3, 20	321.00	0.872	3.14	0.70	0.00255	1.10	0.0481	0.0527	-8	0.0460	0.0189	-0.037027745
8X-3, 40	341.00	2.348	3.84	0.64	0.00264	1.17	0.0293	0.0342	-15	0.0398	0.0126	-0.030125265
8X-3, 60	361.00	0.800	4.05	0.50	0.00266	1.16	0.0315	0.0364	-14	0.0371	0.0128	-0.030411485
8X-3, 80	381.00	1.256	3.55	0.61	0.00270	1.13	0.0390	0.0441	-29	0.0387	0.0161	-0.029684835
8X-3, 100	401.00	1.056	3.32	0.69	0.00266	1.14	0.0355	0.0405	-33	0.0463	0.0149	-0.030430905
8X-3, 120	421.00	0.811	3.04	0.73	0.00260	1.15	0.0330	0.0379	-8	0.0398	0.0132	-0.027889925
8X-3, 140	441.00	0.708	2.69	0.79	0.00274	1.11	0.0416	0.0462	-26	0.0409	0.0174	-0.03317968
8X-4, 10	461.00	0.804	3.09	0.80	0.00280	1.05	0.0518	0.0545	-35	0.0503	0.0216	-0.03838913
8X-4, 30	481.00	0.804	3.10	0.77	0.00271	1.09	0.0460	0.0503	-34	0.0441	0.0191	-0.02970166
8X-4, 50	501.00	0.947	4.47	0.49	0.00257	1.17	0.0300	0.0352	-19	0.0401	0.0124	-0.032907435
8X-4, 70	521.00	0.875	2.61	0.72	0.00260	1.14	0.0377	0.0430	-39	0.0374	0.0150	-0.03285682
8X-4, 90	541.00	0.563	2.93	0.79	0.00261	1.12	0.0416	0.0467	-33	0.0412	0.0169	-0.03289302
8X-4, 110	561.00	1.208	3.81	0.56	0.00249	1.16	0.0366	0.0425	-31	0.0352	0.0140	-0.024150415
8X-4, 130	581.00	0.741	4.05	0.50	0.00245	1.19	0.0313	0.0373	-19	0.0339	0.0116	-0.023188555
8X-5, 5	606.00	0.886	2.25	1.01	0.00261	1.09	0.0499	0.0543	-45	0.0514	0.0208	-0.03872425
8X-5, 15	616.00	1.158	2.53	0.84	0.00252	1.12	0.0460	0.0514	-26	0.0506	0.0192	-0.036296575
8X-5, 25	626.00	0.811	2.67	0.80	0.00250	1.13	0.0443	0.0498	-20	0.0455	0.0182	-0.03012056
8X-5, 33	634.00	0.879	2.34	0.91	0.00250	1.11	0.0485	0.0538	-47	0.0468	0.0200	-0.033271455
8X-5, 36	637.00	0.415	2.07	1.01	0.00246	1.11	0.0495	0.0547	-46	0.0484	0.0201	-0.032279675
8X-5, 38	639.00	0.817	2.35	0.91	0.00232	1.02	0.0771	0.0789	-55	0.0605	0.0277	-0.040814695
8X-5, 40	641.00	0.983	2.13	0.99	0.00246	1.07	0.0596	0.0640	-46	0.0549	0.0229	-0.03867667
8X-5, 42	643.00	0.578	2.13	0.97	0.00251	1.10	0.0515	0.0566	-54	0.0514	0.0199	-0.034960845
8X-5, 44	645.00	1.167	2.63	0.84	0.00248	1.12	0.0466	0.0522	-22	0.0498	0.0201	-0.033532065
8X-5, 46	647.00	1.354	2.44	0.82	0.00245	1.11	0.0520	0.0579	-45	0.0525	0.0199	-0.03608315
8X-5, 48	649.00	0.750	2.52	0.89	0.00247	1.11	0.0495	0.0548	-40	0.0495	0.0204	-0.033633505
8X-5, 50	651.00	1.000	2.01	1.06	0.00249	1.09	0.0507	0.0553	-38	0.0503	0.0207	-0.034718335
8X-5, 52	653.00	0.224	2.38	0.91	0.00248	1.10	0.0506	0.0557	-37	0.0508	0.0207	-0.035256335
8X-5, 54	655.00	0.863	2.06	1.04	0.00251	1.10	0.0530	0.0581	-38	0.0490	0.0207	-0.03341964
8X-5, 56	657.00	1.196	2.16	0.98	0.00251	1.10	0.0517	0.0566	-25	0.0519	0.0206	-0.036239725
8X-5, 58	659.00	0.806	2.20	1.00	0.00249	1.10	0.0514	0.0564	-38	0.0503	0.0213	-0.035273995
8X-5, 61	661.50	0.521	2.28	0.96	0.00246	1.10	0.0526	0.0578	-20	0.0514	0.0214	-0.03369791
8X-5, 65	665.50	0.816	2.11	1.01	0.00247	1.09	0.0547	0.0597	-44	0.0525	0.0216	-0.03495913
8X-5, 70	670.50	0.940	1.53	1.08	0.00118	1.21	0.0576	0.0699	-17	0.0430	0.0120	-0.027122995
8X-5, 75	675.50	0.905	1.39	1.16	0.00117	1.19	0.0666	0.0793	-31	0.0455	0.0146	-0.03218338
8X-5, 80	680.25	0.491	1.38	1.13	0.00132	1.12	0.0842	0.0939	-56	0.0503	0.0216	-0.044017435
8X-5, 84.5	685.25	0.235	1.14	1.35	0.00190	0.87	0.1172	0.1026	-126	0.0576	0.0371	-0.06679261
8X-5, 88	688.00	0.544	0.58	3.13	0.00252	0.50	0.0914	0.0459	-233	0.0247	0.0477	-0.05569615
8X-5, 106	707.00	0.849	2.86	0.46	0.00317	1.11	0.0462	0.0512	-45	0.0336	0.0230	-0.03984628
8X-5, 116	717.00	0.359	2.72	0.46	0.00322	1.12	0.0463	0.0517	-40	0.0304	0.0218	-0.035460655
8X-5, 126	727.00	1.378	3.07	0.37	0.00319	1.13	0.0469	0.0531	-37	0.0301	0.0203	-0.03366359

Note: Depth refers to depth in Core 171B-1049C-8X.