Electronic Supplementary Material

Benthic-pelagic coupling in the Barents Sea: an integrated data-model framework

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Table S1. Reaction network implemented in the organic matter degradation model for the Barents Sea [1,2].

| Reaction | Pathway |
|----------|---------|
| **Primary redox reactions** | |
| $r_1$ | Aerobic respiration |
| $r_2$ | Denitrification |
| $r_3$ | HR Manganese reduction |
| $r_4$ | HR Iron reduction |
| $r_5$ | Organoclastic sulfate reduction |
| $r_6$ | Methanogenesis |
| **Secondary redox reactions** | |
| $r_7$ | Nitrification |
| $r_8$ | Manganese reoxidation by oxygen |
| $r_9$ | Iron reoxidation by HR manganese |
| $r_{10}$ | Iron reoxidation by PR manganese |
| $r_{11}$ | Iron reoxidation by oxygen |
| $r_{12}$ | Sulfide oxidation by oxygen |
| $r_{13}$ | Sulfide oxidation by HR manganese |
| $r_{14}$ | Sulfide oxidation by PR manganese |
| $r_{15}$ | Sulfide oxidation by HR iron |
| $r_{16}$ | Sulfide oxidation by MR iron |
| $r_{17}$ | Sulfide oxidation by PR iron |
| $r_{18}$ | Anaerobic oxidation of methane (AOM) coupled to sulfate reduction |
| $r_{19}$ | Methane oxidation by oxygen |
| $r_{20}$ | Iron sulfide oxidation by oxygen |
| **Other reactions** | |
| $r_{21}$ | HR Mn ageing |
| $r_{22}$ | HR Fe ageing |

HR (Highly Reactive); MR (Moderately Reactive); (PR) Poorly Reactive
Table S2. Stoichiometry and reaction rates implemented in the organic matter degradation model for the Barents Sea [1,2].

| Stoichiometry | Reaction rate |
|---------------|--------------|

### Primary redox reactions

| Reaction | Stoichiometry | Reaction rate |
|----------|---------------|--------------|
| r1       | $(CH_3O)_x(NH_3)_y(H_3PO_4)_z + (x + 2)yO_2 + (y + 2)2HCO_2 \rightarrow (x + y + 2)CO_2 + yNH_4^+ + zHPO_4^{2-} + (x + 2)y + 2)H_2O$ | $r_1 = v \cdot (a + age)^{-1} \cdot CH_3O \cdot f_{o_2}$ |
| r2       | $(CH_3O)_x(NH_3)_y(H_3PO_4)_z + \left(\frac{4x+3y}{5}\right)NO_3^- + \left(\frac{4x+3y+10z}{5}\right)CO_2 + \left(\frac{4x+3y+10z}{5}\right)HCO_3^- + zHPO_4^{2-} + \left(\frac{3x+6y+10z}{5}\right)H_2O$ | $r_2 = v \cdot (a + age)^{-1} \cdot CH_3O \cdot f_{NO_3}$ |
| r3       | $(CH_3O)_x(NH_3)_y(H_3PO_4)_z + 2x HR MnO_2 + (x + y + 2)CO_2 + (x + y + 2)H_2O \rightarrow 2x Mn^{2+} + (4x + y + 2)HCO_3^- + yNH_4^+ + HPO_4^{2-}$ | $r_3 = v \cdot (a + age)^{-1} \cdot CH_3O \cdot f_{HR MnO_2}$ |
| r4       | $(CH_3O)_x(NH_3)_y(H_3PO_4)_z + 4x HR Fe(OH)_3 + (7x + y + 2)CO_2 + 4xFe^{2+} + (8x + y + 2)HCO_3^- + yNH_4^+ + zHPO_4^{2-} + (3x - y + 2)H_2O$ | $r_4 = v \cdot (a + age)^{-1} \cdot CH_3O \cdot f_{HR Fe(OH)_3}$ |
| r5       | $(CH_3O)_x(NH_3)_y(H_3PO_4)_z + \frac{1}{2}SO_4^{2-} + (y - 2)2CO_2 + (y - 2)H_2O \rightarrow \frac{1}{2}H_2S + (x + y - 2)HCO_3^- + yNH_4^+ + zHPO_4^{2-}$ | $r_5 = v \cdot (a + age)^{-1} \cdot CH_3O \cdot f_{SO_4}$ |
| r6       | $(CH_3O)_x(NH_3)_y(H_3PO_4)_z + (y - 2)H_2O \rightarrow \left(\frac{y+2}{2}\right)CO_2 + (y - 2)HCO_3^- + yNH_4^+ + zHPO_4^{2-} + \frac{1}{2}CH_4$ | $r_6 = v \cdot (a + age)^{-1} \cdot CH_3O \cdot f_{CH_4}$ |

### Secondary redox reactions

| Reaction | Stoichiometry | Reaction rate |
|----------|---------------|--------------|
| r7       | $NH_4^+ + 2O_2 + 2HCO_2 \rightarrow NO_3^- + 2CO_2 + 3H_2O$ | $r_7 = k_7 \cdot NH_4^+ \cdot O_2$ |
| r8       | $Mn^{2+} + 2O_2 + 2HCO_2 \rightarrow HR MnO_2 + 2CO_2 + H_2O$ | $r_8 = k_8 \cdot Mn^{2+} \cdot O_2$ |
| r9       | $2Fe^{2+} + HR MnO_2 + 2HCO_2 + 2H_2O \rightarrow HR Fe(OH)_3 + Mn^{2+} + 2CO_2$ | $r_9 = k_9 \cdot Fe^{2+} \cdot HR MnO_2$ |
| r10      | $2Fe^{2+} + PR MnO_2 + 2HCO_2 + 2H_2O \rightarrow HR Fe(OH)_3 + Mn^{2+} + 2CO_2$ | $r_{10} = k_{10} \cdot Fe^{2+} \cdot PR MnO_2$ |
| r11      | $Fe^{2+} + 3O_2 + 2HCO_2 + 2H_2O \rightarrow HR Fe(OH)_3 + 2CO_2$ | $r_{11} = k_{11} \cdot Fe^{2+} \cdot O_2$ |
| r12      | $H_2S + 2O_2 + 2HCO_2 \rightarrow SO_4^{2-} + 2CO_2 + 2H_2O$ | $r_{12} = k_{12} \cdot (HS^- + H_2S) \cdot O_2$ |
| r13      | $H_2S + HR MnO_2 + 2CO_2 \rightarrow Mn^{2+} \rightarrow S_2O_3^- + 2HCO_2$ | $r_{13} = k_{13} \cdot (HS^- + H_2S) \cdot HR MnO_2$ |
| r14      | $H_2S + PR MnO_2 + 2CO_2 \rightarrow Mn^{2+} \rightarrow S_2O_3^- + 2HCO_2$ | $r_{14} = k_{14} \cdot (HS^- + H_2S) \cdot HR MnO_2$ |
| r15      | $H_2S + 2HR Fe(OH)_3 + 4CO_2 \rightarrow 2Fe^{2+} + S_2O_3^- + 4HCO_3^- + H_2O$ | $r_{15} = k_{15} \cdot (HS^- + H_2S) \cdot HR Fe(OH)_3$ |
| r16      | $H_2S + 2MR Fe(OH)_3 + 4CO_2 \rightarrow 2Fe^{2+} + S_2O_3^- + 4HCO_3^- + H_2O$ | $r_{16} = k_{16} \cdot (HS^- + H_2S) \cdot MR Fe(OH)_3$ |
| r17      | $H_2S + 2PR Fe(OH)_3 + 4CO_2 \rightarrow 2Fe^{2+} + S_2O_3^- + 4HCO_3^- + H_2O$ | $r_{17} = k_{17} \cdot (HS^- + H_2S) \cdot PR Fe(OH)_3$ |
| r18      | $CH_4 + CO_2 + SO_4^{2-} \rightarrow 2HCO_3^- + H_2S$ | $r_{18} = k_{18} \cdot CH_4 \cdot SO_4^{2-}$ |
| r19      | $CH_4 + 2O_2 \rightarrow CO_2 + 2H_2O$ | $r_{19} = k_{19} \cdot CH_4 \cdot O_2$ |
| r20      | $FeS + O_2 \rightarrow Fe^{2+}SO_4^{2-}$ | $r_{20} = k_{20} \cdot FeS \cdot O_2$ |

### Other reactions

| Reaction | Stoichiometry | Reaction rate |
|----------|---------------|--------------|
| r21      | $HR MnO_2 \rightarrow PR MnO_2$ | $r_{21} = k_{21} \cdot HR MnO_2$ |
| r22      | $HR Fe(OH)_3 \rightarrow MR Fe(OH)_3$ | $r_{22} = k_{22} \cdot HR Fe(OH)_3$ |
Table S3. General model parameters implemented in the organic matter degradation model for the Barents Sea.

| Parameter                          | Unit | Value | Reference   |
|-----------------------------------|------|-------|-------------|
| **Transport parameters**          |      |       |             |
| Length of model domain            | L    | cm    | 100         | *This study* |
| Bioirrigation coefficient         | $a_\nu$ | yr$^{-1}$ | 10          | [2]         |
| Bioirrigation attenuation depth   | $x_{\text{ari}}$ | cm | 3.5         | [2]         |
| Oxygen molecular diffusion coeff  | $D_{\text{O}_2}$ | cm$^2$ yr$^{-1}$ | 380.44     | [3]         |
| Nitrate molecular diffusion coeff | $D_{\text{NO}_3^-}$ | cm$^2$ yr$^{-1}$ | 394.58     | [3]         |
| Sulfate molecular diffusion coeff | $D_{\text{SO}_4^{2-}}$ | cm$^2$ yr$^{-1}$ | 173.92     | [3]         |
| Ammonium molecular diffusion coeff| $D_{\text{NH}_4^+}$ | cm$^2$ yr$^{-1}$ | 395.87     | [3]         |
| Phosphate molecular diffusion coeff| $D_{\text{PO}_4^{3-}}$ | cm$^2$ yr$^{-1}$ | 112.35     | [3]         |
| Manganese molecular diffusion coeff| $D_{\text{Mn}^{2+}}$ | cm$^2$ yr$^{-1}$ | 123.38     | [3]         |
| Iron molecular diffusion coeff    | $D_{\text{Fe}^{2+}}$ | cm$^2$ yr$^{-1}$ | 136.24     | [3]         |
| Hydrogen sulfide molecular diffusion coeff| $D_{\text{H}_2\text{S}}$ | cm$^2$ yr$^{-1}$ | 331.61     | [3]         |
| Porosity                          | $\phi$ | –     | Site-specific | See table S4 |
| Bioturbation coefficient          | $D_{\text{bio}}$ | cm$^2$ yr$^{-1}$ | Site-specific | See table S4 |
| Bioturbation depth                | $z_{\text{bio}}$ | cm    | Site-specific | See table S4 |
| Sedimentation rate                | $\omega$ | cm yr$^{-1}$ | Site-specific | See table S4 |
| **Reaction parameters**           |      |       |             |
| Stoichiometry constants           | $x/y/z$ | –     | 106/12/1    | [2]         |
| OM Scaling parameter              | $v$  | –     | variable    | [4]         |
| OM Shaping parameter              | $a$  | yr    | variable    | [4]         |
| OM reactivity – multi-G           | $k_{\text{MG}}$ | yr$^{-1}$ | $10^{-15} - \log(\alpha) + 2$ | *This study* |
| OM age                            | $age$ | yr    | variable    | [5]         |
| Oxygen half-saturation constant   | $K_{\text{O}_2}$ | M    | $8.0 \cdot 10^{-9}$ | [3]         |
| Nitrate half-saturation constant  | $K_{\text{NO}_3^-}$ | M | $5.0 \cdot 10^{-9}$ | [3]         |
| Manganese half-saturation constant| $K_{\text{MnO}_4^2}$ | M | $5.0 \cdot 10^{-6}$ | [3]         |
| Iron half-saturation constant     | $K_{\text{Fe(OH)}_3}$ | M | $1.25 \cdot 10^{-3}$ | [3]         |
| Sulfate half-saturation constant  | $K_{\text{SO}_4^{2-}}$ | M | $1.0 \cdot 10^{-7}$ | [3]         |
Table S4. Site-specific transport parameters adopted at each studied location along a 30°E S–N transect in the Barents Sea.

| Parameter                        | Unit  | B13  | B14  | B15  | B16  | B17  |
|----------------------------------|-------|------|------|------|------|------|
| Porosity at sediment-water interface | φ      | –    | 0.89 | 0.91 | 0.92 | 0.82 | 0.82 |
| Porosity at depth                | φ_∞    | –    | 0.62 | 0.71 | 0.62 | 0.50 | 0.62 |
| Porosity attenuation             | φ_ått  | –    | 0.15 | 0.18 | 0.10 | 0.10 | 0.10 |
| Bioturbation coefficient         | D_bio [6] | cm² yr⁻¹ | 6.0 | 4.0 | 2.0 | 2.5 | 2.0 |
| Bioturbation depth               | z_bio [6] | cm   | 2    | 4    | 5    | 5    | 4    |
| Sedimentation rate               | ω [7]  | cm yr⁻¹ | 0.05 | 0.05 | 0.06 | 0.05 | 0.05 |
| Temperature                      | T [8]  | ºC   | 1.76 | 1.94 | −1.50 | −1.45 | 1.75 |
| Salinity                         | S [8]  | –    | 35   | 35   | 35   | 35   | 35   |
| Water depth                      | h [8]  | m    | 355  | 290  | 330  | 294  | 291  |
Table S5. Site-specific reaction parameters determined in this study for each studied location along a 30°E S–N transect in the Barents Sea. Parameters correspond to reaction network outlined in Table S1 and Table S2.

| Parameter | Unit      | B13         | B14         | B15         | B16         | B17         |
|-----------|-----------|-------------|-------------|-------------|-------------|-------------|
| \( k_7 \) | M\(^{-1}\) yr\(^{-1}\) | \( 1.5 \cdot 10^7 \) | \( 1.5 \cdot 10^7 \) | \( 1.5 \cdot 10^{11} \) | \( 1.5 \cdot 10^9 \) | \( 1.5 \cdot 10^{16} \) |
| \( k_8 \) | M\(^{-1}\) yr\(^{-1}\) | \( 2.0 \cdot 10^9 \) | \( 2.0 \cdot 10^4 \) | \( 2.0 \cdot 10^8 \) | \( 2.0 \cdot 10^9 \) | \( 2.0 \cdot 10^{10} \) |
| \( k_9 \) | M\(^{-1}\) yr\(^{-1}\) | \( 2.0 \cdot 10^7 \) | \( 2.0 \cdot 10^7 \) | \( 2.0 \cdot 10^8 \) | \( 2.0 \cdot 10^9 \) | \( 2.0 \cdot 10^9 \) |
| \( k_{10} \) | M\(^{-1}\) yr\(^{-1}\) | \( 2.0 \cdot 10^8 \) | \( 2.0 \cdot 10^8 \) | \( 2.0 \cdot 10^8 \) | \( 2.0 \cdot 10^8 \) | \( 2.0 \cdot 10^8 \) |
| \( k_{11} \) | M\(^{-1}\) yr\(^{-1}\) | \( 1.0 \cdot 10^8 \) | \( 1.0 \cdot 10^9 \) | \( 1.0 \cdot 10^9 \) | \( 1.0 \cdot 10^9 \) | \( 1.0 \cdot 10^9 \) |
| \( k_{12} \) | M\(^{-1}\) yr\(^{-1}\) | \( 1.0 \cdot 10^9 \) | \( 1.0 \cdot 10^9 \) | \( 1.0 \cdot 10^9 \) | \( 1.0 \cdot 10^9 \) | \( 1.0 \cdot 10^9 \) |
| \( k_{13} \) | M\(^{-1}\) yr\(^{-1}\) | \( 1.0 \cdot 10^9 \) | \( 1.0 \cdot 10^9 \) | \( 1.0 \cdot 10^9 \) | \( 1.0 \cdot 10^9 \) | \( 1.0 \cdot 10^9 \) |
| \( k_{14} \) | M\(^{-1}\) yr\(^{-1}\) | \( 1.0 \cdot 10^9 \) | \( 1.0 \cdot 10^9 \) | \( 1.0 \cdot 10^9 \) | \( 1.0 \cdot 10^9 \) | \( 1.0 \cdot 10^9 \) |
| \( k_{15} \) | M\(^{-1}\) yr\(^{-1}\) | \( 1.0 \cdot 10^9 \) | \( 1.0 \cdot 10^9 \) | \( 1.0 \cdot 10^9 \) | \( 1.0 \cdot 10^9 \) | \( 1.0 \cdot 10^9 \) |
| \( k_{16} \) | M\(^{-1}\) yr\(^{-1}\) | \( 1.0 \cdot 10^9 \) | \( 1.0 \cdot 10^9 \) | \( 1.0 \cdot 10^9 \) | \( 1.0 \cdot 10^9 \) | \( 1.0 \cdot 10^9 \) |
| \( k_{17} \) | M\(^{-1}\) yr\(^{-1}\) | \( 1.0 \cdot 10^7 \) | \( 1.0 \cdot 10^7 \) | \( 1.0 \cdot 10^7 \) | \( 1.0 \cdot 10^7 \) | \( 1.0 \cdot 10^7 \) |
| \( k_{18} \) | M\(^{-1}\) yr\(^{-1}\) | \( 5.0 \cdot 10^6 \) | \( 5.0 \cdot 10^6 \) | \( 5.0 \cdot 10^6 \) | \( 5.0 \cdot 10^6 \) | \( 5.0 \cdot 10^6 \) |
| \( k_{19} \) | M\(^{-1}\) yr\(^{-1}\) | \( 1.0 \cdot 10^{13} \) | \( 1.0 \cdot 10^{13} \) | \( 1.0 \cdot 10^{13} \) | \( 1.0 \cdot 10^{13} \) | \( 1.0 \cdot 10^{13} \) |
| \( k_{20} \) | M\(^{-1}\) yr\(^{-1}\) | \( 1.0 \cdot 10^9 \) | \( 1.0 \cdot 10^9 \) | \( 1.0 \cdot 10^9 \) | \( 1.0 \cdot 10^9 \) | \( 1.0 \cdot 10^9 \) |
| \( k_{21} \) | M\(^{-1}\) yr\(^{-1}\) | \( 6.0 \cdot 10^{-1} \) | \( 6.0 \cdot 10^{-1} \) | \( 6.0 \cdot 10^{-1} \) | \( 6.0 \cdot 10^{-1} \) | \( 6.0 \cdot 10^{-1} \) |
| \( k_{22} \) | M\(^{-1}\) yr\(^{-1}\) | \( 6.0 \cdot 10^{-1} \) | \( 6.0 \cdot 10^{-1} \) | \( 6.0 \cdot 10^{-1} \) | \( 6.0 \cdot 10^{-1} \) | \( 6.0 \cdot 10^{-1} \) |
Table S6. Model-derived relative contributions of each metabolic pathway to total rates of heterotrophic organic matter degradation.

| Site | Aerobic respiration | Denitrification | Manganese reduction | Iron reduction | Sulfate reduction |
|------|---------------------|-----------------|---------------------|---------------|------------------|
| B13  | 64.1                | 4.2             | 0.5                 | 0.5           | 30.8             |
| B14  | 52.6                | 8.3             | 7.3                 | 3.1           | 28.7             |
| B15  | 52.9                | 11.6            | 0.01                | 0.4           | 35.1             |
| B16  | 74.6                | 3.8             | 2.9                 | 0.4           | 18.2             |
| B17  | 43.6                | 8.2             | 17.0                | 0.8           | 30.4             |
### Table S7. Model-derived relative contributions of each transport pathway to total ammonium and phosphate benthic fluxes across the sediment-water interface.

| Site | Diffusion | Bioturbation | Bioirrigation | Advection | Diffusion | Bioturbation | Bioirrigation | Advection |
|------|-----------|--------------|---------------|-----------|-----------|--------------|---------------|-----------|
| B13  | 59.2      | 1.1          | 39.7          | <0.01     | 90.1      | 5.9          | 4.0           | <0.01     |
| B14  | 92.9      | 1.1          | 6.0           | <0.01     | 94.3      | 3.9          | 1.8           | <0.01     |
| B15  | 31.2      | 0.2          | 68.6          | <0.01     | 90.7      | 2.2          | 7.1           | <0.01     |
| B16  | 76.8      | 0.8          | 22.4          | <0.01     | 93.4      | 3.4          | 3.2           | <0.01     |
| B17  | 82.8      | 0.6          | 16.6          | <0.01     | 94.8      | 2.4          | 2.9           | <0.01     |
Figure S1. Oxygen concentration profiles measured in bottom waters and sediments along the 30°E S–N transect in the Barents Sea in July 2019 (RRS James Clark Ross – JR18006) [9]. Profiles were determined in 2–3 intact cores containing visually undisturbed bottom water and surface sediments from independent megacorer deployments (coloured dots) at each station. Depth profiles measured direct from cores using a FireSting O2-Mini sensor (Pyro Science) mounted on a plastic support with a mobile arm which allowed data acquisition at 0.5–1.0 cm scale. Dashed line represents the sediment-water interface. No data available at B17 since this station was inaccessible at the time of sampling.
Figure S2. Depth evolution of heterotrophic organic matter degradation rates along the 30°E S–N transect in the Barents Sea. Rates are calculated assuming steady-state conditions and are derived from the primary redox reactions in Table S1 and S2. The top row (a–e) shows the depth profiles of total rates of degradation, and the bottom row (f–j) displays the depth evolution of relative contribution for each respiration pathway.
Table S8. Measured downcore concentration profiles used to inform the data-model fitting at site B13 (cruise JR16006 – July 2017).

| Event | Depth cmbsf | Porewater | Sediment |
|-------|-------------|-----------|-----------|
|       | $NO_3^-$ μM | $NH_4^+$ μM | $PO_4^{3-}$ μM | $Mn^{2+}$ μM | $Fe^{2+}$ μM | Event | Depth cmbsf | $TOC$ (R1) | $TOC$ (R2) |
|       |             |           |           |               |               |       |             | wt%        | wt%        |
| E101  | 0.5         | 12.8      | 2.1       | 1.2           | 0.0           | 0.0   | 0.25        | 2.25       | 2.201      |
|       | 1.5         | 11.9      | 2.3       | 1.3           | 0.0           | 0.0   | 0.75        | 2.061      | 2.002      |
|       | 2.5         | 6.6       | 9.4       | 1.2           | 1.1           | 9.8   | 1.25        | 1.935      | 1.984      |
|       | 4.5         | 0.9       | 30.1      | 1.2           | 1.9           | 56.2  | 1.75        | 1.874      |            |
|       | 6.5         | 0.6       | 32.6      | 1.1           | 1.3           | 27.8  | 2.5         | 1.829      | 1.946      |
|       | 8.5         | 0.8       | 39.6      | 2.0           | 1.6           | 26.1  | 3.5         | 1.975      | 1.908      |
|       | 10.5        | 1.9       | 24.8      | 1.2           | 2.3           | 26.6  | 4.5         | 1.904      |            |
|       | 12.5        | 0.7       | 30.5      | 2.6           | 3.4           | 52.8  | 5.5         | 1.898      | 1.917      |
|       | 14.5        | 0.9       | 29.7      | 0.7           | 3.2           | 50.6  | 6.5         | 1.776      | 1.796      |
|       | 16.5        | 1.0       | 31.3      | 0.8           | 3.0           | 48.1  | 7.5         | 1.802      | 1.747      |
|       | 18.5        | 1.0       | 36.6      | 0.5           | 3.2           | 54.1  | 8.5         | 1.616      | 1.69       |
|       | 20.5        | 0.6       | 36.7      | 0.4           | 4.0           | 68.7  | 9.5         | 1.525      | 1.432      |
|       | 25.5        | 0.5       | 37.8      | 0.2           | 3.8           | 68.7  | 10.5        | 1.399      | 1.472      |
|       |             |           |           |               |               |       | 11.5        | 1.386      | 1.464      |
| E102  | 0.5         | 9.0       | 1.1       | 0.8           | 0.8           | 0.0   | 12.5        | 1.373      | 1.458      |
|       | 1.5         | 6.4       | 9.2       | 1.8           | 10.9          | 45.2  | 13.5        | 1.361      | 1.296      |
|       | 2.5         | 2.5       | 27.2      | 2.6           | 10.5          | 83.6  | 14.5        | 1.261      | 1.221      |
|       | 4.5         | 1.7       | 41.3      | 1.2           | 8.8           | 79.1  | 15.5        | 1.257      | 1.237      |
|       | 6.5         | 0.9       | 46.2      | 1.2           | 11.3          | 112.9 | 16.5        | 1.042      | 1.146      |
|       | 8.5         | 1.3       | 40.2      | 2.2           | 12.6          | 113.0 | 17.5        | 1.24       | 1.24       |
|       | 10.5        | 0.7       | 39.1      | 1.8           | 16.2          | 102.1 | 18.5        | 1.109      | 1.196      |
|       | 12.5        | 2.0       | 24.7      | 3.0           | 7.3           | 37.9  | 19.5        | 1.212      | 1.208      |
|       | 14.5        | 0.6       | 36.3      | 2.4           | 6.1           | 60.7  | 19.5        | 1.212      | 1.208      |
|       | 16.5        | 0.8       | 36.5      | 2.6           | 5.1           | 43.8  | 19.5        | 1.212      | 1.208      |
|       | 18.5        | 0.7       | 41.8      | 1.5           | 5.6           | 55.2  | 19.5        | 1.212      | 1.208      |
|       | 20.5        | 0.5       | 44.9      | 0.4           | 5.3           | 64.4  | 19.5        | 1.212      | 1.208      |
|       | 25.5        | 0.7       | 47.5      | 1.1           | 4.7           | 81.3  | 19.5        | 1.212      | 1.208      |
| E104  | 0.5         | 9.3       | 1.9       | 0.8           | 0.9           | 0.0   | 12.5        | 1.212      | 1.208      |
|       | 1.5         | 8.6       | 5.3       | 1.8           | 2.7           | 10.1  | 12.5        | 1.212      | 1.208      |
|       | 2.5         | 4.0       | 12.7      | 1.8           | 3.6           | 17.4  | 12.5        | 1.212      | 1.208      |
|       | 4.5         | 0.4       | 40.1      | 1.0           | 4.6           | 67.7  | 12.5        | 1.212      | 1.208      |
|       | 6.5         | 0.7       | 37.4      | 2.3           | 5.2           | 56.1  | 12.5        | 1.212      | 1.208      |
|       | 8.5         | 0.5       | 35.9      | 3.3           | 6.1           | 37.7  | 12.5        | 1.212      | 1.208      |
|       | 10.5        | 0.6       | 38.2      | 4.2           | 6.8           | 39.4  | 12.5        | 1.212      | 1.208      |
|       | 12.5        | 0.7       | 35.8      | 3.9           | 8.7           | 40.6  | 12.5        | 1.212      | 1.208      |
|       | 14.5        | 0.5       | 37.3      | 3.9           | 9.0           | 35.4  | 12.5        | 1.212      | 1.208      |
|       | 16.5        | 0.5       | 39.4      | 4.2           | 9.7           | 20.7  | 12.5        | 1.212      | 1.208      |
|       | 18.5        | 0.5       | 39.7      | 4.7           | 6.2           | 30.7  | 12.5        | 1.212      | 1.208      |
|       | 20.5        | 0.3       | 40.6      | 3.4           | 4.5           | 33.0  | 12.5        | 1.212      | 1.208      |
|       | 25.5        | 0.7       | 45.1      | 4.1           | 3.5           | 40.3  | 12.5        | 1.212      | 1.208      |
|       | 30.5        | 0.6       | 47.0      | 3.9           |               |       | 12.5        | 1.212      | 1.208      |
Table S9. Measured downcore concentration profiles used to inform the data-model fitting at site B14 (cruise JR16006 – July 2017).

| Event | Depth cmbsf | \(NO_3^-\) µM | \(NH_4^+\) µM | \(PO_4^{3-}\) µM | \(Mn^{2+}\) µM | \(Fe^{2+}\) µM | Event | Depth cmbsf | \(TOC\) (R1) wt% | \(TOC\) (R2) wt% |
|-------|-------------|----------------|----------------|----------------|----------------|----------------|-------|-------------|----------------|----------------|
| E292  | 0.5         | 13.9           | 3.3            | 1.5            | 15.4           |                 | 0.25   | 2.5         | 2.5            | 2.5            |
|       | 1.5         | 4.6            | 10.3           | 1.2            | 16.9           |                 | 0.75   | 2.3         | 2.4            | 2.4            |
|       | 2.5         | 2.4            | 23.3           | 2.4            | 0.0            |                 | 1.25   | 2.4         | 2.4            | 2.4            |
|       | 4.5         | 2.9            | 22.9           | 1.8            | 0.0            |                 | 1.75   | 2.3         | 2.4            | 2.4            |
|       | 6.5         | 1.7            | 28.2           | 1.6            | 1.4            |                 | 2.5    | 2.4         |                 |                 |
|       | 8.5         | 1.6            | 24.2           | 1.6            | 2.8            |                 | 3.5    | 2.4         | 2.4            | 2.4            |
|       | 10.5        | 1.5            | 22.2           | 1.2            | 2.5            |                 | 4.5    | 2.3         | 2.2            | 2.2            |
|       | 12.5        | 1.7            | 19.4           | 1.5            | 2.5            |                 | 5.5    | 2.4         | 2.3            | 2.3            |
|       | 14.5        | 1.5            | 19.8           | 1.9            | 4.6            |                 | 6.5    | 2.2         | 2.1            |                 |
|       | 16.5        | 1.5            | 19.9           | 2.4            | 2.7            |                 | 7.5    | 2.2         | 2.2            |                 |
|       | 18.5        | 1.6            | 26.2           | 3.2            | 2.2            |                 | 7.5    | 2.2         | 2.2            |                 |
|       | 20.5        | 2.0            | 33.2           | 3.8            | 1.8            |                 | 9.5    | 2.0         | 2.0            |                 |
|       | 25.5        | 2.0            | 44.0           | 6.4            | 1.4            |                 | 10.5   | 2.1         | 2.0            |                 |
|       | 30.5        | 2.2            | 48.7           | 7.3            | 1.0            |                 | 11.5   | 2.1         | 2.2            |                 |
|       |             |                |                |                |                | E295            | 12.5   | 2.0         | 2.1            |                 |
| E294  | 0.5         | 12.0           | 3.3            | 1.0            | 3.2            | 0.0             | 13.5   | 2.0         | 2.0            |                 |
|       | 1.5         | 6.1            | 14.4           | 1.5            | 49.1           | 32.3            | 14.5   | 2.0         | 2.0            |                 |
|       | 2.5         | 2.4            | 32.3           | 5.2            | 26.9           | 126.6           | 15.5   | 1.9         |                 |                 |
|       | 4.5         | 1.8            | 33.8           | 5.7            | 15.5           | 125.2           | 16.5   | 2.2         | 1.9            |                 |
|       | 6.5         | 1.4            | 37.3           | 6.2            | 10.1           | 122.8           | 17.5   | 1.9         | 1.8            |                 |
|       | 8.5         | 1.4            | 38.0           | 5.6            | 15.6           | 111.8           | 18.5   | 1.9         | 1.8            |                 |
|       | 10.5        | 1.4            | 34.1           | 7.2            | 6.9            | 99.6            | 19.5   | 1.9         |                 |                 |
|       | 12.5        | 1.6            | 32.0           | 4.4            | 6.2            | 77.5            | 20.5   | 1.7         | 1.8            |                 |
|       | 14.5        | 1.5            | 40.9           | 5.2            | 7.3            | 105.3           | 21.5   | 1.7         | 1.8            |                 |
|       | 16.5        | 1.3            | 47.8           | 7.6            | 7.7            | 139.1           | 22.5   | 1.7         | 1.7            |                 |
|       | 18.5        | 1.5            | 49.6           | 6.4            | 8.8            | 126.8           | 23.5   | 1.7         | 1.8            |                 |
|       | 20.5        | 1.4            | 56.9           | 8.1            | 10.2           | 128.3           | 24.5   | 1.6         | 1.7            |                 |
|       | 25.5        | 1.6            | 67.9           | 9.0            | 10.3           | 109.9           | 25.5   | 1.7         | 1.7            |                 |
|       | 30.5        | 1.7            | 66.1           | 9.0            | 11.1           | 104.3           | 26.5   | 1.6         | 1.6            |                 |
|       |             |                |                |                |                | E295            | 27.5   | 1.6         | 1.6            |                 |
| E295  | 0.5         | 12.8           | 5.2            | 1.3            | 1.9            | 0.0             | 28.5   | 1.6         | 1.6            |                 |
|       | 1.5         | 5.3            | 19.6           | 3.2            | 31.6           | 91.8            | 29.5   | 1.7         | 1.7            |                 |
|       | 2.5         | 2.2            | 25.6           | 5.2            | 24.6           | 108.1           | 30.5   | 1.7         | 1.7            |                 |
|       | 4.5         | 1.6            | 31.6           | 5.9            | 9.6            | 99.8            | 31.5   | 1.6         | 1.6            |                 |
|       | 6.5         | 1.6            | 26.2           | 3.4            | 5.4            | 62.7            | 32.5   | 1.5         | 1.5            |                 |
|       | 8.5         | 1.5            | 25.4           | 3.2            | 3.1            | 55.9            |        |             |                 |                 |
|       | 10.5        | 1.7            | 25.6           | 2.8            | 2.8            | 41.6            |        |             |                 |                 |
|       | 12.5        | 2.1            | 24.2           | 3.4            | 3.7            | 34.0            |        |             |                 |                 |
|       | 14.5        | 1.6            | 28.4           | 4.8            | 2.5            | 38.2            |        |             |                 |                 |
|       | 16.5        | 1.6            | 32.3           | 4.9            | 2.4            | 34.8            |        |             |                 |                 |
|       | 18.5        | 1.5            | 37.5           | 6.2            | 3.0            | 41.9            |        |             |                 |                 |
|       | 20.5        | 1.7            | 38.2           | 6.2            | 2.9            | 38.7            |        |             |                 |                 |
|       | 25.5        | 1.5            | 46.4           | 7.9            | 3.5            | 46.3            |        |             |                 |                 |
|       | 30.5        | 1.5            | 50.2           | 8.4            | 3.2            | 45.2            |        |             |                 |                 |
Table S10. Measured downcore concentration profiles used to inform the data-model fitting at site B15 (cruise JR16006 – July 2017).

| Event | Depth cmbsf | Porewater $NO_3^-$ μM | $NH_4^+$ μM | $PO_4^{3-}$ μM | $Mn^{2+}$ μM | $Fe^{2+}$ μM | Sediment TOC (R1) wt% | TOC (R2) wt% |
|-------|-------------|-------------------------|-------------|---------------|--------------|--------------|----------------------|--------------|
| E144  | 0.5         | 12.3                    | 0.6         | 1.8           | 0.0          | 0.0          | 0.25                 | 1.7          | 1.7          |
|       | 1.5         | 14.0                    | 0.3         | 1.9           | 0.0          | 0.0          | 1.25                 | 1.7          | 1.8          |
|       | 2.5         | 13.7                    | 0.6         | 2.2           | 0.0          | 0.0          | 1.75                 | 1.8          | 1.9          |
|       | 4.5         | 7.5                     | 0.2         | 2.1           | 5.2          | 0.0          | 2.5                  | 1.8          | 1.8          |
|       | 6.5         | 1.3                     | 1.0         | 2.3           | 22.4         | 0.0          | 3.5                  | 1.7          | 1.6          |
|       | 8.5         | 1.9                     | 3.4         | 3.1           | 33.8         | 0.0          | 4.5                  | 1.6          | 1.6          |
|       | 10.5        | 1.0                     | 6.9         | 1.3           | 43.5         | 26.5         | 5.5                  | 1.5          | 1.6          |
|       | 12.5        | 2.1                     | 7.6         | 0.8           | 38.8         | 49.1         | 6.5                  | 1.5          | 1.6          |
|       | 14.5        | 0.7                     | 10.5        | 0.7           | 40.4         | 84.0         | 7.5                  | 1.4          | 1.4          |
|       | 16.5        | 1.8                     | 13.5        | 0.5           | 45.4         | 106.1        | 8.5                  | 1.4          | 1.5          |
|       | 18.5        | 1.2                     | 10.2        | 0.2           | 47.1         | 113.6        | 9.5                  | 1.4          | 1.4          |
|       | 20.5        | 0.8                     | 22.2        | 0.8           | 107.6        | 102.5        | 10.5                 | 1.3          | 1.3          |
|       | 22.5        | 0.6                     | 32.4        | 2.4           | 99.4         | 157.2        | 11.5                 | 1.4          | 1.5          |
|       | 25.5        | 0.5                     | 35.0        | 1.4           | 106.0        | 168.3        | 12.5                 | 1.5          | 1.5          |
|       | 30.5        | 0.5                     | 35.0        | 1.4           | 106.0        | 168.3        | 13.5                 | 1.5          | 1.5          |
| E145  | 0.5         | 11.8                    | 0.2         | 1.2           | 0.0          | 0.0          | 14.5                 | 1.5          | 1.4          |
|       | 1.5         | 11.8                    | 0.0         | 1.3           | 0.0          | 0.0          | 15.5                 | 1.5          | 1.5          |
|       | 2.5         | 11.3                    | 0.1         | 1.7           | 0.0          | 0.0          | 16.5                 | 1.5          | 1.5          |
|       | 4.5         | 8.5                     | 0.1         | 2.0           | 10.4         | 0.0          | 17.5                 | 1.5          | 1.4          |
|       | 6.5         | 3.0                     | 1.3         | 1.8           | 41.4         | 0.0          | 18.5                 | 1.5          | 1.5          |
|       | 8.5         | 1.7                     | 3.8         | 1.3           | 55.4         | 11.9         | 19.5                 | 1.5          | 1.5          |
|       | 10.5        | 0.6                     | 0.5         | 69.2          | 22.1         | 2.0          | 20.5                 | 1.4          | 1.4          |
|       | 12.5        | 0.5                     | 13.6        | 59.7          | 35.9         | 21.5        | 21.5                 | 1.5          | 1.5          |
|       | 14.5        | 0.9                     | 15.9        | 66.3          | 48.8         | 22.5        | 23.5                 | 1.5          | 1.4          |
|       | 16.5        | 1.0                     | 16.3        | 78.1          | 83.0         | 23.5        | 23.5                 | 1.5          | 1.4          |
|       | 18.5        | 0.5                     | 13.6        | 90.4          | 105.0        | 24.5        | 24.5                 | 1.4          | 1.4          |
|       | 20.5        | 2.5                     | 13.6        | 90.4          | 105.0        | 25.5        | 25.5                 | 1.5          | 1.5          |
|       | 22.5        | 2.5                     | 13.6        | 90.4          | 105.0        | 28.5        | 28.5                 | 1.5          | 1.5          |
|       | 25.5        | 2.5                     | 13.6        | 90.4          | 105.0        | 28.5        | 28.5                 | 1.5          | 1.5          |
|       | 30.5        | 2.5                     | 13.6        | 90.4          | 105.0        | 28.5        | 28.5                 | 1.5          | 1.5          |
| E146  | 0.5         | 1.7                     | 0.3         | 0.0           | 0.0          | 0.0          | 29.5                 | 1.4          | 1.5          |
|       | 1.5         | 11.7                    | 1.1         | 0.9           | 0.0          | 0.0          | 30.5                 | 1.5          | 1.4          |
|       | 2.5         | 13.5                    | 3.2         | 1.2           | 0.0          | 0.0          | 31.5                 | 1.4          | 1.5          |
|       | 4.5         | 11.5                    | 3.2         | 1.4           | 22.7         | 0.0          | 32.5                 | 1.3          | 1.3          |
|       | 6.5         | 4.5                     | 1.5         | 1.4           | 104.7        | 14.9         | 32.5                 | 1.3          | 1.3          |
|       | 8.5         | 1.7                     | 6.3         | 1.6           | 82.2         | 0.0          |                      |              |              |
|       | 10.5        | 1.6                     | 9.8         | 1.7           | 98.3         | 0.0          |                      |              |              |
|       | 12.5        | 1.9                     | 10.0        | 1.8           | 93.1         | 0.0          |                      |              |              |
|       | 14.5        | 0.9                     | 15.0        | 1.5           | 91.3         | 0.0          |                      |              |              |
|       | 16.5        | 0.8                     | 17.8        | 1.1           | 70.1         | 192.9        |                      |              |              |
|       | 18.5        | 0.7                     | 14.8        | 0.5           | 74.4         | 134.6        |                      |              |              |
|       | 20.5        | 1.2                     | 23.4        | 0.3           | 74.3         | 105.8        |                      |              |              |
|       | 22.5        | 1.1                     | 26.6        | 0.1           |              |              |                      |              |              |
|       | 25.5        | 1.2                     | 19.7        | 0.2           | 75.1         | 78.2          |                      |              |              |
|       | 30.5        | 1.3                     | 38.9        | 0.2           | 75.1         | 78.2          |                      |              |              |
Table S11. Measured downcore concentration profiles used to inform the data-model fitting at site B16 (cruise JR16006 – July 2017).

| Event | Depth cmbsf | $NO_3^-$ µM | $NH_4^+$ µM | $PO_4^{3-}$ µM | $Mn^{2+}$ µM | $Fe^{2+}$ µM |
|-------|-------------|--------------|-------------|----------------|-------------|-------------|
| E183  | 0.5         | 12.1         | 4.2         | 1.2            | 0.0         | 0.0         |
|       | 1.5         | 10.5         | 3.2         | 1.6            | 0.0         | 0.0         |
|       | 2.5         | 7.1          | 5.7         | 1.3            | 7.1         | 0.0         |
|       | 4.5         | 2.6          | 15.8        | 2.2            | 26.5        | 77.6        |
|       | 6.5         | 1.7          | 19.8        | 1.6            | 31.0        | 70.2        |
|       | 8.5         | 1.3          | 19.4        | 1.9            | 20.5        | 45.8        |
|       | 10.5        | 1.4          | 20.6        | 1.7            | 19.7        | 51.3        |
|       | 12.5        | 1.7          | 21.4        | 1.2            | 17.3        | 54.4        |
|       | 14.5        | 1.8          | 21.8        | 0.9            | 20.1        | 56.7        |
|       | 16.5        | 2.0          | 21.6        | 1.0            | 23.8        | 60.4        |
|       | 18.5        | 1.7          | 23.8        | 0.8            | 22.3        | 64.7        |
|       | 20.5        | 1.9          | 26.5        | 0.9            | 27.1        | 67.2        |
|       | 25.5        | 1.5          | 32.9        | 1.1            | 25.2        | 97.6        |
|       | 30.5        | 1.4          | 36.7        | 2.0            | 23.0        | 97.6        |

| Event | Depth cmbsf | $TOC$ (R1) wt% | $TOC$ (R2) wt% |
|-------|-------------|----------------|----------------|
| E183  | 0.5         | 13.5           | 1.2            |
|       | 1.5         | 9.4            | 1.1            |
|       | 2.5         | 8.4            | 1.1            |
|       | 4.5         | 4.4            | 1.1            |
|       | 6.5         | 1.4            | 1.1            |
|       | 8.5         | 1.6            | 1.1            |
| E184  | 10.5        | 1.5            | 1.1            |
|       | 12.5        | 1.4            | 1.1            |
|       | 14.5        | 1.4            | 1.1            |
|       | 16.5        | 1.4            | 1.1            |
|       | 18.5        | 1.4            | 1.1            |
|       | 20.5        | 1.4            | 1.1            |
|       | 25.5        | 1.4            | 1.1            |

| Event | Depth cmbsf | $TOC$ (R1) wt% | $TOC$ (R2) wt% |
|-------|-------------|----------------|----------------|
| E185  | 0.5         | 12.2           | 1.1            |
|       | 1.5         | 8.4            | 1.0            |
|       | 2.5         | 6.4            | 1.3            |
|       | 4.5         | 1.8            | 1.2            |
|       | 6.5         | 2.3            | 1.1            |
|       | 8.5         | 1.4            | 1.1            |
| E185  | 10.5        | 8.5            | 1.1            |
Table S12. Measured downcore concentration profiles used to inform the data-model fitting at site B17 (cruise JR16006 – July 2017).

| Event | Depth cmbsf | Porewater | Sediment |
|-------|-------------|-----------|----------|
|       | NO$_3^-$ $\mu$M | NH$_4^+$ $\mu$M | PO$_4^{3-}$ $\mu$M | Mn$^{2+}$ $\mu$M | Fe$^{2+}$ $\mu$M | Event | Depth cmbsf | TOC (R1) wt% | TOC (R2) wt% |
| E223  | 0.5 | 12.1 | 0.4 | 0.8 | 0.0 | 0.0 | 0.3 | 1.6 | 1.7 |
|       | 1.5 | 12.5 | 0.4 | 2.0 | 0.0 | 0.0 | 0.5 | 1.7 | 1.8 |
|       | 2.5 | 3.3 | 3.9 | 1.9 | 65.4 | 0.0 | 1.3 | 1.6 | 1.7 |
|       | 4.5 | 1.4 | 16.4 | 3.5 | 108.1 | 110.4 | 1.8 | 1.7 | 1.7 |
|       | 6.5 | 0.8 | 23.7 | 1.3 | 118.2 | 182.0 | 2.5 | 1.5 | 1.6 |
|       | 8.5 | 1.2 | 25.3 | 4.3 | 122.1 | 117.0 | 3.5 | 1.4 | 1.5 |
|       | 10.5 | 1.2 | 34.9 | 3.8 | 110.7 | 133.5 | 4.5 | 1.4 | 1.4 |
|       | 12.5 | 1.3 | 33.4 | 3.3 | 97.9 | 196.1 | 5.5 | 1.2 | 1.3 |
|       | 14.5 | 0.8 | 32.5 | 1.7 | 77.3 | 152.8 | 6.5 | 1.1 | 1.2 |
|       | 16.5 | 0.9 | 35.0 | 7.8 | 80.5 | 169.4 | 7.5 | 1.1 | 1.2 |
|       | 18.5 | 0.8 | 34.8 | 2.1 | 75.6 | 150.8 | 8.5 | 1.1 | 1.1 |
|       | 20.5 | 1.1 | 33.3 | 2.4 | 72.0 | 126.0 | 9.5 | 1.0 | 1.1 |
|       | 25.5 | 1.8 | 35.6 | 1.5 | 68.9 | 99.6 | 10.5 | 1.1 | 1.0 |
|       | 30.5 | 0.3 | 14.0 | 0.3 | 53.4 | 125.3 | 11.5 | 1.0 | 1.0 |
|       |     |     |     |     |     |     |     |     |     
| E225  | 0.5 | 11.6 | 1.4 | 1.0 | 0.0 | 0.0 | 13.5 | 1.0 | 1.0 |
|       | 1.5 | 9.8 | 0.5 | 1.7 | 0.0 | 0.0 | 14.5 | 1.1 | 1.0 |
|       | 2.5 | 6.3 | 2.8 | 1.6 | 35.9 | 0.0 | 15.5 | 1.1 | 1.2 |
|       | 4.5 | 0.8 | 21.5 | 2.8 | 102.2 | 184.1 | 16.5 | 1.1 | 1.2 |
|       | 6.5 | 0.7 | 29.4 | 6.2 | 107.0 | 189.4 | 17.5 | 1.0 | 1.1 |
|       | 8.5 | 1.0 | 30.1 | 3.1 | 99.8 | 191.6 | 18.5 | 1.0 | 1.1 |
|       | 10.5 | 0.7 | 35.1 | 5.6 | 87.2 | 211.9 | 19.5 | 1.0 | 1.0 |
|       | 12.5 | 1.2 | 40.4 | 2.2 | 79.8 | 212.6 | 20.5 | 0.9 | 0.9 |
|       | 14.5 | 0.9 | 41.5 | 3.7 | 80.4 | 200.5 | 21.5 | 0.8 | 0.9 |
|       | 16.5 | 1.5 | 42.7 | 2.7 | 75.1 | 192.8 | 22.5 | 0.9 | 0.9 |
|       | 18.5 | 0.9 | 47.0 | 3.6 | 69.7 | 185.8 | 23.5 | 0.9 | 0.9 |
|       | 20.5 | 0.9 | 59.8 | 4.1 | 66.1 | 183.6 | 24.5 | 0.9 | 0.9 |
|       | 25.5 | 0.8 | 51.2 | 4.5 | 63.4 | 172.2 | 25.5 | 0.9 | 0.9 |
|       | 30.5 | 1.0 | 50.9 | 3.8 | 62.4 | 158.8 | 26.5 | 0.9 | 0.9 |
|       |     |     |     |     |     |     |     |     |     
| E226  | 0.5 | 11.3 | 0.0 | 0.6 | 0.0 | 0.0 | 28.5 | 0.8 | 0.8 |
|       | 1.5 | 14.0 | 2.3 | 1.2 | 3.0 | 0.0 | 29.5 | 0.8 | 0.8 |
|       | 2.5 | 4.7 | 11.8 | 1.3 | 54.8 | 0.0 | 30.5 | 0.8 | 0.8 |
|       | 4.5 | 1.1 | 18.4 | 2.5 | 180.0 | 57.5 | 31.5 | 0.7 | 0.7 |
|       | 6.5 | 0.9 | 32.1 | 5.6 | 151.4 | 187.5 | 32.5 | 0.7 | 0.8 |
|       | 8.5 | 1.0 | 34.5 | 5.0 | 137.3 | 198.6 | 33.5 | 0.8 | 0.8 |
|       | 10.5 | 1.2 | 35.4 | 5.9 | 120.9 | 164.3 | 20.5 | 0.8 | 0.8 |
|       | 12.5 | 1.3 | 43.0 | 2.3 | 98.8 | 224.1 | 20.5 | 0.8 | 0.8 |
|       | 14.5 | 1.0 | 45.3 | 3.6 | 96.2 | 208.5 | 18.5 | 0.8 | 0.8 |
|       | 16.5 | 0.8 | 39.7 | 1.9 | 96.4 | 211.7 | 18.5 | 0.8 | 0.8 |
|       | 20.5 | 0.8 | 48.6 | 2.7 | 83.5 | 207.1 | 20.5 | 0.8 | 0.8 |
|       | 25.5 | 1.0 | 46.6 | 2.7 | 75.6 | 175.0 | 25.5 | 0.8 | 0.8 |
|       | 30.5 | 1.0 | 59.6 | 2.7 | 68.6 | 152.3 | 30.5 | 0.8 | 0.8 |
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