$$\left\{ \mathbb{E}\left[0, \ 0, \ \sqrt{B_i} - \frac{1}{2} \left(a_i \sqrt{B_i} \right) \epsilon + O[\epsilon]^2 \right], \right.$$

$$\left. \mathbb{E}\left[0, \ 0, \ \frac{1}{\sqrt{B_i}} + \frac{a_i \epsilon}{2 \sqrt{B_i}} + O[\epsilon]^2 \right] \right\}$$