

(a)

Sea level rise
pre-monsoonal input

Freshwater and
nutrient input

Gradual freshening
of surface

Primary production bloom

Remineralization of sinking organic matter
Reduced supply of O_2

Stratification

Anammox

Denitrifiers outcompete anammox

Possible
photoc zone euxinia

"Black Sea-like"
water column

Split anoxia

Early development of seafloor anoxia

Anammox

Anoxia

Euxinia

Organic-rich sediment

Sapropel
onset

Sapropel
core

Sapropel
termination

Time

S5

(b)

Freshwater and
nutrient input

Primary production bloom

Remineralization of sinking organic matter
Reduced supply of O_2

Stratification

Anammox

Denitrifiers outcompete anammox

Anammox
compete with
phototrophs

Shoaling
of
euxinia
into
photic zone

Inflow
Ventilated deep water

Possible split
anoxia

Possible split
anoxia

Development of
seafloor anoxia

Anammox

Anoxia

Euxinia

Organic-rich sediment

Sapropel
onset

Sapropel
core

Sapropel
termination

Time

S65

Post-sapropel
anammox