7. Kapasitas adsorben variasi Zeolit 270 gram dan Karbon Aktif 270 gram (V1)

a. COD

$$qe\ Zeolit\ V1 = \frac{(513{,}6 - 414)\ x\ 3}{270} = 1{,}106{,}67\ mg/g$$

$$qe\ Karbon\ Aktif\ V1 = \frac{(513{,}6 - 414)\ x\ 3}{270} = 1{,}106{,}67\ mg/g$$

b. BOD

$$qe\ Zeolit\ V1 = \frac{(45{,}7 - 35{,}75)\ x\ 3}{270} = 0{,}110{,}56\ mg/g$$

$$qe\ Karbon\ Aktif\ V1 = \frac{(45{,}7 - 35{,}75)\ x\ 3}{270} = 0{,}110{,}56\ mg/g$$

c. Deterjen (surfaktan)

$$qe\ Zeolit\ V1 = \frac{(480 - 359{,}5)\ x\ 3}{270} = 1{,}338{,}89\ mg/g$$

$$qe\ Karbon\ Aktif\ V1 = \frac{(480 - 359{,}5)\ x\ 3}{270} = 1{,}338{,}89\ mg/g$$

8. Kapasitas adsorben variasi Zeolit 540 gram dan Karbon Aktif 540 gram (V2)

a. COD

$$qe\ Zeolit\ V2 = \frac{(513{,}6 - 433)\ x\ 3}{540} = 0{,}447{,}78\ mg/g$$

$$qe\ Karbon\ Aktif\ V2 = \frac{(513{,}6 - 433)\ x\ 3}{540} = 0{,}447{,}78\ mg/g$$

b. BOD

$$qe\ Zeolit\ V2 = \frac{(45{,}7 - 39{,}1)\ x\ 3}{540} = 0{,}036{,}67\ mg/g$$

$$qe\ Karbon\ Aktif\ V2 = \frac{(45{,}7 - 39{,}1)\ x\ 3}{540} = 0{,}036{,}67\ mg/g$$

c. Deterjen (surfaktan)

$$qe\ Zeolit\ V2 = \frac{(480 - 381{,}15)\ x\ 3}{540} = 0{,}549{,}2\ mg/g$$

$$qe\ Karbon\ Aktif\ V2 = \frac{(480 - 381{,}15)\ x\ 3}{540} = 0{,}549{,}2\ mg/g$$

9. Kapasitas adsorben variasi Zeolit 540 gram dan Karbon Aktif 270 gram (V3)

a. COD

$$qe\ Zeolit\ V3 = \frac{(513{,}6 - 406)\ x\ 3}{540} = 0{,}59778\ mg/g$$

$$qe\ Karbon\ Aktif\ V3 = \frac{(513{,}6 - 406)\ x\ 3}{270} = 1{,}19556\ mg/g$$

b. BOD

$$qe\ Zeolit\ V3 = \frac{(45{,}7 - 19{,}25)\ x\ 3}{540} = 0{,}14694\ mg/g$$

$$qe\ Karbon\ Aktif\ V3 = \frac{(45{,}7 - 19{,}25)\ x\ 3}{270} = 0{,}29389\ mg/g$$

c. Deterjen (surfaktan)

$$qe\ Zeolit\ V3 = \frac{(480 - 317{,}25)\ x\ 3}{540} = 0{,}9042\ mg/g$$

$$qe\ Karbon\ Aktif\ V3 = \frac{(480 - 317{,}25)\ x\ 3}{270} = 1{,}8083\ mg/g$$

10. Kapasitas adsorben variasi Zeolit 270 gram dan Karbon Aktif 540 gram (V4)

a. COD

$$qe\ Zeolit\ V4 = \frac{(513{,}6 - 436)\ x\ 3}{270} = 0{,}86222\ mg/g$$

$$qe\ Karbon\ Aktif\ V4 = \frac{(513{,}6 - 436)\ x\ 3}{540} = 0{,}43111\ mg/g$$

b. BOD

$$qe\ Zeolit\ V4 = \frac{(45{,}7 - 38)\ x\ 3}{270} = 0{,}08556\ mg/g$$

$$qe\ Karbon\ Aktif\ V4 = \frac{(45{,}7 - 38)\ x\ 3}{540} = 0{,}04278\ mg/g$$

c. Deterjen (surfaktan)

$$qe\ Zeolit\ V4 = \frac{(480 - 358)\ x\ 3}{270} = 1{,}35555\ mg/g$$

$$qe\ Karbon\ Aktif\ V4 = \frac{(480 - 358)\ x\ 3}{540} = 0{,}67778\ mg/g$$

11. Kapasitas adsorben variasi Zeolit 810 gram dan Karbon Aktif 810 gram (V5)

a. COD

$$qe\ Zeolit\ V5 = \frac{(513{,}6 - 372{,}8)\ x\ 3}{810} = 0{,}5215\ mg/g$$

$$qe\ Karbon\ Aktif\ V5 = \frac{(513{,}6 - 372{,}8)\ x\ 3}{810} = 0{,}5215\ mg/g$$

b. BOD

$$qe\ Zeolit\ Continous = \frac{(45{,}7 - 41{,}7)\ x\ 3}{810} = 0{,}0148\ mg/g$$

$$qe\ Karbon\ Aktif\ Continous = \frac{(45{,}7 - 41{,}7)\ x\ 3}{810} = 0{,}0148\ mg/g$$

c. Deterjen (surfaktan)

$$qe\ Zeolit\ V5 = \frac{(480 - 382{,}5)\ x\ 3}{810} = 0{,}361\ mg/g$$

$$qe\ KArbon\ Aktif\ V5 = \frac{(480 - 382{,}5)\ x\ 3}{810} = 0{,}361\ mg/g$$

12. Kapasitas adsorben variasi Zeolit 270 gram dan Karbon Aktif 540 gram (Batch)

a. COD

$$qe\ Zeolit\ Batch = \frac{(513{,}6 - 401{,}3)\ x\ 3}{270} = 1{,}24778\ mg/g$$

$$qe\ Karbon\ Aktif\ Batch = \frac{(513{,}6 - 401{,}3)\ x\ 3}{540} = 0{,}62389 mg/g$$

b. BOD

$$qe\ Zeolit\ Batch = \frac{(45{,}7 - 11{,}37)\ x\ 3}{270} = 0{,}38144\ mg/g$$

$$qe\ Karbon\ Aktif\ Batch = \frac{(45{,}7 - 11{,}37)\ x\ 3}{540} = 0{,}19072 mg/g$$

v

c. Deterjen (surfaktan)

$$qe\ Zeolit\ Batch = \frac{(480 - 34{,}2)\ x\ 3}{270} = 4{,}95333\ mg/g$$

$$qe\ Karbon\ Aktif\ Batch = \frac{(480 - 34{,}2)\ x\ 3}{540} = 2{,}47667\ mg/g$$