Assignment 5

For questions 1-5 of this assignment, surface (0-5 cm) and subsurface (5-20 cm) soil samples from 15 sites of a manure-applied field adjacent to the Stroubles Creek were analyzed for bioavailable nitrate and orthophosphate. There were 4 replicate tests for each soil sample. Please answer the following questions using the data listed in the EXCEL file. You are required to attach an EXCEL file showing all your calculations and figures in addition to the answers in the word file.

1. Please use the calculated concentrations of nitrate and orthophosphate in soils to plot figure(s) to illustrate:
   - Comparison of nitrate concentrations in the surface soil (0-5 cm) at different sites
   - Comparison of nitrate concentrations in the subsurface soil (5-20 cm) at different sites
   - Comparison of nitrate concentrations between surface soil and subsurface soil at different sites
   - Comparison of orthophosphate concentrations in the surface soil (0-5 cm) at different sites
   - Comparison of orthophosphate concentrations in the subsurface soil (5-20 cm) at different sites
   - Comparison of orthophosphate concentrations between surface soil and subsurface soil at different sites

   Please include all calculations and figures in the EXCEL file and submit. Please think about what the best way is to show the readers an overall picture of your data in the figure(s)

2. Sites 13, 14, and 15 are in the vegetative buffer strip between the field and the Stroubles Creek. Based on your data, do you think this vegetative buffer strip is effective for reducing the input of nitrate and orthophosphate into the creek? Yes or no answer is not enough. You need to use the data to support/explain your claim.