

Engineering has reviewed the plans for the Valvoline Instant oil Change project submitted September 14, 2017 and have the following comments:

**Stormwater Management Permit Application Form**

1. IV. Project Information; Line Item 6, 7 and 8: Line item 6 lists 7,857 square feet of existing impervious surface within the property area. LI 7 lists 10,067sf of existing to be removed and LI 8 lists zero (0) square feet of impervious to remain. LI 7 should be 7,857sf. I will strikethrough the 10,067sf number and write in 7,857sf with your permission.
2. IV. Project Information; Line Item #14: Based on the Post-Development Drainage Map, there appears to be a small amount of off-site impervious surface area draining to the wetland. Line Item #15 also speaks to some amount of offsite draining to the SCM. That amount should be separated from the Impervious Pavement square footage and listed as Offsite (sf) in this table. I'd expect the total impervious area to remain at 14,468sf.

**Stormwater and Erosion Impact Analysis**

3. What would happen if the outlet structure became clogged or failed to operate properly? Can you run a scenario for the 50-year storm with the outlet structure inoperable? Can an emergency spillway be constructed to move the design storm flows to the Willow Woods roadside swale if the wetland is overtopped in the 50-year with the outlet structure clogged? The top of the wetland needs to be a minimum of 18.75' (6 inches higher than the wsel of the 50-year storm). All of this is predicated on the technical standard found on page 5-6 (Ch. V.D.4; Detention and Wet Retention Facilities) of the SW Ordinance.
4. Proposed Water Quality Volumes: I can't follow the stage-storage contour areas and volumes. The plan view of the wetland on sheet C5.1 shows one forebay and one deep pool, but the water quality volumes has one forebay and two deep pools. What is the Main Wetland Area Only? I assume the Total Wetland is the cumulative areas and volumes for the Forebay, Deep Pool(s) and Main Wetland Area Only? Please make this page easier to follow. Double check values for the Small Stormwater Wetland Water Quality Calculations
5. Small Stormwater Wetland Drawdown Method: The contour areas don't seem to be consistent with the wetland stage-storage values. The 0.75" orifice will drain the temporary pool volume in a 2 to 5 day period but the calculations don't appear correct.
6. Make sure the supplement is updated with any revisions to the wetland design. The City will accept the Supplement-EZ form found under Forms at:  
<https://deq.nc.gov/about/divisions/energy-mineral-land-resources/energy-mineral-land-permit-guidance/stormwater-bmp-manual>  
This supplement form is updated for the new MDCs and is probably easier to complete than the old supplement.
7. Provide HGL calculations for the 10 and 50-year storms for the trench drain/pipe system. The 10-year must not surcharge above the rim elevation and the 50-year cannot flood structures or impede emergency access. Assign an appropriate tailwater condition.

Please submit the revised application page, calculations, supplement and any other supporting documentation to Engineering for additional review. Please call or email if there are any questions. Thank you.