6	To examine S7.C, I choose first to point out that S4.C.2. Solid materials storage over concrete surfaces ought to specify that the concrete structures are cleaned of stored manure, organic materials, and manure water at some frequency to then identify failures (cracks and larger voids) to adequately seal them prior to subsequent loading with manure and/or organic solids (and yes, this is elaborated in S4.C.3 to some degree). As for soil pads, NRCS does not advocate the practice of waste storage over soil pads in WA State (the exception being waste storage ponds with low permeability and maintenance means to maintain the specific discharge criterium you now include in this draft permit. Soil pads for manure stacking essentially turn into muck-fest-city when it comes time to remove the solids even during the driest month of each year. In general, this is the case even on the Eastern side of the state where drier conditions exist, and any liner effect that may have been designed into such dry stack earthen structures/locations are destroyed beyond simple repairs by the tires or tracks of the tractors/loaders used to scoop up the stacked solids over soil pads. Now I can do the work to design a soil pad system that would not be destroyed by the equipment, but in a nutshell, such a system would be more expensive than a properly designed concrete pad, and it would also be an operation and maintenance nightmare that I would not wish upon anybody. So, if someone is arguing that soil pads work, the likelihood that I can imagine them *looking like they work* is that the natural base is sand or sand and gravel, and in this situation the manure water that seeps out of the floor of the stacked manure, with very high concentrations of efffluent other than water, does go down into the sand/gravel base and *sort of looks like it works* . In fact, that black manure water seeped into the soil and got deep enough down into the soil where it will potentially make its way into the water table somewhere at greater depth.
7	In appendix A, the permit gives a definition for TMDL. This comment is not about the definition. This comment is about the feasibility of figuring out if any pollutant source is contributing more or less than its allocated amount of pollutants. In S3.A, there is language regarding which discharges are authorized by this permit referring to approved TMDLs and established waste load allocation for CAFOs. In a nutshell, the first paragraph under S3 and the parts of S3 (S3.A and S3.B) are essentially outside of any reasonable methods that designers, operators, and maintenance parties can feasibly work to hold down discharges that may or may not be authorized by any permit. In my work as an engineer, I have been a party to multiple efforts to design production area structures, operations, and maintenance measures that meet or exceed the requirements of all Federal, State, and Local laws and permits, and S3.C, in this case, is where I would have to hang my hat regarding the possibility that an unauthorized discharge may occur. Summarizing, and I have written in with similar comments before, unless there are means to desgin production facility structures and operation and maintenance plans that abide by clearly established thresholds depicting the local maximum authorized flux of the pollutants, even qualified and experienced professionals cannot put together designs and then sleep at night owing to the potential of there being down-the-road accusations and/or lawsuits that threaten their professional license as a result of extraordinarily complicated and amorphous permit language. I can assume that things like standing water in corrals can occur and exist for an arbitrary amount of time with no inkling of whether or not the specific discharge into groundwater of pollutants is greater than your defined threshold for waste storage ponds, but it is much clearer if such a threshold applies to the multitude of locations found in essentially all production areas where water is going to percolate beyond the vadose zone to then end up in groundwater at uncontrolled and unknown rates (rates for which no estimate is ever carried out and documented).

8	Regarding S7.C.2, as stated in paragraph 2 of the Engineering Technical Note 23 Washington State NRCS Assessment Procedure for Existing Waste Storage Ponds (WSP), "The NRCS assessment should not be construed to provide ANY regulatory certainty from State regulatory agencies. State of Washington laws and rules prohibit pollution of waters of the state, including ground water. The state requires a permit for discharge of wastewater to waters of the state. This document does not supersede these requirements." Furthermore, the Engineering Technical Note 23 Washington State NRCS Assessment Procedure for Existing Waste Storage Ponds (WSP) does not pertain to S4.C of the draft permit (e.g. the technical note does not examine the maximum allowable specific discharge of any existing WSP). Note, in addition, that the Engineering Technical Note 23 states under the topic of PROCEDURE that "Through this procedure, NRCS personnel will establish an overall assessment category of a WSP." Again, it is critical to highlight that we cannot be responsible for the regulatory aspects of permits since our agency assists landowners who voluntarily seek to carry out conservation practices. In summary, we recommend that the Washington Department of Ecology not rely on the Engineering Technical Note 23 for any part of the NPDES permit(s) for concentrated animal feeding operations. Instead, your offices may opt to develop pertinent assessment tools for the requirements of S7.C.
9	Pertinent to S7.C.4, it is unclear how to identify deficiencies. Both means to assess soil pads, through a qualifed expert or by completing the double-ring infiltrometer test, lend themselves to variable results and wide interpretation unless multiple double-ring infiltrometer tests are performed and additional means/tests/computations are applied that give reason to qualify the results of these infiltration rate tests. A separate test that NRCS commonly uses to examine the viabiliity of WSP liners is to acquire multiple samples via the proper use of Shelby tubes to acquire undistubed core samples in conjunction with using flexible-wall permeability tests (ASTM D5084-16a). Note that doing this for an existing WSP is likely to be rather onerus in that cleaning away of the stored solids and adequate time to to have conditions that allow people access to the liner/soil that is beneath the solids is no easy trick.