Responses to Comments for the							
Draft Final Site Inspection (SI) QAPP, Biak Traning Center Brett Hall, Powell Butte, OR							
Response Code: A = Agree with comment D = Disagree with comment C = Comment requires clarification							
Comment Number	**Commenter**	**Page(s)**	**Section**	**Line(s)**	**Comment**	**Response Code**	**Response**
TECHNICAL COMMENTS							
1	Hafley			227	Ann Farris can remain DEQ POC, but D. Hafley is interim POC and completing review of document.		
2	Hafley			347	Please identify the approximate number of individuals using the well. Also, whether the on-site well has been tested for PFAS.		
3	Hafley			359	If know, please indicate the type of foams used (e.g., C8 vs C6, or both)		
4	Hafley			390	"Holocene" is mis-spelled.		
5	Hafley			419	In this section, discuss whether any perching of groundwater is either known or suspected. Please discussion site hydrogeology and can be surmised from on-site well log, assuming that it is available. If it is not, identify the source of information including depth to groundwater.		
6	Hafley			441	The surmised groundwater flow direction is presumably based local topography. Please elucidate. This is important given the proposal of a single monitoring well located downgradient of known PFAS release areas, and the significant depth at which groundwater is expected to occur. It should also be noted that groundwater flow is complex/mixed volcanic deposits can be highly variable.		
7	Hafley			534	See comment #6 about surmised groundwater flow direction.		
8	Hafley			538	Also 554. Information on PFAS type, amount, etc. is generally absent. Please provide more information if possible.		
9	Hafley			717	The schedule needs to be updated as it currently shows field work to have been completed in September 2021. Also, asterisk(s) are present but not explained in Notes.		
10	Hafley			907	Please identify the thickness of the soil horizons that will be sampled (6"?). DEQ recommends collecting samples from the full length of individual cores, augers, etc. (composite of, say, 0-2' rather than 0-6") to increase the likelihood of detecting contamination.		

11	Hafley			971	In the QAPP, assessment of potential groundwater impacts is based on a single well, downgradient from AFFF use areas in the **surmised** groundwater flow direction. DEQ has concerns about the uncertainty associated with this approach: we would would typically recommend a mininum of three wells, but acknowledges challenges including expected depth to groundwater. More discussion of gradient would help support the sampling approach, including whether groundwater is expected to occur in an "interflow zone", fractured basalt, or granular media where common advective transport processes might be expected to occur. Please include and discuss the **well log** for the on-site supply well (vis-a-vis site hydrogeology) in support both the depth of the boring/coring, location, etc. An alternative to the monitoring well approach would be multi-level groundwater sampling from a boring located closer/within the PFAS release area, including a determination of whether perched groundwater may be present.		
12	Hafley			1017	Please discuss whether previous sampling of the on-site well for PFAS has occurred, and any available sampling results. If not sampled to date, please sample. If previously sampled and non-detect, please identify date, analytical suite, method, and detection limits. Regarding, water elevation,all reasonable effort should be made to obtain water elevation data from the well.		
13	Hafley			other	It is unclear whether sampling of the proposed monitoring well will be a single event, or multiple events will occur as commonly		
EDITORIAL COMMENTS							
1	Hafley				Information presented in the QAPP, specifically related to the proposed monitoring well,and interpreparation of groundwater flow, constitutes the practice of geology in the State of Oregon. The document should be prepared or approved by a state-registered professional geologist		
2	Hafley				There is insufficient information presented in the SI QAPP for DEQ to ascertain whether the permanent groundwater monitoring well approach is sound. Given that AFFF is known to have been released at two site AOCs, a higher standard of confidence seems warranted.		