RAMBOLL

ENVIRONMENT
& HEALTH

Ms. Wanda Washington
FOCUS
PO Box 28
Tallevast, FL 34270

Re: Review of the 2023 Annual Wetlands Monitoring Report,
Lockheed Martin Tallevast Site, Manatee County Florida

September 15. 2023

Dear Ms. Washington,

At your request, I have reviewed the 2023 Annual Wetlands Monitoring Report (the "2023 WMR"), recently prepared on behalf of LMC for the Tallevast Site (AECOM, August 30, 2023). This Report documents the results and interpretations of the recent monitoring of wetland conditions around the Tallevast Site and the potential impacts of the ground water pumping for remediation of the contamination historically released at the LMC facility on Tallevast Road. As a result of my review, I would offer the following observations and comments.

Ramboll
10150 Highland Manor Drive
Suite 440
Tampa, FL 33610
USA

T +1 813 628 4325
F +1 813 628 4983
https://ramboll.com

The monitoring documented by AECOM appears, in general, to be following the approved permits and plans for assessment of wetland impacts. This report covers the past year but also provides longer-term data on trends in wetland conditions and ground water levels in the surrounding Upper Shallow Aquifer System (USAS).

Only one wetland is still monitored today: Target Wetland 6 (TW-6), located on the south side of Tallevast Road, east of the LMC facility. A second Reference Wetland 3 (RW-3), located farther southeast of the LMC facility and largely in the area affected by pumping of the Ground Water Recovery and Treatment System (GRTS), was removed with FDEP approval from the monitoring program in February 2023 to facilitate the development of the property by a third-party owner. The 2023 WMR states that the loss of this wetland will be mitigated by the developer, but there are no details provided as to how this will be done. In the interim LMC apparently plans to curtail any further monitoring of "background" conditions, and instead plans to use historic monitoring records to assess background conditions in its place. I addressed this issue in my comments on the 2022 WMR and recommended that one of the other former reference wetlands be reactivated to replace RW-3. I also note that in a January 20, 2023 Memorandum to File of Record, SWFWMD staff (Cassidy Hinson) recommended that when RW-3 was removed from the monitoring program, alternative reference wetlands should be "*looked into*" for future monitoring and comparison to TW-6. This recommendation, however, was not noted or requested in SWFWMD's comments on the 2022 WMR, so at present it is unclear what position SWFWMD is taking on this issue.

The continuing need for a contemporary reference wetland is demonstrated by AECOM's comments on the potential causes of the current low water conditions in TW-6 today as compared to other historic periods of drought. AECOM notes that the average water levels beneath TW-6 over the 2022-2023 monitoring period were lower than observed during an even more severe drought in 2011-2012. This is attributed to three factors: the moderate drought conditions that occurred in the Spring and through June of 2023; the redirection of surface runoff (sheet-flow) from the Tallevast Road ROW[1] that occurred with the development of the Amazon facility just east of TW-6 circa 2021; and the increased GRTS pumping and reduced recharge into RC-7002 that began in 2019. This attribution, however, only serves to illustrate that conditions affecting surface water hydrology and local recharge of the USAS around TW-6 are varied and complex, and have been changing in recent years. The absence of monitoring data for RW-3, post February 2023, diminishes the quality of any attempted analysis of the relative impact each of these three factors is currently having on TW-6 conditions, and of the relative benefits of further increases of discharges into RC-7002 to offset the continued low water conditions around the wetland that apparently continue to persist. [2]

Ground water and seasonal surface water levels in and around TW-6 have remained below the long-term norms during the first half of the current reporting period (June 2022- June 2023), but ground water levels in the surrounding USAS began to partially recover with the restart of the RC-7002 infiltration gallery in late January 2023. Throughout the entire year-long monitoring period, however, the wetland apparently did not exhibit any ponded surface water other than during a brief two-to-three week period following the passage of Hurricane Irma through the area in September 2022.[3] This wetland has been dry for the vast majority of the past three years, since LMC stopped the recharge of water into the adjoining infiltration gallery in 2019 and simultaneously increased pumping for the other nearby collection galleries.[4] The fact that this continues to be the case indicates that the area has not yet fully recovered from the increased local pumping and reduced recharge that began in 2019.

AECOM attributes the continued lower water conditions around the TW-6 wetland to be partly the result of a moderate drought, but also the loss of surface water runoff from along a 0.25 mile section of Tallevast Road east of the TW-6 wetland (see discussions in Section 9.3.2 and 9.4.1 of the 2023 WMR). The runoff from the roadway is apparently now captured by the drainage systems on the Amazon property along the south side of the road.[5] Assuming, generously, that the runoff from the southern half of the roadway captured 60 percent of the total annual rainfall that normally falls on this "watershed", it would amount to at most about 750,000 gallons of water recharging into TW-6 over the entire year. In comparison, the RC-7002 infiltration gallery historically (pre-2019) recharged about 10,000,000 gallons per year of treated water along the boundary of the wetland. The rate of recharge varied seasonally, with well over 1,000,000 gallons per month being applied in the Spring seasons (see 2020 RASR, Table 5). In comparison, the

[1] This sheet flow provided a source of surface runoff to help maintain a supply of water to the wetland.
[2] Data from this background wetland provides a relatively "clean" measure of the impact of drought conditions alone on wetland water supply, absent the other confounding influences of pumping and artificial recharge by the GRTS.
[3] Normally, the wetland would be expected to contain some amount of ponded surface water at least during the summer rainy season and early Fall.
[4] The only observed periods of ponded water in the wetland in the past three years followed the passage of tropical storms in November 2020 and again in September 2022; ponding apparently lasted only for a few weeks thereafter.
[5] This runoff allegedly formerly drained in a roadside ditch to the west and into TW-6.

recent recharge rate into RC-7002 since January 2023, when its use was restored, has only been about 400-500,000 gallons per month (see 2023 WMR, Figure 8-1) or less than half of the historic norm. Simultaneously, the nearby collection galleries (EW-2103 and EW-2104) continue to pump well above historic levels and in-excess-of the rate authorized in the WUP issued by SWFWMD for these individual “wells”. It seems apparent, therefore, that the continued lower water conditions exhibited by TW-6 throughout the reporting period is more the result of the increased pumping conditions and the only partial restoration of recharge into RC-7002. While reduced runoff from Tallevast Road post 2021 may play a role, it is at best a minor contributor to the overall water shortfall in the wetland area.

In this 2023 WMR AECOM did not discuss how much water it intends to discharge into RC-7002 going forward to offset the current pumping from the EW-2103 and EW-2104 galleries and to fully restore wetland water supplies. Neither has it indicated how long it expects this higher rate of gallery pumping to continue. The currently reported discharges to RC-7002, however, are less than half the pre-2019 levels; and this reflects a period before the gallery pumping was increased. It would be very beneficial for the FDEP, SWFWMD and community stakeholder reviewers if a more thorough discussion could be included in the upcoming 2023 RASR currently being prepared by AECOM/LMC, reflecting its analysis of this issue and its intentions in this regard.

The continued lower ground water conditions around TW-6 notwithstanding, AECOM reported that the encroachment of upland vegetation (ceasarweed) into the deepest portion of the wetland has diminished from 20 to about 10 percent of the area in the current reporting period. This is an encouraging trend that hopefully will continue.

If you have any questions regarding these observations and comments, I would be happy to discuss them with you further.

Very truly yours,

Robert L Powell PhD, PE
Principal