Jeanne Zokovitch Paben
Brett M. Paben, Attorney at Law
P.O. Box 20603
Sarasota, Florida 34276

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Florida Department of Environmental Protection
Southwest District Office and Business and Professional Services
Waste Cleanup

Tallevast Community Concerns Re: Lockheed Martin Cleanup
Sent via email.

Dear Mr. Brian Dougherty, Mr. Mike Bland, and Mr. Philip Wilkerson,

On behalf of Family Oriented Community United Strong, Inc. (FOCUS) and the Tallevast community who live atop the 200+ acre groundwater plume of industrial solvents, which has been "actively" undergoing clean up by Lockheed Martin for almost ten years, I submit these comments. The purpose of this letter is to attempt to put in one document, in summary fashion the systemic and ongoing failures of Lockheed Martin in its investigation and clean up at the former ABC site, and to impress upon FDEP the need to hold them accountable or allow the US EPA to step in and do so.

Specifically, these comments continue to document the same three primary concerns regarding Lockheed's Remedial Action activities for its contamination emanating from the ABC site that we have expressed to FDEP on numerous occasions. Our previous comments have been based upon on our review of data produced by Lockheed after more than five years of operation of the remediation system. Now after more than nine years of operation of the remediation system and almost fifteen years since the beginning of the treatment through the IRAP, it continues to be abundantly clear that Lockheed's system is not operating as predicted or approved which has resulted in the following primary issues:

1. continued movement and/or redefinition of the southeast edge of the plume,
2. contradicting data as to whether or not the remediation system is fully capturing the northwest edge of the plume,
3. clear evidence that even proximate to the site Lockheed's assessment remains woefully inadequate which has led to areas of recalcitrant contamination within the plume, and
4. continued unknown risks to Tallevast residents, many who were already exposed to high levels of contamination through consuming contaminated groundwater from private drinking water wells for years, including after Lockheed's discovery of contamination.

With respect to the first issue, while the community appreciates that FDEP has pushed Lockheed to further define the southeast edge of the plume, the length of time that it is taking for Lockheed to perform preliminary steps to define the plume is appalling to the community. This action should have and could have been prevented if FDEP and Lockheed had listened to the community concerns to address the unassessed areas twenty years ago. The rules require that responsible parties receive approval for the Site Assessment Report only after the contamination

has been delineated. FDEP approved Lockheed's 4th Site Assessment Report in September 2006 determining that the plume had been mostly delineated and that additional delineation would continue during the Remedial Action Plan development phase. However, the rules require that at the time a RAP is approved that the responsible party has verified the plume – not delineated it for the first time. It is imperative for sound remediation practices (and required by the Florida Administrative Code) that the plume be delineated both horizontally and vertically and that the location of the contamination be well understood before the remedy is designed. FDEP approved Lockheed's 4th Remedial Action Plan in November 2010 with the understanding that the plume had been delineated at that time. The Remedial Action Plan also defined the extent of the capture zone of the remedial action system and used modeling to predict the plume configuration at the time of RAP implementation.

In 2011, FOCUS challenged FDEP's approval of that RAP indicating, among other deficiencies, that the plume had not been properly delineated nor verified. Some of the evidence in support of this finding that we presented at the Division of Administrative Hearings (DOAH) was Lockheed's own model and assessment data. Their reports showed that the model predictions were already incorrect and that the plume had migrated beyond the estimated delineation approaching the edge of the capture zone. Despite this fact that the model used as a basis for the capture zone was flawed and that the contamination was not behaving as predicted, no additional assessment was required until after more than five years of operation when there was no denying that the contamination plume substantially spread beyond the capture zone. This is further evidence that Lockheed did not understand the location and magnitude of the plume. Large gaps in delineation left unassessed contamination to continue to dissolve and migrate resulting in a remedial action system so deficient that instead of recovering the extent of the plume it continued to migrate further to the southeast beyond the capture zone. The realization that this could be true was a primary motivator for Lockheed to increase the amount of USAS pumping at the galleries east of the facility in 2019. The additional investigations of this southeast area have expanded to the LSAS and resulted in changes to the mapped plume, but additional assessment of this LSAS contamination is warranted as the southern extent of this contamination, and the security of the pumping system attempting to control it, cannot be verified without additional data points.

Secondly, FDEP's failure to require additional assessment despite Lockheed's contradictory information regarding full capture of the northwest edge of the plume, is not acceptable. We implore you to immediately request that Lockheed better explain these contradictions and that you utilize appropriate experts to evaluate the conflict. Throughout its investigation and cleanup, Lockheed has relied on a combination of 1) groundwater contamination concentrations and hydrogeologic data, 2) modeling to evaluate plume movement and inform the development and maintenance of the capture zone, and 3) professional judgement to estimate the capture zone. At times, these three have conflicted, including with respect to the full capture of the northwest edge of the plume, and more broadly the areas north of the Lockheed facility across Tallevast Road. While all three are utilized in evaluating contamination and clean up at sites where there are contradictions that could impact the adequacy of a pump and treat system's capture zone, a responsible party should clearly identify such contradictions and explain how these were resolved to support their conclusions. At this site, Lockheed has instead established a pattern of practice of burying information regarding such contradictions into appendices of voluminous

reports and not just failing to explain the contradictions but failing to own that these contradictions even exist. Furthermore, Lockheed has, at times, solely relied on one piece of information in making its conclusions and recommendations. For example, the flow of groundwater on their maps uses professional judgement in lieu of their model or their actual field measurements.

Although this is extremely troublesome for the impacted community and its experts, it is exacerbated by the fact that despite repeated requests for FDEP to ask Lockheed to explain such discrepancies and to adequately report such contradictions in the body of its reports, FDEP has made no such request. For this reason, Lockheed continues to operate without addressing such salient issues, thereby tainting any of the decisions it makes and FDEP approves based on a "pick and choose" approach to the data Lockheed finds most favorable.

Related to the above areas of concern is an overarching concern FOCUS has continued to raise which is that FDEP is relying on Lockheed to support its conclusions including when its conclusions involve contradictions within its own data. In addition to the modeling, another example of this is the "plume stability analysis" provided by Lockheed. Our experts tell us that there are fundamental flaws in the way this was conducted. Forty percent of the USAS groundwater data used in the plume stability analysis was from dynamic samples from extraction wells, which are not representative of in situ conditions or the plume itself. It did not evaluate the stability of the plume in the area of the newly detected 1,4-dioxane migration. Yet very definitive conclusions about the stability of the plume were made. It is FDEP's job to use a critical eye to evaluate if the analyses conducted support correct conclusions. To do so, FDEP has to have access to the expertise necessary to evaluate all of the data and the underlying methodologies that Lockheed is using. Failure to have this expertise means that FDEP cannot perform its oversight job.

Further, FOCUS understands that FDEP is under-resourced and not able to staff at the levels necessary to assure that all areas of expertise utilized by Lockheed have an FDEP staff member with sufficient expertise to digest all of this information. For example, at the time of the RAP challenge and many times since, FOCUS and its technical experts have continued to request that FDEP engage an independent reviewer with a particular expertise. At times, the community has also indicated that FDEP should rely on EPA in its oversight role to fill any of these expertise gaps. Yet none of these options have been pursued. Without additional technical support, FDEP cannot meaningfully review and should not approve any regulatory compliance where the justifications are provided through areas beyond FDEP's technical expertise. This includes all decisions where the modeling data has been relied upon to make conclusions.

Additionally, while there is significant concern regarding delineation of the plume at its outside edges, plume delineation requires actual understanding of the whole plume not just control of the edges. Without this, the ability to assess and choose an effective remedial action plan is impossible. Lockheed's failure to delineate the plume has been well documented but they have also failed to document the contamination within the plume itself, particularly in the densely populated residential area closest to the site.

This is of great concern because the Upper Surficial Aquifer System is the zone that has been most misunderstood by Lockheed and where their predictions have failed. If the contamination in the USAS is not understood, especially within the residential area adjacent to the source property, the situation not only poses challenges to the success of the remedial system but also draws into question whether there are active pathways of exposure that have gone undetected. In the 2009 RAP, Lockheed predicted that the USAS TCE plume would be 4.1 acres at the time the RAP system began operating in 2013. At the 2012 DOAH hearing challenging the RAP the plume was already beyond the area predicted in the RAP documents. Then after five years of operation in 2018 the USAS TCE plume had grown to 13 acres. To be clear after five years of attempting to clean this contamination up, it had not reduced but in fact had expanded by more than 300% of where they said they would be at RAP system startup.

Similarly, in the 2009 RAP, Lockheed predicted that the USAS 1,4-Dioxane plume would be 10 acres at the time the RAP system was planned to start in 2012. At the 2012 DOAH hearing challenging the RAP the plume had migrated beyond the plume configuration predicted in the RAP documents. Then after five years of operation in 2018 the USAS 1,4-Dioxane plume had grown to 38 acres. Again, to be clear after five years of attempting to clean this contamination up, it had not reduced but in fact had expanded by nearly 400% of where they said it would be at system startup.

Also, of significant concern is the risk that the shallow contamination that has likely existed and been unassessed may have on the residents in the area adjacent to the source property. Without any institutional or engineering controls there are no legal/regulatory restrictions on property use that may impact the USAS and there are no physical impediments to prevent any exposure to community members from this groundwater contamination. Any activity that results in accessing even the shallow groundwater in the USAS means likely encountering contaminated groundwater and therefore, exposures occur. Further, decisions made to address stormwater that involve creating surface impoundments have risks if they 1) encounter the shallow water table and 2) if they redirect the movement of groundwater . A recent development for Amazon installed a relatively significant stormwater pond near the southeastern edge of the plume without FDEP representatives overseeing the ABC cleanup even being aware of such plans. This pond is likely having an effect on the movement of groundwater, thereby an effect on the movement of contamination in this area. Further, our scientific experts have raised concerns about the pond's impacts to water quality data being evaluated from the piezometers and monitoring wells in this area that are being used to try to delineate that edge may be impacting groundwater quality results. Also, FDEP itself indicated that having to take into account the influence of this pond complicates Lockheed's ability to control its contamination and its cleanup.

Rampant throughout the 2012 DOAH challenge of the RAP Approval was this belief that because Lockheed had performed so much assessment and was building a system so big that the details of the location of the contamination were not important enough to require additional assessment. This was and remains tacitly offensive to the community who sits atop this groundwater plume, but it is even more offensive because Lockheed's own data has shown that

they have not been able to shrink the plume and thereby risks of exposure. Quantity is not a replacement for quality of the assessment.

Also, of critical importance is that not only has the community suffered from impacts of the contamination, but now it is clear that the operation of the approved remediation system is negatively impacting the community. This decision to just make the capture zone much larger than the plume as it was defined at the time was a decision to take a sledgehammer to a problem when precision tools are better geared to solve the problem. It is not surprising that water is becoming increasingly scarce on this planet and yet, Lockheed is being permitted to withdraw and dispose mass amounts of water to clean up its massive contamination, instead of being required to evaluate more efficient clean up technologies. Lockheed's only response is to pump more water. Even prior to the RAP approval, the community and its technical experts implored Lockheed and FDEP to consider more targeted clean up, by using both more locations for treatment and more technologies. Lockheed refused and FDEP allowed this. Not only is this inefficient but now Lockheed's own data is documenting that this pumping is destroying community wetlands and changing the area ecology.

It has now also been shown that this massive artificial groundwater withdrawal is exacerbating geologic depressions within the community on private properties. The wetlands concerns were documented even at the time of the RAP approval and have continued to be concerns raised by the community's experts. FDEP's decision to allow Lockheed to continue pumping the shallow ground water at such high levels, which at the dominant gallery (EW-2104) consistently exceeds the SWFWMD permit limits, demonstrates FDEP's acquiescence to destruction of the community's wetlands and such impacts are likely to become irreversible.

Further, the community has raised the concerns of the geologic depressions after the RAP system had been operating for 5+ years and requested that FDEP require Lockheed to assess this. FDEP's position was that there was no clear connection. Although FDEP is under resourced, we are hard pressed to believe that FDEP staff does not understand how such massive artificial fluctuations in the groundwater could be causing destabilization of the surface. Nonetheless, FOCUS, on its own, engaged in a study of this and this research supports the hypothesis that the artificial groundwater withdrawal is destabilizing the ground surface.

Additionally, Lockheed has continually failed to meet its obligations to the affected community and for the last several years has been unwilling to even meet with the community. One of the few obligations of community outreach or notification required of Lockheed that they have actually performed, to some degree, are the five-year notice of the Temporary Point of Compliance. However, these have not been done on time or consistent with the regulations as documented clearly in the 2016 review letter and the 2022 review letter by Nadia Locke. Yet, FDEP made no requests of Lockheed to address these – neither on timeliness nor content. Further, the substance of these continues to document that Lockheed's entire execution of the RAP system flies in the face of the entire Global RBCA regulatory system. The TPOC itself was contrived to make allowances for a responsible party actively addressing contamination which cannot be remedied overnight thereby allowing daily violations of groundwater standards on other parties' properties. It was not designed for the TPOC to continue to grow while the responsible party is allowed to do a negligent job of clean up.

Finally, since much is happening with the ABC site currently, FOCUS would like to reiterate its request for a meeting with FDEP on these issues. Ideally Lockheed would participate as well, but our understanding is that they are not interested in meeting with the community. To be clear, we believe they have regulatory obligations to meet with the community affected by their contamination and cleanup, and we believe that FDEP should be directing them as such. Regardless, FDEP's obligations to keep the community informed are even more important in light of Lockheed's unwillingness to do so.

In summary, with the receipt of this letter FOCUS requests that FDEP make immediate demands on Lockheed to

- increase the assessment that is being conducted to define the southeast edge in the USAS and LSAS by requiring Lockheed to
    - continue sampling of the installed piezometers in addition to the wells,
    - produce data regarding the Amazon stormwater pond and to report data regarding its construction and operation that may impact the data from Lockheed's wells,
    - take steps necessary to demonstrate that the Amazon stormwater pond is not influencing water quality data from nearby Lockheed piezometers and wells and if unable to do so, install additional wells further from this influence,
    - to evaluate whether the Amazon stormwater pond is causing plume movement in this area and if so, to address this,
    - install additional monitoring wells to address data gaps in this area, most notably within the LSAS.
- Explain the contradictions between its updated model, groundwater quality data, and plume lines drawn by professional judgement as it relates to the Northwest edge of the plume,
- Install additional monitoring wells in the northwest in the area where Lockheed's model indicated the likely presence of COCs outside of their currently mapped plume,
- Conduct an assessment as to why the USAS remediation wells in the area north of Tallevast Road are having little improvement in contamination concentrations in this area as compared to other portions of the USAS aquifer,
- Increase sampling of all wells in the northwest,
- Require Lockheed to perform step out placement of water sampling through direct push technology in the densely populated residential area due south, due east, and due southeast of the site to provide water quality and hydrogeologic data necessary to
    - Assess this portion of the plume,
    - Assess risks of exposure to contaminated groundwater on these properties due to no engineering or institutional controls,
    - Assess why contamination in this area is recalcitrant to the pump and treat system, and
    - Determine whether or not a supplemental treatment method should be explored.
- Require Lockheed to perform water sampling through direct push technology in this densely populated area, in locations where prior private wells were found to be contaminated,

- Require Lockheed to fund Ramboll and any other independent third party consultant FOCUS chooses to conduct soil gas and indoor air sampling in any residences where groundwater contamination in the USAS has been or is found,
- Require Lockheed to provide comparable data on key aspects of the contamination in each Remedial Action Status Report so that actual changes can be clear, including but not limited to requiring quantification of the size of each plume for each individual COC in each individual aquifer unit,
- Require Lockheed to identify any contradicting data in its appendices in the body of the reports and to provide an explanation for such contradictions and how Lockheed is addressing the contradictions,
- Require Lockheed to provide all backup documentation for its data and reports.
- Cease allowing Lockheed to continue to destroy Target Wetlands 6 without assessing whether or not it can meet its competing obligations of cleaning up its contamination without destroying private property and without altering the natural environment including but not limited to area wetlands and surface water bodies.
- FDEP should be approving action which does not meet all of these obligations only where such competing obligations cannot be met. Further, this should be clearly articulated, and Lockheed should be held accountable to those whose interests are being deprived due to the impacts of its clean up obligations.
- FDEP should follow through with its July 18, 2022, request to confirm that the location of a proposed stormwater pond on the site where Reference Wetlands 3 is located will not cause any issues with the contaminant plume. Specifically, we request the FDEP require Lockheed to provide modeling information and for FDEP to conduct an independent review of the information used by Lockheed to conclude that the pond will not cause any issues with the contaminant plume.
- Require Lockheed to fund follow up investigations regarding how its artificial fluctuations of the water table are destabilizing soil in the community, including but not limited to whether or not damage to residential homes is being caused by this destabilization.
- Require Lockheed to meet directly with affected residents to hear their concerns on at least a quarterly basis.
- Fine Lockheed for its failures to comply with the RAP and its underlying statutes and regulations and utilize these funds for beneficial projects in the community which are chosen and coordinated by FOCUS.

Additionally, FDEP

- must hire staff or independent contractors to review any data submitted by Lockheed in its compliance with its clean up applications where FDEP staff does not have such expertise.
- must dedicate the resources necessary to not just review individual documents but to be able to assess Lockheed's findings in a historical context.
- must also dedicate the resources necessary to review not just the reports but all back-up documentation.

We look forward to hearing back from you soon.

Sincerely,

Jeanne Zokovitch Paben

Jeanne Zokovitch Paben, Esq
850-322-7430
Jeanne.pabenlaw@gmail.com

Laura Ward

Laura Ward
Co-Executive Director
FOCUS, Inc.

Wanda Washington

Wanda Washington
Co-Executive Director
FOCUS, Inc.