



June 14, 2018

Ms. Stacey M. Zee, Environmental Specialist
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Albuquerque, NM 87106

Via faacamdenspaceporteis@leidos.com
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Dear Ms. Zee:

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Thank you for the opportunity to submit comments on the Draft Spaceport Camden Environmental Impact Statement released in March 2018 (draft EIS) on behalf of the Satilla Riverkeeper. Satilla Riverkeeper® is a nonprofit 501c3 organization whose mission is to protect, restore, and educate about the Satilla River and its watershed. We have been carrying out this mission for 14 years. The Satilla River's watershed lies entirely within the coastal plain of Georgia, and the river ecosystems are heavily influenced by the coastal and estuarine waters. The site of the proposed Spaceport Camden sits on the banks of the Satilla River estuary. I am writing to express my concern with the incomplete analysis of environmental impacts included in the draft EIS, especially as they relate to the historical hazardous contamination on the proposed site. Please see the detailed comments that follow.

Proposed Site Property Boundaries

In general, the proposed site boundaries need to be described accurately and consistently throughout the entire EIS. In the Executive Summary, it states and shows in Exhibits ES-2 and ES-3, that the proposed site consists of land currently owned by Union Carbide Corp. However, in other places in the document, it refers to the use of the Bayer Crop Science property for Spaceport Camden operations. **If Bayer Crop Science property will potentially be used for the proposed Spaceport, a comprehensive investigation of the historical contamination on the site and analysis of potential environmental impacts resulting from spaceport construction, operations, and mishaps with launches or landings must be included in the draft EIS.**

Additionally, the property boundaries of land owned by Union Carbide Corp and Bayer Crop Science needs to be verified. In several figures in the draft EIS, it shows that large portions of the marsh are owned by Union Carbide Corp and Bayer Crop Science. **Tidal marshlands are likely owned by the State of Georgia, not Union Carbide or Bayer Crop Science.** Except for rare cases in which a clear title through a Crown Grant (King's Grant) can be established, the State of Georgia claims ownership of tidal marshland under its Coastal Marshlands Protection Act of 1970 (mentioned on Page 3-106, lines 14-17).

Repeatedly within the draft EIS, it states (in various incorrect statements) that the property is 11,800 acres. When in fact, the combined properties at the site owned by Union Carbide Corp and Bayer Crop Science, excluding marshlands, is closer to 2,500 acres. Examples of incorrect statements in draft EIS:

- On page 1-3, lines 18-19: “Camden County proposes to construct Spaceport Camden on approximately 100 noncontiguous acres of the approximately 11,800 acres of uplands on the Union Carbide property.”
- Exhibit 2.1-1
- Page 3-33, line 20: “The ROI for Section 4(f) includes the 11,800-acre footprint of the proposed Spaceport Camden...”
- Page 4-56, lines 9-10: “on the proposed 11,800-acre industrial site presently owned by Union Carbide Corporation and Bayer Crop Science.”

An accurate representation of the proposed site and accurate land area measurements of the site must be included consistently in all sections of the EIS and ownership of marshlands by Union Carbide Corp and Bayer Crop Science must be verified, in order for the decisionmaker to evaluate the true impacts of the proposed alternative.

Related, Section 2.1.2.8 Launch Failures in the draft EIS states that FAA regulations (14 CFR §420.21) require the launch pad to be at least 10,600 feet from the launch site boundary. The location of the vertical launch facility shown in Exhibit 2.1-2 does not comply. Even if it is determined that the marshlands are owned by Union Carbide and Bayer CropScience (contrary to the Coastal Marshlands Protection Act of 1970), the 10,600-ft radius from the approximated vertical launch facility overlaps with the main stem of the Satilla River, a navigable waterway under the jurisdiction of the US Army Corps of Engineers. **The EIS must be amended to include a clear and accurate representation of the distance of the launch pad to the launch site boundary.** (Refer to attachment.)

Hazardous Waste and Historical Contamination

The draft EIS must include a thorough study of the impacts to historical contamination on the proposed Spaceport Camden site AND adjacent properties. According to the Desk Reference (Section 7.1.), “the FAA should coordinate with the appropriate Federal, state, tribal, or local agencies as early as possible in the NEPA process regarding potential impacts resulting from or to previously contaminated sites.” The Desk Reference also states this applies to existing contaminated sites at the proposed project site *or in the immediate vicinity of a project site*. There is no reference in the draft EIS of consultation with Georgia Environmental Protection Division (GA EPD) regarding the contamination on the Union Carbide property nor the Bayer CropScience property. The draft EIS briefly mentions in Section 3.7.3, p. 3-44, Lines 1-2, that the existing hazardous waste landfill will have no indirect or direct impacts, and there is no further discussion on the topic. The draft EIS must include a detailed discussion explaining impacts to the landfill and other existing contamination from Spaceport construction, operations, launch and landing failures. The EIS must also discuss the impacts to the natural and human environment in the event that historical contamination is released or mobilized. These concerns are further detailed in the following paragraphs.

The EIS must include a discussion of the toxic groundwater plume at the Union Carbide property, and its movement, and mitigation measures. Vibration studies referenced in the

draft EIS must be properly analyzed to determine the impacts to the hazardous waste landfill and toxic groundwater plume. (The draft EIS says there would be no significant impacts. However, in other sections, it states that vibrations could cause damage to historical structures. The methods and conclusions from vibrations studies need to be clearly and consistently stated throughout the EIS.) Impacts to the landfill caps, erosion of the bank of Todd Creek, movement of the toxic groundwater plume and effects on the oxygen curtain should be evaluated for construction (including pile driving) and launch and landing failures and mishaps in addition to vibrations associated with normal operations.

There exists an Environmental Covenant between Union Carbide Corporation and Georgia EPD regarding the 4011.54 acre property including the RCRA landfill owned by Union Carbide Corporation. **The EIS must state the current restrictions on the land uses of this property and explain how the spaceport construction, operations, launch or landing failures either complies with or does not comply with the current Environmental Covenant.** The covenant states: “Any activity on the area (4011.54 acres), including RCRA landfill that may result in the release or exposure to hazardous wastes, hazardous constituents, hazardous waste constituents or the constituents of concern that were contained as part of the post-closure care and corrective action program, or create a new exposure pathway, is prohibited.” The covenant also prohibits the use or extraction of groundwater from beneath the property. If the covenant intends to be modified before construction of a spaceport, the final EIS should include evidence of the consultation regarding the hazardous waste landfill and contaminated property, and it must clearly prove that the modifications to the covenant will not negatively impact the management of the RCRA landfill or cause environmental or human exposure to hazardous materials or constituents. (See attachment for covenant dated March 29, 2011.)

Related to groundwater use at the proposed Spaceport site, on pp. 4-126 and 4-127, the draft EIS discusses the volume of expected groundwater use. While the volume is within the current withdrawal permits, **special consideration must be given to the nature of the toxic groundwater plume beneath the proposed site.** Shallow groundwater on site is known to be heavily contaminated, and there is the potential that contamination has or will move laterally or vertically within or between aquifers. It should be included in mitigation measures that groundwater withdrawn from any well, at any depth must be tested frequently for the known constituents in RCRA landfill and for constituents associated with other uses of the property (i.e. Temik/aldicarb, tear gas, pesticides) to ensure both health and safety of humans coming into contact with the water, and to detect and prevent the movement of the toxic groundwater beyond the property boundaries or into surface waters, such as the adjacent marshlands and tidal creeks.

Furthermore, as stated in section 2.1.2.8 Launch Failures, p. 2-34, launch failures are possible, and vehicle debris from an explosion would be expected to stay within required site boundaries (10,600 ft from the launch pad.) However, the hazardous waste landfill proposed to stay under the ownership and management of Union Carbide Corp is within 10,600 ft of the proposed vertical launch facility. (See attachment.) **The EIS must include a thorough evaluation of the potential impacts to the hazardous waste landfills and historical contamination at the site in the event of a launch failure and vehicle debris that could impact the clay caps or other structures associated with the landfill. If there is the potential to interfere with the management systems for the RCRA landfill, the final EIS must state the modifications to**

be made in order to avoid impact to the landfill causing harm to the environment and human health.

Prior to any activities associated with the proposed Spaceport Camden on the proposed site, multiple samples should be taken to test for contamination of adjacent surface waters and marsh sediments. Samples should be taken from multiple creekbank seeps and runoff streams that enter waters of the United States (the Satilla River estuary and tributaries). Samples must include the estuary-adjacent upland periphery of both the Union Carbide and the Bayer CropScience tracts (along Todd Creek, Floyd Basin, and Floyd Creek). Multiple samples should be tested for all chemical analytes listed in the groundwater monitoring list of 40 CFR 1(I), Part 264, Appendix IX. **The Final EIS must include a certified determination of whether a Clean Water Act violation has already occurred at the proposed site of Spaceport Camden.** In particular, mitigation (Chapter 6.7) should require periodic offsite testing for any brownfield toxins now entering public waters immediately adjacent to the proposed spaceport property.

Todd Creek is a large tidal creek along the northern upland edge of the proposed spaceport. It is an integral part of the Satilla River estuary. Seepage or a sudden discharge of the highly toxic groundwater would damage or contaminate Todd Creek with contamination rapidly spreading by estuarine and tidal circulation throughout the estuary and even upstream in the main stem of the Satilla River as well as out to sea and along beaches. Contamination would endanger commercial, sustenance, and recreational water users who have direct exposure to estuarine waters or consume its seafoods. Among other species, the highly toxic contamination from that landfill could harm or make toxic any fish and shellfish taken for human consumption, marine mammals (such as bottlenose dolphins, West Indian manatees, and river otters), and fish-eating birds (such as terns, pelicans, ospreys, and bald eagles).

It seems that the only guaranteed way to ensure that the proposed Spaceport will not mobilize or expose the historic contamination on the proposed site and adjacent property, would be to do a comprehensive clean-up and remediation before any other actions take place.

Wild and Scenic Rivers

The draft EIS notes that the Satilla River is listed on the Nationwide Rivers Inventory (NRI), making it eligible for consideration as a Wild and Scenic River. According to the desk reference, the FAA must consult with the National Park Service (NPS) for NRI-listed rivers within the ROI. The main stem of the Satilla River is less than 2 miles from the vertical launch facility (as depicted in the draft EIS) and the Satilla River estuary forms the boundary of the proposed Spaceport Camden Site. **The final EIS must include documentation of the NRI consultation with the NPS, and the EIS must detail mitigation measures to limit impact of the proposed Spaceport so that designation of the Satilla River estuary as Wild and Scenic remains possible.** Lights, noise, and buildings at the proposed spaceport will disrupt the scenic qualities of the estuary. The impacts to the Satilla River in the case of a launch failure or accident, impacts to the Satilla River of a chemical spill on the Spaceport Camden site, or impacts on the Satilla River for operations that include returning launch vehicles back to the launch site via barges (i.e. dredging or widening) could jeopardize eligibility for Wild and Scenic designation. At the very least, mitigation should recommend the use of very wide upland zone (¼ mile) between spaceport facilities and maintenance operations and the edge of the intertidal waters of the

estuary (defined by the normal high water mark). Wild and Scenic Rivers designation is something that the Satilla Riverkeeper organization has talked about for some time, and we plan to pursue the designation for the Satilla River in the future.

Socioeconomics

Socioeconomics, Operations, p. 4-94: There is very brief mention of waterway closure impacts on commercial fishermen (even though it was noted as one of the major concerns of the community brought up during the public scoping period.) **The EIS must consider losses to commercial fishermen, including shrimpers and crabbers, due to waterway closures and potential for environmental harm to the estuarine and oceanic habitat that sustains their harvests.**

The EIS should also acknowledge the presence of commercial leases of oyster beds and clam beds, and the future option for aquaculture in the tidal marshes surrounding the proposed spaceport site. The impacts to these oyster and clam beds should be discussed in the Affected Environment, Farmlands section.

Ocean Landings

The draft EIS describes the ocean-landing only alternative as the “environmentally preferred alternative.” However, **the EIS should include a thorough study of the environmental impacts associated with ocean landings, including but not limited to marine debris not recoverable, modifications to tidal creek channels to accommodate barges, and construction or modification of dock/s at the proposed Spaceport Camden site.** The draft EIS must describe the impacts of any estuarine channel modifications needed to operate a barge of size and draft suitable to return first stages landed at sea to Spaceport Camden. The Final EIS should analyze navigation difficulties with respect to required turning radii and depths, evaluate the potential need for channel dredging or straightening, and provide a significance determination of subsequent impacts to flow circulation and habitat. The EIS should also list the required permits, processes, and agency consultations to make these environmental modifications (i.e. US Army Corps of Engineers, Coastal Resources Division of the GA DNR.) The Satilla Riverkeeper organization has been working diligently with the US Army Corps of Engineers for the past several years to restore estuarine habitat by way of restoring hydrologic patterns in the Satilla River estuary. It would be unacceptable for this threat to the estuary to be overlooked in the EIS.

Floodplains

In the Executive Summary, table 1, p. 25, Floodplains, the draft EIS notes that Camden County Unified Development Code doesn't allow building “critical facilities” in 100 or 500-year floodplain. Spaceport would need to get an exemption. The final EIS must include the updated flood plain maps (updated in 2018). Mitigation measures should also include careful consideration of where hazardous materials are stored on site in relation to the risk of flooding.

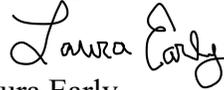
The draft EIS states that roughly 75 employees will regularly be on site, and during launches, that number would increase to 300. The EIS should explain the septic system planned for the site, including the siting and capacity. Floodplain areas in coastal Georgia can be problematic areas for septic systems, and this needs to be addressed in the EIS.

In general, all topics examined in the Affected Environment section of the EIS must include a discussion of the impacts of launch and landing failures, and other mishaps.

Finally, meaningful measures to mitigate environmental impacts caused by construction, operations, and failures must go above and beyond actions required by law. The draft EIS must include these mitigation measures in the Mitigation section (Section 6), so it is clear for the decisionmaker to find. (Many potential mitigation measures seem to be buried in the Affected Environment section.)

We appreciate the opportunity to comment on the Draft EIS, and we hope you find these comments helpful in preparing a thorough Final Environmental Impact Statement to inform the decision maker of associated risks associated with the proposed project.

Sincerely,



Laura Early

Satilla Riverkeeper and Executive Director
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Attachments:

- Environmental Covenant between EPD and UCC
- Hazardous Waste Permit (HW-063)
- Rough Diagram of proposed Spaceport boundary