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Land Use Department

Several colleagues and I identified the proposal's problems during the applicant's expert presentations, several of which were clearly identified by those who presented before me. For my portion of this Public Hearing, I stand before the committee with more insight into the impacts Cashman's application will have on immediate residents, Connecticut Wildlife, and the surrounding environment.

Heavy metals can be released from excavated substrates when mining or blasting large quantities of rock. These metals can easily accumulate in water basins and puddles on an excavation site and increase in concentration as the mining operation continues. According to the National Library of Medicine, when these elements are introduced to water in large concentrations, they can seep into underground wells that supply water to homesteads, threatening the neighbors here in Gales Ferry that rely on wells for their water. This proposed operation will span up to a decade or more, which is more than enough time for metals to accumulate in our aquifers, poisoning the well-reliant households. These heavy metals include cadmium, chromium, arsenic, and manganese. Next to notoriously toxic metals like chromium and arsenic, manganese does not look like much of a threat, but under the conditions it will be subjected to, this element becomes a sleeping dragon. According to Hydrogeologist Dr. Gary Robbins, manganese is a major element in our geology and exists as a coating on our rocks and soils. This is evidenced by the 0.03 weight percentage of Manganese Oxide included in Geologist Jeff Slade's data. Manganese minerals like Manganese Oxide are generally insoluble in water unless the oxygen content of that water is lowered, a phenomenon created by the materials used in explosives such as ANFO, a combination of ammonium nitrate and fuel oil commonly used in blasting operations, being eaten by natural bacteria. When manganese is dissolved in runoff, the water can contaminate both drinking water and any nearby water sources. The National Department of Health classifies high concentrations of

manganese as a neurotoxin, and chronic exposure to manganese at high concentrations results in permanent neurological damage, including problems with memory, attention, and motor skills. Because of the threat posed to our health and wellness, I strongly urge the committee to reject this proposal.

The Ledyard Applicable Zoning Regulation 11.3.4.F states “the proposed uses would not cause any unreasonable pollution, impairment or destruction of the air, water, and other natural resources of the state.” As stated by professional civil engineer Steve Trinkaus in his presentation from October 10th, the applicant’s proposed methods to handle runoff are inadequate due to the impermeability of the site’s grounds and inadequate catch basins for the runoff volume that will be produced. Additionally, the rock processing equipment to crush the blasted aggregate will be stationed next to the Thames River, increasing the risk of particulate matter entering the water column. These two factors will create unreasonable pollution in the Thames River, harming marine life by introducing a higher rate of suspended particulate matter into the water column, a hazard known as siltation. Siltation occurs when loose terrestrial sediments, in this case, the dust and particulates that will be watered down during the blasting process, are captured by runoff and brought into a water system. Siltation particulate is formed from two main sources; feldspar and quartz. Geologist Jeff Slade’s findings indicate that quartz and feldspar collectively comprise 95% of Mt. Decatur’s geology. As quoted in an extensive study on siltation done by F.M. Chutter, “Increases in the amount of silt in river beds lead to increased instability of benthic (riverbed) sediments, which adversely affects their fauna” (F.M. Chutter), meaning that the more particulate matter introduced to a system, the more harm it will do to its inhabitants. Siltation completely disrupts an aquatic ecosystem, dismantling entire food webs. Phytoplankton in water containing high amounts of particulate matter can struggle to photosynthesize due to large particles blocking the sunlight from reaching deeper parts of the water column. Fish populations are choked by particulates irritating gills and smothering eggs and nests, leading to suffocation, failed clutches, and a decrease in population in a sediment-polluted area. Siltation can also make it difficult for fish to secure food, from filter feeders like Atlantic Silversides to

target feeders like Banded Killifish. Filter-feeding fish rely on special filaments on their gills to capture food, filaments that will be clogged by suspended solids. Target feeders need to visually find and strike prey, a task made difficult by the low visibility caused by particulate-polluted waters. Even organisms on the seafloor are affected, with photosynthesis becoming impossible for seaweed and other macroalgae as sediments block the light and the feeding apparatuses of shellfish like oysters, mussels, and clams become clogged, making it near impossible for them to feed. Our Thames River has just begun to recover from decades of industrial pollution, and a study I participated in this past summer at the National Estuarine Research Reserve demonstrates that nature can come back from the brink if we give it the opportunity to. The study yielded that the Connecticut College reef balls are home to a minimum population of nearly 16,000 fish, including foundational species such as Atlantic herring, Atlantic silversides, and bay anchovy. This population far exceeded the counts of the other two reef ball sites we observed and is a thriving ecosystem that will be negatively impacted by the pollution this application will create. Because of the threat posed to our marine wildlife and the violation of Zoning Regulation 11.3.4.F by the current application's parameters, I strongly urge the committee to reject this proposal.

The applicant's property has three defined wetlands on site. Wetlands are one of the most productive habitats on earth. They act as natural sponges and filters, soaking up harmful pollutants such as metals, excess nutrients, and particulate matter and preventing them from entering vulnerable marine ecosystems. These habitats can remove pollutants entirely through a variety of physical, chemical, and biological means. Wetlands additionally are crucial nursery habitats, providing safety for hundreds of different insects, amphibians, and birds. During the applicant's operation, two of the wetlands on the property will be destroyed. This robs the Thames River and the surrounding area of three crucial habitats that protect and nurture its sensitive wildlife and takes another toll on Connecticut's suffering marshes. According to the National Water Summary Wetland Resources, Connecticut lost 74% of its wetlands between the 1780s and 1980s, dramatically decreasing the state's biodiversity. However, the applicant has expressed plans to strengthen the third marsh on their

property, though thus far, they have not outlined their strategy on how to do so. Wetland environments acquire sediment and form slowly over time. These fragile ecosystems are constantly shifting, walking a delicate tightrope between holding and losing sediments, a tightrope that is entirely dependent on the vegetation in the marsh holding sediments in place and preventing erosion. Cashman's operation is going to be introducing a host of pollutants into the environment such as siltation, heavy metals, and the chemical pollution the applicant will produce through the runoff of the calcium chloride solution they propose to use for dust control. Concentrated calcium chloride is toxic to aquatic plants and animals, and the runoff from the dust control procedures will infiltrate the marsh and likely result in its erosion and ultimate destruction despite this restoration attempt. I strongly urge the committee to reject this proposal to protect one of our state's most important environments.

In conclusion, if the applicant's operation is approved, it will severely impact the environment and endanger the lives of wildlife and its residents, including myself and my neighbors. My family and neighbors live just across from Mt. Decatur on Chapman Lane, and we are deeply concerned for the health of ourselves, our family, and our environment. My neighbors and I are confused by the fact that we are having this conversation in the first place due to the health and environmental risks this application proposes. We are concerned by the fact that we even need safety monitors and precautionary measures, which proposes that there is an obvious risk to our safety and an obvious risk to our wildlife. We push against this application because we do not feel safe. There are risks that this application will destroy native populations of wildlife and introduce pollutants to the Thames River that will take decades to remove, therefore this application should be denied. There are risks that this application will expose us to carcinogens and toxins like silica dust, manganese, arsenic, lead, chromium, and magnesium, therefore this application should be denied. When does money begin to matter more than our planet and our lives?