September 18, 2013

Jim Buck
Umigo Indoor Cart Racing
6538 Patterson Pass Rd.
Livermore, CA 94550

RE: Umigo Beneficial Tire Reuse Exemption Letter
Project Number 2013121

Dear Jim:

This letter presents our findings for the use of tires at the Umigo Indoor Card Racing facility in regards to California Regulations Title 14, Chapter 3, Article 5.4 Waste Tire Monofil Regulatory Requirements (The Regulation). We have reviewed Umigo's use of waste tires and the applicable code sections per your request and in accordance with correspondence from Patrick Snider of Cal Recycle. Our review finds that Umigo's current practice and proposed ongoing use of waste tires does not qualify as disposal or storage of waste tires as defined by The Regulation. We find instead that the tire use qualifies as a beneficial reuse of waste tires. Therefore, we propose that the facility be found by the California Integrated Waste Management Board to be exempt from permitting requirements and minimum operating standards established for facilities that operate a waste tire monofil.

Section 17346(f) of The Regulation identifies the qualifications and process that establish beneficial reuse of waste tires as follows:

> *(1) Beneficial reuse of altered waste tires is permitted provided the beneficial use does not pose a threat to public health, safety and the environment.*
>
> *(2) In order to qualify as a beneficial use, the proposed use must employ one or more of the engineering properties of waste tires and provide equal or superior performance or lower cost relative to conventional technologies and the proposed use must be approved in writing by a registered civil engineer.*
>
> *(3) An application to determine if a project is considered a beneficial reuse must be made in writing to the EA and the Board. The EA and the Board will evaluate the proposed project under the criteria set forth in subsections 17346 (f) (1) and (2) and will independently determine and notify the applicant whether the proposed project constitutes a beneficial reuse of altered waste tires within ninety (90) days from their receipt of the application.*

On September 17th 2013 we visited the facility and observed that tires are in use for the purpose of course barriers. We spoke with you regarding Umigo's practices for the use of waste tires and their disposal.

We observed that the typical tire use at the Umigo raceway is groups of tires stacked two high, connected with metal strapping, and contained within an approximately 8" plastic L perimeter. Two bolts attached the L to each tire stack. With these modifications the tire groups are a single moveable unit. The groups of tires are either anchored to the concrete or strapped in series with mesh belts to form a continuous barrier.

When a tire is worn beyond its useful life, it is removed from service and disposed of with a certified tire recycler. Approximately 1,500-2,000 tires are currently used at the site.

We observe that the use of waste tires as barriers for the race track does not pose a threat to public health, safety or the environment. The tire's use is intended to promote safety by creating a flexible barrier system that absorbs impact from vehicles traveling the course. Reuse of the tires has a beneficial impact on the environment as it is a waste product re-directed from a landfill. The use of waste tires precludes the need for other barrier systems which would likely be made of virgin or recycled plastic resin and would require more energy and would produce more greenhouse gasses to manufacture than the incremental impact of reusing waste tires.

The reuse of waste tires for course barriers employs at least four engineering properties of waste tires, including:

1. **Weight:** The weight of the tires are well matched for the needs of a barrier system
2. **Friction:** In combination with weight this is essential to keeping the barriers in place and resistant to impact.
3. **Impact absorption** This is critical to protect the driver's safety, and the integrity of the carts
4. **Ease of modification**, This allows flexibility and reuse of waste tires in multiple configurations.

The primary alternative or "conventional technology" available for indoor cart racing course barriers is manufactured link-type barrier systems. Link-type barriers are weighted plastic articulating segments which link together to form a continuous barrier. Based on the interview with Jim Buck and our assessment of the product information regarding this alternative, it is our opinion that waste tires provides superior performance and a lower cost than conventional technology.

In conclusion we find that the course barriers in this facility are a beneficial reuse of waste tires as defined by The Regulation.

Sincerely,

Jasper Lewis-Gehring, P.E.
R.C.E. 67232
Principal