

2017

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### Recommended Citation

Nicole Price, The Turf War: Gender Discrimination and the Creation of a Hostile Work Environment through Synthetic Turf, 20 U. Denv. Sports & Ent. L.J. 23 (2017).

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## The Turf War: Gender Discrimination and the Creation of a Hostile Work Environment through Synthetic Turf

## The “Turf War”: Gender Discrimination and the Creation of a Hostile Work Environment Through Synthetic Turf

*Nicole Price\**

### I. INTRODUCTION

On July 5, 2015, 53,341 fans, mostly from the United States, filed into the B.C. Place Stadium in Vancouver, Canada hoping for the first U.S. Women’s World Cup win since 1999.<sup>1</sup> The 2015 championship game was a rematch from the 2011 World Cup championship game, where Japan beat the U.S. in penalty kicks.<sup>2</sup> The 2015 championship was different. In the first five minutes, U.S. captain Carli Lloyd scored two goals, which was also the fastest two goals in FIFA<sup>3</sup> history.<sup>4</sup> Minutes later, U.S. player

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\* J.D. Candidate, Seattle University School of Law, class of 2017; B.A., Willamette University, 2014.

<sup>1</sup> Allistair Magowan, BBC SPORT (July 6, 2015), <http://www.bbc.com/sport/football/33085994>.

<sup>2</sup> *Id.*

<sup>3</sup> FIFA stands for Fédération Internationale de Football Association, and translates to International Federation of Association Football; they are the governing body of soccer. *See Who We Are*, FIFA.COM, <http://www.fifa.com/about-fifa/who-we-are/index.html> (last visited Apr. 12, 2016). FIFA is an association governed by Swiss law and was founded in 1904; they are currently based in Zurich, Switzerland. *Id.* FIFA’s primary goal is to “improve the game of [soccer] constantly and promote it globally in the light of its unifying, educational, cultural and humanitarian values, particularly through youth and development programmes.” *What we Stand for*, FIFA.COM, <http://www.fifa.com/about-fifa/who-we-are/explore-fifa.html> (last visited Apr. 12, 2016). FIFA is also responsible for organizing soccer competitions, including, but not limited to, the FIFA World Cup. *Id.* Additionally, FIFA acts as a world governing body, issues regulations and reports, and creates the rules of soccer. *How FIFA Works*, FIFA.COM, <http://www.fifa.com/governance/how-fifa-works/index.html> (last visited Apr. 12, 2016). The head of FIFA is the President, who is elected for four years by member associations represented at the FIFA Congress who are eligible to vote. *Id.* Beneath the President is Congress, which is FIFA’s supreme body and is primarily responsible for developing the game of soccer. *Id.* Lastly, FIFA is comprised of an Executive Committee, chaired by the FIFA President, who provide a forum for all of the confederations. *Id.* The Executive Committee is advised by twenty-two

Lauren Holiday scored again.<sup>5</sup> That wasn't all; just fifteen minutes into the game, Carli Lloyd scored again—from midfield—achieving the first hat trick<sup>6</sup> in a Women's World Cup final and the fastest hat trick in any World Cup game.<sup>7</sup> The United States ended up winning the championship 5–2.<sup>8</sup> The 2015 Women's FIFA World Cup final had the largest television viewership of any soccer game in American history.<sup>9</sup> More than 750 million viewers total watched the FIFA Women's World Cup Canada 2015, making it the second most-watched FIFA competition ever.<sup>10</sup>

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specialist standing committees, where representatives from the confederations and associations are able to express their views and requirements. *Id.* One of the confederations belonging to FIFA is the Confederation of North, Central American and Caribbean Association Football (“CONCACAF”). FIFA STATUTES, AUGUST 2014 Edition, *available at* [http://resources.fifa.com/mm/document/affederation/generic/02/41/81/55/fifastatuten2014\\_e\\_neutral.pdf](http://resources.fifa.com/mm/document/affederation/generic/02/41/81/55/fifastatuten2014_e_neutral.pdf). FIFA also determines who can compete in their competitions. *Id.* One of the teams under CONCACF includes the United States Soccer Federation, more commonly known as the United States National Soccer Team, and includes both the men's and women's Olympic qualifying teams. *Team USA Olympic Qualifying Women*, CONCACAF.COM, <http://www.concacaf.com/team/tusa/olympic-qualifying-women> (last visited Apr. 12, 2016).

<sup>4</sup> Camila Domonoske, *U.S. Women Win World Cup Final 5-2, After Spectacular Start*, NPR (July 5, 2015, 8:13 PM), <http://www.npr.org/sections/thetwo-way/2015/07/05/420346946/u-s-women-lead-world-cup-final-5-2>.

<sup>5</sup> *Id.*

<sup>6</sup> Domonoske, *supra* note 4. A “hat trick” is when a player scores three goals in a single game.

<sup>7</sup> *Id.*

<sup>8</sup> *Id.*

<sup>9</sup> Jack Martinez, *Inequality Hangs Over U.S. Women's World Cup Victory*, NEWS WEEK (July 7, 2015), <http://www.newsweek.com/inequality-hangs-over-us-womens-world-cup-victory-351085>. Approximately 23 million viewers tuned in to watch the final game. Bill Chappell, *U.S. Women's Soccer Team Members File Federal Equal-Pay Complaint*, NPR (Mar. 31, 2016; 10:36 AM), <http://www.npr.org/sections/thetwo-way/2016/03/31/472522790/members-of-u-s-women-s-national-team-file-federal-equal-pay-complaint>. For comparison, the 2014 World Series' Game 7 attracted 23.5 million viewers. *Id.*

<sup>10</sup> *Record-breaking FIFA Women's World Cup tops 750 million TV viewers*, FIFA.COM (Dec. 17, 2015),

<http://www.fifa.com/womensworldcup/news/y=2015/m=12/news=record-breaking-fifa-women-s-world-cup-tops-750-million-tv-viewers-2745963.html>.

Although the United States' Women's National Soccer Team now holds an unprecedented three championships in the Women's World Cup, gender inequality still exists between the men and women soccer players. This has prompted two recent lawsuits: The first was filed by 80 international women's soccer players against FIFA and the Canadian Soccer Association ("CSA")<sup>11</sup> prior to the start of the 2015 Women's World Cup, and the second was filed by U.S. women's soccer players on March 30, 2016 against U.S. soccer.<sup>12</sup> This Note will focus on the first lawsuit, filed against

<sup>11</sup> Hampton Dellinger, *The Grass Ceiling: How to Conquer Inequality in Women's Soccer*, THE ATLANTIC (July 5, 2015), <http://www.theatlantic.com/entertainment/archive/2015/07/womens-soccer-world-cup-fifa-lawsuit/397592/>.

<sup>12</sup> Matt Bonesteel, *Five U.S. women's soccer players file wage discrimination complaint*, THE WASH. POST (Mar. 31, 2016), <https://www.washingtonpost.com/news/early-lead/wp/2016/03/31/five-u-s-womens-soccer-players-file-wage-discrimination-complaint/>. The complaint was submitted to the Equal Employment Opportunity Commission on March 30, 2016 and alleged pay discrimination. Andrew Das, *Top Female Players Accuse U.S. Soccer of Wage Discrimination*, THE N.Y. TIMES, (Mar. 31, 2016), [http://www.nytimes.com/2016/04/01/sports/soccer/uswnt-us-women-carli-lloyd-alex-morgan-hope-solo-complain.html?\\_r=0](http://www.nytimes.com/2016/04/01/sports/soccer/uswnt-us-women-carli-lloyd-alex-morgan-hope-solo-complain.html?_r=0). It was filed by five U.S. Women's National Team soccer players against U.S. Soccer, the governing body for soccer in America, alleging pay discrimination. *Id.* The players who filed the complaint were Carli Lloyd, Hope Solo, Alex Morgan, Megan Rapinoe, and Becky Sauerbrunn. *Id.* The complaint alleges that the U.S. Men's National Team players receive a minimum \$5,000.00 per game, regardless if they win, lose, or tie. Mary Pilon, *US women's soccer players sue over pay gap*, POLITICO (Mar. 31, 2016, 8:01 PM), <http://www.politico.eu/article/us-womens-soccer-players-sue-over-pay-gap/>. The men can also earn as much as \$17,625.00 for an exhibition match against a top opponent. Chris Isidore, *U.S. women soccer players charge pay discrimination*, CNN MONEY (Mar. 31, 2016, 3:06 PM), <http://money.cnn.com/2016/03/31/news/companies/womens-soccer-equal-pay/>. On the other hand, women are paid a maximum of \$4,950.00 even if they win every game, and they're only paid for the first twenty exhibition games they play each year, unlike the men who are paid no matter how many exhibition games they play. *Id.* Also, while U.S. Soccer isn't entirely responsible for winnings earned by each team at the World Cup (that's something that is up to FIFA), it is worth noting that the U.S. Men's Team earned \$9 million in the 2014 World Cup for losing in the round of 16 while the U.S. Women made only \$2 million for winning the entire thing. *Id.* Of course critics will quickly point out that the women make less because they don't bring in as much revenue; however, the U.S. Soccer Federation's most recent annual report had initially

FIFA and the CSA, specifically in regards to the hazards associated with playing on turf and how FIFA forcing the women to play on it could be a hostile work environment.

The first lawsuit was filed in the wake of FIFA announcing that the 2015 Women's World Cup games would be played on artificial turf, rather than on a grass field.<sup>13</sup> Every men's World Cup since 1930 has been played on grass, and the men's World Cup tournaments scheduled for 2018 and 2022 will also be played on grass.<sup>14</sup> Further, FIFA spent \$2 million to install natural grass over artificial turf in both Detroit and New Jersey for the 1994 Men's World Cup, but declined to do so for the women.<sup>15</sup> The conflict and lawsuit from the 80 international women soccer players was subsequently dubbed the "Turf War."<sup>16</sup>

However, there is more to the Turf War than the discrimination between the men's and women's soccer team: Turf may pose health risks as well.<sup>17</sup> For example, Kelly Bendixen, a notable goalkeeper coach who resides in Washington State and has trained

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projected a \$429,929 net loss for the national teams for the 2016 fiscal year, but "thanks almost exclusively to the women's team's success," the federation projects a profit of \$17.7 million. Mary Pilon, *US women's soccer players sue over pay gap*, POLITICO (Mar. 31, 2016, 8:01 PM), <http://www.politico.eu/article/us-womens-soccer-players-sue-over-pay-gap/>. The women's team is anticipated to generate a net profit of \$5 million compared to a net loss of nearly \$1 million for the men's team. *Id.*

<sup>13</sup> See Dr. David Geier, *Grass v. artificial turf: Battle heats up for Women's World Cup*, THE POST & COURIER (Oct. 2, 2014, 12:32 PM), <http://www.postandcourier.com/article/20141002/PC20/141009863>.

<sup>14</sup> *Id.*; Jeff Kassouf, *Players Officially File Lawsuit Against FIFA, CSA Over Artificial Turf at 2015 Women's World Cup*, THE EQUALIZER (Oct. 1, 2014), <http://equalizersoccer.com/2014/10/01/players-officially-file-lawsuit-against-fifa-csa-over-artificial-turf-at-2015-womens-world-cup/>; Marc Lancaster, *Women's World Cup turf war lingers as tournament begins*, SPORTING NEWS (June 3, 2015), <http://www.sportingnews.com/soccer/story/2015-06-03/womens-world-cup-turf-war-fifa-canada-artificial-turf-natural-grass>.

<sup>15</sup> See Kassouf, *supra* note 14.

<sup>16</sup> See *Id.*

<sup>17</sup> Jared Firestone, *Artificial Turf Cancer Lawsuit: Toxic Compounds May be Linked to Cancer*, THE EXPERT INSTITUTE (Aug. 3, 2015), <https://www.theexpertinstitute.com/artificial-turf-cancer-lawsuit-toxic-compounds-may-be-linked-to-cancer/>.

the likes of Tally Hall<sup>18</sup> and Hope Solo,<sup>19</sup> has seen the dangerous effects of artificial turf first hand. He has attended four funerals of young soccer players, all with some form of cancer, and has known countless others who have been diagnosed.<sup>20</sup> As a coach, he knows eight children who have cancer, and they are all goalkeepers.<sup>21</sup> Kelly emphasizes that he's not a scientist or a doctor, but he does know that there is a "high population of goalkeepers who are coming down with cancer."<sup>22</sup> He just wants to know the truth: "is [turf] good or is it bad for us?"<sup>23</sup>

At the forefront of this issue is Amy Griffin, a former goalkeeper for the United States Women's National Team and a member of the University of Washington's coaching staff since 1996.<sup>24</sup> In 2009, two young goalkeepers Amy knew were

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<sup>18</sup> Tally Hall is a men's American professional soccer player in Major League Soccer (MLS) and is a goalkeeper. *Tally Hall*, MLSSOCCER.COM, <http://www.mlssoccer.com/players/tally-hall> (last visited Apr. 12, 2016). While playing for the Houston Dynamo, he helped lead the team to two straight MLS Cups in 2011 and 2012. *Id.* He then went on to set club records for shutouts (not having any goals scored on him in a game) in a regular season, among other awards. *Id.* In 2016, he started playing for D.C. United. *Id.*

<sup>19</sup> Hope Solo is a women's American professional soccer player who plays for the Seattle Reign in the Women's United Soccer Association and is also the starting goalkeeper for the United States Women's National Soccer Team. *About Hope*, HOPESOLO.COM, <http://hopesolo.com/about/> (last visited Apr. 12, 2016); *Roster*, REIGNFC.COM, <https://www.reignfc.com> (last visited Apr. 12, 2016). She is a three-time Olympic medalist in soccer and winner of the 2011 and 2015 FIFA World Cup Golden Glove Awards. *About Hope*, HOPESOLO.COM, <http://hopesolo.com/about/> (last visited Apr. 12, 2016). In 2015, she and the U.S. Women's National Soccer Team won its first World Cup Championship since 1999. *Id.* She was awarded the Golden Glove Award for her performance in the 2015 FIFA Women's World Cup. *Id.*

<sup>20</sup> Julie Foudy, *E60, The Turf War*, ESPN, available at <https://www.youtube.com/watch?v=91svvfuf7iY> (last visited Apr. 12, 2016).

<sup>21</sup> *Id.*

<sup>22</sup> *Id.*

<sup>23</sup> *Id.*

<sup>24</sup> *Amy Griffin*, GOHUSKIES.COM, <http://www.gohuskies.com/ViewArticle.dbml?ATCLID=208062771> (last visited Apr. 12, 2016).

diagnosed with Non-Hodgkin's Lymphoma.<sup>25</sup> Amy started to visit the women and other athletes in local hospitals when one day a nurse looked down at the woman Amy was sitting with and said, "Don't tell me you guys are goalkeepers. You're the fourth goalkeeper I've hooked up this week."<sup>26</sup> After the athletes who were diagnosed told Amy their suspicions about the crumb rubber (those little black dots) used in synthetic turf, Amy then started to keep track. She compiled a list of 187 total athletes, of which 150 are soccer players, and of that 150, 95 are goalkeepers.<sup>27</sup> She acknowledges that her list is not scientific data, but it is enough to question the safety of synthetic turf.<sup>28</sup> Studies sponsored by companies that manufacture turf have stated this small link between turf and cancer is not sufficient to demonstrate that turf causes cancer.<sup>29</sup> However, to-date, no studies of the long-term effects of playing on turf have been published. The toxicity of turf, which contains crumb rubber made from used scrap tire, can contain benzene, carbon black, lead, and other known carcinogens, but it has not been adequately studied.<sup>30</sup> Yet, turf continues to be rolled out. Children continue to play on it. Soccer players rub their open wounds over the surface each time they slide. Goalkeepers continue to swallow these used tired particles when they dive.

In an effort to bring to light the discrimination practices that professional athletes, particularly women, face and to prevent this generation's soccer players from becoming the guinea pigs for determining the true danger of turf, this Note seeks to make the Turf War both an issue about gender discrimination because of the disparate treatment of male and female soccer players, as well as an issue about the creation of a hostile work environment. Part II discusses the background of turf and the research that has been

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<sup>25</sup> Hannah Rapple, *How Safe is the Artificial Turf Your Child Plays On?*, NBC NEWS (Oct. 8, 2014; 5:00 PM), <http://www.nbcnews.com/storyline/artificial-turf-debate/how-safe-artificial-turf-your-child-plays-n220166>.

<sup>26</sup> *Id.*

<sup>27</sup> *Id.*; Foudy, *supra* note 20.

<sup>28</sup> Rapple, *supra* note 25.

<sup>29</sup> It is also important to emphasize that these are studies that were sponsored by the turf companies themselves, not an independent third party, which raises bias concerns. *Id.*

<sup>30</sup> *Id.*



conducted so far. The EPA's endorsement of turf and the regulatory loopholes they provide to turf manufacturers will also be discussed. Part III examines the protections available to professional athletes from the Occupational Safety and Health Administration (OSHA) and under the National Labor Relations Act (NRLA). Part IV suggests that the federal government should not only fund more research into the long-term effects of artificial field turf, but should also enforce OSHA in regards to the work environments of professional athletes.

## II. BACKGROUND

### A. The Evolution of Turf: From Astroturf to Synthetic Turf

During the 1950's and 60's, the Ford Foundation began studying ways to improve physical fitness of young people.<sup>31</sup> At the same time, the Chemstrand Company was developing new synthetic fibers to use as carpeting.<sup>32</sup> Chemstrand was encouraged by the Ford Foundation to make a sports surface for schools, which Chemstrand began focusing on from 1962–1966.<sup>33</sup> As a result, Chemstrand developed a product called "Chemgrass." After installing Chemgrass at a college preparatory school in Rhode Island in 1964, Chemgrass was renamed "Astroturf."<sup>34</sup>

In 1965, the Houston Colt .45s, a professional baseball team, built a new stadium and replaced the natural grass with Astroturf.<sup>35</sup> The new complex was effectively named the AstroDome and the team's name changed to the Houston Astros.<sup>36</sup> In the next few

<sup>31</sup> Mary Bellis, *History of Astroturf*, ABOUT MONEY, <http://inventors.about.com/od/astartinventions/a/astroturf.htm> (last updated Oct. 23, 2015).

<sup>32</sup> *Id.*

<sup>33</sup> *Id.*

<sup>34</sup> The United States Patent and Trademark Office issued the patent for "Chemgrass" in 1967. *Id.*

<sup>35</sup> *Id.*

<sup>36</sup> Bellis, *supra* note 31; David Schoenfield, *Houston Astros Consider Name Change*, ESPN GO (Jan. 24, 2012), [http://espn.go.com/blog/sweetspot/post/\\_id/20183/houston-astros-consider-name-change](http://espn.go.com/blog/sweetspot/post/_id/20183/houston-astros-consider-name-change).

years, the number of turf fields in the United States drastically grew and evolved.<sup>37</sup> By the 1990's, synthetic turf<sup>38</sup> fields were created, which contain crumb rubber, or those “little black dots,” unlike AstroTurf, which was hard and didn't contain crumb rubber.<sup>39</sup> There are currently more than 11,000 synthetic turf sports fields in use just in the United States.<sup>40</sup>

The synthetic turf fields that contain crumb rubber are most concerning. These fields have three layers: a bottom layer composed of plastic sheeting; middle layers composed of crushed stones with plastic tubing for drainage and rubber padding for shock absorbance; and a top layer composed of plastic mesh with plastic strands that resemble blades of grass.<sup>41</sup> After all of that is completed, crumb rubber infill is added to the top layer.<sup>42</sup> Crumb rubber is recycled, chopped up *used tires*.<sup>43</sup> Crumb rubber contains polyaromatic hydrocarbons, phthalates, volatile organic compounds, zinc, iron, manganese, and lead.<sup>44</sup> Many of these chemicals are either known or suspected to cause health effects.<sup>45</sup>

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<sup>37</sup> *Frequently Asked Questions*, SYNTHETIC TURF COUNCIL, <http://www.syntheticurfCouncil.org/page/FAQs> (last visited Apr. 12, 2016). As of 2014, more than 11,000 synthetic turf sports fields are in use in the U.S. and most of them are crumb rubber. Hannah Rappleye, *How Safe is the Artificial Turf Your Child Plays On?*, NBC NEWS (Oct. 8, 2014, 5:00 PM), <http://www.nbcnews.com/storyline/artificial-turf-debate/how-safe-artificial-turf-your-child-plays-n220166>.

<sup>38</sup> For the purposes of this Note, the terms “synthetic turf” and “turf” will both refer to the turf that contains crumb rubber.

<sup>39</sup> *Frequently Asked Questions*, *supra* note 37.

<sup>40</sup> SYNTHETIC TURF COUNCIL, [http://www.syntheticurfCouncil.org/?page=Sports\\_Fields](http://www.syntheticurfCouncil.org/?page=Sports_Fields) (last visited Nov. 30, 2015).

<sup>41</sup> THE N.Y. CITY DEP'T OF HEALTH & MENTAL HYGIENE, <http://www.nyc.gov/html/doh/html/environmental/turf.shtml> (last visited Nov. 30, 2015).

<sup>42</sup> *Id.*

<sup>43</sup> *Id.* (emphasis added).

<sup>44</sup> *Id.*; SYNTHETIC TURF COUNCIL, *supra* note 40.

<sup>45</sup> Luz Claudio, *Synthetic Turf: Health Debate Takes Root*, 116 ENVTL. HEALTH PERSP. A 116, A 117 (2008), <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC2265067/pdf/ehp0116-a0116.pdf>.

On June 11, 2015, Dr. Gaboury Benoit, Ph.D., a Yale Professor of Environmental Chemistry and Engineering, led a study for Environment and Human Health, Inc. (Yale Study).<sup>46</sup> Dr. Benoit found 96 chemicals in the rubber tires used for synthetic turf and the surfacing of playgrounds.<sup>47</sup> Of those 96 chemicals, nearly half of them had no toxicity assessments done to measure their health effects.<sup>48</sup> Of the half that have had toxicity assessments, 20% were probable carcinogens; 40% were irritants; 24% were respiratory irritants, which cause asthma; 37% were skin irritants; and 27% were eye irritants.<sup>49</sup> Thus, for half of the chemicals, nothing is known of their possible toxic effects, and for the other half, there is scientific evidence of their toxic effects, while many possible effects are still unknown. When commenting on the study, Dr. Benoit made it a point to mention that the shredded tires used in synthetic turf “contain a veritable witches brew of toxic substances. It seems irresponsible to market a hazardous waste as a consumer product.”<sup>50</sup> Further, David Brown, Sc.D., a Public Health Toxicologist, explained that, based off of the Yale Study, “[i]t is reasonable to assume that persons playing on synthetic turf fields with rubber tire infill . . . are being exposed concurrently to multiple chemicals.”<sup>51</sup> While these findings are recent, they, and the Turf War, aren’t the first to call into question the toxic effects of crumb rubber.

### **B. The Environmental Protection Agency’s Backing of Synthetic Turf Fields**

The Environmental Protection Agency has previously dealt with the toxic effects of rubber in connection with North America’s, and the United States’, ongoing tire fire problem. One of the largest tire fires in North America occurred on March 1,

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<sup>46</sup> ENV’T & HUMAN HEALTH, INC., [http://www.ehhi.org/turf/new\\_study\\_jun2015.shtml](http://www.ehhi.org/turf/new_study_jun2015.shtml) (last visited Nov. 30, 2015).

<sup>47</sup> *Id.*

<sup>48</sup> *Id.*

<sup>49</sup> *Id.*

<sup>50</sup> *Id.*

<sup>51</sup> *Id.*

1990 at a dump in Hagersville, Ontario.<sup>52</sup> The fire lasted for 17 days, melted acres of used tires that were stacked 30 feet high, and caused thousands of pounds of chemicals to fill the sky with toxic smoke from the 14 million used tires that were involved in the fire.<sup>53</sup> In 1990, the Environmental Protection Agency (EPA) estimated that two to three billion used tires occupied dumps around the country and that the number grew by 280 million tires per year.<sup>54</sup> At the time, less than five percent of used tires were being recycled.<sup>55</sup>

During 1989, the EPA stated that at least eighty-seven significant tire fires occurred in the United States, which was double the number from 1987.<sup>56</sup> With the number of used tires occupying dumps and number of tire fires rapidly growing, the EPA and other state regulators frantically began searching for a solution. One of these solutions included grinding used tires up into crumb rubber to be used on synthetic turf fields. Since 1991, the EPA has recommended the use of tire crumbs for playground surfaces.<sup>57</sup>

The EPA was quick to rejoice in this newfound way to recycle used tires and prevent future tire fires and, as of 2014, ninety percent of the tire piles were gone.<sup>58</sup> Of course, there are other ways in which tires are recycled, such as to create asphalt and floor mats. However, synthetic turf was an additional, happily accepted

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<sup>52</sup> Keith Schneider, *Worst Tire Inferno Has Put Focus on Disposal Problem*, THE N.Y. TIMES (Mar. 2, 1990), <http://www.nytimes.com/1990/03/02/us/worst-tire-inferno-has-put-focus-on-disposal-problem.html>.

<sup>53</sup> *Id.*

<sup>54</sup> *Id.*

<sup>55</sup> *Id.*

<sup>56</sup> *Id.*

<sup>57</sup> Memorandum from Stephen S. Tuber, Assistant Reg'l Adm'r, Office of P'ships and Regulatory Assistance, U.S. EPA, to Charles M. Auer, Dir., Office of Pollution Prevention & Toxic Substances Et., Donna DeLeone, Acting Dir., Office of Children's Health Prot., and Matt Hale, Dir., Office of Solid Waste (Jan. 17, 2008),

[http://www.peer.org/assets/docs/epa/09\\_1\\_6\\_epa\\_tire\\_warnings.pdf](http://www.peer.org/assets/docs/epa/09_1_6_epa_tire_warnings.pdf).

<sup>58</sup> Jim Motavalli, *America's tire mountains: 90 percent are gone, thanks to recycling programs*, Mother Nature Network (Apr. 2, 2014, 9:14 AM), <http://www.mnn.com/lifestyle/recycling/blogs/americas-tire-mountains-90-percent-are-gone-thanks-to-recycling-programs>.

alternative to what was at one time a major concern for the EPA.<sup>59</sup> The problem, unlike asphalt and floor mats, is that athletes swallow and rub their open wounds in synthetic turf, particularly goalkeepers, who get cut more easily each time they dive and who essentially train non-stop by falling to the ground.

After a few years of using synthetic turf and crumb rubber to address the used tire dilemma, reports began filing into the EPA. Citizens and public health officials had questions regarding the risks to children from tire crumb products.<sup>60</sup> As a result, on January 17, 2008, a memorandum from the EPA, Region 8 in Denver, Colorado was sent to the Directors of the Office of Pollution Prevention & Toxic Substances, the Office of Children's Health Protection, and the Office of Solid Waste.<sup>61</sup> The memorandum noted that EPA staff reviewed the research published at the time regarding the safety of tire crumbs and "found information suggesting that children's chronic, repeated exposure to tire crumb could present health hazards."<sup>62</sup>

While the memorandum also stated that at the time there was insufficient data to quantify toxicological risks, it also recognized that "the growing interest and concern about possible toxicological risks of certain crumb rubber applications suggest[ed] that it would be prudent for [the] EPA to look further into its safety and make sure that there is a scientific basis for EPA's promotion of certain uses of the product."<sup>63</sup> The memorandum shows that not only were there growing concerns surrounding crumb rubber in other regions of the EPA, but also that Region 8 recommended that various EPA offices work together to collect data on the issue.<sup>64</sup> Nonetheless, no research was ever commissioned by the EPA.

Although the EPA was aware of the potential hazards of crumb rubber, they are getting away with endorsing crumb rubber because they are benefiting from a regulatory loophole. Under a revised rule of the Resource Conservation and Recovery Act (RCRA),

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<sup>59</sup> *Id.*

<sup>60</sup> Memorandum, *supra* note 57.

<sup>61</sup> *Id.*

<sup>62</sup> *Id.*

<sup>63</sup> *Id.*

<sup>64</sup> *See id.*

enacted to establish a system for controlling hazardous waste, recycling hazardous waste, such as tire crumbs, may be considered exempt from RCRA requirements.<sup>65</sup> Moreover, the EPA's rule allows the synthetic turf manufacturers themselves to decide whether or not RCRA should apply; therefore, it's not surprising that there has been little to no regulation of synthetic turf in addition to minimal testing of tire crumbs throughout the years.<sup>66</sup>

Under 42 U.S.C. § 6903(27), "solid waste" is any "garbage, refuse, sludge from a waste treatment plant, water supply treatment plant, or air pollution control facility and other discarded material, including solid, liquid, semisolid, or contained gaseous material resulting from industrial, commercial, mining, and agricultural operations, and from community activities . . . ."<sup>67</sup> Additionally, "hazardous waste" means:

A solid waste, or combination of solid wastes, which because of its quantity, concentration, or physical, chemical, or infectious characteristics may

...

(A) cause, or significantly contribute to an increase in mortality or an increase in serious irreversible, or incapacitating reversible, illness; or

(B) pose a substantial present or potential hazard to human health or the environment when improperly treated, stored, transported, or disposed of, or otherwise managed.<sup>68</sup>

Crumb rubber is produced by reducing scrap tires down to about 1/4 inch.<sup>69</sup> There are two common processes for manufacturing crumb rubber: ambient grinding and cryogenic processing.<sup>70</sup> In ambient grinding, the rubber from the tires remains at room temperature and enters a cracker mill or

<sup>65</sup> ENV'T & HUMAN HEALTH, INC., [http://www.ehhi.org/turf/how\\_government.shtml](http://www.ehhi.org/turf/how_government.shtml) (last visited Nov. 30, 2015).

<sup>66</sup> *Id.*

<sup>67</sup> 42 U.S.C. § 6903(27) (2012).

<sup>68</sup> 42 U.S.C. § 6903(5) (2012).

<sup>69</sup> *Crumb Rubber Information*, SCRAP TIRE NEWS, <http://www.scraptirenews.com/crumb.php> (last visited Apr. 14, 2016).

<sup>70</sup> *Id.*

granulator.<sup>71</sup> There are typically three machines involved in this process. The first machine will cut up the tires into small chips.<sup>72</sup> The second machine will then grind the chips to separate the rubber from the metal and fabric.<sup>73</sup> The third and final machine will grind the material to the required size specification.<sup>74</sup> In the cryogenic process, on the other hand, the tires are processed at very low temperatures, typically -80 to -120° Celsius.<sup>75</sup> Additionally, liquid nitrogen or commercial refrigeration methods are used to break down the rubber; the rubber is then processed and broken down further to the desired size.<sup>76</sup> As of 2016, there was no U.S. standard for processing crumb rubber;<sup>77</sup> most manufacturers have their own processing system.<sup>78</sup>

As such, the crumb rubber infill used on synthetic turf is a discarded material resulting from an industrial community activity (since used tires come from cars and from the crumb rubber industry) for purposes of 42 U.S.C. § 6903(27). Additionally, in light of the findings from the Yale Study, it can be classified as a hazardous waste under 42 U.S.C. § 6903(5).

Under a revised rule to the definition of solid waste under Subtitle C of the Resource Conservation and Recovery Act (RCRA), the EPA excluded from regulation under the RCRA some hazardous waste that is “legitimately” recycled.<sup>79</sup> Further, “if a hazardous secondary material has been reclaimed and made into a product that will be used by children, and that product contains hazardous constituents that are not in analogous products, that product will *likely* need to be closely scrutinized.”<sup>80</sup> The EPA does

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<sup>71</sup> *Id.*

<sup>72</sup> *Id.*

<sup>73</sup> *Id.*

<sup>74</sup> *See id.*

<sup>75</sup> In Fahrenheit, this is -176° to -248°. *Id.*

<sup>76</sup> *Id.*

<sup>77</sup> *Id.*

<sup>78</sup> *Id.*

<sup>79</sup> 40 C.F.R. § 261.2(a)(2)(ii) (2008); Revision to the Definition of Solid Waste, 73 Fed. Reg. 64668-01, 64669 (to be codified at 40 C.F.R. pt. 261.2).

<sup>80</sup> Revisions to the Definition of Solid Waste, 73 Fed. Reg. at 64706 (emphasis added).

not *prohibit* the incorporation of hazardous constituents into these products, nor do they *guarantee* a close scrutiny of these recycled products.<sup>81</sup> This has effectively resulted in manufacturers who use hazardous wastes to make products for children, such as turf, no longer being subjected to RCRA requirements.<sup>82</sup> Although many commenters argued that the EPA had no authority under RCRA to exclude hazardous secondary materials from the definition of solid waste prior to the adoption of this revised rule, the EPA disagreed.<sup>83</sup> The commenters argued that “Congress intended for hazardous secondary materials to be classified as solid wastes even when they are recycled,” but the EPA defended the legality of their actions by citing *Safe Food and Fertilizer v. EPA*.<sup>84</sup> In *Safe Food and Fertilizer*, nonprofit organizations petitioned for review of an EPA rule excluding recycled materials used to make zinc fertilizers from Subtitle C of RCRA.<sup>85</sup> The court upheld this exclusion by stating that the EPA concluded that the materials were not solid waste.<sup>86</sup> This, the EPA stated, gave them the “authority to determine which types of recycling do not involve discard and, therefore, which types of hazardous secondary materials are not solid wastes.”<sup>87</sup>

The result: since crumb rubber is “legitimately” recycled under EPA standards, the manufacturers of synthetic turf do not have to follow the guidelines and regulations set forth under the RCRA.

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<sup>81</sup> Revisions to the Definition of Solid Waste, 73 Fed. Reg. at 64712; Letter from Abigail Dillen, Vice President of Litig. for Climate & Energy, and John DeCock, President of Clean Water Action, to Lisa Jackson, Adm’r of the Env’tl. Prot. Agency (Apr. 20, 2009), <http://earthjustice.org/sites/default/files/library/signon/letter-to-lisa-jackson-on-definition-of-solid-waste-rule.pdf>.

<sup>82</sup> Letter from Abigail Dillen, *supra* note 81.

<sup>83</sup> Revisions to the Definition of Solid Waste, 73 Fed. Reg. at 64718.

<sup>84</sup> *Id.*

<sup>85</sup> *Safe Food & Fertilizer v. EPA*, 350 F.3d 1263, 1265 (D.C. Cir. 2003).

<sup>86</sup> *Id.*

<sup>87</sup> Revisions to the Definition of Solid Waste, *supra* note 83.



### III. ATHLETE PROTECTIONS UNDER OSHA

Following the asbestos litigation in the early 1990s and studies linking it to numerous harmful side effects, strict standards regarding asbestos in the workplace were implemented by the government. Currently, an employer must ensure that none of their employees are exposed to airborne asbestos in excess of 0.1 fiber per cubic centimeter of air for more than 8 hours.<sup>88</sup> An employer is also barred from exposing their employees to airborne asbestos in excess of 1.0 fiber per cubic centimeter of air for greater than thirty minutes.<sup>89</sup> Occupational Safety and Health Administration (OSHA) goes on to define asbestos-containing material as any material containing more than 1% asbestos.<sup>90</sup> Wherever there is a danger of asbestos exposure, employers are required to post warning signs bear the following: “DANGER [ ] ASBESTOS [ ] MAY CAUSE CANCER [ ] CAUSES DAMAGE TO LUNGS [ ] AUTHORIZED PERSONNEL ONLY.”<sup>91</sup> Crumb rubber and synthetic turf, by contrast, has no such requirement.

Even given all of the protections OSHA offers employees, in most cases it “does not take enforcement action with regard to professional athletes.”<sup>92</sup> The reasoning for this exclusion relates to the legal definition of “employee.”<sup>93</sup>

In July 2015, the U.S. Department of Labor issued guidance regarding classification of workers versus independent contractors established cause to re-examine worker classification.<sup>94</sup> The guidance letter set forth factors to be considered in determining whether workers are employees, including the following: (1) the

<sup>88</sup> 29 CFR § 1910.1001(c)(1) (2012).

<sup>89</sup> 29 CFR § 1910.100(c)(2) (2012).

<sup>90</sup> 29 CFR § 1910.1001(b) (2012).

<sup>91</sup> 29 CFR § 1910.1001(j)(4)(ii)(A) (2012).

<sup>92</sup> Letter from Richard E. Fairfax, OSHA Dir. of Directorate of Enf't Programs, to Robert Van Laanen (Sept. 12, 2008), [https://www.osha.gov/pls/oshaweb/owadisp.show\\_document?p\\_table=INTERPRETATIONS&p\\_id=27301](https://www.osha.gov/pls/oshaweb/owadisp.show_document?p_table=INTERPRETATIONS&p_id=27301).

<sup>93</sup> *Id.*

<sup>94</sup> Judy Greenwald, *DOL Leads Firms to Evaluate Independent Contractors*, BUS. INS.: RISK MGMT (July 21, 2014, 10:51 a.m.), <http://www.businessinsurance.com/article/20150721/NEWS06/150729962/1241>

extent to which the work performance is an integral part of the employer's business; (2) the worker's opportunity for profit or loss depending on his or her managerial skill; (3) the extent of the relative investments of the employer and the worker; (4) whether the work performed requires special skills and initiatives; (5) the permanency of the relationship; and (6) the degree of control exercised or retained by the employee.<sup>95</sup> Further, the IRS defines a common-law employee as anyone who performs services, if the employer can control what will be done and how it will be done.<sup>96</sup> Persons are still employees even if they are given freedom of action, as long as the employer has the right to control the details of how the services are performed.<sup>97</sup> Based on this understanding of an employee, soccer players should be considered employees. FIFA creates the rules of soccer, explicitly defining how a soccer player's "services" can be performed. Not only that, but FIFA is in charge of all of the international soccer matches, thereby controlling who can compete and how they can compete in these prestigious competitions, which includes the World Cup.

The National Labor Relations Act (NLRA) distinguishes between an employee and an independent contractor.<sup>98</sup> For instance, employees have rights of organization and collective bargaining whereas independent contractors don't and are excluded from NLRA coverage.<sup>99</sup> The test for determining whether an individual is an employee or an independent contractor was examined in *NLRB v. United States Co. of America*, which held that the common law agency test applies.<sup>100</sup> Following that case, the National Labor Relations Board (NLRB) decided to follow a nonexclusive list of factors from the Restatement (Second) of

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<sup>95</sup> *Id.*

<sup>96</sup> INTERNAL REVENUE SERV., <https://www.irs.gov/Businesses/Small-Businesses-&-Self-Employed/Employee-Common-Law-Employee> (last updated Oct. 4, 2016).

<sup>97</sup> *Id.*

<sup>98</sup> 29 U.S.C. § 152(3) (2016) ("The term 'employee' . . . shall not include . . . any individual having the status of an independent contractor . . ."); Hiroshi Motomura, Comment, *Employees and Independent Contractors Under the National Labor Relations Act*, 2 BERKELEY J. EMP. & LAB. L. (1977).

<sup>99</sup> *Id.*

<sup>100</sup> *NLRB v. United Ins. Co. of Am.*, 390 U.S. 254, 256 (1968).

Agency in determining whether an individual is an employee or independent contractor:

- 1) The extent of control which, by the agreement, the master may exercise over the details of the work.
- 2) Whether or not the one employed is engaged in a distinct occupation or business.
- 3) The kind of occupation, with reference to whether, in the locality the work is usually done under the direction of the employer or by a specialist without supervision.
- 4) The skill required in the particular occupation.
- 5) Whether the employer or the workman supplies the instrumentalities, tools, and the place of work for the person doing the work.
- 6) The length of time for which the person is employed.
- 7) The method of payment, whether by the time or by the job.
- 8) Whether or not the work is part of the regular business of the employer.
- 9) Whether or not the parties believe they are creating the relation of master and servant.
- 10) Whether the principal is or is not in the business.<sup>101</sup>

Simply put, OSHA does not consider professional athletes employees, and instead classifies them as “independent contractors” outside their regulatory authority and protection.<sup>102</sup> In an interpretation letter, OSHA stated that the classification of an individual as an employee or independent contractor “must be made on a case-by-case basis after considering all of the circumstances affecting the relationship between the teams and

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<sup>101</sup> *Roadway Package Sys., Inc. and Teamsters Local 63*, 326 N.L.R.B. 842 at 849-50 (1998); Restatement (Second) of Agency § 220 (*Roadway Package Sys., Inc.* 326 N.L.R.B. 842 at 849-50 (1998)); Restatement (Second) of Agency § 220 (1958).

<sup>102</sup> *Fairfax*, *supra* note 92.

their players and applying the common law factors.”<sup>103</sup> Based on this, OSHA has jurisdiction to regulate professional sports if the athletes are determined to be employees, but this will be done on a case-by-case basis and precedent suggests that OSHA is hesitant to interfere in the professional sports arena.<sup>104</sup>

Previous case-by-case interpretations of professional athletes as independent contractors have pertained to instances where, for example, a baseball player was hit by a broken bat, or where a firm who insured some professional sports teams had concerns that teams omitted information on the injuries and illnesses of their players.<sup>105</sup> This is a far cry from the troubling concerns raised by artificial field turf, which is more comparable to asbestos than it is to a broken bat.

Further, OSHA defines a hazard as a potential for harm and states that it is associated with a condition that, if left uncontrolled, could result in injury or illness.<sup>106</sup> When determining what kind of jobs are given priority in conducting job hazard analyses, OSHA has a general duty clause that specifically lists “[j]obs with the potential to cause severe or disabling injuries or illness, even if there is no history of previous accidents.”<sup>107</sup> Synthetic turf has the potential to cause severe illness—such as cancer—and even though there is little evidence directly linking cancer to turf and previous “accidents,”<sup>108</sup> there is enough to raise concern and no history of previous accidents is even required. Additionally, it is the employer’s responsibility to “provide a workplace free from

<sup>103</sup> *Id.*

<sup>104</sup> Jon Hyman, *OSHA and Pro Sports—Are Concussions the NFL’s Black Lung*, LEXISNEXIS LEGAL NEWSROOM (Mar. 18, 2015, 2:09 p.m.), <http://www.lexisnexis.com/legalnewsroom/labor-employment/b/labor-employment-top-blogs/archive/2015/03/18/osha-and-pro-sports-are-concussions-the-nfl-s-black-lung.aspx>.

<sup>105</sup> Fairfax, *supra* note 92; Letter from Frank Frodyma, OSHA Acting Dir. of Directorate of Evaluation and Analysis, to Dave Chamberlain, Dir. of Loss Control Servs. (June 23, 2003), [https://www.osha.gov/pls/oshaweb/owadisp.show\\_document?p\\_table=INTERP\\_RETATIONS&p\\_id=24901](https://www.osha.gov/pls/oshaweb/owadisp.show_document?p_table=INTERP_RETATIONS&p_id=24901).

<sup>106</sup> U.S. Dep’t of Labor, Occupational Safety & Health Admin., *Job Hazard Analysis* (2002) (revised), <https://www.osha.gov/Publications/osha3071.html>.

<sup>107</sup> *Id.*

<sup>108</sup> *See id.*

serious recognized health standards” and employers with hazardous chemicals in the workplace, such as known carcinogens found in tire crumbs, “must develop and implement a written hazard communication program.”<sup>109</sup>

Thus, while OSHA may be hesitant to adopt a broad range rule that applies to all athletes, the inclusion of this general duty clause still gives them jurisdiction in the professional sports realm.<sup>110</sup> In fact, OSHA used this clause to cite SeaWorld of Florida following the death of a trainer.<sup>111</sup> In that case, SeaWorld of Florida was cited for three safety violations, and the total penalty was \$75,000.00.<sup>112</sup> OSHA further elaborated that “SeaWorld recognized the inherent risk of allowing trainers to interact with potentially dangerous animals [killer whales] . . . . Nonetheless, it required its employees to work within the pool walls, on ledges and on shelves.”<sup>113</sup> The incident involved a killer whale that grabbed a trainer and pulled her under the water and repeatedly struck and thrashed the trainer. The trainer died as a result.<sup>114</sup> After an investigation by OSHA, it was determined that the whale had also been one of three killer whales involved in the death of a trainer in 1991; that SeaWorld had forbidden trainers from swimming with this whale, but allowed them to interact with it in shallow water; and that SeaWorld trainers had an “extensive history of unexpected and potentially dangerous incidents involving killer whales at its various facilities.”<sup>115</sup> Les Grove, OSHA’s director in Tampa, Florida, said, “All employers are obligated to assess potential risks to the safety and health of their

<sup>109</sup> U.S. DEP’T OF LAB., <https://www.osha.gov/as/opa/worker/employer-responsibility.html> (last visited Nov. 30, 2015).

<sup>110</sup> Hyman, *supra* note 104.

<sup>111</sup> Citation & Notification of Penalty from U.S. Dep’t of Lab. Occupational Safety & Health Admin., to Sea World of Fla., LLC (Aug. 23, 2010), <https://www.osha.gov/dep/citations/seaworld-citation-notification-of-penalty.pdf>.

<sup>112</sup> New Release, U.S. Dep’t of Labor, U.S. Labor Department’s OSHA cites Seaword of Florida following animal trainers death (Aug. 23, 2010), *available at* [https://www.osha.gov/pls/oshaweb/owadisp.show\\_document?p\\_table=NEWS\\_RELEASES&p\\_id=18207](https://www.osha.gov/pls/oshaweb/owadisp.show_document?p_table=NEWS_RELEASES&p_id=18207).

<sup>113</sup> *Id.*

<sup>114</sup> *Id.*

<sup>115</sup> *Id.*

employees and take actions to mitigate those risks.”<sup>116</sup> So, if OSHA can use this clause to regulate the entertainment industry, it can certainly be used to protect professional athletics from being exposed to known carcinogens.<sup>117</sup> Yet, they decline to do so.

FIFA and other professional sports organizations have the money<sup>118</sup> and resources<sup>119</sup> to provide a workplace free from serious health standards, as they have demonstrated when they replaced synthetic turf with natural grass in the 1994 Men’s World Cup.<sup>120</sup> But FIFA chose not to replace the fields for the Women’s World Cup and instead compelled the women’s teams to play on hazardous turf. Aside from the blatant gender discrimination being employed by FIFA by requiring the women to play on turf but

<sup>116</sup> *Id.*

<sup>117</sup> Hyman, *supra* note 104.

<sup>118</sup> From 2011–2014, FIFA made a profit of \$338 million and they made a net profit of \$2.6 billion from the 2014 World Cup alone. Paul Sargeant, *How Fifa makes and spends its money*, BBC NEWS (May 29, 2015), <http://www.bbc.com/news/world-europe-32923882>. Further, in 2015, U.S. and Swiss authorities began investigating FIFA senior officials for accepting bribes and kickbacks estimated at more than \$150 million over a 24-year period, so people really don’t know how much FIFA is making due to their corrupt practices, but it is clearly a ton. *Id.*

<sup>119</sup> FIFA’s objectives are: (a) to improve the game of [soccer] constantly and promote it globally . . . ; (b) to organize its own international competitions [mainly, the World Cup]; (c) to draw up regulations and provisions and ensure their enforcement [this includes creating the actual rules of the game of soccer]; (d) to *control* every type of Association Football [also known as soccer] by taking appropriate steps to prevent infringements of the Statutes, regulations or decisions of FIFA or of the Laws of the Game; (e) to promote integrity, ethics and fair play . . . .” FIFA STATUTES (Apr. 2015 ed.) (emphasis added) (on file with author), *available at* [http://www.fifa.com/mm/Document/AFFederation/Generic/02/58/14/48/2015FIFAStatutesEN\\_Neutral.pdf](http://www.fifa.com/mm/Document/AFFederation/Generic/02/58/14/48/2015FIFAStatutesEN_Neutral.pdf). FIFA reach extends to multiple countries, including the U.S., since they are the governing body of soccer. *See supra* note 3 and accompanying text. Not only that but “FIFA’s immense geographical reach has given it the financial resources and clout to withstand any outside efforts to impose reforms – and to argue it is capable of policing itself.” Martin Maximino, *Corruption, sports and FIFA: Research roundup*, JOURNALIST’S RESOURCE (June 15, 2015), <http://journalistsresource.org/studies/society/culture/corruption-sports-fifa-research-roundup>. They have an immense amount of “control” over the game of soccer and, because of that, have a vast amount of resources.

<sup>120</sup> *See* Kassouf, *supra* note 14.

replacing turf with natural grass for the men, they subjected their athletes to known carcinogens. Employers, including both FIFA and U.S. Soccer, since U.S. Soccer is a member of FIFA,<sup>121</sup> aren't providing a safe workplace, so OSHA can, and should, step in.

#### IV. PROPOSAL

Given the startling, serious concerns surrounding synthetic turf and the remarkable cover-up and loopholes the EPA has employed in efforts to get rid of tires, not only should the government fund further research into the link between synthetic turf and cancer, but OSHA should protect the athletes who are forced to play on this surface. In doing so, perhaps we could stop the serious exposure to crumb tire from continuing to recur before they reach the drastic levels that we saw with asbestos. If OSHA enforces this duty to avoid exposing employees to hazardous material, then turf fields across the country will quickly be reverted to grass or another alternative to enable professional soccer, football, baseball, and other sports teams to be able to play. This includes practice fields and not just game fields and stadiums. While there may be a concern that reverting fields to grass is not practical in certain rainy climates, there is a new alternative to the crumb tires used in turf. In fact, in response to the growing concerns of crumb rubber in synthetic turf, on June 16, 2015, the Parks and Recreation Commission in Long Beach California authorized the recommendation of coconut-based fiber to be used rather than crumb rubber.<sup>122</sup> While the life span of the coconut-based fiber infill is only 2 to 3 years, as opposed to 10 years with crumb rubber, and costs about \$50,000.00 more, the alternative of exposing children and athletes to cancer has a much higher cost.<sup>123</sup> The company leading this revolution, GeoFill, has installed other

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<sup>121</sup> See *supra* note 3 and accompanying text.

<sup>122</sup> Jason Ruiz, *Parks and Recreation Commission Proposes Organic Filler for Synthetic Turf Projects*, LONG BEACH POST (June 16, 2015, 10:47 AM), <http://lbpost.com/news/city/2000006350-parks-and-recreation-commission-proposes-organic-filler-for-synthetic-turf-projects>.

<sup>123</sup> *Id.*

coconut-based fields across the United States.<sup>124</sup> Similar to crumb rubber, the GeoFill infill system is made up of three layers: 100% organic materials consisting of coconut fibers, sand, and a pad layer for shock absorption.<sup>125</sup>

In return, these practice fields, which at times are used by children and college athletics teams, will also aid in reducing the exposure of the harmful chemicals found in synthetic turf in children as well. As a result, not only will professional athletes no longer be exposed to the harms of turf, but the next may not have generation to worry about being lab rats before more effective legislation, similar to asbestos, steps in.

#### V. CONCLUSION

Given the high toxicity rates in crumb rubber in addition to OSHA's guidelines for employers' responsibilities for preventing illness and injuries, FIFA's use of artificial turf during the 2015 Women's World Cup not only amounts to gender discrimination, but also to the creation of a hostile work environment. While the 2015 Women's World Cup was hosted by Canada, numerous FIFA tournaments, including the U.S. Women's United States Victory Tour, were played in the United States. As such, the United States should not only fund more research into the negative implications of crumb rubber, but should replace the current crumb rubber synthetic turf fields to avoid continued hostile work environment conditions for professional athletes.

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<sup>124</sup> *Project: Soccer*, SHAW SPORTS TURF, <http://www.shawsportsturf.com/soccer/> (last visited Nov. 30, 2015).

<sup>125</sup> *Tech & Innovations: Geofill*, SHAW SPORTS TURF, <http://www.shawsportsturf.com/geofill/#> (last visited Nov. 30, 2015).