SERVED: March 24, 2016

NTSB Order No. EM- 213

UNITED STATES OF AMERICA
NATIONAL TRANSPORTATION SAFETY BOARD
WASHINGTON, D.C.

Adopted by the NATIONAL TRANSPORTATION SAFETY BOARD
at its office in Washington, D.C.
on the 24th day of March, 2016

PAUL F. ZUKUNFT, Commandant, United States Coast Guard, Appellee, v. SIMONE JOYCE SOLOMON, Appellant.	Docket ME-30000

OPINION AND ORDER

1. *Background*

Appellant seeks review of the Vice Commandant's[1] decision on appeal (CDOA) 2708, dated May 18, 2015, which affirmed a decision and order (D&O) issued by Coast Guard

[1] The Commandant has delegated to the Vice Commandant the authority to take final action in suspension and revocation proceedings. 33 C.F.R. § 1.01-40.

Administrative Law Judge (ALJ) Dean C. Metry on May 15, 2013, following an evidentiary hearing held January 15 and 16, 2013.[2] By that decision, the law judge denied appellant's appeal of the Coast Guard's August 10, 2012 complaint, which alleged appellant had committed "misconduct" by wrongfully refusing a urine test, as described in 49 C.F.R. § 40.191(b) of the U.S. Department of Transportation's (DOT) regulations on Procedures for Transportation Workplace Drug and Alcohol Testing Programs (the "DOT drug testing regulations"), because she provided a substituted urine specimen.[3] The law judge found the results of the specimen indicated appellant had provided a substituted sample, and therefore refused the drug test. The Vice Commandant affirmed the law judge's order in its entirety. We remand the case for additional analysis and supplemental evidence.

A. *Facts*

The majority of the facts of this case are undisputed. On July 2, 2012, "one of the A.B.s" on the CHARLESTON ALLIANCE instructed the 21 crewmembers aboard the ship that they must take a random chemical test in accordance with 46 C.F.R. part 16, while the ship was in port at Jebel Ali, United Arab Emirates. Jezer Hualde, a collecting officer employed by Anderson-Kelly Associates, Inc., boarded the vessel and began the collection process in the

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[2] Copies of the decisions of the Vice Commandant and law judge are attached to this Opinion and Order.

[3] Section 40.191 is titled "What is a refusal to take a DOT drug test, and what are the consequences?" Paragraph (b) of the regulation provides as follows: "if the MRO reports that you have a verified adulterated or substituted test result, you have refused to take a drug test." Similarly, 46 C.F.R. § 16.105 of the Coast Guard regulations on Chemical Testing indicates a "refuse to submit" means "you refused to take a drug test as set out in 49 [C.F.R.] 40.191."

In charging appellant with misconduct, the complaint cited 46 C.F.R. § 5.27, which states, "[m]isconduct is human behavior which violates some formal, duly established rule. Such rules are found in, among other places, statutes, regulations, the common law, the general maritime law, a ship's regulation or order, or shipping articles and similar sources. It is an act which is forbidden or a failure to do that which is required."

hospital area of the ship. At the hearing, Mr. Hualde's recollection of the collection process indicated he was closely familiar with the steps for collection.[4] In accordance with the DOT drug testing regulations, Mr. Hualde sealed the toilets in the area to ensure the crewmembers would not have access to water. Appellant showed Mr. Hualde her pockets were empty, and observed Mr. Hualde sealing the specimen vials. Both Mr. Hualde and appellant recalled it was a hot day in Jebel Ali, and they both testified they recalled nothing unusual about the collection.
Mr. Hualde kept the box containing the urine specimens from the 21 crewmembers in his air conditioned office, which was not on the vessel. Mr. Hualde recalled the specimens were not refrigerated, and a courier picked up the box the following day. He estimated the temperature in his office was "at least" 18 to 20 degrees Celsius,[5] which equates to approximately 64.4 to 68 degrees Fahrenheit.

On July 10, 2012, the box containing the specimens arrived at Anderson-Kelly's office in Mount Olive, New Jersey. Erin Beller, the Manager of the Substance Abuse Prevent Program at Anderson-Kelly, received the shipment and counted the specimens and examined them for tampering and leaks. She also examined the chain of custody forms that accompanied the specimens, although she testified she was unaware of how long the specimens were in transit in the United Arab Emirates, or elsewhere, before arriving at her office in New Jersey. Later on July 10, Ms. Beller sent the specimens to MEDTOX Laboratories, Inc. in St. Paul, Minnesota, for testing. The specimens arrived at MEDTOX on July 11, 2012.

On July 12, 2012, Medical Review Officer (MRO) Hani Khella verified appellant's drug test results were substituted, based on the fact that the specimen showed creatinine concentration

[4] Tr. (vol. I) at 35-40. References in this Opinion and Order to the transcript of the hearing before the United States Coast Guard ALJ will specify either volume I, which refers to the first day of the hearing (January 15, 2015), or volume II, which refers to the second day (January 16, 2015).

[5] Tr. (vol. I) at 58.

of 1.3 mg/dL and a specific gravity of 1.0223. Dr. Khella called appellant while she was on board the CHARLESTON ALLIANCE and informed her of his determination that she had substituted her urine specimen. Appellant was officially terminated from employment with Argent Marine Operations, Inc. on July 14, 2012, at which point Argent Marine arranged for appellant's return to her home in Florida. Appellant contacted her labor union and a doctor immediately upon her arrival, and arranged for an additional urine test, the results of which were normal. She did not request a re-test when Dr. Khella informed her of the problematic creatinine and specific gravity measurements, because she stated Dr. Khella did not inform her that she could undergo a re-test under the DOT drug testing regulations, nor did he inform her that she could request the urine be tested on different equipment or by a facility other than MEDTOX.[6]

Based on the text of 49 C.F.R. § 40.93(b), the Coast Guard alleged appellant's creatinine concentration of 1.3 mg/dL along with the specific gravity measurement of 1.0223 established appellant had provided a substituted urine specimen. The laboratory tests did not indicate the presence of an adulterant or prohibited substance in the urine. Section 40.93(b), titled "What criteria do laboratories use to establish that a specimen is dilute or substituted?" provides as follows:

> (b) As a laboratory, you must consider the primary specimen to be substituted when the creatinine concentration is less than 2 mg/dL and the specific gravity is less than or equal to 1.0010 or greater than or equal to 1.0200 on both the initial and confirmatory creatinine tests and on both the initial and confirmatory specific gravity tests on two separate aliquots.[7]

[6] Tr. (vol. II) at 23 (appellant's statement that if Dr. Khella had offered a re-test, she would have requested one, and that Dr. Khella only suggested she consider drug rehabilitation services).

[7] The DOT drug testing regulations define "aliquot" as "[a] fractional part of a specimen used for testing. It is taken as a sample representing the whole specimen." 49 C.F.R. § 40.3.

At the hearing, appellant denied she had substituted or diluted the specimen. She agreed the temperature in Jebel Ali on July 2, 2012 was approximately 111 degrees Fahrenheit. Although pH level is not a criterion for establishing whether a specimen is diluted or substituted, the parties agreed the evidence establishes the pH level of appellant's urine specimen was 8.8.[8]

Dr. Khella testified no explanation existed for appellant's diminished creatinine concentration with the heightened specific gravity. On direct examination, cross-examination, and in rebuttal, he stated heat would not have an effect on creatinine concentration, specific gravity, or pH. In discussing the urinalysis with appellant, Dr. Khella asked her if she took any medication or had any medical problems. Appellant informed Dr. Khella that she took blood pressure medication, Lisinopril, as well as diuretic pills and vitamins. Dr. Khella stated none of these items could have affected the creatinine concentration or specific gravity of appellant's urine to the extent shown in her urinalysis results. Dr. Khella concluded the characteristics of the urine specimen were simply not consistent with human urine. Dr. Khella stated if a person drank so much water to cause dilution of the creatinine concentration in his or her urine to just 1.3 mg/dL, then the specific gravity of the urine would also decrease. Dr. Khella emphasized he could not explain appellant's urinalysis results, because it is not physiologically possible to produce a urine specimen with the creatinine concentration and specific gravity of appellant's urine specimen.[9]

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[8] MEDTOX Associate Director for Forensic Toxicology Mitchell Lebard testified, "under the federal guidelines, we are required when we see a low creatinine, that we need to perform a specific pH reading by the meter." Tr. (vol. I) at 172. The complaint did not include an allegation concerning the pH level of appellant's specimen, which was 8.8. The pH level of a specimen is considered out-of-range if it exceeds 9.0. Normal pH is 7; elevation of pH can be the result of heat, bacteria in urine, and/or decreased creatinine level. Tr. (vol. I) at 154, 157-59.

[9] Tr. (vol. I) at 224, 231, 262..

In addition to providing her own testimony, appellant presented two expert witnesses, both of whom stated heat affects creatinine concentration and the pH level of urine. Appellant also presented two studies from the Journal of Analytical Toxicology, which concluded time and heat affect the pH level of urine, and that excessive fluid intake can affect creatinine concentration and the specific gravity of urine. Both of appellant's experts agreed appellant's urinalysis results were extremely unusual. Dr. Dale Syfert had reviewed appellant's medical records and concluded her urine "normally runs a specific gravity into the midrange about 1.02 or thereabouts."[10] Dr. Syfert further stated appellant's records showed she has a history of creatinine concentration on the lower end of normal.

Dr. Daniel Logan, who was previously certified as an MRO and now is a clinical assistant professor at the University of Florida College of Medicine, testified he had never observed urinalysis test results similar to appellant's test results. He stated neither he nor his professor colleagues could come up with a possible adulterant that would result in the measurements of appellant's urine. He further stated creatinine could degrade in urine if the urine is kept in temperatures of 115 degrees Fahrenheit or above. Dr. Logan testified urine is often refrigerated to prevent evaporation and slow the break-down of urine, which is accelerated if bacteria are present in the urine. He opined the specific gravity of appellant's urine was just barely above the acceptable range, and that boiling urine could cause an increase in specific gravity. Dr. Logan stated if he had observed the creatinine concentration and specific gravity as an MRO, he would have ordered the donor to provide a second specimen under direct observation procedures.[11]

B. *Law Judge's Decision and Order*

[10] Tr. (vol. II) at 68.

[11] Tr. (vol. II) at 127-28.

In his Decision and Order (D&O), the law judge ordered suspension of appellant's Merchant Mariner Document for a period of 14 months, based on the fact the Coast Guard proved one charge of misconduct, as codified at 46 C.F.R. § 5.27. The law judge correctly summarized the method of analysis and standard of review applicable to Coast Guard document enforcement proceedings: the Administrative Procedure Act authorizes the imposition of a sanction if, upon consideration of the entire record as a whole, the charges are supported by reliable, probative, and substantial evidence.[12] The burden of proof rests on the Coast Guard to prove a preponderance of the evidence supports the charges.[13] The law judge further explained the standard of review by quoting the Supreme Court's definition of preponderance of the evidence: proving a fact by a preponderance of the evidence "simply requires the trier of fact to believe that the existence of a fact is more probable than its nonexistence before [finding] in favor of the party who has the burden to persuade the [judge] of the fact's existence."[14] As a result, the law judge stated the Coast Guard must prove it is more likely than not that appellant committed misconduct, as charged.

The law judge noted appellant did not significantly call into question the chain of custody of the specimen or the laboratory testing procedures. Instead, she contended the amount of heat to which the specimen was exposed altered the composition of her urine, which caused the abnormal creatinine concentration and specific gravity measurements. The law judge also stated

[12] 5 U.S.C. § 556(d).

[13] D&O at 9 (citing 33 C.F.R. §§ 20.701, 20.702(a), regarding standard of proof and burden of proof, respectively, in the Rules of Practice, Procedure, and Evidence for Formal Administrative Proceedings of the Coast Guard).

[14] Id. (quoting Concrete Pipe and Prod. of California, Inc. v. Constr. Laborers Pension Trust for S. California, 508 U.S. 602, 622 (1993)).

appellant contended the laboratory tested four data points from three separate aliquots of the specimen, when the laboratory should have tested two separate aliquots from two data points.

The law judge denied appellant's appeal on both grounds. He concluded the Coast Guard established a *prima facie* case that appellant had refused the test, based on the creatinine concentration and the specific gravity measurements. The law judge summarized the text of 49 C.F.R. § 40.93(b) as not requiring MEDTOX to conduct any further tests of the aliquots. In this regard, the law judge stated, "a plain reading of the provision requires only that the initial and confirmation tests be run from two (2) different aliquots; it does not specifically mandate the initial and confirmatory tests for creatinine be run from the exact same aliquots as the tests for specific gravity."[15] The law judge also disagreed with appellant's contention that heat had caused her urine specimen to degrade to a point at which it became invalid. The law judge largely based this conclusion on determining appellant's witnesses and evidence was not credible, and that Dr. Khella provided more relevant, credible testimony.[16] Notwithstanding these findings, the law judge reduced the sanction from revocation to a 14 month suspension.

C. *The Commandant's Decision on Appeal (CDOA)*

In accordance with Coast Guard procedures, both appellant and the Coast Guard appealed the law judge's D&O. The Vice Commandant affirmed the law judge's decision in the CDOA, specifically rejecting the issues the parties raised on appeal. In particular, appellant had challenged the law judge's decision on three grounds. First, appellant contended the law judge committed discovery errors by rejecting appellant's requests in discovery for the recordings of certain telephone conversations among appellant and Dr. Khella. Second, appellant argued the law judge abused his discretion in accepting Dr. Khella's testimony as more credible than the

[15] Id. at 12.

[16] Id. at 14-17.

testimony of appellant's experts on the subject of the effects of heat on creatinine concentration. Third, appellant asserted the law judge erred in determining the charging document—the complaint the Coast Guard served on appellant—was sufficient under 49 C.F.R. § 40.93(b). In addition to denying appellant's appeal, the CDOA also denied the Coast Guard's appeal, in which the agency contended the law judge erred in reducing the sanction from revocation to a 14 month suspension.

The Vice Commandant's CDOA explains the rationale for denying the appeals on each of these issues. In affirming the law judge's resolution of the discovery issues appellant presented, the Vice Commandant noted "appellant did not raise any objection to the ALJ's treating the discovery request as limited to the initial telephone conversation," to clarify he only considered appellant's requests for the recording of the initial conversation between appellant and Dr. Khella. Appellant sought discovery of the recording to prove Dr. Khella did not advise her of her opportunity to have the specimen re-tested. The Coast Guard and Dr. Khella denied such a recording existed, and the law judge accepted this denial. The Vice Commandant affirmed the law judge's holding in this regard, finding appellant "waived any argument that her request included the audio recording of the other telephone conversation, [which occurred between Dr. Khella, appellant, and a doctor representing appellant]."[17] The Vice Commandant determined appellant waived her argument concerning the request for the recording because she did not address it when the parties and the law judge discussed the initial conversation at the hearing.[18]

Regarding the law judge's assessment that Dr. Khella's testimony was credible concerning degradation of creatinine concentration in hot temperatures, the Vice Commandant disagreed with the law judge's assessment, stating "there is reason to doubt the testimony of

[17] CDOA at 6.

[18] Id. at 6-7 (citing Tr. vol. II at 58-60).

Dr. Khella, to the extent that he suggested that creatinine in a urine specimen would not degrade at temperatures below 300 degrees Celsius."[19] However, the Vice Commandant concluded, for purposes of its *prima facie* case, the Coast Guard only needed to prove the collection and testing facilities conducted the collection and testing in accordance with the applicable regulations. The Vice Commandant stated the Coast Guard was not required to prove appellant's specimen was not exposed to high heat during transportation and storage of the specimen between July 3 and July 10, 2012. Instead, the Vice Commandant determined the relevant regulations place the burden on appellant to establish she produced or could have produced the urine through physiological means.[20] The Vice Commandant concluded one study appellant introduced into evidence suggested if appellant had produced her specimen through physiological means, even exposure to high temperatures for 14 days could not have caused it to be reported as dilute or substituted. The Vice Commandant also affirmed the law judge's denial of appellant's requests for *amicus curiae* under the Coast Guard's applicable procedural rules, finding the requests were untimely.

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[19] Id. at 8.

[20] Id. at 9. The CDOA cites 49 C.F.R. § 40.145(e), which states as follows:

> (e) The employee has the burden of proof that there is a legitimate medical explanation.
> (1) To meet this burden in the case of an adulterated specimen, the employee must demonstrate that the adulterant found by the laboratory entered the specimen through physiological means.
> (2) To meet this burden in the case of a substituted specimen, the employee must demonstrate that he or she did produce or could have produced urine through physiological means, meeting the creatinine concentration criterion of less than 2 mg/dL and the specific gravity criteria of less than or equal to 1.0010 or greater than or equal to 1.0200 (see § 40.93(b)).
> (3) The employee must present information meeting this burden at the time of the verification interview. As the MRO, you have discretion to extend the time available to the employee for this purpose for up to five days before verifying the specimen, if you determine that there is a reasonable basis to believe that the employee will be able to produce relevant evidence supporting a legitimate medical explanation within that time.

The Vice Commandant further affirmed the law judge's determination that the complaint was not deficient on the basis that it did not comply with 49 C.F.R. §§ 40.39(b) and 40.191(b). In particular, appellant had argued because § 40.39(b) requires confirmatory testing and the complaint did not allege the results of the testing, it was deficient on its face. Appellant filed a motion to dismiss the complaint, based on this shortcoming, and the law judge denied the motion, finding the complaint contained the requisite information and provided appellant with "adequate notice of the actions giving rise to the alleged offense."[21] The Vice Commandant's CDOA affirms the law judge's dismissal of the contention that the complaint was deficient, on the basis that the document cited the applicable regulatory requirements, and that the Coast Guard's jurisprudence in this regard indicates the chemical test results must "show that applicable regulations relating to the chain of custody and specimen integrity safeguards were followed."[22] The Vice Commandant determined appellant received sufficient notice of the charges that formed the basis of the Coast Guard's complaint; therefore, the law judge did not err in finding the complaint was adequate. The Vice Commandant also dismissed the Coast Guard's appeal concerning the law judge's reduction of the sanction.[23]

D. *Appellant's Appeal to the Board*

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[21] CDOA at 11 (citing Order dated Nov. 29, 2012 at 4-5).

[22] Id. at 13 (citing Appeal Decision 2555 (LAVALLAIS) (1994)).

[23] In this regard, the CDOA states, "[a]pplicable regulations authorize the ALJ to decide on a sanction and, where the regulations do not require revocation as a sanction, a Commandant's Decision on appeal cannot displace the regulations and require the ALJ to order revocation." Id. at 14. The CDOA also cites Appeal Decision 2702 (CARROLL) (2013) for the proposition that the law judge's reduction in sanction was acceptable, because the record does not indicate the law judge failed to consider "the proper factors" that are relevant to "a fair and impartial adjudication of the case on its individual facts and merits." Id. The Coast Guard did not appeal the Commandant's CDOA in this regard.

On appeal to this Board, appellant reiterates her argument that the law judge improperly based his decision on an understanding that creatinine concentration in urine is heat stable to 300 degrees, which was an erroneous assumption material to the outcome of the case. In this regard, appellant contends the law judge abused his discretion in considering Dr. Khella's testimony to be credible and probative; appellant cites numerous portions of the record that contain testimony from Dr. Khella that appellant disproves, through experts and scientific publications she presented. For example, Dr. Khella stated "absolutely" no correlation between blood and urine creatinine levels existed and that Lisinopril, which is a diuretic appellant took to control her blood pressure, could not cause urine creatinine concentration to drop. In furtherance of this basis for appeal, appellant contends the Vice Commandant erred in not allowing testimony or opinions, via *amicus curiae*, of Dr. Roger Bertholf, PhD., who appellant asserts recently published a study showing the Vice Commandant's statements concerning an article from the Journal of Analytic Toxicology introduced into the record were incorrect. Appellant further asserts Dr. Khella's errant testimony formed the basis of the Coast Guard's opinion that appellant substituted her urine specimen; therefore, the Coast Guard did not fulfill its burden of proving "that the natural production of urine is human behavior that rises to the level of misconduct."[24] Appellant states she did not commit an act of misconduct, and cites 46 C.F.R. § 5.27, which was the only charge cited in the complaint.

Appellant also asserts the Coast Guard did not comply with discovery obligations because the agency did not notify her of the existence of at least one recorded telephone conversation between Dr. Khella and appellant. While Dr. Khella denied making a recording of the first phone call, in which he recalled he read from a script to inform appellant of her

[24] Appeal Br. at 24-25.

substituted specimen, he acknowledges he recorded a second phone call, and informed appellant at the commencement of the call that he was recording it. Appellant made a written request for "telephone recordings" on December 28, 2012, but allegedly did not receive the second recording, the existence of which Dr. Khella confirmed at the hearing.[25] Appellant asserts she was unaware of the existence of the recording until Dr. Khella responded to questions about it at the hearing. The law judge dismissed the contention as moot, apparently based on the Coast Guard's contention that Dr. Khella did not make a recording of the first phone call, and the agency did not believe a recording of the second phone call was subject to discovery because it lacked relevance.[26] The Vice Commandant affirmed the law judge's determination in this regard.

2. *Decision*

In reviewing Coast Guard actions against a mariner's license, document, or other credential, we determine whether substantial evidence supports the action.[27] The Commandant's decision on appeal should only reverse the law judge's decision if the law judge's findings are arbitrary and capricious.[28] In addition, we are aware that Commandants' decisions on appeal should defer to Coast Guard law judges' credibility determinations.[29] In this case, because we believe the record indicates a number of issues that call into question the veracity of the test results and adherence to discovery and testing obligations, we remand the case to the Coast

[25] Tr. (vol. I) at 241.

[26] Tr. (vol. II) at 59-60.

[27] See generally Commandant v. Moore, NTSB Order No. EM-201 at 7 (2005); see also Appeal Decision 2685 (MATT) (stating, "[o]n appeal, a party may challenge whether each finding of fact rests on substantial evidence, whether each conclusion of law accords with applicable law, precedent, and public policy, and whether the ALJ committed any abuses of discretion" and citing 46 C.F.R. § 5.701 and 33 C.F.R. § 20.1001).

[28] Commandant v. Harris, NTSB Order No. EM-182 (1996).

[29] Commandant v. Moore, NTSB Order No. EM-201 at 8-9 (2005); Commandant v. Purser, 5 NTSB 2597, 2598 (1986).

Guard for findings specific to the issues outlined herein.

A. *Creatinine Concentration and Specific Gravity Measurements*

Each of the medical experts who testified at the hearing, as well as Mr. Lebard, agreed it is physiologically impossible for a human to produce a urine specimen measuring 1.3 mg/dL creatinine concentration in conjunction with 1.0223 specific gravity.[30] Dr. Logan noted appellant's specimen had a specific gravity measurement that was only slightly out-of-range and testified the measurement could possibly be the result of something that was done to the urine to cause it to appear more concentrated than diluted, such as boiling it.[31] The experts consistently agreed low creatinine concentration combined with low specific gravity was a certain indication of dilution. The converse relationship, in which a creatinine concentration is low, but a specific gravity measurement is high, is extremely rare and caused the experts to remain perplexed.

Appellant notes the urine specimen, while collected on July 2, 2012 in the United Arab Emirates, must have been subjected to hot temperatures prior to arriving in New Jersey on July 10, 2012. The Coast Guard does not challenge this point. Appellant does not dispute the accuracy of the evidence showing the chain of custody of the urine sample was in compliance with the applicable regulations. The record establishes the sample could have been exposed to elevated temperatures. The temperature on July 2, 2012 in the United Arab Emirates was approximately 111 degrees Fahrenheit. In this regard, the Vice Commandant confirmed the evidence established appellant's urine specimen "was collected when the outside temperature

[30] Tr. (vol. I) at 175, 179 (testimony of Mr. Lebard); Tr. (vol. I) at 224, 231 (testimony of Dr. Khella); Tr. (vol. II) at 73 (testimony of Dr. Syfert); Tr. (vol. II) at 125-26 (testimony of Dr. Logan, who opined only a pre-mixed specimen made by someone who has access to laboratory equipment could possibly produce a urine specimen with the measurements of appellant's).

[31] Tr. (vol. II) at 126.

was extremely hot."[32] Certain aspects of appellant's urine test results indicate it must have been subjected to heat: the pH level of the urine was 8.8, and the creatinine initially measured 1.4 mg/dL on July 11, 2012, but measured 1.3 mg/dL the following day. This decline within just one day, combined with a pH level that is so high it is almost out-of-range,[33] strongly indicates the urine was exposed to heat.

The Coast Guard also cannot dispute appellant's normal laboratory results show the creatinine concentration of her urine tends to measure low. The evidence shows this is likely the result of genetics, the diuretic effect of a prescription drug she consumed to lower her blood pressure, and the fact she is female. Appellant's traditionally low creatinine concentration, in light of the supposition her urine was exposed to heat, counseled in favor of a repeated test upon the MRO's receipt of the test results. The record establishes average urine creatinine concentrations are lower among women, and decrease with age, beginning at about age 20. Appellant was 43 years old at the time of the collection.[34] In addition, scientific publications show one's race also influences creatinine concentration.[35] Very low results, while uncommon, are possible. We instruct the Coast Guard to consider such information on remand.

B. *Testing Regulations*

For toxicology testing of urine, the Coast Guard utilizes the DOT drug testing regulations, set forth at 49 C.F.R. part 40. The plain language of the regulations, combined with

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[32] D&O at 7.

[33] Tr. (vol. I) at 143, 153, 157, 159, 171, 175; Tr. (vol. II) at 73; Exh. CG-19 at 24.

[34] Exh. R-1 at 3 (showing appellant's date of birth).

[35] Exh. CG-31 at 4 , Table 3 (study published by National Institute of Health, showing differences in creatinine concentrations based on gender and race; Table 3 of the study states 4.9 percent of "Non-Hispanic black" female participants age 40-49 had a urine creatinine concentration of less than 30 mg/dL, while an even higher percentage of "Non-Hispanic white" and "Mexican American" female participants in the same age group had a creatinine concentration of less than 30 mg/dL).

the regulatory history underlying the regulations, indicate appellant's urine should have undergone additional testing, whether by allowing appellant to provide a new specimen or notifying her that she could have requested split sample testing.

In the case *sub judice*, the Coast Guard alleges appellant substituted her specimen, rather than diluted it. However, neither the DOT drug testing regulations, nor the regulatory history underlying them, address a possible non-corroborating relationship between creatinine concentration and specific gravity. The data and rationale upon which DOT relied does not discuss the possibility that creatinine concentration could be reduced, and specific gravity could increase, as the result of exposure to heat. The Coast Guard does not deny appellant's specimen was likely exposed to hot temperatures over a period of eight days before arriving in the United States for testing. We direct the Coast Guard to address whether the DOT drug testing regulations—specifically, 49 C.F.R. § 40.93(b)—were intended to capture the non-corroborating relationship between creatinine concentration and specific gravity. Such an issue is critical to the resolution of the issues on appeal in this case.

In addition, in promulgating the drug testing regulations, the regulatory history clearly shows the agency relied upon two specific measures to ensure validity of testing: split specimen tests and MRO review and verification. The Final Rule enacting the testing regulations states, "to ensure fairness and to provide safeguards parallel to those available in cases of positive drug tests, the Department will add split specimen testing and MRO review to its procedures in these cases."[36] DOT clarified it perceived no statute to compel it to include split specimen testing and MRO review when questions of validity of the specimen arose. However, it stated, "situations in which an adulterant is naturally found or a substitution naturally occurs are

[36] 65 Fed. Reg. 79462, 79480 (Dec. 19, 2000).

likely to be extremely rare… our policy to allow medical review and use of the split specimen will provide employees with an additional level of protection and an added degree of fairness."[37] The Final Rule goes on to state the proper procedure in such rare cases would consist of the MRO informing the employee that he or she may obtain additional evaluation from another physician, acceptable to the MRO, who has expertise concerning any potential medical explanation for the test results.[38] The fact the DOT recognized a rare case may exist in which substitution *naturally* occurs, combined with the reliance on the MRO in such circumstances, emphasizes the importance of the MRO's role in reviewing and explaining the test results and follow-up procedures to employees.

In the case at hand, MRO Khella testified he read from a script when informing appellant of her substituted test result. The script includes notification that the employee may have the split specimen tested, and may opt to have follow-up testing completed. Appellant testified Dr. Khella never informed her of either of these options. She recalled he only recommended she enroll in a drug abuse rehabilitation program. She stated if Dr. Khella had offered a re-test, she would have chosen to do so. A review of the script shows the main purpose of the interview is to discern whether a legitimate medical explanation existed for the substituted test result. Only at the conclusion of the interview does the script contain the sentence, "[f]inally, you'll have the right, up to 72 hours, to request to have the original sample retested at another laboratory."[39]
Dr. Khella testified when he inquired of appellant with regard to whether a legitimate medical explanation existed to explain the test results, she stated she takes blood pressure medication. Dr. Khella concluded blood pressure medication could not affect creatinine concentration, noted

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[37] Id.

[38] Id. at 79481.

[39] Tr. (vol. I) at 223; Exh. CG-15.

the specimen as substituted on the appropriate form, and sent the package with his MRO report to the appropriate authorities.

As the Vice Commandant's CDOA explains, the evidence at the hearing establishes the erroneous nature of Dr. Khella's opinion that heat, consumption of a prescription drug, or other factors could not affect creatinine concentration. In addition, Dr. Khella did not inform appellant she could obtain "additional evaluation from another physician, acceptable to the MRO," as the DOT drug testing Final Rule contemplates.[40] These shortcomings, in addition to the fact the specimen was subjected to hot temperatures prior to testing, call into question the reliability of Dr. Khella's determination that appellant had substituted her specimen. Because we believe Dr. Khella's testimony appears to be the primary evidence contradicting appellant's case in rebuttal, we further direct the Coast Guard to address the inconsistency in finding Dr. Khella's testimony not credible, but then finding no error with discovery in the case, and no problem with its resolution of the case overall.

In rare cases such as the one at issue here, we note the accuracy of test results is paramount to our analysis. Without further clarification concerning the effects of heat, adulterants, or other environmental factors on creatinine and specific gravity, we believe the record is insufficient to establish the accuracy of the test results.

Due to the number of questions arising from the facts of this case, we must receive additional evidence and clarification to resolve the aforementioned issues. The Coast Guard maintains the burden of establishing appellant engaged in misconduct as described at 46 C.F.R. § 5.27 by "attempting to defraud the testing process by submitting a substituted sample."[41]

2. *Conclusion*

[40] 65 Fed. Reg. 79462, 79481 (Dec. 19, 2000).

[41] Compl. at ¶ 9.

In conclusion, we emphasize the narrow nature of our holding in this case. Our holding here does not call into question DOT drug testing regulations, nor does it function to upend or overturn, in any manner, drug tests that have occurred and will continue to occur in accordance with the regulations. The unique facts of this case are the only source of our rationale for determining, in this exceptional circumstance, that remanding this case for further analysis is appropriate. Moreover, we do not opine on the acceptance of additional evidence via the *amicus curiae* procedure, as our remand of the case renders this issue moot.

ACCORDINGLY, IT IS ORDERED THAT:

This case is remanded to the Coast Guard for further proceedings consistent with this Opinion and Order.

HART, Chairman, DINH-ZARR, Vice Chairman and SUMWALT, Member of the Board, concurred in the above opinion and order. WEENER, Member of the Board, concurred, in part, and dissented, in part, and submitted the following statement.

Member Earl F. Weener, Concurring, in Part, and Dissenting, in Part:

I do not concur with our direction to the Coast Guard to "address whether the DOT drug testing regulations—specifically, 49 C.F.R §40.93(b)—were intended to capture the non-corroborating relationship between creatinine concentration and specific gravity." The intent of the DOT notwithstanding, the language of the regulation is clear. The regulation is written so that when a sample has an extremely low creatinine level and a higher than normal specific gravity it is to be considered substituted. Not only is an exploration of the DOT's subjective intent not necessary to the resolution of this case, it borders on the nonsensical. The parameters of the rules are set to establish when a substance, purported by a test taker to be his or her urine, is not, in fact, human urine at all. To expect something that is not human urine to have test results consistent with human urine is illogical.

I also do not concur with our instruction to the Coast Guard directing it to consider specific information contained in the National Institute of Health study. The study is minimally relevant at best because no participant appears to have had creatinine levels consistent with those in the sample in this case. The study did generally find that the female participants tended to have lower creatinine levels relative to male participants, the "Non-Hispanic black" 40-49 year old female participants had higher creatinine levels relative to the "Non-Hispanic white" and

"Mexican American" participants in the same age group, and the older participants had lower relative creatinine levels than the younger participants. We point out that fewer than 5% of the "Non-Hispanic black" participants aged 40-49 had a creatinine concentration of less than 30/mg/dL. It is unclear how any of this is relevant to the Appellant's sample or what this direction to the Coast Guard intends to accomplish. The Appellant provides the best direct evidence of her normal creatinine levels in the form of an additional sample.

In review of this case, it is necessary to consider our proper role in the context of the issues brought forward on appeal. The law judge determined that the Coast Guard met its burden by establishing through substantial evidence a *prima facie* showing that the urine sample in question was substituted. Our role is to examine whether or not the judge's findings were arbitrary or capricious. The law judge determined that the Appellant did not sufficiently prove a defense regarding the sample results. Our role is to determine whether or not the law judge was arbitrary or capricious in so doing. The Coast Guard must prove the test results show that the Appellant sample meets the definition of a substituted sample and, therefore, is not comprised entirely of human urine. Having met this burden, the Coast Guard is not required by the regulation to continue with further testing, to determine what the sample actually is, or to prove what specific adulterant may have been added. Based on the review of the record, neither party disputes the numerical values of the test results. While the Appellant's witnesses offer opinions, based on their medical experience, relating to refrigeration of samples and subsequent confirmatory testing, the record seems clear that, in so far as the initial testing procedure, the Coast Guard met all applicable standards.

Once the Coast Guard meets its burden of proof, it has established that the sample is substituted, or in other words, not human urine. Then, in accordance with 49 CFR Part 40 §40.145, the burden of proving an asserted "legitimate medical defense" falls to the Appellant. While a test subject may assert any number of possible or potential explanations for the test results, this alone does not satisfy the requirement. The language of the regulation requires that "the employee must demonstrate that the adulterant found by the laboratory entered the specimen through physiological means." 49 CFR Part 40 §40.145 further requires that to succeed the Appellant must "demonstrate that he or she did produce or could have produced urine through physiological means, meeting the creatinine concentration criterion of less than 2 mg/dL and the specific gravity of less than or equal to 1.0010 or greater than or equal to 1.0200." While the law judge adequately explained why he was unconvinced by the Appellant's argument and evidence, he failed to specifically indicate whether the Appellant did or did not establish by a preponderance of the evidence that, based on medical issues including medication and underlying medical or physiological condition, she did or could have produced urine otherwise indicative of a substituted sample. To make this determination, the law judge should consider whether any witness provided examples of medical conditions shown to have produced samples consistent with the language of the regulation. The Coast Guard should also consider what qualifies as "physiological means."

I do not concur that the evidence "strongly indicates that the urine was exposed to heat" sufficient to produce the creatinine level or specific gravity of the sample. The Appellant's experts, however, do raise issues regarding the potential impact of heat on the sample. Neither side disputes the fact that on at least one day of the time the sample was in transit to the testing facility the outdoor temperature reached well over 100° Fahrenheit. It is not clear for how much, if any, of the sample's transit it might have been exposed to heat or might have been kept in climate controlled conditions. It is also, not clear from the record what exact effect heat might have had on the sample's creatinine level or specific gravity. All expert witnesses weighed in on this issue. The law judge agreed with Coast Guard's witness, or at least, was not convinced by the Appellant's experts. The law judge determined that there was not sufficient evidence to establish that the heat to which the sample was, or may have been exposed, did affect the sample.

We note a discrepancy in the questioning of Dr. Khella's statement regarding the temperature at which creatinine degrades. In a discussion of the relative credibility of the witnesses, the Coast Guard should be instructed to specify reasons for overall credibility determinations. What, for instance, makes a doctor whose career is specific to forensic urine testing more or less credible than a medical doctor with a similar education but a focus on the practice of emergency medicine? The Coast Guard should also be instructed to explain whether the Appellant's evidence, on its own, failed to establish that heat did, in fact, affect the samples to the extent that the extremely low creatinine level is explained.

Guard procedural rules and regulations, the burden of proof is on the Coast Guard to prove the charges are supported by a preponderance of the evidence. 33 C.F.R. §§ 20.701, 20.702(a). "The term substantial evidence is synonymous with preponderance of the evidence as defined by the U.S. Supreme Court." Appeal Decision 2477 (TOMBARI) (1988); see also Steadman v. Sec. and Exch. Comm'n, 450 U.S. 91, 107 (1981).

The burden of proving a fact by a preponderance of the evidence "simply requires the trier of fact 'to believe that the existence of a fact is more probable than its nonexistence before [he] may find in favor of the party who has the burden to persuade the [judge] of the fact's existence.'" Concrete Pipe and Prod. of California, Inc. v. Constr. Laborers Pension Trust for S. California, 508 U.S. 602, 622 (1993) (citing In re Winship, 397 U.S. 358, 371-72 (1970) (Harlan, J., concurring) (brackets in original)). Therefore, the Coast Guard Investigating Officer (IO) must prove by credible, reliable, probative, and substantial evidence that Respondent more likely than not committed Misconduct.

B. Coast Guard's Argument

The Coast Guard proffers Respondent's employer, Argent Marine, lawfully ordered her to submit to a random urinalysis on July 2, 2012 while the ALLIANCE CHARLESTON was at port in Jebel Ali, UAE. (Tr. Vol. I at 13, 80, 89). 46 C.F.R. § 16.230. On that same date, Mr. Jezer Hualde, a certified DOT specimen collector, collected Respondent's sample in accordance with the procedures set forth in 49 C.F.R. Part 40. (Tr. Vol. I at 30) (CG Ex. 3, CG Ex. 7).

Mr. Hualde poured Respondent's specimen into two vials, sealing both vials in Respondent's presence; Respondent signed the CCF acknowledging Mr. Hualde sealed the specimen in her presence. (Tr. Vol. I at 39) (CG Ex. 8). Mr. Hualde packaged Respondent's sample with the twenty (20) other samples collected aboard the ALLIANCE CHARLESTON,

first storing the samples in an air conditioned room overnight, then shipping them to the United States via local courier the following day. (Tr. Vol. I at 58) (ALJ Ex. 1, ALJ Ex. 2).

Erin Beller, Manager of the Substance Abuse Prevention Program at Anderson-Kelley, received a FedEx shipment of the samples at her office in Mount Olive, New Jersey approximately one week later, on July 10, 2012. (Tr. Vol. I at 91-92). Ms. Beller kept the samples locked in her office overnight, and then shipped them to MEDTOX the following day. (Tr. Vol. I at 110-11). Ms. Beller testified she received the samples intact and noticed nothing unusual about them. (Tr. Vol. I at 109-110).

MEDTOX, a SAMSHA certified laboratory located in Minnesota, conducted the laboratory testing procedures in accordance with 49 C.F.R. Part 40. (Tr. Vol. I at 127-35, 138-39, 159) (CG Ex. 10, CG Ex. 19). During the testing procedure, a total of three (3) aliquots were taken from Respondent's urine sample. (Tr. Vol. I at 142-43) (CG Ex. 19).

The first aliquot, tested on July 11, 2012, yielded a pH of 8.8 and a creatinine value of 1.4 mg/dL; no specific gravity measurement was taken. (Tr. Vol. I at 143-45, 147) (CG Ex. 19). The second aliquot, tested on July 12, 2012, yielded a specific gravity of 1.0223. (Tr. Vol. I at 144) (CG Ex. 19). The third aliquot, run for confirmatory testing, yielded a specific gravity of 1.0223 and a creatinine value of 1.3 mg/dL. (Tr. Vol. I at 145) (CG Ex. 19).

The Coast Guard suggests Respondent submitted a substituted sample pursuant to the applicable regulations as her creatinine concentration was less than 2 mg/dL, and her specific gravity was greater than 1.0200. 49 C.F.R. § 40.93(b). Dr. Hani Khella, the MRO, thus properly verified Respondent's sample as substituted. (Tr. Vol. II at 219, 225) (CG Ex. 13, CG Ex. 14, CG Ex. 15).

Dr. Khella testified it was not physiologically possible for a human to produce such a urine sample, even if the sample was exposed to extreme heat over time. (Tr. Vol. II at 231-33, 252-53, Tr. Vol. III at 154-55). Although Respondent testified she took vitamins and various

medications, Dr. Khella opined Respondent's test results could not be achieved through any combination of medication. (Tr. Vol. II at 254).

C. Respondent's Argument

At the hearing, Respondent did not significantly call into question the chain of custody of the specimen or the laboratory testing procedures.[3] Instead, Respondent offered two main arguments in her defense. First, Respondent suggested the wording of 49 C.F.R. § 40.93(b) mandates that two (2) aliquots be taken from each urine sample, and that one creatinine and one specific gravity measurement be taken from each of the two aliquots. (See Tr. Vol. I at 199). In the instant case, the four (4) requisite data points were taken from three (3) separate aliquots instead of two (2). (Tr. Vol. I at 142-43) (CG Ex. 19).

Second, Respondent proffers the sample was exposed to excessive amounts heat while in transit from the UAE to the United States. Respondent suggests this extreme heat exposure altered the chemical composition of Respondent's urine, thereby causing the abnormal creatinine and specific gravity readings. (Tr. Vol. I at 43, Tr. Vol. III at 10-11).

D. Analysis

The Coast Guard has demonstrated through a preponderance of the reliable and probative evidence that Respondent refused to test in violation of 49 C.F.R. § 40.191(b) by submitting a verified substituted sample according to the parameters set forth by 49 C.F.R. § 40.93(b). For the reasons discussed herein, neither of Respondent's arguments refutes or undermines the Coast Guard's prima facie case of Misconduct.

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[3] Respondent did bring attention to the fact that the specimen collector did not wear gloves, but did not allege how or why this would impact or invalidate the testing procedure. (Tr. Vol. I at 44-45, 115). See 49 C.F.R. Part 40. Respondent also alleged the MRO, Dr. Khella did not offer her the opportunity to have her sample re-tested. (Tr. Vol. III at 23). However, Dr. Khella credibly testified that when he calls donors he reads from a standard MRO interview script, informing each donor he or she has up to seventy-two (72) hours to request the split specimen be tested at another laboratory. (Tr. Vol. II at 220) (CG Ex. 15).

a. 49 C.F.R. § 40.93(b)

Respondent argues 49 C.F.R. § 40.93(b) mandates two (2) aliquots be taken from a urine sample, and, from this, four (4) data points extracted: one creatinine measurement and one specific gravity measurement from each of the two (2) aliquots. (See Tr. Vol. I at 199). In the instant case, a total of three (3) aliquots were taken. (Tr. Vol. I at 142-43) (CG Ex. 19). MEDTOX measured the urine creatinine level from the first and third aliquots, and the specific gravity from the second and third aliquots. (CG Ex. 19). Thus, Respondent contends Respondent's urinalysis was not conducted in accordance with 49 C.F.R. Part 40, specifically 49 C.F.R. § 40.93(b).

Title 49 C.F.R. § 40.93(b) states as follows:

> As a laboratory, you must consider the primary specimen to be substituted when the creatinine concentration is less than 2 mg/dL and the specific gravity is less than or equal to 1.0010 or greater than or equal to 1.0200 on both the initial and confirmatory creatinine tests and on both the initial and confirmatory specific gravity tests on two separate aliquots.

Respondent contends the language of 49 C.F.R. § 40.93(b) mandates two aliquots be taken from a urine sample, not three. (See Tr. Vol. I at 199). Respondent's argument in this regard is unpersuasive. The regulatory language references "the initial and confirmatory creatinine tests and...the initial and confirmatory specific gravity tests on two separate aliquots." 49 C.F.R. § 40.93(b). Thus, a plain reading of the provision requires only that the initial and confirmation tests be run from two (2) different aliquots; it does not specifically mandate the initial and confirmatory tests for creatinine be run from the exact same aliquots as the tests for specific gravity.[4]

[4] Further, Mitchell LeBard, the Associate Director for Forensic Toxicology at MEDTOX, credibly testified that, pursuant to federal requirements, if the initial creatinine level is abnormally low, the lab must perform a specific gravity test using a four digit refractometer as opposed to a three digit refractometer. (Tr. Vol. I at 145-47). The lab also performs an initial pH test, as "the pH reading chemically can be affected by the ionic strength [of urine with an unusually low creatinine]." (Tr. Vol. I at 174). Specific gravity must be tested with a four digit refractometer if the

Further, assuming, arguendo, that the language of 49 C.F.R. § 40.93(b) did require the initial and confirmatory tests for creatinine and specific gravity be run on the same two aliquots, the undersigned finds this error to be harmless. Regardless of the number of aliquots used, the measurements for both creatinine and specific gravity were initially calculated, and then confirmed, using two different samplings of Respondent's urine. Thus, Respondent has failed to explain how use of a third aliquot undermines the accuracy of the test in any meaningful way.

Respondent also questioned Dr. Khella, the MRO, as to the requirements of 49 C.F.R. § 40.93(b), inquiring as to how he was able to certify the specimen as substituted after reviewing only one creatinine and one specific gravity measurement. (Tr. Vol. II at 237-38). Ostensibly, counsel sought to suggest Dr. Khella could not have properly certified the sample as substituted absent a review of all four (4) data points. However, 49 C.F.R. § 40.93 states that "[a]s a laboratory, you must consider the primary specimen to be substituted when...". (Emphasis added). Thus, the provision is specifically directed at the laboratory, not the MRO. 49 C.F.R. § 40.93(b). Thus, Respondent's argument in this regard is also without merit.

b. The Scientific Evidence

i. Summary

Dr. Khella, the MRO, testified that while creatinine varies by gender and race, is not physiologically possible for a human to produce urine with a creatinine of 1.3 mg/dL and a specific gravity of 1.0223. (Tr. Vol. II at 231-33). He explained that while diuretics and

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creatinine is less than 5 mg/dL, and a pH test is required for samples with a creatinine level of less than 2 mg/dL. (Tr. Vol. I at 147-48).
Thus, due to Respondent's abnormally low creatinine reading, a specific gravity measurement was not taken from the first aliquot. Instead, the specific gravity was first recorded the following day using the second aliquot and the more specific four digit refractometer. (CG Ex. 19). Thus, the laboratory provided a cogent reason for the use of three (3) aliquots instead of two (2), and, ultimately, the creatinine and specific gravity of Respondent's urine were both tested twice. 49 C.F.R. § 40.93(b).

medication could conceivably lower creatinine, they could not lower it to a level of 1.3 mg/dL. (Tr. Vol. II at 246). The average urine creatinine is 130 mg/dL; any reading over three hundred (300) or under twenty (20) is considered abnormal. (Tr. Vol. III at 162).

Dr. Khella further testified creatinine is "heat stable" and would not decrease simply because a urine sample was exposed to hot temperatures. (Tr. Vol. II at 252-53). He explained creatinine has "a melting point of 300 degrees Celsius," suggesting that "[u]nless you're in a volcano," heat will not be a factor. (Tr. Vol. II at 258). Thus, "sitting in the desert [during shipment] is not going to cause the urine to degrade and cause...the creatinine to disappear, or to break down." (Tr. Vol. II at 258).

By contrast, Respondent's first medical witness, Dr. Dale Syfert, testified it was indeed physiologically possible for a human to produce urine with such readings, suggesting Respondent's low creatinine levels could be explained by her medications. (Tr. Vol. III at 71-72). Dr. Syfert also testified creatinine can degrade in high temperatures, especially when yeast or bacteria is present. (Tr. Vol. III at 73, 85, 92, 95). Last, Dr. Syfert described a creatinine level of 1.5 mg/dL as being "at the lower end of normal." (Tr. Vol. III at 84).

Respondent's second medical witness, Dr. Logan, testified he had never seen a case with a low creatinine and a high specific gravity, and could not think of a physiologic process that could yield such a result. (Tr. Vol. III at 121). He noted Lisinopril, one of Respondent's medications, "conceivably could cause" some lowering of the creatinine, but did not indicate whether the medication could explain a creatinine level of 1.3 mg/dL.

ii. Discussion

Among the three experts, Dr. Khella was the most qualified and the most credible. Notably, Dr. Khella is the only one of the testifying physicians currently certified as a Medical

Review Officer. (CG Ex. 13, CG Ex. 33). While Dr. Logan was previously certified as a MRO, his certification has lapsed. (Tr. Vol. III at 121) (Resp. Ex. 8). The record does not indicate Dr. Syfert, was ever certified as an MRO, and suggests his background is primarily in the field of emergency medicine. (See Tr. Vol. III at 66, 79) (Resp. Ex. 7).

Of the testifying physicians, Dr. Khella was the most knowledgeable and credible on the subject matter. He was particularly informative regarding the effect of heat on creatinine, specific gravity, and pH. (Tr. Vol. II at 252-53, 260). He testified with great specificity, explaining creatinine has a melting point of three hundred (300) degrees Celsius. (Tr. Vol. II at 252-53). He unequivocally testified Respondent's sample was inconsistent with normal human urine, regardless of the medications Respondent may have been taking at the time. (Tr. Vol. II at 262, Tr. Vol. III at 154-55).

Respondent's medical witnesses, Dr. Syfert and Dr. Logan, were more equivocal. Dr. Logan testified Lisinopril could conceivably explain some lowering of creatinine due to its diuretic effects, and Dr. Syfert testified Respondent's low creatinine could be explained by medication. (Tr. Vol. III at 71-72, 119-21). However, both Dr. Logan and Dr. Syfert ultimately concluded there must have been something wrong with the testing procedures and/or the handling of the specimen. (Tr. Vol. III at 76, 98, 121).

Dr. Syfert testified the results could be explained by the hot temperatures to which Respondent's urine was exposed in the UAE, suggesting the "results are compatible with the way the specimen was handled," as creatinine will diminish when not refrigerated. (Tr. Vol. III at 100). However, Dr. Syfert conceded "we just don't know [by] how much," later stating that "temperatures above the normal in the 100 to 120 range," and not merely unrefrigerated temperatures, can degrade creatinine. (Tr. Vol. III at 85, 92, 95, 100).

When asked whether creatinine composition could change when exposed to high temperatures, Dr. Logan explained he was "not entirely sure that that's true or not," conceding "I

don't know that I can answer [that] for sure." (Tr. Vol. III at 127-28). Admittedly, Dr. Logan was also uncertain as to whether there was an upper limit to normal human creatinine levels. (Tr. Vol. III at 137).

While Respondent introduced two learned treatises into evidence, the undersigned considers neither study very probative, as Respondent presented minimal testimony as to the significance of the studies and/or how they relate to the instant case. (See Tr. Vol. III at 61-62, 92-93, 101-02, 104) (Resp. Ex. 4, Resp. Ex. 5).

Respondent also introduced evidence tending to show her prior urine screens were normal. (Resp. Ex. 3). Additionally, Respondent introduced evidence suggesting that, after returning to the United States, her urine again tested normal. (Tr. Vol. III at 32, 34). However, this evidence neither rebuts the Coast Guard's case nor explains the abnormal July 2, 2012 specimen. In fact, if anything, such evidence actually supports the Coast Guard's position, as it indicates Respondent has no physiological abnormalities, thereby making sample substitution the more likely explanation.

Interestingly, both Dr. Syfert and Dr. Logan testified they did not think substitution could explain Respondent's test results, suggesting one would have to be a skilled chemist to produce the test results seen in the instant case. Specifically, Dr. Logan testified that "it's possible [one could] add salt to a normal urine specimen and raise the specific gravity [to get these results]," but suggested "you have to be awfully lucky to get just the right amount of salt in it to be able to do it." (Tr. Vol. III at 122-23). He further testified:

> You just have to be incredibly lucky. And I asked that of a toxicologist as well. And they said, boy you—you just almost have to be down to measuring it with a micro scale to be lucky enough to hit that right on that number.
> (Tr. Vol. III at 132).

Similarly, Dr. Syfert testified that one explanation of the results was the specimen was "very skillfully and cleverly altered in some way," suggesting that if one was to obtain the result

by adding "baking soda or salt or sugar, [one] would have to weigh and measure that very, very carefully." (Tr. Vol. III at 76-77, 88). He further testified:

> [I]f I were to set out to [make a specimen that would yield similar test results], personally, as someone who trained in chemistry, I'd have to have very accurate calibrating burets, scales. I'd have to make a solution.
> I would have difficulty doing that in a –except—anywhere except in a chemistry laboratory. And that idea that I could just mix something up and dump it in and still come out with on-target specific gravity, a high pH and a low serum creatinine, I think that would give the average biochemist a good test question. (Tr. Vol. III at 77).

However, put simply, the specimen failed. Thus, Respondents' witnesses' assertions that Respondent would need either luck or skill to obtain the instant results are illogical. Pursuant to 49 C.F.R. § 40.93(b), Respondent's sample does not qualify as acceptable human urine. Any specimen with a creatinine less than 2 mg/dL and a specific gravity less than or equal to 1.0010 or greater than or equal to 1.0200 is considered substituted; the precise data points are moot. Thus, any insinuation that Respondent sought to achieve the precise creatinine and specific gravity levels present in her specimen is fallacious.

E. Conclusion

Accordingly, after careful review of the entire record, including the witness testimony, applicable statutes, regulations and case law, the undersigned finds the Coast Guard **PROVED** by a preponderance of the evidence that Respondent committed Misconduct by refusing to test in violation of 49 C.F.R. § 40.191(b).

ULTIMATE FINDINGS OF FACT AND CONCLUSIONS OF LAW

1. At all relevant times mentioned herein, Respondent was a holder of Merchant Mariner's Document No. 184789.

2. Respondent and the subject matter of this hearing are properly within the jurisdiction vested in the Coast Guard under 46 U.S.C. § 7703(1)(B); 46 C.F.R. Parts 5 and 16; 33 C.F.R. Part 20; and the APA codified at 5 U.S.C. §§ 551-59.

3. Respondent was lawfully directed to submit to chemical testing. 46 C.F.R. § 16.230.

4. The Coast Guard has **PROVED** by a preponderance of reliable, probative, and credible evidence that Respondent committed Misconduct pursuant to 46 C.F.R. § 5.27.

SANCTION

The authority to impose sanctions at the conclusion of a case is exclusive to the Administrative Law Judge. 46 C.F.R. §§ 5.567; 5.569(a); Appeal Decision 2362 (ARNOLD) (1984). The nature of this non-penal administrative proceeding is to "promote, foster, and maintain the safety of life and property at sea." 46 U.S.C. § 7701; 46 C.F.R. § 5.5; Appeal Decision 1106 (LABELLE) (1959). Here, the Coast Guard proposes a sanction of revocation.

The 46 C.F.R. § 5.569 guidelines provide a "Suggested Range of Appropriate Orders" for various offenses. The purpose of the Table is to provide guidance to the Administrative Law Judge and promote uniformity in orders rendered. 46 C.F.R. § 5.569(d); Appeal Decision 2628 (VILAS) (2002), aff'd by NTSB Docket ME-174.

The undersigned has carefully reviewed the entire record and all of the evidence presented in this matter and notes the proposed sanction of revocation exceeds the suggested range of sanctions considered in the 46 C.F.R. § 5.569 guidelines. Here, Respondent was charged with wrongfully refusing to test pursuant to 49 C.F.R. § 40.191(b) by submitting a verified substituted sample.[5] The regulatory guidelines suggest a sanction of twelve (12) to twenty-four (24) months for "Refusal to take chemical drug test." 46 C.F.R. § 5.569.

[5] "As an employee, if the MRO reports that you have a verified adulterated or substituted test result, you have refused to take a drug test." 49 C.F.R. § 40.191(b).

Title 46 C.F.R. § 5.569 explains that, "[e]xcept for acts or offenses for which revocation is mandatory, factors which may affect the order include: (1) Remedial actions which have been undertaken independently by the respondent; (2) Prior record of the respondent, considering the period of time between prior acts and the act or offense for which presently charged is relevant; and (3) Evidence of mitigation or aggravation."

In the instant case, the undersigned finds a sanction within the Table guidelines appropriate. Neither side presented significant aggravating or mitigating factors to support a departure from the recommended guidelines. While the Coast Guard introduced case law wherein revocation was imposed for violations of 49 C.F.R. § 40.191(b), the governing case law does not mandate such a sanction. (CG Ex. 27-CG Ex. 30). See Appeal Decision 2646 (MCDONALD) (2004) (upholding the ALJ's sanction of twelve months for providing a verified substituted urine specimen). See also Commandant v. Ailsworth, NTSB Order No. EM-211 (2012) ("[T]he sanction of revocation in this case is in conflict with the sanction range articulated in the Coast Guard's regulation. If the Coast Guard believes these violations should carry a potential greater sanction, the Coast Guard has the ability to implement these changes through public rulemaking, rather than wholesale reliance on deference to the law judge's sanction."). Accordingly, the undersigned finds a sanction within the suggested range appropriate, and assesses a sanction of fourteen (14) months outright suspension.

On April 26, 2013, Respondent, through counsel, filed a "Notice of Inability to Work" with both the Coast Guard and the undersigned. In the Notice, Respondent's counsel stated Respondent had encountered an "inability to be employed due to the upcoming expiration of her Merchant Mariner Credentials set for August 2013." As such, Respondent requested "that any such suspensions or punishments which may issue in the pending ruling to consider and calculate these past three and a half months with a roadblock at every turn and resulting in an ultimate inability to obtain employment as a part of her punishment." As such, the Notice apparently

represents a motion for the undersigned to reduce Respondent's sanction due to Respondent's inability to find employment.

The undersigned may not reduce the sanction as a result of Respondent's suggestion, through motion, that she is unable to find employment. Respondent's assertions are vague and unsubstantiated; had Respondent provided additional evidence, the outcome may have been different. Further, there is no indication in the record Respondent has completed a good faith deposit of her credentials at any point; the undersigned has received nothing more than a general assertion of the inability to find employment. See APPEAL DECISION 2686 (SALAMON) (2010) (explaining an ALJ may credit the respondent with deposit time in the event of a good faith deposit.) Accordingly, there is insufficient evidence to warrant any reduction in sanction.

WHEREFORE,

ORDER

IT IS HEREBY ORDERED that Respondent Simone Joyce Solomon's Merchant Mariner's Document Number 184789 is hereby **SUSPENDED** outright for a period of fourteen (14) months from the date of this Order.

PLEASE TAKE NOTICE that service of this Decision on the parties and/or parties' representative(s) serves as notice of appeal rights set forth in 33 C.F.R. §§ 20.1001 – 20.1004. (**Attachment B**).

Dean C. Metry
U.S. Coast Guard Administrative Law Judge

Date: May 15, 2013

ATTACHMENT A
WITNESS AND EXHIBIT LISTS

WITNESS LIST

COAST GUARD'S WITNESSES

1. Jezer Hualde
2. Hershal Kohut
3. Erin Beller
4. Mitchell LeBard
5. Dr. Hani Khella

RESPONDENT'S WITNESSES

1. Simone Solomon
2. Dr. Dale Syfert
3. Dr. Daniel Logan

EXHIBIT LIST

COAST GUARD'S EXHIBITS

CG Ex. 3 ALLIANCE CHARLESTON Crew List
CG Ex. 4 Copy of Simone Solomon's Passport
CG Ex. 7 Collector Qualification and Training
CG Ex. 8 Collector Federal Drug Testing Custody and Control Form (CCF)
CG Ex. 10 SAMSHA Accreditation for MEDTOX Laboratories
CG Ex. 11 Laboratory Custody and Control Form (CCF)
CG Ex. 13 MRO Qualifications
CG Ex. 14 MRO Custody and Control Form (CCF)
CG Ex. 15 MRO Standard Interview Script
CG Ex. 17 MRO Report
CG Ex. 19 Laboratory Litigation Package
CG Ex. 24 Crewmember Results
CG Ex. 27 USCG v. Gilroy
CG Ex. 28 USCG v. Langley
CG Ex. 29 USCG v. Langley CDOA
CG Ex. 30 USCG v. Sweeney
CG Ex. 31 Creatinine Concentrations in the U.S. Population
CG Ex. 33 Dr. Khella's Curriculum Vitae

RESPONDENT'S EXHIBITS

Resp. Ex. 1 MEDTOX Report and Report of Dr. Naeem Hader

Resp. Ex. 3 Respondent's Urinalysis Results
Resp. Ex. 4 "Normalization of Urinary Drug Concentrations with Specific Gravity and Creatinine"
Resp. Ex. 5 "Urine pH: the Effects of Time and Temperature after Collection"
Resp. Ex. 6 MRO Notes
Resp. Ex. 7 Dr. Syfert's Curriculum Vitae
Resp. Ex. 8 Dr. Logan's Curriculum Vitae

ALJ'S EXHIBITS

ALJ Ex. 1 Coast Guard's Response to ALJ's Order for Discovery, and Motion for Extension
ALJ Ex. 2 Coast Guard's Response to ALJ's Order Granting Motion for Additional Discovery

ATTACHMENT B
APPEAL RIGHTS

33 CFR 20.1001 General.

(a) Any party may appeal the ALJ's decision by filing a notice of appeal. The party shall file the notice with the U. S. Coast Guard Administrative Law Judge Docketing Center; Attention: Hearing Docket Clerk; Room 412; 40 S. Gay Street; Baltimore, MD 21201-4022. The party shall file the notice 30 days or less after issuance of the decision, and shall serve a copy of it on the other party and each interested person.
(b) No party may appeal except on the following issues:
(1) Whether each finding of fact is supported by substantial evidence.
(2) Whether each conclusion of law accords with applicable law, precedent, and public policy.
(3) Whether the ALJ abused his or her discretion.
(4) The ALJ's denial of a motion for disqualification.
(c) No interested person may appeal a summary decision except on the issue that no hearing was held or that in the issuance of the decision the ALJ did not consider evidence that that person would have presented.
(d) The appeal must follow the procedural requirements of this subpart.

33 CFR 20.1002 Records on appeal.

(a) The record of the proceeding constitutes the record for decision on appeal.
(b) If the respondent requests a copy of the transcript of the hearing as part of the record of proceeding, then, --
(1) If the hearing was recorded at Federal expense, the Coast Guard will provide the transcript on payment of the fees prescribed in 49 CFR 7.45; but,
(2) If the hearing was recorded by a Federal contractor, the contractor will provide the transcript on the terms prescribed in 49 CFR 7.45.

33 CFR 20.1003 Procedures for appeal.

(a) Each party appealing the ALJ's decision or ruling shall file an appellate brief with the Commandant at the following address: U.S. Coast Guard Administrative Law Judge Docketing Center; Attention: Hearing Docket Clerk; Room 412; 40 S. Gay Street; Baltimore, MD 21201-4022, and shall serve a copy of the brief on every other party.
(1) The appellate brief must set forth the appellant's specific objections to the decision or ruling. The brief must set forth, in detail, the --
(i) Basis for the appeal;
(ii) Reasons supporting the appeal; and
(iii) Relief requested in the appeal.
(2) When the appellant relies on material contained in the record, the appellate brief must specifically refer to the pertinent parts of the record.
(3) The appellate brief must reach the Docketing Center 60 days or less after service of the ALJ's decision. Unless filed within this time, or within another time period authorized in writing by the Docketing Center, the brief will be untimely.

(b) Any party may file a reply brief with the Docketing Center 35 days or less after service of the appellate brief. Each such party shall serve a copy on every other party. If the party filing the reply brief relies on evidence contained in the record for the appeal, that brief must specifically refer to the pertinent parts of the record.
(c) No party may file more than one appellate brief or reply brief, unless --
(1) The party has petitioned the Commandant in writing; and
(2) The Commandant has granted leave to file an added brief, in which event the Commandant will allow a reasonable time for the party to file that brief.
(d) The Commandant may accept an amicus curiae brief from any person in an appeal of an ALJ's decision.

33 CFR 20.1004 Decisions on appeal.

(a) The Commandant shall review the record on appeal to determine whether the ALJ committed error in the proceedings, and whether the Commandant should affirm, modify, or reverse the ALJ's decision or should remand the case for further proceedings.
(b) The Commandant shall issue a decision on every appeal in writing and shall serve a copy of the decision on each party and interested person.