In the United States Court of Federal Claims

No. 13-600C
(Filed: March 30, 2017)

TIDEWATER CONTRACTORS, INC.,	*	
	*	
Plaintiff,	*	RCFC 56; Summary Judgment; No Genuine Issue of Material Fact; Contract Interpretation; Parole Evidence; Binding Agency Directive; Course of Dealing; Common Trade Practice
	*	
v.	*	
	*	
THE UNITED STATES,	*	
	*	
Defendant.	*	

Joseph A. Yazbeck, Jr., Lake Oswego, OR, for plaintiff.

Sosun Bae, United States Department of Justice, Washington, DC, for defendant.

OPINION AND ORDER

SWEENEY, Judge

In this case, plaintiff Tidewater Contractors, Inc. claims that the United States Department of Transportation's Federal Highway Administration ("FHWA") breached an express road construction contract with plaintiff by improperly withholding payments. The crux of the case concerns the FHWA's verification of plaintiff's test results regarding the density of its superpave hot asphalt concrete pavement. Specifically, plaintiff claims that (1) the FHWA improperly decided to test all of the core samples for verification purposes; (2) the FHWA failed to follow proper procedures when conducting verification testing; (3) the FHWA's verification testing was untimely; (4) FHWA personnel mishandled the core samples, causing damage; (5) the FHWA improperly rejected plaintiff's offer to take additional core samples; (6) the FHWA improperly initiated a noncontractual method of acceptance of the work when it visually inspected the pavement; and (7) the FHWA improperly transferred contract funds to Crook County, Oregon officials as payment for an asphalt surface treatment of the road.

Defendant United States now moves the court for summary judgment pursuant to Rule 56 of the Rules of the United States Court of Federal Claims ("RCFC"). The motion is fully briefed, and the court deems oral argument unnecessary. For the reasons set forth below, the court grants defendant's motion.

I. BACKGROUND

In its motion for summary judgment, defendant provides a statement of the case. See Def.'s Mot. 1-23. In its response, plaintiff states: "Pursuant to RCFC 5.4(a)(3), Tidewater adopts the Government's statement of the case, with the exceptions discussed in the Argument section, below." Pl.'s Resp. 1. The facts described herein are derived from both parties' submissions, including the attached appendices.

A. The Contract

Plaintiff is an Oregon corporation. Compl. ¶ 2. On May 1, 2009, plaintiff entered into a contract with the FHWA for the paving of 7.91 miles of Beaver Creek Road in Crook County, Oregon. Id. ¶ 3; Def.'s Mot. A1, A9, A599. The total value of the contract was $6,228,652.58, Def.'s Mot. A31, A599, including approximately $1.6 million for the superpave pavement portion of the contract based on estimated quantities, id. at A21, A27. By its own terms, the contract, Contract No. DTFH70-09-C-0005, is "governed by the Federal Acquisition Regulation ("FAR"), agency supplemental regulations, and the Standard Specifications for Construction of Roads and Bridges on Federal Highway Projects, FP-03 Metric Units [("FP-03")]." Id. at A11; accord id. at A13. The FP-03 is, in turn, specifically amended and supplemented by the Special Contract Requirements ("SCRs"). Id. at A8, A160.

1. Density Testing—Superpave Hot Asphalt Concrete Pavement

Section 401 of the FP-03, as modified by section 401 of the SCRs, provides the specifications for superpave hot asphalt concrete pavement. See id. at A240-50, A358-78. Pursuant to these specifications, plaintiff was to cut core samples from the compacted pavement, test the core samples, and then deliver the core samples to the contracting officer. Id. at A250, A368. Sampling and testing requirements are contained in Table 401-6. Id. at A247-50. With respect to sampling, Table 401-6 indicates that plaintiff was to obtain core samples "not later than 12 hours after final rolling." Id. at A250. With respect to testing, Table 401-6 indicates that the core density or bulk specific gravity ("Gmb") of the core samples is determined by using the American Association of State Highway and Transportation Officials ("AASHTO") T 166 test. Id. at A249, A601. Section 106.01 of the SCRs requires the parties to use the FHWA's modified AASHTO procedures, contained in the Western Federal Lands Highway Division ("WFLHD") Supplements to Nationally Developed Standard Test Procedures, known as the T 166-94 or modified T 166 test. Id. at A171, A379. The modified T 166 test "involves submerging a core sample in a water bath, removing the sample, drying the sample, and using a formula that considers the weight of the sample during various points of the test in order to calculate the bulk specific gravity." Id. at 6 (citing id. at A379-81). Table 401-6 further provides that the theoretical maximum specific gravity (density) ("Gmm") is determined by using the AASHTO T 209 test, which is also referred to as the T 209 rice test due to the appearance of the device used to conduct the test—a pycnometer.[1] Id. at A249, A384-98, A601, A664. The sample for the rice test is taken from "[b]ehind [the] paver before compacting." Id. at A249. The rice test must be

[1] The pycnometer "looks kind of like a pot that you would make rice in." Def.'s Mot. A664 (Perry Dep. 68:19-24).

performed at least once daily, and results must be reported within four hours of the test's completion. Id.

Ultimately, the compaction percentage, or density, is determined by dividing the Gmb by the Gmm, and then multiplying the result by one hundred percent. Id. at A601, A774-75. See generally id. at A501-38 (worksheets); Pl.'s Resp. A4-41 (same). Section 401.14 of the FP-03 set 91.0 percent as the minimum acceptable compaction percentage. Def.'s Mot. A368.

2. Inspection—Generally

In addition to specifying pavement testing procedures, the contract provided for the inspection of plaintiff's work. Section 52.246-12 of the FAR addresses plaintiff's inspection obligations and provides:

> (b) The Contractor shall maintain an adequate inspection system and perform such inspections as will ensure that the work performed under the contract conforms to contract requirements. The Contractor shall maintain complete inspection records and make them available to the Government. All work shall be conducted under the general direction of the Contracting Officer and is subject to Government inspection and test[ing] at all places and at all reasonable times before acceptance to ensure strict compliance with the terms of the contract.

Id. at A129. In addition, Section 106.01 of the FP-03 provides:

> The Government may inspect, sample, or test all work at any time before final acceptance of the project. When the Government tests work, copies of test reports are furnished to the Contractor upon request. Government tests may or may not be performed at the work site. If Contractor testing and inspection is verified by the Government, the Contractor's results may be used by the Government to evaluate work for acceptance. Do not rely on the availability of Government test results for process control.

Id. at A342.

3. Acceptance—Generally

The contract also described the FHWA's methods for accepting plaintiff's work. Section 106.01 of the FP-03 provides:

> Acceptable work conforming to the contract will be paid for at the contract unit bid price. Four methods of determining conformity and accepting work are described in Subsections 106.02 to 106.05 inclusive. The primary method of acceptance is specified in each

> Section of work. However, work may be rejected at any time it is found by any of the methods not to comply with the contract.

Id. Those four methods are: (1) FP-03 Section 106.02—Visual Inspection, (2) FP-03 Section 106.03—Certification, (3) FP-03 Section 106.04—Measured or Tested Conformance, and (4) FP-03 Section 106.05—Statistical Evaluation of Work and Determination of Pay Factor (Value of Work). Id. at A343-52. In this case, section 401.17 of the FP-03 mandates that the density of plaintiff's superpave hot asphalt concrete pavement is to be evaluated for conformity pursuant to the statistical evaluation method, see id. at A372, which provides:

> **(a) General.** For work evaluated based on statistical evaluation, both the Government and Contractor assume some risk.
>
> The Government's risk is the probability that work of a rejectable quality level is accepted. The Contractor's risk is either the probability that work produced at an acceptable quality level (AQL) is rejected . . . or the probability that the work produced at the AQL is accepted at less than the contract price . . . .
>
> . . . .
>
> The quality characteristics to be evaluated, lot size, sampling frequency, sampling location, test methods, specification limits, and category are as follows:
>
> > **(1) Quality characteristics.** The quality characteristics to be evaluated are listed in the Acceptance Subsection of each Section.
> >
> > **(2) Lot size.** A lot is a discrete quantity of work to which the statistical evaluation procedure is applied. A lot normally represents the total quantity of work produced. More than one lot may occur if changes in the target values, material sources, or job-mix formula are requested in writing and approved.
> >
> > **(3) Sampling frequency.** The frequency of sampling is listed in the Acceptance Subsection of each Section. The frequency rate shown normally results in a minimum of 5 samples. The minimum number required to perform a statistical evaluation is 3. The maximum obtainable pay factor with 3, 4, or 5 samples is 1.01.[2] A minimum of 8 samples are required to obtain a 1.05 pay factor.

[2] A pay factor is a multiple of the contract price for a particular pay item. See, e.g., Def.'s Mot. A655 (Perry Dep. 47:6-11) (noting that plaintiff could be "penalized or given a

If the sampling frequencies and quantity of work would otherwise result in fewer than 8 samples, a written request is required to increase the sampling frequency to provide for a minimum of 8 samples. Provide the request to increase the sampling frequency at least 48 hours before beginning production. An increase in the sampling frequency may result in a reduced pay factor.

(4) Sampling location. The point of sampling is listed in the Acceptance Subsection of each Section. The exact location of sampling will be specified by the [Contracting Officer] based on random numbers.

(5) Test methods. The test methods used to test the sample are listed in the Acceptance Subsection of each Section.

(6) Specification limits. The specification limits for the quality characteristics are listed in the contract provisions for the work in question.

(7) Category. The category for the quality characteristics to be analyzed is listed in the acceptance subsection of each Section.

(b) Acceptance. The work in the lot will be paid for at a final pay factor when all inspections or test results are completed and evaluated.

Before determining the final pay factor, the work may be incorporated into the project provided the current pay factor does not fall below 0.90. If a lot is concluded with fewer than 3 samples, the material will be evaluated under Subsection 106.04.

If the current pay factor of a lot falls below 0.90, terminate production. Production may resume after the Contractor takes effective and acceptable actions to improve the quality of the production.

A lot containing an unsatisfactory percentage of nonspecification material (less than 1.00 pay factor) is accepted provided the lowest single pay factor has not fallen into the reject portion of Table 106-2.

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bonus" based on the results of statistical analysis), A700 (Perry Dep. 139:1-7) (explaining that a pay factor of 1.02 signifies a two-percent bonus).

> A lot containing an unsatisfactory percentage of nonspecification material with the lowest single pay factor falling into the reject portion of Table 106-2 is rejected. Remove all rejected material from the work.
>
> When approved, it is permissible to voluntarily remove nonspecification material and replace it with new material to avoid or minimize a pay factor of less than 1.00. New material will be sampled, tested, and evaluated according to this Subsection.
>
> Any quantity of material may be rejected based on visual inspection or test results. Do not incorporate rejected material in the work. The results of tests run on rejected material will be excluded from the lot.
>
> **(c) Statistical evaluation.** The Variability-Unknown/Standard Deviation Method will be used to determine the estimated percentage of the lot that is within specification limits.

Id. at A344-46 (footnote added).

B. The FHWA Field Materials Manual

The contract was not the only document that provided guidance to the parties. Additional guidance was provided by the FHWA's Field Materials Manual ("Manual"); although the Manual is not expressly incorporated into the contract, it is available online to all FHWA contractors.[3] See generally Fed. Highway Admin., U.S. Dep't of Transp., Federal Lands Highway Field Materials Manual (Oct. 2008), http://flh.fhwa.dot.gov/resources/materials/fmm/.[4] The introduction to the Manual explains its purpose:

> This manual has been developed to provide construction project personnel with information and guidance for field activities relating to materials. This manual complements the [FP-03]. When the guidelines or directions set forth in this manual conflict with [a Federal Lands Highway] contract, the contract shall govern.

[3] Appendix B of the Manual "contains sampling and testing methods . . . that are not found in AASHTO" and is specifically referenced in the contract. Def.'s Mot. A171. However, its contents are irrelevant to the instant case because "the Contract itself expressly states the tests that actually were required." Def.'s Suppl. Br. 14 (citing Def.'s Mot. A171, A249, A368, A379-81, A384); accord Def.'s Mot. A611 (observing that "Appendix B of the Manual . . . is not germane to the present issue" and referring to SCR Section 106.01).

[4] The record before the court contains excerpts from the Manual. Those excerpts are the only portions of the Manual considered by the court.

> This manual is intended as general guidance. It sets forth procedures and best practices for testing and verifying materials on a contract. The application of this manual to any particular situation is to be guided by sound engineering principles. This manual does not create enforceable rights. However, a contract may adopt or incorporate by reference any portion of this manual and thereby establish that portion as binding on the parties.

Def.'s Mot. A839.

1. Acceptance—Generally

The Manual provides the following general guidance with respect to the FHWA's acceptance of a contractor's work:

> Material is to be inspected and/or tested by the Project Engineer before final acceptance of the work. There are four methods for accepting material[,] each having varying degrees of involvement by the Project Engineer[:] visual inspection, certification, measured or tested for conformance, and statistical evaluation. The contract defines these methods for any particular contract. The contract also defines the primary acceptance procedure applicable to each item of work in the Acceptance Subsection under each Section of work in the [FP-03]. Where there is a conflict between the contract and this Manual, the contract will control.

Id. at A399. With respect to statistical evaluation, the method of acceptance at issue in this case, Section 1.1.4 of the Manual, titled "Statistical Evaluation of Work and Determination of Pay Factor (Value of Work)," provides:

> The fourth and final method of acceptance is based on making an evaluation of the value of the work and is often called "Statistical Acceptance[."] The Project Engineer determines the random sampling locations using QL-PAY.[5] Typically, the contractor will be sampling and testing the materials and will have a portable testing laboratory on site. The random sampling locations should not be divulged to the contractor until moments

[5] QL-PAY is a computer program that "uses statistical procedures to analyze the data and determine if there are significant differences between [two sets of] results or if the results are within what would be considered normal limits of variability." Def.'s Mot. A403; accord id. at A768 ("QL-Pay properly uses F-tests and t-tests for verification of the in-place pavement density measured by the contractor with the in-place pavement density measured independently by FHWA."). It is also used to calculate pay factors. See, e.g., id. at A700 (Perry Dep. 139:1-14). QL-PAY is shorthand for "Quality Level Analysis & Pay Factor Computations." See generally Pl.'s Resp. A42-57.

> before a sample is to be taken. The Project Engineer must witness the actual sampling and splitting of each sample. Once the material is sampled and split, the Project Engineer must take immediate possession of the Government's portion (split).
>
> After obtaining the sample, the Project Engineer will test the material. This means sending the material to the [Federal Lands Highway Division ("FLHD")] Laboratory. Upon receiving test results, the Project Engineer should immediately enter all of the test results (those tested by the contractor as well as those tested by the Government) into QL-PAY to determine the value of the work. QL-PAY files should be transmitted to the Division Materials Quality Assurance Engineer at least weekly. If no additional test results are added during the next 7 day reporting period, the current QL-PAY files do not need to be resubmitted.
>
> Where contractor testing is part of the contract, in addition to determining the value of the work, it is necessary to verify the validity of the contractor's results. This is also done within QL-PAY. Only after the contractor's test results are validated may they be used to determine the amount of pay due the contractor. See Subsection 106.05 of the [FP-03].

Id. at A401-02 (footnote added).

2. Verification—Generally

The Manual further provides the following general guidance with respect to the FHWA's verification of a contractor's work utilizing QL-PAY:

> Regardless of which acceptance method is used, it is always necessary to verify the quality of materials incorporated into the work. The responsibility for final acceptance of all materials rests with the Contracting Officer. Therefore, the Project Engineer must be confident that the results obtained on which the acceptance decision is based are valid. Using qualified laboratories and qualified technicians facilitates achieving a quality project and having reliable test results on which to base acceptance decisions.
>
> Whenever there are at least three samples tested by both the contractor and the Government, comparison of the results should be performed by entering them into QL-PAY. QL-PAY uses statistical procedures to analyze the data and determine if there are significant differences between the contractor's and Government's results or if the results are within what would be considered normal

limits of variability. If the results are within normal variability limits, the contractor's results would be considered valid. If the results are not within normal variability limits, QL-PAY will issue an alert. It is essential that the Division Materials Quality Assurance Engineer be contacted immediately and review the data before any action is taken. A final determination as to the validity of the contractor's results must be made by an individual having a background in both statistical analysis and materials in order to avoid making an incorrect decision.

When there are fewer than three samples tested by either party, the comparison cannot be done in QL-PAY. In those instances, the results of samples should be compared using the multi-laboratory precision limit specified in the applicable test method. This provides an acceptable range for two results obtained from different laboratories by different operators. If the results are within the multi-laboratory precision limit, the contractor's results would be considered valid.

Id. at A403.

3. Validation—Generally

With respect to the FHWA's validation of a contractor's test results, Section 1.3.1.1 of the Manual, titled "Validation Conditions," provides that "the following conditions must be met:"

1. All of the samples must be obtained based on random locations determined by the Project Engineer. Random numbers and locations can be generated within QL-PAY.

2. Sampling locations must not be divulged to the contractor until moments before the sample is to be taken.

3. All samples must be obtained by the contractor in the presence of the Project Engineer.

4. The Project Engineer must take immediate possession of the material after it is sampled and split.

5. The Project Engineer must remain in control of the Government's sample. The contractor is not to handle or have further contact with the sample once the Project Engineer takes possession.

6. The Project Engineer should obtain a split sample of all material and submit the first three to five samples obtained to the FLHD Laboratory for testing. After submitting these samples, a minimum of 10 percent of the remaining split samples should be selected and sent to the FLHD Laboratory for testing. Split samples should be submitted as work progresses. Do not wait until all the work is completed before sending the split samples in for testing.

7. All split samples not submitted for testing must be properly stored until final acceptance of the material. In the event that the contractor's test results are not verified it may become necessary for the Government to test all of the split samples.

Id. at A405.

Next, the Manual provides that once the contractor's and the FHWA's test results are entered into QL-PAY, QL-PAY performs certain functions "to verify the quality of the material and validate the contractor's results."[6] Id. at A405-06. Specifically, pursuant to Section 1.3.1.2 of the Manual, titled "Test Results Verification," QL-PAY does the following:

1. Determines the Degree of Normality and Skewness Coefficients for each quality characteristic. . . .

2. Determines the pay factor for each quality characteristic and uses the lowest single pay factor to determine the lot pay factor. . . .

3. Performs an F-test for each quality characteristic based on independent data. . . .

4. Performs an Independent t-test for each quality characteristic. . . .

5. Performs an F-test for each quality characteristic based on paired data. . . .

6. Performs a Paired t-test for each paired quality characteristic. . . . [and]

7. Plots control charts.

[6] Although "verification" and "validation" are related terms, each has its own meaning. The parties consistently use the term "verification" to encompass both verification and validation. Nevertheless, the parties appear to understand that "verification" has the meaning set forth under FHWA regulations—"[s]ampling and testing performed to validate the quality of the product." 23 C.F.R. § 637.203 (2009).

Id. at A406-07.

Finally, the Manual provides the following guidance in cases where the contractor's test results cannot be verified:

> If the contractor's test results are rejected, the Project Engineer will be requested to submit the Government's entire remaining split samples for that work item to the FLHD Laboratory. In such cases, the Project Engineer should notify the contractor in writing and afford the contractor the opportunity to witness the testing of the remaining split samples. After testing is completed, the Project Engineer should enter all of the results into QL-PAY and e-mail a copy to the Division Materials Quality Assurance Engineer for final analysis.
>
> If the final analysis substantiates the decision to reject the contractor's test results, the final acceptance and pay factor determination will be based on the Government's test results. In such cases, the contractor will be responsible for the cost for all additional Government materials testing. The Division Materials [Quality Assurance] Engineer will provide the Project Engineer with an itemized list of the increased testing costs. The costs should be deducted from the contractor's monthly estimate.
>
> If the final analysis does not substantiate the decision to reject the contractor's test result, the final acceptance and pay factor determination will be based on the contractor's test results, and the Government will absorb the additional costs associated with the increased testing.

Id. at A408. In the event of a dispute between a contractor and the FHWA, Section 1.3.3 of the Manual allows for third-party testing. Id. at A408-09.

C. Contract Performance

1. Plaintiff Hires Mr. Perry to Oversee Paving Operations

In the spring of 2011, plaintiff's owner and president, Jess Fitzhugh, asked Ray Perry to serve as quality control manager for the pavement phase of the Beaver Creek Road project. Id. at A638 (Perry Dep. 7:14-21), A644 (Perry Dep. 19:1-9). As quality control manager, Mr. Perry was responsible for "[m]aking sure Tidewater's projects [met] specifications." Id. at A639 (Perry Dep. 8:2-5). From 1983 to 2008, prior to working for plaintiff, Mr. Perry worked for the Oregon Department of Transportation ("ODOT"). Id. at A431-32 (Perry resume), A640-41 (Perry Dep. 10:3-13:1). Mr. Perry had never previously worked on a project involving the FHWA. Id. at A431-32.

Before beginning work on the project, Mr. Perry spoke to a retired FHWA employee regarding QL-PAY. Id. at A673-74 (Perry Dep. 86:17-87:23). In addition, on the first day of paving, Mr. Perry spent between four and five hours reviewing the contract and its specifications. Id. at A674-75 (Perry Dep. 87:24-88:16).

2. Plaintiff's Core Sample Testing Procedures

On June 23, 2011, plaintiff began paving operations utilizing superpave hot asphalt concrete. Id. at A501, A602. Using a nuclear density gauge, Mr. Perry assessed the density of the pavement before extracting core samples for testing purposes. Id. at A658-63 (Perry Dep. 62:24-66:2), A708 (McCrory Dep. 15:9-10). At times, Shay Perry, Mr. Perry's daughter, whom he hired to work on the project, id. at A676 (Perry Dep. 93:1-25), performed the nuclear density gauge testing, id. at A660-61 (Perry Dep. 63:12-64:10), A677 (Perry Dep. 95:1-9). The nuclear density gauge was used every hour, every half hour, or—on occasion—every minute for quality control purposes, with the goal of reaching ninety-one or ninety-two percent compaction. Id. at A662-63 (Perry Dep. 65:12-66:7). Mr. Perry was not present every time his daughter conducted readings. Id. at A677 (Perry Dep. 95:1-15).

After extraction, plaintiff's technician, Doug McCrory, tested core samples using the modified T 166 test; Mr. Perry oversaw the testing on an "intermittent" basis.[7] Id. at A668-69 (Perry Dep. 76:5-77:18), A708 (McCrory Dep. 15:4-15). Mr. McCrory received his training on how to conduct the modified T 166 test from Mr. Perry. Id. at A710-11 (McCrory Dep. 30:17-31:4).

After performing the modified T 166 test on the core samples, Mr. McCrory provided the values, via daily handwritten notes, to Mr. Perry. Id. at A717 (McCrory Dep. 43:8-14). Mr. Perry would then transfer Mr. McCrory's values to a worksheet. Id. at A678-79 (Perry Dep. 97:20-98:6). Finally, Mr. Perry would pack the core samples into round plastic cylinders, and would either leave them on the road for FHWA personnel to pick up or deliver them to FHWA personnel directly.[8] Id. at A679 (Perry Dep. 98:7-23).

3. Plaintiff Tests Core Samples One Through Thirty-Three

From June 23, 2011, to July 9, 2011, plaintiff tested thirty-two core samples and provided the test results to the FHWA. Id. at A501-12. In addition, Mr. Perry entered plaintiff's results into QL-PAY on a daily basis to determine whether they met the terms of the contract. Id. at A699 (Perry Dep. 138:15-25). On July 9, 2011, plaintiff temporarily ceased paving operations. Id. at A604. That same day, Mr. Perry's reading of QL-PAY showed that plaintiff's work was at a pay factor of 1.02, meaning that plaintiff would earn a two percent bonus. Id. at A700 (Perry Dep. 139:1-7).

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[7] Mr. McCrory tested core samples one through thirty-two, and Mr. Perry tested core sample thirty-three. Def.'s Mot. A526-38 (worksheets), A680-81 (Perry Dep. 101:6-102:2).

[8] Defendant contends that the core samples were handled properly and were not left on the road. Def.'s Mot. 35 (citing Answer ¶ 7; Def.'s Mot. A748-49), A546, A608-09.

On July 13, 2011, after determining that the pycnometer calibration was incorrect, plaintiff resubmitted its test results for core samples one through thirty-two with updated rice values. Id. at A683-84 (Perry Dep. 113:21-114:5). Compare id. at A514-25 (resubmitted worksheets), with id. at A501-512 (original worksheets). On August 4, 2011, after FHWA staff witnessed a recalibration of the pycnometer, Mr. Perry again resubmitted plaintiff's test results for core samples one through thirty-two with updated rice values. Id. at A684-85 (Perry Dep. 114:6-115:1). Compare id. at A526-37 (newly updated worksheets), with id. at A514-25 (worksheets submitted on July 13, 2011). Paving operations resumed on August 11, 2011. Id. at A604. That same day, Mr. Perry tested core sample thirty-three, and on August 13, 2011, he provided the FHWA with the results. Id. at A538.

4. The FHWA Identifies Problems With Plaintiff's Core Sample Testing Procedures

In the meantime, on June 25, 2011, FHWA inspector Samantha Gould noted that plaintiff's test results for three samples from the test strip did not match up with the "original test results" from two days prior. Id. at A441. Mr. Perry acknowledged that he had experienced issues regarding the initial test strip during early paving. Id. at A686-87 (Perry Dep. 116:2-117:12). In addition, Mr. Perry admitted that he had been using ODOT forms for core correlation with the nuclear density gauge readings, id. at A687 (Perry Dep. 117:13-22), rather than calculating the values in the "FHWA way," id. at A441.

On June 29, 2011, FHWA project engineer Paul Akehurst concluded that Mr. Perry had not been using the correct samples to conduct the T 209 rice test. Id. at A446. Specifically, Mr. Akehurst claimed that Mr. Perry had "been using a rice test that he is pulling first thing in the a.m. and not out on the project." Id.; see also id. at A249 (listing sampling and testing requirements), A497 (July 1, 2011 electronic-mail message from FHWA materials engineer John Snyder describing Mr. Perry's sampling process), A751-52 (FHWA senior materials engineer Brad Neitzke's recollection of a conversation with Mr. Perry regarding his sampling process). Mr. Perry admitted that he obtained core samples for the rice test both from the plant at the beginning of the day and from behind the paver during the day. Id. at A687-88 (Perry Dep. 117:23-120:3); see also id. at A249 (listing sampling and testing requirements).

On July 12, 2011, Ms. Gould told Mr. Perry that she wanted to verify the calibration of the pycnometer he was using.[9] Id. at A540 (July 27, 2011 electronic-mail message from Ms. Gould to Mr. Perry), A689-90 (Perry Dep. 123:12-124:8). Mr. Perry performed a calibration in Ms. Gould's presence, but it "did not meet AASHTO T209's criteria for the water temperature at 77 degrees F." Id. at A540 (July 27, 2011 electronic-mail message from Ms. Gould to Mr.

[9] To calibrate a pycnometer, the device is first filled with water that is seventy-seven degrees Fahrenheit, plus or minus two degrees. Def.'s Mot. A693-94 (Perry Dep. 127:16-128:1). Next, the lid of the device is spun down on the device to remove the air bubbles from the water. Id. Finally, excess water is wiped off and the device is weighed. Id. If the water is at seventy-seven degrees, the procedure can be performed in less than five minutes. Id. A pycnometer's calibration must be verified before it is used, given that its mass may change over time. Id. at A754 (Neitzke Dep. 16:6-18).

Perry); accord id. at A690-91 (Perry Dep. 124:9-125:8). That same day,[10] Mr. Snyder directed the project engineer to send all of the loose asphalt mix and core samples to the FHWA laboratory to verify plaintiff's results. Id. at A465, A605, A754-55 (Neitzke Dep. 16:19-17:4). Mr. Snyder requested the samples because he was concerned with the accuracy of plaintiff's test results and whether the FHWA would be able to verify the data. Id. at A605, A755-56 (Neitzke Dep. 17:5-10, 17:18-18:14).

On July 13, 2011, Ms. Gould and Mr. Akehurst met Mr. Perry at plaintiff's on-site field laboratory for another attempt to calibrate the pycnometer, but they were unable to do so because there was no certified thermometer on site. Id. at A540 (July 27, 2011 electronic-mail message from Ms. Gould to Mr. Perry), A691-92 (Perry Dep. 125:11-126:1). That same day, plaintiff submitted revised test results. Id. at A605; see also id. at A514-25 (worksheets). The following day, using plaintiff's revised results, the FHWA laboratory reported discrepancies between FHWA measurements and plaintiff's measurements. Id. at A605. A third attempt to recalibrate the pycnometer on July 15, 2011, also failed due to lack of a certified thermometer. Id. Mr. Perry did not perform the pycnometer calibration until July 29, 2011. Id. at A606 (providing a timeline of events that included the calibration), A691-92 (Perry Dep. 125:22-126:10).

On July 27, 2011, Ms. Gould sent Mr. Perry an electronic-mail message to inform him that there was an issue with the test results for several rice values and the calculations performed on one of the core sample reports. Id. at A539-40. Ms. Gould asked Mr. Perry to, by July 29, 2011, provide correct test results for hot mix sample ten; provide correct test results for core samples three through five, ten, and eleven; provide a new report for core sample two; and recalibrate the pycnometer. Id. at A539-40 (electronic-mail message), A695-96 (Perry Dep. 129:25-130:11).

5. The FHWA's Test Results for Paving Core Samples One Through Thirty-Three

On August 4, 2011, the FHWA notified plaintiff that "government test results indicate significant differences in core density results when compared to Tidewater[']s results" and that the FHWA was "in the process of testing all split samples for [T 209] Rice values to establish core densit[ie]s based on Government testing." Id. at A542; accord id. at A541 (August 1, 2011 electronic-mail message from Mr. Snyder). On August 8, 2011, the FHWA reported its final test results from QL-PAY for core samples one through thirty-two using its own Gmm (i.e., T 209) values. Id. at A607. The FHWA determined that thirteen of the thirty-two core samples did not meet the 91.0 percent minimum density requirement. Id.; accord id. at A546-47 (October 7, 2011 electronic-mail message from Mr. Snyder attaching the FHWA's test results). On August

[10] Also on July 12, 2011, Ms. Gould advised Jess Fitzhugh that Mr. Perry was over a month behind on submitting paperwork despite "3-4 [reminders] per week." Id. at A465. Mr. Perry claims that he ran behind on turning in his contractor daily reports due to the overall workload during his sixteen-to-eighteen-hour days, including travel, on the project. Def.'s Mot. A697-98 (Perry Dep. 134:10-135:24). In addition, Mr. Perry submitted daily reports lacking "narrative" information. Compare id. at A498-99 (reflecting that no narratives were provided), with id. at A195 (requiring plaintiff to "[p]rovide narrative and original support data" in daily reports).

18, 2011, the FHWA issued a notice of substantial completion as of August 14, 2011, and reported its test result for core sample thirty-three. Id. at A607.

That same day, Mr. Neitzke sent an electronic-mail message to FHWA personnel indicating that "[b]ased on the statistical comparison of [plaintiff's] data and the data from WFL central laboratory, . . . the Government ha[d] not verified [plaintiff]'s data and therefore will use the WFL central laboratory data to evaluate the work for acceptance." Id. at A545. Mr. Neitzke further explained:

> The statistical analysis of the WFL central laboratory data shows that the material placed under [the superpave pavement item] has a quality level that falls into the reject area according to Table 106-2—Pay Factors. This is based on evaluating the density results of all the [core samples] taken for acceptance as stated in [FP-03] Subsection 401.17.

Id. Mr. Neitzke recommended that the FHWA accept the superpave portion of the contract at A pay factor of 0.75.[11] Id.

Pursuant to section 154.07 of the SCRs, id. at A209, on August 19, 2011, the FHWA retained a portion of its Progress Estimate 13 payment to plaintiff due to the discrepancy in testing results. Id. at A608. On September 21, 2011, the FHWA retained additional funds from its Progress Estimate 14 payment to plaintiff due to the discrepancy in testing results. Id. The total amount retained was $374,273.73, which was consistent with a pay factor of 0.75 for the superpave portion of the project. Id.

D. Plaintiff's Certified Claim

On February 24, 2012, plaintiff submitted a certified claim to the contracting officer contesting the FHWA's retention of funds. Id. at A551. On April 20, 2012, plaintiff filed a breach-of-contract suit in the United States Court of Federal Claims ("Court of Federal Claims"). Id. at A593. On August 29, 2012, the contracting officer issued a final decision denying plaintiff's claim. Id. at A561. Plaintiff and defendant agreed that "the August 29, 2012 final decision was, in effect, a nullity—it was as if the final decision had not been issued."[12] Id. at

[11] A minimum of sixty percent of the thirty-three samples meeting the 91.0 percent density standard was necessary to achieve a pay factor of 0.75. Def.'s Mot. 5 (citing id. at A351 (Table 106-2—Pay Factors)). According to Table 106-02—Pay Factors, failure to meet the sixty percent threshold would result in rejection. Id. at A351. The FHWA ultimately determined that twenty of the thirty-three samples—60.6 percent—met the density threshold. Id. at 16 (citing id. at A546-47). Mr. Neitzke presumably made his "reject" observation based on the 59.4 percent success rate of the first thirty-two samples, see id. at A546-47, before the test results of sample thirty-three were available.

[12] Once a contractor files suit in this court, the contracting officer cannot render a valid final decision that is appealable to this court. Sharman Co., Inc. v. United States, 2 F.3d 1564, 1571 (Fed. Cir. 1993) ("Once a claim is in litigation, the Department of Justice gains exclusive

A593. On December 10, 2012, the court dismissed the complaint without prejudice for lack of subject matter jurisdiction because, when the complaint was filed, the contracting officer had not yet issued a final decision.[13] Id. at A595, A598. Two days later, on December 12, 2012, the contracting officer issued a revised final decision again denying plaintiff's claim. Id. at A599; see generally id. at A599-626.

E. Retesting of All Paving Core Samples

Following the contracting officer's revised final decision denying plaintiff's claim, the parties agreed to allow a third party to retest core samples one through thirty-three. Pl.'s Resp. 29. Carlson Testing, Inc. ("Carlson"), a company that performs highway materials testing for contractors and agencies, was retained to conduct the retesting. Def.'s Mot. A726-27 (Toller Dep. 8:19-9:9). Between April 30 and May 1, 2013, Carlson's Ty Toller, along with representatives of plaintiff and the FHWA, met at the FHWA laboratory in Vancouver, Washington to conduct the retesting. Id. at A628.

In the presence of the parties' representatives, Mr. Toller retested the core samples using the modified T 166 test, the same method used by the parties. Id. at A629 (Toller report), A740-41 (Toller Dep. 41:22-42:6). Mr. Toller then prepared a report summarizing his observations and results from the testing. Id. at A628-32. Following a visual inspection of the core samples, Mr. Toller indicated that "nearly all the cores [were] out of round and [had] a slight lean to them." Id. at A628. In addition, he indicated that "[t]he first 15 cores had not been trimmed or prepped and it was obvious that no attempt to remove the underlying base material had been made as it remained on the core specimens." Id. Furthermore, he stated that some of the core samples bore pry marks, which, he noted, could have been made at the time of extraction. Id. at A733 (Toller Dep. 29:3-14). He also stated that some of the cores were cracked, due possibly to fatigue, i.e., "having too much load put on them," or overheating. Id. at A733-34 (Toller Dep. 29:20-30:6). Mr. Toller added, however, that none of the core samples was too damaged to test. Id. at A734-35 (Toller Dep. 30:23-32:8). Finally, he indicated that a core sample can be damaged from handling, id. at A745 (Toller Dep. 55:5-16), and that once a core sample is damaged, further deterioration might occur, id. at A746 (Toller Dep. 66:1-12).

For twenty-six of the thirty-three core samples that Mr. Toller retested, he recorded lower bulk specific gravity numbers than those recorded by the FHWA, which, in turn, were generally lower than those recorded by plaintiff.[14] Id. at A633. He attributed the decreases in bulk specific gravity to increases in water absorption, and indicated that the increase in water

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authority to act in the pending litigation. That exclusive authority divests the contracting officer of [the] authority to issue a final decision on the claim." (citation omitted)), overruled on other grounds by Reflectone, Inc. v. Dalton, 60 F.3d 1572 (Fed. Cir. 1995) (en banc).

[13] The decision in Tidewater Contractors, Inc. v. United States, 107 Fed. Cl. 779 (2012), is reproduced in its entirety at pages 590 to 598 of the appendix attached to defendant's motion for summary judgment.

[14] In his deposition, Mr. Toller indicated that his results showed a lower bulk specific gravity for thirty of the thirty-three core samples. Def.'s Mot. A737 (Toller Dep. 35:1-6).

absorption could be attributable to either a difference in testing methodologies or a degradation of the samples in between testing. Id. at A742-43 (Toller Dep. 51:18-52:10). However, he specifically made "no conclusion" as to the actual cause. Id. at A743 (Toller Dep. 52:6-10).

F. Plaintiff Files the Instant Action

After Mr. Toller issued his report, on August 22, 2013, plaintiff filed the instant action. In its complaint, plaintiff alleges that the FHWA improperly retained contract funds and requests that the court award it those funds, plus interest and attorney fees. Compl. 3.

G. The Parties' Experts

During discovery, the parties each retained an expert to opine on the testing performed on the core samples.

1. Ramon Bonaquist's Expert Report on Behalf of Defendant

Defendant retained Ramon Bonaquist, a professional engineer with over thirty years of experience specializing in asphalt materials and flexible pavements. Id. at A767. He is currently the chief operating officer of Advanced Asphalt Technologies, LLC, an accredited asphalt materials consulting firm that, among other endeavors, specializes in acceptance testing. Id. at A767, A802. Mr. Bonaquist was retained to review:

> 1. The validity of the procedures used by FHWA to verify Tidewater's density results.
>
> 2. Differences in bulk specific gravity measurements on the same cores made by Tidewater, FHWA, and Carlson . . . .
>
> 3. The impact of variation in testing procedure on bulk specific gravity measurements.
>
> 4. Whether the cores were damaged between the time that they were tested by Tidewater and then retested by the FHWA.
>
> 5. Differences between FHWA's and [ODOT's] statistical acceptance of asphalt concrete pavement density.

Id. at A766.

In his July 14, 2015 expert report, Mr. Bonaquist presented seven opinions. First, he concluded that "[t]he specification used by FHWA for the asphalt concrete paving is a typical quality assurance specification where quality control is the responsibility of the contractor and acceptance is the responsibility of the contracting agency." Id. at A768. See generally id. at A770-71 (discussing the basis of Mr. Bonaquist's first opinion). Then, he noted that under this quality assurance specification, plaintiff's results could "be used in acceptance provided that the

quality of the [pavement] is verified by testing performed by the [FHWA]." Id. at A768. He further noted that "QL-Pay properly uses F-tests and t-tests for verification of the in-place pavement density measured by the contractor with the in-place density measured independently by FHWA." Id.

Second, Mr. Bonaquist found that the pavement densities reported by plaintiff were higher and had a smaller variance as compared to the densities reported by the FHWA, which was both "statistically significant and significant from a pavement engineering perspective." Id. See generally id. at A771-74 (discussing the basis of Mr. Bonaquist's second opinion). He agreed with the FHWA's conclusion "that [plaintiff's] data did not verify." Id. at A769.

Third, Mr. Bonaquist opined that the differences between plaintiff's and the FHWA's density results were due to differences in bulk specific gravity readings, rather than differences in maximum specific gravity readings. Id. See generally id. at A774-78 (discussing the basis of Mr. Bonaquist's third opinion). He determined that where FHWA reported bulk specific gravities greater than 2.220, there was no statistically significant difference between plaintiff's and the FHWA's results, whereas when the FHWA reported bulk specific gravities less than 2.220, the difference in results was statistically significant. Id. at A769.

Fourth, Mr. Bonaquist determined that the bulk specific gravity measurements taken by plaintiff were greater than those taken by the FHWA, which, in turn, were greater than those taken by Carlson. Id. See generally id. at A778-84 (discussing the basis of Mr. Bonaquist's fourth opinion). He further found that these differences resulted from differences in water absorption during testing, with water absorption being "lowest during the Tidewater testing[,] intermediate during the FHWA testing[,] and highest during the Carlson testing." Id. at A769.

Fifth, Mr. Bonaquest noted that the reason why the core samples absorbed the lowest amount of water during plaintiff's testing, thus yielding greater bulk specific gravity measurements, was the "systematic differences in testing" between plaintiff's and the FHWA's laboratories. Id. See generally id. at A784-87 (discussing the basis of Mr. Bonaquist's fifth opinion). He also concluded that "the FHWA bulk specific gravity measurements are the best representation of the density of the in-place pavement." Id. at A769.

Sixth, Mr. Bonaquist concluded that there was "no evidence" of damage to the core samples between the time they were tested by plaintiff and when they were tested by the FHWA. Id. See generally id. at A787-91 (discussing the basis of Mr. Bonaquist's sixth opinion). He based this conclusion on (1) his physical examination of the core samples, (2) graphical and statistical analysis of "various indicators of potential damage," and (3) the differences in the volume of the core samples. Id. at A769. Specifically, he found that the differences in bulk specific gravity reported by plaintiff and the FHWA were not related to "when the sample was taken," id. at A787, the "elapsed time between sampling and receipt in the FHWA laboratory," id. at A788, or Carlson's "visual assessment" of damage, id. at A789.

Finally, Mr. Bonaquist concluded that the "FHWA's specification for statistical acceptance of asphalt concrete pavement density is stricter than ODOT's." Id. at A769. See

generally id. at A791-93 (discussing the basis of Mr. Bonaquist's seventh opinion). In particular, he observed that ODOT's specification "reduces the importance of controlling variability" by

> (1) using an average maximum specific gravity in the in-place density calculations,
>
> (2) using an average of 5 in-place density measurements as the density acceptance parameter, and
>
> (3) applying a pay factor of 1.00 when the acceptance parameter for all sublots is within the specification limits.

Id. at A769-70.

2. Chris Hardwick's Expert Report on Behalf of Plaintiff

Plaintiff retained Chris Hardwick of Asphalt Pavement Technologies, LLC to review "the initial testing of thirty three cores by the Tidewater field lab and later retesting of the same cores by the Federal Highway lab in Vancouver, Washington." Id. at A760. Mr. Hardwick has thirty-eight years of experience in the construction materials testing industry—both as a laboratory manager and owner—and, "[w]hen the SuperPave system of mix design and process control was first introduced, [he] was an Instructor for the Certified Asphalt Technician Program." Id.

In his June 30, 2015 report, Mr. Hardwick found that "the absorptions, dry weights and relative compactions" for the first two core samples reported by plaintiff and the FHWA were "nearly identical." Id. at A761. For the remaining core samples, he found that the percentage of water absorption had "more than doubled" between the time plaintiff tested the core samples and when the FHWA tested them. Id. He also noted that the first two core samples were tested in the field and then hand-carried away by Mr. Neitzke, while the remaining core samples were "transported differently after the initial field tests." Id. at A762. He concluded:

> I think that the original tests conducted by the Tidewater field lab reflect the relative compaction of the cores at the time the pavement was placed. The first two cores retested by the Federal Highway Lab in Vancouver, Washington also represent the relative compaction of the pavement at the time it was placed. I think that the remaining 31 cores show an increase in permeability between the initial field test and the retesting conducted by both the Federal Highway lab and by Carlson Testing. The retested cores do not represent the relative compaction of the in place pavement. The National Center for Asphalt Technology (NCAT) Report 03-02 titled "An Evaluation of Factors Affecting Permeability of Superpave Designed Pavements" provides a Scientific Process for understanding the reason for the increase in absorption between the initial testing and the retesting of these cores.

Id. at A763.

3. Mr. Bonaquist's Rebuttal Report

On August 17, 2015, Mr. Bonaquist submitted a rebuttal report explaining why the court should discount Mr. Hardwick's report. See generally id. at A819-28. Mr. Bonaquist claimed that Mr. Hardwick based his opinion on an analysis of the testing data from only the first two core samples. Id. at A821. Specifically, Mr. Bonaquist contended that Mr. Hardwick "present[ed] no engineering analysis of the test data from the 33 project cores to support his opinion that the bulk specific gravity tests conducted by Tidewater reflect the in-place density of the pavement at the time of construction while the majority of those conducted by the FHWA do not." Id. He emphasized that Mr. Hardwick simply "assume[d] that FHWA transported the remaining 31 cores differently for testing in the FHWA lab," causing these remaining core samples to inaccurately represent the in-place density of the pavement. Id. In particular, Mr. Bonaquist argued that not only did the FHWA actually test seven core samples—not just two, as Mr. Hardwick asserted—within four days of sampling, id. at A821-22, but that "a proper statistical analysis of all of the cores shows that the elapsed time between sampling and testing by FHWA does not affect the difference between the bulk specific gravity reported by the two laboratories," id. at A825.

Mr. Bonaquist also claimed that Mr. Hardwick's reliance on NCAT Report 03-02 is misplaced because, while the report does "show that asphalt mixtures may be highly permeable to water depending on the gradation of the mixture and the in-place density," it does not "address changes in permeability or absorption of roadway cores subject to multiple rounds of testing." Id. at A823. Further, Mr. Bonaquist averred that NCAT Report 03-02 actually supports his conclusion that it was more appropriate for the FHWA to use its own density data for acceptance purposes. Id. According to Mr. Bonaquist, the report "shows that mixtures similar to that used on the Beaver Creek project will be permeable and absorb water at the densities reported by both FHWA and Tidewater, which is consistent with the test results reported by FHWA, but is inconsistent with the results reported by Tidewater." Id. at A825. He noted that the "higher absorptions reported by FHWA compare well with similar data published in the literature by NCAT while the lower absorptions reported by Tidewater do not agree with the published data." Id.

4. Mr. Hardwick's Rebuttal Report

In his August 14, 2015 rebuttal report, Mr. Hardwick concluded that "the test results from Tidewater, FHWA and Carlson correctly report[ed] the [bulk] specific gravity of the cores at the time the tests were conducted." Id. at A817. Mr. Hardwick discounted Mr. Bonaquist's conclusion that the difference in core density test results was due to the testing methodologies employed because Mr. Bonaquist's statistical analysis demonstrated differences between plaintiff's and the FHWA's results for one subgroup of seventeen core samples, but not for a separate subgroup comprised of the other sixteen core samples. Id. at A816. Mr. Hardwick opined that the difference in test results was due to the passage of time: "The three sets of tests track changes in the physical condition of the cores with the passage of time. As porosity increased, the calculated relative compaction decreased." Id. at A817. Thus, Mr. Hardwick

found that plaintiff's initial testing yielded the most accurate information regarding the "relative compaction of the finished pavement." Id.

H. The Instant Motion

Following the completion of discovery, defendant moved for summary judgment. After briefing, the court ordered supplemental briefing concerning the import of the Manual. Supplemental briefing concluded on January 21, 2017.

II. MOTIONS FOR SUMMARY JUDGMENT

Summary judgment is appropriate when there is no genuine issue of material fact and the moving party is entitled to a judgment as a matter of law. RCFC 56(a); Celotex Corp. v. Catrett, 477 U.S. 317, 322 (1986). A fact is material if it "might affect the outcome of the suit under the governing law." Anderson v. Liberty Lobby, Inc., 477 U.S. 242, 248 (1986). An issue is genuine if it "may reasonably be resolved in favor of either party." Id. at 250.

The moving party bears the initial burden of demonstrating the absence of any genuine issue of material fact. Celotex, 477 U.S. at 323. The nonmoving party then bears the burden of showing that there are genuine issues of material fact for trial. Id. at 324. Both parties may carry their burden by "citing to particular parts of materials in the record, including depositions, documents, electronically stored information, affidavits or declarations, stipulations (including those made for purposes of the motion only), admissions, interrogatory answers, or other materials" or by "showing that the materials cited do not establish the absence or presence of a genuine dispute, or that an adverse party cannot produce admissible evidence to support the fact." RCFC 56(c)(1). However, "[i]f the evidence is merely colorable, or is not significantly probative, summary judgment may be granted." Anderson, 477 U.S. at 249-50 (citations omitted). Entry of summary judgment is mandated against a party who fails to establish "an element essential to that party's case, and on which that party will bear the burden of proof at trial." Celotex, 477 U.S. at 322.

The court must draw all inferences from the underlying facts in the light most favorable to the nonmoving party. Matsushita Elec. Ind. Co. v. Zenith Radio Corp., 475 U.S. 574, 587 (1986). However, the court must not weigh the evidence or make findings of fact. See Anderson, 477 U.S. at 249 ("[A]t the summary judgment stage the judge's function is not himself to weigh the evidence and determine the truth of the matter but to determine whether there is a genuine issue for trial."); Contessa Food Prods., Inc. v. Conagra, Inc., 282 F.3d 1370, 1376 (Fed. Cir. 2002) ("On summary judgment, the question is not the 'weight' of the evidence, but instead the presence of a genuine issue of material fact . . . ."), abrogated on other grounds by Egyptian Goddess, Inc. v. Swisa, Inc., 543 F.3d 665 (Fed. Cir. 2008) (en banc); Ford Motor Co. v. United States, 157 F.3d 849, 854 (Fed. Cir. 1998) ("Due to the nature of the proceeding, courts do not make findings of fact on summary judgment."); Mansfield v. United States, 71 Fed. Cl. 687, 693 (2006) ("[T]he Court may neither make credibility determinations nor weigh the evidence and seek to determine the truth of the matter. Further, summary judgment is inappropriate if the factual record is insufficient to allow the Court to determine the salient legal issues." (citation omitted)).

III. IMPORT OF THE MANUAL

As noted above, this dispute centers on the FHWA's verification of plaintiff's results.[15] The court concludes, and the parties do not dispute, that the contract expressly provides that the relationship between them is governed by the language of (1) the contract itself, (2) the FAR, (3) agency supplemental regulations, and (4) the FP-03, as amended and supplemented by the SCRs. See Def.'s Mot. A8, A11, A160. In addition, the court concludes, and the parties do not dispute, that these documents do not provide a definition for the term "verification."[16] The issue, therefore, is whether this deficit renders the contract ambiguous such that the court may look to the Manual, which is extrinsic evidence, to provide the necessary information.

A. Principles of Contract Interpretation

To determine whether the Manual was part of the parties' agreement, the court must interpret the provisions of the parties' contract. Contract interpretation, including the interpretation of government contracts, is a matter of law. Medlin Constr. Grp., Ltd. v. Harvey, 449 F.3d 1195, 1199-2000 (Fed. Cir. 2006); see also Precision Pine & Timber, Inc. v. United States, 596 F.3d 817, 824 (Fed. Cir. 2010) (explaining that general rules of contract interpretation apply to federal government contracts). As such, issues concerning contract interpretation are "generally amenable to summary judgment." Varilease Tech. Group, Inc. v. United States, 289 F.3d 795, 798 (Fed. Cir. 2002). Therefore, resolving the instant motion requires the court to "identify and apply 'principles of general contract law.'" Praecomm, Inc. v. United States, 78 Fed. Cl. 5, 10 (2007) (quoting Franconia Assocs. v. United States, 536 U.S. 129, 141 (2002)).

The court applies "three primary rules of contract interpretation." Enron Fed. Sols., Inc. v. United States, 80 Fed. Cl. 382, 393 (2008). First, contract interpretation "begins with the language of the written agreement." NVT Techs., Inc. v. United States, 370 F.3d 1153, 1159 (Fed. Cir. 2004); see also Enron Fed. Sols., 80 Fed. Cl. at 393 (stating that contract interpretation "start[s] with the plain meaning of the Contract's text"). A contract "is read in accordance with its express terms and the plain meaning thereof." C. Sanchez & Son, Inc. v. United States, 6 F.3d 1539, 1543 (Fed. Cir. 1993); accord U.S. Sur. Co. v. United States, 83 Fed. Cl. 306, 311 (2008). These terms are given "their ordinary meaning unless the parties mutually intended and agreed to an alternative meaning." Harris v. Dep't of Veterans Affairs, 142 F.3d 1463, 1467 (Fed. Cir. 1998). The contract language "must be given that meaning that would be derived from

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[15] This case arises under the Contract Disputes Act of 1978 ("CDA"), 41 U.S.C. §§ 7101-7109 (2012). The court has jurisdiction to entertain this suit because plaintiff has met the jurisdictional prerequisites of the CDA. See K-Con Bldg. Sys., Inc. v. United States, 778 F.3d 1000, 1005 (Fed. Cir. 2015) (describing the CDA's jurisdictional requirements). Plaintiff timely submitted a proper certified claim to the contracting officer, the contracting officer issued a final decision on that claim, and plaintiff timely sought review of that decision in this court.

[16] As noted above, "verification" is defined in FHWA regulations. See supra note 6. To the extent that this definition applies to the instant dispute, see, e.g., 23 C.F.R. §§ 625.3(d), 625.4(c)(3), it fails to describe the specific processes by which the FHWA was required to perform such verification.

the contract by a reasonably intelligent person acquainted with the contemporaneous circumstances." Metric Constructors, Inc. v. NASA, 169 F.3d 747, 752 (Fed. Cir. 1999) (internal quotation marks omitted). Thus, "any subjective, unexpressed intent of one of the parties is ineffective." Sterling, Winchester & Long, L.L.C. v. United States, 83 Fed. Cl. 179, 183 (2008).

Second, the court applies the "settled principle[] of contract interpretation," Dalton v. Cessna Aircraft Co., 98 F.3d 1298, 1305 (Fed. Cir. 1996), that a contract "be considered as a whole and interpreted so as to harmonize and give reasonable meaning to all of its parts," NVT Techs., 370 F.3d at 1159. Such an interpretation "is to be preferred over one that leaves a portion of the contract useless, inexplicable, void, or superfluous." Id. (citing Gould, Inc. v. United States, 935 F.2d 1271, 1274 (Fed. Cir. 1991)); see also United Int'l Investigative Serv. v. United States, 109 F.3d 734, 737 (Fed. Cir. 1997) (stating that the interpretation of a contract must "avoid[] conflict or surplusage of its provisions").

Third, "[t]he mere fact that the parties disagree with regard to the interpretation of a specific provision, does not, standing alone, render that provision ambiguous." Enron Fed. Sols., 80 Fed. Cl. at 393; accord Metric Constructors, 169 F.3d at 751 ("To show an ambiguity[,] it is not enough that the parties differ in their respective interpretations of a contract term."). "Whether a contract provision is ambiguous is . . . a question of law," as is "[w]hether an ambiguity is patent or latent." NVT Techs, 370 F.3d at 1159.

1. Unambiguous Contract Provisions

When a contract term is "clear and unambiguous on its face, the plain and ordinary meaning of the contract controls." Sterling, Winchester & Long, 83 Fed. Cl. at 183. As such, the court "cannot assign it another meaning, no matter how reasonable that other meaning might seem to be." Triax Pac., Inc. v. West, 130 F.3d 1469, 1473 (Fed. Cir. 1997). As a "rule of substantive law," Barron Bancshares, Inc. v. United States, 366 F.3d 1360, 1375 (Fed. Cir. 2004), the "parol evidence rule renders inadmissible evidence introduced to modify, supplement, or interpret the terms of a fully integrated, unambiguous agreement," Zafer Taahhut Insaat ve Ticaret A.S. v. United States, 833 F.3d 1356, 1366 (Fed. Cir. 2016) (internal quotation marks omitted). In other words, courts give clear and unambiguous contract provisions "their plain and ordinary meaning and will not resort to parol evidence." Barseback Kraft AB v. United States, 121 F.3d 1475, 1479 (Fed. Cir. 1997). Using extrinsic evidence to interpret unambiguous terms "would cast a long shadow of uncertainty over all transactions and contracts." McAbee Constr. Inc. v. United States, 97 F.3d 1431, 1435 (Fed. Cir. 1996) (internal quotation marks omitted).

2. Ambiguous Contract Provisions

An ambiguity exists when the parties to a contract have different interpretations of a contractual provision that are both reasonable. LAI Servs., Inc. v. Gates, 573 F.3d 1306, 1314 (Fed. Cir. 2009) (citing Metric Constructors, 169 F.3d at 751). Where the contract language is ambiguous, disputed issues of fact may arise concerning the parties' intent. Perry-McCall Constr., Inc. v. United States, 46 Fed. Cl. 664, 672 (2000). A court's task is to construe a

contract "to effect the parties' intent at the time they executed the [contract]." Dureiko v. United States, 209 F.3d 1345, 1356-57 (Fed. Cir. 2000).

Courts may "appropriately look to extrinsic evidence" to resolve a contractual ambiguity. Metro. Area Transit, Inc. v. Nicholson, 463 F.3d 1256, 1260 (Fed. Cir. 2006). If a court is unable to interpret a contract based on its express terms (as explained above), an ambiguity may be resolved by looking to—in order of preference—course of performance, course of dealing, and common trade practice. Restatement (Second) of Contracts § 203 (Am. Law Inst. 1981); accord Cross Petroleum v. United States, 51 Fed. Cl. 549, 553 (2002) (noting that course of performance, course of dealing, and common trade practice are "relevant to determining the content and meaning of an express contract"). If all of these approaches fail, the doctrine of contra proferentem is applied as a "rule of last resort" to construe the ambiguity against the drafter. Gardiner, Kamya, & Assocs., P.C. v. Jackson, 467 F.3d 1348, 1352-53 (Fed. Cir. 2006). However, the existence of a patent ambiguity provides "exception to the general rule of contra proferentem," and contractors "may not recover" when an ambiguity is patent as opposed to latent. E.L. Hamm & Assocs., Inc. v. England, 379 F.3d 1334, 1341-42 (Fed. Cir. 2004).

B. The Contract Is Ambiguous Regarding Verification

Plaintiff contends that the contract is ambiguous with respect to what procedures must be used to verify its test results and that, consequently, the court may rely on the Manual to supply the missing terms. Specifically, plaintiff claims that the Manual is a binding agency directive because (1) under Hamlet v. United States, 63 F.3d 1097, 1103-05 (Fed. Cir. 1995), the Manual has the force and effect of law; and (2) the Manual was incorporated into the contract by virtue of the parties' course of dealing. Pl.'s Resp. 2-9. Plaintiff also claims that the Manual contains industry best practices, and that both plaintiff and the FHWA necessarily relied on the Manual to supply missing contract terms. Pl.'s Suppl. Br. 5-6. Defendant, on the other hand, argues simply that the FHWA informs contractors that the Manual is an available online resource and that any ambiguity in the contract is patent:

> FHWA provides contractors with access to its Field Materials Manual (Manual) as a resource guide. Although not expressly incorporated into the Contract, the Manual is available to contractors online . . . . See A399 (providing excerpt from FHWA Field Manual). As noted online, the Manual "has been developed to provide construction project personnel with information and guidance for field activities relating to materials[]" and "complements the [FP-03]." Id. The Manual "is intended as general guidance[]" and sets forth procedures and best practices for testing and verifying materials on a contract." Id.
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> . . . .
>
> . . . The Contract is silent, however, as to what "verification procedures" FHWA would use to verify Tidewater's test results. . . . To the extent that Tidewater believes that the

> Contract should have contained specific instruction as to how FHWA would use the core sample data for comparison, it should have raised this issue with FHWA before signing the Contract.

Def.'s Mot. 7, 32 (alterations in original).[17] Further, defendant avers that "the Manual expressly states that [it] is not a part of the parties' agreement" and that the contract "provide[s] the [full] terms of the parties' agreement." Def.'s Suppl. Br. 2-3. However, defendant also indicates that the FHWA performed its verification testing "as explained in the Field Materials Manual." Def.'s Mot. 32.

The court concludes that the term "verification"—which is not defined in the contract or its expressly incorporated materials—is "susceptible to more than one reasonable meaning." Barron Bancshares, 366 F.3d at 1375-76. Under defendant's interpretation, "verification" can be accomplished using any reasonable method chosen by the FHWA. See Def.'s Mot. 32-33; Def.'s Reply 3-4. Under plaintiff's interpretation, "verification" must be accomplished pursuant to the guidelines set forth in the Manual. Pl.'s Resp. 8. Since neither interpretation conflicts with how "verification" is used in the contract, each is "consistent with the contract language." Enron Fed. Sols., 80 Fed. Cl. at 394. Accordingly, the court must determine whether the Manual—to the extent that is describes procedures for the "verification" of a contractor's test results—should be considered part of the agreement between plaintiff and the FHWA.

C. The Manual Is Not a Binding Agency Directive

1. Legal Standard

The Court first considers whether, as plaintiff contends, the Manual is a binding agency directive. In Hamlet, the Federal Circuit set forth the standard for determining when an agency policy becomes a binding directive. 63 F.3d at 1103-05. The issue before the Federal Circuit was whether a personnel manual created by the United States Department of Agriculture's ("USDA") Agricultural Stabilization and Conservation Service ("ASCS") was binding on its Charlotte County, Virginia office's removal of one of its employees. Id. at 1102-03. The court held that regardless of whether or not a provision in an agency manual was promulgated pursuant to the rulemaking procedures of the Administrative Procedure Act ("APA"), 5 U.S.C. § 553 (1994), a provision in such a manual was "a regulation entitled to the force and effect of law" if:

> (1) the promulgating agency was vested with the authority to create such a regulation;
>
> (2) the promulgating agency conformed to all procedural requirements, if any, in promulgating the regulation;
>
> (3) the promulgating agency intended the provision to establish a binding rule; and

[17] Contrary to defendant's citations, the introduction to the Manual containing the quoted material is actually located in the record at page A839 of the appendix to defendant's motion for summary judgment.

(4) the provision does not contravene a statute.

In determining whether a provision was intended to be binding, the court should consider (a) whether the language of the provision is mandatory or advisory; (b) whether the provision is "substantive" or "interpretive"; (c) the context in which the provision was promulgated; and (d) any other extrinsic evidence of intent.

Hamlet, 63 F.3d at 1105.

Applying the four-part test, the Hamlet court concluded that the ASCS personnel manual was not a binding agency directive. Id. at 1105-07. First, the court indicated that a federal statute, the Soil Conservation and Domestic Allotment Act, granted the USDA the authority to promulgate regulations relating to ASCS committees. Id. at 1105. The court noted that USDA regulations, which are published in the Code of Federal Regulations, give the Deputy Administrator of the ASCS the authority to issue the procedures necessary to implement the published regulations. Id. Second, the court observed that since the manual dealt with personnel issues, it was exempt from the APA's strict notice-and-comment requirements. Id. at 1103 (citing 5 U.S.C. § 553(a)(2)), 1105. Third, the court found that because the provision at issue dealt with back pay and provided that a "permanent appointee who is restored to duty is eligible for backpay . . . 'at the rate that employee would have earned had the employee remained on the rolls,'" the provision was both mandatory and substantive. Id. at 1106. The court also noted that one of the ASCS's personnel officers testified that the manual provisions were agency regulations that were to be followed. Id. The court concluded, therefore, that "the ASCS intended the provision to be binding on the agency." Id. The court went on to find, however, that because the provision contravened a federal statute, the fourth element of its test had not been met. Id. Specifically, the court found that because ASCS employees are not "employees" under Title 5 of the United States Code and are therefore not eligible for benefits under the Back Pay Act, 5 U.S.C. § 5596,[18] Congress clearly intended to withhold the benefit of back pay from this class of ASCS employees. Hamlet, 63 F.3d at 1106-07. Thus, the court held that the ASCS manual was not "a regulation entitled to the force and effect of law." Id.

2. Plaintiff's Argument

In the instant action, plaintiff argues that, under Hamlet, the Manual "clearly qualifies as binding agency directive" because "there is no evidence in the record that FHWA lacked the authority to create such a regulation, that it failed to conform to procedural requirements in

[18] Under 5 U.S.C. § 2105(a), which applies to all of Title 5, an "employee" is an individual who is appointed to a civil service position "by one of the following acting in an official capacity—(A) the President; (B) a Member or Members of Congress, or the Congress; (C) a member of a uniformed service; (D) an individual who is an employee under this section; (E) the head of a Government controlled corporation; or (F) an adjutant general designated by the Secretary concerned under section 709(c) of title 32." Because ASCS employees are appointed to their positions by the county executive director, who is not an "employee" under section 2105(a), ASCS employees are not "employees" under Title 5. Hamlet, 63 F.3d at 1106.

promulgating the Manual, and/or that the Manual contravenes a statute." Pl.'s Resp. 4. According to plaintiff, the key factor is the FHWA's intent. Id. Plaintiff argues that the FHWA clearly intended to establish a binding rule because the Manual specifically "stat[es] that '[w]here there is a conflict between a contact and this manual, the contract will control,'" and also that, by its own terms, "the Manual 'complements the [FP-03]'" Id. (quoting Def.'s Mot. A839).

According to plaintiff, the language in the Manual demonstrates that the FHWA intended that "the Contract and the Manual are to be read in conjunction with one another, with the Manual yielding only when there is a conflict between it and the Contract." Id. In addition, plaintiff argues that the language of the Manual is both mandatory and substantive, id. at 4-6, because "the FHWA obviously promulgated the Manual to instruct its personnel as to the procedure for, among other things, verifying and accepting contractor test results . . . [and the] FHWA clearly treated the Manual as the statement of its procedures," id. at 6. Anticipating defendant's argument that the language in the Manual's introduction indicates that the Manual is not binding agency directive, plaintiff argues that "such disclaimers are ineffective when the language of the provision is mandatory in nature." Id. at 6 (citing Appalachian Power Co. v. EPA, 208 F.3d 1015, 1022-23 (D.C. Cir. 2000)).

3. Defendant's Argument

Defendant refutes plaintiff's position that, under Hamlet, the Manual has the force and effect of a binding agency directive. Def.'s Reply 5-9. In support of its position, defendant points to (1) the language in the introduction to the Manual, which states that the Manual "'is intended as general guidance . . . [and] does not create enforceable rights,'" id. at 6 (quoting Def.'s Mot. A839), and (2) the fact that the Manual "lacks the procedural dressing of a binding regulation" in that it was not subject to the APA's notice-and-comment requirement for rulemaking, id. at 6-7 (internal quotation marks omitted). Defendant summarizes its overall position concerning the Manual as a binding agency directive:

> The clear language of FHWA's Manual demonstrates that it is intended to serve as mere guidance and does not create any obligations or enforceable rights. Having been unable to establish a breach of contract case under the plain terms of the parties' Contract, [plaintiff's] attempt to misdirect the Court to the FHWA's Manual and manufacture factual issues that would allow it to survive summary judgment must fail. As FHWA's Manual is not incorporated into the Contract or a binding directive, the Court should not take the bait.

Id. at 9.

4. The Court's Resolution

The court agrees with defendant that the Manual does not have the force and effect of a binding agency directive. Plaintiff relies on four decisions in support of its argument that the

Manual is binding authority. However, each decision either directly supports defendant's position or describes circumstances that are distinguishable from those in the case at bar.

In Jay Cashman, Inc. v. United States, 88 Fed. Cl. 297, 302 (2009), the plaintiff claimed that the United States Army Corps of Engineers ("Corps") breached a dredging contract by failing to follow the dictates of its own Engineering Manual. The court explained that the plaintiff had not shown that the relevant manual provision was either "part of the contract or [could] be fairly interpreted as a 'regulation' creating a substantive right to monetary compensation from the United States" because the Engineering Manual was not incorporated by reference into the parties' contract. Id. at 303. The court also explained that there was no indication that the Corps intended for the provision at issue "to have the force of a binding regulation, so as to give rise to enforceable rights." Id. In addition, the court found that "[t]he manual was neither published in the Federal Register nor otherwise promulgated as a rule—and thereby lacked the procedural dressing of a binding regulation." Id. at 303-04. Further, the court stated that the provision "lacked the normative content of such a regulation [in that] there [was] nothing in the language of the manual, its purpose or its context to suggest that the agency intended to confer therein any rights on third parties." Id. at 304. Ultimately, the court concluded that the "manual was intended merely to serve as a form of non-binding guidance," and that "'violations' of that sort of guidance do not give rise to legally-cognizable claims." Id. Like in Jay Cashman, the Manual at issue here was—with one exception not relevant to the instant dispute, see supra note 3—not incorporated into the parties' contract, was not promulgated through notice-and-comment rulemaking procedures, and, pursuant to its express terms, was not intended to create any enforceable rights.

The second decision plaintiff relies on is Hymas v. United States, 117 Fed. Cl. 466 (2014), vacated on other grounds, 810 F.3d 1312 (Fed. Cir. 2016). In Hymas, a bid protest involving the United States Department of the Interior's ("DOI") award of cooperative farming agreements for the 2014 farming season, one of the issues before the court was whether the DOI's failure to comply with the requirements of an internal document—the Departmental Manual—was arbitrary and capricious and prejudiced the plaintiff. Id. at 502-04. Applying the Hamlet factors, the court concluded that the Departmental Manual had the force and effect of law. Specifically, the court held that (1) the DOI was authorized to issue the Departmental Manual pursuant to 5 U.S.C. § 522(a)(2)(C), (2) nothing in the administrative record suggested that the DOI had not followed all of the procedural requirements in publishing the Departmental Manual, and (3) nothing in the Departmental Manual was found to contravene a statute. Id. at 503. With respect to the DOI's intent, the court observed that "the Departmental Manual states, '[b]ureaus and offices must comply with the provisions of the [Departmental Manual],' reflecting that Interior intended this document to be binding authority. Therefore, the Departmental Manual is a binding agency directive, not just a statement of policy." Id. (citation omitted). Thus, unlike the Manual in the case at bar, the manual in Hymas contained, within its text, a statement of the agency's intent that the manual was binding.

The third decision plaintiff refers to is Golding v. United States, 48 Fed. Cl. 697 (2001). In Golding, a former midshipman who had been involuntarily discharged from the United States Naval Academy ("Naval Academy") based on a physical disqualification sued for back pay and reinstatement, alleging violations of the United States Constitution as well as various federal

statutes and United States Navy ("Navy") regulations. Id. at 699. According to the plaintiff, one of the reasons why his discharge was void was because the Navy violated its Medical Policy for Not-Physically Qualified USNA Midshipmen ("Navy Medical Directive") when the Navy's Chief of Medicine and Surgery failed to make a final determination in his case. Id. at 734-35. The court found that the Navy had the authority to issue the directive, that the APA's notice-and-comment requirement did not apply because the directive related solely to internal and military matters, that the directive did not contravene a federal statute, and that the language of the directive was mandatory. Id. at 737-38. The court thus concluded that the Navy Medical Directive had the "force and effect of law" pursuant to Hamlet, id. at 737, and agreed with the plaintiff that the Naval Academy violated the directive, id. at 738-40.

By comparison, no such mandatory language appears in the Manual concerning the Manual's broad purpose. Rather, as noted above, the introduction to the Manual contains numerous disclaimers as to its purpose. For example, the introduction provides that the Manual was "developed to provide . . . information and guidance" that is not in conflict with a particular contract. Def.'s Mot. A839. The introduction further provides that the Manual "is intended as general guidance," that it "sets forth procedures and best practices for testing and verifying materials on a contract," and that its application "to any particular situation is to be guided by sound engineering principles." Id. Finally, in unequivocal terms, the introduction contains a statement that the Manual "does not create enforceable rights," while noting that "a contract may adopt or incorporate by reference any portion of this manual and thereby establish that portion as binding on the parties." Id. Thus, the court's reasoning in Golding concerning mandatory language does not support plaintiff's position due to the lack of any such mandatory language in the Manual regarding its purpose.

Finally, plaintiff discusses Appalachian Power, 208 F.3d at 1022-23:

> In Appalachian Power, an [Environmental Protection Agency ("EPA")] publication contained a disclaimer that "[t]he policies set forth in this paper are intended solely as guidance, do not represent final Agency action, and cannot be relied upon to create any rights enforceable by any party." [208 F.3d at 1023.] The court ignored this attempted disclaimer and looked to the substance of the publication and found that "[i]t commands, it requires, it orders, it dictates" and thus gave "marching orders." Id. Therefore, the attempted disclaimer was ineffective. Thus, the Manual's similar disclaimer is also ineffective.

Pl.'s Resp. 6-7. As plaintiff represents, in Appalachian Power, the United States Court of Appeals for the District of Columbia Circuit ("District of Columbia Circuit") deemed the EPA publication binding, insofar as it placed obligations on state regulatory agencies, despite the fact that the publication also contained a disclaimer in the last paragraph. 208 F.3d at 1023. The District of Columbia Circuit characterized the disclaimer as "boilerplate" language at the "end" of a document that "from beginning to end—except the last paragraph—reads like a ukase." Id. In contrast, the Manual's disclaimer, rather than being a mere afterthought, is prominently set forth at the very beginning of the Manual. See Def.'s Mot. A839. In other words, the Manual

confronts readers with its intended scope before its substantive provisions are set forth. Thus, unlike the court in Appalachian Power, this court cannot ignore the Manual's disclaimer.[19]

Under the third Hamlet prong, agency statements that are not issued as formal regulations "bind[] the agency only if the agency intended the statement[s] to be binding." Farrell v. Dep't of the Interior, 314 F.3d 584, 590 (Fed. Cir. 2002). Further, in determining agency intent, the "primary consideration . . . is whether the text of the agency statement indicates that it was designed to be binding on the agency." Id. at 591. Here, there is no evidence that the FHWA intended for the Manual to be binding on parties that contract with the government. In fact, the opposite is true—there is evidence that the FHWA intended for the Manual to be advisory in nature, not mandatory. For example, as noted above, the introduction to the Manual expressly provides that the "manual is intended as general guidance" and that it "does not create enforceable rights." Def.'s Mot. A839. The introduction further provides that "[w]hen the guidelines or directions set forth in this manual conflict with [a Federal Lands Highway] contract, the contract shall govern." Id. Finally, the introduction outlines a process for incorporating portions of the Manual into a contract, explaining that "a contract may adopt or incorporate by reference any portion of this manual and thereby establish that portion as binding on the parties."[20] Id.

Furthermore, contrary to plaintiff's argument, the court concludes that the permissive language found in the Manual's introduction is not negated by the mandatory language that later appears within the Manual. For example, plaintiff notes that the Manual provides: "'The Project Engineer must witness the actual sampling and splitting of each sample. Once the material is sampled and split, the Project Engineer must take immediate possession of the Government's portion (split).'" Pl.'s Resp. 4 (quoting Def.'s Mot. A401). Plaintiff also describes Section 1.3.1.1 of the Manual as being "riddled with mandatory language." Id. (citing Def.'s Mot. A405). While Section 1.3.1.1 of the Manual does contain mandatory language, that language does not convert the entire document from one intended to be advisory into one that is binding. Rather, as stated in its introduction, the Manual is designed to "set[] forth procedures and best practices for testing and verifying materials on a contract." Def.'s Mot. A839. Thus, the Manual's mandatory language does not require contracting parties to adopt the Manual; however, if contracting parties choose to adopt the Manual's procedures and protocols, then they must follow its directives as written.

This conclusion follows the Federal Circuit's ruling in Hamlet and other subsequent Court of Federal Claims decisions that focused on the agency's intent. See, e.g., Christos v. United States, 48 Fed. Cl. 469, 476 (2000) ("'[I]t is not the intent of [the agency] in implementing this workforce restructuring plan to create any private right of action or to modify

[19] Although decisions of federal appellate courts other than the Federal Circuit are "persuasive" authority, they are "not binding on the Court of Federal Claims." Bankers Tr. N.Y. Corp. v. United States, 225 F.3d 1368, 1371 (Fed. Cir. 2000). Thus, to the extent that Appalachian Power supports plaintiff's position, it is not binding on this court.

[20] Appendix B of the Manual is the only portion of the Manual actually referenced in the contract, but it is "not germane to the present issue." Def.'s Mot. A611; accord supra note 3. See also Def.'s Mot. A171 (containing the reference to the Manual).

obligations imposed upon employers or employee representatives by law or by contract.' Such a clear statement of intent makes it unnecessary to review whether the provision is mandatory or advisory and substantive or interpretive, as well as the context in which the provision was promulgated. [The agency] did not intend to be bound . . . ." (footnote omitted)). In Hamlet, the Federal Circuit set the bar high for good reason—a court must not treat agency guidelines or policy as binding directives without first satisfying itself that it is doing nothing more than giving effect to that which the agency had already deemed necessary. The burden is a heavy one and not easily met. In those cases where courts have deemed guidelines, manuals, or policies to be binding agency regulations, courts have been careful to articulate a well-supported justification for doing so. Because the separation of powers is "one of the fundamental principles of our society," Marbury v. Madison, 5 U.S. (1 Cranch) 137, 177 (1803), courts must tread carefully when asked by a party to give binding effect to agency materials not promulgated through notice-and-comment rulemaking. In this case, it is clear that the FHWA did not intend the Manual to be a legally binding directive. Accordingly, the court declines to treat it as one.

D. The Manual Was Not Incorporated Into the Contract by Virtue of the Parties' Course of Dealing

The court next addresses whether plaintiff and the FHWA incorporated the Manual into the contract through their course of dealing.[21] Prior conduct between contracting parties can demonstrate "a common basis of understanding for interpreting their expressions and other conduct." Restatement (Second) of Contracts, supra, at § 223(1), quoted in Miller Elevator Co. v. United States, 30 Fed. Cl. 662, 688-89 (1994). Such a course of dealing "gives meaning to or supplements or qualifies [the parties'] agreement." Restatement (Second) of Contracts, supra, at § 223(2); accord Dynetics, Inc. v. United States, 121 Fed. Cl. 492, 501 (2015) ("Course of dealing relies on a 'shared understanding' between the parties, which in certain situations can be used to clarify or supplement written contractual terms."). While "[e]vidence of the parties' course of dealing" cannot alter the terms of an integrated agreement, Barron Bancshares, 366 F.3d at 1375, the meaning of those terms "is inevitably dependent on context," Restatement (Second) of Contracts, supra, at § 202 cmt. d. Thus, the parties' prior conduct can "demonstrate their common understanding" as to how contractual terms are applied. Amtec Corp. v. United States, 69 Fed. Cl. 79, 88 (2005).

According to plaintiff, the "FHWA has clearly treated the manual as part of its contracts and has expected contractors to do the same." Pl.'s Resp. 8. To buttress this contention, plaintiff observes that (1) the Manual supplies the definitions of various terms used in the contract, such as "verification" and "acceptance"; (2) the contract instructs contractors to obtain a copy of the Manual from the FHWA's website; and (3) in its previous dealings with the FHWA, plaintiff has operated in accordance with the Manual's dictates. Id. Finally, plaintiff references the declaration of Scott Fitzhugh, its project manager, who asserts that plaintiff "performed its obligations in accordance with the [Manual] in its past contracts with FHWA and, in

[21] Since there were no "'repeated occasions for performance,'" Metro. Area Transit, 463 F.3d at 1260 (quoting Restatement (Second) of Contracts, supra, at § 202(4)), regarding the FHWA's verification of plaintiff's core sample density testing during the contract at issue, there is no course of performance to analyze before turning to course of dealing.

performance of those contracts, FHWA has operated in accordance with the Manual." Fitzhugh Decl. ¶ 2.

Defendant disputes plaintiff's proposition. See generally Def.'s Reply 9-10. First, defendant notes that plaintiff's only evidence for its claim is Scott Fitzhugh's unsupported assertion that it was customary for the FHWA and its contractors to act in accordance with the Manual. Id. at 9. Defendant further notes that plaintiff took no discovery on the issue beyond soliciting Scott Fitzhugh's statement. Id. at 10. Finally, defendant argues that, irrespective of the procedures suggested in the Manual, the FHWA was permitted to check plaintiff's work because the contract itself "clearly states that '[t]he Government may inspect, sample, or test all work at any time before final acceptance of the project.'" Id. (quoting Def.'s Mot. A342).

Although plaintiff claims that the Manual was incorporated into the contract by virtue of the parties' past dealings, the only evidence plaintiff offers is a vague statement by its project manager that in its previous contracts with the FHWA, the parties followed the Manual's guidance. Plaintiff does not indicate, for example, how many times it contracted with the FHWA; when it contracted with the FHWA; or whether, in previous contracts, the Manual was expressly incorporated or, as here, a particular portion of the Manual was simply mentioned. In addition, plaintiff is silent as to the FHWA's prior conduct, which must be considered for the court to assess the parties' prior course of conduct. See Boye v. United States, 90 Fed. Cl. 392, 416 (2009) ("[T]he supplied evidence addresses the actions of only one party to the contract . . . and not both parties as would be necessary to ascertain the course of conduct of the 'parties.'"). Thus, plaintiff has not provided the court with sufficient evidence upon which it can conclude that, by virtue of the parties' previous course of dealing, the Manual was incorporated into the contract.

E. The Manual Reflects Common Trade Practice

As an alternative to examining the parties' prior dealings to interpret a contract, courts may look to evidence of custom and trade usage—i.e., common trade practice—to explain ambiguous contract terms. W. States Constr. Co. v. United States, 26 Cl. Ct. 818, 821-24 (1992). Common trade practice can also establish that "in the context of a particular contract a term has a special meaning within an industry" and that a contractor "legitimately interpreted [the contract] in a way different than a layman's reading . . . and not just on the fact that things are not customarily done in the manner called for by the contract." Id. at 824. In other words, although common trade practice cannot supplant a contract's requirements (because parties are generally free to define the terms of their bargain even if those terms conflict with industry custom), it can help explain contractual language. See, e.g., id. ("If the contract calls for three coats of paint . . . then the fact that industry practice only calls for one coat is irrelevant [because] 'three' has no special meaning in the construction business."). Thus, in situations where "trade practice and custom may inform the meaning of an otherwise unambiguous term," looking to common trade practice is an exception to the rule that "review of an unambiguous contract is generally limited to the contract itself." Nw. Title Agency, Inc. v. United States, 126 Fed. Cl. 55, 58 (2016) (citing TEG-Paradigm Envtl., Inc. v. United States, 465 F.3d 1329, 1338 (Fed. Cir. 2006)), appeal docketed, No. 16-2158 (Fed. Cir. June 1, 2016); accord Metric Constructors, 169 F.3d at 752

("[T]o interpret disputed contract terms, the context and intention of the contracting parties are more meaningful than the dictionary definition." (internal quotation marks omitted)).

Besides being "a useful interpretation aid where there is a term in the contract that has an accepted industry meaning different from its ordinary meaning," common trade practice can be helpful "where there is a term with an accepted industry meaning that was omitted from the contract." Hunt Constr. Grp. v. United States, 281 F.3d 1369, 1373 (Fed. Cir. 2002) (internal quotation marks omitted). According to the Restatement (Second) of Contracts:

> (1) A usage of trade is a usage having such regulatory of observance in a place, vocation, or trade as to justify an expectation that it will be observed with respect to a particular agreement. It may include a system of rules regularly observed even though particular rules are changed from time to time.
>
> . . . .
>
> (3) Unless otherwise agreed, a usage of trade in the vocation or trade in which the parties are engaged or a usage of trade of which they know or have reason to know gives meaning to or supplements or qualifies their agreement.

Restatement (Second) of Contracts, supra, at § 222. As early as 1871, the United States Supreme Court recognized the importance of such evidence:

> [C]ustom or usage was properly received to ascertain and explain the meaning and intention of the parties to a contract, whether written or parol, the meaning of which could not be ascertained without the aid of such extrinsic evidence, and that such evidence was thus used on the theory that the parties knew of the existence of the custom or usage and contracted in reference to it.

Robinson v. United States, 80 U.S. 363, 365 (1871); accord Hostetter v. Park, 137 U.S. 30, 40 (1890) ("It is well settled that parties who contract on a subject-matter concerning which known usages prevail incorporate such usages by implication into their agreements, if nothing is said to the contrary."); Jowett, Inc. v. United States, 234 F.3d 1365, 1368 (Fed. Cir. 2000) (explaining that contracting parties "can be their own lexicographers and that trade practice may serve that lexicographic function in some cases"); Den Norske Bank AS v. First Nat. Bank of Boston, 75 F.3d 49, 58-59 (1st Cir. 1996) ("Where, as here, the contract language is ambiguous, evidence of custom and trade practice may be admitted to arrive at an interpretation which appears to be in accord with justice and common sense and the probable intention of the parties." (internal quotation marks omitted)); Gholson, Byars & Holmes Constr. Co. v. United States, 173 Ct. Cl. 374, 395 (1965) ("[T]rade usage or custom may show that language which appears on its face to be perfectly clear and unambiguous has, in fact, a meaning different from its ordinary meaning."); PCL Constr. Servs., Inc. v. United States, 47 Fed. Cl. 745, 786-87 (2000) ("A basic

tenet of modern contract law is that introduction of evidence on trade meaning, usage and custom is an acceptable aid in interpreting contract terms." (internal quotation marks omitted)).

In this case, the evidence before the court that reliance on the Manual is a common trade practice appears in the form of the parties' own words. Plaintiff suggests, in arguing that the Manual was incorporated into the contract through the parties' course of dealing, that resorting to the Manual is common within the industry:

> Indeed, the Manual fills in a lot of blanks in the Contract as to FHWA's procedures for, among other things, verification and acceptance. For example, without the Manual, FHWA is left with no practical way of verifying contractor test results. That is, the Contract makes no mention of QL-Pay, which is the tool which FHWA was to use to verify contractor testing and determine pay factors. Instead, it is the Manual which contains the description of how FHWA is to verify Tidewater's testing using QL-Pay. Thus, FHWA clearly treats the Manual as part of its contracts. Further, in the Contract, FHWA instructs contractors to obtain the Manual from FHWA's web site. Indeed, Tidewater has performed its obligations in accordance with the Manual in its past contracts with FHWA and, in performance of those contracts, FHWA has operated in accordance with the Manual.

Pl.'s Resp. 8 (citations omitted).

Defendant's characterization of the role the Manual plays is not as clear. In its motion for summary judgment, under a heading captioned "FHWA Verification Procedures," which is itself the third section under defendant's "Statement of Facts," defendant contends that the Manual is merely an advisory document and simultaneously indicates that Chapter 1 of the Manual "explains FHWA's process for the verification of contractor test results." Def.'s Mot. 7-8. Although defendant argues that the Manual is neither a binding agency directive nor incorporated into the contract through the parties' course of dealing, defendant also concedes that the process it uses to verify contractor results is found in the Manual, which "[a]lthough not expressly incorporated into the Contract, . . . is available to contractors." Id. at 7. In addition, although defendant then notes that the Manual "is [only] intended as general guidance," id., in the paragraph that follows, defendant proceeds to identify each of the relevant sections of Chapter 1 of the Manual, including those that address the "Verification Processes," id. at 7-8.

As noted above, the introduction to the Manual states:

> This manual has been developed to provide construction project personnel with information and guidance for field activities relating to materials. This manual complements the [FP-03]. When the guidelines or directions set forth in this manual conflict with [a Federal Lands Highway] contract, the contract shall govern.

> This manual is intended as general guidance. It sets forth procedures and best practices for testing and verifying materials on a contract. The application of this manual to any particular situation is to be guided by sound engineering principles. This manual does not create enforceable rights. However, a contract may adopt or incorporate by reference any portion of this manual and thereby establish that portion as binding on the parties.

Def.'s Mot. A839. Thus, at a minimum, defendant cannot deny that the Manual describes "best practices" within the industry governed by the FHWA. It is axiomatic that the FHWA's own description of best practices within the industry is probative of common trade practice. Further, detailed verification and acceptance procedures are a necessary component of the parties' contract. To the extent that the contract itself lacks such procedures, the parties must necessarily have intended common trade practice to apply because they were free to provide otherwise in the contract. Therefore, notwithstanding the disclaimers present in the Manual's introduction, the court concludes that Chapter 1, Division 100 of the Manual is incorporated into the contract as common trade practice. However, the Manual may not be read in any way that is inconsistent with the plain language of the contract itself. See Metric Constructors, 169 F.3d at 752 ("Trade practice evidence is not an avenue for a party to avoid its contractual obligations . . . .").

IV. PLAINTIFF'S BREACH-OF-CONTRACT CLAIM

Having found that it may properly consider the relevant portions of the Manual, the court turns to plaintiff's breach-of-contract claim. As noted above, plaintiff alleges in its complaint that (1) the FHWA improperly decided to test all of the core samples for verification purposes; (2) the FHWA failed to follow proper procedures when conducting verification testing; (3) the FHWA's verification testing was untimely; (4) FHWA personnel mishandled the core samples, causing damage; (5) the FHWA improperly rejected plaintiff's offer to take additional core samples; (6) the FHWA improperly initiated a noncontractual method of acceptance of the work when it visually inspected the pavement; and (7) the FHWA improperly transferred contract funds to Crook County, Oregon officials as payment for an asphalt surface treatment of the road. The court addresses each allegation in turn.

A. FHWA's Decision to Test Plaintiff's Core Samples for Verification Purposes Was Permissible

In its motion for summary judgment, defendant contends that the FHWA was within its rights under the contract to test all of the core samples. Specifically, defendant argues, the FHWA was allowed to "inspect, sample, or test all work at any time before final acceptance of the project," Def.'s Mot. 28 (internal quotation marks omitted), and that the "FHWA's decision to test [all] the core samples was consistent with the plain language of the contract," id. at 29. Defendant also avers that the FHWA had no obligation to use plaintiff's test results to evaluate work for acceptance, even if it was able to verify plaintiff's results. Id. at 28-29. Thus, defendant argues, when the FHWA lost confidence in plaintiff's testing process because it could not verify plaintiff's results, it was both permitted under the contract to conduct its own testing of the core samples and justified in doing so. Id.

In addition, defendant notes that apart from the fact that it had every right, under the contract, to use its own test results for verification purposes, plaintiff's core samples did not meet the density requirements specified in the contract. Id. at 30. According to defendant, although plaintiff recorded an average of 91.54 percent density for its first seven core samples, it was on notice that an "impermissible number of its samples" might fail to meet the 91.0 percent minimum requirement under the contract "[b]ecause density would be evaluated based on statistical results for all contractor core sample results, . . . given that QL-Pay conducts a number of data comparisons [and] considers variances between contractor and [FHWA] results." Id. at 30-31. In other words, defendant claims that plaintiff fundamentally misunderstood how statistical evaluation was performed under the contract.

On the other hand, plaintiff essentially argues that the FHWA would only have been allowed to test all of the core samples if its results did not verify in QL-PAY, and that the FHWA's stated reason for testing all of the core samples—that plaintiff's rice values were incorrect—was baseless. Pl.'s Resp. 16. First, plaintiff contends that there was no evidence that the pycnometer was not calibrated and that, in any event, it was the FHWA's responsibility to provide plaintiff with a calibrated pycnometer.[22] Id. at 17. Second, plaintiff claims that even if the pycnometer was not calibrated, it did not affect the rice values or maximum specific gravity results, as testified to by both the FHWA's personnel and its expert witness. Id. at 17-18. Alternatively, plaintiff claims that even if there was a problem with the rice values, the FHWA's failure to designate the random samples, as required by the contract, caused the problem. Id. at 18-19. Finally, plaintiff argues that even if it was permissible and reasonable for the FHWA to test all of the core samples, the Manual required the FHWA to notify plaintiff in writing prior to testing and to provide plaintiff the opportunity to witness the testing. Id. at 19.

In its reply, defendant argues, once again, that the FHWA was within its purview to "choose to use [plaintiff's] test results, provided that FHWA first verified [those] results," but that because the FHWA had several concerns regarding plaintiff's testing processes, it decided to test all thirty-three core samples. Def.'s Reply 3. Defendant emphasizes that the difference between the parties' initial test results further justifies the FHWA's decision to test all of the core samples. Id. Finally, defendant contends that just because it chose to follow one aspect of the verification procedures specified in the Manual, it is not bound to follow all of them:

> Unable to confront the undisputed fact[] that its test results could not be verified, Tidewater attempts to deflect the import of the plain language of the Contract with an immaterial argument that because FHWA publishes a Field Materials Manual (Manual)

[22] This contention is incorrect. Section 154.04A of the SCRs notes that the FHWA-furnished trailer that plaintiff used as its on-site field laboratory was "offered" as a convenience to plaintiff, Def.'s Mot. A207, and explicitly states that plaintiff must "[d]etermine if the laboratory trailer and testing equipment are adequate to perform all testing required by the Contract," id. at A208, "recalibrate [the equipment] as necessary" during performance, id., and "[s]ubmit written documentation to the [contracting officer] that the equipment is properly calibrated," id. Further, plaintiff was required to ensure that "[t]esting equipment [was] checked and calibrated to applicable specifications" and to "[f]urnish any additional equipment required to perform tests not supplied with the laboratory trailer." Id. at A209.

> that contractors may use as a guide, summary judgment is inappropriate unless there is evidence in the record showing that FHWA followed every aspect of the Manual. In doing so, Tidewater is not merely deflecting attention from its deficient work, but is also attempting to transform the Contract—which states that FHWA is not required to use Tidewater's test results—into a new contract altogether where, if the FHWA determines that it is going to test Tidewater's work, it must follow a number of specific steps and demonstrate that it has met those steps before it can decide not to use Tidewater's test results.

Id. at 4 (citation omitted).

The court concludes that the plain language of the contract gave the FHWA full rights to test all thirty-three core samples for verification purposes. First, FAR 52.246-12, which is expressly incorporated into the contract, provides:

> (b) The Contractor shall maintain an adequate inspection system and perform such inspections as will ensure that the work performed under the contract conforms to contract requirements. The Contractor shall maintain complete inspection records and make them available to the Government. All work shall be conducted under the general direction of the Contracting Officer and is subject to Government inspection and test[ing] at all places and at all reasonable times before acceptance to ensure strict compliance with the terms of the contract.

Def.'s Mot. A129. Second, Section 106.01 of the FP-03, which is also expressly incorporated into the contract, provides:

> The Government may inspect, sample, or test all work at any time before final acceptance of the project. When the Government tests work, copies of test reports are furnished to the Contractor upon request. Government tests may or may not be performed at the work site. If Contractor testing and inspection is verified by the Government, the Contractor's results may be used by the Government to evaluate work for acceptance. Do not rely on the availability of Government test results for process control.

Id. at A342. Thus, under both the FAR and the FP-03, the FHWA was permitted to inspect and test any and all of plaintiff's work at any time prior to final acceptance. Furthermore, neither the contract nor the materials incorporated into the contract obligated the FHWA to use plaintiff's test results to evaluate plaintiff's work for acceptance, regardless of verification. Rather, the FHWA could choose to use plaintiff's test results, but only if it was able to verify plaintiff's testing and inspection. See id. (explaining that plaintiff's results "may" be used for acceptance "if [plaintiff's] testing and inspection is verified").

Finally, plaintiff is mistaken in its contention that the FHWA was only permitted to test all thirty-three core samples if plaintiff's results did not verify in QL-PAY.[23] According to the plain language of the contract, the only condition or restriction on the FHWA's right to "inspect, sample, or test" any or all of plaintiff's work was that such inspection and testing take place "before final acceptance." Id. Therefore, the court must disregard the Manual to the extent that it otherwise restricts the FHWA's ability to test all core samples. The court thus need not address plaintiff's contention that the FHWA had no valid basis to test all thirty-three core samples because, under the plain language of the contract, there was no requirement that the FHWA provide a basis for testing plaintiff's work as long as it did so prior to final acceptance.

Since the FHWA performed its verification testing of all the core samples before final acceptance, the court concludes that all other issues surrounding its decision to do so are immaterial. This conclusion is consistent with the contract's explicit directive placing ultimate responsibility for the quality of the road upon plaintiff. See id. at A129 (requiring plaintiff to "ensure that the work performed under the contract conforms to contract requirements"). If the pavement indeed had the requisite density, proper verification testing by the FHWA would yield the same result. Furthermore, plaintiff's allegations regarding the FHWA's failure to designate the random samples or provide plaintiff the opportunity to witness the FHWA's testing concern the FHWA's verification procedures themselves, which are discussed below, rather than the FHWA's decision to test all core samples.

B. There Are No Genuine Issues of Material Fact Concerning the FHWA's Verification Procedures

Second, defendant argues that plaintiff has failed to demonstrate that the FHWA did not follow correct verification procedures. Id. at 32-33. According to defendant, the contract was silent as to verification procedures and therefore defendant could not have failed to follow the proper ones. Id. at 32. If, defendant adds, plaintiff was concerned that verification procedures were not specified in the contract, it should have raised the issue during contract negotiations. Id. Defendant further claims that plaintiff has failed to demonstrate that the FHWA's verification testing of the thirty-three core samples was faulty, and that plaintiff's own expert, Mr. Hardwick, concluded that defendant had correctly tested the core samples. Id. at 32-33.

Plaintiff argues that the FHWA, to conduct a proper verification of plaintiff's test results, would have needed to take the following actions: (1) verify the quality of plaintiff's materials and validate plaintiff's test results by meeting the seven validation conditions under Section 1.3.1.1 of the Manual; (2) enter both parties' test results in QL-PAY under Section 1.3.1.2 of the Manual to produce a pay factor for each lot; (3) if the pay factor for a lot fell below 0.90 in QL-PAY, terminate production to allow plaintiff to take remedial action under FP-03 Section 106.05; (4) if the pay factor for each lot was above 0.90 in QL-PAY, verify only ten percent of the remaining samples; and (5) if the test results did not verify, notify plaintiff in writing so that it could witness the testing of all of the remaining samples. Pl.'s Resp. 9-11. Plaintiff then argues

[23] Moreover, plaintiff's contention here is at odds with its own later assertion (in a different section of its response) that the FHWA could test "all work at any time before final acceptance." Pl.'s Resp. 20 (internal quotation marks omitted).

that the FHWA "could not have verified" plaintiff's test results, regardless of the test results themselves, because the FHWA failed to follow the proper procedures. Id. at 12.

In its reply, defendant argues that, contrary to plaintiff's claims, defendant followed proper verification procedures under the Manual. See generally Def.'s Reply 3-9. Defendant reiterates that the FHWA was under no obligation to use plaintiff's test results, and, in fact, decided not to do so because those test results could not be verified. Id. at 3. Defendant also asserts that plaintiff did not produce any evidence "that FHWA failed to follow proper 'verification procedures.'" Id. at 10. Defendant then counters plaintiff's argument as to four specific points:

- Contrary to plaintiff's contention that, under the Manual, the FHWA bears the burden of ensuring that plaintiff's work meets the contract's requirements, the contract specifies that "[plaintiff] is responsible for ensuring that its product is acceptable under the Contract," id. at 12, and warns plaintiff not to "'rely on the availability of Government test results for process control,'" id. (quoting Def.'s Mot. A342).

- Contrary to plaintiff's contention that the contract requires the FHWA to terminate production "if test results are outside of an acceptable limit," the contract "places responsibility on [plaintiff] for paving the road, and ultimately for making the decision to terminate production if it determines that its product is not conforming to the Contract requirements." Id. In particular, defendant avers that the instruction in FP-03 Section 106.05(b) to terminate production if the pay factor of a lot falls below 0.90 is directed at plaintiff, not the FHWA. Id. (citing Def.'s Mot. A345).

- Contrary to plaintiff's contention that the Manual states that the FHWA "should only have tested the first five core samples and, if they are verified, should have only tested ten percent of the remaining core samples," id. at 13 (citing Pl.'s Resp. 12-13), the Manual "states that the FHWA Project Engineer should obtain a split sample of the first three to five core samples for the FHWA Laboratory, and then should select a minimum of 10 percent of the remaining samples for testing," id. (citing Def.'s Mot. A405).

- Contrary to plaintiff's contention that the FHWA "reallocated the statistical risk by testing all the core samples," the contract (1) allowed the FHWA to test all of the core samples and (2) by design, allocated the statistical risk that the FHWA might "reject acceptable work" or "accept work that is not acceptable" between the parties by providing for random

locations of the core samples rather than testing of the entire road. Id.

The court concludes that, to the extent that the FHWA failed to meet the validation conditions, enter results in QL-PAY, terminate production when the pay factor fell below 0.90, limit its testing to ten percent of the core samples, afford plaintiff an opportunity to witness the FHWA's retesting of the core samples, or otherwise follow proper verification procedures, such failures are immaterial for three reasons. First, plaintiff's own expert concluded that all testing was conducted properly. Id. at A817. Second, as explained above, the plain language of the contract placed ultimate responsibility for the quality of the road upon plaintiff. Plaintiff had access to a nuclear density gauge to test the in-place compaction of the pavement as it was being rolled, allowing any necessary adjustments to be made before core samples were extracted, id. at A661-62 (Perry Dep. 64:11-65:22); tested all core samples in its on-site field laboratory before they were transferred to the FHWA, id. at A668-69 (Perry Dep. 76:5-77:18); and had access to QL-PAY, id. at A699 (Perry Dep. 138:15-25). Third, as explained above, the FHWA was within its rights to test all of the core samples. In particular, to the extent that the Manual required only ten percent of the remaining samples to be tested, such percentage is, by the Manual's plain terms, a minimum threshold and does not preclude additional testing.[24] The court also concludes that, to the extent that there was a reallocation of statistical risk, any such reallocation was contemplated by the contract because the FHWA's decision to test all of the core samples was similarly contemplated by the contract. See, e.g., id. at A342 (allowing the FHWA to test "all" work). Finally, the court concludes that plaintiff's allegation regarding the FHWA's failure to designate the random samples is immaterial because plaintiff has not offered any evidence that the maximum specific gravity values used by the FHWA prejudiced plaintiff.

In sum, plaintiff has not identified any genuine issues of material fact that could counter the court's conclusion that, as a matter of law, the FHWA's verification testing complied with the contract and the Manual.

C. There Are No Genuine Issues of Material Fact Concerning the Timeliness of the FHWA's Verification Testing

Plaintiff next argues that the FHWA's verification testing was untimely because the Manual "clearly contemplates" that the FHWA was to conduct verification testing "as work progresses" and "[t]here is no evidence in the record that FHWA input [plaintiff's] test results in QL-Pay prior to testing all of the cores in August 2011." Pl.'s Resp. 16.

Defendant contends that the Manual does not speak to the timing of verification testing, Def.'s Mot. 34, but that the FHWA's testing of all thirty-three core samples was nevertheless reasonably timed, given the FHWA's concerns about plaintiff's test results, id. at 33-34. Defendant further avers that the FHWA's testing was conducted using QL-PAY, the statistical evaluation methodology described in the Manual. Id. at 34. Finally, defendant observes that the contract provided that the FHWA could "inspect, sample or test all work at any time before final

[24] To the extent that the Manual's ten-percent provision regarding additional testing was a maximum limitation rather than a minimum threshold, such limitation clearly conflicts with the plain language of the contract permitting "all work" to be tested, and is therefore disregarded.

acceptance of the project." Def.'s Reply 13 (internal quotation marks omitted).

The court concludes that the issue of whether the Manual required the FHWA to perform verification testing on plaintiff's results as work progressed is immaterial. First, as explained previously, the only condition or restriction on the FHWA's right to "inspect, sample, or test" any or all of plaintiff's work was that such inspection and testing take place "before final acceptance." Def.'s Mot. A342. To the extent that the Manual contains additional restrictions on the FHWA's timing of its verification sampling and testing, such additional restrictions are disregarded as conflicting with the language of the contract itself. Second, defendant's expert, Mr. Bonaquist, determined that there was no statistically significant correlation between the differences in the parties' test results and the time that elapsed between their testing of the core samples—i.e., the timing of the testing did not impact the results. Id. at A788-89. Plaintiff did not challenge this determination. Third, plaintiff cannot reasonably argue that it was prejudiced by any delay in receiving results from the FHWA's testing because there is no evidence that plaintiff ever requested the test results. See id. at A342 ("When the Government tests work, copies of test reports are furnished to the Contractor upon request." (emphasis added)). In any event, the FHWA provided plaintiff with its test results during the paving hiatus. Id. at A612. Further, as explained above, plaintiff was ultimately responsible for the quality of the product. See id. at A342 ("Do not rely on the availability of government test results for process control.").

Since it is (1) immaterial whether the Manual required the FHWA to conduct its verification testing as work progressed and (2) undisputed that the FHWA performed its verification testing of all the core samples "before final acceptance," as permitted by the contract, there are no genuine issues of material fact concerning the timeliness of the FHWA's verification testing. The court concludes that, as a matter of law, the FHWA timely conducted its verification testing.

D. There Are No Genuine Issues of Material Fact Concerning Damage to the Core Samples

Fourth, plaintiff claims that the FHWA damaged the core samples by failing to follow the Manual's storage and handling procedures.[25] See generally Pl.'s Resp. 24-26. Plaintiff observes that "the parties' experts agree that the difference in density test results is due to differences in bulk specific gravity between the laboratories," which is due to "differences in water absorption between the laboratories." Id. at 22. However, as plaintiff also observes, the parties' experts "disagree as to the reason for the difference in absorption." Id. According to plaintiff, "this is a classic case of conflicting expert opinion which creates a genuine issue of material fact." Id. Plaintiff is incorrect. A genuine issue of material fact does not automatically arise from "the mere existence of some alleged factual dispute." Anderson, 477 U.S. at 247. Courts must still determine "whether there is the need for a trial." Id. at 250.

Plaintiff asserts that the FHWA's purported mishandling of the core samples caused the increased absorption levels and, in turn, the discrepancy between the testing results obtained by the different laboratories. Pl.'s Resp. 25. On the other hand, defendant argues that there is no

[25] The court construes plaintiff's use of the term "mishandling" to include improper storage. Therefore, any references to mishandling also refer to improper storage.

evidence that the FHWA mishandled the core samples and further, even if it did, that there is no correlation between any purported damage and core density results. Def.'s Mot. 35-37. Defendant asserts that plaintiff has proffered no evidence that the difference in test results was due to degradation of the core samples as opposed to differences in testing. Id. at 36. Defendant also notes that neither Mr. Toller nor Mr. Hardwick "conducted any engineering analysis" to explain the increased water absorption, whereas Mr. Bonaquist "analyzed a number of metrics before ultimately concluding that the difference in test results was likely due to differences in testing and was not due to any purported damage of the core samples." Id.

Specifically, Mr. Bonaquist conducted a detailed analysis and determined that there was no correlation between the differences in testing results and (1) when the sample was originally taken, id. at A787-88; (2) the elapsed time between sampling and receipt in the FHWA laboratory, id. at A788-89; or (3) Carlson's visual assessment of damage, id. at A789-90. Based on his analysis, Mr. Bonaquist "conclude[d] that there is no evidence indicating that the cores were damaged during the time between testing by Tidewater and retesting by FHWA." Id. at A791.

Meanwhile, plaintiff's allegations regarding the FHWA's mishandling of the core samples are unsupported by the evidence in the record and thus carry no weight. See, e.g., TechSearch, L.L.C. v. Intel Corp., 286 F.3d 1360, 1375 (Fed. Cir. 2002) (explaining that "wholly conclusory allegations fail[] to raise a genuine issue of material fact"); Snowbank Enters., Inc. v. United States, 6 Cl. Ct. 476, 486-87 (1984) (giving no weight to an opinion that was "unfounded . . . rather than the product of a reasoned analysis"). Although plaintiff's expert, Mr. Hardwick, determined that there was an "increase in permeability," Def.'s Mot. A763, he made no mention of any purported mishandling, see id. at A760-63 (initial expert report), A815-18 (expert rebuttal report), and further opined that the testing itself was performed correctly, id. at A817. Furthermore, although Mr. Toller speculated that the discrepancy in water absorption "could" be caused by testing differences or mishandling of the core samples, id. at A630, he ultimately reached "no conclusion" as to that effect, id. at A743 (Toller Dep. 52:6-10).

Mere speculation is not the same as evidence. Plaintiff thus fails to offer any evidence to counter Mr. Bonaquist's finding that there is no correlation between any purported damage to the core samples and the differences in testing results. Therefore, the court concludes that, to the extent that the core samples were damaged, such damage did not impact the FHWA's test results. This conclusion renders immaterial the issue of any alleged mishandling of the core samples.

E. The FHWA's Rejection of Plaintiff's Invitation to Take New Core Samples Was Permissible

Plaintiff next alleges that although it "offered to re-core the paving for further verification testing" and that although it later suggested that "new cores be taken and tested by an independent, AASHTO accredited lab" as provided for in the Manual, the FHWA "wrongfully rebuked" those offers. Compl. ¶ 7. In support of its argument, plaintiff notes that Section 1.3.3 of the Manual provides for third-party testing as a means of dispute resolution. Pl.'s Resp. 19-20; accord Def.'s Mot. A408-09. Furthermore, although plaintiff admits that the contract

requires the contractor to cut core samples from compacted pavement "'not later than 12 hours after final rolling,'" Pl.'s Resp. 20 (quoting Def.'s Mot. A250), it argues that other contractual provisions, the FAR, and the Manual contradict this requirement. Id. Specifically, plaintiff highlights the following:

- According to the contract, the FHWA "'may inspect, sample, or test all work at any time before final acceptance of the project.'" Id. (quoting Def.'s Mot. A342).

- Under FAR 52.246-12, "'all work . . . is subject to Government inspection and test[ing] at all places and at all reasonable times before acceptance.'" Id. (quoting Def.'s Mot. A129).

- Section 1.3.3 of the Manual allows for "'additional sampling and/or testing'" by an independent certified laboratory. Id. (quoting Def.'s Mot. A408).

Thus, plaintiff argues, because the FHWA was permitted to sample and test "all work at any time" under the contract, the "12-hour rule" with respect to a contractor's taking of a core sample should be cast aside. Id.

Defendant counters that the FHWA was well within its rights to reject plaintiff's offer to take new core samples. Def.'s Mot. 37-38. Under the express terms of the contract, defendant avers, the FHWA had no obligation to cut new core samples for further testing. Def.'s Reply 15-16. Defendant also notes that, contrary to plaintiff's suggestion, the "12-hour rule" does not conflict with the FHWA's right to inspect, sample, or test work at any time. Id. at 16. According to defendant, the 12-hour rule is a limitation placed on plaintiff obtaining core samples, and not a limitation on when the FHWA may test or inspect plaintiff's work. Id.

Defendant is correct that the 12-hour rule set forth in the contract and the FHWA's contractual right to inspect and test all work at any time prior to final acceptance are not in conflict because the 12-hour rule applies to the contractor. Moreover, neither the contract nor the Manual require the FHWA to allow additional third-party sampling and testing; it is merely permitted to do so. See id. at A408 (providing that a proposal for additional testing could be "accepted if appropriate, modified if necessary, or rejected" by the FHWA). Therefore, the court concludes that there are no genuine issues of material fact concerning the propriety of the FHWA's decision to reject additional sampling and testing.

F. FHWA's Visual Inspection and Subsequent Contract with Crook County for Asphalt Segregation Are Immaterial

Finally, plaintiff claims that the FHWA "initiated a non-contractual method of acceptance of work" when it rejected plaintiff's work following a visual inspection and instead transferred contract funds to Crook County officials to "pay for an asphalt surface treatment of the road." Compl. ¶ 10. Defendant argues that this contention is without merit because the court previously held that the FHWA's agreement with Crook County was separate from its contract with

plaintiff.[26] Def.'s Mot. 38 (citing id. at A596-97). According to defendant, "[t]he Court's decision on this issue is [the] law of the case and should govern at this juncture." Id. Defendant also correctly indicates that plaintiff "offered no evidence on this issue during discovery." Id. Plaintiff does not address this issue in its response.

The court need not address defendant's law-of-the-case argument, or the potential application of issue preclusion, because plaintiff's abandonment of this issue is sufficient for its resolution. The Federal Circuit has previously held that an "absence of evidence" to support a claim renders summary judgment appropriate. Dairyland Power Co-op v. United States, 16 F.3d 1197, 1202 (Fed. Cir. 1994). Plaintiff took no discovery concerning the FHWA's visual inspection or separate contract with Crook County. Meanwhile, defendant offered evidence (aside from the court's December 10, 2012 Opinion and Order in the previous case between the parties) that neither the FHWA's visual inspection nor its separate contract with Crook County are germane to the FHWA's retained funds for the superpave hot asphalt concrete pavement pay item. The funds retained by the FHWA dealt entirely with the density of the pavement, whereas the visual inspection dealt with a separate issue for which no funds were retained. Def.'s Mot. A625. Further, although plaintiff highlighted the FHWA's visual inspection and separate contract with Crook County in its complaint, plaintiff's failure to respond (despite having ample opportunity) to defendant's contention that they have no bearing on this case constitutes a waiver. See Novasteel SA v. United States, 284 F.3d 1261, 1274 (Fed. Cir. 2002) ("[A] party does not waive an argument based on what appears in its pleading; a party waives arguments based on what appears in its brief."); RCFC 56(e) (reflecting that the court may enter summary judgment for the movant when a party "fails to properly support an assertion of fact or fails to properly address another party's assertion of fact").

In sum, there are no genuine issues of material fact to counter the court's conclusion that, as a matter of law, the FHWA's visual inspection and separate contract with Crook County were permissible.

V. CONCLUSION

The court has considered all of the parties' arguments. To the extent not discussed herein, they are unpersuasive or without merit.

The Manual is not a binding agency directive, nor is it incorporated into the parties' contract by their course of dealing. However, it reflects common trade practice, and as such, supplies necessary terms that do not conflict with the contract itself.

The FHWA's decision to test all thirty-three core samples was permissible. There are no genuine issues of material fact regarding the verification procedures followed by the FHWA, the timeliness of the FHWA's verification testing, or damage to the core samples. The FHWA was within its rights to reject plaintiff's offer to take additional core samples. Finally, the FHWA's

[26] As noted above, on December 10, 2012, the court dismissed plaintiff's previous complaint, without prejudice, for lack of subject matter jurisdiction because the contracting officer had not yet issued a final decision. See generally Tidewater, 107 Fed. Cl. at 779.

visual inspection and subsequent contract with Crook County have no bearing on the instant dispute.

For the reasons stated above, defendant's motion for summary judgment is **GRANTED**. Plaintiff's complaint is **DISMISSED WITH PREJUDICE**. No costs. The clerk is directed to enter judgment accordingly.

IT IS SO ORDERED.

s/ Margaret M. Sweeney
MARGARET M. SWEENEY
Judge