#### BEFORE THE MARYLAND STATE BOARD OF CONTRACT APPEALS

Appeal of ORFANOS CONTRACTORS, INC.	) )	
	)	Docket No. MSBCA 1849
Under Maryland Transportation	)	
Authority Contract No. KH	)	
498-000-002	)	

November 19, 1996

<u>Equitable Adjustment - Timeliness of Claim</u> - The notice provisions of COMAR 21.10.04.02 require documentation of a claim (i.e., filing of the claim) within 30 days of the filing of the notice of claim or as soon as reasonably possible when the nature of the problem makes contemporaneous cost quantification impossible, provided that, regardless of circumstances, the claim must be filed no later than the date that final payment is made.

<u>Equitable Adjustment - Jury Verdict</u> - Where appropriate the Board will apply a jury verdict approach in the award of an equitable adjustment to more fully promote the purpose and policies of the General Procurement Law as set forth in §11-201 of Division II of the State Finance and Procurement Article.

APPEARANCES FOR APPELLANT:

Kenneth K. Sorteberg, Esq. William M. Huddles, Esq. Huddles & Jones, P.C. Columbia, MD

Herman M. Braude, Esq. Braude & Margulies, P.C. Washington, D.C.

APPEARANCE FOR RESPONDENT:

Deborah A. Donohue Assistant Attorney General Baltimore, MD

#### **OPINION BY CHAIRMAN HARRISON**

Appellant appeals the denial of its claim for a time extension and abatement of liquidated damages<sup>1</sup> arising out of a contract to clean and paint five bridges on the Kennedy Highway and to replace sliding plate bearings thereon.

Appellant appealed under the 180 day deemed denied provision set forth in §15-219(d)(2) of the State Finance and Procurement Article for construction contracts. Following the hearing of this appeal Appellant has argued that

#### Findings of Fact

- 1. In the fall of 1990 the Maryland Transportation Authority (MdTA) solicited bids for Contract No. KH 498-000-002, the cleaning, painting, and replacement of sliding plate bearings of five bridges along I-95 in Harford and Cecil Counties, Maryland; specifically, the Big and Little Northeast Creek, Big Elk, Route 136, and CSX bridges.
- 2. At bid opening on November 21, 1990 only one bid was received; that of Appellant in the amount of Nine hundred twenty-five thousand, three hundred fifty dollars (\$925,350).
- 3. The Contract contained GP-2.04, a mandatory provision for construction contracts regarding site investigation:

The Contractor acknowledges that he has investigated and satisfied himself as to the conditions affecting the work, including but not restricted to those bearing upon transportation, disposal, handling and storage of materials, availability of labor, water, electric power, roads and uncertainties of weather, river stages, tides or similar physical conditions at the site, the conformation and conditions of the ground, the character, quality and quantity of surface and subsurface materials or obstacles to be encountered insofar as this information is reasonably ascertainable from an inspection of the site, including all exploratory information in possession of the State, as well as from information presented by the drawings and specifications made a part of this Contract. Any failure by the Contractor to acquaint himself with the available information may not relieve him from responsibility for estimating properly the difficulty or cost of successfully performing the work. The State assumes no responsibility for any conclusions or interpretations made by the Contractor on the basis of the information made available by the State.

4. Mill scale was present on the steel on all five bridges, but was covered over by paint. It is standard industry practice that a painting contractor is responsible for investigating site conditions before submitting a bid. Appellant did not perform any inspection of the subsurface of the steel on any of the bridges in the Contract. An inspection of the subsurface of the steel was possible because the steel was accessible to the touch from each abutment and a knife test,

(2) "Construction" includes any major work necessary to repair, prevent damage to, or sustain existing components of an improvement to real property.

the subject contract is a maintenance contract. Construction is defined in §11-101(e) of the State Finance and Procurement Article as follows:

<sup>(</sup>e) Construction.—(1) "Construction" means the process of building, altering, improving, or demolishing an improvement to real property.

<sup>(3) &</sup>quot;Construction" does not include the maintenance or routine operation of an existing improvement to real property, or activities related to an energy performance contract.

Maintenance is not defined in the General Procurement Law. It is defined in relevant part at COMAR 21.10.02.01(53) to mean "any work necessary for the continued operation or upkeep of a facility, structure, building, grounds . . . that is not included within the definition of construction." The Board finds that the subject Contract is a construction contract. Otherwise the absence of a Procurement Officer's decision would deprive the Board of jurisdic-tion. The Board appreciates that the argument of Appellant's counsel that the Contract is a maintenance rather than a construction contract is intended to counter MdTA's arguments regarding the notice of claim provisions of COMAR and the Contract and the merits of the appeal involving the degree of cleanliness required to be achieved under Respondent's argument concerning the mandatory differing site condition clause required for construction contracts.

which is a standard industry procedure, could have been performed on all of the bridges to detect the presence or possible absence of mill scale.

- 5. The Contract drawings show that the bridges were built in the early 1960's. Only about 10% of steel used in bridge building during that time was shotblasted to remove mill scale. It is common industry knowledge that most steel used in bridge building during that time had mill scale on it.
- 6. There is no industry standard or practice regarding bridge repainting schedules. However, Appellant had previously performed cleaning and painting work on three of these same five I-95 bridges in 1982, under Contract No. NE 467; specifically, the Big and Little Northeast Creek and CSX bridges. The cleaning methods specified under this 1982 contract were to "Blast clean to conform to SSPC-SP6-63,<sup>2</sup> Commercial Sa2; and Power Tool clean to conform to SSPC-SP6-63, St3," requiring that:

All loose paint, rust, dirt, grease and other foreign matter shall be removed by blast cleaning and/or power tool cleaning as directed by the Engineer.

All surfaces which have not been sandblasted shall be power tool cleaned. At previous painted surfaces in good condition, paint shall be power tool cleaned but left intact and featheredged at bare metal.

- 7. Performance of this 1982 contract by Appellant should have revealed the presence of mill scale on the Big and Little Northeast Creek and CSX bridges. The Board finds that Appellant should have been aware of the presence of mill scale on all five bridges covered by the captioned Contract. The presence of mill scale did not constitute a Type I or Type II differing site condition.
- 8. During the spring of 1991, Appellant was the contractor on an MdTA project at the Baltimore Harbor Tunnel (BHT), and had a dispute with the MdTA over the project. The MdTA Procurement Officer would not authorize a notice to proceed to be issued on the captioned Contract until the dispute with Appellant at the BHT project was resolved. Once the dispute with Appellant was resolved, on June 25, 1991, the MdTA Procurement Officer issued the notice to proceed on the captioned Contract, with work to begin on July 9, 1991.
- Section SP 2-6.03 of the Contract, entitled "Construction Methods," under the heading "Painting Structural Steel," required "[a]ll existing surfaces shall be blast cleaned to SSPC-SP-6, Commercial Blast Cleaning."
- 10. The Structural Steel Painting Council (SSPC) Surface Preparation Specification No. 6 (SSPC-SP-6) covers the requirements for Commercial Blast Cleaning of steel surfaces by the use of abrasives and was thus incorporated in the Contract by the reference to "Commercial Blast Cleaning." The SSPC-SP-6 specification provided:

2.1 A Commercial Blast cleaned surface when viewed without magnification, shall be free of all visible oil, grease, dirt, dust, mill scale, rust, paint, oxides, corrosion products, and other foreign matter, except for staining, as noted in Section 2.2.

2.2 Staining shall be limited to no more than 33 percent of each square inch of surface area and may consist of light shadows, slight streaks, or minor discolorations caused by

<sup>2</sup> SSPC stands for Steel Structures Painting Counsel, an organization which advocates standards for surface preparation and painting of steel structures such as bridges.

stains of rust, stains of mill scale, or stains of previously applied paint. Slight residues of rust and paint may also be left in the bottoms of pits if the original surface is pitted.

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2.4 When painting is specified, the surface shall be roughened to a degree suitable for the specified paint system.

2.5 Immediately prior to paint application, the surface shall comply with the degree of cleaning as specified herein.

2.6 SSPC-Vis 1-89 or other visual standards of surface preparation may be specified to supplement the written definition. \*NOTE: Additional information on visual standards is available in Section A.4 of the Appendix.

- 11. All mill scale except a percentage of staining therefrom, whether loose or adherent, is to be removed under this specification.
- 12. Although difficult, it is commercially possible to remove all adherent mill scale except a percentage of staining therefrom, through use of SSPC-SP-6 Commercial Blast.
- 13. Section A.4 of the SSPC-SP-6 Appendix states:

A.4 VISUAL STANDARDS - Note that the use of visual standards in conjunction with this specification is required only when they are specified in the procurement documents (project specification) covering the work. It is recommended, however, that the use of visual standards be mandatory in the procurement of documents (project specifications).

14. The Contract specifications for painting incorporated Section 812 - Painting of the Standard Specifications for Construction and Materials, January 1992, which required in relevant part the following:

812.03.04 Surface Preparation. The surfaces shall be prepared in accordance with this section and the cited Structural Steel Painting Council (SSPC) Specifications. Surface conditions shall be as shown in SSPC Vis-1 or AASHTO M 271.

\* \* \*

(d) Sandblast cleaning shall be use to remove mill scale, rust, rust scale, paint or other foreign matter from steel surfaces. This shall be done with sand or grit abrasives propelled through nozzles or confrifugal wheels in accordance with SSPC-SP-6. The end result shall meet the surface condition of Near White Sa 2 <sup>1</sup>/<sub>2</sub>, Commercial Blast Cleaning Sa 2 or Brushoff Blast Cleaning Sa 1.

- 15. This specification, using only the Vis 1 visual standards, allowed the end result of an SSPC-SP-6 cleaning to be near white, commercial blast, or brushoff blast.
- 16. The MdTA inspectors did not use the visual standards in determining whether or not Appellant's cleaning met the SSPC-SP-6 standard; the written definition only was used.
- 17. The definition of SSPC-SP-10, Near White Blast, requires removal of all paint, mill scale, and foreign matter, and allows a maximum of 5% staining. In order to achieve a Near White Blast, every square inch of steel must conform to the standard of no more than 5% staining.
- 18. With respect to mill scale staining, SSPC-SP-6 allows a maximum of 33% staining per square inch of surface area to remain, but staining of more than 5% up to 33% is still within the written definition of SSPC-SP-6. There is no intermediate level of blast cleanliness between SSPC-SP-

6 and SSPC-SP-10 which allows up to 5% mill scale staining per square inch of surface area. Any level of cleanliness between these two standards is credited as being an SSPC-SP-6 commercial blast.

- 19. While Appellant did not achieve a Near White Blast on every square inch of steel on any of the Contract Bridges, the record reflects that it was held to such standard by the MdTA inspectors. The relative cost differential between performing a job at SSPC-SP-6 and performing a job at SSPC-SP-10, based on contractors' experience, is about 20%.
- 20. The Board finds that the Contract allowed up to 33% mill scale staining to remain and did not require that the contractor achieve a Near White Blast.
- 21. Section SP 2-7.02 of the Contract entitled "Construction Requirements," under the heading "Containment and Disposal of Blast Waste," stated that:

[t]he goal of this contract will be to contain as near to 100% of the generated residue as possible. The Contractor shall conform to all applicable State and Federal regulations and shall utilize the best available technology for the bridge sites with a goal of 100% containment.

A note contained that section stated: "Negative pressure systems shall have a minimum fan capacity of 1 cfin per each <u>6 square feet</u> of work area."

- 22. Early in the performance of the Contract, the MdTA informed Appellant that the minimum fan capacity note in the Contact should have read: "1 cfm per each <u>6 cubic feet</u> of work area," since the work area is measured in cubic feet, not square feet. However, Appellant determined the size of each con-tainment area.
- 23. Appellant chose to utilize a second fan in its containment system. The dust socks Appellant used were not cleaned properly, causing shutdowns of the original fan. Appellant received a 20" replacement fan from Eagle Industries to use while the cause of the shutdowns was being investigated. Eagle Industries charged Appellant for the 20" fan because it had been used on the job and because it had been contaminated by lead paint. Appellant ordered a second 24" replacement fan from Eagle Industries. A replacement sock ordered by Appellant from Eagle Industries was delivered, but was the wrong size for the fan. These difficulties with the fan caused Appellant to be unable to blast for at least several days.<sup>3</sup>
- 24. Section SP 2-703 of the Contract, entitled "Method of Measurement and Basis of Payment," under the heading "Containment and Disposal of Blast Waste," stated:

2. The "Hauling and Disposal of Industrial Blast Waste without treatment" including labor, materials, equipment and all incidentals will be measured and paid for at the contract unit price bid per ton. . . .

That section further stated:

3. The "Hauling, treatment, and disposal of Blast Waste as Industrial Waste" including all labor, equipment, treatment and incidentals, will be measured and paid for at the contract unit price bid per ton. Should the contractor determine that, at the time of bidding, a facility that will dispose of the treated waste as Industrial is not available, an alternate item has been provided for "Hauling, Treatment, and Disposal of Blast Waste as Hazardous Waste". This term shall included all labor, equipment, treatment and incidentals, and will be measured and paid for at the contract price bid per ton.

The record does not reflect the exact number of days.

- 25. The Board finds that the Schedule of Prices in the bid form conveys to bidders that MdTA estimates that a total of 460 tons of blast waste (whether classified as <u>without treatment</u>, <u>industrial</u> or <u>hazardous</u>) will be generated by the work.
- 26. Appellant's estimate of blast waste was 3 lbs. per square foot of steel. Appellant's estimate of steel area was 180,000 square feet. Appellant's estimate for tons of blast waste was 270 tons total. The MdTA Engineer's estimate of blast waste was 5.4 lbs. per square foot of steel. The MdTA's estimate of steel area was 170,050 square feet. Blast waste generated on a project requiring SSPC-SP-6, assuming 100 p.s.i. blasting pressure, can range from 5.1 lbs. per square foot of steel to 15 lbs. per square foot of steel, depending on the initial surface condition.
- 27. The total tonnage of blast waste generated by Appellant on the contact was 736.77 tons.
- 28. Appellant bid an average crew of five, (two painters, two laborers, and one superintendent), working ten hour days (½ hour for lunch) for 170 working days. Appellant estimated that the blasting and priming work would take five work days per containment with an average of four containments per bridge for the five bridges. This would be less than 100 work days to perform Commercial Blast and priming work with blasting to require approximately 68 working days. The remainder of the time would be spent on building and moving containments, cleanup and waste disposal and painting.
- 29. In the bid Appellant utilized abrasive material of three pounds per square foot on 180,000 square feet of steel (or 270 tons). The three pounds quantity was allegedly based on Appellant's past experience in performing "Commercial Blast" on other bridge structures.
- 30. Appellant's bid for cleaning and painting of the steel was \$654,500 or approximately \$3.65 per square foot with overhead and profit of 24%. The MdTA Engineer's Estimate was \$3.00 per square foot.
- 31. As noted above, the Board finds that at the time of bid Appellant should have been aware of the presence of mill scale on the bridges as a result of previous work on some of the bridges in 1982 and the ability to determine the presence of mill scale by physical pre-bid inspection.
- 32. By letter date June 25, 1991, MdTA notified Appellant to proceed with the prosecution of the Contract work on July 9, 1991. This notice to proceed came four months later than the March 1991 notice to proceed forecasted by MdTA at the pre-bid meeting, and pushed the contract completion date to March 5, 1992. As noted above the delay in issuance of the notice to proceed resulted from a dispute on another project.
- 33. As set forth above, Appellant's Contract, at Specification Section SP 2-6.03-Painting Structural Steel, called for Commercial Blast Cleaning. Subsection SP2-6.03(a), Under Surface Preparation, states: "All existing surfaces shall be blast cleaned to SSPC-SP-6, Commercial Blast Cleaning".
- 34. SSPC has established several standards of surface preparation by sand blasting, including SSPC-SP-6 Commercial Blast; SSPC-SP-10 Near White Blast; and SSPC-SP-5 White Blast. The least expensive is the Commercial Blast. It requires approximately three and one-half pounds per square foot of blast abrasive per square foot of surface. The Near White Blast, which allows up to 5% mill scale staining to remain, is more expensive, requiring about eight pounds per square foot of abrasive and costs more than Commercial Blast.

The White Blast, which requires all mill scale staining to be removed, is the most expensive and requires approximately ten pounds of abrasive per square foot.

- 35. Appellant started work on July 9, 1991 at the Rt. 136 bridge and within a few days discovered the presence of adherent mill scale which MdTA inspectors properly required to be removed. Appellant removed the mill scale from the steel as directed by the inspectors. However, the inspectors not only insisted that mill scale be removed but that consistent with a Near White Blast (SSPC-S0-10) that less than 5% staining remain rather than up to 33% staining allowed by the specified Commercial Blast. This same problem with the allowable degree of mill scale staining occurred throughout the course of the project on all five bridges under Appellant's Contract.
- 36. Shortly after starting work on July 9, 1991, Appellant took photographs of blasted steel areas which evidenced White or Near White Blasting ("too good") and of other areas which were unacceptable (i.e., "not good enough" according to MdTA) but which were the result of a Commercial Blast. Appellant then requested a meeting with MdTA to discuss the mill scale problem and the extra blasting effort, beyond Commercial Blast, required by Appellant to remove the mill scale. This meeting was held on July 16, 1991, one week after the work had commenced. During the meeting Appellant's photos were reviewed and the mill scale problem was discussed. Appellant complained that MdTA was requiring a Near White Blast in removal of the mill scale while the specifications only required a Commercial Blast. After reviewing Appellant's photographs of the work, MdTA told Appellant to try to achieve a blast result somewhere "in between" the "unacceptable" Commercial Blast photographs and "acceptable" Near White Blast photographs.
- 37. Appellant (through its then chief estimator, Mr. Michael Orfanos) testified that the "in between" compromise suggested by the MdTA led to an inefficient trial and error method of blasting.

That means that we discussed the photos and we had these photos that looked near white and then we had what we were achieving and they said, well you can try and get in between there, and it led us on to a trial and error type blasting operation where each and every time we blast it was subjective to the inspector. There wasn't a standard to follow. We would blast, call the inspector, approve our steel, this is too dark, this is too dark here, X it, X it, this is too dark here.

So we would have to go back and blast some more. And that created a whole slew of problems in itself, because when you prepare for the inspector you've got to blow down all your steel and then find your inspector, which as time went on was a terrible thing in itself, but you've got to get your inspector to result up and go in there, look at it and then he may still not be happy and have you blast again. But the thing was you blast it to make then satisfied, you'd take off all this mill scale and to [sic] [blast] yourself into a near white, white condition.

38. Mr. Kenneth A. Timber, of SSPC's Surface Preparation Committee, explained in his article, "New SSPC Visual Standard for Abrasive Blast Cleaning," why his committee omitted a Commercial Blast photograph for Grade A steel (adherent mill scale) when producing the new SSPC-Vis 1-89 pictorial standard:

Each of the 4 degrees of blast cleaning is depicted over rust grades B, C, and D. However, for rust grade A (intact mill scale), only the Near White and White Metal grades of cleaning are shown.

\* \* \*

Similarly, the committee decided not to prepare a standard photograph for the Commercial Blast Cleaning of adherent mill scale. The definition of Commercial Blast requires that all mill scale be removed but allows 33 percent of each square inch to contain stains or discoloration. Repeated attempts were made to achieve this end condition on phases bearing mill scale and ranging from 3/16-inch to ½inch thick. In every case, either small islands of mill scale remained on the surface, or the amount of staining that remained after removal of the mill scale covered far less than 33 percent of each square inch and approached a Near-White degree of cleaning. Based on many trial runs and the review of numerous photographs, the committee determined that a Commercial Blast cannot normally be obtained when removing adherent mill scale.

39. Appellant's expert, Mr. Dean Berger, stated that "you simply cannot remove adherent mill scale using a [SSPC-]SP-6 Commercial Blast Cleaning standard," and that, in order to remove adherent mill scale, "[you][m]ust have a [SSPC-SP-10] Near-White Blast."

MdTA's expert, Dr. Lloyd Smith, stated that "[i]t is recognized in the industry that if you have areas where you have rust grade A, adherent mill scale, that when you blast that mill scale off. it could approach [SSPC-SP-10] Near White metal, I agree with that. That's been my testimony here today." And, as noted by Richard R. Ramsey of the Florida Department of Transportation:

[i]n abrasive cleaning operations, if one encounters flat surfaces bearing tightly adherent mill scale, he will end up with a Near-White Blast (SSPC-SP10) in his attempt to comply with the staining requirement of the SSPC-SP6 Commercial Blast specification. For this type of surface condition, the SSPC-SP6 cleaning requirements may be considered inappropriate and misleading from the contractor's viewpoint.

- 40. On September 25, 1991, Mr. Michael Orfanos called MdTA and requested another meeting with MdTA. Mr. Orfanos advised MdTA that the adherent mill scale was continuing to be a problem, that Appellant was being required to perform Near White and White Blast rather than Commercial Blast, and that Appellant's blast waste was over double the anticipated quantity.
- 41. At a meeting on October 17, 1991 Appellant advised MdTA of the additional cost and time to remove adherent mill scale and achieve a Near White versus Commercial Blast, and complained as narrated in Mr. Michael Orfanos' testimony:

That I tried to do this ['in between'] compromise, and that's not what's happening in the field. That things were being done subjectively, and they were getting worse. We've gone to the second bridge, and we have found mill scale, and I didn't bid this job this way. I bid a Commercial Blast, and I'm being required to do a Near-white Blast.

After explaining its position at the meeting, Appellant was told by MdTA, "take off all the mill scale."

42. Appellant (through Mr. Michael Orfanos) also testified that he perceived a difference in the MdTA's attitude at the July 16, 1991 meeting versus the October 17, 1991 meeting:

At July 16th they were saying I could leave a little bit of mill scale. Leave a little bit of paint . Something in between the near-white I was doing and what I had been doing initially.

\* \* \*

At the July meeting they saw the mill scale there and told me to try and get in between. I though they acknowledged the fact that it was there and that there was a problem and try to compromise the situation. When we went to the other meeting, now, it was, the mill scale is there and take it all off, and it was a different situation now.

- 43. By letter dated October 29, 1991, and received by MdTA on October 31, 1991, Appellant presented MdTA with a written explanation of its position alleging that MdTA was requiring Appellant to perform a Near White Blast in lieu of the specified Commercial Blast because of the existence of adherent mill scale and setting forth Appellant's request for compensatory time extensions arising out of this alleged changed work and out of the late notice to proceed. This letter also notified MdTA that the four month late Notice to Proceed put Appellant's work into unfavorable winter weather. Appellant's letter, which set forth the elements of the claim, was addressed to Larry Schuerholz, who was MdTA's Area Engineer and who had been designated as an authorized representative of the Procurement Officer and as the person to whom Appellant should direct its correspondence.<sup>4</sup> Appellant's October 29, 1991 letter also states that the cost therefor would be submitted when the full impact of the problem had been assessed.
- 44. The Board finds that Appellant's letter of October 29, 1991 constituted a notice of claim within the contemplation of COMAR 21.10.04.02A. Appellant (through Mr. Michael Orfanos) testified with respect to the monetary aspect of its October 29, 1991 claim letter as follows:

I had then written the letter of October 29th, which is within a couple weeks after this situation, and in this letter we said what the problems were and that, when we could determine an expense, that we would submit it because, again, we had three more bridges to go to. You really wouldn't know what you would find until you went through all the bridges. So I couldn't put a hard dollar to it. I couldn't anticipate the way I was being inspected at the time. It was, again, very subjective.

\* \* \*

At this time it [additional costs] wouldn't be known because we were only on the second bridge, for one reason, and the other reason was that the way we were made to do it, it had been so subjective that you really couldn't estimate what you felt you would end up with in the end. You didn't know if you were going to go for near-white. You didn't know if you were going to be pushed to white. It was always a subjective thing, and, again, we didn't know what the other three bridges would reveal.

- 45. By December 6, 1991, Appellant had not received any response to its October 29, 1991 claim letter. Appellant sent MdTA another letter on December 6, 1991 requesting a response.
- 46. By letter dated December 13, 1991, Timothy J. Reilly, Chief of Construction for the MdTA responded to Appellant's October 29, 1991 claim letter. Although the MdTA's response acknowledged each of the elements of Appellant's claim, the response denied liability for them except for indicating that a non-compensatory time extension and winter shutdown for the late Notice to Proceed would be considered. The letter specifically denied Appellant's request for monetary compensation: "In conclusion, your request for monetary compensation is denied."

<sup>4 &</sup>quot;Procurement Officer" is defined at COMAR 21.01.02.01(67) to include an "authorized representative acting within the limits of authority."

MdTA's December 13, 1991 response letter also specifically denied that MdTA was directing Appellant to perform a surface preparation greater than Commercial Blast.

- 47. Appellant testified that MdTA continued to require the Near White Blast respecting the removal of mill scale (i.e. less than 5% staining was allowed to remain) throughout the project on all five bridges. Partially as a result of the extensive additional work, which Appellant was required to perform, in order to achieve less than 5% mill scale staining, the project was not substantially completed until June 16, 1993.
- 48. Subsequent to Mr. Reilly's letter of December 13, 1991, Appellant and MdTA had numerous discussions regarding the delays associated with the mill scale problem, but no formal decisions were made. Shortly after substantial completion of the project, MdTA made it clear that it would not grant Appellant a compensable time extension and change order for the extra work. MdTA instead proposed assessment of 110 days of liquidated damages against Appellant. By letter dated September 29, 1993, Appellant wrote to MdTA and requested "[p]lease explain the basis for your proposed assessment of 110 days of liquidated damages. We are unable to derive how it was arrived at."
- 49. By letter dated October 5, 1993, MdTA responded to Appellant's request and formally proposed assessment of 110 days of liquidated damages. By letter dated October 21, 1993, Appellant disputed this liquidated damage assessment and, with reference to Appellant's October 29, 1991 claim letter, reiterated that it was entitled to a compensable time extension and that it intended to submit its additional costs as soon as possible. Appellant then requested that the undisputed contract amount be paid except for "leaving a sufficient amount in the contract until our disputes are resolved." MdTA acquiesced and paid Appellant all but \$100 of the undisputed contract balance so that the contract would remain open.
- 50. By letter dated April 13, 1994 (received by MdTA on April 14, 1994), Appellant submitted its alleged additional costs in the amount of \$945,507. These costs were stated to reflect direct and overhead field costs arising out of the Near White Blast required to remove the adherent mill scale stain and arising out of the extended performance time. Appellant also requested a time extension and remission of the \$55,500 in liquidated damages. The letter was addressed to John A. Moeller, the MdTA Procurement Officer, and requested a Procurement Officer's final decision.
- 51. Although Appellant subsequently met with MdTA concerning the above, the meeting was not fruitful. MdTA never issued a Procurement Officer's final decision and on October 21, 1994, Appellant appealed to the Board under the deemed denied provisions of Section 15-219 of the State Finance and Procurment Article.
- 52. During the hearing of the appeal Appellant claimed damages of \$899,599 in direct costs and \$208,930 in extended home office overhead, and its contract balance of \$55,600, which includes \$55,500<sup>5</sup> in liquidated damages being retained by MdTA as well as the \$100 undisputed contract balance which was retained by MdTA at Appellant's request so that the contract would remain open. The stipulated contract amount is \$1,121,309 of which \$1,065,709

<sup>5</sup> The actual amount of liquidated damages would appear to be \$55,000 based on 110 days of liquidated damages at \$500 per day liquidated damages amount. It appears, however, that \$55,500 is actually being withheld.

has been paid by MdTA to Appellant, and \$55,500 in liquidated damages and the \$100 undisputed contract balance has been withheld.<sup>6</sup>

- 53. The home office overhead was calculated using the <u>Eichleay</u> formula by Mrs. Gwendolyn Goldman, Appellant's corporate accountant. The testimony of Mrs. Goldman at the hearing was received as that of an expert witness in accounting for construction firms.
- 54. On the final day of the hearing, Mrs. Goldman presented a second revised Eichleay calculation which eliminated from Appellant's alleged damages certain duplications of home office overhead for years ending 1991, 1992, 1993, 1994 and 1995. Mrs. Goldman performed this second revised calculation after considering the MdTA's response to Appellant's Proof of Costs and after considering the testimony of MdTA's accounting expert, William Kime, of the firm of Rubin & McGeehin Chartered, regarding home office overhead duplications.

#### Decision

The Board entertained prehearing arguments on the State's pre-hearing Motion to Dismiss predicated on COMAR 21.10.04.02 and contract provisions which require dismissal of a claim not complying with their time requirements. The Board deferred ruling pending a hearing on the merits. The motion was renewed during the hearing of the appeal. The Board deferred ruling. The Board hereby denies the State's motion. COMAR 21.10.04.02 provides:

#### .02 Filing of Claim by Contractor.

- A. Unless a lesser period is prescribed by law or by contract, a contractor shall file a written notice of a claim relating to a contract with the appropriate procurement officer within 30 days after the basis for the claim is known or should have been known, whichever is earlier.
- B. Contemporaneously with or within 30 days of the filing of a notice of a claim, but no later than the date that final payment is made, a contractor shall submit the claim to the appropriate procurement officer. The claim shall be in writing and shall contain:

(1) An explanation of the claim, including reference to all contract provisions upon which it is based.

(2) The amount of the claim;

(3) The facts upon which the claim is based;

(4) All pertinent data and correspondence that the contractor relies upon to substantiate the claim; and

(5) A certification by a senior official, officer, or general partner of the contractor or the subcontractor, as applicable, that, to the best of the person's knowledge and belief, the claim is made in good faith, supporting data are accurate and complete, and the amount requested accurately

<sup>6</sup> The total contract amount of \$1,121,309 exceeds Appellant's bid of \$925,350. We assume the additional money represents approved change orders or extra work authorizations.

reflects the contract adjustment for which the person believes the procurement agency is liable.

- C. A notice of claim or a claim that is not filed within the time prescribed in Regulation .02 shall be dismissed.
- D. Each procurement contract shall provide notice of the time requirements of this regulation.

On September 26, 1991, Appellant requested a meeting with MdTA to discuss, among other things, problems with mill scale removal. It was ultimately agreed that the meeting would be held on October 17, 1991. On October 17, 1991, Mr. Michael Orfanos met with officials and agents of MdTA, including Mr. Keith Duerling (Deputy Director of Engineering) and Mr. Larry Schuerholz (Area Engineer), as well as Mr. Larry Livezy (MdTA Inspector) and Mr. Don Johns (MdTA's Bridge Inspection Consultant).

At the meeting, Appellant orally presented to MdTA notice of its claim. As reflected by Mr. Michael Orfanos' notes for this meeting, the issues discussed by Appellant included:

"Solid mill scale. Unknown site condition. Lost production & time. ... Specification is SSPC-SP-6 Commercial. To date, our preparation has been directed to greater than Commercial Blast (Near White SP-10 & White SP-5). Increased time & money. Generating 2 to 3 times more waste. Inspection take [sic] 20 to 30 minutes for approximately 3 beams invariabl[y] [sic] required to do additional blasting. Never a comprise [sic] or balance . . . Job bid Commercial Blast (chevy) forcing Near White (Cadillac) without paying for it. Made Class B job (1-5) into Class D job (1.0 to 2.5).

The Board finds that pursuant to COMAR 21.10.04.02A Appellant knew at this October 17, 1991 meeting of the basis of its claim. Such knowledge triggered the thirty day window for Appellant to submit a written notice of claim to the Procurement Officer. By letter dated October 29, 1991, and addressed to Mr. Keith Duerling, an authorized representative of the Procurement Officer, Appellant explained its contract claim.

This October 29, 1991 letter set forth the facts upon which Appellant's contract claim was based. The letter set forth that Commercial Blast cleaning as specified could not remove the adherent mill scale and all the paint discovered on the bridges; that Appellant was being required to perform blast cleaning to the Near White standard while the contract requires the Commercial Blast standard; that additional time would be required due to the impact of this changed work; that additional time would be required due to the late notice to proceed which would push Appellant's work into adverse winter conditions; and that the specification requirement for one cfin per six (6) square feet of work area was inadequate.

The October 29, 1991 letter also set forth the relevant data and correspondence which might substantiate the contract claim. Among other things, it references several relevant contract provisions, the pre-bid meeting minutes, the notice to proceed, as well as "numerous conversations, discussions and meetings" which had already taken place concerning the adherent mill scale problem. The October 29, 1991 letter also requested both time and money for the alleged changed work arising from the existence of adherent mill scale and for the late notice to proceed. The October 29, 1991 letter did not, however, set forth a specific dollar amount for the contract claim because such amount was impossible to calculate until after the work had been completed. As of October 29, 1991, Appellant had just started on the second of five bridges. Like the first bridge, this bridge also contained adherent mill scale. However, the extent of mill scale on the second through fifth bridges was unknown, and so, the exact additional costs for achieving a Near White Blast standard on the project was impossible to determine.

The Board has recognized that all mill scale, whether loose or adherent, was to be removed and that Appellant's claim solely on the basis that the Contract did not require removal of all mill scale is denied.<sup>7</sup> However, the degree of mill scale staining permitted to remain was also clearly a problem. The MdTA inspectors were applying a subjective standard and requiring a Near White Blast (resulting occasionally in a White Blast). This inconsistency in inspection which often resulted in surface preparation that exceeded SSPC-SP-6 Commercial Blast made pricing virtually impossible. As Mr. Michael Orfanos testified:

I had then written the letter of October the 29th, which is within a couple weeks after this situation, and in this letter we said what the problems were and that, when we could determine an expense, that we would submit it because, again, we had three more bridges to go to. You really wouldn't know what you would find until you went through all the bridges. So I couldn't put a hard dollar to it. I couldn't anticipate the way I was being inspected at the time. It was, again, very subjective.

\* \* \*

At this time it [additional costs for the problems encountered] wouldn't be known because we were only on the second bridge, for one reason, and the other reason was that the way we were made to do it, it had been so subjective that you really couldn't estimate what you felt you would end up with in the end. You didn't know if you were going to go for near-white. You didn't know if you were going to be pushed to white. It was always a subjective thing, and, again, we didn't know what the other three bridges would reveal.

The October 29, 1991 letter reasonably conveyed that Appellant was making a claim for both time and money for alleged changes and delays discussed in the letter. Indeed, by letter dated December 13, 1991, the MdTA stated it would consider granting Appellant a non-compensatory time extension and winter shutdown for the late notice to proceed and MdTA acknowledged but denied the remaining elements of Appellant's claim. This letter closed by stating, "In conclusion, your request for monetary compensation is denied."

The October 29, 1991 letter constitutes Appellant's notice of claim. The notice provisions of COMAR 21.10.04.02 and the Contract then require documentation of the claim; i.e. filing of the

<sup>7</sup> We are likewise of the opinion that paint removal is not an issue. The issue is the percentage of mill scale staining allowed to remain under the Contract documents.

claim, within 30 days but no later than the date final payment is made. We believe the COMAR and Contract notice provisions to require documentation of a claim within 30 days of the filing of the notice of claim or as soon as reasonably possible when the nature of the problem makes contemporaneous cost quantification impossible, provided that, regardless of circumstances, the claim must be filed no later than final payment.

The Contract was substantially complete on June 16, 1993. Because the work out of which the claim arose was then substantially complete, Appellant should then have been able to begin to assess the additional cost of the application of the Near White Blast standard by the State on all five bridges.

Appellant filed its claim by letter dated April 13, 1994, nearly eleven months after substantial completion of the Contract in June of 1993. However, there was a dispute over liquidated damages that continued until October of 1993 when by letter dated October 21, 1993, Appellant disputed the State's assessment of liquidated damages and stated that it would submit its claim for additional costs as soon as possible. While, as discussed below, we are troubled by the lack of validity of certain of Appellant's asserted costs, we nevertheless find, based on the record, that Appellant acted with reasonable promptness to determine its costs resulting from the State requiring a Near White Blast standard throughout the course of the entire project, whether the reasonableness of such time to compile its claim is measured from the date of substantial completion in June 1993 or from October 1993.

Thus where changed work results in a period of extended performance and where the actual costs for such changed work and period of extended performance are not possible to determine until after this work has been performed, the timeliness requirements of COMAR 21.10.04.02 and the Contract (GP-5.14) are complied with absent a statement of damages or additional costs as long as (1) the State is placed on notice of the nature of the problem and that additional costs will result therefrom; (2) the basic elements of such potential costs or damages are stated; and (3) those costs are quantified as soon as reasonably practicable and prior to final payment.

Herein, we find that the State was placed on notice of the nature of the problem, that costs would result therefrom and the basic elements of such potential additional costs, in timely fashion. These costs were quantified as soon as reasonably practicable prior to final payment.

Concerning the requirement that costs be quantified prior to final payment we note that the notice provision of the Contract (GP-5.14), which requires both notice of the claim and provision of elements of cost data within 30 days, also states that its terms are "[s]ubject to and without in any way enlarging or limiting the other provisions of this contract." One such other contract provision is GP-4.05, entitled "Changes", which may be involved because Appellant's claims arise out of alleged changes to the Contract. Paragraph (6) of GP-4.05 provides:

(6) No claim by the Contractor for an equitable adjustment hereunder shall be allowed if asserted after final payment under this contract.

Final payment has not been made. Appellant submitted to MdTA the alleged additional costs incurred for the various claim elements by letter dated April 13, 1994 after substantial completion of the Contract in June of the previous year. However, MdTA continues to hold \$100 of the undisputed contract balance. Accordingly, GP-4.05 does not bar consideration of Appellant's claim.

In summary, we find that Appellant's letter of October 29, 1991 constitutes a timely and sufficient notice of claim and that likewise the claim itself was timely filed by letter dated April 13, 1994. <u>See Maryland Transportation Authority v. Dick Corporation</u>, Court of Special Appeals No. 1839, unreported (September 14, 1995); <u>Maryland Transportation Authority v. Dick Corporation</u>, et al., Court of Special Appeals No. 1563, unreported (July 15, 1993).

We turn now to the merits of the claim. The Board finds from the record that Appellant was required to remove nearly all mill scale staining (no more than 5% mill scale staining remaining on any square inch) from the surfaces of all the members of all five bridges and that mill scale (loose and adherent) was present on all the members of all five bridges. Appellant was required to achieve this staining factor of not more than five percent (5%) on all steel surfaces of the bridges whether around angular configurations or smooth surfaces. The record reflects that this was the inspection standard applied, although Appellant did not achieve such standard on every square inch of steel. Nevertheless, Appellant was thus required to attempt to achieve a Near White (SSPC-SP-10) standard which sometimes resulted in a White (SSPC-SP-5) result rather than what the SSPC-SP-6 Commercial Blast specification called for which allowed up to 33% staining to remain.

The Appellant claims that it would have completed the surface preparation, painting and waste removal, and sliding plate bearing replacement in the 240 calendar contract completion days set forth in the Contract. Indeed, Appellant calculated in its post-hearing brief that it could have performed the work in 237 calendar days. Without adjustments for winter weather delays caused by MdTA not issuing notice to proceed until June 25, 1991 with a start date of July 9, 1991, Appellant asserts it should have finished March 6, 1992. Appellant alleges that as a result of delays caused by the actions of the State it did not substantially complete the work until on or about June 16, 1993. In assessing liquidated damages for 110 days, MdTA charged 686 days to the contract work and removed therefrom 335 days on the basis of inclement (and winter) weather, leaving 351 calendar days remaining; 111 days over the 240 calendar days to complete from notice to proceed set forth in the contract.<sup>8</sup> The Board determines that the Contract work at issue (surface preparation, waste removal and painting) was extended by the State's requiring that Appellant remove more mill scale stain than allowed to remain under the SSPC-SP-6 Contract specification and that Appellant is entitled to an equitable adjustment for at least a portion of the actual additional costs incurred during the extended performance period attributable to mill scale stain removal. Determining the amount of the equitable adjustment is not, however, an easy task, based on a record that reflects that Appellant's own inefficiencies in pursuing the work also caused its performance to be extended beyond the 240 calendar day completion time set forth in the Contract.

<sup>8</sup> As noted above in Footnote 5, the State appears to be withholding liquidated damages based on 111 days rather than 110.

Additionally, the Board's task is complicated by the Appellant's method of accounting for costs or damages, its failure to provide reasonable documentation, the fact that Appellant seeks payment more than once for certain expenditures, and its failure to use acceptable accounting standards to record equipment charges and costs during the extended period of the Contract. We also note that Appellant's bid estimate of three pounds per square foot may have been somewhat low and that the relative cost difference between a Commercial Blast and a Near White is approximately 20%. However, we recognize that compliance with the Near White standard caused Appellant to have to reblast and perform other work not anticipated in its bid.

Concerning contractor inefficiencies<sup>9</sup> during the course of the Contract performance we note that the record reflects that Appellant occasionally failed to meet the pressure requirements of 90 p.s.i. on its sandblasting hoses, causing extra blast waste to be generated, at a rate of about 15% more abrasive per every loss of 10 p.s.i. in pressure, and causing a loss in productivity. Appellant's blasting work was also slowed down because of the use of equipment that was not the most appropriate for the job and poor visibility inside the containment.

Appellant's subcontractor (for blasting and painting) experienced difficulty performing its work. During the course of contract performance, Appellant was required by the MdTA inspectors to reblast areas that the blasters had missed.

During 1991 and 1992 there were numerous equipment breakdowns, which caused the blasting operations to shut down. There were at least 29 instances where the MdTA logs noted equipment breakdowns. The compressor and vacuum unit would fail, and blasting operations ceased until the equipment was fixed. Not every instance of equipment breakdowns are recorded in the MdTA's daily logs. These equipment breakdowns slowed down Appellant's performance of this Contract. We thus conclude that Appellant itself is responsible for a portion of the extended contract performance herein.

The record, however, does not admit of quantification of the number of days of the extended performance that each party is responsible for. The Board determines that a jury verdict approach is permissible given the facts herein to more fully promote the purpose and policies of the General Procurement Law as set forth in §11-201 of Division II of the State Finance and Procurement Article. The record reflects that the Appellant actually generated 736.77 tons of blast waste. The bid documents indicated an estimated quantity of 460 tons of blast waste. Accordingly, Appellant generated 38% more blast waste than estimated in the bid documents. Using the jury verdict approach as discussed in some detail below the Board finds that an increase in blast waste was caused by the Near White (that sometimes resulted in a White Blast) standard Appellant was held to and that 50% or one-half of the entire extended performance time of 468 days (March 6, 1992 - June 16, 1993) was caused by the State holding Appellant to this standard rather than SSPC-SP-6 Commercial Blast standard called for in the Contract. The remaining 50% or one-half of the extended performance time we find to be attributable to the Appellant as resulting from its own

<sup>&</sup>lt;sup>9</sup> Precise quantification of these inefficiencies is not possible because, among other reasons, Appellant is missing its daily logs from April of 1992 to April of 1993.

work inefficiencies. However, Appellant is entitled to an equitable adjustment for the portion of the extended period of performance attributable to the State.

We shall now examine Appellant's allegations of damages allegedly resulting from the extended performance of the Contract. Appellant's costs alleged to have been incurred during the period of extended performance are in certain cases speculative or unsupported and in other cases are duplicative. Certain components of Appellant's costs were revised several times during the hearing. However, the following amounts are demonstrated by the record and acceptable theories of cost recovery to have been incurred during the period of extended performance. The amounts are derived from the State's cost expert's (Rubino & McGeehin Chartered) report dated May 1996 (R&M Report) and testimony thereon.

The Board finds that the Appellant could be entitled to \$263,884 in direct cost, \$52,776 in field overhead and profit, \$2,754 in bonding cost, and \$177,205 in home office overhead cost pursuant to the Eichleay formula for a total of \$496,619, before adjustments, involving the extended performance time. We explain further.

The Board finds that use of the Eichleay formula is appropriate to determine home office overhead because Appellant does not keep detailed records from which its home office overhead during the period of extended performance may be ascertained and it is clear from the record that some home office overhead is properly allocated to the contract at issue during the period of extended performance. See generally <u>Corman Construction, Inc.</u>, MSBCA 1254, 3 MSBCA ¶206(1989) at p. 45; <u>Standard Mechanical Contractors of Maryland, Inc.</u>, MSBCA 1145 & 1165, 2 MSBCA ¶127(1986) at pp. 28-29; <u>J. Roland Dashiell & Sons, Inc.</u>, MSBCA 1324, 1360 & 1369, 3 MSBCA ¶268(1991) at pp. 28-31. Once again drawing on the R&M Report and testimony thereon the Board finds that \$177,205 represents Appellant's home office overhead for the 468 day period of extended performance.

These costs are summarized on Schedule I of the R&M Report. The entire report is attached hereto as Exhibit A and incorporated herein by reference. For purposes of calculating Appellant's damages the Board accepts the 468 day period of extended performance claimed by Appellant and used by R&M in generating its report. The Board thus finds that Appellant's total additional costs during the period of extended performance herein were \$496,619 summarized as follows:

Calculations based on the *total cost approach* as presented in Schedule 1, in a report dated May 17, 1996 prepared by Rubino and McGeehin, Chartered, with adjustments as shown. (Respondent's exhibit 26)

Materials	\$ 35,641
Labor	17 2,839
Labor Burden	18,843
Equipment	<u>36,561</u> (1)
Subtotal	263,884
Field OH and Profit	<u>52.776(</u> 2)

Subtotal	316,660
Bond Cost	2,754(3)
Eichleay Formula	<u>177,205</u>
Total prior to adjustment	496,619

Notes:

- 1. Represents balance of Equipment claim after deductions by R&M for adjustments and unsupported amounts.
- 2. Calculated at 20% of actual cost per R&M Report fn 5.

3. Calculated at .87% of cost per R&M Report fn 6.

However, as noted above, a portion of the period of extended performance is attributable to inefficiency and other problems that is the responsibility of the Appellant. Appellant would have required additional time to complete even if notice to proceed had not been delayed and MdTA had not required a Near White (sometimes resulting in a White) surface preparation. It is not possible from the record to precisely quantify what number of days of the extended performance period is attributable to Appellant and what number of days is attributable to MdTA. As indicated above the Board has determined that it is appropriate to use a jury verdict approach. The Board is empowered to resolve contract disputes and award equitable adjustments to make a contractor whole. While clearly preferring precise quantification in measuring the loss suffered by a contractor, the Board has upon occasion applied a jury verdict approach. As the Board observed in Granite Construction Co., MDOT 1014, 1 MSBCA [66 (1983) at p. 34:

The process by which a judge or a Board determines this fair and reasonable approximation [of damages] is referred to as the jury verdict approach. It requires that the trier of fact:

... weight the probative value of the various estimates that are placed into evidence and arrive at a judgment as to the amount of the equitable adjustment that should be given in view of the conflicting testimony and proof that has been introduced. In performing this task of weighting the evidence, they see themselves functioning in the role of a jury arriving at a verdict, and this does appear to be a relatively accurate reflection of the process that occurs.

R. Nash., "Government Contract Changes," p. 441 (1975); see also <u>S.W. Electronics & Manufacturing Corp.</u> v <u>United States</u>, 228 Ct.Cl. 333, 655 F.2d 1078 (1981); <u>Dver & Dver, Inc.</u>, ENGBCA 3999, 80-2 BCA ¶14563; <u>Calif. Shipbuilding & Dry Dock Co.</u>, ASBCA No. 21394, 78-1 BCA ¶13168.

We believe based on an assessment of the entire record that an equal division of responsibility for the extended period of performance is appropriate. In applying this jury verdict approach to determination of an equitable adjustment herein we shall award Appellant one-half or 50% of its costs incurred during the extended period of performance in the amount of \$248,309.

We shall also apply a jury verdict approach regarding the assessment by MdTA of \$55,500 in liquidated damages. The Board accepts the determination by MdTA that for purposes of calculating liquidated damages 686 days are charged to the contract with 335 days of inclement weather removed therefrom, leaving 351 calendar days remaining which is 111 days over the 240 day contract completion time set forth in the Contract. For purposes of its request for an equitable adjustment, Appellant claims an extended performance period of 468 calendar days from March 6, 1992 to June 16, 1993 without any adjustment for days on which no work could be performed. For purposes of the liquidated damages assessment Appellant takes the position that all of the extended period of performance beyond March 6, 1992 is attributable to the State requiring it to prepare the steel to a Near White surface condition. The Board has found using a jury verdict approach that both parties are equally responsible for the extended period of performance. Applying such approach to the State's 111 day liquidated damages assessment of \$55,500 (111 days x 500 per day = \$55,500) the Board will reduce liquidated damages by \$27,750.

We thus find Appellant entitled to an equitable adjustment of \$275,809 summarized as follows:

Calculations based on the *total cost approach* as presented in Schedule 1, in a report dated May 17, 1996 prepared by Rubino and McGeehin, Chartered, with adjustments as shown. (Respondent's exhibit 26)

Materials	\$ 35,641	
Labor Labor Burden	18.843	
Equipment	36,561(1)	
Subtotal		263,884
Field OH and Profit	<u>52,776</u> (2)	
Subtotal		316,660
Bond Cost	2,754(3)	
Eichleay Formula	<u>177,205</u>	
Total prior to adjustment		496,619
MSBCA Adjustment rate		<u>50(</u> 4)
Subtotal		248,309
Reduction in Liquidated Damages withheld		<u>27,500</u> (5)
FINAL		275,809

Notes:

1. Represents balance of Equipment claim after deductions by R&M adjustments and unsupported amounts.

- 2. Calculated at 20% of actual cost per R&M Report fn 5.
- 3. Calculated at .87% of cost per R&M Report fn 6.
- 4. See full explanation pages 24-27.
- 5. See full explanation page 27.

Appellant is also entitled to be paid the \$100.00 withheld as final payment.

The State is entitled to withhold \$27,500 in liquidated damages from Appellant.

The Board, in its discretion pursuant to Section 15-222, Division II, State Finance and Procurement Article, declines to award predecision interest. Appellant was partially responsible for the period of extended performance that forms the basis of its claim. Because Appellant failed to provide creditable documentation, and failed to utilize acceptable methods to account for equipment cost and depreciation and to a large degree relied upon estimates, its claimed costs were very significantly reduced during the hearing. The record simply does not reflect the refusal by the State to pay a claim as of a date when the amount and the State's liability therefore was or should have been known with reasonable certainty; indeed, the Board applied a jury verdict approach in determining the amount of the equitable adjustment. See <u>Department of General Services v</u>. Harmans Associates Limited Partnership, 98 Md. App. 535(1993) at pp. 555-558.

Post-decision interest shall run from the date of this decision.

Wherefore, it is Ordered this day of November, 1996 that Appellant's appeal is sustained in the amount of \$275,809 as set forth above and the matter is remanded to MdTA for payment in accordance with this opinion.

Dated: November 19, 1996

Robert B. Harrison III Chairman

I concur:

Randolph B. Rosencrantz Board Member

#### Certification

#### COMAR 21.10.01.02 Judicial Review.

A decision of the Appeals Board is subject to judicial review in accordance with the provisions of the Administrative Procedure Act governing cases.

#### Annotated Code of MD Rule 7-203 Time for Filing Action.

(a) Generally. - Except as otherwise provided in this Rule or by statute, a petition for judicial review shall be filed within 30 days after the latest of:

(1) the date of the order or action of which review is sought;

(2) the date the administrative agency sent notice of the order or action to the petitioner, if notice was required by law to be sent to the petitioner; or

(3) the date the petitioner received notice of the agency's order or action, if notice was required by law to be received by the petitioner.

(b) Petition by Other Party. - If one party files a timely petition, any other person may file a petition within 10 days after the date the agency mailed notice of the filing of the first petition, or within the period set forth in section (a), whichever is later.

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I certify that the foregoing is a true copy of the Maryland State Board of Contract Appeals Decision in MSBCA 1849, appeal of Orfanos Contractors, Inc. under Maryland Transportation Authority Contract No. KH-498-000-002.

Dated: November 19, 1996

Mary F. Priscilla Recorder

#### EXHIBIT A

ORFANOS CONTRACTORS, INC. Claim Under Contract No. KH-498-002 Report to the State of Maryland Maryland Transportation Authority MSBCA 1849



#### Rubino & McGeehin C H A R T E R E D

Certified Public Accountants

2 Democracy Center 6903 Rockledge Drive Suite 1400 Bethesda, Maryland 20817-1818 301-564-3635 FAX 301-564-2994

May 17, 1996

Deborah A. Donohue, Esquire Assistant Attorney General Office of the Attorney General Maryland Transportation Authority 303 Authority Drive Baltimore, Maryland 21222-2200

> Re: Orfanos Contractors, Inc. MSBCA 1849

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Practice Station

Durstein (CPAF)

Dear Ms. Donahue:

Pursuant to the Maryland State Board of Contract Appeals' Order on Proof of Costs in the Appeal of Orfanos Contractors, Inc. (Orfanos) under Docket No. MSBCA 1849, we have performed a review of the books of accounts and other cost records of Orfanos in support of the Proof of Costs submitted by the Appellant. The claimed costs relate to alleged delays and inefficiencies under Maryland Transportation Authority (the Authority) Contract No. KH-498-000-002 for Orfanos' work related to cleaning, painting and replacement of sliding plate bearings on Bridges-John F. Kennedy Memorial Highway.

Summaries of costs and charges claimed by Orfanos are presented through the various schedules in this report. Based on the procedures we performed and the data available, we have determined that certain amounts claimed by Orfanos as part of its Proof of Costs should be adjusted. These amounts are discussed in the notes to the schedules, and are summarized on Schedule 1, as "Rubino & McGeehin (R&M) Adjustments."

In addition to the R&M Adjustments, we have also identified claim amounts which are estimated/unsupported or subject to claim theories or approaches requiring further analysis and assessment from both legal and engineering perspectives. These areas relate specifically to the use of a total cost claim approach for calculation of certain elements of damages; and the use of the <u>Eichleay</u> formula for calculations of home office overhead.

Craig A, Carlini Matauret A, DeBoe Robert N, Gray William M, Kime Matthew R, Krafft Franck A, McGeehin Louis J, Rubino, Jr. Wiley R, Wright, III

Shareholders:

Deborah A. Donahue, Esq. Maryland Transportation Authority May 17, 1996 Page 2

All adjusted claim amounts included in this report assume full entitlement. We make no comment with regard to claimed delay days, nor with respect to engineering or scheduling assumptions included in the claim.

Very truly yours,

· Ja Aili

Rubino & McGeehin, Chartered

Enclosures

#### ORFANOS CONTRACTORS, INC. MSBCA No. 1849 Claim Endnotes

- (1) Revised amounts presented assume full entitlement. R&M makes no comment with respect to the delay days, nor with respect or scheduling assumptions.
- (2) See attached Schedule 2 for breakdown of amounts claimed.
- (3) See attached Schedule 3 for breakdown of amounts claimed.
- (4) See attached Schedule 4 for breakdown of amounts claimed
- (5) Overhead and profit have been applied to the subtotals of each column at the claim rate of 20%. The determination as to an equitable fee rate for additional costs associated with this project is beyond the scope of this report. Accordingly, we make no comment as to the reasonableness of the claimed profit rate.
- (6) The Bond cost has been recalculated utilizing the actual bond rate of .87%
- (7) R&M Adjustments represent amounts claimed by Orfanos as direct job costs but which were charged to home office overhead. As a result, these amounts are already included in the claim amount for unabsorbed home office overhead. We have, therefore, questioned them in their entirety because they are duplicated in another claim area. all other adjustments are explained separately in other notes.
- (8) The amount claimed is based upon the application of a total cost claim approach. Under this particular approach, all differences between the costs incurred and costs "as bid" are presented as part of the claim amount. "As bid" costs, as defined by Orfanos, are all costs estimated for the project. Orfanos has made no adjustment for any of its own errors in the performance of the project or omissions in its bid, if any, exist.
- (9) The adjustment includes \$268 for amounts charged to other jobs.
- (10) It should be noted that these material costs are for direct activities that have been claimed by calculating the costs incurred during the extended period. These costs may be related to additional items of work and not extended periods of time. The issue of whether or not these costs are compensable is beyond the scope of this report. No adjustment has been proposed for these items.
- (11) The adjustment includes \$9,332 for items charged to other jobs and \$3,476 for amounts charged to home office overhead accounts.

- (12) The adjustment includes \$45,133 for purchased equipment and \$5,814 for costs charged to home office overhead accounts.
- (13) Equipment costs were claimed using monthly rates. No support has been provided for the monthly rates used. In an attempt to calculate the actual costs of the owned equipment we have summarized the ownership cost information (depreciation and cost of money) for the pieces identified by Orfanos and have estimated the monthly costs for the delay periods claimed. Orfanos has claimed separately the operating costs of the equipment (fuel, repairs. etc.) and the other ownership costs (insurance, taxes, etc.) are included in the home office overhead.
- (14) The amount represents total cost of materials that were paid for by P&J Contracting, Co. (Subcontractor). As of the date of this report, support for this amount has been requested but not provided. In addition, R&M noted that P&J Contracting has only been paid by Orfanos the original subcontract amount of \$86,400 less retainage of \$5,141.
- (15) Included in this amount is \$1,524 charged to a home office overhead account; \$2,088 in credits for returned pallets; and \$102 for amounts that did not agree to the invoices provided.
- (16) The amount presented is based upon the application of the <u>Eichleay</u> formula. Determination as to the overall entitlement or reasonableness of a home office overhead claim element relating to the alleged delay days identified, and specifically to the use of the <u>Eichleay</u> formula to estimate the claim amount, are legal issues which are beyond the scope of this report.
- (17) The claim amount presented has been adjusted for the impact relating to home office overhead paid to home office overhead paid to Orfanos on additional contract billings during the life of the contract. The Authority made additional payments of \$217,955 to Orfanos as part of the subject contract, thereby reducing the amount of unabsorbed home office overhead which would be calculated under a simple Eichleay approach. Based on a review of Orfanos' supporting bid information, we have estimated the amount of home office overhead paid by the Authority as part of these additional contract billings to be 50% of a total mark-up of \$42,185, for a total of \$21,092.
- (18) This adjustment reflects 50% of the overhead and fee claimed specific items previously discussed. The 50% estimate used by R&Mreflects the estimated portion of overhead that Orfanos would recover if it recovered its claim amounts, including those presented by R&M as unsupported or based on total cost approaches. As reimbursements these payments would reduce the amount of unabsorbed home office overhead which would be calculated under a simple <u>Eichleay</u> approach. To the extent the R&M adjustments are not incorporated in the decision, the adjustment presented would increase by 50% of the markup up on those items.

- (19) These equipment items have not been identified by Orfanos as capitalized equipment on the fixed asset depreciation schedule; therefore no ownership cost can be determined. All costs associated with operating this equipment has been claimed in other claim sections.
- (20) These pieces of equipment were fully depreciated prior to this job. We have taken the asset acquisition cost and divided it by the actual useful life through June 1993 to recalculate the monthly ownership cost based on actual usage by Orfanos.
- (21) Labor burden was claimed by Orfanos using a total cost approach (i.e., bid burden of 40% less various calculated burden rates of 28.25% to 50.45%). We have recalculated the average effective burden rate for 1991 thru 1993 (13.85%) and applied it to the adjusted labor amounts.
- (22) In addition to the depreciation costs associated with owned equipment, R&M has estimated the cost of money for this equipment by using the average book value multiplied by the cost of money rates. All other ownership costs are recovered as a direct cost or through home office overhead.
- (23) The adjustment includes \$8,403 for purchased equipment, \$8,972 for costs charged to home office overhead accounts and \$547 in other miscellaneous adjustments.
- (24) The adjustment includes math errors totaling \$87,451 AND \$7,505 of costs charged to home overhead accounts.

		Sur	Orfano MS nmary of Claime Assuming	s Contractor's, Inc. BCA No. 1849 ed Costs and Adjusted A g Full Entitlement (1)	Amounts		
					Amounts Based Upon		
Description	Claimed <u>Amount</u>	4	R&M <u>Adjustments</u>	Unsupporte d	Total Cost <u>Approach</u>	Eichleay <u>Formula</u>	Balance
Material Labor	<pre>\$ 373,317 184,343</pre>	(2)	\$ 224,627 104	<u>Amounts</u> \$23,279 11,400	\$35,641 172,839		\$ 89,770 -
Labor Burden Equipment	48,441 286,250	( <del>4</del> )	13,306 227,089	16,292 22,600	18,843	1	- 36,561
Subtotal	892,351		465,126	73,571	237,323	nn y	126,331
Overhead & Profit Subtotal	178,470 1,070,821	(5)	93,025 558,151	14,714 88,285	45,465 272,788	•	25,266 151,597
Bond	16,062	(9)	11,602	768	2,373	3	1,319
Subtotal Home Office Overhead Claim Total	1,086,883 241,020 1,327,903	(16)	569,753 - 89,053	89,053 - 275,161	275,161 - 241,020	- \$ 241,020	152,916 (16) \$ - 152.916
Less: Unabsorbed Overhead Recovered on Additional Contract				×			
Revenue Less: Unabsorbed Overhead in Discrete			21,092 (1	(1)		(21,092)	(17)
Claim Items Adjusted Totals	\$1,327,903		42,723 (1	8) \$ 89,053	\$ 275,161	(42,723) \$ 177,205	(18) <u>\$ 152,916</u>

Orfanos Contractor's, Inc. MSBCA No. 1849 Summary of Claimed Material Costs and Adjusted Amounts

	ζ						Amounts Based Upon		
Description		mount	Kozimi Adjustments (7)		Unsupported <u>Amounts</u>		Total Cost <u>Approach (8)</u>	Balance	
C&P Telephone	\$	594	ج		69		, 84	S.	4
Cable & Wireless		1,136	1,136		•		•	<del>,</del>	
Conowingo Power		2,182	·		I		I	2.18	2
Port-A-Pot, Inc.		710	•		ı		I	12	0
Great Bear		33	·		Ŧ		3		) m
Sand		37,202	3,714	(15)	8,865	(14)	24.623	•	, ,
Misc. Blast & Paint Supplies		10,037	2,259	6)	8	-		7.77	8 (10)
Epoxy Mastic		763	·				763	•	
Zink		18,678			9,124	(14)	9,554		a
Vinyl		5,914			5,213	(14)	701		1
Spray Equipment		667			1			90	2
Thinners		3,343	•		1		3	3.34	- <del>(</del> )
Supt. Expense (Skordalos		2,236	208		ì			2.02	. 00
Supt. Expense (A. Orfanos)		11,066	4,374	_	1		1	6,65	2
P.M. Expense (M. Orfanos)		1,506	1,366				1	]7	0
Bell Atlantic Mobile		4,623	4,223		I			4(	0
Superintendent Health Ins.		3,821	3,821		I		ı		. 1
Equipment Repairs & Parts		17,355	12,808	(11)	I			4.54	L
Fuels, Auto Parts		27,804	139		77		3	27,58	
United Oil		795	723		ı		,		2
Best Battery		967	296		I				ı
Fleet Parts, Inc.		94,956	94,956	(24)	1		1		1
Sullivan's Road Service & Repair		10,221	10,221		'				

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## Orfanos Contractor's, Inc. MSBCA No. 1849 Summary of Claimed Material Costs and Adjusted Amounts

Description	Claimed <u>Amount</u>	R&M Adjustments (7)	n	'nsupported <u>Amounts</u>	Amounts Based Upon Total Cost <u>Approach (8)</u>	Balance	
Misc. Rentals & Equipment	\$ 62,460	\$ 50,947	(12)	B	·	\$ 11,513	
Road Service, Repairs and Dump	7,641	7,641	, ,	I	ı	F	
New Vacuum & Dust Collector	20,282	17,922	(23)	I	ı	2,300	
Health Ins. (New Vac. & Dust	1,455	1,455	r	·	•	1	
Col.)							
Safety Supplies	3,617	3		ŧ	ı	3,617	
Containment Materials	6,405	441		3	·	5,964	(10)
CMC/OHR	2,467	3		I	à	2,467	(01)
Containment Lumber	7,318	3,463		ı	ı	3,855	
Indusco	3,257	37		ı	ı	3,220	(10)
Hoffberger	1,806	1,806		ı	ŧ	I	•
Total	\$ 373,317	\$ 224,627		\$ 23,279	\$ 35,641	\$ 89,770	

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# Orfanos Contractor's, Inc. MSBCA No. 1849 Summary of Claimed Labor and Burden and Adjusted Amounts

Description	Claimed <u>Amount</u>	R&M Adjustments (7)	Unsupported <u>Amounts</u>	Amounts Based Upon Total Cost <u>Approach (8)</u>	Bala	lice
Hourly Labor Expense (Orfanos)	\$ 116,049	\$ 104	\$	\$ 115,945	69	I
Hourly Labor Burden (Orfanos) (21)	23,815	7,757	1	16.058	•	I
fourly Labor Expense (P&J)	36,783	I		36.783		•
Hourly Labor Burden (P&J)	14,713		14,713			1
Superintendent Labor Expense	20,111	ſ	a	20.111		ı
Superintendent Labor Burden (21	) 6,513	3,728	r	2,785		•
Vew Build Equipment Expense	11,400	•	11.400	1		1
Vew Build Equipment Burden (21)	3,401	1,822	1,579	,		1
Total	\$ 232,785	\$ 13,411	\$ 27,692	\$ 191,682	(A) \$	•

(A) - Consists of labor of \$172,839 and labor burden of \$18,943

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Summar	y of Claimed E	MSBCA No. 1849 Juipment Costs and	Adjusted Amounts (13)				
Description	Asset <u>Number</u>	Claimed <u>Amount</u>	R&M <u>Adjustments (7)</u>		Jnsupported <u>Amounts</u>		Balance
985 Ford Box Truck & 2 Pots	98	\$ 20,000	\$ 18,341		, 9		\$1.659
50 CFM Ingersoll Rand Compressor	100	16,800	14,802		r		1,998
980 Lima 15KW Generator	67	6,500	5,792	(20)	,		708
989 Perone Trailer & Custom Vacuum	96	21,000	20,658	,	I		342
979 Int'l Dump 1 axle	51	16,000	15,361	(20)			639
<pre>3raco GH533 Bulldog Spray Unit #1</pre>		(6) 8,000	¢		8,000		'
<pre>iagle 10000 CFM Max Vac Dust Collector #1</pre>		(9) 1,750			1,750		I
agle 10000 CFM Max Vac Dust Collector #2		(9) 1,750	•		1,750		•
983 Ford Crew Cab Pick Up	54	5,000	3,580	(20)	1		1,420
984 Chevy Crew Cab Pick Up	57	5,000	3,790	(20)	I		1,210
Arrow Panel #1		(9) 3,900	F		3,900		'
0° Office Trailer	76	3,200	(3,373)				6,573
0° Storage Trailer (Navaho)	39	1,280	1,107	(20)	ı		173
Aluminum Scaffold Picks	33 & 34	27,000	25,142	(20)	I		1,858
Case Loader 450 Model	105	36,000	30,618		I		5,382
986 Chevy Utility Body Pick Up	59	7,000	3,825	(20)	ı		3,175
974 Ford Box Truck 20' & 2 Pots	47	4,800	4,716	(20)	ı		84
750 CFM Sullivan Compressor	)	19) 7,200	•		7,200		I
991 Trailer & Custom Vacuum & Generator	46/104/107	35,000	32,688		8		2,312
Arrow Panel #2	72	1,170	1,109	(20)	ı		61
986 Ford Dump 1 Axle	66	16,000	13,072		ı		2,928
Graco GH533 Bulldog Spray Unit #2	74	8,000	7,324	(20)	ı		676
600 CFM Sullair Compressor	108	11,400	7,664		ı		3,736
(993 Custom 30,000 CFM Dust Collector	82 & 109	22,500	20,873	l	I		1,627
Cotal		\$286,250	\$227,089		\$ 22,600	(19)	\$36,561

(A) - See Schedule 5 for detailed calculations

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Schedule 4

**Orfanos Contractor's, Inc.** 

	Orfanos C MSR4	Contractor's, Inc. CA No. 1840		
	Equipment De	preciation Summary		
		Total	Total	Total
	Asset	Depreciation	Cost of	Ownership
Description	Number	Cost (A)	Money (B)	Cost
1985 Ford Box Truck & 2 Pots	98	\$ 1,088	\$ 571	\$ 1.659
750 CFM Ingersoll Rand Compressor	100	1,310	688	1 998
1980 Lima 15KW Generator	67	464	244	708
1989 Perone Trailer & Custom Vacuum	96	224	118	342
1979 Int'l Dump 1 axle	51	419	220	689
Graco GH533 Bulldog Spray Unit #1				
Eagle 10000 CFM Max Vac Dust Collector #1			,	
Eagle 10000 CFM Max Vac Dust Collector #2		•		r
1983 Ford Crew Cab Pick Up	54	931	480	1 420
1984 Chevy Crew Cab Pick Up	57	262	417	1,710
Arrow Panel #1				1,410
40' Office Trailer	26	4.310	2.263	- 573
30' Storage Trailer (Navaho)	39	113		173
Aluminum Scaffold Picks	33 & 34	1.218	640	1 858
Case Loader 450 Model	105	3.529	1 853	5 387
1986 Chevy Utility Body Pick Up	59	2.082	1.093	3.175
1974 Ford Box Truck 20' & 2 Pots	47	55	29	84
750 CFM Sullivan Compressor			1	5
1991 Trailer & Custom Vacuum & Generator	46/104/107	1,516	796	2312
Arrow Panel #2	72	40	21	19
1986 Ford Dump 1 Axle	66	1.920	1.008	7 978
Graco GH533 Bulldog Spray Unit #2	74	443	233	676
1600 CFM Sullair Compressor	108	2,450	1.286	3 736
1993 Custom 30,000 CFM Dust Collector	82 & 109	1,067	560	1.627
Total		\$ 23,973	\$ 12,589	\$ 36.561
(A) - Can Schadular 6 7 and 9 for doministical				

(A) - See Schedules 6, 7, and 8 for depreciation calculations(B) - See Schedule 8 for cost of money detail. An effective cost of money/depreciation ratio of 52.51% has been reflected.

### Schedule 5

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							Schedule 6
	Orfa Equipi	nos Contractor's, Ir MSBCA No. 1849 nent Depreciation C	lc. Losts				
	A ceat	Dote of	Acomicition	Domociotion		Mantha	Equipment
Description	<u>Number</u>	Acquisition	Cost	1992 & 1993		Information Claimed	Lepreciation Cost
1985 Ford Box Truck & 2 Pots	98	4/11/90	\$ 8,500	\$ 2,611		10	\$ 1,088
750 CFM Ingersoll Rand Compressor	100	1/27/90	14,628	4,493		7	1,310
1980 Lima 15KW Generator	67	6/12/86	3,900	I	$(\forall)$	10	464
1989 Perone Trailer & Custom Vacuum	96	11/10/89	2,500	768		7	224
1979 Int'l Dump 1 axle	51	8/1/77	8,000	ı	(Y)	10	419
Graco GH533 Bulldog Spray Unit #1	(1:	(6		•		10	t
Eagle 10000 CFM Max Vac Dust Collector #1	(1)	(6	I	I		7	
Eagle 10000 CFM Max Vac Dust Collector #2	(1)		1	I		L	ı
1983 Ford Crew Cab Pick Up	54	3/18/83	11,455	I	(Y)	10	931
1984 Chevy Crew Cab Pick Up	57	5/10/84	12,354	ı	(Y)	7	793
Arrow Panel #1	( <u></u> ]	(6	8	1	•	7	1
40' Office Trailer	97	3/1/90	21,047	6,465		16	4,310
30' Storage Trailer (Navaho)	39	5/1/82	950		(Y)	16	113
Aluminum Scaffold Picks	33 & 34	1/1/78	21,655		(B)	10	1,218
Case Loader 450 Model	105	3/25/92	13,650	5,293	(B)	10	3,529
1986 Chevy Utility Body Pick Up	59	3/21/85	18,114	1	(¥)	10	2,082
1974 Ford Box Truck 20' & 2 Pots	47	5/22/76	3,772		$(\mathbb{A})$	с,	55
750 CFM Sullivan Compressor	E	(6	1	1		e.	I
1991 Trailer & Custom Vacuum & Generator	46/104/107		11,869	1,336	(B)	10	1,516
Arrow Panel #2	72	6/7/86	1,125	1	(¥)	ŝ	40
1986 Ford Dump 1 Axle	66	5/18/90	15,000	4,608		10	1,920
Graco GH533 Bulldog Spray Unit #2	74	2/18/85	3,900	•	(Y)	10	443
1600 CFM Sullair Compressor	108	3/9/93	29,400	2,450	(B)	ę	2,450
1993 Custom 30,000 CFM Dust Collector	82 & 109		29,391	191	(B)	c.	1,067
<b>Total Ownership Costs</b>						•	\$ 23,973
		1					

(A) - Expense for Fully Depreciated Equipment is calculated on Schedule 7(B) - See Schedule 8 for depreciation calculation

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Recalculatio	n of Depreciation Cos	ts for Items Fully De	preciated on O	rfanos' Records		
	Asset	Date of	Acquisiti	Useful	Months	Equipment Depreciatio
Description	Number	Acquisition	Cost	Life (A)	<u>Claime</u> <u>d</u>	n Cost
1980 Lima 15KW Generator	67	6/12/86	3,900	84	10	464
1979 Int'l Dump 1 axle	51	8/1/77	8,000	191	10	419
1983 Ford Crew Cab Pick Up	54	3/18/83	11,455	123	10	931
1984 Chevy Crew Cab Pick Up	57	5/10/84	12,354	109	7	793
30' Storage Trailer (Navaho)	39	5/1/82	950	134	16	113
1986 Chevy Utility Body Pick Up	59	3/21/85	18,114	87	10	2,082
1974 Ford Box Truck 20' & 2 Pots	47	5/22/76	3,772	206	ę	55
Arrow Panel #2	72	6/7/86	1,125	84	£	40
Graco GH533 Bulldog Spray Unit #2	74	2/18/85	3,900	80	10	443

(A) - Useful life is calculated by determining the number of months from the acquisition date through June 30 1998 (B) - Equipment depreciating cost is calculated by multiplying the months claimed by the depreciating cost

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Schedule 7

Orfanos Contractor's, Inc.

**MSBCA No. 1849** 

Recalculation of Depreciation Cost for Items with Multiple Asset Numbers and for Assets Acquired after June 1991 Orfanos Contractor's, Inc. MSBCA No. 1849

<u>Description</u>	Asset <u>Number</u>	Acquisition <u>Date</u>	Acquisition <u>Cost</u>		Useful <u>Life</u>	Months <u>Claimed</u>	Depreciation <u>Cost</u>
Aluminum Scaffold Picks	Asset # 33 Asset # 34	1/1/78 2/1/79	\$ 8,425 13,230		186 173	10	\$ 453 765 \$ 1,218
1991 Trailer & Custom Vacuum & Generator	Asset # 46 Asset # 104 Asset # 107	10/11/84 3/7/92 2/15/93	6,100 1,202 134	(e) (e)	105 15 4	10 4 4	581 581 801 134 \$1,516
1993 Custom 30,000 CFM Dust Collector	Asset # 82 Asset # 109	10/1/86 4/1/93	23,657 191	(Y)	3	~~~` ~~~`	876 191 \$ 1,067
Case Loader 450 Model	Asset # 105	3/25/92	5,293	(Y)	15	10	\$ 3,529
1600 CFM Sullair Compressor	Asset # 108	3/9/93	2,450	(¥)	n	e S	\$ 2,450

(A)-Amounts represent 1992 & 1993 depreciation

## Orfanos Contractor's, Inc. MSBCA No. 1849 Equipment Depreciation Summary

	1992	1993	<u>Total (22)</u>
Property and Equipment Beginning of Year (A)	\$ 246,010	\$ 257,091	
Property and Equipment End of Year (A)	257,091	278,599	
Average for 2 Year Period	251,551	267,845	
Annual Cost of Money Rate (B)	7.688%	6.75%	
Cost of Money for 2 Years	\$ 19,339	\$ 18,080	\$ 37,419
Depreciation Expense for 2 Years	\$ 37,537	\$ 33,730	\$ 71,267
Cost of Money Rate			52.51%

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(A) - Amounts per Audited Financial Statements of Orfanos.(B) - Average Rate per Treasury Department for Cost of Money.