ARMED SERVICES BOARD OF CONTRACT APPEALS

Appeals of --	)	
	)	
Haskell Corporation	)	ASBCA Nos. 54171, 54262
	)	54263
Under Contract No. DACA85-01-C-0001	)	

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OPINION BY ADMINISTRATIVE JUDGE PEACOCK

These appeals involve claims under a contract to design and construct a bulk fuel storage facility at a remote site in Alaska. Both entitlement and quantum are before us for decision. We sustain the appeals to the extent indicated below.

FINDINGS OF FACT

1. The referenced contract was awarded to Haskell Corporation (Haskell or appellant) by the United States Army Corps of Engineers, Alaska District (government or COE) on 12 December 2000 in the original amount of $3,682,000. The contract required the design and construction of a new bulk fuel storage facility, the transfer of fuel from the old to new tanks and the removal and disposal of the old tanks. The work was to be performed at Cape Romanzof, a remote Air Force radar station located near the Bering Sea approximately 540 air miles west of Anchorage, Alaska. On-site work was scheduled to be completed by 3 December 2001. The site could be accessed only by water or air. Water/barge access was restricted to an approximate five month period from late spring to early fall. The contract included required standard clauses such as FAR 52.236-2, DIFFERING SITE CONDITIONS (APR 1984). (Joint ex. 1; tr. 1/114)

ASBCA Nos. 54262 & 54263—NON-FROST SUSCEPTIBLE MATERIALS CLAIM

2. The contract required appellant to install eight new fuel tanks on concrete pads. The pads were to be placed on a 2-foot layer of non-frost susceptible (NFS) material overlying sub grade of unclassified, suitable compactable fill. (Joint ex. 1 at dwg. CA-04; tr. 3/129-30)

3. With respect to NFS materials, Technical Specification (TS) 01010 at ¶ 2.2.3.3.d states in part (Joint ex. 1 at amendment 4):

> . . . . Approximately 2,000 cubic yards of processed (fractured) gravel material is [sic] available on site for a cost of $20 per cubic yard. This gravel can be purchased from the site caretaker, ARCTEC. This material will require additional processing to meet structural fill and backfill requirements. A grain size distribution of this material is included in Attachment G, Available Gravel Grain Size Distribution . . . . [Emphasis in original]

4. To qualify as NFS material, the contract required that no more than 5% of the total material placed be small enough to pass through a No. 200 sieve (or screen) (exs. A-68 at 02200-2, G-199; tr. 3/340-42).

5. The Gravel Grain Size Distribution (GGSD) chart furnished by the government to offerors in Amendment No. 4 to the Request for Proposals (RFP) indicated that 8.7% (or about 174 cubic yards (cys)) of the 2,000 cy stockpile (referenced in the TS) consisted of fines small enough to pass the No. 200 sieve (ex. A-4).

6. In preparing its proposal, Haskell relied on the grain size distribution data and planned to screen the government's 2,000 cys (referred to by the parties as the 2-inch stockpile) of on-site material (or as much thereof as needed). It planned to segregate finer materials and then mix or "reblend" a portion of the screened fines with the larger gravel to satisfy the requirement that no more than 5% pass a No. 200 sieve (tr. 1/243-48, 2/10-12, 3/10, 130, 335-48). Appellant estimated that it would need to purchase roughly 1,569 cubic yards of NFS material as measured loose prior to its final compaction. The amount later increased by about 55 cys because of minor post award design revisions that slightly increased the size of the pad area. Haskell anticipated that the loose NFS material would be reduced in volume by approximately 15% when compacted. The plan required Haskell to reduce the fines content from 8.7% (174 cys) to 5% (100 cys) or less during the screening and reblending process

(tr. 3/10, 15-19, 27-28, 33-34, 55-56, 67-68, 72, 83, 85-86, 91-93, 96, 107, 5/125-28, 142).

7. The 2,000 cy stockpile would have been sufficient to yield the required quantity of NFS material if the 8.7% fines representation in the GGSD chart was accurate (tr. 3/185, 335-36, 380, 4/75-76, 5/61-66, 101, 110-112, 141-42; ex. A-73). The government's Resident Engineer performed a technical analysis and agreed contemporaneously that appellant "reasonably expected [that the NFS material] could have been obtained from the 2,000 CY stockpile" (ex. A-31 at H0097).

8. After award, representatives of Haskell and its engineering design consultant, Great Northern Engineering (GNE) visited Cape Romanzof on 23 January 2001. At that time, deep snow and the storage of vehicles on the site made it impracticable to check all pertinent elevations and verify government-furnished survey data. (Tr. 1/143-44, 183, 202-03, 210, 213, 3/329, 4/23, 73-74)

9. Following completion of the design and review process, Haskell mobilized its equipment and materials to the site commencing on or about 27 May 2001 (tr. 1/214-17). In early June 2001 after the site was cleared of snow and vehicles were removed, appellant discovered various inaccuracies in the government survey (tr. 1/222-23, 228-33, 3/123-24). These defects did not impact the quantity of NFS fill required for the job and appellant has not filed a claim for the survey inaccuracies (tr. 3/331; 4/46-47). To compensate for the survey errors, appellant increased the quantity of sub grade fill beneath the NFS gravel material but the 2 foot layer (and quantity) required of NFS remained unchanged. There was no requirement that the fill underlying the 2 foot NFS layer also consist of NFS materials. (Tr. 1/122, 230-31, 3/331; ex. A-30 at H0094)

10. Haskell purchased the 2,000 cy stockpile from ARCTEC, the government's on-site caretaker contractor, and intended to screen and reblend the entire 2,000 cys (ex. A-27; tr. 3/152-54, 180, 334-37, 352-53). On or about 9 June 2001, Haskell set up screening equipment to process the material using two vibrating screens: an upper screen that would pass material less than 1 inch in size, and a lower 3/8" screen that would further sift out the materials passing through the upper screen (tr. 3/331-32, 5/134-35). The screen sizes and equipment were selected in consultation with appellant's supplier who recommended use, *inter alia*, of the 3/8-inch screen at the site (tr. 5/101-03, 135-36).[1]

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[1] The government interposed a hearsay objection to the receipt of the supplier's recommendation into evidence (gov't reply at 6). The government objection pertains to the weight to be accorded to the supplier's statement that the 3/8-inch screen could properly be used. The Board received the evidence for

11. Appellant anticipated that it would need to address the problem of moisture and frozen material in the stockpile. It elected to scrape, "knock down" or "skim" outer layers of material from the pile as the screening progressed and then used the high winds at the site to thaw out material prior to screening. (Tr. 1/196-97, 241-42, 3/48) The greater the fines content of the pile, the more likely that the materials would be frozen (tr. 3/95, 99).

12. After appellant set up its screening equipment, it began to scrape materials from the pile to expose and thaw wet materials. Appellant then transported thawed materials to the screening equipment. However, clumps of fines in the gravel material plugged up the 3/8 inch screen and prevented smaller materials from passing. (Tr. 1/244-49)

13. Appellant began screening operations on or about 14 June 2001 and attempted to screen the 2000 cy pile through 19 June 2001 (exs. A-32, -38; tr. 2/12-14). Appellant notified the government of the problems in screening out the smaller materials on 14 June 2001. The COE advised Haskell that processing the pile and choices of screening procedures were appellant's responsibilities. Haskell switched from a 3/8 inch to a 5/8 inch screen which allowed more material to pass but produced less usable NFS fill from the stockpile. With either screen, production was much slower than anticipated by appellant. (Tr. 1/244, 249, 3/32, 182, 331-32) During the period 14-19 June 2001, appellant processed 500 cys (tr. 3/183-84, 364, 374). During portions of the period, appellant used two ten hour shifts per day to screen the gravel (ex. A-38; tr. 2/136-38).

14. Haskell's soils engineer, Shannon & Wilson (S&W), tested samples from the stockpile on 19 June 2001 (ex. A-58 at HO814). S&W concluded that the stockpiled gravel pile contained 23% fines passing the No. 200 sieve or 264% more than the 8.7% represented in the contract (*id.*; tr. 1/250, 5/15; exs. A-15, -39, -71). Appellant advised the government orally and by letter of the discrepancy on 22 and 25 June 2001, respectively. There is no evidence that refutes the conclusion of S&W regarding the fines content of the stockpile or brings into question appellant's sampling procedures. S&W's measurement was not challenged by the government's inspector and resident engineer. The contracting officer conceded that the stockpile contained excessive fines content and, therefore, constituted a differing site condition (DSC). (Exs. A-16, -19, -23, -30, -71, -72; R4I, tab 1 at 16; tr. 4/82, 5/54)

15. The higher fines content of the stockpile, among other things, caused NFS material to retain more moisture than appellant anticipated. The stockpile remained

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its effect on the perceiver (appellant) not for the underlying accuracy of the recommendation regarding the adequacy of the screen.

wetter because the higher percentage of fines in the materials "clumped" together. This exacerbated appellant's problems in screening out the fines and it was unable to use the smaller screens efficiently. The high fines content and not a failure to thaw the materials caused appellant's problems in screening the material. (Tr. 1/244, 2/71, 3/77, 365-66, 377-78, 4/81, 5/54-55, 114-15)

16. As a result of the excessive quantity of fines appellant's screening production was materially slower than it would have been had the fines percentage been as represented (tr. 1/244, 249, 2/159-60, 3/32, 140, 184, 365-66; ex. A-23).

17. Running water at the site was subject to restrictions and use of a water washing system during screening was not a viable option to reduce clumping. There is no contemporaneous evidence that water washing was feasible or would have increased appellant's rate of processing/screening the NFS stockpile. (Tr. 2/95, 3/41-42, 96-97, 5/103-06)

18. The slow production caused by the DSC and the potential that the 2,000 cy pile would not yield sufficient NFS material led the parties to discuss the feasibility of obtaining the NFS materials from alternative sources. However, importing suitable replacement NFS material from off site sources during the middle of the short construction season was expensive and impractical. (Ex. A-16; tr. 3/65-70, 74-75)

19. Pending a determination as to how to proceed and the results of S&W's soil analysis, appellant suspended its screening operations after 19 June 2001. By 22 June 2001, the tank pad site had been graded, leveled, compacted and was ready for the placement of the NFS material as the final step prior to forming and placing the concrete pads on which the new tanks would sit. As of 22 June 2001, the placement of NFS gravel was a critical path activity. (Tr. 2/156-57)
Because of the slow production and the issue of whether the stockpile contained adequate NFS materials given the increased fines content, appellant requested the government's guidance concerning the best method of overcoming the differing site condition on 22 June 2001. (Exs. A-38, -39; tr. 2/12-14, 60-63)

20. On 25 June 2001, appellant requested the government's permission to purchase additional NFS material from a nearby stockpile (the 1-inch stockpile) that had been created by ARCTEC (ex. A-14).

21. The government authorized appellant to use the alternative NFS materials on or about 29 June 2001. ARCTEC segregated 1200 cys from the 1-inch pile and moved the materials for appellant's use by approximately 2 July 2001. (Exs. A-24, -36, -39) Although the COE assumed that ARCTEC would sell the replacement aggregate to appellant at the same contractual rate of $20 per cy stated for the 2-inch stockpile, appellant was actually charged and paid $35 per cy. (*Id.;* ex A-27*)*

22. Ultimately, Haskell purchased 1200 cys of the 1-inch material from ARCTEC. The 1-inch material did not require screening to remove fines. It was more efficient and economical to purchase the 1-inch material than to incur the higher labor costs and time to screen the original 2-inch stockpile. (Ex. A-27; tr. 3/166-67, 183, 3/366-67)

23. On 2 July 2001, appellant began combining the 1-inch material with the 400 cys of usable NFS material from the 2-inch stockpile to meet the NFS requirements for the project. It also used portions of the previously purchased 2,000 cy 2-inch pile for subgrade fill that did not require NFS materials. (Tr. 3/177-81, 186, 192)

24. The Government's expert developed computations that assumed that a ¾-inch screen was the smallest screen used. According to the expert, a compacted cy figure of 1480 cys was required as opposed to the 1270 compacted in place cy quantity that appellant estimated. The expert used a 17% compaction factor decreasing the size of the 2,000 cy pile by that percentage. He also assumed that 20% of the pile would be "wasted" and that the square footage to be covered by the gravel pad would be about 20,000 square feet. Haskell's original estimate assumed that the volume of the gravel pad would be about 4% less and used a compaction factor of 15%. The expert concluded that the 2,000 cy, 2-inch pile mentioned in the contract would not yield sufficient NFS and 3,310 cys would be required, assuming the materials had 8.7% fines. He also concluded that screens smaller than 5/8-inch would generally require a water washing system to help segregate the finer materials. (Tr. 4/114-125, 5/11-12, 30-32)

25. Haskell's expert determined that the square footage required to be covered with NFS material was 19,240.78 square feet or 1,425 cys to cover the 2 foot deep gravel pad, as adjusted to reflect the post award design changes. To determine the uncompacted quantity, the expert multiplied the final 1,425 cys by the compaction factor rather than reducing the entire 2,000 cy pile by the percentage. The expert contended that a 15% compaction factor would be more appropriate and with gravels, it could be as low as 5%. The expert also considered that given the remote nature of the site and the need to use all available materials, only 3-5% of the original 2000 cys would be "wasted." According to appellant's expert, the government expert greatly overestimated the amount of material that would be "wasted" or otherwise lost in the screening, compaction and placement process. Both the appellant's expert and its project manager calculated that the entire 2,000 cys should be purchased and processed to produce sufficient NFS material. (Tr. 5/52-53, 60-65, 90-91, 101; exs. -73, -74).[2]

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[2] The government objected to appellant's use of a reference "Guide" (ex. A-75) as

26. By letter of 20 July 2001, appellant requested $162,394 to reimburse it for the consequences of the DSC (ex. A-29). Haskell's proposal consisted of 6 elements plus overhead and profit, as follows (*id*):

ITEM	DESCRIPTION	COST
1	Air freight sample to lab in Anchorage - $665 CZF-BET+$110 BET-ANC	$ 775
2	Rush Lab analysis (Sunday OT)	$ 200
3	Purchase cost of 1" minus material 1,200 cy @$35/cy	$ 42,000
4	Time lost processing unsuitable 2" minus material (258 labor hours at $22,941 plus $6,450 equipment cost.)	$ 29,391
5	Schedule impact 6/22 to 7/1	$ 29,095
6	2" minus material offered in contract at $20 per cy had actual cost of $35 per cy. 2,000 cy x ($35 - $20)	$ 30,000
	SUBTOTAL	$131,461
	Overhead @ 12.3%	$ 16,170
	Profit @ 10%	$ 14,763
	TOTAL PROPOSAL	$162,394

27. All site personnel were charged directly to the job regardless of their position. No intermediate markups for field overhead are claimed. (Tr. 2/277-79) Supervisory and quality control personnel hours were distributed to the various labor codes in proportion to the amount of daily labor costs recorded per cost code and became direct costs of the job. (*Id.*; tr. 3/316-19) The government has not challenged the home office overhead and profit rates proposed by Haskell and has paid appellant in full for the elements 1 (air freight) and 2 (lab analysis) above. The disputes center on the remaining elements of appellant's proposal: the purchase cost of aggregate (items 3 and 6), inefficiencies in processing the 2-inch pile and delays, impacts and

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background material reinforcing certain assumptions used by appellant to calculate its claim. The primary basis for the objection appears to be that the government was "surprised" by the late proffer of what the government claims is speculative and questionable expert material. The Board has not relied on the exhibit to support our finding. Insofar as the witness relied upon it as background, the objection is overruled.

inefficiencies pending availability of the 1-inch pile from 22 June through 1 July 2001.

Purchase Costs of Stockpiles

28. Haskell paid $35 per cy to purchase the 1200 cy 1-inch pile for a total direct cost of $42,000. With overhead (12.3%) and profit (10%), appellant claims $51,883 for this element of its claim. (Exs. A-27, -29; tr. 3/153, 168, 394)

29. ARCTEC also charged appellant $35 per cy for the 2-inch stockpile instead of the $20 cy price set forth in the contract (tr. 3/153, 168; exs. A-27, -29; R4I, tab i).

Inefficiencies Processing 2-Inch Pile

30. The government acknowledged that appellant was entitled to some compensation for extra costs associated with processing the 2-inch pile (ex. A-33; tr. 3/171-72).

31. Haskell expended 258 labor hours processing the 2-inch pile during the period 14 June through 19 June 2001 at a total cost of $22,941 or an average per hour labor cost of $88.92 ($22,941/258 hrs.). Of this total, 190 were direct labor hours and 67.6 were supervisory labor hours. This effort resulted in the processing/screening of 500 cys of NFS material. (Ex. A-29 at HOO74-87)

32. In preparing its proposal, appellant estimated that it could process 1,569 cys of NFS material from the 2-inch pile in 157 labor hours using a 2 man crew manning the screening equipment if the pile contained 8.7% fines as represented in the contract. (Ex. A-8) Appellant no longer contends that it required only 1,569 cys to satisfy NFS requirements.

33. Appellant claimed the hourly cost of operating each piece of equipment used in the screening operation for 10 hours per day during the 6 day period 14 through 19 June 2001. The total amount claimed for all equipment used in screening during the period was $6,450 or on average $1,075 per 10 hour shift and $107.50 per hour. (Ex. A-29 at HOO74-75) There is no productivity or other pricing information regarding any item of equipment used with the exception of the screening equipment. There is no evidence that the screening equipment could not operate at maximum capacity.

34. Appellant's proposal estimate was unrealistic. Haskell concedes that the capacity of the screening equipment was only 10 cys per hour and that it could not have processed the materials any faster than that rate. Working two 10-hour shifts per

day, only 200 cys per day could be produced and the 2,000 cys in the 2-inch pile could not be processed in less than 10 days, assuming the equipment operated at full capacity.[3] (App. reply at 11, 13, 35; tr. 3/355, 381, 389, 5/125-126, 148-50)

Impacts/Inefficiencies/Delays Pending Availability of 1-Inch Pile

35. Pending availability of the 1-inch pile from 22 June to (but not including) 1 July 2001, Haskell performed out-of-sequence, non-critical path work (tr. 2/14-17, 107-08, 114-16, 158, 3/207-19, 360, 385-86). The sole calculation in the record of the extent of inefficiency during that nine day period is that prepared by appellant. Appellant computed the total labor hours worked and estimated an inefficiency factor of 65%. (Tr. 3/198-208, 384) The amount thus calculated and claimed totaled $29,095 plus overhead and profit. No alternative calculation was offered by the government. There is no persuasive evidence that the percentage of inefficiency was less than that computed by appellant.

36. On 5 November 2001, the government executed unilateral Modification No. P00002 (Mod. 2) to the contract awarding appellant $46,707 pursuant to the Changes clause. No time extension was granted. The monetary award included payment for airfreight and lab analysis ($975), lost labor and equipment time processing unsuitable materials ($7,835) and the additional cost of $15 per cy charged by ARCTEC for the 2,000 cy pile over the $20 price stated in the contract ($30,000), along with home office overhead (12.3%) and profit (10%). (Ex. A-35) Rationale supporting the government's award of $7,835 for lost labor and equipment time processing the 2-inch pile is not explained in the record.

37. By letters dated 9 and 11 April 2002, appellant filed claims and requested final decisions relating to the insufficiency of the 2-inch pile. Both claims had been received by the contracting officer by 16 April 2002 (R4/54263, tab 3). Together the claims sought compensation for the items listed in its 20 July 2001 letter above (finding 26) to the extent that Haskell considered that it was not fully compensated by Mod. 2. (Exs. A-36, -37) Two contracting officer final decisions denying the claims (except to the extent provided for in Mod. 2) were issued on 25 April 2003 (R4/54262, tab 1; R4/54263, tab 1). Appellant timely appealed. In ASBCA No. 54263, appellant seeks an equitable adjustment based on the costs associated with purchasing the 1-inch pile. In ASBCA No. 54262, it seeks to recover all other alleged increased costs (plus profit) caused by the differing site condition. Because both

[3] To an extent, the appellant has recognized and partially adjusted for the limited capacity of the screening equipment in its brief (app. reply at 22). Given our method of calculating the proper equitable adjustment detailed in our decision below, we need not analyze or further consider the partial adjustment.

appeals concern the same claim event and the parties have generally treated them together, we do not further distinguish between the two appeals.

DECISION

During performance, government representatives, including the contracting officer, conceded that the excessive fines content of the 2-inch pile constituted a differing site condition. Although the government now appears to challenge that concession, it has offered no proof supporting its contentions. Intimations that soil samples taken by appellant and/or S&W soils test results were suspect are pure speculation on the part of government counsel. The presence of approximately 264% more fines in the 2-inch stockpile than represented in the contract was a latent condition that was materially different than represented in the contract and increased Haskell's work processing the original stockpile. We agree with the contemporaneous conclusions of government personnel that the excessive fines content of the materials constituted a Type I differing site condition.

In the main, the government disputes the extent to which appellant was damaged by the differing site condition. Most of the government's contentions pertain to the pricing of the equitable adjustment due appellant. However, the government conducted no audit and offered no technical analysis of the claims in these appeals.

In resolving the pricing issues presented, we apply the basic rule that appellant is entitled to recover the difference between its actual, reasonable costs plus profit of providing acceptable NFS materials less amounts it would have incurred had the fines content of the 2-inch pile been the percentage represented in the contract. See *Santa Fe Engineers, Inc.*, ASBCA No. 48331, 95-1 BCA ¶ 27,505 at 137,076; *Modern Foods, Inc.*, ASBCA No. 2090, 57-1 BCA ¶ 1229 at 3,544.

A. Appellant's Actual Costs of Performance

The government has not challenged appellant's claimed profit (10%) and home office overhead (12.3%) rates. It has also conceded that Haskell is entitled to its air freight ($775) and lab costs ($200) to ship the samples to S&W for analysis. The pricing disputes concern three elements of the claim: 1. Haskell's direct costs of processing the 2-inch pile during the period 14-19 June 2001; 2. Delays and inefficiencies pending availability of the 1-inch pile during the period 22 June to 1 July 2001; and, 3. Purchase costs of the stockpiles.

Direct Costs of Processing the 2-inch Pile

First, Haskell maintains that its direct equipment and labor costs of screening the 2-inch pile to produce the initial 500 cys of NFS material were increased during the period 14 to 19 June 2001. Its claim sought $29,391 for this element.

Haskell claimed all of the direct labor and equipment costs that were incurred during the period 14-19 June 2001. As originally computed it did not reduce the $29,391 by the amount of equipment and labor hours that would have been incurred had it not encountered the DSC. We address this error and reduce the claim in our computations below.

Nevertheless, we consider that the amount of $29,391 accurately reflects appellant's labor and equipment costs of processing the 2-inch pile during the 14-19 June 2001 period.

The government disputes the propriety of including supervisory and quality control hours as direct costs of the screening operation. We do not consider that any impropriety occurred based on the present record. In this case, we have found that appellant's practice was to allocate its supervisory and quality control costs directly to activities in the same proportion that total labor costs were distributed to the activity. There is no evidence that double charging of the supervisory and quality control costs occurred. No intermediate "field overhead" markups were taken. The government has not presented any evidence that brings into question the propriety of appellant's methodology for allocating these costs directly to the activities in question.

The government alleges that quality control and supervisory personnel should not have been performing direct labor tasks. From the standpoint of pricing the equitable adjustment, the government benefited from any contribution they made directly to performance of the screening processing work. If appellant had hired additional laborers, not only would their costs be allocable to the claim but also a greater share of the supervisory/quality control cost would have been distributed to the increased direct labor.

As discussed below however, the basic gist of the government's argument does have some relevance and validity in determining what appellant's costs would have been had the 2-inch pile been as indicated in the contract.

We conclude that appellant's actual direct equipment and labor cost associated with the screening process was the amount claimed of $29,391.

Delays and Inefficiencies Pending Availability of the 1-inch Pile

We have found that appellant's performance was delayed and made inefficient pending the government's approval and availability of the alternative source for NFS materials (the 1-inch pile) during the nine day period 22 June to 1 July. It seeks to recover $29,095 for the period.

Appellant introduced essentially unrebutted calculations of the extent of its inefficiency performing out-of-sequence work pending a determination regarding the alternative source of NFS materials. The government has presented no alternative technical analysis that would support a conclusion that the entire amount should not be considered to have resulted from the DSC. Government counsel's speculation about actual inefficiency losses is not evidence.

However, as we have found and as discussed in detail below, the record establishes that the processing of the 2-inch pile would have required a minimum of 10 days (or 200 machine and 400 labor hours). Because screening commenced on 14 June 2001, it could not have been completed prior to 23 June 2001. There is no evidence that appellant intended or could have begun placing screened and reblended NFS materials in the foundation before 24 June 2001. At a minimum, appellant's personnel would have been screening and processing the 2-inch pile materials during two of the 9 inefficiency days claimed. In addition, the record discloses that some additional time would have been required because appellant did not consistently use two shifts, and some allowance for reblending and equipment operating at less than full capacity is appropriate. A proportionate reduction in the inefficiency claim covering the period 22 June to 1 July 2001 is required. By jury verdict, we conclude that the processing of the NFS materials would have been accomplished in 11 days. Accordingly, appellant would have completed this activity on 24 June 2001. Therefore, we reduce appellant's claimed expenses for the inefficiency period by one-third (3/9) of the amount claimed ($29,095) and determine that inefficiency costs caused by the DSC were $19,397.

Purchase Costs of Both Stockpiles

We have found that appellant paid $35 to purchase the 1200 cys of the 1-inch material. ARCTEC also charged Haskell $35 per cy to acquire the 2,000 cy 2-inch stockpile rather than the contractually-stated rate of $20 per cy. The total amount actually paid for NFS material was $112,000.

Based on the foregoing conclusions, appellant's actual cost of providing acceptable NFS material was as follows:

Air freight & lab analysis	$975
Direct costs of processing 2-inch pile (incl. supervisory costs)	$29,391
Inefficiency/delay pending use of 1-inch pile	$19,397
Purchase cost of both stockpiles	$112,000
Subtotal	$161,763
Overhead @ 12.3%	$19,897
Total	$181,660

B. The Estimated Cost of Performance Without the DSC

Costs of Processing 2-inch Pile

Had the fines content of the 2-inch pile been as indicated in the contract and no differing site conditions been encountered, appellant's actual costs of performing the contract would have been significantly greater than the estimated cost for the work included in its proposal. The dispositive fact is that capacity of the screening equipment was only 10 cys per hour. Given this significant limitation on production, appellant should have estimated that it would take a minimum of 200 equipment hours to process the 2000 cys of material, apart from any reblending or remixing of processed materials. This would have required appellant to work a minimum of two 10-hour shifts per day for ten days. Given the limitations of the screening equipment and based on the evidence available to us, appellant should have estimated that about 200 equipment and 400 labor hours would be required to process the 2,000 cys in the stockpile. Although there were occasions where more than two persons worked the processing operation, the screening machinery was also capable of operating with less than a two man crew. Considering all the relevant quantum evidence in the record, we consider that as a result of reblending operations, the occasional need for more than a two man crew and equipment/crews operating at less than optimal capacity an additional 40 labor hours and 20 equipment hours would have been needed to complete the processing activity.

Based on the computations included in the claim, we have found that appellant's actual average hourly direct labor and equipment rates were $88.92 and $107.50, respectively. These rates have not been challenged by the government. Accordingly, Haskell's direct labor and equipment costs of processing the 2-inch pile would have been $39,125 (440 hrs. x $88.92/hr) and $23,650 (220 hrs. x $107.50/hr).

In addition to appellant's direct labor costs, some portion of appellant's supervisory and quality control costs would have been allocated to the work. As discussed above, appellant's practice was to apportion such costs to site activities based on direct labor costs devoted to such activity. Although the record does not

reflect a precise allocation percentage, we consider that 30% of direct labor reasonably approximates the additional amount that should be added to the $39,125 computed above. That percentage approximates the ratio of supervisory hours (69) to direct labor hours (190) worked during the period 14-19 June 2001, adjusted to recognize that if the fines content of the pile had been as represented, not as much supervisory time would have been necessary. Accordingly, we determine that an additional $11,738 ($39,125 x .3) should be included.

The record fails to establish that the estimated direct costs should be further increased to reflect other direct processing related expenses or any unusual difficulties in performing at Cape Romanzof in June 2001.

Direct Materials-Purchase of NFS Materials

The government has declined to pay appellant the costs it incurred to purchase the alternative 1-inch materials. The primary reason for denying reimbursement appears to be the government's belief that appellant would have had to obtain NFS materials in addition to 2000 cys in the 2-inch pile in any event. As best we can ascertain, this contention was first developed in the testimony of the government's expert long after the work was completed. We have carefully considered all of the evidence, factors and assumptions bearing on the issue and have found that the pile should have yielded the requisite NFS quantity had the fines content been as indicated in the contract. The stockpile would have been adequate if it had been as represented. Moreover, it is incongruous at best that the government should first raise the issue years after the construction occurred. The government did not contemporaneously question the adequacy of the pile. In the overall context of the contract representations, the nature of the remote site and the work, along with the contemporaneous actions of the parties, we consider that the government as well as appellant reasonably concluded that the 2000 cys should have sufficed.

To the extent that additional NFS materials from the 2-inch pile were added to the sub grade, it occurred as the result of the government's survey error and Haskell's expedient decision to use those previously purchased and readily available materials. Haskell did not file a claim based on the faulty survey information. The 2-inch materials were not *required* to be placed in the sub grade. The survey error had no impact on the thickness of NFS materials that were required to be placed beneath the pads. That depth was always 2 feet above the sub grade.

Acquisition of further NFS materials from the 1-inch pile (or elsewhere) would not have been required if the 2-inch pile materials had been as represented. Accordingly, we conclude that appellant would only have purchased the 2-inch materials. We have also found that purchase of the entire quantity of 2,000 cys would have been necessary, not the 1,569 cys estimated in Haskell's proposal. Appellant

was also entitled to rely on the contract representation that those materials could be obtained at the rate of $20 per cy not the $35 per cy actually paid. Appellant's total actual cost for the NFS materials should have been $40,000 (2,000 cys x $20/cy).

Appellant's total costs of purchasing screening and processing NFS materials, including home office overhead should have been as follows:

Direct labor	$39,125
Supervisory/Quality control cost	$11,738
Direct equipment	$23,650
Direct materials	$40,000
Subtotal	$114,513
Overhead @ 12.3 %	$14,086
Total	$128,599

C. Conclusion--Equitable Adjustment

We determine that appellant's reasonable increased costs of performing the NFS screening/processing were $53,061 ($181,660-$128,599). With profit at 10%, the total equitable adjustment due appellant is $58,367. The government has previously awarded appellant an equitable adjustment of $46,707 in Mod. 2 to the contract. Accordingly, appellant is entitled to an additional $11,660, plus interest in accordance with the Contract Disputes Act commencing 16 April 2002. ASBCA Nos. 54262 and 54263 are sustained to the extent indicated.

ASBCA No. 54171—DEICING CLAIM

FURTHER FINDINGS OF FACT

38. Appellant completed the concrete pads and installed new fuel tanks and a new pumping and pipe system by early fall 2001. TS 01010—Design Requirements at ¶ 2.1.3.7p stated that Haskell was "responsible for the safe transfer of the useable fuel from the existing bulk storage tank system (up to 1,080-KL (285,000 gallons)) to the new storage tanks (1,060-KL (280,000 gallons)) following switchover" (Joint ex. 1). The contract did not contain any express requirement or procedures for removal of water that may have condensed in the 50-year old tank before the fuel transfer. However, the requirement to transfer "useable fuel" meant that the fuel had to be transferred without water or debris (tr. 1/155; 2/184).

39. In its proposal, appellant originally scheduled the fuel transfer to occur during the period 8-12 October 2001 (Joint ex. 1 at 0381). Appellant's 18 March 2001 schedule indicated that the fuel transfer would occur from 27-29 September 2001 (exs. G-13, -14). In late September to early October, Haskell proceeded to take

steps preparatory to transferring fuel from the existing 285,000 gallon fuel tank to the new fuel tanks. At all relevant times, the old tank was filled with fuel and any internal investigation of the tank's interior was impossible. During performance, ARCTEC had exclusive access to the old tank and was responsible for its maintenance and monitoring water levels. ARCTEC was responsible for "dipping" the tank once per month to determine water levels and also, according to a government witness, may have been responsible for removing water in the tank at regular intervals (tr. 2/80-84, 298, 3/215, 266, 4/99).

40. Appellant developed a "Fuel Transfer Procedure" (FTP) setting forth steps for transferring the fuel (ex. A-48). The FTP was submitted to the COE prior to proceeding with the transfer. The first stage of this procedure required "Hydrotesting" of the lines with a small quantity of fuel, *i.e.*, arctic grade diesel from the old tank. Prior to testing, the FTP called for measurement of water in the tank by ARCTEC and pumping the water into a temporary container. The procedure assumed that the old tank had a sump pump installed to perform the pumping. (*Id.*; tr. 2/176-78, 261-62, 266, 3/213-20, 281) Any water in a diesel fuel tank is heavier than the fuel and sinks to the bottom of the tank. Water was to be drained from the lower of two taps on the side of the tank, referred to as the "clean out" line or low point drain. (Tr. 3/259-60, 265, 4/6-8, 91-94)

41. After informing the COE's on site representatives including the QAR, Haskell asked ARCTEC to check the level of condensed water that might have collected at the bottom of the old tank. The COE's quality assurance representative (QAR) and a Haskell representative were present and observed ARCTEC's methodology of using a treated plum bob device to measure the water level. ARCTEC informed Haskell that the tank had ¼ inch of water on the floor of the tank. The QAR estimated that the amount of water associated with the ¼ inch estimate was 248.55 gallons of water. (Tr. 2/178-84, 190, 264, 298, 3/214-16; exs. A-49, -50, -51, -52 at HO520)

42. Haskell determined that gravity drainage of the water was sufficient without need for pumping. It gravity drained water from the lowest tap on the tank until only clean, uncontaminated fuel was discharged. (Tr. 2/185, 188, 193-94, 3/223-24) Haskell actually removed approximately 800 gallons of water and a water/fuel mixture prior to the point where only clean fuel was discharged. Of that quantity, approximately 700 gallons were water. (Tr. 2/194-95, 237-38, 297, 3/223-25, 259-60, 268-69, 277, 291, 293, 5/119-20; ex. A-49).

43. The tank did not have an internal sump. The absence of an internal sump built into its floor so that water could effectively be drained from the lowest external tap was contrary to normal fuel tank design. The sump would normally be connected

to internal pipe linking the lowest external tap to the lowest point in the interior of the tank. (Tr. 1/152, tr. 2/226, 3/218, 220, 245-46, 251, 256, 4/21)

44. The tank's bottom was not flat but "irregular" and had a convex profile that was "higher in the center and lower where the floor met the sidewall" (ex. A-50 at HO512, -51 at HO515; tr. 2/226, 231). The government's QAR at the site considered at the time that the unevenness of the tank's bottom caused water or slush to be trapped in certain areas during the initial draining of the old tank. (Exs. A-50 at HO512, -52 at HO520) He also concluded that ARCTEC's measurement methods "would certainly provide a false reading on the dipstick when it was inserted in the tank to determine the level of water on the floor" (ex. A-50 at HO512). The parties contemporaneously theorized that "differential settlement" of the old tank's foundation caused the unevenness of the tank's bottom. The unevenness led to the false reading, trapped water, and the failure to drain all of the water from the tank (tr. 3/289-91, 4/22-23; exs. A-50, -52). In a field update report of 29 October 2001, the QAR stated (ex. A-52 at HO520):

> My theory is that the tank experienced differential settlement. The weight of the sidewalls combined with the weight of the roof was such that the ring-wall sank into the ground forcing the tank bottom to assume a convex profile. Another possibility is that the tank was designed with the convex bottom. I don't think Haskell could have reasonably expected this profile and the bearing it had on accurately calculating the volume of water on the tank floor.

45. Fuel tanks are normally sloped to permit drainage toward and through the lowest tap. The existing fuel tank was not properly designed to permit full drainage. (Tr. 1/152-53, 3/248, 253, 265, 275, 4/92)

46. There is no evidence that appellant knew or should have discovered the absence of a sump, internal piping or the differential settlement within the tank during a reasonable site inspection.

47. Haskell used the same gravity flow method (not pumping) to fill the fuel transfer line and new tank lines with diesel fuel for pressure testing of the system. No pumping of fuel from the old tank was needed prior to actually transferring fuel after completion of all tests. (Tr. 2/196, 204-07, 240-41, 3/227-30, 236, 5/115-16)

48. As of early October, appellant planned to complete the fuel transfer and demolish the old tanks prior to demobilizing in 2001 (tr. 2/253-55). Haskell attempted to commence the fuel transfer on or about 8 October 2001 after completion

of the hydrotest. (Exs. A-45, -46, -47; tr. 2/248-51) Despite appellant's efforts, additional water remained in the tank during the drainage process. Appellant experienced blockages in the valves and piping between the new control building and the new tanks and associated piping that it had installed. The blockages were caused by the freezing of water that had not been drained from the fuel tanks. (Ex. A-46; tr. 2/216, 220-22, 5/122-23) The water entered the new pipes when they were filled by gravity for the pressure test. The ice formed after the lines were drained following completion of the pressure test and before the start of the fuel transfer. (Tr. 2/237, 3/233-35, 293-94, 4/42, 5/122-23)

49. The government did not produce test records, temperature, water level and other data related to the old tank that were required to be maintained by ARCTEC (see tr. 2/180, 4/99).

50. Appellant disassembled and reassembled piping components and employed various methods to heat the lines sufficiently to permit fuel transfer under severe winter weather conditions. Appellant ultimately bypassed the newly-installed piping system and pumped the fuel out from the top of the old tank to complete the fuel transfer. As of 18 October 2001, the fuel had been transferred to the new tanks. Appellant's demolition and environmental remediation subcontractor, BC Excavating (BC), was able to commence the cleaning and demolition process after the fuel transfer. BC cut large holes and doors in the old tank. Before anyone entered the tank it had to be ventilated to eliminate unsafe fumes. BC personnel entered the tank after it was aired out and scraped ice from the floor and removed the residual fuel. However, appellant was unable to complete the demolition of the old tanks because of the adverse weather. (Exs. A-47, -48, -49, -50; tr. 1/129, 2/224-25, 3/231-32, 242-43, 245, 4/49)

51. In an email to the government dated 22 October 2001, appellant stated that it had removed substantially more water from the old tank than ARCTEC's measurements had suggested was present and had taken all reasonable and prudent steps to avoid introducing water into the system. Haskell sought compensation for the "extraordinary costs . . . encountered in keeping the system free of ice." (Ex. A-49)

52. Completion of the work in 2001 was also delayed by causes attributable to the electrical work performed by Haskell's electrical subcontractor, 3-Way Electric of Alaska, Inc. (3-Way). Appellant would have been in a position to perform the fuel transfer at an indeterminate earlier date but for the delayed electrical work (tr. 285). As of 29 October 2001, substantial electrical and other work remained to be accomplished that was unrelated to the icing issues or demolition of the tanks. (Exs. A-47, 48, 50, 52, G-15, 178, 179; tr. 1/129-30, 2/237, 3/285)

53. The sole government witness addressing the deicing claim did not inspect the fuel tank. (Tr. 4/92, 95) There is no evidence of the extent of his background or expertise with respect to fuel transfer procedures. The government failed to qualify the witness as an expert. He had two alternative theories as to the possible cause of icing during the fuel transfer: the pumping theory and the "cold sink" theory. With respect to the pumping theory, the witness speculated that water remaining in the tank could have been sucked into the fuel lines once mechanical pumping commenced. According to the expert, the mechanical pumping may have created a "swirl" or "vortex" that sucked out the water that then froze in the fuel lines. With respect to the second or "cold sink" theory, he opined that when water was drained from the tank bottom, it may have lowered an overlying layer of diesel fuel (substantially warmer than the withdrawn water) bringing the fuel into contact with and thawing an underlying layer of ice that had remained frozen throughout the initial water drainage process and as a result had not been removed. Neither of these theories was discussed as a possibility contemporaneously. (Tr. 4/84-90)

54. Regarding the pumping theory, only 74.7 gallons of fuel had been pumped when freezing occurred (ex. A-47; tr. 293-94). That quantity was insufficient to draw fuel or water from the old tank which stood approximately 500-600 feet away from the areas where freezing occurred. The water entered the new tank system when the fuel lines were filled by gravity for the pressure test, *i.e.,* before any mechanical pumping occurred. (Tr. 2/168-69, 3/288-89, 293-94, 4/42)

55. Regarding the "cold sink" theory, appellant removed 800 gallons of water/fuel and lowered the contents of the tank by only 0.805 inches (ex. A-51 at HO514). There is no support for the witness' conclusory opinion that such a small change in the contents of the tank would have any appreciable melting effect on an assumed layer of ice of unknown dimensions. In particular, there are no calculations, data, tests, studies or other evidence addressing the likely (much less actual) temperatures of the fuel and tank before, during or after the removal of water or the transfer of fuel. (Tr. 4/85-87, 90-91, 93-95) To the extent evidence exists, it would support a conclusion that the weather preceding the fuel transfer would not have been cold enough to cause any remaining water in the tank to freeze particularly given the approximate temperature of arctic fuel in the tank of 45-50 degrees (tr. 2/233-35, 3/247). There is no evidence establishing when the ice found in the bottom of the tank (after it was opened) formed. It could have formed immediately before or after the holes and doors were cut in the tank in the freezing temperatures and severe ice/snow conditions of late October, 2001 (tr. 4/49, 95, 5/145).

56. On 14 May 2002, appellant submitted a claim to the contracting officer seeking compensation for the extra costs incurred in accomplishing the fuel transfer (ex. A-55). Absent specific evidence we find that the claim letter was delivered on Monday, 20 May 2002. The total amount now sought is $145,676 (app. br. at 32).

No time extension was claimed. The claimed costs fell into four categories exclusive of Appellant's overhead, profit and remobilization expenses to complete the work in 2002. The four categories of direct costs claimed were: 1. Electric heat tracing materials and Freight; 2. Replacement of a fuel transfer pump; 3. Subcontractor BC Excavating's increased costs; 4. Haskell's increased direct costs.

57. Haskell purchased and used electric heat tracing materials to thaw the fuel lines after the icing problems occurred. The total cost incurred to purchase the materials and the air freight charges to deliver them to the site was $12,074. (Ex. A-55 at HO558, HO560-63; tr. 222)

58. The icing problem caused the motor of appellant's original fuel transfer pump to become plugged, stall and burn out necessitating its replacement. Haskell purchased a replacement pump at a total cost of $1,176, including air freight shipping charges. (Ex. A-55 at HO558, HO564-66; tr. 223-24)

59. The portion of the claim detailing BC's increased costs consists of four subcomponents. First, BC mobilized an "additional person to site for winter work" to provide safety due to the adverse winter working conditions at a claimed cost (with markups and profit) of $1,988.47. Second, the claim seeks recovery of $3,521.37 for the compensation BC paid the additional employee for 50.5 hours work at the site. Third, BC employees performed extensive work at the direction of Haskell to assist appellant in overcoming the icing problems. The total amount invoiced by BC to perform the deicing work for Haskell totaled $29,846, including all BC markups and profit. Fourth, the claim seeks recovery of BC's estimated "remobilization/demurrage charges" of $13,394 in 2002 because BC's demolition/remediation work could not be completed in 2001. (Ex. A-55 at HO558, 567-70) BC had mobilized to the site by approximately 9 October 2001. Appellant's 1 October 2001 schedule update indicated the tank demolition/remediation work was to be completed by 19 October 2001. There is no evidence that completion of that work by the scheduled date could not have occurred had appellant not encountered the DSC at approximately the time BC mobilized. But for the deicing issues, BC would have been able to complete its subcontract work during 2001 and would not have been required to remobilize. (R4-54171, tabs 19, 20; tr. 3/238)

60. The fourth category of direct expenses set forth in appellant's claim relate to: 1. Haskell's own labor costs incurred to thaw lines and install heat tracing and insulation in the total amount of $21,198; 2. Haskell's subsistence expenses for its employees for the period 19 October to 4 November 2001 of $2,718, and 3. Subsistence expenses for BC's employees for the same period of $3,567. (Ex. A-55 at HO558, 571-584; tr. 222)

61. The claim also sought recovery of Haskell overhead at 12.3% and profit at 10% (*id.* at HO558). These percentages are not disputed by the government.

62. Haskell originally planned to complete the work in 2001 (tr. 2/163). Remobilization in the late spring/early summer of 2002 was required, among other things, to complete the demolition and remediation of the old fuel tanks and the electrical work to be performed by Haskell's subcontractor 3-Way Electric (tr. 227). Haskell's 14 May 2002 claim indicated that the estimated costs of remobilization, including airfare, subsistence, snow removal and de-winterizing equipment were $22,374 not including any amounts that would be incurred by 3-Way. (Ex. A-55 at HO559) After receipt of BC's actual remobilization expenses in 2002, the amount claimed for remobilization increased in the amount of $7,500 (tr. 3/242).

63. In a final decision dated 4 February 2003, the contracting officer (CO) denied the claim in its entirety. The CO considered that Haskell bore full responsibility for designing the transfer method and completing the transfer of fuel. (R4-54171, tab 1) According to the CO, appellant had "no right to rely on the (water level) test results provided by ARCTEC" because "they are not a party to this contract and do not represent the Government" (*id.* at 8). The CO also alluded to perceived deficiencies with appellant's fuel transfer procedure that may have contributed to icing (*id.* at 9). There is no persuasive evidence in the record supporting the CO's allegations that there were deficiencies in appellant's fuel transfer procedures. No such deficiencies were identified by site personnel in the contemporaneous documentation. The CO also theorized that "frost" may have materialized in the new fuel tanks as well as in piping, valves and other parts of the system (*id.*). Other than the government's similar "cold sink" theory regarding the old fuel tank, there is no evidence in the record that frost entered the new pipes or caused the icing problems.

64. By letter of 23 April 2003, Haskell timely appealed the final decision (R4-54171, tab 2).

DECISION

The government argues that under the contract appellant assumed the responsibility and risk of both designing and building the project, including developing a plan for, and accomplishing, the transfer of fuel to the new tanks. While appellant was responsible for designing a fuel transfer procedure that took into consideration contractual indications and known and usual site conditions, the design–build character of the contract did not insulate the government from liability for differing site conditions. In this case, appellant maintains that it encountered unknown and unusual conditions that caused the icing problems, *i.e.*, a Type II differing site condition (DSC). In essence, the government argues that appellant did not encounter a differing site condition. The gist of the government's position is that

conditions leading to icing in the fuel lines could not be considered "unusual" at the remote Arctic site and should have been "known" by appellant. The government offers several theories as to what caused the icing problem basically as alternatives to appellant's proof that the conditions of the old tank and/or the amount of water in the tank were unknown and unusual and led to the icing problems.

Before addressing the government theories of causation, the most persuasive evidence in the record supports the conclusion that the irregular nature of the old tank bottom and inadequate means for completely draining the tank were unknown and unusual conditions. The tank did not drain properly. Contemporaneously, the government QAR concluded that the 50-year old tank had experienced differential settlement that trapped water in pockets of the irregular tank bottom. He theorized that water was not discharged initially when appellant drained the tank. Apart from its alternative theories, the government has not attempted to rebut appellant's proof that the drainage characteristics of the tank were not known or usual.

Given ARCTEC's misleading water level reading indicating only about 250 gallons of water were present, we cannot fault appellant for not reevaluating the efficacy of its method for removing the water or discovering the actual condition of the tank. Appellant drained substantially more than 250 gallons of water and continued until only pure fuel was discharged from the tank. Appellant sought and acted on the best information available. It reasonably relied on measurements provided by ARCTEC, the support contractor having exclusive access to the old tank and charged with responsibility for its maintenance.

The government's alternative theories as to the cause of the icing problems for the most part are based on the testimony of its purported expert and various "common sense" observations by the government's trial counsel.

With respect to the witness, the government presented very little evidence of his background and knowledge relative to the engineering disciplines in dispute, in particular his prior experience concerning fuel transfer procedures similar to those involved in this appeal. Moreover, the witness failed to submit analyses or provide detailed underlying bases for his conclusions. Although he offered opinions, they were not persuasive.

The theory that appears to be most favored by the government is the "cold sink" theory. The basic premise of the theory is that the inside bottom of the old 285,000 gallon tank was layered with ice during the water removal process. An additional premise is that the ice thawed sometime after the 800 gallons of water/fuel were removed by Haskell but prior to the pressure test. The government concludes that the melted water entered the fuel lines during or shortly after the pressure test.

There are insufficient facts to support the underlying premises of the government's "cold sink" theory. If the assumption that a layer of ice was present on the bottom of the fuel tank is correct, it was at best another unknown and unusual condition. The theory was not advanced contemporaneously by site personnel. The presence of ice in the tank presumably was unknown by ARCTEC which was responsible for the maintenance of the tank. It provided appellant with the water level information without mention of any possibility of an ice layer. ARCTEC regularly monitored not only water levels but also temperatures within the tank. These records were not introduced. We consider that to establish its ice layer theory, the government could have introduced temperature data that might lend credence to its assumptions. Such proof is particularly important given the government's second premise that a minute lowering of the fuel level by removing 800 gallons of water/fuel from the 285,000 gallon tank was sufficient to raise the temperature at the bottom of the tank to melt the ice layer. Without presentation and thorough analysis of temperature information, the "cold sink" theory remains purely hypothetical and more problematic than appellant's theory of causation which rests on contemporaneously developed facts.

The origin of this government theory also appears to stem from the discovery of ice on the floor of the tank after it was opened by appellant's demolition subcontractor in late October 2001. The presence of ice after the opening of the tank does not establish that the ice was present prior to its opening. The opened tank was exposed to extreme Arctic winter snow and ice conditions and thoroughly ventilated prior to the entry of site personnel and discovery of the ice.

The government's "swirl" or "vortex" theory is also discredited by the facts. It is based on the assumption that pumping caused water remaining in the tank to be sucked out. No pumping occurred prior to the entry of water into the lines. The theory also does not explain how water remained in the tank despite appellant's drainage of water until only fuel was discharged.

The government suggests that the location of the lowest tap two inches above the bottom of the floor of the tank necessarily precluded gravity draining water from the bottommost portion of the old tank below the tap. The argument is based solely on the assumptions of the government's attorney without support in the record. Among other things, the purpose of the tap was to drain the water. There was no suggestion by site personnel that gravity drainage (perhaps assisted by the assumed sump) would not serve its intended purpose. In all the second guessing and post mortem analyses, the government's theory was not raised prior to trial. ARCTEC reported the water level to be 1/4 inch, well below the 2-inch tap level. Appellant successfully drained the water presumably from areas below the tap. In short, gravity drainage appeared to work. We cannot fault appellant for relying on the apparent success of its methodology. In addition, if the government's theory is correct, it does

not explain why water below the tap did not drain during the water removal process but did gravity drain immediately after that process was concluded when the lines were filled for pressure testing.

Based on the most persuasive evidence in this record, we consider that unknown and unusual conditions within the tank prevented the drainage of all water and that some remaining water entered the fuel lines during the pressure test. In brief, we conclude that appellant encountered a Type II DSC that caused the icing problems.

We turn now to the quantum issues. The following claimed amounts have not been disputed by the government and are included in the equitable adjustment:

1. Heat tracing materials and freight	$12,074
2. Replacement pump and freight	$1,176
3. BC direct labor/de-icing work	$29,846
4. Haskell's direct labor costs to de-ice	$21,198
Total	$64,294

The contractor has not sought a time extension for any delays attributable to the de-icing work. Nevertheless, the remaining categories of direct costs incurred by Haskell, with the exception of certain expenses attributable to BC, are dependent on proof that appellant was delayed by causes for which it is entitled to monetary compensation. It seeks subsistence expenses for the 19 October to 4 November 2001 period and remobilization costs for the following construction season when the onset of winter precluded completion of all on site construction activities during 2001. Haskell may not recover these delay-related expenses because it was concurrently delayed for reasons unrelated to the icing issue.

With respect to BC's direct costs, we have found that the subcontractor could have completed the demolition/remediation work during 2001, but for the DSC. Had it not been delayed assisting Haskell in performance of the deicing work, BC would not have been required to remain on the job after 19 October 2001. Nor would it have been forced to remobilize during the 2002 construction season to complete its work. In contrast to appellant, the start of BC's work was delayed from approximately 9 October to 19 October 2001 solely as a consequence of the DSC. It would not have incurred extended site costs and remobilization expenses if commencement of demolition had not been delayed by the deicing issue. Accordingly, appellant is entitled to recover BC's subsistence expenses during the period 19 October through 4 November 2001 ($3,567) (finding 60) and its remobilization expenses in 2002 of $20,894 ($13,394 plus $7,500) (findings 59 and 62) for a total of $24,461. Adding the latter BC costs to the previous total of $64,294 set forth above, we determine that appellant's total recoverable increased direct costs associated with the DSC are $88,755.

In contrast, Haskell was delayed by its electrical subcontractor both before and after commencement of the fuel transfer operation. Its personnel were required to remain at the site after 19 October and remobilize the following year regardless of the DSC. We have determined that there were numerous contract closeout tasks that were unrelated to deicing or tank demolition. In addition, because the electrical subcontract work forced the fuel transfer operation into adverse weather conditions, we deny appellant's request for reimbursement of BC's expenses associated with the additional employee sent to the site for winter safety reasons. That additional employee would not have been required if the electrical work had not been delayed. The determination to mobilize the additional employee was not influenced by the DSC. The costs for that worker were segregated from the portion of appellant's claim that sought compensation for BC's direct labor costs devoted to overcoming the DSC. From the limited evidence available, we cannot determine whether that employee assisted Haskell in the deicing effort. Appellant has not proved it should recover these amounts.

As previously noted, the government has not disputed appellant's home office overhead and profit percentage. We markup Haskell's recoverable direct costs and compute the amount of the equitable adjustment as follows:

Total recoverable direct costs	$88,755
Overhead (12.3%)	$10,917
Subtotal	$99,672
Profit (10%)	$9,967
Total	$109,639

The appeal is sustained in the amount of $109,639, plus interest in accordance with the Contract Disputes Act commencing on 20 May 2002.

CONCLUSION

ASBCA Nos. 54262 and 54263 are sustained in the amount of $11,660. ASBCA No. 54171 is sustained in the amount of $109,639. Appellant is also entitled to interest computed in accordance with the Contract Disputes Act commencing on the dates set forth above.

Dated: 19 October 2006

ROBERT T. PEACOCK
Administrative Judge
Armed Services Board
of Contract Appeals

I concur

MARK N. STEMPLER
Administrative Judge
Acting Chairman
Armed Services Board
of Contract Appeals

I concur

EUNICE W. THOMAS
Administrative Judge
Vice Chairman
Armed Services Board
of Contract Appeals

I certify that the foregoing is a true copy of the Opinion and Decision of the Armed Services Board of Contract Appeals in ASBCA Nos. 54171, 54262, 54263, Appeals of Haskell Corporation, rendered in conformance with the Board's Charter.

Dated:

CATHERINE A. STANTON
Recorder, Armed Services
Board of Contract Appeals