

**Investigation and reconciliation of cargo quantities for B 120 oil spill at Buzzards Bay, April 2003**

**Addendum to report of June 14, 2003**

At the request of Bouchard Transportation Co. Inc. and in the light of additional information we have reviewed our report of June 14. The review was requested because concern has been expressed that we indicated that the oil spilled had a calculated gravity of 7.7 rather than the 9.2 stated on the cargo documents for the B 120 that were generated by ITS/Caleb Brett at Buzzards Bay. It should be noted that at the time of writing our report we were unable to have a dialogue with ITS/Caleb Brett because they were not permitted to discuss their reports and documents with parties other than their principals who were in the first instance the oil company that was shipping the cargo.

From appendix F of our original report we noted that the API of the parcel loaded at Coastal Eagle Point was 8.9. We understood this to be the API gravity of the cargo loaded at Eagle Point and by means of a volumetrically weighted average of the two parcels derived an API gravity of 7.7 for the final blend.

In our report of June 14 we calculated, and leaned towards, the lower API gravity of 7.7 for the mixture after the second loading. This was because we were not aware that ITS/Caleb Brett had analyzed a sample of oil from each of the barge's compartments after she loaded at Coastal Eagle Point that gave a range of gravities from 8.9 to 9.2. It is now clear to us that ITS/Caleb Brett had actually established, by analysis, that the entire cargo, after loading had an API Gravity of 8.9 to 9.2. We were particularly concerned, in the circumstances, that we should not mislead anyone into thinking that the oil was lighter than it might have been. For this reason therefore we erred toward the lower API Gravity of 7.7 for a mixture of the two original parcels with API Gravities of 6.3 and 8.9. We are now able to calculate, with the information available to us, that the parcel loaded at Eagle Point had an API Gravity of about 11.4.

On July 23, 2003 we were provided with copies of the aforementioned analysis reports and now feel very confident that the actual API of the two parcels combined was close to 9.2 when the barge left Philadelphia. It should be noted that we cannot vouchsafe that there was a homogeneous mix of the two parcels of cargo on board as the sampling technique employed by ITS/Caleb Brett recovers material from different levels in the barge's tanks. However the barge B 120 is provided with a good cargo heating system and on passage to Buzzards Bay the heating system on the barge would have facilitated effective mixing of the cargo. At the time of the incident there is a strong probability that the cargo had become a homogeneous mixture.

It should be noted that the API Gravity of fresh water is 10.0 and that for water is 6.5. A mixture of oil with an API gravity 9.2 of should float readily in saltwater even when cooled.

We have also been asked to comment on whether the personnel operating a barge would have any knowledge of the API Gravity of the cargo when loading it. It is customary for the barge personnel to be given the API Gravity by the terminal and/or the attending cargo inspector. Barge personnel and the operating company have no facility to determine or measure the API Gravity of cargo loaded.

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