



**Western  
Technologies  
Inc.**  
The Quality People  
Since 1955

3737 East Broadway Road  
Phoenix, Arizona 85040-2966  
(602) 437-3737 • fax 470-1341

June 4, 1998

Brewer Cote of Arizona  
5226 West Missouri Avenue  
Glendale, Arizona 85301

Attn: Mr. W. Steve Brewer  
Re: Testing of Recovered Asphalt  
RejuvaSeal Applications  
51st Avenue and Camelback Road  
Phoenix, Arizona

Job No. 2128JJ156

As you requested, Western Technologies Inc. (WT) personnel obtained cores from pavement within the southeast corner of 51st Avenue and Camelback. These cores were submitted to the WT materials laboratory where the upper 1/2 inch of asphalt concrete was removed and utilized as samples to remove, recover and test the asphalt binder. The following information is provided in support of the results of the asphalt testing, which are attached.

Three sets of four cores were taken at the designated site on May 12, 1998. One set of cores was taken from an obviously treated area of the pavement identified with red spray paint as location A. A similar location was identified with the letter B, and it was also sampled by four cores. The untreated pavement adjacent to these treated locations was sampled by taking four cores, and it was identified as location C. Following completion of coring, the cores holes were patched with bituminous patching material,

The cores were warmed to approximately 250° F in an oven, and the upper 3/8 to 1/2 inch of asphalt concrete was removed by slicing through the core with a steel trowel. The cores that were identified as locations A and B displayed an obvious difference in the consistency of the asphalt binder between this layer and the lower part of the cores. The upper portion of the cores was easily separated from the lower portion of the core. Cores from location C displayed no difference between the upper 1/2 inch and the balance of the cores.

The material separated from the cores was combined according to location such that three samples representing locations A, B and C were generated. The asphalt binder from these samples was extracted using a solvent extraction process. The extracted binder was recovered through the Abson recovery process. The recovered asphalt samples were tested for penetration at 77°F and absolute viscosity at 140°F. The results of this testing are attached.

It is readily apparent that the viscosities of the asphalts from treated samples are significantly lower than measured for the untreated sample. Similarly, the penetrations of the asphalts from treated samples were higher than measured for the untreated sample. These test results are

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indicative of rejuvenation and softening of the aged binder present within the asphalt concrete pavement. From visual examination during sample preparation it appeared that the rejuvenation had penetrated to a depth of approximately 3/8 inch as the time sample preparation was performed. It will be noted that the asphalt recovered from Location A (RejuvaSeal) had a lower viscosity and higher penetration than the asphalt recovered from Location B (emulsified RejuvaSeal), indicating slightly less rejuvenation for the emulsified material. However, the difference in rejuvenation between these samples is minor compared to the rejuvenation obtained by both samples.

This report completes our scope of services examining properties of recovered asphalt. If there are questions about this work, or if we can be of further service to you, please call.

Sincerely,  
WESTERN TECHNOLOGIES INC.



W. R. Meier, Jr., Ph.D., P.E.  
Senior Materials Engineer



Reviewed by, Phillip D. Feliz  
Senior Materials Principal

Attachments; Results of Asphalt Tests

Copies to: Addressee (5)



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**LABORATORY REPORT**

Client **BREWER COTE OF ARIZONA**  
**5226 WEST MISSOURI AVENUE**  
**GLENDALE ARIZONA 85301**

Date of Report 6-05-98  
Job No. 2128JJ156

Event/ Invoice No.  
Authorized By **BCA/BREWER**  
Sampled By **WT/FARRELL**  
Submitted By **WT/FARRELL**

Lab No. 1  
Date 5-07-98  
Date 5-12-98  
Date 5-12-90

Project **CORING AND RECOVERED ASPHALT TESTING**  
Contractor  
Type/ Use of Material **REJUVASEAL/ASPAHALT**  
Sample Source/ Location **BREWER COTE OF ARIZONA**  
Reference-

Location **51ST AVE AND CAMELBACK**  
Arch./ Engr. - -  
Supplier/Source **SEE BELOW**

Source/Location Desig. By **CLIENT** Date 5-07-96

Special Instructions: **TOP 1/2" REMOVED FROM CORES FOR TESTING**  
**TEST RESULTS**



CORE LOCATION

TREATMENT

PENETRATION AT  
25°C, 100G, 5 SEC,  
dmm

ABSOLUTE  
VISCOSITY AT 60°C,  
POISES

A  
B  
C

RejuvaSeal  
Emulsified RejuvaSeal  
Untreated

10  
8  
3

80.700  
120.640  
2.03X10<sup>6</sup>



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LABORATORY  
REPORT

LABORATORY TEST RESULTS REPORTED HEREIN APPLY ONLY TO THE SPECIFIC SAMPLES ON WHICH THE TEST WAS RUN. THE ABOVE SERVICE AND REPORT WERE PERFORMED PURSUANT TO THE TERMS AND CONDITIONS OF THE CONTRACT BETWEEN WT AND CLIENT. WT WARRANTS THAT THIS WAS PERFORMED UNDER THE STANDARD OF REASONABLE CARE APPLICABLE TO TESTING FACILITIES. NO OTHER WARRANTY, GUARANTEE, OR REPRESENTATION, EXPRESSED OR IMPLIED, IS INCLUDED OR INTENDED.

REVIEWED BY

*[Handwritten Signature]*