June 4, 1998

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

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

As you requested, Western Technologies Inc. (WT) personnel obtained cores from pavement within the southeast corner of 51st Avenue and Camelback. Three 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 in provided in support of the results of the asphalt testing, which are attached.

Three sets of four cores were taken to 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 C 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 112 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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Job No. 2128J156

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
tread 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. Moier, 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)
LABORATORY REPORT

Client: BREWER COTE OF ARIZONA
Address: 5255 WEST MISSOURI AVENUE, GLENDALE, ARIZONA 85301

Date of Report: 6-05-98
Job No.: 2128JJ156
Event/Invoice No.: 
Authorized By: BCA/BREWER
Submitted By: WIFARRELL
Location: 51ST AVE. AND CAMELBACK
Arch/Engr.: SEE BELOW
Supplier/Source: SEE BELOW
Source/Location Desig.: By CLIENT

Project: CORING AND RECOVERED ASPHALT TESTING
Type/Use of Material: REJUVASEAL/ASPHALT
Sample Source: Location BREWER COTE OF ARIZONA

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

TEST RESULTS

<table>
<thead>
<tr>
<th>CORE LOCATION</th>
<th>TREATMENT</th>
<th>PENETRATION AT 25°C, 100G, 5 SEC, dmm</th>
<th>ABSOLUTE VISCOSITY AT 60°C, PORES</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>Pre-Cut</td>
<td>10</td>
<td>80.700</td>
</tr>
<tr>
<td>B</td>
<td>Emulsified Rejuvaseal</td>
<td>8</td>
<td>120.640</td>
</tr>
<tr>
<td>C</td>
<td>Untreated</td>
<td>3</td>
<td>2.03x10⁶</td>
</tr>
</tbody>
</table>

Copies To: CLIENT (1)