## DISTRIBUTION SHEET

<table>
<thead>
<tr>
<th>To DISTRIBUTION</th>
<th>From ANALYTICAL SERVICES</th>
<th>Page 1 of 1</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Date: 03/06/95</td>
</tr>
</tbody>
</table>

**Project Title/Work Order**

**EDT NO.:** EDT-610404  
**ECN NO.:** N/A

### ONSITE

<table>
<thead>
<tr>
<th>Name</th>
<th>MSIN</th>
<th>Text With all Attach</th>
<th>Addendum IA Only</th>
<th>EDT/ECN Only</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pacific Northwest Laboratory</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>J. R. Gormsen</td>
<td>K7-28</td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Westinghouse Hanford Company</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>R. A. Esch</td>
<td>T6-30</td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>G. D. Johnson</td>
<td>S7-15</td>
<td>X</td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>J. G. Kristofzski</td>
<td>T6-06</td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>N. G. McDuffie</td>
<td>S7-15</td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>P. Sathyanarayana</td>
<td>R2-12</td>
<td>2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>R. D. Schreiber</td>
<td>R2-12</td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Central Files</td>
<td>L8-04</td>
<td>2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>EDMC</td>
<td>H6-08</td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>LTIC</td>
<td>T6-03</td>
<td>2</td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>OSTI</td>
<td>L8-07</td>
<td>2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>TFIC (Tank Farm Information Center)</td>
<td>R1-20</td>
<td>X</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
DISCLAIMER

This report was prepared as an account of work sponsored by an agency of the United States Government. Neither the United States Government nor any agency thereof, nor any of their employees, make any warranty, express or implied, or assumes any legal liability or responsibility for the accuracy, completeness, or usefulness of any information, apparatus, product, or process disclosed, or represents that its use would not infringe privately owned rights. Reference herein to any specific commercial product, process, or service by trade name, trademark, manufacturer, or otherwise does not necessarily constitute or imply its endorsement, recommendation, or favoring by the United States Government or any agency thereof. The views and opinions of authors expressed herein do not necessarily state or reflect those of the United States Government or any agency thereof.
DISCLAIMER

Portions of this document may be illegible in electronic image products. Images are produced from the best available original document.
## Distribution

2. To: (Receiving Organization)  
Program Support

5. Proj./Prog./Dept./Div.:  
Tank 241-AW-101/Waste Management/PS/AS  

8. Originator Remarks:  
This document is being released into the Supporting Document System for retrievability purposes.

11. Receiver Remarks:  
For Release.

### DATA TRANSMITTED

<table>
<thead>
<tr>
<th>(A) Item No.</th>
<th>(B) Document/Drawing No.</th>
<th>(C) Sheet No.</th>
<th>(D) Rev. No.</th>
<th>(E) Title or Description of Data Transmitted</th>
<th>(F) Approval Designator</th>
<th>(G) Reason for Transmittal</th>
<th>(H) Originator Disposition</th>
<th>(I) Receiver Disposition</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>WHC-SD-WM-DP-097</td>
<td>N/A</td>
<td>0</td>
<td>Tank Characterization report for Double Shell Tank 241-AW-101</td>
<td>Q</td>
<td>2</td>
<td>1</td>
<td></td>
</tr>
</tbody>
</table>

### SIGNATURE/DISTRIBUTION

<table>
<thead>
<tr>
<th>Reason</th>
<th>Disp.</th>
<th>(J) Name</th>
<th>(K) Signature</th>
<th>(L) Date</th>
<th>(M) MSIN</th>
<th>(F) Approval Designator</th>
<th>(G) Reason for Transmittal</th>
<th>(H) Originator Disposition</th>
<th>(I) Receiver Disposition</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>1</td>
<td>Cog. Mgr. J. G. Kristofski</td>
<td>[Signature]</td>
<td>9/28/95</td>
<td>12-08</td>
<td>E, S, Q, D or N/A</td>
<td>1. Approval</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>QA Eng. W. A. Hendricks</td>
<td>[Signature]</td>
<td>9/28/95</td>
<td>12-08</td>
<td>E, S, Q, D or N/A</td>
<td>1. Approval</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### KEY

- E, S, Q, D or N/A
- 1. Approval
- 2. Review
- 3. Post-Review
- 4. Review
- 5. Review
- 6. Receipt Acknow. Required
- 7. Approved
- 8. Reviewed w/comment
- 9. Disapproved w/comment
- 10. Receipt acknowledged

### Signature/Distribution

<table>
<thead>
<tr>
<th>Reason</th>
<th>Disp.</th>
<th>(J) Name</th>
<th>(K) Signature</th>
<th>(L) Date</th>
<th>(M) MSIN</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>QA Eng. W. A. Hendricks</td>
<td>[Signature]</td>
<td>9/28/95</td>
<td>12-08</td>
</tr>
</tbody>
</table>

### Approval

- [Approved]
- [Reviewed w/comments]
- [Disapproved w/comments]
<table>
<thead>
<tr>
<th><strong>RELEASE AUTHORIZATION</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Document Number:</strong></td>
</tr>
<tr>
<td><strong>Document Title:</strong></td>
</tr>
<tr>
<td><strong>Release Date:</strong></td>
</tr>
</tbody>
</table>

This document was reviewed following the procedures described in WHC-CM-3-4 and is:

**APPROVED FOR PUBLIC RELEASE**

**WHC Information Release Administration Specialist:**

[Signature]

March 8, 1995

Kara M. Broz

---

**TRADEMARK DISCLAIMER.** Reference herein to any specific commercial product, process, or service by trade name, trademark, manufacturer, or otherwise, does not necessarily constitute or imply its endorsement, recommendation, or favoring by the United States Government or any agency thereof or its contractors or subcontractors.

This report has been reproduced from the best available copy. Available in paper copy and microfiche. Printed in the United States of America. Available to the U.S. Department of Energy and its contractors from:

U.S. Department of Energy
Office of Scientific and Technical Information (OSTI)
P.O. Box 62
Oak Ridge, TN 37831
Telephone: (615) 576-8401

Available to the public from:

U.S. Department of Commerce
National Technical Information Service (NTIS)
5285 Port Royal Road
Springfield, VA 22161
Telephone: (703) 487-4650

---

A-6001-400.2 (09/94) WEF256
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Tank Characterization 40-Day Crust Burn for Double Shell Tank 241-AW-101</td>
<td>WHC-SD-WM-DP-097</td>
<td>0</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>5. Key Words</th>
<th>6. Author</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>7. Abstract</th>
<th>8. RELEASE STAMP</th>
</tr>
</thead>
<tbody>
<tr>
<td>N/A</td>
<td>OFFICIAL RELEASE BY WHC DATE MAR 08 1995</td>
</tr>
</tbody>
</table>

A-6400-073 (08/94) MEF124
ANALYTICAL SERVICES

Project: TANK CHARACTERIZATION
40-DAY CRUST BURN REPORT
FOR DOUBLE SHELL TANK

Tank: 241-AW-101

Date Printed: MARCH 2, 1995

MASTER

DISTRIBUTION OF THIS DOCUMENT IS UNLIMITED

DISTRIBUTION OF THIS DOCUMENT IS UNLIMITED
# TABLE OF CONTENTS

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Narrative</td>
<td>1</td>
</tr>
<tr>
<td>Sample Data Summary</td>
<td>5</td>
</tr>
<tr>
<td>Undigested Sample Analyses - Direct</td>
<td>10</td>
</tr>
<tr>
<td><strong>Differential Scanning Calorimetry</strong></td>
<td></td>
</tr>
<tr>
<td>Worklist # 538</td>
<td>12</td>
</tr>
<tr>
<td>Worklist # 539</td>
<td>21</td>
</tr>
<tr>
<td>Worklist # 540</td>
<td>27</td>
</tr>
<tr>
<td>Worklist # 541</td>
<td>35</td>
</tr>
<tr>
<td>Worklist # 547</td>
<td>39</td>
</tr>
<tr>
<td><strong>Thermal Gravimetric Analyses</strong></td>
<td></td>
</tr>
<tr>
<td>Worklist # 545</td>
<td>47</td>
</tr>
<tr>
<td>Worklist # 546</td>
<td>53</td>
</tr>
<tr>
<td>Worklist # 548</td>
<td>59</td>
</tr>
</tbody>
</table>

This Document consists of pages 1 through 64.
Summary

Three auger samples from tank AW-101 were received by the 222-S laboratories. They were analyzed to support the crust burn safety issue. No sample results exceeded the notification criteria.

Sample Receipt and Extrusion

Riser 13A
One 10 inch auger (95-AUG-001) was used to sample the tank AW-101 contents at riser 13A. The sample was taken on 1/25/95, and received at the 222-S laboratory on 1/27/95. Extrusion took place on 2/7/95. The total amount of solid material recovered was about 78 grams. There was less than 5 mL of drainable liquid which was not recovered. Based on the texture and type of material sampled, the recovery is estimated to be 85%. Most of the solid was a damp, dark brown, sludge material that was located on all nine flutes, with the heaviest accumulation on flutes 7, 8 and 9. The sample found on flutes 1 through 3 (top of the auger) consisted of this sludge with crystalline, crust material dispersed throughout (approximately 26 grams of material). This material was sampled separately, designated as a facie (crust), and assigned sample number S9ST000107. The sludge material from flute 4 was subsampled (approximately 3 grams collected), designated as the Upper Half, and assigned sample number S9ST000102. The sludge material from flute 9 was subsampled (approximately 2 grams collected), designated as the Lower Half, and assigned sample number S9ST000103. The remaining material from flutes 4 through 9 (approximately 49 grams recovered) was collected and saved for further analysis. The initial results for the crust burn safety issue (DSC and TGA) for Riser 13A appear on page 1 of Table 1 and in Table 2. The final report will contain all other analyses.

Riser 12A
One 10 inch auger (95-AUG-004) was used to sample the tank AW-101 contents at riser 12A. The sample was taken on 1/26/95, and received at the 222-S laboratory on 1/27/95. Extrusion took place on 2/7/95. The total amount of solid material recovered was about 12 grams. There was less than 5 mL of drainable liquid collected. Based on the texture and type of material sampled, the recovery is estimated to be 60%. The solid was a damp, dark brown, sludge material that was located on flutes 4 through 9 only, with the heaviest accumulation on flutes 8 and 9. There was no crust material observed. The sludge material from flutes 5 and 6 was subsampled (approximately 0.5 grams collected), designated as the Upper Half, and assigned sample number S9ST000110. The sludge material from flute 9 was subsampled (approximately 2 grams collected), designated as the Lower Half, and assigned sample number S9ST000111. The remaining material from flutes 4 through 9 (approximately 10 grams recovered) was collected and archived. The initial results for the crust burn safety issue (DSC and TGA) for Riser 12A appear on page 2 of Table 1 and in Table 2. The final report will contain all other analyses.
WHC-SD-WM-DP-097, REV. 0

Riser 24B

One 10 inch auger (95-AUG-005) was used to sample the tank AW-101 contents at riser 24B. The sample was taken on 1/27/95, and received at the 222-S laboratory on 1/27/95. Extrusion took place on 2/8/95. The total amount of solid material recovered was about 18 grams. There was less than 5 mL of drainable liquid which was not recovered. Based on the texture and type of material sampled, the recovery is estimated to be 60%. The solid was a damp, dark brown, sludge material that was located on flutes 6 through 10 only, with the heaviest accumulation on flutes 9 and 10. There was no crust material observed. The sludge material from flute 6 was subsampled (approximately 1 gram collected), designated as the Upper Half, and assigned sample number S95T000113. The sludge material from flute 10 was subsampled (approximately 3 grams collected), designated as the Lower Half, and assigned sample number S95T000114. The remaining material from flutes 6 through 10 (approximately 15 grams recovered) was collected and archived. The initial results for the crust burn safety issue (DSC and TGA) for Riser 24B appear on page 3 of Table 1 and in Table 2.

Analytical Results

There are two result tables attached. The first, Table 1, is the summary table from the Laboratory Information Management System (LIMS). Table 2 provides additional calculated results for net exothermic energy and the total energy, requested by the Flammable Gas Safety Program cognizant scientist. The data used for these calculations was obtained from the summary report and additional information that is reported in the comment section for each sample in the LIMS.

TGA (Moisture)

The weight percent water by thermogravimetric analysis (TGA) was performed on a Mettler Model 20 thermogravimetric analyzer, using procedure LA-560-112 with an air purge. All samples results met the accuracy and precision criteria of 20%. The results were all within the range of 31.81% water to 42.46% water. There were no notification (action) limits for these analyses.

DSC

Differential thermal calorimetry (DSC) was performed using procedure LA-514-113, and a Mettler Model 20 differential scanning calorimeter under an air purge. There were no results which exceeded the notification limit of 586 Joules/g. One sample (S95T000107) exceeded the precision limit of 20%. This sample was from the portion of Riser 13A that consisted of crust material mixed with sludge. The initial sample result was 86.4 Joules/g and the duplicate was 0 Joules/g. A third sample was run giving a result of 111.3 Joules/g, which was reported as the duplicate in the summary report. The duplicate had a second endotherm at 300°C that did not appear in the other two analyses. No further reruns were requested due to the small exotherm, the dose rate and the heterogeneous nature of this sample. All samples met the accuracy criterion of 20%.
Sample S95T000102, collected from Riser 13A just below the crust layer, produced three exotherms. The first was 14.7 Joules/g, the second 30.5 Joules/g, and the third 77.7 Joules/g. The sum of the three is reported in Table 1.

The dry weight calculations for the exothermic energy were calculated using the sum of all measured exotherms. The sample result for dry weight was calculated using the percent water result reported as sample, and the duplicate used the percent water result reported as duplicate. Due to the heterogeneous nature of these samples, this method of calculation may introduce an additional precision error. This is exemplified in sample S95T000102 by the increase in the relative percent deviation (RPD) between the sample and duplicate from 11.5% for exothermic energy based on wet weight to 23.3% based on dry weight. Since the duplicate result for sample number S95T000107 was 0 Joules/g, the result of 111.3 Joules/g, measured on the third sample portion, was used for the dry weight calculation for the duplicate.

Reference

SAMPLE DATA SUMMARY
Table 1: 40 DAY CRUST BURN SAFETY ISSUE RESULTS
AW-101

<table>
<thead>
<tr>
<th>Sample#</th>
<th>R#</th>
<th>Analyte</th>
<th>Unit</th>
<th>Action Limits Lower</th>
<th>Upper</th>
<th>Standard %</th>
<th>Blank</th>
<th>Result</th>
<th>Duplicate</th>
<th>Average</th>
<th>RPD %</th>
<th>Spk Rec %</th>
<th>Det Limit</th>
<th>Count Err%</th>
</tr>
</thead>
<tbody>
<tr>
<td>S95T000107</td>
<td></td>
<td>% Water by TGA using Mettler</td>
<td>%</td>
<td>n/a</td>
<td>n/a</td>
<td>98.67</td>
<td>n/a</td>
<td>41.33</td>
<td>41.01</td>
<td>41.17</td>
<td>0.78</td>
<td>n/a</td>
<td>0.000</td>
<td>n/a</td>
</tr>
<tr>
<td>S95T000107</td>
<td></td>
<td>DSC Exotherm Dry Calculated</td>
<td>Joules/g</td>
<td>n/a</td>
<td>n/a</td>
<td>98.67</td>
<td>n/a</td>
<td>147</td>
<td>185.0</td>
<td>168.0</td>
<td>25.0</td>
<td>n/a</td>
<td>0.000</td>
<td>n/a</td>
</tr>
<tr>
<td>S95T000107</td>
<td></td>
<td>DSC Exotherm using Mettler</td>
<td>Joules/g</td>
<td>n/a</td>
<td>n/a</td>
<td>105.4</td>
<td>n/a</td>
<td>86.4</td>
<td>111.3</td>
<td>98.85</td>
<td>25.2</td>
<td>n/a</td>
<td>0.000</td>
<td>n/a</td>
</tr>
</tbody>
</table>

> Limit violated
=> Selected Limit

Sample# | R# | Analyte                                | Unit     | Action Limits Lower | Upper | Standard % | Blank | Result | Duplicate | Average | RPD % | Spk Rec % | Det Limit | Count Err% |
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>S95T000102</td>
<td></td>
<td>% Water by TGA using Mettler</td>
<td>%</td>
<td>n/a</td>
<td>n/a</td>
<td>98.67</td>
<td>n/a</td>
<td>38.82</td>
<td>37.24</td>
<td>38.03</td>
<td>4.15</td>
<td>n/a</td>
<td>0.000</td>
<td>n/a</td>
</tr>
<tr>
<td>S95T000102</td>
<td></td>
<td>DSC Exotherm Dry Calculated</td>
<td>Joules/g</td>
<td>n/a</td>
<td>n/a</td>
<td>98.67</td>
<td>n/a</td>
<td>201</td>
<td>159.0</td>
<td>180.0</td>
<td>25.3</td>
<td>n/a</td>
<td>0.000</td>
<td>n/a</td>
</tr>
<tr>
<td>S95T000102</td>
<td></td>
<td>DSC Exotherm using Mettler</td>
<td>Joules/g</td>
<td>n/a</td>
<td>n/a</td>
<td>105.4</td>
<td>n/a</td>
<td>122.9</td>
<td>99.6</td>
<td>111.2</td>
<td>20.9</td>
<td>n/a</td>
<td>0.000</td>
<td>n/a</td>
</tr>
</tbody>
</table>

Sample# | R# | Analyte                                | Unit     | Action Limits Lower | Upper | Standard % | Blank | Result | Duplicate | Average | RPD % | Spk Rec % | Det Limit | Count Err% |
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>S95T000103</td>
<td></td>
<td>% Water by TGA using Mettler</td>
<td>%</td>
<td>n/a</td>
<td>n/a</td>
<td>98.56</td>
<td>n/a</td>
<td>39.94</td>
<td>40.62</td>
<td>40.28</td>
<td>1.69</td>
<td>n/a</td>
<td>0.000</td>
<td>n/a</td>
</tr>
<tr>
<td>S95T000103</td>
<td></td>
<td>DSC Exotherm Dry Calculated</td>
<td>Joules/g</td>
<td>n/a</td>
<td>n/a</td>
<td>98.56</td>
<td>n/a</td>
<td>190</td>
<td>217.0</td>
<td>203.5</td>
<td>13.3</td>
<td>n/a</td>
<td>0.000</td>
<td>n/a</td>
</tr>
<tr>
<td>S95T000103</td>
<td></td>
<td>DSC Exotherm using Mettler</td>
<td>Joules/g</td>
<td>n/a</td>
<td>n/a</td>
<td>103.0</td>
<td>n/a</td>
<td>114</td>
<td>128.9</td>
<td>121.5</td>
<td>12.3</td>
<td>n/a</td>
<td>0.000</td>
<td>n/a</td>
</tr>
</tbody>
</table>
### Table 1: 40 Day Crust Burn Safety Issue Results

**AW-101**

**CORE NUMBER:** n/a  
**SEGMENT #:** 95-AUG-004

#### SEGMENT PORTION: U Upper Half of Segment

<table>
<thead>
<tr>
<th>Sample#</th>
<th>R#</th>
<th>Analyte</th>
<th>Unit</th>
<th>Action Limits</th>
<th>Lower</th>
<th>Upper</th>
<th>Standard %</th>
<th>Blank</th>
<th>Result</th>
<th>Duplicate</th>
<th>Average</th>
<th>RPD %</th>
<th>Spk Rec %</th>
<th>Det Limit</th>
<th>Count Err %</th>
</tr>
</thead>
<tbody>
<tr>
<td>$^{9}$ST000110</td>
<td>% Water by TGA using Mettler</td>
<td>%</td>
<td>n/a</td>
<td>n/a</td>
<td>98.56</td>
<td>n/a</td>
<td>41.90</td>
<td>42.13</td>
<td>42.02</td>
<td>0.55</td>
<td>n/a</td>
<td>0.000</td>
<td>n/a</td>
<td></td>
<td></td>
</tr>
<tr>
<td>$^{9}$ST000110</td>
<td>DSC Exotherm Dry Calculated</td>
<td>Joules/g</td>
<td>n/a</td>
<td>5852.000</td>
<td>n/a</td>
<td>n/a</td>
<td>175</td>
<td>193</td>
<td>184.0</td>
<td>9.78</td>
<td>n/a</td>
<td>0.000</td>
<td>n/a</td>
<td></td>
<td></td>
</tr>
<tr>
<td>$^{9}$ST000110</td>
<td>DSC Exotherm using Mettler</td>
<td>Joules/g</td>
<td>n/a</td>
<td>103.0</td>
<td>n/a</td>
<td>103.5</td>
<td>111.6</td>
<td>106.5</td>
<td>9.48</td>
<td>n/a</td>
<td>0.000</td>
<td>n/a</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

#### SEGMENT PORTION: L Lower Half of Segment

<table>
<thead>
<tr>
<th>Sample#</th>
<th>R#</th>
<th>Analyte</th>
<th>Unit</th>
<th>Action Limits</th>
<th>Lower</th>
<th>Upper</th>
<th>Standard %</th>
<th>Blank</th>
<th>Result</th>
<th>Duplicate</th>
<th>Average</th>
<th>RPD %</th>
<th>Spk Rec %</th>
<th>Det Limit</th>
<th>Count Err %</th>
</tr>
</thead>
<tbody>
<tr>
<td>$^{9}$ST000111</td>
<td>% Water by TGA using Mettler</td>
<td>%</td>
<td>n/a</td>
<td>n/a</td>
<td>97.91</td>
<td>n/a</td>
<td>39.21</td>
<td>38.75</td>
<td>38.98</td>
<td>1.18</td>
<td>n/a</td>
<td>0.000</td>
<td>n/a</td>
<td></td>
<td></td>
</tr>
<tr>
<td>$^{9}$ST000111</td>
<td>DSC Exotherm Dry Calculated</td>
<td>Joules/g</td>
<td>n/a</td>
<td>5642.000</td>
<td>n/a</td>
<td>n/a</td>
<td>119</td>
<td>114</td>
<td>116.5</td>
<td>4.29</td>
<td>n/a</td>
<td>0.000</td>
<td>n/a</td>
<td></td>
<td></td>
</tr>
<tr>
<td>$^{9}$ST000111</td>
<td>DSC Exotherm using Mettler</td>
<td>Joules/g</td>
<td>n/a</td>
<td>104.4</td>
<td>n/a</td>
<td>72.4</td>
<td>69.8</td>
<td>71.10</td>
<td>3.66</td>
<td>n/a</td>
<td>0.000</td>
<td>n/a</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

- => Limit violated  
- => Selected Limit
**Table 1: 40 DAY CRUST BURN SAFETY ISSUE RESULTS**

**AW-101**

**CORE NUMBER:** n/a  
**SEGMENT #:** 95-AUG-005  
**SEGMENT PORTION:** U Upper Half of Segment

<table>
<thead>
<tr>
<th>Sample#</th>
<th>R#</th>
<th>Analyte</th>
<th>Unit</th>
<th>Action Limits Lower</th>
<th>Standard %</th>
<th>Blank</th>
<th>Result</th>
<th>Duplicate</th>
<th>Average</th>
<th>RPD</th>
<th>Spk Rec</th>
<th>Det Limit</th>
<th>Count Err%</th>
</tr>
</thead>
<tbody>
<tr>
<td>S95T000113</td>
<td></td>
<td>% Water by TGA using Mettler</td>
<td>%</td>
<td>n/a</td>
<td>n/a</td>
<td>97.91</td>
<td>n/a</td>
<td>31.81</td>
<td>35.80</td>
<td>35.80</td>
<td>11.8</td>
<td>n/a</td>
<td>0.000</td>
</tr>
<tr>
<td></td>
<td></td>
<td>DSC Exotherm Dry Calculated</td>
<td>Joules/g Dry</td>
<td>n/a</td>
<td>n/a</td>
<td>248</td>
<td>270</td>
<td>259.0</td>
<td>8.49</td>
<td>n/a</td>
<td>0.000</td>
<td>n/a</td>
<td>0.000</td>
</tr>
<tr>
<td>S95T000113</td>
<td></td>
<td>DSC Exotherm using Mettler</td>
<td>Joules/g</td>
<td>n/a</td>
<td>n/a</td>
<td>104.4</td>
<td>168.9</td>
<td>173.1</td>
<td>2.46</td>
<td>n/a</td>
<td>0.000</td>
<td>n/a</td>
<td>0.000</td>
</tr>
</tbody>
</table>

**SEGMENT PORTION:** L Lower Half of Segment

<table>
<thead>
<tr>
<th>Sample#</th>
<th>R#</th>
<th>Analyte</th>
<th>Unit</th>
<th>Action Limits Lower</th>
<th>Standard %</th>
<th>Blank</th>
<th>Result</th>
<th>Duplicate</th>
<th>Average</th>
<th>RPD</th>
<th>Spk Rec</th>
<th>Det Limit</th>
<th>Count Err%</th>
</tr>
</thead>
<tbody>
<tr>
<td>S95T000114</td>
<td></td>
<td>% Water by TGA using Mettler</td>
<td>%</td>
<td>n/a</td>
<td>n/a</td>
<td>99.43</td>
<td>n/a</td>
<td>42.46</td>
<td>38.13</td>
<td>40.30</td>
<td>10.7</td>
<td>n/a</td>
<td>0.000</td>
</tr>
<tr>
<td></td>
<td></td>
<td>DSC Exotherm Dry Calculated</td>
<td>Joules/g Dry</td>
<td>n/a</td>
<td>n/a</td>
<td>177</td>
<td>162</td>
<td>169.5</td>
<td>8.85</td>
<td>n/a</td>
<td>0.000</td>
<td>n/a</td>
<td>0.000</td>
</tr>
<tr>
<td>S95T000114</td>
<td></td>
<td>DSC Exotherm using Mettler</td>
<td>Joules/g</td>
<td>n/a</td>
<td>n/a</td>
<td>102.6</td>
<td>101.8</td>
<td>100.1</td>
<td>1.68</td>
<td>n/a</td>
<td>0.000</td>
<td>n/a</td>
<td>0.000</td>
</tr>
</tbody>
</table>

---

**Action Limits**

- **=>** Limit violated  
- **==** Selected Limit
## Table 2: Additional Calculated Results for Tank 241-AW-101
Crust Burn Flammable Gas Safety Issue

### 95-AUG-001 Riser 13A

<table>
<thead>
<tr>
<th>Sample #</th>
<th>Segment Portion</th>
<th>Net Exothermic Energy (Joules/g Dry)</th>
<th>Net Exothermic Energy (Joules/g)</th>
<th>Net Endothermic Energy (Joules/g)</th>
<th>Total Energy (Joules/g)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Notification Limit</td>
<td>586.0</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>S95T000107</td>
<td>Facie (Crust)</td>
<td>147.0</td>
<td>86.40</td>
<td>1285</td>
<td>-1198</td>
</tr>
<tr>
<td>S95T000102</td>
<td>Upper half sludge</td>
<td>201.0</td>
<td>122.9</td>
<td>1129</td>
<td>-1006</td>
</tr>
<tr>
<td>S95T000103</td>
<td>Lower half sludge</td>
<td>190.0</td>
<td>114.0</td>
<td>842.1</td>
<td>-728.1</td>
</tr>
</tbody>
</table>

### 95-AUG-004 Riser 12A

<table>
<thead>
<tr>
<th>Sample #</th>
<th>Segment Portion</th>
<th>Net Exothermic Energy (Joules/g Dry)</th>
<th>Net Exothermic Energy (Joules/g)</th>
<th>Net Endothermic Energy (Joules/g)</th>
<th>Total Energy (Joules/g)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Notification Limit</td>
<td>586.0</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>S95T000110</td>
<td>Upper half sludge</td>
<td>175.0</td>
<td>101.5</td>
<td>1095</td>
<td>-993.4</td>
</tr>
<tr>
<td>S95T000111</td>
<td>Lower half sludge</td>
<td>119.0</td>
<td>72.40</td>
<td>999.2</td>
<td>-926.8</td>
</tr>
</tbody>
</table>

### 95-AUG-005 Riser 24B

<table>
<thead>
<tr>
<th>Sample #</th>
<th>Segment Portion</th>
<th>Net Exothermic Energy (Joules/g Dry)</th>
<th>Net Exothermic Energy (Joules/g)</th>
<th>Net Endothermic Energy (Joules/g)</th>
<th>Total Energy (Joules/g)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Notification Limit</td>
<td>586.0</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>S95T000113</td>
<td>Upper half sludge</td>
<td>248.0</td>
<td>168.9</td>
<td>976.6</td>
<td>-807.7</td>
</tr>
<tr>
<td>S95T000114</td>
<td>Lower half sludge</td>
<td>177.0</td>
<td>101.8</td>
<td>974.8</td>
<td>-873.0</td>
</tr>
</tbody>
</table>
LABCORE Data Entry Template for Worklist# 583

Worklist Comment: Calculated AW-101 dry DSC. bdv

<table>
<thead>
<tr>
<th>Seg</th>
<th>Type</th>
<th>Sample#</th>
<th>Rep</th>
<th>Al</th>
<th>Test</th>
<th>Matrix</th>
<th>DSC</th>
<th>TAA</th>
<th>DSC_dry</th>
<th>Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>S95T000107</td>
<td>0</td>
<td></td>
<td>DSC-02</td>
<td>SOLID</td>
<td>86.4</td>
<td>41.33</td>
<td>147</td>
<td>Joule</td>
</tr>
<tr>
<td>2</td>
<td>DUP</td>
<td>S95T000107</td>
<td>0</td>
<td></td>
<td>DSC-02</td>
<td>SOLID</td>
<td>111.3</td>
<td>41.01</td>
<td>189</td>
<td>Joule</td>
</tr>
<tr>
<td>3</td>
<td>SAMPLE</td>
<td>S95T000102</td>
<td>0</td>
<td></td>
<td>DSC-02</td>
<td>SOLID</td>
<td>122.9</td>
<td>38.82</td>
<td>201</td>
<td>Joule</td>
</tr>
<tr>
<td>4</td>
<td>DUP</td>
<td>S95T000102</td>
<td>0</td>
<td></td>
<td>DSC-02</td>
<td>SOLID</td>
<td>99.6</td>
<td>37.24</td>
<td>159</td>
<td>Joule</td>
</tr>
<tr>
<td>5</td>
<td>SAMPLE</td>
<td>S95T000103</td>
<td>0</td>
<td></td>
<td>DSC-02</td>
<td>SOLID</td>
<td>114.0</td>
<td>39.94</td>
<td>190</td>
<td>Joule</td>
</tr>
<tr>
<td>6</td>
<td>DUP</td>
<td>S95T000103</td>
<td>0</td>
<td></td>
<td>DSC-02</td>
<td>SOLID</td>
<td>128.9</td>
<td>40.62</td>
<td>217</td>
<td>Joule</td>
</tr>
<tr>
<td>7</td>
<td>SAMPLE</td>
<td>S95T000110</td>
<td>0</td>
<td></td>
<td>DSC-02</td>
<td>SOLID</td>
<td>101.5</td>
<td>41.90</td>
<td>175</td>
<td>Joule</td>
</tr>
<tr>
<td>8</td>
<td>DUP</td>
<td>S95T000110</td>
<td>0</td>
<td></td>
<td>DSC-02</td>
<td>SOLID</td>
<td>111.6</td>
<td>42.13</td>
<td>193</td>
<td>Joule</td>
</tr>
<tr>
<td>9</td>
<td>SAMPLE</td>
<td>S95T000111</td>
<td>0</td>
<td></td>
<td>DSC-02</td>
<td>SOLID</td>
<td>72.4</td>
<td>39.21</td>
<td>119</td>
<td>Joule</td>
</tr>
<tr>
<td>10</td>
<td>DUP</td>
<td>S95T000111</td>
<td>0</td>
<td></td>
<td>DSC-02</td>
<td>SOLID</td>
<td>69.8</td>
<td>38.75</td>
<td>114</td>
<td>Joule</td>
</tr>
<tr>
<td>11</td>
<td>SAMPLE</td>
<td>S95T000113</td>
<td>0</td>
<td></td>
<td>DSC-02</td>
<td>SOLID</td>
<td>168.9</td>
<td>31.81</td>
<td>248</td>
<td>Joule</td>
</tr>
<tr>
<td>12</td>
<td>DUP</td>
<td>S95T000113</td>
<td>0</td>
<td></td>
<td>DSC-02</td>
<td>SOLID</td>
<td>173.1</td>
<td>35.80</td>
<td>270</td>
<td>Joule</td>
</tr>
<tr>
<td>13</td>
<td>SAMPLE</td>
<td>S95T000114</td>
<td>0</td>
<td></td>
<td>DSC-02</td>
<td>SOLID</td>
<td>101.8</td>
<td>42.46</td>
<td>177</td>
<td>Joule</td>
</tr>
<tr>
<td>14</td>
<td>DUP</td>
<td>S95T000114</td>
<td>0</td>
<td></td>
<td>DSC-02</td>
<td>SOLID</td>
<td>100.1</td>
<td>41.77</td>
<td>162</td>
<td>Joule</td>
</tr>
</tbody>
</table>

Final page for worklist # 583

Data Entry Comments:

2-27-95

Entered + Verified by

Blandina Valenzuela

WHC-SD-WM-DP-097, REV. 0

Units shown for QC (SPK) may not reflect the actual units.
LABCORE Data Entry Template for Worklist# 538

Analyst: [WS]  
Instrument: DSC01  
Method: LA-514-113  

Worklist Comment: Please run AW-101 DSC UNDER AIR. bdv

<table>
<thead>
<tr>
<th>Seg</th>
<th>Type</th>
<th>Sample#</th>
<th>Rep Al</th>
<th>Test</th>
<th>Matrix</th>
<th>Actual</th>
<th>Found</th>
<th>DL</th>
<th>Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>STD</td>
<td>12W14A</td>
<td>DSC-01</td>
<td>SOLID</td>
<td></td>
<td>28.45</td>
<td>30.0</td>
<td>N/A</td>
<td>Joule*</td>
</tr>
<tr>
<td>2</td>
<td>SAMPLE</td>
<td>S95T000107</td>
<td>0</td>
<td>DSC-01</td>
<td>SOLID</td>
<td>N/A</td>
<td>86.4</td>
<td></td>
<td>Joule*</td>
</tr>
<tr>
<td>3</td>
<td>DUP</td>
<td>S95T000107</td>
<td>0</td>
<td>DSC-01</td>
<td>SOLID</td>
<td>86.4</td>
<td>0</td>
<td>N/A</td>
<td>Joule*</td>
</tr>
<tr>
<td>4</td>
<td>STD</td>
<td></td>
<td>DSC-01</td>
<td>SOLID</td>
<td></td>
<td>28.45</td>
<td>29.7</td>
<td>N/A</td>
<td>Joule*</td>
</tr>
<tr>
<td>5</td>
<td>DUP2</td>
<td>S95T000107</td>
<td>0</td>
<td>DSC-01</td>
<td>SOLID</td>
<td>86.4</td>
<td>11.3</td>
<td>N/A</td>
<td>Joule*</td>
</tr>
<tr>
<td>6</td>
<td>SAMPLE</td>
<td>S95T000102</td>
<td>0</td>
<td>DSC-01</td>
<td>SOLID</td>
<td>N/A</td>
<td>14.7</td>
<td></td>
<td>Joule*</td>
</tr>
<tr>
<td>7</td>
<td>DUP</td>
<td>S95T000102</td>
<td>0</td>
<td>DSC-01</td>
<td>SOLID</td>
<td>14.7</td>
<td>13.1</td>
<td>N/A</td>
<td>Joule*</td>
</tr>
</tbody>
</table>

Final page for worklist # 538

See attached page for signatures

Data entered and verified by Blandina Valenguelas

Date: 2-13-95

Data Entry Comments: S95T000107 produced an endotherm at 132°C with a delta H of 1284.6 J/g. S95T000102 produced an endotherm at 130°C with a delta H of 1129.2 J/g; the sample also had 2 other exotherms one at 315.7°C with a delta H of 30.5 J/g and the other at 431.6°C with a delta H of 77.7 J/g.
LABCORE Data Entry Template for Worklist# 538

Analyst: ~dw~ Instrument: DSC01 Method: LA-514-113 - B - 1

Worklist Comment: Please run AW-101 DSC UNDER AIR. bdv  WHC-SD-WM-DR-097, REV. 0

<table>
<thead>
<tr>
<th>Seg Type</th>
<th>Sample#</th>
<th>Rep Al</th>
<th>Test</th>
<th>Matrix</th>
<th>Actual</th>
<th>Found</th>
<th>DL</th>
<th>Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 STD</td>
<td>WHC-SD-WM-DP497, REV. 0</td>
<td></td>
<td>DSC-01</td>
<td>SOLID</td>
<td>88.45</td>
<td>30.0</td>
<td>N/A</td>
<td>Joule</td>
</tr>
<tr>
<td>2 SAMPLE</td>
<td>S95T000107</td>
<td>0</td>
<td>DSC-01</td>
<td>SOLID</td>
<td>N/A</td>
<td>86.4</td>
<td>N/A</td>
<td>Joule</td>
</tr>
<tr>
<td>3 DUP</td>
<td>S95T000107</td>
<td>0</td>
<td>DSC-01</td>
<td>SOLID</td>
<td>86.4</td>
<td></td>
<td>N/A</td>
<td>Joule</td>
</tr>
<tr>
<td>4 SAMPLE</td>
<td>S95T000102</td>
<td>0</td>
<td>DSC-01</td>
<td>SOLID</td>
<td>N/A</td>
<td></td>
<td>N/A</td>
<td>Joule</td>
</tr>
<tr>
<td>5 DUP</td>
<td>S95T000102</td>
<td>0</td>
<td>DSC-01</td>
<td>SOLID</td>
<td></td>
<td></td>
<td>N/A</td>
<td>Joule</td>
</tr>
</tbody>
</table>

Final page for worklist # 538

Analyst Signature: ~dw~

Date: 2-12-95

Data Entry Comments:

Units shown for QC (SPK) may not reflect the actual units.

Page: 1
DSC STD 12NH4A
6.465 mg

Rate: 10.0 °C/min

Integration
Delta H 194 mJ
30.0 J/g
Peak 158.6 °C
-14.5 mW

File: 00035.001
Ident: 0.0

DSC METTLER 12-Feb-95
222-S Laboratory

14 mW
10.

120.  140.  160.  180. °C

Signature below represents chemical technologist/chemist that
completed/verified the calibration/analysis on pages 14 to 20

David W. Smith 2-12-95
S95T000107 (DUP2) AIR
19.481 mg
Rate: 10.0 °C/min

Integration
Delta H 2168 mJ
111.3 J/g
Peak 325.7°C
4.8 mW

Integration
Delta H 20986 mJ
1077.3 J/g
Peak 132.7°C
-55.4 mW

BEST AVAILABLE COPY

WHC-SD-WM-DP-0097, REV. 0
LABCORE Data Entry Template for Worklist# 539

Analyst: [Signature]
Instrument: DSC01
Method: LA-514-113

Worklist Comment: Please run AW-101 UNDER AIR.

<table>
<thead>
<tr>
<th>Seg</th>
<th>Type</th>
<th>Sample#</th>
<th>Rep Al</th>
<th>Test</th>
<th>Matrix</th>
<th>Actual</th>
<th>Found</th>
<th>DL</th>
<th>Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>STD</td>
<td>[2N]4A</td>
<td>DSC-01</td>
<td>SOLID</td>
<td>28.45</td>
<td>29.3</td>
<td>N/A</td>
<td>Joule*</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>SAMPLE</td>
<td>S95T000103</td>
<td>0</td>
<td>DSC-01</td>
<td>SOLID</td>
<td>N/A</td>
<td>114.0</td>
<td>Joule*</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>DUP</td>
<td>S95T000103</td>
<td>0</td>
<td>DSC-01</td>
<td>SOLID</td>
<td>114.0</td>
<td>128.9</td>
<td>N/A</td>
<td>Joule*</td>
</tr>
<tr>
<td>4</td>
<td>SAMPLE</td>
<td>S95T000110</td>
<td>0</td>
<td>DSC-01</td>
<td>SOLID</td>
<td>N/A</td>
<td>101.5</td>
<td>Joule*</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>DUP</td>
<td>S95T000110</td>
<td>0</td>
<td>DSC-01</td>
<td>SOLID</td>
<td>101.5</td>
<td>111.6</td>
<td>N/A</td>
<td>Joule*</td>
</tr>
</tbody>
</table>

Final page for worklist # 539

S95T000110 produced one endotherm at 135°C with a delta H of 104.9 J/g. S95T000103 produced one endotherm at 131°C with a delta H of 101.5 J/g. 842.1 J/g.

Units shown for QC (SPK) may not reflect the actual units.
Integration
Delta H 189 mJ
29.3 J/g
Peak 158.7°C
-13.7 mW
Integration
Delta H = 1600 mJ
114.0 J/g
Peak = 315.6°C
4.3 mW

Integration
Delta H = 15364 mJ
1094.9 J/g
Peak = 135.4°C
-37.8 mW

Rate: 10.0 °C/min
Ident: 0.0
222-S Laboratory

BEST AVAILABLE COPY
S95T000110 (DUP) AIR
16.651 mg
Rate: 10.0 °C/min
Ident: 0.0
222-S Laboratory

File: 00053.001 DSC METTLER 13-Feb-95

Integration
Delta H 99 mJ
5.9 J/g
Peak 231.1°C
-1.8 mW

Integration
Delta H 2146 mJ
128.9 J/g
Peak 321.7°C
6.4 mW

Integration
Delta H 16539 mJ
993.3 J/g
Peak 141.0°C
-44.6 mW

BEST AVAILABLE COPY
Integration
Delta H 1682 mJ
101.5 J/g
Peak 251.4°C
4.1 mW

BEST AVAILABLE COPY

Integration
Delta H 13956 mJ
842.1 J/g
Peak 131.6°C
-34.3 mW
LABCORE Data Entry Template for Worklist# 540

**Analyst:** DWS  **Instrument:** DSC01  **Method:** LA-514-113 B-1

**Worklist Comment:** Please run AW-101 UNDER AIR. bdv

<table>
<thead>
<tr>
<th>Seg</th>
<th>Type</th>
<th>Sample#</th>
<th>Rep</th>
<th>Test</th>
<th>Matrix</th>
<th>Actual</th>
<th>Found</th>
<th>DL</th>
<th>Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>STD</td>
<td>12N14-A</td>
<td></td>
<td>DSC-01</td>
<td>SOLID</td>
<td>28.45</td>
<td>29.7</td>
<td>N/A</td>
<td>Joule*</td>
</tr>
<tr>
<td>2</td>
<td>SAMPLE</td>
<td>S95T000111</td>
<td>0</td>
<td>DSC-01</td>
<td>SOLID</td>
<td>N/A</td>
<td>72.4</td>
<td></td>
<td>Joule*</td>
</tr>
<tr>
<td>3</td>
<td>DUP</td>
<td>S95T000111</td>
<td>0</td>
<td>DSC-01</td>
<td>SOLID</td>
<td>72.4</td>
<td>69.8</td>
<td>N/A</td>
<td>Joule*</td>
</tr>
<tr>
<td>4</td>
<td>SAMPLE</td>
<td>S95T000113</td>
<td>0</td>
<td>DSC-01</td>
<td>SOLID</td>
<td>N/A</td>
<td>163.9</td>
<td></td>
<td>Joule*</td>
</tr>
<tr>
<td>5</td>
<td>STD</td>
<td>12N14-A</td>
<td></td>
<td>DSC-01</td>
<td>SOLID</td>
<td>28.45</td>
<td>28.6</td>
<td>N/A</td>
<td>Joule*</td>
</tr>
<tr>
<td>6</td>
<td>DUP</td>
<td>S95T000113</td>
<td>0</td>
<td>DSC-01</td>
<td>SOLID</td>
<td>163.9</td>
<td>173.1</td>
<td>N/A</td>
<td>Joule*</td>
</tr>
</tbody>
</table>

* units = Joules/g

Data Entry Comments: S95T000111 produced two endotherms, one at 137.2°C with a delta H of 978.7 J/g, and the second at 233.0°C with a delta H of 20.5 J/g. S95T000113 produced an endotherm at 135.2°C.

Units shown for QC (SPK) may not reflect the actual units. with a delta H of 976.6 J/g

Final page for worklist # 540

Signed by Blandina Valenzuela on 2/21/95

Date 2/22/95

2/24/95

Page: 1
LABCORE Data Entry Template for Worklist# 540

Analyst: [Signature] Instrument: DSC01 Method: LA-514-113

Worklist Comment: Please run AW-101 UNDER AIR. bdv

<table>
<thead>
<tr>
<th>Seg Type</th>
<th>Sample#</th>
<th>Rep Al</th>
<th>Test</th>
<th>Matrix</th>
<th>Actual</th>
<th>Found</th>
<th>DL</th>
<th>Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 STD</td>
<td>12N14-A</td>
<td>0</td>
<td>DSC-01</td>
<td>SOLID</td>
<td></td>
<td></td>
<td></td>
<td>N/A</td>
</tr>
<tr>
<td>2 SAMPLE</td>
<td>S95T000111</td>
<td>0</td>
<td>DSC-01</td>
<td>SOLID</td>
<td>N/A</td>
<td></td>
<td></td>
<td>N/A</td>
</tr>
<tr>
<td>3 DUP</td>
<td>S95T000111</td>
<td>0</td>
<td>DSC-01</td>
<td>SOLID</td>
<td></td>
<td></td>
<td></td>
<td>N/A</td>
</tr>
<tr>
<td>4 SAMPLE</td>
<td>S95T000113</td>
<td>0</td>
<td>DSC-01</td>
<td>SOLID</td>
<td>N/A</td>
<td></td>
<td></td>
<td>N/A</td>
</tr>
<tr>
<td>5 DUP</td>
<td>S95T000113</td>
<td>0</td>
<td>DSC-01</td>
<td>SOLID</td>
<td></td>
<td></td>
<td></td>
<td>N/A</td>
</tr>
</tbody>
</table>

Final page for worklist # 540

Analyst Signature

Date: 2-18-95

Data Entry Comments:

Units shown for QC (SPK) may not reflect the actual units.
Integration
Delta H 192 mJ
29.7 J/g
Peak 158.5°C
-14.0 mW
Integration
Delta H 340 mJ
20.5 J/g
Peak 233.0°C
-4.6 mW

Integration
Delta H 16269 mJ
978.7 J/g
Peak 137.2°C
-39.5 mW

Integration
Delta H 1204 mJ
72.4 J/g
Peak 319.7°C
3.8 mW
Integration
Delta H 621 mJ
31.0 J/g
Peak 232.8°C
-7.5 mW

Integration
Delta H 19251 mJ
961.5 J/g
Peak 134.6°C
-48.0 mW

BEST AVAILABLE COPY
Integration
Delta H 2897 mJ
976.6 J/g
Peak 321.7°C
5.2 mW

Integration
Delta H 16756 mJ
975.6 J/g
Peak 135.2°C
-40.3 mW
DSC STD 12N14-A
6.465 mg
Rate: 10.0 °C/min

Integration
Delta H 185 mJ
28.6 J/g
Peak 158.9°C
-13.5 mW

File: 00083.001 DSC METTLER 19-Feb-95
Ident: 0.0 222-S Laboratory

3.3

10. mW

120. 140. 160. 180. °C
Integration
Delta H 4260 mJ
173.1 J/g
Peak 321.9°C
8.7 mW

Integration
Delta H 25665 mJ
1043.1 J/g
Peak 131.6°C
-70.9 mW
LABCORE Data Entry Template for Worklist# 541


Worklist Comment: Please run AW-101 UNDER AIR. bdv

<table>
<thead>
<tr>
<th>Seq</th>
<th>Type</th>
<th>Sample#</th>
<th>Rep</th>
<th>Test</th>
<th>Matrix</th>
<th>Actual</th>
<th>Found</th>
<th>DL</th>
<th>Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>STD</td>
<td>12N14A</td>
<td>0</td>
<td>DSC-01</td>
<td>SOLID</td>
<td>28.45</td>
<td>29.2</td>
<td>N/A</td>
<td>Joule*</td>
</tr>
<tr>
<td>2</td>
<td>SAMPLE</td>
<td>S95T000114</td>
<td>0</td>
<td>DSC-01</td>
<td>SOLID</td>
<td>N/A</td>
<td>101.8</td>
<td></td>
<td>Joule*</td>
</tr>
<tr>
<td>3</td>
<td>DUP</td>
<td>S95T000114</td>
<td>0</td>
<td>DSC-01</td>
<td>SOLID</td>
<td>101.8</td>
<td>100.1</td>
<td>N/A</td>
<td>Joule*</td>
</tr>
</tbody>
</table>

Final page for worklist # 541

Analyst Signature: [Signature]
Date: 2-13-95
Verified by Blandina O. Valenguela: 2-20-95
2-21-95

*units = Joules/g

Data Entry Comments: S95T000114 produced two endotherms one at 130.3°C with a delta H of 956.8 J/g and the second 18.0 J/g at 235.2°C.

Units shown for QC (SPK) may not reflect the actual units.
DSC STD 12N14A
5.465 mg

Rate: 10.0 °C/min
Ident: 0.0

BEST AVAILABLE COPY

Integration
Delta H 189 mJ
29.2 J/g
Peak 158.7 °C
-12.7 mJ

SIGNATURE BELOW REPRESENTS CHEMICAL TECHNOLOGIST/CHEMIST THAT COMPLETED/VERIFIED THE CALIBRATION/ANALYSIS ON PAGES 36 TO 38.

Susie M. Hallon
2/22/95
S95T000114 AIR
11.416 mg
Rate: 10.0 °C/min
Ident: 0.0
222-S Laboratory

Integration
Delta H 205 mJ
18.0 J/g
Peak 235.2°C
-2.5 mW

Integration
Delta H 1167 mJ
101.8 J/g
Peak 325.6°C
3.9 mW

Integration
Delta H10922 mJ
956.8 J/g
Peak 130.3°C
-21.4 mW

BEST AVAILABLE COPY
In -3" EiOZ m

Integration
Delta H 438 mJ
23.0 J/g
Peak 235.0°C
-5.6 mW

Integration
Delta H 16695 mJ
876.9 J/g
Peak 137.2°C
-40.0 mW

BEST AVAILABLE COPY
LABCORE Data Entry Template for Worklist# 547


Worklist Comment: Please run AW-101 TGA UNDER AIR. bdv  WHC-SD-WM-DP-097, REV. 0

<table>
<thead>
<tr>
<th>Seg Type</th>
<th>Sample#</th>
<th>Rep Al</th>
<th>Test</th>
<th>Matrix</th>
<th>Actual</th>
<th>Found</th>
<th>DL</th>
<th>Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 STD</td>
<td>42N8-A</td>
<td>0</td>
<td>TGA-01</td>
<td>SOLID</td>
<td>59.19</td>
<td>57.75</td>
<td>N/A</td>
<td>%</td>
</tr>
<tr>
<td>2 SAMPLE</td>
<td>S95T000111</td>
<td>0</td>
<td>TGA-01</td>
<td>SOLID</td>
<td>N/A</td>
<td>39.21</td>
<td></td>
<td>%</td>
</tr>
<tr>
<td>3 DUP</td>
<td>S95T000111</td>
<td>0</td>
<td>TGA-01</td>
<td>SOLID</td>
<td>39.21</td>
<td>38.75</td>
<td>N/A</td>
<td>%</td>
</tr>
<tr>
<td>4 SAMPLE</td>
<td>S95T000113</td>
<td>0</td>
<td>TGA-01</td>
<td>SOLID</td>
<td>N/A</td>
<td>31.81</td>
<td></td>
<td>%</td>
</tr>
<tr>
<td>5 STD</td>
<td>42N8-A</td>
<td>0</td>
<td>TGA-01</td>
<td>SOLID</td>
<td>59.19</td>
<td>57.95</td>
<td>N/A</td>
<td>%</td>
</tr>
<tr>
<td>6 DUP</td>
<td>S95T000113</td>
<td>0</td>
<td>TGA-01</td>
<td>SOLID</td>
<td>31.81</td>
<td>35.80</td>
<td>N/A</td>
<td>%</td>
</tr>
</tbody>
</table>

Final page for worklist # 547

Data Entry Comments:

Units shown for QC (SPK) may not reflect the actual units.

Page: 1
### LABCORE Data Entry Template for Worklist# 547

**Analyst:**

**Instrument:** TGA01  
**Method:** LA-560-112

**Worklist Comment:** Please run AW-101 TGA UNDER AIR.

<table>
<thead>
<tr>
<th>Seg</th>
<th>Type</th>
<th>Sample#</th>
<th>Rep Al</th>
<th>Test</th>
<th>Matrix</th>
<th>Actual</th>
<th>Found</th>
<th>DL</th>
<th>Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>STD</td>
<td>42W8-17</td>
<td></td>
<td>TGA-01</td>
<td>SOLID</td>
<td></td>
<td></td>
<td></td>
<td>%</td>
</tr>
<tr>
<td>2</td>
<td>SAMPLE</td>
<td>S95T000111</td>
<td>0</td>
<td>TGA-01</td>
<td>SOLID</td>
<td>N/A</td>
<td></td>
<td></td>
<td>%</td>
</tr>
<tr>
<td>3</td>
<td>DUP</td>
<td>S95T000111</td>
<td>0</td>
<td>TGA-01</td>
<td>SOLID</td>
<td></td>
<td>N/A</td>
<td></td>
<td>%</td>
</tr>
<tr>
<td>4</td>
<td>SAMPLE</td>
<td>S95T000113</td>
<td>0</td>
<td>TGA-01</td>
<td>SOLID</td>
<td>N/A</td>
<td></td>
<td></td>
<td>%</td>
</tr>
<tr>
<td>5</td>
<td>DUP</td>
<td>S95T000113</td>
<td>0</td>
<td>TGA-01</td>
<td>SOLID</td>
<td></td>
<td>N/A</td>
<td></td>
<td>%</td>
</tr>
</tbody>
</table>

---

**Final page for worklist # 547**

**Analyst Signature:**

**Date:** 2-18-95

**WHC-SD-WM-DP-097, REV. 0**

---

**Data Entry Comments:**

---

*Units shown for QC (SPK) may not reflect the actual units.*
Step Analysis
Height -9.58 mg
-57.75 %
Residue 7.01 mg
42.25 %
Dpeak 83.0°C
Step Analysis
Height -8.19 mg
-39.21 %
ResiC. 12.70 mg
60.79 %
Dpeak 105.0 °C
S95T000111 (DUP) AIR
25.585 mg
Rate: 10.0 °C/min
Ident: 0.0

Step Analysis
Height -9.91 mg
-38.75 %
ResiC. 15.67 mg
61.25 %
Dpeak 111.0 °C
TGA STD 42N8-A

15.459 mg

Rate: 10.0 °C/min

Step Analysis

Height -8.96 mg
-57.95 %

ResiC. 6.50 mg
42.05 %

Dpeak 79.0 °C

File: 00084.001 TG METTLER 18-Feb-95

Ident: 0.0 222-S Laboratory

©2023 Datapaq, Inc.
**LABCORE Data Entry Template for Worklist # 545**

**Analyst:** DWS  
**Instrument:** TGA01  
**Method:** LA-560-112-0 A-2  
**Worklist Comment:** Please run AW-101 TGA UNDER AIR. bdv  
**WHC-SD-WM-DP-097, REV. 0**  

<table>
<thead>
<tr>
<th>Seg Type</th>
<th>Sample#</th>
<th>Rep Al</th>
<th>Test</th>
<th>Matrix</th>
<th>Actual</th>
<th>Found</th>
<th>DL</th>
<th>Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 STD</td>
<td>4208A</td>
<td>0</td>
<td>TGA-01</td>
<td>SOLID</td>
<td>59.19</td>
<td>58.40</td>
<td>N/A</td>
<td>%</td>
</tr>
<tr>
<td>2 SAMPLE</td>
<td>S95T000107</td>
<td>0</td>
<td>TGA-01</td>
<td>SOLID</td>
<td>N/A</td>
<td>41.33</td>
<td>%</td>
<td></td>
</tr>
<tr>
<td>3 DUP</td>
<td>S95T000107</td>
<td>0</td>
<td>TGA-01</td>
<td>SOLID</td>
<td>41.33</td>
<td>41.01</td>
<td>N/A</td>
<td>%</td>
</tr>
<tr>
<td>4 SAMPLE</td>
<td>S95T000102</td>
<td>0</td>
<td>TGA-01</td>
<td>SOLID</td>
<td>N/A</td>
<td>38.82</td>
<td>%</td>
<td></td>
</tr>
<tr>
<td>5 DUP</td>
<td>S95T000102</td>
<td>0</td>
<td>TGA-01</td>
<td>SOLID</td>
<td>38.82</td>
<td>37.24</td>
<td>N/A</td>
<td>%</td>
</tr>
</tbody>
</table>

**Final page for worklist # 545**

Data Entry Comments:

---

Units shown for QC (SPK) may not reflect the actual units.
Step Analysis
Height: 10.96 mg
-58.40 %
ResiC: 7.81 mg
41.60 %
Dpeak: 90.3°C
S9T000107 AIR
19.243 mg  Rate: 10.0 °C/min  File: 00036.001  TG METTLER  12-Feb-95
Ident: 0.0  222-S Laboratory

Step Analysis
Height -7.95 mg
   -41.33 %
ResiC. 11.29 mg
   58.67 %
Dpeak 105.0°C
Step Analysis
Height -8.32 mg
-41.01 %
Resid. 11.97 mg
58.99 %
Dpeak 109.0°C
Step Analysis
Height -7.48 mg
-37.24 %
Residue 12.61 mg
62.76 %
LABCORE Data Entry Template for Worklist# 546


Worklist Comment: Please run AW-I01 TGA UNDER AIR. bdv

<table>
<thead>
<tr>
<th>Seg Type</th>
<th>Sample#</th>
<th>Rep Al</th>
<th>Test</th>
<th>Matrix</th>
<th>Actual</th>
<th>Found</th>
<th>DL</th>
<th>Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 STD</td>
<td>42N8-A</td>
<td></td>
<td>TGA-01</td>
<td>SOLID</td>
<td>59.19</td>
<td>58.34</td>
<td>N/A</td>
<td>%</td>
</tr>
<tr>
<td>2 SAMPLE</td>
<td>S95T000103</td>
<td>0</td>
<td>TGA-01</td>
<td>SOLID</td>
<td>N/A</td>
<td>39.94</td>
<td>%</td>
<td></td>
</tr>
<tr>
<td>3 DUP</td>
<td>S95T000103</td>
<td>0</td>
<td>TGA-01</td>
<td>SOLID</td>
<td>39.94</td>
<td>40.62</td>
<td>N/A</td>
<td>%</td>
</tr>
<tr>
<td>4 SAMPLE</td>
<td>S95T000110</td>
<td>0</td>
<td>TGA-01</td>
<td>SOLID</td>
<td>N/A</td>
<td>41.90</td>
<td>%</td>
<td></td>
</tr>
<tr>
<td>5 DUP</td>
<td>S95T000110</td>
<td>0</td>
<td>TGA-01</td>
<td>SOLID</td>
<td>42.13</td>
<td>42.13</td>
<td>N/A</td>
<td>%</td>
</tr>
</tbody>
</table>

Final page for worklist # 546

Analyst Signature: Susan M. Fulton

Date: 2-12-95

Verified by Blandina D. Valenzuela

WHC-SD-WM-DP-097, REV. 0

Data Entry Comments:

Units shown for QC (SPK) may not reflect the actual units.
TGA STD 42N8-A
15.357 mg
Rate: 10.0 °C/min
Ident: 0.0
222-S Laboratory

BEST AVAILABLE COPY

Step Analysis
Height -8.96 mg
-58.34 %
ResiC. 6.40 mg
41.66 %
Dpeak 80.0°C

Signature below represents chemical technologist/chemist that completed/verified the calibration/analysis on pages 54 to 58.

Susie M. Fulton
2/13/95
Step Analysis
Height: -4.21 mg
-39.94%
Residue: 6.33 mg
60.06%
Dpeak: 93.0°C

S95T000103 AIR
10.541 mg
Rate: 10.0 °C/min
Ident: 0.0
222-S Laboratory

File: 00048.001 TG METTLER 12-Feb-95
Step Analysis
Height: -9.02 mg
-40.62%
Residue: 13.18 mg
59.38%
D peak: 127.0°C
S95T000110 AIR
7.301 mg

Rate: 10.0 °C/min

Step Analysis
Height -3.06 mg
-41.90 %
Residue 4.24 mg
58.10 %
Dpeak 75.0°C

File: 00052.001 TG METTLER 12-Feb-95
Ident: 0.0 222-S Laboratory
Step Analysis
Height: -8.38 mg
-42.13 %
Residual: 11.51 mg
57.87 %
Peak Temperature: 97.0°C
LABCORE Data Entry Template for Worklist# 548


Worklist Comment: Please run AW-101 TGA UNDER AIR. bdv

<table>
<thead>
<tr>
<th>Seg</th>
<th>Type</th>
<th>Sample#</th>
<th>Rep</th>
<th>Al</th>
<th>Test</th>
<th>Matrix</th>
<th>Actual</th>
<th>Found</th>
<th>DL</th>
<th>Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>STD</td>
<td>42N8-A</td>
<td>0</td>
<td></td>
<td>TGA-01</td>
<td>SOLID</td>
<td>59.19</td>
<td>58.85</td>
<td>N/A</td>
<td>%</td>
</tr>
<tr>
<td>2</td>
<td>SAMPLE</td>
<td>S95T000114</td>
<td>0</td>
<td></td>
<td>TGA-01</td>
<td>SOLID</td>
<td>N/A</td>
<td>42.46</td>
<td></td>
<td>%</td>
</tr>
<tr>
<td>3</td>
<td>DUP</td>
<td>S95T000114</td>
<td>0</td>
<td></td>
<td>TGA-01</td>
<td>SOLID</td>
<td>42.46</td>
<td>38.13</td>
<td>N/A</td>
<td>%</td>
</tr>
<tr>
<td>4</td>
<td>DUP2</td>
<td>S95T000114</td>
<td>0</td>
<td></td>
<td>TGA-01</td>
<td>SOLID</td>
<td>42.46</td>
<td>41.77</td>
<td>N/A</td>
<td>%</td>
</tr>
</tbody>
</table>

Final page for worklist # 548

See attached for signature

Analyst Signature

Verified by Blandina O. Valenzuela

Date: 2-14-95

2-20-95

2-21-95

---

Data Entry Comments:

---

Units shown for QC (SPK) may not reflect the actual units.
LABCORE Data Entry Template for Worklist# 548

Analyst: [Signature]  Instrument: TGA01  Method: LA-560-112

Worklist Comment: Please run AW-101 TGA UNDER AIR. bdv

<table>
<thead>
<tr>
<th>Seg Type</th>
<th>Sample#</th>
<th>Rep Al</th>
<th>Test</th>
<th>Matrix</th>
<th>Actual</th>
<th>Found</th>
<th>DL</th>
<th>Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 STD</td>
<td>TGA-01</td>
<td></td>
<td>SOLID</td>
<td></td>
<td>N/A</td>
<td>%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2 SAMPLE</td>
<td>S95T000114</td>
<td>0</td>
<td>TGA-01</td>
<td>SOLID</td>
<td>N/A</td>
<td>%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3 DUP</td>
<td>S95T000114</td>
<td>0</td>
<td>TGA-01</td>
<td>SOLID</td>
<td></td>
<td>N/A</td>
<td>%</td>
<td></td>
</tr>
</tbody>
</table>

Final page for worklist # 548

[Signature]  Date: 2-13-95

Data Entry Comments:

Units shown for QC (SPK) may not reflect the actual units.
TGA STD 42NBA

16.259 mg

Rate: 10.0 °C/min

Ident: 0.0

222-S Laboratory

Step Analysis
Height -9.57 mg
-58.85 %
Resic. 6.69 mg
41.15 %
Dpeak 85.0°C

Signature below represents Chemical Technologist/Chemist that completed/verified the calibration/analysis on pages 61 to 64.

File: 00060.001 TG METTLER 13-Feb-95

Susie M. Fulton
2/14/95 BNV
Step Analysis
Height -3.11 mg
-38.13 %
ResiC. 5.15 mg
63.20 %
Dpeak 91.0°C
Step Analysis
Height -5.06 mg
-41.77 %
ResiC. 7.27 mg
60.00 %
Dpeak 93.0°C