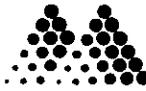


Analytical Report

H0129-T/W



Mountain States Analytical, Inc.

The Quality Solution

0049510

RECRA Enviromental, Inc.
208 Welsh Pool Road
Lionville, PA 19341

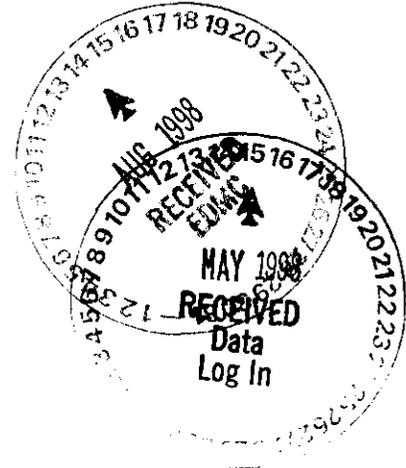
Attn: Mr. Kyle Clay
Project: TNU Hanford 10985-001-001-9999-00

MSAI Sample: 78468
MSAI Group: 21973
Date Reported: 04/23/98
Discard Date: 05/23/98
Date Submitted: 04/17/98
Date Sampled: 01/07/98
Collected by:
Purchase Order:
Project No.:

Sample ID: BOMJK8
Matrix: Solid Waste

Test Analysis	Results as Received	Units	Limit of Quantitation
9887 Grain Size, ASTM, sw Method: ASTM D-421-85/422-63	See Comment		(1)

- (1) 3 inch = 100 %
- 2 inch = 100 %
- 1 1/2 inch = 100 %
- 1 inch = 79.6 %
- 3/4 inch = 70.6 %
- 3/8 inch = 48.2 %
- No. 4 = 34.6 %
- No. 10 = 22.9 %
- No. 40 = 11.7 %
- No. 200 = 5.9 %



ND - Not detected at the Limit of Quantitation.

This report consists of the following items: A cover letter, a signed analytical report for each sample specified on the cover letter, and if applicable, an inorganic quality control summary. Organic sample reports contain footnotes which describe any quality control anomalies which may have occurred.

Respectfully Submitted,
Reviewed and Approved by:

W. Scott Fraser

W. Scott Fraser
Project Manager

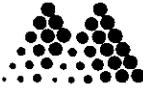
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6223 Bayonne, Spring, Texas 77389
281-320-2842 • FAX 281-320-0989
e-mail: gbrewer@msailabs.com



Analytical Report



Mountain States Analytical, Inc.

The Quality Solution

RECRA Enviromental, Inc.
208 Welsh Pool Road
Lionville, PA 19341

Attn: Mr. Kyle Clay
Project: TNU Hanford 10985-001-001-9999-00

MSAI Sample: 78469
MSAI Group: 21973
Date Reported: 04/23/98
Discard Date: 05/23/98
Date Submitted: 04/17/98
Date Sampled: 12/30/97
Collected by:
Purchase Order:
Project No.:

Sample ID: BOMJDO
Matrix: Solid Waste

Test Analysis	Results as Received	Units	Limit of Quantitation
9887 Grain Size, ASTM, sw Method: ASTM D-421-85/422-63	See Comment		(1)
(1) 3 inch = 100 %			
2 inch = 100 %			
1 1/2 inch = 100 %			
1 inch = 96.0 %			
3/4 inch = 93.4 %			
3/8 inch = 74.4 %			
No. 4 = 62.3 %			
No. 10 = 44.4 %			
No. 40 = 14.9 %			
No. 200 = 5.1 %			

ND - Not detected at the Limit of Quantitation.

This report consists of the following items: A cover letter, a signed analytical report for each sample specified on the cover letter, and if applicable, an inorganic quality control summary. Organic sample reports contain footnotes which describe any quality control anomalies which may have occurred.

Respectfully Submitted,
Reviewed and Approved by:

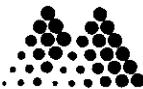
W. Scott Fraser
Project Manager

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e-mail: gbrewer@msailabs.com





Mountain States Analytical, Inc.

The Quality Solution

RECRA Enviromental, Inc.
208 Welsh Pool Road
Lionville, PA 19341

Attn: Mr. Kyle Clay
Project: TNU Hanford 10985-001-001-9999-00

MSAI Sample: 78470
MSAI Group: 21973
Date Reported: 04/23/98
Discard Date: 05/23/98
Date Submitted: 04/17/98
Date Sampled: 12/29/97
Collected by:
Purchase Order:
Project No.:

Sample ID: BOMJD4
Matrix: Solid Waste

Test Analysis	Results as Received	Units	Limit of Quantitation
9887 Grain Size, ASTM, sw Method: ASTM D-421-85/422-63	See Comment		(1)

(1) 3 inch	= 100 %
2 inch	= 100 %
1 1/2 inch	= 100 %
1 inch	= 83.9 %
3/4 inch	= 80.1 %
3/8 inch	= 70.2 %
No. 4	= 64.2 %
No. 10	= 55.8 %
No. 40	= 42.2 %
No. 200	= 16.8 %

ND - Not detected at the Limit of Quantitation.

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Respectfully Submitted,
Reviewed and Approved by:

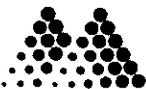
W. Scott Fraser
Project Manager

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e-mail: gbrewer@msailabs.com





Mountain States Analytical, Inc.

The Quality Solution

RECRA Enviromental, Inc.
208 Welsh Pool Road
Lionville, PA 19341

Attn: Mr. Kyle Clay
Project: TNU Hanford 10985-001-001-9999-00

MSAI Sample: 78471
MSAI Group: 21973
Date Reported: 04/23/98
Discard Date: 05/23/98
Date Submitted: 04/17/98
Date Sampled: 12/30/97
Collected by:
Purchase Order:
Project No.:

Sample ID: BOMJD6
Matrix: Solid Waste

Test Analysis	Results as Received	Units	Limit of Quantitation
9887 Grain Size, ASTM, sw Method: ASTM D-421-85/422-63	See Comment		(1)

- (1) 3 inch = 100 %
- 2 inch = 100 %
- 1 1/2 inch = 100 %
- 1 inch = 94.9 %
- 3/4 inch = 92.5 %
- 3/8 inch = 73.0 %
- No. 4 = 50.1 %
- No. 10 = 30.3 %
- No. 40 = 4.7 %
- No. 200 = 1.7 %

ND - Not detected at the Limit of Quantitation.

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Respectfully Submitted,
Reviewed and Approved by:

W. Scott Fraser
Project Manager



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RECRA Enviromental, Inc.
208 Welsh Pool Road
Lionville, PA 19341

Attn: Mr. Kyle Clay
Project: TNU Hanford 10985-001-001-9999-00

MSAI Sample: 78472
MSAI Group: 21973
Date Reported: 04/23/98
Discard Date: 05/23/98
Date Submitted: 04/17/98
Date Sampled: 12/31/97
Collected by:
Purchase Order:
Project No.:

Sample ID: BOMJD9
Matrix: Solid Waste

Test Analysis	Results as Received	Units	Limit of Quantitation
9887 Grain Size, ASTM, sw Method: ASTM D-421-85/422-63	See Comment		(1)
(1) 3 inch = 100 %			
2 inch = 100 %			
1 1/2 inch = 100 %			
1 inch = 87.4 %			
3/4 inch = 79.3 %			
3/8 inch = 67.5 %			
No. 4 = 56.7 %			
No. 10 = 35.5 %			
No. 40 = 6.7 %			
No. 200 = 1.9 %			

ND - Not detected at the Limit of Quantitation.

This report consists of the following items: A cover letter, a signed analytical report for each sample specified on the cover letter, and if applicable, an inorganic quality control summary. Organic sample reports contain footnotes which describe any quality control anomalies which may have occurred.

Respectfully Submitted,
Reviewed and Approved by:

W. Scott Fraser
Project Manager

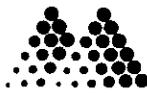
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RECRA Enviromental, Inc.
208 Welsh Pool Road
Lionville, PA 19341

Attn: Mr. Kyle Clay
Project: TNU Hanford 10985-001-001-9999-00

MSAI Sample: 78473
MSAI Group: 21973
Date Reported: 04/23/98
Discard Date: 05/23/98
Date Submitted: 04/17/98
Date Sampled: 12/31/97
Collected by:
Purchase Order:
Project No.:

Sample ID: BOMJF5
Matrix: Solid Waste

Test	Analysis	Results as Received	Units	Limit of Quantitation
9887	Grain Size, ASTM, sw Method: ASTM D-421-85/422-63	See Comment		(1)
(1)	3 inch = 100 %			
	2 inch = 100 %			
	1 1/2 inch = 100 %			
	1 inch = 100 %			
	3/4 inch = 100 %			
	3/8 inch = 99.0 %			
	No. 4 = 97.4 %			
	No. 10 = 94.1 %			
	No. 40 = 53.7 %			
	No. 200 = 16.5 %			

ND - Not detected at the Limit of Quantitation.

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Respectfully Submitted,
Reviewed and Approved by:

W. Scott Fraser
Project Manager

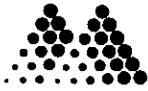
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Analytical Report



Mountain States Analytical, Inc.

The Quality Solution

RECRA Enviromental, Inc.
208 Welsh Pool Road
Lionville, PA 19341

Attn: Mr. Kyle Clay
Project: TNU Hanford 10985-001-001-9999-00

MSAI Sample: 78474
MSAI Group: 21973
Date Reported: 04/23/98
Discard Date: 05/23/98
Date Submitted: 04/17/98
Date Sampled: 12/31/97
Collected by:
Purchase Order:
Project No.:

Sample ID: BOMJJ3
Matrix: Solid Waste

Test	Analysis	Results as Received	Units	Limit of Quantitation
9887	Grain Size, ASTM, sw Method: ASTM D-421-85/422-63	See Comment		(1)

(1) 3 inch = 100 %
2 inch = 100 %
1 1/2 inch = 100 %
1 inch = 100 %
3/4 inch = 100 %
3/8 inch = 99.3 %
No. 4 = 98.9 %
No. 10 = 97.5 %
No. 40 = 13.9 %
No. 200 = 2.7 %

ND - Not detected at the Limit of Quantitation.

This report consists of the following items: A cover letter, a signed analytical report for each sample specified on the cover letter, and if applicable, an inorganic quality control summary. Organic sample reports contain footnotes which describe any quality control anomalies which may have occurred.

Respectfully Submitted,
Reviewed and Approved by:

W. Scott Fraser
Project Manager

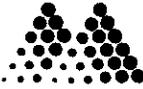
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Analytical Report



Mountain States Analytical, Inc.

The Quality Solution

RECRA Enviromental, Inc.
208 Welsh Pool Road
Lionville, PA 19341

Attn: Mr. Kyle Clay
Project: TNU Hanford 10985-001-001-9999-00

MSAI Sample: 78475
MSAI Group: 21973
Date Reported: 04/23/98
Discard Date: 05/23/98
Date Submitted: 04/17/98
Date Sampled: 12/31/97
Collected by:
Purchase Order:
Project No.:

Sample ID: BOMJJ6
Matrix: Solid Waste

Test Analysis	Results as Received	Units	Limit of Quantitation
9887 Grain Size, ASTM, sw Method: ASTM D-421-85/422-63	See Comment		(1)

(1) 3 inch = 100 %
2 inch = 100 %
1 1/2 inch = 100 %
1 inch = 100 %
3/4 inch = 100 %
3/8 inch = 100 %
No. 4 = 100 %
No. 10 = 98.1 %
No. 40 = 18.7 %
No. 200 = 3.0 %

ND - Not detected at the Limit of Quantitation.

This report consists of the following items: A cover letter, a signed analytical report for each sample specified on the cover letter, and if applicable, an inorganic quality control summary. Organic sample reports contain footnotes which describe any quality control anomalies which may have occurred.

Respectfully Submitted,
Reviewed and Approved by:

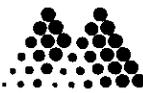
W. Scott Fraser
Project Manager

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e-mail: gbrewer@msailabs.com





Mountain States Analytical, Inc.

The Quality Solution

RECRA Enviromental, Inc.
208 Welsh Pool Road
Lionville, PA 19341

Attn: Mr. Kyle Clay
Project: TNU Hanford 10985-001-001-9999-00

MSAI Sample: 78476
MSAI Group: 21973
Date Reported: 04/23/98
Discard Date: 05/23/98
Date Submitted: 04/17/98
Date Sampled: 01/02/98
Collected by:
Purchase Order:
Project No.:

Sample ID: BOMJF8
Matrix: Solid Waste

Test Analysis	Results as Received	Units	Limit of Quantitation
9887 Grain Size, ASTM, sw Method: ASTM D-421-85/422-63	See Comment		(1)

(1)

3 inch	= 100 %
2 inch	= 100 %
1 1/2 inch	= 100 %
1 inch	= 100 %
3/4 inch	= 100 %
3/8 inch	= 100 %
No. 4	= 100 %
No. 10	= 96.8 %
No. 40	= 43.8 %
No. 200	= 5.2 %

ND - Not detected at the Limit of Quantitation.

This report consists of the following items: A cover letter, a signed analytical report for each sample specified on the cover letter, and if applicable, an inorganic quality control summary. Organic sample reports contain footnotes which describe any quality control anomalies which may have occurred.

Respectfully Submitted,
Reviewed and Approved by:

W. Scott Fraser
Project Manager

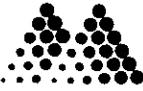
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Analytical Report



Mountain States Analytical, Inc.

The Quality Solution

RECRA Enviromental, Inc.
208 Welsh Pool Road
Lionville, PA 19341

Attn: Mr. Kyle Clay
Project: TNU Hanford 10985-001-001-9999-00

MSAI Sample: 78477
MSAI Group: 21973
Date Reported: 04/23/98
Discard Date: 05/23/98
Date Submitted: 04/17/98
Date Sampled: 01/03/98
Collected by:
Purchase Order:
Project No.:

Sample ID: BOMJH1
Matrix: Solid Waste

Test Analysis	Results as Received	Units	Limit of Quantitation
9887 Grain Size, ASTM, sw Method: ASTM D-421-85/422-63	See Comment		(1)

(1) 3 inch = 100 %
2 inch = 100 %
1 1/2 inch = 100 %
1 inch = 100 %
3/4 inch = 100 %
3/8 inch = 100 %
No. 4 = 95.5 %
No. 10 = 87.6 %
No. 40 = 37.7 %
No. 200 = 6.0 %

ND - Not detected at the Limit of Quantitation.

This report consists of the following items: A cover letter, a signed analytical report for each sample specified on the cover letter, and if applicable, an inorganic quality control summary. Organic sample reports contain footnotes which describe any quality control anomalies which may have occurred.

Respectfully Submitted,
Reviewed and Approved by:

W. Scott Fraser
Project Manager

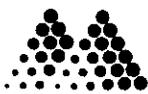
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e-mail: gbrewer@msailabs.com



Analytical Report



Mountain States Analytical, Inc.

The Quality Solution

RECRA Enviromental, Inc.
208 Welsh Pool Road
Lionville, PA 19341

Attn: Mr. Kyle Clay
Project: TNU Hanford 10985-001-001-9999-00

MSAI Sample: 78478
MSAI Group: 21973
Date Reported: 04/23/98
Discard Date: 05/23/98
Date Submitted: 04/17/98
Date Sampled: 01/05/98
Collected by:
Purchase Order:
Project No.:

Sample ID: BOMJK2
Matrix: Solid Waste

Test Analysis	Results as Received	Units	Limit of Quantitation
9887 Grain Size, ASTM, sw Method: ASTM D-421-85/422-63	See Comment		(1)

(1) 3 inch = 100 %
2 inch = 100 %
1 1/2 inch = 100 %
1 inch = 100 %
3/4 inch = 100 %
3/8 inch = 100 %
No. 4 = 100 %
No. 10 = 98.6 %
No. 40 = 55.3 %
No. 200 = 14.9 %

ND - Not detected at the Limit of Quantitation.

This report consists of the following items: A cover letter, a signed analytical report for each sample specified on the cover letter, and if applicable, an inorganic quality control summary. Organic sample reports contain footnotes which describe any quality control anomalies which may have occurred.

Respectfully Submitted,
Reviewed and Approved by:

W. Scott Fraser
Project Manager

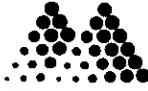
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Analytical Report



Mountain States Analytical, Inc.

The Quality Solution

RECRA Enviromental, Inc.
208 Welsh Pool Road
Lionville, PA 19341

Attn: Mr. Kyle Clay
Project: TNU Hanford 10985-001-001-9999-00

MSAI Sample: 78479
MSAI Group: 21973
Date Reported: 04/23/98
Discard Date: 05/23/98
Date Submitted: 04/17/98
Date Sampled: 01/05/98
Collected by:
Purchase Order:
Project No.:

Sample ID: BOMJK5
Matrix: Solid Waste

Test Analysis	Results as Received	Units	Limit of Quantitation
9887 Grain Size, ASTM, sw Method: ASTM D-421-85/422-63	See Comment		(1)

- (1) 3 inch = 100 %
2 inch = 100 %
1 1/2 inch = 100 %
1 inch = 100 %
3/4 inch = 100 %
3/8 inch = 100 %
No. 4 = 100 %
No. 10 = 96.8 %
No. 40 = 50.0 %
No. 200 = 16.4 %

ND - Not detected at the Limit of Quantitation.

This report consists of the following items: A cover letter, a signed analytical report for each sample specified on the cover letter, and if applicable, an inorganic quality control summary. Organic sample reports contain footnotes which describe any quality control anomalies which may have occurred.

Respectfully Submitted,
Reviewed and Approved by:

W. Scott Fraser
Project Manager

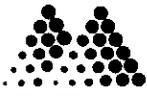
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Analytical Report



Mountain States Analytical, Inc.

The Quality Solution

RECRA Enviromental, Inc.
208 Welsh Pool Road
Lionville, PA 19341

Attn: Mr. Kyle Clay
Project: TNU Hanford 10985-001-001-9999-00

MSAI Sample: 78480
MSAI Group: 21973
Date Reported: 04/23/98
Discard Date: 05/23/98
Date Submitted: 04/17/98
Date Sampled: 01/05/98
Collected by:
Purchase Order:
Project No.:

Sample ID: BOMJJ9
Matrix: Solid Waste

Test	Analysis	Results as Received	Units	Limit of Quantitation
9887	Grain Size, ASTM, sw Method: ASTM D-421-85/422-63	See Comment		(1)
(1)	3 inch	= 100 %		
	2 inch	= 100 %		
	1 1/2 inch	= 100 %		
	1 inch	= 100 %		
	3/4 inch	= 100 %		
	3/8 inch	= 100 %		
	No. 4	= 100 %		
	No. 10	= 96.4 %		
	No. 40	= 26.0 %		
	No. 200	= 6.0 %		

ND - Not detected at the Limit of Quantitation.

This report consists of the following items: A cover letter, a signed analytical report for each sample specified on the cover letter, and if applicable, an inorganic quality control summary. Organic sample reports contain footnotes which describe any quality control anomalies which may have occurred.

Respectfully Submitted,
Reviewed and Approved by:

W. Scott Fraser
Project Manager

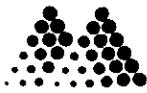
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Southwest States Region
6223 Bayonne, Spring, Texas 77389
281-320-2842 • FAX 281-320-0989
e-mail: gbrewer@msailabs.com



Analytical Report



Mountain States Analytical, Inc.

The Quality Solution

RECRA Environmental, Inc.
208 Welsh Pool Road
Lionville, PA 19341

Attn: Mr. Kyle Clay
Project: TNU Hanford 10985-001-001-9999-00

MSAI Sample: 78481
MSAI Group: 21973
Date Reported: 04/23/98
Discard Date: 05/23/98
Date Submitted: 04/17/98
Date Sampled: 12/30/97
Collected by:
Purchase Order:
Project No.:

Sample ID: BOMJD3
Matrix: Solid Waste

Test Analysis	Results as Received	Units	Limit of Quantitation
9887 Grain Size, ASTM, sw Method: ASTM D-421-85/422-63	See Comment		(1)
(1) 3 inch	= 100 %		
2 inch	= 100 %		
1 1/2 inch	= 100 %		
1 inch	= 87.0 %		
3/4 inch	= 77.5 %		
3/8 inch	= 61.4 %		
No. 4	= 50.2 %		
No. 10	= 32.8 %		
No. 40	= 8.7 %		
No. 200	= 3.0 %		

ND - Not detected at the Limit of Quantitation.

This report consists of the following items: A cover letter, a signed analytical report for each sample specified on the cover letter, and if applicable, an inorganic quality control summary. Organic sample reports contain footnotes which describe any quality control anomalies which may have occurred.

Respectfully Submitted,
Reviewed and Approved by:

W. Scott Fraser
Project Manager

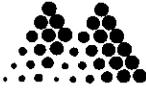
10
Years of
Quality
Service

Corporate Office
1645 West 2200 South, Salt Lake City, Utah 84119
801-973-0050 • 1-800-973-6724(MSAI) • FAX 801-972-6278
e-mail: service@msailabs.com

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Analytical Report



Mountain States Analytical, Inc.

The Quality Solution

RECRA Enviromental, Inc.
208 Welsh Pool Road
Lionville, PA 19341

Attn: Mr. Kyle Clay
Project: TNU Hanford 10985-001-001-9999-00

MSAI Sample: 78482
MSAI Group: 21973
Date Reported: 04/23/98
Discard Date: 05/23/98
Date Submitted: 04/17/98
Date Sampled: 12/29/97
Collected by:
Purchase Order:
Project No.:

Sample ID: BOMJC7
Matrix: Solid Waste

Test Analysis	Results as Received	Units	Limit of Quantitation
9887 Grain Size, ASTM, sw Method: ASTM D-421-85/422-63	See Comment		(1)

(1)

3 inch	= 100 %
2 inch	= 100 %
1 1/2 inch	= 100 %
1 inch	= 88.7 %
3/4 inch	= 82.4 %
3/8 inch	= 77.0 %
No. 4	= 74.0 %
No. 10	= 70.5 %
No. 40	= 35.0 %
No. 200	= 9.2 %

ND - Not detected at the Limit of Quantitation.

This report consists of the following items: A cover letter, a signed analytical report for each sample specified on the cover letter, and if applicable, an inorganic quality control summary. Organic sample reports contain footnotes which describe any quality control anomalies which may have occurred.

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Reviewed and Approved by:

W. Scott Fraser
Project Manager

10
Years of
Quality
Service

Corporate Office
1645 West 2200 South, Salt Lake City, Utah 84119
801-973-0050 • 1-800-973-6724(MSAI) • FAX 801-972-6278
e-mail: service@msailabs.com

Southwest States Region
6223 Bayonne, Spring, Texas 77389
281-320-2842 • FAX 281-320-0989
e-mail: gbrewer@msailabs.com



Mountain States Analytical, Inc.

GRADATION
ASTM Method: D-421/D422
MSAI Method: 9887

Date: 4-21-98
Time: 1300
Analyst: 124 RCB

Sample ID: 21973-78468

<u>Sieve Size</u>	<u>Passing Weight</u>	<u>Percentage Passing</u>
Starting Sample Wt.	<u>1625.0</u>	
3-inch	<u>1625.0</u>	<u>100.0</u>
2-inch	<u>1625.0</u>	<u>100.0</u>
1 1/2-inch	<u>1625.0</u>	<u>100.0</u>
1-inch	<u>1293.9</u>	<u>79.6</u>
3/4-inch	<u>1151.3</u>	<u>70.8</u>
3/8-inch	<u>783.0</u>	<u>48.2</u>
No. 4 (4.75mm)	<u>562.8</u>	<u>34.6</u>
No. 10 (2.0mm)	<u>372.5</u>	<u>22.9</u>
No. 40 (425um)	<u>189.7</u>	<u>11.7</u>
No. 200 (75um)	<u>95.9</u>	<u>5.9</u>

Data Entered By: [Signature] Date: 4-22-98
Validated By: [Signature] Date: 04/22/98

Mountain States Analytical, Inc.

GRADATION
ASTM Method: D-421/D422
MSAI Method: 9887

Date: 4-21-98
Time: 1300
Analyst: 1247203

Sample ID: 21973-78469

<u>Sieve Size</u>	<u>Passing Weight</u>	<u>Percentage Passing</u>
Starting Sample Wt.	<u>1420.1</u>	
3-inch	<u>1420.1</u>	<u>100.0</u>
2-inch	<u>1420.1</u>	<u>100.0</u>
1 1/2-inch	<u>1420.1</u>	<u>100.0</u>
1-inch	<u>1364.0</u>	<u>96.0</u>
3/4-inch	<u>1326.7</u>	<u>93.4</u>
3/8-inch	<u>1057.1</u>	<u>74.4</u>
No. 4 (4.75mm)	<u>884.8</u>	<u>62.3</u>
No. 10 (2.0mm)	<u>630.9</u>	<u>44.4</u>
No. 40 (425um)	<u>212.2</u>	<u>14.9</u>
No. 200 (75um)	<u>72.1</u>	<u>5.1</u>

Data Entered By: [Signature] Date: 4-22-98
Validated By: [Signature] Date: 04/22/98

Mountain States Analytical, Inc.

GRADATION
ASTM Method: D-421/D422
MSAI Method: 9887

Date: 4-21-98
Time: 1300
Analyst: 124 RLB

Sample ID: 21973-78470

<u>Sieve Size</u>	<u>Passing Weight</u>	<u>Percentage Passing</u>
Starting Sample Wt.	<u>1055.4</u>	
3-inch	<u>1055.4</u>	<u>100.0</u>
2-inch	<u>1055.4</u>	<u>100.0</u>
1 1/2-inch	<u>1055.4</u>	<u>100.0</u>
1-inch	<u>885.8</u>	<u>83.9</u>
3/4-inch	<u>844.9</u>	<u>80.1</u>
3/8-inch	<u>741.4</u>	<u>70.2</u>
No. 4 (4.75mm)	<u>677.1</u>	<u>64.2</u>
No. 10 (2.0mm)	<u>589.4</u>	<u>55.8</u>
No. 40 (425um)	<u>445.0</u>	<u>42.2</u>
No. 200 (75um)	<u>176.9</u>	<u>16.8</u>

Data Entered By: [Signature]
Validated By: [Signature]

Date: 4-22-98
Date: 09/22/98

Mountain States Analytical, Inc.

GRADATION
ASTM Method: D-421/D422
MSAI Method: 9887

Date: 4-21-98
Time: 1300
Analyst: 124 RD3

Sample ID: 21973-78471

<u>Sieve Size</u>	<u>Passing Weight</u>	<u>Percentage Passing</u>
Starting Sample Wt.	<u>1748.3</u>	
3-inch	<u>1748.3</u>	<u>100.0</u>
2-inch	<u>1748.3</u>	<u>100.0</u>
1 1/2-inch	<u>1748.3</u>	<u>100.0</u>
1-inch	<u>1658.7</u>	<u>94.9</u>
3/4-inch	<u>1617.9</u>	<u>92.5</u>
3/8-inch	<u>1275.8</u>	<u>73.0</u>
No. 4 (4.75mm)	<u>876.1</u>	<u>50.1</u>
No. 10 (2.0mm)	<u>529.2</u>	<u>30.3</u>
No. 40 (425um)	<u>82.4</u>	<u>4.7</u>
No. 200 (75um)	<u>30.5</u>	<u>1.7</u>

Data Entered By: [Signature] Date: 4-22-98
Validated By: [Signature] Date: 04/25/98

Mountain States Analytical, Inc.

GRADATION
ASTM Method: D-421/D422
MSAI Method: 9887

Date: 4-21-98
Time: 1300
Analyst: 124 RLB

Sample ID: 21973-78472

<u>Sieve Size</u>	<u>Passing Weight</u>	<u>Percentage Passing</u>
Starting Sample Wt.	<u>1427.6</u>	
3-inch	<u>1427.6</u>	<u>100.0</u>
2-inch	<u>1427.6</u>	<u>100.0</u>
1 1/2-inch	<u>1427.6</u>	<u>100.0</u>
1-inch	<u>1247.2</u>	<u>87.4</u>
3/4-inch	<u>1132.4</u>	<u>79.3</u>
3/8-inch	<u>963.5</u>	<u>67.5</u>
No. 4 (4.75mm)	<u>809.4</u>	<u>56.7</u>
No. 10 (2.0mm)	<u>506.7</u>	<u>35.5</u>
No. 40 (425um)	<u>95.4</u>	<u>6.7</u>
No. 200 (75um)	<u>26.9</u>	<u>1.9</u>

Data Entered By: [Signature] Date: 4-22-98
Validated By: [Signature] Date: 04/22/98

Mountain States Analytical, Inc.

GRADATION
ASTM Method: D-421/D422
MSAI Method: 9887

Date: 4-21-98
Time: 1300
Analyst: 124 RB

Sample ID: 21973.78473

<u>Sieve Size</u>	<u>Passing Weight</u>	<u>Percentage Passing</u>
Starting Sample Wt.	<u>1071.9</u>	
3-inch	<u>1071.9</u>	<u>100.0</u>
2-inch	<u>1071.9</u>	<u>100.0</u>
1 1/2-inch	<u>1071.9</u>	<u>100.0</u>
1-inch	<u>1071.9</u>	<u>100.0</u>
3/4-inch	<u>1071.9</u>	<u>100.0</u>
3/8-inch	<u>1060.7</u>	<u>99.0</u>
No. 4 (4.75mm)	<u>1044.4</u>	<u>97.4</u>
No. 10 (2.0mm)	<u>1008.6</u>	<u>94.1</u>
No. 40 (425um)	<u>575.9</u>	<u>53.7</u>
No. 200 (75um)	<u>176.8</u>	<u>16.5</u>

Data Entered By: [Signature] Date: 4-22-98
Validated By: [Signature] Date: 04/22/98

Mountain States Analytical, Inc.

GRADATION
ASTM Method: D-421/D422
MSAI Method: 9887

Date: 4-21-98
Time: 1300
Analyst: 124 RLB

Sample ID: 21973-78474

<u>Sieve Size</u>	<u>Passing Weight</u>	<u>Percentage Passing</u>
Starting Sample Wt.	<u>511.7</u>	
3-inch	<u>511.7</u>	<u>100.0</u>
2-inch	<u>511.7</u>	<u>100.0</u>
1 1/2-inch	<u>511.7</u>	<u>100.0</u>
1-inch	<u>511.7</u>	<u>100.0</u>
3/4-inch	<u>511.7</u>	<u>100.0</u>
3/8-inch	<u>507.9</u>	<u>99.3</u>
No. 4 (4.75mm)	<u>506.1</u>	<u>98.9</u>
No. 10 (2.0mm)	<u>499.1</u>	<u>97.5</u>
No. 40 (425um)	<u>71.0</u>	<u>13.9</u>
No. 200 (75um)	<u>13.8</u>	<u>2.7</u>

Data Entered By: [Signature] Date: 4-22-98
Validated By: [Signature] Date: 04/22/98

Mountain States Analytical, Inc.

GRADATION
ASTM Method: D-421/D422
MSAI Method: 9887

Date: 4-21-98
Time: 1300
Analyst: 124 RQ3

Sample ID: 21973-78475

<u>Sieve Size</u>	<u>Passing Weight</u>	<u>Percentage Passing</u>
Starting Sample Wt.	<u>304.9</u>	
3-inch	<u>304.9</u>	<u>100.0</u>
2-inch	<u>304.9</u>	<u>100.0</u>
1 1/2-inch	<u>304.9</u>	<u>100.0</u>
1-inch	<u>304.9</u>	<u>100.0</u>
3/4-inch	<u>304.9</u>	<u>100.0</u>
3/8-inch	<u>304.9</u>	<u>100.0</u>
No. 4 (4.75mm)	<u>304.9</u>	<u>100.0</u>
No. 10 (2.0mm)	<u>299.0</u>	<u>98.1</u>
No. 40 (425um)	<u>57.0</u>	<u>18.7</u>
No. 200 (75um)	<u>9.2</u>	<u>3.0</u>

Data Entered By:

[Signature]

Date:

4-22-98

Validated By:

[Signature]

Date:

04/22/98

Mountain States Analytical, Inc.

GRADATION

ASTM Method: D-421/D422

MSAI Method: 9887

Sample ID: 21973-78476

Date:

4-21-98

Time:

1300

Analyst:

124 R03

**Sieve
Size**

**Passing
Weight**

**Percentage
Passing**

Starting Sample Wt.

324.6

3-inch

324.6

100.0

2-inch

324.6

100.0

1 1/2-inch

324.6

100.0

1-inch

324.6

100.0

3/4-inch

324.6

100.0

3/8-inch

324.6

100.0

No. 4 (4.75mm)

324.6

100.0

No. 10 (2.0mm)

314.1

96.8

No. 40 (425um)

142.1

43.8

No. 200 (75um)

16.8

5.2

Data Entered By:

[Signature]

Date:

4-22-98

Validated By:

[Signature]

Date:

04/22/98

Mountain States Analytical, Inc.

GRADATION
ASTM Method: D-421/D422
MSAI Method: 9887

Date: 4-21-98
Time: 1300
Analyst: 124 R23

Sample ID: 21973-78477

<u>Sieve Size</u>	<u>Passing Weight</u>	<u>Percentage Passing</u>
Starting Sample Wt.	<u>299.2</u>	
3-inch	<u>299.2</u>	<u>100.0</u>
2-inch	<u>299.2</u>	<u>100.0</u>
1 1/2-inch	<u>299.2</u>	<u>100.0</u>
1-inch	<u>299.2</u>	<u>100.0</u>
3/4-inch	<u>299.2</u>	<u>100.0</u>
3/8-inch	<u>299.2</u>	<u>100.0</u>
No. 4 (4.75mm)	<u>285.6</u>	<u>95.5</u>
No. 10 (2.0mm)	<u>262.1</u>	<u>87.6</u>
No. 40 (425um)	<u>112.9</u>	<u>37.7</u>
No. 200 (75um)	<u>18.0</u>	<u>6.0</u>

Data Entered By: [Signature] Date: 4-22-98
Validated By: [Signature] Date: 04/22/98

Mountain States Analytical, Inc.

GRADATION
ASTM Method: D-421/D422
MSAI Method: 9887

Date: 4-21-98
Time: 1300
Analyst: 124 RLB

Sample ID: 21973-78478

<u>Sieve Size</u>	<u>Passing Weight</u>	<u>Percentage Passing</u>
Starting Sample Wt.	<u>331.1</u>	
3-inch	<u>331.1</u>	<u>100.0</u>
2-inch	<u>331.1</u>	<u>100.0</u>
1 1/2-inch	<u>331.1</u>	<u>100.0</u>
1-inch	<u>331.1</u>	<u>100.0</u>
3/4-inch	<u>331.1</u>	<u>100.0</u>
3/8-inch	<u>331.1</u>	<u>100.0</u>
No. 4 (4.75mm)	<u>331.1</u>	<u>100.0</u>
No. 10 (2.0mm)	<u>326.6</u>	<u>98.6</u>
No. 40 (425um)	<u>183.2</u>	<u>55.3</u>
No. 200 (75um)	<u>49.3</u>	<u>14.9</u>

Data Entered By: [Signature]
Validated By: [Signature]

Date: 4-22-98
Date: 04/22/98

Mountain States Analytical, Inc.

GRADATION

ASTM Method: D-421/D422

MSAI Method: 9887

Sample ID: 21973-78479

Date:

4-21-98

Time:

1300

Analyst:

124 Kelly

**Sieve
Size**

**Passing
Weight**

**Percentage
Passing**

Starting Sample Wt.

333.1

3-inch

333.1

100.0

2-inch

333.1

100.0

1 1/2-inch

333.1

100.0

1-inch

333.1

100.0

3/4-inch

333.1

100.0

3/8-inch

333.1

100.0

No. 4 (4.75mm)

333.1

100.0

No. 10 (2.0mm)

322.4

96.8

No. 40 (425um)

166.4

50.0

No. 200 (75um)

54.6

16.4

Data Entered By:

[Signature]

Date:

4-22-98

Validated By:

[Signature]

Date:

04/22/98

Mountain States Analytical, Inc.

GRADATION

ASTM Method: D-421/D422

MSAI Method: 9887

Sample ID: 21973-78480

Date: 4-21-98
Time: 1300
Analyst: 124 RBZ

<u>Sieve Size</u>	<u>Passing Weight</u>	<u>Percentage Passing</u>
Starting Sample Wt.	<u>327.1</u>	
3-inch	<u>327.1</u>	<u>100.0</u>
2-inch	<u>327.1</u>	<u>100.0</u>
1 1/2-inch	<u>327.1</u>	<u>100.0</u>
1-inch	<u>327.1</u>	<u>100.0</u>
3/4-inch	<u>327.1</u>	<u>100.0</u>
3/8-inch	<u>327.1</u>	<u>100.0</u>
No. 4 (4.75mm)	<u>327.1</u>	<u>100.0</u>
No. 10 (2.0mm)	<u>315.4</u>	<u>96.4</u>
No. 40 (425um)	<u>85.2</u>	<u>26.0</u>
No. 200 (75um)	<u>19.7</u>	<u>6.0</u>

Data Entered By: [Signature] Date: 4-22-98
Validated By: [Signature] Date: 04/22/98

Mountain States Analytical, Inc.

GRADATION

ASTM Method: D-421/D422

MSAI Method: 9887

Sample ID: 21973-78481

Date:

4-21-98

Time:

1300

Analyst:

124 RLB

**Sieve
Size**

**Passing
Weight**

**Percentage
Passing**

Starting Sample Wt.

1461.9

3-inch

1461.9

100.0

2-inch

1461.9

100.0

1 1/2-inch

1461.9

100.0

1-inch

1271.2

87.0

3/4-inch

1132.8

77.5

3/8-inch

898.0

61.4

No. 4 (4.75mm)

733.7

50.2

No. 10 (2.0mm)

479.7

32.8

No. 40 (425um)

126.7

8.7

No. 200 (75um)

44.3

3.0

Data Entered By:

[Signature]

Date:

4-22-98

Validated By:

[Signature]

Date:

04/22/98

Mountain States Analytical, Inc.

GRADATION
 ASTM Method: D-421/D422
 MSAI Method: 9887

Date: 4-21-98
 Time: 1300
 Analyst: 124 RLS

Sample ID: 21973-78482

<u>Sieve Size</u>	<u>Passing Weight</u>	<u>Percentage Passing</u>
Starting Sample Wt.	<u>1199.2</u>	
3-inch	<u>1199.2</u>	<u>100.0</u>
2-inch	<u>1199.2</u>	<u>100.0</u>
1 1/2-inch	<u>1199.2</u>	<u>100.0</u>
1-inch	<u>1063.6</u>	<u>88.7</u>
3/4-inch	<u>987.8</u>	<u>82.4</u>
3/8-inch	<u>923.7</u>	<u>77.0</u>
No. 4 (4.75mm)	<u>887.4</u>	<u>74.0</u>
No. 10 (2.0mm)	<u>845.0</u>	<u>70.5</u>
No. 40 (425um)	<u>420.0</u>	<u>35.0</u>
No. 200 (75um)	<u>110.5</u>	<u>9.2</u>

Data Entered By: [Signature] Date: 4-22-98
 Validated By: [Signature] Date: 04/22/98