



April 22, 2011

Analytical Report for Service Request No: K1102875

Jeff Scott  
Specialty Minerals, Incorporated  
3515 Industrial Way  
P O Box 719  
Longview, WA 98632

**RE: Lime Grit**

Dear Jeff:

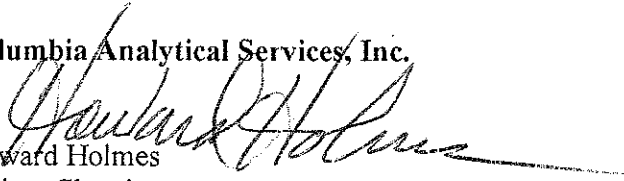
Enclosed are the results of the samples submitted to our laboratory on April 04, 2011. For your reference, these analyses have been assigned our service request number K1102875

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. The test results meet requirements of the current NELAP standards, where applicable, and except as noted in the laboratory case narrative provided. For a specific list of NELAP-accredited analytes, refer to the certifications section at [www.caslab.com](http://www.caslab.com). All results are intended to be considered in their entirety, and Columbia Analytical Services, Inc (CAS) is not responsible for use of less than the complete report. Results apply only to the items submitted to the laboratory for analysis and individual items (samples) analyzed, as listed in the report.

Please call if you have any questions. My extension is 3364. You may also contact me via Email at [HHolmes@caslab.com](mailto:HHolmes@caslab.com)

Respectfully submitted,

**Columbia Analytical Services, Inc.**

  
Howard Holmes  
Project Chemist

HH/jw

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## Acronyms

ASTM	American Society for Testing and Materials
A2LA	American Association for Laboratory Accreditation
CARB	California Air Resources Board
CAS Number	Chemical Abstract Service registry Number
CFC	Chlorofluorocarbon
CFU	Colony-Forming Unit
DEC	Department of Environmental Conservation
DEQ	Department of Environmental Quality
DHS	Department of Health Services
DOE	Department of Ecology
DOH	Department of Health
EPA	U S Environmental Protection Agency
ELAP	Environmental Laboratory Accreditation Program
GC	Gas Chromatography
GC/MS	Gas Chromatography/Mass Spectrometry
LUFT	Leaking Underground Fuel Tank
M	Modified
MCL	Maximum Contaminant Level is the highest permissible concentration of a substance allowed in drinking water as established by the USEPA.
MDL	Method Detection Limit
MPN	Most Probable Number
MRL	Method Reporting Limit
NA	Not Applicable
NC	Not Calculated
NCASI	National Council of the Paper Industry for Air and Stream Improvement
ND	Not Detected
NIOSH	National Institute for Occupational Safety and Health
PQL	Practical Quantitation Limit
RCRA	Resource Conservation and Recovery Act
SIM	Selected Ion Monitoring
TPH	Total Petroleum Hydrocarbons
tr	Trace level is the concentration of an analyte that is less than the PQL but greater than or equal to the MDL.

### Inorganic Data Qualifiers

- \* The result is an outlier. See case narrative.
- # The control limit criteria is not applicable. See case narrative.
- B The analyte was found in the associated method blank at a level that is significant relative to the sample result as defined by the DOD or NELAC standards.
- E The result is an estimate amount because the value exceeded the instrument calibration range.
- J The result is an estimated value that was detected outside the quantitation range.
- U The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.  
*DOD-QSM 4.1 definition*: Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
- i The MRL/MDL or LOQ/LOD is elevated due to a matrix interference.
- X See case narrative.
- Q See case narrative. One or more quality control criteria was outside the limits.
- H In accordance with the 2007 EPA Methods Update Rule published in the Federal Register, the holding time for this test is immediately following sample collection. The samples were analyzed as soon as possible after receipt by the laboratory.

### Metals Data Qualifiers

- # The control limit criteria is not applicable. See case narrative.
- J The result is an estimated value that was detected outside the quantitation range.
- E The percent difference for the serial dilution was greater than 10%, indicating a possible matrix interference in the sample.
- M The duplicate injection precision was not met.
- N The Matrix Spike sample recovery is not within control limits. See case narrative.
- S The reported value was determined by the Method of Standard Additions (MSA).
- U The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.  
*DOD-QSM 4.1 definition*: Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
- W The post-digestion spike for furnace AA analysis is out of control limits, while sample absorbance is less than 50% of spike absorbance.
- i The MRL/MDL or LOQ/LOD is elevated due to a matrix interference.
- X See case narrative.
- + The correlation coefficient for the MSA is less than 0.995.
- Q See case narrative. One or more quality control criteria was outside the limits.

### Organic Data Qualifiers

- \* The result is an outlier. See case narrative.
- # The control limit criteria is not applicable. See case narrative.
- A A tentatively identified compound, a suspected aldol-condensation product.
- B The analyte was found in the associated method blank at a level that is significant relative to the sample result as defined by the DOD or NELAC standards.
- C The analyte was qualitatively confirmed using GC/MS techniques, pattern recognition, or by comparing to historical data.
- D The reported result is from a dilution.
- E The result is an estimate amount because the value exceeded the instrument calibration range.
- J The result is an estimated value that was detected outside the quantitation range.
- N The result is presumptive. The analyte was tentatively identified, but a confirmation analysis was not performed.
- P The GC or HPLC confirmation criteria was exceeded. The relative percent difference is greater than 40% between the two analytical results.
- U The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.  
*DOD-QSM 4.1 definition*: Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
- i The MRL/MDL or LOQ/LOD is elevated due to a chromatographic interference.
- X See case narrative.
- Q See case narrative. One or more quality control criteria was outside the limits.

### Additional Petroleum Hydrocarbon Specific Qualifiers

- F The chromatographic fingerprint of the sample matches the elution pattern of the calibration standard.
- L The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of lighter molecular weight constituents than the calibration standard.
- H The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of heavier molecular weight constituents than the calibration standard.
- O The chromatographic fingerprint of the sample resembles an oil, but does not match the calibration standard.
- Y The chromatographic fingerprint of the sample resembles a petroleum product eluting in approximately the correct carbon range, but the elution pattern does not match the calibration standard.
- Z The chromatographic fingerprint does not resemble a petroleum product.

**Columbia Analytical Services, Inc.  
Cooler Receipt and Preservation Form**

PC Howard

Client / Project: Specialty Minerals Service Request K11 2875  
 Received: 4/4/11 Opened: 4/4/11 By: [Signature] Unloaded: 4/4/11 By: [Signature]

- 1 Samples were received via? Mail Fed Ex UPS DHL PDX Courier Hand Delivered  
 2 Samples were received in: (circle) Cooler Box Envelope Other NA  
 3 Were custody seals on coolers? NA Y N If yes, how many and where? \_\_\_\_\_  
 If present, were custody seals intact? Y N If present, were they signed and dated? Y N

Cooler Temp °C	Temp Blank °C	Thermometer ID	Cooler/COC ID	NA	Tracking Number	NA	Filed
<u>NA</u>				<u>NA</u>		<u>NA</u>	

- 7 Packing material used Inserts Baggies Bubble Wrap Gel Packs Wet Ice Sleeves Other BOX  
 8 Were custody papers properly filled out (ink, signed, etc )? NA Y N  
 9 Did all bottles arrive in good condition (unbroken)? Indicate in the table below NA Y N  
 10. Were all sample labels complete (i e analysis, preservation, etc )? NA Y N  
 11 Did all sample labels and tags agree with custody papers? Indicate major discrepancies in the table on page 2 NA Y N  
 12 Were appropriate bottles/containers and volumes received for the tests indicated? NA Y N  
 13 Were the pH-preserved bottles (*see SMO GEN SOP*) received at the appropriate pH? Indicate in the table below NA Y N  
 14 Were VOA vials received without headspace? Indicate in the table below NA Y N  
 15 Was C12/Res negative? NA Y N

Sample ID on Bottle	Sample ID on COC	Identified by:

Sample ID	Bottle Count	Bottle Type	Out of Temp	Head-space	Broke	pH	Reagent	Volume added	Reagent Lot Number	Initials	Time

Notes, Discrepancies, & Resolutions: R101 2 samples  
1) Camas brit 3/16/11  
2) Longview brit 3/16/11

**Columbia Analytical Services, Inc.**  
**Kelso, WA**  
**State Certifications, Accreditations, and Licenses**

<b>Agency</b>	<b>Number</b>
Alaska DEC UST	UST-040
Arizona DHS	AZ0339
Arkansas - DEQ	88-0637
California DHS	2286
Florida DOH	E87412
Hawaii DOH	-
Idaho DHW	-
Indiana DOH	C-WA-01
Louisiana DEQ	3016
Louisiana DHH	LA050010
Maine DHS	WA0035
Michigan DEQ	9949
Minnesota DOH	053-999-368
Montana DPHHS	CERT0047
Nevada DEP	WA35
New Jersey DEP	WA005
New Mexico ED	-
North Carolina DWQ	605
Oklahoma DEQ	9801
Oregon - DEQ	WA100010
South Carolina DHEC	61002
Washington DOE	C1203
Wisconsin DNR	998386840
Wyoming (EPA Region 8)	-



COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client: Specialty Minerals, Incorporated  
Project: Lime Grit  
Sample Matrix: Soil

Service Request: K1102875

Total Solids

Prep Method: NONE  
Analysis Method: 160.3M  
Test Notes:

Units: PERCENT  
Basis: Wet

Sample Name	Lab Code	Date Collected	Date Received	Date Analyzed	Result	Result Notes
Camas Grit	K1102875-001	03/16/2011	04/04/2011	04/07/2011	67.2	
Longview Grit	K1102875-002	03/16/2011	04/04/2011	04/07/2011	87.8	

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Specialty Minerals Incorporated  
 Project: Lime Grit  
 Sample Matrix: Soil

Service Request: K1102875  
 Date Collected: 3/16/11  
 Date Received: 4/4/11

Analysis Method: OSU

Units: Percent  
 Basis: Dry

CaCO3 Equivalency

Sample Name	Lab Code	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Note
Camas Grit	K1102875-001	102		3.0	1	NA	4/16/11 12:00	
Longview Grit	K1102875-002	102		2.3	1	NA	4/16/11 12:00	
Method Blank	K1102875-MB	ND	U	2.0	1	NA	4/16/11 12:00	

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Specialty Minerals, Incorporated  
Project: Lime Grit  
Sample Matrix: Soil

Service Request: K1102875  
Date Collected: 3/16/11  
Date Received: 4/4/11

Analysis Method: 9020B Modified

Units: mg/Kg  
Basis: Dry

Halides, Extractable Organic (EOX)

Sample Name	Lab Code	Result Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Note
Camas Grit	K1102875-001	ND U	15	1	NA	4/13/11	
Longview Grit	K1102875-002	ND U	11	1	NA	4/13/11	
Method Blank	K1102875-MB	ND U	10	1	NA	4/13/11	



**COLUMBIA ANALYTICAL SERVICES, INC.**

Analytical Report

Client: Specialty Minerals, Incorporated  
 Project: Lime Grit  
 Sample Matrix: Soil

Date Collected: 3/16/2011  
 Date Received: 4/4/2011  
 Service Request: K1102875

Dry Sieve Analysis  
 ASTM C-33 SAND  
 Units: Percent Passing

Sample Name: Camas Grit

Sample #:	K1102875-001
Wet Weight	272.25
Tare	33.20
Dry Weight+	216.09
% Solids	67.2

Sample Name: Longview Grit

Sample #:	K1102875-002
Wet Weight	236.30
Tare	33.22
Dry Weight+	240.64
% Solids	87.8

Sample Name: Longview Grit

Sample #:	K1102875-002DUP
Wet Weight	228.10
Tare	32.90
Dry Weight+	232.21
% Solids	87.4

Sieve Size	Dry Weight	% Passing
No.10	2.1837	98.8
No.60	7.6631	94.6
No.100	24.6173	81.1
Pan	148.3078	-

Sieve Size	Dry Weight	% Passing
No.10	77.8385	62.4
No.60	89.0197	94.6
No.100	27.7066	6.00
Pan	12.4292	-

Sieve Size	Dry Weight	% Passing
No.10	72.8144	63.4
No.60	86.3773	20.0
No.100	27.2082	6.29
Pan	12.5026	-

Total Weight = 182.77  
 % Recovered = 99.9

Total Weight = 206.99  
 % Recovered = 99.8

Total Weight = 198.90  
 % Recovered = 99.8

COLUMBIA ANALYTICAL SERVICES, INC.

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INORGANIC ANALYSIS DATA PACKAGE

Service Request : K1102875

Client : Specialty Minerals, Incorporated  
Project Name : Lime Grit  
Project No. : NA

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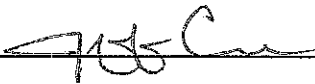
Sample Name :

Lab Code :

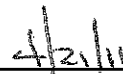
Camas Grit	K1102875-001
Camas Grit	K1102875-001S
Longview Grit	K1102875-002
Method Blank	K1102875-MB

Comments:

Approved By: \_\_\_\_\_



Date: \_\_\_\_\_



COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client : Specialty Minerals, Incorporated  
Project Name : Lime Grit  
Project Number : NA  
Matrix : Soil

Service Request : K1102875  
Date Collected : 03/16/11  
Date Received : 04/04/11  
Date TCLP Performed : 04/07/11  
Date Extracted : 04/08/11  
Date Analyzed : 04/11,12/11

Toxicity Characteristic Leaching Procedure (TCLP)  
EPA Method 1311  
Metals  
Units: mg/L (ppm) in TCLP Extract

Sample Name : Camas Grit  
Lab Code : K1102875-001

Analyte	EPA Method	MRL	Regulatory Limit *	Sample Result	Result Notes
Arsenic	3010A/6010C	0.1	5	ND	
Barium	3010A/6010C	10	100	ND	
Cadmium	3010A/6010C	0.01	1	ND	
Chromium	3010A/6010C	0.01	5	0.03	
Lead	3010A/6010C	0.05	5	ND	
Mercury	7470A	0.001	0.2	ND	
Selenium	3010A/6010C	0.1	1	ND	
Silver	3010A/6010C	0.02	5	ND	

\* From 40 CFR Part 261, et al, and Federal Register, March 29, 1990 and June 29, 1990

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client : Specialty Minerals, Incorporated  
Project Name : Lime Grit  
Project Number : NA  
Matrix : Soil

Service Request : K1102875  
Date Collected : NA  
Date Received : NA  
Date TCLP Performed : 04/07/11  
Date Extracted : 04/08/11  
Date Analyzed : 04/11,12/11

Toxicity Characteristic Leaching Procedure (TCLP)  
EPA Method 1311  
Metals  
Units: mg/L (ppm) in TCLP Extract

Sample Name : Method Blank  
Lab Code : K1102875-MB

Analyte	EPA Method	MRL	Regulatory Limit *	Sample Result	Result Notes
Arsenic	3010A/6010C	0.1	5	ND	
Barium	3010A/6010C	1.0	100	ND	
Cadmium	3010A/6010C	0.01	1	ND	
Chromium	3010A/6010C	0.01	5	ND	
Lead	3010A/6010C	0.05	5	ND	
Mercury	7470A	0.001	0.2	ND	
Selenium	3010A/6010C	0.1	1	ND	
Silver	3010A/6010C	0.02	5	ND	

\* From 40 CFR Part 261, et al, and Federal Register, March 29, 1990 and June 29, 1990

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client : Specialty Minerals, Incorporated  
Project Name : Lime Grit  
Project Number : NA  
Matrix : Soil

Service Request : K1102875  
Date Collected : 03/16/11  
Date Received : 04/04/11  
Date TCLP Performed : 04/07/11  
Date Extracted : 04/08/11  
Date Analyzed : 04/11,12/11

Matrix Spike Summary  
Toxicity Characteristic Leaching Procedure (TCLP)  
EPA Method 1311  
Metals  
Units: mg/L (ppm) in TCLP Extract

Sample Name : Camas Grit  
Lab Code : K1102875-001S

Analyte	Spike Level	Sample Result	Spiked Sample Result	Percent Recovery*	Result Notes
Arsenic	5.0	ND	4.7	94	
Barium	10	ND	10.1	101	
Cadmium	1.0	ND	0.87	87	
Chromium	5.0	0.03	4.78	95	
Lead	5.0	ND	4.80	96	
Mercury	0.005	ND	0.005	100	
Selenium	1.0	ND	0.1	10	
Silver	1.0	ND	0.92	92	

\* From 40 CFR Part 261, et al, and Federal Register, March 29, 1990 and June 29, 1990.

COLUMBIA ANALYTICAL SERVICES, INC.

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INORGANIC ANALYSIS DATA PACKAGE

Client : Specialty Minerals, Incorporated  
Project Name : Lime Grit  
Project No. : NA

Service Request : K1102875

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Sample Name :

Camas Grit  
Longview Grit  
Method Blank

Lab Code :

K1102875-001  
K1102875-002  
K1102875-MB

Comments:

Approved By: 

Date: 4/2/11

**COLUMBIA ANALYTICAL SERVICES, INC.**

**Analytical Report**

**Client :** Specialty Minerals, Incorporated  
**Project Name :** Lime Grit  
**Project No. :** NA  
**Matrix :** Soil

**Service Request :** K1102875  
**Date Collected :** 03/16/11  
**Date Received :** 04/04/11  
**Date Extracted :** 04/11-20/11

Total Metals

**Sample Name :** Camas Grit  
**Lab Code :** K1102875-001

**Units :** mg/Kg (ppm)  
**Basis :** Dry

<b>Analyte</b>	<b>Analysis Method</b>	<b>MRL</b>	<b>Date Analyzed</b>	<b>Sample Result</b>	<b>Result Notes</b>
Arsenic	6010C	3.0	04/21/11	ND	
Cadmium	6010C	0.1	04/21/11	ND	
Calcium	6010C	10	04/21/11	263000	
Chromium	6010C	0.7	04/21/11	6.0	
Cobalt	6010C	0.7	04/21/11	1.0	
Lead	6010C	3.0	04/21/11	ND	
Magnesium	6010C	6.0	04/21/11	8490	
Mercury	7471B	0.02	04/11/11	ND	
Molybdenum	6010C	0.6	04/21/11	ND	
Nickel	6010C	0.6	04/21/11	2.4	
Selenium	6010C	6.0	04/21/11	ND	
Zinc	6010C	1.5	04/21/11	22.9	

Comments:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client : Specialty Minerals, Incorporated  
Project Name : Lime Grit  
Project No. : NA  
Matrix : Soil

Service Request : K1102875  
Date Collected : NA  
Date Received : NA  
Date Extracted : 04/11-20/11

Total Metals

Sample Name : Method Blank  
Lab Code : K1102875-MB

Units : mg/Kg (ppm)  
Basis : Dry

Analyte	Analysis Method	MRL	Date Analyzed	Sample Result	Result Notes
Arsenic	6010C	2.0	04/21/11	ND	
Cadmium	6010C	0.1	04/21/11	ND	
Calcium	6010C	10	04/21/11	ND	
Chromium	6010C	0.5	04/21/11	ND	
Cobalt	6010C	0.5	04/21/11	ND	
Lead	6010C	2.0	04/21/11	ND	
Magnesium	6010C	4.0	04/21/11	ND	
Mercury	7471B	0.02	04/11/11	ND	
Molybdenum	6010C	0.4	04/21/11	ND	
Nickel	6010C	0.4	04/21/11	ND	
Selenium	6010C	4.0	04/21/11	ND	
Zinc	6010C	1.0	04/21/11	ND	

Comments:



COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

**Client:** Specialty Minerals, Incorporated  
**Project:** Lime Grit  
**Sample Matrix:** Solid

**Service Request:** K1102875  
**Date Collected:** 03/16/11  
**Date Received:** 04/04/11  
**Date Extracted:** 04/20/11

Total Metals  
Units: mg/Kg (ppm)  
Dry Weight Basis

**Sample Name:** Camas Grit  
**Lab Code:** K1102875-001  
**Date Analyzed:** 04/21/11

Analyte	Method	MRL	
Calcium as CaCO <sub>3</sub>	ICP-OES	25	658000
Magnesium as MgCO <sub>3</sub>	ICP-OES	21	29500