



ANALYTICAL SUMMARY REPORT

December 30, 2010

Big Sky Co Water and Sewer Dist 363
PO Box 160670
Big Sky, MT 59716

Workorder No.: B10121314

Project Name: Compost, 2010

Energy Laboratories Inc Billings MT received the following 1 sample for Big Sky Co Water and Sewer Dist 363 on 12/15/2010 for analysis.

Sample ID	Client Sample ID	Collect Date	Receive Date	Matrix	Test
B10121314-001	Compost	12/14/10 12:30	12/15/10	Solid	Metals by ICP/ICPMS, Total or Soluble Mercury in Solid By CVAA Moisture, Compost Ammonia as N, KCL Extract Total Kjeldahl Nitrogen Digestion, Total Metals Digestion, Mercury by CVAA Solids Content

This report was prepared by Energy Laboratories, Inc., 1120 S 27th St., Billings, MT 59101. Any exceptions or problems with the analyses are noted in the Laboratory Analytical Report, the QA/QC Summary Report, or the Case Narrative.

The results as reported relate only to the item(s) submitted for testing.

If you have any questions regarding these test results, please call.

Report Approved By:

LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

Client: Big Sky Co Water and Sewer Dist 363
Project: Compost, 2010
Lab ID: B10121314-001
Client Sample ID Compost

Report Date: 12/30/10
Collection Date: 12/14/10 12:30
Date Received: 12/15/10
Matrix: Solid

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL CHARACTERISTICS							
Solids, Total	43.5	wt%		0.01		A2540 G	12/22/10 10:10 / srm
CHEMICAL CHARACTERISTICS							
Moisture @70 C	56.5	wt%-as rcvd		0.1		TMECC	12/20/10 07:58 / srm
Total Kjeldahl Nitrogen	14300	mg/kg-dry		10		ASA31-3	12/22/10 10:10 / srm
Ammonia as N, KCL Extract	214	mg/kg-dry		1		ASA33-7	12/21/10 10:40 / srm
METALS, TOTAL - EPA SW846							
Arsenic	5.3	mg/kg		0.4		SW6020	12/23/10 04:47 / tao
Cadmium	ND	mg/kg		0.5		SW6020	12/23/10 04:47 / tao
Copper	194	mg/kg		0.4		SW6020	12/23/10 04:47 / tao
Lead	6.6	mg/kg		0.4		SW6020	12/23/10 04:47 / tao
Mercury	0.08	mg/kg		0.05		SW7471A	12/22/10 14:52 / age
Molybdenum	4.3	mg/kg		0.5		SW6020	12/23/10 04:47 / tao
Nickel	9	mg/kg		1		SW6020	12/23/10 04:47 / tao
Phosphorus	11400	mg/kg		10		SW6010B	12/27/10 15:29 / tao
Potassium	2520	mg/kg		50		SW6020	12/23/10 04:47 / tao
Selenium	1.3	mg/kg		0.3		SW6020	12/23/10 04:47 / tao
Zinc	210	mg/kg		1		SW6020	12/23/10 04:47 / tao

Report Definitions: RL - Analyte reporting limit.
QCL - Quality control limit.

MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.



QA/QC Summary Report

Prepared by Billings, MT Branch

Client: Big Sky Co Water and Sewer Dist 363

Report Date: 12/30/10

Project: Compost, 2010

Work Order: B10121314

Analyte	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: ASA31-3									Batch: R158933
Sample ID: B10121314-001ADUP	Sample Duplicate								12/22/10 10:10
Total Kjeldahl Nitrogen	13100	mg/kg-dry	10				9.4	30	
Sample ID: B10121693-001ADUP	Sample Duplicate								12/22/10 10:10
Total Kjeldahl Nitrogen	41400	mg/kg-dry	570				7.4	30	
Sample ID: LCS-1012221010	Laboratory Control Sample								12/22/10 10:10
Total Kjeldahl Nitrogen	616	mg/kg	10	94	50	150			
Sample ID: B10121314-001A MS	Sample Matrix Spike								12/22/10 10:10
Total Kjeldahl Nitrogen	19100	mg/kg	10	119	50	150			

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.



QA/QC Summary Report

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Client: Big Sky Co Water and Sewer Dist 363

Report Date: 12/30/10

Project: Compost, 2010

Work Order: B10121314

Analyte	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: ASA33-7							Batch: 10122103-ANS1		
Sample ID: LCS	Laboratory Control Sample					Run: FIA201-B_101221A			12/21/10 10:36
Ammonia as N, KCL Extract	3.66	mg/kg	1.0	105	50	150			
Sample ID: B10121314-001ADUP	Sample Duplicate					Run: FIA201-B_101221A			12/21/10 10:41
Ammonia as N, KCL Extract	208	mg/kg-dry	1.0				2.9	30	
Sample ID: B10121314-001AMS	Sample Matrix Spike					Run: FIA201-B_101221A			12/21/10 10:42
Ammonia as N, KCL Extract	292	mg/kg-dry	1.0	123	50	150			

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.



QA/QC Summary Report

Prepared by Billings, MT Branch

Client: Big Sky Co Water and Sewer Dist 363
Project: Compost, 2010

Report Date: 12/30/10
Work Order: B10121314

Analyte	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW6010B							Analytical Run: ICP202-B_101221B		
Sample ID: QCS	Initial Calibration Verification Standard								12/27/10 10:03
Phosphorus	7.66	mg/L	0.10	96	90	110			
Sample ID: ICSA	Interference Check Sample A								12/27/10 10:18
Phosphorus	0.0659	mg/L	0.10		0	0			
Sample ID: ICSAB	Interference Check Sample AB								12/27/10 10:22
Phosphorus	9.15	mg/L	0.10	92	80	120			
Method: SW6010B							Batch: 51177		
Sample ID: MB-51177	Method Blank								12/27/10 15:22
Phosphorus	ND	mg/kg	1						
Sample ID: LCS1-51177	Laboratory Control Sample								12/27/10 15:25
Phosphorus	650	mg/kg	10	90	70	130			
Sample ID: B10121693-001ADIL	Serial Dilution								12/27/10 16:58
Phosphorus	22300	mg/kg-dry	270		0	0	7.1	10	
Sample ID: B10121693-001APDS	Post Digestion/Distillation Spike								12/27/10 17:02
Phosphorus	40200	mg/kg-dry	56	84	70	130			
Sample ID: B10121693-001AMS3	Sample Matrix Spike								12/27/10 17:13
Phosphorus	39500	mg/kg-dry	62	73	75	125			S
Sample ID: B10121693-001AMSD3	Sample Matrix Spike Duplicate								12/27/10 17:17
Phosphorus	37800	mg/kg-dry	60	68	75	125	4.5	20	S

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

S - Spike recovery outside of advisory limits.

QA/QC Summary Report

Prepared by Billings, MT Branch

Client: Big Sky Co Water and Sewer Dist 363
Project: Compost, 2010

Report Date: 12/30/10
Work Order: B10121314

Analyte	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW6020 Batch: 51177									
Sample ID: MB-51177	Method Blank			Run: ICPMS203-B_101221A			12/22/10 06:07		
Arsenic	0.0196	mg/kg	0.40						
Cadmium	ND	mg/kg	0.50						
Copper	0.330	mg/kg	0.40						
Lead	0.0403	mg/kg	0.40						
Molybdenum	0.0216	mg/kg	0.50						
Nickel	ND	mg/kg	1.0						
Potassium	ND	mg/kg	50						
Selenium	ND	mg/kg	0.30						
Zinc	0.711	mg/kg	1.0						
Sample ID: B10121693-001ADIL	Serial Dilution			Run: ICPMS203-B_101221A			12/22/10 06:16		
Arsenic	6.19	mg/kg-dry	5.0		0	0		10	N
Cadmium	ND	mg/kg-dry	4.1		0	0		10	
Copper	1560	mg/kg-dry	41		0	0	34	10	R
Lead	64.0	mg/kg-dry	5.0		0	0	36	10	R
Molybdenum	18.5	mg/kg-dry	5.0		0	0		10	N
Nickel	40.2	mg/kg-dry	23		0	0		10	N
Potassium	6240	mg/kg-dry	1300		0	0		10	N
Selenium	ND	mg/kg-dry	61		0	0		10	
Zinc	1080	mg/kg-dry	15		0	0	46	10	R
Sample ID: B10121693-001AMS3	Sample Matrix Spike			Run: ICPMS203-B_101221A			12/22/10 06:40		
Arsenic	2510	mg/kg-dry	5.0	98	75	125			
Cadmium	1250	mg/kg-dry	1.0	98	75	125			
Copper	3480	mg/kg-dry	9.3	92	75	125			
Lead	2660	mg/kg-dry	5.0	102	75	125			
Molybdenum	2500	mg/kg-dry	5.0	97	75	125			
Nickel	2660	mg/kg-dry	5.2	103	75	125			
Potassium	124000	mg/kg-dry	290	93	75	125			
Selenium	2400	mg/kg-dry	14	93	75	125			
Zinc	3030	mg/kg-dry	5.0	92	75	125			
Sample ID: B10121693-001AMSD3	Sample Matrix Spike Duplicate			Run: ICPMS203-B_101221A			12/22/10 06:44		
Arsenic	2440	mg/kg-dry	5.0	98	75	125	2.9	20	
Cadmium	1220	mg/kg-dry	1.0	98	75	125	2.5	20	
Copper	3450	mg/kg-dry	9.0	94	75	125	0.9	20	
Lead	2570	mg/kg-dry	5.0	102	75	125	3.3	20	
Molybdenum	2420	mg/kg-dry	5.0	97	75	125	3.2	20	
Nickel	2560	mg/kg-dry	5.0	102	75	125	3.7	20	
Potassium	120000	mg/kg-dry	280	93	75	125	3.4	20	
Selenium	2340	mg/kg-dry	13	93	75	125	2.7	20	
Zinc	2960	mg/kg-dry	5.0	92	75	125	2.5	20	

Qualifiers:

RL - Analyte reporting limit.

N - The analyte concentration was not sufficiently high to calculate a RPD for the serial dilution test.

ND - Not detected at the reporting limit.

R - RPD exceeds advisory limit.



QA/QC Summary Report

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Client: Big Sky Co Water and Sewer Dist 363

Report Date: 12/30/10

Project: Compost, 2010

Work Order: B10121314

Analyte	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW6020							Batch: 51177		
Sample ID: LCS1-51177	Laboratory Control Sample			Run: ICPMS203-B_101221A			12/22/10 06:49		
Arsenic	156	mg/kg	5.0	91	70	130			
Cadmium	51.2	mg/kg	1.0	94	70	130			
Copper	75.6	mg/kg	5.0	94	70	130			
Lead	121	mg/kg	5.0	99	70	130			
Molybdenum	116	mg/kg	5.0	95	70	130			
Nickel	156	mg/kg	5.0	95	70	130			
Potassium	2490	mg/kg	50	86	70	130			
Selenium	101	mg/kg	5.0	89	70	130			
Zinc	155	mg/kg	5.0	93	70	130			

Qualifiers:

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QA/QC Summary Report

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Client: Big Sky Co Water and Sewer Dist 363
Project: Compost, 2010

Report Date: 12/30/10
Work Order: B10121314

Analyte	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
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Method: SW6020

Analytical Run: ICPMS203-B_101222A

Sample ID: ICSA-101101C Interference Check Sample A 12/22/10 11:30

Arsenic	5.10E-05	mg/L	0.0010						
Cadmium	0.000945	mg/L	0.0010						
Copper	0.000253	mg/L	0.0010						
Lead	0.000105	mg/L	0.0010						
Molybdenum	0.895	mg/L	0.0010	112	70	130			
Nickel	0.000607	mg/L	0.0010						
Potassium	37.6	mg/L	0.0072	75					
Selenium	0.000155	mg/L	0.0010						
Zinc	0.000956	mg/L	0.0010						

Sample ID: ICSAB-101101C,100119H Interference Check Sample AB 12/22/10 11:35

Arsenic	0.0103	mg/L	0.0010	103	70	130			
Cadmium	0.0113	mg/L	0.0010	113	70	130			
Copper	0.0201	mg/L	0.0010	100	70	130			
Lead	9.50E-05	mg/L	0.0010		0	0			
Molybdenum	0.856	mg/L	0.0010	107	70	130			
Nickel	0.0208	mg/L	0.0010	104	70	130			
Potassium	36.1	mg/L	0.0072	90	70	130			
Selenium	0.00957	mg/L	0.0010	96	70	130			
Zinc	0.0101	mg/L	0.0010	101	70	130			

Sample ID: QCS-100607A,101012A,1 Initial Calibration Verification Standard 12/22/10 14:30

Arsenic	0.0503	mg/L	0.0010	101	90	110			
Cadmium	0.0264	mg/L	0.0010	106	90	110			
Copper	0.0518	mg/L	0.0010	104	90	110			
Lead	0.0504	mg/L	0.0010	101	90	110			
Molybdenum	0.0492	mg/L	0.0010	98	90	110			
Nickel	0.0519	mg/L	0.0010	104	90	110			
Potassium	2.47	mg/L	0.0072	99	90	110			
Selenium	0.0498	mg/L	0.0010	100	90	110			
Zinc	0.0524	mg/L	0.0010	105	90	110			

Method: SW6020

Batch: 51177

Sample ID: MB-51177 Method Blank Run: ICPMS203-B_101222A 12/23/10 04:42

Arsenic	0.02	mg/kg	0.02						
Cadmium	ND	mg/kg	0.02						
Copper	ND	mg/kg	0.2						
Lead	0.03	mg/kg	0.003						
Molybdenum	ND	mg/kg	0.01						
Nickel	ND	mg/kg	0.1						
Potassium	6	mg/kg	6						
Selenium	ND	mg/kg	0.3						
Zinc	0.9	mg/kg	0.07						

Qualifiers:

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ND - Not detected at the reporting limit.



QA/QC Summary Report

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Client: Big Sky Co Water and Sewer Dist 363
Project: Compost, 2010

Report Date: 12/30/10
Work Order: B10121314

Analyte	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual	
Method: SW7471A							Analytical Run: HGCV201-B_101222A			
Sample ID: QCS	Initial Calibration Verification Standard								12/22/10 14:40	
Mercury	0.00186	mg/kg	1.0	93	90	110				
Method: SW7471A							Batch: 51206			
Sample ID: MB-51206	Method Blank								12/22/10 14:49	
Mercury	0.005	mg/kg	0.002							
Sample ID: LCS1-51206	Laboratory Control Sample								12/22/10 14:50	
Mercury	5.11	mg/kg	1.0	97	70	130				
Sample ID: B10121757-001ADIL	Serial Dilution								12/22/10 15:24	
Mercury	0.232	mg/kg	1.0		0	0		20	N	
Sample ID: B10121757-001AMS3	Sample Matrix Spike								12/22/10 15:25	
Mercury	10.1	mg/kg	1.0	99	70	130				
Sample ID: B10121757-001AMSD3	Sample Matrix Spike Duplicate								12/22/10 15:26	
Mercury	10.4	mg/kg	1.0	103	70	130	3.8	30		

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

N - The analyte concentration was not sufficiently high to calculate a RPD for the serial dilution test.

Workorder Receipt Checklist



B10121314

Login completed by: Darwin C. Miller

Reviewed by: BL2000\kmcDonald

Reviewed Date: 12/15/2010

Date Received: 12/15/2010

Received by: jlw

Carrier name: Return-UPS
Ground nc

- | | | | |
|---|---|-----------------------------|--|
| Shipping container/cooler in good condition? | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | Not Present <input type="checkbox"/> |
| Custody seals intact on shipping container/cooler? | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | Not Present <input type="checkbox"/> |
| Custody seals intact on sample bottles? | Yes <input type="checkbox"/> | No <input type="checkbox"/> | Not Present <input checked="" type="checkbox"/> |
| Chain of custody present? | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | |
| Chain of custody signed when relinquished and received? | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | |
| Chain of custody agrees with sample labels? | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | |
| Samples in proper container/bottle? | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | |
| Sample containers intact? | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | |
| Sufficient sample volume for indicated test? | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | |
| All samples received within holding time? | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | |
| Container/Temp Blank temperature: | 5.0°C On Ice | | |
| Water - VOA vials have zero headspace? | Yes <input type="checkbox"/> | No <input type="checkbox"/> | No VOA vials submitted <input checked="" type="checkbox"/> |
| Water - pH acceptable upon receipt? | Yes <input type="checkbox"/> | No <input type="checkbox"/> | Not Applicable <input checked="" type="checkbox"/> |

Contact and Corrective Action Comments:

None

