

Daily Analysis Runlog For Sequence/QC Batch ID # LB86313

Review By		Review On				
SubDirectory		LB86313		Test : Cyanide		

STD. NAME	STD REF.#
ICAL Standard	WP53410,WP53409,WP50408,WP53407,WP53406,WP53405,WP53404
ICV Standard	WP53411
CCV Standard	WP53412
ICSA Standard	
CRI Standard	
LCS Standard	
Chk Standard	WP53459,WP50159,WP551626

Sr#	SampleId	ClientID	QcType	Date	Comment	Status
1	S0.0	S0.0	CAL1	03/11/17 11:47		OK
2	S5.0	S5.0	CAL2	03/11/17 11:47		OK
3	S10.0	S10.0	CAL3	03/11/17 11:47		OK
4	S100.0	S100.0	CAL4	03/11/17 11:47		OK
5	S250.0	S250.0	CAL5	03/11/17 11:47		OK
6	S500.0	S500.0	CAL6	03/11/17 11:47		OK
7	ICV	ICV	ICV	03/11/17 12:25		OK
8	ICB	ICB	ICB	03/11/17 12:25		OK
9	CCV001	CCV001	CCV	03/11/17 12:25		OK
10	CCB001	CCB001	CCB	03/11/17 12:25		OK
11	PB97436BL	PBS006	MB	03/11/17 12:25		OK
12	I2151-03	MDABX3	SAM	03/11/17 12:25		OK
13	I2151-04	MDABX7	SAM	03/11/17 12:25		OK
14	I2151-05	MDABX7D	DUP	03/11/17 12:25		OK
15	I2151-06	MDABX7S	MS	03/11/17 12:25		OK
16	I2151-07	MDABX9	SAM	03/11/17 12:25		OK
17	I2151-08	MDABY0	SAM	03/11/17 12:33		OK
18	I2151-09	MDABY1	SAM	03/11/17 12:33		OK
19	I2151-10	MDABY2	SAM	03/11/17 12:33		OK
20	I2151-11	MDABY3	SAM	03/11/17 12:33		OK
21	I2151-12	MDABY4	SAM	03/11/17 12:33		OK

Daily Analysis Runlog For Sequence/QC Batch ID # LB86313

Review By		Review On				
SubDirectory		LB86313		Test : Cyanide		
STD. NAME		STD REF.#				
ICAL Standard		WP53410,WP53409,WP50408,WP53407,WP53406,WP53405,WP53404				
ICV Standard		WP53411				
CCV Standard		WP53412				
ICSA Standard						
CRI Standard						
LCS Standard						
Chk Standard		WP53459,WP50159,WP551626				

22	I2151-13	MDABY5	SAM	03/11/17 12:33		OK
23	I2151-14	MDABY6	SAM	03/11/17 12:33		OK
24	I2151-15	MDABY7	SAM	03/11/17 12:33		OK
25	I2151-16	MDABZ9	SAM	03/11/17 12:33		OK
26	I2151-17	MDAC00	SAM	03/11/17 12:33		OK
27	I2151-18	MDAC01	SAM	03/11/17 12:33		OK
28	I2151-19	MDAC02	SAM	03/11/17 12:37		OK
29	CCV002	CCV002	CCV	03/11/17 12:37		OK
30	CCB002	CCB002	CCB	03/11/17 12:37		OK



Metals

- 2a -

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Client: LB86313

SDG No.: LB86313

Contract: _____

Lab Code: CHEM

Case No.: LB86313

SAS No.: LB86313

Initial Calibration Source: _____

Continuing Calibration Source: _____

Sample ID	Analyte	Result ug/L	True Value	% Recovery	% RSD	Acceptance Window (%R)	M	Analysis Date	Analysis Time	Run Number
ICV	Cyanide	93.6	99	95	0	85 - 115	CN	03/11/2017	12:25	LB86313



Metals

- 2a -

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Client: LB86313

SDG No.: LB86313

Contract: _____ Lab Code: CHEM

Case No.: LB86313

SAS No.: LB86313

Initial Calibration Source: _____

Continuing Calibration Source: _____

Sample ID	Analyte	Result ug/L	True Value	% Recovery	% RSD	Acceptance Window (%R)	M	Analysis Date	Analysis Time	Run Number
CCV001	Cyanide	239	250	96	0	85 - 115	CN	03/11/2017	12:25	LB86313
CCV002	Cyanide	258	250	103	0	85 - 115	CN	03/11/2017	12:37	LB86313



Metals

- 3a -

INITIAL AND CONTINUING CALIBRATION BLANK SUMMARY

Client: LB86313 **SDG No.:** LB86313
Contract: **Lab Code:** CHEM **Case No.:** LB86313 **SAS No.:** LB86313

Sample ID	Analyte	Result ug/L	Acceptance Limit	Conc Qual	LOD	CRQL	M	Analysis Date	Analysis Time	Run Number
ICB	Cyanide	0.44	+/-10.0	U	5.0	10.0	CN	03/11/2017	12:25	LB86313



Metals

- 3a -

INITIAL AND CONTINUING CALIBRATION BLANK SUMMARY

Client: LB86313

SDG No.: LB86313

Contract:

Lab Code: CHEM

Case No.: LB86313

SAS No.: LB86313

Sample ID	Analyte	Result ug/L	Acceptance Limit	Conc Qual	LOD	CRQL	M	Analysis Date	Analysis Time	Run Number
CCB001	Cyanide	0.39	+/-10.0	U	5.0	10.0	CN	03/11/2017	12:25	LB86313
CCB002	Cyanide	0.41	+/-10.0	U	5.0	10.0	CN	03/11/2017	12:37	LB86313



Metals

- 3a -

INITIAL AND CONTINUING CALIBRATION BLANK SUMMARY

Client: LB86313

SDG No.: LB86313

Contract: Lab Code: CHEM

Case No.: LB86313

SAS No.: LB86313

Sample ID	Analyte	Result ug/L	Acceptance Limit	Conc Qual	LOD	CRQL	M	Analysis Date	Analysis Time	Run Number
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Report of Analysis

Client:		Date Collected:	2/28/2017 12:00:00 AM
Project:	LB86313	Date Received:	3/1/2017 12:00:00 AM
Client Sample ID:	MDABX3	SDG No.:	LB86313
Lab Sample ID:	I2151-03	Matrix:	Solid
Level (low/med):	low	% Solid:	100

Cas	Parameter	Conc.	Qua.	DF	MDL	LOD	LOQ / CRQL	Units	Prep Date	Date Ana.	Ana Met.
57-12-5	Cyanide	2.5		1	0.055	0.013	0.5	mg/kg	03/09/2017	03/11/2017	ISM02.2_CN



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Report of Analysis

Client:		Date Collected:	2/28/2017 12:00:00 AM
Project:	LB86313	Date Received:	3/7/2017 12:00:00 AM
Client Sample ID:	MDABX7	SDG No.:	LB86313
Lab Sample ID:	I2151-04	Matrix:	Solid
Level (low/med):	low	% Solid:	96.5

Cas	Parameter	Conc.	Qua.	DF	MDL	LOD	LOQ / CRQL	Units	Prep Date	Date Ana.	Ana Met.
57-12-5	Cyanide	0	U	1	0.056	0.013	0.51	mg/kg	03/09/2017	03/11/2017	ISM02.2_CN



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Report of Analysis

Client:		Date Collected:	3/2/2017 12:00:00 AM
Project:	LB86313	Date Received:	3/7/2017 12:00:00 AM
Client Sample ID:	MDABX9	SDG No.:	LB86313
Lab Sample ID:	I2151-07	Matrix:	Solid
Level (low/med):	low	% Solid:	93.7

Cas	Parameter	Conc.	Qua.	DF	MDL	LOD	LOQ / CRQL	Units	Prep Date	Date Ana.	Ana Met.
57-12-5	Cyanide	0	U	1	0.054	0.012	0.49	mg/kg	03/09/2017	03/11/2017	ISM02.2_CN



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Report of Analysis

Client:		Date Collected:	2/28/2017 12:00:00 AM
Project:	LB86313	Date Received:	3/7/2017 12:00:00 AM
Client Sample ID:	MDABY0	SDG No.:	LB86313
Lab Sample ID:	I2151-08	Matrix:	Solid
Level (low/med):	low	% Solid:	95.4

Cas	Parameter	Conc.	Qua.	DF	MDL	LOD	LOQ / CRQL	Units	Prep Date	Date Ana.	Ana Met.
57-12-5	Cyanide	0	U	1	0.057	0.013	0.51	mg/kg	03/09/2017	03/11/2017	ISM02.2_CN



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Report of Analysis

Client:		Date Collected:	2/28/2017 12:00:00 AM
Project:	LB86313	Date Received:	3/7/2017 12:00:00 AM
Client Sample ID:	MDABY1	SDG No.:	LB86313
Lab Sample ID:	I2151-09	Matrix:	Solid
Level (low/med):	low	% Solid:	92.8

Cas	Parameter	Conc.	Qua.	DF	MDL	LOD	LOQ / CRQL	Units	Prep Date	Date Ana.	Ana Met.
57-12-5	Cyanide	0	U	1	0.058	0.013	0.52	mg/kg	03/09/2017	03/11/2017	ISM02.2_CN



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Report of Analysis

Client:		Date Collected:	3/2/2017 12:00:00 AM
Project:	LB86313	Date Received:	3/7/2017 12:00:00 AM
Client Sample ID:	MDABY2	SDG No.:	LB86313
Lab Sample ID:	I2151-10	Matrix:	Solid
Level (low/med):	low	% Solid:	91.2

Cas	Parameter	Conc.	Qua.	DF	MDL	LOD	LOQ / CRQL	Units	Prep Date	Date Ana.	Ana Met.
57-12-5	Cyanide	0	U	1	0.056	0.013	0.51	mg/kg	03/09/2017	03/11/2017	ISM02.2_CN



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Report of Analysis

Client:		Date Collected:	2/28/2017 12:00:00 AM
Project:	LB86313	Date Received:	3/7/2017 12:00:00 AM
Client Sample ID:	MDABY3	SDG No.:	LB86313
Lab Sample ID:	I2151-11	Matrix:	Solid
Level (low/med):	low	% Solid:	93.7

Cas	Parameter	Conc.	Qua.	DF	MDL	LOD	LOQ / CRQL	Units	Prep Date	Date Ana.	Ana Met.
57-12-5	Cyanide	0	U	1	0.056	0.013	0.51	mg/kg	03/09/2017	03/11/2017	ISM02.2_CN



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Report of Analysis

Client:		Date Collected:	2/28/2017 12:00:00 AM
Project:	LB86313	Date Received:	3/7/2017 12:00:00 AM
Client Sample ID:	MDABY4	SDG No.:	LB86313
Lab Sample ID:	I2151-12	Matrix:	Solid
Level (low/med):	low	% Solid:	92.7

Cas	Parameter	Conc.	Qua.	DF	MDL	LOD	LOQ / CRQL	Units	Prep Date	Date Ana.	Ana Met.
57-12-5	Cyanide	0	U	1	0.057	0.013	0.52	mg/kg	03/09/2017	03/11/2017	ISM02.2_CN



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Report of Analysis

Client:		Date Collected:	3/3/2017 12:00:00 AM
Project:	LB86313	Date Received:	3/7/2017 12:00:00 AM
Client Sample ID:	MDABY5	SDG No.:	LB86313
Lab Sample ID:	I2151-13	Matrix:	Solid
Level (low/med):	low	% Solid:	91.5

Cas	Parameter	Conc.	Qua.	DF	MDL	LOD	LOQ / CRQL	Units	Prep Date	Date Ana.	Ana Met.
57-12-5	Cyanide	0	U	1	0.059	0.013	0.54	mg/kg	03/09/2017	03/11/2017	ISM02.2_CN



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Report of Analysis

Client:		Date Collected:	2/28/2017 12:00:00 AM
Project:	LB86313	Date Received:	3/7/2017 12:00:00 AM
Client Sample ID:	MDABY6	SDG No.:	LB86313
Lab Sample ID:	I2151-14	Matrix:	Solid
Level (low/med):	low	% Solid:	94.6

Cas	Parameter	Conc.	Qua.	DF	MDL	LOD	LOQ / CRQL	Units	Prep Date	Date Ana.	Ana Met.
57-12-5	Cyanide	0.44	J	1	0.056	0.013	0.51	mg/kg	03/09/2017	03/11/2017	ISM02.2_CN



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Report of Analysis

Client:		Date Collected:	3/2/2017 12:00:00 AM
Project:	LB86313	Date Received:	3/7/2017 12:00:00 AM
Client Sample ID:	MDABY7	SDG No.:	LB86313
Lab Sample ID:	I2151-15	Matrix:	Solid
Level (low/med):	low	% Solid:	93.8

Cas	Parameter	Conc.	Qua.	DF	MDL	LOD	LOQ / CRQL	Units	Prep Date	Date Ana.	Ana Met.
57-12-5	Cyanide	0	U	1	0.056	0.013	0.51	mg/kg	03/09/2017	03/11/2017	ISM02.2_CN



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Report of Analysis

Client:		Date Collected:	3/3/2017 12:00:00 AM
Project:	LB86313	Date Received:	3/7/2017 12:00:00 AM
Client Sample ID:	MDABZ9	SDG No.:	LB86313
Lab Sample ID:	I2151-16	Matrix:	Solid
Level (low/med):	low	% Solid:	91.4

Cas	Parameter	Conc.	Qua.	DF	MDL	LOD	LOQ / CRQL	Units	Prep Date	Date Ana.	Ana Met.
57-12-5	Cyanide	0	U	1	0.056	0.013	0.51	mg/kg	03/09/2017	03/11/2017	ISM02.2_CN



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Report of Analysis

Client:		Date Collected:	2/28/2017 12:00:00 AM
Project:	LB86313	Date Received:	3/7/2017 12:00:00 AM
Client Sample ID:	MDAC00	SDG No.:	LB86313
Lab Sample ID:	I2151-17	Matrix:	Solid
Level (low/med):	low	% Solid:	98.1

Cas	Parameter	Conc.	Qua.	DF	MDL	LOD	LOQ / CRQL	Units	Prep Date	Date Ana.	Ana Met.
57-12-5	Cyanide	0	U	1	0.056	0.013	0.51	mg/kg	03/09/2017	03/11/2017	ISM02.2_CN



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Report of Analysis

Client:		Date Collected:	2/28/2017 12:00:00 AM
Project:	LB86313	Date Received:	3/7/2017 12:00:00 AM
Client Sample ID:	MDAC01	SDG No.:	LB86313
Lab Sample ID:	I2151-18	Matrix:	Solid
Level (low/med):	low	% Solid:	94.2

Cas	Parameter	Conc.	Qua.	DF	MDL	LOD	LOQ / CRQL	Units	Prep Date	Date Ana.	Ana Met.
57-12-5	Cyanide	0.025	U	1	0.058	0.013	0.53	mg/kg	03/09/2017	03/11/2017	ISM02.2_CN



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Report of Analysis

Client:		Date Collected:	3/3/2017 12:00:00 AM
Project:	LB86313	Date Received:	3/7/2017 12:00:00 AM
Client Sample ID:	MDAC02	SDG No.:	LB86313
Lab Sample ID:	I2151-19	Matrix:	Solid
Level (low/med):	low	% Solid:	93

Cas	Parameter	Conc.	Qua.	DF	MDL	LOD	LOQ / CRQL	Units	Prep Date	Date Ana.	Ana Met.
57-12-5	Cyanide	0	U	1	0.059	0.013	0.53	mg/kg	03/09/2017	03/11/2017	ISM02.2_CN



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Report of Analysis

Client:		Date Collected:	3/3/2017 12:00:00 AM
Project:	LB86313	Date Received:	3/7/2017 12:00:00 AM
Client Sample ID:	MDAC02	SDG No.:	LB86313
Lab Sample ID:	I2151-19	Matrix:	Solid
Level (low/med):	low	% Solid:	93

Cas	Parameter	Conc.	Qua.	DF	MDL	LOD	LOQ / CRQL	Units	Prep Date	Date Ana.	Ana Met.
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Color Before:

Clarity Before:

Texture:

Color After:

Clarity After:

Artifacts:

Comments:

U = Not Detected

LOQ = Limit of Quantitation

MDL = Method Detection Limit

LOD = Limit of Detection

D = Dilution

Q = indicates LCS control criteria did not meet requirements

J = Estimated Value

B = Analyte Found in Associated Method Blank

* = indicates the duplicate analysis is not within control limits.

E = Indicates the reported value is estimated because of the presence of interference.

OR = Over Range

N = Spiked sample recovery not within control limits



Metals
- 3b -
PREPARATION BLANK SUMMARY

Client: LB86313

SDG No.: LB86313

Instrument: CN

Sample ID	Analyte	Result (mg/kg)	Acceptance Limit	Conc Qual	LOD mg/kg	CRQL mg/kg	M	Analysis Date	Analysis Time	Run
PB97436BL		SOLID		Batch Number:		PB97436		Prep Date:	03/09/2017	
	Cyanide	0.009	<0.5	U	0.013	0.5	CN	03/11/2017	12:25	LB86313



metals
- 5a -
MATRIX SPIKE SUMMARY

client: LB86313 level: low sdg no.: LB86313
contract: lab code: CHEM case no.: LB86313 sas no.: LB86313
matrix: Solid sample id: I2151-04 client id: MDABX7S
Percent Solids for Sample: 96.5 Spiked ID: I2151-06 Percent Solids for Spike Sample: 96.5

Analyte	Units	Acceptance Limit %R	Spiked Result	C	Sample Result	C	Spike Added	% Recovery	Qual	M
Cyanide	mg/kg	75 - 125	3.9		0.51	U	5.1	76		CN

Metals

- 6 -

DUPLICATE SAMPLE SUMMARY

Client: LB86313 **Level:** LOW **SDG No.:** LB86313
Contract: **Lab Code:** CHEM **Case No.:** LB86313 **SAS No.:** LB86313
Matrix: Solid **Sample ID:** I2151-04 **Client ID:** MDABX7D
Percent Solids for Sample: 96.5 **Duplicate ID** I2151-05 **Percent Solids for Spike Sample:** 96.5

Analyte	Units	Acceptance Limit	Sample Result	C	Duplicate Result	C	RPD	Qual	M
Cyanide	mg/kg	20	0.51	U		0	U		CN

**Metals
- 13 -**

SAMPLE PREPARATION SUMMARY

Client: <u>LB86313</u>	SDG No.: <u>LB86313</u>	
Contract: _____	Lab Code: <u>CHEM</u>	Method: _____
	Case No.: <u>LB86313</u>	SAS No.: <u>LB86313</u>

Sample ID	Client ID	Sample Type	Matrix	Prep Date	Initial Sample Size(g)	Final Sample Volume (mL)	Percent Solids
Batch Number: PB97436							
PB97436BL	PBS006	MB	SOLID	03/11/2017	1.00	50.0	100.00
I2151-03	MDABX3	SAM	SOLID	03/11/2017	1.00	50.0	100.00
I2151-04	MDABX7	SAM	SOLID	03/11/2017	1.01	50.0	96.50
I2151-05	MDABX7D	DUP	SOLID	03/11/2017	1.01	50.0	96.50
I2151-06	MDABX7S	MS	SOLID	03/11/2017	1.01	50.0	96.50
I2151-07	MDABX9	SAM	SOLID	03/11/2017	1.09	50.0	93.70
I2151-08	MDABY0	SAM	SOLID	03/11/2017	1.02	50.0	95.40
I2151-09	MDABY1	SAM	SOLID	03/11/2017	1.03	50.0	92.80
I2151-10	MDABY2	SAM	SOLID	03/11/2017	1.07	50.0	91.20
I2151-11	MDABY3	SAM	SOLID	03/11/2017	1.04	50.0	93.70
I2151-12	MDABY4	SAM	SOLID	03/11/2017	1.04	50.0	92.70
I2151-13	MDABY5	SAM	SOLID	03/11/2017	1.02	50.0	91.50
I2151-14	MDABY6	SAM	SOLID	03/11/2017	1.03	50.0	94.60
I2151-15	MDABY7	SAM	SOLID	03/11/2017	1.04	50.0	93.80
I2151-16	MDABZ9	SAM	SOLID	03/11/2017	1.07	50.0	91.40
I2151-17	MDAC00	SAM	SOLID	03/11/2017	1.01	50.0	98.10
I2151-18	MDAC01	SAM	SOLID	03/11/2017	1.00	50.0	94.20
I2151-19	MDAC02	SAM	SOLID	03/11/2017	1.01	50.0	93.00

FORM 15-IN
INITIAL CALIBRATION

Lab Name: LB86313 Contract: _____
Lab Code: CHEM Case No.: LB86313 MA No.: _____ SDG No.: LB86313
Instrument ID: CN Start Date: 03/11/2017
Analytical Method: _____ Run Batch: LB86313.mdb
Concentration Units: ug/L

Analyte	True	Found	%D	True	Found	%D	True	Found	%D
Cyanide	0	0	0	5	3.7	-26	10	8.1	-19

FORM 15-IN
INITIAL CALIBRATION

Lab Name: LB86313 Contract: _____
Lab Code: CHEM Case No.: LB86313 MA No.: _____ SDG No.: LB86313
Instrument ID: CN Start Date: 03/11/2017
Analytical Method: _____ Run Batch: LB86313.mdb
Concentration Units: ug/L

Analyte	True	Found	%D	True	Found	%D	True	Found	%D
Cyanide	100	102	2	250	254	2	500	498	0