

Daily Analysis Runlog For Sequence/QC Batch ID # LB92166

Review By		Review On				
SubDirectory		LB92166		Test : Cyanide		
STD. NAME		STD REF.#				
ICAL Standard		WP60348,WP60349,WP60350,WP60351,WP60352,WP60353,WP60354				
ICV Standard		WP60355				
CCV Standard		WP60356				
ICSA Standard		N/A				
CRI Standard		N/A				
LCS Standard		N/A				
Chk Standard		WP60349,WP59958,WP60150				
Sr#	SampleId	ClientID	QcType	Date	Comment	Status
1	S0.0	S0.0	CAL1	12/14/17 13:40		OK
2	S5.0	S5.0	CAL2	12/14/17 13:40		OK
3	S10.0	S10.0	CAL3	12/14/17 13:40		OK
4	S100.0	S100.0	CAL4	12/14/17 13:40		OK
5	S250.0	S250.0	CAL5	12/14/17 13:40		OK
6	S500.0	S500.0	CAL6	12/14/17 13:40		OK
7	ICV	ICV	ICV	12/14/17 14:17		OK
8	ICB	ICB	ICB	12/14/17 14:17		OK
9	CCV001	CCV001	CCV	12/14/17 14:17		OK
10	CCB001	CCB001	CCB	12/14/17 14:17		OK
11	PB105029BL	PBW005	MB	12/14/17 14:17		OK
12	I6803-01	MBDYW5	SAM	12/14/17 14:17		OK
13	I6803-02	MBDYW6	SAM	12/14/17 14:17		OK
14	I6803-03	MBDYZ4	SAM	12/14/17 14:25		OK
15	I6803-04	MBDYW1	SAM	12/14/17 14:25		OK
16	I6803-05	MBDYW2	SAM	12/14/17 14:25		OK
17	I6803-06	MBDYW9	SAM	12/14/17 14:25		OK
18	I6803-07	MBDYZ5	SAM	12/14/17 14:25		OK
19	I6803-08	MBDYT4	SAM	12/14/17 14:25		OK
20	I6803-09	MBDYT6	SAM	12/14/17 14:25		OK
21	I6803-10	MBDYT8	SAM	12/14/17 14:25		OK

Daily Analysis Runlog For Sequence/QC Batch ID # LB92166

Review By		Review On				
SubDirectory		LB92166		Test : Cyanide		
STD. NAME		STD REF.#				
ICAL Standard		WP60348,WP60349,WP60350,WP60351,WP60352,WP60353,WP60354				
ICV Standard		WP60355				
CCV Standard		WP60356				
ICSA Standard		N/A				
CRI Standard		N/A				
LCS Standard		N/A				
Chk Standard		WP60349,WP59958,WP60150				
22	I6803-11	MBDYT8D	DUP	12/14/17 14:25		OK
23	I6803-12	MBDYT8S	MS	12/14/17 14:25		OK
24	I6803-13	MBDYT9	SAM	12/14/17 14:25		OK
25	I6803-14	MBDYW0	SAM	12/14/17 14:30		OK
26	I6803-15	MBDYW3	SAM	12/14/17 14:30		OK
27	I6803-16	MBDYZ0	SAM	12/14/17 14:30		OK
28	I6803-17	MBDYZ6	SAM	12/14/17 14:30		OK
29	I6803-18	MBDZ07	SAM	12/14/17 14:30		OK
30	CCV002	CCV002	CCV	12/14/17 14:30		OK
31	CCB002	CCB002	CCB	12/14/17 14:30		OK



Metals

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INITIAL AND CONTINUING CALIBRATION VERIFICATION

Client: LB92166

SDG No.: LB92166

Contract: _____ **Lab Code:** CHEM

Case No.: LB92166

SAS No.: LB92166

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	94.9	99	96	0	85 - 115	CN	12/14/2017	14:17	LB92166



Metals

- 2a -

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Client: LB92166

SDG No.: LB92166

Contract: _____ Lab Code: CHEM

Case No.: LB92166

SAS No.: LB92166

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	236	250	94	0	85 - 115	CN	12/14/2017	14:17	LB92166
CCV002	Cyanide	254	250	102	0	85 - 115	CN	12/14/2017	14:30	LB92166



Metals

- 3a -

INITIAL AND CONTINUING CALIBRATION BLANK SUMMARY

Client: LB92166 **SDG No.:** LB92166
Contract: **Lab Code:** CHEM **Case No.:** LB92166 **SAS No.:** LB92166

Sample ID	Analyte	Result ug/L	Acceptance Limit	Conc Qual	LOD	CRQL	M	Analysis Date	Analysis Time	Run Number
ICB	Cyanide	2.1	+/-10.0	U	5.0	10.0	CN	12/14/2017	14:17	LB92166



Metals

- 3a -

INITIAL AND CONTINUING CALIBRATION BLANK SUMMARY

Client: <u>LB92166</u>		SDG No.: <u>LB92166</u>								
Contract: _____		Lab Code: <u>CHEM</u>		Case No.: <u>LB92166</u>			SAS No.: <u>LB92166</u>			
Sample ID	Analyte	Result ug/L	Acceptance Limit	Conc Qual	LOD	CRQL	M	Analysis Date	Analysis Time	Run Number
CCB001	Cyanide	2.1	+/-10.0	U	5.0	10.0	CN	12/14/2017	14:17	LB92166
CCB002	Cyanide	2.1	+/-10.0	U	5.0	10.0	CN	12/14/2017	14:30	LB92166



Metals

- 3a -

INITIAL AND CONTINUING CALIBRATION BLANK SUMMARY

Client: LB92166

SDG No.: LB92166

Contract: Lab Code: CHEM

Case No.: LB92166

SAS No.: LB92166

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:	12/7/2017 12:00:00 AM
Project:	LB92166	Date Received:	12/8/2017 12:00:00 AM
Client Sample ID:	MBDYW5	SDG No.:	LB92166
Lab Sample ID:	I6803-01	Matrix:	WATER
Level (low/med):	low	% Solid:	0

Cas	Parameter	Conc.	Qua.	DF	MDL	LOD	LOQ / CRQL	Units	Prep Date	Date Ana.	Ana Met.
57-12-5	Cyanide	0	U	1	2.1	5	10	ug/L	12/14/2017	12/14/2017	ISM02.4_CN



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Report of Analysis

Client:		Date Collected:	12/7/2017 12:00:00 AM
Project:	LB92166	Date Received:	12/8/2017 12:00:00 AM
Client Sample ID:	MBDYW6	SDG No.:	LB92166
Lab Sample ID:	I6803-02	Matrix:	WATER
Level (low/med):	low	% Solid:	0

Cas	Parameter	Conc.	Qua.	DF	MDL	LOD	LOQ / CRQL	Units	Prep Date	Date Ana.	Ana Met.
57-12-5	Cyanide	0	U	1	2.1	5	10	ug/L	12/14/2017	12/14/2017	ISM02.4_CN



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Report of Analysis

Client:		Date Collected:	12/7/2017 12:00:00 AM
Project:	LB92166	Date Received:	12/8/2017 12:00:00 AM
Client Sample ID:	MBDYZ4	SDG No.:	LB92166
Lab Sample ID:	I6803-03	Matrix:	WATER
Level (low/med):	low	% Solid:	0

Cas	Parameter	Conc.	Qua.	DF	MDL	LOD	LOQ / CRQL	Units	Prep Date	Date Ana.	Ana Met.
57-12-5	Cyanide	4.2	J	1	2.1	5	10	ug/L	12/14/2017	12/14/2017	ISM02.4_CN



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Report of Analysis

Client:		Date Collected:	12/11/2017 12:00:00 AM
Project:	LB92166	Date Received:	12/12/2017 12:00:00 AM
Client Sample ID:	MBDYW1	SDG No.:	LB92166
Lab Sample ID:	I6803-04	Matrix:	WATER
Level (low/med):	low	% Solid:	0

Cas	Parameter	Conc.	Qua.	DF	MDL	LOD	LOQ / CRQL	Units	Prep Date	Date Ana.	Ana Met.
57-12-5	Cyanide	3.4	J	1	2.1	5	10	ug/L	12/14/2017	12/14/2017	ISM02.4_CN



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Report of Analysis

Client:		Date Collected:	12/11/2017 12:00:00 AM
Project:	LB92166	Date Received:	12/12/2017 12:00:00 AM
Client Sample ID:	MBDYW2	SDG No.:	LB92166
Lab Sample ID:	I6803-05	Matrix:	WATER
Level (low/med):	low	% Solid:	0

Cas	Parameter	Conc.	Qua.	DF	MDL	LOD	LOQ / CRQL	Units	Prep Date	Date Ana.	Ana Met.
57-12-5	Cyanide	0	U	1	2.1	5	10	ug/L	12/14/2017	12/14/2017	ISM02.4_CN



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Report of Analysis

Client:		Date Collected:	12/11/2017 12:00:00 AM
Project:	LB92166	Date Received:	12/12/2017 12:00:00 AM
Client Sample ID:	MBDYW9	SDG No.:	LB92166
Lab Sample ID:	I6803-06	Matrix:	WATER
Level (low/med):	low	% Solid:	0

Cas	Parameter	Conc.	Qua.	DF	MDL	LOD	LOQ / CRQL	Units	Prep Date	Date Ana.	Ana Met.
57-12-5	Cyanide	4.1	J	1	2.1	5	10	ug/L	12/14/2017	12/14/2017	ISM02.4_CN



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Report of Analysis

Client:		Date Collected:	12/11/2017 12:00:00 AM
Project:	LB92166	Date Received:	12/12/2017 12:00:00 AM
Client Sample ID:	MBDYZ5	SDG No.:	LB92166
Lab Sample ID:	I6803-07	Matrix:	WATER
Level (low/med):	low	% Solid:	0

Cas	Parameter	Conc.	Qua.	DF	MDL	LOD	LOQ / CRQL	Units	Prep Date	Date Ana.	Ana Met.
57-12-5	Cyanide	0	U	1	2.1	5	10	ug/L	12/14/2017	12/14/2017	ISM02.4_CN



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Report of Analysis

Client:		Date Collected:	12/12/2017 12:00:00 AM
Project:	LB92166	Date Received:	12/13/2017 12:00:00 AM
Client Sample ID:	MBDYT4	SDG No.:	LB92166
Lab Sample ID:	I6803-08	Matrix:	WATER
Level (low/med):	low	% Solid:	0

Cas	Parameter	Conc.	Qua.	DF	MDL	LOD	LOQ / CRQL	Units	Prep Date	Date Ana.	Ana Met.
57-12-5	Cyanide	0.23	U	1	2.1	5	10	ug/L	12/14/2017	12/14/2017	ISM02.4_CN



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Report of Analysis

Client:		Date Collected:	12/12/2017 12:00:00 AM
Project:	LB92166	Date Received:	12/13/2017 12:00:00 AM
Client Sample ID:	MBDYT6	SDG No.:	LB92166
Lab Sample ID:	I6803-09	Matrix:	WATER
Level (low/med):	low	% Solid:	0

Cas	Parameter	Conc.	Qua.	DF	MDL	LOD	LOQ / CRQL	Units	Prep Date	Date Ana.	Ana Met.
57-12-5	Cyanide	0	U	1	2.1	5	10	ug/L	12/14/2017	12/14/2017	ISM02.4_CN



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Report of Analysis

Client:		Date Collected:	12/12/2017 12:00:00 AM
Project:	LB92166	Date Received:	12/13/2017 12:00:00 AM
Client Sample ID:	MBDYT8	SDG No.:	LB92166
Lab Sample ID:	I6803-10	Matrix:	WATER
Level (low/med):	low	% Solid:	0

Cas	Parameter	Conc.	Qua.	DF	MDL	LOD	LOQ / CRQL	Units	Prep Date	Date Ana.	Ana Met.
57-12-5	Cyanide	0	U	1	2.1	5	10	ug/L	12/14/2017	12/14/2017	ISM02.4_CN



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Report of Analysis

Client:		Date Collected:	12/12/2017 12:00:00 AM
Project:	LB92166	Date Received:	12/13/2017 12:00:00 AM
Client Sample ID:	MBDYT9	SDG No.:	LB92166
Lab Sample ID:	I6803-13	Matrix:	WATER
Level (low/med):	low	% Solid:	0

Cas	Parameter	Conc.	Qua.	DF	MDL	LOD	LOQ / CRQL	Units	Prep Date	Date Ana.	Ana Met.
57-12-5	Cyanide	0	U	1	2.1	5	10	ug/L	12/14/2017	12/14/2017	ISM02.4_CN



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Report of Analysis

Client:		Date Collected:	12/12/2017 12:00:00 AM
Project:	LB92166	Date Received:	12/13/2017 12:00:00 AM
Client Sample ID:	MBDYW0	SDG No.:	LB92166
Lab Sample ID:	I6803-14	Matrix:	WATER
Level (low/med):	low	% Solid:	0

Cas	Parameter	Conc.	Qua.	DF	MDL	LOD	LOQ / CRQL	Units	Prep Date	Date Ana.	Ana Met.
57-12-5	Cyanide	0	U	1	2.1	5	10	ug/L	12/14/2017	12/14/2017	ISM02.4_CN



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Report of Analysis

Client:		Date Collected:	12/12/2017 12:00:00 AM
Project:	LB92166	Date Received:	12/13/2017 12:00:00 AM
Client Sample ID:	MBDYW3	SDG No.:	LB92166
Lab Sample ID:	I6803-15	Matrix:	WATER
Level (low/med):	low	% Solid:	0

Cas	Parameter	Conc.	Qua.	DF	MDL	LOD	LOQ / CRQL	Units	Prep Date	Date Ana.	Ana Met.
57-12-5	Cyanide	0.34	U	1	2.1	5	10	ug/L	12/14/2017	12/14/2017	ISM02.4_CN



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Report of Analysis

Client:		Date Collected:	12/12/2017 12:00:00 AM
Project:	LB92166	Date Received:	12/13/2017 12:00:00 AM
Client Sample ID:	MBDYZ0	SDG No.:	LB92166
Lab Sample ID:	I6803-16	Matrix:	WATER
Level (low/med):	low	% Solid:	0

Cas	Parameter	Conc.	Qua.	DF	MDL	LOD	LOQ / CRQL	Units	Prep Date	Date Ana.	Ana Met.
57-12-5	Cyanide	0	U	1	2.1	5	10	ug/L	12/14/2017	12/14/2017	ISM02.4_CN



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Report of Analysis

Client:		Date Collected:	12/12/2017 12:00:00 AM
Project:	LB92166	Date Received:	12/13/2017 12:00:00 AM
Client Sample ID:	MBDYZ6	SDG No.:	LB92166
Lab Sample ID:	I6803-17	Matrix:	WATER
Level (low/med):	low	% Solid:	0

Cas	Parameter	Conc.	Qua.	DF	MDL	LOD	LOQ / CRQL	Units	Prep Date	Date Ana.	Ana Met.
57-12-5	Cyanide	1.8	U	1	2.1	5	10	ug/L	12/14/2017	12/14/2017	ISM02.4_CN



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Report of Analysis

Client:		Date Collected:	12/12/2017 12:00:00 AM
Project:	LB92166	Date Received:	12/13/2017 12:00:00 AM
Client Sample ID:	MBDZ07	SDG No.:	LB92166
Lab Sample ID:	I6803-18	Matrix:	WATER
Level (low/med):	low	% Solid:	0

Cas	Parameter	Conc.	Qua.	DF	MDL	LOD	LOQ / CRQL	Units	Prep Date	Date Ana.	Ana Met.
57-12-5	Cyanide	2.8	J	1	2.1	5	10	ug/L	12/14/2017	12/14/2017	ISM02.4_CN



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Report of Analysis

Client:		Date Collected:	12/12/2017 12:00:00 AM
Project:	LB92166	Date Received:	12/13/2017 12:00:00 AM
Client Sample ID:	MBDZ07	SDG No.:	LB92166
Lab Sample ID:	I6803-18	Matrix:	WATER
Level (low/med):	low	% Solid:	0

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: LB92166

SDG No.: LB92166

Instrument: CN

Sample ID	Analyte	Result (ug/L)	Acceptance Limit	Conc Qual	LOD ug/L	CRQL ug/L	M	Analysis Date	Analysis Time	Run
PB105029BL	Cyanide	2.1	<10	U	5.0	10	CN	12/14/2017	14:17	LB92166



metals
- 5a -
MATRIX SPIKE SUMMARY

client: LB92166 level: low sdg no.: LB92166
contract: lab code: CHEM case no.: LB92166 sas no.: LB92166
matrix: WATER sample id: I6803-10 client id: MBDYT8S
Percent Solids for Sample: 0 Spiked ID: I6803-12 Percent Solids for Spike Sample: 0

Analyte	Units	Acceptance Limit %R	Spiked Result	C	Sample Result	C	Spike Added	% Recovery	Qual	M
Cyanide	ug/L	75 - 125	81.3		10.0	U	100	81		CN



Metals

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DUPLICATE SAMPLE SUMMARY

Client: LB92166 Level: LOW SDG No.: LB92166
Contract: Lab Code: CHEM Case No.: LB92166 SAS No.: LB92166
Matrix: WATER Sample ID: I6803-10 Client ID: MBDYT8D
Percent Solids for Sample: 0 Duplicate ID I6803-11 Percent Solids for Spike Sample: 0

Analyte	Units	Acceptance Limit	Sample Result	C	Duplicate Result	C	RPD	Qual	M
Cyanide	ug/L	20	10.0	U		0	U		CN

“A control limit of $\pm 20\%$ RPD for each matrix applies for sample values greater than 10 times Detection Limit”



Metals
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SAMPLE PREPARATION SUMMARY

Client: LB92166 **SDG No.:** LB92166
Contract: **Lab Code:** CHEM **Method:**
Case No.: LB92166 **SAS No.:** LB92166

					Initial Sample Size(mL)	Final Sample Volume (mL)	Percent Solids
Sample ID	Client ID	Sample Type	Matrix	Prep Date			
Batch Number: PB105029							
PB105029BL	PBW005	MB	WATER	12/14/2017	50.0	50.0	
I6803-01	MBDYW5	SAM	WATER	12/14/2017	50.0	50.0	
I6803-02	MBDYW6	SAM	WATER	12/14/2017	50.0	50.0	
I6803-03	MBDYZ4	SAM	WATER	12/14/2017	50.0	50.0	
I6803-04	MBDYW1	SAM	WATER	12/14/2017	50.0	50.0	
I6803-05	MBDYW2	SAM	WATER	12/14/2017	50.0	50.0	
I6803-06	MBDYW9	SAM	WATER	12/14/2017	50.0	50.0	
I6803-07	MBDYZ5	SAM	WATER	12/14/2017	50.0	50.0	
I6803-08	MBDYT4	SAM	WATER	12/14/2017	50.0	50.0	
I6803-09	MBDYT6	SAM	WATER	12/14/2017	50.0	50.0	
I6803-10	MBDYT8	SAM	WATER	12/14/2017	50.0	50.0	
I6803-11	MBDYT8D	DUP	WATER	12/14/2017	50.0	50.0	
I6803-12	MBDYT8S	MS	WATER	12/14/2017	50.0	50.0	
I6803-13	MBDYT9	SAM	WATER	12/14/2017	50.0	50.0	
I6803-14	MBDYW0	SAM	WATER	12/14/2017	50.0	50.0	
I6803-15	MBDYW3	SAM	WATER	12/14/2017	50.0	50.0	
I6803-16	MBDYZ0	SAM	WATER	12/14/2017	50.0	50.0	
I6803-17	MBDYZ6	SAM	WATER	12/14/2017	50.0	50.0	
I6803-18	MBDZ07	SAM	WATER	12/14/2017	50.0	50.0	

FORM 15-IN
INITIAL CALIBRATION

Lab Name: LB92166 Contract: _____
Lab Code: CHEM Case No.: LB92166 MA No.: _____ SDG No.: LB92166
Instrument ID: CN Start Date: 12/14/2017
Analytical Method: _____ Run Batch: LB92166.mdb
Concentration Units: ug/L

Analyte	True	Found	%D	True	Found	%D	True	Found	%D
Cyanide	0	0	0	5	3.9	-22	10	9.3	-7

FORM 15-IN
INITIAL CALIBRATION

Lab Name: LB92166 Contract: _____
Lab Code: CHEM Case No.: LB92166 MA No.: _____ SDG No.: LB92166
Instrument ID: CN Start Date: 12/14/2017
Analytical Method: _____ Run Batch: LB92166.mdb
Concentration Units: ug/L

Analyte	True	Found	%D	True	Found	%D	True	Found	%D
Cyanide	100	100	0	250	255	2	500	498	0