CHEMTECH

Instrument ID: CN

284 Sheffield Street, Mountainside, New Jersey 07092 Phone : 908 789 8900 Fax : 908 789 8922

Daily Analysis Runlog For Sequence/QCBatch ID # LB86070

Review By

Review On

SubDirectory LB86070

Test : Cyanide

STD. NAME	STD REF.#
ICAL Standard	WP53182,WP53181,WP53180,WP53179,WP53178,WP53177
ICV Standard	WP53183
CCV Standard	WP53184
ICSA Standard	
CRI Standard	
LCS Standard	
Chk Standard	WP53215,WP50159,WP51626

Sr#	SampleId	ClientID	QcType	Date	Comment	Status
1	S0.0	S0.0	CAL1	02/28/17 10:07		OK
2	S5.0	S5.0	CAL2	02/28/17 10:07		OK
3	S10.0	S10.0	CAL3	02/28/17 10:07		OK
4	S100.0	S100.0	CAL4	02/28/17 10:07		OK
5	S250.0	S250.0	CAL5	02/28/17 10:07		OK
6	S500.0	S500.0	CAL6	02/28/17 10:07		OK
7	ICV	ICV	ICV	02/28/17 10:57		OK
8	ICB	ICB	ICB	02/28/17 10:57		OK
9	CCV001	CCV001	CCV	02/28/17 10:57		OK
10	CCB001	CCB001	CCB	02/28/17 10:57		OK
11	PB97204BL	PBW005	MB	02/28/17 10:57		OK
12	I1984-01	MBC863	SAM	02/28/17 10:57		OK
13	I1984-02	MBC863D	DUP	02/28/17 10:57		OK
14	I1984-03	MBC863S	MS	02/28/17 10:57		OK
15	I1984-04	MBC864	SAM	02/28/17 10:57		OK
16	I1984-05	MBC865	SAM	02/28/17 10:57		OK
17	PB97208BL	PBS006	MB	02/28/17 10:57		OK
18	I1986-01	MBC866	SAM	02/28/17 11:05		OK
19	I1986-02	MBC867	SAM	02/28/17 11:05		OK
20	I1986-03	MBC868	SAM	02/28/17 11:05		OK
21	I1986-04	MBC869	SAM	02/28/17 11:05		OK

CHEMTECH

Instrument ID: CN

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Daily Analysis Runlog For Sequence/QCBatch ID # LB86070

Review By Review On

SubDirectory LB86070 Test : Cyanide

STD. NAME	STD REF.#
ICAL Standard	WP53182,WP53181,WP53180,WP53179,WP53178,WP53177
ICV Standard	WP53183
CCV Standard	WP53184
ICSA Standard	
CRI Standard	
LCS Standard	
Chk Standard	WP53215,WP50159,WP51626

22	I1986-05	MBC870	SAM	02/28/17 11:05		OK
23	I1986-06	MBC871	SAM	02/28/17 11:05		OK
24	I1986-07	MBC872	SAM	02/28/17 11:05		OK
25	I1986-08	MBC873	SAM	02/28/17 11:05		OK
26	I1986-09	MBC887	SAM	02/28/17 11:05		OK
27	I1986-10	MBC887D	DUP	02/28/17 11:05		OK
28	I1986-11	MBC887S	MS	02/28/17 11:05		OK
29	CCV002	CCV002	CCV	02/28/17 11:11		OK
30	CCB002	CCB002	CCB	02/28/17 11:12		OK

CHEMTECH

Metals

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INITIAL AND CONTINUING CALIBRATION VERIFICATION

Client: LB86070 **SDG No.:** LB86070

Contract: **Lab Code:** CHEM **Case No.:** LB86070 **SAS No.:** LB86070

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	97.1	99	98	0	85 - 115	CN	02/28/2017	10:57	LB86070

CHEMTECH

Metals

- 2a -

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Client: LB86070 **SDG No.:** LB86070

Contract: **Lab Code:** CHEM **Case No.:** LB86070 **SAS No.:** LB86070

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	243	250	97	0	85 - 115	CN	02/28/2017	10:57	LB86070
CCV002	Cyanide	237	250	95	0	85 - 115	CN	02/28/2017	11:11	LB86070

CHEMTECH

Metals

- 3a -

INITIAL AND CONTINUING CALIBRATION BLANK SUMMARY

Client: LB86070 **SDG No.:** LB86070

Contract: **Lab Code:** CHEM **Case No.:** LB86070 **SAS No.:** LB86070

Sample ID	Analyte	Result ug/L	Acceptance Limit	Conc Qual	LOD	CRQL	M	Analysis Date	Analysis Time	Run Number
ICB	Cyanide	0.18	+/-10.0	U	5.0	10.0	CN	02/28/2017	10:57	LB86070

CHEMTECH

Metals

- 3a -

INITIAL AND CONTINUING CALIBRATION BLANK SUMMARY

Client: LB86070 **SDG No.:** LB86070

Contract: **Lab Code:** CHEM **Case No.:** LB86070 **SAS No.:** LB86070

Sample ID	Analyte	Result ug/L	Acceptance Limit	Conc Qual	LOD	CRQL	M	Analysis Date	Analysis Time	Run Number
CCB001	Cyanide	0.051	+/-10.0	U	5.0	10.0	CN	02/28/2017	10:57	LB86070
CCB002	Cyanide	0.4	+/-10.0	U	5.0	10.0	CN	02/28/2017	11:12	LB86070

CHEMTECH

Metals

- 3a -

INITIAL AND CONTINUING CALIBRATION BLANK SUMMARY

Client: LB86070 **SDG No.:** LB86070

Contract: **Lab Code:** CHEM **Case No.:** LB86070 **SAS No.:** LB86070

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:	2/22/2017 12:00:00 AM
Project:	LB86070	Date Received:	2/23/2017 12:00:00 AM
Client Sample ID:	MBC863	SDG No.:	LB86070
Lab Sample ID:	I1984-01	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	0.024	U	1	1.5	5	10	ug/L	02/27/2017	02/28/2017	ISM02.2_CN

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Report of Analysis

Client:		Date Collected:	2/22/2017 12:00:00 AM
Project:	LB86070	Date Received:	2/23/2017 12:00:00 AM
Client Sample ID:	MBC864	SDG No.:	LB86070
Lab Sample ID:	I1984-04	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	0.65	U	1	1.5	5	10	ug/L	02/27/2017	02/28/2017	ISM02.2_CN

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Report of Analysis

Client:		Date Collected:	2/22/2017 12:00:00 AM
Project:	LB86070	Date Received:	2/23/2017 12:00:00 AM
Client Sample ID:	MBC865	SDG No.:	LB86070
Lab Sample ID:	I1984-05	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	0.55	U	1	1.5	5	10	ug/L	02/27/2017	02/28/2017	ISM02.2_CN

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Report of Analysis

Client:		Date Collected:	2/23/2017 12:00:00 AM
Project:	LB86070	Date Received:	2/23/2017 12:00:00 AM
Client Sample ID:	MBC866	SDG No.:	LB86070
Lab Sample ID:	I1986-01	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	02/27/2017	02/28/2017	ISM02.2_CN

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Report of Analysis

Client:		Date Collected:	2/23/2017 12:00:00 AM
Project:	LB86070	Date Received:	2/23/2017 12:00:00 AM
Client Sample ID:	MBC867	SDG No.:	LB86070
Lab Sample ID:	I1986-02	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	0.31	J	1	0.056	0.013	0.51	mg/kg	02/27/2017	02/28/2017	ISM02.2_CN

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Report of Analysis

Client:		Date Collected:	2/23/2017 12:00:00 AM
Project:	LB86070	Date Received:	2/23/2017 12:00:00 AM
Client Sample ID:	MBC868	SDG No.:	LB86070
Lab Sample ID:	I1986-03	Matrix:	Solid
Level (low/med):	low	% Solid:	92.5

Cas	Parameter	Conc.	Qua.	DF	MDL	LOD	LOQ / CRQL	Units	Prep Date	Date Ana.	Ana Met.
57-12-5	Cyanide	0.001	U	1	0.059	0.013	0.54	mg/kg	02/27/2017	02/28/2017	ISM02.2_CN

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Report of Analysis

Client:		Date Collected:	2/23/2017 12:00:00 AM
Project:	LB86070	Date Received:	2/23/2017 12:00:00 AM
Client Sample ID:	MBC869	SDG No.:	LB86070
Lab Sample ID:	I1986-04	Matrix:	Solid
Level (low/med):	low	% Solid:	92.4

Cas	Parameter	Conc.	Qua.	DF	MDL	LOD	LOQ / CRQL	Units	Prep Date	Date Ana.	Ana Met.
57-12-5	Cyanide	0.014	U	1	0.058	0.013	0.53	mg/kg	02/27/2017	02/28/2017	ISM02.2_CN

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Report of Analysis

Client:		Date Collected:	2/23/2017 12:00:00 AM
Project:	LB86070	Date Received:	2/23/2017 12:00:00 AM
Client Sample ID:	MBC870	SDG No.:	LB86070
Lab Sample ID:	I1986-05	Matrix:	Solid
Level (low/med):	low	% Solid:	94.3

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	0.53	mg/kg	02/27/2017	02/28/2017	ISM02.2_CN

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Report of Analysis

Client:		Date Collected:	2/23/2017 12:00:00 AM
Project:	LB86070	Date Received:	2/23/2017 12:00:00 AM
Client Sample ID:	MBC871	SDG No.:	LB86070
Lab Sample ID:	I1986-06	Matrix:	Solid
Level (low/med):	low	% Solid:	93.9

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	0.53	mg/kg	02/27/2017	02/28/2017	ISM02.2_CN

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Report of Analysis

Client:		Date Collected:	2/23/2017 12:00:00 AM
Project:	LB86070	Date Received:	2/23/2017 12:00:00 AM
Client Sample ID:	MBC872	SDG No.:	LB86070
Lab Sample ID:	I1986-07	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	0.057	0.013	0.52	mg/kg	02/27/2017	02/28/2017	ISM02.2_CN

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Report of Analysis

Client:		Date Collected:	2/23/2017 12:00:00 AM
Project:	LB86070	Date Received:	2/23/2017 12:00:00 AM
Client Sample ID:	MBC873	SDG No.:	LB86070
Lab Sample ID:	I1986-08	Matrix:	Solid
Level (low/med):	low	% Solid:	94.9

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	02/27/2017	02/28/2017	ISM02.2_CN

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Report of Analysis

Client:		Date Collected:	2/23/2017 12:00:00 AM
Project:	LB86070	Date Received:	2/23/2017 12:00:00 AM
Client Sample ID:	MBC887	SDG No.:	LB86070
Lab Sample ID:	I1986-09	Matrix:	Solid
Level (low/med):	low	% Solid:	89.7

Cas	Parameter	Conc.	Qua.	DF	MDL	LOD	LOQ / CRQL	Units	Prep Date	Date Ana.	Ana Met.
57-12-5	Cyanide	0.015	U	1	0.059	0.013	0.54	mg/kg	02/27/2017	02/28/2017	ISM02.2_CN

CHEMTECH 284 Sheffield Street, Mountainside NJ 07092 (908)-789-8900 Fax : 908 789 8922

Report of Analysis

Client:		Date Collected:	2/23/2017 12:00:00 AM
Project:	LB86070	Date Received:	2/23/2017 12:00:00 AM
Client Sample ID:	MBC887	SDG No.:	LB86070
Lab Sample ID:	I1986-09	Matrix:	Solid
Level (low/med):	low	% Solid:	89.7

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

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

CHEMTECH

Metals
- 3b -
PREPARATION BLANK SUMMARY

Client: LB86070 **SDG No.:** LB86070

Instrument: CN

Sample ID	Analyte	Result (ug/L)	Acceptance Limit	Conc Qual	LOD ug/L	CRQL ug/L	M	Analysis Date	Analysis Time	Run
PB97204BL		**WATER**		**Batch Number:**		**PB97204**		**Prep Date:**	**02/27/2017**	
	Cyanide	0.51	<10	U	5.0	10	CN	02/28/2017	10:57	LB86070

Sample ID	Analyte	Result (mg/kg)	Acceptance Limit	Conc Qual	LOD mg/kg	CRQL mg/kg	M	Analysis Date	Analysis Time	Run
PB97208BL		**SOLID**		**Batch Number:**		**PB97208**		**Prep Date:**	**02/27/2017**	
	Cyanide	0.005	<0.5	U	0.013	0.5	CN	02/28/2017	10:57	LB86070

CHEMTECH

metals
- 5a -
MATRIX SPIKE SUMMARY

client: LB86070 **level:** low **sdg no.:** LB86070

contract: **lab code:** CHEM **case no.:** LB86070 **sas no.:** LB86070

matrix: WATER **sample id:** I1984-01 **client id:** MBC863S

Percent Solids for Sample: 0 **Spiked ID:** I1984-03 **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	80.4		10.0	U	100	80		CN

CHEMTECH

metals
- 5a -
MATRIX SPIKE SUMMARY

client: LB86070 **level:** low **sdg no.:** LB86070

contract: **lab code:** CHEM **case no.:** LB86070 **sas no.:** LB86070

matrix: Solid **sample id:** I1986-09 **client id:** MBC887S

Percent Solids for Sample: 89.7 **Spiked ID:** I1986-11 **Percent Solids for Spike Sample:** 89.7

Analyte	Units	Acceptance Limit %R	Spiked Result	C	Sample Result	C	Spike Added	% Recovery	Qual	M
Cyanide	mg/kg	75 - 125	4.5		0.54	U	5.2	87		CN

CHEMTECH

Metals

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DUPLICATE SAMPLE SUMMARY

Client: LB86070 **Level:** LOW **SDG No.:** LB86070

Contract: **Lab Code:** CHEM **Case No.:** LB86070 **SAS No.:** LB86070

Matrix: WATER **Sample ID:** I1984-01 **Client ID:** MBC863D

Percent Solids for Sample: 0 **Duplicate ID** I1984-02 **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	0.041	U			CN

"A control limit of ±20% RPD for each matrix applies for sample values greater than 10 times Detection Limit"

CHEMTECH

Metals

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DUPLICATE SAMPLE SUMMARY

Client: LB86070 **Level:** LOW **SDG No.:** LB86070

Contract: **Lab Code:** CHEM **Case No.:** LB86070 **SAS No.:** LB86070

Matrix: Solid **Sample ID:** I1986-09 **Client ID:** MBC887D

Percent Solids for Sample: 89.7 **Duplicate ID** I1986-10 **Percent Solids for Spike Sample:** 89.7

Analyte	Units	Acceptance Limit	Sample Result	C	Duplicate Result	C	RPD	Qual	M
Cyanide	mg/kg	20	0.54	U	0.002	U			CN

"A control limit of ±20% RPD for each matrix applies for sample values greater than 10 times Detection Limit"

CHEMTECH

Metals
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SAMPLE PREPARATION SUMMARY

Client: LB86070 **SDG No.:** LB86070

Contract: **Lab Code:** CHEM **Method:**

Case No.: LB86070 **SAS No.:** LB86070

Sample ID	Client ID	Sample Type	Matrix	Prep Date	Initial Sample Size(mL)	Final Sample Volume (mL)	Percent Solids
Batch Number:	**PB97204**						
PB97204BL	PBW005	MB	WATER	02/28/2017	50.0	50.0	
I1984-01	MBC863	SAM	WATER	02/28/2017	50.0	50.0	
I1984-02	MBC863D	DUP	WATER	02/28/2017	50.0	50.0	
I1984-03	MBC863S	MS	WATER	02/28/2017	50.0	50.0	
I1984-04	MBC864	SAM	WATER	02/28/2017	50.0	50.0	
I1984-05	MBC865	SAM	WATER	02/28/2017	50.0	50.0	

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Metals
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SAMPLE PREPARATION SUMMARY

Client: LB86070 **SDG No.:** LB86070

Contract: **Lab Code:** CHEM **Method:**

Case No.: LB86070 **SAS No.:** LB86070

Sample ID	Client ID	Sample Type	Matrix	Prep Date	Initial Sample Size(g)	Final Sample Volume (mL)	Percent Solids
Batch Number:	**PB97208**						
PB97208BL	PBS006	MB	SOLID	02/28/2017	1.00	50.0	100.00
I1986-01	MBC866	SAM	SOLID	02/28/2017	1.02	50.0	91.50
I1986-02	MBC867	SAM	SOLID	02/28/2017	1.04	50.0	93.80
I1986-03	MBC868	SAM	SOLID	02/28/2017	1.01	50.0	92.50
I1986-04	MBC869	SAM	SOLID	02/28/2017	1.03	50.0	92.40
I1986-05	MBC870	SAM	SOLID	02/28/2017	1.00	50.0	94.30
I1986-06	MBC871	SAM	SOLID	02/28/2017	1.01	50.0	93.90
I1986-07	MBC872	SAM	SOLID	02/28/2017	1.04	50.0	93.00
I1986-08	MBC873	SAM	SOLID	02/28/2017	1.04	50.0	94.90
I1986-09	MBC887	SAM	SOLID	02/28/2017	1.04	50.0	89.70
I1986-10	MBC887D	DUP	SOLID	02/28/2017	1.08	50.0	89.70
I1986-11	MBC887S	MS	SOLID	02/28/2017	1.07	50.0	89.70