



GENCHEM

- 2a -

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Client: LB92585

SDG No.: LB92585

Contract: _____ Lab Code: CHEM

Case No.: LB92585

SAS No.: LB92585

Initial Calibration Source: _____

Continuing Calibration Source: _____

Sample ID	Analyte	Result mg/L	True Value	% Recovery	% RSD	Acceptance Window (%R)	M	Analysis Date	Analysis Time	Run Number
CCV1	Cyanide	0.24	0.25	96	0	90 - 110		01/12/2018	12:13	LB92585
CCV2	Cyanide	0.24	0.25	96	0	90 - 110		01/12/2018	12:21	LB92585
CCV3	Cyanide	0.25	0.25	100	0	90 - 110		01/12/2018	12:28	LB92585



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- 3a -

INITIAL AND CONTINUING CALIBRATION BLANK SUMMARY

Client: LB92585

SDG No.: LB92585

Contract:

Lab Code: CHEM

Case No.: LB92585

SAS No.: LB92585

Sample ID	Analyte	Result mg/L	Acceptance Limit	Conc Qual	LOD	CRQL	M	Analysis Date	Analysis Time	Run Number
ICB1	Cyanide	0.00014	+/-0.005	U		0.005		01/12/2018	12:13	LB92585

Sample ID	Analyte	Result mg/L	Acceptance Limit	Conc Qual	LOD	CRQL	M	Analysis Date	Analysis Time	Run Number
CCB1	Cyanide	0.00018	+/-0.005	U		0.005		01/12/2018	12:13	LB92585
CCB2	Cyanide	0.00025	+/-0.005	U		0.005		01/12/2018	12:21	LB92585
CCB3	Cyanide	0.00017	+/-0.005	U		0.005		01/12/2018	12:28	LB92585



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- 3a -

INITIAL AND CONTINUING CALIBRATION BLANK SUMMARY

Client: LB92585

SDG No.: LB92585

Contract: Lab Code: CHEM

Case No.: LB92585

SAS No.: LB92585

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

Client:		Date Collected:	
Project:	LB92585	Date Received:	
Client Sample ID:	HIGHPB105593	SDG No.:	LB92585
Lab Sample ID:	HIGHPB105593	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	0.48		1	0.003		0.005	mg/L		01/12/2018	9012B



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Report of Analysis

Client:		Date Collected:	1/11/2018 12:00:00 AM
Project:	LB92585	Date Received:	1/11/2018 12:00:00 AM
Client Sample ID:	BU-02-011118	SDG No.:	LB92585
Lab Sample ID:	J1010-01	Matrix:	Solid
Level (low/med):	low	% Solid:	84.9

Cas	Parameter	Conc.	Qua.	DF	MDL	LOD	LOQ / CRQL	Units	Prep Date	Date Ana.	Ana Met.
57-12-5	Cyanide	0.055	J	1	0.038		0.29	mg/Kg	01/12/2018	01/12/2018	9012B



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Report of Analysis

Client:		Date Collected:	1/11/2018 12:00:00 AM
Project:	LB92585	Date Received:	1/11/2018 12:00:00 AM
Client Sample ID:	HR-05-011118-A	SDG No.:	LB92585
Lab Sample ID:	J1011-10	Matrix:	Solid
Level (low/med):	low	% Solid:	84.7

Cas	Parameter	Conc.	Qua.	DF	MDL	LOD	LOQ / CRQL	Units	Prep Date	Date Ana.	Ana Met.
57-12-5	Cyanide	0.057	J	1	0.038		0.29	mg/Kg	01/12/2018	01/12/2018	9012B



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Report of Analysis

Client:		Date Collected:	1/11/2018 12:00:00 AM
Project:	LB92585	Date Received:	1/11/2018 12:00:00 AM
Client Sample ID:	HR-05-011118-B	SDG No.:	LB92585
Lab Sample ID:	J1011-12	Matrix:	Solid
Level (low/med):	low	% Solid:	87.3

Cas	Parameter	Conc.	Qua.	DF	MDL	LOD	LOQ / CRQL	Units	Prep Date	Date Ana.	Ana Met.
57-12-5	Cyanide	0.11	J	1	0.036		0.28	mg/Kg	01/12/2018	01/12/2018	9012B



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Report of Analysis

Client:		Date Collected:	1/11/2018 12:00:00 AM
Project:	LB92585	Date Received:	1/11/2018 12:00:00 AM
Client Sample ID:	HR-05-011118-C	SDG No.:	LB92585
Lab Sample ID:	J1011-14	Matrix:	Solid
Level (low/med):	low	% Solid:	88.6

Cas	Parameter	Conc.	Qua.	DF	MDL	LOD	LOQ / CRQL	Units	Prep Date	Date Ana.	Ana Met.
57-12-5	Cyanide	0.22	J	1	0.036		0.27	mg/Kg	01/12/2018	01/12/2018	9012B



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Report of Analysis

Client:		Date Collected:	1/11/2018 12:00:00 AM
Project:	LB92585	Date Received:	1/11/2018 12:00:00 AM
Client Sample ID:	CL-02-011118-A	SDG No.:	LB92585
Lab Sample ID:	J1015-01	Matrix:	Solid
Level (low/med):	low	% Solid:	89

Cas	Parameter	Conc.	Qua.	DF	MDL	LOD	LOQ / CRQL	Units	Prep Date	Date Ana.	Ana Met.
57-12-5	Cyanide	0.013	U	1	0.037		0.28	mg/Kg	01/12/2018	01/12/2018	9012B



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Report of Analysis

Client:		Date Collected:	1/11/2018 12:00:00 AM
Project:	LB92585	Date Received:	1/11/2018 12:00:00 AM
Client Sample ID:	CL-02-011118-B	SDG No.:	LB92585
Lab Sample ID:	J1015-03	Matrix:	Solid
Level (low/med):	low	% Solid:	84.5

Cas	Parameter	Conc.	Qua.	DF	MDL	LOD	LOQ / CRQL	Units	Prep Date	Date Ana.	Ana Met.
57-12-5	Cyanide	0.11	J	1	0.037		0.28	mg/Kg	01/12/2018	01/12/2018	9012B



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Report of Analysis

Client:		Date Collected:	1/11/2018 12:00:00 AM
Project:	LB92585	Date Received:	1/11/2018 12:00:00 AM
Client Sample ID:	CL-02-011118-C	SDG No.:	LB92585
Lab Sample ID:	J1015-05	Matrix:	Solid
Level (low/med):	low	% Solid:	91.3

Cas	Parameter	Conc.	Qua.	DF	MDL	LOD	LOQ / CRQL	Units	Prep Date	Date Ana.	Ana Met.
57-12-5	Cyanide	0.075	J	1	0.035		0.27	mg/Kg	01/12/2018	01/12/2018	9012B



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Report of Analysis

Client:		Date Collected:	1/11/2018 12:00:00 AM
Project:	LB92585	Date Received:	1/11/2018 12:00:00 AM
Client Sample ID:	CL-02-011118-D	SDG No.:	LB92585
Lab Sample ID:	J1015-07	Matrix:	Solid
Level (low/med):	low	% Solid:	81.9

Cas	Parameter	Conc.	Qua.	DF	MDL	LOD	LOQ / CRQL	Units	Prep Date	Date Ana.	Ana Met.
57-12-5	Cyanide	0.018	U	1	0.04		0.31	mg/Kg	01/12/2018	01/12/2018	9012B



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Report of Analysis

Client:		Date Collected:	1/11/2018 12:00:00 AM
Project:	LB92585	Date Received:	1/11/2018 12:00:00 AM
Client Sample ID:	OR-02-011118	SDG No.:	LB92585
Lab Sample ID:	J1018-03	Matrix:	Solid
Level (low/med):	low	% Solid:	92.1

Cas	Parameter	Conc.	Qua.	DF	MDL	LOD	LOQ / CRQL	Units	Prep Date	Date Ana.	Ana Met.
57-12-5	Cyanide	0.11	J	1	0.034		0.26	mg/Kg	01/12/2018	01/12/2018	9012B



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Report of Analysis

Client:		Date Collected:	1/11/2018 12:00:00 AM
Project:	LB92585	Date Received:	1/11/2018 12:00:00 AM
Client Sample ID:	CLEAN-SAND-13	SDG No.:	LB92585
Lab Sample ID:	J1106-01	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	0.1	J	1	0.034		0.26	mg/Kg	01/12/2018	01/12/2018	9012B



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Report of Analysis

Client:		Date Collected:	1/11/2018 12:00:00 AM
Project:	LB92585	Date Received:	1/11/2018 12:00:00 AM
Client Sample ID:	CLEAN-SAND-14	SDG No.:	LB92585
Lab Sample ID:	J1106-02	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	0.017	U	1	0.034		0.26	mg/Kg	01/12/2018	01/12/2018	9012B



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Report of Analysis

Client:		Date Collected:	1/11/2018 12:00:00 AM
Project:	LB92585	Date Received:	1/11/2018 12:00:00 AM
Client Sample ID:	CLEAN-SAND-15	SDG No.:	LB92585
Lab Sample ID:	J1106-03	Matrix:	Solid
Level (low/med):	low	% Solid:	94.1

Cas	Parameter	Conc.	Qua.	DF	MDL	LOD	LOQ / CRQL	Units	Prep Date	Date Ana.	Ana Met.
57-12-5	Cyanide	0.011	U	1	0.033		0.25	mg/Kg	01/12/2018	01/12/2018	9012B



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Report of Analysis

Client:		Date Collected:	1/11/2018 12:00:00 AM
Project:	LB92585	Date Received:	1/11/2018 12:00:00 AM
Client Sample ID:	CLEAN-SAND-16	SDG No.:	LB92585
Lab Sample ID:	J1106-04	Matrix:	Solid
Level (low/med):	low	% Solid:	94.1

Cas	Parameter	Conc.	Qua.	DF	MDL	LOD	LOQ / CRQL	Units	Prep Date	Date Ana.	Ana Met.
57-12-5	Cyanide	0.27		1	0.034		0.26	mg/Kg	01/12/2018	01/12/2018	9012B



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Report of Analysis

Client:		Date Collected:	
Project:	LB92585	Date Received:	
Client Sample ID:	LOWPB105593	SDG No.:	LB92585
Lab Sample ID:	LOWPB105593	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	0.0088		1	0.003		0.005	mg/L		01/12/2018	9012B



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Report of Analysis

Client:		Date Collected:	
Project:	LB92585	Date Received:	
Client Sample ID:	LOWPB105593	SDG No.:	LB92585
Lab Sample ID:	LOWPB105593	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



GENCHEM
- 3b -
PREPARATION BLANK SUMMARY

Client: LB92585

SDG No.: LB92585

Instrument: Konelab 20

Sample ID	Analyte	Result (mg/Kg)	Acceptance Limit	Conc Qual	LOD mg/Kg	CRQL mg/Kg	M	Analysis Date	Analysis Time	Run
PB105593BL		SOLID		Batch Number:		PB105593		Prep Date:	01/12/2018	
	Cyanide	-0.0087	<0.24	U		0.24		01/12/2018	12:13	LB92585



GENCHEM
- 5a -
MATRIX SPIKE SUMMARY

client: LB92585 level: low sdg no.: LB92585
contract: lab code: CHEM case no.: LB92585 sas no.: LB92585
matrix: Solid sample id: J1010-01 client id: BU-02-011118MS
Percent Solids for Sample: 84.9 Spiked ID: J1010-01MS Percent Solids for Spike Sample: 84.9

Analyte	Units	Acceptance Limit %R	Spiked Result	C	Sample Result	C	Spike Added	% Recovery	Qual	M
Cyanide	mg/Kg	75 - 125	2.2		0.055	J	2.3	93		



GENCHEM
- 5a -
MATRIX SPIKE DUPLICATE SUMMARY

client: LB92585 level: low sdg no.: LB92585
contract: lab code: CHEM case no.: LB92585 sas no.: LB92585
matrix: Solid sample id: J1010-01 client id: BU-02-011118MSD
Percent Solids for Sample: 84.9 Spiked ID: J1010-01MSD Percent Solids for Spike Sample: 84.9

Analyte	Units	Acceptance Limit %R	MSD Result	C	Sample Result	C	Spike Added	% Recovery	Qual	M
Cyanide	mg/Kg	75 - 125	2.2		0.055	J	2.3	93		

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- 6 -

DUPLICATE SAMPLE SUMMARY

Client: LB92585 **Level:** LOW **SDG No.:** LB92585
Contract: **Lab Code:** CHEM **Case No.:** LB92585 **SAS No.:** LB92585
Matrix: Solid **Sample ID:** J1010-01 **Client ID:** BU-02-011118DUP
Percent Solids for Sample: 84.9 **Duplicate ID** J1010-01DUP **Percent Solids for Spike Sample:** 84.9

Analyte	Units	Acceptance Limit	Sample Result	C	Duplicate Result	C	RPD	Qual	M
Cyanide	mg/Kg	20	0.055	J	0.047	J	16		

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- 6 -

DUPLICATE SAMPLE SUMMARY

Client: LB92585 **Level:** LOW **SDG No.:** LB92585
Contract: **Lab Code:** CHEM **Case No.:** LB92585 **SAS No.:** LB92585
Matrix: Solid **Sample ID:** J1010-01MS **Client ID:** BU-02-011118MSD
Percent Solids for Sample: 84.9 **Duplicate ID** J1010-01MSD **Percent Solids for Spike Sample:** 84.9

Analyte	Units	Acceptance Limit	Sample Result	C	Duplicate Result	C	RPD	Qual	M
Cyanide	mg/Kg	20	2.2		2.2		0		



GENCHEM

- 7 -

LABORATORY CONTROL SAMPLE SUMMARY

Client: LB92585

SDG No.: LB92585

Contract:

Lab Code: CHEM

Case No.: LB92585

SAS No.: LB92585

Analyte	Units	True Value	Result	C	% Recovery	Acceptance Limits	M
PB105593BS Cyanide	mg/Kg	4.9	4.8		98	85 - 115	