



GENCHEM

- 3a -

INITIAL AND CONTINUING CALIBRATION BLANK SUMMARY

Client: LB86168 **SDG No.:** LB86168
Contract: **Lab Code:** CHEM **Case No.:** LB86168 **SAS No.:** LB86168

| Sample ID | Analyte | Result mg/L | Acceptance Limit | Conc Qual | LOD | CRQL | M | Analysis Date | Analysis Time | Run Number |
|-----------|---------|----------------|---------------------|--------------|-----|-------|---|------------------|------------------|---------------|
| ICB1 | Cyanide | 0.00038 | +/-0.005 | U | | 0.005 | | 03/06/2017 | 11:28 | LB86168 |



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INITIAL AND CONTINUING CALIBRATION BLANK SUMMARY

| Client: LB86168 | | SDG No.: LB86168 | | | | | | | | |
|-----------------|----------------|-------------------|------------------|-----------|-----|-------|---|---------------|---------------|------------|
| Contract: | Lab Code: CHEM | Case No.: LB86168 | SAS No.: LB86168 | | | | | | | |
| Sample ID | Analyte | Result mg/L | Acceptance Limit | Conc Qual | LOD | CRQL | M | Analysis Date | Analysis Time | Run Number |
| CCB1 | Cyanide | -0.0000714 | +/-0.005 | U | | 0.005 | | 03/06/2017 | 11:28 | LB86168 |
| CCB2 | Cyanide | 0.00034 | +/-0.005 | U | | 0.005 | | 03/06/2017 | 11:58 | LB86168 |



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INITIAL AND CONTINUING CALIBRATION BLANK SUMMARY

Client: LB86168

SDG No.: LB86168

Contract: Lab Code: CHEM

Case No.: LB86168

SAS No.: LB86168

| 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: | LB86168 | Date Received: | |
| Client Sample ID: | HIGHPB97334 | SDG No.: | LB86168 |
| Lab Sample ID: | HIGHPB97334 | 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 | 0.49 | | 1 | 0.003 | | 0.005 | mg/L | | 03/06/2017 | 9012B |



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Report of Analysis

| | | | |
|-------------------|------------------|-----------------|----------------------|
| Client: | | Date Collected: | 3/3/2017 12:00:00 AM |
| Project: | LB86168 | Date Received: | 3/3/2017 12:00:00 AM |
| Client Sample ID: | FRAC-TANK-252657 | SDG No.: | LB86168 |
| Lab Sample ID: | I2100-01 | 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 | 0.00039 | U | 1 | 0.003 | | 0.005 | mg/L | 03/03/2017 | 03/06/2017 | 9012B |



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Report of Analysis

| | | | |
|-------------------|------------|-----------------|---------|
| Client: | | Date Collected: | |
| Project: | LB86168 | Date Received: | |
| Client Sample ID: | LOWPB97334 | SDG No.: | LB86168 |
| Lab Sample ID: | LOWPB97334 | 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 | 0.01 | | 1 | 0.003 | | 0.005 | mg/L | | 03/06/2017 | 9012B |



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Report of Analysis

| | | | |
|-------------------|------------|-----------------|---------|
| Client: | | Date Collected: | |
| Project: | LB86168 | Date Received: | |
| Client Sample ID: | LOWPB97334 | SDG No.: | LB86168 |
| Lab Sample ID: | LOWPB97334 | Matrix: | WATER |
| Level (low/med): | low | % Solid: | 0 |

| 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



GENCHEM
- 3b -
PREPARATION BLANK SUMMARY

Client: LB86168

SDG No.: LB86168

Instrument: Konelab 20

| Sample ID | Analyte | Result (mg/L) | Acceptance Limit | Conc Qual | LOD mg/L | CRQL mg/L | M | Analysis Date | Analysis Time | Run |
|-----------|---------|------------------|---------------------|--------------|-------------|--------------|---|------------------|------------------|---------|
| PB97334BL | Cyanide | 0.0005 | <0.005 | U | | 0.005 | | 03/06/2017 | 11:28 | LB86168 |



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MATRIX SPIKE SUMMARY

client: LB86168 level: low sdg no.: LB86168
contract: lab code: CHEM case no.: LB86168 sas no.: LB86168
matrix: WATER sample id: I2100-01 client id: FRAC-TANK-252657MS
Percent Solids for Sample: 0 Spiked ID: I2100-01MS Percent Solids for Spike Sample: 0

| Analyte | Units | Acceptance Limit %R | Spiked Result | C | Sample Result | C | Spike Added | % Recovery | Qual | M |
|---------|-------|------------------------|------------------|---|------------------|---|----------------|---------------|------|---|
| Cyanide | mg/L | 75 - 125 | 0.033 | | 0.003 | U | 0.04 | 82.5 | | |



GENCHEM
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MATRIX SPIKE DUPLICATE SUMMARY

client: LB86168 level: low sdg no.: LB86168
contract: lab code: CHEM case no.: LB86168 sas no.: LB86168
matrix: WATER sample id: I2100-01 client id: FRAC-TANK-252657MSD
Percent Solids for Sample: 0 Spiked ID: I2100-01MSD Percent Solids for Spike Sample: 0

| Analyte | Units | Acceptance Limit %R | MSD Result | C | Sample Result | C | Spike Added | % Recovery | Qual | M |
|---------|-------|------------------------|---------------|---|------------------|---|----------------|---------------|------|---|
| Cyanide | mg/L | 75 - 125 | 0.034 | | 0.003 | U | 0.04 | 85 | | |

GENCHEM

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DUPLICATE SAMPLE SUMMARY

Client: LB86168 **Level:** LOW **SDG No.:** LB86168
Contract: **Lab Code:** CHEM **Case No.:** LB86168 **SAS No.:** LB86168
Matrix: WATER **Sample ID:** I2100-01 **Client ID:** FRAC-TANK-252657DUP
Percent Solids for Sample: 0 **Duplicate ID** I2100-01DUP **Percent Solids for Spike Sample:** 0

| Analyte | Units | Acceptance Limit | Sample Result | C | Duplicate Result | C | RPD | Qual | M |
|---------|-------|---------------------|------------------|---|---------------------|---|-----|------|---|
| Cyanide | mg/L | 20 | 0.003 | U | 0.001 | U | | | |



GENCHEM

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DUPLICATE SAMPLE SUMMARY

Client: LB86168 **Level:** LOW **SDG No.:** LB86168
Contract: **Lab Code:** CHEM **Case No.:** LB86168 **SAS No.:** LB86168
Matrix: WATER **Sample ID:** I2100-01MS **Client ID:** FRAC-TANK-252657MSD
Percent Solids for Sample: 0 **Duplicate ID** I2100-01MSD **Percent Solids for Spike Sample:** 0

| Analyte | Units | Acceptance Limit | Sample Result | C | Duplicate Result | C | RPD | Qual | M |
|---------|-------|---------------------|------------------|---|---------------------|---|-----|------|---|
| Cyanide | mg/L | 20 | 0.033 | | 0.034 | | 3 | | |

| Analyte | Units | True Value | Result | C | % Recovery | Acceptance Limits | M |
|-----------|-------|------------|--------|---|------------|-------------------|---|
| PB97334BS | | | | | | | |
| Cyanide | mg/L | 0.1 | 0.097 | | 97 | 85 - 115 | |