March 03, 2017

Lori Kozel
TETRA TECH
1 South Wacker Drive
Suite 3700
Chicago, IL 60606

Bureau Veritas Work Order No. 17030206

Reference: TOLEDO LITHIUM FIRE

Dear Lori Kozel:

Bureau Veritas North America, Inc. received 3 samples on March 03, 2017 for the analyses presented in the following report.

This is a revised report. Please see the Case Narrative for details.

This material is confidential and is intended solely for the person to whom it is addressed. If this is received in error, please contact the number provided below.

We appreciate the opportunity to assist you. If you have any questions concerning this report, please contact a Client Services Representative at (800) 806-5887.

Sincerely,

Karen Coonan

Karen Coonan

Client Services Representative
Electronic signature authorized through password protection

Bureau Veritas North America, Inc.
Health, Safety, and Environmental Services
22345 Roethel Drive
Novi, MI 48375

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CASE NARRATIVE

Date: *03-Mar-17*

CLIENT: TETRA TECH

Project: TOLEDO LITHIUM FIRE

Work Order No 17030206

FINAL REPORT: This is the final report. It includes the results of the TO-15 dilution.

The results of this report relate only to the samples listed in the body of this report.

Unless otherwise noted below, the following statements apply: 1) all samples were received in acceptable condition, 2) all quality control results associated with this sample set were within acceptable limits and/or do not adversely affect the reported results, and 3) the industrial hygiene results have not been blank corrected.

Volatiles by EPA TO-15: Our laboratory is accredited by TNI/NELAP as Florida laboratory #E87952. Please note that our accreditation from TNI/NELAP does not include 20 of the chemicals on the standard list of EPA TO-15 compounds or any tentatively identified compounds (TICs).

Nitrogen was used as the diluent gas instead of zero air listed in TO-15.

ANALYTICAL RESULTS

Date: *03-Mar-17*

Client: TETRA TECH

Project: TOLEDO LITHIUM FIRE

Work Order No: 17030206

Sample Identification TOLEDO FIRE-01-SUMMA-030317

Date Sampled: 3/3/2017

Lab Number: 003A

Date Received: 3/3/2017

Sample Type: Air, Can

Analysis Date: 3/3/2017

Test Method: EPA Method TO-15A

Analyst: JTF

Initial Pressure: -0.7 psig

Final Pressure: -0.7 psig

Canister ID: 10852

CAS #	Analyte	Results (ug/m³)	RL (ug/m³)	Results (ppbV)	RL (ppbV)	DF	Qual
71-55-6	1,1,1-Trichloroethane	ND	2.7	ND	0.5	1	
79-34-5	1,1,2,2-Tetrachloroethane	ND	3.4	ND	0.5	1	
79-00-5	1,1,2-Trichloroethane	ND	2.7	ND	0.5	1	
75-34-3	1,1-Dichloroethane	ND	2.0	ND	0.5	1	
75-35-4	1,1-Dichloroethene	ND	2.0	ND	0.5	1	
120-82-1	1,2,4-Trichlorobenzene	ND	3.7	ND	0.5	1	
95-63-6	1,2,4-Trimethylbenzene	**5.8**	2.5	**1.2**	0.5	1	
106-93-4	1,2-Dibromoethane	ND	3.8	ND	0.5	1	
95-50-1	1,2-Dichlorobenzene	ND	3.0	ND	0.5	1	
107-06-2	1,2-Dichloroethane	ND	2.0	ND	0.5	1	
78-87-5	1,2-Dichloropropane	ND	2.3	ND	0.5	1	
108-67-8	1,3,5-Trimethylbenzene	**1.8**	2.5	**0.36**	0.5	1	J
541-73-1	1,3-Dichlorobenzene	ND	3.0	ND	0.5	1	
106-46-7	1,4-Dichlorobenzene	ND	3.0	ND	0.5	1	
123-91-1	1,4-Dioxane	ND	7.2	ND	2	1	
78-93-3	2-Butanone	**25**	1.5	**8.4**	0.5	1	
591-78-6	2-Hexanone	ND	2.0	ND	0.5	1	
622-96-8	4-Ethyltoluene	ND	2.5	ND	0.5	1	
108-10-1	4-Methyl-2-pentanone	ND	2.0	ND	0.5	1	
67-64-1	Acetone	**120**	12	**50**	5	5	
107-05-1	Allyl Chloride	ND	1.6	ND	0.5	1	
71-43-2	Benzene	**220**	8.0	**69**	2.5	5	
100-44-7	Benzyl Chloride	ND	2.6	ND	0.5	1	
75-27-4	Bromodichloromethane	ND	3.4	ND	0.5	1	
75-25-2	Bromoform	ND	5.2	ND	0.5	1	
74-83-9	Bromomethane	**0.43**	1.9	**0.11**	0.5	1	J
75-15-0	Carbon Disulfide	**1.5**	1.6	**0.49**	0.5	1	J
56-23-5	Carbon Tetrachloride	ND	3.1	ND	0.5	1	

General Notes and Qualifiers:

--; Information not available or not applicable.
ND; Less than the indicated limit of detection (LOD)
RL; Report Limit
J; Value is between the MDL and Reporting Limit, estimated r
B; Analyte detected in the associated Method Blank
S; Spike Recovery outside accepted recovery limits
R; RPD outside accepted recovery limits
T; Tentatively Identified Compound (TIC)
E; Value exceeds linear range of calibration curve

ANALYTICAL RESULTS

Date: *03-Mar-17*

Client: TETRA TECH

Project: TOLEDO LITHIUM FIRE

Work Order No: 17030206

Sample Identification TOLEDO FIRE-01-SUMMA-030317

Date Sampled: 3/3/2017

Lab Number: 003A

Date Received: 3/3/2017

Sample Type: Air, Can

Analysis Date: 3/3/2017

Test Method: EPA Method TO-15A

Analyst: JTF

Initial Pressure: -0.7 psig

Final Pressure: -0.7 psig

Canister ID: 10852

CAS #	Analyte	Results (ug/m³)	RL (ug/m³)	Results (ppbV)	RL (ppbV)	DF	Qual
108-90-7	Chlorobenzene	ND	2.3	ND	0.5	1	
75-00-3	Chloroethane	ND	1.3	ND	0.5	1	
67-66-3	Chloroform	ND	2.4	ND	0.5	1	
74-87-3	Chloromethane	**15**	1.0	**7.3**	0.5	1	
156-59-2	cis-1,2-Dichloroethene	ND	2.0	ND	0.5	1	
10061-01-5	cis-1,3-Dichloropropene	ND	2.3	ND	0.5	1	
124-48-1	Dibromochloromethane	ND	4.3	ND	0.5	1	
75-71-8	Dichlorodifluoromethane	**2.1**	2.5	**0.42**	0.5	1	J
141-78-6	Ethyl Acetate	ND	1.8	ND	0.5	1	
100-41-4	Ethylbenzene	**14**	2.2	**3.1**	0.5	1	
142-82-5	Heptane	**7.3**	2.0	**1.8**	0.5	1	
87-68-3	Hexachlorobutadiene	ND	5.3	ND	0.5	1	
108-38-3	m & p-Xylene	**22**	2.2	**5.2**	0.5	1	
1634-04-4	Methyl tert-Butyl Ether	ND	1.8	ND	0.5	1	
75-09-2	Methylene Chloride	ND	1.7	ND	0.5	1	
91-20-3	Naphthalene	**69**	2.6	**13**	0.5	1	
95-47-6	o-Xylene	**8.6**	2.2	**2.0**	0.5	1	
100-42-5	Styrene	**30**	2.1	**7.0**	0.5	1	
127-18-4	Tetrachloroethene	ND	3.4	ND	0.5	1	
108-88-3	Toluene	**78**	1.9	**21**	0.5	1	
156-60-5	trans-1,2-Dichloroethene	ND	2.0	ND	0.5	1	
10061-02-6	trans-1,3-Dichloropropene	ND	2.3	ND	0.5	1	
79-01-6	Trichloroethene	ND	2.7	ND	0.5	1	
75-69-4	Trichlorofluoromethane	**1.4**	2.8	**0.25**	0.5	1	J
108-05-4	Vinyl Acetate	**130**	8.8	**37**	2.5	5	
75-01-4	Vinyl Chloride	ND	1.3	ND	0.5	1	

General Notes and Qualifiers:

--; Information not available or not applicable.
ND; Less than the indicated limit of detection (LOD)
RL; Report Limit
J; Value is between the MDL and Reporting Limit, estimated r
B; Analyte detected in the associated Method Blank
S; Spike Recovery outside accepted recovery limits
R; RPD outside accepted recovery limits
T; Tentatively Identified Compound (TIC)
E; Value exceeds linear range of calibration curve

ANALYTICAL RESULTS

Date: ***03-Mar-17***

Client: **TETRA TECH**

Project: **TOLEDO LITHIUM FIRE** **Work Order No: 17030206**

Client ID: TOLEDO FIRE-01-TAL-030317 **Date Sampled:** 3/3/2017

Lab ID: 001A **DateReceived:** 3/3/2017

Matrix: MCE Filter, .8um **Air Vol.(L):** 1154.515

Analyte	Concentration (µg)	Concentration (mg/m³)	Reporting Limit (µg)	Test Method	Date Analyzed	/ Analyst
Aluminum	<1	<0.00087	1	NIOSH 7303/7300 Mod	03/03/2017	JWS
Antimony	<1	<0.00087	1	NIOSH 7303/7300 Mod	03/03/2017	JWS
Arsenic	<1	<0.00087	1	NIOSH 7303/7300 Mod	03/03/2017	JWS
Barium	<1	<0.00087	1	NIOSH 7303/7300 Mod	03/03/2017	JWS
Beryllium	<0.02	<0.000017	0.02	NIOSH 7303/7300 Mod	03/03/2017	JWS
Cadmium	<0.5	<0.00043	0.5	NIOSH 7303/7300 Mod	03/03/2017	JWS
Calcium	<10	<0.0087	10	NIOSH 7303/7300 Mod	03/03/2017	JWS
Chromium	<1	<0.00087	1	NIOSH 7303/7300 Mod	03/03/2017	JWS
Cobalt	<1	<0.00087	1	NIOSH 7303/7300 Mod	03/03/2017	JWS
Copper	<1	<0.00087	1	NIOSH 7303/7300 Mod	03/03/2017	JWS
Iron	<1	<0.00087	1	NIOSH 7303/7300 Mod	03/03/2017	JWS
Lead	2.9	0.0025	1	NIOSH 7303/7300 Mod	03/03/2017	JWS
Lithium	<1	<0.00087	1	NIOSH 7303/7300 Mod	03/03/2017	JWS
Magnesium	<10	<0.0087	10	NIOSH 7303/7300 Mod	03/03/2017	JWS
Manganese	<1	<0.00087	1	NIOSH 7303/7300 Mod	03/03/2017	JWS
Molybdenum	<1	<0.00087	1	NIOSH 7303/7300 Mod	03/03/2017	JWS
Nickel	<1	<0.00087	1	NIOSH 7303/7300 Mod	03/03/2017	JWS
Phosphorus	<5	<0.0043	5	NIOSH 7303/7300 Mod	03/03/2017	JWS
Potassium	<10	<0.0087	10	NIOSH 7303/7300 Mod	03/03/2017	JWS
Selenium	<1	<0.00087	1	NIOSH 7303/7300 Mod	03/03/2017	JWS
Silver	<0.2	<0.00017	0.2	NIOSH 7303/7300 Mod	03/03/2017	JWS
Sodium	<10	<0.0087	10	NIOSH 7303/7300 Mod	03/03/2017	JWS
Strontium	<1	<0.00087	1	NIOSH 7303/7300 Mod	03/03/2017	JWS
Thallium	<1	<0.00087	1	NIOSH 7303/7300 Mod	03/03/2017	JWS
Tin	<1	<0.00087	1	NIOSH 7303/7300 Mod	03/03/2017	JWS
Titanium	<1	<0.00087	1	NIOSH 7303/7300 Mod	03/03/2017	JWS
Vanadium	<1	<0.00087	1	NIOSH 7303/7300 Mod	03/03/2017	JWS
Zinc	1.8	0.0016	1	NIOSH 7303/7300 Mod	03/03/2017	JWS

General Notes:
<: Less than the indicated reporting limit (RL).
--: Information not available or not applicable.

ANALYTICAL RESULTS

Date: ***03-Mar-17***

Client: **TETRA TECH**

Project: **TOLEDO LITHIUM FIRE** **Work Order No: 17030206**

Client ID: TOLEDO FIRE-02-TAL-030317 **Date Sampled:** 3/3/2017

Lab ID: 002A **DateReceived:** 3/3/2017

Matrix: MCE Filter, .8um **Air Vol.(L):** 1212.896

Analyte	Concentration (µg)	Concentration (mg/m³)	Reporting Limit (µg)	Test Method	Date Analyzed	/ Analyst
Aluminum	<1	<0.00082	1	NIOSH 7303/7300 Mod	03/03/2017	JWS
Antimony	<1	<0.00082	1	NIOSH 7303/7300 Mod	03/03/2017	JWS
Arsenic	<1	<0.00082	1	NIOSH 7303/7300 Mod	03/03/2017	JWS
Barium	<1	<0.00082	1	NIOSH 7303/7300 Mod	03/03/2017	JWS
Beryllium	<0.02	<0.000016	0.02	NIOSH 7303/7300 Mod	03/03/2017	JWS
Cadmium	<0.5	<0.00041	0.5	NIOSH 7303/7300 Mod	03/03/2017	JWS
Calcium	<10	<0.0082	10	NIOSH 7303/7300 Mod	03/03/2017	JWS
Chromium	<1	<0.00082	1	NIOSH 7303/7300 Mod	03/03/2017	JWS
Cobalt	<1	<0.00082	1	NIOSH 7303/7300 Mod	03/03/2017	JWS
Copper	<1	<0.00082	1	NIOSH 7303/7300 Mod	03/03/2017	JWS
Iron	<1	<0.00082	1	NIOSH 7303/7300 Mod	03/03/2017	JWS
Lead	<1	<0.00082	1	NIOSH 7303/7300 Mod	03/03/2017	JWS
Lithium	<1	<0.00082	1	NIOSH 7303/7300 Mod	03/03/2017	JWS
Magnesium	<10	<0.0082	10	NIOSH 7303/7300 Mod	03/03/2017	JWS
Manganese	<1	<0.00082	1	NIOSH 7303/7300 Mod	03/03/2017	JWS
Molybdenum	<1	<0.00082	1	NIOSH 7303/7300 Mod	03/03/2017	JWS
Nickel	<1	<0.00082	1	NIOSH 7303/7300 Mod	03/03/2017	JWS
Phosphorus	<5	<0.0041	5	NIOSH 7303/7300 Mod	03/03/2017	JWS
Potassium	<10	<0.0082	10	NIOSH 7303/7300 Mod	03/03/2017	JWS
Selenium	<1	<0.00082	1	NIOSH 7303/7300 Mod	03/03/2017	JWS
Silver	<0.2	<0.00016	0.2	NIOSH 7303/7300 Mod	03/03/2017	JWS
Sodium	<10	<0.0082	10	NIOSH 7303/7300 Mod	03/03/2017	JWS
Strontium	<1	<0.00082	1	NIOSH 7303/7300 Mod	03/03/2017	JWS
Thallium	<1	<0.00082	1	NIOSH 7303/7300 Mod	03/03/2017	JWS
Tin	1.6	0.0013	1	NIOSH 7303/7300 Mod	03/03/2017	JWS
Titanium	<1	<0.00082	1	NIOSH 7303/7300 Mod	03/03/2017	JWS
Vanadium	<1	<0.00082	1	NIOSH 7303/7300 Mod	03/03/2017	JWS
Zinc	<1	<0.00082	1	NIOSH 7303/7300 Mod	03/03/2017	JWS

General Notes:
<: Less than the indicated reporting limit (RL).
--: Information not available or not applicable.

Bureau Veritas North America, Inc.

Date: *03-Mar-17*

CLIENT: TETRA TECH
Work Order: 17030206
Project: TOLEDO LITHIUM FIRE

QC SUMMARY REPORT

Method Blank

Sample ID: **MB-67000** Batch ID: **67000** Units: **µg** Analysis Date: **3/3/2017** Prep Date: **3/3/2017**

Client ID: Run ID: **ME_PE10J_170303I** SeqNo: **4826813**

Analyte	Result 1	PQL	Spike Added	Unspiked Sample Result	%REC	LowLimit	HighLimit	Result 2	%RPD	RPDLimit	Qual
Lead	ND	1.0									

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below Reporting Limit
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank

CLIENT: TETRA TECH
Work Order: 17030206
Project: TOLEDO LITHIUM FIRE

QC SUMMARY REPORT

Method Blank

Sample ID: **67000-LB** Batch ID: **67000** Units: **µg** Analysis Date: **3/3/2017 12:00:54 PM** Prep Date:

Client ID: Run ID: **ME_PE10J_170303J** SeqNo: **4826956**

Analyte	Result 1	PQL	Spike Added	Unspiked Sample Result	%REC	LowLimit	HighLimit	Result 2	%RPD	RPDLimit	Qual
Bismuth	ND	1.0									
Cerium	ND	1.0									
Indium	ND	1.0									
Lanthanum	ND	1.0									
Zirconium	ND	3.0									
Aluminum	0.1512	1.0									
Antimony	ND	1.0									
Arsenic	0.1433	1.0									
Barium	0.0175	1.0									
Beryllium	ND	0.020									
Boron	0.1632	1.0									
Cadmium	ND	0.50									
Calcium	0.8312	10									
Chromium	0.4323	1.0									
Cobalt	ND	1.0									
Copper	0.0127	1.0									
Iron	0.0723	1.0									
Lead	0.0102	1.0									
Lithium	0.004	1.0									
Magnesium	0.1214	10									
Manganese	0.0098	1.0									
Molybdenum	ND	1.0									
Nickel	0.0147	1.0									
Phosphorus	0.2418	5.0									

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below Reporting Limit
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank

CLIENT: TETRA TECH
Work Order: 17030206
Project: TOLEDO LITHIUM FIRE

QC SUMMARY REPORT

Method Blank

Sample ID: **67000-LB** Batch ID: **67000** Units: **µg** Analysis Date: **3/3/2017 12:00:54 PM** Prep Date:

Client ID: Run ID: **ME_PE10J_170303J** SeqNo: **4826956**

Analyte	Result 1	PQL	Spike Added	Unspiked Sample Result	%REC	LowLimit	HighLimit	Result 2	%RPD	RPDLimit	Qual
Potassium	0.2082	10									
Selenium	0.0337	1.0									
Silver	0.0014	0.20									
Sodium	0.1919	10									
Strontium	0.0005	1.0									
Thallium	ND	1.0									
Tin	0.0682	1.0									
Titanium	0.0031	1.0									
Vanadium	ND	1.0									
Zinc	0.0804	1.0									

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below Reporting Limit
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank

CLIENT: TETRA TECH
Work Order: 17030206
Project: TOLEDO LITHIUM FIRE

QC SUMMARY REPORT

Method Blank

Sample ID: **17030206-000a** Batch ID: **R240526** Units: **ppbv** Analysis Date: **3/3/2017 2:17:00 PM** Prep Date:

Client ID: Run ID: **MS_HP4D_170303A** SeqNo: **4827538**

Analyte	Result 1	PQL	Spike Added	Unspiked Sample Result	%REC	LowLimit	HighLimit	Result 2	%RPD	RPDLimit	Qual
1,1,1-Trichloroethane	ND	0.50									
1,1,2,2-Tetrachloroethane	ND	0.50									
1,1,2-Trichloroethane	ND	0.50									
1,1-Dichloroethane	ND	0.50									
1,1-Dichloroethene	ND	0.50									
1,2,4-Trichlorobenzene	ND	0.50									
1,2,4-Trimethylbenzene	ND	0.50									
1,2-Dibromoethane	ND	0.50									
1,2-Dichlorobenzene	ND	0.50									
1,2-Dichloroethane	ND	0.50									
1,2-Dichloropropane	ND	0.50									
1,3,5-Trimethylbenzene	ND	0.50									
1,3-Butadiene	ND	0.50									
1,3-Dichlorobenzene	ND	0.50									
1,4-Dichlorobenzene	ND	0.50									
1,4-Dioxane	ND	2.0									
2,2,4-Trimethylpentane	ND	0.50									
2-Butanone	ND	0.50									
2-Hexanone	ND	0.50									
4-Ethyltoluene	ND	0.50									
4-Methyl-2-pentanone	ND	0.50									
Acetone	ND	1.0									
Allyl Chloride	ND	0.50									
Benzene	ND	0.50									

Qualifiers: ND - Not Detected at the Reporting Limit; S - Spike Recovery outside accepted recovery limits; B - Analyte detected in the associated Method Blank; J - Analyte detected below Reporting Limit; R - RPD outside accepted recovery limits

CLIENT: TETRA TECH
Work Order: 17030206
Project: TOLEDO LITHIUM FIRE

QC SUMMARY REPORT

Method Blank

Sample ID: **17030206-000a** Batch ID: **R240526** Units: **ppbv** Analysis Date: **3/3/2017 2:17:00 PM** Prep Date:

Client ID: Run ID: **MS_HP4D_170303A** SeqNo: **4827538**

Analyte	Result 1	PQL	Spike Added	Unspiked Sample Result	%REC	LowLimit	HighLimit	Result 2	%RPD	RPDLimit	Qual
Benzyl Chloride	ND	0.50									
Bromodichloromethane	ND	0.50									
Bromoethene	ND	0.50									
Bromoform	ND	0.50									
Bromomethane	ND	0.50									
Carbon Disulfide	ND	0.50									
Carbon Tetrachloride	ND	0.50									
Chlorobenzene	ND	0.50									
Chloroethane	ND	0.50									
Chloroform	ND	0.50									
Chloromethane	ND	0.50									
cis-1,2-Dichloroethene	ND	0.50									
cis-1,3-Dichloropropene	ND	0.50									
Cyclohexane	ND	0.50									
Dibromochloromethane	ND	0.50									
Dichlorodifluoromethane	ND	0.50									
Dichlorotetrafluoroethane	ND	0.50									
Ethyl Acetate	ND	0.50									
Ethylbenzene	ND	0.50									
Heptane	ND	0.50									
Hexachlorobutadiene	ND	0.50									
Hexane	ND	0.50									
Isopropyl Alcohol	ND	1.0									
m & p-Xylene	ND	0.50									

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below Reporting Limit
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank

CLIENT: TETRA TECH
Work Order: 17030206
Project: TOLEDO LITHIUM FIRE

QC SUMMARY REPORT

Method Blank

Sample ID: **17030206-000a** Batch ID: **R240526** Units: **ppbv** Analysis Date: **3/3/2017 2:17:00 PM** Prep Date:

Client ID: Run ID: **MS_HP4D_170303A** SeqNo: **4827538**

Analyte	Result 1	PQL	Spike Added	Unspiked Sample Result	%REC	LowLimit	HighLimit	Result 2	%RPD	RPDLimit	Qual
Methyl tert-Butyl Ether	ND	0.50									
Methylene Chloride	ND	0.50									
Naphthalene	ND	0.50									
o-Xylene	ND	0.50									
Propene	ND	0.50									
Styrene	ND	0.50									
Tetrachloroethene	ND	0.50									
Tetrahydrofuran	ND	0.50									
Toluene	ND	0.50									
trans-1,2-Dichloroethene	ND	0.50									
trans-1,3-Dichloropropene	ND	0.50									
Trichloroethene	ND	0.50									
Trichlorofluoromethane	ND	0.50									
Trichlorotrifluoroethane	ND	0.50									
Vinyl Acetate	ND	0.50									
Vinyl Chloride	ND	0.50									

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below Reporting Limit
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank

Bureau Veritas North America, Inc.

Date: *03-Mar-17*

CLIENT: TETRA TECH
Work Order: 17030206
Project: TOLEDO LITHIUM FIRE

QC SUMMARY REPORT

Laboratory Control Spike

Sample ID: **LCS-67000** Batch ID: **67000** Units: **µg** Analysis Date: **3/3/2017** Prep Date: **3/3/2017**

Client ID: Run ID: **ME_PE10J_170303I** SeqNo: **4826814**

Analyte	Result 1	PQL	Spike Added	Unspiked Sample Result	%REC	LowLimit	HighLimit	Result 2	%RPD	RPDLimit	Qual
Lead	9.591	1.0	10	0	95.9	93	121				

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below Reporting Limit
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank

CLIENT: TETRA TECH
Work Order: 17030206
Project: TOLEDO LITHIUM FIRE

QC SUMMARY REPORT

Laboratory Control Spike

Sample ID: **67000-LCS** Batch ID: **67000** Units: **µg** Analysis Date: **3/3/2017 12:02:38 PM** Prep Date:

Client ID: Run ID: **ME_PE10J_170303J** SeqNo: **4826957**

Analyte	Result 1	PQL	Spike Added	Unspiked Sample Result	%REC	LowLimit	HighLimit	Result 2	%RPD	RPDLimit	Qual
Bismuth	10.64	1.0	10	0	106	94.2	119				
Cerium	ND	1.0	10	0	0	87.4	112				S
Indium	10.59	1.0	10	0	106	94.7	115				
Lanthanum	10.05	1.0	10	0	101	93	110				
Zirconium	9.92	3.0	10	0	99.2	86.3	120				
Aluminum	9.284	1.0	10	0	92.8	83.4	117				
Antimony	9.533	1.0	10	0	95.3	86.1	116				
Arsenic	9.964	1.0	10	0	99.6	87.3	116				
Barium	10.34	1.0	10	0	103	92.2	119				
Beryllium	9.607	0.020	10	0	96.1	87.7	119				
Boron	9.646	1.0	10	0	96.5	81.5	108				
Cadmium	10.14	0.50	10	0	101	90.8	119				
Calcium	10.9	10	10	0	109	85.5	121				
Chromium	10.6	1.0	10	0	106	91.2	118				
Cobalt	10.23	1.0	10	0	102	91.1	119				
Copper	10.4	1.0	10	0	104	93.5	121				
Iron	9.792	1.0	10	0	97.9	85.8	124				
Lead	10.25	1.0	10	0	102	93	121				
Lithium	8.96	1.0	10	0	89.6	84.5	119				
Magnesium	9.56	10	10	0	95.6	89.1	117				
Manganese	10.36	1.0	10	0	104	91.5	122				
Molybdenum	10.18	1.0	10	0	102	90.8	115				
Nickel	10.24	1.0	10	0	102	92.5	119				
Phosphorus	9.29	5.0	10	0	92.9	86.9	118				

Qualifiers:
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CLIENT: TETRA TECH
Work Order: 17030206
Project: TOLEDO LITHIUM FIRE

QC SUMMARY REPORT

Laboratory Control Spike

Sample ID: **67000-LCS** Batch ID: **67000** Units: **µg** Analysis Date: **3/3/2017 12:02:38 PM** Prep Date:

Client ID: Run ID: **ME_PE10J_170303J** SeqNo: **4826957**

Analyte	Result 1	PQL	Spike Added	Unspiked Sample Result	%REC	LowLimit	HighLimit	Result 2	%RPD	RPDLimit	Qual
Potassium	92.3	10	100	0	92.3	87.2	121				
Selenium	10.26	1.0	10	0	103	80.8	122				
Silver	9.853	0.20	10	0	98.5	65.6	128				
Sodium	93.7	10	100	0	93.7	69	111				
Strontium	9.426	1.0	10	0	94.3	87.5	117				
Thallium	10.11	1.0	10	0	101	84.3	125				
Tin	10.42	1.0	10	0	104	93.2	123				
Titanium	10.09	1.0	10	0	101	88.9	118				
Vanadium	10.21	1.0	10	0	102	89	116				
Zinc	10.23	1.0	10	0	102	90.3	119				

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R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank

Bureau Veritas North America, Inc.

Date: *03-Mar-17*

CLIENT: TETRA TECH
Work Order: 17030206
Project: TOLEDO LITHIUM FIRE

QC SUMMARY REPORT

Laboratory Control Spike Duplicate

Sample ID: **LCSD** Batch ID: **67000** Units: **µg** Analysis Date: **3/3/2017** Prep Date: **3/3/2017**

Client ID: Run ID: **ME_PE10J_170303I** SeqNo: **4826818**

Analyte	Result 1	PQL	Spike Added	Unspiked Sample Result	%REC	LowLimit	HighLimit	Result 2	%RPD	RPDLimit	Qual
Lead	9.801	1.0	10	0	98	93	121	9.591	2.17	9.1	

Qualifiers:
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R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank

CLIENT: TETRA TECH
Work Order: 17030206
Project: TOLEDO LITHIUM FIRE

QC SUMMARY REPORT

Laboratory Control Spike Duplicate

Sample ID: **67000-LCSD** Batch ID: **67000** Units: **µg** Analysis Date: **3/3/2017 12:04:25 PM** Prep Date:

Client ID: Run ID: **ME_PE10J_170303J** SeqNo: **4826958**

Analyte	Result 1	PQL	Spike Added	Unspiked Sample Result	%REC	LowLimit	HighLimit	Result 2	%RPD	RPDLimit	Qual
Bismuth	10.71	1.0	10	0	107	94.2	119	10.64	0.656	12.4	
Cerium	ND	1.0	10	0	0	87.4	112	0	0	12.9	S
Indium	10.7	1.0	10	0	107	94.7	115	10.59	1.03	9.49	
Lanthanum	10.08	1.0	10	0	101	93	110	10.05	0.298	32	
Zirconium	10.04	3.0	10	0	100	86.3	120	9.92	1.2	6.51	
Aluminum	9.341	1.0	10	0	93.4	83.4	117	9.284	0.612	9.96	
Antimony	9.607	1.0	10	0	96.1	86.1	116	9.533	0.773	10.8	
Arsenic	10.03	1.0	10	0	100	87.3	116	9.964	0.66	11.6	
Barium	10.43	1.0	10	0	104	92.2	119	10.34	0.867	9.47	
Beryllium	9.835	0.020	10	0	98.4	87.7	119	9.607	2.35	11	
Boron	9.774	1.0	10	0	97.7	81.5	108	9.646	1.32	5.58	
Cadmium	10.23	0.50	10	0	102	90.8	119	10.14	0.884	8.71	
Calcium	10.91	10	10	0	109	85.5	121	10.9	0.0917	14	
Chromium	10.53	1.0	10	0	105	91.2	118	10.6	0.663	8.81	
Cobalt	10.32	1.0	10	0	103	91.1	119	10.23	0.876	9.83	
Copper	10.45	1.0	10	0	105	93.5	121	10.4	0.48	8.1	
Iron	9.837	1.0	10	0	98.4	85.8	124	9.792	0.459	13.6	
Lead	10.32	1.0	10	0	103	93	121	10.25	0.681	9.1	
Lithium	9.264	1.0	10	0	92.6	84.5	119	8.96	3.34	9.13	
Magnesium	9.745	10	10	0	97.4	89.1	117	9.56	1.92	11.1	
Manganese	10.49	1.0	10	0	105	91.5	122	10.36	1.25	8.23	
Molybdenum	10.25	1.0	10	0	102	90.8	115	10.18	0.685	9.54	
Nickel	10.35	1.0	10	0	103	92.5	119	10.24	1.07	8.99	
Phosphorus	9.264	5.0	10	0	92.6	86.9	118	9.29	0.28	13.1	

Qualifiers: ND - Not Detected at the Reporting Limit; S - Spike Recovery outside accepted recovery limits; B - Analyte detected in the associated Method Blank; J - Analyte detected below Reporting Limit; R - RPD outside accepted recovery limits

CLIENT: TETRA TECH
Work Order: 17030206
Project: TOLEDO LITHIUM FIRE

QC SUMMARY REPORT

Laboratory Control Spike Duplicate

Sample ID: **67000-LCSD** Batch ID: **67000** Units: **µg** Analysis Date: **3/3/2017 12:04:25 PM** Prep Date:

Client ID: Run ID: **ME_PE10J_170303J** SeqNo: **4826958**

Analyte	Result 1	PQL	Spike Added	Unspiked Sample Result	%REC	LowLimit	HighLimit	Result 2	%RPD	RPDLimit	Qual
Potassium	93.69	10	100	0	93.7	87.2	121	92.3	1.49	9.66	
Selenium	9.953	1.0	10	0	99.5	80.8	122	10.26	3.04	14.6	
Silver	9.933	0.20	10	0	99.3	65.6	128	9.853	0.809	29.6	
Sodium	97.49	10	100	0	97.5	69	111	93.7	3.96	18.2	
Strontium	9.666	1.0	10	0	96.7	87.5	117	9.426	2.51	8.8	
Thallium	10.13	1.0	10	0	101	84.3	125	10.11	0.198	17.7	
Tin	10.54	1.0	10	0	105	93.2	123	10.42	1.15	10.7	
Titanium	10.21	1.0	10	0	102	88.9	118	10.09	1.18	10.9	
Vanadium	10.28	1.0	10	0	103	89	116	10.21	0.683	9.88	
Zinc	10.4	1.0	10	0	104	90.3	119	10.23	1.65	8.75	

Qualifiers:
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REQUEST FOR LABORATORY ANALYTICAL SERVICES

For Bureau Veritas Use Only
Bureau Veritas Lab Project No.
170302006

BUREAU VERITAS 1828

Bureau Veritas North America, Inc.

Detroit Lab
22345 Roethel Drive
Novi, MI 48375
(800) 806-5887
(248) 344-1770
FAX (248) 344-2655

Atlanta Lab
3380 Chastain Meadows Pky., Suite 300
Kennesaw, GA 30144
(800) 252-9919
(770) 499-7500
FAX (770) 499-7511

Chicago Lab
95 Oakwood Road
Lake Zurich, IL 60047
(888) 576-7522
(847) 726-3320
FAX (847) 726-3323

RUSH ANALYSIS
CONTACT LAB IN ADVANCE
Need Results by: 3 / 3 / 17
RUSH Charges Authorized? [X] Yes [ ] No
(If yes, Initial here) _____
[X] Email Results to lori.kozel@tetratech.com

REPORT RESULTS TO
Name: Lori Kozel
Company: Tetra Tech
Mailing Address: 25213 Sequndre Road
City, State, Zip: Madison Heights MI 48071
Telephone No.: 313 574 3176
FAX No.:
Client Job No.:
Dept.:

BILLING / INVOICE INFORMATION
[ ] PO # _____ [ ] Call for Credit Card Information [ ] Direct Bill
Name:
Company:
Address:
City, State, Zip:

Special instructions and/or specific regulatory requirements:
(method, limit of detection, etc.)
Rush
Full data pkg.

ANALYSIS REQUESTED
(Enter an 'X' in the box below to indicate request. Enter a 'P' if Preservative added.*)

CLIENT SAMPLE IDENTIFICATION	DATE SAMPLED	MINUTES SAMPLED	MATRIX/ MEDIA	AIR VOLUME (specify units)	no mercury TAL metals (including Lithium)	TO15										FOR LAB USE ONLY
✓ Toledo Fire-01-TAL-030317	3/3/17	466	A	1154.5152	X											
✓ Toledo Fire-02-TAL-030317	3/3/17	464	A	1212.8964	X											
✓ Toledo Fire-01-Summa-030317	3/3/17	—	A	—		X										Can number 10852

CHAIN OF CUSTODY
Collected by: Kelly Thomas (print)
Collector's Signature: [signature]
Relinquished by: [signature] Date/Time 3/3/17 10:50
Received by: Jessica J Preble Date/Time 3-3-17 10:50am
~~Relinquished by:~~ ~~Date/Time~~
~~Received by:~~ ~~Date/Time~~
Method of Shipment:
Received at Lab by: Karen Cooper Date/Time 3/3/17 10:50
Sample Condition Upon Receipt: [X] Acceptable [ ] Other (explain)

Authorized by: Date
(Client Signature **MUST** Accompany Request)

Page ____ of ____