



ALS USA Inc.  
4977 Energy Way  
Reno NV 89502  
Phone: +1 775 356 5395 Fax: +1 775 355 0179  
www.alsglobal.com/geochemistry

To: LIBERTY STAR URANIUM & METALS  
CORPORATION  
2 E CONGRESS STREET  
TUCSON AZ 85701

Page: 1  
Total # Pages: 2 (A - D)  
Plus Appendix Pages  
Finalized Date: 25-OCT-2020  
This copy reported on  
26-OCT-2020  
Account: LIBSTA

## CERTIFICATE TU20211476

Project: Hay Mountain-Red Rock Canyon

This report is for 23 Rock samples submitted to our lab in Tucson, AZ, USA on 22-SEP-2020.

The following have access to data associated with this certificate:

JAY CRAWFORD

## SAMPLE PREPARATION

ALS CODE	DESCRIPTION
WEI-21	Received Sample Weight
LOG-22	Sample login - Rcd w/o BarCode
SND-ALS	Send samples to internal laboratory
CRU-QC	Crushing QC Test
PUL-QC	Pulverizing QC Test
CRU-31	Fine crushing - 70% <2mm
SPL-22Y	Split Sample - Boyd Rotary Splitter
PUL-31	Pulverize up to 250g 85% <75 um

## ANALYTICAL PROCEDURES

ALS CODE	DESCRIPTION	INSTRUMENT
ME-OG46	Ore Grade Elements - AquaRegia	ICP-AES
Cu-OG46	Ore Grade Cu - Aqua Regia	
Au-GRA21	Au 30g FA-GRAV finish	WST-SIM
ME-MS41	Ultra Trace Aqua Regia ICP-MS	

This is the Final Report and supersedes any preliminary report with this certificate number. Results apply to samples as submitted. All pages of this report have been checked and approved for release.

\*\*\*\*\* See Appendix Page for comments regarding this certificate \*\*\*\*\*

Signature:

Saa Traxler, General Manager, North Vancouver



ALS USA Inc.  
4977 Energy Way  
Reno NV 89502  
Phone: +1 775 356 5395 Fax: +1 775 355 0179  
www.alsglobal.com/geochemistry

To: LIBERTY STAR URANIUM & METALS  
CORPORATION  
2 E CONGRESS STREET  
TUCSON AZ 85701

Page: 2 - A  
Total # Pages: 2 (A - D)  
Plus Appendix Pages  
Finalized Date: 25-OCT-2020  
Account: LIBSTA

Project: Hay Mountain-Red Rock Canyon

**CERTIFICATE OF ANALYSIS TU20211476**

Sample Description	Method Analyte Units LOD	WEI-21 Recvd Wt. kg 0.02	Au-GRA21 Au ppm 0.05	Au-GRA21 Au Check ppm 0.05	ME-MS41 Ag ppm 0.01	ME-MS41 Al % 0.01	ME-MS41 As ppm 0.1	ME-MS41 Au ppm 0.02	ME-MS41 B ppm 10	ME-MS41 Ba ppm 10	ME-MS41 Be ppm 0.05	ME-MS41 Bi ppm 0.01	ME-MS41 Ca % 0.01	ME-MS41 Cd ppm 0.01	ME-MS41 Ce ppm 0.02	ME-MS41 Co ppm 0.1
314087		1.40	1.84		0.73	0.05	112.0	1.86	<10	10	0.06	0.03	6.57	0.37	0.91	0.6
314088		0.86	13.55		1.28	0.21	574	13.95	<10	20	0.46	5.80	0.12	0.11	4.93	1.2
314089		1.31	4.87		1.69	0.06	450	4.60	<10	20	0.08	1.19	0.27	0.13	0.53	0.3
314090		1.68	0.89		0.18	0.14	85.8	0.84	<10	60	0.09	0.06	0.13	0.08	2.94	0.5
314091		1.75	0.68		0.47	0.16	65.6	0.50	10	70	0.10	0.06	0.17	0.08	3.31	0.5
314092		1.61	0.07		3.83	0.10	76.6	0.13	10	290	0.09	0.04	0.17	0.07	1.17	0.4
314093		1.68	3.31		0.10	0.10	195.5	3.23	<10	30	0.36	0.04	0.47	0.08	6.71	0.7
314094		1.92	3.26		4.02	0.09	239	3.26	10	30	0.07	0.05	0.06	0.11	1.57	0.3
314095		1.54	0.10		1.62	0.05	80.0	0.19	<10	20	0.06	0.04	0.13	0.09	0.81	0.3
314096		1.76	0.97		1.94	0.21	92.7	1.01	10	20	0.08	0.02	1.14	0.06	2.53	0.3
314097		1.95	0.10		0.22	0.07	9.2	<0.02	<10	20	0.14	0.05	6.02	4.32	3.40	0.9
314098		1.89	0.31		4.77	0.25	37.0	0.22	<10	10	0.21	0.02	0.54	0.09	1.13	0.4
314099		1.56	0.19		1.41	0.08	95.9	0.11	10	20	0.21	0.09	0.08	0.16	1.05	1.4
314100		1.77	0.10		0.10	0.35	2.8	0.04	<10	60	0.12	0.07	3.12	0.03	3.42	0.7
314101		1.84	2.20		0.10	0.17	63.5	0.62	<10	40	0.19	0.47	2.29	0.09	13.00	0.8
314102		1.54	0.44		0.04	0.25	28.6	0.31	<10	60	0.27	0.16	2.96	0.11	5.10	0.9
314103		1.69	<0.05		0.72	0.16	5.2	<0.02	<10	40	0.30	0.05	9.83	0.08	2.60	1.4
314104		1.73	<0.05		1.22	0.11	10.4	0.02	<10	40	0.18	0.06	0.09	0.06	3.95	0.4
314105		1.51	10.70	10.50	8.94	0.52	8.0	2.92	10	120	4.16	0.30	4.46	1.32	39.5	6.0
314106		1.33	0.07		0.03	0.44	0.5	<0.02	<10	60	0.49	0.10	1.25	0.08	14.60	1.4
314107		1.71	1.74		0.07	0.30	18.9	0.03	<10	20	0.78	0.06	10.25	0.29	6.10	1.2
314108		1.46	<0.05		0.06	0.26	3.8	<0.02	10	30	2.04	0.05	10.05	0.11	10.55	1.1
314109		1.50	<0.05		0.08	0.36	9.0	<0.02	10	30	0.99	0.04	0.60	0.06	4.76	0.7



ALS USA Inc.  
4977 Energy Way  
Reno NV 89502  
Phone: +1 775 356 5395 Fax: +1 775 355 0179  
www.alsglobal.com/geochemistry

To: LIBERTY STAR URANIUM & METALS  
CORPORATION  
2 E CONGRESS STREET  
TUCSON AZ 85701

Page: 2 - B  
Total # Pages: 2 (A - D)  
Plus Appendix Pages  
Finalized Date: 25-OCT-2020  
Account: LIBSTA

Project: Hay Mountain-Red Rock Canyon

**CERTIFICATE OF ANALYSIS TU20211476**

Sample Description	Method Analyte Units LOD	ME-MS41 Cr ppm 1	ME-MS41 Cs ppm 0.05	ME-MS41 Cu ppm 0.2	ME-MS41 Fe % 0.01	ME-MS41 Ga ppm 0.05	ME-MS41 Ge ppm 0.05	ME-MS41 Hf ppm 0.02	ME-MS41 Hg ppm 0.01	ME-MS41 In ppm 0.005	ME-MS41 K % 0.01	ME-MS41 La ppm 0.2	ME-MS41 Li ppm 0.1	ME-MS41 Mg % 0.01	ME-MS41 Mn ppm 5	ME-MS41 Mo ppm 0.05
314087		25	0.41	3.4	0.53	0.26	<0.05	<0.02	0.08	<0.005	0.01	0.5	3.3	0.46	47	68.8
314088		32	2.77	4.5	3.69	1.40	<0.05	0.12	0.08	0.039	0.05	2.1	4.3	0.04	72	193.0
314089		49	0.89	4.4	2.35	0.66	<0.05	<0.02	0.14	<0.005	0.01	0.3	1.4	0.04	46	956
314090		36	1.96	6.7	1.15	1.88	<0.05	0.03	0.04	<0.005	0.05	1.7	2.2	0.03	59	930
314091		30	2.41	4.8	0.81	1.86	<0.05	0.02	0.06	<0.005	0.04	1.7	2.7	0.02	75	1265
314092		40	0.78	7.1	0.88	0.63	<0.05	<0.02	0.17	<0.005	0.02	0.6	3.8	0.05	83	1850
314093		52	0.60	2.5	1.25	0.41	<0.05	0.04	0.03	<0.005	0.06	3.9	5.5	0.03	65	51.5
314094		51	1.87	9.1	1.73	1.53	<0.05	<0.02	0.11	<0.005	0.03	0.8	2.1	0.01	69	1510
314095		42	0.44	5.3	0.70	0.49	<0.05	<0.02	0.15	<0.005	0.02	0.3	1.9	0.02	58	870
314096		40	1.92	4.4	0.73	1.43	<0.05	0.03	0.20	<0.005	0.06	1.0	7.8	0.06	59	1310
314097		27	0.29	4.0	0.79	0.30	<0.05	0.02	0.17	<0.005	0.02	1.4	4.1	3.12	223	13.10
314098		43	1.20	2.2	0.44	1.16	<0.05	0.05	0.03	<0.005	0.13	0.6	3.3	0.04	38	416
314099		82	0.22	59.9	5.70	1.64	<0.05	0.03	0.55	0.010	0.01	0.7	1.7	0.01	58	956
314100		30	0.71	3.2	0.35	0.86	<0.05	0.04	<0.01	<0.005	0.35	1.3	2.5	0.01	81	4.82
314101		22	1.18	3.5	0.80	0.74	<0.05	0.14	0.01	0.030	0.17	6.0	3.3	0.05	244	6.29
314102		20	7.86	2.1	0.38	0.58	<0.05	0.09	0.03	<0.005	0.11	2.1	6.0	0.02	323	4.98
314103		33	0.48	12.9	1.85	0.73	<0.05	0.04	0.01	<0.005	0.04	1.3	5.0	0.12	76	4.96
314104		37	0.93	3.5	0.52	0.48	<0.05	0.02	0.01	<0.005	0.05	1.6	3.5	0.01	62	21.2
314105		9	4.96	>10000	1.53	2.16	0.06	0.16	0.01	0.023	0.25	18.6	12.4	0.09	247	0.81
314106		17	0.78	22.3	0.75	2.01	<0.05	0.04	0.05	0.006	0.10	7.7	21.9	0.30	129	1.49
314107		17	5.54	5.7	0.38	1.44	0.10	0.05	0.01	0.005	0.14	2.7	36.6	0.10	179	4.06
314108		19	13.45	30.7	0.35	1.07	0.22	0.10	0.02	<0.005	0.24	5.3	249	0.14	94	1.71
314109		41	2.75	3.8	0.49	1.12	0.37	0.10	0.01	<0.005	0.35	2.3	570	0.06	42	7.29



ALS USA Inc.  
4977 Energy Way  
Reno NV 89502  
Phone: +1 775 356 5395 Fax: +1 775 355 0179  
www.alsglobal.com/geochemistry

To: LIBERTY STAR URANIUM & METALS  
CORPORATION  
2 E CONGRESS STREET  
TUCSON AZ 85701

Page: 2 - C  
Total # Pages: 2 (A - D)  
Plus Appendix Pages  
Finalized Date: 25-OCT-2020  
Account: LIBSTA

Project: Hay Mountain-Red Rock Canyon

**CERTIFICATE OF ANALYSIS TU20211476**

Sample Description	Method Analyte Units LOD	ME-MS41 Na %	ME-MS41 Nb ppm	ME-MS41 Ni ppm	ME-MS41 P ppm	ME-MS41 Pb ppm	ME-MS41 Rb ppm	ME-MS41 Re ppm	ME-MS41 S %	ME-MS41 Sb ppm	ME-MS41 Sc ppm	ME-MS41 Se ppm	ME-MS41 Sn ppm	ME-MS41 Sr ppm	ME-MS41 Ta ppm	ME-MS41 Te ppm
314087		<0.01	<0.05	2.4	50	2.2	1.0	<0.001	0.01	4.30	0.2	1.1	<0.2	37.8	<0.01	0.02
314088		<0.01	0.08	2.6	110	15.6	9.2	<0.001	0.01	6.85	1.3	1.6	0.6	18.2	<0.01	0.01
314089		<0.01	<0.05	1.8	60	3.3	2.0	<0.001	0.01	13.50	0.2	11.3	<0.2	35.4	<0.01	0.05
314090		<0.01	0.08	2.3	360	4.7	5.3	<0.001	0.02	7.08	0.4	2.9	<0.2	33.1	<0.01	0.02
314091		<0.01	0.06	2.4	270	6.3	5.9	<0.001	0.01	9.61	0.4	1.2	<0.2	47.0	<0.01	0.02
314092		<0.01	<0.05	2.1	210	2.9	2.7	0.001	0.02	4.94	0.1	2.6	<0.2	14.4	<0.01	0.01
314093		<0.01	0.24	4.2	40	1.4	4.6	0.001	0.01	1.88	0.4	1.0	<0.2	88.5	<0.01	0.01
314094		<0.01	<0.05	2.6	60	3.2	3.0	0.001	0.04	14.25	0.2	9.6	<0.2	62.6	<0.01	0.01
314095		<0.01	<0.05	1.9	60	2.9	1.6	0.002	0.02	14.60	0.1	7.1	<0.2	25.3	<0.01	0.01
314096		<0.01	0.05	1.9	60	1.7	7.5	0.001	0.03	7.19	0.5	6.5	<0.2	45.0	<0.01	<0.01
314097		<0.01	<0.05	4.1	180	3.8	1.2	0.001	0.01	0.83	0.4	0.5	<0.2	23.7	<0.01	0.02
314098		<0.01	0.06	2.4	60	1.6	11.7	0.002	0.02	1.91	0.5	1.4	<0.2	16.2	<0.01	<0.01
314099		<0.01	0.06	4.0	110	199.5	0.6	0.004	0.13	10.90	0.2	3.9	0.2	28.5	<0.01	0.03
314100		<0.01	0.08	1.6	100	4.4	28.0	0.001	0.03	0.31	0.9	0.2	<0.2	10.0	<0.01	0.03
314101		<0.01	0.31	2.1	190	7.4	11.1	<0.001	0.01	1.45	0.8	0.2	0.4	19.3	<0.01	0.01
314102		<0.01	0.13	1.7	360	5.6	13.6	<0.001	<0.01	0.53	0.3	0.6	<0.2	34.8	<0.01	0.01
314103		<0.01	0.30	7.6	140	5.0	4.0	0.001	0.01	0.70	0.3	0.5	<0.2	31.5	<0.01	0.06
314104		<0.01	0.05	2.3	330	5.2	4.7	0.001	0.01	0.74	0.3	0.2	<0.2	8.8	<0.01	0.01
314105		0.01	0.05	4.8	400	13.1	25.1	0.015	0.01	2.03	1.7	0.3	0.3	88.5	<0.01	0.05
314106		<0.01	<0.05	1.9	140	2.6	7.7	<0.001	0.01	0.09	0.7	<0.2	0.2	11.7	<0.01	0.01
314107		0.01	0.09	2.6	160	4.3	18.5	<0.001	0.01	0.42	0.9	0.3	<0.2	193.0	<0.01	0.01
314108		0.01	0.17	2.9	100	3.1	41.5	<0.001	0.01	1.33	0.9	0.3	<0.2	356	<0.01	0.01
314109		0.01	0.62	3.4	50	4.9	48.0	0.001	0.01	1.41	0.8	0.5	0.2	12.8	<0.01	0.02



ALS USA Inc.  
4977 Energy Way  
Reno NV 89502  
Phone: +1 775 356 5395 Fax: +1 775 355 0179  
www.alsglobal.com/geochemistry

To: LIBERTY STAR URANIUM & METALS  
CORPORATION  
2 E CONGRESS STREET  
TUCSON AZ 85701

Page: 2 - D  
Total # Pages: 2 (A - D)  
Plus Appendix Pages  
Finalized Date: 25-OCT-2020  
Account: LIBSTA

Project: Hay Mountain-Red Rock Canyon

**CERTIFICATE OF ANALYSIS TU20211476**

Sample Description	Method Analyte Units LOD	ME-MS41 Th ppm 0.2	ME-MS41 Ti % 0.005	ME-MS41 Tl ppm 0.02	ME-MS41 U ppm 0.05	ME-MS41 V ppm 1	ME-MS41 W ppm 0.05	ME-MS41 Y ppm 0.05	ME-MS41 Zn ppm 2	ME-MS41 Zr ppm 0.5	Cu-OG46 Cu % 0.001
314087		<0.2	<0.005	0.17	0.65	11	0.11	0.47	9	<0.5	
314088		0.6	<0.005	0.21	3.56	32	0.35	3.04	39	3.6	
314089		<0.2	<0.005	0.16	1.16	49	0.42	0.21	10	<0.5	
314090		0.4	<0.005	0.76	0.94	97	0.32	0.41	10	1.0	
314091		0.4	<0.005	1.04	1.22	73	0.41	0.65	7	1.0	
314092		0.2	<0.005	0.12	0.95	44	0.12	0.38	15	<0.5	
314093		0.5	0.011	0.29	1.28	14	0.34	0.60	14	1.6	
314094		0.2	<0.005	2.13	1.24	63	0.59	0.24	7	<0.5	
314095		<0.2	<0.005	1.24	1.06	26	0.22	0.16	6	<0.5	
314096		<0.2	<0.005	0.51	1.59	31	0.21	1.25	6	1.0	
314097		0.4	<0.005	0.20	0.66	8	0.12	1.48	52	0.7	
314098		0.3	<0.005	0.36	0.47	57	0.41	0.48	5	1.6	
314099		0.5	<0.005	0.83	1.76	43	0.81	0.23	36	1.1	
314100		0.2	<0.005	0.28	0.49	11	0.09	1.03	3	1.6	
314101		2.5	<0.005	0.23	0.99	17	0.36	5.79	13	2.4	
314102		1.1	<0.005	0.13	0.60	2	0.13	3.24	17	1.5	
314103		0.4	0.013	0.06	0.95	30	0.72	0.72	12	1.2	
314104		0.5	<0.005	0.04	0.18	9	0.09	0.69	7	0.7	
314105		4.1	<0.005	0.14	10.55	45	0.29	15.45	59	6.2	1.450
314106		1.2	<0.005	0.05	0.14	11	0.07	1.90	17	0.8	
314107		0.5	<0.005	0.15	0.21	13	1.28	2.68	12	1.4	
314108		1.3	0.015	0.20	0.25	9	1.75	3.43	7	2.3	
314109		0.6	0.022	0.19	0.92	11	14.20	1.15	5	2.9	



ALS USA Inc.  
4977 Energy Way  
Reno NV 89502  
Phone: +1 775 356 5395 Fax: +1 775 355 0179  
[www.alsglobal.com/geochemistry](http://www.alsglobal.com/geochemistry)

To: LIBERTY STAR URANIUM & METALS  
CORPORATION  
2 E CONGRESS STREET  
TUCSON AZ 85701

Page: Appendix 1  
Total # Appendix Pages: 1  
Finalized Date: 25-OCT-2020  
Account: LIBSTA

Project: Hay Mountain-Red Rock Canyon

**CERTIFICATE OF ANALYSIS TU20211476**

**CERTIFICATE COMMENTS**

**ANALYTICAL COMMENTS**

Applies to Method: Gold determinations by this method are semi-quantitative due to the small sample weight used (0.5g).  
ME-MS41

**LABORATORY ADDRESSES**

Applies to Method: Processed at ALS Vancouver located at 2103 Dollarton Hwy, North Vancouver, BC, Canada.  
Au-GRA21 Cu-OG46 ME-MS41 ME-OG46

Applies to Method: Processed at ALS Tucson, Arizona, USA  
CRU-31 CRU-QC LOG-22 PUL-31  
PUL-QC SND-ALS SPL-22Y WEI-21