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Account: TODRIV

## QC CERTIFICATE AD17205394

This report is for 35 Soil samples submitted to our lab in Adelaide, SA, Australia on 25-SEP-2017.

The following have access to data associated with this certificate:

PAUL BURTON  
CATH WETHERBY

KIM GREY

GAVIN OTTO

## SAMPLE PREPARATION

ALS CODE	DESCRIPTION
WEI-21	Received Sample Weight
LOG-24	Pulp Login - Rcd w/o Barcode
LOG-22	Sample login - Rcd w/o BarCode
LEV-01	Waste Disposal Levy
PUL-31	Pulverize split to 85% < 75 um
PUL-QC	Pulverizing QC Test

## ANALYTICAL PROCEDURES

ALS CODE	DESCRIPTION	INSTRUMENT
ME-MS89L	Super Trace DL Na2O2 by ICP-MS	ICP-MS

To: TODD RIVER METALS  
ATTN: CATH WETHERBY  
LEVEL 1  
282 ROKEBY ROAD  
SUBIACO WA 6008

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:

Colin Ramshaw, Vancouver Laboratory Manager





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# QC CERTIFICATE OF ANALYSIS AD17205394

Sample Description	Method Analyte Units LOR	ME-MS89L Ag ppm	ME-MS89L As ppm	ME-MS89L Ba ppm	ME-MS89L Be ppm	ME-MS89L Bi ppm	ME-MS89L Ca %	ME-MS89L Cd ppm	ME-MS89L Ce ppm	ME-MS89L Co ppm	ME-MS89L Cs ppm	ME-MS89L Cu ppm	ME-MS89L Dy ppm	ME-MS89L Er ppm	ME-MS89L Eu ppm	ME-MS89L Fe %
		5	4	2	0.4	0.1	0.1	0.8	0.2	0.5	0.1	20	0.03	0.02	0.03	0.05
STANDARDS																
AMIS0343		5	14	75	230	2.5	0.4	<0.8	1.1	2.4	345	50	0.17	0.10	<0.03	0.85
Target Range - Lower Bound		<5	<4	68	209	2.4	<0.1	<0.8	<0.2	1.5	0.8	<20	<0.03	<0.02	<0.03	0.65
Upper Bound		10	22	87	257	3.2	0.5	1.6	1.1	3.7	1.4	90	0.14	0.10	0.09	0.93
GTA-01		8	<4	56	177.0	1.6	0.4	<0.8	0.3	0.8	150.5	<20	0.05	0.02	<0.03	0.55
Target Range - Lower Bound		<5	<4	48	165.0	1.4	0.3	<0.8	<0.2	<0.5	132.5	<20	<0.03	<0.02	0.23	0.41
Upper Bound		15	10	64	202	2.0	0.8	2.1	0.7	1.6	162.0	50	0.15	0.07	0.38	0.66
GTA-02		<5	<4	57	185.5	1.3	0.4	<0.8	<0.2	0.9	191.5	<20	0.03	0.02	0.03	0.57
GTA-02		<5	<4	59	183.0	1.7	0.4	<0.8	<0.2	0.8	178.5	<20	0.07	<0.02	<0.03	0.52
Target Range - Lower Bound		<5	<4	48	172.0	1.1	0.4	<0.8	<0.2	<0.5	157.0	<20	<0.03	<0.02	<0.03	0.39
Upper Bound		14	10	63	211	1.7	0.8	2.0	0.6	1.6	192.0	40	0.10	0.07	0.12	0.64
OREAS 146		<5	7	12950	12.5	2.4	11.3	2.0	3990	31.8	0.4	40	204	80.5	113.5	18.90
OREAS 146		<5	6	14300	13.9	2.5	11.7	1.9	4180	32.5	0.5	40	217	83.4	111.5	19.45
Target Range - Lower Bound		<5	<4	11900	11.8	2.3	12.1	<0.8	3910	30.0	0.5	<20	202	78.3	111.0	18.30
Upper Bound		15	22	14600	15.3	3.1	15.1	3.7	4790	37.8	0.9	80	246	95.7	136.0	22.5
SY-4		<5	<4	336	3.6	0.2	5.6	<0.8	119.5	2.7	1.4	<20	19.05	13.90	1.81	4.26
Target Range - Lower Bound		<5	<4	299	2.1	<0.1	5.1	<0.8	107.5	1.7	1.2	<20	16.35	12.75	1.75	3.91
Upper Bound		15	12	369	4.0	0.4	6.4	1.6	131.5	3.9	1.8	60	20.1	15.65	2.21	4.89
BLANKS																
BLANK		14	<4	<2	<0.4	0.1	0.2	0.9	<0.2	<0.5	0.1	<20	<0.03	0.02	<0.03	<0.05
BLANK		10	<4	<2	<0.4	0.2	0.1	0.8	<0.2	<0.5	0.1	<20	<0.03	<0.02	<0.03	<0.05
BLANK		10	<4	<2	<0.4	0.2	0.1	1.6	<0.2	<0.5	0.1	<20	<0.03	<0.02	<0.03	<0.05
BLANK		9	<4	<2	<0.4	0.2	0.1	1.2	<0.2	<0.5	<0.1	<20	<0.03	<0.02	<0.03	<0.05
BLANK		<5	<4	<2	<0.4	<0.1	0.1	<0.8	<0.2	<0.5	0.3	<20	<0.03	<0.02	<0.03	<0.05
BLANK		<5	<4	<2	<0.4	<0.1	0.1	<0.8	<0.2	<0.5	0.1	<20	<0.03	<0.02	<0.03	<0.05
Target Range - Lower Bound		<5	<4	<2	<0.4	<0.1	<0.1	<0.8	<0.2	<0.5	<0.1	<20	<0.03	<0.02	<0.03	<0.05
Upper Bound		10	8	4	0.8	0.2	0.2	1.6	0.4	1.0	0.2	40	0.06	0.04	0.06	0.10





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# QC CERTIFICATE OF ANALYSIS AD17205394

Sample Description	Method Analyte Units LOR	ME-MS89L Ga ppm 0.5	ME-MS89L Gd ppm 0.03	ME-MS89L Ge ppm 0.5	ME-MS89L Ho ppm 0.01	ME-MS89L In ppm 0.3	ME-MS89L K % 0.05	ME-MS89L La ppm 0.08	ME-MS89L Li ppm 2	ME-MS89L Lu ppm 0.05	ME-MS89L Mn ppm 10	ME-MS89L Mo ppm 2	ME-MS89L Nb ppm 0.8	ME-MS89L Nd ppm 0.07	ME-MS89L Ni ppm 10	ME-MS89L Pb ppm 0.5
STANDARDS																
AMISO343		47.6	0.15	7.9	<0.01	<0.3	2.60	0.60	7440	<0.05	980	4	46.3	0.50	<10	6.5
Target Range - Lower Bound		39.7	0.09	6.1	<0.01	<0.3	2.16	0.26	6310	<0.05	810	<2	37.0	0.44	<10	4.3
Upper Bound		49.7	0.23	8.9	0.05	0.7	2.76	0.62	7720	0.12	1010	8	47.0	0.78	30	6.9
GTA-01		56.0	0.09	7.1	<0.01	<0.3	2.32	0.19	3300	<0.05	890	2	47.5	0.16	<10	12.7
Target Range - Lower Bound		47.5	<0.03	5.7	<0.01	<0.3	1.91	<0.08	3020	<0.05	800	<2	41.5	<0.07	<10	10.2
Upper Bound		59.1	0.13	8.5	0.03	0.7	2.45	0.42	3700	0.13	1000	6	52.5	0.25	40	13.6
GTA-02		58.2	0.03	8.4	0.01	<0.3	2.56	0.11	1810	<0.05	780	2	60.3	<0.07	<10	14.1
GTA-02		55.9	0.03	7.6	<0.01	<0.3	2.60	0.09	1820	<0.05	720	2	55.9	<0.07	10	14.2
Target Range - Lower Bound		49.5	<0.03	6.2	<0.01	<0.3	2.19	<0.08	1615	<0.05	630	<2	50.5	<0.07	<10	11.5
Upper Bound		61.7	0.11	9.0	0.02	0.6	2.79	0.28	1975	0.13	790	6	63.5	0.21	40	15.1
OREAS 146		31.3	327	5.4	32.6	0.3	1.13	2340	22	5.49	18800	57	374	1965	60	681
OREAS 146		35.3	350	6.4	34.5	<0.3	1.12	2370	22	6.13	19100	59	401	2050	70	710
Target Range - Lower Bound		28.8	309	4.3	31.8	<0.3	0.90	2260	21	5.62	18550	52	348	1935	60	657
Upper Bound		36.4	377	6.9	38.8	1.0	1.22	2760	31	6.98	22700	68	428	2370	110	804
SY-4		39.8	14.20	1.6	4.56	<0.3	1.45	57.9	37	2.18	830	<2	14.9	55.6	<10	12.8
Target Range - Lower Bound		32.7	12.75	<0.5	3.86	<0.3	1.19	52.1	32	1.84	760	<2	11.3	52.0	<10	8.5
Upper Bound		41.1	15.65	2.6	4.74	1.0	1.57	63.9	44	2.36	950	6	15.9	63.8	30	11.5
BLANKS																
BLANK		0.6	<0.03	0.7	0.02	<0.3	0.06	<0.08	<2	0.09	10	<2	0.8	<0.07	<10	<0.5
BLANK		1.1	<0.03	2.1	<0.01	<0.3	0.07	<0.08	<2	<0.05	<10	<2	<0.8	<0.07	<10	2.0
BLANK		<0.5	<0.03	0.6	<0.01	<0.3	0.09	<0.08	2	<0.05	10	<2	1.4	<0.07	<10	0.6
BLANK		1.0	<0.03	1.7	<0.01	<0.3	0.08	<0.08	<2	<0.05	<10	<2	1.0	<0.07	<10	0.5
BLANK		<0.5	<0.03	<0.5	<0.01	<0.3	0.07	<0.08	<2	<0.05	<10	<2	1.0	<0.07	10	<0.5
BLANK		<0.5	0.03	0.5	<0.01	<0.3	0.06	<0.08	<2	<0.05	<10	<2	1.2	<0.07	10	<0.5
Target Range - Lower Bound		<0.5	<0.03	<0.5	<0.01	<0.3	<0.05	<0.08	<2	<0.05	<10	<2	<0.8	<0.07	<10	<0.5
Upper Bound		1.0	0.06	1.0	0.02	0.6	0.10	0.16	4	0.10	20	4	1.6	0.14	20	1.0





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## QC CERTIFICATE OF ANALYSIS AD17205394

Sample Description	Method Analyte Units LOR	ME-MS89L Pr ppm 0.03	ME-MS89L Rb ppm 0.5	ME-MS89L Re ppm 0.01	ME-MS89L Sb ppm 0.3	ME-MS89L Se ppm 3	ME-MS89L Sm ppm 0.04	ME-MS89L Sn ppm 3	ME-MS89L Sr ppm 20	ME-MS89L Ta ppm 0.04	ME-MS89L Tb ppm 0.01	ME-MS89L Te ppm 0.5	ME-MS89L Th ppm 0.1	ME-MS89L Ti % 0.005	ME-MS89L Tl ppm 0.02	ME-MS89L Tm ppm 0.01
STANDARDS																
AMIS0343		0.06	3850	<0.01	7.6	<3	0.12	83	<20	174.0	0.02	<0.5	3.0	0.005	32.8	<0.01
Target Range - Lower Bound		0.04	3280	<0.01	6.0	<3	<0.04	74	<20	160.0	<0.01	<0.5	1.7	<0.005	29.7	<0.01
Upper Bound		0.18	4000	0.03	8.0	8	0.20	97	60	196.0	0.04	1.5	2.3	0.021	36.3	0.03
GTA-01		<0.03	3670	<0.01	<0.3	<3	<0.04	434	20	390	0.03	0.7	4.2	<0.005	29.0	<0.01
Target Range - Lower Bound		<0.03	3310	<0.01	<0.3	<3	<0.04	391	<20	373	<0.01	<0.5	3.3	<0.005	24.3	<0.01
Upper Bound		0.09	4040	0.03	1.4	10	0.15	485	70	457	0.04	1.9	4.3	0.010	29.7	0.03
GTA-02		<0.03	4030	<0.01	<0.3	<3	<0.04	395	30	686	0.01	<0.5	3.9	<0.005	33.0	<0.01
GTA-02		<0.03	3940	<0.01	<0.3	4	<0.04	394	20	625	0.01	<0.5	3.3	<0.005	33.4	<0.01
Target Range - Lower Bound		<0.03	3510	<0.01	<0.3	<3	<0.04	353	<20	622	<0.01	<0.5	3.1	<0.005	27.4	<0.01
Upper Bound		0.06	4290	0.03	1.0	11	0.12	438	80	760	0.02	2.1	4.0	0.010	33.6	0.02
OREAS 146		498	24.8	<0.01	<0.3	<3	406	43	2920	3.51	37.7	<0.5	818	0.816	0.42	8.55
OREAS 146		495	27.4	0.01	0.4	<3	437	45	3020	3.86	41.0	<0.5	833	0.856	0.41	9.83
Target Range - Lower Bound		493	24.6	<0.01	<0.3	<3	390	38	2770	3.10	37.0	<0.5	805	0.752	0.41	8.45
Upper Bound		603	31.2	0.03	1.3	6	476	54	3430	3.88	45.2	1.0	985	1.030	0.55	10.35
SY-4		14.85	53.5	<0.01	<0.3	<3	12.10	6	1140	0.89	2.59	0.9	1.0	0.171	0.23	2.33
Target Range - Lower Bound		13.05	50.5	<0.01	<0.3	<3	11.40	<3	1050	0.59	2.33	<0.5	1.0	0.140	0.20	2.06
Upper Bound		16.05	62.9	0.02	1.0	9	14.00	15	1330	0.83	2.87	1.0	1.6	0.201	0.30	2.54
BLANKS																
BLANK		<0.03	<0.5	<0.01	<0.3	3	0.06	<3	<20	0.08	0.05	0.5	<0.1	<0.005	<0.02	0.16
BLANK		<0.03	<0.5	<0.01	<0.3	<3	<0.04	<3	<20	0.05	0.01	<0.5	<0.1	<0.005	<0.02	<0.01
BLANK		<0.03	<0.5	<0.01	<0.3	11	<0.04	<3	<20	0.30	<0.01	<0.5	<0.1	<0.005	0.03	<0.01
BLANK		<0.03	<0.5	<0.01	<0.3	5	<0.04	<3	<20	0.08	<0.01	<0.5	<0.1	<0.005	<0.02	<0.01
BLANK		<0.03	0.6	<0.01	0.3	3	<0.04	<3	<20	1.21	<0.01	0.7	<0.1	<0.005	0.03	<0.01
BLANK		<0.03	1.0	0.01	<0.3	<3	<0.04	<3	<20	1.19	<0.01	0.7	<0.1	<0.005	<0.02	<0.01
Target Range - Lower Bound		<0.03	<0.5	<0.01	<0.3	<3	<0.04	<3	<20	<0.04	<0.01	<0.5	<0.1	<0.005	<0.02	<0.01
Upper Bound		0.06	1.0	0.02	0.6	6	0.08	6	40	0.08	0.02	1.0	0.2	0.010	0.04	0.02





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Sample Description	Method Analyte Units LOR	ME-MS89L U ppm 0.2	ME-MS89L V ppm 1	ME-MS89L W ppm 0.3	ME-MS89L Y ppm 0.2	ME-MS89L Yb ppm 0.02	ME-MS89L Zn ppm 10
STANDARDS							
AMIS0343		6.2	4	4.0	1.1	0.04	80
Target Range - Lower Bound		5.5	<1	2.7	0.4	<0.02	60
Upper Bound		7.1	6	4.3	1.2	0.09	100
GTA-01		6.3	<1	5.8	0.5	0.02	70
Target Range - Lower Bound		5.0	<1	4.5	0.3	<0.02	50
Upper Bound		6.6	4	6.2	1.2	0.06	90
GTA-02		6.1	1	5.5	<0.2	0.02	50
GTA-02		5.7	1	5.4	0.3	0.03	50
Target Range - Lower Bound		4.8	<1	4.4	<0.2	<0.02	30
Upper Bound		6.4	5	6.1	0.7	0.06	70
OREAS 146		2.4	154	26.3	871	46.8	1490
OREAS 146		2.3	166	27.8	891	50.3	1430
Target Range - Lower Bound		1.9	144	25.8	814	47.1	1360
Upper Bound		2.9	178	32.2	996	57.7	1680
SY-4		0.8	6	<0.3	117.0	14.80	90
Target Range - Lower Bound		0.4	6	<0.3	107.0	13.65	80
Upper Bound		1.2	10	0.9	131.0	16.75	130
BLANKS							
BLANK		0.3	2	0.9	<0.2	0.04	20
BLANK		0.2	3	0.5	<0.2	<0.02	10
BLANK		0.4	2	0.5	<0.2	<0.02	<10
BLANK		0.3	4	<0.3	<0.2	<0.02	<10
BLANK		0.3	<1	<0.3	<0.2	<0.02	<10
BLANK		0.3	1	<0.3	0.2	0.02	20
Target Range - Lower Bound		<0.2	<1	<0.3	<0.2	<0.02	<10
Upper Bound		0.4	2	0.6	0.4	0.04	20





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DUPLICATES																
SC17019		<5	19	201	2.4	1.1	0.2	<0.8	52.6	1.3	55.1	<20	4.39	2.11	0.70	1.07
DUP		<5	22	220	2.6	1.0	0.2	<0.8	53.4	1.1	55.7	<20	4.37	2.27	0.91	1.07
Target Range - Lower Bound		<5	15	198	1.9	0.9	<0.1	<0.8	50.2	0.6	52.5	<20	4.13	2.06	0.73	0.97
Upper Bound		10	26	223	3.1	1.2	0.3	1.6	55.9	1.8	58.3	40	4.63	2.32	0.88	1.17
SC17034		9	11	259	3.3	0.4	0.3	<0.8	41.9	2.3	30.3	<20	3.92	2.37	0.56	1.23
DUP		7	10	263	2.8	0.3	0.3	<0.8	41.2	2.3	30.6	<20	4.34	2.40	0.63	1.22
Target Range - Lower Bound		<5	6	246	2.4	0.2	0.2	<0.8	39.3	1.7	28.8	<20	3.89	2.25	0.54	1.11
Upper Bound		10	15	276	3.7	0.5	0.4	1.6	43.8	2.9	32.1	40	4.37	2.52	0.65	1.34





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Sample Description	Method Analyte Units LOR	ME-MS89L Ga ppm 0.5	ME-MS89L Gd ppm 0.03	ME-MS89L Ge ppm 0.5	ME-MS89L Ho ppm 0.01	ME-MS89L In ppm 0.3	ME-MS89L K % 0.05	ME-MS89L La ppm 0.08	ME-MS89L Li ppm 2	ME-MS89L Lu ppm 0.05	ME-MS89L Mn ppm 10	ME-MS89L Mo ppm 2	ME-MS89L Nb ppm 0.8	ME-MS89L Nd ppm 0.07	ME-MS89L Ni ppm 10	ME-MS89L Pb ppm 0.5
DUPLICATES																
SC17019		10.7	4.84	2.6	0.84	<0.3	1.25	27.9	168	0.29	160	<2	23.7	20.4	10	5.6
DUP		10.7	5.05	2.4	0.76	<0.3	1.26	27.7	165	0.32	160	<2	23.2	21.7	10	5.1
Target Range - Lower Bound		9.7	4.67	1.9	0.75	<0.3	1.14	26.3	156	0.24	140	<2	21.5	19.95	<10	4.6
Upper Bound		11.7	5.22	3.1	0.85	0.6	1.37	29.3	177	0.37	180	4	25.4	22.2	20	6.1
SC17034		13.8	4.57	2.6	0.82	<0.3	1.98	21.4	83	0.34	270	<2	22.2	16.70	<10	4.0
DUP		13.0	4.44	1.7	0.83	<0.3	2.02	19.80	83	0.38	270	<2	21.6	16.60	<10	3.5
Target Range - Lower Bound		12.2	4.25	1.5	0.77	<0.3	1.85	19.50	77	0.29	250	<2	20.0	15.75	<10	3.1
Upper Bound		14.6	4.76	2.8	0.88	0.6	2.15	21.7	89	0.43	290	4	23.8	17.55	20	4.4





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QC CERTIFICATE OF ANALYSIS AD17205394

Sample Description	Method Analyte Units LOR	ME-MS89L Pr ppm 0.03	ME-MS89L Rb ppm 0.5	ME-MS89L Re ppm 0.01	ME-MS89L Sb ppm 0.3	ME-MS89L Se ppm 3	ME-MS89L Sm ppm 0.04	ME-MS89L Sn ppm 3	ME-MS89L Sr ppm 20	ME-MS89L Ta ppm 0.04	ME-MS89L Tb ppm 0.01	ME-MS89L Te ppm 0.5	ME-MS89L Th ppm 0.1	ME-MS89L Ti % 0.005	ME-MS89L Tl ppm 0.02	ME-MS89L Tm ppm 0.01
DUPLICATES																
SC17019		6.17	183.5	0.01	0.3	<3	3.94	1220	60	19.10	0.68	0.8	10.5	0.187	1.01	0.35
DUP		6.15	189.5	0.01	0.6	<3	4.57	1250	70	14.05	0.79	<0.5	10.4	0.185	1.03	0.36
Target Range - Lower Bound		5.82	176.5	<0.01	<0.3	<3	4.00	1170	40	15.70	0.69	<0.5	9.8	0.167	0.95	0.33
Upper Bound		6.50	196.5	0.02	0.6	6	4.51	1300	90	17.45	0.78	1.0	11.1	0.205	1.09	0.38
SC17034		4.63	195.5	<0.01	1.1	<3	3.60	62	40	10.25	0.80	<0.5	10.6	0.141	0.76	0.37
DUP		4.60	209	<0.01	<0.3	<3	3.20	60	50	10.50	0.72	<0.5	10.6	0.143	0.81	0.39
Target Range - Lower Bound		4.35	191.5	<0.01	0.4	<3	3.19	55	<20	9.82	0.71	<0.5	10.0	0.126	0.73	0.35
Upper Bound		4.88	213	0.02	1.0	6	3.61	67	70	10.95	0.81	1.0	11.2	0.158	0.84	0.41





Sample Description	Method Analyte Units LOR	ME-MS89L	ME-MS89L	ME-MS89L	ME-MS89L	ME-MS89L	ME-MS89L
		U	V	W	Y	Yb	Zn
		ppm	ppm	ppm	ppm	ppm	ppm
		0.2	1	0.3	0.2	0.02	10
DUPLICATES							
SC17019		3.3	23	28.5	20.9	2.26	40
DUP		3.2	21	30.7	21.6	2.04	70
Target Range - Lower Bound		2.9	20	27.8	20.0	2.02	40
Upper Bound		3.6	24	31.4	22.5	2.28	70
SC17034		4.4	16	19.2	25.5	2.30	30
DUP		4.3	14	20.9	25.1	2.25	20
Target Range - Lower Bound		3.9	13	18.7	23.8	2.14	<10
Upper Bound		4.8	17	21.4	26.8	2.41	40





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**QC CERTIFICATE OF ANALYSIS AD17205394**

	CERTIFICATE COMMENTS								
	<p style="text-align: center;"><b>LABORATORY ADDRESSES</b></p> <table><tr><td>Processed at ALS Adelaide located at Unit 1, 1 Burma Road, Pooraka, Adelaide, SA, Australia.</td><td></td></tr><tr><td>LEV-01</td><td>LOG-22</td></tr><tr><td>PUL-QC</td><td>WEI-21</td></tr></table> <p>Applies to Method:</p> <table><tr><td>LOG-24</td><td>PUL-31</td></tr></table> <p>Processed at ALS Vancouver located at 2103 Dollarton Hwy, North Vancouver, BC, Canada.</p> <p>Applies to Method:</p> <p>ME-MS89L</p>	Processed at ALS Adelaide located at Unit 1, 1 Burma Road, Pooraka, Adelaide, SA, Australia.		LEV-01	LOG-22	PUL-QC	WEI-21	LOG-24	PUL-31
Processed at ALS Adelaide located at Unit 1, 1 Burma Road, Pooraka, Adelaide, SA, Australia.									
LEV-01	LOG-22								
PUL-QC	WEI-21								
LOG-24	PUL-31								