	Page:	1 of 2
	Test Ce	ertificate
Analytical Services	Certificate:	
	Issue No:	2
	Tel: Fax:	
	rax.	
	ORD-06173	
Sample Receipt Date		
Date Analysis Started		
Completion Date		
Turnaround Time		
No of Samples  Purchase Order Number		
Quote Number		
Quoto Humiso.	25/10/000	
Dear		
Analysis of your sample(s) is now complete and we have plea	sure in enclosing the appropriate test report.	
All analysis was completed within analysis that was subcontracted to a latter than was	unless otherwise specified. is indicated by 'S'. Please refe ple deviations.	
Results relate only to the items tested. This Test Certificate su cannot be reproduced except in full and without written approv		oratory. It
Should you have any queries regarding this report(s) or any pa +44(0)28 9446 6708 who will be happy to discuss your require	art of our service, please contact Sales on ements.	
Thank you for using Services	and we look forward to receiving your next sample	es.



Lab Technician

Yours Sincerely



2 of 2

### **Analytical Services**

**Test Certificate** 

Certificate:

-							Issue	No:	2
Lab Ref	Sample Details	Sample Date	Method No.	Test	Result	Units	ACC	Lab	Sample Deviations
020619	DCS1	02/06/2015	N/A	Arsenic, Ultra-low Total as As	1.2	ug/l	Y	s	
			SAM016	BOD	<1	mg/l	Υ		
			N/A	Cadmium, Filtered as Cd	<0.0006	mg/l	Υ	S	
			N/A	Chromium - Hexavalent	<0.005	mg/l	Υ	S	
			N/A	Chromium III	<0.03	mg/l	N	S	
			N/A	Chromium, Filtered as Cr	<0.002	mg/l	Υ	S	
			N/A	Copper, Filtered as Cu	<0.009	mg/l	Υ	S	
			N/A	Iron, Filtered as Fe	0.52	mg/l	Υ	S	
			N/A	Lead, Filtered as Pb	<0.006	mg/l	Υ	S	
			N/A	Mercury, Filtered as Hg	<0.00010	mg/l	Υ	S	
			N/A	Nickel, Filtered as Ni	<0.003	mg/l	Υ	S	
			SAM004	рН	6.57	Units	Υ		
			SAM001	Suspended Solids	4	mg/l	Υ		
			N/A	Total Hardness as CaCO3	9.98	mg/l	Υ	S	
			N/A	TPH / Oil & Greases	<1	mg/l	Υ	S	
			N/A	Zinc, Total as Zn	<0.018	mg/l	Υ	S	
	Sample Matrix:	Surface Water	Analyst Comment:						
020620	DCS2	02/06/2015	N/A	Arsenic, Ultra-low Total as As	7.7	ug/l	Υ	S	
			SAM016	BOD	<1	mg/l	Υ		
			N/A	Cadmium, Filtered as Cd	<0.0006	mg/l	Υ	S	
			N/A	Chromium - Hexavalent	< 0.005	mg/l	Υ	S	
			N/A	Chromium III	<0.03	mg/l	N	S	
			N/A	Chromium, Filtered as Cr	< 0.002	mg/l	Υ	S	
			N/A	Copper, Filtered as Cu	<0.009	mg/l	Υ	S	
			N/A	Iron, Filtered as Fe	<0.23	mg/l	Υ	S	
			N/A	Lead, Filtered as Pb	<0.006	mg/l	Υ	S	
			N/A	Mercury, Filtered as Hg	<0.00010	mg/l	Υ	S	
			N/A	Nickel, Filtered as Ni	0.005	mg/l	Υ	S	
			SAM004	pH	7.82	Units	Υ		
			SAM001	Suspended Solids	39	mg/l	Υ		
			N/A	Total Hardness as CaCO3	141	mg/l	Υ	S	
			N/A	TPH / Oil & Greases	<1	mg/l	Υ	S	
			N/A	Zinc, Total as Zn	<0.018	mg/l	Υ	S	

Samp	ole Dev	viations Legend		
Results may be compromised if the following deviations apply				
Comment	С	Incorrect Container	‡	
Container with Headspace provided	8	Insufficient sample volume	¢	
BOD Overdiluted, therefore result indicative only	\$	BOD Underdiluted, therefore result indicative only	#	
High Chloride concentration, COD could not be determined	§	Holding time exceeded due to sampled on date	@	

±

Holding time exceeded due to delayed instructions

&



Holding time exceeded in Lab

Analyst Comment:

Sample Matrix: Surface Water

	Page: 1 of 2
Analytical Services	Test Certificate  Certificate:  Issue No: 1
Dalradian Gold Ltd	Tel: Fax:
Job No	ORD-06174
Sample Receipt Date	02/06/2015
Date Analysis Started	02/06/2015
Completion Date	15/06/2015
Turnaround Time	10
No of Samples	2
Purchase Order Number	PO1866
Quote Number	ECA-01585
cannot be reproduced except in full and without written appro Should you have any queries regarding this report(s) or any p	unless otherwise specified. Any Laboratory is indicated by 'S'. Please refer to the ople deviations.  upersedes any version previously issued by the laboratory. It wal from  eart of our service, please contact Sales on
-44(0)28 9446 6708 who will be happy to discuss your requir	

Thank you for using Services and we look forward to receiving your next samples.

Yours Sincerely



Lab Technician



2 of 2

# **Analytical Services**

# **Test Certificate**

Certificate:

Issue No: 1

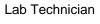
Lab Ref	Sample Details	Sample Date	Method No.	Test	Result	Units	ACC	Lab	Sample Deviations
020621	DCS3	02/06/2015	N/A	Arsenic, Ultra-low Total as As	1.5	ug/l	Υ	S	
· <del></del>			SAM016	BOD	<1	mg/l	Υ		
			N/A	Cadmium, Filtered as Cd	<0.0006	mg/l	Υ	S	
			N/A	Chromium - Hexavalent	<0.005	mg/l	Υ	S	
			N/A	Chromium III	<0.03	mg/l	N	S	
			N/A	Chromium, Filtered as Cr	<0.002	mg/l	Υ	S	
			N/A	Copper, Filtered as Cu	<0.009	mg/l	Υ	S	
			N/A	Iron, Filtered as Fe	0.52	mg/l	Υ	S	
			N/A	Lead, Filtered as Pb	<0.006	mg/l	Υ	S	
			N/A	Mercury, Filtered as Hg	<0.00010	mg/l	Υ	S	
			N/A	Nickel, Filtered as Ni	< 0.003	mg/l	Υ	S	
			SAM004	pH	6.81	Units	Υ		
			SAM001	Suspended Solids	9	mg/l	Υ		
			N/A	Total Hardness as CaCO3	10.8	mg/l	Υ	S	
			N/A	TPH / Oil & Greases	<1	mg/l	Υ	S	
			N/A	Zinc, Total as Zn	<0.018	mg/l	Υ	S	
	Sample Matrix:	: Surface Water	Analyst Comment:						
020622	DCS4	02/06/2015	N/A	Arsenic, Ultra-low Total as As	1.1	ug/l	Υ	S	
			SAM016	BOD	1.28	mg/l	Υ		\$
			N/A	Cadmium, Filtered as Cd	<0.0006	mg/l	Υ	S	
			N/A	Chromium - Hexavalent	<0.005	mg/l	Υ	S	
			N/A	Chromium III	<0.03	mg/l	N	S	
			N/A	Chromium, Filtered as Cr	<0.002	mg/l	Υ	S	
			N/A	Copper, Filtered as Cu	<0.009	mg/l	Υ	S	
			N/A	Iron, Filtered as Fe	0.36	mg/l	Υ	S	
			N/A	Lead, Filtered as Pb	<0.006	mg/l	Υ	S	
			N/A	Mercury, Filtered as Hg	<0.00010	mg/l	Υ	S	
			N/A	Nickel, Filtered as Ni	< 0.003	mg/l	Υ	S	
			SAM004	pH	6.79	Units	Υ		
			SAM001	Suspended Solids	9	mg/l	Υ		
			N/A	Total Hardness as CaCO3	16.2	mg/l	Υ	S	
			N/A	TPH / Oil & Greases	<1	mg/l	Υ	S	
			N/A	Zinc, Total as Zn	<0.018	mg/l	Υ	S	

Sample Matrix: Surface Water Analyst Comment:

Samp	le Dev	viations Legend	
Results may be compro	mised	if the following deviations apply	
Comment	С	Incorrect Container	‡
Container with Headspace provided	8	Insufficient sample volume	¢
BOD Overdiluted, therefore result indicative only	\$	BOD Underdiluted, therefore result indicative only	#
High Chloride concentration, COD could not be determined	§	Holding time exceeded due to sampled on date	@
Holding time exceeded in Lab	±	Holding time exceeded due to delayed instructions	&



			Page: 1 of 2
		Tes	t Certificate
Analytical Servi	ces	Certificate:	
		Issue No:	1
Dalradian Gold L	td		
		Tel: Fax:	
1	Joh No.	ORD-06172	
	Sample Receipt Date		
	Date Analysis Started		
	Completion Date		
	Turnaround Time		
	No of Samples		
	Purchase Order Number		
	Quote Number	ECA-01585	
Door			
Dear Analysis of your sa	, ample(s) is now complete and we have plea	sure in enclosing the appropriate test report.	
All analysis was co analysis that was s		unless otherwise speris indicated by 'S'. Pleas	
	to the items tested. This Test Certificate succed except in full and without written approv	opersedes any version previously issued by the val from	ne laboratory. It
	any queries regarding this report(s) or any pa 38 who will be happy to discuss your require		
Thank you for usin	g	and we look forward to receiving your next s	amples.
Yours Sincerely			





2 of 2

# **Analytical Services**

# **Test Certificate**

Certificate:

Issue No:

							issue	NO.	1
Lab Ref	Sample Details	Sample Date	Method No.	Test	Result	Units	ACC	Lab	Sample Deviations
020617	DCS5	02/06/2015	N/A	Arsenic, Ultra-low Total as As	1.1	ug/l	Υ	S	
			SAM016	BOD	1.1	mg/l	Υ		\$
			N/A	Cadmium, Filtered as Cd	<0.0006	mg/l	Υ	S	
			N/A	Chromium - Hexavalent	<0.005	mg/l	Υ	S	
			N/A	Chromium III	<0.03	mg/l	N	S	
			N/A	Chromium, Filtered as Cr	<0.002	mg/l	Υ	S	
			N/A	Copper, Filtered as Cu	< 0.009	mg/l	Υ	S	
			N/A	Iron, Filtered as Fe	0.38	mg/l	Υ	S	
			N/A	Lead, Filtered as Pb	<0.006	mg/l	Υ	S	
			N/A	Mercury, Filtered as Hg	<0.00010	mg/l	Υ	S	
			N/A	Nickel, Filtered as Ni	<0.003	mg/l	Υ	S	
			SAM004	рН	6.88	Units	Υ		
			SAM001	Suspended Solids	< 3	mg/l	Υ		
			N/A	Total Hardness as CaCO3	16.3	mg/l	Υ	S	
			N/A	TPH / Oil & Greases	<1	mg/l	Υ	S	
			N/A	Zinc, Total as Zn	<0.018	mg/l	Υ	S	
	Sample Matrix:	Surface Water	Analyst Comment:						
020618	DCS6	02/06/2015	N/A	Arsenic, Ultra-low Total as As	<1.0	ug/l	Υ	S	
			SAM016	BOD	<1	mg/l	Υ		
			N/A	Cadmium, Filtered as Cd	<0.0006	mg/l	Υ	S	
			N/A	Chromium - Hexavalent	<0.005	mg/l	Υ	S	
			N/A	Chromium III	<0.03	mg/l	N	S	
			N/A	Chromium, Filtered as Cr	<0.002	mg/l	Υ	S	
			N/A	Copper, Filtered as Cu	<0.009	mg/l	Υ	S	
			N/A	Iron, Filtered as Fe	<0.23	mg/l	Υ	S	
			N/A	Lead, Filtered as Pb	<0.006	mg/l	Υ	S	
			N/A	Mercury, Filtered as Hg	<0.00010	mg/l	Υ	S	
			N/A	Nickel, Filtered as Ni	<0.003	mg/l	Υ	S	
			SAM004	pH	6.73	Units	Υ		
			SAM001	Suspended Solids	< 3	mg/l	Υ		
			N/A	Total Hardness as CaCO3	<3.20	mg/l	Υ	S	
			N/A	TPH / Oil & Greases	<1	mg/l	Υ	S	
			N/A	Zinc, Total as Zn	<0.018	mg/l	Υ	S	

Sample Matrix:	Surface Water	Analyst Comment:
		Comment:

Samp	ole Dev	viations Legend		
Results may be compromised if the following deviations apply				
Comment	С	Incorrect Container	‡	
Container with Headspace provided	8	Insufficient sample volume	¢	
BOD Overdiluted, therefore result indicative only	\$	BOD Underdiluted, therefore result indicative only	#	
High Chloride concentration, COD could not be determined	§	Holding time exceeded due to sampled on date	@	
Holding time exceeded in Lab	±	Holding time exceeded due to delayed instructions	&	





### **Monitoring and Testing Services**

Te Fa W

Fax: Web: email

A copy of this certificate is available on

Customer		Lab Report Ref. No.	
	Dalradian Gold Ltd	Date of Receipt	04/06/2015
		Sampled On	02/06/2015
		Date Testing Commenced	04/06/2015
		Received or Collected	Courier: DPD
		Condition on Receipt	Acceptable
Customer PO	PO1867	Date of Report	17/06/2015
Customer Ref	DCS3 - 02/06/15	Sample Type	Surface Water
Ref 2			

# **CERTIFICATE OF ANALYSIS**

Test Parameter	SOP	Analytical Technique	Result	Units	Acc.
Arsenic (Dissolved)	177	ICPMS	7.069	ug/L	
BOD (Surface Water)	113	Electrometry	<2	mg/L	UKAS
Cadmium (Dissolved)	177	ICPMS	< 0.09	ug/L	
Chromium (Dissolved)	177	ICPMS	1.017	ug/L	
Copper (Dissolved)	177	ICPMS	19.83	ug/L	
Hardness Total (Surface Water)	111	Colorimetry	25	mg/L CaCO3	UKAS
Iron (Dissolved)	177	ICPMS	1485	ug/L	
Lead (Dissolved)	177	ICPMS	0.381	ug/L	
Mercury (Dissolved)	178	ICPMS	<0.2	ug/L	
Nickel (Dissolved)	177	ICPMS	6.816	ug/L	
Oils, Fats & Grease	101	Solvent Extraction/ Gravimetry	<1	mg/L	
pH (Surface Water)	110	Electrometry	7.4	pH Units	UKAS
Solids (Total Suspended)	106	Filtration/ Drying @ 104C	3	mg/L	
Zinc (Surface Water)	177	ICPMS	36.51	ug/L	UKAS

Signed:

Ref 3

Acc.: Accredited Parameters by ISO 17025:2005

PVL - Parametric Value Limit as per EU (Drinking water) Regulations (SI 122 2014)

For bacterial analysis a result of 0 means none detected in volume examined

All organic results are analysed as received and all results are corrected for dry weight at 104 C

Results shall not be reproduced, except in full, without the approval of

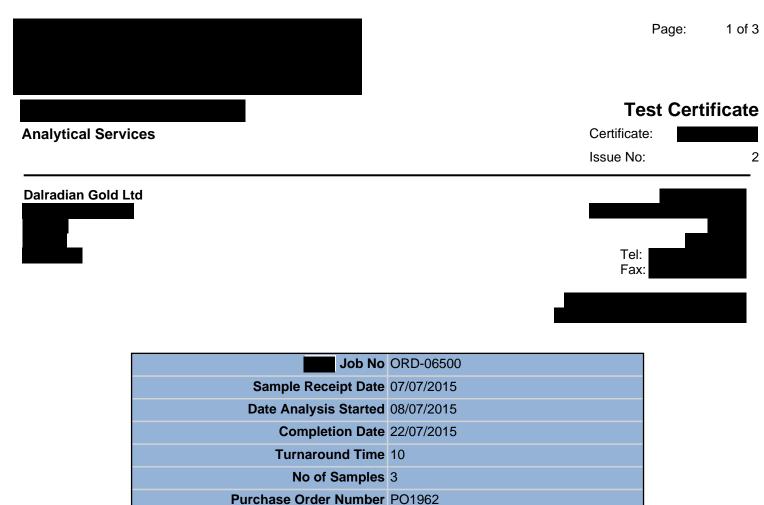
Results contained in this report relate only to the samples tested

(P): Presumptive Results



Date: 17/06/2015

\*\*: The test result for this parameter may be invalid as it has exceeded the recommended holding time (BS EN ISO 5667-3:2012)



Dear ,

Analysis of your sample(s) is now complete and we have pleasure in enclosing the appropriate test report.

All analysis was completed within analysis that was subcontracted to a subcontracted to a

**Quote Number** ECA-01585

Should you have any queries regarding this report(s) or any part of our service, please contact Sales on +44(0)28 9446 6708 who will be happy to discuss your requirements.

Thank you for using Services and we look forward to receiving your next samples.

Yours Sincerely



Lab Technician



2 of 3

# **Analytical Services**

# **Test Certificate**

Certificate:

							Issue	No:	
_ab Ref	Sample Details	Sample Date	Method No.	Test	Result	Units	ACC	Lab	Sample Deviations
021744	DCS4	07/07/2015	N/A	Arsenic (Dissolved)	< 1.0	ug/l	Υ	S	
			SAM016U	BOD (U)	2.47	mg/l	N		\$
			N/A	Cadmium (Dissolved)	< 0.080	ug/l	Υ	S	
			N/A	Chromium (Dissolved)	< 1.0	ug/l	Υ	S	
			N/A	Chromium (Hexavalent)	< 20	ug/l	Υ	S	
			N/A	Chromium (Trivalent)	< 20	ug/l	N	S	
			N/A	Copper (Dissolved)	1.1	ug/l	Υ	S	
			N/A	Iron (Dissolved)	560	ug/l	N	S	
			N/A	Lead (Dissolved)	< 1.0	ug/l	Υ	S	
			N/A	Mercury Dissolved CT	< 0.50	ug/l	Υ	S	
			N/A	Nickel (Dissolved)	< 1.0	ug/l	Υ	S	
			SAM001	Suspended Solids	13	mg/l	Υ		
			N/A	Total Hardness as CAC03	30	mg/l	N	S	
			N/A	TPH / Oil & Greases	<1	mg/l	Υ	S	
			N/A	Zinc (Total)	6.7	ug/l	Υ	S	
	Sample Matrix:	Surface Water	Analys Commen						
021745	DCS5	07/07/2015	N/A	Arsenic (Dissolved)	< 1.0	ug/l	Y	S	
020	2000	0.,0.,20.0	SAM016U	BOD (U)	2.01	mg/l	N		\$
			N/A	Cadmium (Dissolved)	< 0.080	ug/l	Y	S	•
			N/A	Chromium (Dissolved)	< 1.0	ug/l	Y	S	
			N/A	Chromium (Hexavalent)	< 20	ug/l	Y	S	
			N/A	Chromium (Trivalent)	< 20	ug/l	N	S	
			N/A	Copper (Dissolved)	< 1.0	ug/l	Υ	S	
			N/A	Iron (Dissolved)	630	ug/l	N	S	
			N/A	Lead (Dissolved)	< 1.0	ug/l	Y	S	
			N/A	Mercury Dissolved CT	< 0.50	ug/l	Y	S	
			N/A	Nickel (Dissolved)	< 1.0	ug/l	Y	S	
			SAM004	pH	7.23	Units	Y		
			SAM001	Suspended Solids	14	mg/l	Υ		
			N/A	Total Hardness as CAC03	31	mg/l	N	S	
			N/A	TPH / Oil & Greases	<1	mg/l	Y	S	
			N/A	Zinc (Total)	8.8	ug/l	Y	S	
	Sample Matrix:	Surface Water	Analys Commen						
004740	D000	07/07/0045	N1/A	A (D)	4.0		.,	0	
021746	DCS6	07/07/2015	N/A	Arsenic (Dissolved)	< 1.0	ug/l	Y	S	
			SAM016U	BOD (U)	<1	mg/l	N		
			N/A	Cadmium (Dissolved)	< 0.080	ug/l	Y	S	
			N/A	Chromium (Dissolved)	< 1.0	ug/l	Y	S	
			N/A	Chromium (Hexavalent)	< 20	ug/l	Y	S	
			N/A	Chromium (Trivalent)	< 20	ug/l	N	S	
			N/A	Copper (Dissolved)	< 1.0	ug/l	Y	S	
			N/A	Iron (Dissolved)	< 20	ug/l	N	S	



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2

# **Test Certificate**

# **Analytical Services**

Certificate:

Issue No:

Lab Ref	Sample Details	Sample Date	Method No.	Test	Result	Units	ACC	Lab	Sample Deviations
021746	DCS6	07/07/2015	N/A	Lead (Dissolved)	< 1.0	ug/l	Υ	S	
			N/A	Mercury Dissolved CT	< 0.50	ug/l	Υ	S	
			N/A	Nickel (Dissolved)	< 1.0	ug/l	Υ	S	
			SAM004	рН	5.89	Units	Υ		
			SAM001	Suspended Solids	< 3	mg/l	Υ		
			N/A	Total Hardness as CAC03	< 15	mg/l	N	S	
			N/A	TPH / Oil & Greases	<1	mg/l	Υ	S	
			N/A	Zinc (Total)	4.7	ug/l	Υ	S	

Sample Matrix: Surface Water

Analyst Comment:

Samp	ole Dev	viations Legend	
Results may be compro	omised	I if the following deviations apply	
Comment	С	Incorrect Container	‡
Container with Headspace provided	8	Insufficient sample volume	¢
BOD Overdiluted, therefore result indicative only	\$	BOD Underdiluted, therefore result indicative only	#
High Chloride concentration, COD could not be determined	§	Holding time exceeded due to sampled on date	@
Holding time exceeded in Lab	±	Holding time exceeded due to delayed instructions	&



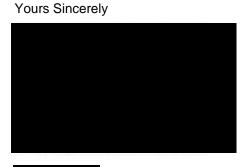
			Test Ce	ertificate
Analytical Services			Certificate:	
			Issue No:	
Dalradian Gold Ltd				
			Tel: Fax:	
	Job No	ORD-06651		
	Sample Receipt Date	28/07/2015		
	Date Analysis Started	28/07/2015		
	Completion Date	07/08/2015		
	Turnaround Time	7		
	No of Samples	5		
	Purchase Order Number			
	Quote Number	ECA-01585		
Dear ,				

cannot be reproduced except in full and without written approval from

Services and we look forward to receiving your next samples.

Should you have any queries regarding this report(s) or any part of our service, please contact Sales on  $+44(0)28\ 9446\ 6708$  who will be happy to discuss your requirements.

Thank you for using



Lab Technician



2 of 4

# **Test Certificate**

### **Analytical Services**

Certificate:

Issue No:

							15506	NO.			
Lab Ref	Sample Details	Sample Date	Method No.	Test	Result	Units	ACC	Lab	Sample Deviations		
022262	DCS1	28/07/2015	N/A	Arsenic (Dissolved)	2.8	ug/l	Υ	s			
			SAM016	BOD	1.49	mg/l	Υ		8\$		
			N/A	Cadmium (Dissolved)	6.9	ug/l	Υ	S			
			N/A	Chromium (Dissolved)	4.7	ug/l	Υ	S			
			N/A	Chromium (Trivalent)	< 20	ug/l	N	S			
			N/A	Chromium Hexavalent	< 20	ug/l	Υ	S			
			N/A	Copper (Dissolved)	9.6	ug/l	Υ	S			
			N/A	Iron (Dissolved)	1200	ug/l	N	S			
			N/A	Lead (Dissolved)	2.1	ug/l	Υ	S			
			N/A	Mercury Dissolved CT	0.51	ug/l	Υ	S			
			N/A	Nickel (Dissolved)	3.1	ug/l	Υ	S			
			SAM004	pH	5.94	Units	Υ				
			SAM001	Suspended Solids	9	mg/l	Υ				
			N/A	Total Hardness	< 15	mg/l	N	S			
			N/A	TPH / Oil & Greases	<1	mg/l	Υ	S			
			N/A	Zinc (Total)	14	ug/l	Υ	S			
	Sample Matrix:	Surface Water	Analyst Comment:								
022263	DCS3	28/07/2015	N/A	Arsenic (Dissolved)	1.3	ug/l	Υ	S			
022200	2000	20/01/2010	SAM016	BOD	1.42	mg/l	Y		8\$		
			N/A	Cadmium (Dissolved)	0.45	ug/l	Y	S			
			N/A	Chromium (Dissolved)	4.6	ug/l	Y	S			
			N/A	Chromium (Trivalent)	< 20	ug/l	N	S			
			N/A	Chromium Hexavalent	< 20	ug/l	Υ	S			
			N/A	Copper (Dissolved)	4.2	ug/l	Υ	S			
			N/A	Iron (Dissolved)	1200	ug/l	N	S			
			N/A	Lead (Dissolved)	< 1.0	ug/l	Y	S			
			N/A	Mercury Dissolved CT	< 0.50	ug/l	Υ	S			
			N/A	Nickel (Dissolved)	4.6	ug/l	Υ	S			
			SAM004	pH	6.02	Units	Y				
			SAM001	Suspended Solids	16	mg/l	Y				
			N/A	Total Hardness	< 15	mg/l	N	S			
			N/A	TPH / Oil & Greases	<1	mg/l	Υ	S			
			N/A	Zinc (Total)	13	ug/l	Υ	S			
	Sample Matrix:	Surface Water	Analyst Comment:								
022264	DCS4	28/07/2015	N/A	Arsenic (Dissolved)	1.2	ug/l	Υ	S			
_ <del></del>			SAM016	BOD	1.95	mg/l	Υ		8\$		
			N/A	Cadmium (Dissolved)	0.6	ug/l	Υ	S			
			N/A	Chromium (Dissolved)	5.8	ug/l	Υ	S			
			N/A	Chromium (Trivalent)	< 20	ug/l	N	S			
			N/A	Chromium Hexavalent	< 20	ug/l	Υ	S			
			N/A	Copper (Dissolved)	3.2	ug/l	Υ	S			



Page: 3 of 4

# **Test Certificate**

### **Analytical Services**

Certificate:

Issue No:

							10000			
Lab Ref	Sample Details	Sample Date	Method No.	Test	Result	Units	ACC	Lab	Sample Deviations	
022264	DCS4	28/07/2015	N/A	Iron (Dissolved)	780	ug/l	N	S		
OZZZO I	2001	20/01/2010	N/A	Lead (Dissolved)	< 1.0	ug/l	Y	S		
			N/A	Mercury Dissolved CT	< 0.50	ug/l	Y	S		
			N/A	Nickel (Dissolved)	6.3	ug/l	Y	S		
			SAM004	pH	6.10	Units	Y			
			SAM001	Suspended Solids	9	mg/l	Υ			
			N/A	Total Hardness	< 15	mg/l	N	S		
			N/A	TPH / Oil & Greases	<1	mg/l	Υ	S		
			N/A	Zinc (Total)	9.6	ug/l	Υ	S		
	Sample Matrix:	Surface Water	Analyst Comment:							
022265	DCS5	28/07/2015	N/A	Arsenic (Dissolved)	1.2	ug/l	Υ	S		
			SAM016	BOD	2.04	mg/l	Υ		8\$	
			N/A	Cadmium (Dissolved)	0.5	ug/l	Υ	S		
			N/A	Chromium (Dissolved)	6.5	ug/l	Υ	S		
			N/A	Chromium (Trivalent)	< 20	ug/l	N	S		
			N/A	Chromium Hexavalent	< 20	ug/l	Υ	S		
			N/A	Copper (Dissolved)	3.2	ug/l	Υ	S		
			N/A	Iron (Dissolved)	830	ug/l	N	S		
			N/A	Lead (Dissolved)	< 1.0	ug/l	Υ	S		
			N/A	Mercury Dissolved CT	< 0.50	ug/l	Υ	S		
			N/A	Nickel (Dissolved)	7.1	ug/l	Υ	S		
			SAM004	рН	6.20	Units	Υ			
			SAM001	Suspended Solids	12	mg/l	Υ			
			N/A	Total Hardness	< 15	mg/l	N	S		
			N/A	TPH / Oil & Greases	<1	mg/l	Υ	S		
			N/A	Zinc (Total)	11	ug/l	Υ	S		
	Sample Matrix:	Surface Water	Analyst Comment:							
022266	DCS6	28/07/2015	N/A	Arsenic (Dissolved)	< 1.0	ug/l	Υ	S		
			SAM016	BOD	<1	mg/l	Υ		8	
			N/A	Cadmium (Dissolved)	0.43	ug/l	Υ	S		
			N/A	Chromium (Dissolved)	6.9	ug/l	Υ	S		
			N/A	Chromium (Trivalent)	< 20	ug/l	N	S		
			N/A	Chromium Hexavalent	< 20	ug/l	Υ	S		
			N/A	Copper (Dissolved)	1.9	ug/l	Υ	S		
			N/A	Iron (Dissolved)	< 20	ug/l	Ν	S		
			N/A	Lead (Dissolved)	< 1.0	ug/l	Υ	S		
			N/A	Mercury Dissolved CT	< 0.50	ug/l	Υ	S		
			N/A	Nickel (Dissolved)	8.3	ug/l	Υ	S		
			SAM004	рН	5.91	Units	Υ			
			SAM001	Suspended Solids	< 3	mg/l	Υ			
			N/A	Total Hardness	< 15	mg/l	N	S		



4 of 4



# **Test Certificate**

### **Analytical Services**

Certificate:

Issue No:

Lab Ref	Sample Details	Sample Date	Method No.	Test	Result	Units	ACC	Lab	Sample Deviations
022266	DCS6	28/07/2015	N/A	TPH / Oil & Greases	<1	mg/l	Υ	S	
			N/A	Zinc (Total)	6.9	ug/l	Υ	S	

Sample Matrix: Surface Water

Analyst Comment:

Samp	ole Dev	viations Legend	
Results may be compro	mised	if the following deviations apply	
Comment	С	Incorrect Container	‡
Container with Headspace provided	8	Insufficient sample volume	¢
BOD Overdiluted, therefore result indicative only	\$	BOD Underdiluted, therefore result indicative only	#
High Chloride concentration, COD could not be determined	§	Holding time exceeded due to sampled on date	@
Holding time exceeded in Lab	±	Holding time exceeded due to delayed instructions	&



Attention :

Date: 14th September, 2015

Your reference :

Our reference: Test Report 15/10835 Batch 1

Location:

Date samples received : 31st July, 2015

Status: Final report

Issue:

Six samples were received for analysis on 31st July, 2015 of which six were scheduled for analysis. Please find attached our Test Report which should be read with notes at the end of the report and should include all sections if reproduced. Interpretations and opinions are outside the scope of any accreditation, and all results relate only to samples supplied.

All analysis is carried out on as received samples and reported on a dry weight basis unless stated otherwise. Results are not surrogate corrected.

### Compiled By:



BSc

**Project Manager** 

Dalradian Gold Ltd Client Name: Report : Liquid

Reference: Location:

Contact: Liquids/products: V=40ml vial, G=glass bottle, P=plastic bottle

JE Job No.: 15/10835 H=H<sub>2</sub>SO<sub>4</sub>, Z=ZnAc, N=NaOH, HN=HNO<sub>3</sub>

JE Job No.:	15/10835						H=H <sub>2</sub> SO <sub>4</sub> ,	∠=∠nAc, N=	NaOH, HN=	HNU <sub>3</sub>			
J E Sample No.	1-6	7-12	13-18	19-24	25-30	31-36							
Sample ID	DCS 1	DCS 2	DCS 3	DCS 5	DCS 4	DCS 6							
Depth											Please so	e attached n	otes for all
COC No / misc												ations and a	
Containers	V HN P BOD G	V HN P BOD G	V HN P BOD G	V HN P BOD G	V HN P BOD G	V N P BOD G							
Sample Date													
Sample Type													
Batch Number	1	1	1	1	1	1							
											LOD/LOR	Units	Method No.
Date of Receipt											.0.0	/1	TM20/DM4.4
Dissolved Arsenic # Dissolved Cadmium #	2.5 <0.03	6.7 0.13	<0.9 <0.03	2.4 <0.03	<0.03	<0.9 <0.03					<0.9 <0.03	ug/l ug/l	TM30/PM14 TM30/PM14
Total Dissolved Chromium #	<0.03	<0.2	<0.03	<0.03	<0.03	<0.2					<0.03	ug/l	TM30/PM14
Dissolved Copper#	<3	<3	3	<3	<3	<3					<3	ug/l	TM30/PM14
Total Dissolved Iron #	2.5690	<0.0047	2.6340	1.2410	1.1460	<0.0047					<0.0047	mg/l	TM30/PM14
Dissolved Lead #	<0.4	2.6	1.0	2.4	2.2	1.6					<0.4	ug/l	TM30/PM14
Dissolved Nickel #	0.7	6.5	0.7	0.5	0.4	<0.2					<0.2	ug/l	TM30/PM14
Dissolved Zinc#	4.5	2.9	5.3	4.9	4.8	2.0					<1.5	ug/l	TM30/PM14
Total Zinc	8	4	9	7	6	3					<3	ug/l	TM30/PM14
Mercury Dissolved by CVAF#	<0.01	<0.01	<0.01	0.05	0.04	<0.01					<0.01	ug/l	TM61/PM38
Total Hardness Dissolved (as CaCO3)	229	179	21	27	25	<1					<1	mg/l	TM30/PM14
EPH (C8-C40)#	<10	<10	<10	<10	<10	<10					<10	ug/l	TM5/PM30
GRO (>C4-C8)#	<10	<10	<10	<10	<10	<10					<10	ug/l	TM36/PM12
GRO (>C8-C12)#	<10	<10	<10	<10	<10	<10					<10	ug/l	TM36/PM12
GRO (>C4-C12)#	<10	<10	<10	<10	<10	<10					<10	ug/l	TM36/PM12
Hexavalent Chromium	<2	<2	<2	<2	<2	<2					<2	ug/l	TM38/PM0
Total Dissolved Chromium III	<2	<2	<2	<2	<2	<2					<2	ug/l	NONE/NONE
		_	_	_		_							
BOD (Settled)#	1	<1	1	1	1	<1					<1	mg/l	TM58/PM0
pH#	6.85	7.98	7.12	6.88	6.68	5.67					<0.01	pH units	TM73/PM0
Total Suspended Solids #	<10	<10	<10	<10	<10	<10					<10	mg/l	TM37/PM0
		J	l	l	l .	l .	J.	1	J.				

### NOTES TO ACCOMPANY ALL SCHEDULES AND REPORTS

**JE Job No.:** 15/10835

#### **SOILS**

Please note we are only MCERTS accredited (UK soils only) for sand, loam and clay and any other matrix is outside our scope of accreditation.

Where an MCERTS report has been requested, you will be notified within 48 hours of any samples that have been identified as being outside our MCERTS scope. As validation has been performed on clay, sand and loam, only samples that are predominantly these matrices, or combinations of them will be within our MCERTS scope. If samples are not one of a combination of the above matrices they will not be marked as MCERTS accredited

It is assumed that you have taken representative samples on site and require analysis on a representative subsample. Stones will generally be included unless we are requested to remove them.

All samples will be discarded one month after the date of reporting, unless we are instructed to the contrary.

If you have not already done so, please send us a purchase order if this is required by your company.

Where appropriate please make sure that our detection limits are suitable for your needs, if they are not, please notify us immediately.

All analysis is reported on a dry weight basis unless stated otherwise. Results are not surrogate corrected. Samples are dried at 35°C ±5°C unless otherwise stated. Moisture content for CEN Leachate tests are dried at 105°C ±5°C.

Where Mineral Oil or Fats, Oils and Grease is quoted, this refers to Total Aliphatics C10-C40.

Where a CEN 10:1 ZERO Headspace VOC test has been carried out, a 10:1 ratio of water to wet (as received) soil has been used.

% Asbestos in Asbestos Containing Materials (ACMs) is determined by reference to HSG 264 The Survey Guide - Appendix 2 : ACMs in buildings listed in order of ease of fibre release.

#### **WATERS**

Please note we are not a UK Drinking Water Inspectorate (DWI) Approved Laboratory.

ISO17025 (UKAS) accreditation applies to surface water and groundwater and one other matrix which is analysis specific, any other liquids are outside our scope of accreditation.

As surface waters require different sample preparation to groundwaters the laboratory must be informed of the water type when submitting samples.

Where Mineral Oil or Fats, Oils and Grease is quoted, this refers to Total Aliphatics C10-C40.

### **DEVIATING SAMPLES**

Samples must be received in a condition appropriate to the requested analyses. All samples should be submitted to the laboratory in suitable containers with sufficient ice packs to sustain an appropriate temperature for the requested analysis. If this is not the case you will be informed and any test results that may be compromised highlighted on your deviating samples report.

### **SURROGATES**

Surrogate compounds are added during the preparation process to monitor recovery of analytes. However low recovery in soils is often due to peat, clay or other organic rich matrices. For waters this can be due to oxidants, surfactants, organic rich sediments or remediation fluids. Acceptable limits for most organic methods are 70 - 130% and for VOCs are 50 - 150%. When surrogate recoveries are outside the performance criteria but the associated AQC passes this is assumed to be due to matrix effect. Results are not surrogate corrected.

### **DILUTIONS**

A dilution suffix indicates a dilution has been performed and the reported result takes this into account. No further calculation is required.

#### NOTE

Data is only reported if the laboratory is confident that the data is a true reflection of the samples analysed. Data is only reported as accredited when all the requirements of our Quality System have been met. In certain circumstances where all the requirements of the Quality System have not been met, for instance if the associated AQC has failed, the reason is fully investigated and documented. The sample data is then evaluated alongside the other quality control checks performed during analysis to determine its suitability. Following this evaluation, provided the sample results have not been effected, the data is reported but accreditation is removed. It is a UKAS requirement for data not reported as accredited to be considered indicative only, but this does not mean the data is not valid.

Where possible, and if requested, samples will be re-extracted and a revised report issued with accredited results. Please do not hesitate to contact the laboratory if further details are required of the circumstances which have led to the removal of accreditation.

### ABBREVIATIONS and ACRONYMS USED

ISO17025 (UKAS) accredited - UK.
Indicates analyte found in associated method blank.
Dilution required.
MCERTS accredited.
Not applicable
No Asbestos Detected.
None Detected (usually refers to VOC and/SVOC TICs).
No Determination Possible
Calibrated against a single substance
Surrogate recovery outside performance criteria. This may be due to a matrix effect.
Results expressed on as received basis.
AQC failure, accreditation has been removed from this result, if appropriate, see 'Note' on previous page.
Result outside calibration range, results should be considered as indicative only and are not accredited.
Analysis subcontracted to a Jones Environmental approved laboratory.
Samples are dried at 35°C ±5°C
Suspected carry over
Limit of Detection (Limit of Reporting) in line with ISO 17025 and MCERTS
Matrix Effect
No Fibres Detected
AQC Sample
Blank Sample
Client Sample
Trip Blank Sample
Outside Calibration Range

**JE Job No**: 15/10835

Test Method No.	Description	Prep Method No. (if appropriate)	Description	ISO 17025 (UKAS)	MCERTS (UK soils only)	Analysis done on As Received (AR) or Dried (AD)	Reported on dry weight basis
TM5	Modified USEPA 8015B method for the determination of solvent Extractable Petroleum Hydrocarbons (EPH) with carbon banding within the range C8-C40 GC-FID.	PM30	Water samples are extracted with solvent using a magnetic stirrer to create a vortex.	Yes			
TM30	Determination of Trace Metal elements by ICP-OES (Inductively Coupled Plasma - Optical Emission Spectrometry). Modified US EPA Method 200.7	PM14	Analysis of waters and leachates for metals by ICP OES. Samples are filtered for dissolved metals and acidified if required.				
TM30	Determination of Trace Metal elements by ICP-OES (Inductively Coupled Plasma - Optical Emission Spectrometry). Modified US EPA Method 200.7	PM14	Analysis of waters and leachates for metals by ICP OES. Samples are filtered for dissolved metals and acidified if required.	Yes			
TM36	Modified US EPA method 8015B. Determination of Gasoline Range Organics (GRO) in the carbon chain range of C4-12 by headspace GC-FID.	PM12	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis.	Yes			
TM37	Modified USEPA 160.2 .Gravimetric determination of Total Suspended Solids. Sample is filtered and the resulting residue is dried and weighed.	PM0	No preparation is required.	Yes			
TM38	Soluble Ion analysis using the Thermo Aquakem Photometric Automatic Analyser.  Modified US EPA methods 325.2, 375.4, 365.2, 353.1, 354.1	PM0	No preparation is required.				
TM58	Modified USEPA methods 405.1 and BS 5667-3. Measurement of Biochemical Oxygen Demand.	PM0	No preparation is required.	Yes			
TM61	Modified US EPA methods 245.7 and 200.7. Determination of Mercury by Cold Vapour Atomic Fluorescence.	PM38	Samples are brominated to reduce all mercury compounds to Mercury (II) which is analysed using method TM061.	Yes			
TM73	Modified US EPA methods 150.1 and 9045D. Determination of pH by Metrohm automated probe analyser.	PM0	No preparation is required.	Yes			
NONE	No Method Code	NONE	No Method Code				



Attention :

Date: 14th September, 2015

Your reference : Discharge Contents

Our reference : Test Report 15/10987 Batch 1

Location: Curraghinalt

Date samples received : 5th August, 2015

Status: Final report

Issue:

Six samples were received for analysis on 5th August, 2015 of which six were scheduled for analysis. Please find attached our Test Report which should be read with notes at the end of the report and should include all sections if reproduced. Interpretations and opinions are outside the scope of any accreditation, and all results relate only to samples supplied.

All analysis is carried out on as received samples and reported on a dry weight basis unless stated otherwise. Results are not surrogate corrected.

### Compiled By:



BSc

**Project Manager** 

Client Name: Dalradian Gold Ltd Report: Liquid

Reference: Discharge Contents

**Location:** Curraghinalt

Contact:

Liquids/products: V=40ml vial, G=glass bottle, P=plastic bottle

JE Job No.:

15/10987

Liquids/products: V=40ml vial, G=glass bottle, P=plastic bottle

H=H<sub>2</sub>SO<sub>4</sub>, Z=ZnAc, N=NaOH, HN=HNO<sub>3</sub>

JE JOD NO.:	15/10987						11=112504, 2	 Naoh, HN=	111103			
J E Sample No.	1-6	7-12	13-18	19-23	24-29	30-35						
Sample ID	DCS1	DCS2	DCS3	DCS4	DCS5	DCS6						
Depth										5.		
COC No / misc											e attached n ations and a	
		V HN P BOD G	V HN P BOD G	V HN BOD G	V HN P BOD G	V HN P BOD G						
Sample Date												
Sample Type	Surface Water											
Batch Number	1	1	1	1	1	1				LOD/LOR	Units	Method
Date of Receipt	05/08/2015	05/08/2015	05/08/2015	05/08/2015	05/08/2015	05/08/2015						No.
Dissolved Arsenic#	2.6	6.5	2.0	2.4	5.4	<0.9				<0.9	ug/l	TM30/PM14
Dissolved Cadmium #	<0.03	0.06	<0.03	<0.03	<0.03	<0.03				<0.03	ug/l	TM30/PM14
Total Dissolved Chromium#	0.6	<0.2	<0.2	<0.2	0.3	<0.2				<0.2	ug/l	TM30/PM14
Dissolved Copper#	<3	<3	<3	<3	<3	<3				<3	ug/l	TM30/PM14
Total Dissolved Iron * Dissolved Lead *	2.0460	0.1384 2.5	1.8430 0.7	2.4590 0.5	2.7490	<0.0047 <0.4				<0.0047	mg/l ug/l	TM30/PM14 TM30/PM14
Dissolved Nickel #	1.0	7.0	0.7	0.5	0.8	<0.4				<0.4	ug/l	TM30/PM14
Dissolved Selenium #	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2				<1.2	ug/l	TM30/PM14
Dissolved Zinc#	6.0	5.6	6.1	5.5	4.4	<1.5				<1.5	ug/l	TM30/PM14
Total Zinc	7	6	7	6	5	<3				<3	ug/l	TM30/PM14
Mercury Dissolved by CVAF#	<0.01	<0.01	<0.01	<0.01	0.03	<0.01				<0.01	ug/l	TM61/PM38
Total Hardness Dissolved (as CaCO3)	12	175	21	23	21	<1				<1	mg/l	TM30/PM14
EPH (C8-C40)#	<10	<10	<10	<10	<10	<10				<10	ug/l	TM5/PM30
GRO (>C4-C8)#	<10	<10	<10	<10	<10	<10				<10	ug/l	TM36/PM12
GRO (>C8-C12)#	<10	<10	<10	<10	<10	<10				<10	ug/l	TM36/PM12
GRO (>C4-C12)#	<10	<10	<10	<10	<10	<10				<10	ug/l	TM36/PM12
III I Ol		0										T1 100 (D1 10
Hexavalent Chromium  Total Dissolved Chromium III	<2 <2	<2 <2	<2 <2	<2 <2	<2 <2	<2 <2				<2 <2	ug/l ug/l	TM38/PM0 NONE/NONE
Total Dissolved Childhilani III	\Z	~2	~2	\Z	\Z	\Z				<b>\</b> 2	ug/i	NONE/NONE
BOD (Settled)#	2	1	2	1	2	<1				<1	mg/l	TM58/PM0
pH#	5.74	7.69	5.95	7.28	6.51	5.76				<0.01	pH units	TM73/PM0
Total Suspended Solids #	<10	14	<10	12	<10	<10				<10	mg/l	TM37/PM0

### NOTES TO ACCOMPANY ALL SCHEDULES AND REPORTS

**JE Job No.:** 15/10987

#### **SOILS**

Please note we are only MCERTS accredited (UK soils only) for sand, loam and clay and any other matrix is outside our scope of accreditation.

Where an MCERTS report has been requested, you will be notified within 48 hours of any samples that have been identified as being outside our MCERTS scope. As validation has been performed on clay, sand and loam, only samples that are predominantly these matrices, or combinations of them will be within our MCERTS scope. If samples are not one of a combination of the above matrices they will not be marked as MCERTS accredited

It is assumed that you have taken representative samples on site and require analysis on a representative subsample. Stones will generally be included unless we are requested to remove them.

All samples will be discarded one month after the date of reporting, unless we are instructed to the contrary.

If you have not already done so, please send us a purchase order if this is required by your company.

Where appropriate please make sure that our detection limits are suitable for your needs, if they are not, please notify us immediately.

All analysis is reported on a dry weight basis unless stated otherwise. Results are not surrogate corrected. Samples are dried at 35°C ±5°C unless otherwise stated. Moisture content for CEN Leachate tests are dried at 105°C ±5°C.

Where Mineral Oil or Fats, Oils and Grease is quoted, this refers to Total Aliphatics C10-C40.

Where a CEN 10:1 ZERO Headspace VOC test has been carried out, a 10:1 ratio of water to wet (as received) soil has been used.

% Asbestos in Asbestos Containing Materials (ACMs) is determined by reference to HSG 264 The Survey Guide - Appendix 2 : ACMs in buildings listed in order of ease of fibre release.

#### **WATERS**

Please note we are not a UK Drinking Water Inspectorate (DWI) Approved Laboratory.

ISO17025 (UKAS) accreditation applies to surface water and groundwater and one other matrix which is analysis specific, any other liquids are outside our scope of accreditation.

As surface waters require different sample preparation to groundwaters the laboratory must be informed of the water type when submitting samples.

Where Mineral Oil or Fats, Oils and Grease is quoted, this refers to Total Aliphatics C10-C40.

### **DEVIATING SAMPLES**

Samples must be received in a condition appropriate to the requested analyses. All samples should be submitted to the laboratory in suitable containers with sufficient ice packs to sustain an appropriate temperature for the requested analysis. If this is not the case you will be informed and any test results that may be compromised highlighted on your deviating samples report.

### **SURROGATES**

Surrogate compounds are added during the preparation process to monitor recovery of analytes. However low recovery in soils is often due to peat, clay or other organic rich matrices. For waters this can be due to oxidants, surfactants, organic rich sediments or remediation fluids. Acceptable limits for most organic methods are 70 - 130% and for VOCs are 50 - 150%. When surrogate recoveries are outside the performance criteria but the associated AQC passes this is assumed to be due to matrix effect. Results are not surrogate corrected.

### **DILUTIONS**

A dilution suffix indicates a dilution has been performed and the reported result takes this into account. No further calculation is required.

#### NOTE

Data is only reported if the laboratory is confident that the data is a true reflection of the samples analysed. Data is only reported as accredited when all the requirements of our Quality System have been met. In certain circumstances where all the requirements of the Quality System have not been met, for instance if the associated AQC has failed, the reason is fully investigated and documented. The sample data is then evaluated alongside the other quality control checks performed during analysis to determine its suitability. Following this evaluation, provided the sample results have not been effected, the data is reported but accreditation is removed. It is a UKAS requirement for data not reported as accredited to be considered indicative only, but this does not mean the data is not valid.

Where possible, and if requested, samples will be re-extracted and a revised report issued with accredited results. Please do not hesitate to contact the laboratory if further details are required of the circumstances which have led to the removal of accreditation.

### ABBREVIATIONS and ACRONYMS USED

#	ISO17025 (UKAS) accredited - UK.
В	Indicates analyte found in associated method blank.
DR	Dilution required.
M	MCERTS accredited.
NA	Not applicable
NAD	No Asbestos Detected.
ND	None Detected (usually refers to VOC and/SVOC TICs).
NDP	No Determination Possible
SS	Calibrated against a single substance
SV	Surrogate recovery outside performance criteria. This may be due to a matrix effect.
W	Results expressed on as received basis.
+	AQC failure, accreditation has been removed from this result, if appropriate, see 'Note' on previous page.
++	Result outside calibration range, results should be considered as indicative only and are not accredited.
*	Analysis subcontracted to a Jones Environmental approved laboratory.
AD	Samples are dried at 35°C ±5°C
СО	Suspected carry over
LOD/LOR	Limit of Detection (Limit of Reporting) in line with ISO 17025 and MCERTS
ME	Matrix Effect
NFD	No Fibres Detected
BS	AQC Sample
LB	Blank Sample
N	Client Sample
ТВ	Trip Blank Sample
OC	Outside Calibration Range

**JE Job No:** 15/10987

Test Method No.	Description	Prep Method No. (if appropriate)	Description	ISO 17025 (UKAS)	MCERTS (UK soils only)	Analysis done on As Received (AR) or Dried (AD)	Reported on dry weight basis
TM5	Modified USEPA 8015B method for the determination of solvent Extractable Petroleum Hydrocarbons (EPH) with carbon banding within the range C8-C40 GC-FID.	PM30	Water samples are extracted with solvent using a magnetic stirrer to create a vortex.	Yes			
TM30	Determination of Trace Metal elements by ICP-OES (Inductively Coupled Plasma - Optical Emission Spectrometry). Modified US EPA Method 200.7	PM14	Analysis of waters and leachates for metals by ICP OES. Samples are filtered for dissolved metals and acidified if required.				
TM30	Determination of Trace Metal elements by ICP-OES (Inductively Coupled Plasma - Optical Emission Spectrometry). Modified US EPA Method 200.7	PM14	Analysis of waters and leachates for metals by ICP OES. Samples are filtered for dissolved metals and acidified if required.	Yes			
TM36	Modified US EPA method 8015B. Determination of Gasoline Range Organics (GRO) in the carbon chain range of C4-12 by headspace GC-FID.	PM12	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis.	Yes			
TM37	Modified USEPA 160.2 .Gravimetric determination of Total Suspended Solids. Sample is filtered and the resulting residue is dried and weighed.	PM0	No preparation is required.	Yes			
TM38	Soluble Ion analysis using the Thermo Aquakem Photometric Automatic Analyser.  Modified US EPA methods 325.2, 375.4, 365.2, 353.1, 354.1	PM0	No preparation is required.				
TM58	Modified USEPA methods 405.1 and BS 5667-3. Measurement of Biochemical Oxygen Demand.	PM0	No preparation is required.	Yes			
TM61	Modified US EPA methods 245.7 and 200.7. Determination of Mercury by Cold Vapour Atomic Fluorescence.	PM38	Samples are brominated to reduce all mercury compounds to Mercury (II) which is analysed using method TM061.	Yes			
TM73	Modified US EPA methods 150.1 and 9045D. Determination of pH by Metrohm automated probe analyser.	PM0	No preparation is required.	Yes			
NONE	No Method Code	NONE	No Method Code				



### **Monitoring and Testing Services**

Tel: Fax: Web: email

A copy of this certificate is available on

Lab Report Ref. No. Customer Date of Receipt 06/08/2015 **Dalradian Gold Ltd** Sampled On 04/08/2015 **Date Testing Commenced** 06/08/2015 Received or Collected Courier: DPD **Condition on Receipt** Acceptable **Customer PO** PO2067 Date of Report 28/08/2015 DCS2 - 04/08/15 **Customer Ref** Sample Type **Trade Effluent** Ref 2

# **CERTIFICATE OF ANALYSIS**

Test Parameter	SOP	Analytical Technique	Result	Units	Acc.
Arsenic (Dissolved)	177	ICPMS	8.64	ug/L	
BOD (Industrial Eff.)	113	Electrometry	8	mg/L	UKAS
Cadmium (Dissolved)	177	ICPMS	0.121	ug/L	
Chromium (Dissolved)	177	ICPMS	<0.68	ug/L	
Copper (Dissolved)	177	ICPMS	13.99	ug/L	
Hardness Total (Industrial Eff.)	111	Colorimetry	183	mg/L CaCO3	UKAS
Iron (Dissolved) mg/L	177	ICPMS	0.9932	mg/L	
Lead (Dissolved)	177	ICPMS	0.37	ug/L	
Mercury (Dissolved)	178	ICPMS	1.051	ug/L	
Nickel (Dissolved)	177	ICPMS	9.321	ug/L	
Oils, Fats & Grease	101	Solvent Extraction/ Gravimetry	<1	mg/L	
pH (Industrial Eff)	110	Electrometry	7.7	pH Units	UKAS
Solids (Total Suspended) Industrial E	106	Gravimetry	23	mg/L	UKAS
Zinc (Industrial Eff.)	177	ICPMS	14.59	ug/L	UKAS

### Signed:

Ref 3

Acc.: Accredited Parameters by ISO 17025:2005

PVL - Parametric Value Limit as per EU (Drinking water) Regulations (SI 122 2014)

For bacterial analysis a result of 0 means none detected in volume examined

All organic results are analysed as received and all results are corrected for dry weight at 104 C

Results shall not be reproduced, except in full, without the approval of

Results contained in this report relate only to the samples tested

(P) : Presumptive Results



Date: 28/08/2015

\*\*: The test result for this parameter may be invalid as it has exceeded the recommended holding time (BS EN ISO 5667-3:2012)



### **Monitoring and Testing Services**

Tel: Fax: Web: email

A copy of this certificate is available on

Lab Report Ref. No. Customer Date of Receipt 06/08/2015 **Dalradian Gold Ltd** Sampled On 04/08/2015 06/08/2015 **Date Testing Commenced** Received or Collected Courier: DPD **Condition on Receipt** Acceptable **Customer PO** PO2067 Date of Report 28/08/2015 DCS4 - 04/08/15 **Customer Ref** Surface Water Sample Type Ref 2

# **CERTIFICATE OF ANALYSIS**

Test Parameter	SOP	Analytical Technique	Result	Units	Acc.
Arsenic (Dissolved)	177	ICPMS	3.454	ug/L	
BOD (Surface Water)	113	Electrometry	<2	mg/L	UKAS
Cadmium (Dissolved)	177	ICPMS	< 0.09	ug/L	
Chromium (Dissolved)	177	ICPMS	<0.68	ug/L	
Copper (Dissolved)	177	ICPMS	11.24	ug/L	
Hardness Total (Surface Water)	111	Colorimetry	22	mg/L CaCO3	UKAS
Iron (Dissolved) mg/L	177	ICPMS	1.482	mg/L	
Lead (Dissolved)	177	ICPMS	0.573	ug/L	
Mercury (Dissolved)	178	ICPMS	<0.2	ug/L	
Nickel (Dissolved)	177	ICPMS	1.513	ug/L	
Oils, Fats & Grease	101	Solvent Extraction/ Gravimetry	<1	mg/L	
pH (Surface Water)	110	Electrometry	7.4	pH Units	UKAS
Solids (Total Suspended)	106	Filtration/ Drying @ 104C	3	mg/L	
Zinc (Surface Water)	177	ICPMS	10.31	ug/L	UKAS

Signed:

Ref 3

Acc.: Accredited Parameters by ISO 17025:2005

PVL - Parametric Value Limit as per EU (Drinking water) Regulations (SI 122 2014)

For bacterial analysis a result of 0 means none detected in volume examined

All organic results are analysed as received and all results are corrected for dry weight at 104 C

Results shall not be reproduced, except in full, without the approval of

Results contained in this report relate only to the samples tested

(P) : Presumptive Results



Date: 28/08/2015

\*\*: The test result for this parameter may be invalid as it has exceeded the recommended holding time (BS EN ISO 5667-3:2012)