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Deeside

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Attention :

Date:

24th February, 2017

Your reference :

Dalradian Gold Ltd 3 Killybrack Rd

Omagh BT79 7DG

nes

Our reference :

Test Report 17/3314 Batch 1 17/3320 Batch 1

Location:

Curraghinalt

Date samples received :

Status:

Final report

Issue :

1

Compiled By:

BSc

Project Manager

Client Name:

Dalradian Gold Ltd

Reference: Location: DCS Currentinelt

Contact:

Curraghinalt

Report: Liquid

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

H=H₂SO₄, Z=ZnAc, N=NaOH, HN=HNO₃

| | | | | | | | H=H₂SO₄, Z | ∠=∠nAc, N= | NaOH, HN= | HNU ₃ | | | |
|--|------------------|-----------------|------------------|-----------------------|--------------------|---------------------|-----------------|------------|-----------|------------------|-----------|--------------|------------------------|
| J E Job No. | 17/3320 | 17/3320 | 17/3320 | 17/3314 | 17/3314 | 17/3314 | 17/3320 | | 0.5 | | | | |
| J E Sample No. | 1-7 | 8-14 | 15-21 | 1-10 | 11-20 | 21-30 | 22-28 | 6 | | | | | |
| Sample ID | DCS1 | DCS2 | DCS3 | DC\$4 | DCSs | DCS6 | DCS7 | AXXV. | | | | | |
| Depth | ALC: | A1 41 | 21/4 | - | | | | Value | | | | e attached n | |
| COC No / misc | 8925E | | | | Marie | | | 211 | Survino. | | abbrevi | ations and a | cronyms |
| Containers | V HIN NO P BOD O | V HN NB P 800 G | V H41 NB P 800 G | V H (M) N (4) P 800 0 | VH NN N NB P BOD O | V H HN N NS = 800 G | V HN MB P BOD G | | | | | | |
| Sample Date | 01/02/2017 | 01/02/2017 | 01/02/2017 | 01/02/2017 | 01/02/2017 | 01/02/2017 | 01/02/2017 | | 200 | | | | |
| Sample Type | XXXXXXXXXX | | | mu gays | 12777 | The same of | 100 | 720 | 0 | | | | |
| | | 38-7 | | - | 54-5-6 | 100 | The state of | | 12 - 3 | | | | _ |
| Batch Number | | 151 | 1 | 1 | 1 | 1 | 1 | 489 | TO NO. | | LOD/LOR | Units | Method No. |
| Date of Receipt | | | | | | | | | | | H) - 1123 | | T1 100 (T1 11 1 |
| Dissolved Arsenic | <0.9 | 2.6 | 2.4 | <0.9 | <0.9 | <0.9 | 2.2 | | | | <0.9 | ug/l | TM30/PM14 |
| Dissolved Cadmium | <0,03 | <0.03 | <0.03 | <0.03 | <0.03 | <0.03 | <0.03 | | | | <0.03 | ug/l | TM30/PM14 TM30/PM14 |
| Total Dissolved Chromium | 0.7 | 0.2 | 1,3 | <0.2 | <0.2 | <0.2 | <0.2 <3 | | | | <0.2 | ug/l ug/l | TM30/PM14 |
| Dissolved Copper Total Dissolved Iron | <3 0.7231 | <3 0.1571 | <3 0.7368 | 0.7023 | 0.6844 | <0.0047 | 0.1609 | | | | <0.0047 | mg/l | TM30/PM14 |
| Total Dissolved Iron Dissolved Lead | <0.4 | <0.4 | <0.4 | <0.4 | <0.4 | <0.4 | <0.4 | | | | <0.4 | ug/l | TM30/PM14 |
| Dissolved Nickel | 0.6 | 8.0 | 1.2 | 0.7 | <0.2 | <0.2 | 7.6 | | | | <0.2 | ug/l | TM30/PM14 |
| Dissolved Nickel | 4.2 | 24.4 | 5.4 | 4.2 | 4.5 | <1.5 | 24.2 | ==== | | | <1.5 | ug/l | TM30/PM14 |
| Total Zinc | 5 | 29 | 10 | 3.9 | 4.4 | <1.5 | 28 | | | | <1.5 | ug/l | TM30/PM14 |
| Mercury Dissolved by CVAF | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | | | | <0.01 | ug/l | TM61/PM38 |
| Total Hardness Dissolved (as CeCO3) | 13 | 196 | 23 | 19 | 21 | <1 | 199 | | | | <1 | mg/l | TM30/PM14 |
| | | 185,4397.2 | | | 1000 | | | | | | | | |
| EPH (C8-C40) * | <10 | <10 | <10 | <10 | <10 | <10 | <10 | | | | <10 | ug/l | TM5/PM30 |
| GRO (>C4-C8)* | <10 | <10 | <10 | <10 | <10 | <10 | <10 | | | | <10 | ug/l | TM36/PM12 |
| GRO (>C8-C12)* | <10 | <10 | <10 | <10 | <10 | <10 | <10 | | | | <10 | ug/l | TM36/PM12 |
| GRO (>C4-C12)" | <10 | <10 | <10 | <10 | <10 | <10 | <10 | | | | <10 | ug/l | ТМ36/РМ12 |
| Hexavalent Chromium * | <6 | <6 | <6 | <6 | <6 | <6 | <6 | | | | <6 | ug/l | TM38/PM0 |
| Total Dissolved Chromium III | <6 | <6 | <6 | <6 | <6 | <6 | <6 | | | | <6 | ug/l | NONEMONE |
| BOD (Settled)* | 9 | <1 | <1 | 1 | <1 | <1 | <1 | | | | <1 | mg/l | TM58/PM0 |
| pH ^d | 6,57 | 7.39 | 7.48 | 7.38 | 6.19 | 5.62 | 7.53 | | | | <0.01 | pH units | TM73/PM0 |
| Total Suspended Solids | <10 | <10 | <10 | <10 | <10 | <10 | <10 | | | | <10 | mg/l | TM37/PM0 |
| | | | | | | | | | | | | | |
| | | | | | | | | | | | | | |

Client Name: Dalradian Gold Ltd

Reference: DCS

Location: Curraghinalt

Contact:

Reason No deviating sample report results for jobs 17/3314,17/3320 Analysis J E Sample No. Depth Sample ID Batch 고 우 양 양 양

Please note that only samples that are deviating are mentioned in this report. If no samples are listed it is because none were deviating. Only analyses which are accredited are recorded as deviating if set criteria are not met.

NOTES TO ACCOMPANY ALL SCHEDULES AND REPORTS

JE Job No.:

17/3314 17/3320

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.

Negative Neutralization Potential (NP) values are obtained when the volume of NaOH (0.1N) titrated (pH 8.3) is greater than the volume of HCI (1N) to reduce the pH of the sample to 2.0 - 2.5. Any negative NP values are corrected to 0.

WATERS

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

ISO17025 accreditation applies to surface water and groundwater and usually 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.

BLANKS

Where analytes have been found in the blank, the sample will be treated in accordance with our laboratory procedure for dealing with contaminated blanks.

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.

JE Job No.:

17/3314 17/3320

ABBREVIATIONS and ACRONYMS USED

| # | ISO17025 (UKAS) accredited - UK, |
|---------|--|
| SA | ISO17025 (SANAS) accredited - South Africa. |
| B | |
| | 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 |
| co | 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 |
| ос | Outside Calibration Range |

JE Job No: 17/3314 17/3320

| rest Method No. | Description | Prep Method No. (if appropriate) | Description | ISO MCERTS 17025 (UK soils (UKAS/S Only) ANAS) | Analysis done on As Received (AR) or Dried (AD) | Reported on dry weight basis |
|-----------------|---|--|---|---|---|------------------------------------|
| TMS | Modified USEPA 8015B method for the determination of solvent Extractable Petroleum Hydrocarbons (EPH) with carbon banding within the range C9-C40 GC-FID. | PM30 | Water samples are extracted with solvent using a magnetic stirrer to create a vortex. | √es Yes | | |
| TM20 | Modified BS 1377-3: 1990/USEPA 160.3 Gravimetric determination of Total Dissolved Solids/Total Solids | PMO | No preparation is required. | Yes | | |
| TM30 | Determination of Trace Metal elements by ICP-OES (Inductively Coupled Plasma - Optical Emission Spectrometry), Modified US EPA Method 200.7 and 6010B | PM14 | Analysis of waters and teachates for metals by KCP OES/ICP MS. Samples are filtered for dissolved metals and acidified if required. | | · | |
| ТМЗО | Determination of Trace Metal elements by ICP-DES (Inductively Coupled Plasma - Optical Emission Spectrometry), Modified US EPA Method 200.7 and 6010B | PM14 | Analysis of waters and leachates for metals by ICP OES/ICP MS. Samples are filtered for dissolved metals and acidified if required. | Yes | | |
| TM36 | Modified US EPA method 8015B. Determination of Gasokine Range Organics (GRO) in the carbon chain range of G4-12 by headspace GC-FID. | PM12 | Modified US EPA method 5021, Preparation of solid and liquid samples for GC headspace analysis. | Yes | | |
| TM37 | Modified USEPA 180.2 Gravimetric determination of Total Suspended Solids. Sample is filtered and the resulting residue is dried and weighed. | PMO | No preparation is required. | , Yes | | |
| TM38 | Soluble fon analysis using the Thermo Aquakern Photometric Automatic Analyser. Modified US EPA methods 325.2, 375.4, 365.2, 353.1, 354.1 | РМО | No preparation is required. | Yes | | |
| TM53 | Ammonia reacts with Nessler's reagent which is analysed spectrophotometrically. | PMO | No preparation is required. | | | |
| TM57 | Modified US EPA Method 410.4. Chemical Oxygen Demand is determined by hot digestion with Polassaum Dichromate and measured spectrophotometerically. | PM0 | No preparation is required. | Yes | | |
| TMS8 | Modified USEPA methods 405.1 and BS 5667-3. Measurement of Biochemical Oxygen Demand, When cBOD (Carbonaceous BOD) is requested a nitrification inhibitor is added which prevents the oxidation of reduced forms of nitrogen, such as ammonia, nitrite and organic nitrogen which exert a nitrogenous demand. | PMO | No preparabon is required. | Yes | | |

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Method Code Appendix

Exova Jones Environmental

JE Job No: 17/3314 17/3320

| Test Method No. | Description | Prep Method No. (if appropriate) | Description | ISO 17025 (UKAS/S ANAS) | MCERTS (UK soils only) | Analysis done on As Received (AR) or Dried (AD) | Reported on dry weight basis |
|-----------------|---|--|---|----------------------------------|------------------------------|--|------------------------------------|
| TM60 | Modified USEPA 9060. Determination of TOC by calculation from Total Carbon and Inorganic Carbon using a TOC analyser, the carbon in the sample is converted to CO2 and then passed through a non-dispersive infrared gas analyser (NDIR). | PMO | No preparation is required. | Yes | | | |
| TM61 | Modified US EPA methods 245.7 and 200.7, Determination of Mercury by Cold Vapour Atomic Fluorescence. | PM36 | Samples are bromnated to reduce all mercury compounds to Mercury (II) which is analysed using method TM061. | | | | |
| 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 a analysed using method TM061. | Yes | | | |
| TM73 | Modified US EPA methods 150.1 and 9045D. Determination of pH by Metrohm automated probe analyser. | PMO | No preparabon is required. | Yes | | | |
| TM75 | Modified US EPA method 310,1. Determination of Alkalinity by Metrohm automated titration analyser. | PMO | No preparation is required. | Yes | | | |
| TM76 | Modified US EPA method 120.1, Determination of Specific Conductance by Metrohm automated probe analyser, | PMO | No preparation is required. | Yes | | | |
| TM89 | Modified USEPA method OlA-1667. Determination of cyanide by Flow Injection Analyser. Where WAD cyanides are required a Ligand displacement step is carried out before analysis. | PMO | No preparation is required. | | | | |
| TM173 | Analysis of fluoride by ISE (Ion Selective Electrode) using modified ISE method 340.2 | PMO | No preparation is required. | | | | |
| NONE | No Method Code | NONE | No Method Code | | | | |
| 8 | | | | | | | |

