



November 21th, 2016

Re: Termination of Nuclear Materials License
License Number: 54-35234-01

Good afternoon Mr. Null,

As discussed over the phone, DGI Geoscience Inc. completed a project in Northern Michigan in August of 2015. This project involved the use of a downhole density probe that utilized a 3.7 GBq Cesium-137 source that DGI was licensed to use as per license 54-35234-01. Once this project was completed the Cs137 source was sent back to Canada where it has remained since the completion of the project. Attached to this letter you will find a copy of our Canadian Nuclear Materials License as well as the leak test results for source 4081CO, the source that was used on this project.

Please feel free to contact me if you have any questions, comments, or concerns.

Regards,

A handwritten signature in black ink, appearing to read 'Andrew Torgerson', followed by a long horizontal line extending to the right.

Andrew Torgerson

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DGI – Ore & Host Rock Characterization



SEALED RADIOACTIVE SOURCE LEAK TEST MEASUREMENT CERTIFICATE

Company Name: DGI Geoscience Inc.
Address: 121 Wellham, Unit 7
Barrie, Ontario
L4N 8Y3

Certificate ID: 48-25573

Measurement Date: November 3, 2016

MEASUREMENT SYSTEM INFORMATION

Measurement Method: PerkinElmer WIZARD2

Equipment Calibration Date: November 3, 2016

Verification Date: August 21, 2015

MEASUREMENT DATA

<u>Radioisotope</u>		<u>Counting Efficiency</u>	<u>Background (CPM)</u>	<u>MDA (Bq)</u>	<u>Limit (Bq)</u>	
Cesium-137		23.5%	18.9	0.7	200.0	
<u>Kit #</u>	<u>Device SN</u>	<u>Source SN</u>	<u>Radioisotope</u>	<u>Gross CPM</u>	<u>Bq Value</u>	<u>Action Required</u>
140865	6349GQ	-	Cs-137	19.6	< 0.7	None Required
140880	4101CO	-	Cs-137	17.7	< 0.7	None Required
140855	4086CO	-	Cs-137	18.6	< 0.7	None Required
140853	4081CO	-	Cs-137	19.2	< 0.7	None Required
140859	VL-1-987	-	Cs-137	20.7	< 0.7	None Required
140858	VL-1-877	-	Cs-137	22.0	< 0.7	None Required
141074	VL-1-875	-	Cs-137	17.4	< 0.7	None Required
141066	VL-1-860	-	Cs-137	21.4	< 0.7	None Required
141076	VL-1-873	-	Cs-137	19.0	< 0.7	None Required
140857	4100CO	-	Cs-137	19.6	< 0.7	None Required
140860	4098CO	-	Cs-137	18.9	< 0.7	None Required
140856	4088CO	-	Cs-137	19.9	< 0.7	None Required

* MDA is defined as the smallest amount of activity that can be quantified for comparison with regulatory limits and is considered significant at the 95% confidence level.

CONCLUSIONS/ACTION REQUIRED

No evidence of removable radioactive contamination in excess of the prescribed limit was detected.

Name: Alexia Epp

Signature:

I) **LICENCE NUMBER:** 12807-1-19.1

II) **LICENSEE**

Pursuant to section 24 of the Nuclear Safety and Control Act, this licence is issued to:

DGI Geoscience Inc.
119 Spadina Avenue
Suite 405
Toronto, ON
M5V 2L1
Canada

Corporate No.: 1273521 (Ontario)

This licence replaces licence 12807-1-19.0.

III) **LICENCE PERIOD**

This licence is valid from: January 19, 2015 to November 30, 2019 unless otherwise suspended, amended, revoked or replaced.

IV) **LICENSED ACTIVITIES**

This licence authorizes the licensee to:

- (a) possess, transfer, import, export, use and store the nuclear substances listed in the Appendix: Nuclear Substances and Radiation Devices of this licence.
- (b) conduct licensed activities in the location(s) specified in the Appendix: Locations of Licensed Activities of this licence.

This licence is issued for: logging - sealed source (816).

V) **CONDITIONS**

The contents of the appendices attached to this licence form part of the licence.

1. **Operation Notification**

Upon request from the Commission or a person authorized by the Commission the licensee shall notify the Commission in advance of the time, date and location of each job site.
(2524-0)

2. **Survey Meter Requirements**

The licensee shall provide at all times where nuclear substances, except for Hydrogen-3 and Nickel-63, are handled or stored a radiation survey meter.

(2058-1)

3. Logging Source Requirements

The licensee shall not import or use sealed borehole logging sources unless they meet the performance requirements of:

- (a) test level 56522 of the International Organization for Standardization Standard 2919 - 1980, Sealed Radioactive Sources - Classification (as amended from time to time), or
- (b) test level 56522 of the American National Standards Institute Standard Sealed Radioactive Sources - Classification N43.6 - 1997 (as amended from time to time), or
- (c) test level 46515 of the American National Standards Institute Standard N5.10 - 1968 Classification of Sealed Radioactive Sources

(2185-4)

4. Storage

The licensee shall:

- (a) ensure that when in storage radioactive nuclear substances or radiation devices are accessible only to persons authorized by the licensee;
- (b) ensure that the dose rate at any occupied location outside the storage area, room or enclosure resulting from the substances or devices in storage does not exceed 2.5 microSv/h; and
- (c) have measures in place to ensure that the dose limits in the Radiation Protection Regulations are not exceeded as a result of the substances or devices in storage.

(2575-2)

5. Storage Notification

Upon request from the Commission or a person authorized by the Commission the licensee shall notify the Commission in writing of the storage site(s) of each nuclear substance.

(2298-1)

6. Logging Source Abandoned Report

The licensee shall submit a written report to the Commission within 21 days of submitting the preliminary report of any sealed source which has been abandoned down a borehole.

The report should include:

- (a) the date of the occurrence;
- (b) a description of the well logging source involved including the nuclear substance and quantity, chemical and physical form;
- (c) the surface location and identification of the well;
- (d) the results of the efforts to immobilize and seal the source in place;
- (e) a brief description of the attempted recovery effort;
- (f) the depth of the source;
- (g) the depth of the top of the cement plug;
- (h) the depth of the well;
- (i) any other information, such as a warning statement, contained on the permanent identification plaque; and
- (j) a list of the other organizations who received a copy of the report.

(2026-3)

7. Location Notification

The licensee shall, for any site where licensed activities are to be conducted for more than 90 consecutive days, notify the Commission in writing of the site within 7 days of starting to conduct the activities at the site. The licensee shall notify the Commission in writing within 7 days of the discontinuance of licensed activities at any

site. The continuity of consecutive days is not broken during off site use or off site temporary storage.
(2300-2)

8. Records Requirements - Portable Devices

The licensee shall ensure that a copy of the prescribed records and operating procedures specific to the site where licensed activities are conducted for more than 90 consecutive days is maintained at that site. The continuity of consecutive days is not broken during off site use or off site temporary storage.
(2350-4)

9. Logging Source Recovery Notification

The licensee shall notify the Commission of any operation to recover a sealed source stuck in a borehole prior to conducting the operation.
(2017-2)

10. Logging Source Abandonment Approval

The licensee shall not leave a sealed source unattended for any period of time in a borehole without written authorization from the Commission or a person authorized by the Commission.
(2375-0)

11. Work Procedures

Written work procedures for normal and emergency conditions shall be provided to all employees, and shall be available wherever radioactive prescribed substances are used or stored.
(2393-1)

12. Annual Compliance Report

The licensee shall, by September 30 of each year, submit to the Commission a written annual compliance report in the form specified in the Appendix: Annual Compliance Reporting Form to this licence.
(2916-10)

13. Action Level Notification

Subject to any other condition of this licence and unless otherwise permitted by the prior written approval of the Commission or a person authorized by the Commission, the licensee shall report in writing to the Commission or a person authorized by the Commission within 48 hours after becoming aware that any action level specified in the Appendix: Licence Documents has been reached.
(2700-2)

14. Financial Guarantee

The licensee shall, as of April 1, 2015, maintain at all times a financial guarantee in respect of the activities authorized by this licence of a value set by the Commission and in a form acceptable to the Commission.
(2020-0)

15. Operation Limitations

Subject to any other condition of this licence and unless otherwise permitted by the prior written approval of the Commission or a person authorized by the Commission, the licensee shall carry out the licensed activities in accordance with the documents or parts thereof referred to in the Appendix: Licence Document(s).
(2917-7)

16. Sealed Source Security Requirements

The licensee shall implement the security measures for sealed sources as set out in Regulatory Document REGDOC-2.12.3, Security of Nuclear Substances: Sealed Sources, as amended from time to time:

- a) by no later than May 31, 2015, for Category 1 and 2 sealed sources, and
- b) by no later than May 31, 2018, for Category 3, 4 and 5 sealed sources.

The sealed source categories are specified in REGDOC-2.12.3.

(2490-1)

17. Inaccuracies Notification

The licensee shall report to the Commission or a person authorized by the Commission, as soon as is practicable, the discovery of any inaccuracy or incompleteness in the documents referred to in the Appendix: Licence Document(s).

(2920-6)

President

Appendix: Nuclear Substances and Radiation Devices

DGI Geoscience Inc.

Sealed Nuclear Substances

Nuclear Substance	Maximum Quantity Per Sealed Source
Americium 241/ Beryllium	111 GBq
Cesium 137	4.63 GBq
Cobalt 60	9 GBq

end of appendix

Appendix: Location(s) of Licensed Activities

DGI Geoscience Inc.

Throughout Canada

end of appendix
