

UNITED STATES  
SECURITIES AND EXCHANGE COMMISSION  
Washington, D.C. 20549

**FORM SD**  
**SPECIALIZED DISCLOSURE REPORT**

**Harvard Bioscience, Inc.**  
(Exact name of the registrant as specified in its charter)

**DELAWARE**  
(State or Other Jurisdiction of  
Incorporation)

**001-33957**  
(Commission File Number)

**04-3306140**  
(IRS Employer Identification Number)

**84 October Hill Road, Holliston, MA**  
(Address of Principal Executive Offices)

**01746**  
(Zip Code)

**Michael A. Rossi**      **(508) 893-8999**  
(Name and telephone number, including area code, of the person to contact in connection with this report.)

Check the appropriate box to indicate the rule pursuant to which this form is being filed, and provide the period to which the information in this form applies:

ý Rule 13p-1 under the Securities Exchange Act (17 CFR 240.13p-1) for the reporting period from January 1 to December 31, 2020.

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## **Section 1 - Conflict Minerals Disclosure**

### **Item 1.01 Conflict Minerals Disclosure and Report**

Harvard Bioscience, Inc. (“Harvard Bioscience” or “the Company”) has evaluated its current product lines and has determined in good faith that during 2020 it manufactured or contracted to manufacture products as to which columbite-tantalite (coltan), cassiterite, gold, wolframite and their derivatives, which are limited to tantalum, tin, and tungsten (herein referred to as “Conflict Minerals”) are necessary to the functionality or production of such products (herein referred to as “Covered Products”). Based on such determination, Harvard Bioscience conducted a reasonable country of origin inquiry, or RCOI, that was reasonably designed to determine whether any of the Conflict Minerals in the Covered Products originated in the Democratic Republic of the Congo or an adjoining country (the Republic of the Congo, the Central African Republic, South Sudan, Uganda, Rwanda, Burundi, Tanzania, Zambia or Angola) or were from recycled or scrap sources.

Following the RCOI, Harvard Bioscience exercised due diligence on the source and chain of custody of its applicable products. Information on the RCOI, steps we have taken to exercise due diligence on the source and chain of custody of any Conflict Minerals in the Covered Products and the results of this due diligence, are disclosed in the Conflict Minerals Report filed as Exhibit 1.01 to this Form SD.

### **Conflict Minerals Disclosure**

A copy of Harvard Bioscience’s Conflict Minerals Report is filed as Exhibit 1.01 hereto and is publicly available at: <http://investor.harvardbioscience.com/corporate-governance.cfm>. The content of any website referred to in this Form SD is included for general information only and is not incorporated by reference in this Form SD.

### **Item 1.02 Exhibit**

Harvard Bioscience, Inc. has filed its Conflict Minerals Report as Exhibit 1.01 to this Form SD.

## **Section 2 - Exhibits**

### **Item 2.01 Exhibits**

[Exhibit 1.01](#) [Conflict Minerals Report as required by Items 1.01 and 1.02 of this Form SD](#)

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## SIGNATURES

Pursuant to the requirements of the Securities Exchange Act of 1934, the registrant has duly caused this report to be signed on its behalf by the duly authorized undersigned.

**Harvard Bioscience, Inc.**

(Registrant)

/s/ Michael A. Rossi

May 27, 2021

By: Michael A. Rossi, Chief Financial Officer

**Harvard Bioscience, Inc.****Conflict Minerals Report****For the Year Ended December 31, 2020****Forward Looking Statements**

*Forward-looking statements contained in this Report are made based on known events and circumstances at the time of release, and as such, are subject in the future to unforeseen uncertainties and risks. Statements in this Report which express a belief, expectation, or intention, as well as those that are not historical fact, are forward-looking statements, including statements related to the Company's compliance efforts and expected actions identified in this Report. These forward-looking statements are subject to various risks, uncertainties and assumptions, including, among other matters, the Company's customers' requirements to use certain suppliers, the Company's suppliers' responsiveness and cooperation with the Company's due diligence efforts, the Company's ability to implement improvements in its conflict minerals program and the Company's ability to identify and mitigate related risks in its supply chain. If one or more of these or other risks materialize, actual results may vary materially from those expressed. For a more complete discussion of these and other risk factors, see the Company's other filings with the Securities and Exchange Commission ("SEC"), including its Annual Report on Form 10-K for the year ended December 31, 2020 and subsequent Quarterly Reports on Form 10-Q. The Company makes these statements as of the date of this disclosure, and undertakes no obligation to update them unless otherwise required by law.*

**Conflict Minerals Disclosure**

This report for the year ended December 31, 2020 is presented to comply with Rule 13p-1 under the Securities Exchange Act of 1934, as amended (the "Rule"). The Rule was adopted by the Securities and Exchange Commission ("SEC") to implement reporting and disclosure requirements related to conflict minerals as directed by Section 1502 of the Dodd-Frank Wall Street Reform and Consumer Protection Act of 2010 (the "Section 1502 of the Dodd-Frank Act"). The Rule imposes certain reporting obligations on SEC registrants whose manufactured products contain conflict minerals which are necessary to the functionality or production of their products. Conflict Minerals are defined as cassiterite, columbite-tantalite, gold, wolframite, and their derivatives, which are limited to tin, tantalum, tungsten, and gold ("Conflict Minerals" or "3TGs") for the purposes of this report. These requirements apply to registrants whatever the geographic origin of the conflict minerals and whether or not they fund armed conflict.

As described in this report, Harvard Bioscience, Inc., a Delaware corporation (herein referred to as "Harvard Bioscience," the "Company," "we," "us," or "our") has reason to believe that some of the Conflict Minerals present in its supply chain may have originated in the Covered Countries and therefore performed due diligence on the source and chain of custody of the 3TGs in question to determine whether its products are "DRC Conflict Free." The Company designed its due diligence measures to conform, in all material respects, with the internationally recognized due diligence framework in The Organisation for Economic Co-Operation and Development ("OECD") Due Diligence Guidance for Responsible Supply Chains of Minerals from Conflict-Affected and High-Risk Areas and the related supplements for gold, tin, tantalum and tungsten (the "OECD Guidance").

For purposes of this report, Covered Countries refers to the Democratic Republic of the Congo (the "DRC") and adjoining countries, defined as any country that shares an internationally recognized border with the Democratic Republic of the Congo. We are unable with absolute assurance to determine the origin of the Conflict Minerals in our products and therefore cannot exclude the possibility that some may have originated in the Covered Countries.

**1. Company Overview**

This report has been prepared by management of Harvard Bioscience. The information includes the activities of all majority-owned subsidiaries as of December 31, 2020.

Harvard Bioscience is a leading developer, manufacturer and seller of technologies, products and services that enable fundamental research, discovery, and pre-clinical testing for drug development. The Company's customers range from renowned academic institutions and government laboratories, to the world's leading pharmaceutical, biotechnology and contract research organizations. With operations in North America, Europe and China, the Company sells through a combination of direct and distribution channels to customers around the world.

**Conflict Minerals Policy**

We adopted a conflict minerals policy in 2013 which is publicly available at <http://investor.harvardbioscience.com/corporate-governance.cfm>.

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## **2. Product Description**

As of December 31, 2020, our broad core product range was organized into two commercial product families: Preclinical devices and instruments and Cellular and Molecular technologies. As of December 31, 2020, we primarily sold our products under brand names, including Harvard Apparatus, DSI (Data Scientific), Ponemah, Buxco, BTX, and MCS. Our products consist of instruments, consumables, and systems made up of several individual products. We manufacture our products at our locations in the United States, Germany, Sweden and Spain. Our broad and complex product range may contain conflict minerals within the following components:

- Tantalum, used in capacitors,
- Tin, used in soldered components,
- Tungsten, used in coatings, alloys, heating elements and electrodes,
- Gold, used in circuit boards, electrodes and electronic components.

## **3. Description of Reasonable Country of Origin Inquiry, or RCOI**

We began our RCOI by completing a supplier list extraction from our Vendor List. This list was then filtered to remove:

- Service Providers/Suppliers
- Indirect Materials Suppliers
- Inactive Suppliers (minimum 2 years since last purchase)

This ensures that all suppliers surveyed provided items to Harvard Bioscience that were used in final products in the year 2020. Once the filtering was completed, we populated the list with contact information and this list was then provided to Assent Compliance (“Assent”), our third-party service provider, for upload to their Assent Compliance Manager SaaS system (“ACM”). It was deemed appropriate to not further filter this list based on the necessity of the presence of Conflict Minerals in the products as we could not definitively determine the presence or absence of Conflict Minerals in all parts supplied. The survey employed the Responsible Minerals Initiative (RMI) Conflict Minerals Reporting Template (the “CMRT”), version 6.0 or higher, originally developed by the Responsible Business Alliance (RBA) and The Global e-Sustainability Initiative. The CMRT allows for further scoping as they ask suppliers whether any of the Conflict Minerals are intentionally added and if they are necessary to the functionality or production of their products. Assent conducted additional analysis of the supply chain and such analysis combined with supplier feedback, allowed Assent and Harvard Bioscience to remove additional suppliers from scope of the conflict minerals regulation.

Assent then conducted the supplier survey portion of the RCOI. During the supplier survey, suppliers were contacted via the ACM, a SaaS platform that enables its users to complete and track supplier communications as well as allow suppliers to upload completed CMRTs directly to the platform for assessment and management. Non-responsive suppliers were contacted a minimum of three times by ACM and then were also managed by the Assent Compliance team in one-on-one communications. This includes two to three direct follow ups from that team. Assent’s communications with suppliers included training and education on the completion of the CMRT to alleviate any remaining confusion with suppliers. All of these communications were monitored and tracked in Assent’s system for future reporting and transparency.

The program continues to include automated data validation on all submitted CMRTs. The goal of data validation is to increase the accuracy of submissions and identify any contradictory answers in the CMRT. This data validation is based on questions within the declaration tab of the CMRT which helps to identify areas that require further classification or risk assessment, as well as understand the due diligence efforts of suppliers. The results of this data validation contribute to the program’s health assessment and are shared with suppliers to ensure they understand areas that require clarification or improvement.

All submitted forms are accepted and classified as valid or invalid so that data is retained. Suppliers are contacted regarding invalid forms and are encouraged to submit a valid form. Suppliers are also provided with guidance on how to correct these validation errors in the form of feedback to their CMRT submission, training courses and direct engagement help through Assent’s multilingual Supplier Experience team. Since some suppliers may remain unresponsive to feedback, Harvard Bioscience, Inc. tracks program gaps to account for future improvement opportunities. As of May 26, 2021, there were 6 invalid supplier submissions that could not be corrected.

As of May 26, 2021, there were 1,107 suppliers in scope of the conflict minerals program and 456 provided a completed CMRT. The Company’s total response rate including responses confirmed to be out of scope for this reporting year was 47%.

Assent compared the list of smelters and refiners provided in our suppliers’ responses to the lists of smelters maintained by the RMI and, if a supplier indicated that a facility was certified as conflict-free, confirmed that the facility was listed on RMI’s list of validated conflict free smelters and refiners of 3TGs. Our suppliers identified a total of 333 smelters and refiners that appear on the lists maintained by RMI. Of these 333 smelters and refiners, 237 are validated as conflict free by RMI or a cross-recognized initiative, and, based on information provided by RMI, a further 8 have agreed to undergo or are currently undergoing a third-party audit. Most of the CMRTs we received were made on a company or division level basis which did not allow us to identify which smelters or refiners listed by our suppliers actually processed the 3TGs contained in our products. Based on the RCOI, we had reason to believe that some of the 3TGs may have originated from the Covered Countries, therefore, in accordance with the Rule, performed due diligence on the source and chain of custody of the conflict minerals in question.

## **4. Due Diligence Process**

### ***4.1 Design of Due Diligence***

Our due diligence measures have been designed to conform, in all material respects, with the framework in The Organisation for Economic Co-operation and Development (“OECD”) Due Diligence Guidance for Responsible Supply Chains of Minerals from Conflict-Affected and High-Risk Areas (the “OECD Guidance”) and the related Supplements for Conflict Minerals.

The Guidance identifies five steps for due diligence that should be implemented and provides guidance as to how to achieve each step. We developed our due diligence process to address each of these five steps, namely:

1. Establishing strong company management systems regarding conflict minerals;
2. Identifying and assessing risks in our supply chain;
3. Designing and implementing a strategy to respond to identified risks in our supply chain;
4. Utilizing independent third-party audits of supply chain diligence; and
5. Publicly reporting on our supply chain due diligence

We are a downstream supplier, many steps removed from the mining of 3TG. A large number of suppliers, through multiple tiers of distribution, supply the components and materials integrated into our products. Furthermore, we do not purchase raw ore or unrefined conflict minerals or make purchases from the Covered Countries. The origin of the conflict minerals cannot be determined with any certainty once the raw ores are smelted, refined and converted to ingots, bullion or other conflict mineral containing derivatives. The smelters and refiners consolidate raw ore and represent the best actors in the total supply chain to possess knowledge of the origin of the ores they procure.

The OECD Guidance specifies that the requirements for compliance should reflect a company’s position in the supply chain. In particular, the OECD Guidance states that the implementation of due diligence should be tailored to a company’s activities and relationships and that the nature and extent of due diligence may vary based on a company’s size, products, relationships with suppliers and other factors. Due to practical difficulties associated with supply chain complexities, the OECD Guidance advises that downstream companies exercise due diligence primarily by establishing controls over their immediate suppliers. Accordingly, we rely primarily on our “tier 1” (direct) suppliers to provide information with respect to the origin of the conflict minerals contained in the components and materials supplied to us.

### ***4.2 Management Systems***

#### **Internal Team**

Harvard Bioscience has established a cross-functional Conflict Minerals Compliance Team led by the Company’s head of global engineering. The Conflict Minerals Compliance Team is responsible for implementing the conflict minerals compliance strategy and briefing senior management about the results of these due diligence efforts.

The Company also uses a third-party service provider, Assent, to assist with evaluating supply chain information regarding 3TGs, identifying potential risks, and in the development and implementation of additional due diligence steps that the Company will undertake with suppliers in regard to conflict minerals.

The Company leverages Assent’s Managed Services in order to work with dedicated program specialists who support Harvard Bioscience’s conflict minerals program. The Company communicates regularly with the Assent team in order to receive updates on program status. Each member of Assent’s Customer Success team is trained in conflict minerals compliance and understands the intricacies of the CMRT and conflict minerals reporting, as well as Section 1502 of the Dodd-Frank Act

#### **Control Systems**

As we do not typically have a direct relationship with Conflict Minerals smelters and refiners, we are engaged and actively cooperate with other major manufacturers in our sector and other sectors. Controls include, but are not limited to, the use of the CMRT as the data collection format for our suppliers, and our Code of Business Conduct and Ethics which outlines certain expected behaviors for all Harvard Bioscience employees. In addition, we rely on our direct suppliers to provide information on the origin of the Conflict Minerals contained in components and materials supplied to us – including sources of Conflict Minerals that are supplied to them from lower tier suppliers.

#### **Supplier Engagement**

With respect to the OECD requirement to strengthen engagement with suppliers, we have, through Assent, provided education on the Conflict Minerals regulation as well as the expectations of the law and for a continued business relationship. We put a strong emphasis on supplier education and training. To accomplish this, we utilized Assent’s learning management system, Assent University, and provided all in-scope suppliers access to their Conflict Minerals training course. This training is tracked and evaluated based on completion. All suppliers are encouraged to complete all modules within this course.

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## Grievance Mechanism

Various communication channels exist to serve as grievance mechanisms for early-warning risk awareness. We have multiple longstanding grievance mechanisms whereby employees (internal) and suppliers (external) can report violations of our policies. This includes, but is not limited to our whistleblower policies that are part of our Code of Business Conduct and Ethics policy located on our website at <http://investor.harvardbioscience.com/corporate-governance.cfm>. Any violations are reported to the Corporate Compliance Officer.

Violations or grievances at the industry level can be reported to the Responsible Mineral Initiative (“RMI”) directly as well. This can be done at <http://www.responsiblemineralsinitiative.org/responsible-minerals-assurance-process/grievance-mechanism/>.

## Maintain Records

Our existing policy related to relevant documentation of our conflict mineral compliance process requires that documentation will be retained for a period of at least five years. Through Assent, a document retention policy to retain conflict minerals related documents, including supplier responses to CMRTs and the sources identified within each reporting period, has been implemented. We store all of the information and findings from this process in a database that can be audited by internal or external parties.

### 4.3 Identify and Assess Risk in the Supply Chain

Because of the complexity of our products, and the depth, breadth, and constant evolution of our supply chain, it is difficult to identify actors upstream from our direct suppliers. Risks associated with supplier CMRT content are identified automatically in the ACM based on criteria established for supplier responses. These risks are addressed by Assent staff and members of the Company’s internal Conflict Minerals Team, who contact the supplier, gather pertinent data and perform an assessment of the supplier’s conflict minerals status.

Risks at the supplier level may include non-responsive suppliers, incomplete CMRTs, or CMRTs that are submitted at the company level. In those cases where a company-level CMRT (such as when a company declares there are no 3TGs in any of its products) is submitted, Harvard Bioscience, Inc. is unable to determine if all of the specified smelters and refiners were used for 3TGs in the products supplied to the Company.

Risks were identified by assessing the due diligence practices and status of smelters and refiners identified in the supply chain by upstream suppliers that listed mineral processing facilities on their CMRT declarations. Assent compared these facilities listed in the responses to the list of smelters and refiners consolidated by the RMI to ensure that the facilities met the recognized definition of a 3TGs processing facility that was operational during the 2020 calendar year.

Assent determined if the smelter had been audited against a standard in conformance with the OECD Guidance, such as the Responsible Minerals Assurance Process (“RMAP”). Harvard Bioscience, Inc. does not have a direct relationship with smelters and refiners and does not perform direct audits of these entities within their pre-supply chain. Smelters that have completed an RMAP audit are considered to be DRC-conflict free. In cases where the smelter’s due diligence practices have not been audited against the RMAP standard or they are considered non-conformant by RMAP, follow-ups are made to suppliers reporting those facilities. Smelters are then assessed for the potential for sourcing risk.

Each facility that meets the RMI definition of a smelter or refiner of a 3TG mineral is assessed according to red-flag indicators defined in the OECD Guidance. Assent uses numerous factors to determine the level of risk that each smelter poses to the supply chain by identifying red flags. These factors include:

1. Geographic proximity to the DRC and covered countries;
2. Known mineral source country of origin.
3. Responsible Minerals Assurance Process (RMAP) audit status;
4. Credible evidence of unethical or conflict sourcing;
5. Peer Assessments conducted by credible third-party sources.

Risk mitigation activities are initiated whenever a supplier’s CMRT reported facilities of concern. Through Assent, suppliers with submissions that included any smelters of concern were immediately provided with feedback instructing that supplier to take their own independent risk mitigation actions. Examples include the submission of a product specific CMRT to better identify the connection to products that they supply to Harvard Bioscience, Inc. Additional escalation may have been necessary to address any continued sourcing from these smelters of concern. Suppliers are given clear performance objectives within reasonable timeframes with the ultimate goal of progressive elimination of these smelters of concern from the supply chain. In addition, suppliers are guided to the educational materials on mitigating the risks identified through the data collection process.

Suppliers are also evaluated on program strength, which assists in making key risk mitigation decisions as the program progresses. The criteria used to evaluate the strength of the program is based on certain questions in the CMRT related to the suppliers’ conflict minerals practices and policies.

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#### ***4.4 Design and Implement a Strategy to Respond to Risks***

Together with Assent, Harvard Bioscience, Inc. developed processes to assess and respond to the risks identified in the supply chain. Harvard Bioscience, Inc. has a risk management plan, through which the conflict minerals program is implemented, managed and monitored. As the program progresses, escalations are sent to non-responsive suppliers to outline the importance of a response via CMRTs and to outline the required cooperation for compliance to the conflict minerals rules and the Company's expectations.

Feedback on supplier submissions is given directly to suppliers and educational resources are provided to assist suppliers in corrective action methods or to improve their internal programs. The Company engages suppliers believed to be supplying 3TGs from sources that may support conflict in the Covered Countries to establish an alternative source of 3TGs that does not support such conflict, as provided in the OECD Guidance. Assent also communicates directly with smelters that have not yet been determined to be conformant with the RMAP in order to request sourcing information and encourage their involvement with the RMI program.

In cases where suppliers have continuously been non-responsive or are not committed to corrective action plans, the Company will assess if replacing that supplier is feasible. The results of the program and risk assessment are shared with the Conflict Minerals Team and the Harvard Bioscience, Inc.'s Leadership Team to ensure transparency within the Company.

#### ***4.5 Carry out Independent Third-Party Audit of Supply Chain Due Diligence at Identified Points in the Supply Chain***

We do not have a direct relationship with smelters and refiners and therefore do not perform or direct audits of these entities. However, we will rely on publicly available third-party assurances and certifications, for example, through the RMI's Responsible Minerals Assurance Process "RMAP". The RMAP uses independent private-sector auditors, and audits the source, including the mines of origin, and the chain of custody of the conflict minerals used by smelters and refiners that agree to participate in the program.

Assent also directly contacts smelters and refiners that are not currently enrolled in the RMAP to encourage their participation and gather information regarding each facilities' sourcing practices on behalf of its compliance partners. Harvard Bioscience, Inc. is a signatory of this communication in accordance with the requirements of downstream companies detailed in the OECD Guidance.

#### ***4.6 Report Annually on Supply Chain Due Diligence***

We report annually on our supply chain due diligence by filing a Form SD and a Conflict Minerals Report with the SEC. Our Form SD and Conflict Minerals Report can be found on the Corporate Governance page of our website: <http://investor.harvardbioscience.com/corporate-governance.cfm>. Information found on or accessed through this website is not considered part of this report and is not incorporated by reference herein.

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## **5. Due Diligence Results**

### **Survey Responses**

We are actively surveying our supplier chain. This year we surveyed 1,107 suppliers. Of those suppliers we received CMRTs from 456 suppliers. We review the responses against criteria developed to determine whether further engagement with our suppliers is required. These criteria included untimely or incomplete responses as well as inconsistencies within the data reported in the template. We, through the assistance of Assent, have worked with these suppliers to provide revised responses. All final CMRT submissions were reviewed and validated to ensure no inaccuracies or gaps in data were found. At the end of our campaigning, 6 suppliers were unable to correct their CMRT and as such, are still listed as invalid submissions.

### **Smelters or Refiners**

The information that we received from a majority of our Applicable Suppliers was at their company-wide level. Thus, the smelters or refiners identified by our Applicable Suppliers contained in the tables below may contain smelters or refiners that processed conflict minerals that our Applicable Suppliers supplied to their other customers, but not to us. As a result, we are unable to conclusively determine whether the smelters or refiners included in the tables below were used to process the conflict minerals necessary to the functionality or production of our products during 2020. Because of this uncertainty, we are also unable to conclusively determine whether each of the countries of origin listed above were the country of origin of conflict minerals in our products during 2020, and therefore also unable to conclusively determine the source and chain of custody of those conflict minerals. In addition, the information that we receive from our Applicable Suppliers may yield inaccurate or incomplete information because they may not have received accurate and complete conflict minerals information from all the suppliers in their own supply chain. As we are not a member of the RMI, we also do not have access to audit reports or detailed findings of the third-party audits conducted as part of the RMI's RMAP or the LBMA Responsible Gold Program and, as a result, are not responsible for the quality of these audits or the audit findings.

Our third-party service provider compared the facilities listed in the responses in the CMRT to the list of smelters maintained by the RMI and confirmed that the name was listed by RMI as a legitimate smelter. As of May 21, 2021, we have validated in this manner that 333 smelters or refiners provided in our supplier CMRTs are included on these lists. The facilities determined to be legitimate smelters or refiners based on this comparison to the RMI-maintained list have also been compared to the RMI's RMAP list. Based on this comparison, we are aware of 237 compliant smelters or refiners, 24 smelters or refiners that have begun the process and are deemed as active in the RMAP but have not yet been validated as Conflict-Free and 64 smelters or refiners that are not enrolled in the process to become compliant to the RMAP. Confirmed smelter or refiner sourcing is not generally available through public information sources related to the smelter or refiner, however Attachment A does include an aggregate country list of known smelter or refiner sourcing countries. Despite the additional smelter information obtained from these suppliers, in most cases information has been provided on a company or division level, rather than on a component level. Therefore, we cannot yet ascertain whether the smelters identified by our suppliers are related to any parts or components provided to us by the suppliers. Attachment A lists the smelters and refiners that the suppliers we surveyed reported as being in their supply chains. We have not included in Attachment A any smelters or refiners that we have not been able to validate.

### **Efforts to determine mine or location of origin**

As noted above, the current efforts focus on gathering smelter information via the CMRT reporting template and, as the program progresses, requiring full completion of all necessary smelter identification information which will enable the validation and disclosure of the smelters as well as the tracing of the Conflict Minerals to their location of origin. Seeking information about Conflict Minerals smelters and refiners in our supply chain represents the most reasonable effort we can make to determine the mines or locations of origin of the Conflict Minerals in our supply chain.

## **6. Steps to improve future due diligence and to mitigate risk**

We intend to take the following steps to improve the due diligence conducted to further mitigate any risk that the necessary Conflict Minerals in our products could benefit armed groups in the DRC or adjoining countries:

- Continue to engage with suppliers and direct them to training resources to attempt to increase the response rate and improve the content of the supplier survey responses.
  - Suppliers will continue to be requested to inform Harvard Bioscience of the correlation between these smelters and the products and parts they supply to Harvard Bioscience
  - Continue to engage any of our suppliers found to be supplying us with Conflict Minerals from sources that support conflict in the DRC or any adjoining country to establish an alternative source of Conflict Minerals that does not support such conflict.
  - Continue to evaluate upstream sources through a broader set of tools to evaluate risk that includes using a comprehensive smelter and refiner library with detailed status and notes for each listing, scanning for credible media on each smelter and refiner to flag risk issues, and comparing the list of smelters and refiners against government watch and denied parties lists.
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**APPENDIX A**

**Smelter Table**

<b>Metal</b>	<b>Standard Smelter Name</b>	<b>Location</b>	<b>Smelter ID</b>
Gold	8853 S.p.A.	ITALY	CID002763
Gold	Abington Reldan Metals, LLC	U.S.A.	CID002708
Gold	Advanced Chemical Company	U.S.A.	CID000015
Gold	African Gold Refinery	UGANDA	CID003185
Gold	Aida Chemical Industries Co., Ltd.	JAPAN	CID000019
Gold	Al Etihad Gold Refinery DMCC	UNITED ARAB EMIRATES	CID002560
Gold	Alexy Metals	U.S.A.	CID003500
Gold	Allgemeine Gold-und Silberscheideanstalt A.G.	GERMANY	CID000035
Gold	Almalyk Mining and Metallurgical Complex (AMMC)	UZBEKISTAN	CID000041
Gold	AngloGold Ashanti Corrego do Sitio Mineracao	BRAZIL	CID000058
Gold	Argor-Heraeus S.A.	SWITZERLAND	CID000077
Gold	Asahi Pretec Corp.	JAPAN	CID000082
Gold	Asahi Refining Canada Ltd.	CANADA	CID000924
Gold	Asahi Refining USA Inc.	U.S.A.	CID000920
Gold	Asaka Riken Co., Ltd.	JAPAN	CID000090
Gold	Atasay Kuyumculuk Sanayi Ve Ticaret A.S.	TURKEY	CID000103
Gold	AU Traders and Refiners	SOUTH AFRICA	CID002850
Gold	Augmont Enterprises Private Limited	INDIA	CID003461
Gold	Aurubis AG	GERMANY	CID000113
Gold	Bangalore Refinery	INDIA	CID002863
Gold	Bangko Sentral ng Pilipinas (Central Bank of the Philippines)	PHILIPPINES	CID000128
Gold	Boliden AB	SWEDEN	CID000157
Gold	C. Hafner GmbH + Co. KG	GERMANY	CID000176
Gold	C.I Metales Procesados Industriales SAS	COLOMBIA	CID003421
Gold	Caridad	MEXICO	CID000180
Gold	CCR Refinery - Glencore Canada Corporation	CANADA	CID000185
Gold	Cendres + Metaux S.A.	SWITZERLAND	CID000189
Gold	CGR Metalloys Pvt Ltd.	INDIA	CID003382
Gold	Chimet S.p.A.	ITALY	CID000233
Gold	Chugai Mining	JAPAN	CID000264
Gold	Daye Non-Ferrous Metals Mining Ltd.	CHINA	CID000343
Gold	Degussa Sonne / Mond Goldhandel GmbH	GERMANY	CID002867
Gold	Dijllah Gold Refinery FZC	UNITED ARAB EMIRATES	CID003348
Gold	DODUCO Contacts and Refining GmbH	GERMANY	CID000362
Gold	Dowa	JAPAN	CID000401
Gold	DS PRETECH Co., Ltd.	KOREA, REPUBLIC OF	CID003195
Gold	DSC (Do Sung Corporation)	KOREA, REPUBLIC OF	CID000359

Gold	Eco-System Recycling Co., Ltd. East Plant	JAPAN	CID000425
Gold	Eco-System Recycling Co., Ltd. North Plant	JAPAN	CID003424
Gold	Eco-System Recycling Co., Ltd. West Plant	JAPAN	CID003425
Gold	Emerald Jewel Industry India Limited (Unit 1)	INDIA	CID003487
Gold	Emerald Jewel Industry India Limited (Unit 2)	INDIA	CID003488
Gold	Emerald Jewel Industry India Limited (Unit 3)	INDIA	CID003489
Gold	Emerald Jewel Industry India Limited (Unit 4)	INDIA	CID003490
Gold	Emirates Gold DMCC	UNITED ARAB EMIRATES	CID002561
Gold	Fidelity Printers and Refiners Ltd.	ZIMBABWE	CID002515
Gold	Fujairah Gold FZC	UNITED ARAB EMIRATES	CID002584
Gold	GCC Gujrat Gold Centre Pvt. Ltd.	INDIA	CID002852
Gold	Geib Refining Corporation	U.S.A.	CID002459
Gold	Gold Coast Refinery	GHANA	CID003186
Gold	Gold Refinery of Zijin Mining Group Co., Ltd.	CHINA	CID002243
Gold	Great Wall Precious Metals Co., Ltd. of CBPM	CHINA	CID001909
Gold	Guangdong Jinding Gold Limited	CHINA	CID002312
Gold	Guoda Safina High-Tech Environmental Refinery Co., Ltd.	CHINA	CID000651
Gold	Hangzhou Fuchunjiang Smelting Co., Ltd.	CHINA	CID000671
Gold	Heimerle + Meule GmbH	GERMANY	CID000694
Gold	Heraeus Metals Hong Kong Ltd.	CHINA	CID000707
Gold	Heraeus Precious Metals GmbH & Co. KG	GERMANY	CID000711
Gold	Hunan Chenzhou Mining Co., Ltd.	CHINA	CID000767
Gold	Hunan Guiyang yinxing Nonferrous Smelting Co., Ltd.	CHINA	CID000773
Gold	HwaSeong CJ CO., LTD.	KOREA, REPUBLIC OF	CID000778
Gold	Inner Mongolia Qiankun Gold and Silver Refinery Share Co., Ltd.	CHINA	CID000801
Gold	International Precious Metal Refiners	UNITED ARAB EMIRATES	CID002562
Gold	Ishifuku Metal Industry Co., Ltd.	JAPAN	CID000807
Gold	Istanbul Gold Refinery	TURKEY	CID000814
Gold	Italpreziosi	ITALY	CID002765
Gold	JALAN & Company	INDIA	CID002893
Gold	Japan Mint	JAPAN	CID000823
Gold	Jiangxi Copper Co., Ltd.	CHINA	CID000855
Gold	JSC Ekaterinburg Non-Ferrous Metal Processing Plant	RUSSIAN FEDERATION	CID000927
Gold	JSC Uralelectromed	RUSSIAN FEDERATION	CID000929
Gold	JX Nippon Mining & Metals Co., Ltd.	JAPAN	CID000937
Gold	K.A. Rasmussen	NORWAY	CID003497
Gold	Kaloti Precious Metals	UNITED ARAB EMIRATES	CID002563
Gold	Kazakhmys Smelting LLC	KAZAKHSTAN	CID000956
Gold	Kazzinc	KAZAKHSTAN	CID000957
Gold	Kennecott Utah Copper LLC	U.S.A.	CID000969
Gold	KGHM Polska Miedz Spolka Akcyjna	POLAND	CID002511
Gold	Kojima Chemicals Co., Ltd.	JAPAN	CID000981
Gold	Korea Zinc Co., Ltd.	KOREA, REPUBLIC OF	CID002605

Gold	Kundan Care Products Ltd.	INDIA	CID003463
Gold	Kyrgyzaltyn JSC	KYRGYZSTAN	CID001029
Gold	Kyshtym Copper-Electrolytic Plant ZAO	RUSSIAN FEDERATION	CID002865
Gold	L'azurde Company For Jewelry	SAUDI ARABIA	CID001032
Gold	Lingbao Gold Co., Ltd.	CHINA	CID001056
Gold	Lingbao Jinyuan Tonghui Refinery Co., Ltd.	CHINA	CID001058
Gold	L'Orfebre S.A.	ANDORRA	CID002762
Gold	LS-NIKKO Copper Inc.	KOREA, REPUBLIC OF	CID001078
Gold	LT Metal Ltd.	KOREA, REPUBLIC OF	CID000689
Gold	Luoyang Zijin Yinhui Gold Refinery Co., Ltd.	CHINA	CID001093
Gold	Marsam Metals	BRAZIL	CID002606
Gold	Materion	U.S.A.	CID001113
Gold	Matsuda Sangyo Co., Ltd.	JAPAN	CID001119
Gold	MD Overseas	INDIA	CID003548
Gold	Metal Concentrators SA (Pty) Ltd.	SOUTH AFRICA	CID003575
Gold	Metallix Refining Inc.	U.S.A.	CID003557
Gold	Metalor Technologies (Hong Kong) Ltd.	CHINA	CID001149
Gold	Metalor Technologies (Singapore) Pte., Ltd.	SINGAPORE	CID001152
Gold	Metalor Technologies (Suzhou) Ltd.	CHINA	CID001147
Gold	Metalor Technologies S.A.	SWITZERLAND	CID001153
Gold	Metalor USA Refining Corporation	U.S.A.	CID001157
Gold	Metalurgica Met-Mex Penoles S.A. De C.V.	MEXICO	CID001161
Gold	Mitsubishi Materials Corporation	JAPAN	CID001188
Gold	Mitsui Mining and Smelting Co., Ltd.	JAPAN	CID001193
Gold	MMTC-PAMP India Pvt., Ltd.	INDIA	CID002509
Gold	Modeltech Sdn Bhd	MALAYSIA	CID002857
Gold	Morris and Watson	NEW ZEALAND	CID002282
Gold	Moscow Special Alloys Processing Plant	RUSSIAN FEDERATION	CID001204
Gold	Nadir Metal Rafineri San. Ve Tic. A.S.	TURKEY	CID001220
Gold	Navoi Mining and Metallurgical Combinat	UZBEKISTAN	CID001236
Gold	NH Recytech Company	KOREA, REPUBLIC OF	CID003189
Gold	Nihon Material Co., Ltd.	JAPAN	CID001259
Gold	Ogussa Osterreichische Gold- und Silber-Scheideanstalt GmbH	AUSTRIA	CID002779
Gold	Ohura Precious Metal Industry Co., Ltd.	JAPAN	CID001325
Gold	OJSC "The Gulidov Krasnoyarsk Non-Ferrous Metals Plant" (OJSC Krastsvetmet)	RUSSIAN FEDERATION	CID001326
Gold	OJSC Novosibirsk Refinery	RUSSIAN FEDERATION	CID000493
Gold	PAMP S.A.	SWITZERLAND	CID001352
Gold	Pease & Curren	U.S.A.	CID002872
Gold	Penglai Penggang Gold Industry Co., Ltd.	CHINA	CID001362
Gold	Planta Recuperadora de Metales SpA	CHILE	CID002919
Gold	Prioksky Plant of Non-Ferrous Metals	RUSSIAN FEDERATION	CID001386
Gold	PT Aneka Tambang (Persero) Tbk	INDONESIA	CID001397
Gold	PX Precinox S.A.	SWITZERLAND	CID001498

Gold	QG Refining, LLC	U.S.A.	CID003324
Gold	Rand Refinery (Pty) Ltd.	SOUTH AFRICA	CID001512
Gold	Refinery of Seemine Gold Co., Ltd.	CHINA	CID000522
Gold	REMONDIS PMR B.V.	NETHERLANDS	CID002582
Gold	Royal Canadian Mint	CANADA	CID001534
Gold	SAAMP	FRANCE	CID002761
Gold	Sabin Metal Corp.	U.S.A.	CID001546
Gold	Safimet S.p.A	ITALY	CID002973
Gold	SAFINA A.S.	CZECH REPUBLIC	CID002290
Gold	Sai Refinery	INDIA	CID002853
Gold	Samduck Precious Metals	KOREA, REPUBLIC OF	CID001555
Gold	Samwon Metals Corp.	KOREA, REPUBLIC OF	CID001562
Gold	Sancus ZFS (L'Orfebre, SA)	COLOMBIA	CID003529
Gold	SAXONIA Edelmetalle GmbH	GERMANY	CID002777
Gold	Sellem Industries Ltd.	MAURITANIA	CID003540
Gold	SEMPSA Joyeria Plateria S.A.	SPAIN	CID001585
Gold	Shandong Humon Smelting Co., Ltd.	CHINA	CID002525
Gold	Shandong Tiancheng Biological Gold Industrial Co., Ltd.	CHINA	CID001619
Gold	Shandong Zhaojin Gold & Silver Refinery Co., Ltd.	CHINA	CID001622
Gold	Shenzhen Zhonghenglong Real Industry Co., Ltd.	CHINA	CID002527
Gold	Shirpur Gold Refinery Ltd.	INDIA	CID002588
Gold	Sichuan Tianze Precious Metals Co., Ltd.	CHINA	CID001736
Gold	Singway Technology Co., Ltd.	TAIWAN	CID002516
Gold	SOE Shyolkovsky Factory of Secondary Precious Metals	RUSSIAN FEDERATION	CID001756
Gold	Solar Applied Materials Technology Corp.	TAIWAN	CID001761
Gold	Sovereign Metals	INDIA	CID003383
Gold	State Research Institute Center for Physical Sciences and Technology	LITHUANIA	CID003153
Gold	Sudan Gold Refinery	SUDAN	CID002567
Gold	Sumitomo Metal Mining Co., Ltd.	JAPAN	CID001798
Gold	SungEel HiMetal Co., Ltd.	KOREA, REPUBLIC OF	CID002918
Gold	Super Dragon Technology Co., Ltd	TAIWAN	CID001810
Gold	T.C.A S.p.A	ITALY	CID002580
Gold	Tanaka Kikinzoku Kogyo K.K.	JAPAN	CID001875
Gold	The Refinery of Shandong Gold Mining Co., Ltd.	CHINA	CID001916
Gold	Tokuriki Honten Co., Ltd.	JAPAN	CID001938
Gold	Tongling Nonferrous Metals Group Co., Ltd.	CHINA	CID001947
Gold	Tony Goetz NV	BELGIUM	CID002587
Gold	TOO Tau-Ken-Altyn	KAZAKHSTAN	CID002615
Gold	Torecom	KOREA, REPUBLIC OF	CID001955
Gold	Umicore Precious Metals Thailand	THAILAND	CID002314
Gold	Umicore S.A. Business Unit Precious Metals Refining	BELGIUM	CID001980
Gold	United Precious Metal Refining, Inc.	U.S.A.	CID001993
Gold	Valcambi S.A.	SWITZERLAND	CID002003

Gold	Western Australian Mint (T/a The Perth Mint)	AUSTRALIA	CID002030
Gold	WIELAND Edelmetalle GmbH	GERMANY	CID002778
Gold	Yamakin Co., Ltd.	JAPAN	CID002100
Gold	Yokohama Metal Co., Ltd.	JAPAN	CID002129
Gold	Yunnan Copper Industry Co., Ltd.	CHINA	CID000197
Gold	Zhongyuan Gold Smelter of Zhongjin Gold Corporation	CHINA	CID002224
Tantalum	Asaka Riken Co., Ltd.	JAPAN	CID000092
Tantalum	Changsha South Tantalum Niobium Co., Ltd.	CHINA	CID000211
Tantalum	D Block Metals, LLC	U.S.A.	CID002504
Tantalum	Exotech Inc.	U.S.A.	CID000456
Tantalum	F&X Electro-Materials Ltd.	CHINA	CID000460
Tantalum	FIR Metals & Resource Ltd.	CHINA	CID002505
Tantalum	Global Advanced Metals Aizu	JAPAN	CID002558
Tantalum	Global Advanced Metals Boyertown	U.S.A.	CID002557
Tantalum	Guangdong Zhiyuan New Material Co., Ltd.	CHINA	CID000616
Tantalum	H.C. Starck Co., Ltd.	THAILAND	CID002544
Tantalum	H.C. Starck Hermsdorf GmbH	GERMANY	CID002547
Tantalum	H.C. Starck Inc.	U.S.A.	CID002548
Tantalum	H.C. Starck Ltd.	JAPAN	CID002549
Tantalum	H.C. Starck Smelting GmbH & Co. KG	GERMANY	CID002550
Tantalum	H.C. Starck Tantalum and Niobium GmbH	GERMANY	CID002545
Tantalum	Hengyang King Xing Lifeng New Materials Co., Ltd.	CHINA	CID002492
Tantalum	Jiangxi Dinghai Tantalum & Niobium Co., Ltd.	CHINA	CID002512
Tantalum	Jiangxi Tuohong New Raw Material	CHINA	CID002842
Tantalum	JiuJiang JinXin Nonferrous Metals Co., Ltd.	CHINA	CID000914
Tantalum	Jiujiang Tanbre Co., Ltd.	CHINA	CID000917
Tantalum	Jiujiang Zhongao Tantalum & Niobium Co., Ltd.	CHINA	CID002506
Tantalum	KEMET Blue Metals	MEXICO	CID002539
Tantalum	LSM Brasil S.A.	BRAZIL	CID001076
Tantalum	Metallurgical Products India Pvt., Ltd.	INDIA	CID001163
Tantalum	Mineracao Taboca S.A.	BRAZIL	CID001175
Tantalum	Mitsui Mining and Smelting Co., Ltd.	JAPAN	CID001192
Tantalum	Ningxia Orient Tantalum Industry Co., Ltd.	CHINA	CID001277
Tantalum	NPM Silmet AS	ESTONIA	CID001200
Tantalum	PRG Doeel	NORTH MACEDONIA	CID002847
Tantalum	QuantumClean	U.S.A.	CID001508
Tantalum	Resind Industria e Comercio Ltda.	BRAZIL	CID002707
Tantalum	Solikamsk Magnesium Works OAO	RUSSIAN FEDERATION	CID001769
Tantalum	Taki Chemical Co., Ltd.	JAPAN	CID001869
Tantalum	Telex Metals	U.S.A.	CID001891
Tantalum	Ulba Metallurgical Plant JSC	KAZAKHSTAN	CID001969
Tantalum	XinXing HaoRong Electronic Material Co., Ltd.	CHINA	CID002508
Tantalum	Yanling Jincheng Tantalum & Niobium Co., Ltd.	CHINA	CID001522

Tin	Alpha	U.S.A.	CID000292
Tin	An Vinh Joint Stock Mineral Processing Company	VIET NAM	CID002703
Tin	Chenzhou Yunxiang Mining and Metallurgy Co., Ltd.	CHINA	CID000228
Tin	Chifeng Dajingzi Tin Industry Co., Ltd.	CHINA	CID003190
Tin	China Tin Group Co., Ltd.	CHINA	CID001070
Tin	CRM Fundicao De Metais E Comercio De Equipamentos Eletronicos Do Brasil Ltda	BRAZIL	CID003486
Tin	CRM Synergies	SPAIN	CID003524
Tin	CV Ayi Jaya	INDONESIA	CID002570
Tin	CV Venus Inti Perkasa	INDONESIA	CID002455
Tin	Dongguan CiEXPO Environmental Engineering Co., Ltd.	CHINA	CID003356
Tin	Dowa	JAPAN	CID000402
Tin	Electro-Mechanical Facility of the Cao Bang Minerals & Metallurgy Joint Stock Company	VIET NAM	CID002572
Tin	EM Vinto	BOLIVIA	CID000438
Tin	Estanho de Rondonia S.A.	BRAZIL	CID000448
Tin	Fenix Metals	POLAND	CID000468
Tin	Gejiu City Fuxiang Industry and Trade Co., Ltd.	CHINA	CID003410
Tin	Gejiu Fengming Metallurgy Chemical Plant	CHINA	CID002848
Tin	Gejiu Kai Meng Industry and Trade LLC	CHINA	CID000942
Tin	Gejiu Non-Ferrous Metal Processing Co., Ltd.	CHINA	CID000538
Tin	Gejiu Yunxin Nonferrous Electrolysis Co., Ltd.	CHINA	CID001908
Tin	Gejiu Zili Mining And Metallurgy Co., Ltd.	CHINA	CID000555
Tin	Guangdong Hanhe Non-Ferrous Metal Co., Ltd.	CHINA	CID003116
Tin	HuiChang Hill Tin Industry Co., Ltd.	CHINA	CID002844
Tin	Jiangxi New Nanshan Technology Ltd.	CHINA	CID001231
Tin	Luna Smelter, Ltd.	RWANDA	CID003387
Tin	Ma'anshan Weitai Tin Co., Ltd.	CHINA	CID003379
Tin	Magnu's Mineraiis Metais e Ligas Ltda.	BRAZIL	CID002468
Tin	Malaysia Smelting Corporation (MSC)	MALAYSIA	CID001105
Tin	Melt Metais e Ligas S.A.	BRAZIL	CID002500
Tin	Metallic Resources, Inc.	U.S.A.	CID001142
Tin	Metallo Belgium N.V.	BELGIUM	CID002773
Tin	Metallo Spain S.L.U.	SPAIN	CID002774
Tin	Mineracao Taboca S.A.	BRAZIL	CID001173
Tin	Minsur	PERU	CID001182
Tin	Mitsubishi Materials Corporation	JAPAN	CID001191
Tin	Modeltech Sdn Bhd	MALAYSIA	CID002858
Tin	Nghe Tinh Non-Ferrous Metals Joint Stock Company	VIET NAM	CID002573
Tin	Novosibirsk Processing Plant Ltd.	RUSSIAN FEDERATION	CID001305
Tin	O.M. Manufacturing (Thailand) Co., Ltd.	THAILAND	CID001314
Tin	O.M. Manufacturing Philippines, Inc.	PHILIPPINES	CID002517
Tin	Operaciones Metalurgicas S.A.	BOLIVIA	CID001337
Tin	Pongpipat Company Limited	MYANMAR	CID003208

Tin	Precious Minerals and Smelting Limited	INDIA	CID003409
Tin	PT Aries Kencana Sejahtera	INDONESIA	CID000309
Tin	PT Artha Cipta Langgeng	INDONESIA	CID001399
Tin	PT ATD Makmur Mandiri Jaya	INDONESIA	CID002503
Tin	PT Babel Inti Perkasa	INDONESIA	CID001402
Tin	PT Babel Surya Alam Lestari	INDONESIA	CID001406
Tin	PT Bangka Serumpun	INDONESIA	CID003205
Tin	PT Bukit Timah	INDONESIA	CID001428
Tin	PT Cipta Persada Mulia	INDONESIA	CID002696
Tin	PT Lautan Harmonis Sejahtera	INDONESIA	CID002870
Tin	PT Menara Cipta Mulia	INDONESIA	CID002835
Tin	PT Mitra Stania Prima	INDONESIA	CID001453
Tin	PT Mitra Sukses Globalindo	INDONESIA	CID003449
Tin	PT Prima Timah Utama	INDONESIA	CID001458
Tin	PT Rajawali Rimba Perkasa	INDONESIA	CID003381
Tin	PT Rajehan Ariq	INDONESIA	CID002593
Tin	PT Refined Bangka Tin	INDONESIA	CID001460
Tin	PT Stanindo Inti Perkasa	INDONESIA	CID001468
Tin	PT Sukses Inti Makmur	INDONESIA	CID002816
Tin	PT Timah Nusantara	INDONESIA	CID001486
Tin	PT Timah Tbk Kundur	INDONESIA	CID001477
Tin	PT Timah Tbk Mentok	INDONESIA	CID001482
Tin	PT Tinindo Inter Nusa	INDONESIA	CID001490
Tin	Resind Industria e Comercio Ltda.	BRAZIL	CID002706
Tin	Rui Da Hung	TAIWAN	CID001539
Tin	Soft Metais Ltda.	BRAZIL	CID001758
Tin	Super Ligas	BRAZIL	CID002756
Tin	Thai Nguyen Mining and Metallurgy Co., Ltd.	VIET NAM	CID002834
Tin	Thaisarco	THAILAND	CID001898
Tin	Tin Technology & Refining	U.S.A.	CID003325
Tin	Tuyen Quang Non-Ferrous Metals Joint Stock Company	VIET NAM	CID002574
Tin	VQB Mineral and Trading Group JSC	VIET NAM	CID002015
Tin	White Solder Metalurgia e Mineracao Ltda.	BRAZIL	CID002036
Tin	Yunnan Chengfeng Non-ferrous Metals Co., Ltd.	CHINA	CID002158
Tin	Yunnan Tin Company Limited	CHINA	CID002180
Tin	Yunnan Yunfan Non-ferrous Metals Co., Ltd.	CHINA	CID003397
Tungsten	A.L.M.T. Corp.	JAPAN	CID000004
Tungsten	ACL Metais Eireli	BRAZIL	CID002833
Tungsten	Albasteel Industria e Comercio de Ligas Para Fundicao Ltd.	BRAZIL	CID003427
Tungsten	Artek LLC	RUSSIAN FEDERATION	CID003553
Tungsten	Asia Tungsten Products Vietnam Ltd.	VIET NAM	CID002502
Tungsten	Chenzhou Diamond Tungsten Products Co., Ltd.	CHINA	CID002513
Tungsten	China Molybdenum Co., Ltd.	CHINA	CID002641



Tungsten	Chongyi Zhangyuan Tungsten Co., Ltd.	CHINA	CID000258
Tungsten	CNMC (Guangxi) PGMA Co., Ltd.	CHINA	CID000281
Tungsten	Cronimet Brasil Ltda	BRAZIL	CID003468
Tungsten	Fujian Ganmin RareMetal Co., Ltd.	CHINA	CID003401
Tungsten	Ganzhou Haichuang Tungsten Co., Ltd.	CHINA	CID002645
Tungsten	Ganzhou Huaxing Tungsten Products Co., Ltd.	CHINA	CID000875
Tungsten	Ganzhou Jiangwu Ferrotungsten Co., Ltd.	CHINA	CID002315
Tungsten	Ganzhou Seadragon W & Mo Co., Ltd.	CHINA	CID002494
Tungsten	GEM Co., Ltd.	CHINA	CID003417
Tungsten	Global Tungsten & Powders Corp.	U.S.A.	CID000568
Tungsten	Guangdong Xianglu Tungsten Co., Ltd.	CHINA	CID000218
Tungsten	H.C. Starck Smelting GmbH & Co. KG	GERMANY	CID002542
Tungsten	H.C. Starck Tungsten GmbH	GERMANY	CID002541
Tungsten	Hunan Chenzhou Mining Co., Ltd.	CHINA	CID000766
Tungsten	Hunan Chunchang Nonferrous Metals Co., Ltd.	CHINA	CID000769
Tungsten	Hydrometallurg, JSC	RUSSIAN FEDERATION	CID002649
Tungsten	Japan New Metals Co., Ltd.	JAPAN	CID000825
Tungsten	Jiangwu H.C. Starck Tungsten Products Co., Ltd.	CHINA	CID002551
Tungsten	Jiangxi Gan Bei Tungsten Co., Ltd.	CHINA	CID002321
Tungsten	Jiangxi Minmetals Gao'an Non-ferrous Metals Co., Ltd.	CHINA	CID002313
Tungsten	Jiangxi Tonggu Non-ferrous Metallurgical & Chemical Co., Ltd.	CHINA	CID002318
Tungsten	Jiangxi Xinsheng Tungsten Industry Co., Ltd.	CHINA	CID002317
Tungsten	Jiangxi Yaosheng Tungsten Co., Ltd.	CHINA	CID002316
Tungsten	JSC "Kirovgrad Hard Alloys Plant"	RUSSIAN FEDERATION	CID003408
Tungsten	Kennametal Fallon	U.S.A.	CID000966
Tungsten	Kennametal Huntsville	U.S.A.	CID000105
Tungsten	KGETS Co., Ltd.	KOREA, REPUBLIC OF	CID003388
Tungsten	Lianyou Metals Co., Ltd.	TAIWAN	CID003407
Tungsten	Malipo Haiyu Tungsten Co., Ltd.	CHINA	CID002319
Tungsten	Masan Tungsten Chemical LLC (MTC)	VIET NAM	CID002543
Tungsten	Moliren Ltd.	RUSSIAN FEDERATION	CID002845
Tungsten	Niagara Refining LLC	U.S.A.	CID002589
Tungsten	NPP Tyazhmetprom LLC	RUSSIAN FEDERATION	CID003416
Tungsten	Philippine Chuangxin Industrial Co., Inc.	PHILIPPINES	CID002827
Tungsten	Unecha Refractory metals plant	RUSSIAN FEDERATION	CID002724
Tungsten	Wolfram Bergbau und Hutten AG	AUSTRIA	CID002044
Tungsten	Xiamen Tungsten (H.C.) Co., Ltd.	CHINA	CID002320
Tungsten	Xiamen Tungsten Co., Ltd.	CHINA	CID002082
Tungsten	Xinfeng Huarui Tungsten & Molybdenum New Material Co., Ltd.	CHINA	CID002830

## Country of Origin List:

This list below sets out possible countries of origin of 3TGs used in the manufacture of products containing conflict minerals that are necessary to the functionality or production of our products. The list is based on publicly available information, our reasonable country of origin investigation, and other due diligence. For the reasons described in the Report, however, these possible countries of origin cannot necessarily be linked to our products:

Country of Origin List		
Afghanistan	Guyana	Peru
Armenia	Hungary	Philippines
Australia	India	Poland
Austria	Indonesia	Portugal
Belarus	Ireland	Republic Of Korea
Belgium	Israel	Russia
Bermuda	Italy	Rwanda
Bolivia	Ivory Coast	Saudi Arabia
Brazil	Japan	Sierra Leone
Bulgaria	Kazakhstan	Singapore
Burundi	Kenya	Slovakia
Cambodia	Kyrgyzstan	Slovenia
Canada	Laos	South Africa
Central African Republic	Liberia	Spain
Chile	Lithuania	Sudan
China	Luxembourg	Suriname
Colombia	Madagascar	Sweden
Czech Republic	Malaysia	Switzerland
Djibouti	Mali	Tanzania
Dominican Republic	Mauritania	Thailand
DRC or an adjoining country (1)	Mexico	Turkey
Ecuador	Mongolia	Uganda
Egypt	Morocco	United Arab Emirates
England	Mozambique	United Kingdom
Estonia	Myanmar	USA
Ethiopia	Namibia	Uzbekistan
Finland	Netherlands	Vietnam
France	New Zealand	Zambia
Germany	Niger	Zimbabwe
Ghana	Nigeria	
Guinea	Papua New Guinea	

(1) the "Covered Countries"