

Due Dilligence Report 2019

Alphamin BISIE Mining, DRC

Audit date: 9-10 September 2019

Inspectors: Mr. Warit Choovaree, Procurement Director – Thaisarco

Mr. Rapee Jutaporn, Procurement Manager – Thaisarco

1. General Mine Information

- At a tin grade of roughly 4.5%, Mpama North is the world's highest-grade tin resource
- It has an output around 10 000 tonnes of contained tin per annum, amounting to ~3% of the world's mined tin supply
- Alphamin's processing plant's construction was completed in the second quarter of 2019
- Alphamin has 2 mine sites; Mpama North and Mpama South

2. Identification of Mine Site Location

- ABM is located in North Kivu, DRC (GPS: 1°2'7"S 27°44'23"E), 30 minutes by plane from GOMA airport

3. Permit Details

- This is on its mining license and it has an additional five exploration licenses covering a total of 1,270km² in the North Kivu Province of the Democratic Republic of Congo (DRC)

4. Production Details

- The processing plant was achieved using primarily gravity separation, with a small float at the end to eliminate impurities in the final concentrate and obtaining good recoveries of around 72%
- Mpama North is producing approximately 10,000 tonnes contained tin per annum. Its life of mine is currently 12.5 years
- Mpama South is approximately 1,000 meters center to center from Mpama North
- A portal will be established from which an underground fan drilling program will be undertaken. The results of this will inform the mine plan for Mpama South
- No additional processing facilities are required for Mpama South material, this will be added to the feed to the current plant at Mpama North, which was designed to be able to accommodate this incremental feed
- Alphamin is aiming to start the production of Mpama South in 2021

5. Mine Workers

- ABM has 119 workers for 3 shifts (24 hours) at processing plant
- Working day: Monday to Saturday.
- Working time: 8 a.m. – 5 p.m.

6. Conflict Risks

- There is no any armed group stated on/ near mine site.
- It has no case of Human Rights Violations.

7. Policies

- Responsible Supply Chain policy

8. Mining and Processing Method

- Alphamin plans to mine the Cassiterite by using a sub-level caving mining method
- Ore from tunnel will be delivered by trucks to the Run of Mine (ROM) pad for stockpiling. The material will be fed into the crusher by a front-end loader
- After crushing, the size of material will be -10mm from -450mm
- Then the material is conveyed to jig plant
- The less dense reject material being discarded
- The more dense concentrate material being fed to the gravity concentrate plant
- The gravity concentrate plant has a high grade and low grade circuit;
 - High grade circuit: spirals and shacking tables – Magnetic separation process
 - Low grade circuit: regrind mill – spirals and shacking tables – Sulphide Flotation - Magnetic separator
- Then the material will be put into the dryer and packed into the big bag
- The tailing has contained the Sn around 2-3%

9. Respect of Laws

- The limitation of OT is 45 hours per week by laws and ABM can prove by showing the working time record of their workers
- It has no any case of forced labor or money is extorted from workers.

10. Due Diligence and Mineral Traceability

- Alphamin is fully OECD-Compliant
- The mine is in the Walikale Territory of North Kivu province. This remoteness allows the operation to be in control of its own destiny and focus on efficient reliable production
- The Dodd-Frank Act seeded further international responsible minerals legislation and protocols such as those of the International Conference on the Great Lakes Region's (ICGLR) Mineral Certification Mechanism which certifies all Alphamin material being exported from the DRC. ICGLR certification confirms OECD compliance of the minerals
- They have Mineral Supply Chain Transparency & Control Procedure that has issued on 8/2/2018 and related to OECD Due Diligence requirements
- The due diligence on upstream and downstream function will be the joint responsibility of the AFM CFO and ABM MD
- ABM uses the AMIRA Code of Practice and Guidelines for Metal Accounting, the code has been developed to help on their traceability from mine to final product and all of records will be maintained for a minimum of 5 years
- ABM also identify and assess risk in the supply chain;
 - Mineral Extraction
 - Mine site inspection certification: the status of ABM is always "Green" but in the event of either "Yellow" or "Red", ABM will address any issues immediately that are identified by the inspectors

- ICGLR Exporter Audit: ABM will request and support an ICGLR third party audit which will be audited every 3 years after an initial audit
- Mineral Extraction Process
- Mineral Transport Process: the bagging and tagging process will be witnessed by representative of the Government of the DRC's Mines Ministry and its Centre of Expertise, Evaluation & Certification of precious and semi-precious substances (CEECE). Alphamin has planned for a large marshalling yard facility in Logu to trans load the sealed containers, and the trucks have to pass through 6 AMB manned checkpoints in DRC as follow;
 - Alpha – Mengwe
 - Beta – Kisangani
 - Charlie – Bafwasenda
 - Delta – Niainia
 - Echo – Mambasa
 - Foxtrot - Beni
- Chain of Custody Handover Process: at the Logu, the bag of Cassiterite will be inspected by representative of Alphamin and the Mines Division. They will re-check the grade of material by using a hand held XRF further if the seals are found to be intact and the %Sn from XRF shows that the discrepancy is plus or minus more than 5% from their record at mine site. It will be quarantined in 20 ft lockable containers and they will to the same in Kampala, Uganda before re-stuffing the container and deliver to loading port

11. Security

- All personal and material will enter the underground working through the controlled access point and it will be kept locked during normal operational conditions to prevent unauthorized access to the underground workings but allow for emergency evacuation via panic hardware
- There are the securities at the mine site.

12. Personal Protective Equipment

- Head protection, footwear, and protective clothing are available for all workers. They also provide the emergency Oxygen portable for the supervisors

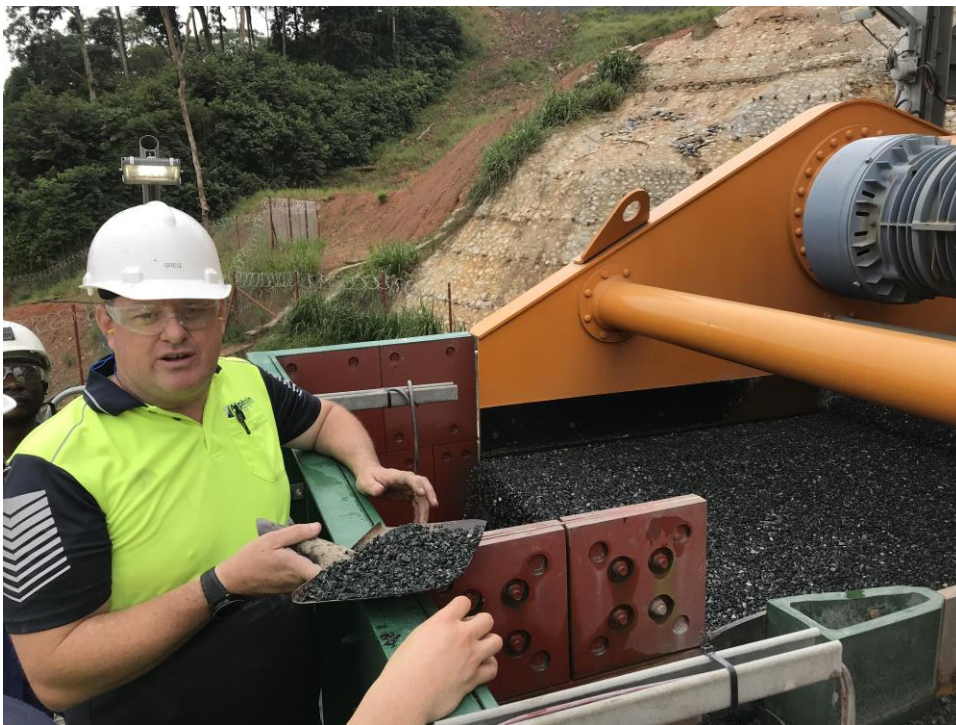
13. Mine Safety Risks

- There have adequate tunnel lighting and appropriate signs in the mining area.
- There have the rock fall-safe at the tunnel entrance and the emergency exit in the tunnel
- All workers have to be trained with HSE Manager before start working

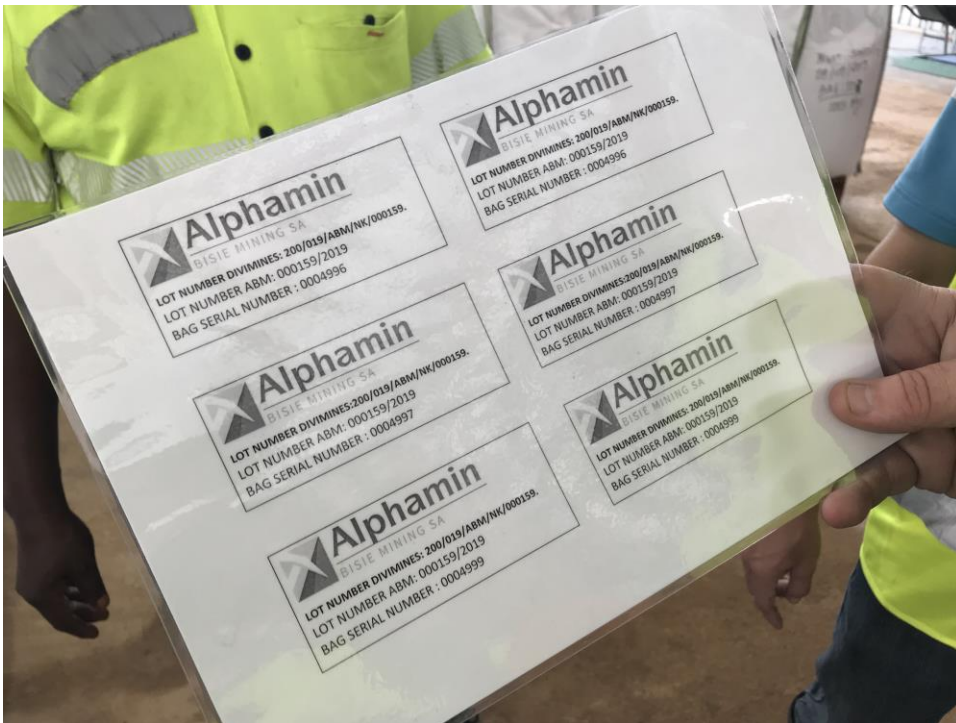














Spedag Warehouse, Kampala – Uganda (Cargo from ABM)

Audit date: 11 September 2019

Inspectors: Mr. Warit Choovaree, Procurement Director – Thaisarco

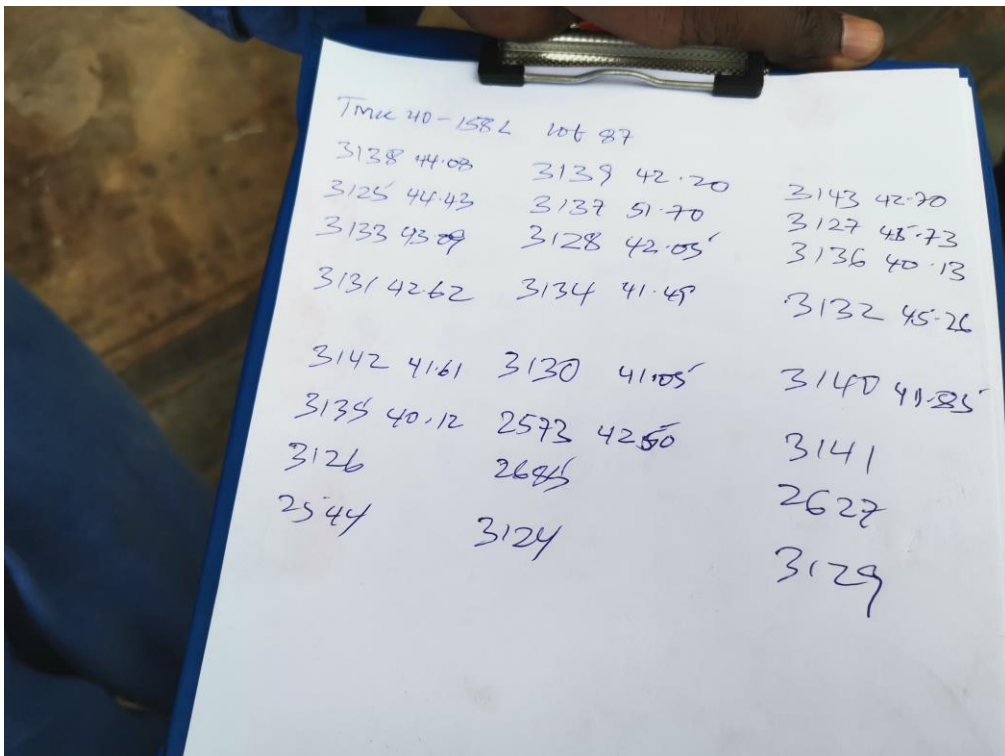
Mr. Rapee Jutaporn, Procurement Manager – Thaisarco

- The shipments from ABM will be re-stuffing here from 40ft container to 20ft container
- When the containers have reached at Spedag Kampala facility, clearing agents (SPIF) will inform the Uganda Revenue Authority (URA) of the containers arrival. URA will remove the electronic seal inside the Spedag yard
- During re-stuffing, the staff from TMK (outsourcing) will re-weight by sampling 6 bags per container and use a hand held XRF analyser to check the %Sn of material if the discrepancy less/ more than 5% from the ABM results at the mine site. The bag will be put in quarantine and an investigation during the Logu – Kampala leg
- After the cargo has been re-stuffed and packed into 20ft container; TMK will seal the container with wire seals, heavy duty locks then a heavy duty iSpy (tracking lock)
- Then the cargo will be delivered to Mombasa, Kenya; 1 day from Spedag to Border and 7 days from Mpondwe to Malaba
- Once the containers arrive at Malaba, Spedag staff will accompany the containers to the border and arrange to Spedag Kenya warehouse that far from Mombasa port just 4 km

- The staffs will check the conditions of containers again to make sure that it has no theft or tempering
- The cargo will be stored at warehouse and awaiting export (maximum 14 days)













Piran (Pella)

Audit date: 13 September 2019

Inspectors: Mr. Warit Choovaree, Procurement Director – Thaisarco

Mr. Rapee Jutaporn, Procurement Manager – Thaisarco

1. General Mine Information

- Piran has 2 mine sites; MUSHA for Cassiterite and NTUNGA for Coltan. Now, they are operating for MUSHA only due to the price of Coltan is decreased further they haven't capacity to operate 2 sites together. Further, they also hired some workers to do artisanal mine in their concession area.

2. Identification of Mine Site Location

- Piran is located in Eastern province, Rwamagana district (GPS: 2°4'11"S 30°16'36"E)

3. Permit Details

- Piran Resources secured a 25-year mining license for both the Musha and Ntunga concessions, a combined license area of 4000 hectares with an additional ~2,000 hectares under an exploration license

4. Production Details

- For MUSHA site, they produce 100% for cassiterite. The tunnel has 3 levels, the length of it is around 1.2 kilometer, and the depth between level 1 and level 2 is 28 meters and 48 meters for level 3.
- The monthly production is around 20-25 MT, they also show the detail of daily production on dashboard that contained the information of accident record, the production at mine site, the grade of material at mine site, plant feed, the grade of material at plant feed, %Sn recovery, daily production, artisanal production, and stock of concentrates. The volume of production is decreased in a few months ago due to their Jack Hammers are broken and all of spare parts have to import from Uganda moreover Uganda has been banned for import-export with Rwanda since April, 2019 so they have decided to import the new one from China. Furthers, their jig concentrator is not in the good condition then they have to use pan for upgrading some part of material after passed the jig after that it has to be re-processed if the jig is in good condition, this process is no need to do that can save the time a lot.

5. Mine Workers

- They have 700 permanent workers for 3 shifts (24 hours), almost workers are men. And 540 workers who have registered with Rwandese government for Artisanal mine.
- Working day: Monday to Saturday.
- Working time: 8 a.m. – 5 p.m.

6. Conflict Risks

- The mine site operator/ owner aren't involved in doing mining business with DRC, Burundi, or Uganda.
- There is no any armed group stated on/ near mine site.
- It has no case of Human Rights Violations.

7. Policies

- The security policy has issued by Marius Botha – General Manager of Piran and Richard Kamanzi – Security Manager of Piran on 18/2/2019, that's related to OECD due diligence guidance.
- The health and safety policy has issued by James Beams who is the Chief Executive Officer of Piran on 18/6/2018 and the next review should be in June 2019 anyway it's not available when we have visited.
- The Environmental and community policy has issued by James Beams who is the Chief Executive Officer of Piran on 18/6/2018 and the next review should be in June 2019 anyway it's not available when we have visited.

8. Mining and Processing Method

- The geology in this area is rock anyway it's not too hard so Piran just use only Jack Hammers to dig into the tunnel, they can dig around 400 meters depth in one month.
- No blasting.
- The truck will deliver the material from the mine site to their upgrading plant which is located in the same area. The material will go through the crusher first then it will be passed jig, the low grade one will be upgraded by panning and re-process by jig again. For the high grade, it will go through 5 shaking tables after that it will be delivered to another plant for

drying and upgrading by magnetic separator. The sample will be taken and pass the screen 2mm. If the analysis result is lower than 55%Sn; further upgrade process will be applied. For the material above 55%Sn, it will be packed in bag and put the mine tag on it.

- The grade of material before upgrading is around 0.7 %Sn and they can upgrade till 62-65 %Sn.
- 2 years ago, they have plan to set up the new upgrading plant for tailing anyway it's not economy to do that due to the %Sn which contained in the tailing is really low therefore they decided to continue exploring for the high grade one.

9. Respect of Laws

- They allow the workers to do overtime 3 hours per week according to Rwanda Labor Laws.
- All workers have registered by Rwanda Mines, Petroleum and Gas Board (RMB) so it can certify that they have not employed the workers who are underage and the tax has paid legally.
- We found the children for playing in concession area but they aren't participating in any mining process.
- It has no any case of forced labor or money is extorted from workers.

10. Due Diligence and Mineral Traceability

- The mine site operator is familiar with the contents of the OECD due diligence guidance.
- Their security policy is related to DDG.
- There is no untagged material entering and exiting the mine site.
- They are participating in the iTSCI scheme however it will be changed to BSP soon due to the staffs are not stand by there and they come just a few time in a month if they change to BSP, the staffs will stand by at the mine site for the whole working time that makes it more efficiently further the cost is also lower.

11. Security

- They have 140 securities for 3 shifts that are sensitized to human rights protection.
- The visitors have to sign on the visitor book before go into the concession area and put the neck lanyard all the time when staying in the area.
- There are the securities at the mine site.

12. Personal Protective Equipment

- Head protection, footwear, and protective clothing are available for all workers.

13. Mine Safety Risks

- There have adequate tunnel lighting and appropriate signs in the mining area.
- There have the rock fall-safe at the tunnel entrance and the emergency exit in the tunnel











ETS Hajos

Audit date: 14 September 2019

Inspectors: Mr. Warit Choovaree, Procurement Director – Thaisarco

Mr. Rapee Jutaporn, Procurement Manager – Thaisarco

1. General Mine Information

- Concession area is 800 Hectare.
- They produce Cassiterite, Coltan, and Wolfram
- It has 8 sites anyway only 5 sites which are active; Ryamugabo, Kiyaya, Rebero, Nkongi, and Rukankama.
- We have visited at Rukankama site which has the highest production of Cassiterite (around 200-300 kg. per day).

2. Identification of Mine Site Location

- ETS hajos is located in Eastern province, Rwamagana district, Karenga Sector (GPS: 2°4'18"S 30°16'45"E)

3. Permit Details

- mining license number N. 0516/16.02, applied on 18/12/2012

4. Production Details

- The production of Cassiterite is around 200-300 kg. per day at Rukankama site, the total production of Cassiterite for 5 sites is around 400-500 kg per day
- Even dry or rainy season, it has no effect with their production due to it has the big river at the foothill so they have no any problem of shortage water

5. Mine Workers

- They have 215 workers; 200 workers are men and 15 workers are women.
- Working day: Monday to Saturday.
- Working time: 8 a.m. – 5 p.m.

6. Conflict Risks

- The mine site operator/ owner aren't involved in doing mining business with DRC, Burundi, or Uganda.
- There is no any armed group stated on/ near mine site.
- It has no case of Human Rights Violations.

7. Policies

- They have no any official policy anyway we have interviewed with Mr. Rugenera Marc who is the Mining engineer, he can explain their working procedures which related to Due Diligence

8. Mining and Processing Method

- They use the shovel to dig the material in tunnel and put in bag, the material will be delivered by workers as assembly line.
- The material will be washed at washing area which is located just 50 meters from the entrance of tunnel, they have 2 washing ponds that have built from concrete.
- They use the water pumps in order to deliver the water from the river at foothill and they wash the material in every working days
- The material after washing will be took to make it dry after that it will be packed in back and put the tag before delivery to their upgrading plant in Kigali
- They can upgrade the cassiterite to 70% by using crusher and magnetic separator
- The high grade one will be blended to 62-64% before delivery to MSA

9. Respect of Laws

- It has no any case of forced labor or money is extorted from workers
- The minimum age of worker is 18 years old by laws
- We haven't found any child labor at the mine site

10. Due Diligence and Mineral Traceability

- The mine site operator is familiar with the contents of the OECD due diligence guidance
- There is no untagged material entering and exiting the mine site
- They are participating in the iTSCI scheme
- Mr. Rugenera told us that the material from mine site will be delivered to their upgrading plant in Kigali after that it will be delivered to MSA. It's an uncertain, the material has to be tagged before go out from the mine site and MSA is the person who cut the mine tag at their works when they received the material from miner. If Hajos upgrade their material in Kigali how they deliver the material to MSA with the tag on bag

11. Security

- They have 12 securities for day and night time that are sensitized to human rights protection; there is no case of stolen material
- The visitors have to sign on the visitor book before go into the concession area

- There are the securities at the mine site

12. Personal Protective Equipment

- Head protection, footwear, and protective clothing are available for all workers. However the condition of PPE is quite poor

13. Mine Safety Risks

- The lighting in tunnel is not sufficient for working
- There have the rock fall-safe at the tunnel entrance but the condition is not good
- 4 tunnels have connected so it's quite safe in case of the entrance of any tunnel has collapsed
- The operation area is located in middle of village, some house is just next to the entrance of tunnel







DUMAC

Audit date: 14 September 2019

Inspectors: Mr. Warit Choovaree, Procurement Director – Thaisarco

Mr. Rapee Jutaporn, Procurement Manager – Thaisarco

1. General Mine Information

- Concession area is 400 Hectare.
- 14 Tunnels; it has no any tunnel are not connected.

2. Identification of Mine Site Location

- DUMAC is located in Eastern province, Rwamagana district (GPS: 1°56'38"S 30°27'36"E)

3. Permit Details

- Mining license number N. 20417/16.02 which has applied on 3/2/2013

4. Production Details

- 75% is Cassiterite and 25% is Coltan
- After upgrading at mine site, the percentage will be up to 60% for Cassiterite
- Refer to their production book, they can produce 7.998 MT in Jul, 2019 and 8.454 MT in August, 2019 for mixed ore

5. Mine Workers

- They have 110 workers; 90% is men.

- Working day: Monday to Saturday.
- Working time: 8 a.m. – 5 p.m.

6. Conflict Risks

- The mine site operator/ owner aren't involved in doing mining business with DRC, Burundi, or Uganda.
- There is no any armed group stated on/ near mine site.
- It has no case of Human Rights Violations.

7. Policies

- They have no any policy which relate to due diligence however we found a minute of meeting that the site manager has communicated this information to all of workers.

8. Mining and Processing Method

- They use Jack hammer to dig into the tunnel, no excavator, no blasting and the material will be crushed into smaller size by using mortar
- The material will be washed on every Monday till Friday
- They use a water pump to get the water from river and keep it in reservoir and the water will be released to the gutter for washing material
- They use firewood to make the material dry after that they use a magnet to separate the Fe from the cassiterite before packing in the bag and waiting RMB come to tag material

9. Respect of Laws

- The workers have to provide the required information for registration that can identify the age of workers furthers the cooperative also have the copies of ID card for all of them, we have randomized the name of worker form the register book and asked them for the copy of ID; Mr. MUNYAMPETA Theoneste who born on 1/1/1963, ID number 1196380039445009
- It has no any case of forced labor or money is extorted from workers.
- They did Environmental Impact Assessment Certificate, the certificate number is RDB/3/EC/JM/030/03/16

10. Due Diligence and Mineral Traceability

- The mine site operator is familiar with the contents of the OECD due diligence guidance.
- There is no untagged material entering and exiting the mine site.
- They are participating in the iTSCi scheme.
- They received 96 tags per month and they put one tag for 70 kg of their production that is consistent with their monthly production.

11. Security

- They have 18 securities for day and night time that are sensitized to human rights protection; there is no case of stolen material.
- The visitors have to sign on the visitor book before go into the concession area
- There are the securities at the mine site and it has no any case of stolen

12. Personal Protective Equipment

- We found some worker doesn't wear the proper PPE

13. Mine Safety Risks

- The entrance and exit is the same way for each tunnel and all of 14 tunnels are not connected that's risk in case of any collapse of tunnels and the workers are inside
- There have no the rock fall-safe at the tunnel entrance
- There have no adequate tunnel lighting and appropriate signs in the mining area







MMB

Audit date: 14 September 2019

Inspectors: Mr. Warit Choovaree, Procurement Director – Thaisarco

Mr. Rapee Jutaporn, Procurement Manager – Thaisarco

1. General Mine Information
 - Concession area is 400 Hectare.
 - 8 tunnels connected
2. Identification of Mine Site Location
 - MMB is located in Eastern province, Rwamagana district (GPS: 1°56'22"S 30°19'41"E)
3. Permit Details
 - Their mining license no. T/103741520 which is effective on 25/2/2016 and expire on 22/6/2018, however they have re-applied and awaiting for the new one
4. Production Details
 - 2 MT per week for Cassiterite
5. Mine Workers
 - They have 165 workers
 - Working day: Monday to Saturday.
 - Working time: 8 a.m. – 6 p.m.
6. Conflict Risks

- The mine site operator/ owner aren't involved in doing mining business with DRC, Burundi, or Uganda.
- There is no any armed group stated on/ near mine site.
- It has no case of Human Rights Violations.

7. Policies

- They have policy which related to due diligence and also put the poster in front of their office that shows all of material need to put the tag before delivery out from the mine site

8. Mining and Processing Method

- They dig the tunnel by Jack hammer for 120 depth then the material will be put in the cart and bring to washing area
- The material will be washed at washing area which is located in front of the entrance of tunnel, they have 1 washing pond that have built from concrete.
- The material will be washed twice a week
- They use firewood to make the material dry before packing in the bag and waiting RMB come to tag material on every Saturday then they will deliver the material to exporter in the same day

9. Respect of Laws

- The ministry of mine came on 13/9/2019 to inspect them on the environmental issue and they can't found any concerned on their mining processes
- The workers have to provide the required information for registration that can identify the age of workers
- They do insurance for only 30 workers, the detail as follow;
 - Insurer: SORAS A.G. Ltd.
 - Policy no. 210/238/1/001682/2017
 - Avenant no. 210/238/2/000227/2017
 - Period: 8/5/2019 – 7/5/2020
 - Limit of indemnity: RWF 1,500,000 to be paid to entitled beneficiary/ RWF 1,500,000 to be paid to victim
- It has no any case of forced labor or money is extorted from workers

10. Due Diligence and Mineral Traceability

- The mine site operator is familiar with the contents of the OECD due diligence guidance.
- There is no untagged material entering and exiting the mine site.
- They are participating in the iTSCi scheme, RMB gave them 80 tags per month
- RMB staffs come to mine site on every Saturday for tagging material and MMB will deliver it in the same day. Unfortunately, we went there on Saturday and we can't found any RMB staffs at site
- Refer to their visitor book, iTSCi came to MMB for audit on 6/7/2019 however they have no record for the audit result

11. Security

- They have 8 securities for day and night time that are sensitized to human rights protection, the detail as follow

- Team A: NKIZABANDI Thomas and HAKIZIMANA Jean Baptiste
- Team B: NIYIGENA Theoneste and KAJYAMBERE Damascene
- Team C: SINDIKUBWABO Anathole
- Team D: UWIRAGIYE Thomas
- Team E: MFASHIJWENIMANA Jonas and MANIGIRANEZA Aimable
- The visitors have to sign on the visitor book before go into the concession area
- There are the securities at the mine site anyway they have no any security and barrier gate at the entrance
- The entrance of each tunnel will be locked after working hours

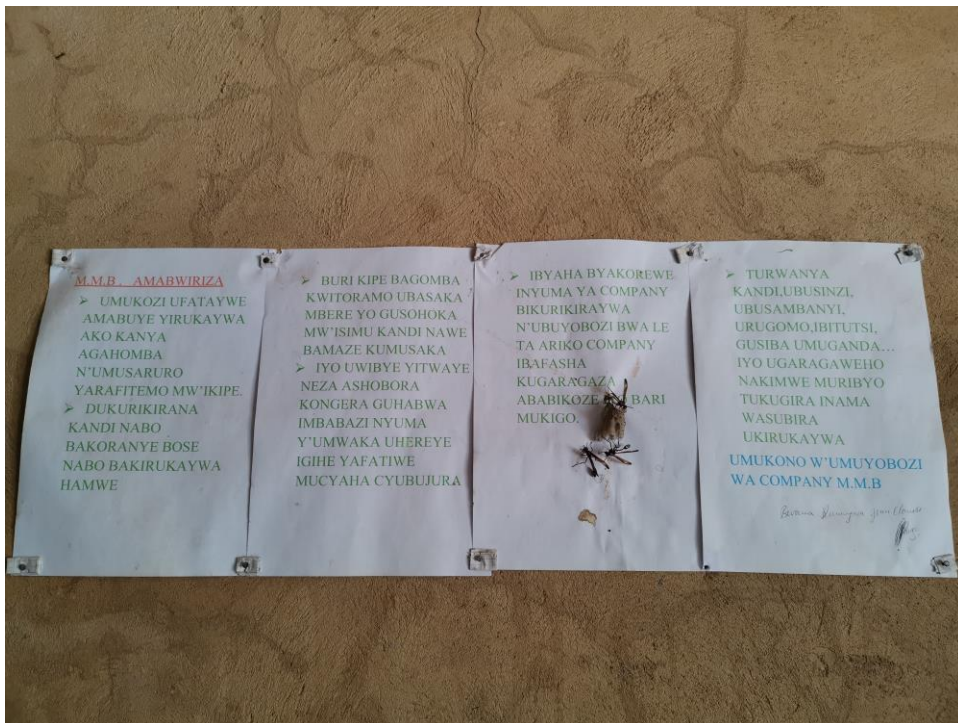
12. Personal Protective Equipment

- Head protection, footwear, and protective clothing are available for all workers

13. Mine Safety Risks

- There have no tunnel lighting and appropriate signs in the mining area.
- There have the rock fall-safe at the tunnel entrance









KOPABAMANYA

Audit date: 16 September 2019

Inspectors: Mr. Warit Choovaree, Procurement Director – Thaisarco

Mr. Rapee Jutaporn, Procurement Manager – Thaisarco

1. General Mine Information

- Concession area is 50 Hectare.
- They have 2 sites; Murara and Gitwe anyway it has no any production yet for Gitwe, it's still under the process to open the surface of area.
- Murara site has mixed ore; 70% for Sn and 30% for Coltan.

2. Identification of Mine Site Location

- KOPABAMANYA is located in Eastern province, Bugesera district (GPS: 2°7'15"S 30°3'8"E)

3. Permit Details

- For the Murara site, the mining license number is 103242532/ARM.02/DEC21/16/001-Tin Number 103242532 which is effective on 13/12/2016 and it will be expired on 12/12/2021
- For the Gitwe site, the mining license number is 103242532/ARM.02/DEC21/16/002-Tin number 102123638 which is effective on 13/12/2016 and it will be expired on 12/12/2021
- Trading license no. 31699371 issued by Rwanda Revenue Authority on 23/1/2019

4. Production Details

- They can produce around 1 MT per month (70% for Cassiterite and 30% for Coltan)
- 50 kg for daily production in August but just 20 Kg for daily production in March due to problem of shortage water

5. Mine Workers

- They have 45 workers; 4 teams
- We found the checklist of workers for 4 teams however it has updated till 9/8/2019, Fabiola said "it has updated one that kept by the mine site manager"
- Working day: Monday to Saturday
- Working time: 7 a.m. – 6 p.m.
- They also have the checklist for worker

6. Conflict Risks

- The mine site operator/ owner aren't involved in doing mining business with DRC, Burundi, or Uganda
- There is no any armed group stated on/ near mine site
- It has no case of Human Rights Violations

7. Policies

- They have no any policy anyway the mine site manager have a short briefing for workers before working every day which has contained the detail of due diligence

8. Mining and Processing Method

- The material will be packed in the bag and delivered out from the tunnel by workers to washing plant, the distance is just around 100 meters
- It will be passed through 2 crushers before washing
- They keep the stock water in big tank and reservoir, the washing will be processed by every working days

- After the material dried, it will be packed in bag and delivered to export twice a month
- The tailing has kept in the pond anyway they do nothing with it at the present

9. Respect of Laws

- They have insurance for only 10 workers which has issued on 10/7/2019 and it will be expired on 9/7/2020, the insurance will be covered for 330,000 FRW.
- They have checked the ID card of every worker before registration and they have the copy for all of it; we found the copy of ID card of Mr. Hagenimana Innocent (26 years old), ID number 1199380174204086 that can match with the registration of workers.
- They have the trading license certificate which has issued on 23/1/2019 (Serial no. 31699371) and shows the amount of tax that they have paid.
- It has no any case of forced labor or money is extorted from workers.

10. Due Diligence and Mineral Traceability

- It has no policy about due diligence, they just informed securities to check the workers before/ after go into the mining area in order to check that is no untagged material entering and exiting the mine site.
- They are participating in the iTSCi scheme.
- We have checked the weight which they delivered on 22/8/2019 (500 kg) and 4/9/2019 (450 kg) from iTSCi mine site production logbook that can matched with their record

11. Security

- They have 4 securities for day and night time that are sensitized to human rights protection; there is no case of stolen material.
- The visitors have to sign on the visitor book before go into the concession area
- There are the securities at the mine site.

12. Personal Protective Equipment

- Head protection, footwear, and protective clothing are available for all workers

13. Mine Safety Risks

- There have adequate tunnel lighting but no appropriate signs in the mining area
- In the old day, one tunnel is collapsed anyway the active one has the rock fall-safe at the tunnel entrance and it has 4 exits in the tunnel
- The entrance of tunnel will be locked after working hour







Burera Mining Development Co. (BMDC)

Audit date: 17 September 2019

Inspectors: Mr. Warit Choovaree, Procurement Director – Thaisarco

Mr. Rapee Jutaporn, Procurement Manager – Thaisarco

1. General Mine Information

- It has 2 sites; the 1st site is “Ngurugunzu1” (100 Hectare) which has produced WO3 and the 2nd site is “Ngurugunzu2” (250 Hectare) this site has produced Cassiterite and Coltan
- They have 9 open pits, no tunnel

2. Identification of Mine Site Location

- BMDC is located in Western province, Ngurugunzu district, Nrado and Bwira sectors, Kinyovi and Kabarondo cells (GPS: 1°56'34"S 29°36'59"E)

3. Permit Details

- mining license number N. 0412/16.02

4. Production Details

- They can produce the Cassiterite around 150 kg per day, we have checked on their production book; their production number as follow;
 - 2-7/9/19 942.5 kg
 - 9-14/9/19 1,085.5 kg
 - Total in Jul, 2019 4,062.50 kg
 - Total in Aug, 2019 3,830.75 kg
- For the “Ngurugunzu2”, 80% of production is Cassiterite and 20% is Coltan

5. Mine Workers

- They have 60 workers; 95% is men and the rest is women. The number of worker is depends on tin price and wages, the seasoning has not any effect on this
- Working day: Monday to Saturday.
- Working time: 7 a.m. – 5 p.m.

6. Conflict Risks

- The mine site operator/ owner aren't involved in doing mining business with DRC, Burundi, or Uganda.
- There is no any armed group stated on/ near mine site.
- It has no case of Human Rights Violations.

7. Policies

- They have no environmental policy but they shows us that the Eucalyptus's seed has kept in their office and waiting for planting in concession area which has abandoned
- They put the poster in front of their office that shows all of material need to put the tag before delivery out from the mine site

8. Mining and Processing Method

- They dig into the small hill by human, they have no blasting and no use any machine likes Jack hammer due to it has no electric generator at the mine site. Their operation area looks like a narrow and deep channel that's quite risk to collapse. They also have a plan to rent the excavator for opening the surface in new area in order to increase the volume of production

- The material will be delivered by workers from operation area to washing area, the distant is around 100 meter. They will wash the material on every Tuesday and Saturday
- The tailing will be also re-washed when the production is slow down
- After washing, the material will be delivered by workers to their office that will be taken around one hour, the distance is quite far. Before the workers left from the mine site, the securities there will check the weight on each bag and call to the staff at office to inform the weight and the name of worker
- When the material is reached at their office, it will be re-weighed in order to check the discrepancy on weight. Due to the distant between mine site and office is far so it has a chance that the workers will take the material from outside into their bag or take out the material from bag and keep somewhere
- They will make the material dry by using the firewood then it will be taken to the crushers and magnetic separator respectively; they have 2 crushers and 1 magnetic separator
- Then the material will be tagged and delivered to exporter in Kigali once a week

9. Respect of Laws

- The workers have to provide the required information for registration that can identify the age of workers and check ID for every workers before let them go into the mine site
- It has no any case of forced labor or money is extorted from workers.
- They do the insurance just for 10 workers
- We found a child who carry the tank of water in their concession area anyway he just take the water to his house for household consumption

10. Due Diligence and Mineral Traceability

- The mine site operator is familiar with the contents of the OECD due diligence guidance.
- There is no untagged material entering and exiting the mine site.
- They are participating in the iTSCi scheme.
- They have received 80 tags in every 2 weeks for 2 mine sites

11. Security

- They have 6 securities for day and night time that are sensitized to human rights protection
- They have no fence around their concession area

12. Personal Protective Equipment

- Head protection, footwear, and protective clothing are available for all workers.
- The mine owner will give the new PPE to workers every 6 months

13. Mine Safety Risks

- There have no the rock fall-safe at the tunnel entrance and the emergency exit in the tunnel.
- It had 1 accident in 2016, one worker has backache from the land slide











GAMICO

Audit date: 18 September 2019

Inspectors: Mr. Warit Choovaree, Procurement Director – Thaisarco

Mr. Rapee Jutaporn, Procurement Manager – Thaisarco

1. General Mine Information

- Concession area is 250 Hectare, they have 3 mine sites; NYAGISOZI, GISIZA, and RUMURI
- They produce Cassiterite only, the type of mine is tunnel which has connected each other
- The physical geography of this area is hard rock
- The Managing director is Mr. Zaninka Josiane NZABAKENGA, Date of Birth: 1/1/1982, ID number is 1198270171709011
- Share capital is RWF1,2000,000

2. Identification of Mine Site Location

- GAMICO is located in Eastern province, Gatsibo district (GPS: 1°42'10"S 30°18'51"E)

3. Permit Details

- mining license number is N. 0114/16.02 which has issued on 28/11/2013
- Full registration information for domestic company; company code 102755533, register date 10/8/2012

4. Production Details

- Their production is around 2.5 MT per month per mine site

- According to their production record, the daily production is quite fluctuate due to the number of workers in each day;
 - 09/09/19 144.90 kg 13 workers
 - 10/09/19 196.05 kg 15 workers
 - 11/09/19 438.10 kg 24 workers
 - 13/09/19 691.20 kg 38 workers
- They have a problem of shortage water in dry season; they just collect the water from rain. It has no river around this area
- We have visited them on 18/9/2019 anyway we found that the latest record is on 13/9/2019, 3 days of record is missing.
- They have delivered 5,926 kg in Aug, 2019 to exporter in Kigali refer to their mine site log book of iTSCi

5. Mine Workers

- They have 174 workers (11 teams)
- Working day: Monday to Saturday.
- Working time: 8 a.m. – 5 p.m.

6. Conflict Risks

- The mine site operator/ owner aren't involved in doing mining business with DRC, Burundi, or Uganda.
- There is no any armed group stated on/ near mine site.
- It has no case of Human Rights Violations.

7. Policies

- They have no any official policy, we just found some posters which have mentioned about PPE and due diligence

8. Mining and Processing Method

- The material from the tunnel will be washed in front of the tunnel, the schedule for washing is depends on the storage of water
- The distance between mine site to their office is around 1.5 km. After the material is reached at their office, they will make it dry by using firewood then they will crush by using a small mortar after that they just rockling the magnet into the material in order to separate the Fe. Every processes go by manual, no any machine is get involved

9. Respect of Laws

- The workers have to provide the required information for registration that can identify the age of workers but they have no any copy if workers' ID
- They do the insurance for only 10 workers by Radiant insurance company; the insurance number is N. 1452274 which has issued on 18/7/2019

10. Due Diligence and Mineral Traceability

- The mine site operator is familiar with the contents of the OECD due diligence guidance.
- There is no untaged material entering and exiting the mine site.
- They are participating in the iTSCi scheme.

- Refer to their latest record on logbook; on 13/8/2019, they have delivered 2,452 kg with 35 tags which is consistent with the volume of material
- We found many of un-used tags have kept outside the box

11. Security

- They have just 4 securities for day and night time that is not enough for their concession area
- The visitors have to sign on the visitor book before go into the concession area
- There are the securities at the mine site.

12. Personal Protective Equipment

- Head protection, footwear, and protective clothing are available for all workers.

13. Mine Safety Risks

- There have adequate tunnel lighting and appropriate signs in the mining area
- There have the rock fall-safe at the tunnel entrance anyway the condition is not strong enough









DUMICO

Audit date: 19 September 2019

Inspectors: Mr. Warit Choovaree, Procurement Director – Thaisarco

Mr. Rapee Jutaporn, Procurement Manager – Thaisarco

1. General Mine Information

- Concession area is 200 Hectare
- We have visited at KAJWI site which has produces the Cassiterite. It has 4 tunnels anyway it has not connected

2. Identification of Mine Site Location

- DUMICO is located in Northern province, Gakenke District, Nemba and Karambo sectors, Gisozi and Kirebe cells.
- Their license is requesting for a mining exploration of Cassiterite only

3. Permit Details

- Mining license number N. 0355/16.02 which has issued on 23/6/2014

4. Production Details

- They can produce Cassiterite around 200 kg per day
- Refer to their mine site logbook, the 1,401 kg of Cassiterite has put the tag on 28/8/2019 and 700 kg has put it on 4/9/2019

- Refer to their processing site logbook, the 1,122 kg of Cassiterite has put the tag on 16/8/2019 and delivered to exporter in Kigali

5. Mine Workers

- They have 40 permanent workers and 50 temporary workers
- Working day: Monday to Saturday
- Working time: 7 a.m. – 4 p.m.

6. Conflict Risks

- The mine site operator/ owner aren't involved in doing mining business with DRC, Burundi, or Uganda
- There is no any armed group stated on/ near mine site
- It has no case of Human Rights Violations

7. Policies

- They have no any official policy, we just found some posters which have mentioned about PPE and due diligence

8. Mining and Processing Method

- The workers will carry the material from inside the tunnel to washing area that is located in front of the tunnel. They have no water pump, the water has flow down from the top of hill and they have no any issue of water shortage
- They will wash the material 3 times per week
- After washing, the material will be delivered by workers to their office which is far from mine site around 1.5 km. Before the workers left from the mine site, the securities there will check the weight on each bag and call to the staff at office to inform the weight and the name of worker
- When the material is reached at their office, it will be re-weighed in order to check the discrepancy on weight. Due to the distant between mine site and office is far so it has a chance that the workers will take the material from outside into their bag or take out the material from bag and keep somewhere
- They will make the material dry by using the firewood, they have no crusher and magnetic separator so the Cassiterite will be delivered to exporter in Kigali for upgrading

9. Respect of Laws

- We found the children are playing in concession area but they aren't participating in any mining process
- The workers have to provide the required information for registration that can identify the age of workers but they have no any copy if workers' ID
- It has no any case of forced labor or money is extorted from workers

10. Due Diligence and Mineral Traceability

- The mine site operator is familiar with the contents of the OECD due diligence guidance
- There is no untagged material entering and exiting the mine site
- They are participating in the iTSCI scheme

11. Security

- They have only 3 securities for day and night time that are sensitized to human rights protection; there is no case of stolen material
- There are the securities at the mine site
- It has no fence in their production area
- It has no door and locker at the entrance of tunnel so it has a chance that the people from outside will go into the tunnel to steal the mineral after working hour

12. Personal Protective Equipment

- Head protection, footwear, and protective clothing are available for all workers

13. Mine Safety Risks

- There have adequate tunnel lighting but have no appropriate signs in the mining area
- There have the rock fall-safe at the tunnel entrance









MUKARWESA (MMC)

Audit date: 19 September 2019

Inspectors: Mr. Warit Choovaree, Procurement Director – Thaisarco

Mr. Rapee Jutaporn, Procurement Manager – Thaisarco

1. General Mine Information

- Concession area is 100 Hectare, MUREHE site
- It has 7 tunnels which are connected, 4 tunnels are active
- The company is registered on 1/9/2016, Registration number is 106290029, Capital RWF 40,000,000 (100 ordinary shares/ RWF 400,000 each)
- The tunnels directed toward South East and the elevation is 1,875 m above sea level. The width of tunnels are around 1m and the height is around 1.5-7 m, the deepest tunnel is around 80m

2. Identification of Mine Site Location

- MMC is located in Northern province, Gakenke District (GPS: 1°35'5"S 29°41'18"E)

3. Permit Details

- Their new mining license is not available when we visited due to the new share holder want to change the name of mine from MUKARWESA to MUREHE Mining Company
- They have paid for artisanal mining license fee on 3/10/2016 to Ministry of natural resources

4. Production Details

- Their production in July, 2019 is 3,394 kg. 80% is Cassiterite and the rest of 20% is Coltan

5. Mine Workers

- They have 207 workers; 107 Males and 80 Females
- Working day: Monday to Saturday.
- Working time: 8 a.m. – 5 p.m.

6. Conflict Risks

- The mine site operator/ owner aren't involved in doing mining business with DRC, Burundi, or Uganda.
- There is no any armed group stated on/ near mine site.
- It has no case of Human Rights Violations.

7. Policies

- They have no any official policy, we just found some posters which have mentioned about PPE and due diligence

8. Mining and Processing Method

- They have no blasting due to the soil and rock in that area is really soft, the tunnels have operated by workers. Actually, they want to use the heavy machine to save the time but the soil stability and land slope can't support the weight of machine
- They use water pump to deliver the water from river and store it in fore dam that has 10 m long, 5m wide, and 1.5 m deep

- Just 10% of Cassiterite which can recover from the washing process, the rest of 90% is lost in the tailing anyway the tailing will be re-washed. They try to improve the percentage of recovery by making the washing channel longer and reduce the amount of cassiterite for input
- No electricity but we noticed that the power line isn't far from their site, it has a possibility to improve on that

9. Respect of Laws

- They have insurance for only 40 workers which has affected on 23/11/2018 and it will be expired on 23/11/2019, the insurance will be covered for 462,000 FRW
- They have checked the ID card of every worker before registration and they have the copy for all of it;
- It has no any case of forced labor but it has some of workers complained that they haven't receive the wage for OT and the wage is quite low due to they have to work in dangerous place
- No treatment facilities for waste and muddy water, all of used water is disposed to Mukuracebe river

10. Due Diligence and Mineral Traceability

- The mine site operator is familiar with the contents of the OECD due diligence guidance.
- There is no untagged material entering and exiting the mine site.
- They are participating in the iTSCI scheme.
- They got 22 tags in every 2 weeks that is consistent with their production in July, 2019

11. Security

- They have only 2 securities for day time and 4 for night time that are sensitized to human rights protection; there is no case of stolen material.
- The visitors have to sign on the visitor book before go into the concession area
- There are the securities at the mine site.

12. Personal Protective Equipment

- Head protection, footwear, and protective clothing are available but some of workers didn't wear it properly

13. Mine Safety Risks

- There have no adequate tunnel lighting and no appropriate signs in the mining area
- There have the rock fall-safe at the tunnel entrance but they have no the emergency exit in the tunnel. It can be a serious landslide due to the rock and soil in that area is really soft
- Due to the tunnel is quite deep then the air circulation isn't good, they should use the air pump to increase the oxygen for workers who work in the tunnel







Mine site in Kalomo, Zambia (Inspection with Afritin)

Audit date: 21 September 2019

Inspectors: Mr. Warit Choovaree, Procurement Director – Thaisarco

Mr. Rapee Jutaporn, Procurement Manager – Thaisarco

- The mine site is located at Kalomo, Zambia. It will be taken around 4 hours from Livingstone by car (GPS: 17°34'33"S 26°48'11"E)
- We found many child and woman labor, it seems they are the villager in that area and want to earn some money anyway the child labor is **unacceptable**
- No water, No machine or any equipment
- They said., they can produce around 150 kg per week
- Future Plans
 - Afritin will take some sample from that area for analysis later, they have checked with XRF at Ministry of mine in Lusaka before that shows the tin content is around 70% but it seems the XRF machine has used for a long time without calibration
 - If the result is good, Afritin will send their team to site for exploration that will be take some time. Due to refer to survey report which issued by Ministry of mine, it has no any detail of reservation for Cassiterite

****Thaisarco has no business with this client***







Smelter in Kabwe, Zambia (Inspection with Afritin)

Audit date: 23 September 2019

Inspectors: Mr. Warit Choovaree, Procurement Director – Thaisarco

Mr. Rapee Jutaporn, Procurement Manager – Thaisarco

- The smelter is located at Kabwe, Zambia that's far from Lusaka around 2 hours by car (160 km)
- The smelter has only one electric furnace with 2 smelting pots; one for Cobalt, another one for Cassiterite. Anyway, it will be taken around 2 hours in order to switch it
- At the present, the main activity is smelting Cobalt. For Cassiterite, they have ever imported from DRC for the trial shipment
- The burned limestone and Coke are the main components for mixing with Cassiterite before put into the furnace
- The capacity of furnace is 500-1,000 kg per hour, the working time is 8 hours per shift and they have 2 shifts for operation
- 98% of Cassiterite can be recovered from the process
- The yield is around 8 MT per day at 98%Sn content
- They produce the final products as 2 shapes; Tin ingot and Tin granule
- They have 10 workers for 2 shifts
- Cost

- Electricity USD30,000 a month
- Graphite Electrode 5 kg for smelting Cassiterite 1 MT
- The Tin price is the main factor for their cost
- They set up the bag house that has contained a hundred of bags for collecting the dust from process
- The moving permit (issued by Ministry of Mine) and police clearance are required for delivery the ores in Zambia
- Future Plans
 - Re-built the upgrading plant, they already have crushers and some of shacking tables then try to source the Cassiterite in Zambia or other countries
 - After upgrading, the Cassiterite which contained more than 55%Sn they want to deliver to Thaisarco via Afritin. For the low grade one, they will put it into the furnace to produce the tin metal
 - Improving on traceability scheme

****Thaisarco has no business with this client***









UIS

Audit date: 26 September 2019

Inspectors: Mr. Warit Choovaree, Procurement Director – Thaisarco

Mr. Rapee Jutaporn, Procurement Manager – Thaisarco

1. General Mine Information

- Uis was discovered in 1911 and was developed by Iscor of South Africa as the largest hard-rock tin mine in the world. Production started in the 1950s and ended in 1990 as a result of depressed tin prices
- Uis has a JORC-compliant resource of 71.54 million MT at 0.134% tin, an inferred mineral resource estimate of 71.54 million MT and 0.0085% tantalum for 6 091 MT contained tantalum and an inferred mineral resource estimate of 71.54 million MT at 0.63 % lithium oxide for 450 265 MT contained lithium oxide

2. Identification of Mine Site Location

- UIS, Namibia (GPS: 21°14'2"S 14°53'3"E)

3. Permit Details

- The mining license which extends over 225 km²

4. Production Details

- Heavy liquid separation tests show tin recoveries >74% at concentrate grades of >67% tin
- The main impurities in that area is Silica and quartz
- The capacity of their upgrading plant is 50,000 MT for input per month
- Now, Afritin has 52,000 MT of ore as stockpile and waiting for process
- 2 electric generators have set up in their plant due to the electricity always trip 3 times daily and the downtime is 4 hours for 1 trip, now they are in process to install the electricity from the main power line
- The water has delivered via 140 km of pipeline from the sea and passed the process of RO, they have 2 storage water tanks; 1 million liter and 0.5 million liter
- 95% of water in process has circulated
- Their target for final product is 65 MT per month however it has many problems of feeding pump and spirals after commissioning that make them can't reach the target at the present
- Just only 4 MT that is ready to ship to Thaisarco, the shipment should be arrived at works around mid of February, 2020

5. Mine Workers

- They have 80 workers; 4 teams
- 20 of workers are outsourcing for the jobs of blasting and construction
- Working day: Monday to Saturday
- Working time: 8 a.m. – 5 p.m. for Mining side, 7 a.m. – 3p.m./ 3 p.m. – 11 p.m./ 11 p.m. – 7 a.m. for processing side

6. Conflict Risks

- The mine site operator/ owner aren't involved in doing mining business with DRC, Burundi, or Uganda.
- There is no any armed group stated on/ near mine site.
- It has no case of Human Rights Violations.

7. Policies

- They are really focused on Health and safety policies “Safety first, ensuring we go home every day unhurt”, all workers have trained on this.
- Namibia has not considered as CAHRAs or red flags so they haven’t the supply chain policy yet

8. Mining and Processing Method

- The upgrading plant design is informed by the process flow of the historical Uis mine, known to have been an efficient operation with multiple stages of beneficiation
- They use Dense Medium Separation (DMS) modules as opposed to the historic jigging circuit
- Wet high intensity magnetic separation (WHIMS) is used to split the final concentrate into a salable tin and tantalum concentrate
- Mining material will be liberated using drilling and blasting in order to open the surface, the depth of open pit is around 10 meters
- The ore will be put into primary crusher then go into 3 stages crushing
- After that the material will be split into 2 parts; the first one (fine) will go through spirals then go through shacking table directly and the second part (big size) will go through DMS#1 and #2 cyclones then will be passed roll crusher, DMS#3 cyclone, and shacking table respectively
- The wet final product will be weighed and pack into the drum
- XRF method is used for checking the quality of final product before export

9. Respect of Laws

- Their health and safety policies are complying with applicable legal requirements
- It has no worker under 18 years old refer to Namibian laws
- The maximum of OT is 3 hours per day which followed by the labor laws
- On Sunday or public holiday, Afritin has paid double for the wages to workers

10. Due Diligence and Mineral Traceability

- The mine site operator is familiar with the contents of the OECD due diligence guidance; their lot number can trace back to the production date and time

11. Security

- The visitors have to sign on the visitor book before go into the concession area
- There are the securities at the mine site
- The people and vehicle from outside can’t go into the mining area; Afritin will provide the motorcade and let the visitor follows

12. Personal Protective Equipment

- Head protection, footwear, and protective clothing are available for all of workers

13. Mine Safety Risks

- There have appropriate signs in the mining area











