

PREPARED FOR:

PREPARED BY:



Harmony Gold Mining Company



Pre-disturbance Environmental Site Assessment and Site Specific EMP

| | | | |
|------------------------|------------------------|------------------|------------------|
| Site ID: | Harmony Brand A TSF | Contractor: | EIMS |
| Location: | Harmony Mines - Welkom | Inspector: | Vukosi Mabunda |
| Client representative: | N/A | Inspection Date: | 11 November 2023 |

1. Background

Background of the project: Harmony Gold Mining Company Limited (Harmony), also referred to as the 'Applicant', own and operate a number of Gold Mines and Plants in the Welkom region in the Free State. Harmony currently deposits tailings onto the Free State South (FSS) 2 Tailings Storage Facility (TSF), St. Helena 4 TSF, St. Helena 123 TSF, Dam 23 TSF, Brand D TSF and Target 1&2 TSF. The current planned Life of Mine (LOM) of the Free State Operations exceed the available deposition capacity of these TSF's and Harmony is undertaking a feasibility assessment to redeposit slurry on the footprint of Brand A TSF which has largely been reclaimed to date. Slurry deposition is proposed on the Brand A TSF footprint and there may be a requirement to upgrade the existing Return Water Dam (RW Dam).

Brand A TSF is located at 28° 0'53.81"S; 26°50'18.34"E between Bronville and Saaiplaas in Welkom, Free State Province. The study area falls within the Matjhabeng Local Municipality Wards 8, 11 and 24 (Lejweleputswa District Municipality) administrative area. The project area is situated within 27 farm properties distributed between Farm Harmony 222, Farm Klippan 14, Farm La Riviera 289, Farm Rustgevonden 564, Farm Saaiplaas 690, Farm Saaiplaas 771, and Farm Vaalkranz 220.

Slurry deposition is proposed on the Brand A TSF footprint and there may be a requirement to upgrade the existing Return Water Dam (RW Dam). In order to allow for slurry deposition on Brand A from either of the operational plants (Central Plant, Saaiplaas Plant and One Plant), a number of new residue deposition pipelines may be required:

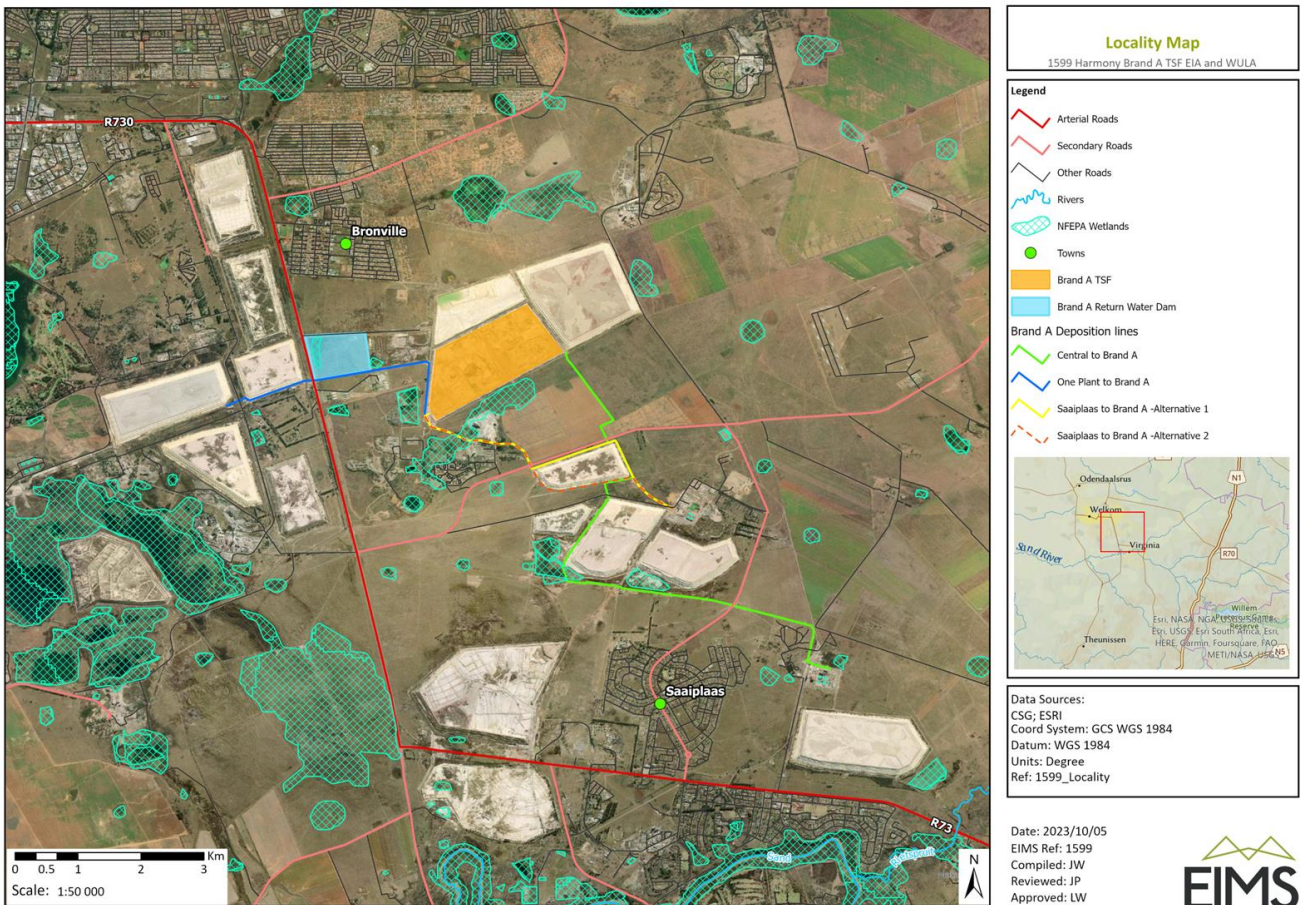
- **One Plant to Brand A** (approximately 4km long):
 - This pipe extends from the existing pipe from One Plant depositing onto FSS2 to Brand A and follows the route that already has other slurry pipelines
- **Saaiplaas Plant to Brand A:**
 - There are two optional routes around the Saaiplaas 6 TSF. Alternative 1 which ~4.6km long and alternative 2 ~4.4km long.
- **Central Plant to Brand A** (approximately 9.2km long):
 - Deposition from One plant to Brand A would follow the existing pipe route and could potentially use the same pipeline

The residue deposition pipelines will have a NB diameter of more than 360mm with a peak throughput of more than 120 ℓ/s. The pipelines will be flanged steel pipelines and installed above-ground on pre-cast concrete plinths. A 3.5m wide access road, adjacent to the pipelines, will be cleared/graded to provide access for construction, maintenance and inspections.



| Project Aspects: | Yes | No | Details (provide specifications) | Location (DD MM SS) | |
|------------------|-------------------------------------|-------------------------------------|--|--|---|
| | | | | Latitude | Longitude |
| ❖ TSF | <input checked="" type="checkbox"/> | <input type="checkbox"/> | Expansion of Tailings Storage Facility and associated infrastructure. Other Points of Interest 1. One Plant to Brand A Pipeline: <ul style="list-style-type: none"> Start point: Endpoint: 2. Saaiplaas Plant to Brand A Pipeline: <ul style="list-style-type: none"> Start point: Endpoint: 3. Central Plant to Brand A Pipeline: <ul style="list-style-type: none"> Start point: Endpoint: | Brand A 28° 0'53.81"S; 28° 1'17.78"S 28° 1'21.78"S 28° 2'10.69"S 28° 1'21.81"S 28° 3'32.84"S 28° 0'50.15"S | 26°50'18.34"E 26°48'8.15"E 26°49'52.22"E 26°51'57.44"E 26°49'52.31"E 26°53'18.22"E 26°51'2.48"E |
| ❖ Other: | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | There is a potential to upgrade the Return Water Dam as part of the establishment of the Brand A TSF. | | |

2. Site Layout Plan



2. DEA Screening Tool Assessment

| Aspect | Very High | High | Medium | Low |
|--------------------------------------|-----------|------|--------|-----|
| Agriculture | | X | | |
| Animal species | | | X | |
| Aquatic Biodiversity | X | | | |
| Archaeological and Cultural Heritage | | | | X |



| | | | | |
|--------------------------------------|---|---|---|---|
| Civil Aviation | | X | | |
| Defense Theme | | | | X |
| Paleontology | | | X | |
| Plant Species Theme | | | | X |
| Terrestrial Ecology/ Biodiversity | X | | | |

3. Site Assessment

3.1 Gradient (indicate the general gradient characteristics of site)

| | | | | | | | | | |
|--------|---------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|-------------------------------------|--------------------------|--------------------------|
| Aspect | | | | | | | | | |
| | TSF site area | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

Is the site located on or in the immediate vicinity of any of the following:

| | Yes | No | Comment |
|--|-------------------------------------|-------------------------------------|--|
| Erosion Channels or areas of severe erosion/ destabilized soils | <input type="checkbox"/> | <input checked="" type="checkbox"/> | No severe erosion observed. |
| Wetlands (within 32m) | <input checked="" type="checkbox"/> | <input type="checkbox"/> | Several wetland bodies close to the site. |
| Unstable slopes or geological features (rocky outcrops) | <input type="checkbox"/> | <input checked="" type="checkbox"/> | None were noted. |
| Bare areas | <input type="checkbox"/> | <input checked="" type="checkbox"/> | There are very minimal bare areas. |
| Other Sensitive or risk areas? | <input type="checkbox"/> | <input checked="" type="checkbox"/> | There were no potential risks or sensitive areas noted. |
| Are any existing servitudes and structures directly or indirectly affected by the proposed sites and routes (e.g., Eskom, public road servitudes and restrictions 60m from National Road, farmer's water/irrigation supplies, etc.)? | <input checked="" type="checkbox"/> | <input type="checkbox"/> | One Plant to Brand A Pipeline will transect underneath Provincial Road (R730). |

3.2 Vegetation

Which of the listed descriptions best describes the general groundcover on and around the site?

| | | | | |
|--|---|--|---|---|
| Natural veld - good condition <input type="checkbox"/> | Natural veld with scattered aliens <input type="checkbox"/> | Natural veld with heavy infestation <input type="checkbox"/> | Veld dominated by alien species <input checked="" type="checkbox"/> | Gardens <input type="checkbox"/> |
| Sport field <input type="checkbox"/> | Cultivated land <input checked="" type="checkbox"/> | Paved surface <input type="checkbox"/> | Building or other structure <input checked="" type="checkbox"/> | Bare soil <input checked="" type="checkbox"/> |
| Comments on vegetation composition: | Site is mostly grassland with scattered areas that are disturbed and degraded due to anthropogenic activities, such as clearing of vegetation, presence of alien and invasive plant species, and fragmentation due to the presence of the mining infrastructure such as existing TSFs and access roads. Existing TSFs located to the north, east and south of the site. | | | |
| Comments on weed species/type | It appears that alien and invasive plant species are present on site. The exact type and species will be confirmed during the EIA specialist study. | | | |

Land cover/ use description: Describe the land uses on the site

**TSF area**

Significantly transformed land previously used for the same activity.

4. General Comments and Recommendations

In general the site for the TSF appears to be of low ecological sensitivity due to its proximity to mining areas and disturbance and degradation to the site areas due to current mining activities. A small number of alien plants were noted in the area as well. Several wetlands were noted during the site inspection. A portion of cultivated area were noted south of the proposed TSF area, however, there was no evidence of cultivation been currently undertaken, rather infestation by alien species. A Terrestrial Biodiversity specialist study will be undertaken to confirm the sensitive species that may occur on the site footprint. Aquatic and wetlands study will be undertaken to delineate and provide risk matrix as well as mitigation measures. Agricultural Impact study will be undertaken to identify potential impacts and mitigation measures on agricultural potential.

Site Photos

| | | | |
|---|--|---|---|
| <p>Aspect: General TSF area</p> |  |  |  |
| <p>Describe area and adjacent land use:</p> | <p>View north across the Brand A TSF site showing the extent of the reclamation of Brand A. The only adjacent land use is mining. The area can be described as significantly transformed with minimal vegetation cover and scattered aliens.</p> | <p>Eastern view from the Brand A TSF showing a large body of wetland. Several wetlands noted along the southern extent of the Brand A TSF. The only adjacent land use is mining. The area can be described as moderately transformed with near-natural vegetation and grassland with pockets of wetlands and scattered aliens.</p> | <p>Southern view from the Brand A TSF showing general site conditions. The only adjacent land use is mining. The area can be described as moderately transformed with near-natural vegetation and grassland with pockets of Eucalyptus globulus (blue gum) trees and scattered aliens.</p> |
| <p>Aspect: General TSF area</p> |  |  |  |
| <p>Describe area and adjacent land use:</p> | <p>Western view from the Brand A TSF showing some of the existing structures on site. Area comprising of substation and powerlines mainly for the mining activities. The area can be described as significantly transformed with modified vegetation and grassland with isolated Eucalyptus globulus (blue gum) trees and scattered aliens.</p> | <p>Northern view from main access road adjacent to Saaiplaas TSF showing crop fields. The adjacent land use is mining and previously cultivated land. The area can be described as moderately transformed with modified grassland infested by aliens.</p> | <p>Southern view from main access road adjacent to Saaiplaas TSF showing the routing of the existing pipelines. The only adjacent land use is mining. The area can be described as moderately transformed with modified vegetation and grassland with scattered aliens.</p> |



| | | | |
|---|---|---|--|
| <p>Aspect: General TSF area</p> | | | |
| <p>Describe area and adjacent land use:</p> | <p>View east across R730 showing the Return Water Dam (RWD) and pipelines parallel to the RWD. The adjacent land use includes poultry farming. The area can be described as significantly transformed with minimal vegetation and presence of alien species.</p> | <p>View south across site from the main access road towards Saaiplaas town showing isolated trees within low laying grass. The adjacent land uses include mining and grazing. The area can be described as moderately transformed with near-natural vegetation with limited alien infestation.</p> | <p>View west across site from the main access road towards Saaiplaas town showing existing pipelines, pocket of thicket vegetation and Saaiplaas TSF. The adjacent land uses include mining and grazing. The area can be described as moderately transformed with near-natural vegetation with limited alien infestation.</p> |
| <p>Aspect: General TSF area</p> | | | |
| <p>Describe area and adjacent land use:</p> | <p>View east across site from the main access road adjacent to Saaiplaas TSF showing the existing pipelines going over the road. The proposed pipelines will likely follow the same path. The adjacent land uses include mining and crop farming.</p> | <p>View west across site from the main access road toward Saaiplaas Town showing the existing pipelines going underneath the access road. The proposed pipelines will likely follow the same path. The adjacent land uses include mining and grazing.</p> | <p>The adjacent land uses in addition to the mining activities include crop farming and grazing activities.</p> |



7. Verification findings and motivation:

| Assessment for specialist studies and motivation: | | | | | |
|---|-----------------------|------------------------|----------------------|-------------------------------------|--|
| Screening Tool Specialist Study Required: | Level of Sensitivity: | Suggested Sensitivity: | Required Assessment | level of | Motivation |
| Aquatic Biodiversity | Very High | Medium | None. | <input type="checkbox"/> | A full aquatic assessment will be undertaken due to the pre-identified wetlands around the proposed development footprint. |
| | | | Compliance Statement | <input type="checkbox"/> | |
| | | | Full Assessment | <input checked="" type="checkbox"/> | |
| | | | Other | <input type="checkbox"/> | |
| Archaeological and Cultural Heritage | Low | Low | None. | <input type="checkbox"/> | A full HIA is required as Section 38 of the NHRA is triggered by the proposed activity. |
| | | | Compliance Statement | <input type="checkbox"/> | |
| | | | Full Assessment | <input checked="" type="checkbox"/> | |
| | | | Other | <input type="checkbox"/> | |
| Paleontology | Medium | Low | None. | <input type="checkbox"/> | A full PIA will be undertaken due to the medium sensitivity identified by the DFFE Screening Tool and associated protocols. |
| | | | Compliance Statement | <input type="checkbox"/> | |
| | | | Full Assessment | <input checked="" type="checkbox"/> | |
| | | | Other | <input type="checkbox"/> | |
| Agriculture Theme | Very High | Low | None. | <input type="checkbox"/> | A soils assessment will be undertaken as part of the EA. Although the proposed Brand A TSF is within a defined area and will have minimal impact on external activities outside its footprint, there are agricultural activities within close proximity of the site. |
| | | | Compliance Statement | <input type="checkbox"/> | |
| | | | Full Assessment | <input checked="" type="checkbox"/> | |
| | | | Other | <input type="checkbox"/> | |
| Terrestrial Biodiversity | High | Low | None. | <input type="checkbox"/> | Full assessment will be undertaken as part of the EIA due to the pre-identified very high sensitivity and clearance of vegetation which will be required within NEMBA listed sensitive ecosystem. |
| | | | Compliance Statement | <input type="checkbox"/> | |
| | | | Full Assessment | <input checked="" type="checkbox"/> | |
| | | | Other | <input type="checkbox"/> | |
| Animal Species | Medium | Low | None. | <input type="checkbox"/> | This will be covered by the terrestrial |



| | | | | | |
|----------------|--------|-----|----------------------|-------------------------------------|--|
| | | | | | biodiversity assessment. |
| | | | Compliance Statement | <input type="checkbox"/> | |
| | | | Full Assessment | <input checked="" type="checkbox"/> | |
| | | | Other | <input checked="" type="checkbox"/> | |
| Plant Species | Low | Low | None. | <input type="checkbox"/> | This will be covered by the terrestrial biodiversity assessment. |
| | | | Compliance Statement | <input type="checkbox"/> | |
| | | | Full Assessment | <input checked="" type="checkbox"/> | |
| | | | Other | <input type="checkbox"/> | |
| Civil Aviation | High | Low | None. | <input checked="" type="checkbox"/> | Civil Aviation Assessment will not be undertaken as although there is Harmony Airport FAHA approximately 3km south of the development site, the Airport has since been discontinued. In addition, the proposed development blends in with the existing land uses in the area and there is no anticipated impacts on civil aviation emanating from the project. |
| | | | Compliance Statement | <input type="checkbox"/> | |
| | | | Full Assessment | <input type="checkbox"/> | |
| | | | Other | <input type="checkbox"/> | |
| Defence | Medium | low | None. | <input checked="" type="checkbox"/> | Defence Impact Assessment will not be undertaken. There are no military bases / facilities present within the vicinity of the project site. The nearest defense facility is the military base in Kroonstad, approximately 60km northeast of the site. |
| | | | Compliance Statement | <input type="checkbox"/> | |
| | | | Full Assessment | <input type="checkbox"/> | |
| | | | Other | <input type="checkbox"/> | |

Guidance notes:

- An applicant intending to undertake an activity identified in the scope of this protocol, on a site identified by the screening tool as being of “very high” or “high” sensitivity for terrestrial animal species must submit a Terrestrial Animal Species Specialist Assessment Report.
- An applicant intending to undertake an activity identified in the scope of this protocol on a site identified by the screening tool as being of “medium sensitivity” for terrestrial animal species must submit either a Terrestrial Animal Species Specialist Assessment Report or a Terrestrial Animal Species Compliance Statement, depending on the outcome of a site inspection undertaken in accordance with paragraph 4.
- An applicant intending to undertake an activity identified in the scope of this protocol on a site identified by the screening tool as being of “low” sensitivity for terrestrial animal species must submit a Terrestrial Animal Species Compliance Statement.
- Where the information gathered from the site sensitivity verification differs from the screening tool designation of “very high” or “high”, for terrestrial animal species sensitivity and it is found to be of a “low” sensitivity, then a Terrestrial Animal Species Compliance Statement must be submitted.
- Where the information gathered from the site sensitivity verification differs from the screening tool designation of “low” terrestrial animal species sensitivity and it is found to be of a “very high” or “high” terrestrial animal species sensitivity, a Terrestrial Animal Species Specialist Assessment must be conducted.
- If any part of the development falls within an area of confirmed “very high” or “high” sensitivity, the assessment and reporting requirements prescribed for the “very high” or “high” sensitivity, apply to the entire development footprint. Development footprint in the context of this protocol means, the area on which the proposed development will take place and includes the area that will be disturbed or impacted.