March 2018

SABAJO PROJECT

ENVIRONMENTAL AND SOCIAL IMPACT ASSESSMENT

Section 8
Maps

Report No. 1669326-7000
# Maps

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TEMPATI CREEK BRIDGE - LONGITUDINAL SECTION

WEST - SABAJO

18000
18000
18000
18000

Existing groundlevel

Concrete deck
Prefab concrete Girder

Steel piles Ø600 (cylindrical)
Length=22 m

Prefab concrete girder

Approach road

Sheet pile anchor wall

Sheet pile structure Type AZ 26

Existing soil

1669326 2-4 Haul-Road-Bridges_Rev0.mxd
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LEGEND

BRIDGE LOCATION
ROAD
LOCAL ROAD
WATERCOURSE
POTENTIAL PROJECT ACCESS ROAD
EXPLOITATION CONCESSION BOUNDARY
PROJECT PHYSICAL IMPACT AREA
MERIAN MINE EXISTING AND APPROVED FOOTPRINT

LOCATION MAP

REFERENCES:
LARGE SCALE BRIDGE SECTIONS PROVIDED BY FIRM ENGINEERING, SEPTEMBER 28, 2017.

CONSULTANT
PROJECT NO.
CONTROL
REV.
MAP
YYYY-MM-DD
DESIGNED
PREPARED
REVIEWED
APPROVED

SABAJO PROJECT ESIA

SABAJO-MERIAN HAUL ROAD BRIDGE LONGITUDINAL SECTIONS

CLIENT
LOCATION MAP AND PROFILES NOT TO SCALE

NEWMONT SURINAME

LOCATION MAP

LOCATION MAP

LEGEND

BRIDGE LOCATION
ROAD
LOCAL ROAD
WATERCOURSE
POTENTIAL PROJECT ACCESS ROAD
EXPLOITATION CONCESSION BOUNDARY
PROJECT PHYSICAL IMPACT AREA
MERIAN MINE EXISTING AND APPROVED FOOTPRINT

CONSULTANT
PROJECT NO.
CONTROL
REV.
MAP
YYYY-MM-DD
DESIGNED
PREPARED
REVIEWED
APPROVED

SABAJO PROJECT ESIA

SABAJO-MERIAN HAUL ROAD BRIDGE LONGITUDINAL SECTIONS

CLIENT
LOCATION MAP AND PROFILES NOT TO SCALE

NEWMONT SURINAME
Note: Elevation in meters with respect to mean sea level

LEGEND
- Interbedded and Blackshale (IBS)
- Greywacke (SGw)
- Sedimentary Breccia (BxS)
- Andesite (AN)
- Dacite (DA)
- Cassador Fault
- Ore body

CLIENT
NEWMONT SURINAME LLC

PROJECT
SABAO PROJECT ESHIA
HYDROGEOLOGY BASELINE

CONSULTANT

TITLE
GEOLOGIC CROSS-SECTION A - A'

PROJECT NO. 1669326
PHASE 5000
REV. 0
MAP 4.6-2
Note: Elevation in meters with respect to mean sea level

LEGEND
- Interbedded and Blackshale (IBS)
- Greywacke (SGw)
- Sedimentary Breccia (BxS)
- Andesite (AN)
- Dacite (DA)
- Intermixed Volcanoclastic Sediments
- Cassador Fault
- Ore body

CLIENT
NEWMONT SURINAME LLC

PROJECT
SABAJO PROJECT ESHIA
HYDROGEOLOGY BASELINE

CONSULTANT
GOLDER

TITLE
GEOLOGIC CROSS-SECTION B - B'

PROJECT NO. 1669326
PHASE 5000
REV. 0
MAP 4.6-3

PATH: https://golderassociates.sharepoint.com/sites/12266g/Technical Work/Phase 3000 Data Analysis & Reporting/Hydrogeology Baseline/ESIA Section/Figures | FILE NAME: Cross Section Figures_3.xlsx
LEGEND
- SURFACE WATER MONITORING LOCATION
- GROUNDWATER CONTOUR ELEVATION (M AMSL)
- INFERRRED GROUNDWATER CONTOUR ELEVATION (M AMSL)
- GROUNDWATER DIRECTIONAL ARROW
- GROUNDWATER MONITORING LOCATION
- WATER LEVELS (M AMSL) AUGUST 2017

MONITORING WELL
TEST WELL

LOCAL WATERSHED
WATERCOURSE

PROPOSED PROJECT FOOTPRINT
- PIT
- STOCKPILE
- WASTE ROCK STORAGE FACILITY
- SURFACE FACILITIES
- LANDFILL
- ROAD
- WATER MANAGEMENT BERM
- WATER MANAGEMENT POND

REFERENCES:
1. COORDINATE SYSTEM: WGS 1984 UTM ZONE 21N
2. BASE DATASET AND TOPOGRAPHY PROVIDED BY NEWMONT

CONSULTANT: NEWMONT SURINAME, LLC

TITLE: SABAJO PROJECT ESIA

PROJECT AREA GROUNDWATER ELEVATIONS – AUGUST 2017

COORDINATE SYSTEM: WGS 1984 UTM ZONE 21N
BASE DATASET AND TOPOGRAPHY PROVIDED BY NEWMONT

NEWMONT SURINAME, LLC

SABAJO PROJECT ESIA

CONTRIBUTED BY:

REVISED:
APPROVED:

GOLDER

REVISED:
APPROVED:

6/28/2018
0

SCALE:
1:20,000

4 - 4
Map 4.11-4  Key Biodiversity Areas Closest to Sabajo are Brownsberg Nature Park and Nassau Mountain (Source: IBAT)
Map 4.11-5  Location of Protected Areas Nearest Sabajo (Source: IBAT)
Map 4.11-6  Aquatic Ecology Sampling Locations; Regional Background Sites (Source: ESS/HGA)
LEGEND
+ RECEPTOR
ACCESS ROUTE ROAD SEGMENT

CLIENT
NEWMONT SURINAME

PROJECT
SABAJO PROJECT ESIA

TITLE
PROJECT ACCESS ROUTE GENERIC MODEL DOMAIN

CONSULTANT
GOLDER

REFERENCE(S)
BASE DATA AND TOPOGRAPHY PROVIDED BY NEWMONT. IMAGERY OBTAINED FROM COPERNICUS SENTINEL DATA AUGUST 23, 2017.
DATUM: WGS84 PROJECTION: UTM ZONE 21

REVISION HISTORY
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IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: ISO A4

CONSULTANT
GOLDER

PROJECT NO.
1669326

PATHE
0

ACTIVE
0

MAP
5.2-2
### SABAJO Project ESIA

**Title:** Total Effects Case Maximum 24-Hour PM10 Concentrations

**Project No.:** 1669326

**Consultant:** Golder

**Designed:** 2018-02-27

**Prepared:** GJ

**Reviewed:** AL

**Approved:** GJ

**Reference(s):**
- Base data and topography provided by Newmont. Imagery obtained from Copernicus Sentinel data August 23, 2017.
- Datum: WGS84, Projection: UTM Zone 21

**Scale:** 1:200,000

**Author:** GJ

**Printed on:** 2018-02-27 at 5:57:41 PM

**Measurement:**
- WHO AAQG = 50 μg/m³

**Legend:**
- Road
- Local Road
- ATV Trail
- Watercourse
- Waterbody
- Study Area Community
- Air Analysis Domain
- Potential Project Access Road
- Exploitation Concession Boundary
- SabaJO Project Physical Impact Area

**Concentration (μg/m³):**
- < 20
- 20 - 25
- 25 - 35
- 35 - 50
- > 50

**Map Reference:** I:\2016\1669326\Mapping\MXD\Air\FINAL\1669326_AIR_ESIA_Map5-2-3_5-2-8_CumulativeEffects_Rev0.mxd
COMPAGNIE KREEK
DREPADA
BOSLANTI
SANTA BARBARA
MARGO
MAROWIJNE RIVER
BROKOPONDO
SURINAME RIVER
VILLAGE BALINGSOELA
VILLAGE TAPPOIPA
VILLAGE ASIGRONG
VILLAGE BROKOPONDO CENTRUM
VILLAGE AFOBACA CENTRUM

LEGEND
ROAD
LOCAL ROAD
ATV TRAIL
WATERCOURSE
WATERBODY
STUDY AREA COMMUNITY AND
AIR ANALYSIS POINT
STUDY AREA COMMUNITY
MAXIMUM POINT OF IMPINGEMENT
POTENTIAL PROJECT ACCESS ROAD
AIR MODELLING DOMAIN
EXPLOITATION CONCESSION BOUNDARY
SABAJO PROJECT PHYSICAL IMPACT AREA

CONCENTRATION (µg/m³)
< 10
10 - 15
15 - 20
20 - 25
> 25
WHO AAQG = 25 µg/m³

BASIS DATA AND TOPOGRAPHY PROVIDED BY NEWMONT. IMAGERY OBTAINED FROM COPERNICUS SENTINEL DATA AUGUST 23, 2017.
DATUM: WGS84
PROJECTION: UTM ZONE 21
SCALE: 1:200,000

COMPANY: GOLDER

SABAJO PROJECT ESIA

TOTAL EFFECTS CASE MAXIMUM 24-
HOUR PM₁₀ CONCENTRATIONS

GOLDER ENGINEERS SURINAME

CONTRACTOR
SABAJO PROJECT ESIA

TOTAL EFFECTS CASE MAXIMUM 24-
HOUR PM₁₀ CONCENTRATIONS

PATH: I:\2016\1669326\Mapping\MXD\Air\FINAL\1669326_AIR_ESIA_Map5-2-3_5-2-8_CumulativeEffects_Rev0.mxd
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IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: ANSI B
**LEGEND**
- **STUDY AREA COMMUNITY**
- **OTHER COMMUNITY**
- **DISTRICT BOUNDARY**
- **INTERNATIONAL BOUNDARY**
- **PAVED ROAD**
- **UNPAVED ROAD**
- **WATERCOURSE**
- **WATERBODY**
- **POTENTIAL PROJECT ACCESS ROAD**
- **SABAJO PROJECT FOOTPRINT**
- **AIR AND NOISE EFFECTS STUDY AREA**
- **REGIONAL WATERSHED**

**TOTAL TRAFFIC NOISE LEVEL PREDICTION (dBA)**
- <30
- 30-35
- 35-40
- 40-45
- 45-50
- 50-55
- >55

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**REFERENCES:**
- BASE DATA AND TOPOGRAPHY PROVIDED BY NEWMONT.
- DATUM: WGS84
- PROJECTION: UTM ZONE 21

**NEWMONT SURINAME**

**SABAJO PROJECT ESIA**

**ROADSIDE NOISE RESULTS**
LEGEND
- PAVED ROAD
- UNPAVED ROAD
- ATV TRAIL
- WATERCOURSE
- WATERBODY
- POTENTIAL PROJECT ACCESS ROAD
- EXPLOITATION CONCESSION BOUNDARY

CLIENT
NEWMONT SURINAME

PROJECT
SABAJO PROJECT ESIA

REFERENCE(S)
BASE DATA AND TOPOGRAPHY PROVIDED BY NEWMONT. IMAGERY OBTAINED FROM COPERNICUS SENTINEL DATA AUGUST 23, 2017.

DATUM: WGS84 PROJECTION: UTM ZONE 21
**LEGEND**

- **GROUND WATER MONITORING LOCATION**
- **LOCAL ROAD**
- **WATERCOURSE**
- **EXPLOITATION CONCESSION BOUNDARY**
- **DRAINAGE DIVIDE**

**PROJECT FOOTPRINT**

- **PIT**
- **STOCKPILE**
- **WASTE ROCK STORAGE FACILITY**
- **SURFACE FACILITIES**
- **LANDFILL**
- **ROAD**

---

**CLIENT**

**NEWMONT SURINAME**

**PROJECT**

**SABAJO PROJECT ESIA**

**TITLE**

**PREDICTED RADIUS-OF-INFLUENCE FROM DEWATERING ACTIVITIES AT SABAJO PIT 1 AT END OF MINING (YEAR 11)**

---

**CONSULTANT**

**GOLDER**

**PROJECT NO.**

1669326

**CONTROL**

0

**REV.**

MAP

5.5-1

**NOTE(S)**

K = HYDRAULIC CONDUCTIVITY, M/S = METERS PER SECOND, MM/YR = MILLIMETERS PER YEAR, ANISOTROPY = RATIO OF THE VERTICAL K TO THE HORIZONTAL K, H0 = INITIAL SATURATED THICKNESS OF THE ULTIMATE PIT WALL (PRE-MINING)

**REFERENCE(S)**

BASE DATA AND TOPOGRAPHY PROVIDED BY NEWMONT.

DATUM: WGS84 PROJECTION: UTM ZONE 21

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**Path:** I:\2016\1669326\Mapping\MXD\Hydrogeology\FINAL\1669326_HYDG_Fig5-5-1_Pit1-Dewatering_Rev0.mxd

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Bulk K = 2.7 x 10^{-7} m/s
Recharge = 50 mm/yr
Anisotropy = 0.1
H0 = 280 m

---

Bulk K = 2.7 x 10^{-7} m/s
Recharge = 50 mm/yr
Anisotropy = 0.1
H0 = 296 m
Project Access Road and Forestry Concessions

**References:**
- Base data, Topography and Forestry Concessions provided by Newmont.
- Datum: WGS84, Projection: UTM Zone 21

**Legend:**
- Road
- Local Road
- Watercourse
- Waterbody
- Potential Project Access Road
- Sabajo Project Physical Impact Area
- Merian Mine Existing and Approved Footprint
- Merian Exploitation Concession Boundary

**Project:**
- Sabajo Project ESIA

**Client:**
- Newmont Suriname

**Consultant:**
- Golder

**Project No.:**
- 1669326

**Des. Date:**
- 2018-02-27

**Drawn By:**
- GJ

**Prepared By:**
- GJ

**Reviewed By:**
- GJ

**Approved By:**
- GJ

**Printed By:**
- GJ

**Date Printed:**
- 2018-02-27

**Time Printed:**
- 6:32:09 PM

**Project Access Road and Forestry Concessions: Project Image Reference 5.9.1**
NEWMONT SURINAME
SABAJO PROJECT ESIA

WASTE ROCK STORAGE FACILITY AND STOCKPILE VISIBILITY

NOTE(S):
WASTE ROCK STORAGE FACILITY HEIGHTS FOR SANTA BARBARA AND MARGO WERE ASSUMED TO BE 65M ABOVE AVERAGE GROUND ELEVATION WITHIN THE FEATURE FOOTPRINT.

REFERENCES:
BASE DATA, PROJECT DATA AND TOPOGRAPHY PROVIDED BY NEWMONT.
DATUM: WGS84 PROJECTION: UTM ZONE 21