Citinickel Mines
AND DEVELOPMENT CORPORATION

2024

ENVIRONMENTAL PROTECTION AND ENHANCEMENT PROGRAM

CITINICKEL MINES AND DEVELOPMENT CORPORATION
TORONTO AND PULOT NICKEL MINING PROJECTS
MPSA NO. 229-2007-IVB

BARANGAY BATO-BATO, NARRA AND
BARANGAY PULOT INTERIOR, SOFRONIO ESPAÑOLA, PALAWAN

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1. CORPORATE DATA

Project Name:	**TORONTO NICKEL MINING PROJECT (TNMP)**
Company Name:	**CITINICKEL MINES AND DEVELOPMENT CORPORATION (CMDC)**
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Contact Person:	**ATTY. GIOAN FERNAND A. LEGASPI** President **MS. PAMELA P. MIGUEL** Vice President for Admin & Operations **ENGR. JULIUS B. COSMIANO** Resident Mine Manager

2. PROJECT DESCRIPTION

2.1. Project Details

The Citinickel Mines and Development Corporation's (CMDC) Toronto Nickel Mining Project (TNMP) is covered by the following permits:

Mining Tenement No.:	MPSA No. 229-2007-IVB
Date Approved:	January 3, 2007
Environmental Compliance Certificate No.:	ECC Reference No. 1006-0021
Production Capacity	2,000,000 DMT Nickel Ore per year
Strategic Environmental Plan (SEP) Clearance No.:	LSMO-080422-036

2.1.1. Contract Area

Table 1. Project Contract Area Coordinates

Parcel 1		
Corner	Latitude	Longitude
1	$9^0$14'50.09"	$118^0$15'44.01''
2	$9^0$14'50.09"	$118^0$14'51.59"
3	$9^0$13'58.01"	$118^0$14'51.59"
4	$9^0$13'58.01''	$118^0$15'17.80
5	$9^0$14'24.05''	$118^0$15'17.80"
6	$9^0$14'24.05"	$118^0$1 5'44.01"
Area = 192.0000 hectares		
Parcel 2		
1	$9^0$13'40.97''	$118^0$16'36.43"
2	$9^0$13'40.97"	$118^0$14'51.59"
3	$9^0$12'48.89"	$118^0$14'51.59''
4	$9^0$12'48.89"	$118^0$15'44.01''

5	$9^0$12’22.85’’	$118^0$15’44.01
6	$9^0$12’22.85’’	$118^0$16’10.22’’
7	$9^0$12’48.89’’	$118^0$16’10.22’’
8	$9^0$12’48.89”	$118^0$16’36.43”
Area = 576.0000 hectares		
Total Area = 768 hectares		

2.1.2. Project Location

The Project is located in Barangay Bato-bato (San Isidro), Municipality of Narra, Palawan. It is centered at coordinates 9°14’50.09’’ to 9°12’48.89’’N and 118°15’44.01’’ to 118°16’36.43’’E. The project area is situated 150 kilometers south of Puerto Princesa, Palawan and 6 kilometers from the National Highway.

From Manila, the project site can be accessed through a direct one- hour flight to the capital city of Palawan, Puerto Princesa. Passengers also have the option to ride the commercial boat (e.g. 2Go) that reaches Puerto Princesa after a 24-hour journey.

When traveling from Puerto Princesa City via land trip, the project site can be accessed by a 2-hour land trip via the south road passing through the Municipality of Aborlan. Bus companies such as RORO Bus, Cherry Bus, and some commercial utility van services also ply the area.

The project is covered by MPSA No. 229-2007-IV-B which was approved by Department of Environment and Natural Resources (DENR) Secretary Angelo T. Reyes on January 3, 2007 with two parcels totaling 768 hectares.

Figure 1 shows the General Location Map of Citinickel Mines and Development Corporation – Toronto Nickel Mining Project (CMDC – TNMP). Larger scale of figure 1 is presented in Annex A.1.

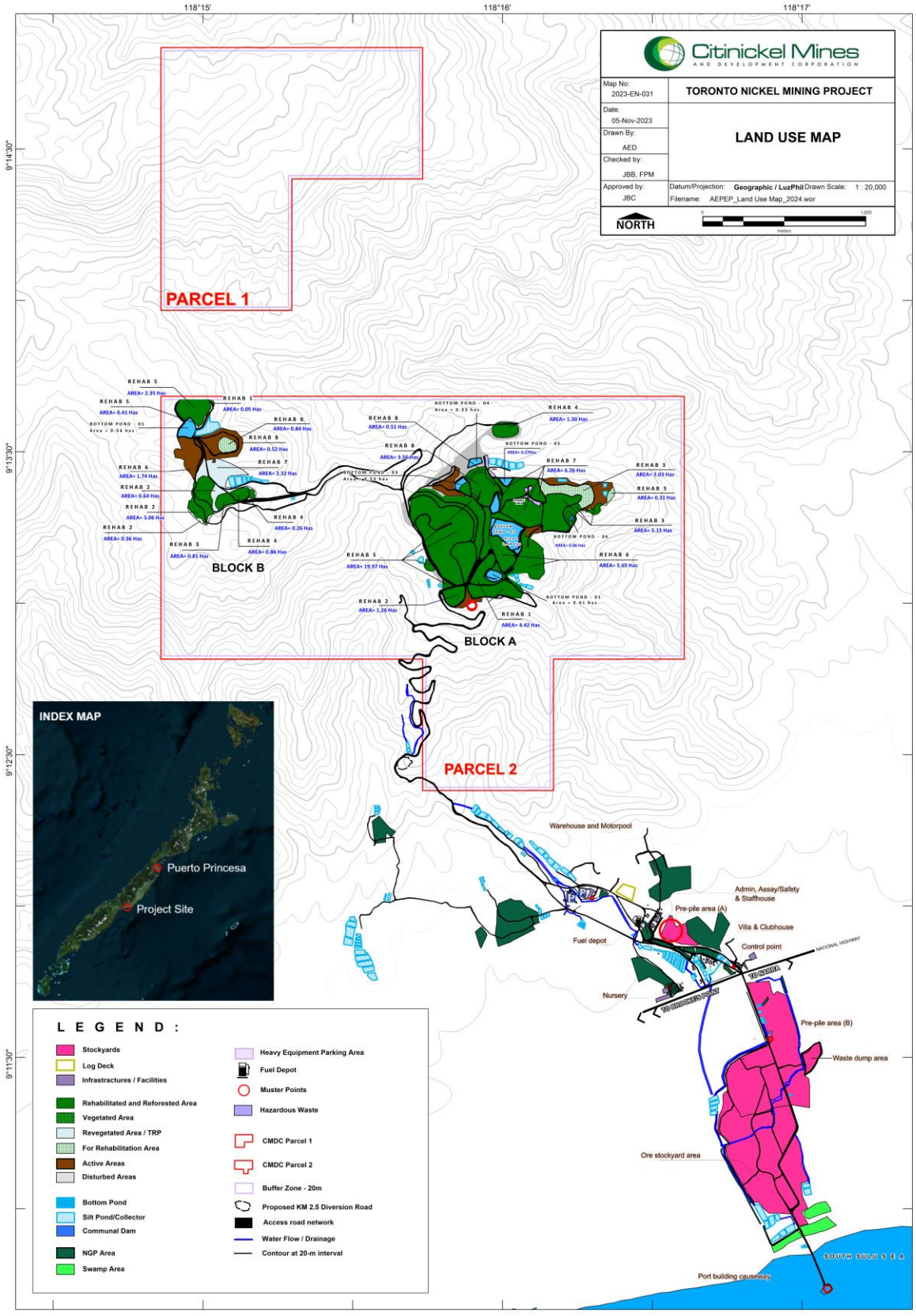


Figure 1. General Location Map

2.2. Estimated Capital Cost

The estimated initial capital expenditures and investment for the project both Narra and Española is Php 234,012,118.78. Breakdown and details of the aforementioned amount are shown in Table 2 below:

Table 2. Details of the Initial Capital Expenditures

Particulars	Cost (PHP)
Exploration Drilling	12,320,000.00
Land Acquisition	3,745,500.00
Mobilization/Demobilization	17,250,000.00
Land clearing and site preparation	5,609,297.50
Road Construction	6,339,375.00
Safety and health Management	244,090.00
Environmental cash fund	4,219,600.00
Environmental Remediation	21,493,383.00
Causeway Construction	4,600,000.00
Stockyard Development	6,265,200.00
Civil Works	16,657,750.00
General Services	3,300,000.00
Mechanical, Electrical and Laboratory Equipment	9,328,000.00
Office Equipment	2,092,200.00
Pre/Feasibility Studies	1,100,000.00
Permitting	3,080,000.00
EIS/ECC Acquisition	1,650,000.00
Occupation Fee	84,480.00
Working Capital	114,633,242.58
TOTAL	**234,012,118.78**

Ten percent (10%) of the aforesaid Initial Capital Expenditures was used by the Company in the construction and installation of the necessary environmental control facilities such as siltation pond, drainage canal, check dams, seedling nurseries and mine rehabilitation research facilities, purchase of water truck for dust prevention, etc. The allotted budget based on the 10% initial CAPEX is **23,401,211.878** Pesos.

2.3. Minerals (Type of Minerals Mined)

The minerals to be produced or mined in the project area is nickel ore with average grade of 1.40% Nickel and other associated metal and minerals such as cobalt and iron.

2.4. Mining Method

The project pertains to the mining of laterite composed of limonite and saprolite ores. Figure 2 shows the active mining area in Block A, including the corresponding coordinates embedded in the picture;

Figure 2. Active area in Block A

Moreover, limonite and saprolite mineral deposit requires surface mining method. The development scheme is as follows:

- Construction of access roads and/or modification of existing mine roads. Since there are already access roads that were developed from a previous small scale mining, road widening and reduction of grade or rerouting of some portions will be done. The road construction or improvement necessitated the utilization of bulldozers, grader, front-end loaders, compactor, excavator and hauling trucks (dump trucks).

- Clearing of the ore zone of vegetation. The ore zone planned to be mined is cleared of existing shrubs, bushes, trees and other vegetation.

- Stripping of the overburden. It consists of removal of topsoil, subsoil and/or waste rock and debris using hydraulic excavators or shovels. Removal of the overburden exposes the mineralized nickel ore which is mined by benching with excavators and shovels.

- Construction of benches and access ramps.

  Contour mining method will be used. It is one of the surface mining methods used in the Philippines. In this project, contour method usually has the following features:

  - 3-meter bench height
  - Multi-level mining that provides flexibility in handling various grades and tonnages
  - Mined-out areas can be used as waste dumps and bottom ponds.
  - Multiple mining areas can be programmed as the need arises.

  Areas will start from highest elevation progressing downwards to lower elevation. Earth-moving equipment like backhoes, excavators and loaders in combination with dump trucks will be utilized. All run-off mine ores (limonite

and saprolite) will be hauled passing to sampling stand heading to solar drying stockyards or Ore Stockyard areas in preparation for shipment.

Bench Parameter (Figure 3):

a. Bench height : 3 meters
b. Bench width : 5 meters
c. Bench slope : <80˚
d. Pit slope : <70˚
e. Road width : 12m wide

Figure 3. Block A Rehab 6 benching

2.5. Ore Stockpiling

The ore is piled at pre-pile yard area according to the classification resulting from the segregation from the mine. Each pre-pile consists of 10 truckloads on which every truck shall be sampled for final reclassification. In this stage the ore is also subjected for sun drying to reduce its moisture content. Then, it shall be transferred to an ore stockyard.

The stockpile on ore stockyard area is ramp and cliff type of structure where additional materials will be pushed on the edge making the elevation higher on

each dumping. This process enables the separation of fine ore (equal or below 300mm in diameter) from boulders (above 300mm in diameter). Identified boulders having low nickel content shall be considered as waste and will be used for utility works. Medium to high grade boulders will undergo a manual crushing and shall be stockpiled accordingly.

Stockpiled soil and other waste materials will also be susceptible to erosion during heavy rain which may contribute to the siltation. This might affect the quality of nearby water bodies especially the Sulu Sea. To address such, drainage canal was constructed within the perimeter of ore stockyard area which engineered to allow run-offs to be directed to silt collector sumps and siltation ponds prior to discharge to the receiving water bodies thus mitigate the impact of siltation.

2.6. Shipping/Port Facility

Toronto Nickel Mining Project have its own shipping and port facilities with a minimum 300-meter-long by 16 meters' width rock-file causeway.

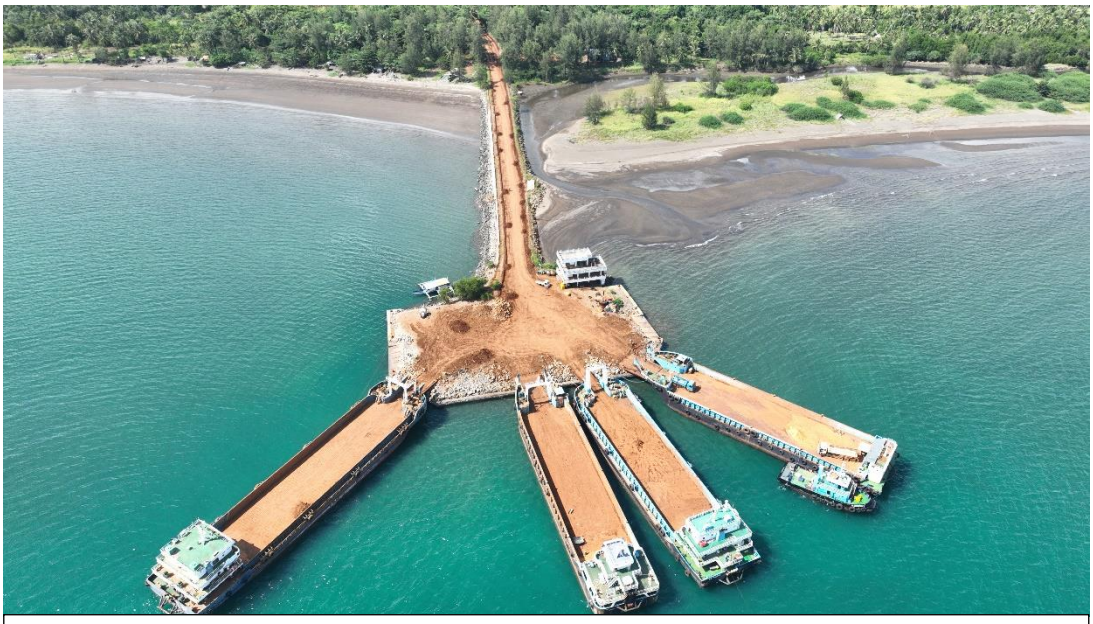


Figure 4. Port Facility

Ore in the existing ore stockyard that meet buyer's ore requirements/specifications will be hauled directly by dump trucks to port and will be loaded to Land Carrier Transport (LCT) with an average capacity of 1,260 WMT. Ore from the LCT, on

the other hand, will be transported to International Vessel (buyer) with a minimum volume of 30,000 WMT capacity for direct delivery in foreign market such as China, Japan and Australia.

2.7. Estimated Production

As reflected to the 3-Year Development/Utilization Work Program (YD/UWP), the estimated annual production of Toronto Nickel Mining Project for the year 2024 is 1,100,000 Wet Metric Tons (WMT). The computed overburden or waste stripping ratio is mostly 1:3**.**

2.8. Plant Process

CMDC has no provision yet for the processing of nickel ore. Nickel ore will be directly shipped to foreign market such as China, Japan and Australia.

2.9. Proposed Life of the Project

The Company's operation is around twelve (12) years old since started development in the 2nd Quarter of 2011. Based on the reported ore reserve and the annual projected production, TNMP shall be able to continue for another ten (10) years. Mine life of TNMP is extended due to the release of the amended SEP Clearance No. LSMO-080422-036 dated August 4, 2022 covering Block B located in Parcel 2, and portion of Parcel 1.

2.10. Mineral Reserves/Resources

See table 3 for the latest submitted Mineral Resource/Reserve Inventory Report last 3rd Quarter 2023 for Toronto Nickel Mining Project.

Table 3. Toronto Nickel Ore Reserve

Resource Inventory		
Resource Classification	**WMT**	**Grade/Assay (Ni) (Primary Mineral)**
Measured	2,797,745.89	**1.50**
Indicated	14,439,300.00	**-**
Inferred	19,232,123.00	**-**
Total/Average	**36,469,168.89**	**-**

2.11. Potential for Additional Reserves

Toronto Nickel Mining Project's mining claim is 768 hectares with two (2) Parcel. Parcel 1 has potential to increase the company's ore reserve. Currently, development in-fill drilling is being conducted within the areas in Parcels 1 & 2 that are covered of the amended Strategic Environmental Plan (SEP) Clearance issued by the Palawan Council for Sustainable Development (PCSD).

2.12. Accessibility and Transportation

2.12.1. Road (Preference and Alternatives)

From Manila, the project site can be accessed through a direct one- hour flight to the capital city of Palawan, Puerto Princesa. Passengers also have the option to ride the commercial boat that reaches Puerto Princesa after a 24-hour journey (Figure 4). When traveling from Puerto Princesa City via land trip, the project site can be accessed by a 2-hour land trip via the south road passing through the Municipality of Aborlan. Bus companies such as RORO Bus, Cherry Bus, and some commercial utility van services also ply the area.

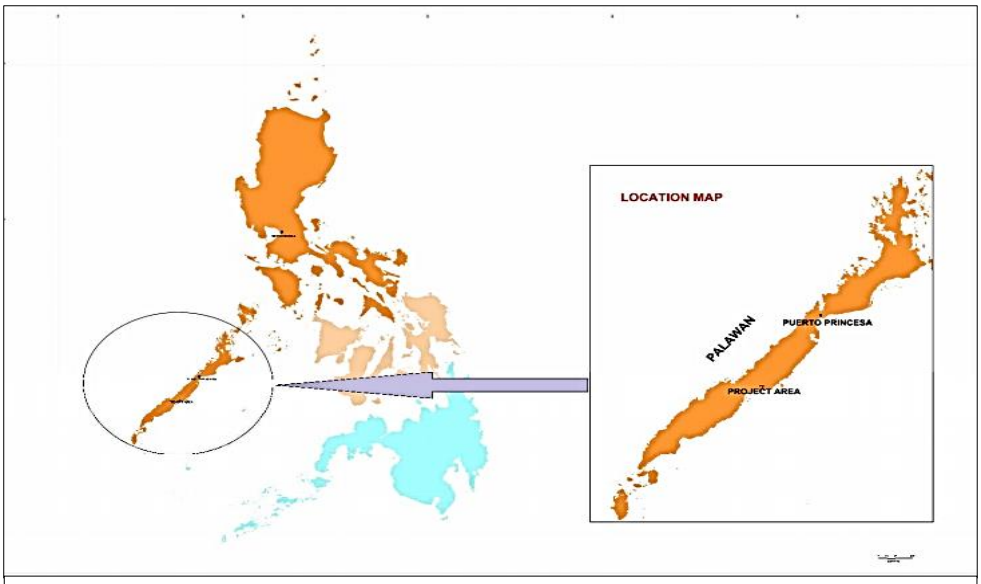


Figure 5. Location Map of Project Area

2.13. Land Used and Summary of Disturbed Areas

As mentioned, CMDC-TNMP's mining claim is 768 hectares with two (2) parcels. Out of 768 hectares, 89.87 hectares is classified as disturbed areas while the remaining 678.13 hectares is undisturbed areas as of November 5, 2023. Disturbed areas are categorized by the company in accordance with the definition specified at Section 4 of DAO 2018-19 otherwise known as *"Guidelines for Additional Environmental Measures for Operating Surface Metallic Mines*." Summary of Land-used within MPSA is presented in Table 4 while the summary of disturbed areas is reflected in Table 5.

Table 4. Land-Used of CMDC-TNMP's Mining Claim

Particulars	Area (Hectares)
1. Parcel 1	
1.1 Disturbed areas	0.00
1.2. Undisturbed areas	192.00
2. Parcel 2	
1.1 Disturbed areas	89.87
1.2. Undisturbed areas	486.13
TOTAL	**768.00**

Table 5. Summary of CMDC-TNMP's Disturbed Areas

Particulars	Block A	Block B	Total (has.)
TOTAL COVERAGE OF OPEN AREAS (A+B+C)	**70.24**	**19.63**	**89.87**
A. Rehabilitation Activities			
A.1 Rehabilitated & Reforested Area (Permanent)	48.08	7.13	55.21
A.2 Temporary Revegetated Area (TRP)	0.00	2.80	2.80
SUB TOTAL	**48.08**	**9.93**	**58.01**
B. Ancillaries			
B.1 In-pit road	4.61	1.55	**6.16**
B.2 Siltation/Bottom Ponds	5.11	0.92	**6.03**
B.3 Bunk House and Parking Area	0.57	0.00	**0.57**
SUB TOTAL	**10.29**	**2.47**	**12.76**
C. Remaining Disturbed Areas			
C.1 Active Mining Areas	4.45	6.39	**10.84**
4.2 For Reforestation Area (Planting)	0.00	0.00	**0.00**
4.3 For Rehabilitation Area (Recontouring and Topsoil Matting)	2.34	0.84	**3.18**
4.4 Idle Area	5.08	0.00	**5.08**
GRAND TOTAL OF THE REMAINING DISTURBED AREA	**11.87**	**7.23**	**19.10**

2.14. Utilities

2.14.1. Power Supply

The average daily power consumption of the project is around 1,187.25 kwh/day. Palawan Electric Cooperative (PALECO) provides daily electricity requirements of the office lightings, laboratory equipment's and pier facilities

for dry docking maintenance and barge loading operations. The Company maintains generator sets powered by diesel engine which utilized when power interruption occurs as listed in table 6. These generator sets have an existing Permit to Operate No. PTO-OL-R4B-2022-06804-R issued by the DENR-Environmental Management Bureau (EMB) on August 30, 2022 valid for five (5) years.

Table 6. List of Generator Sets at Toronto Nickel Mining Project

Fire Burning Equipment	Location
1. DENYO 45 KVA	Port
2. DENYO 45 KVA	New Motorpool
3. DENYO 45 KVA	Port (Spare Unit)
4. CUMMINS 125 KVA	Powerhouse (Admin)
5. CUMMINS 250 KVA	Powerhouse (Admin)
6. AIRMAN 100 KVA	New Motorpool (Spare Unit)
7. 50 KVA CUMMINS	CMDC Clubhouse/Villa

Figure 6. Powerhouse

2.14.2. Water Supply

The estimated daily water consumption of the project is around 140.49 cubic meter/day. Water is supply from a dug well and nearby spring. Water from dug well is being pump to a water tank for distribution to company employees' barracks and offices. On the other hand, water from nearby spring is collected to water tank (filtration box) for distribution to offices and other infrastructures within the company premises not covered by water from dug well. Water for road sprinkling activity is sourced-out from the siltation ponds and bottom ponds.

Figure 7. Deep Well

Figure 8. Siphoning of Water for Road Sprinkling

2.15. Mining Equipment

2.15.1. List of Mining Equipment

CMDC-TNMP has an existing Motorpool that are responsible for the maintenance of all mining equipment.

Table 7. List of Mining Equipment (as of November 22, 2023)

Item code	Description	Quantity
a.	Backhoe	28
b.	Bulldozer	4
c.	Road Grader	2
d.	Compactor	3
e.	Dump Truck	24
f.	Wheel Loader	6
g.	Water Truck	5
h.	Fuel Truck	3
i.	Trailer Truck	1
j	Boom Truck	2
k.	Service Elf/Truck	4
l.	Service Truck (Military)	1
m.	Service Vehicle (Jeep)	1
n.	Official Vehicle	11
o.	Ambulance	1
p.	Tractor	1
q.	Landing Craft Tank (LCT)	6
r.	Tug Boat	1
s	Barge	1

Note: LCT, Tugboat and Barge are rental units

Figure 9. Motorpool

Figure 10. Parking Area

2.15.2. List of Fixed Equipment

Fixed equipment that was provided and installed in the project is seen below:

Table 8. List of Fixed Equipment

Item code	Description	Quantity
a.	Generator Set	7
b.	Xray Fluorescence (XRF)	2
c.	Drying Oven	6
d.	Crusher	2
e.	Pulverizer	1
f.	Analytical Balance	1
g.	Top loading Balance	2

2.16. Workforce Information

2.16.1. Total Operational Workforce

A total of Three Hundred Thirteen (313) personnel are employed for the operation. For camp security, a total of twenty-eight (28) security guards

were hired through a security agency. They work on two (2) shifts (7:00 am to 7:00 pm, and 7:00 pm to 7:00 am).

Mine Environmental Protection and Enhancement Office (MEPEO) is the one responsible for environmental-related programs. Mine Safety and Health Office which is responsible for implementing the safety rules and regulations and to oversee any unsafe act and unsafe condition in work place. Both offices are directly reporting to the Resident Mine Manager. Table of organization for the project is elaborated in Annex B.1.

2.16.2. Housing Option

Company officials (e.g. Managers, Senior and Junior Staff) are provided with staff house located within the property of the Company. Skilled workers who are from far places are provided with bunkhouse while those locally-hired reside in the host and neighboring barangays. Security personnel also reside in bunkhouse within the vicinity of the Company.

Figure 11. Staffhouse Building

2.17. Development Schedule

2.17.1. Site Development and Production Start-Up

The project started its development in the 2nd quarter of year 2011. The approximate volume of production for the year 2011, 2012, 2013, 2014, 2015, 2016, 2017, 2018, 2019, 2020, 2021, 2022, & 2023 (until September 2023) were 261,192 WMT, 1,359,505.25 WMT, 1,150,275.361 WMT, 1,652,494.80 WMT, 968,866.80 WMT, 585,556.27 WMT, 350,511.90 WMT, 264,741.60 WMT, 133,194.10 WMT, 67,045.50 WMT, 1,063,100.00 WMT, 819,814.90 WMT, and 636,328.00 WMT, respectively.

For the year 2024, the project will sustain its production to attain the target production of 1,100,000 Wet Metric Tons (WMT). Table 9 shows the Development and Production Gantt Chart.

Table 9. Development and Production Gantt Chart

TNMP												
Activity	**2024**											
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Tree cutting and Earth-balling												
Clearing of Vegetation												
Stripping and Bench Forming												

TNMP Mine Production Schedule														Estimations	
Calendar Year	Month												Total Volume (WMT)	Remarks	
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec		Mining Days	Daily Average (WMT)
2024	104,762	104,762	104,762	104,762	104,762	104,762	78,571	78,571	78,571	78,571	104,762	78,571	1,100,000	210	5,238

3. SPECIFIC STRATEGY TO LIMIT AND CONTROL THE IMPACTS

3.1. Land Resources and Vegetation

Opening a mine particularly using stripping and bench mining method will necessitate clearing of vegetation to extract the nickel ore. The result of the development is a temporary land disturbance which will eventually be rehabilitated and reforested.

The specific disturbance and impact to the environment are as follows:

a. Land deformation and creation of barren surface that will be exposed to rainfall and heat of the sun;

b. Eventually, during rainy season, open space consisting of road cuts, mine benches/mine openings, will be disturbed and process of erosion and siltation will be active on this barren land surface;

c. Potential contamination of creeks and rivers with laterites; and

d. Potential exposure of dry land surface with loose soil particles to wind and heat producing dust and/or particulates which will be aggravated with the passage of fleet of haul trucks.

As required by the laws, the above identified land disturbances and impact will be fully addressed with appropriate environmental mitigating measures as mining of nickel advances.

3.1.1. Progressive Rehabilitation

3.1.1.1. Top Soil and Subsoil Management

The Company practices the progressive rehabilitation method. This involves the staged restoration of the mined-out areas during the exploitation and ore extraction phases. Mine wastes produced during the stripping and extractions are utilized for contouring and soil matting.

Figure 12. Backfilling, Recontouring and Topsoil Matting in Block A

On the other hand, recovered mine waste from desilting of silt control structures is temporary stored in waste dump area (see coordinates in Annex A.7). Furthermore, appropriate mitigating measures in waste dumping area such as regular maintenance of its perimeter canal will be continuously implemented.

Figure 13. Aerial View of Waste Dump Area

Top soil has the highest concentration of organic matter and it is where most of the biological soil activities occur, hence, it is a protocol of the Company to utilize the top soil to return the productivity of the mined-out/disturbed areas. On the other hand, subsoil will be also utilized, since lower percentage of organic matter and humus is still available. Using of biodegradable wastes such as dried leaves and small twigs for enrichment of soil through the process of decomposition is also being practiced. As part of the progressive rehabilitation, road embankments and other land surface no longer needed for operation had been subjected for revegetation.

In continuous compliance with DAO 2018-19 otherwise known as *"Guidelines for Additional Environmental Measures for Operating Surface Metallic Mines"*, the Company will conduct stripping activities for topsoil and subsoil collection for additional mining areas application once the STCEP application will be approved. Moreover, in compliance with the DAO 2022-04, prior to the stripping activities, soil analysis of the topsoil shall be conducted in order to determine the amount of its nutrient content. This data will be utilized in the long term progressive rehabilitation program of the company. For the year 2024, 8.53 hectares is subject for development in TNMP as reflected to Annex A.8. Stripped topsoil and subsoil shall be

stockpiled in designated areas (50 -100 meters adjacent to potential mining areas) separately for revegetation and rehabilitation purposes; Provided, that if the said soil material is not utilized within six months, the same shall be covered by vegetation or any equivalent soil conservation measures such as covering of materials using coconet or whatever scientifically applicable to retain its properties and protect soil organisms.

Moreover, the Company is also committed to rehabilitate the denuded and non-mineralized areas outside mining claims adversely affected by human-induced activities such as uncontrolled forest extraction for timber and fuel wood production, forest fires, unplanned settlements and slash-and-burn. Those were included for the continuous support of the Company to the National Greening Program (NGP) of the Government.

3.1.1.2. **Progressive Rehabilitation Program**

From year 2012 to November 26, 2023, the Company has planted 55.21 hectares of mined-out areas wherein Agoho (*Casuarina equisetifolia)* is the dominant species planted. Endemic species such as Narra, Ipil, Batino, Kupang, Malabayabas, Moning, among others, were also incorporated. Introduction of grasses, creeping vines and native ornamental trees such as Palawan Cherry, Fire Tree and Alibangbang, among others, was started. The corresponding map of the mine rehbailitation areas is presented in Annex A.2.

BEFORE
September 2022

AFTER
September 2023

Figure 14. Progress of Block A Rehabilitation Area 6

Figure 15. Aerial View of Block A Rehabilitation areas

Figure 16. Aerial View of Block A Rehabilitation Areas 1, 2, 5 & 6

Figure 17. Aerial View of Block A Rehabilitation Areas 5, 7 & 8

Figure 18. Aerial View of Block A Rehabilitation Areas 5, 6, 7 & 8

Table 10. Summary of Rehabilitation Accomplishment

Year	Area (Name)	Area (has.)	Species Planted
2012, 2019	Block A Rehabilitation 1	4.42	Narra, Agoho, Ipil, Moning, Duguan, Kansilay, Batino, Kawayan-Tinik, Ipil
2012	Block A Rehabilitation 2	1.26	Narra, Agoho, Ipil
2015, 2019, July 2020, 2022, 2023	Block A Rehabilitation 3	5.15	Agoho, Batino, Maladuhat, Malakatmon, Malapapaya, Kawayan-tinik
2015, 2016, 2017	Block A Rehabilitation 4	1.30	Agoho, Narra, Ipil, Batino
2016, 2017, 2019, 2020, 2021, 2022, 2023	Block A Rehabilitation 5	19.97	Agoho, Apitong-Baboy, Apian, Batino, Bunot-bunot, Butterfly Tree, Ipil, Malabayabas, Maladuhat, Malapapaya, Moning, Narra, Nato, Palomaria, Sandana, Supa, Udling, Fruit Trees (Bayabas, Duhat, Sampalok)
2016, 2017, 2018, 2022	Block A Rehabilitation 6	5.65	Agoho, Narra, Ipil, Batino, Mosquito Tree, Udling, Palawan Cherry, Moning
2017, 2018, 2021, 2022	Block A Rehabilitation 7	6.26	Agoho, Batino, Maladuhat, Udling, Palawan Cherry, Fire Tree, Narra, Moning
2019, 2022	Block A Rehabilitation 8	3.56	Agoho, Batino, Kandis, Malapapaya, Mancono, Nato, Sandana, Udling, Kawayan-tinik, Moning
SUB-TOTAL		**48.08**	
2016, 2022 (Coffee)	Block B Rehabilitation 1	0.05	Agoho, Ipil, Coffee
2017, 2018, 2022 (enrichment)	Block B Rehabilitation 2	3.06	Agoho, Udling, Batino, Duguan
2017	Block B Rehabilitation 3	0.81	Agoho
2016, 2022 (enrichment)	Block B Rehabilitation 4	0.86	*Acacia mangium*, Agoho, Narra
2016, 2020, 2022 (enrichment)	Block B Rehabilitation 5	2.35	*Acacia mangium*, Moning, Narra, Batino, Udling
SUB TOTAL:		**7.13**	
GRAND TOTAL		**55.21**	

Rehabilitation accomplishment as of November 5, 2023

Total Area Rehabilitated at Block A	=	48.08 hectares
Total Area Rehabilitated at Block B	=	7.13 hectares
Total Area Rehabilitated in Blocks A & B	**=**	**55.21 hectares**

Priorities for 2024 AEPEP is to rehabilitate ten (10) hectares in Block A Rehabilitation areas 5 & 8, and Block B Rehabilitation areas. Additionally, Progressive Rehabilitation Program (PRP) areas for the last three (3) years (2020-2022) will be consistently maintain. Corresponding map is presented in Annex A.3.

In compliance with the DENR Administrative Order No. 2022-04 otherwise known as *"Enhancing Biodiversity Conservation and Protection in Mining Operations*," endemic and native species found within the vicinity or untouched forest of the mine site will be the primary plant types to be continuously utilized in the rehabilitation of mined-out areas in order to restore the natural setting of the area prior to commencement of mining operation. Collection of wildlings and seeds of Mancono, Agoho, Batino, Malabayabas and Narra, among others, will continuously carried-out as part of the regular nursery operations of the Mine Environmental Protection and Enhancement Office (MEPEO) to make sure that these plants will be the main species for reforestation. The declared mined-out area will be continuously rehabilitated; enrichment planting will be conducted after the pioneer species are fully grown. After an interval of at least 1-3 years, the indigenous climax species will be introduced. Planting of introduced species will be discouraged.

Should it be necessary, site preparation such as re-contouring and top soil matting will be undertaken before the onset of the rainy season to prevent silt and sediment generation. Planting, with a spacing of two (2) meters by two (2) meters on previously-declared mined-out areas will be conducted during the rainy season as this can also help ensure high survival rate of newly transplanted seedlings. However, due to the unpredictable weather condition for the past years, land preparation works and planting will be carried-out for the whole year.

3.1.1.3. Temporary Revegetation Program

Section 5.d. ii. of DAO 2018-19 states that *"Temporary revegetation or progressive rehabilitation shall be implemented immediately on disturbed areas exceeding the maximum disturbed area limit provided based on declared annual production."* The maximum combined allowable disturbed areas for Toronto and Pulot Nickel Mining Projects (T&PNMP) based on the mining annual production rate is 60 hectares. To conform with the above DAO, Toronto Nickel Mining Project (TNMP) declared excess disturbed areas covering 12.19 hectares located in Blocks A & B mined-out areas subject for Temporary Revegetation Program (TRP) by means of planting shrubs, vines, grasses, and alike. TRP areas were accomplished planting on July 2020 as reflected to table 11. Map and Technical description is appended in Annex A.2.

Figure 19. Block B Rehab 2 TRP

Table 11. Summary of Temporary Revegetation Program Accomplishment

Month/Year	Area (Name)	Area (has.)	Species Planted
June 2019, 2021 (enrichment)	Block A Rehabilitation 6 TRP	1.05	Malakatmon, Vines
June 2020	Block B Rehabilitation 2 TRP	1.0	Itch grass, Napier, Nut sedge, Pigeon Pea
June 2020	Block B Rehabilitation 4 TRP	0.26	Tikog grass
2015, 2016, 2017	Block B Rehabilitation 5 TRP	0.55	Itch grass, Nut sedge, Pigeon Pea, Railroad vine (Palang-palang)

January 2020, May-July 2020	Block B Rehabilitation 6 TRP	3.39	Cassava, Castor oil (Makasla), Humidicola, Napier grass, Rail road vine (palang-palang), Water spinach (kangkong)
January-June 2019, June-July 2020 (enrichment)	Block B Rehabilitation 7 TRP	2.72	Cassava, Castor oil (Makasla), Minunga, Napier grass, Rail road vine (palang-palang), Water spinach (kangkong)
April-June 2019, January-June 2020	Block B Rehabilitation 8 TRP	3.22	Bagtok (Bamboo), Castor oil (Makasla), Napier grass, Rail road vine (palang-palang), Water spinach (kangkong)
TOTAL		**12.19**	

By the end of the year 2023, all TRP areas will be converted into active areas and ancillaries as stipulated to the 3 YD/UWP.

3.1.2 National Greening Program Commitment

The Company enrolled to the National Greening Program (NGP) and committed to donate or plant seedlings equivalent to the total disturbed area of the project.

CMDC has started the donations of different kinds of seedlings since the first quarter of Calendar Year 2011 to various government agencies/ offices, private sectors/ individuals, schools/ academes and nearby barangays. Aside from seedling donation, the Company is complying its commitment to the program by planting and maintaining trees in non-mining areas within the Company premises. Regular monitoring, protection and maintenance were carried-out to ensure high survival rate of the existing NGP areas.

Figure 20. Seedlings donation to CENRO Quezon and BLGU Bato-bato

The Company will continue to support the greening program of the DENR. Planting of trees within the Company premises will continue to be undertaken; planting of fruit bearing trees will be encouraged in lieu to the forest trees. Seedling donations will be extended nationwide, if possible, provided that the transportation will be shouldered by the second party.

3.1.3 Production of Large Planting Materials

Large planting materials will be considered to utilize in mined-out rehabilitation area in compliance with recommendation of Multi-Partite Monitoring Team (MMT). By year 2024, CMDC-TNMP will produce 10,000 assorted endemic seedlings and 1,200 assorted bamboo species.

Figure 21. Out-planting area in Central Nursery

3.1.4 Nursery Operation and Maintenance

CMDC-TNMP established a permanent seedlings nursery located at the camp site with a capacity of 400,000-700,000 seedlings depending on the size of potting bags to be use. Satellite nursery, with a capacity of 10,000 wildlings, was also established in the elevated area of mine site for adaptation/acclimation purposes.

Figure 22. Aerial View of Central Nursery

Figure 23. Aerial View of Satellite Nursery

For the past years, the seedlings produced were disposed either by tree planting within the tenement throughout the year or donation in compliance with the NGP. As of November 2023, the company produced 17,090 assorted

seedlings in Nursery. Table 12 shows the inventory of seedlings in the nursery as of November 25, 2023:

Table 12. Inventory of Seedlings as of November 25, 2023

At Central Forest Nursery			
Forest Trees		**Nursing Stage**	**Out-planting Stock**
1	Agoho	0	4,180
2	An-an	0	460
3	Bangkal	0	1,395
4	Batino	0	37,445
5	Baslayan	0	709
6	Bunog	0	8,545
7	Candis-candis	0	240
8	Crab Eye	0	560
9	Hambabalod	0	3,000
10	Inyam	0	405
11	Ipil	0	840
12	Maladita	0	5,931
13	Malapapaya	1,500	970
14	Mala-starapple	686	520
15	Moning	0	107,836
16	Mosquito Tree (Neem)	0	8,140
17	Narra	0	35
18	Nato	199	201
19	Sandana	0	1,730
20	Others	0	45
TOTAL		**2,385**	**183,187**
Fruit Tree			
1	Avocado	0	3
2	Cacao	0	347
3	Coffee	0	280
4	Guyabano	0	8

5	Langka	0	160
6	Lanzones	0	41
7	Lemon	0	4
8	Sampalok	0	60
9	Santol	0	115
TOTAL		**0**	**1,018**
Ground Cover/Ornamental/Others			
1	African Talisay	0	142
2	Fire Tree	0	2,701
3	Golden Shower	0	175
4	Palm	0	160
5	Palawan Cherry	0	540
6	Udling	0	4,370
TOTAL		**0**	**8,088**
Shrubs & Grasses			
1	Bagtok	457	0
2	Bamboo Bayog	16	130
3	Kawayan-tinik	0	325
4	Japanese Bamboo	64	166
5	Patong Kawayan	0	30
TOTAL		**537**	**651**
At Satellite Nursery			
Assorted Forest Trees Species		10,636	0
SUB-TOTAL		**13,558**	**192,944**
GRAND TOTAL		**206,502**	

As part of soil fertility enhancement, the Company has engaged in vermi-composting to augment the volume of fertilizers needed in the future. Carbonized and composted rice hull from the nearby rice mills are collected by the MEPEO and used as planting medium in nursery.

Figure 24. Vermicomposting facility

3.1.5 Annual Research Plan

For the year 2024, the project will be conducting research entitled "Coral Transplantation: An Essential Tools for Reef Restoration in Barangay Bato-bato, Narra, Palawan. This study is expected to accomplish on December 2025. Narrative for this research is presented in Annex C.1.

3.2 Monitoring

The MEPEO will spearhead the monitoring of all rehabilitation and reforestation program of the Company. For the year 2024, the company commissioned Third Party Consultant to conduct Rapid Biodiversity Assessment of MPSA area in CMDC-TNMP. This is in compliance with the condition stipulated to the amended SEP Clearance. Also, the company will be conducting in-house Flora & Fauna Monitoring in a semi-annual basis as part of the 2024 Environmental Research. Methodology is appended to Annex C.2.

Figure 25. In-house Flora Monitoring

3.3 Water Resources

There are Four (4) impact water resources, three (3) river systems and one (1) marine water. These are the following:

a. Balitien River (mine impact area)
b. Purok 7 Communal Dam (mine impact area)
c. Pinagduguan River (mine impact area)
d. Brgy. Bato - Bato Marine Coastal Areas (pier loading area)

3.3.2 Sediment Control

The Company has been continuously implementing siltation prevention measures such as sediment barriers and containment ponds at strategic places to avoid siltation of adjacent river systems, the Balitien, Purok 7 Communal dam, Pinagduguan River and coastal waters.

The siltation ponds are designed to contain all silted run-off mine water. This allows the silt to settle before discharging the clear effluent into nearby tributaries. The Company continues to improve these siltation prevention measures by adding more silt collector sumps whenever necessary and periodically desilting these to help maintain their holding capacities. Series of siltation ponds and siltation pond's compartments have constructed. These structures not only improved water retention within the ponds but also allowed desilting activities to be undertaken manageably at any time, even during rainy season (please see attached CMDC-TNMP Environmental Structures in Annex A.4.).

Regular desilting and maintenance of siltation ponds, bottom ponds and silt collector sumps were thoroughly conducted as scheduled or necessary to attain its maximum serviceable usage and capacity.

The silt materials from siltation ponds were hauled and temporarily stockpiled to the designated waste dumping area for future utilization. Likewise, perimeter

canal has also constructed in waste dumping area to prevent the spillage of silt to the nearby adjacent creeks/rivers.

Figure 26. Desilting of Silt Control Structures

Figure 27. Aerial View of Block A Bottom Pond 2

Figure 28. Aerial View of Admin Siltation Pond

As environmental control strategies, all avenues of run-off that may contaminate water ways are provided with drainage channels as control structures that will divert water to silt traps, sumps and eventually to silt ponds for containment. Control structures such as drainage systems and siltation ponds are intended to trap sediments, silts and reduce the velocity of runoff. Natural flow of stream/creek will be maintained.

The target schedule of desilting/maintenance of siltation control structures were reflected in the AEPEP matrix of activities including the cost of implementation hereof.

3.3.3 Slope Stabilization of Ore Stockyards (Active and Non-Active)

3.3.3.1 Low Grade Ore, Waste, and Top Soil

Stripped-off top layer of soil were recovered and used in rehabilitating the mined-out areas. Management of soil and low grade ores is included in the mine operation cost.

3.3.4 Buffer Zone Management

A 20-meter buffer zone shall be established inward from the Mining Tenement Boundary, and outward from the edges of the normal high waterline of rivers and streams that are within the Mining Tenement area. Extraction activities and facilities shall not be allowed within the said buffer zone, except for necessary access roads and bridges. Likewise, to date, there is no existing facilities within the buffer zone required to be transferred, except access road. Please see distance of the company's Ore Stockyard area (OSY) and active mining areas from the buffer zones as reflected to the maps on Annex A.5 & A.6, for reference.

3.3.5 Pier Stockyard and Temporary Stockyard

The company has no pier stockyard as temporary stockpile area for ore shipment. Presently, the pre-pile yard and ore stockyard has an area of 51.18 hectares enough to accommodate approximately 3 Million WMT of ore. The ore stockyard area has a distance of 281 meters from the coastline.

Figure 29. Aerial View of Ore Stockyard Area

3.3.6 Road Maintenance

3.3.6.1 Haulage Road (Ore Stockyard)

It is necessary for the efficient transport of nickel ore and waste materials as well as in the environmental control and safety of trucks the proper maintenance of haul roads (mine area roads and main haul road). Mine area haul road includes the access from active mining areas to pre-stockpiled and final stockpile areas, waste dumpsite and topsoil dumping areas.

Figure 30. Road maintenance activity

Haul road distances vary as nickel ore extraction advances and progressive rehabilitation is always on the top of the schedule of activity. With regards to the main haul road, year round maintenance is to be conducted by backfilling, road grading/leveling, compaction and water sprinkling. The length of the main road that connects mine site and pier is approximately six (6) kilometers.

3.3.7 Maintenance and Monitoring Activities

Regular monitoring of environmental facilities (i.e. silt collector sumps, siltation ponds, bottom ponds and dikes, embankments, water levels, color, and discharge) are continuously implemented in a daily basis to ensure the

efficiency of the structures to contain/retain the certain level of water in the siltation ponds and silt collector sumps. Replacement of gabions and geo-textile filter materials are also conducted regularly or as needed.

3.4 Ground Water

The existing mine operations do not use any toxic chemicals nor produce toxic materials such as tailings, acid drainage, among others. Hence, there is no chance of contaminating the ground water resources from the latter toxic substance.

Generated solid wastes are properly segregated, collected and disposed in a regular basis according to waste classification in compliance with RA 9003 (Ecological Solid Waste Management Act). Biodegradable waste is placed in compostable facility that utilize in Mine Rehabilitation areas; Recyclable waste is stored in Materials Recovery Facility (MRF); and Residual Waste is being disposed to the Narra Sanitary Landfill in a weekly basis since the Memorandum of Agreement (MOA) between Citinickel and LGU Narra has been approved. Furthermore, the Company also adheres strictly with the international standard stipulated in ISO 14001:2015 (Environmental Management System).

Figure 31. Color-coded trash bins around mine site

Figure 32. Material Recovery Facility (MRF)

Moreover, the Company is also strictly complying with Republic Act (R.A.) 6969 otherwise known as *Toxic Substances and Hazardous and Nuclear Wastes Control Act* of the Philippines and its Implementing Rules and Regulations (IRR). All hazardous wastes are properly stored in the temporary hazardous waste storage facility of the Company and transported/treated by the 3rd Party DENR-Accredited transporter /treater of hazardous waste. Used oil and oil-contaminated drums are stored in a 10 x 10 m open storage area with concrete and impermeable flooring provided with a standard drainage. The lowest point of the flooring is provided with oil-water separator with series of compartment. Spilled oils are washed by water and flow towards the separator compartment. The oil-water separator operates simply by the concept of difference in specific gravity. In an oil-water mixture, water, being heavier, separates forming the lower layer while the oil floats over the water. The oil layer is decanted and stored in drums while the water flows through the drain pipe towards the drainage canal.

Figure 33. Temporary Hazardous Waste Storage Facility

The Company's diesel fuel requirements are being delivered in bulk by fuel tanker and transferred to the storage tanks through pumping method. The storage tank is lined with an impervious bund-wall to contain 110% of the total volume of the tank to confine oil spillage in case of tank breakages. Likewise, the storage tank area is provided with secondary containment and oil-water separator unit.

3.5 Noise

The sources of noise pollution may come from the following operations:

a. From use of heavy equipment during mining, loading and road maintenance operation; and,

b. Passage of hauling trucks along roads adjacent to host barangays and neighboring communities and residential areas.

3.5.2 Control Strategies

Noise pollution in the project area and vicinity is expected to be well within the standard limit set by the DENR and Department of Labor and Employment (DOLE). However, as a means to further control the noise coming from the mining operation due to utilization of heavy equipment and during hauling of nickel ore from the mine site to pier, the following measures to control or limit noise within DENR Standard is being implemented:

a. Instead of using explosives in breaking hard rock portion of the mine area, hydraulic rock breakers are utilized, thereby reducing the generation of noise from explosion of explosives;

b. Series of humps along the haulage road have been constructed to force the Company and contractor's vehicles to slow down, thereby reducing noise level. Whenever necessary, silencers and mufflers are installed in machines generating uncontrollable noise levels;

c. The project site is located far away from the communities. Thus, construction of sound barriers is not necessary. However, a portion of traversed haulage road is exposed, where haulers of beneficiated ore to the ore stockyard regularly traveled during dry season. The Company

planted different kind of giant endemic species such as Agoho, Narra, among others, along the side of road network to act as sound barriers;

d. Regular maintenance, check-up and replacement of mufflers of Company vehicles and contract haulers of nickel ore were performed as scheduled to minimized the noise generation;

e. All drivers are regularly instructed during the safety talk that truck speed shall be limited to 10-20 kph when travelling within populated areas or national highway;

f. In-house noise monitoring using hand held or portable digital noise meter were regularly performed by Mine Safety and Health Department to check the level of noise in the affected areas; and,

g. Provision of ear muffs or earplugs to heavy equipment operator, whenever necessary.

3.6 Air Quality

In nickel mining and hauling operation, dust generation is the main identified impact due to very fine lateritic soil particles produced as a result of soil excavation, transportation and stockpiling. However, since the main sources are already known, its control and prevention will be one of the activities in this program. Hence, it is a mandatory requirement to have the technical information through sampling of air to determine which areas of operation is expected to exceed the DENR standard for air quality so that appropriate mitigation will be implemented.

Parameters that are necessary to be monitored is the Total Suspended Particulate (TSP) and/or Particulate Matter (PM-10) pursuant to RA 8749 otherwise known as "*Philippine Clean Air Act"* and its Implementing Rules and Regulations (IRR).

3.6.2 Control Strategies

3.6.2.1 **Dust Suppression Strategies**

During dry season and any time of the day when dust emission are noted, regular road water sprinkling are conducted to minimize the dust emission. The total length of the road (hauling and access roads) being sprayed with water is approximately 17.39 kilometers starting from the pier up to the mine haul road at the ore stockyard.

Figure 34. Road sprinkling activity

The number of water trucks of the company including rental units is eleven (11) units. There will be no specific hours of water sprinkling. It is the policy of the Company to continuously conduct water sprinkling as often as necessary which starts at 6 AM up to 7 PM. Other control measures being implemented are the following:

a. Maintaining a speed limit to 10 kph and a maximum of 20 kph;

b. Constructing road humps across the haulage road to somehow reduce the speed of hauling trucks and other vehicles;

c. Planting of trees, which act as dust curtain, along sides of the haulage road and perimeter of Ore Stockyard area;

d. Proper maintenance of haulage road through the use of road grader and road roller/compactor, bringing the road to a near paved-road status;

e. Using minimum drop height during ore loading to minimize fugitive dusts;

f. Stabilizing and re-vegetating mined areas; and

g. Planting of fast-growing trees, which act as wind breakers/dust curtain, around the open storage areas to prevent fugitive dust emission by wind action.

3.6.2.2 **Smoke Emission Strategies**

Citinickel ensure that all equipment and vehicles entering the company premises conforms to the provisions stipulated in R.A. 8749 (Philippine Clean Air Act of 1999) and it's implementing rules and regulations.

3.7 Social Issues

Social issues such as those that are raised by Non-Government Organization's (NGO's) and anti-mining groups will be addressed by the Company. Continuous Information and Education Communication (IEC) Campaign about the programs of CMDC on environmental protection, operations, social responsibility and Social Development and Management Program (SDMP) including the progressive rehabilitation strategies to address the issues and concerns of the rice farmers.

CMDC will maintain the line of communication open and transparent to the Local Government Unit (LGU), local residents, NGO's and government agencies concerned to be able to respond promptly on future issues that may be raised by

anti- mining groups. It will also use the tri-media information drive to counter the misinformation and dis-information campaign of the local NGO's and educates people on the responsible mining and the truth about nickel mining operations and its temporary impact to the surrounding environment and how the Company successfully implements the mitigation measures.

For around eleven (11) years now, the mining operation of CMDC has played a central role in the development not only on the impact barangays but also in the Municipality of Narra as a whole. It is the multiplier effect in which the communities are able to develop through active local economic activities.

Aside from these, the industry has helped in carrying out priority developmental projects in the local and national levels through regular imbursement of mining revenues. The investment of the mineral wealth through full compliance and implementation of the Social Development and Management Program (SDMP) gives the local stakeholders direct access on benefits and local developmental funds. Among of these projects are the following:

A. Implementation of the Annual Social Development and Management Program (SDMP):

SDMP Phase 2
Period Covered : January 1, 2017 – December 30, 2021
No. of beneficiary : 1 Barangay

A.1. Infrastructure:

Access to facilities for education, health, cultural activities, and farm to market accessibility was increased and improved. These projects included:

- Construction of following establishments:
  - BNC/Barangay Health Worker (BHW) Office
  - Barangay Tanod Outpost
  - Chapels

- Concreting of barangay roads
- Concreting of People's Organization Building
- Road Maintenance
- Renovation of Senior Citizen Building

A.2. Social:

The company provided opportunities in improving delivery of services to the community by capacitating key workers, continuous quest for sustainable micro-enterprise projects, and initiating related activities. These projects help creating more opportunities for constituents such as:

- Socio-cultural, Education, and sports activities/events
- Social Affair programs and other activities
- Equipment fo r BDAT/Barangay Disaster Risk and Reduction Management Office (BDRRMO)
- Provision of service vehicle (mini elf) for the host community

A.3. Sanitation & Health:

The company supported the improvement of basic health services within the partner communities resounding to adjoining municipality by providing:

- Medical Supplies
- Water System
- Medical Assistance (Operation Tuli)
- Comfort Room
- Provision of birthing home facility and equipments needed
- Nutrition Month Celebration
- Medical Transport (ambulance) for the employee and community use
- Blood donation to the Philippine Red Cross Palawan Chapter for utilization of local hospitals

A.4. Livelihood:

In order to elevate the skills and gain additional knowledge of the farmers, fisherman and small cooperatives have given priority to improve and enhance their lives thru the following programs:

- Farmers Field School (FFS)
- Farm Inputs (Spray Can)
- Livelihood training
- Capitalization for livelihood Project (Vermicomposting facility)
- RIC Livelihood Program
- Provision of Tractor and Farm Implements to CMFI
- Farm to Market Roads

A.5. Corporate Social Responsibility (CSR):

The Company is supportive to various activities for the community, as part of CSR, the Company are diligently providing the following:

- Financial assistance to the following:
  - Municipality of Narra's official entry, Barangay Bato-Bato *"Tribu Bitianon"*, for the Baragatan Festival Street Dancing Competition
  - Arong/Payaw owners
- Sponsorship to the following activity:
  - Annual Palay Festival
  - Catholic Bishop's Conference of the Philippines
  - Basic Ecclesial Comminuty Session
  - Palawan Runners Club
  - Yearly Provincial Meet
- Donations:
  - Sample bags, Used Tires
  - Diesel (Philippine National Police Higway Patrol Group)
  - Logistics Support to Local Government Unit (LGU) of Narra
  - Fire wood for Atheletic Event Competition

A.6. Education:

The Company has prioritized the scholarship provision for Indigenous People (IP) given the situation that they are the less fortunate grassroots of the community. Thru scholarship grant these people would improve and follow the natural way of living:

- Scholarship Programs
- Para-teacher Program
- Provision of uniform and equipment for Drum and Lyre of Bato - Bato Elementary School
- Playground/play apparatus for San Isidro Elementary School Day Care one and two Computer center for San Isidro Elementary School

3.8 Emergency Response Brigade (ERB) and Fire Brigade Organization (FBO)

In the event of environment disaster brought about by heavy downpour and flooding, fire and hazardous waste spill, and breaching of siltation control structures, the Emergency Response Brigade (ERB) and Fire Brigade Organization (FBO) organized by the Company shall automatically respond to such eventualities (Please see Annex B.2 for Emergency Response Brigade and Fire Brigade Organization).

3.9 Conservation Values

Although overburden stripping is necessary, not all areas shall be affected immediately. A large part of area shall be left untouched. This will give time to gather and propagate local species of flora and for the fauna to migrate to adjacent forested areas. Nursery for seedlings production shall be established and reforestation shall be carried out as mined-out area is declared. Local species shall be propagated while natural distribution of the different forest population shall be imitated in the reforestation efforts.

3.9.2 Nature Issues

In typical mining operations, the aquatic and terrestrial ecosystems are the first to be affected. Existing vegetation, wildlife and aquatic ecosystem are also displaced. These cannot be ruled out since it is necessary to have earth moving to carry out the mining activity.

Animals special shall be made recover and migrate to unaffected areas. Hunting/poaching shall be prohibited and enforced as art of the company's environmental commitments.

3.9.3 Control Strategies

As soon as an area is reforested during decommissioning phase, the company will advocate that it will be declared as a private wildlife and forest reservation area of the company. Facilities like silt traps shall be utilized as water impounding to irrigate reforested areas.

3.9.4 Visual Aesthetics

3.9.4.1 **Acceptable Levels of Impact**

Overburden stripping shall alter the existing site aesthetics as some point. Scenery of secondary forest growth will be stripped off at the mines sites.

3.9.4.2 **Control Strategies**

Progressive rehabilitation and revegetation shall be carried as the mining activities proceed. Reforested areas shall be declared as a private wildlife reservation and forest reservation in the future.

3.10 Heritage and Cultural Value

3.10.2 Acceptable Levels of Impact

There is no historical site that may be affected by the operation. Cultural traditions will be respected and considered in formulation of corporation policies, plans, and programs if applicable.

3.10.3 Control Strategies

No control measures are needed as no cultural values may be lost or changed, as majority of the influx of workers shall be coming from nearby barangays. Religious and social activities of the host communities shall be vigorously supported like fiestas and church celebration.

Table 13. Foreseen Environmental Impacts, Mitigating Measures and Estimated Cost (Summary)

Activity	Affected Resources/Areas	Foreseen Impacts	Mitigating Measures	Estimated Budget (Php x 1000)
1. Additional Access road Construction	Air and Water Quality	Increase particulate matter and siltation generation.	Regular road water sprinkling and maintenance of silt control structures.	5,196.60
2. Mining Operation	Air Quality	Increase emission from vehicles and equipment. Particulate matter from mining operation (dust generation).	Regular check-up and strictly follow the Preventive Maintenance Schedule (PMS) of vehicles and equipment, Tree and grass planting for carbon sequestration Regular road water sprinkling. Air quality monitoring.	1,052.016 (costing of Road watering is included to activity no. 1)
	Water Quality	Erosion and sedimentation of silt control structures and waterways. Oil contamination from vehicles and equipment. Generation of solid waste and wastewater.	Regular maintenance of silt control structures, construction of additional drainage canals, silt ponds and silt collector sumps. Regular maintenance of vehicles and equipment. Strictly implement proper solid waste management and treatment of wastewater. Regular Water Quality Monitoring.	1,620 (costing for maintenance of silt control structures in included in activity no. 1)
	Noise	Disturbance of nearby communities. Disturbance of wildlife species.	Limit operations during working hours. Possible use of silencers and enclosures. In-house noise monitoring.	33 (for in-house & MMT noise monitoring only. Other activities is under ASHP)
	Terrain and Landscape	Excavation of mine area; construction of waste rock and ore stockpile; removal of vegetation.	Standard benching and contouring Implement Progressive Rehabilitation Program	40,881.47
	Socio Economic Issues	Disturbance of Community/Poor Level of Acceptance from the Community	Employment of local residents. Conduct regular IEC Campaign drive. Implementation of SDMP.	Refer to SDMP Budget
3. Reclamation and Closure	Air Quality	Dust Generation	Revegetation of disturbed areas, road sprinkling, road maintenance.	Included in activity no. 1
	Water Quality	Siltation	Continuous water quality monitoring, maintenance of silt control structures.	Included in activity no. 2 under air quality
	Terrain and Landscape	Waste ore stockpile	Areas affected should be re-graded and revegetated with local plants species and vegetation.	Included in activity no. 1
	Wildlife	Removal of Habitat	Implementation of revegetation program, plant native species.	Included in activity no. 1

3.11 Establishment of Reference Ecosystem

The TNMP established a reference ecosystem within the MPSA in compliance with the provision of DENR Administrative Order (DAO) No. 2022-04 otherwise known as *"Enhancing Biodiversity Conservation and Protection in Mining Operations."* A total of 38.40 hectares or equivalent to 5% of the total approved MPSA area was defined as reflected to Annex A.9.

Biodiversity Monitoring using existing tools and methods of Biodiversity Management Bureau (BMB) and soil analysis will be conducted to the defined reference ecosystem to serve as baseline in rehabilitating the mined-out areas of the company. Also, permanent monitoring stations within the reference ecosystem will be established.

4 APPROACH AND STRATEGY FOR MONITORING

4.1 Monitoring

4.1.2 Significant Impact to be Monitored

All identified environmental pollution/degradation that include the following shall be monitored:

a. Deforestation/devegetation
b. Land disturbances
c. Soil erosion
d. Siltation
e. Water quality degradation
f. Air quality degradation
g. Adverse socio-economic impacts, if any

Regular in-house air and water quality monitoring as well as the in-house noise level monitoring shall be done and brought this to the third party laboratory for analyses, as necessary. The results shall be included to the Quarterly Self-Monitoring Report and Semi-annual Compliance Monitoring Report for submission to DENR – Environmental Management Bureau (EMB). Moreover, if necessary, the results must be presented to the scheduled validation activities of the Multi-Partite Monitoring Team (MMT) and Mine Rehabilitation Fund Committee (MRFC).

4.2 Sources of Impact

4.2.2 Mining Activities/Infrastructures

i. Parameters to be monitored

The impact water bodies are the Balitien, Purok 7 Communal dam and Pinagduguan River. Marine water at Causeway and Balitien river delta are also part of monitoring areas. Parameters to be monitored are pH, Temperature, Heavy Metals (Arsenic, Cadmium, Lead, Manganese, Nickel), Total Suspended Solids (TSS) & Oil and Grease (for discharge points only).

ii. Purpose of Monitoring

Main concern to be monitored is the water quality and condition of adjacent river systems and marine water near the causeway that might be impacted by the mining activities.

iii. Monitoring Methods

Monthly water quality monitoring shall be conducted by the company and quarterly by MMT. Sampling methods to be adopted is in accordance with the prescribed method of sampling by the DENR – EMB.

Erosion control measures and silt control structures shall be inspected regularly especially during rainy season to check silt accumulation at the silt traps and other areas of concerns.

iv. Monitoring Frequency

Water Quality	-	Monthly
Stability/Environmental Integrity	-	Daily
Deforestation area/planted trees	-	Weekly

4.2.3 Noise

i. Parameters to be Monitored

The noise level, expressed in decibel (dB), of various equipment of the mine operation or point sources of noise at the pre-determined noise monitoring stations will be monitored.

ii. Purpose of Monitoring

To determine noise level emanated from the mine operation especially during hauling from minesite to pier site if noise level is within the DENR standard.

iii. Monitoring Methods

To determine the noise level around mine industrial premises, sampling stations were established. A hand held noise level meter will be used to give instantaneous display readings. The sampling activities shall be done quarterly by MMT or monthly by the Company.

iv. Monitoring Frequency

Noise monitoring will be done monthly or often as possible as required by MMT.

4.2.4 Air Quality

Air quality is usually described in terms of the concentration levels of the various types of air pollutants over a certain area at any given time.

i. Parameters to be Monitored

Based on the nature of the mine operation, the only air pollutants parameters to be considered is the Total Suspended Particulates (TSP). However, the Company is open for any recommended air quality paramaters to be included in the monitoring (e.g. Particulate Matter 10).

ii. Purpose of Monitoring

To determine the quality of air around mine industrial site premises and nearby residential areas.

iii. Monitoring Methods

Total Suspended Particulates (TSP) and Particulate Matter (PM) 10 are collected using air filters and High Volume Air Sampler, set-up at pre-determined air sampling stations within and outside the company premises.

iv. Monitoring Frequency

Ambient air quality monitoring will be done monthly and quarterly by MMT.

4.2.5 Social Issues

i. Parameters to be Monitored

Parameters to be monitored include the perception of the residents, rice farmers and neighboring communities regarding the project implementation. Monitoring shall likewise include the effectivity of the environmental mitigation measures and community development programs/projects provided by the Company through Social Development and Management Program (SDMP).

ii. Purpose of Monitoring

To monitor public perception and acceptability of the project from the affected people and the effect of the program on the SDMP so that the Company could assess if there is a need for further improvements of the environmental and social activity implementation.

iii. Monitoring Methods

Social meetings, coordination with the community leaders, NGO's and LGU's.

iv. Monitoring Locations

Host and neighboring communities.

v. Monitoring Frequency

The Company's Community Relations (COMREL) is tasked to monitor frequently the issues and concerns being raised by the communities, civil societies and government regulatory agencies.

The summary of monitoring plan/matrix showing the sources of impacts and their corresponding parameters to be monitored, monitoring frequency, monitoring method and purpose of monitoring is reflected in Table 16.

4.2.6 Conservation Values

The activities under conservation values will focus on vegetation and wildlife. Monitoring will require the recording of vegetation and annual inventory of revegetation and rehabilitation results to measure and validate the effectiveness of the program and the survival rate of plant species used in the revegetation program in a quarterly (flora) and semi-annual (fauna) basis. Monitoring parameters will include survival rate, growth rate, density and propagation. It will be done periodically, throughout the mine life and after closure.

Further, maintenance of coastal area adjacent to causeway such as quarterly coastal clean-up drives will be conducted.

Table 15. Summary of Environmental Impact Monitoring

Sources of Impact	Parameters	Purpose of Monitoring	Monitoring Method	Monitoring Locations	Monitoring Frequency
Mining Operations/Social Issues/Heritage and Cultural Values	Air Quality: TSP or PM-10	To determine the level of particulate matter (TSP or PM-10)	Air Sampling using DENR-EMB Calibrated Equipment	Pre-determined Air Sampling Stations of the Company	Monthly or as necessary
	Water Quality Ambient: pH, Arsenic, Cadmium, Lead, Manganese, Nickel, Total Suspended Solids (TSS) Effluent: pH, Arsenic, Cadmium, Lead, Manganese, Nickel, Total Suspended Solids (TSS), Oil and Grease, Hexavalent Chromium	To determine the quality of water parameters mandated by the Government	Water Sampling	Pre-determine Water Sampling Stations of the Company	Monthly or as necessary
	Noise Quality	To determine the level of decibel (dB)	Noise Sampling	Pre-determine Noise Sampling Stations of the Company	Monthly or as necessary
	Flora and Fauna Biodiversity	To determine the flora and fauna biodiversity in Mine Rehabilitation areas	Acceptable method for biodiversity assessment	Blocks A & B Rehabilitation areas	Periodically or as necessary
	Heritage and Cultural Values and Social Issues	To get feedback on the public perception and acceptability of the project to the affected communities	Site validation/assessment	Residents of the immediate and neighboring communities	Periodically or as necessary

Table 16. Environmental Impacts, Controls Strategies and Monitoring Program

Environmental Impact				Mitigating Measures	Impact Monitoring						Budget P x 1000
Description of Impact		Affected Areas	Sources of Impact		Objectives	Parameter	Method of Procedures	Monitoring location	Frequency	Schedule	
General	Detailed										
Water Quality Degradation	Turbid water from mine runoff will significantly provide changes of water quality on nearby rivers and coastal area.	Balitien River, Pinagduguan River, Coastal Area and farmlands of Bato-Bato (San Isidro, Narra, Palawan	Mining Operation/ Ore Stockyard Area	1. Construction of 9 Siltation Ponds and Collector Sumps (SCS). 2. Construction of mine drainage channel to divert water run-off to nearest siltation ponds. 3. Regular desilting of constructed Pit Bottom, SCS and siltation ponds. 4. Construction of additional Siltation ponds based on the calculated excess runoff.	To ensure that the constructed mitigating measures are efficiently contained silted water.		Daily monitoring of settling ponds and mine drainage channel.	Minepit, Kilometer 2.5 Siltation Pond, Balitien Siltation Ponds, Admin Siltation Ponds, Old and New Communal Dam Siltation Ponds, Ore Stockyard Siltation Ponds and Causeway	Daily or as frequent as necessary	January-December 2024	1,946.604
				5. Daily monitoring of siltation ponds and discharge measurement	To determine the effectiveness of constructed siltation ponds and the volume of discharge.	Visual inspection (e.g. if with observed cracks, seepage), flowrate of discharge	Daily inspection and measurement of discharge rate of siltation pond discharge points.	Silt Control Structures from Minepit to Causeway Effluent Points: Admin Siltation Pond, Balitien Siltation Pond, Pieryard Siltation Pond	Daily (effluent) Weekly (All settling ponds)	January-December 2024	180.00
				6. Regular monitoring of farmlands and provision of rice planting assistance to farmers	To validate farmlands that are allegedly impacted	Measure the exact area with planted rice crops	Monthly monitoring of rice fields and provision of rice planting	Allegedly affected farmlands of Bato-Bato (San Isidro),	Monthly/ per cropping period	January-December 2024	83.00

					by the CMDC mining operation.		assistance to farmers per cropping season.	Narra, Palawan (Purok 1, 2 ,3, 5 and 6)	(Twice per year)		
				7. Monthly water quality monitoring of identified sampling stations for laboratory analysis of heavy metals and onsite parameters.n	To validate the water quality in conformance with RA 9275.	Water Quality Ambient: pH, Arsenic, Cadmium, Lead, Manganese, Nickel, Total Suspended Solids (TSS) Effluent: pH, Arsenic, Cadmium, Lead, Manganese, Nickel, Total Suspended Solids (TSS), Oil and Grease, Hexavalent Chromium	Monthly in-house water sampling for onsite and heavy metals parameters for laboratory analysis	Ambient: 1. East of Causeway; 2. West of Causeway; 3. Front of Causeway; 4. Purok 7 Communal Dam; 5. Balitien Delta; 6. Balitien Midstream; 7. Balitien Upstream; 8. Communal Dam; 9. Pinagduguan Falls; 10. Pinagduguan Delta Effluent: Admin SP; Balitien SP; Pieryard SP	Monthly	January-December 2024	728.00
Air Quality	The use of heavy equipment for mining and hauling activities will generate dust emission, gaseous emission and increase of noise level	Nearby residence of Barangay San Isidro	Minepit excavation and Ore transport from minepit to Ore Stockyard Area	1. Use of properly maintained heavy equipment installed with mufflers. 2. Protection of existing vegetation near the mining area to serve as noise barrier. 3. Use of properly maintained motor vehicles and heavy equipment.	To verify the effectiveness of established mitigating measures and continuously provide improvement as necessary to reduce dust emission,	The standard noise monitoring result is not more than 90 decibels. For Air Quality Monitoring Result, the TSP is not more that 300 Normal Cubic meters.	1. Securing yearly smoke emission test results of all vehicles. 2. Monthly in-house noise level monitoring 3. Monthly in-house air quality monitoring.	Minepit, pre-pile yard, hauling road, and Ore Stockyard Area	Daily/Monthly or as frequent as necessary	January-December 2024	3,502.016

				4. Regular water sprinkling along exposed areas especially during dry periods. 5. Limiting the speed of service vehicles, hauling trucks and other heavy equipment. 6. Imposition of truck load limits to prevent the unwanted discharge of materials and dusts. 7. Maintenance of mine roads, including causeway, stockyard, pre-pile and mine pit, to reduce dust emission.	noise level and gaseous emission in compliance to RA 8749 and DAO 2000-98		4. Daily monitoring of service vehicles' speed thru trip tickets 5. Monthly validation/inspection of road watering consumption and 6. Daily monitoring of water sprinkling activity				
Deforestation / Land Disturbances	The mining operation and activities will cause loss of top soil, soil erosion, slope failure or mass movement, change in land formation, siltation of drainage systems, generation	Minepit, Balitien River,Pinagduguan River, Purok 7 Communal Dam, and Causeway	Minepit, pier yard, motorpool, campsite and causeway	1. Revegetation of the open/expose areas. 2. Maintaining a stockpile for topsoil in a designated area away from creeks/erosion prone areas. 3. Use of a combination of permanent engineering structures and vegetative means to stabilize toe and slope stockpiles.	To apply state-of-the-art mine rehabilitation strategies and performed progressive mine rehabilitation.		1. Daily patrol works on established rehabilitation sites. 2. Regular application of organic fertilizer for growth development of potted seedlings in nursery.	Nursery, Minepit, hauling road, Ore Stockyard Area and established buffer zone and rehabilitated areas.	Daily/ monthly	January-December 2024	42,271.47

	of solid waste and soil contaminatio n with oil and grease			4. Installation of proper drainage along road systems and open areas and by immediately revegetating the peripheries. 5. Maintaining vegetation cover in the designated buffer zones and in the peripheries of roads and minepit. 6. Diversion of runoff away from steep slopes and denuded areas by constructing interceptors, drains and berms. 7. Keeping stockpiles with moderate slopes to minimize high erosion rate 8. Progressive rehabilitation.			3. Massive production of seedling for large planting stocks 4. Regular patrol works on buffer zone area for illegal activity inspection. 5. Planting of endemic/end angered species 6. Regular inspection of stockpile slope. 7. Regular inspection of interceptor canals, drains and berms.				
					To monitor the recolonizati on and restoration of flora and fauna within disturbed areas		1. Conduct of Third Party Biodiversity Assessment; 2. Conduct in-house Flora and Fauna Monitoring	Rehabilitated and Adjacent Areas	1. Third Party – Annual 2. In-house Flora and Fauna Monitoring – Once per Semester	January-December 2024	580.00

				9. Implementation of Solid Waste and Hazardous Waste Management Program involving employees and contractors. 10. Maintenance of vehicles/heavy equipment strictly at motorpool. 11. Regular maintenance of the oil and water separator will be done to ensure optimum performance. 12. Good housekeeping practices including proper handling and clean-up of oil at motorpool.	To validate the reduction of solid waste generation at source and proper toxic and hazardous waste management in compliance to RA 9003 and RA 6969 and its Implementing Rules and Regulations		1. Regular garbage collection and inventory of solid waste generated. 2. Recycling of biodegradable waste for mine rehabilitation. 3. Regular inspection and maintenance of hazardous waste storage facility	From Minepit to Causeway (Pier area), Contractors	Waste Collection – Twice a week Inspection/ Maintenance of Hazwaste facility and MRF – Once a week	January-December 2024	892.00
				13. Clean-up drive activities and coastal management, Adopt-A-Creek/River Program	To support environmental programs of the DENR and help the community to clean water bodies		Participation and providing logistics needs for the activity.	Identified adopt-a-creek/river and coastal areas	Quarterly	January-December 2024	100.50

5. TOTAL COST OF AEPEP

For year 2024, the total budget for the various environmental protection and enhancement projects/activities is around **Php 63,000,037.80.** This will be used to sustain priority projects that include mined-out areas rehabilitation and restoration, seedlings production, construction and maintenance of silt control structures, dust control, air and water quality monitoring, environmental research and other environment-related activities and programs. Thus, the Company would be willing to spend more than what was approved in the above-mentioned program just to satisfy the needs of its environmental projects and comply with every applicable laws and regulations. The summary and the matrix for the quarterly implementation of these projects/activities are presented in Table 18.

5.1 Reporting

The Company's AEPEP activities' accomplishment will be reported to the Multi-Partite Monitoring (MMT) on a quarterly basis. The accomplishment reports will be submitted by the MMT to the Mine Rehabilitation Fund Committee (MRFC) for scrutiny and further recommendations to improve CMDC-TNMP's environmental mitigation activities.

In case of violations, CMDC is responsible to report to the MRFC its compliance to the MMT findings and recommendations. Report will be submitted after the MMT's quarterly monitoring as reflected below:

Table 17. Report Submission Details

Aspect	MMT Reporting	Company Reporting
Water Quality	Quarterly	Quarterly
Air Quality	Quarterly	Quarterly
Noise Level	Quarterly	Monthly/Quarterly

TABLE 18. 2024 AEPEP MATRIX OF CITINICKEL MINES AND DEVELOPMENT CORPORATION - TORONTO NICKEL MINING PROJECT (CMDC-TNMP)

Activities	Unit of Work Measure/ Unit Cost	2024 AEPEP ACCOMPLISHMENT (PHYSICAL & FINANCIAL)					Remarks
		TARGET (Physical/Financial)					
		1Q	2Q	3Q	4Q	Annual	
• LAND RESOURCE (35%)		*7,394,816.64*	*20,789,506.28*	*11,451,772.44*	*12,181,822.44*	*51,817,917.80*	
1. Progressive Rehabilitation of Mined - Out Areas							
A. Backfilling	hectare	2.00	4.00	2.00	2.00	**10.0**	Covers Block A Rehabilitation Areas 4&5 and Block B Rehabilitation Area 8. Cost includes 2023 AEPEP backlogged (**Php 2,419,225.02)** to be carried-out in 1Q 2024 AEPEP. Cost incurred for the Progressive Rehabilitation of MIned-out Areas was based on the actual expenditures in land preparation activities in 2023.
	2,252,688.96	2,419,225.02	9,010,755.84	4,505,377.92	4,505,377.92	**20,440,736.70**	
B. Re-countouring/ Reshaping/Benching	hectare	2.00	4.00	2.00	2.00	**10.0**	Covers Block A Rehabilitation Areas 4&5 and Block B Rehabilitation Area 8. Cost includes 2023 AEPEP backlogged (**Php 2,419,225.02)** to be carried-out in 1Q 2024 AEPEP. Cost incurred for the Progressive Rehabilitation of MIned-out Areas was based on the actual expenditures in land preparation activities in 2023.
	2,252,688.96	2,419,225.02	9,010,755.84	4,505,377.92	4,505,377.92	**20,440,736.70**	
C. Reforestation	hectare	2.00	4.00	2.00	2.00	**10.0**	Block A Rehabilitation Areas 4&5 and Block B Rehabilitation Area 8
	99,400.00	198,800.00	397,600.00	198,800.00	198,800.00	**994,000.00**	
	seedling	5,000	10,000	5,000	5,000	**25,000**	with 2 x 2 meter spacing of indigenous trees species
D. Maintenance	hectare	4	5	12.4	5	**26.40**	
latest	**2024**	0	2	4	2	**8.0**	Covers Block A Rehabilitation Areas 4&5 and Block B Rehabilitation Area 8
new	**2023**	2	2	2	2	**8.0**	Will cover the areas subject for rehabilitation in Block A Rehab Areas 5 & 8
recent	**2022**	0	1	4	1	**6.0**	Will cover the areas subject for rehabilitation in Block A Rehab Areas 5,6,7 & 8
Old	**2021**	1	0	1	0	**2.0**	Will cover the areas subject for rehabilitation in Block A Rehab Areas 3,5, 6 & 7
Old	**2016**	1.00	0	1.40	0	**2.40**	Will cover Block B rehab area 1&5
	15,000.00	60,000.00	75,000.00	186,000.00	75,000.00	**396,000.00**	

2. Mining Forest Program (MFP) and National Greening Program (NGP)							
A. NGP							
1. Maintenance	hectare	1.12	4.47	1.12	1.12	**7.83**	Maintenance (e.g. grasscutting/brushing, maintenance of fire break within the perimeter) of the ff NGP Areas: Limbaga, Admin, CMDC Park, Sotito, Balitien
	Area	Limbaga (0.32 ha.); Admin (0.49 ha.); CMDC Park (0.16 ha.); Ore Stockyard (0.15 ha.)	Limbaga (0.32 ha.); Admin (0.49 ha.); CMDC Park (0.16 ha.); Ore Stockyard (0.15 ha.); Sotito (2.0 has.); Balitien (1.35 has.)	Limbaga (0.32 ha.); Admin (0.49 ha.); CMDC Park (0.16 ha.); Ore Stockyard (0.15 ha.)	Limbaga (0.32 ha.); Admin (0.49 ha.); CMDC Park (0.16 ha.); Ore Stockyard (0.15 ha.)		
	32,680.00	36,601.60	146,079.60	36,601.60	36,601.60	**255,884.40**	
3. Nursery Operations							
A. Seedling Production	seedlings	-	5,000	-	5,000	**10,000**	Assorted endemic species; Equivalent to 120% of the required seedlings for planting
	10.00	0.00	50,000.00	0.00	50,000	**100,000.00**	
B. Seedling Maintenance	seedlings	200,000	200,000	200,000	200,000	**180,000**	Maintenance of existing seedlings in Central Nursery
	3	600,000.00	600,000.00	600,000.00	600,000.00	**2,400,000.00**	
C. Nursery Infrastructure							
1. Establishment of Permanent Nursing Shed	activity	-	-	-	1	**1**	Construction of permanent nursing shed using G.I pipes
	300,000.00	-	-	-	300,000	**300,000.00**	
2. Establishment of Misting System	unit	-	-	-	1	**1**	Provision of materials for the misting system of Central Forest Nursery
	200,000.00	-	-	-	200,000.00	**200,000.00**	
D. Auxilliary Facility							
1. Horticulture Project	unit	1	1	1	1	**1**	Maintenance of the existing horticulture project situated in Central Nursery
	Kgs	50.00	100.00	200.00	50.00	**400.00**	
	25,000.00	25,000.00	25,000.00	25,000.00	25,000.00	**100,000.00**	

2. Vermicomposting							
a. Maintenance of Vermicomposting Project	No. of Facility	1	1	1	1	**1.00**	Maintenance of existing one (1) vermicomposting facility in Nursery for the purpose of producing organic fertilizer for mine rehabilitation & nursery
	Production of vermicast (Kilogram)	1,000	1,000	1,000	1,000	**4,000.00**	
	15,000.00	15,000.00	15,000.00	15,000.00	15,000.00	**60,000.00**	
b. Procurement of Substrate for vermicomposting	Kilogram	0	4,000	0	4,000	**8,000**	Procurement of substrate (cow manure, rice straw) to serve as food of vermi worms
	8,000.00	0.00	16,000.00	0.00	16,000.00	**32,000.00**	
5. Slope Stabilization and Erosion Control							
A. Production of Bamboo Culms	culm	300	300	300	300	**1,200**	Planting of bamboo culms along the boundary and slopes of the following area: Block A Buffer Zones, Central Forest Nursery, Ore Stockyard Areas.
	35.00	10,500	10,500	10,500	10,500	**42,000.00**	
B. Bamboo Planting	hectare	-	1	-	1	**2**	
	No. of Bamboo culms	-	-	400	400	**800**	
	77,700.00	-	-	77,700.00	77,700.00	**155,400.00**	
C. Grass Planting along the slopes of Existing Mine Rehabilitated Areas	hectare	-	1.5	1.5		**3.00**	Portion of Block A Rehabilitation Area 5, Block B Rehabilitation Areas 1&5
	77,700.00		116,550.00	116,550.00		**233,100.00**	
6. Topsoil/Subsoil Management							
A. Retrieval and Management of Topsoil/Subsoil from mine	Area (m^2)	36,100	40,000	50,000	50,000	**176100.00**	Topsoil/subsoil with 1 meter thick
	Volume (m^3)	36,100	40,000	50,000	50,000	**176100.00**	
							Expenses c/o Development cost under 3YD/UWP
7. Access Road							
A. Maintenance of Access Roads	kilometer	17.39	17.39	17.39	17.39	**17.39**	Maintenance of access road from mine pit to causeway
	309,085.68	1,537,200.00	1,243,000.00	1,101,600.00	1,493,200.00	**5,375,000.00**	
8. Bufferzone Establishment/Management							
A. Observance and monitoring of bufferzone	hectare	34.94	34.94	34.94	34.94	**34.94**	Bufferzone from mining area to MPSA boundary. Perimeter length is subject for measurement.
	5,000.00	5,000.00	5,000.00	5,000.00	5,000.00	**20,000.00**	
9. Stockyard Management							
A. Ore Beneficiation	hectare	51.18	51.18	51.18	51.18	**51.18**	Manage the flow of water to the interceptor canal and prevent additional moisture content of ore
							Costing is incorporated to the company's operational cost

B. Maintenance of Waste Dump Area	hectare	1.41	1.41	1.41	1.41	**1.41**	Lifting of stored desilted waste from settling ponds
	68,265.00	68,265.00	68,265.00	68,265.00	68,265.00	**273,060.00**	
• WATER QUALITY AND RESOURCE (20%)		***874,460.00***	***1,102,312.00***	***1,024,832.00***	***607,000.00***	***3,608,604.00***	
1. Maintenance of Pollution Control Structures through Desilting							
A. Siltation Ponds	m^3	3,695	3,936	2,886	1,332	**11,849**	Maintenance of settling ponds from the mine pit to causeway
	No. of Siltation Ponds	3.00	3.00	3.00	2.00	**8.00**	6 Siltation Ponds subject for maintenance (desilting): Ore Stockyard Siltation Pond, Kilometer 2.5 Silt Pond, Old Communal Dam Silt Pond, Admin Siltation Pond, Pieryard Silt Pond, Block B Silt Pond 2
	Siltation Ponds	1. Kilometer 2.5 SP; 2. Old Communal Dam SP; 3. Block B Silt Pond	1. Kilometer 2.5 SP; 2. Old Communal Dam SP; 3. Admin SP	1. Kilometer 2.5 SP; 2. Old Communal Dam SP; 3. Ore Stockyard SP	1. Kilometer 2.5 SP; 2. Old Communal Dam SP		
	115.20	415,000.00	455,000.00	330,000.00	165,000.00	**1,365,000.00**	
B. Collector Sumps (CS)	m^3	155	116	726	-	**997**	Maintenance of silt collector sumps from the mine pit to causeway
	No. of CS	3	3	5	-	**11**	6 Collector sumps subject for maintenance (desilting). No schedule of desilting in 4thQ2023 based on historical data
	Collector Sumps	1. Motorpool CS; 2. Washpond CS; 3. Communal Dam CS	1. Communal Dam CS; 2. ADTS CS; 3. Washpond CS	1. Motorpool CS; 2. Communal Dam CS; 3. Block A CS; 4. Washpond CS; 5. Prepile-yard CS	-	**11**	
	132.00	20,460.00	15,312.00	95,832.00	-	**131,604.00**	
C. Drainage Canal/System	kilometer	8.0317	8.0317	8.0317	8.0317	**8.0317**	Maintenance of drainage canals from the mine pit to causeway
	56,027.99	100,000.00	150,000.00	100,000.00	100,000.00	**450,000.00**	
2. Solid Waste Management							
A. Collection/Storage/ Handling/Disposal	ton (residual waste only)	0.520	0.520	0.520	0.520	**2.08**	Collection of generated solid waste within the mine site. Projected generation of solid wastes with 50% allowance/buffer compared to 5-year historical data: Bio-4.81 tons; Recyclable-2.48 tons; Residual-2.08 tons
	80,000.00	80,000.00	80,000.00	80,000.00	80,000.00	**320,000.00**	
B. MRF/Sanitary Landfill							
1. Improvement of MRF	no. of facility	-	-	1.00	-	**1.00**	Carried over from 2023 AEPEP Commitment
	152,000.00	-	-	152,000.00	-	**152,000.00**	

2. Maintenance of MRF	no. of facility	1	1	1	1	**1**	Maintenance of MRF in a weekly basis
	10,000.00	10,000.00	10,000.00	10,000.00	10,000.00	**40,000.00**	
3. Hazardous Waste Management							
A. Collection/Storage/ Handling/Disposal	ton	6.00	6.00	6.00	6.00	**24.00**	Projected generation of hazardous wastes
	10,000.00	10,000.00	10,000.00	10,000.00	10,000.00	**40,000.00**	
B. Maintenance of Hazardous Waste Facility (HWF)							
1. Renovation of Existing HWF	no. of facility	-	1	1	-	**1**	Renovation of existing hazardous waste facility. Budget for 2023 AEPEP (Php 150,000) will carried-over , Allocated Budget for 2024 AEPEP is (Php 150,000) which include materials and labor.
	300,000.00	-	150,000.00	150,000.00	-	**300,000.00**	
2. Maintenance of HWF	no. of facility	1	1	1	1	**1**	Maintenance works (e.g., housekeeping. Labeling, lifting of drums, transferring into drums) in a weekly basis
	10,000.00	10,000.00	10,000.00	10,000.00	10,000.00	**40,000.00**	
4. Water Quality Monitoring							
A. Water Quality Monitoring (In - house)	activity	2	2	2	2	**8.00**	Two (2) samples per sampling station for ambient and three (3) samples per sampling station for effluent; Sampling conducted twice per quarter. Assumption: No discharge at Station 12 (Pieryard SP) during the 1st & 2nd Quarter
	sample	46	46	52	52	**196**	
	2,295.92	110,000.00	110,000.00	115,000.00	115,000.00	**450,000.00**	
B. MMT Confirmatory Sampling	activity	1	1	1	1	**4.00**	Two (2) samples per sampling station for ambient and three (3) samples per sampling station for effluent; Sampling conducted once per quarter. Assumption: No discharge at Station 12 (Pieryard SP) during the 1st & 2nd Quarter
	sample	23	23	26	26	**98**	
	2,836.73	67,000.00	67,000.00	72,000.00	72,000.00	**278,000.00**	
5. Other Water Quality and Resource Environmental Activities							
A. Monitoring of Effluent/Diversion Canals	no. of effluent monitored	3	3	3	3	**12**	Admin, Balitien & Pieryad Siltation Ponds
	15,000.00	15,000.00	15,000.00	15,000.00	15,000.00	**60,000.00**	
B. Monitoring of Siltation Control Structures	no. of monitoring	13	13	13	13	**52**	Regular monitoring of all silt control structures in a weekly basis; Frequency of monitoring will be increased in case of occurrence of heavy rain
	30,000.00	30,000.00	30,000.00	30,000.00	30,000.00	**120,000.00**	
C. Annual Calibration of Water Quality Monitoring Equipment	no. of unit	1	-	1	-	**2**	Annual calibration of two (2) units of Horiba Water Quality Monitoring Equipment
	7,000.00	7,000.00	-	7,000.00	-	**14,000.00**	

• AIR QUALITY (20%)		***866,504.00***	***1,059,504.00***	***866,504.00***	***709,504.00***	***3,502,016.00***	
A. Dust Suppression							
1. Water Spraying	kilometer	17.39	**17.39**	**17.39**	**17.39**	**17.39**	Water spraying from minepit to causeway
	186,889.02	800,000.00	1,000,000.00	800,000.00	650,000.00	**3,250,000.00**	
B. Air Quality Monitoring (In - house)	activity	2	2	2	2	**8.00**	Twice per quarter for eight (8) regular air quality monitoring stations
	sample	16	16	16	16	**64**	
	562.50	9,000.00	9,000.00	9,000.00	9,000.00	**36,000.00**	
C. MMT Air Quality Monitoring	activity	1	1	1	1	**4.00**	Once per quarter for eight (8) regular air quality monitoring stations
	sample	8.00	8.00	8.00	8.00	**32.00**	
	688.00	5,504.00	5,504.00	5,504.00	5,504.00	**22,016.00**	
D. Other Air Quality Environmental Activities							
1. Calibration of Air Quality Monitoring Equipment	no. of unit	1	-	1	-	**2**	Annual calibration of one (1) unit of Staplex Air Quality Monitoring Equipment and one (1) unit of HAZDUST EPAM-5000 Air Quality Monitoring Equipment
	7,000.00	7,000.00	-	7,000.00	-	**14,000.00**	
2. Road Sweeping/Scraping	no. of area maintained	1	1	1	1	**1**	Maintenance of National highway (crossing) - infront of Control Point
	45,000.00	45,000.00	45,000.00	45,000.00	45,000.00	**180,000.00**	
• NOISE AND VIBRATION (10%)		***8,250.00***	***8,250.00***	***8,250.00***	***8,250.00***	***33,000.00***	
A. MMT Noise Level Monitoring	activity	1	1	1	1	**4.00**	Once per quarter for eight (8) regular monitoring stations
	sample	8	8	8	8	**32.00**	
	343.75	2,750.00	2,750.00	2,750.00	2,750.00	**11,000.00**	
B. In - house Noise Level Monitoring	activity	2	2	2	2	**8**	
	sample	16	16	16	16	**64.00**	Twice per quarter for eight (8) regular monitoring stations
	343.75	5,500.00	5,500.00	5,500.00	5,500.00	**22,000.00**	

• CONSERVATION VALUES (5%)		***525,000.00***	***32,500.00***	***32,500.00***	***50,500.00***	***640,500.00***	
A. Adopt - a - River Program	activity	1	1	-	1	**3**	Panacan River, Balitien River, Pinagduguan Falls
	20,000.00	15,000.00	22,500.00	-	22,500.00	**60,000.00**	
B. Coastal Clean - up Drive	activity	-	-	1	1	**2**	Coastal area of Brgy. Bato - bato and Brgy. Antipuluan
	20,250.00	-	-	22,500.00	18,000.00	**40,500.00**	
C. Other Conservation Values Environmental Activities							
1. Rapid Biodiversity Assessment Report	Activity	1	-	-	-	**1**	In compliance with the amended SEP clearance conditions. To be conducted by 3rd Party Consultant
	500,000.00	500,000.00	-	-	-	**500,000.00**	
1. Biodiversity Monitoring of Reference Ecosystem	hectare	38.40	38.40	38.40	38.40	**38.40**	In compliance with DAO 2022-04. Activity includes monitoring of Reference Ecosystem, install signage, and set-up of permanent monitoring plots/sites for Biodiversity monitoring.
	Activity	1	1	1	1	**4.00**	
	10,000.00	10,000.00	10,000.00	10,000.00	10,000.00	**40,000.00**	
• ENVIRONMENTAL RESEARCH (5%)		**0.00**	**340,000.00**	**0.00**	**40,000.00**	**380,000.00**	
A. Research Study: Coral Tranplantation: An Essential Tools for Coral Restoration in Brgy Bato Bato, Narra, Palawan	progress report		1			**1**	The study will be conducted for 2 years (2024-2025) to determine the suitability of the coral species for transplanting as essential tool for coral reef restotaion
	300,000.00	-	300,000.00			**300,000.00**	
B. In-house Flora and Fauna Monitoring	activity	-	1	-	1	**2**	Monitor Blocks A & B in a Semi-annual Basis
	40,000.00	-	40,000.00		40,000.00	**80,000.00**	
•OTHERS (5%)		**636,500.00**	**1,225,000.00**	**586,500.00**	**570,000.00**	**3,018,000.00**	
A. Multipartite Monitoring Team (MMT) Validation	monitoring	1.00	1.00	1.00	1.00	**4.00**	MMT validation - 4Q2023, 1Q - 3Q2024
	400,000.00	400,000.00	400,000.00	400,000.00	400,000.00	**1,600,000.00**	
B. Mine Rehabilitation Fund Committee (MRFC) Meeting							
1. Mine Rehabilitation Fund Committee (MRFC) Meeting	meeting	1	1	1	1	**4**	1st-4thQ2024 MRFC meeting
	100,000.00	100,000.00	100,000.00	100,000.00	100,000.00	**400,000.00**	
2. MRFC Secretariat Honorarium	No. of personnel	1.00	1.00	1.00	1.00	**4**	Php5,000 per month per project of CMDC (TNMP & PNMP)
	15,000.00	15,000.00	15,000.00	15,000.00	15,000.00	**60,000.00**	

C. Meetings/Trainings /Seminars	activity	1	3	1	2	**7.00**	Attendance to the environment-related meetings/trainings/seminars to capacitate the MEPEO personnel. SCUBA Diving Training of 2 MEPEO personnel, PCO Training
	25,000.00	25,000.00	75,000.00	25,000.00	50,000.00	**175,000.00**	
D. IEC to the Company's Employees and Contractors in line with the ISO 14001:2015 (Environmental Management System)	activity	1	2	1	1	**5.00**	IEC during General Toolbox Meeting and orientation to the newly-hired employees. Environmental Month Celebration
	28,000.00	5,000.00	125,000.00	5,000.00	5,000.00	**140,000.00**	
E. Inspection/Monitoring/Audit, etc.	activity	1	1	-	-	**2**	SHES and other environment-related inspection/monitoring/audit
	50,000.00	50,000.00	50,000.00	-	-	**100,000.00**	
F. Permits/Certificates/Registrations, etc.	No. of Permit	-	15	-	-	**15**	a. Secure Discharge permits of eleven (11) septic tanks & three (3) oil-water separator (carry-over from 2023 AEPEP Target) b. Amendment of Hazardous Waste Generators ID
	4,000.00	-	60,000.00	-	-	**60,000.00**	
G. Farmland Monitoring	activity	1	-	1	-	**2**	Monitoring per cropping period: 2nd Cropping 2023 - 16 September 2023 - 15 March 2023 1st Cropping 2024 - 16 March 2024 - 15 September 2024
	41,500.00	41,500.00	-	41,500.00	-	**83,000.00**	
H. Procurement of complete sets of SCUBA Diving Gears	unit	-	1.00	-	-	**1.00**	For Underwater Assessment and Monitoirng within the coastal area of Brgy Bato-Bato, Narra, Palawan
	500,000.00	-	420,000.00	-	-	**420,000.00**	
I. Procurement of 1 unit underwater Camera	unit	-	1.00	-	-	**1.00**	For underwater Photo documentation purposes
	40,000.00	-	40,000.00	-	-	**40,000.00**	
GRAND TOTAL		**10,305,530.64**	**24,557,072.28**	**13,970,358.44**	**14,167,076.44**	**63,000,037.80**	

Total Environmental-related Cost: **Php 63,000,037.80**
Estimated Direct Mining Cost*: **Php 165,674,160.00**

Percentage of Total Environmental-related Cost to the Direct Mining Cost **38.03%**

*Partial and unofficial.

6. NAME AND SIGNATURE OF PERSONS PREPARING THE AEPEP

Prepared by:

FOR. JUDE MICHAEL P. SISCAR
Company Forester

MONICA A. ALASKA
Pollution Control Officer

MR. JULIUS B. BUGAWAN
MEPE Officer

Approved by:

ENGR. JULIUS B. COSMIANO
Resident Mine Manager

MS. PAMELA P. MIGUEL
Vice-President for Admin & Operations

ANNEX A

Maps, Lay-out, Figures

ANNEX A.1.

Land Use Map

118°15' 118°16' 118°17'

9°14'30" 9°13'30" 9°12'30" 9°11'30"

Citinickel Mines AND DEVELOPMENT CORPORATION

Map No: 2023-EN-031	**TORONTO NICKEL MINING PROJECT**
Date: 05-Nov-2023	**LAND USE MAP**
Drawn By: AED	
Checked by: JBB, FPM	
Approved by: JBC	Datum/Projection: **Geographic / LuzPhil** Drawn Scale: 1 : 20,000
	Filename: AEPEP_Land Use Map_2024.wor

NORTH

0 1,000 meters

PARCEL 1

BLOCK B

REHAB 5 AREA= 2.35 Has
REHAB 5 AREA= 0.41 Has
BOTTOM POND - 01 Area = 0.54 has
REHAB 1 AREA= 0.05 Has
REHAB 8 AREA= 0.84 Has
REHAB 8 AREA= 0.52 Has
REHAB 7 AREA= 2.32 Has
REHAB 6 AREA= 1.74 Has
REHAB 2 AREA= 0.64 Has
REHAB 2 AREA= 3.06 Has
REHAB 2 AREA= 0.36 Has
REHAB 3 AREA= 0.81 Has
REHAB 4 AREA= 0.26 Has
REHAB 4 AREA= 0.86 Has

BLOCK A

BOTTOM POND - 04 Area = 0.33 has
REHAB 8 AREA= 0.51 Has
REHAB 8 AREA= 3.56 Has
BOTTOM POND - 03 Area = 0.53 has
REHAB 4 AREA= 1.30 Has
BOTTOM POND - 05 AREA= 0.27Has
REHAB 7 AREA= 6.26 Has
REHAB 3 AREA= 2.03 Has
REHAB 3 AREA= 0.31 Has
REHAB 3 AREA= 5.15 Has
BOTTOM POND - 02 Area = 0.68 has
BOTTOM POND - 06 AREA= 0.06 Has
REHAB 5 AREA= 19.97 Has
REHAB 6 AREA= 5.65 Has
REHAB 2 AREA= 1.26 Has
REHAB 1 AREA= 4.42 Has
BOTTOM POND - 01 Area = 0.61 has

PARCEL 2

Warehouse and Motorpool
Admin, Assay/Safety & Staffhouse
Pre-pile area (A)
Villa & Clubhouse
Fuel depot
Control point
NATIONAL HIGHWAY
TO NARRA
Nursery
TO BROOKE'S POINT
Pre-pile area (B)
Waste dump area
Ore stockyard area
SOUTH SULU S E A
Port building causeway

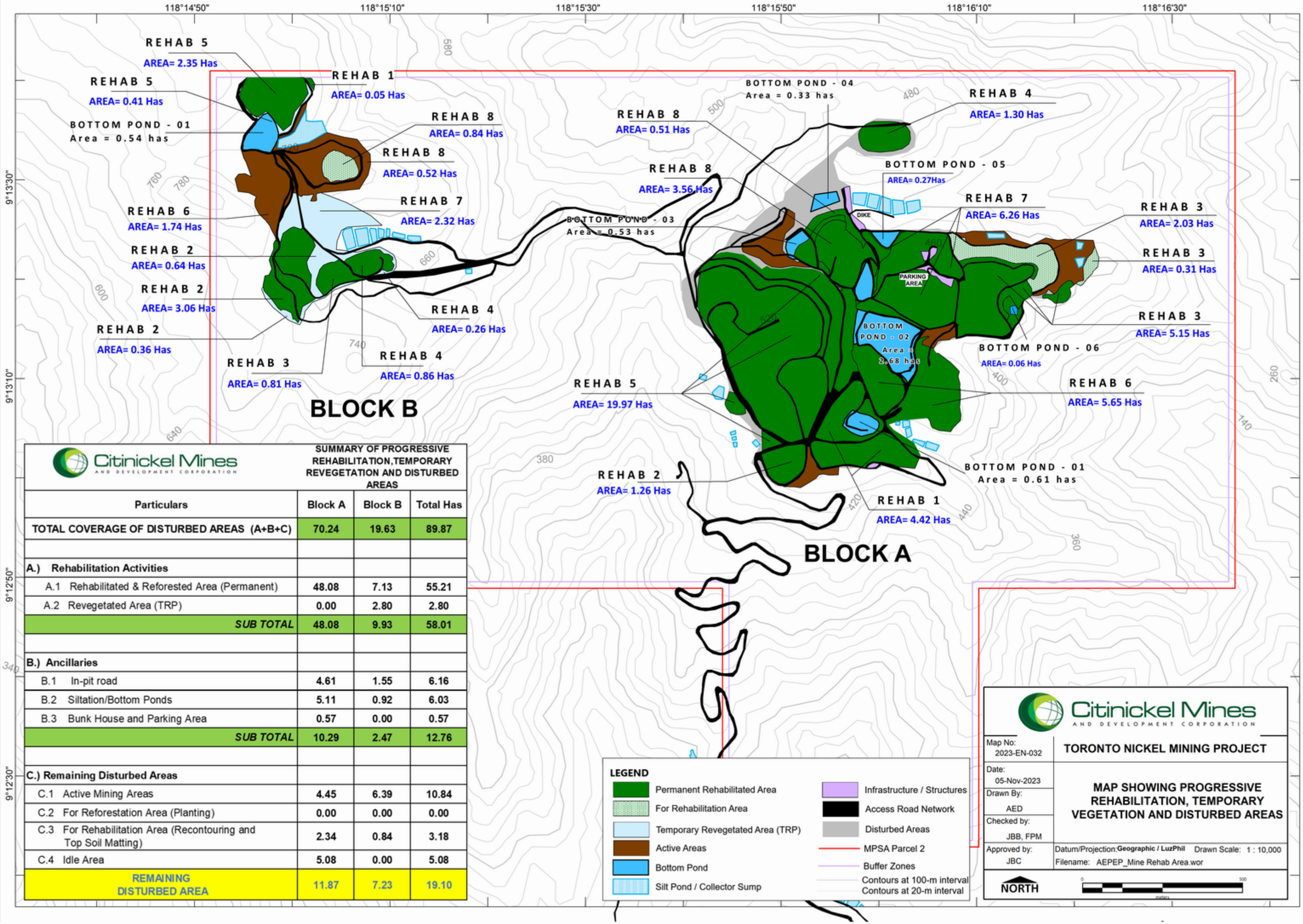
INDEX MAP

L E G E N D :

- Stockyards
- Log Deck
- Infrastractures / Facilities
- Rehabilitated and Reforested Area
- Vegetated Area
- Revegetated Area / TRP
- For Rehabilitation Area
- Active Areas
- Disturbed Areas
- Bottom Pond
- Silt Pond/Collector
- Communal Dam
- NGP Area
- Swamp Area
- Heavy Equipment Parking Area
- Fuel Depot
- Muster Points
- Hazardous Waste
- CMDC Parcel 1
- CMDC Parcel 2
- Buffer Zone - 20m
- Proposed KM 2.5 Diversion Road
- Access road network
- Water Flow / Drainage
- Contour at 20-m interval

ANNEX A.2.

Map Showing Progressive Rehabilitation, Temporary Revegetated Program (TRP) areas and Disturbed Areas



Citinickel Mines AND DEVELOPMENT CORPORATION

SUMMARY OF PROGRESSIVE REHABILITATION,TEMPORARY REVEGETATION AND DISTURBED AREAS

Particulars	Block A	Block B	Total Has
TOTAL COVERAGE OF DISTURBED AREAS (A+B+C)	70.24	19.63	89.87
A.) Rehabilitation Activities			
A.1 Rehabilitated & Reforested Area (Permanent)	48.08	7.13	55.21
A.2 Revegetated Area (TRP)	0.00	2.80	2.80
SUB TOTAL	48.08	9.93	58.01
B.) Ancillaries			
B.1 In-pit road	4.61	1.55	6.16
B.2 Siltation/Bottom Ponds	5.11	0.92	6.03
B.3 Bunk House and Parking Area	0.57	0.00	0.57
SUB TOTAL	10.29	2.47	12.76
C.) Remaining Disturbed Areas			
C.1 Active Mining Areas	4.45	6.39	10.84
C.2 For Reforestation Area (Planting)	0.00	0.00	0.00
C.3 For Rehabilitation Area (Recontouring and Top Soil Matting)	2.34	0.84	3.18
C.4 Idle Area	5.08	0.00	5.08
REMAINING DISTURBED AREA	11.87	7.23	19.10

Citinickel Mines AND DEVELOPMENT CORPORATION

Map No: 2023-EN-032	**TORONTO NICKEL MINING PROJECT**
Date: 05-Nov-2023	**MAP SHOWING PROGRESSIVE REHABILITATION, TEMPORARY VEGETATION AND DISTURBED AREAS**
Drawn By: AED	
Checked by: JBB, FPM	
Approved by: JBC	Datum/Projection:**Geographic / LuzPhil** Drawn Scale: 1 : 10,000
	Filename: AEPEP_Mine Rehab Area.wor

ANNEX A.3.

Target Rehabilitation Areas for CY 2024

118°14'40" 118°15' 118°15'20" 118°15'40" 118°16' 118°16'20" 118°16'40"

9°13'40" 9°13'20" 9°13' 9°12'40" 9°12'20"

2024 (6.00 Ha)

2024 (2.00 Ha)

2024 (2.00 Ha)

BLOCK B

BLOCK A

PARCEL 2

LEGEND

- 2024 Target Rehabilitation Area
- Access Road Network
- MPSA Parcel 2
- 20-m Buffer Zone
- Contour at 20-m interval

Citinickel Mines
AND DEVELOPMENT CORPORATION

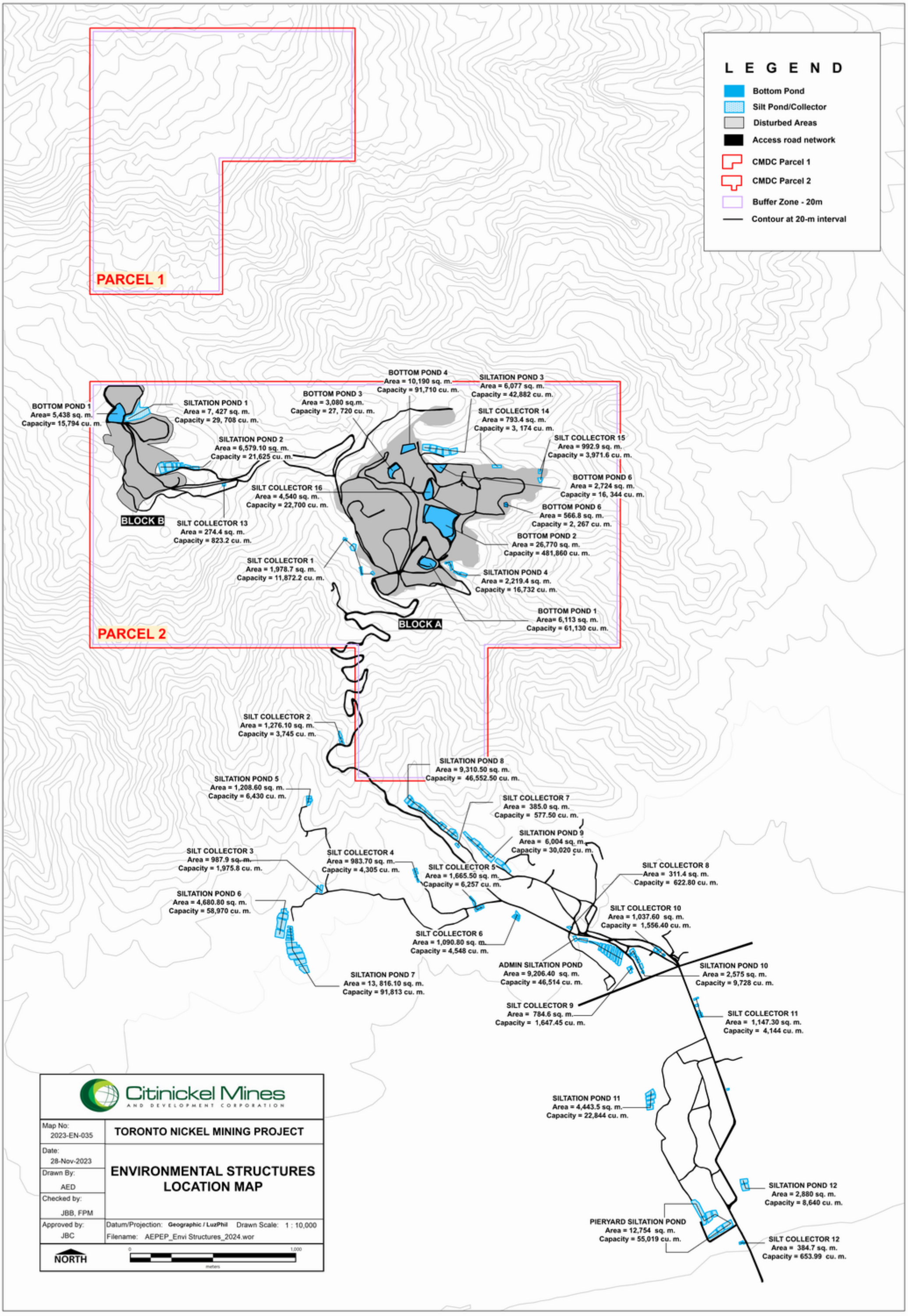
Map No: 2023-EN-036	**TORONTO NICKEL MINING PROJECT**
Date: 24-Nov-2023	**MAP SHOWING TARGET REHABILITATION AREAS FOR CY 2024 (10 HA)**
Drawn By: AED	
Checked by: JBB, FPM	
Approved by: JBC	Datum/Projection: **Geographic/LuzPhil** Drawn Scale: 1 : 10,000
	Filename: AEPEP_Target Rehab Areas_2024.wor

NORTH

0 500 meters

ANNEX A.4.

Environmental Structures Location Map


LEGEND
Bottom Pond
Silt Pond/Collector
Disturbed Areas
Access road network
CMDC Parcel 1
CMDC Parcel 2
Buffer Zone - 20m
Contour at 20-m interval
PARCEL 1
PARCEL 2
BLOCK A
BLOCK B
BOTTOM POND 1
Area= 5,438 sq. m.
Capacity= 15,794 cu. m.
SILTATION POND 1
Area = 7, 427 sq. m.
Capacity = 29, 708 cu. m.
SILTATION POND 2
Area = 6,579.10 sq. m.
Capacity = 21,625 cu. m.
SILT COLLECTOR 13
Area = 274.4 sq. m.
Capacity = 823.2 cu. m.
BOTTOM POND 4
Area = 10,190 sq. m.
Capacity = 91,710 cu. m.
BOTTOM POND 3
Area = 3,080 sq.m.
Capacity = 27, 720 cu. m.
SILTATION POND 3
Area = 6,077 sq. m.
Capacity = 42,882 cu. m.
SILT COLLECTOR 14
Area = 793.4 sq. m.
Capacity = 3, 174 cu. m.
SILT COLLECTOR 15
Area = 992.9 sq. m.
Capacity = 3,971.6 cu. m.
BOTTOM POND 6
Area = 2,724 sq. m.
Capacity = 16, 344 cu. m.
BOTTOM POND 6
Area = 566.8 sq. m.
Capacity = 2, 267 cu. m.
SILT COLLECTOR 16
Area = 4,540 sq. m.
Capacity = 22,700 cu. m.
BOTTOM POND 2
Area = 26,770 sq. m.
Capacity = 481,860 cu. m.
SILT COLLECTOR 1
Area = 1,978.7 sq. m.
Capacity = 11,872.2 cu. m.
SILTATION POND 4
Area = 2,219.4 sq. m.
Capacity = 16,732 cu. m.
BOTTOM POND 1
Area= 6,113 sq. m.
Capacity = 61,130 cu. m.
SILT COLLECTOR 2
Area = 1,276.10 sq. m.
Capacity = 3,745 cu. m.
SILTATION POND 8
Area = 9,310.50 sq. m.
Capacity = 46,552.50 cu. m.
SILTATION POND 5
Area = 1,208.60 sq. m.
Capacity = 6,430 cu. m.
SILT COLLECTOR 7
Area = 385.0 sq. m.
Capacity = 577.50 cu. m.
SILTATION POND 9
Area = 6,004 sq. m.
Capacity = 30,020 cu. m.
SILT COLLECTOR 3
Area = 987.9 sq. m.
Capacity = 1,975.8 cu. m.
SILT COLLECTOR 4
Area = 983.70 sq. m.
Capacity = 4,305 cu. m.
SILT COLLECTOR 5
Area = 1,665.50 sq. m.
Capacity = 6,257 cu. m.
SILT COLLECTOR 8
Area = 311.4 sq. m.
Capacity = 622.80 cu. m.
SILTATION POND 6
Area = 4,680.80 sq. m.
Capacity = 58,970 cu. m.
SILT COLLECTOR 10
Area = 1,037.60 sq. m.
Capacity = 1,556.40 cu. m.
SILT COLLECTOR 6
Area = 1,090.80 sq. m.
Capacity = 4,548 cu. m.
ADMIN SILTATION POND
Area = 9,206.40 sq. m.
Capacity = 46,514 cu. m.
SILTATION POND 10
Area = 2,575 sq. m.
Capacity = 9,728 cu. m.
SILTATION POND 7
Area = 13, 816.10 sq. m.
Capacity = 91,813 cu. m.
SILT COLLECTOR 9
Area = 784.6 sq. m.
Capacity = 1,647.45 cu. m.
SILT COLLECTOR 11
Area = 1,147.30 sq. m.
Capacity = 4,144 cu. m.
SILTATION POND 11
Area = 4,443.5 sq. m.
Capacity = 22,844 cu. m.
SILTATION POND 12
Area = 2,880 sq. m.
Capacity = 8,640 cu. m.
PIERYARD SILTATION POND
Area = 12,754 sq. m.
Capacity = 55,019 cu. m.
SILT COLLECTOR 12
Area = 384.7 sq. m.
Capacity = 653.99 cu. m.
Citinickel Mines
AND DEVELOPMENT CORPORATION
Map No: 2023-EN-035
TORONTO NICKEL MINING PROJECT
Date: 28-Nov-2023
Drawn By: AED
Checked by: JBB, FPM
Approved by: JBC
ENVIRONMENTAL STRUCTURES LOCATION MAP
Datum/Projection: Geographic / LuzPhil
Drawn Scale: 1 : 10,000
Filename: AEPEP_Envi Structures_2024.wor
NORTH
0
1,000
meters

ANNEX A.5.

Distance of Buffer Zone from
Stockyard to Causeway

118°16'40"

118°17'

9°11'50"

9°11'30"

9°11'10"

9°10'50"

Citinickel Mines
AND DEVELOPMENT CORPORATION

Map No: 2023-EN-033	TORONTO NICKEL MINING PROJECT
Date: 24-Nov-2023	MAP SHOWING DISTANCE FROM STOCKYARD TO CAUSEWAY
Drawn By: AED	
Checked by: JBB, FPM	
Approved by: JBC	Datum/Projection: Geographic / LuzPhil Drawn Scale: 1 : 20,000
	Filename: AEPEP_Distance Map_Stockyard to Causeway.wor

NORTH

0 250 meters

Control point

TO NARRA

TO BROOKE'S POINT

Pre-pile area (B)

Waste dump area

Ore stockyard area

281 meters

267 meters

Port building causeway

SOUTH SULU S E A

L E G E N D :

- Stockyards
- Log Deck
- Infrastractures / Facilities
- Rehabilitated and Reforested Area
- Vegetated Area
- Revegetated Area / TRP
- For Rehabilitation Area
- Active Areas
- Disturbed Areas
- Bottom Pond
- Silt Pond/Collector
- Communal Dam
- NGP Area
- Swamp Area
- Heavy Equipment Parking Area
- Fuel Depot
- Muster Points
- Hazardous Waste
- CMDC Parcel 1
- CMDC Parcel 2
- Buffer Zone - 20m
- Proposed KM 2.5 Diversion Road
- Access road network
- Water Flow / Drainage
- Contour at 20-m interval

ANNEX A.6.

Distance from Buffer Zone to Active Area

118°14'40" 118°15' 118°15'20" 118°15'40" 118°16' 118°16'20" 118°16'40"

9°13'40" 9°13'20" 9°13' 9°12'40" 9°12'20"

240 meters

BLOCK B

BLOCK A

PARCEL 2

LEGEND

- Disturbed Area
- Active Area
- Access Road Network
- MPSA Parcel 2
- 20-m Buffer Zone
- Contour at 20-m interval

Citinickel Mines
AND DEVELOPMENT CORPORATION

Map No: 2023-EN-034	**TORONTO NICKEL MINING PROJECT**
Date: 24-Nov-2023	**MAP SHOWING DISTANCE FROM ACTIVE AREA TO TENEMENT BOUNDARY**
Drawn By: AED	
Checked by: JBB, FPM	
Approved by: JBC	Datum/Projection: **Geographic/LuzPhil** Drawn Scale: 1 : 10,000
	Filename: AEPEP_Distance Map_2024.wor

NORTH

0 500 meters

ANNEX A.7.

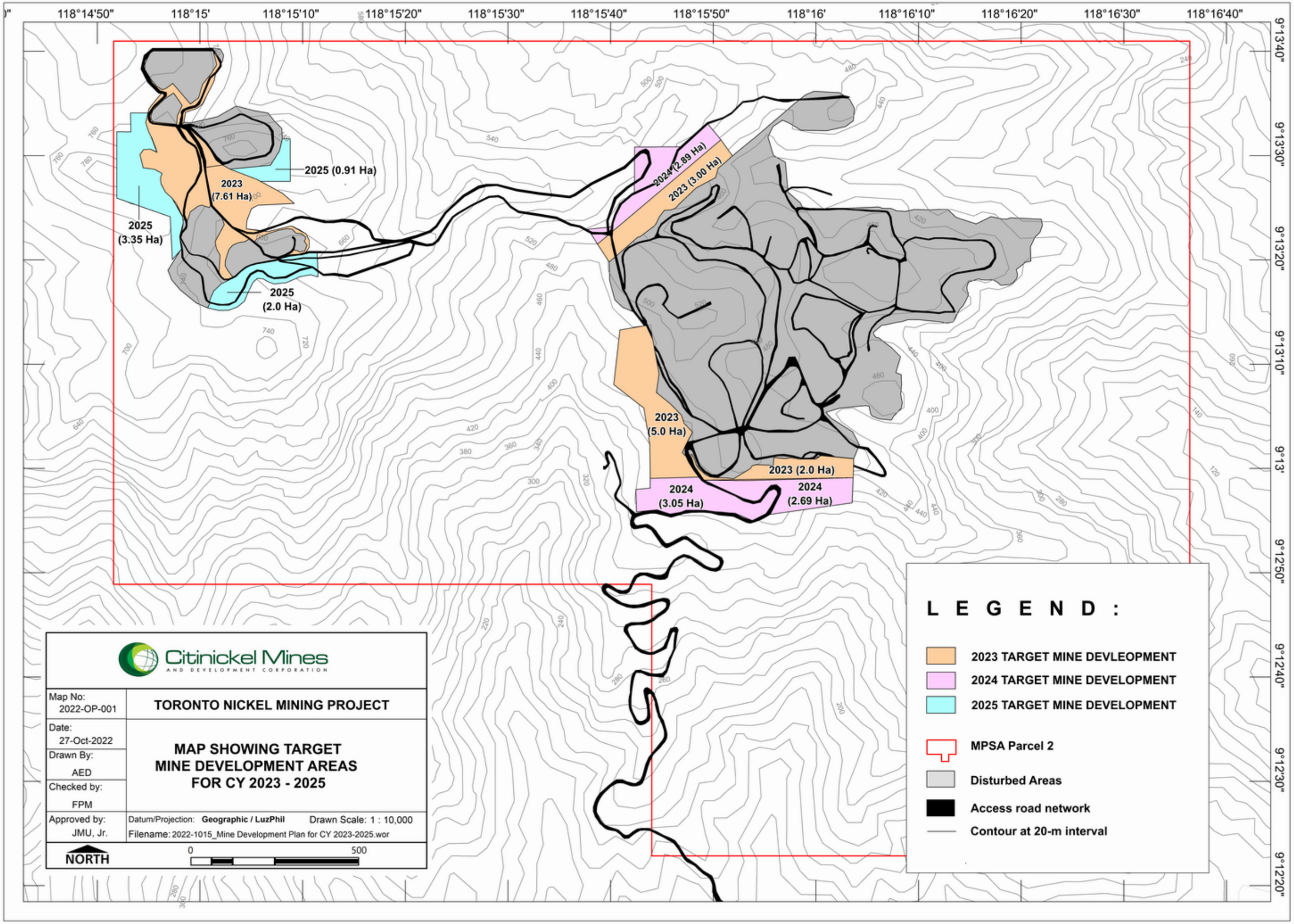
Technical Description of Waste Dump area

Detailed Coordinates of Mine Waste Area or Waste Dump

WASTE DUMP AREA (1.41 has)		
POINT	**LATITUDE**	**LONGITUDE**
1	9°11'28.2300"	118°17'0.6108"
2	9°11'30.2964"	118°16'59.898"
3	9°11'30.7968"	118°16'59.8548"
4	9°11'31.1856"	118°17'0.5964"
5	9°11'31.4556"	118°17'1.0896"
6	9°11'31.9524"	118°17'1.6800"
7	9°11'32.4888"	118°17'2.2344"
8	9°11'32.6616"	118°17'2.4720"
9	9°11'32.7480"	118°17'2.7060"
10	9°11'32.7624"	118°17'2.8716"
11	9°11'33.0252"	118°17'3.3432"
12	9°11'32.9892"	118°17'3.6024"
13	9°11'31.8408"	118°17'3.9084"
14	9°11'31.4880"	118°17'3.9768"
15	9°11'31.2756"	118°17'4.0128"
16	9°11'31.1172"	118°17'4.0164"
17	9°11'30.9588"	118°17'4.0272"
18	9°11'30.7248"	118°17'3.9948"
19	9°11'30.2496"	118°17'3.6924"
20	9°11'29.6628"	118°17'3.2028"
21	9°11'29.0544"	118°17'3.0336"
22	9°11'27.9024"	118°17'2.3172"
23	9°11'27.2148"	118°17'1.7844"
24	9°11'26.4084"	118°17'0.4956"
25	9°11'26.6208"	118°17'0.5244"
26	9°11'27.8628"	118°17'0.5964"
27	9°11'28.0212"	118°17'0.6216"

ANNEX A.8.

Mine Development Areas for CY 2024


118°14'50"
118°15'
118°15'10"
118°15'20"
118°15'30"
118°15'40"
118°15'50"
118°16'
118°16'10"
118°16'20"
118°16'30"
118°16'40"
9°13'40"
9°13'30"
9°13'20"
9°13'10"
9°13'
9°12'50"
9°12'40"
9°12'30"
9°12'20"
2025 (0.91 Ha)
2023
(7.61 Ha)
2025
(3.35 Ha)
2025
(2.0 Ha)
2024 (2.89 Ha)
2023 (3.00 Ha)
2023
(5.0 Ha)
2023 (2.0 Ha)
2024
(3.05 Ha)
2024
(2.69 Ha)
Citinickel Mines
AND DEVELOPMENT CORPORATION
Map No:
2022-OP-001
TORONTO NICKEL MINING PROJECT
Date:
27-Oct-2022
Drawn By:
AED
Checked by:
FPM
MAP SHOWING TARGET
MINE DEVELOPMENT AREAS
FOR CY 2023 - 2025
Approved by:
JMU, Jr.
Datum/Projection: Geographic / LuzPhil
Drawn Scale: 1 : 10,000
Filename: 2022-1015_Mine Development Plan for CY 2023-2025.wor
NORTH
0
500
L E G E N D :
2023 TARGET MINE DEVLEOPMENT
2024 TARGET MINE DEVELOPMENT
2025 TARGET MINE DEVELOPMENT
MPSA Parcel 2
Disturbed Areas
Access road network
Contour at 20-m interval

ANNEX A.9.

Reference Ecosystem Map

118.246 °
118.25 °
118.254 °
118.258 °
118.262 °
118.266 °
118.27 °
118.274 °

9.228 °
9.224 °
9.22 °
9.216 °
9.212 °
9.208 °

1
2
3
4

LEGEND

- Reference Ecosystem
- Disturbed Areas
- Access Road network
- MPSA Parcel 2
- 20-m Buffer Zone
- Contour at 20-m interval

REFERENCE ECOSYSTEM		
Corner	Longitude	Latitude
1	118.263069	9.213252
2	118.267613	9.213256
3	118.263069	9.206527
4	118.267618	9.206527
AREA = 38.4 HECTARES		

Citinickel Mines
AND DEVELOPMENT CORPORATION

Map No: 2023-EN-010	**TORONTO NICKEL MINING PROJECT**
Date: 11-Feb-2023	**MAP SHOWING REFERENCE ECOSYSTEM AREA (38.4 Ha)**
Drawn By: AED	
Checked by: FPM	
Approved by: JMU, Jr.	Datum/Projection: **Geographic / LuzPhil** Drawn Scale: 1 : 10,000
	Filename: TNMP_Reference Ecosystem.wor

NORTH

0 500
meters

ANNEX B

Organizational Chart

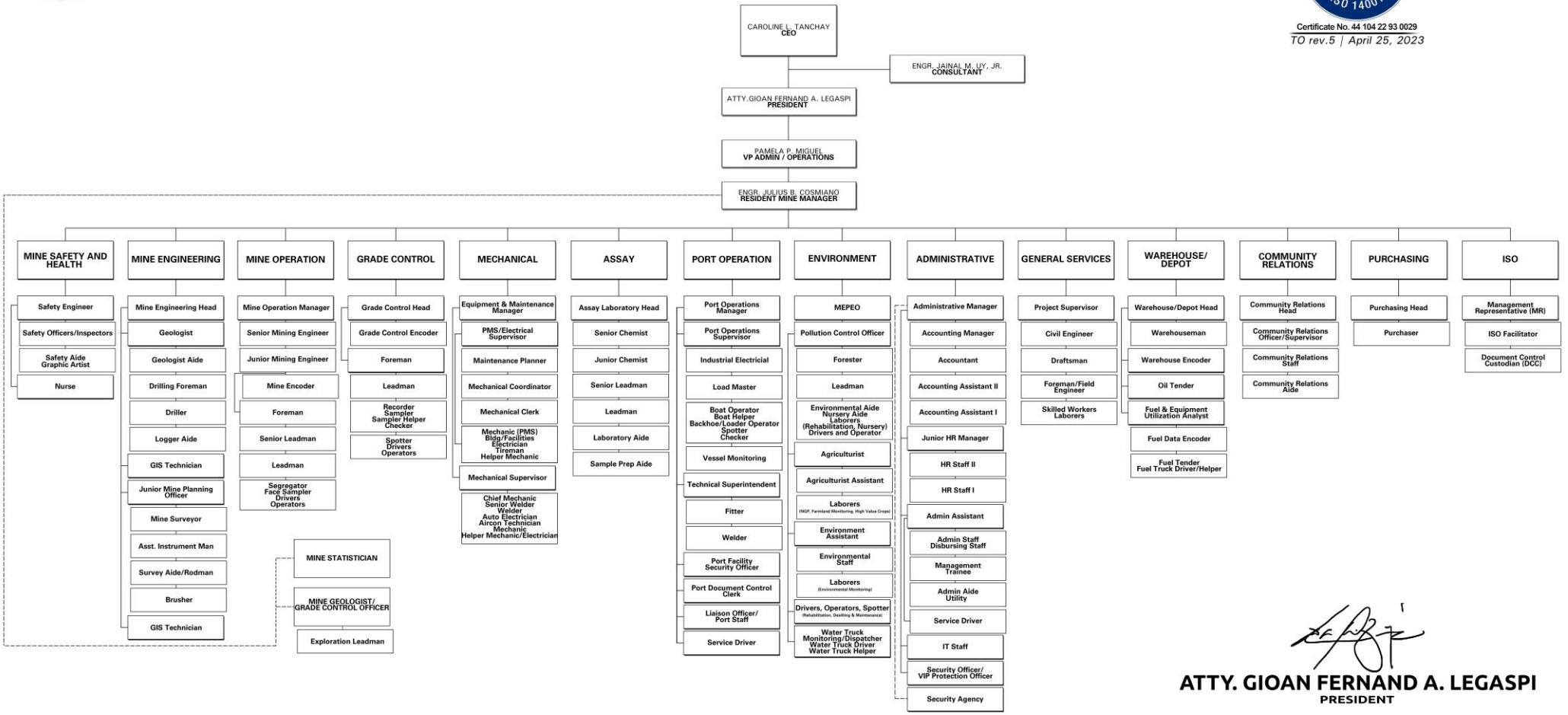
ANNEX B.1.

Table of Organization

Citinickel Mines AND DEVELOPMENT CORPORATION

TABLE OF ORGANIZATION
TORONTO NICKEL MINING PROJECT

TÜV NORD CERT GmbH ISO 14001
Certificate No. 44 104 22 93 0029
TO rev.5 | April 25, 2023

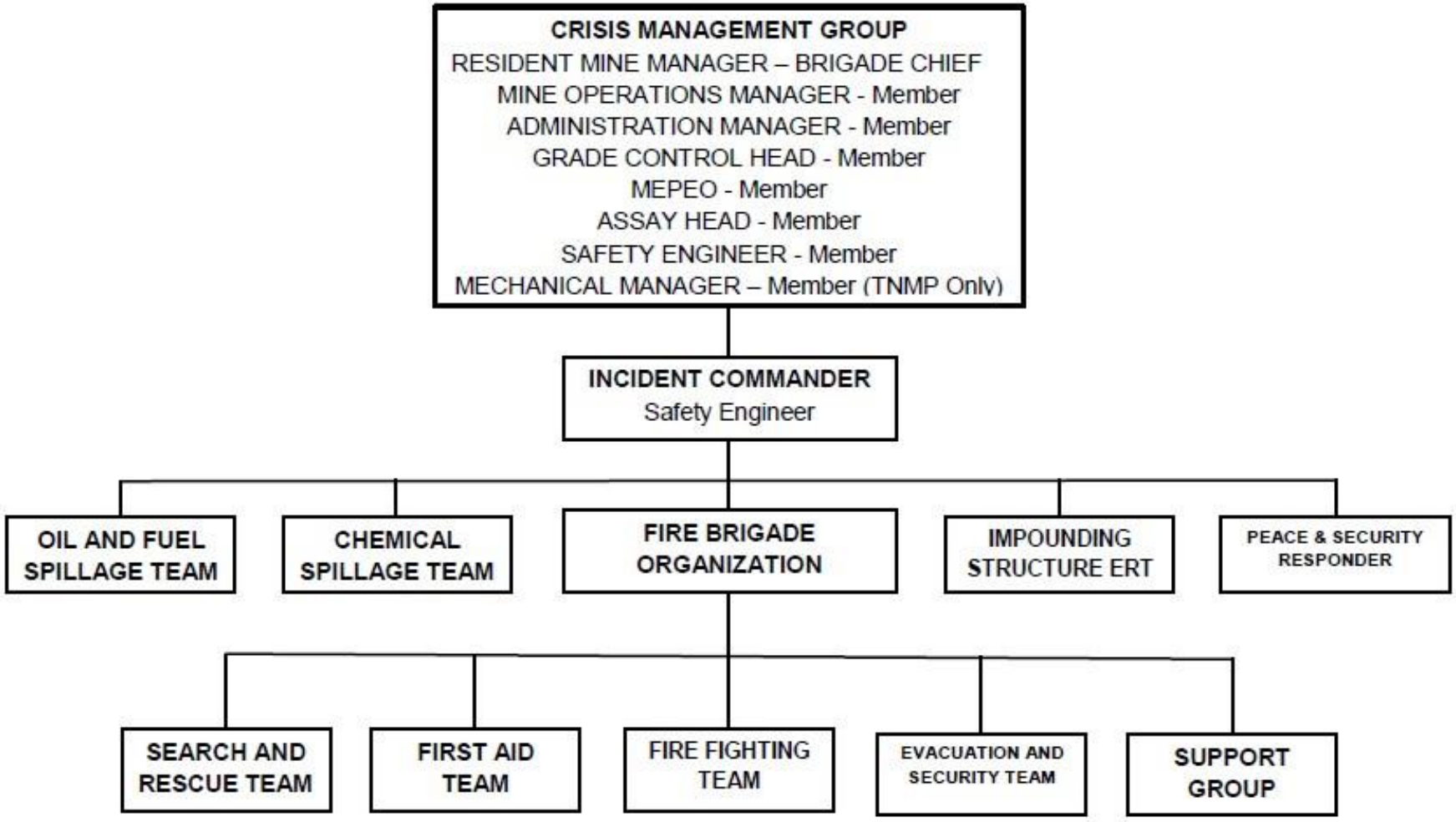


ATTY. GIOAN FERNAND A. LEGASPI
PRESIDENT

ANNEX B.2.

Emergency Response Brigade

EMERGENCY RESPONSE BRIGADE AND FIRE BRIGADE ORGANIZATION



ANNEX C

Narrative Report

ANNEX C.1.

2024 Research Proposal

Research Title	:	Coral Transplantation: An Essential Tools for Reef Restoration in Brgy. Bato Bato, Narra, Palawan
Proponent	:	Citinickel Mines and Development Corporation - Toronto Nickel Mining Project
Researcher	:	Julius B. Bugawan/MEPE Officer
Budget Allocation	:	**Php 300,000.00**

Introduction

Coral reefs are known to be the rainforest of the sea that harbour high biodiversity with a countless number of ecological interrelationships. They play a very significant role in the environment such as providing shelter for numerous species of different types of animals and marine plants and a nursery for many species of fish.

Coral nurseries are an essential tool for restoring and rehabilitate the destructed or degraded reef. Rehabilitation is defined in Precht 2006, as "the act of partially or, more rarely, fully replacing structural or functional characteristics of an ecosystem that have been reduced or lost". It may also be the substitution of an alternative qualities or characteristics than those originally present provided that they have more social, economic, or ecological value than existed in the disturbed or degraded state (Elliott *et. al*., 2007). Thus, the rehabilitated state is not expected to be the same as the original state or as healthy but merely an improvement on the degraded state (Bradshaw 2002).

Recently, restoration strategies have focused on the broader conservation an effort that emphasizes the need to combine local management actions such as establishment of marine reserves and effective management of coastal zones with direct actions such as transplantation (Mumby and Steneck 2008, Bruckner *et. al*., 2009).

This research will provide the community and other stakeholders within the municipality of Narra, Palawan the needed information for coral nursery undertakings. This will also give them an awareness and knowledge regarding the importance of coral reefs and other reef species that are currently available in the coastal areas of Narra, Palawan.

Objective of the Study

The study will be conducted specifically; a) to determine coral species for planting, b) to enhance the abundance of live coral species on local reefs as a basis for preserving coral biodiversity, c) to identify source of coral fragments for nursery and transplantation to restore damage reefs, d) to test the suitability of transplanting coral fragments, e) to determine the growth and survival rate of the planted coral fragments, f). serves as source of planting materials for coral restoration in the selected study area.

Methodology

1. Study Area

The study will be conducted within the coastal water of Brgy Bato Bato, Narra, Palawan with an average deep of 6 meters depth. In selecting suitable sites for coral nursery the following criteria will be determined as follows; accessibility, optimal depth of 5-10 meters, with good water quality and flow, protection from high surge, sand and/or rubble substrate or sparse seagrass beds, proximity to out-plant site selection area.

2. Experimental Set-up

2.1. Establishment of Coral Nursery

Table nursery for coral fragments will be fabricated made of stainless angle bars with a dimension of 1.5 meters width and 3 meters in length. The fabricated table nursery will be deployed underwater by the SCUBA divers.

After deployment, collection and farming of coral fragments will be done simultaneously to avoid stress of the coral fragments. This strategy also allowed for controls on the water parameters with similar salinity, and others. The collected coral fragments will be transferred underwater using a plastic basket/crate carried by SCUBA divers.

2.2. Coral Transplanting

Live coral fragments with an average initial length of 5 cm will be individually planted within their respective coral substrates (concrete modules). Planting of coral fragments shall be done upright by just tying them with zip tie in a deformed bars provided in the module.

Young corals are particularly fragile and so the divers had to be extra careful in handling these materials.

2.3. Monitoring and Maintenance

Monitoring of the transplanted corals will be done periodically, once every quarter after planting. Observations will include: (a.) coral growth increments (in cm.), (b.) listing of target, indicator and major fish species in the study area.

At the same time, related activities such as cleaning of debris attached to the planted coral and preserving the transplantation area were done.

2.4. Data Analysis

2.4.1. Growth Rate (%)
2.4.2. Survival Rate (%)

Table 1. Gannt Chart of Proposed Activities

Activities	YEAR 1&2											
	1	2	3	4	5	6	7	8	9	10	11	12
Coral Nursery Establishment												
1. Site Identification												
2. Procurement of Materials												
3. Preparation of Experimental Design												
4. Deployment of Coral Nursery												
5. Collection and Planting of Coral Fragment												
6. Monitoring												
Coral Transplanting												
1. Transplanting of Coral Fragments												
2. Monitoring/Data Gathering												
3. Maintenance of the coral fragments												
4. Data Analysis												
5. Report Writing												
6. Submission of First Draft												