



Security Assessment

MetaGold

Dec 6th, 2022



oceanglobal.network

Summary

This report has been prepared for MetaGold (MGV) to discover issues and vulnerabilities in the source code of the MetaGold (MGV) project as well as any contract dependencies that were not part of an officially recognized library. A comprehensive examination has been performed, utilizing Static Analysis, Manual Review, and Testnet Deployment techniques.

The auditing process pays special attention to the following considerations:

Testing the smart contracts against both common and uncommon attack vectors.

Assessing the codebase to ensure compliance with current best practices and industry standards.

Ensuring contract logic meets the specifications and intentions of the client.

Cross-referencing contract structure and implementation against similar smart contracts produced by industry leaders.

Thorough line-by-line manual review of the entire codebase by industry experts.

The security assessment resulted in findings that ranged from critical to informational. We recommend addressing these findings to ensure a high level of security standards and industry practices.

We suggest recommendations that could better serve the project from the security perspective:

Enhance general coding practices for better structures of source codes;

Add enough unit tests to cover the possible use cases;

Provide more comments per each function for readability, especially contracts that are verified in public;

Provide more transparency on privileged activities once the protocol is live.

This is a limited report on our findings based on our analysis, in accordance with good industry practice as of the date of this report, in relation to cybersecurity vulnerabilities and issues in the framework and algorithms based on smart contracts, the details of which are set out in this report. In order to get a full view of our analysis, it is crucial for you to read the full report. While we have done our best in conducting our analysis and producing this report, it is important to note that you should not rely on this report and cannot claim against us on the basis of what it says or doesn't say, or how we produced it, and it is important for you to conduct your own independent investigations before making any decisions. We go into more detail on this in the disclaimer below - please make sure to read it in full.

Overview

Ocean Global was commissioned by MetaGold to perform an audit of smart contracts:

0x619bf493e5027a6f4cc8c802a3c02fd560a83b3e

This Smart Contract is deployed on BNB Chain, Cronos Chain, Polygon Chain,
Fantom Chain and Ethereum Chain

0x330dd1a5c9aa9c4afe9bbc24b6c5de353b554d3a

This Smart Contract is deployed on Avalanche C-Chain

These two smart contracts are the same but deployed on different chains.

The purpose of the audit was to achieve the following:

Ensure that the smart contract functions as intended.

Identify potential security issues with the smart contract.

The information in this report should be used to understand the risk exposure of the smart contract, and as a guide to improving the security posture of the smart contract by remediating the issues that were identified.

Project Summary

Name	MetaGold
Description	MetaGold is the first Blockchain-based MMORPG in Virtual Reality with Realistic Graphics built on Unreal Engine, created and owned by its users. It is a universal platform that will connect games, decentralized applications, and virtual realities.
Platform	BNB, Cronos, Polygon, Fantom, Ethereum, Avalanche
Language	Solidity
Codebase	https://github.com/MetaGoldVerse
Website	https://metagoldverse.com

Contract Details

Contract Address	0x619bf493e5027a6f4cc8c802a3c02fd560a83b3e 0x330dd1a5c9aa9c4afe9bbc24b6c5de353b554d3a
Total Supply	270,000,000 MGV
Symbol	MGV
Decimals	18
Transfer Fee	0%
Buy & Selling (DEX) Fee	4%
Deployer Address	0xb1df10a4f348CFeA833F1201D04092391860fc73
Owner Address	0xb1df10a4f348CFeA833F1201D04092391860fc73

Audit Summary

Delivery Date	Dec 06, 2022
Audit Methodology	Static Analysis, Manual Review, Testnet Deployment
Key Components	MetaGoldVerse.sol

Vulnerability Summary

Vulnerability Level	Total
Critical	0
Major	0
Medium	0
Minor	0
Informational	1
Discussion	1

Understandings

MetaGold is the first Blockchain-based MMORPG in Virtual Reality with Realistic Graphics built on Unreal Engine, created and owned by its users. It is a universal platform with multi-chain compatibility that will connect games, decentralized applications, and virtual realities.

As per the tokenomics and confirmed by the team, A 4% fee is deducted on each transaction and these tokens are later burned to continuously increase the token value. This only applies when trading on Decentralized Exchanges (DEX).

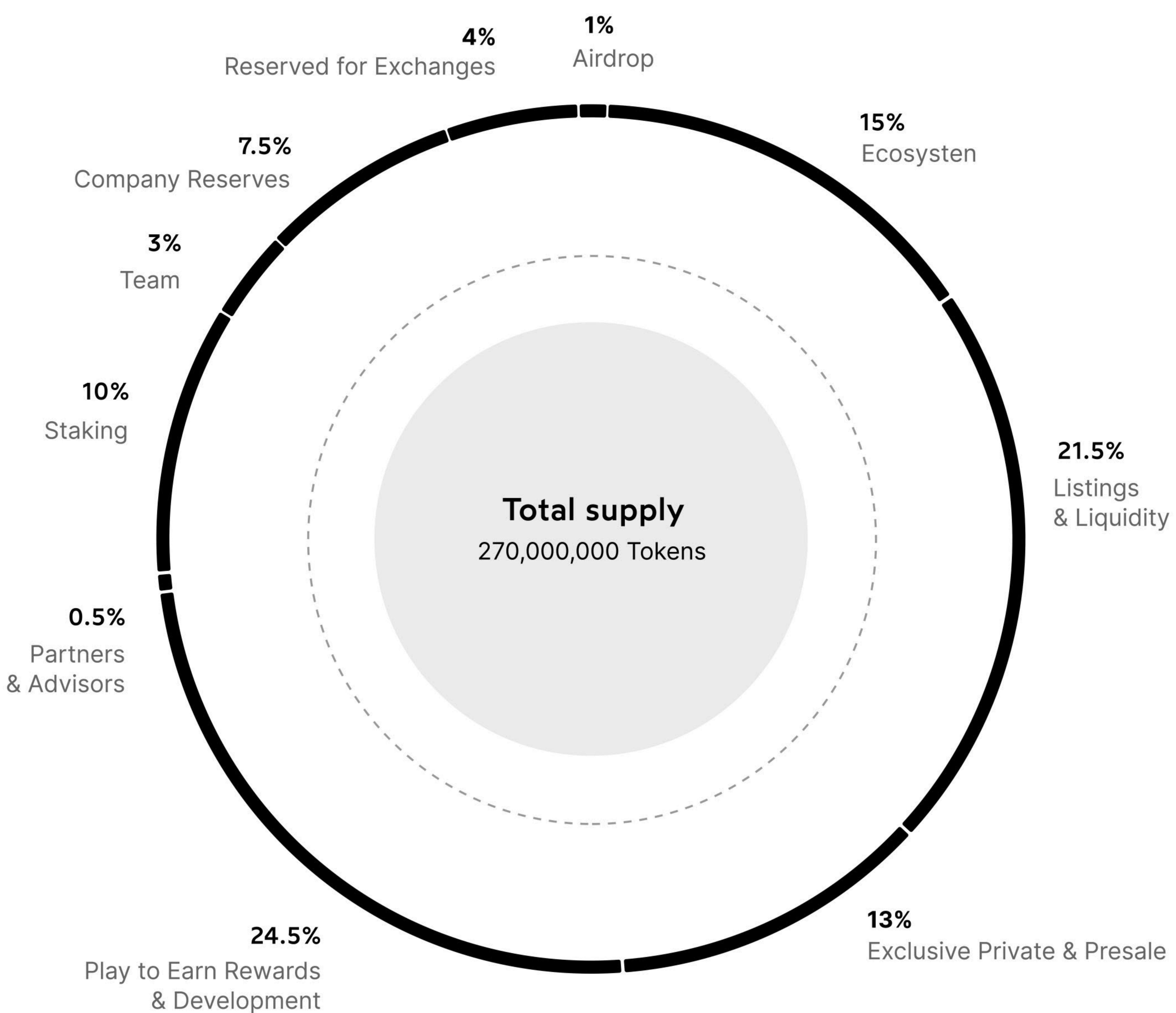
There's no additional fee for transferring tokens or trading on Centralized Exchanges (CEX).

Introduction (Source: Whitepaper)

\$MGV tokens become the investment tool to purchase virtual land in MetaGold Verse. MetaGold's financial infrastructure will allow for everyone who will be settling Metaverse with us the ability to buy and sell around all things related and needed for settlement.

Investors will be able to buy and sell \$MGV via both Decentralized and Centralized exchanges. All \$MGV from initial real estate purchases will be publicly burnt decreasing the overall supply of the token. \$MGV will also be required to purchase items from within MetaGold Marketplace for example; upgrading real estate space or purchasing items from within the marketplace. This is what makes \$MGV valuable and necessary for the ecosystem to operate.

For more information please visit the official website of MetaGold
<https://metagoldverse.com/>

Tokenomics (Source: Website)

Token vesting details are available on the official website:
<https://metagoldverse.com/>

Privileged Functions

The contract contains the following privileged functions that are restricted by the `onlyOwner` modifier. They are used to modify the contract configurations and address attributes. We grouped these functions below:

Function to burn token balance available in the smart contract:

`burnTokens` (0x6d1b229d)

Functions to change or renounce ownership of the smart contract:

`renounceOwnership` (0x715018a6)

`transferOwnership` (0xf2fde38b)

Function to set the Uniswap/Pancakeswap (DEX) factory address:

`setFactory` (0x5bb47808)

Function to withdraw any tokens available in the smart contract:

`withdrawTokens` (0x9bc5c509)

Source Code (Verified on all chains)

Transfers Holders Info **Contract** Analytics Comments

Code Read Contract Write Contract

Contract Source Code Verified (Exact Match) !

Contract Name:	MetaGoldVerse	Optimization Enabled:	No with 200 runs
Compiler Version	v0.5.17+commit.d19bba13	Other Settings:	default evmVersion, MIT license

Contract Source Code (Solidity)

```

1  /**
2   *Submitted for verification at Etherscan.io on 2022-12-05
3   */
4
5 // SPDX-License-Identifier: MIT
6
7 pragma solidity >=0.3.0 <0.8.17;
8
9
10 interface IBEP20 {
11     /**
12      * @dev Returns the amount of tokens in existence.
13     */
14     function totalSupply() external view returns (uint256);
15
16     /**
17      * @dev Returns the token decimals.
18     */
19     function decimals() external view returns (uint8);
20
21     /**
22      * @dev Returns the token symbol.
23     */
24     function symbol() external view returns (string memory);
25 }
```

Contract Security Audit

Contract Interaction

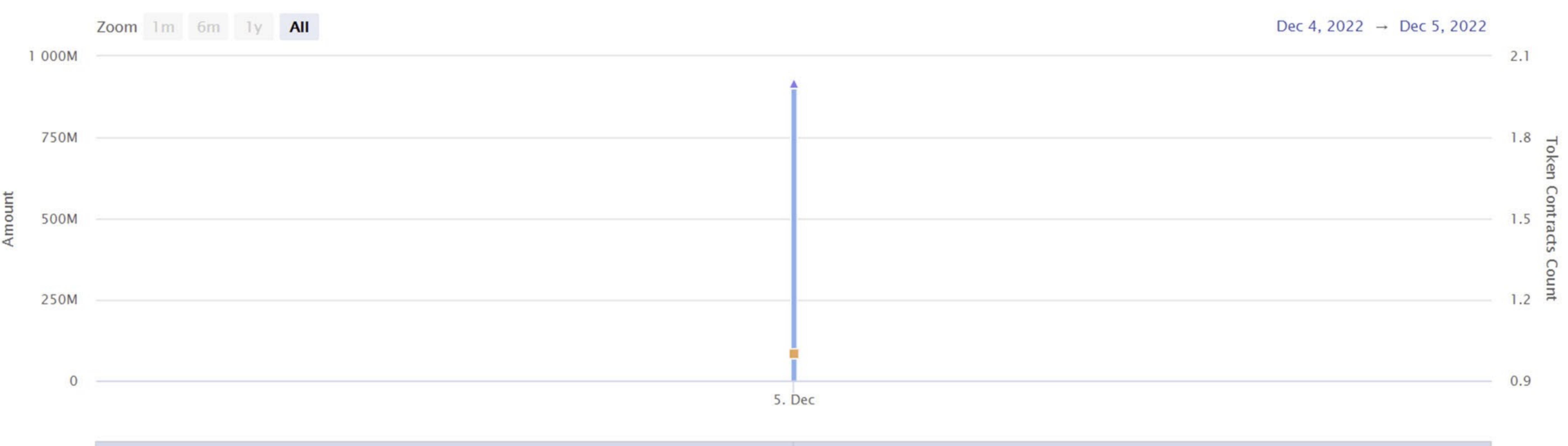
Transfers Holders Info **Contract** Analytics Comments

Token Contract Overview

Time Series: Token Contract Overview Mon 5, Dec 2022 - Mon 5, Dec 2022

Token Contract 0x619bf493e5027a6f4cc8c802a3c02fd560a83b3e (MetaGold)
Source: BscScan.com

Zoom 1m 6m 1y All Dec 4, 2022 → Dec 5, 2022



Amount

Transfer Amount Transfers Count Unique Receivers Unique Senders Total Unique

Website Test (SSL Secured) [www.metagoldverse.com](https://metagoldverse.com)



MetaGold • The Digital Frontier's [+ https://metagoldverse.com](https://metagoldverse.com) Guest Update

M E T A G O L D

Project Whitepaper Docs Presale Partner with us Upcoming More Explorers

M E T A G O L D META GOLD META GOLDVERSE.COM

CoinMarketCap Cryptocurrency Market Capitalisations

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UNREAL ENGINE

The Ultimate Virtual Reality Hyper-Realistic

#Metaverse

MetaGold is the first Blockchain-based MMORPG in Virtual Reality with Realistic Graphics built on Unreal Engine, created and owned by its users. It is a universal platform that will connect games, decentralized applications, and virtual realities.

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Contract Function Details

+ interface IBEP20 #

```
function totalSupply external
function decimals external
function symbol external
function name external
function getOwner external
function balanceOf external
function transfer external #
function allowance external
function approve external #
function transferFrom external #
```

+ contract Context

```
constructor internal
function _msgSender internal
function _msgData internal
```

+ library SafeMath

```
function add internal
function sub internal
function mul internal
function div internal
function mod internal
```

+ contract Ownable is Context #

```
constructor internal
function owner public
+ modifier onlyOwner
function renounceOwnership public #
function transferOwnership public #
function _transferOwnership internal
```

+ interface IPancakeFactory

```
function feeTo external
function feeToSetter external
function getPair external
function allPairs external
function allPairsLength external
```

Contract Function Details

+ interface IPancakeFactory

```
function feeTo external
function feeToSetter external
function getPair external
function allPairs external
function allPairsLength external
function createPair external
function setFeeTo external
function setFeeToSetter external
```

+ contract MetaGoldVerse is Context, IBEP20, Ownable #

```
constructor(address payable _lpAddress) public
function external payable
function setFactory external #
function name external
function symbol external
function decimals external
function totalSupply external
function getOwner external
function balanceOf external
function transfer external #
function allowance external
function approve external #
function transferFrom external #
function increaseAllowance public
function decreaseAllowance public
function _transfer internal
function _getTFee private
function pairSync external #
function rewardSync external #
function totalReward external
function burnTokens external #
function _burn internal
function _approve internal
function withdrawTokens external #
function _burnFrom internal
```

Issues Checking System

Issue Description	Checking Status
Compiler errors	Passed (v0.5.17+commit.d19bba13)
Race conditions and Reentrancy	Passed
Possible delays in data delivery	Passed
Oracle calls	Passed
Timestamp dependence	Passed
Integer Overflow and Underflow	Passed
DoS with Revert	Passed
DoS with block gas limit	Passed
Methods execution permissions	Passed
Economy model of the contract	Passed
The impact of the exchange rate on the logic	Passed
Malicious Event log	Passed
Scoping and Declaration	Passed
Uninitialized storage pointers	Passed
Arithmetic accuracy	Passed
Design Logic	Passed

Contract Security

 - Scanned on gopluslabs.io

Contract source code verified

This token contract is open source. You can check the contract code for details. Unsourced token contracts are likely to have malicious functions to defraud their users of their assets.

No proxy

There is no proxy in the contract. The proxy contract means contract owner can modify the function of the token and possibly effect the price.

No mint function

Mint function is transparent or non-existent. Hidden mint functions may increase the amount of tokens in circulation and effect the price of the token.

No function found that retrieves ownership

If this function exists, it is possible for the project owner to regain ownership even after relinquishing it

Owner can't change balance

The contract owner is not found to have the authority to modify the balance of tokens at other addresses.

No hidden owner

No hidden owner address was found for the token. For contract with a hidden owner, developer can still manipulate the contract even if the ownership has been abandoned.

This token can not self destruct

No self-destruct function found. If this function exists and is triggered, the contract will be destroyed, all functions will be unavailable, and all related assets will be erased.

No external call risk found

External calls would cause this token contract to be highly dependent on other contracts, which may be a potential risk.

No Honeypot Risk

This does not appear to be a honeypot.

Contract Security - Scanned on gopluslabs.io

No codes found to suspend trading.

If a suspendable code is included, the token maybe neither be bought nor sold (honeypot risk).

No trading cooldown function

The token contract has no trading cooldown function. If there is a trading cooldown function, the user will not be able to sell the token within a certain time or block after buying.

No anti_whale(Unlimited number of transactions)

There is no limit to the number of token transactions. The number of scam token transactions may be limited (honeypot risk).

Tax cannot be modified

The contract owner may not contain the authority to modify the transaction tax. If the transaction tax is increased to more than 49%, the tokens will not be able to be traded (honeypot risk).

No blacklist

The blacklist function is not included. If there is a blacklist, some addresses may not be able to trade normally (honeypot risk).

No whitelist

The whitelist function is not included. If there is a whitelist, some addresses may not be able to trade normally (honeypot risk).

No tax changes found for personal addresses

No tax changes were found for every assigned address. If it exists, the contract owner may set a very outrageous tax rate for assigned address to block it from trading.

Owner privileges (In the period when the owner is not renounced)

- Owner can burn the tokens if there is an available balance in the contract

```
578  */
579  function burnTokens(uint256 amount) external onlyOwner {
580     _balances[address(this)] = _balances[address(this)].sub(amount, "BEP20: burn amount exceeds balance");
581     totalBurn = totalBurn.add(amount);
582     totalSupply = _totalSupply.sub(amount);
583     emit Transfer(address(this), address(0), amount);
584 }
585
```

- Owner can withdraw ether / bnb or any token from the smart contract

```
626
627 /**
628 * @dev Withdraw BNB or BEP20 tokens from the deployed contract
629 */
630
631 function withdrawTokens(address token, uint amount, address payable _wallet) external onlyOwner {
632     if(token == address(0)) {
633         _wallet.transfer(amount);
634     } else {
635         IBEP20(token).transfer(_wallet, amount);
636     }
637 }
```

Security Issues

✓ High Severity Issues

No high severity issues were found.

✓ Medium Severity Issues

No medium severity issues were found.

✓ Low Severity Issues

No low severity issues were found.

Conclusion

- ✓ Smart contracts contain no issues!

DEX Liquidity Locking Details:

- ✓ LP Tokens will be locked on Ocean Global Locker (10 Years) after IDO.

Check Locked Tokens here:

<https://oceanglobal.network/locker-view?address=0x619bf493e5027a6f4cc8c802a3c02fd560a83b3e>

Ocean Global Note:

Please check the disclaimer above and note. The report is provided for the only contract mentioned in the report and does not include any other potential contracts deployed by Owner.

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The analysis of the security is purely based on the smart contracts alone. No applications or operations were reviewed for security. No product code has been reviewed.

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Ocean Global’s goal is to help reduce the attack vectors and the high level of variance associated with utilizing new and consistently changing technologies, and in no way claims any guarantee of security or the functionality of the technology we agree to analyze.

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