Cyberscope

Audit Report

GreenWorld

March 2022

Type	BEP20
Network	BSC
Address	0x94Dbb34Cb263d84C5270376829E9318c400aeEc0
Audited by	© cyberscope

Table of Contents

Contract Review

Contract Name	GREENWORLD
Compiler Version	v0.8.7+commit.e28d00a7
Optimization	200 runs
Licence	Unlicense
Explorer	https://bscscan.com/token/0x94Dbb34Cb263d84C5270376829E9318c400aeEc0
Symbol	GWD
Decimals	6
Total Supply	500,000,000
Domain	gwdtoken.com

Source Files

Filename	**SHA256**
contract.sol	973f7136b10fef398cb611f263f6e1bb90a20488240fb769b3e3cb8f670ecb88

Audit Updates

Initial Audit	29th March 2022
Corrected	05 April 2022

Contract Analysis

Critical Medium Minor Pass

Severity	Code	Description	Status
●	ST	Contract Owner is not able to stop or pause transactions	Resolved
●	OCTD	Contract Owner is not able to transfer tokens from specific address	
●	OTUT	Owner Transfer User's Tokens	
●	ELFM	Contract Owner is not able to increase fees more than a reasonable percent (25%)	Resolved
●	ULTW	Contract Owner is not able to increase the amount of liquidity taken by dev wallet more than a reasonable percent	
●	MT	Contract Owner is not able to mint new tokens	
●	BT	Contract Owner is not able to burn tokens from specific wallet	
●	BC	Contract Owner is not able to blacklist wallets from selling	Resolved

ST - Stop Transactions

Criticality	critical
Location	contract.sol#L632,647
Status	Resolved

Description

The contract owner has the authority to stop transactions for all users excluding the owner. The owner may take advantage of it by setting the `tradingEnabled` to false.

```
    if (!_isExcludedFromFee[from] && !_isExcludedFromFee[to]) {
            require(tradingEnabled, "Trading not active");
        }
```

The contract owner may convert the contract into a **Honeypot** and prevent users from selling. He can take advantage of it by setting the `maxSellLimit` to zero.

```
   if (
            from != pair && !_isExcludedFromFee[to] &&
!_isExcludedFromFee[from] && !swapping
        ) {
            require(amount <= maxSellLimit, "You are exceeding maxSellLimit");
            if (to != pair) {
                require(
                    balanceOf(to) + amount <= maxWalletLimit,
                    "You are exceeding maxWalletLimit"
       );
    }
```

Recommendation

The contract could embody a check for not allowing setting the maxSellLimit less than a reasonable amount. A suggested implementation could check that the maximum amount should be more than a fixed percentage of the total supply.

The team should carefully manage the private keys of the owner's account. We strongly recommend a powerful security mechanism that will prevent a single user

from accessing the contract admin functions. That risk can be prevented by temporarily locking the contract or renouncing ownership.

Corrected 05 April 2022

The owner has renounced contract ownership and the threats have been eliminated.

ELFM - Exceed Limit Fees Manipulation

Criticality	critical
Location	contract.sol#L398,410
Status	Resolved

Description

The contract owner has the authority to increase over the allowed limit of 25%. The owner may take advantage of it by calling the `setTaxes` function with a high percentage value.

```
function setTaxes(
     uint256 _rfi,
     uint256 _charity,
     uint256 _liquidity,
     uint256 _utility,
     uint256 _operation,
     uint256 _burn
 ) public onlyOwner {
     taxes = Taxes(_rfi, _charity, _liquidity, _utility, _operation, _burn);
     emit FeesChanged();
 }
```

Recommendation

The contract could embody a check for the maximum acceptable value.

The team should carefully manage the private keys of the owner's account. We strongly recommend a powerful security mechanism that will prevent a single user from accessing the contract admin functions. That risk can be prevented by temporarily locking the contract or renouncing ownership.

Corrected 05 April 2022

The owner has renounced contract ownership and the threats have been eliminated.

BC - Blacklisted Contracts

Criticality	critical
Location	contract.sol#L824,828
Status	Resolved

Description

The contract owner has the authority to stop contracts from transactions. The owner may take advantage of it by calling the `blacklistAddress` function.

```
        require(!_isBlacklisted[from] && !_isBlacklisted[to], "You are a bot");
```

Recommendation

The team should carefully manage the private keys of the owner's account. We strongly recommend a powerful security mechanism that will prevent a single user from accessing the contract admin functions. That risk can be prevented by temporarily locking the contract or renouncing ownership.

Corrected 05 April 2022

The owner has renounced contract ownership and the threats have been eliminated.

Contract Diagnostics

Critical Medium Minor

Severity	Code	Description
	L01	Public Function could be Declared External
	L02	State Variables could be Declared Constant
	L04	Conformance to Solidity Naming Conventions
	L07	Missing Events Arithmetic
	L11	Unnecessary Boolean equality
	L13	Divide before Multiply Operation

L01 - Public Function could be Declared External

Criticality	minor
Location	contract.sol#L66,70,251,255,264,273,277,282,296,301 and 9 more

Description

Public functions that are never called by the contract should be declared external to save gas.

```
rescueAnyBEP20Tokens
setSellTaxes
setTaxes
isExcludedFromFee
includeInFee
excludeFromFee
reflectionFromToken
isExcludedFromReward
transfer
...
```

Recommendation

Use the external attribute for functions never called from the contract.

L02 - State Variables could be Declared Constant

Criticality	minor
Location	contract.sol#L152,163

Description

Constant state variables should be declared constant to save gas.

```
deadWallet
_tTotal
```

Recommendation

Add the constant attribute to state variables that never change.

L04 - Conformance to Solidity Naming Conventions

Criticality	minor
Location	contract.sol#L88,195,338,395,396,397,398,399,400,407 and 13 more

Description

Solidity defines a naming convention that should be followed. Rule exceptions:

- Allow constant variable name/symbol/decimals to be lowercase.
- Allow _ at the beginning of the mixed_case match for private variables and unused parameters.

```
_symbol
_name
genesis_block
_decimals
_amount
_to
_tokenAddr
_enabled
_burn
...
```

Recommendation

Follow the Solidity naming convention.
https://docs.soliditylang.org/en/v0.4.25/style-guide.html#naming-conventions

L07 - Missing Events Arithmetic

Criticality	minor
Location	contract.sol#L336,807,812,840,845

Description

Detected missing events for critical arithmetic parameters. There are functions that have no event emitted, so it is difficult to track off-chain changes.

```
maxWalletLimit = amount * 10 ** decimals()
maxBuyLimit = maxBuy * 10 ** decimals()
swapTokensAtAmount = amount * 10 ** _decimals
coolDownTime = time * 1
deadline = _deadline
```

Recommendation

Emit an event for critical parameter changes.

L11 - Unnecessary Boolean equality

Criticality	minor
Location	contract.sol#L336

Description

The comparison to boolean constants is redundant. Boolean constants can be used directly and do not need to be compared to true or false.

```
state == true
```

Recommendation

Remove the equality to the boolean constant.

L13 - Divide before Multiply Operation

Criticality	minor
Location	contract.sol#L725

Description

Performing divisions before multiplications may cause lose of prediction.

```
unitBalance = deltaBalance / (denominator - temp.liquidity)
```

Recommendation

The multiplications should be prior to the divisions.

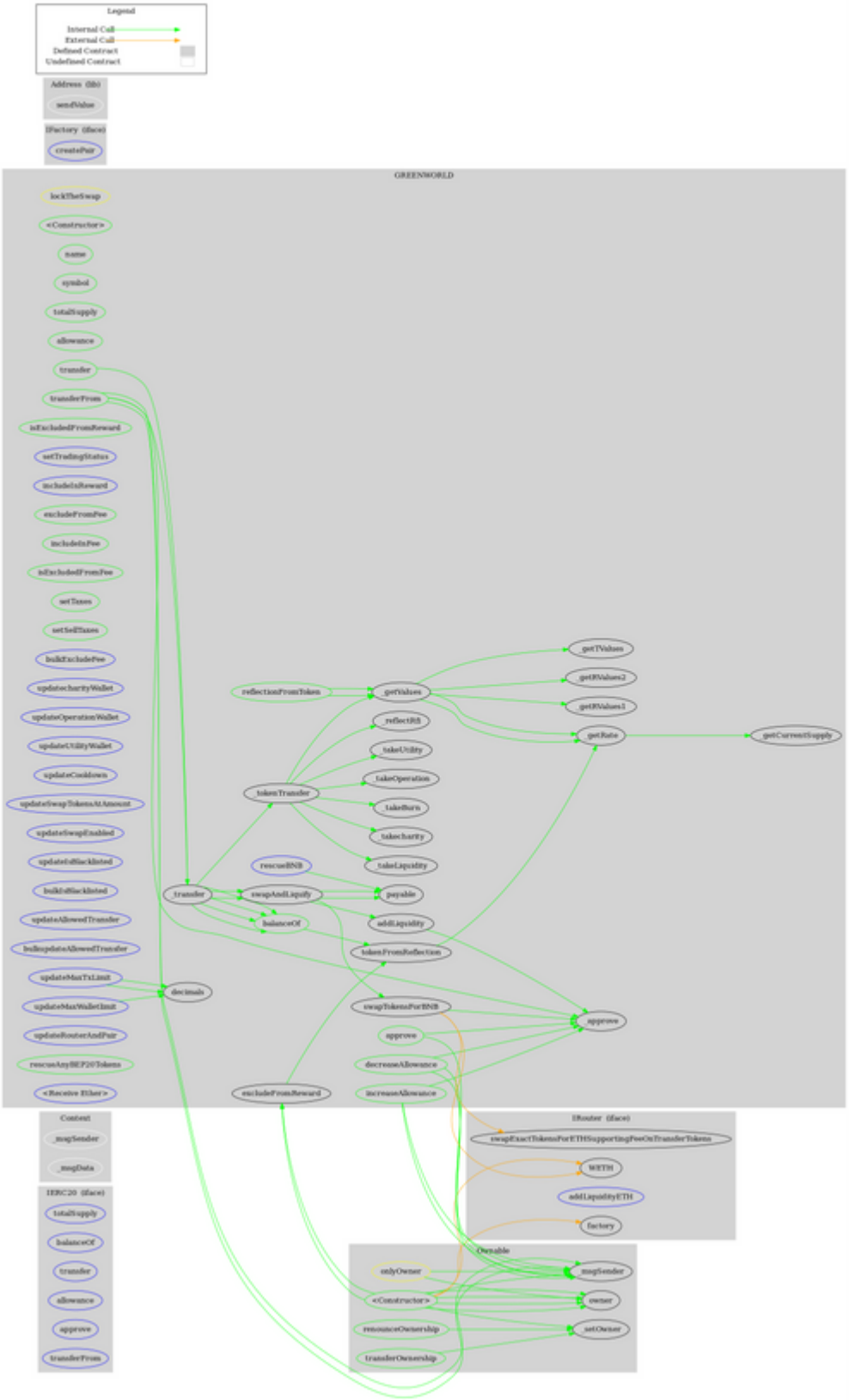
Contract Functions

Contract	Type	Bases		
	Function Name	Visibility	Mutability	Modifiers
IERC20	Interface			
	totalSupply	External		-
	balanceOf	External		-
	transfer	External	✓	-
	allowance	External		-
	approve	External	✓	-
	transferFrom	External	✓	-
Context	Implementation			
	_msgSender	Internal		
	_msgData	Internal		
Ownable	Implementation	Context		
	<Constructor>	Public	✓	-
	owner	Public		-
	renounceOwnership	Public	✓	onlyOwner
	transferOwnership	Public	✓	onlyOwner
	_setOwner	Private	✓	
IFactory	Interface			
	createPair	External	✓	-
IRouter	Interface			
	factory	External		-
	WETH	External		-
	addLiquidityETH	External	Payable	-
	swapExactTokensForETHSupportingFeeOnTransferTokens	External	✓	-

Address	Library			
	sendValue	Internal	✓	
GREENWORLD	Implementation	Context, IERC20, Ownable		
	<Constructor>	Public	✓	-
	name	Public		-
	symbol	Public		-
	decimals	Public		-
	totalSupply	Public		-
	balanceOf	Public		-
	allowance	Public		-
	approve	Public	✓	-
	transferFrom	Public	✓	-
	increaseAllowance	Public	✓	-
	decreaseAllowance	Public	✓	-
	transfer	Public	✓	-
	isExcludedFromReward	Public		-
	reflectionFromToken	Public		-
	setTradingStatus	External	✓	onlyOwner
	tokenFromReflection	Public		-
	excludeFromReward	Public	✓	onlyOwner
	includeInReward	External	✓	onlyOwner
	excludeFromFee	Public	✓	onlyOwner
	includeInFee	Public	✓	onlyOwner
	isExcludedFromFee	Public		-
	setTaxes	Public	✓	onlyOwner
	setSellTaxes	Public	✓	onlyOwner
	_reflectRfi	Private	✓	
	_takeLiquidity	Private	✓	
	_takecharity	Private	✓	
	_takeBurn	Private	✓	
	_takeOperation	Private	✓	
	_takeUtility	Private	✓	
	_getValues	Private		

	_getTValues	Private		
	_getRValues1	Private		
	_getRValues2	Private		
	_getRate	Private		
	_getCurrentSupply	Private		
	_approve	Private	✓	
	_transfer	Private	✓	
	_tokenTransfer	Private	✓	
	swapAndLiquify	Private	✓	lockTheSwap
	addLiquidity	Private	✓	
	swapTokensForBNB	Private	✓	
	bulkExcludeFee	External	✓	onlyOwner
	updatecharityWallet	External	✓	onlyOwner
	updateOperationWallet	External	✓	onlyOwner
	updateUtilityWallet	External	✓	onlyOwner
	updateCooldown	External	✓	onlyOwner
	updateSwapTokensAtAmount	External	✓	onlyOwner
	updateSwapEnabled	External	✓	onlyOwner
	updateIsBlacklisted	External	✓	onlyOwner
	bulkIsBlacklisted	External	✓	onlyOwner
	updateAllowedTransfer	External	✓	onlyOwner
	bulkupdateAllowedTransfer	External	✓	onlyOwner
	updateMaxTxLimit	External	✓	onlyOwner
	updateMaxWalletlimit	External	✓	onlyOwner
	updateRouterAndPair	External	✓	onlyOwner
	rescueBNB	External	✓	onlyOwner
	rescueAnyBEP20Tokens	Public	✓	onlyOwner
	<Receive Ether>	External	Payable	-

Contract Flow



Domain Info

Domain Name	gwdtoken.com
Registry Domain ID	2682965657_DOMAIN_COM-VRSN
Creation Date	2022-03-20T09:34:11Z
Updated Date	2022-03-20T09:34:12Z
Registry Expiry Date	2024-03-20T09:34:11Z
Registrar WHOIS Server	whois.godaddy.com
Registrar URL	https://www.godaddy.com
Registrar	GoDaddy.com, LLC
Registrar IANA ID	146

There is no public billing information, the creator is protected by the privacy settings.

Summary

There are some functions that can be abused by the owner, like manipulating fees up to 100%, stopping transactions for all users except the owner and massively blacklisting wallets from trading. The contract can be converted into a **honeypot** and prevent users from selling if the owner abuses the admin functions. A multi-wallet signing pattern will provide security against potential hacks. Temporarily locking the contract or renouncing ownership will eliminate all the contract threats.

Corrected 05 April 2022

The owner has renounced contract ownership and the threats have been eliminated.

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The Cyberscope team

https://www.cyberscope.io