Cyberscope

Audit Report

DOGEBEER

August 2022

Type	BEP20
Network	BSC TESTNET
Address	0xb4C6827362D0b685303A55F56e063F8eBAf0b023
Audited by	© cyberscope

Table of Contents

Contract Review

Contract Name	DOGEBEER
Compiler Version	v0.8.11+commit.d7f03943
Optimization	0 runs
Explorer	https://testnet.bscscan.com/address/0xb4C6827362D0b685303A55F56e063F8eBAf0b023
Symbol	BEERS
Decimals	9
Total Supply	420,000,000

Source Files

Filename	**SHA256**
contract.sol	e517a5a9dc0c1d33898e2a2acc55026c0e89c90c273249cb24fa52324f6de410

Audit Updates

Initial Audit	23rd July 2022 https://github.com/cyberscope-io/audits/tree/main/beers/v1/audit.pdf
Corrected	19th August 2022

Contract Analysis

🔴 Critical 🟠 Medium ⚪ Minor 🔵 Pass

Severity	Code	Description	Status
🟠	ST	Stops Transactions	Unresolved
🔵	OCTD	Transfers Contract's Tokens	Passed
🔵	OTUT	Transfers User's Tokens	Passed
🟠	ELFM	Exceeds Fees Limit	Unresolved
⚪	ULTW	Transfers Liquidity to Team Wallet	Unresolved
🔵	MT	Mints Tokens	Passed
🔵	BT	Burns Tokens	Passed
🔵	BC	Blacklists Addresses	Passed

ST - Stops Transactions

Criticality	medium
Location	contract.sol#L692
Status	Unresolved

Description

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

```
if(from != owner() && to != owner()) {
    require(amount <= _maxTxAmount, "Transfer amount exceeds the maxTxAmount.");
}
```

Recommendation

The contract could embody a check for not allowing setting the _maxTxAmount 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.

ELFM - Exceeds Fees Limit

Criticality	medium
Location	contract.sol#L1104
Status	Unresolved

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 `setSellFee` function with 25 and 25. As a result the total fees will be 50%.

```
function setSellFee(uint256 sellTaxFee, uint256 sellLiquidityFee) external
onlyOwner {
    // Added maximum level of 25% to the sell and liquidity fees.
    require(_sellTaxFee <= 25 && sellLiquidityFee <= 25, "TOO_MUCH_FEE");
    _sellTaxFee = sellTaxFee;
    _sellLiquidityFee = sellLiquidityFee;
}
```

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.

ULTW - Unlimited Liquidity to Team Wallet

Criticality	minor
Location	contract.sol#L1194

Description

The contract owner has the authority to transfer funds without limit to the team wallet. These funds have been accumulated from fees collected from the contract. The owner may take advantage of it by calling the `Sweep` method.

```
function Sweep() external onlyOwner {
    uint256 balance = address(this).balance;
    payable(owner()).transfer(balance);
}
```

Recommendation

The contract could embody a check for the maximum amount of funds that can be swapped. Since a huge amount may volatile the token's price.

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.

Contract Diagnostics

🔴 Critical 🟠 Medium ● Minor

Severity	Code	Description	Status
●	L01	Public Function could be Declared External	Unresolved
●	L02	State Variables could be Declared Constant	Unresolved
●	L03	Redundant Statements	Unresolved
●	L04	Conformance to Solidity Naming Conventions	Unresolved
●	L07	Missing Events Arithmetic	Unresolved
●	L09	Dead Code Elimination	Unresolved
●	L14	Uninitialized Variables in Local Scope	Unresolved

L01 - Public Function could be Declared External

Criticality	minor
Location	contract.sol#L184,189,195,199,203,210,559,563,567,571,580,585,589,594,600,605,610,614,618,622,626,636,653,1012,1016,1020,1071,1087
Status	Unresolved

Description

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

```
renounceOwnership
transferOwnership
getUnlockTime
getTime
lock
unlock
name
symbol
decimals
...
```

Recommendation

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

L02 - State Variables could be Declared Constant

Criticality	minor
Location	contract.sol#L498,497,507
Status	Unresolved

Description

Constant state variables should be declared constant to save gas.

```
_buyBackMaxTimeForHistories
_buyBackTimeInterval
_isEnabledBuyBackAndBurn
```

Recommendation

Add the constant attribute to state variables that never change.

L03 - Redundant Statements

Criticality	minor
Location	contract.sol#L20
Status	Unresolved

Description

The contract contains statements that are not used and have no effect. As a result, those segments increase the code size of the contract unnecessarily.

```
Context
```

Recommendation

Remove the redundant statements in order to decrease the code size.

L04 - Conformance to Solidity Naming Conventions

Criticality	minor
Location	contract.sol#L255,256,272,293,985,991,1067,1071,1082,1087,1091,1128,1132,1136,1141,1146,1169,1188,1194,1199,1207,1215,432,444,448,449,450,467,470,473,474,476,477,479,480,482,485,487,489,494,495,496,497,498,507
Status	Unresolved

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.

```
DOMAIN_SEPARATOR
PERMIT_TYPEHASH
MINIMUM_LIQUIDITY
WETH
_amount
SetBuyBackDivisor
GetBuyBackTimeInterval
SetBuyBackRangeRate
GetSwapMinutes
...
```

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#L1067,1082,1091,1095,1099,1104,1111,1115,1119,1124,1128
Status	Unresolved

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.

```
_buyBackDivisor = newDivisor
_buyBackRangeRate = newPercent
_intervalMinutesForSwap = newMinutes * 60
_taxFee = taxFee
_buyTaxFee = buyTaxFee
_sellTaxFee = sellTaxFee
_liquidityFee = liquidityFee
buyBackSellLimit = buyBackSellSetLimit
_maxTxAmount = maxTxAmount
...
```

Recommendation

Emit an event for critical parameter changes.

L09 - Dead Code Elimination

Criticality	minor
Location	contract.sol#L142,125,129,133,137,102
Status	Unresolved

Description

Functions that are not used in the contract, and make the code's size bigger.

```
_functionCallWithValue
functionCall
functionCallWithValue
isContract
```

Recommendation

Remove unused functions.

L14 - Uninitialized Variables in Local Scope

Criticality	minor
Location	contract.sol#L700
Status	Unresolved

Description

The are variables that are defined in the local scope and are not initialized.

```
sellHistory
```

Recommendation

All the local scoped variables should be initialized.

Contract Functions

Contract	**Type**	**Bases**		
	Function Name	**Visibility**	**Mutability**	**Modifiers**
Context	Implementation			
	_msgSender	Internal		
	_msgData	Internal		
IERC20	Interface			
	totalSupply	External		-
	balanceOf	External		-
	transfer	External	✓	-
	allowance	External		-
	approve	External	✓	-
	transferFrom	External	✓	-
SafeMath	Library			
	add	Internal		
	sub	Internal		
	sub	Internal		
	mul	Internal		
	div	Internal		
	div	Internal		
	mod	Internal		
	mod	Internal		
Address	Library			
	isContract	Internal		
	functionCall	Internal	✓	
	functionCall	Internal	✓	
	functionCallWithValue	Internal	✓	
	functionCallWithValue	Internal	✓	

	_functionCallWithValue	Private	✓	
Ownable	Implementation	Context		
	<Constructor>	Public	✓	-
	owner	Public		-
	renounceOwnership	Public	✓	onlyOwner
	transferOwnership	Public	✓	onlyOwner
	getUnlockTime	Public		-
	getTime	Public		-
	lock	Public	✓	onlyOwner
	unlock	Public	✓	-
IUniswapV2Factory	Interface			
	feeTo	External		-
	feeToSetter	External		-
	getPair	External		-
	allPairs	External		-
	allPairsLength	External		-
	createPair	External	✓	-
	setFeeTo	External	✓	-
	setFeeToSetter	External	✓	-
IUniswapV2Pair	Interface			
	name	External		-
	symbol	External		-
	decimals	External		-
	totalSupply	External		-
	balanceOf	External		-
	allowance	External		-
	approve	External	✓	-
	transfer	External	✓	-
	transferFrom	External	✓	-
	DOMAIN_SEPARATOR	External		-

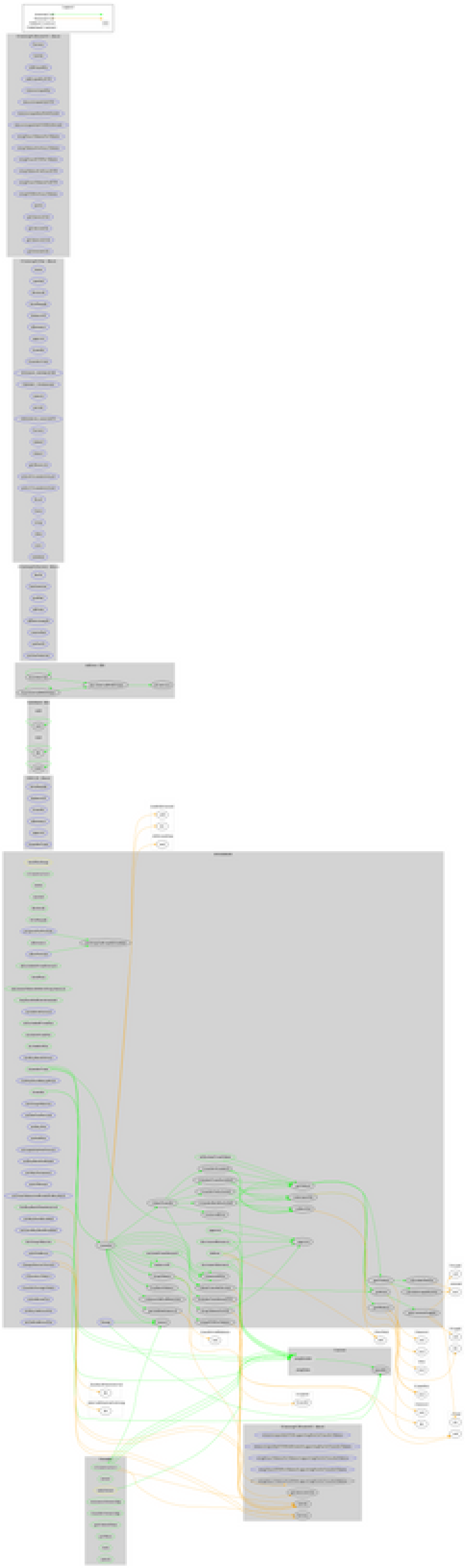
	PERMIT_TYPEHASH	External		-
	nonces	External		-
	permit	External	✓	-
	MINIMUM_LIQUIDITY	External		-
	factory	External		-
	token0	External		-
	token1	External		-
	getReserves	External		-
	price0CumulativeLast	External		-
	price1CumulativeLast	External		-
	kLast	External		-
	burn	External	✓	-
	swap	External	✓	-
	skim	External	✓	-
	sync	External	✓	-
	initialize	External	✓	-
IUniswapV2Router01	Interface			
	factory	External		-
	WETH	External		-
	addLiquidity	External	✓	-
	addLiquidityETH	External	Payable	-
	removeLiquidity	External	✓	-
	removeLiquidityETH	External	✓	-
	removeLiquidityWithPermit	External	✓	-
	removeLiquidityETHWithPermit	External	✓	-
	swapExactTokensForTokens	External	✓	-
	swapTokensForExactTokens	External	✓	-
	swapExactETHForTokens	External	Payable	-
	swapTokensForExactETH	External	✓	-
	swapExactTokensForETH	External	✓	-
	swapETHForExactTokens	External	Payable	-
	quote	External		-
	getAmountOut	External		-

	getAmountIn	External		-
	getAmountsOut	External		-
	getAmountsIn	External		-
IUniswapV2Router02	Interface	IUniswapV2Router01		
	removeLiquidityETHSupportingFeeOnTransferTokens	External	✓	-
	removeLiquidityETHWithPermitSupportingFeeOnTransferTokens	External	✓	-
	swapExactTokensForTokensSupportingFeeOnTransferTokens	External	✓	-
	swapExactETHForTokensSupportingFeeOnTransferTokens	External	Payable	-
	swapExactTokensForETHSupportingFeeOnTransferTokens	External	✓	-
DOGEBEER	Implementation	Context, IERC20, Ownable		
	<Constructor>	Public	✓	-
	name	Public		-
	symbol	Public		-
	decimals	Public		-
	totalSupply	Public		-
	balanceOf	Public		-
	transfer	Public	✓	-
	allowance	Public		-
	approve	Public	✓	-
	transferFrom	Public	✓	-
	increaseAllowance	Public	✓	-
	decreaseAllowance	Public	✓	-
	isExcludedFromReward	Public		-
	totalFees	Public		-
	minimumTokensBeforeSwapAmount	Public		-
	buyBackSellLimitAmount	Public		-
	deliver	Public	✓	-
	reflectionFromToken	Public		-

	tokenFromReflection	Public		-
	excludeFromReward	Public	✓	onlyOwner
	includeInReward	External	✓	onlyOwner
	_approve	Private	✓	
	_transfer	Private	✓	
	swapTokens	Private	✓	lockTheSwap
	buyBackTokens	Private	✓	lockTheSwap
	swapTokensForEth	Private	✓	
	swapETHForTokens	Private	✓	
	_tokenTransfer	Private	✓	
	_transferStandard	Private	✓	
	_transferToExcluded	Private	✓	
	_transferFromExcluded	Private	✓	
	_transferBothExcluded	Private	✓	
	_reflectFee	Private	✓	
	_getValues	Private		
	_getTValues	Private		
	_getRValues	Private		
	_getRate	Private		
	_getCurrentSupply	Private		
	_takeLiquidity	Private	✓	
	calculateTaxFee	Private		
	calculateLiquidityFee	Private		
	removeAllFee	Private	✓	
	restoreAllFee	Private	✓	
	isExcludedFromFee	Public		-
	excludeFromFee	Public	✓	onlyOwner
	includeInFee	Public	✓	onlyOwner
	_getSellBnBAmount	Private		
	_removeOldSellHistories	Private	✓	
	SetBuyBackDivisor	External	✓	onlyOwner
	GetBuyBackTimeInterval	Public		-
	SetBuyBackRangeRate	External	✓	onlyOwner
	GetSwapMinutes	Public		-

	SetSwapMinutes	External	✓	onlyOwner
	setTaxFeePercent	External	✓	onlyOwner
	setBuyFee	External	✓	onlyOwner
	setSellFee	External	✓	onlyOwner
	setLiquidityFeePercent	External	✓	onlyOwner
	setBuyBackSellLimit	External	✓	onlyOwner
	setMaxTxAmount	External	✓	onlyOwner
	setLPDivisor	External	✓	onlyOwner
	setNumTokensSellToAddToBuyBack	External	✓	onlyOwner
	setLPAddress	External	✓	onlyOwner
	setSwapAndLiquifyEnabled	Public	✓	onlyOwner
	setBuyBackEnabled	External	✓	onlyOwner
	setAutoBuyBackEnabled	External	✓	onlyOwner
	prepareForPreSale	External	✓	onlyOwner
	afterPreSale	External	✓	onlyOwner
	transferToAddressETH	Private	✓	
	changeRouterVersion	External	✓	onlyOwner
	<Receive Ether>	External	Payable	-
	transferForeignToken	External	✓	onlyOwner
	Sweep	External	✓	onlyOwner
	setAddressFee	External	✓	onlyOwner
	setBuyAddressFee	External	✓	onlyOwner
	setSellAddressFee	External	✓	onlyOwner

Contract Flow



Summary

There are some functions that can be abused by the owner like stopping transactions, manipulating fees and transferring funds to the team’s wallet. A multi-wallet signing pattern will provide security against potential hacks. Temporarily locking the contract or renouncing ownership will eliminate all the contract threats.

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Coinscope audit and K.Y.C. service has been rebranded to Cyberscope.

Coinscope is the leading early coin listing, voting and auditing authority firm. The audit process is analyzing and monitoring many aspects of the project. That way, it gives the community a good sense of security using an informative report and a generic score.

Cyberscope and Coinscope are aiming to make crypto discoverable and efficient globally. They provide all the essential tools to assist users draw their own conclusions.

The Cyberscope team

https://www.cyberscope.io