



**TechRate**  
AUDIT COMPANY

# Smart Contract Security Audit

# Audit Details



Audited project

**SpongeBob Square**



Deployer address

**0x471f883bbd2c705f418ba3d6667ef05342c4ee05**



Client contacts:

**SpongeBob Square team**



Blockchain

**Binance Smart Chain**



Project website:

**<https://www.spongebobsquare.com>**

# Disclaimer

This is a limited report on our findings based on our analysis, in accordance with good industry practice as at 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 below disclaimer below – please make sure to read it in full.

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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.

# Background

TechRate was commissioned by SpongeBob Square to perform an audit of smart contracts:

<https://bscscan.com/address/0x471f883bbd2c705f418ba3d6667ef05342c4ee05#code>

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 improve the security posture of the smart contract by remediating the issues that were identified.

# Contracts Details

## Token contract details for 16.01.2022

Contract name	SpongeBob Square
Contract address	0x471f883BBd2c705F418Ba3d6667ef05342C4ee05
Total supply	1,000,000,000,000,000
Token ticker	SPONGS
Decimals	9
Token holders	12,107
Transactions count	61,176
Top 100 holders dominance	71.80%
Liquidity fee	4
BNB reward fee	2
Operations fee	2
Total fees	6
Dividend tracker	0xbde8d0345b360f5bd3ce86db721d5907720e7543
Uniswap V2 pair	0x2ba1213091a94224a79cd656f90dd8d0e4696e97
Contract deployer address	0x93a7a2be310e3806f8cff2cdbe05fc96fe40d0
Contract's current owner address	0x00

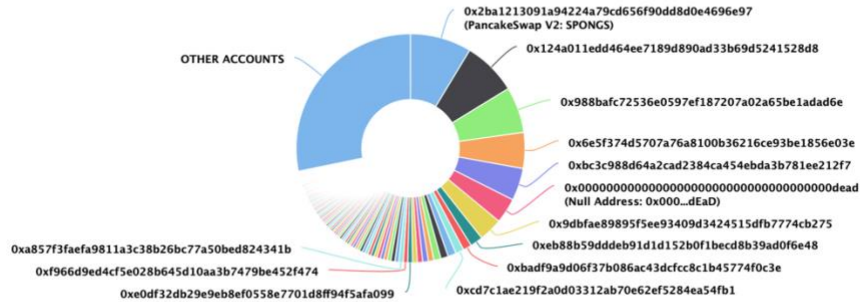
# SpongeBob Square Token Distribution

The top 100 holders collectively own 71.80% (717,953,719,381,824.00 Tokens) of SpongeBob Square

Token Total Supply: 1,000,000,000,000.00 Token | Total Token Holders: 12,107

## SpongeBob Square Top 100 Token Holders

Source: BscScan.com



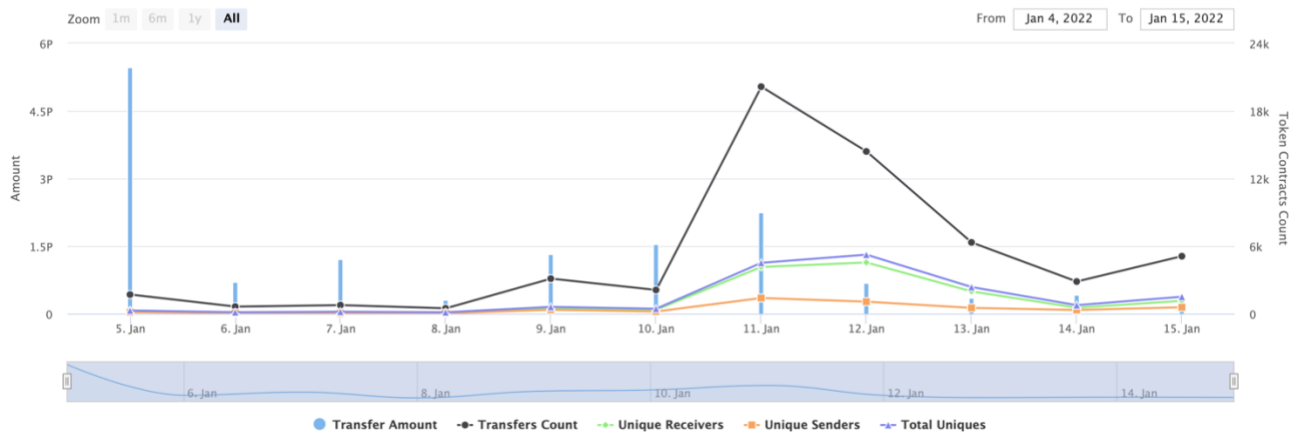
(A total of 717,953,719,381,824.00 tokens held by the top 100 accounts from the total supply of 1,000,000,000,000.00 token)

# SpongeBob Square Contract Interaction Details

Time Series: Token Contract Overview


Wed 5, Jan 2022 - Sat 15, Jan 2022

Token Contract 0x471f883bbd2c705f418ba3d6667ef05342c4ee05 (SpongeBob Square)  
Source: BscScan.com








# SpongeBob Square Top 10 Token Holders

Rank	Address	Quantity (Token)	Percentage
1	 PancakeSwap V2: SPONGS	86,597,101,065,217.463404671	8.6597%
2	0x124a011edd464ee7189d890ad33b69d5241528d8	76,120,377,771,505.666343372	7.6120%
3	0x988bafc72536e0597ef187207a02a65be1adad6e	64,967,313,640,437.339875523	6.4967%
4	0x6e5f374d5707a76a8100b36216ce93be1856e03e	50,835,271,414,169.898907508	5.0835%
5	0xbc3c988d64a2cad2384ca454ebda3b781ee212f7	45,808,332,718,444.67	4.5808%
6	Null Address: 0x000...dEaD	35,549,853,271,361.308755461	3.5550%
7	0x9dbfae89895f5ee93409d3424515dfb7774cb275	33,321,351,014,840.36754373	3.3321%
8	0xeb88b59dddeb91d1d152b0f1becd8b39ad0f6e48	18,058,107,104,753.113068409	1.8058%
9	0xbadf9a9d06f37b086ac43dcfcc8c1b45774f0c3e	12,028,724,420,429.843295649	1.2029%
10	0xcd7c1ae219f2a0d03312ab70e62ef5284ea54fb1	11,835,333,482,001.891299494	1.1835%

# SpongeBob Square LP Token Holders

Rank	Address	Quantity	Percentage
1	 0x5b5e94485c9628793b01a38762921dc37b6829b6	1,582.0875846151134	47.9563%
2	 0xef6815c8a9d09a62f7526833640c7a16e3d59167	1,204.010579728215691989	36.4960%
3	Null Address: 0x000...dEaD	373.227055789445036574	11.3133%
4	SpongeBob Square: Deployer	134.306228039709217995	4.0711%
5	0xb1b9b4bbe8a92d535f5df2368e7fd2ecfb3a1950	4.36841947292705003	0.1324%
6	0xfa04e0630a0fcc71e5880460f87d2d0c6445a44	0.586010724256194792	0.0178%
7	0xf04b96298a2e1a31223af5a35c0d6cf49b62e70e	0.1972132361436378	0.0060%
8	0x6600b931182fa79f78bd57efdb9fc193643ca4	0.095966821308927205	0.0029%
9	0x2fcd738d1d890471d39ab37b61dbc534abfc19c3	0.05546933345851417	0.0017%
10	0xebdbb9fabdea0178f93d3573bd73a0008e9a2eab	0.050170176912028023	0.0015%
11	0xef332a83de33bd0a3e311f67281615b0dd5421b5	0.032319060219889915	0.0010%
12	 Null Address: 0x000...000	0.000000000000001	0.0000%

# Contract functions details

- + Context
  - [Int] \_msgSender
  - [Int] \_msgData
- + Ownable (Context)
  - [Pub] <Constructor> #
  - [Pub] owner
  - [Pub] renounceOwnership #
    - modifiers: onlyOwner
  - [Pub] transferOwnership #
    - modifiers: onlyOwner
- + [Int] IERC20
  - [Ext] totalSupply
  - [Ext] balanceOf
  - [Ext] transfer #
  - [Ext] allowance
  - [Ext] approve #
  - [Ext] transferFrom #
- + [Int] IERC20Metadata (IERC20)
  - [Ext] name
  - [Ext] symbol
  - [Ext] decimals
- + [Int] DividendPayingTokenOptionalInterface
  - [Ext] withdrawableDividendOf
  - [Ext] withdrawnDividendOf
  - [Ext] accumulativeDividendOf
- + [Int] DividendPayingTokenInterface
  - [Ext] dividendOf
  - [Ext] distributeDividends (\$)
  - [Ext] withdrawDividend #
- + [Lib] SafeMathInt
  - [Int] mul
  - [Int] div
  - [Int] sub
  - [Int] add
  - [Int] abs
  - [Int] toUint256Safe
- + [Lib] SafeMathUint
  - [Int] toInt256Safe
- + [Lib] SafeMath
  - [Int] add
  - [Int] sub
  - [Int] sub
  - [Int] mul



- [Int] div
- [Int] div
- [Int] mod
- [Int] mod

#### + ERC20 (Context, IERC20, IERC20Metadata)

- [Pub] <Constructor> #
- [Pub] name
- [Pub] symbol
- [Pub] decimals
- [Pub] totalSupply
- [Pub] balanceOf
- [Pub] transfer #
- [Pub] allowance
- [Pub] approve #
- [Pub] transferFrom #
- [Pub] increaseAllowance #
- [Pub] decreaseAllowance #
- [Int] \_transfer #
- [Int] \_mint #
- [Int] \_burn #
- [Int] \_approve #
- [Int] \_beforeTokenTransfer #

#### + DividendPayingToken (ERC20, DividendPayingTokenInterface, DividendPayingTokenOptionalInterface, Ownable)

- [Ext] updateDividendUniswapV2Router #
  - modifiers: onlyOwner
- [Pub] <Constructor> #
  - modifiers: ERC20
- [Ext] <Fallback> (\$)
- [Prv] swapETHForTokens #
- [Ext] setIgnoreToken #
  - modifiers: onlyOwner
- [Pub] isIgnoredToken
- [Ext] getRawBNBDividends
- [Ext] setWhiteListAMM #
  - modifiers: onlyOwner
- [Ext] setRewardToken #
  - modifiers: onlyOwner
- [Ext] unsetRewardToken #
  - modifiers: onlyOwner
- [Pub] distributeDividends (\$)
- [Pub] withdrawDividend #
- [Int] \_withdrawDividendOfUser #
- [Pub] dividendOf
- [Pub] withdrawableDividendOf
- [Pub] withdrawnDividendOf
- [Pub] accumulativeDividendOf
- [Int] \_transfer #
- [Int] \_mint #
- [Int] \_burn #
- [Int] \_setBalance #

#### + [Int] IUniswapV2Router01

- [Ext] factory
- [Ext] WETH
- [Ext] addLiquidity #
- [Ext] addLiquidityETH (\$)
- [Ext] removeLiquidity #
- [Ext] removeLiquidityETH #
- [Ext] removeLiquidityWithPermit #
- [Ext] removeLiquidityETHWithPermit #
- [Ext] swapExactTokensForTokens #
- [Ext] swapTokensForExactTokens #
- [Ext] swapExactETHForTokens (\$)
- [Ext] swapTokensForExactETH #
- [Ext] swapExactTokensForETH #
- [Ext] swapETHForExactTokens (\$)
- [Ext] quote
- [Ext] getAmountOut
- [Ext] getAmountIn
- [Ext] getAmountsOut
- [Ext] getAmountsIn

+ [Int] IUniswapV2Router02 (IUniswapV2Router01)

- [Ext] removeLiquidityETHSupportingFeeOnTransferTokens #
- [Ext] removeLiquidityETHWithPermitSupportingFeeOnTransferTokens #
- [Ext] swapExactTokensForTokensSupportingFeeOnTransferTokens #
- [Ext] swapExactETHForTokensSupportingFeeOnTransferTokens (\$)
- [Ext] swapExactTokensForETHSupportingFeeOnTransferTokens #

+ [Int] IUniswapV2Factory

- [Ext] feeTo
- [Ext] feeToSetter
- [Ext] getPair
- [Ext] allPairs
- [Ext] allPairsLength
- [Ext] createPair #
- [Ext] setFeeTo #
- [Ext] setFeeToSetter #

+ [Int] IUniswapV2Pair

- [Ext] name
- [Ext] symbol
- [Ext] decimals
- [Ext] totalSupply
- [Ext] balanceOf
- [Ext] allowance
- [Ext] approve #
- [Ext] transfer #
- [Ext] transferFrom #
- [Ext] DOMAIN\_SEPARATOR
- [Ext] PERMIT\_TYPEHASH
- [Ext] nonces
- [Ext] permit #
- [Ext] MINIMUM\_LIQUIDITY
- [Ext] factory
- [Ext] token0
- [Ext] token1

- [Ext] getReserves
- [Ext] price0CumulativeLast
- [Ext] price1CumulativeLast
- [Ext] kLast
- [Ext] mint #
- [Ext] burn #
- [Ext] swap #
- [Ext] skim #
- [Ext] sync #
- [Ext] initialize #

#### + SPONGS (ERC20, Ownable)

- [Pub] <Constructor> #
  - modifiers: ERC20
- [Ext] <Fallback> (\$)
- [Ext] setWhiteListAMM #
  - modifiers: onlyOwner
- [Ext] updateSwapTokensAtAmount #
  - modifiers: onlyOwner
- [Ext] disableTransferDelay #
  - modifiers: onlyOwner
- [Pub] updateDividendTracker #
  - modifiers: onlyOwner
- [Ext] updateMaxTxn #
  - modifiers: onlyOwner
- [Ext] updateDividendTokensMinimum #
  - modifiers: onlyOwner
- [Ext] updateUniswapV2Router #
  - modifiers: onlyOwner
- [Ext] updateDividendUniswapV2Router #
  - modifiers: onlyOwner
- [Ext] updateTradingStatus #
  - modifiers: onlyOwner
- [Pub] excludeFromFees #
  - modifiers: onlyOwner
- [Ext] excludeMultipleAccountsFromFees #
  - modifiers: onlyOwner
- [Ext] addToWhitelist #
  - modifiers: onlyOwner
- [Ext] setIsBot #
  - modifiers: onlyOwner
- [Ext] excludeFromDividends #
  - modifiers: onlyOwner
- [Ext] includeInDividends #
  - modifiers: onlyOwner
- [Ext] setAutomatedMarketMakerPair #
  - modifiers: onlyOwner
- [Ext] updateLiquidityWallet #
  - modifiers: onlyOwner
- [Ext] updateOperationsWallet #
  - modifiers: onlyOwner
- [Ext] updateBuyBackWallet #
  - modifiers: onlyOwner
- [Ext] updateFees #
  - modifiers: onlyOwner

- [Ext] updateGasForProcessing #
    - modifiers: onlyOwner
  - [Ext] updateClaimWait #
    - modifiers: onlyOwner
  - [Ext] setIgnoreToken #
    - modifiers: onlyOwner
  - [Pub] isAMMWhitelisted
  - [Int] isContract
  - [Pub] getUserCurrentRewardToken
  - [Pub] getUserHasCustomRewardToken
  - [Pub] getRewardTokenSelectionCount
  - [Ext] getLastProcessedIndex
  - [Ext] getNumberOfDividendTokenHolders
  - [Pub] getHolderSelfFactor
  - [Ext] getDividendTokensMinimum
  - [Ext] getClaimWait
  - [Ext] getTotalDividendsDistributed
  - [Pub] isExcludedFromFees
  - [Pub] withdrawableDividendOf
  - [Pub] dividendTokenBalanceOf
  - [Ext] getAccountDividendsInfo
  - [Ext] getAccountDividendsInfoAtIndex
  - [Pub] getRawBNBDividends
  - [Pub] getBNBAvailableForHolderBuyBack
  - [Pub] isIgnoredToken
  - [Pub] setRewardToken #
  - [Pub] setRewardTokenWithCustomAMM #
  - [Pub] unsetRewardToken #
  - [Pub] activateContract #
    - modifiers: onlyOwner
  - [Ext] buyBackTokensWithNoFees (\$)
  - [Ext] claim #
  - [Ext] processDividendTracker #
  - [Prv] \_setAutomatedMarketMakerPair #
  - [Int] \_transfer #
  - [Prv] swapAndLiquify #
  - [Prv] swapTokensForEth #
  - [Prv] addLiquidity #
  - [Prv] swapAndSendDividends #
  - [Pub] recoverContractBNB #
    - modifiers: onlyOwner
  - [Prv] sendToOperationsWallet #
  - [Pub] setMaxSellPercent #
    - modifiers: onlyOwner
- + [Lib] IterableMapping
- [Pub] get
  - [Pub] getIndexOfKey
  - [Pub] getKeyAtIndex
  - [Pub] size
  - [Pub] set #
  - [Pub] remove #
- + SPONGSDividendTracker (DividendPayingToken)
- [Pub] <Constructor> #

- modifiers: DividendPayingToken
- [Int] \_transfer
- [Pub] withdrawDividend
- [Ext] excludeFromDividends #
  - modifiers: onlyOwner
- [Ext] includeInDividends #
  - modifiers: onlyOwner
- [Ext] updateDividendMinimum #
  - modifiers: onlyOwner
- [Ext] updateClaimWait #
  - modifiers: onlyOwner
- [Ext] getLastProcessedIndex
- [Ext] getNumberOfTokenHolders
- [Pub] getAccount
- [Pub] getAccountAtIndex
- [Prv] canAutoClaim
- [Ext] setBalance #
  - modifiers: onlyOwner
- [Pub] process #
- [Pub] processAccount #
  - modifiers: onlyOwner

(\$) = payable function

# = non-constant function

# Issues Checking Status

Issue description		Checking status
1.	Compiler errors.	Passed
2.	Race conditions and Reentrancy. Cross-function race conditions.	Passed
3.	Possible delays in data delivery.	Passed
4.	Oracle calls.	Passed
5.	Front running.	Passed
6.	Timestamp dependence.	Passed
7.	Integer Overflow and Underflow.	Passed
8.	DoS with Revert.	Passed
9.	DoS with block gas limit.	Low issues
10.	Methods execution permissions.	Passed
11.	Economy model of the contract.	Passed
12.	The impact of the exchange rate on the logic.	Passed
13.	Private user data leaks.	Passed
14.	Malicious Event log.	Passed
15.	Scoping and Declarations.	Passed
16.	Uninitialized storage pointers.	Passed
17.	Arithmetic accuracy.	Passed
18.	Design Logic.	Passed
19.	Cross-function race conditions.	Passed
20.	Safe Open Zeppelin contracts implementation and usage.	Passed
21.	Fallback function security.	Passed



# Security Issues

## ✓ High Severity Issues

No high severity issues found.

## ✓ Medium Severity Issues

No medium severity issues found.

## ✓ Low Severity Issues

### 1. Out of gas

Issue:

- The function `excludeMultipleAccountsFromFees()` uses the loop to exclude multiple accounts from fees. Function will be aborted with `OUT_OF_GAS` exception if there will be a long addresses list.

Recommendation:

Be careful about accounts array length.

## Notes:

- Dividend tracker may be changed. So that logic of `setBalance` and other functions could be another and not audited.
- Contract has cooldown sell fee.

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

- Owner can change uniswapV2Router address in the contract and in the dividend contract.
- Owner can add addresses in ignoreRewardTokens array.
- Owner can whitelist addresses.
- Owner can manually change reward tokens.
- Owner can change swapTokensAtAmount and maxSellTransactionAmount.
- Owner can enable/disable transfer delay.
- Owner can change dividend tracker.
- Owner can change minimum for dividends.
- Owner can enable trading.
- Owner can exclude from the fees.
- Owner can allow transfer for addresses on stopped trading status.
- Owner can mark addresses as bots.
- Owner can exclude from dividends.
- Owner can exclude and include addresses in automatedMarketMakerPairs array.
- Owner can change liquidity, buyback and operations wallets.
- Owner can change fees.
- Owner can change gas for processing.
- Owner can update claimWait value.
- Owner can withdraw contract BNBs.
- Owner can change \_maxSellPercent value.

# Conclusion

Smart contracts contain low severity issues! Liquidity pair contract's security is not checked due to out of scope. The further transfers and operations with the funds raise are not related to this particular contract.

Liquidity locking details are NOT provided by the team.

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## *TechRate note:*

*Please check the disclaimer above and note, the audit makes no statements or warranties on business model, investment attractiveness or code sustainability. The report is provided for the only contract mentioned in the report and does not include any other potential contracts deployed by Owner.*