

Building the Futuristic Blockchain Ecosystem

SECURITY AUDIT REPORT

PEPE Inu



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OVERVIEW

The Expelee team has performed a line-by-line manual analysis and automated review of the smart contract. The smart contract was analysed mainly for common smart contract vulnerabilities, exploits, and manipulation hacks. According to the smart contract audit:

Audit Result	Passed
KYC Verification	Done
Audit Date	12 May 2023



CONTRACT DETAILS

Token Name: PEPE Inu

Symbol: \$pepeinu

Network: Binance smart chain

Language: Solidity

Contract Address: 0xbffFD68774Aa006840385CB021966188990a2d1A

Total Supply: 420,690,000,000,000

Contract SHA-256 Checksum: d3060941a078cd639f714719c4b03dbffadb5975

Owner's Wallet: 0x6cdc04bbcde24e02fc09189787341c8f972abc1c



OWNER PRIVILEGES

- Contract owner is not able to set buy/sell/transfer fees
- Contract owner is not able to blacklist an arbitrary wallet
- Contract owner is not able to set limit for buy/sell/transfer/holding amounts
- Contract owner is not able to mint new tokens
- Contract owner is not able to disable trades
- Contract owner must enable trades for holders manually



AUDIT METHODOLOGY

Audit Details

Our comprehensive audit report provides a full overview of the audited system's architecture, smart contract codebase, and details on any vulnerabilities found within the system.

Audit Goals

The audit goal is to ensure that the project is built to protect investors and users, preventing potentially catastrophic vulnerabilities after launch, that lead to scams and rugpulls.

Code Quality

Our analysis includes both automatic tests and manual code analysis for the following aspects:

- Exploits
- Back-doors
- Vulnerability
- Accuracy
- Readability

Tools

- DE
- Open Zeppelin
- Code Analyzer
- Solidity Code
- Compiler
- Hardhat



VULNERABILITY CHECKS

Design Logic	Passed
Compiler warnings	Passed
Private user data leaks	Passed
Timestamps dependence	Passed
Integer overflow and underflow	Passed
Race conditions & reentrancy. Cross-function race conditions	Passed
Possible delays in data delivery	Passed
Oracle calls	Passed
Front Running	Passed
DoS with Revert	Passed
DoS with block gas limit	Passed
Methods execution permissions	Passed
Economy model	Passed
Impact of the exchange rate on the logic	Passed
Malicious event log	Passed
Scoping and declarations	Passed
Uninitialized storage pointers	Passed
Arithmetic accuracy	Passed
Cross-function race conditions	Passed
Safe Zepplin module	Passed



RISK CLASSIFICATION

When performing smart contract audits, our specialists look for known vulnerabilities as well as logical and acces control issues within the code. The exploitation of these issues by malicious actors may cause serious financial damage to projects that failed to get an audit in time. We categorize these vulnerabilities by the following levels:

High Risk

Issues on this level are critical to the smart contract's performance/functionality and should be fixed before moving to a live environment.

Medium Risk

Issues on this level are critical to the smart contract's performance/functionality and should be fixed before moving to a live environment.

Low Risk

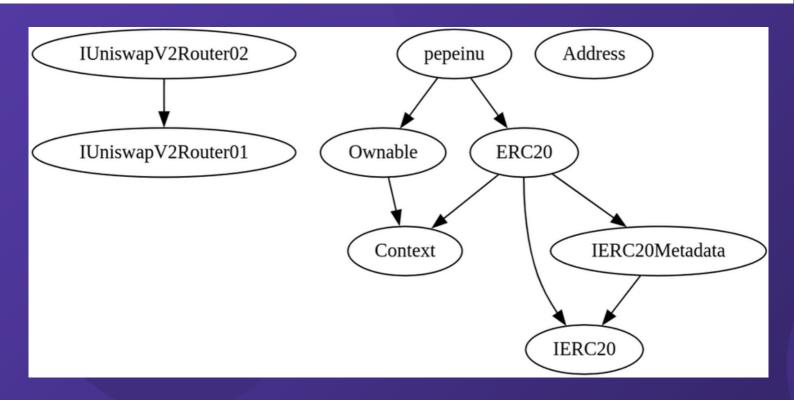
Issues on this level are minor details and warning that can remain unfixed.

Informational

Issues on this level are minor details and warning that can remain unfixed.



INHERITANCE TREES





TESTNET VERSION

Adding Liquidity 🗸
Tx:
https://testnet.bscscan.com/tx/0x34f01d9b63ff322201e5717bded087007470af8f2ac1020a04eeb5385a573b9c
Dueu06/00/4/0a1612aC1020a04eeD5565a5/5D7C
Buying from a fee excluded wallet 🗸
Tx (0% tax):
https://testnet.bscscan.com/tx/0x78a828c087783ebb3e0bb
3624293948e28af67c66bcdf3a473634e31232359ad
Selling from a fee excluded wallet ✓
Tx (0% tax):
https://testnet.bscscan.com/tx/0xfb862b1c8b3a1be7043ecc
2b5e97ec5437062abf01533169262df8c9de096664
Transferring using a fee excluded wallet 🗸
Tx (0% tax):
https://testnet.bscscan.com/tx/0xec990357b69b8664d4a61
dd1ec7d0155fcd31f04e076a86086944b7977aa0b44



TESTNET VERSION

Adding Liquidity				
bded087007470af8f2ac1020a04eeb5385a573b9c				
Buying from a fee excluded wallet				
Tx (0% tax): https://tostpot.bcocoop.com/ty/0y79a929a097793abb3a0bb				
https://testnet.bscscan.com/tx/0x78a828c087783ebb3e0bb3624293948e28af67c66bcdf3a473634e31232359ad				
Selling from a fee excluded wallet \checkmark				
Tx (0% tax):				
https://testnet.bscscan.com/tx/0xfb862b1c8b3a1be7043ecc 2b5e97ec5437062abf01533169262df8c9de096664				
Transferring using a fee excluded wallet ✓ Tx (0% tax):				
https://testnet.bscscan.com/tx/0xec990357b69b8664d4a61				
dd1ec7d0155fcd31f04e076a86086944b7977aa0b44				



FUNCTION DETAILS

```
Contract
               Type
                           Bases
      **Function Name** | **Visibility** | **Mutability** | **Modifiers** |
| **IUniswapV2Factory** | Interface | |||
| L | feeTo | External | | NO | |
 L | feeToSetter | External | NO | |
| L | getPair | External | | NO | |
 L | allPairs | External | | NO | |
 | allPairsLength | External | | NO | | | |
 | createPair | External | | | NO | |
| L | setFeeTo | External | | | NO | |
 └ | setFeeToSetter | External | | ● | NO ! |
| **IUniswapV2Pair** | Interface | ||| |
| L | name | External | | NO | |
 | symbol | External | | NO | |
 | decimals | External | | NO | |
 L | totalSupply | External | | NO | |
 L | balanceOf | External | | NO | |
 L | allowance | External | | NO | |
 L | approve | External | | | NO | |
| L | transfer | External | | | NO | |
 L | DOMAIN SEPARATOR | External | | | NO | |
 | PERMIT TYPEHASH | External | | | NO | |
| L | nonces | External | | NO | |
 └ | permit | External | | ● | NO | |
 L | MINIMUM_LIQUIDITY | External | | | NO | |
| L | factory | External | NO | |
 L | token0 | External | | NO | |
 L | token1 | External | | NO | |
| L | getReserves | External | | NO | |
 | price0CumulativeLast | External | NO | |
 | price1CumulativeLast | External | NO | |
 L | kLast | External | | NO | |
 └ | mint | External | | ● |NO | |
 L|burn|External | | | NO | |
 L | swap | External | | | NO | |
 L | skim | External | | | NO | |
 └ | sync | External ! | ● |NO! |
 | initialize | External | | | NO | |
 **IUniswapV2Router01** | Interface | |||
| L | factory | External | NO | |
 L | WETH | External | | NO | |
```



FUNCTION DETAILS

```
L | addLiquidity | External | | | NO | |
 L | addLiquidityETH | External | | III | NO |
| L | removeLiquidity | External | | | NO | | | | | | | | | |
 | removeLiquidityETH | External | | | | | | | | | | | | | |
| | removeLiquidityWithPermit | External | | | NO | |
 | swapExactTokensForTokens | External | | | NO | |
 | swapTokensForExactTokens | External | | | NO | |
| L | swapExactETHForTokens | External | NO |
 | swapTokensForExactETH | External | |
 | swapExactTokensForETH | External | |
 L | swapETHForExactTokens | External | NO | |
 L | quote | External | | | NO | |
 L | getAmountOut | External | NO | |
 L | getAmountIn | External | | NO | |
| L | getAmountsOut | External | | NO | | | |
| L | getAmountsIn | External | NO | |
| **IUniswapV2Router02** | Interface | IUniswapV2Router01 ||
| | removeLiquidityETHSupportingFeeOnTransferTokens | External | | | | NO | |
| L | removeLiquidityETHWithPermitSupportingFeeOnTransferTokens | External | | | NO |
 | L | swapExactTokensForETHSupportingFeeOnTransferTokens | External | | | NO | |
| **IERC20** | Interface | ||
L | totalSupply | External | NO | |
 L | balanceOf | External | | NO | |
 L | transfer | External | | | NO | |
| L | allowance | External | | NO | |
 L | approve | External | | | NO | |
| L | transferFrom | External | | | NO | |
| **IERC20Metadata** | Interface | IERC20 |||
| L | name | External | | NO | |
 L | symbol | External | | NO | |
| L | decimals | External | | NO | |
| **Address** | Library | |||
| L | isContract | Internal | | | |
 L | sendValue | Internal | | | |
 L | functionCall | Internal 🔒 | 🛑 | |
 L | functionCallWithValue | Internal
 L | functionCallWithValue | Internal 🙃 | 🛑 | |
```



FUNCTION DETAILS

```
L | functionStaticCall | Internal 🔒 | | |
 └ | functionStaticCall | Internal 🔒 | | |
 └ | functionDelegateCall | Internal 🔒 | ● | |
 └ | functionDelegateCall | Internal 🙃 | 🛑 | |
 └ | verifyCallResultFromTarget | Internal 🔒 | | |
 | | verifyCallResult | Internal | | |
 | revert | Private 🔐 | ||
| **Context** | Implementation | ||
 L | msgSender | Internal 🔒 | | |
 L | msgData | Internal 🔒 | | |
 **Ownable** | Implementation | Context |||
| L | <Constructor> | Public | | | NO | |
 | owner | Public | | NO | |
 L | renounceOwnership | Public | | | | onlyOwner |
 L | transferOwnership | Public | | | lonlyOwner |
| **ERC20** | Implementation | Context, IERC20, IERC20Metadata |||
 | name | Public | NO | |
 L|symbol|Public | | NO | |
 L | decimals | Public | | NO
 L | totalSupply | Public | | NO |
 L | balanceOf | Public | | NO | |
 L | transfer | Public | | | NO | |
 L | allowance | Public | | NO | |
 | approve | Public | | | NO | |
 L | transferFrom | Public | | | NO | |
 | increaseAllowance | Public | | | NO | |
 L | decreaseAllowance | Public | | | NO | |
 L | transfer | Internal 🔒 | 🛑 | |
 L | mint | Internal 🔒 | 🛑 | |
 L | burn | Internal 🔒 | 🛑 | |
 L | approve | Internal 🔒 | 🛑 | |
 📙 beforeTokenTransfer | Internal 🔒 | 🛑 | |
 💄 afterTokenTransfer | Internal 🔒 | 🔴 | |
 **pepeinu** | Implementation | ERC20, Ownable |||
 | excludeFromFees | External | | | onlyOwner |
 L | isExcludedFromFees | Public | | NO | |
 | enableTrading | External | | | onlyOwner |
 L | _transfer | Internal 🔒 | 🛑 | |
```



MANUAL REVIEW

Severity Criteria

Expelee assesses the severity of disclosed vulnerabilities according to methodology based on OWASP standarts.

Vulnerabilities are dividend into three primary risk categroies:

High

Medium

Low

High-level considerations for vulnerabilities span the following key areas when conducting assessments:

- Malicious input handling
- Escalation of privileges
- Arithmetic
- Gas use

Overall Risk Severity					
Impact	HIGH	Medium	High	Critical	
	MEDIUM	Low	Medium	High	
	LOW	Note	Low	Medium	
		LOW	MEDIUM	HIGH	
	Likelihood				



FINDINGS

Findings	Severity	Found
High Risk	High	1 (Resolved)
Medium Risk	Medium	0
Low Risk	Low	0
Suggestion & discussion	Informational	0
Gas Optimizations	● Gas Opt.	0



HIGH RISK FINDING

Category: Centralization

Subject: Enabling trades is not guaranteed

Overview: The owner of the contract must enable trades for public, otherwise no one would be able to buy/sell/transfer their tokens except whitelisted wallets.

```
function enableTrading() external onlyOwner {
  require(!tradingEnabled, "Trading already enabled.");
  tradingEnabled = true;
  swapEnabled = true;
}
```

Suggestion

To mitigate this issue there are several options:

- Enable tradings before presale
- Transfer ownership to safu dev for initial days after presale

Issue Status: Not Resolved



ABOUT EXPELEE

Expelee is a product-based aspirational Web3 start-up.
Coping up with numerous solutions for blockchain security and constructing a Web3 ecosystem from deal making platform to developer hosting open platform, while also developing our own commercial and sustainable blockchain.

www.expelee.com

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Building the Futuristic Blockchain Ecosystem



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