



Smart Contract Audit

FOR

PEPE WITH PEARL EARRING

DATED : 14 October 23'

MANUAL TESTING

Logical – Setting swap threshold to zero may revert swaps on internal swap

Severity: High

function: updateSwapTokensAtAmount

Status: Open

Overview:

Setting swapTokensAtAmount to zero may revert sell (PEPEEARL => BNB) or wallet to wallet transfers. This is because contract will try to perform internal swap with 0 tokens as input.

```
function updateSwapTokensAtAmount(uint256 amount) external onlyOwner {
    require(
        amount <= 1000000,
        "Cannot set swap threshold amount higher than 1% of tokens"
    );
    swapTokensAtAmount = amount * 10 ** _decimals;
}
```

Suggestion

Ensure that swapTokensAtAmount is always greater than zero

```
function updateSwapTokensAtAmount(uint256 amount) external onlyOwner {
    require(
        amount <= 1000000,
        "Cannot set swap threshold amount higher than 1% of tokens"
    );
    require(amount >= totalSupply() / 100000 * 10 ** _decimals(), "new swap threshold must be higher than 0.00001% of total supply");
    swapTokensAtAmount = amount * 10 ** _decimals;
}
```

Alternatively, you can use a try-catch block when calling pancake swap router try

```
router.swapExactTokensForETHSupportingFeeOnTransferTokens(
    tokenAmount,
    0, // accept any amount of ETH
    path,
    address(this),
    block.timestamp
)
{} catch {}
```



AUDIT SUMMARY

Project name – PEPE WITH PEARL EARRING

Date: 14 October 2023

Scope of Audit- Audit Ace was consulted to conduct the smart contract audit of the solidity source codes.

Audit Status: **Passed with high risk**

Issues Found

Status	Critical	High	Medium	Low	Suggestion
Open	0	1	0	0	0
Acknowledged	0	0	0	0	0
Resolved	0	1	0	0	0

USED TOOLS

Tools:

1- Manual Review:

A line by line code review has been performed by audit ace team.

2- BSC Test Network: All tests were conducted on the BSC Test network, and each test has a corresponding transaction attached to it. These tests can be found in the "Functional Tests" section of the report.

3- Slither :

The code has undergone static analysis using Slither.

Testnet version:

The tests were performed using the contract deployed on the BSC Testnet, which can be found at the following address:

<https://testnet.bscscan.com/token/0xFfD18E092508C01B5D07db8a23F31A3eD4E91469>



Token Information

Token Address :

0xCf3eD1d49134fB015bd4b919Cd7ae41Dda0581D9

Name: PEPE WITH PEARL EARRING

Symbol: PEPEARL

Decimals: 9

Network: Binance smart chain

Token Type: BEP20

Owner: 0x1b7963FdD0f57ED7A12570d4B260d19401A3e9B4

Deployer: 0x1b7963FdD0f57ED7A12570d4B260d19401A3e9B4

Token Supply: 100,000,000

Checksum:

51599f7ac46156632bb42ac8e11439bbf74cc982

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TOKEN OVERVIEW

buy fee: 3%

Sell fee: 3%

transfer fee: 3%

Fee Privilege: Static fees

Ownership: Owner

Minting: None

Max Tx: None

Blacklist: No

Other Privileges:

- Initial distribution of the token
 - Modyfing internal swap thershold
-

AUDIT METHODOLOGY

The auditing process will follow a routine as special considerations by Auditace:

- Review of the specifications, sources, and instructions provided to Auditace to make sure the contract logic meets the intentions of the client without exposing the user's funds to risk.
 - Manual review of the entire codebase by our experts, which is the process of reading source code line-by-line in an attempt to identify potential vulnerabilities.
 - Specification comparison is the process of checking whether the code does what the specifications, sources, and instructions provided to Auditace describe.
 - Test coverage analysis determines whether the test cases are covering the code and how much code is exercised when we run the test cases.
 - Symbolic execution is analysing a program to determine what inputs cause each part of a program to execute.
 - Reviewing the codebase to improve maintainability, security, and control based on the established industry and academic practices.
-



VULNERABILITY CHECKLIST

- | | |
|------------------------------------|-------------------------------|
| ✓ Return values of low-level calls | ✓ Gasless Send |
| ✓ Private modifier | ✓ Using block.timestamp |
| ✓ Multiple Sends | ✓ Re-entrancy |
| ✓ Using Suicide | ✓ Tautology or contradiction |
| ✓ Gas Limitand Loops | ✓ Timestamp Dependence |
| ✓ Address hardcoded | ✓ Revert/require functions |
| ✓ Exception Disorder | ✓ Use of tx.origin |
| ✓ Using inline assembly | ✓ Integer overflow/underflow |
| ✓ Divide before multiply | ✓ Dangerous strict equalities |
| ✓ Missing Zero Address Validation | ✓ Using SHA3 |
| ✓ Compiler version not fixed | ✓ Using throw |
-



CLASSIFICATION OF RISK

Severity

Description

◆ Critical	These vulnerabilities could be exploited easily and can lead to asset loss, data loss, asset, or data manipulation. They should be fixed right away.
◆ High-Risk	A vulnerability that affects the desired outcome when using a contract, or provides the opportunity to use a contract in an unintended way.
◆ Medium-Risk	A vulnerability that could affect the desired outcome of executing the contract in a specific scenario.
◆ Low-Risk	A vulnerability that does not have a significant impact on possible scenarios for the use of the contract and is probably subjective.
◆ Gas Optimization / Suggestion	A vulnerability that has an informational character but is not affecting any of the code.

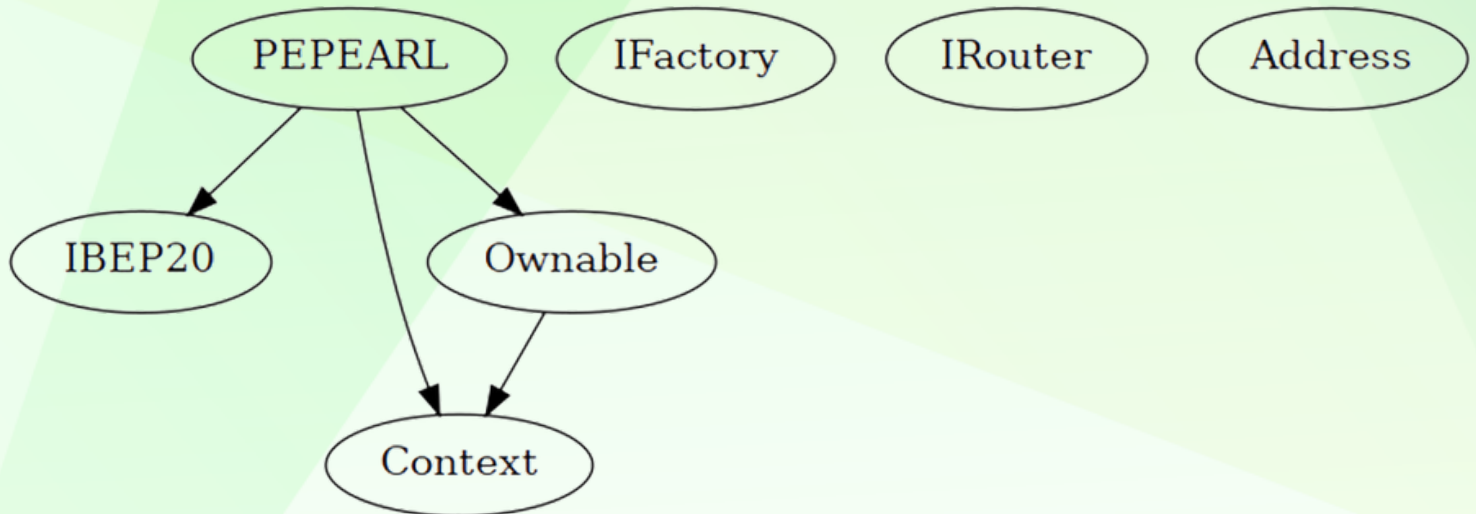
Findings

Severity

Found

◆ Critical	0
◆ High-Risk	2
◆ Medium-Risk	0
◆ Low-Risk	0
◆ Gas Optimization / Suggestions	0

INHERITANCE TREE





POINTS TO NOTE

- **Owner is not able to adjust buy/sell/transfer fees (3% each)**
 - Owner is not able to blacklist an arbitrary wallet
 - Owner is not able to disable trades
 - Owner is not able to mint new tokens
 - **Owner must enable trades manually (trades already enabled)**
-



STATIC ANALYSIS

```
INFO:Detectors:
PEPEARL._rTotal (contracts/Token.sol#168) is set pre-construction with a non-constant function or state variable:
- (MAX - (MAX % _tTotal))
Reference: https://github.com/crytic/slither/wiki/Detector-Documentation#function-initializing-state
INFO:Detectors:
Pragma version^0.8.17 (contracts/Token.sol#10) allows old versions
solc-0.8.17 is not recommended for deployment
Reference: https://github.com/crytic/slither/wiki/Detector-Documentation#incorrect-versions-of-solidity
INFO:Detectors:
Low level call in Address.sendValue(address,uint256) (contracts/Token.sol#129-140):
- (success) = recipient.call{value: amount}() (contracts/Token.sol#135)
Reference: https://github.com/crytic/slither/wiki/Detector-Documentation#low-level-calls
INFO:Detectors:
Function IRouter.WETH() (contracts/Token.sol#105) is not in mixedCase
Struct PEPEARL.valuesFromGetValues (contracts/Token.sol#205-219) is not in CapWords
Function PEPEARL.EnableTrading() (contracts/Token.sol#373-378) is not in mixedCase
Parameter PEPEARL.updatedeadline(uint256)._deadline (contracts/Token.sol#380) is not in mixedCase
Parameter PEPEARL.updateSwapEnabled(bool)._enabled (contracts/Token.sol#796) is not in mixedCase
Parameter PEPEARL.rescueAnyBEP20Tokens(address,address,uint256)._tokenAddr (contracts/Token.sol#808) is not in mixedCase
Parameter PEPEARL.rescueAnyBEP20Tokens(address,address,uint256)._to (contracts/Token.sol#809) is not in mixedCase
Parameter PEPEARL.rescueAnyBEP20Tokens(address,address,uint256)._amount (contracts/Token.sol#810) is not in mixedCase
Constant PEPEARL._decimals (contracts/Token.sol#164) is not in UPPER_CASE_WITH_UNDERSCORES
Variable PEPEARL.genesis_block (contracts/Token.sol#172) is not in mixedCase
Constant PEPEARL._name (contracts/Token.sol#180) is not in UPPER_CASE_WITH_UNDERSCORES
Constant PEPEARL._symbol (contracts/Token.sol#181) is not in UPPER_CASE_WITH_UNDERSCORES
Reference: https://github.com/crytic/slither/wiki/Detector-Documentation#conformance-to-solidity-naming-conventions
INFO:Detectors:
Redundant expression "this (contracts/Token.sol#50)" inContext (contracts/Token.sol#44-53)
Reference: https://github.com/crytic/slither/wiki/Detector-Documentation#redundant-statements
INFO:Detectors:
PEPEARL.updateSwapTokensAtAmount(uint256) (contracts/Token.sol#788-794) uses literals with too many digits:
- require(bool,string)(amount <= 1000000,Cannot set swap threshold amount higher than 1% of tokens) (contracts/Token.sol#789-792)
PEPEARL.slitherConstructorVariables() (contracts/Token.sol#143-820) uses literals with too many digits:
- _tTotal = 100000000 * 10 ** _decimals (contracts/Token.sol#167)
PEPEARL.slitherConstructorVariables() (contracts/Token.sol#143-820) uses literals with too many digits:
- swapTokensAtAmount = 100000 * 10 ** 9 (contracts/Token.sol#170)
Reference: https://github.com/crytic/slither/wiki/Detector-Documentation#too-many-digits
INFO:Detectors:
PEPEARL._lastSell (contracts/Token.sol#159) is never used in PEPEARL (contracts/Token.sol#143-820)
Reference: https://github.com/crytic/slither/wiki/Detector-Documentation#unused-state-variable
INFO:Detectors:
Loop condition 'i < _excluded.length' (contracts/Token.sol#585) should use cached array length instead of referencing 'length' member of the storage array.
Reference: https://github.com/crytic/slither/wiki/Detector-Documentation#cache-array-length
INFO:Detectors:
PEPEARL._tTotal (contracts/Token.sol#167) should be constant
PEPEARL.deadWallet (contracts/Token.sol#175) should be constant
Reference: https://github.com/crytic/slither/wiki/Detector-Documentation#state-variables-that-could-be-declared-constant
INFO:Detectors:
PEPEARL.pair (contracts/Token.sol#162) should be immutable
PEPEARL.router (contracts/Token.sol#161) should be immutable
Reference: https://github.com/crytic/slither/wiki/Detector-Documentation#state-variables-that-could-be-declared-immutable
INFO:Slither::contracts/Token.sol analyzed (7 contracts with 88 detectors), 47 result(s) found
```

Result => A static analysis of contract's source code has been performed using slither,

No major issues were found in the output



CONTRACT ASSESMENT

```
| Contract|      Type      |Bases |      |      | |
|---|---|---|---|---|---|
|  └─ | **Function Name** | **Visibility** | **Mutability** | **Modifiers** |
|||||
| **IBEP20** | Interface | |||
|  └─ | totalSupply | External  !  | | NO  !  |
|  └─ | balanceOf | External  !  | | NO  !  |
|  └─ | transfer | External  !  | ● | NO  !  |
|  └─ | allowance | External  !  | | NO  !  |
|  └─ | approve | External  !  | ● | NO  !  |
|  └─ | transferFrom | External  !  | ● | NO  !  |
|||||
| **Context** | Implementation | |||
|  └─ | _msgSender | Internal  🔒  | | |
|  └─ | _msgData | Internal  🔒  | | |
|||||
| **Ownable** | Implementation | Context |||
|  └─ | <Constructor> | Public  !  | ● | NO  !  |
|  └─ | owner | Public  !  | | NO  !  |
|  └─ | renounceOwnership | Public  !  | ● | onlyOwner |
|  └─ | transferOwnership | Public  !  | ● | onlyOwner |
|  └─ | _setOwner | Private  🔒  | ● | |
|||||
| **IFactory** | Interface | |||
|  └─ | createPair | External  !  | ● | NO  !  |
|||||
| **IRouter** | Interface | |||
|  └─ | factory | External  !  | | NO  !  |
|  └─ | WETH | External  !  | | NO  !  |
|  └─ | addLiquidityETH | External  !  | 💰 | NO  !  |
|  └─ | swapExactTokensForETHSupportingFeeOnTransferTokens | External  !  | ● | NO  !  |
|||||
| **Address** | Library | |||
|  └─ | sendValue | Internal  🔒  | | ● | |
```



CONTRACT ASSESMENT

|||||

| ****PEPEARL**** | Implementation | Context, IBEP20, Ownable |||

| | <Constructor> | Public ! | ●|NO ! |

| | name | Public ! | |NO ! |

| | symbol | Public ! | |NO ! |

| | decimals | Public ! | |NO ! |

| | totalSupply | Public ! | |NO ! |

| | balanceOf | Public ! | |NO ! |

| | allowance | Public ! | |NO ! |

| | approve | Public ! | ●|NO ! |

| | transferFrom | Public ! | ●|NO ! |

| | increaseAllowance | Public ! | ●|NO ! |

| | decreaseAllowance | Public ! | ●|NO ! |

| | transfer | Public ! | ●|NO ! |

| | isExcludedFromReward | Public ! | |NO ! |

| | reflectionFromToken | Public ! | |NO ! |

| | EnableTrading | External ! | ●|onlyOwner |

| | updatedeadline | External ! | ●|onlyOwner |

| | tokenFromReflection | Public ! | |NO ! |

| | excludeFromReward | Public ! | ●|onlyOwner |

| | includeInReward | External ! | ●|onlyOwner |

| | excludeFromFee | Public ! | ●|onlyOwner |

| | includeInFee | Public ! | ●|onlyOwner |

| | isExcludedFromFee | Public ! | |NO ! |

| | _reflectRfi | Private 🗝️ | ●| |

| | _takeLiquidity | Private 🗝️ | ●| |

| | _takeMarketing | Private 🗝️ | ●| |

| | _takeOps | Private 🗝️ | ●| |

| | _takeDev | Private 🗝️ | ●| |

| | _getValues | Private 🗝️ | | |

| | _getTValues | Private 🗝️ | | |

| | _getRValues1 | Private 🗝️ | | |

| | _getRValues2 | Private 🗝️ | | |

| | _getRate | Private 🗝️ | | |

| | _getCurrentSupply | Private 🗝️ | | |

| | _approve | Private 🗝️ | ●| |

| | _transfer | Private 🗝️ | ●| |

| | _tokenTransfer | Private 🗝️ | ●| |



CONTRACT ASSESMENT

	swapAndLiquify	Private		lockTheSwap
	addLiquidity	Private		
	swapTokensForBNB	Private		
	bulkExcludeFee	External		onlyOwner
	updateMarketingWallet	External		onlyOwner
	updateDevWallet	External		onlyOwner
	updateOpsWallet	External		onlyOwner
	updateSwapTokensAtAmount	External		onlyOwner
	updateSwapEnabled	External		onlyOwner
	rescueBNB	External		onlyOwner
	rescueAnyBEP20Tokens	Public		onlyOwner
	<Receive Ether>	External		NO

Legend

| Symbol | Meaning |

| :-----: | ----- |

| | Function can modify state |

| | Function is payable |



FUNCTIONAL TESTING

1- Adding liquidity (**passed**):

<https://testnet.bscscan.com/tx/0x9305d649c7949ba7929c1779cf4bedb75034206b304ff16c9aa5d06c65eda9c1>

2- Buying when excluded (0% tax) (**passed**):

<https://testnet.bscscan.com/tx/0xb8f326c8a2a8308f357f65f27a27c68016efce795d15fc4576d2287c8f34ed4c>

3- Selling when excluded (0% tax) (**passed**):

<https://testnet.bscscan.com/tx/0x5fbe6dbd35e6150dd1a1f806ff3cd1a4e54448d411e24986cad2e0679456f834>

4- Transferring when excluded from fees (0% tax) (**passed**):

<https://testnet.bscscan.com/tx/0x3ccbeac1d1cf7a71c26dc60eb6bfe68d1acf30383d729bf68d2d543027ce0d60>

5- Buying when not excluded from fees (tax 3%) (**passed**):

<https://testnet.bscscan.com/tx/0xd2111707cc0ca38c406c2760ba181087b59c7720e2fac918c83bcf5553f53a89>

6- Selling when not excluded from fees (tax 3%) (**passed**):

<https://testnet.bscscan.com/tx/0x8222d051dc3f6c274aa1b32b23555a832ef0614f74fb2f9c90fe37fc39fcb80>

7- Transferring when not excluded from fees (3% tax) (**passed**):

<https://testnet.bscscan.com/tx/0xd81b5762e897070d139fc0ac484b0061c996066cf940fc3c5051ef45d9c179de>

7- Internal swap (Marketing BNB) (**passed**):

<https://testnet.bscscan.com/tx/0xd81b5762e897070d139fc0ac484b0061c996066cf940fc3c5051ef45d9c179de>

MANUAL TESTING

Centralization – Enabling Trades

Severity: High

function: EnableTrading

Status: Resolved (Already enabled trades)

Overview:

The enableTrading function permits only the contract owner to activate trading capabilities. Until this function is executed, no investors can buy, sell, or transfer their tokens. This places a high degree of control and centralization in the hands of the contract owner.

```
function EnableTrading() external onlyOwner {
    require(!tradingEnabled, "Cannot re-enable trading");
    tradingEnabled = true;
    swapEnabled = true;
    genesis_block = block.number;
}
```

Suggestion

To reduce centralization and potential manipulation, consider one of the following approaches:

1. Automatically enable trading after a specified condition, such as the completion of a presale, is met.
2. If manual activation is still desired, consider transferring the ownership of the contract to a trustworthy, third-party entity like a certified "PinkSale Safu" developer. This can provide investors with more confidence in the eventual activation of trading capabilities, mitigating concerns of potential bad faith actions by the original owner

MANUAL TESTING

Logical – Setting swap threshold to zero may revert swaps on internal swap

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function: updateSwapTokensAtAmount

Status: Open

Overview:

Setting swapTokensAtAmount to zero may revert sell (PEPEEARL => BNB) or wallet to wallet transfers. This is because contract will try to perform internal swap with 0 tokens as input.

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Suggestion

Ensure that swapTokensAtAmount is always greater than zero

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    require(
        amount <= 1000000,
        "Cannot set swap threshold amount higher than 1% of tokens"
    );
    require(amount >= totalSupply() / 100000 * 10 ** _decimals(), "new swap threshold must be higher than 0.00001% of total supply");
    swapTokensAtAmount = amount * 10 ** _decimals;
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```

Alternatively, you can use a try-catch block when calling pancake swap router try

```
router.swapExactTokensForETHSupportingFeeOnTransferTokens(
    tokenAmount,
    0, // accept any amount of ETH
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{} catch {}
```



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