KISHIELD

Security Audit

H2O Token

April 2, 2023

Contract Audited

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Audit Summary

This report has been prepared for H2O Token on the ETH network. KISHIELD provides both client-centered and user-centered examination of the smart contracts and their current status when applicable. This report represents the security assessment made to find issues and vulnerabilities on the source code along with the current liquidity and token holder statistics of the protocol.

A comprehensive examination has been performed, utilizing Cross Referencing, Static Analysis, In-House Security Tools, and line-by-line Manual Review.

The auditing process pays special attention to the following considerations:

- Ensuring contract logic meets the specifications and intentions of the client without exposing the user's funds to risk.
- Testing the smart contracts against both common and uncommon attack vectors.
- Inspecting liquidity and holders statistics to inform the current status to both users and client when applicable.
- Assessing the codebase to ensure compliance with current best practices and industry standards.
- Verifying contract functions that allow trusted and/or untrusted actors to mint, lock, pause, and transfer assets.
- Thorough line-by-line manual review of the entire codebase by industry experts.

Project Overview

Token Summary

Parameter	Result
Address	0xdD3eFD22E70BBEeA0e74B5c28B79363658fE7E47
Name	H2O
Token Tracker	H2O (H2O)
Decimals	9
Supply	10,000,000,000
Platform	ETH
compiler	v0.8.19+commit.7dd6d404
Optimization	Yes with 200 runs
LicenseType	MIT
Language	Solidity
Codebase	https://etherscan.io/address/0xdD3eFD22E70BBEeA0e74B5c28B79363658fE7E47#code
Url	https://h20.care/

Main Contract Assessed

Name	Contract	Live
H2O	0xdD3eFD22E70BBEeA0e74B5c28B79363658fE7E47	Yes

Smart Contract Vulnerability Checks

Vulnerability	Automatic Scan	Manual Scan	Result
Unencrypted Private Data On-Chain	Complete	Complete	Low / No Risk
Code With No Effects	Complete	Complete	Low / No Risk
Message call with hardcoded gas amount	Complete	Complete	Low / No Risk
Hash Collisions With Multiple Variable Length Arguments	Complete	Complete	Low / No Risk
Unexpected Ether balance	Complete	Complete	Low / No Risk
Presence of unused variables	Complete	Complete	Low / No Risk
Right-To-Left-Override control character (U+202E)	Complete	Complete	Low / No Risk
Typographical Error	Complete	Complete	Low / No Risk
DoS With Block Gas Limit	Complete	Complete	Low / No Risk
Arbitrary Jump with Function Type Variable	Complete	Complete	Low / No Risk
Insufficient Gas Griefing	Complete	Complete	Low / No Risk
Incorrect Inheritance Order	Complete	Complete	Low / No Risk
Write to Arbitrary Storage Location	Complete	Complete	Low / No Risk
Requirement Violation	Complete	Complete	Low / No Risk
Missing Protection against Signature Replay Attacks	Complete	Complete	Low / No Risk
Weak Sources of Randomness from Chain Attributes	Complete	Complete	Low / No Risk

Vulnerability	Automatic Scan	Manual Scan	Result
Authorization through tx.origin	Complete	Complete	Low / No Risk
Delegatecall to Untrusted Callee	Complete	Complete	Low / No Risk
Use of Deprecated Solidity Functions	Complete	Complete	Low / No Risk
Assert Violation	Complete	Complete	Low / No Risk
Reentrancy	Complete	Complete	Low / No Risk
Unprotected SELFDESTRUCT Instruction	Complete	Complete	Low / No Risk
Unprotected Ether Withdrawal	Complete	Complete	Low / No Risk
Unchecked Call Return Value	Complete	Complete	Low / No Risk
Outdated Compiler Version	Complete	Complete	Low / No Risk
Integer Overflow and Underflow	Complete	Complete	Low / No Risk
Function Default Visibility	Complete	Complete	Low / No Risk

Contract Ownership

The contract ownership of H2O is not currently renounced. The ownership of the contract grants special powers to the protocol creators, making them the sole addresses that can call sensible ownable functions that may alter the state of the protocol.

The current owner is the address 0xc330E1477d1b5E2D62206d3Fe770b01EECD55699 which can be viewed from:
HERE

The owner wallet has the power to call the functions displayed on the priviliged functions chart below, if the owner wallet is compromised this privileges could be exploited.

We recommend the team to renounce ownership at the right timing if possible, or gradually migrate to a timelock with governing functionalities in respect of transparency and safety considerations.

Important Notes To The Users:

- The owner cannot mint tokens after intial deployment.
- The owner cannot change the buy or sell tax amount.
- The owner cannot stop Trading.
- The owner cannot blacklist addresses.
- Once the owner renounces ownership of the contract, none of the following are applicable:
- The owner needs to call openTrading function to allow non-tax excluded users to trade.
- The owner can enable/disable the buy/sell taxes.
- The owner can add/exclude addresses from fees.
- The onwer can change the swapTokensAtAmount between 0.001% - 0.1% of the supply.
- The owner cam airdrop tokens, these come from the owner balance.
- The owner can enable/disable the token to ETH swap mechainsm that send taxes to the taxAddress.
- No high-risk Exploits/Vulnerabilities Were Found in token Source Code.

Read carefully the notes section and make your own decision before interacting with the audited contract.

Audit Passed

Technical Findings Summary

Classification of Issues

*All Issues Found are Informational

Severity	Description
High	Exploits, vulnerabilities or errors that will certainly or probabilistically lead towards loss of funds, control, or impairment of the contract and its functions. Issues under this classification are recommended to be fixed with utmost urgency
Medium	Bugs or issues with that may be subject to exploit, though their impact is somewhat limited. Issues under this classification are recommended to be fixed as soon as possible.
Low	Effects are minimal in isolation and do not pose a significant danger to the project or its users. Issues under this classification are recommended to be fixed nonetheless.
Info	Consistency, syntax or style best practices. Generally pose a negligible level of risk, if any.

Findings

Severity	Found
High	0
Medium	0
Low	0
Info	4
Total	4

Findings

Public function that could be declared external

ID	Severity	Contract	Function
01	Informational	H2O	Functions: renounceOwnership, owner

Description

Gas Optimization. Public function that could be declared external

Recommendation

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

Missing events arithmetic

ID	Severity	Contract	Function
02	Informational	H2O	Missing events for updateSwapTokensAtAmount

Description

Functions that change critical arithmetic parameters should emit an event.

Recommendation

Emit corresponding events for critical parameter changes.

Too many digits

ID	Severity	Contract	Function
03	Informational	H2O	Variable updateSwapTokensAtAmount

Description

Literals with many digits are difficult to read and review.

Recommendation

Make use of scientific notation, use underscores, and/or use ether suffix.

Code with no effects

ID	Severity	Contract	Function
04	Informational	H2O	Context._msgData() function

Description

Statements/Variables/Mappings are not used by the contract.

Recommendation

We recommend deleting the statements.

Priviliged Functions (onlyOwner & Others)

Function Name	Parameters	Visibility
renounceOwnership	none	public
transferOwnership	address newOwner	public
openTrading	none	external
excludeFromFees	address account, bool excluded	public
updateSwapTokensAtAmount	uint256 _swapAt	external
enableSwap	none	external
disableSwap	none	external
enableBuyTax	none	external
disableBuyTax	none	external
enableSellTax	none	external
disableSellTax	none	external
airdrop	calldata _addresses, calldata _amount	external

Statistics

Liquidity Info

Parameter	Result
Pair Address	0x81396E4CcE60B82a329bAA2612E4Ef70394A72cf
H2O Reserves	0.00 H2O
ETH Reserves	0.00 ETH
Liquidity Value	$0 USD

Token (H2O) Holders Info

Parameter	Result
H2O Percentage Burnt	0.00%
H2O Amount Burnt	0 H2O
Top 10 Percentage Own	100.00%
Top 10 Amount Owned	10,000,000,000 H2O
Top 10 Aprox Value	$NaN USD

LP (H2O/ETH) Holders Info

Parameter	Result
H2O/ETH % Burnt	0.00%
H2O/ETH Amount Burnt	0 H2O/ETH
Top 10 Percentage Owned	0.00%
Top 10 Amount Owned	0 H2O/ETH
Locked Tokens Percentage	0.00%
Locked Tokens Amount	0 H2O/ETH

* All the data diplayed above was taken on-chain at block 16962246
* The tokens on industry-standard burn wallets are not included on the top 10 wallets calculations

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