HackSafe

Smart Contract Security Audit Report

AQUA

November 2022

Security Status

★ ★ ★ ★ ⯪

www.hacksafe.io

Audit Details

Audited project
AQUA

Deployer address
0xd0770397b59b1f6238e9c125c5ef4cb9007fe81f

Client contacts
AQUA Team

Blockchain
Binance smart chain

Website
https://app.planet.finance/

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.

Procedure

Step 1 - In-Depth Manual Review

Manual line-by-line code reviews to ensure the logic behind each function is sound and safe from various attack vectors. This is the most important and lengthy portion of the audit process (as automated tools often cannot find the nuances that lead to exploits such as flash loan attacks).

Step 2 - Automated Testing

Simulation of a variety of interactions with your Smart Contract on a test blockchain leveraging a combination of automated test tools and manual testing to determine if any security vulnerabilities exist.

Step 3 – Leadership Review

The engineers assigned to the audit will schedule meetings with our leadership team to review the contracts, any comments or findings, and ask questions to further apply adversarial thinking to discuss less common attack vectors.

Step 4 - Resolution of Issues

Consulting with the team to provide our recommendations to ensure the code's security and optimize its gas efficiency, if possible. We assist project team's in resolving any outstanding issues or implementing our recommendations.

Step 5 - Published Audit Report

Boiling down results and findings into an easy-to-read report tailored to the project. Our audit reports highlight resolved issues and any risks that exist to the project or its users, along with any remaining suggested remediation measures. Diagrams are included at the end of each report to help users understand the interactions which occur within the project.

Background

HackSafe was commissioned by AQUA to perform an audit of smart contracts:

- https://bscscan.com/token/0x72B7D61E8fC8cF971960DD9cfA59B8C829D91991#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 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.

Contract Details

Token contract details for 21.11.2022

Token Type	: DEFI
Contract name	: AQUA
Contract address	: 0x72B7D61E8fC8cF971960DD9cfA59B8C829D91991
Total supply	: 100,000.053694
Token Ticker	: AQUA
Decimals	: 18
Token Holders	: 6,182
Transactions count	: 1,768,498
Compiler version	: v0.6.12+commit.27d51765
Contract deployer address	: 0xd0770397b59b1f6238e9c125c5ef4cb9007fe81f
Owner address	: 0x0ac58fd25f334975b1b61732cf79564b6200a933

Audit Summary

According to the standard audit assessment, Customer`s solidity smart contracts are **“Secure”.** This token contract does contain owner control, which do not make it fully decentralized as owner does have control over smart contract.

Insecure	Poor secured	Secure	Well-secured

You are here 

We used various tools like Slither, Mythril and Remix IDE. At the same time this finding is based on critical analysis of the manual audit. All issues found during automated analysis were manually reviewed and applicable vulnerabilities are presented in the issues checking status.

We found 0 critical, 0 high, medium and 2 low.

Social profiles

Twitter profile	: https://twitter.com/planet_finance
Github profile	: https://github.com/planetfinance
Telegram profile	: https://t.me/planet_finance
Coinmarket profile	: https://coinmarketcap.com/currencies/planet-finance/
Coingecko profile	: https://www.coingecko.com/en/coins/planet-finance/

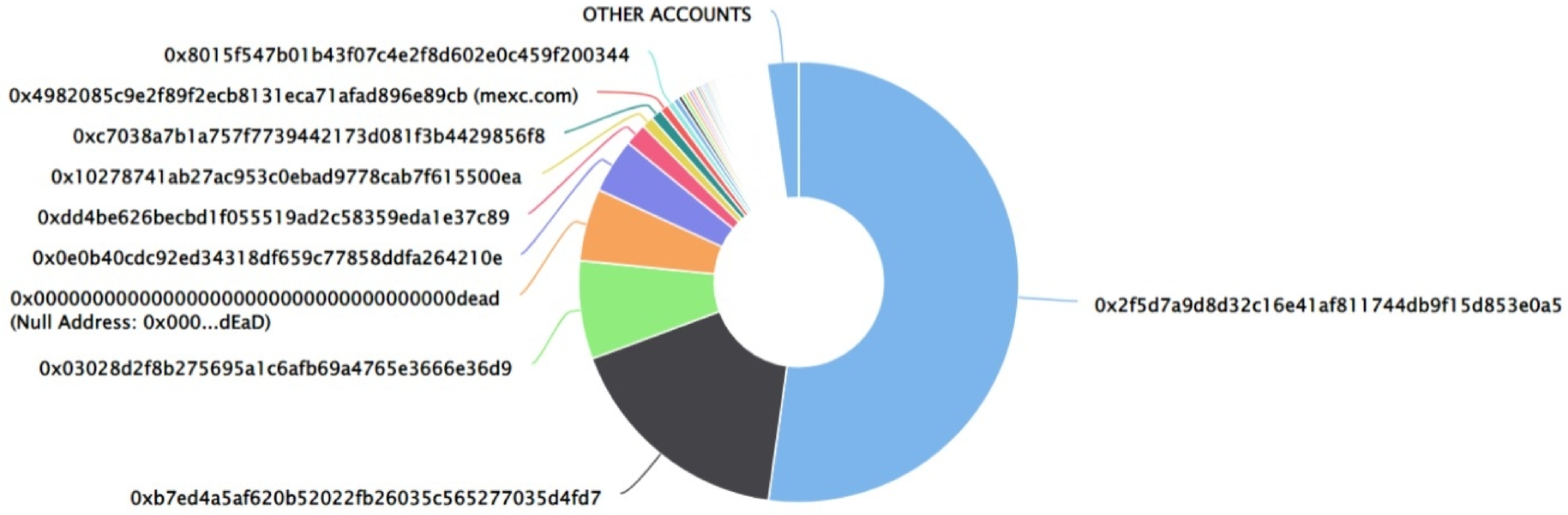
AQUA Distribution

The top 100 holders collectively own 97.69% (97,692.25 Tokens) of AQUA

Token Total Supply: 100,000.05 Token | Total Token Holders: 6,182

AQUA Top 100 Token Holders

Source: BscScan.com



AQUA Top 20 Token Holders

(A total of 97,692.25 tokens held by the top 100 accounts from the total supply of 100,000.05 token)

Rank	Address	Quantity (Token)	Percentage
1	0x2f5d7a9d8d32c16e41af811744db9f15d853e0a5	52,216.246414529189140905	52.2162%
2	0xb7ed4a5af620b52022fb26035c565277035d4fd7	17,139.903510659508746229	17.1399%
3	0x03028d2f8b275695a1c6afb69a4765e3666e36d9	7,202.30795290819729865	7.2023%
4	Null Address: 0x000...dEaD	5,330.652530113449631772	5.3306%
5	0x0e0b40cdc92ed34318df659c77858ddfa264210e	4,000.84229743735799267	4.0008%
6	0xdd4be626becbd1f055519ad2c58359eda1e37c89	1,620.216425024649527529	1.6202%
7	0x10278741ab27ac953c0ebad9778cab7f615500ea	864.949536412890929477	0.8649%
8	0xc7038a7b1a757f7739442173d081f3b4429856f8	827.618046120529008193	0.8276%
9	mexc.com	634.416848255555170162	0.6344%
10	0x8015f547b01b43f07c4e2f8d602e0c459f200344	489.198353462494741467	0.4892%
11	0xd3c78ed8ca8d30ef4876302167bcdb680024f640	428.976997299897545611	0.4290%
12	0xb48470883701d859d64d3d9a5f6215fd9452172d	308.919258779065629649	0.3089%
13	0xde81f2885484d5b17aa398bf379daa543e034759	291.1144756591240706	0.2911%
14	0x354dad92e2edd2358291850b0aa20c5c677d6751	270.632304536413374407	0.2706%
15	0xb8f7a1544b51367474c876513181667771f336363	220.392916633287757941	0.2204%
16	0x6e6e97551aa11531082eac3d8698a771cc94981e	203.078930162326416792	0.2031%
17	0x8386d1dc1af75f1d7e6fb1ea665777e0419f0cd0	200.628701745794210818	0.2006%
18	0x6fe797cd06c83268d9fb12b52acaf89b4ff725c2	199.660067259937290272	0.1997%
19	0x7ef01f7b2ec092d2649d095f294a8af46cc27f16	196.682895195298707556	0.1967%
20	0x22ff9197d386fc5d9c76a27d553446c18789ff34	190.952136703571464515	0.1910%

AQUA Distribution

AQUA Contract Overview

Contract functions details

+Context
    -[Int] _msgSender
    -[Int] _msgData

+[Lib] SafeMath
    -[Int] add
    -[Int] sub
    -[Int] sub
    -[Int] mul
    -[Int] div
    -[Int] div
    -[Int] mod
    -[Int] mod

+[Int] IERC20
    -[Ext] totalSupply
    -[Ext] balanceOf
    -[Ext] transfer
    -[Ext] allowance
    -[Ext] approve
    -[Ext] transferFrom

+ERC20 (Context, IERC20)
    -[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 #

Contract functions details

-[Int] _setupDecimals #
-[Int] _beforeTokenTransfer #

+Ownable (Context)
-[Int] <constructor>
-[Pub] owner
-[Pub] renounceOwnership #
- modifiers: onlyOwner
-[Pub] transferOwnership #
-modifiers: onlyOwner

+AQUA (ERC20)
-[Pub] mint #
-modifiers: onlyOwner

($) = payable function
= non-constant function

Issues Checking Status

No.	Title	Status
1.	Unlocked Compiler Version	Low issue
2.	Missing Input Validation	Passed
3.	Race conditions and Reentrancy. Cross-function race conditions.	Passed
4.	Possible delays in data delivery	Passed
5.	Oracle calls.	Passed
6.	Timestamp dependence.	Passed
7.	Integer Overflow and Underflow	Passed
8.	DoS with Revert.	Passed
9.	DoS with block gas limit.	Passed
10.	Methods execution permissions.	Passed
11.	Economy model of the contract.	Passed
12.	Private use data leaks.	Passed
13.	Malicious Event log.	Passed
14.	Scoping and Declarations.	Passed
15.	Uninitialized storage pointers.	Passed
16.	Arithmetic accuracy.	Passed
17.	Design Logic.	Passed
18.	Safe Open Zeppelin contracts implementation and usage.	Passed
19.	Incorrect Naming State Variable	Passed
20.	Too old version	Low issue

Severity Definitions

Risk Level	Description
Critical	Critical vulnerabilities are usually straightforward to exploit and can lead to assets loss or data manipulations.
High	High-level vulnerabilities are difficult to exploit; however, they also have a significant impact on smart contract execution, e.g., public access to crucial functions
Medium	Medium-level vulnerabilities are important to fix; however, they can't lead to assets loss or data manipulations.
Low	Low-level vulnerabilities are mostly related to outdated, unused, etc. code snippets that can't have a significant impact on execution.

Security Issues

- **Critical Severity Issues**
  No critical severity issue found.
- **High Severity Issues**
  No high severity issue found.
- **Medium Severity Issues**
  No medium severity issue found.
- **Low Severity Issues**
  Two low severity issue found.

1. Old compiler version

- **Description**
  Contract has been deployed using too old solidity version.
- **Recommendation**
  It is advisable to deploy contract using any of the latest version of solidity.

2. Unlocked Compiler Version.

- **Description**
  The contract utilizes an unlocked compiler version. An unlocked compiler version in the contract's source code permits the user to compile it at or above a particular version. This, in turn, leads to differences in the generated bytecode between compilations due to differing compiler version numbers. This can lead to ambiguity when debugging as compiler-specific bugs may occur in the codebase that would be difficult to identify over a span of multiple compiler versions rather than a specific one.
- **Recommendation**
  It is advisable that the compiler version is alternatively locked at the lowest version possible so that the contract can be compiled. For example, for version ^0.6.12 the contract should contain the following line:

  pragma solidity 0.6.12;

Centralization

Owner Privileges :

- AQUA Contract:
    - Owner can transfer and renounce ownership.
    - Owner can mint.

This smart contract has some functions which can be executed by the admin (Owner) only. If the admin wallet private key would be compromised, then it would create trouble as smart contract ownership has not been renounced. Following are Admin functions:

- transferOwnership
- renounceOwnership
- mint

Conclusion

Smart contract contains low severity issues! The further transfer and operations with the fund raised are not related to this particular contract.

HackSafe 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.