

Audit Report May, 2023



For





Table of Content

Executive Summary	01
Checked Vulnerabilities	03
Techniques and Methods	04
Manual Testing	05
High Severity Issues	05
Medium Severity Issues	05
Low Severity Issues	06
Informational Issues	07
Automated Tests	08
Closing Summary	10
About QuillAudits	11



Executive Summary

Project Name DexterLabs

Overview DexterLabs expands on ERC20 functionality providing a few more

features, with fees on buys and sells.

Timeline 29th May, 2023 to 30th May, 2023

Method Manual Review, Functional Testing, Automated Testing etc.

Scope of Audit The scope of this audit was to analyze DexterLabs codebase for

quality, security, and correctness.

Contracts in Scope <u>https://bscscan.com/</u>

address/0x363b5A986B1F2D36B0a870782658f658997b7495#code



	High	Medium	Low	Informational
Open Issues	0	0	0	0
Acknowledged Issues	0	2	0	1
Partially Resolved Issues	0	1	0	0
Resolved Issues	1	0	0	0

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Types of Severities

High

A high severity issue or vulnerability means that your smart contract can be exploited. Issues on this level are critical to the smart contract's performance or functionality, and we recommend these issues be fixed before moving to a live environment.

Medium

The issues marked as medium severity usually arise because of errors and deficiencies in the smart contract code. Issues on this level could potentially bring problems, and they should still be fixed.

Low

Low-level severity issues can cause minor impact and or are just warnings that can remain unfixed for now. It would be better to fix these issues at some point in the future.

Informational

These are severity issues that indicate an improvement request, a general question, a cosmetic or documentation error, or a request for information. There is low-to-no impact.

Types of Issues

Open

Security vulnerabilities identified that must be resolved and are currently unresolved.

Resolved

These are the issues identified in the initial audit and have been successfully fixed.

Acknowledged

Vulnerabilities which have been acknowledged but are yet to be resolved.

Partially Resolved

Considerable efforts have been invested to reduce the risk/impact of the security issue, but are not completely resolved.

Checked Vulnerabilities



Timestamp Dependence

Gas Limit and Loops

Exception Disorder

✓ Gasless Send

✓ Use of tx.origin

Compiler version not fixed

Address hardcoded

Divide before multiply

Integer overflow/underflow

Dangerous strict equalities

Tautology or contradiction

Return values of low-level calls

Missing Zero Address Validation

Private modifier

Revert/require functions

Using block.timestamp

Multiple Sends

✓ Using SHA3

Using suicide

✓ Using throw

Using inline assembly

03

Techniques and Methods

Throughout the audit of smart contract, care was taken to ensure:

- The overall quality of code.
- Use of best practices.
- Code documentation and comments match logic and expected behaviour.
- Token distribution and calculations are as per the intended behaviour mentioned in the whitepaper.
- Implementation of ERC-20 token standards.
- Efficient use of gas.
- Code is safe from re-entrancy and other vulnerabilities.

The following techniques, methods and tools were used to review all the smart contracts.

Structural Analysis

In this step, we have analysed the design patterns and structure of smart contracts. A thorough check was done to ensure the smart contract is structured in a way that will not result in future problems.

Static Analysis

Static analysis of smart contracts was done to identify contract vulnerabilities. In this step, a series of automated tools are used to test the security of smart contracts.

Code Review / Manual Analysis

Manual analysis or review of code was done to identify new vulnerabilities or verify the vulnerabilities found during the static analysis. Contracts were completely manually analysed, their logic was checked and compared with the one described in the whitepaper. Besides, the results of the automated analysis were manually verified.

Gas Consumption

In this step, we have checked the behaviour of smart contracts in production. Checks were done to know how much gas gets consumed and the possibilities of optimization of code to reduce gas consumption.

Tools and Platforms used for Audit

Remix IDE, Truffle, Truffle Team, Solhint, Mythril, Slither, Solidity statistic analysis.

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Manual Testing

A. Contract - DexterLabs.sol

High Severity Issues

1. Centralization Risk

Description

The contract is heavily centralized, and any compromise of the owner (responsible for the transactions carried out with the onlyOwner modifier) could lead to bricking the contract or a loss of funds.

Remediation

Client can implement a multi-signature wallet architecture making the risk of failure to as minimal as possible with more members of the multisig.

DexterLabs Team Comment: As we did before, once the launch is completed we will move the ownership to a gnosis multisig safe to ensure the contracts safety.

Status

Resolved

Medium Severity Issues

2. Privileged account transfers

Description

If renouncing privileges is not done appropriately, the current beneficiary can renounce their privileges and still be excluded from fees while the new beneficiary will be able to collect fees and still retain same privileges. This can result in loss of revenue for the client.

Remediation

Properly deal with privilege account transfers in setFeesAddress(), setBuybackAddress(), setMarketingAddress(), setDevelopmentAddress and setLPtokenReciver().

Status

Acknowledged



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3. Input sanitization

Description

Majority of functions could behave irregularly because of the lack of input validation.

Remediation

Input validation could be done by including require checks at the beginning of the methods to restrict the values that can be passed in and thereby the possibility of unexpected values being obtained during function calls.

Status

Acknowledged

4. Missing test cases

Description

The codebase lacks unit test coverage. It is advisable to have test coverage greater than 95% of the codebase to reduce unexpected functionality and help fuzz test as many invariants as possible.

Remediation

Include unit tests for the codebase.

Status

Partially Resolved

Low Severity Issues

No issues found

Informational Issues

5. Event emission

Description

Some of the contract functions that update the vault's state do not emit events when called. It is advisable for ease of tracking changes on the blockchain to emit events. The functions that change state should have events emitted when called.

Remediation

Emit events for these state changes for ease of tracking and logging.

Status

Acknowledged

Automated Tests

No major issues were found. Some false positive errors were reported by the tools. All the other issues have been categorized above according to their level of severity.

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09

Summary

In this report, we have considered the security of the DexterLabs codebase. We performed our audit according to the procedure described above.

Some issues of High, Medium, Low and Informational severity were found. Some suggestions and best practices are also provided in order to improve the code quality and security posture.

Disclaimer

QuillAudits smart contract audit is not a security warranty, investment advice, or an endorsement of the DexterLabs Platform. This audit does not provide a security or correctness guarantee of the audited smart contracts.

sThe statements made in this document should not be interpreted as investment or legal advice, nor should its authors be held accountable for decisions made based on them. Securing smart contracts is a multistep process. One audit cannot be considered enough. We recommend that the DexterLabs Team put in place a bug bounty program to encourage further analysis of the smart contract by other third parties.

About QuillAudits

QuillAudits is a secure smart contracts audit platform designed by QuillHash Technologies. We are a team of dedicated blockchain security experts and smart contract auditors determined to ensure that Smart Contract-based Web3 projects can avail the latest and best security solutions to operate in a trustworthy and risk-free ecosystem.



850+Audits Completed



\$16BSecured



800KLines of Code Audited



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