

Blockchain Security | Smart Contract Audits | KYC Development | Marketing

MADE IN GERMANY

Liquidus Finance

Audit

Security Assessment 29. December, 2022







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Version	Date	Description
1.0	23. December 2022	Layout projectAutomated-/Manual-Security TestingSummary

Network

TBA

Website

https://liquidus.finance

Telegram

https://t.me/liquidusfinance

Twitter

https://twitter.com/LiquidusFinance

Medium

https://blog.liquidus.finance

Instagram

https://www.instagram.com/liquidus_finance/

Description

Liquidus is a practical tool that allows you to easily stake your crypto assets on the leading DeFi platforms. It simplifies liquidity and staking, earning you premium rates fueled by the decentralised economy. Not only will liquidus provide a more seamless farming experience, but it will pick, sort and show you the best investments for your held assets, helping you make your money go further. Becoming a one stop solution for earning decentralised interest is the main vision for Liquidus

Project Engagement

During the Date of 23 December 2022, **Liquidus Finacne Team** engaged Solidproof.io to audit smart contracts that they created. The engagement was technical in nature and focused on identifying security flaws in the design and implementation of the contracts. They provided Solidproof.io with access to their code repository and whitepaper.

Logo



Contract Link v1.0

Provided as files

Vulnerability & Risk Level

Risk represents the probability that a certain source-threat will exploit vulnerability, and the impact of that event on the organization or system. Risk Level is computed based on CVSS version 3.0.

Level	Value	Vulnerability	Risk (Required Action)
Critical	9 - 10	A vulnerability that can disrupt the contract functioning in a number of scenarios, or creates a risk that the contract may be broken.	Immediate action to reduce risk level.
High	7 – 8.9	A vulnerability that affects the desired outcome when using a contract, or provides the opportunity to use a contract in an unintended way.	Implementation of corrective actions as soon aspossible.
Medium	4 – 6.9	A vulnerability that could affect the desired outcome of executing the contract in a specific scenario.	Implementation of corrective actions in a certain period.
Low	2 – 3.9	A vulnerability that does not have a significant impact on possible scenarios for the use of the contract and is probably subjective.	Implementation of certain corrective actions or accepting the risk.
Informational	O – 1.9	A vulnerability that have informational character but is not effecting any of the code.	An observation that does not determine a level of risk

Auditing Strategy and Techniques Applied

Throughout the review process, care was taken to evaluate the repository for security-related issues, code quality, and adherence to specification and best practices. To do so, reviewed line-by-line by our team of expert pentesters and smart contract developers, documenting any issues as there were discovered.

Methodology

The auditing process follows a routine series of steps:

- 1. Code review that includes the following:
 - i) Review of the specifications, sources, and instructions provided to SolidProof to make sure we understand the size, scope, and functionality of the smart contract.
 - ii) Manual review of code, which is the process of reading source code line-byline in an attempt to identify potential vulnerabilities.
 - iii) Comparison to specification, which is the process of checking whether the code does what the specifications, sources, and instructions provided to SolidProof describe.
- 2. Testing and automated analysis that includes the following:
 - i) Test coverage analysis, which is the process of determining whether the test cases are actually covering the code and how much code is exercised when we run those test cases.
 - ii) Symbolic execution, which is analysing a program to determine what inputs causes each part of a program to execute.
- 3. Best practices review, which is a review of the smart contracts to improve efficiency, effectiveness, clarify, maintainability, security, and control based on the established industry and academic practices, recommendations, and research.
- 4. Specific, itemized, actionable recommendations to help you take steps to secure your smart contracts.

Used Code from other Frameworks/Smart Contracts (direct imports)

Imported packages:

Dependency / Import Path	Count
@openzeppelin/contracts/access/Ownable.sol	9
@openzeppelin/contracts/security/Pausable.sol	6
@openzeppelin/contracts/security/ReentrancyGuard.sol	5
@openzeppelin/contracts/token/ERC20/IERC20.sol	9
@openzeppelin/contracts/token/ERC20/utils/SafeERC20.sol	9
@openzeppelin/contracts/utils/Address.sol	1
@openzeppelin/contracts/utils/Context.sol	4
@openzeppelin/contracts/utils/math/SafeMath.sol	9
hardhat/console.sol	1

Tested Contract Files

This audit covered the following files listed below with a SHA-1 Hash.

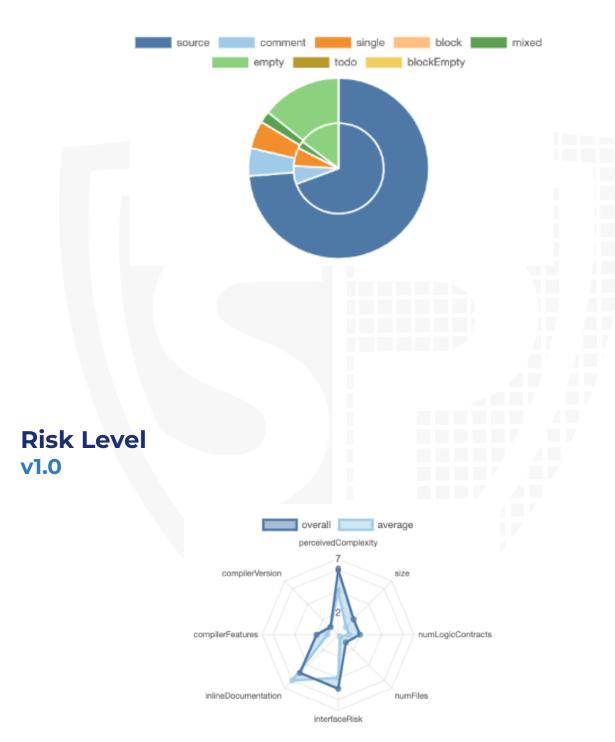
A file with a different Hash has been modified, intentionally or otherwise, after the security review. A different Hash could be (but not necessarily) an indication of a changed condition or potential vulnerability that was not within the scope of this review.

v1.0

File Name	SHA-1 Hash
deposit-farm-contract-main/contracts/	caaca86cb5d68c6b7a59b4f7138a
LiquidusAutoLP.sol	486f5013d04f
deposit-farm-contract-main/contracts/	bb6535e7236c3f110ecfcdb6fd7f3
LiquidusFeeEstimation.sol	7e35f005492
deposit-farm-contract-main/contracts/	b7a2bb02f7e92f0d27a6ec832f6a7
KyberSwapLIQ.sol	7f0365dacc9
deposit-farm-contract-main/contracts/	2c11cfdf4275c0b9463ae08b3e28c
LiquidusBoost.sol	80ec8b23c85

Metrics

Source Lines v1.0



Capabilities

Components



Exposed Functions

This section lists functions that are explicitly declared public or payable. Please note that getter methods for public stateVars are not included.

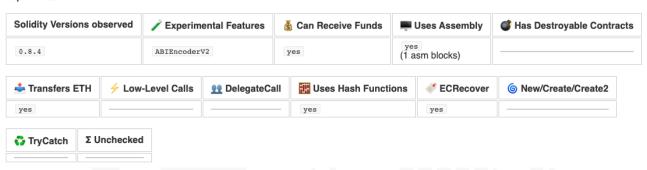


External	Internal	Private	Pure	View
89	86	0	13	35

StateVariables



Capabilities



Inheritance Graph v1.0



CallGraph v1.0



Scope of Work/Verify Claims

The above token Team provided us with the files that needs to be tested (Github, Bscscan, Etherscan, files, etc.). The scope of the audit is the main contract (usual the same name as team appended with .sol).

We will verify the following claims:

- 1. Is contract an upgradeable
- 2. Correct implementation of Token standard
- 3. Deployer cannot mint any new tokens
- 4. Deployer cannot burn or lock user funds
- 5. Deployer cannot pause the contract
- 6. Deployer cannot set fees
- 7. Deployer cannot blacklist/antisnipe addresses
- 8. Overall checkup (Smart Contract Security)

Is contract an upgradeable

Name Is contract an upgradeable? Yes No

Comments:

v1.0

- Owner can deploy a new version of the contract which can change any limit and give owner new privileges
 - Be aware of this and do your own research for the contract which is the contract pointing to

Correct implementation of Token standard

	ERC20				
Function	Description	Exist	Tested	Verified	
TotalSupply	Provides information about the total token supply	√	√	✓	
BalanceOf	Provides account balance of the owner's account	\checkmark	√	✓	
Transfer	Executes transfers of a specified number of tokens to a specified address	√	√	✓	
TransferFrom	Executes transfers of a specified number of tokens from a specified address	√	√	√	
Approve	Allow a spender to withdraw a set number of tokens from a specified account	√	√	√	
Allowance	Returns a set number of tokens from a spender to the owner	√	1	√	

ERC721					
Function	Description	Exist	Tested	Verified	
BalanceOf	Count all NFTs assigned to an owner	\checkmark	√	\checkmark	
OwnerOf	Find the owner of an NFT	√	√	√	
SafeTransferFrom	Transfers the ownership of an NFT from one address to another address	√	√	√	
SafeTransferFrom	See above - Difference is that this function has an extra data parameter	√	√	√	
TransferFrom	Transfer ownership of an NFT	\checkmark	√	\checkmark	
Approve	Change or reaffirm the approved address for an NFT	√	√	√	
SetApprovalForAll	Enable or disable approval for a third party ("operator") to manage all of `msg.sender`'s assets	√	√	√	
GetApproved	Get the approved address for a single NFT	√	√	√	
IsApprovedForAll	Query if an address is an authorized operator for another address	√	√	√	
SupportsInterface	Query if a contract implements an interface	√	√	√	
Name	Provides information about the name	√	1	√	
Symbol	Provides information about the symbol	√	√	√	
TokenURI	Provides information about the TokenUri	√	1	1	

Write functions of all contracts v1.0

🛊 useKyberApiData 👸 zapln 👸 setFees setFees setTierThresholds setTierThresholds recoverWrongTokens addWhitelistFromFee addWhitelistFromFee removeWhitelistFromFee removeWhitelistFromFee addWhitelistRouter addWhitelistRouters removeWhitelistRouter removeWhitelistRouters recoverWrongTokens pause setFees unpause setTierThresholds claimBoost setLIQToken recoverWrongTokens setBoostPercentage setRewardToken setNFT pause setCollectionHoldings unpause recoverWrongTokens addLpStakingContract removeLpStakingContract addTokenStakingContract removeTokenStakingContract pause unpause

Deployer cannot mint any new tokens

Name	Exist	Tested	Status
Deployer cannot mint	-	_	-
Max / Total Supply	N/A		

Comments:

v1.0

· Owner can mint new tokens

Deployer cannot burn or lock user funds

Name	Exist	Tested	Status
Deployer can lock	\checkmark	√	X
Deployer cannot burn	-	_	-

Comments:

v1.0

- Owner can lock user funds by
 - · Setting the fees amount to 100% or more

Deployer cannot pause the contract

Name	Exist	Tested	Status
Deployer can pause	\checkmark	√	X

Comments:

v1.0

· Owner can pause contract

Deployer cannot set fees

Name	Exist	Tested	Status
Deployer can set fees over 25%	\checkmark	√	X
Deployer can set fees to nearly 100% or to 100%	√	√	X

Comments:

v1.0

- Fees can be set without any limitations that means it could be set to even more than 100%
- · There owner can also add/remove wallets from fees

Deployer can blacklist/antisnipe addresses

Name	Exist	Tested	Status
Deployer cannot blacklist/antisnipe addresses	-	-	_



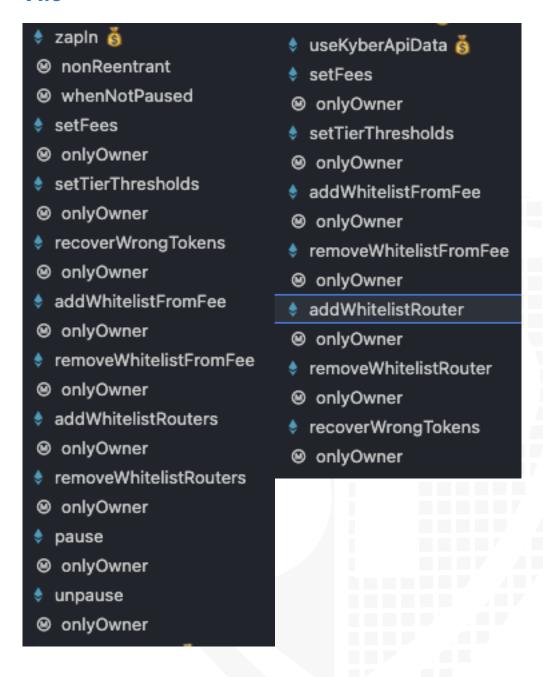
Overall checkup (Smart Contract Security)



Legend

Attribute	Symbol
Verified / Checked	√
Partly Verified	
Unverified / Not checked	×
Not available	_

Modifiers and public functions v1.0



setFees claimBoost onlyOwner nonReentrant setTierThresholds whenNotPaused onlyOwner recoverWrongTokens setLIQToken onlyOwner ⊗ onlyOwner setBoostPercentage setRewardToken onlyOwner setNFT pause ⊗ onlyOwner ⊗ onlyOwner setCollectionHoldings unpause ⊗ onlyOwner recoverWrongTokens onlyOwner ⊗ onlyOwner addLpStakingContract ⊗ onlyOwner removeLpStakingContract ⊗ onlyOwner addTokenStakingContract

Ownership Privileges

removeTokenStakingContract

⊗ onlyOwner

⊗ onlyOwner

⊗ onlyOwner

onlyOwner

unpause

pause

- · Deployer can set following state variables without any limitations
 - feeSilver, feeGold, feeTitan, and feewallet.
 - Tier Thresholds (silver, gold, titan)
 - Boost Percentage
 - Collection Holdings
- · Deployer can set/update following addresses
 - Reward Token
 - LIQ Token
 - NFT Contract
 - LP Staking Contract
 - Token Staking Address

- · The owner can add/remove router addresses from the whitelist
- The owner can withdraw any token from the contract's balance because it is possible to pass any token address in the "recoverWrongTokens" function



Source Units in Scope v1.0

File	Logic Contracts	Interfaces	Lines	nLines	nSLOC	Comment Lines	Complex. Score
deposit-farm-contract-main/contracts/LiquidusAutoLP.sol	2	6	622	377	300	41	575
deposit-farm-contract-main/contracts/LiquidusFeeEstimation.sol	1	2	201	194	155	10	163
deposit-farm-contract-main/contracts/KyberSwapLIQ.sol	1	1	162	139	107	6	120
deposit-farm-contract-main/contracts/LiquidusBoost.sol	1		69	69	52	1	56
Totals	5	9	1054	779	614	58	914

Legend

Attribute	Description			
Lines	total lines of the source unit			
nLines	normalised lines of the source unit (e.g. normalises functions spanning multiple lines)			
nSLOC	normalised source lines of code (only source-code lines; no comments, no blank lines)			
Comment Lines	lines containing single or block comments			
Complexity Score	a custom complexity score derived from code statements that are known to introduce code complexity (branches, loops, calls, external interfaces,)			

Audit Results

Critical issues

No critical issues

High issues

No high issues

Medium issues

No medium issues

Issue	File	Type	Line	Description
#1	LiquidusA utoLP.sol	Fees can be 100%	576	Owner can set Fees to any arbitrary value even more than 100%
#2	KyberSwa pLIQ.sol	Fees can be 100%	126	Owner can set Fees to any arbitrary value even more than 100%
#3	LiquidusF eeEstimati on.sol	Fees can be 100%	96	Owner can set Fees to any arbitrary value even more than 100%

Low issues

No low issues File Issue Type Description Line ΑII Missing Zero Address Check that the address is not #1 All Owner Validation (missing-**Functions** zero zero-check) that takes an address type as a parameter #2 ΑII Missing Events ΑII Emit an event for critical Arithmetic parameter changes

Informational issues

	No informational issues				
Issue	File	Type	Line	Description	
#1	All	NatSpec documentation missing	-	If you started to comment your code, also comment all other functions, variables etc.	

Audit Comments

We recommend you to use the special form of comments (NatSpec Format, Follow link for more information https://docs.soliditylang.org/en/latest/natspec-format.html) for your contracts to provide rich documentation for functions, return variables and more. This helps investors to make clear what that variables, functions etc. do.

29. December 2022:

- There is still an owner (Owner still has not renounced ownership)
- Read whole report and modifiers section for more information

SWC Attacks

ID	Title	Relationships	Status
<u>SW</u> <u>C-1</u> <u>36</u>	Unencrypted Private Data On-Chain	CWE-767: Access to Critical Private Variable via Public Method	PASSED
<u>SW</u> <u>C-1</u> <u>35</u>	Code With No Effects	CWE-1164: Irrelevant Code	PASSED
<u>SW</u> <u>C-1</u> <u>34</u>	Message call with hardcoded gas amount	CWE-655: Improper Initialization	PASSED
<u>SW</u> <u>C-1</u> <u>33</u>	Hash Collisions With Multiple Variable Length Arguments	CWE-294: Authentication Bypass by Capture-replay	PASSED
<u>SW</u> <u>C-1</u> <u>32</u>	Unexpected Ether balance	CWE-667: Improper Locking	PASSED
<u>SW</u> <u>C-1</u> <u>31</u>	Presence of unused variables	CWE-1164: Irrelevant Code	PASSED
<u>SW</u> <u>C-1</u> <u>30</u>	Right-To-Left- Override control character (U+202E)	CWE-451: User Interface (UI) Misrepresentation of Critical Information	PASSED
<u>SW</u> <u>C-1</u> <u>29</u>	Typographical Error	CWE-480: Use of Incorrect Operator	PASSED
<u>SW</u> <u>C-1</u> <u>28</u>	DoS With Block Gas Limit	CWE-400: Uncontrolled Resource Consumption	PASSED

<u>SW</u> <u>C-1</u> <u>27</u>	Arbitrary Jump with Function Type Variable	CWE-695: Use of Low-Level Functionality	PASSED
SW C-1 25	Incorrect Inheritance Order	CWE-696: Incorrect Behavior Order	PASSED
<u>SW</u> <u>C-1</u> <u>24</u>	Write to Arbitrary Storage Location	CWE-123: Write-what-where Condition	PASSED
SW C-1 23	Requirement Violation	CWE-573: Improper Following of Specification by Caller	PASSED
<u>SW</u> <u>C-1</u> <u>22</u>	Lack of Proper Signature Verification	CWE-345: Insufficient Verification of Data Authenticity	PASSED
SW C-1 21	Missing Protection against Signature Replay Attacks	CWE-347: Improper Verification of Cryptographic Signature	PASSED
SW C-1 20	Weak Sources of Randomness from Chain Attributes	CWE-330: Use of Insufficiently Random Values	PASSED
<u>SW</u> <u>C-11</u> <u>9</u>	Shadowing State Variables	CWE-710: Improper Adherence to Coding Standards	PASSED
<u>SW</u> <u>C-11</u> <u>8</u>	Incorrect Constructor Name	CWE-665: Improper Initialization	PASSED
<u>SW</u> <u>C-11</u> <u>7</u>	Signature Malleability	CWE-347: Improper Verification of Cryptographic Signature	PASSED

<u>SW</u> <u>C-11</u> <u>6</u>	Timestamp Dependence	CWE-829: Inclusion of Functionality from Untrusted Control Sphere	PASSED
<u>SW</u> <u>C-11</u> <u>5</u>	Authorization through tx.origin	CWE-477: Use of Obsolete Function	PASSED
<u>SW</u> <u>C-11</u> <u>4</u>	Transaction Order Dependence	CWE-362: Concurrent Execution using Shared Resource with Improper Synchronization ('Race Condition')	PASSED
<u>SW</u> <u>C-11</u> <u>3</u>	DoS with Failed Call	CWE-703: Improper Check or Handling of Exceptional Conditions	PASSED
<u>SW</u> <u>C-11</u> <u>2</u>	Delegatecall to Untrusted Callee	CWE-829: Inclusion of Functionality from Untrusted Control Sphere	PASSED
<u>SW</u> <u>C-11</u> <u>1</u>	Use of Deprecated Solidity Functions	CWE-477: Use of Obsolete Function	PASSED
<u>SW</u> <u>C-11</u> <u>O</u>	Assert Violation	CWE-670: Always-Incorrect Control Flow Implementation	PASSED
SW C-1 09	Uninitialized Storage Pointer	CWE-824: Access of Uninitialized Pointer	PASSED
<u>SW</u> <u>C-1</u> <u>08</u>	State Variable Default Visibility	CWE-710: Improper Adherence to Coding Standards	PASSED
SW C-1 07	Reentrancy	CWE-841: Improper Enforcement of Behavioral Workflow	PASSED
<u>SW</u> <u>C-1</u> <u>06</u>	Unprotected SELFDESTRUC T Instruction	CWE-284: Improper Access Control	PASSED

<u>SW</u> <u>C-1</u> <u>05</u>	Unprotected Ether Withdrawal	CWE-284: Improper Access Control	PASSED
<u>SW</u> <u>C-1</u> <u>04</u>	Unchecked Call Return Value	CWE-252: Unchecked Return Value	PASSED
<u>SW</u> <u>C-1</u> <u>03</u>	Floating Pragma	CWE-664: Improper Control of a Resource Through its Lifetime	PASSED
<u>SW</u> <u>C-1</u> <u>02</u>	Outdated Compiler Version	CWE-937: Using Components with Known Vulnerabilities	PASSED
<u>SW</u> <u>C-1</u> <u>01</u>	Integer Overflow and Underflow	CWE-682: Incorrect Calculation	PASSED
<u>SW</u> <u>C-1</u> <u>00</u>	Function Default Visibility	CWE-710: Improper Adherence to Coding Standards	PASSED







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