HackSafe

Smart Contract Security Audit Report

KOALA Token

May **2022**

Security Status

★★★★½

www.hacksafe.io

Audit Details

Audited project
KOALA Token

Deployer address
0xb9659d3037b88DC35ed578eEFbBb7c9708189a3b

Client contacts
Koala token

Blockchain
Binance Smart Chain

Website
https://moonkoala.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.

Background

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

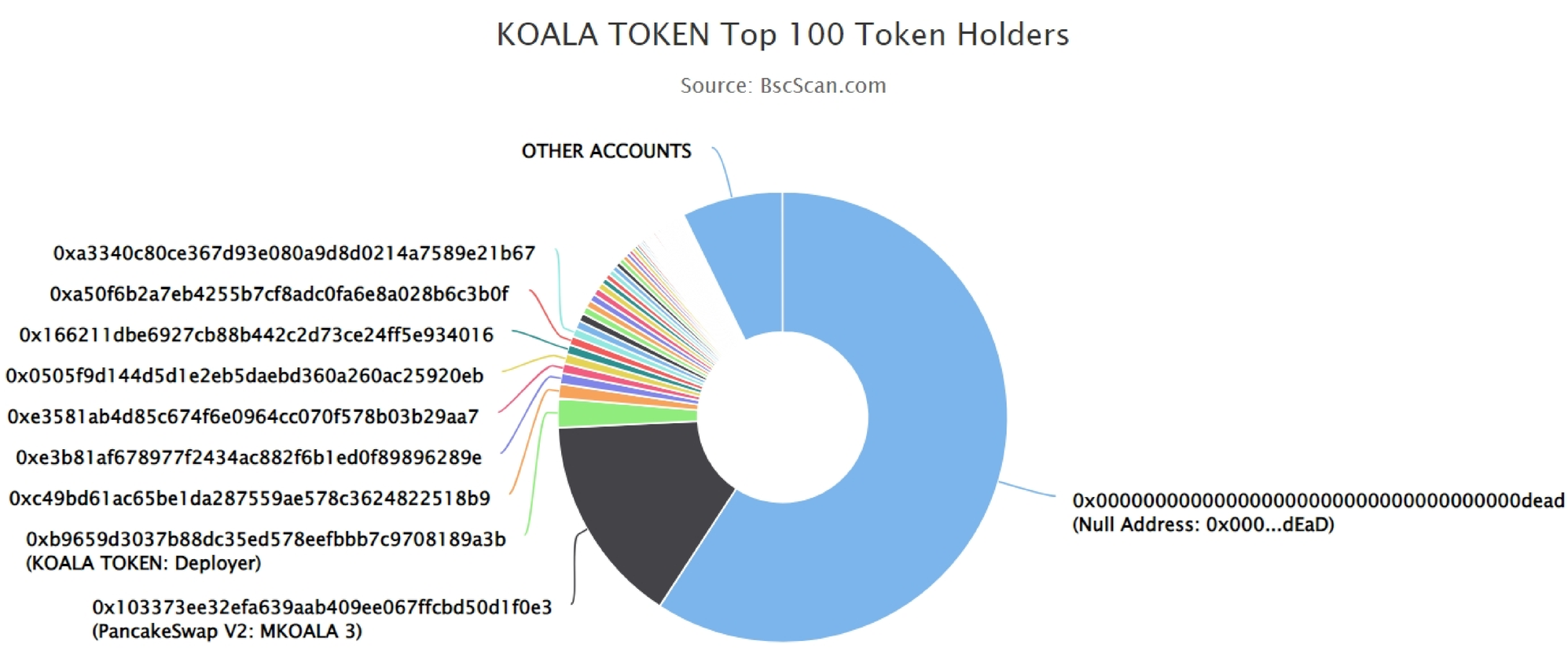
- https://bscscan.com/address/0x2A0F5257F4bfE6c75cd58A14A0e7c4651E2160DE#code

Contract Details

Token contract details for 20.05.2022

Contract name	: MKOALA
Contract address	: 0x2A0F5257F4bfE6c75cd58A14A0e7c4651E2160DE
Total supply	: 691,296,310,719,068,000
Token Ticker	: MKOALA
Decimals	: 0
Token Holders	: 19,698 address
Top 100 token holder's dominance	: 92.74%
Transactions count	: 108,667
Complier version	: v0.5.17+commit.d19bba13
Contract deployer address	: 0xb9659d3037b88DC35ed578eEFbBb7c9708189a3b
owner address	: No owner

KOALA Token Distribution



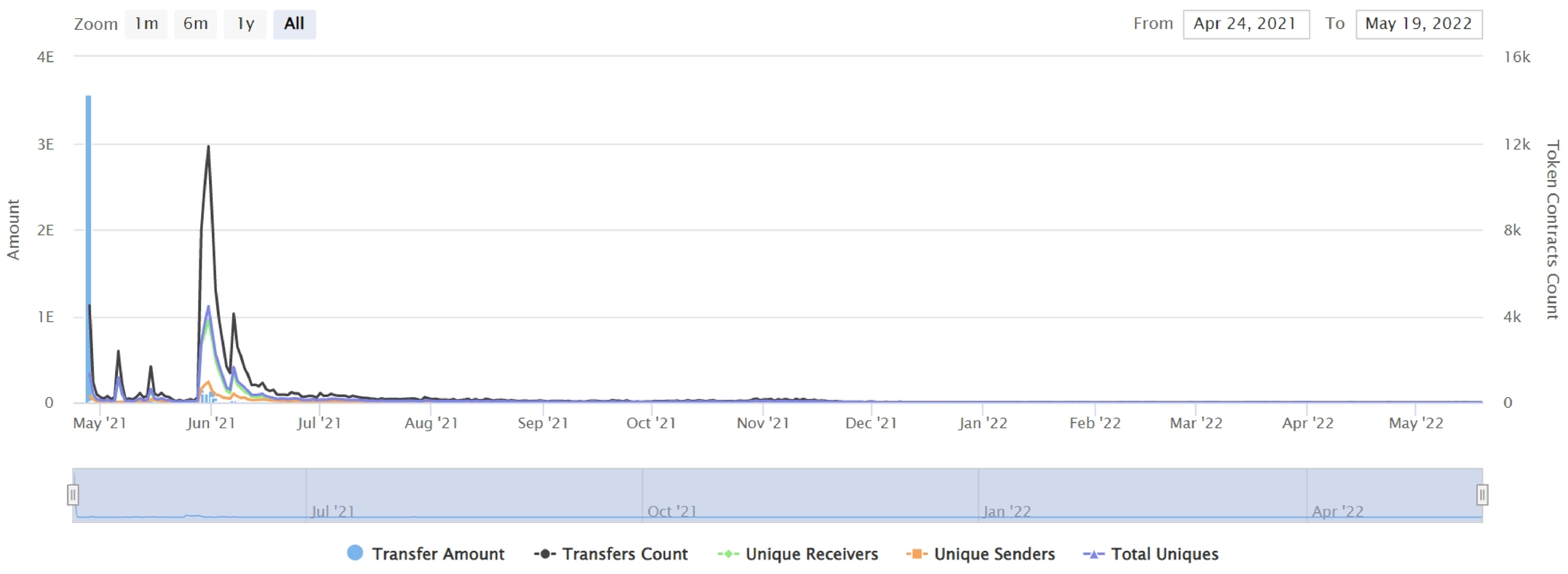
KOALA TOKEN Top 20 Token Holders

Rank	Address	Quantity (Token)	Percentage
1	Null Address: 0x000...dEaD	409,310,101,313,476,000	59.2091%
2	PancakeSwap V2: MKOALA 3	104,004,023,217,410,000	15.0448%
3	KOALA TOKEN: Deployer	14,480,675,497,188,500	2.0947%
4	0xc49bd61ac65be1da287559ae578c3624822518b9	6,993,434,438,663,230	1.0116%
5	0xe3b81af678977f2434ac882f6b1ed0f89896289e	5,448,915,650,845,510	0.7882%
6	0xe3581ab4d85c674f6e0964cc070f578b03b29aa7	4,822,738,440,083,750	0.6976%
7	0x0505f9d144d5d1e2eb5daebd360a260ac25920eb	4,782,727,479,118,470	0.6918%
8	0x166211dbe6927cb88b442c2d73ce24ff5e934016	4,606,273,464,259,790	0.6663%
9	0xa50f6b2a7eb4255b7cf8adc0fa6e8a028b6c3b0f	4,404,067,955,873,230	0.6371%
10	0xa3340c80ce367d93e080a9d8d0214a7589e21b67	4,214,896,149,435,590	0.6097%
11	0x3a60862e8732ebaaff621b86ca244e80ef6380f5	4,037,661,233,752,470	0.5841%
12	0x6717212bf38f79b41b479199ccd3da8cbf49ccda	3,991,041,553,203,710	0.5773%
13	0xc9fbf4962cda095a9604ff3f36dc4c321cad0767	3,710,388,060,778,180	0.5367%
14	0xeb5d241b054b90b3280c1b0749a2ec588fb19a12	3,563,727,167,673,090	0.5155%
15	0x91daf535e64a5e0bdb464a65eb35046c1a151444	3,561,720,047,050,910	0.5152%
16	0xb52516dd74aa35a72c6d32e9352e1547c139f768	3,425,596,719,841,040	0.4955%
17	0x882071e62ed3122101fc1b5a1d6b10f782145974	3,311,458,991,224,270	0.4790%
18	0x29bb977490c10da2e3e8530a6a09bf78ae5228fb	2,925,896,923,013,780	0.4232%
19	0x99f78571d4136ce0a5ef417a2c6a5ee28e9a6d9f	2,665,341,596,943,600	0.3856%
20	0xd5ee08644ca114d8587db8e08edcc5ba122ac70a	2,640,298,012,481,590	0.3819%

KOALA Token Distribution

KOALA TOKEN Contract overview

Token Contract 0x2a0f5257f4bfe6c75cd58a14a0e7c4651e2160de (KOALA TOKEN)
Source: BscScan.com



Contract functions details

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

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

+ ERC20Detailed (IERC20)
    - [Pub] <constructor>#
    - [Pub] name
    - [Pub] symbol
    - [Pub] decimals

+ MKOALA (ERC20Detailed)
    - [Pub] <constructor> $
    - [Pub] totalSupply
    - [Pub] balanceOf
    - [Pub] allowance
    - [Pub] findOnePercent
    - [Pub] transfer #
    - [Pub] multiTransfer #
    - [Pub] approve #
    - [Pub] transferFrom #
    -[Pub] increaseAllowance#
    -[Pub] decreaseAllowance#
    - [Int] _transfer #
    - [Int] _mint #
    - [Int] _burn #
    - [Int] _burnFrom #

Contract functions details

($) = 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.	Low issue
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

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 issues found.

Low Severity Issues

Two low severity issues found.

1. 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 ^0.5.0 the contract should contain the following line:

  pragma solidity 0.5.0;

2. DoS with block gas limit.

Out of gas

- **Description**

  The function multiTransfer uses one loop to transfer tokens to given addresses array list with given array list of amount, there is chances of function getting aborted with out -f gas exception if there will be too long list of addresses.

- **Location:**

  multiTransfer function.

- **Recommendation:**

  We advise to use enumerableSet instead of array or just do not use too long array list which can help you to develop clean coding style and save some computational gas too.

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.