



Cyberscope

Audit Report

Opulence Reward Pool

March 2022

SHA256 13b5d6c1a1c43eb09a52360152b4ea88557da3126f6d9f42452e1e9f1282926c

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Source Files

Filename	SHA256
contract.sol	13b5d6c1a1c43eb09a52360152b4ea88557da3126f6d9f42452e1e9f1282926c

Audit Updates

Initial Audit	28th March 2022
Corrected	

Contract Analysis

Rewards pool accumulated OPEC tokens. The contract is responsible for transferring the accumulated OPEC tokens to the treasury and arbitrary addresses. The contract contains two roles.

Contract Owner

The contract owner role has the ability to set the treasury and OPEC token address. The role is also responsible for adding and removing addresses to the “manager” role.

Manager

The manager role has the ability to withdraw the rewards pool accumulated tokens to the treasury and other arbitrary addresses. Many addresses can have the manager role.

Contract Diagnostics

● Critical ● Medium ● Minor

Severity	Code	Description
●	L01	Public Function could be Declared External
●	L04	Conformance to Solidity Naming Conventions
●	L09	Dead Code Elimination
●	L11	Unnecessary Boolean equality

L01 - Public Function could be Declared External

Criticality	minor
Location	contract.sol#L111,130,139

Description

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

```
transferOwnership  
renounceOwnership  
owner
```

Recommendation

Use the external attribute for functions never called from the contract

L04 - Conformance to Solidity Naming Conventions

Criticality

minor

Location

contract.sol#L615,633,634,653,658,663,621

Description

Solidity defines a naming convention that should be followed. Rule exceptions:

- Allow constant variable name/symbol/decimals to be lowercase.
- Allow _ at the beginning of the mixed_case match for private variables and unused parameters.

```
_managers  
_rewardAmount  
_account  
_treasury  
_opex  
RewardPool_V2
```

Recommendation

Follow the Solidity naming convention.

<https://docs.soliditylang.org/en/v0.4.25/style-guide.html#naming-conventions>

L09 - Dead Code Elimination

Criticality	minor
Location	contract.sol#L228,257,317,327,290,300,203,404,428,419 and 1 more

Description

Functions that are not used in the contract, and make the code's size bigger.

```
safeTransferFrom
safeIncreaseAllowance
safeDecreaseAllowance
safeApprove
sendValue
functionStaticCall
functionDelegateCall
functionCallWithValue
functionCall
...
```

Recommendation

Remove unused functions.

L11 - Unnecessary Boolean equality

Criticality

minor

Location

contract.sol#L623

Description

The comparison to boolean constants is redundant. Boolean constants can be used directly and do not need to be compared to true or false.

```
require(bool,string)(_managers[msg.sender] == true,Only managers can call this function)
```

Recommendation

Remove the equality to the boolean constant.

Contract Functions

Contract	Type	Bases		
	Function Name	Visibility	Mutability	Modifiers
IERC20	Interface			
	totalSupply	External		-
	balanceOf	External		-
	transfer	External	✓	-
	allowance	External		-
	approve	External	✓	-
	transferFrom	External	✓	-
Ownable	Implementation			
	<Constructor>	Public	✓	-
	owner	Public		-
	renounceOwnership	Public	✓	onlyOwner
	transferOwnership	Public	✓	onlyOwner
Address	Library			
	isContract	Internal		
	sendValue	Internal	✓	
	functionCall	Internal	✓	
	functionCall	Internal	✓	
	functionCallWithValue	Internal	✓	
	functionCallWithValue	Internal	✓	
	functionStaticCall	Internal		
	functionStaticCall	Internal		
	functionDelegateCall	Internal	✓	
	functionDelegateCall	Internal	✓	
	verifyCallResult	Internal		
SafeERC20	Library			
	safeTransfer	Internal	✓	

	safeTransferFrom	Internal	✓	
	safeApprove	Internal	✓	
	safeIncreaseAllowance	Internal	✓	
	safeDecreaseAllowance	Internal	✓	
	_callOptionalReturn	Private	✓	
SafeMath	Library			
	add	Internal		
	sub	Internal		
	sub	Internal		
	mul	Internal		
	div	Internal		
	div	Internal		
	mod	Internal		
	mod	Internal		
RewardPool_V2	Implementation	Ownable		
	<Constructor>	Public	✓	-
	init	External	✓	onlyOwner
	addManager	External	✓	onlyOwner
	removeManager	External	✓	onlyOwner
	setOPECAddress	External	✓	onlyOwner
	setTreasuryAddress	External	✓	onlyOwner
	rewardTo	External	✓	onlyManager
	withdrawToken	External	✓	onlyManager

Contract Flow



Summary

The Opulence reward pool contract is responsible for transferring the accumulated tokens to addresses. The contract contains two different types of roles. The audit focuses on the role responsibilities and the core functionality of the contract.

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Coinscope audit and K.Y.C. service has been rebranded to Cyberscope.

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Cyberscope and Coinscope are aiming to make crypto discoverable and efficient globally. They provides all the essential tools to assist users draw their own conclusions.



The Cyberscope team

<https://www.cyberscope.io>