ASSURE DEFI®
THE VERIFICATION GOLD STANDARD

**Security** Assessment:

# More Pad STAKING

MOREPAD

December 23, 2024

- Audit Status: **Fail**
- Audit Edition: **Advance**

# Project Overview

## Token Summary

| Parameter | Result |
| --- | --- |
| Address | |
| Name | More Pad |
| Token Tracker | More Pad (MPAD) |
| Decimals | 18 |
| Supply | |
| Platform | BNBCHAIN |
| compiler | 0.8.22+commit.4fc1097e |
| Contract Name | MOREPAD |
| Optimization | Yes with 200 runs |
| LicenseType | MIT |
| Language | Solidity |
| Codebase | |
| Payment Tx | Corporate |

## Main Contract Assessed
## Contract Name

| Name | Contract | Live |
|---|---|---|
| More Pad | | Yes |

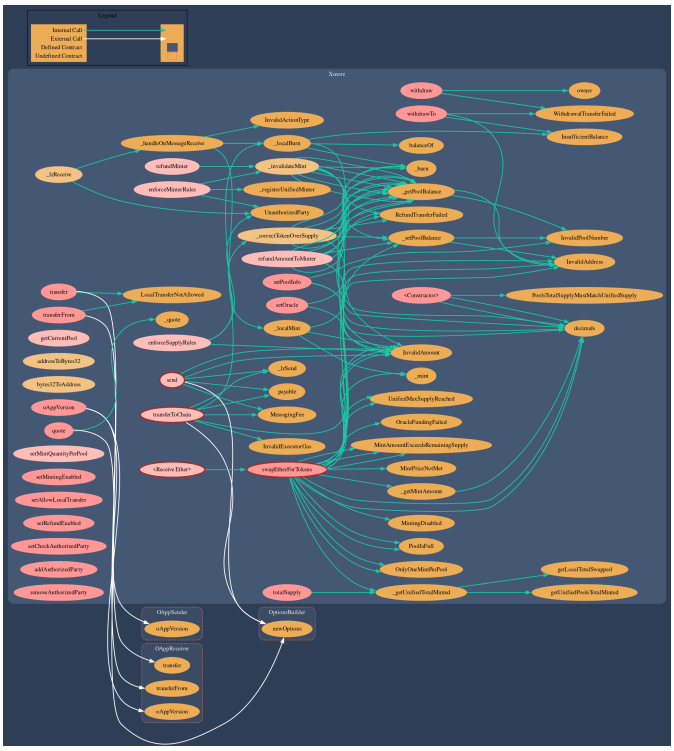
## TestNet Contract was Not Assessed

## Solidity Code Provided

| SolID | File Sha-1 | FileName |
|---|---|---|
| MOT_1 | 13fa00fd790e769e7c523df5df60ac04cfc0148d | MOT_1.sol |
| MOT_1 | | .sol |
| MOT_1 | | .sol |
| MOT_1 | | .sol |
| MOT_1 | | .sol |
| MOT_1 | | .sol |

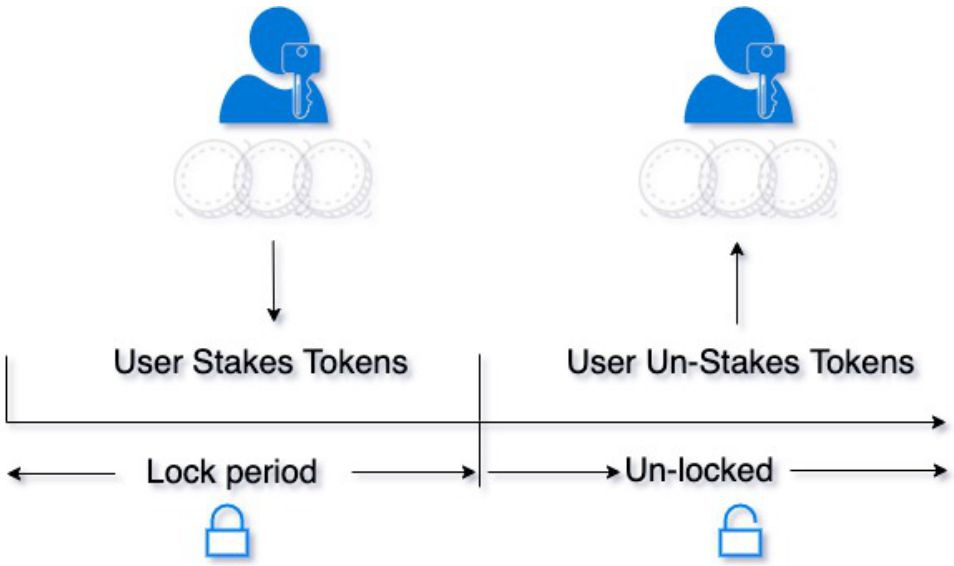
# Call Graph

The contract for More Pad has the following call graph structure.



# What is a Staking Contract

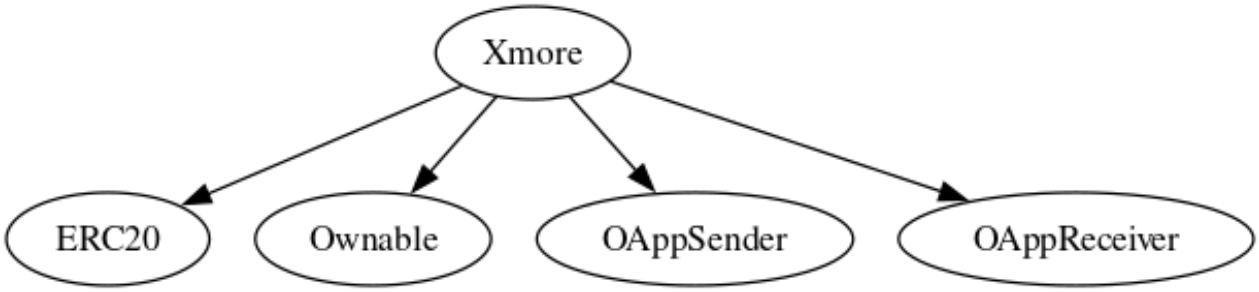
A smart contract which allows users to stake and un-stake a specified ERC20 token. Staked tokens are locked for a specific length of time (set by the contrat owner at the outset). Once the time period has elapsed, the user can remove their tokens again.



# Inheritance

## The contract for More Pad has the following inheritance structure.

## The Project has a Total Supply of



# Privileged Functions (onlyOwner)

Please Note if the contract is Renounced none of this functions can be executed.

| Function Name | Parameters | Visibility |
|---|---|---|
| refuncdMinter | | External |
| refundAmountToMinter | | External |
| setMintQuantityPerPool | | External |
| setOracle | | Public |
| setPoolInfo | | Public |
| setMintingEnabled | | Public |
| setAllowLocalTransfer | | Public |
| setRefundEnabled | | Public |
| withdraw | | Public |
| withdrawTo | | Public |
| setCheckAuthorizedParty | | Public |
| addAuthorizedParty | | Public |
| removeAuthorizedParty | | Public |

# MPAD-19 | Centralization Privileges of onlyOwner.

| Category | Severity | Location | Status |
| --- | --- | --- | --- |
| | Medium | MOT_1.sol: | Detected |

## Description

Centralized Privileges are found on the functions outlined in the OnlyOwner Section.

## Remediation

Inheriting from Ownable and calling its constructor on yours ensures that the address deploying your contract is registered as the owner. The onlyOwner modifier makes a function revert if not called by the address registered as the owner.

## Project Action

# MPAD-22 | Unauthorized Access to Oracle Functions.

| Category | Severity | Location | Status |
| --- | --- | --- | --- |
| Access Control | High | MOT_1.sol: | Detected |

## Description

Oracle-related functions can be called by unauthorized addresses.

## Remediation

Ensure only the designated oracle address can call these functions.

## Project Action

# MPAD-24 | Refund Transfer Failure.

| Category | Severity | Location | Status |
| --- | --- | --- | --- |
| Error Handling | Informational | MOT_1.sol: | Detected |

## Description

Refunds may fail due to insufficient gas or balance.

## Remediation

Implement a more robust refund mechanism with event logging for failures.

## Project Action

# Technical Findings Summary

## Classification of Risk

| Severity | Description |
|---|---|
| Critical | Risks are those that impact the safe functioning of a platform and must be addressed before launch. Users should not invest in any project with outstanding critical risks. |
| High | Risks can include centralization issues and logical errors. Under specific circumstances, these major risks can lead to loss of funds and/or control of the project. |
| Medium | Risks may not pose a direct risk to users' funds, but they can affect the overall functioning of a platform |
| Low | Risks can be any of the above but on a smaller scale. They generally do not compromise the overall integrity of the Project, but they may be less efficient than other solutions. |
| Informational | Errors are often recommended to improve the code's style or certain operations to fall within industry best practices. They usually do not affect the overall functioning of the code. |

## Findings

| Severity | Found | Pending | Resolved |
|---|---|---|---|
| Critical | 0 | 0 | 1 |
| High | 1 | 1 | 0 |
| Medium | 1 | 1 | 2 |
| Low | 0 | 0 | 2 |
| Informational | 1 | 1 | 0 |
| Total | 3 | 3 | 5 |

# Social Media Checks

| Social Media | URL | Result |
|---|---|---|
| Twitter | https://x.com/morepad404 | Pass |
| Other | | N/A |
| Website | https://www.morepad.io/ | Pass |
| Telegram | | Fail |

We recommend to have 3 or more social media sources including a completed working websites.

**Social Media Information Notes:**

**Auditor Notes: undefined**

**Project Owner Notes:**

# Assessment Results

## Score Results

| Review | Score |
|---|---|
| Overall Score | 81/100 |
| Auditor Score | 80/100 |
| **Review by Section** | **Score** |
| Manual Scan Score | 19 |
| Auto Scan Score | 37 |
| Advance Check Score | 25 |

The Following Score System Has been Added to this page to help understand the value of the audit, the maximum score is 100, however to attain that value the project most pass and provide all the data needed for the assessment. Our Passing Score has been changed to 84 Points for a higher standard, if a project does not attain 85% is an automatic failure. Read our notes and final assessment below.

## Audit Fail

# Assessment Results

## Important Notes:

- Access Control: The contract relies heavily on the oracle for critical functions, which poses a risk if the oracle is compromised. Implementing multi-signature controls or additional authorization checks is recommended.ı
- Reentrancy: Although the contract uses ReentrancyGuard, the refund mechanism in certain functions could still be vulnerable. Ensure state changes are made before external calls.ı
- Arithmetic Safety: While Solidity 0.8 includes overflow checks, ensure all arithmetic operations are safe, especially when dealing with large values.ı
- State Management: Functions like _correctTokenOverSupply may not consistently update state variables, leading to potential discrepancies. Ensure atomic and consistent state updates.ı
- Gas Optimization: The contract contains loops that could hit gas limits, particularly in functions handling large datasets. Consider optimizing these loops or implementing batch processing.ı
- External Calls: Unchecked return values from external calls can lead to silent failures. Implement checks and handle failures appropriately.ı
- Fallback Handling: The absence of a fallback function could lead to unexpected Ether transfers. Implement a fallback function to handle such cases.ı

- Overall Risk Classificationı
- Risk Level: Medium to Highı
- Rationale: The contract has several critical issues, particularly around access control and input validation, which could lead to significant vulnerabilities if exploited.ı
- Audit Scoreı
- Score: 80/100ı
- Passing Threshold: 85/100ı
- The contract currently does not meet the passing threshold due to the identified issues. Addressing these concerns will improve the score and enhance the contract's security and robustness.

**Auditor Score =80**
**Audit Fail**

# Appendix

## Finding Categories

### Centralization / Privilege

Centralization / Privilege findings refer to either feature logic or implementation of components that actagainst the nature of decentralization, such as explicit ownership or specialized access roles incombination with a mechanism to relocate funds.

### Gas Optimization

Gas Optimization findings do not affect the functionality of the code but generate different, more optimalEVM opcodes resulting in a reduction on the total gas cost of a transaction.

### Logical Issue

Logical Issue findings detail a fault in the logic of the linked code, such as an incorrect notion on howblock.timestamp works.

### Control Flow

Control Flow findings concern the access control imposed on functions, such as owner-only functionsbeing invoke-able by anyone under certain circumstances.

### Volatile Code

Volatile Code findings refer to segments of code that behave unexpectedly on certain edge cases that mayresult in a vulnerability.

### Coding Style

Coding Style findings usually do not affect the generated byte-code but rather comment on how to makethe codebase more legible and, as a result, easily maintainable.

### Inconsistency

Inconsistency findings refer to functions that should seemingly behave similarly yet contain different code,such as a constructor assignment imposing different require statements on the input variables than a setterfunction.

### Coding Best Practices

ERC 20 Conding Standards are a set of rules that each developer should follow to ensure the code meet a set of creterias and is readable by all the developers.

# Disclaimer

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