



TechRate

AUDIT COMPANY

CORX

Smart Contract Security Audit

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

TechRate was commissioned by CORX to perform an audit of smart contracts:

- <https://bscscan.com/address/0x18900e675bbb073c6d291fd95d6be6811e77f1a2#code> (MasterChef)
- <https://rinkeby.etherscan.io/address/0x6Dd2b7283a125FA7A5EcF1FD6D6BC510c568f38f#code> (CORXLPFarmR)

The purpose of the audit was to achieve the following:

- Ensure that the smart contract functions as intended.
- Identify potential security issues with the smart contract.

The information in this report should be used to understand the risk exposure of the smart contract, and as a guide to improve the security posture of the smart contract by remediating the issues that were identified.

Issues Checking Status

| Issue description | Checking status |
|--|-----------------|
| 1. Compiler errors. | Passed |
| 2. Race conditions and Reentrancy. Cross-function race conditions. | Passed |
| 3. Possible delays in data delivery. | Passed |
| 4. Oracle calls. | Passed |
| 5. Front running. | Passed |
| 6. Timestamp dependence. | Passed |
| 7. Integer Overflow and Underflow. | Passed |
| 8. DoS with Revert. | Passed |
| 9. DoS with block gas limit. | Low issues |
| 10. Methods execution permissions. | Passed |
| 11. Economy model of the contract. | Passed |
| 12. The impact of the exchange rate on the logic. | Passed |
| 13. Private user data leaks. | Passed |
| 14. Malicious Event log. | Passed |
| 15. Scoping and Declarations. | Passed |
| 16. Uninitialized storage pointers. | Passed |
| 17. Arithmetic accuracy. | Passed |
| 18. Design Logic. | Passed |
| 19. Cross-function race conditions. | Passed |
| 20. Safe Open Zeppelin contracts implementation and usage. | Passed |
| 21. Fallback function security. | Passed |

Security Issues

✓ High Severity Issues

No high severity issues found.

✓ Medium Severity Issues

No medium severity issues found.

✓ Low Severity Issues

1. Out of gas

Issue:

- Function `massUpdatePools()` functions use the loop to update all pools.

Recommendation:

Check that array length is not too big.

📎 Information

Unnamed coefficient “2” in calculation of pending tokens.

```
function getPending(uint256 _pid, address _user, uint32 _to) public view returns (uint256) {
    Program storage _p = programs[_pid];
    Stake storage _s = stakeOf[_pid][_user];
    if (_to > _p.finish) _to = _p.finish;
    return _s.debt + ((_p.M * k * (_to - _s.started) * _s.amount * 2) / (_p.B * 1e4));
}
```

Owner privileges (In the period when the owner is not renounced)

MasterChef:

- Dev address can change dev address. CORX contract minting extra 10% of corxReward to dev address on every pool update.
- Fee address can change fee address. Fee address gets tokens on every deposit.
- Owner can add pool.
- Owner can change:
 - allocation points of pool;
 - deposit fee of pool;
 - emission rate;

CORXLPFarmR:

- Owner can add program.
- Owner can withdraw tokens from contract address.

Conclusion

Smart contracts contain low severity issue!

TechRate 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.