



VelaToken

Smart Contract Audit Report

TABLE OF CONTENTS

[Audited Details](#)

- Audited Project
- Blockchain
- Addresses
- Project Website
- Codebase

[Summary](#)

- Contract Summary
- Audit Findings Summary
- Vulnerabilities Summary

[Conclusion](#)

[Audit Results](#)

[Smart Contract Analysis](#)

- Detected Vulnerabilities

[Disclaimer](#)

[About Us](#)

AUDITED DETAILS

Audited Project

Project name	Token ticker	Blockchain
VelaToken	VELA	Arbitrum

Addresses

Contract address	0x088cd8f5eF3652623c22D48b1605DCfE860Cd704
Contract deployer address	0x4EDC01b119A224DbC0fa1297A6acA3f02af5a58d

Project Website

https://vela.exchange/

Codebase

https://arbiscan.io/address/0x088cd8f5eF3652623c22D48b1605DCfE860Cd704#code

SUMMARY

Vela Exchange is a permissionless, self-custody-driven perpetual exchange built with innovative blockchain architecture to ensure fast transactions, secure trading, and extensibility into additional synthetic options and derivatives. The rewards structure of Vela Exchange is carefully balanced to manage token & rewards supply while maintaining high incentives for liquidity provisioning and trading.

Contract Summary

Documentation Quality

VelaToken provides a very good documentation with standard of solidity base code.

- The technical description is provided clearly and structured and also don't have any high risk issue.

Code Quality

The Overall quality of the basecode is standard.

- Standard solidity basecode and rules are already followed by VelaToken with the discovery of several low issues.

Test Coverage

Test coverage of the project is 100% (Through Codebase)

Audit Findings Summary

- SWC-103 | Pragma statements can be allowed to float when a contract is intended on lines 10, 38, 69, 417, 489, 580, 607, 856, 963, 1048, 1078 and 1467.

CONCLUSION

We have audited the VelaToken project released in December 2022 to discover issues and identify potential security vulnerabilities in VelaToken Project. This process is used to find technical issues and security loopholes which might be found in the smart contract.

The security audit report provides a satisfactory result with some low-risk issues.

The issues found in the VelaToken smart contract code do not pose a considerable risk. The writing of the contract is close to the standard of writing contracts in general. The low-risk issues found are some a floating pragma is set. It is recommended to specify a fixed compiler version to ensure that the bytecode produced does not vary between builds. This is especially important if you rely on bytecode-level verification of the code.

AUDIT RESULT

Article	Category	Description	Result
Default Visibility	SWC-100 SWC-108	Functions and state variables visibility should be set explicitly. Visibility levels should be specified consciously.	PASS
Integer Overflow and Underflow	SWC-101	If unchecked math is used, all math operations should be safe from overflows and underflows.	PASS
Outdated Compiler Version	SWC-102	It is recommended to use a recent version of the Solidity compiler.	PASS
Floating Pragma	SWC-103	Contracts should be deployed with the same compiler version and flags that they have been tested thoroughly.	ISSUE FOUND
Unchecked Call Return Value	SWC-104	The return value of a message call should be checked.	PASS
Unprotected Ether Withdrawal	SWC-105	Due to missing or insufficient access controls, malicious parties can withdraw from the contract.	PASS
SELFDESTRUCT Instruction	SWC-106	The contract should not be self-destructible while it has funds belonging to users.	PASS
Reentrancy	SWC-107	Check effect interaction pattern should be followed if the code performs recursive call.	PASS
Uninitialized Storage Pointer	SWC-109	Uninitialized local storage variables can point to unexpected storage locations in the contract.	PASS
Assert Violation	SWC-110 SWC-123	Properly functioning code should never reach a failing assert statement.	PASS
Deprecated Solidity Functions	SWC-111	Deprecated built-in functions should never be used.	PASS
Delegate call to Untrusted Callee	SWC-112	Delegatecalls should only be allowed to trusted addresses.	PASS

DoS (Denial of Service)	SWC-113 SWC-128	Execution of the code should never be blocked by a specific contract state unless required.	PASS
Race Conditions	SWC-114	Race Conditions and Transactions Order Dependency should not be possible.	PASS
Authorization through tx.origin	SWC-115	tx.origin should not be used for authorization.	PASS
Block values as a proxy for time	SWC-116	Block numbers should not be used for time calculations.	PASS
Signature Unique ID	SWC-117 SWC-121 SWC-122	Signed messages should always have a unique id. A transaction hash should not be used as a unique id.	PASS
Incorrect Constructor Name	SWC-118	Constructors are special functions that are called only once during the contract creation.	PASS
Shadowing State Variable	SWC-119	State variables should not be shadowed.	PASS
Weak Sources of Randomness	SWC-120	Random values should never be generated from Chain Attributes or be predictable.	PASS
Write to Arbitrary Storage Location	SWC-124	The contract is responsible for ensuring that only authorized user or contract accounts may write to sensitive storage locations.	PASS
Incorrect Inheritance Order	SWC-125	When inheriting multiple contracts, especially if they have identical functions, a developer should carefully specify inheritance in the correct order. The rule of thumb is to inherit contracts from more /general/ to more /specific/.	PASS
Insufficient Gas Griefing	SWC-126	Insufficient gas grieving attacks can be performed on contracts which accept data and use it in a sub-call on another contract.	PASS
Arbitrary Jump Function	SWC-127	As Solidity doesnt support pointer arithmetics, it is impossible to change such variable to an arbitrary value.	PASS

Typographical Error	SWC-129	A typographical error can occur for example when the intent of a defined operation is to sum a number to a variable.	PASS
Override control character	SWC-130	Malicious actors can use the Right-To-Left-Override unicode character to force RTL text rendering and confuse users as to the real intent of a contract.	PASS
Unused variables	SWC-131 SWC-135	Unused variables are allowed in Solidity and they do not pose a direct security issue.	PASS
Unexpected Ether balance	SWC-132	Contracts can behave erroneously when they strictly assume a specific Ether balance.	PASS
Hash Collisions Variable	SWC-133	Using abi.encodePacked() with multiple variable length arguments can, in certain situations, lead to a hash collision.	PASS
Hardcoded gas amount	SWC-134	The transfer() and send() functions forward a fixed amount of 2300 gas.	PASS
Unencrypted Private Data	SWC-136	It is a common misconception that private type variables cannot be read.	PASS

SMART CONTRACT ANALYSIS

Started	Saturday Dec 24 2022 04:14:44 GMT+0000 (Coordinated Universal Time)
Finished	Sunday Dec 25 2022 16:55:29 GMT+0000 (Coordinated Universal Time)
Mode	Standard
Main Source File	VelaToken.sol

Detected Issues

[illegible]

SWC-103 | A FLOATING PRAGMA IS SET.

LINE 10

low SEVERITY

The current pragma Solidity directive is `""^0.8.0""`. It is recommended to specify a fixed compiler version to ensure that the bytecode produced does not vary between builds. This is especially important if you rely on bytecode-level verification of the code.

Source File

- VelaToken.sol

Locations

```
9
10  pragma solidity ^0.8.0;
11
12  /**
13   * @dev Interface of the ERC165 standard, as defined in the
14
```

SWC-103 | A FLOATING PRAGMA IS SET.

LINE 38

low SEVERITY

The current pragma Solidity directive is `""^0.8.0""`. It is recommended to specify a fixed compiler version to ensure that the bytecode produced does not vary between builds. This is especially important if you rely on bytecode-level verification of the code.

Source File

- VelaToken.sol

Locations

```
37
38  pragma solidity ^0.8.0;
39
40
41  /**
42
```

SWC-103 | A FLOATING PRAGMA IS SET.

LINE 69

low SEVERITY

The current pragma Solidity directive is `""^0.8.0""`. It is recommended to specify a fixed compiler version to ensure that the bytecode produced does not vary between builds. This is especially important if you rely on bytecode-level verification of the code.

Source File

- VelaToken.sol

Locations

```
68
69  pragma solidity ^0.8.0;
70
71  /**
72   * @dev Standard math utilities missing in the Solidity language.
73
```

SWC-103 | A FLOATING PRAGMA IS SET.

LINE 417

low SEVERITY

The current pragma Solidity directive is ""^0.8.0"". It is recommended to specify a fixed compiler version to ensure that the bytecode produced does not vary between builds. This is especially important if you rely on bytecode-level verification of the code.

Source File

- VelaToken.sol

Locations

```
416
417  pragma solidity ^0.8.0;
418
419
420  /**
421
```

SWC-103 | A FLOATING PRAGMA IS SET.

LINE 489

low SEVERITY

The current pragma Solidity directive is `""^0.8.0""`. It is recommended to specify a fixed compiler version to ensure that the bytecode produced does not vary between builds. This is especially important if you rely on bytecode-level verification of the code.

Source File

- VelaToken.sol

Locations

```
488
489  pragma solidity ^0.8.0;
490
491  /**
492   * @dev External interface of AccessControl declared to support ERC165 detection.
493
```

SWC-103 | A FLOATING PRAGMA IS SET.

LINE 580

low SEVERITY

The current pragma Solidity directive is ""^0.8.0"". It is recommended to specify a fixed compiler version to ensure that the bytecode produced does not vary between builds. This is especially important if you rely on bytecode-level verification of the code.

Source File

- VelaToken.sol

Locations

```
579
580  pragma solidity ^0.8.0;
581
582  /**
583   * @dev Provides information about the current execution context, including the
584
```

SWC-103 | A FLOATING PRAGMA IS SET.

LINE 607

low SEVERITY

The current pragma Solidity directive is ""^0.8.0"". It is recommended to specify a fixed compiler version to ensure that the bytecode produced does not vary between builds. This is especially important if you rely on bytecode-level verification of the code.

Source File

- VelaToken.sol

Locations

```
606
607  pragma solidity ^0.8.0;
608
609
610
611
```


SWC-103 | A FLOATING PRAGMA IS SET.

LINE 856

low SEVERITY

The current pragma Solidity directive is ""^0.8.0"". It is recommended to specify a fixed compiler version to ensure that the bytecode produced does not vary between builds. This is especially important if you rely on bytecode-level verification of the code.

Source File

- VelaToken.sol

Locations

```
855
856  pragma solidity ^0.8.0;
857
858
859  /**
860
```

SWC-103 | A FLOATING PRAGMA IS SET.

LINE 963

low SEVERITY

The current pragma Solidity directive is `""^0.8.0""`. It is recommended to specify a fixed compiler version to ensure that the bytecode produced does not vary between builds. This is especially important if you rely on bytecode-level verification of the code.

Source File

- VelaToken.sol

Locations

```

962
963  pragma solidity ^0.8.0;
964
965  /**
966   * @dev Interface of the ERC20 standard as defined in the EIP.
967
```

SWC-103 | A FLOATING PRAGMA IS SET.

LINE 1048

low SEVERITY

The current pragma Solidity directive is `""^0.8.0""`. It is recommended to specify a fixed compiler version to ensure that the bytecode produced does not vary between builds. This is especially important if you rely on bytecode-level verification of the code.

Source File

- VelaToken.sol

Locations

```
1047
1048  pragma solidity ^0.8.0;
1049
1050
1051  /**
1052
```

SWC-103 | A FLOATING PRAGMA IS SET.

LINE 1078

low SEVERITY

The current pragma Solidity directive is `""^0.8.0""`. It is recommended to specify a fixed compiler version to ensure that the bytecode produced does not vary between builds. This is especially important if you rely on bytecode-level verification of the code.

Source File

- VelaToken.sol

Locations

```
1077
1078  pragma solidity ^0.8.0;
1079
1080
1081
1082
```

SWC-103 | A FLOATING PRAGMA IS SET.

LINE 1467

low SEVERITY

The current pragma Solidity directive is `""^0.8.9""`. It is recommended to specify a fixed compiler version to ensure that the bytecode produced does not vary between builds. This is especially important if you rely on bytecode-level verification of the code.

Source File

- VelaToken.sol

Locations

```
1466
1467  pragma solidity ^0.8.9;
1468
1469
1470
1471
```

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This is a limited report on our findings based on our analysis, in accordance with good industry practice as of 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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