



# VITALBlock security.

Blockchain Security | Smart Contract Audit | KYC Certification | **SAFU** |  
CEX Listing | Marketing

MADE IN CANADA

SGOLD

# AUDIT

SECURITY ASSESSMENT

26<sup>TH</sup> April 2025

For



Making Blockchain, Defi And Web3 A Safer Place.



@VB\_Audit



Vitalblock.org






@Vitalblock

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## INTRODUCTION

<b>Auditing Firm</b>	 <b>VITAL BLOCK SECURITY</b>
<b>Client Firm</b>	 <b>SGOLD</b>
<b>Methodology</b>	<b>Automated Analysis, Manual Code Review</b>
<b>Language</b>	<b>Move</b>
<b>Contract Address</b>	<b><a href="#">0x69db37833c9ee0617ddef52be7d229522e5024a44d5f5345b02202d55fb77f44::sgold::SGOLD</a></b>
<b>Source Code Light</b>	<b>Verified</b>
<b>Centralization</b>	<b>Active ownership</b>
<b>Scheme Signature</b>	<b>ED25519</b>
<b>Blockchain</b>	 <b>Sui Network</b>
<b>Website</b>	<b><a href="https://sgold.fun">https://sgold.fun</a></b>
<b>Telegram</b>	<b><a href="https://t.me/SGold_Community">https://t.me/SGold_Community</a></b>
<b>Twitter</b>	<b><a href="https://x.com/SGOLD_FUN">https://x.com/SGOLD_FUN</a></b>
<b>Doc</b>	<b><a href="https://docs.sgold.fun/">https://docs.sgold.fun/</a></b>
<b>Prelim Report Date</b>	<b>April 26<sup>th</sup> 2025</b>
<b>Final Report Date</b>	<b>April 26<sup>th</sup> 2025</b>

 Verify the authenticity of this report on our GitHub Repo: <https://www.github.com/vital-block>



## Document Properties

<b>Client</b>	<b>SGOLD</b>
<b>Title</b>	Smart Contract Audit Report
<b>Target</b>	<b>SGOLD</b>
<b>Version</b>	1.0
<b>Author</b>	Akhmetshin Marat
<b>Auditors</b>	Akhmetshin Marat, James BK, Ben Partrick , C. John
<b>Reviewed by</b>	Dima Meru
<b>Approved by</b>	Prince Mitchell
<b>Classification</b>	Public

## Version Info

Version	Date	Author(s)	Description
1.0	APRIL 26 <sup>TH</sup> , 2025	C. John	Final Release
1.0-AP	APRIL 26 <sup>TH</sup> 14, 2025	C. John	Release Candidate

## Contact

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In the following, we show the specific pull request and the commit hash value used in this audit.

- [SGOLD · Token Mint](#) (543PHL90)
- <https://suivision.xyz/coin/0x69db37833c9ee0617ddef52be7d229522e5024a44d5f5345b02202d55fb77f44::sgold::SGOLD?tab=Trades>
- (8211PD778)

## About Vital Block Security

Vital Block Security provides professional, thorough, fast, and easy-to-understand smart contract security audit. We do in-depth and penetrative static, manual, automated, and intelligent analysis of the smart contract. Some of our automated scans include tools like ConsenSys MythX, Mythril, Slither, Surya. We can audit custom smart contracts, DApps, NFTs, etc (including the service of smart contract auditing). We are reachable at Telegram (<https://t.me/vitalblock>), Twitter ([http://twitter.com/Vb\\_Audit](http://twitter.com/Vb_Audit)), or Email ([info@vitalblock.org](mailto:info@vitalblock.org)).

Impact	High	Critical	High	Medium
	Medium	High	Medium	Low
	Low	Medium	Low	Low
		High	Medium	Low
		Likelihood		

## Methodology

To standardize the evaluation, we define the following terminology based on the OWASP Risk Rating Methodology.

- Likelihood represents how likely a particular vulnerability is to be uncovered and exploited in the wild;
- Impact measures the technical loss and business damage of a successful attack;
- Severity demonstrates the overall criticality of the risk.

## SCOPE OF WORK

Vital Block was consulted by **SGOLD** to conduct the smart contract audit of its. Rust (MOVE) source code. The audit scope of work is strictly limited to the mentioned .Move file only:

O.SGOLD.move

 External contracts and/or interfaces dependencies are not checked due to being out of scope.

Verify audited contract's contract address and deployed link below:

Public Contract Address	
<b>0x69db37833c9ee0617ddef52be7d229522e5024a44d5f5345b02202d55fb77f44::sgold::SGOLD</b>	
Contract Name	SGOLD
Ticker	\$SGOLD
Total Supply	21,000,000



# AUDIT METHODOLOGY

Smart contract audits are conducted using a set of standards and procedures. Mutual collaboration is essential to performing an effective smart contract audit. Here's a brief overview of Vital Block

Security auditing process and methodology:

## CONNECT

- The onboarding team gathers source codes, and specifications to make sure we understand the size, and scope of the smart contract audit.

## AUDIT

- Automated analysis is performed to identify common contract vulnerabilities. We may use the following third-party frameworks and dependencies to perform the automated analysis:
  - Remix IDE Developer Tool
  - Open Zeppelin Code Analyzer
  - SWC Vulnerabilities Registry
  - DEX Dependencies, e.g., Pancakeswap, Uniswap
- Simulations are performed to identify centralized exploits causing contract and/or trade locks.
- A manual line-by-line analysis is performed to identify contract issues and centralized privileges.

We may inspect below mentioned common contract vulnerabilities, and centralized exploits:

<p><b>Centralized Exploits</b></p>	<ul style="list-style-type: none"> <li>○ <b>Token Supply Manipulation</b></li> <li>○ <b>Access Control and Authorization</b></li> <li>○ <b>Assets Manipulation</b></li> <li>○ <b>Ownership Control</b></li> <li>○ <b>Liquidity Access</b></li> <li>○ <b>Stop and Pause Trading</b></li> <li>○ <b>Ownable Library Verification</b></li> </ul>
------------------------------------	--

### Common Contract Vulnerabilities

- Integer Overflow
- Lack of Arbitrary limits
- Incorrect Inheritance Order
- Typographical Errors
- Requirement Violation
- Gas Optimization
- Coding Style Violations
- Re-entrancy
- Third-Party Dependencies
- Potential Sandwich Attacks
- Irrelevant Codes
- Divide before multiply
- Conformance to Solidity Naming Guides
- Compiler Specific Warnings
- Language Specific Warnings

### REPORT

- The auditing team provides a preliminary report specifying all the checks which have been performed and the findings thereof.
- The client's development team reviews the report and makes amendments to the codes.
- The auditing team provides the final comprehensive report with open and unresolved issues.

### PUBLISH

- The client may use the audit report internally or disclose it publicly.

 It is important to note that there is no pass or fail in the audit, it is recommended to view the audit as an unbiased assessment of the safety of solidity codes.



**Table 1.0 The Full Audit Checklist**

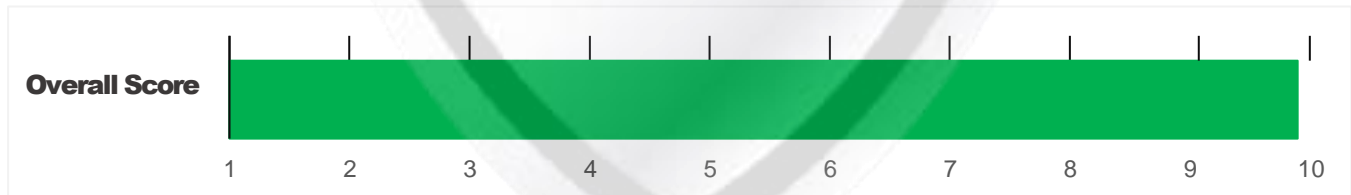
Category	Checklist Items
<b>Basic Coding Bugs</b>	Constructor Mismatch
	Ownership Takeover
	Redundant Fallback Function
	Overflows & Underflows
	Reentrancy
	Money-Giving Bug
	Blackhole
	Unauthorized Self-Destruct
	Revert DoS
	Unchecked External Call
	Gasless Send
	Send Instead Of Transfer
	Costly Loop
	(Unsafe) Use Of Untrusted Libraries
	(Unsafe) Use Of Predictable Variables
	Transaction Ordering Dependence
	Deprecated Uses
<b>Semantic Consistency Checks</b>	Semantic Consistency Checks
<b>Advanced DeFi Scrutiny</b>	Business Logics Review
	Functionality Checks
	Authentication Management
	Access Control & Authorization
	Oracle Security
	Digital Asset Escrow
	Kill-Switch Mechanism
	Operation Trails & Event Generation
	ERC20 Idiosyncrasies Handling
	Frontend-Contract Integration
	Deployment Consistency
	Holistic Risk Management
<b>Additional Recommendations</b>	Avoiding Use of Variadic Byte Array
	Using Fixed Compiler Version
	Making Visibility Level Explicit
	Making Type Inference Explicit
	Adhering To Function Declaration Strictly
	Following Other Best Practices

## EXECUTIVE SUMMARY

Vital Block Security has performed the automated and manual analysis of the **SGOLD** Move code. The code was reviewed for common contract vulnerabilities and centralized exploits. Here's a quick audit summary:

Status	Critical ! 🔴	Major " 🟡	Medium # 🟡	Minor \$ 🟢	Unknown % 🟤
Open	0	0	1	2	0
Acknowledged	0	0	1	1	0
Resolved	0	0	0	0	0
Noteworthy <a href="#">onlyOwner</a> Privileges	Set Taxes and Ratios, Airdrop, Set Protection Settings, Set Reward Properties, Set Reflector Settings, Set Swap Settings, Set Pair and Router				

**SGOLD** Smart contract has achieved the following score: **94.0**



i Please note that smart contracts deployed on blockchains aren't resistant to exploits, vulnerabilities and/or hacks. Blockchain and cryptography assets utilize new and emerging technologies. These technologies present a high level of ongoing risks. For a detailed understanding of risk severity, source code vulnerability, and audit limitations, kindly review the audit report thoroughly.

i Please note that centralization privileges regardless of their inherited risk status - constitute an elevated impact on smart contract safety and security.

## RISK CATEGORIES

Smart contracts are generally designed to hold, approve, and transfer tokens. This makes them very tempting attack targets. A successful external attack may allow the external attacker to directly exploit. A successful centralization-related exploit may allow the privileged role to directly exploit. All risks which are identified in the audit report are categorized here for the reader to review:

Risk Type	Definition
<b>Critical</b> 🚨	These risks could be exploited easily and can lead to asset loss, data loss, asset, or data manipulation. They should be fixed right away.
<b>Major</b> 🟡	These risks are hard to exploit but very important to fix, they carry an elevated risk of smart contract manipulation, which can lead to high-risk severity.
<b>Medium</b> 🟠	These risks should be fixed, as they carry an inherent risk of future exploits, and hacks which may or may not impact the smart contract execution. Low-risk re-entrancy-related vulnerabilities should be fixed to deter exploits.
<b>Minor</b> 🟢	These risks do not pose a considerable risk to the contract or those who interact with it. They are code-style violations and deviations from standard practices. They should be highlighted and fixed nonetheless.
<b>Unknown</b> 🟤	These risks pose uncertain severity to the contract or those who interact with it. They should be fixed immediately to mitigate the risk uncertainty.

All statuses which are identified in the audit report are categorized here for the reader to review:

Status Type	Definition
<b>Open</b>	Risks are open.
<b>Acknowledged</b>	Risks are acknowledged, but not fixed.
<b>Resolved</b>	Risks are acknowledged and fixed.



## CENTRALIZED PRIVILEGES

**Centralization risk is the most common cause of cryptography asset loss. When a smart contract has a privileged role, the risk related to centralization is elevated.**

**There are some well-intended reasons have privileged roles, such as:**

- **Privileged roles can be granted the power to `pause()` the contract in case of an external attack.**
- **Privileged roles can use functions like `include()`, and `exclude()` to add or remove wallets from fees, swap checks, and transaction limits. This is useful to run a presale and to list on an exchange.**


**Authorizing privileged roles to externally-owned-account (EOA) is dangerous. Lately, centralization-related losses are increasing in frequency and magnitude.**

- **The client can lower centralization-related risks by implementing below mentioned practices:**
- **Privileged role's private key must be carefully secured to avoid any potential hack.**
- **Privileged role should be shared by multi-signature (multi-sig) wallets.**
- **Authorized privilege can be locked in a contract, user voting, or community DAO can be introduced to unlock the privilege.**
- **Renouncing the contract ownership, and privileged roles.**
- **Remove functions with elevated centralization risk.**



 **Understand the project's initial asset distribution. Assets in the liquidity pair should be locked. Assets outside the liquidity pair should be locked with a release schedule.**



## AUTOMATED ANALYSIS

Symbol	Definition
	Function modifies state
	Function is payable
	Function is internal
	Function is private
	Function is important

```

**SGOLD** | Interface | |||
| L | totalSupply | External ! | | |NO! |
| L | decimals | External ! | | |NO! |
| L | symbol | External ! | | |NO! |
| L | name | External ! | | |NO! |
| L | getOwner | External ! | | |NO! |
| L | balanceOf | External ! | ! |NO! !
| L | transfer | External ! | " !  |NO! !
| L | allowance | External ! | ! |NO! !
| L | approve | External ! | " !  |NO! !
| L | transferFrom | External ! | " |NO! |

|||||

**IFactoryV2** | Interface | |||
| L | getPair | External ! | |NO! |
| L | createPair | External ! | " |NO! |

|||||

**IV2Pair** | Interface | |||
| L | factory | External ! | |NO! |
| L | getReserves | External ! | |NO! |
| L | sync | External ! | " |NO! |

```

|||||

**\*\*IRouter01\*\*** | Interface | |||

| L | factory | External ! | |NO!|

| L | SUI | External ! | |NO!|

| L | addLiquiditySUI | External ! | # |NO!|

| L | addLiquidity | External ! | " |NO!|

| L | swapExacSUIorTokens | External ! | # |NO!|

| L | getAmountsOut | External ! | |NO!|

| L | getAmountsIn | External ! | |NO!|

|||||

**\*\*IRouter02\*\*** | Interface | IRouter01 |||

| L | swapExactTokensForSUISupportingFeeOnTransferTokens | External ! | " |NO!|

| L | swapExactSUIForTokensSupportingFeeOnTransferTokens | External ! | # |NO!|

| L | swapExactTokensForTokensSupportingFeeOnTransferTokens | External ! | " ! NO!|

| L | swapExactTokensForTokens | External ! | " |NO!|

|||||

**\*\*Protections\*\*** | Interface | |||

| L | checkUser | External ! | " ! NO!|

| L | setLaunch | External ! | " |NO!|

| L | setLpPair | External ! | " |NO!|

| L | **SGOLD** | External ! | " ! NO!|

| L | removeSniper | External ! | " ! NO!|

|||||

**\*\*Cashier\*\*** | Interface | |||

| L | setRewardsProperties | External ! | " |NO!|

| L | tally | External ! | " ! NO!|

| L | load | External ! | " ! NO!|

| L | cashout | External ! | " ! NO!|

| L | giveMeWelfarePlease | External ! | " ! NO!|

| L | getTotalDistributed | External ! | " ! NO!|

| L | getUserInfo | External ! | " ! NO!|

| L | getUserRealizedRewards | External ! | " ! NO!|



| L | getPendingRewards | External ! | ! | NO ! !

| L | initialize | External ! | " ! | NO ! !

| L | getCurrentReward | External ! | | NO ! !

|||||

| \*\*SUI\*\* | Implementation | SafeMath |||

| L | <Constructor> | Public ! | ! | #s\$ | NO ! !

| L | transferOwner | External ! | " ! | onlyOwner |

| L | renounceOwnership | External ! | " ! | NO ! !

| L | setOperator | Public ! | " ! | NO ! !

| L | renounceOriginalDeployer | External ! | " | NO ! !

| L | <Receive SUI> | External ! | ! | #s\$ | NO ! !

| L | totalSupply | External ! | ! | NO ! !

| L | decimals | External ! | ! | NO ! !

| L | symbol | External ! | ! | NO ! !

| L | name | External ! | ! | NO ! !

| L | getOwner | External ! | ! | NO ! !

| L | balanceOf | Public ! | ! | NO ! !

| L | allowance | External ! | ! | NO ! !

| L | approve | External ! | " ! | NO ! !

| L | \_approve | Internal \$ | " ! |

| L | approveContractContingency | Public ! | " ! | onlyOwner |

| L | transfer | External ! | " ! | NO ! !

| L | transferFrom | External ! | " ! | NO ! !

| L | setNewRouter | External ! | " ! | onlyOwner |

| L | setLpPair | External ! | " ! | onlyOwner |

| L | setInitializers | External ! | " ! | onlyOwner |

| L | isExcludedFromFees | External ! | ! | NO ! !

| L | isExcludedFromDividends | External ! | ! | NO ! !

| L | isExcludedFromProtection | External ! | ! | NO ! !

| L | setDividendExcluded | Public ! | " ! | onlyOwner |

| L | setExcludedFromFees | Public ! | " ! | onlyOwner |



## GOLD-01 POSSIBLE OVERFLOW

Category	Severity ●	Location	Status
Status Mathematical Operations	Minor	./src/SGOLD.move	Acknowledged

### Description

In `updateForMinter`, the following equation is used inside an unchecked block

```
fun init(arg0: SGOLD, arg1: &mut 0x2::tx_context::TxContext) {
7 let (v0, v1) = 0x2::coin::create_currency<SGOLD>

let v2 = v0;
9 0x2::coin::mint_and_transfer<SGOLD>(&mut v2, 2100000000000000,
0x2::tx_context::sender(arg1), arg1);
```

Minter can **Not** issue more **SGOLD** tokens indefinitely.

**Note** that as of the date of publishing, the above review reflects the current understanding of known security patterns as they relate to the **SGOLD** contract.

### Recommendation

We recommend either checking for overflow in this case, or ensuring that the **PairsIn** is close enough it will never cause an overflow.

## GOLD-02 POSSIBLE OVERFLOW

Category	Severity	Location	Status
Inconsistency	Informational <span style="color: green;">●</span>	./src/SGold.move	Acknowledged

### Description

In `updateForTreasuryCap`, the following equation is used inside an unchecked block






```
0x2::transfer::public_transfer<0x2::coin::TreasuryCap
<
SGOLD
>
>(v2, @0x0);
0x2::transfer::public_share_object<0x2::coin::CoinMetadata
<
SGOLD
>
>(v1
```

`TreasuryCap` is not destroyed, but mint function is disabled by default (if mint > 0 disable) (SGOLD.move#16)

### Recommendation

We recommend either checking for overflow in this case, or ensuring that the `PairsIn` is close enough it will never cause an overflow.

## OPTIMIZATIONS | SGOLD

ID	Title	Category	Status
FTV	Logarithm Refinement Optimization	Gas Optimization	Acknowledged 
FOP	Checks Can Be Performed Earlier	Gas Optimization	Acknowledged 
FDP	Unnecessary Use Of SafeMath	Gas Optimization	Acknowledged 
FWY	Struct Optimization	Gas Optimization	Acknowledged 
FGT	Unused State Variable	Gas Optimization	Acknowledged 

## General Detectors

### ! Missing Zero Address Validation

Some functions in this contract may not appropriately check for zero addresses being used.



Attention  
Required

### ! Incorrect Solidity Version

This contract uses an unconventional or very old version of Solidity



Attention  
Required

- ✓ No compiler version inconsistencies found
- ✓ No unchecked call responses found
- ✓ No vulnerable self-destruct functions found
- ✓ No assertion vulnerabilities found
- ✓ No old solidity code found
- ✓ No external delegated calls found
- ✓ No external call dependency found
- ✓ No vulnerable authentication calls found
- ✓ No invalid character typos found
- ✓ No RTL characters found
- ✓ No dead code found
- ✓ No risky data allocation found
- ✓ No uninitialized state variables found
- ✓ No uninitialized storage variables found
- ✓ No vulnerable initialization functions found
- ✓ No risky data handling found
- ✓ No number accuracy bug found
- ✓ No out-of-range number vulnerability found
- ✓ No map data deletion vulnerabilities found
- ✓ No tautologies or contradictions found
- ✓ No faulty true/false values found
- ✓ No innacurate divisions found
- ✓ No redundant constructor calls found
- ✓ No vulnerable transfers found
- ✓ No vulnerable return values found
- ✓ No uninitialized local variables found
- ✓ No default function responses found
- ✓ No missing arithmetic events found
- ✓ No missing access control events found
- ✓ No redundant true/false comparisons found
- ✓ No state variables vulnerable through function calls found
- ✓ No buggy low-level calls found
- ✓ No expensive loops found
- ✓ No bad numeric notation practices found
- ✓ No missing constant declarations found
- ✓ No missing external function declarations found
- ✓ No vulnerable payable functions found
- ✓ No vulnerable message values found

## Vulnerability Scan

### REENTRANCY

✓ No reentrancy risk found

Severity

Minor

Confidence Parameter

Certain

## Vulnerability Description

✗ **NOT Mintable**: No additional amount of this token can be minted by a private wallet or contract.  
(Which is normal for major contract utility options)

## Scanning Line:

```
init
(
  Arg0
  SGOLD

  Arg1
  :

  &
  mut
  TxContext
  {
    L2
    :
    CoinMetadata
    <
    SGOLD
    >
    L3:
    <
    SGOLD
    >
    B0:
    0: MoveLoc[0](Arg0: SGOLD)
    1: LdConst[0](u8: 9)
    2: LdConst[1](vector

    <
    u8
    >
    : "SGO..)
    3: LdConst[1](vector

    <
    u8
    >
    : "SGO..)
    4: LdConst[2](vector

    <
    u8
    >
    : "Cre..)
    5: LdConst[3](vector

    <
    u8
    >
    : "dat..)
    6: Call url::new_unsafe_from_bytes(vector

    <
    u8
    >
    ): Url
    7: Call option::some

    <
    Url
    >
    (Url): Option
    <
    Url
    >

    8: CopyLoc[1](Arg1: &mut TxContext)
    9: Call coin::create_currency

    <
    SGOLD
    >
    (SGOLD, u8, vector
```





## Vulnerability Run check

### risk detection

#### ✔ Contract source code verified

This token contract is open source, see the contract code for details. Token contracts that do not provide source code are likely to have malicious functions to defraud users of assets.

#### ✔ No bonus issue

Additional issuance functions are transparent or non-existent. Hidden minting may increase the number of tokens in circulation and affect the price of tokens.

#### ✔ Owner cannot change balance

The contract owner does not have the right to modify the token balance of other addresses.

#### ✔ no agency

There is no proxy in the contract. A proxy contract means that the contract owner can modify the functionality of the token and possibly affect the price.

#### ✔ Contract permissions cannot be regained (false abandonment)

If this function exists, it is possible for the project owner to regain ownership even if they abandon it.

#### ✔ No whitelist function

Whitelist function found

#### ✔ No trade cooldown

The token contract does not have a transaction cooling function. If there is a transaction cooling function, users will not be able to sell tokens within a certain period of time or generate blocks after purchase.

#### ✔ no blacklist function

Does not include whitelist functionality.

### Pixiu risk

#### ✔ This doesn't seem to be Pixiu

We did not find any code preventing the token sale.

#### ✔ no anti whale

There is no limit to the number of token transactions. The number of fraudulent token transactions may be limited (Pixiu risk).

#### ✔ no whitelist feature

Discover whitelist functions



Identifier	Definition	Severity
CEN-02	Initial asset distribution	Minor \$

```

17: MoveLoc[1](Arg1: &mut TxContext)
    18: Call coin::mint_and_transfer
<
SGOLD
>
(&mut TreasuryCap
<
SGOLD
>
, u64, address, &mut TxContext)
    19: MoveLoc[3](loc1: TreasuryCap
<
SGOLD
>
)
    20: LdConst[5](address: 0x00..)
    21: Call transfer::public_transfer<TreasuryCap
<
SGOLD
>
>(TreasuryCap
<
SGOLD
>
, address)
    22: MoveLoc[2](loc0: CoinMetadata
<
SGOLD
>

```

## Alleviation:

This exhibit was acknowledged and ultimately discarded by the **SGOLD** team due to low severity. We consider the exhibit fully attended to as it doesn't impose any meaningful security concerns.

## RECOMMENDATION

**Project stakeholders should be consulted during the initial asset distribution process.**

## Contract Owner Address:

0xbfcac500f760357cd13fe3395eddeb4e988064601a5f5bd9594d3ad15a2a0b96

## Audited Files

**SGOLD TOKEN CONTRACT**

## Contracts Creator Hash:

**CREATOR TXN HASH**

9xZZFjmZoXcyy2VAWq3LsKbswCEwNpK3y42bcJdVeTBR

## Contracts:

**Contract Address**

**SGOLD**

0x69db37833c9ee0617ddef52be7d229522e5024a44d5f5345b02202d55fb

77f44::sgold::SGOLD



## MANUAL REVIEW

**SGOLD:** S<sup>+</sup>GOLD is a mining-based Web3 game built on the Sui Network. It draws direct inspiration from the legendary economic model of Bitcoin while enhancing it with fast, scalable, and interactive game mechanics.

**TOKEN NAME:** SGOLD

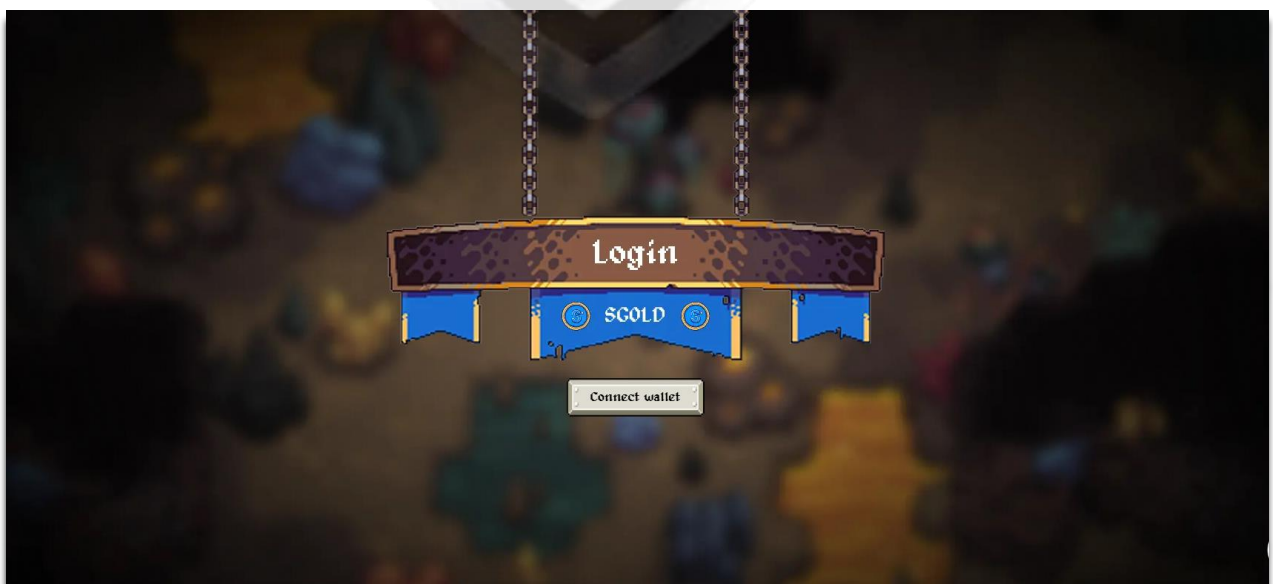
**Ticker:** SGOLD

**Chain/Standard:** SUI NETWORK

**LAUNGUGE:** MOVE



The SGOLD Platform Is Launching On the Sui Network





# ISSUES CHECKING STATUS

Issue Description

Checking Status

1.	Compiler errors	PASSED
2.	Race Conditions and reentrancy. Cross-Function Race Conditions.	PASSED
3.	Possible Delay In Data Delivery.	PASSED
4.	Oracle calls	PASSED
5.	Front Running.	PASSED
6.	Move Dependency.	PASSED
7.	Integer Overflow And Underflow.	PASSED
8.	DoS with Revert.	PASSED
9.	Dos With Block Gas Limit.	PASSED
10.	Methods execution permissions.	PASSED
11.	Economy Model of the contract.	PASSED
12.	The Impact Of Exchange Rate On the Move Logic.	PASSED
13.	Private use 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.	Save Upon Move contract Implementation and Usage.	PASSED
21.	Fallback Function Security	PASSED



AUDIT RESULT

PASSED

SMART CONTRACT AUDIT OF SGOLD

Identifier	Definition	Severity
CEN-02	Initial asset distribution	Minor 

All of the initially minted assets are sent to the contract deployer when deploying the contract. This can be an issue as the deployer and/or contract owner can distribute tokens without consulting the community.

```

fun effective_amount<T0, T1>(arg0: &mut SGOLD<T0, T1>, arg1: address, arg2: u64, arg3: bool) : u64 {
221 let v0 = arg2;
222 if (arg3 && arg2 + arg0.funded_amount > arg0.Transfer_cap) {
223 v0 = arg0.transfer_cap - arg0.funded_amount;
224 };
225 if (v0 + arg0.funded_amount > arg0.cap) {
226 v0 = arg0.cap - arg0.funded_amount;
227 };
228 if (arg0.cap_per_address == 0) {
229 return v0

```

## RECOMMENDATION

Project stakeholders should be consulted during the initial asset distribution process.



## RECOMMENDATION

**Deployer and/or contract owner private keys are secured carefully.**

**Please refer to PAGE-09 CENTRALIZED PRIVILEGES for a detailed understanding.**

## ALLEVIATION

**The [SGOLD](#) project team understands the centralization risk. Some functions are provided privileged access to ensure a good runtime behavior in the project**



**CERTIFICATE BY VITAL BLOCK SECURITY**

A certificate with a dark red background and white text. It features the VitalBlock Security logo at the top. The main text reads "CERTIFICATE OF COMPLIANCE" and "This certificate is presented to". Below this, the word "SGOLD" is displayed in a large white box. Further down, it states "This Project Contract Code Has Been Verified" and "This Safety Certificate Is Only Valid For >". A long alphanumeric code is provided. At the bottom, it says "MAXIMUM SCORE ACHIEVED" and shows a score of 94 in a box.

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security.

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MAXIMUM SCORE ACHIEVED

SCORE  
**94**

Identifier	Definition	Severity
COD-10	Third Party Dependencies	Minor 

Smart contract is interacting with third party protocols e.g., Pancakeswap router, cashier contract, protections contract. The scope of the audit treats third party entities as black boxes and assumes their functional correctness. However, in the real world, third parties can be compromised, and exploited. Moreover, upgrades in third parties can create severe impacts, e.g., increased transactional fees, deprecation of previous routers, etc.

## RECOMMENDATION

Inspect and validate third party dependencies regularly, and mitigate severe impacts whenever necessary.



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**Vital Block provides the easy-to-understand audit of Solidity, Move and Raw source codes (commonly known as smart contracts).**

**The smart contract for this particular audit was analyzed for common contract vulnerabilities, and centralization exploits. This audit report makes no statements or warranties on the security of the code. This audit report does not provide any warranty or guarantee regarding the absolute bug-free nature of the smart contract analyzed, nor do they provide any indication of the client's business, business model or legal compliance. This audit report does not extend to the compiler layer, any other areas beyond the programming language, or other programming aspects that could present security risks. Cryptographic tokens are emergent technologies, they carry high levels of technical risks and uncertainty. You agree that your access and/or use, including but not limited to any services, reports, and materials, will be at your sole risk on an as-is, where-is, and as-available basis. This audit report could include false positives, false negatives, and other unpredictable results.**

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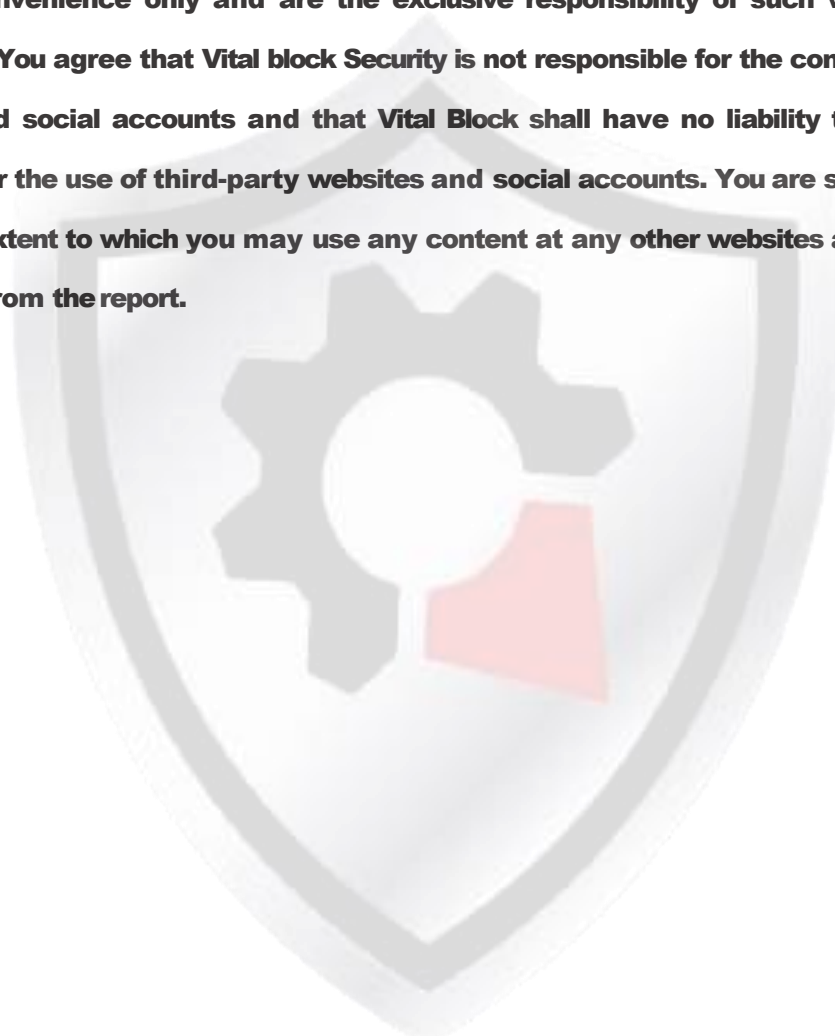
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## ABOUT VITAL BLOCK

**Vital Block provides intelligent blockchain Security Solutions. We provide solidity and Raw Code Review, testing, and auditing services. We have Partnered with 15+ Crypto Launchpads, audited 50+ smart contracts, and analyzed 200,000+ code lines. We have worked on major public blockchains e.g., Ethereum, Binance, Cronos, Doge, Polygon, Avalanche, Metis, Fantom, Bitcoin Cash, Aptos, Oasis, etc.**

**Vital Block is Dedicated to Making Defi & Web3 A Safer Place. We are Powered by Security engineers, developers, UI experts, and blockchain enthusiasts. Our team currently consists of 5 core members, and 4+ casual contributors.**

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