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	Internal Control System Corporate Management of Internal Control Assurance		
	GEE-M-002	Prepared 06/03/2018	Version: 1


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1. OBJECTIVE

Establishing guidelines for the administration, maintenance and continuous improvement of the Internal Control System at Ecopetrol and the companies of the Ecopetrol Group, ensuring compliance with the Sarbanes Oxley Act (Sox¹) and its alignment with COSO² as best internal control practice.

2. GENERAL CONDITIONS

2.1. General aspects

Ecopetrol establishes the adoption of the COSO model as a general framework in furtherance of its Internal Control System pursuant to the highest international standards.

According to COSO, corporate governance practices are framed in the principles of transparency, governance and business control management. Risk management is part of the general corporate governance and the internal control process is an integral part of a company's risks management³. This relationship is shown graphically herein below:⁴




Figure 1. Corporate Governance, Risk Management and Internal Control System.

¹ Abbreviation for the American Sarbanes Oxley Act controlled by the Securities and Exchange Commission -SEC.

² COSO is the short name for the Committee that sponsors corporate governance and business management practices in the United States. Its name in English is "Committee of Sponsoring Organizations of the Treadway Commission", which is a private sector initiative comprised by professional associations interested in Risk Management and corporate control. Further information can be consulted on the website www.coso.org/

³ For further risk management reference, refer to document GEE-P-005.

⁴ Taken from the updated version of COSO in 2013.

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2.2. Internal Control System

According to COSO, the Internal Control System is a process carried out by everyone in the organization, supervised by the Board of Directors, Senior Management and control entities, to have reasonable assurance that all necessary activities are performed correctly to ensure achievement of the objectives.

2.3. Regulatory Reference

In accordance with the requirements established for companies registered in the Stock Market of New York, Ecopetrol and its Group frame the development of their internal control for the external financial report (CIRF) in the SOX Law.

Both Ecopetrol and its subsidiaries will be subject to the legal regime of the country of incorporation and to the jurisdiction where they operate.


The laws associated with the combat and prevention of corruption vary according to the country of incorporation of the company and its legal nature. In some cases the application of the following provisions will be mandatory, and where not applicable, the references are: Law 1778 of 2016, Law 1474 of 2011, Basic Legal Circular issued by the Superintendence of Companies, Chapter on Risk Self-Control and LAFT Risk Management, and Report of Suspicious Transactions for Applicable Entities, Corrupt Foreign Practices Act, UK Bribery Act, Sarbanes Oxley SOX Act, Dodd Frank Act, OECD Convention against Transnational Bribery (ratified by Colombia), United Nations Convention against corruption, Principle 10 of the Global Compact, among others.

The content of this document is consistent with the practices of the COSO model, the risk management standard ISO 31000, the COBIT management framework, and Ecopetrol current regulations in terms of risks, internal control and ethics.

2.4. Internal Control System Premises

The Internal Control System is managed through the following premises that interact with each other in a systematic and dynamic way and is applicable at all levels of the organization:

- **Promote a self-control culture:** The Internal Control System is supported by a self-control philosophy, such as the attitude of carrying out the day to day work with self-criticism and self-management, with all those who interact therein being responsible for managing their risks and implementing their controls to provide reasonable security, seeking transparent and effective performance to facilitate the achievement of the organization's objectives.
- **Operations-based:** The Internal Control System is based on processes, procedures and management systems that support the operations of the organization, on which basis the objectives, risks, mitigation measures and risk alerts are determined, managed and monitored.

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- **Focused on achieving the objectives:** Once the objectives are defined for the organization to create, preserve and realize value for its stakeholders, the Internal Control System obtains the risk management input and its mitigation measures.
- **Provides reasonable security:** When referring to reasonable security, it is understood that the Internal Control System does not provide full security as regards achievement of the objectives, given its inherent limitations in the operation such as judgment or human error when taking decisions, collusion, control elusion, and external factors not controllable by organization.
- **Management tool:** The Internal Control System thus becomes a useful tool for the company to develop, in an efficient and effective way, mechanisms to adapt to changes in the operating and business environment, mitigating risks to acceptable levels and supporting its decision-making processes.

Note: In furtherance of this document, Process shall be understood as that contained in the Company's process map, including Management Systems.

2.5. Roles and Responsibilities

All the roles and responsibilities described herein deal specifically with the development of the Internal Control System in the organization.


Board of Directors: The Board of Directors supervises and oversees the management and effectiveness of risk management and Internal Control System to ensure that it is adequate to the needs of the company. The Board of Directors performs its functions directly or relying on the Board of Directors Committees in accordance with its corporate governance structure, and reviews high-level corporate guidelines related to internal control, ethics, fraud, risks and corporate governance. Mark the "Tone at the Top" regarding the importance of internal control and standards of conduct expected by the company.

CEO⁵: Maximum responsible for the design, implementation, direction and evaluation of the Internal Control before the Board of Directors and the organization. Sets the tone of the organization with respect to the importance of internal control and expected conduct standards.

As part of his responsibilities, the CEO supervises and controls the risks faced by the company. Acknowledge of the Internal Control System failures and its impact on the sustainability and reports to the Audit Committee of the Board of Directors all significant deficiencies and fraud and non-compliance cases that may affect the financial information and performance of the company.

Process Owners: Responsible for the execution of the process and, therefore, for the risks and mitigations identified. The owner of each process is responsible for:

⁵ Chief Executive Officer. Refers to President, Director, General Manager of the company, or their equivalent.

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- Implementing, maintaining and improving the process by exercising self-control in every action taken.
"I make sure I'm doing correctly what I have to do."
- Managing, controlling/ supervising and ensuring the achievement of planned results based on corporate guidelines.
- Identifying process objectives, aligned with the corporate strategy.
- Identifying the risks that will affect the fulfillment of his objectives.
- Identifying mitigation for managing the risks.
- Identifying on time internal control failures, establishing action plans and managing its effective and timely implementation in the processes under his responsibility.
- Carrying out self-evaluations in his self-control exercise and formalizing them whenever requested by any assurance group.
- Attending and providing information to the monitoring areas when they so require it.
- Keeping the risks and controls of his process up to date.

Ecopetrol's Internal Control Assurance Corporate Management: Responsible for defining guidelines for risk management and internal control for the Ecopetrol Group, monitoring the identification of risks, implementing effective mitigation measures and alarms on critical aspects of the processes, and carrying out preventive technical and methodological monitoring of issues related to the design and implementation of the Internal Control System seeking compliance, safety and quality of requirements associated with the regulation and related laws.

Compliance areas of the Ecopetrol Group companies: Responsible for leading the planning, implementation and deployment of Internal Control System guidelines in the process, in order to ensure its sustainability and contribute to the culture of self-control and self-management for decision-making related to risk management and compliance with strategic and process objectives, as well as analyze and communicate the initiatives and/or projects that originate in the process that have an impact on the Internal Control System.


Control, treatment actions and reporting of key risk indicators executors: Responsible for supporting process owners in identifying and managing risks, executing controls, treatment actions and reporting key risk indicators defined for the processes in which they participate. Advise process owners, in a transparent and timely manner about internal control failures identified in performance of their activity, support the identification of improvement action plans leading to the closing of identified gaps, and work for their correct and timely implementation, exercising self-control in every action they take according to "I make sure I am doing correctly what I have to do" and keep evidence that controls, treatment actions and reporting of key risk indicators have been properly performed.

Integral Role of Internal Control of Ecopetrol S.A. Processes: Responsible for advising process owners and ensure the activities defined for effective risk management and internal control, and report to the Internal Control Assurance Corporate Management the results of the analysis and monitoring carried out, in accordance with the planning and the established guidelines.

In general terms, all collaborators are responsible for managing the risks generated in processes in which they are responsible, through the implementation of the risk management cycle. Likewise, they must participate in the establishment and implementation of preventive measures and report changes that

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represent new risks and/or controls, incidents or materialized risks, using the means available in the Company for such purpose.

3. DEVELOPMENT

3.1. Objectives

The internal control framework (COSO) adopted establishes three categories of objectives interrelated with five required components, that is, designed and operating to ensure the achievement of the objectives:

- **Operational objectives:** These refer to the effectiveness and efficiency of company operations, including its financial and operational performance objectives, and the protection of its assets against potential losses.
- **Reporting objectives:** These refer to financial and non-financial data, internal and external, and may cover reliability, timeliness, transparency, and other aspects established by the regulators, recognized bodies or company own policies.
- **Compliance Objectives:** They refer to compliance with laws and regulations to which the organization is subjected.

3.2. Components of the Internal Control System


Outlined below are the main characteristics of the components of the Internal Control System established according to COSO, explaining some common implementation schemes developed by organizations.

3.2.a. Control Environment

The company, headed by its Board of Directors and other governing bodies and its leaders, defines the tone of the organization and creates control awareness in its personnel. The control environment provides a set of standards, processes, and structures that are the basis for implementing internal control in the organization. It also includes corporate integrity and ethical values, parameters that enable the assignment of authority and responsibility, and the process of attracting, developing and retaining competent professionals. The control environment has relevant influence on the rest of components of the Internal Control System.

Implementation Guidelines:

- Ensure proper decision-making using a clearly defined governance structure, which addresses relevant issues of corporate governance, ethics, strategy management, internal control and risk management, and the deployment of roles and responsibilities in its organizational structure.

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- Have clear rules that ensure the proper functioning of governing bodies, for example, Good Governance Code, Internal Corporate Governance Regulations, Corporate Governance Guidelines, evaluation mechanisms of the Board of Directors, Board Committees and Steering Committees, and Assessment Mechanisms for senior managers, among others.
- Facilitate the deployment and alignment of the strategy at all levels of the organization, leveraged through a process management model, and supported in a culture aimed at fulfilling strategic and process objectives and their continuous improvement.
- Establish a culture based on respect, integrity and responsibility values, having in place the necessary tools for the prevention and monitoring of their ethical management and compliance.
- Establish an organizational structure that supports risk management and Internal Control and assign specific responsibilities for its definition, implementation, monitoring and improvement.
- Carry out a functional analysis to ensure proper allocation of responsibilities in the Organization areas, seeking to reduce risks of conflict of interest, and promote adequate functional distribution.


3.2.b. Risk Assessment

The company analyzes the internal and external risk events that affect the achievement of objectives, including the potential impact of significant changes, fraud and internal monitoring. Risks are identified, analyzed and valued considering probability and impact as the basis to ensure its proper management and prioritization according to its inherent and residual exposure.

Risk management contributes to the minimization of costs and damage caused, based on the analysis of the company context, as well as the determination of methods for treatment and monitoring of its risks, for preventing or avoiding the materialization of events that may affect the normal development of processes and the fulfillment of business objectives.

Implementation Guide:

- The company identifies its risks and mitigation measures taking into account the documentation of the objectives to identify the risks and their sufficiency, and end up with the mitigation measures (controls and treatment actions), thus creating the Objective - Risk-Control trilogy, where the three concepts must interrelate.
- Taking objectives as a starting point, risk identification allows to determine in a systematic and structured way the events that can negatively affect fulfillment of the objectives, whether under control of the company or not. This results in the identification of risks that threaten the assurance of operational, reporting and compliance objectives.
- The process risk management cycle must be carried out based on the Process Risk Management of the Ecopetrol Group GEE-P-005.

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3.2.c. Control Activities

Understanding this model component as the actions established through guidelines, policies, procedures and activities to mitigate the risks that affect the achievement of objectives, in general terms it refers to the mitigation measures established by the organization to cover its risks.

Implementation Guide:

- The organization designs, implements and maintains control activities and other mitigation measures to manage risks and thus have reasonable security related to the fulfillment of its objectives, which enable monitoring and response to risks on time.
- This information must be documented formally in the integral internal control matrix, which are formally managed and monitored periodically.
- Use of a technological tool for the administration of relevant Internal Control documentation, in which mitigation is managed. Keep in mind that all company mitigation components are identified and managed by process owners who are accountable for the management of their risks and mitigating factors.
- The control management cycle must be carried out based on the "Procedure for managing controls and mitigation measures in the Ecopetrol Group", GEE-P-006.

3.2.d. Information and Communication


It is the continuous and interactive process of providing, sharing and obtaining relevant information and quality, from internal or external sources, flowing upwards, downwards and at all levels, so that the Organization can exercise its internal control responsibilities and support the achievement of its objectives.

Implementation Guide:

- Have information technology management guidelines, including treatment of confidential information, access management, information security, risk management and key IT functional controls, establishing responsibilities, directives and guidelines to ensure proper treatment of the information.
- The company defines and communicates responsibilities, internal and external reports, and channels that must be established for internal control at all levels of the Organization.

3.2.d. Monitoring

It is the evaluation process to determine whether each of the five internal control components and their principles exist and work properly over time throughout the organization. These evaluations are carried out periodically and may vary in scope and frequency according to the risk assessment, the effectiveness of the own assessments and other considerations. The results are evaluated by comparing them with criteria defined by Management, regulating bodies and other recognized regulating organizations and the improvement opportunities detected are communicated for their management.

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The Internal Control System monitoring comprises activities carried out periodically to have reasonable assurance on achievement of the objectives, mainly through the verification of management of its risks and effectiveness of its mitigation measures.

This monitoring scheme is based on the "lines of defense" model, whereby the first line of defense is developed through the daily management of risks associated with business operations, while the second line is developed by areas with supervisory functions, including the definition of guidelines and the assurance of the Internal Control System, and a third line made up of the Internal and External Audits, which independently challenge the previous lines.

It is expressed in a graph as follows:

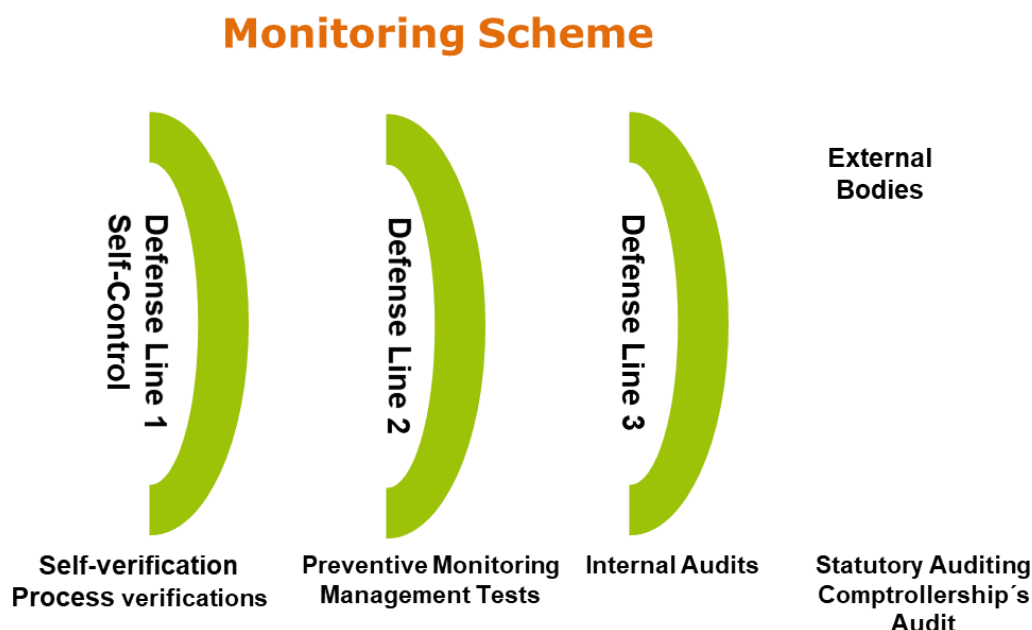



Figure 1. Internal Control System Monitoring Scheme

Implementation Guide:

- Internal control self-assessments: As part of the evaluation and monitoring activities of the Internal Control System, risk self-assessments, controls, treatment actions and KRI's are carried out, based on the review that the executors and owners of the process perform on the condition of such components.

Self-assessments are monitoring exercises of the first line of defense, and are considered a tool that is part of the performance review of the Internal Control System, as they define potential opportunities for improvement and seek to close the gaps that process owners become aware of

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and report preventively and prior to other lines of defense.

These are carried out through the completion of specific questions defined to guide process owners in performing their analysis. Any flaw identified by the owner of the process or others who are responsible for the monitoring must be reported in the self-assessments.

- Internal control certification: Monitoring mechanism implemented by process executives to report to the internal control government any failures or relevant issues that may impact the Internal Control System, identified in the processes they manage. This certification includes issues reported individually in the self-assessments by process.

This certification is an express statement that the processes have mitigation measures and sufficient alarms to manage their risks and reasonably secure the achievement of their objectives, and that the necessary improvement actions have been to correct identified control failures.


In particular, as part of compliance with the SOX Law and for certification of the internal control on the financial reports, the President and the Financial Vice President must issue annually before the Securities and Exchange Commission, SEC, a document certifying: 1) the conclusion on the effectiveness of the controls and disclosure procedures developed by the Company, and 2) the conclusion on the effectiveness financial reporting internal controls.

- Continuous supervision: These are activities carried out by all company personnel in the normal course of company operations, focused on timely supervision of the execution of all control activities in the company. The continuous supervision includes tracking activities, identifying early alerts or opportunities to be remedied.

Some examples are: Regular and timely review of key process indicators; monitoring of transactions made by the company; comparison of the information obtained in the daily course of operations with data generated by information systems, monitoring, without limitation, fulfillment of budgets and plans.

- Independent Monitoring: Although the permanent follow-up procedures, as well as the Certifications and self-assessments by process provide important feedback, it is necessary to carry out evaluations that focus on the effectiveness of the Internal Control System, which must be carried out by people who are independent of the process, as an indispensable requirement to guarantee their impartiality and objectivity.

Some examples are: Reviews by the assurance teams, which perform their analyses and report the opportunities for improvement or alarms found depending on the existence and functionality of COSO components, as well as insufficiency in risks and mitigation actions to ensure business, process and financial reporting objectives; reviews performed by the internal auditor or his equivalent who, based on his knowledge of the business and function methodology, conducts a comprehensive, independent evaluation of the internal control; independent reviews by the external auditor or his equivalent, who performs independent testing to verify the design and suitability of the mitigation measures implemented to avoid or reduce risks. In sum, the mitigation measures on which the External Auditor focuses are specifically those that ensure integrity, reliability and timeliness of the figures and disclosures contained in the company's Financial

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Statements.

4. CONTINGENCIES

N/A.

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