

Chapter 2 Mandate, Audit scope and Methodology

The Compliance Audit Report has been prepared under the provisions of Section 19-A of the Comptroller and Auditor General's (Duties, Powers and Conditions of Service) Act, 1971. The Audit has been carried out in line with the Regulations on Audit and Accounts, 2007 and Compliance Audit Guidelines of the Comptroller and Auditor General of India.

2.1 Scope and Audit objectives

The scope of Audit is to review performance of water injection in western offshore area of the company⁵ for the period from 2014-15 to 2018-19 (with backward and forward linkages).

The objectives of the Audit were to assess whether:

1. the requirement of water injection planned in the annual water injection build-up plan was commensurate with the requirement envisaged in the field development schemes/ feasibility reports approved by the management and planned quantity was injected into the reservoir,
2. requisite water injection equipment were made available to inject required quantity of water into reservoir,
3. desired quality of water was injected into the reservoir, and
4. water injection facilities were maintained through corrosion monitoring, pigging of water injection lines, workover⁶ of injectors, stimulation⁷ operations of injection wells pipelines and backwash of injectors.

2.2 Audit criteria

The criteria for Audit were drawn from the policies/ guidelines/ norms adopted by the company as appearing in its manuals/ internal documents/ laid down procedures relating to reservoir health, quality/ quantity of injection water, maintenance/ replacement/ overhauling norms of equipment as per company and original equipment manufacturer (OEM) norms, maintenance and monitoring mechanism of water injection pipelines and wells/ strings, etc. The reports of international consultants appointed by the company/ its in-house research organisations were also considered (**Annexure-I**).

⁵ *Western offshore assets include Mumbai High, Neelam & Heera and Bassein & Satellite. While Mumbai High and Neelam & Heera are mainly oil fields, Bassein & Satellite comprises gas fields. Further, water injection in Bassein & Satellite is adopted mainly for creating a barrier between the two fields. Bassein & Satellite is not covered in the current Audit.*

⁶ *A workover or well servicing is any operation performed on a well to restore or improve the performance of a well.*

⁷ *A well intervention procedure to improve injectivity.*

2.3 Audit methodology

An Entry Conference was held with the Management on 8 April 2019 in which Audit objectives, scope and methodology were discussed. Field Audit included collection and review of information/ documents, discussions with Management and was conducted from August 2019 to April 2020. University of Petroleum Energy and Studies (UPES), Dehradun was engaged as technical consultant for providing technical guidance to Audit. The draft Audit Report was issued to the Management/ Ministry of Petroleum and Natural Gas simultaneously on 15 December 2020. Response of the Management (February 2021) and the Ministry (June 2021) has been suitably incorporated in the Audit Report. The response and views expressed by the Management and Ministry during Exit Conference held on 8 September 2021 have also been suitably incorporated in the Report.

2.4 Acknowledgement

We place on record the cooperation extended by the Ministry and the Management and staff of ONGC in smooth conduct of the audit. We also place on record the cooperation extended by University of Petroleum Energy and Studies during the course of field Audit and finalisation of Audit Report.

Water Injection Header

