

1.0
Introduction

PAN AMERICAN HEALTH ORGANISATION
VULNERABILITY ASSESSMENT OF THE DRINKING WATER SUPPLY
INFRASTRUCTURE OF MONTSERRAT
CONTRACT NO: CSA-071-97

1.0 INTRODUCTION

1.1 General

Montserrat is a British dependency located in the Leeward Islands of the Eastern Caribbean. It is 11 miles long and 7 miles wide with an area of 39.5 square miles. Its nearest neighbours are Antigua to the north east and Guadeloupe to the south east, each approximately 27 miles away. Figures 1 and 2 indicate the location of Montserrat in the Caribbean and a map of the island respectively.

Prevailing winds are from the north east to south east and average rainfall is in the vicinity of 60 inches per year. The Soufriere Hills volcano rises to 3,000 ft above sea level at Chances Peak in the southern half of the island. The summit is almost always obscured by clouds. The Soufriere slopes from its peak to the sea on the east, south and west and towards the Belham Valley on the north where the land then rises into the Centre Hills. Recent volcano activity has been accompanied by seismic activity of relatively low intensity as has been the case prior to the recent activity.

At longitude 16° 45 'N and latitude 62° 10 'W Montserrat is exposed to the action of Atlantic tropical storms.

Based on the Scope of Services in the Contractual Service Agreement Contract No. CSA-071-97 the Contractor, David A. Lashley of David Lashley & Partners Inc., carried out the Vulnerability Assessment of the Drinking Water Supply Infrastructure of Montserrat, with the view of recommending mitigation measures to limit damage to the water supply systems arising from volcano, earthquake or hurricane.

1.2 Approach to the Task

1.2.1 First Visit

The task commenced with a visit to Montserrat in mid-April 1997 to obtain the background to the issues by meeting with relevant personnel, primarily from the Montserrat Water Authority.

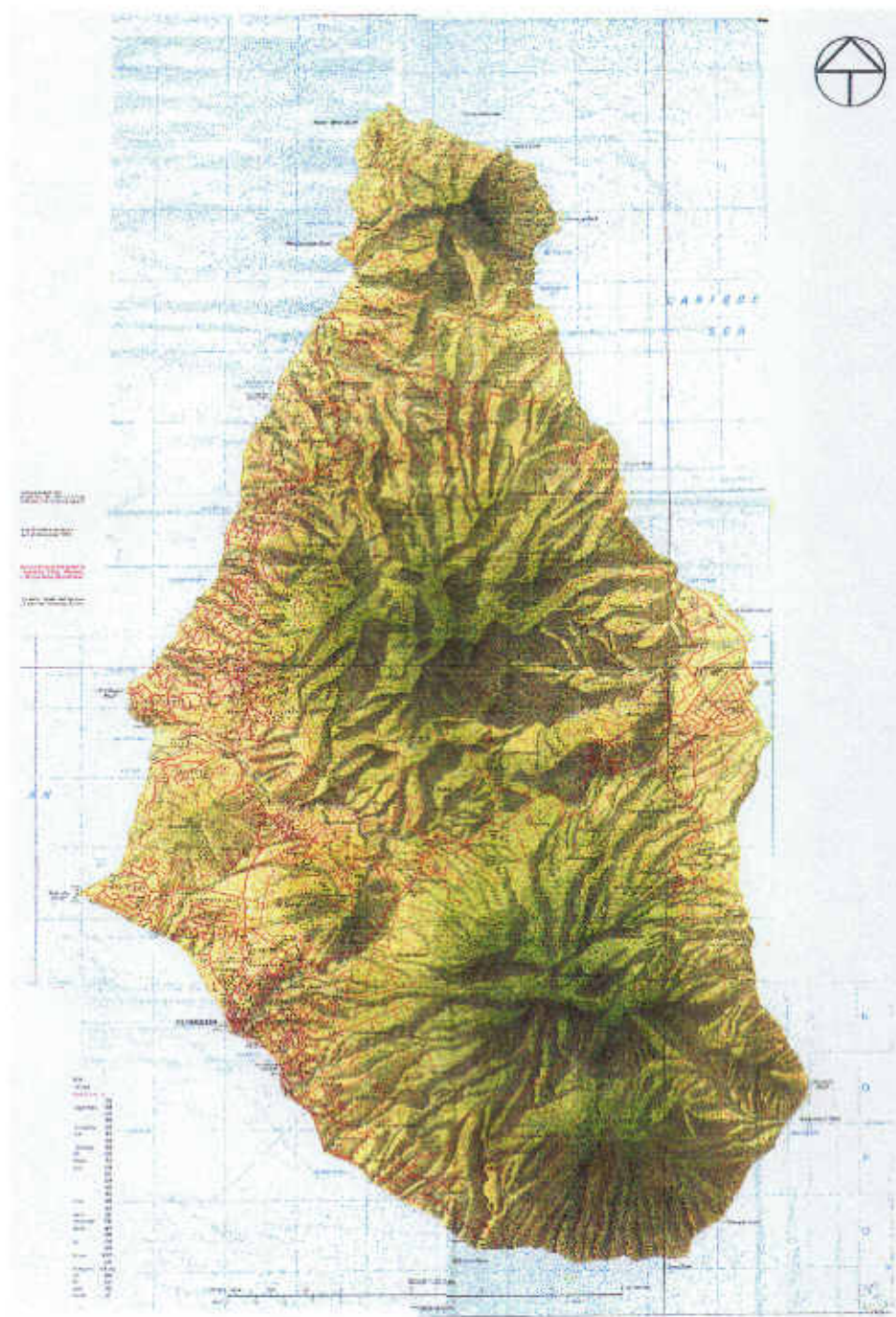


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Figure 1- Location Map



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Figure 2- Map of Montserrat

and other representatives of Government, as well as members of the Overseas Development Administration of the British Government responsible for the management of the emergency aid in the current volcano crisis and scientists at the Montserrat Volcano Observatory.

At the time of the first visit, the Soufriere Hills Volcano had been active for over one year and nine months and there had been a major dislocation of public and private sector operations due to the need for movement to the Safe Zone north of the Belham Valley, in the northern half of the island. As a result, most of the public and private sector were operating from temporary accommodations with the additional burden of having to manage conditions due to the volcanic activity

Even in these trying circumstances, every effort was made to assist in obtaining readily accessible available information and making arrangements for the physical inspection of critical components of the major drinking water systems of Montserrat. Further promises were made to obtain relevant reports on the water systems for review, taking into account the reduced ability to locate documents in the current operational conditions

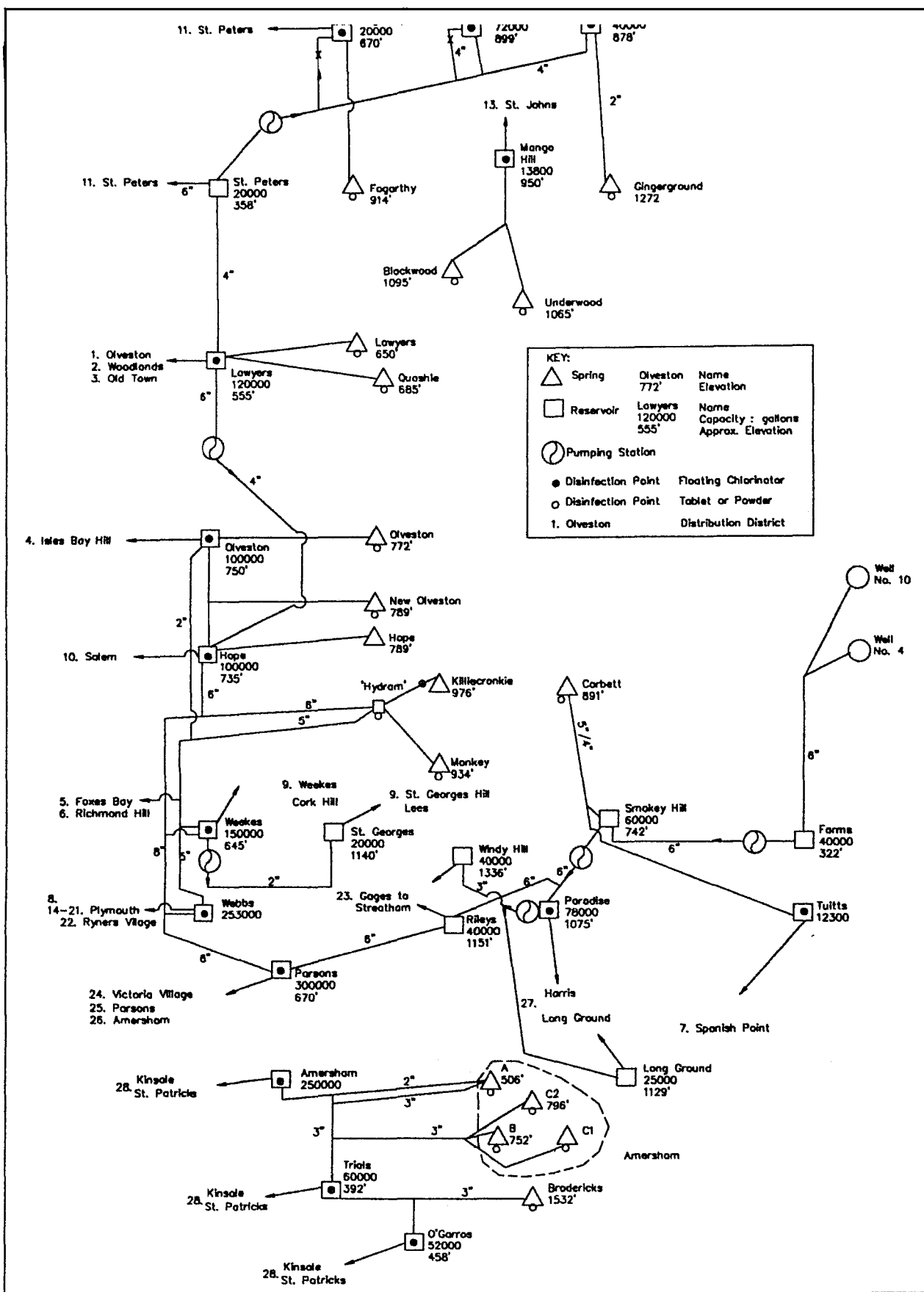
During this first visit, an inspection of the intake installations and storage facilities at Hope, Lawyers and Olveston was made. In addition, basic information identifying the various spring and well sources, storage facilities, pumping stations and supply mains was obtained in diagrammatic form. Figures 3, 4 and 5 following indicate this data

A visit was made to the Montserrat Volcano Observatory where the scientists briefly outlined the history of recent activities and indicated their monitoring and basis of warning systems in relation to the information collected. A Risk Map of the island was provided and is included as Figure 6

The Contractor outlined the purpose of his visit to Montserrat and one of the scientists promised to provide a report which was under preparation in relation to various risks and would incorporate comment related to water supply

The report from the Volcano Observatory scientists was subsequently received along with other relevant information on water supply studies and reports as they became available, the last portion of which arrived on July 10th 1997 along with the July 4th revised risk map included as Figure 7

A visit was made to the Emergency Operations Centre where information on the operations was received along with "An Official's Guide to Evacuation Procedures in a Volcanic Emergency"



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