Water Utility Master Plan

DRAFT REPORT

08/22/03

Prepared for:

Naval Support Activity
La Maddalena, Italy

Excluding the Island of Santo Stefano

PROCUREMENT SENSITIVE

Prepared by:

Naval Facilities Engineering Command
Atlantic Division Norfolk, VA
EFA Mediterranean Naples, Italy

Table of Contents

Page

Executive Summary

1.0 Introduction
- 1.1 Background
- 1.2 Purpose

2.0 Water System Description
- 2.1 NSA La Maddalena
  - 2.1.1 Trinita Housing Complex
    - 2.1.1.1 Site Description
    - 2.1.1.2 Supply
    - 2.1.1.3 Demand
    - 2.1.1.4 Storage
    - 2.1.1.5 Treatment
    - 2.1.1.6 Distribution
  - 2.1.2 Paradiso Housing Complex
    - 2.1.2.1 Site Description
    - 2.1.2.2 Supply
    - 2.1.2.3 Demand
    - 2.1.2.4 Storage
    - 2.1.2.5 Treatment
    - 2.1.2.6 Distribution
  - 2.1.3 Support Office Compound (Mordini)
    - 2.1.3.1 Site Description
    - 2.1.3.2 Supply
    - 2.1.3.3 Demand
    - 2.1.3.4 Storage
    - 2.1.3.5 Treatment
    - 2.1.3.6 Distribution
  - 2.1.4 Minor Facilities
    - 2.1.4.1 Site Description
    - 2.1.4.2 Demand
    - 2.1.4.3 Storage
    - 2.1.4.4 Treatment
    - 2.1.4.5 Distribution
- 2.2 Water Supply
  - 2.2.1 Municipal
  - 2.2.2 Trucked Water
  - 2.2.3 Bottled Water

3.0 Water Quantity
- 3.1 Supply

PROCUREMENT SENSITIVE

3.1.1 Current Condition
3.1.2 Future Condition (*including City projects and proposals*)
3.2 Demand
3.2.1 Current Condition
3.2.2 Future Condition
3.3 Storage
3.2.1 Current Condition
3.2.2 Future Condition

4.0 Water Quality
4.1 Current Condition
4.2 Future Condition

5.0 Proposed Solutions
5.1 Historic Proposals
5.2 Current Proposal

6.0 Current Political Climate
6.1 Party In Control
6.2 Influential Players

7.0 Recommendations
7.1 Supply
7.2 Demand
7.3 Storage

Appendices
A Utility Mapping
B Summary of Past Studies
C EFAMED Trip Reports
D Economic Analysis (*of recommended alternatives*)
E NSALM Water Rumors
F Utility Service Contracts

PROCUREMENT SENSITIVE

Executive Summary

Background and Purpose

Due to regional droughts, high seasonal demands, and the poor condition of the City of La Maddalena's infrastructure, NSA La Maddalena (NSALM) has experienced frequent and regular water outages since the late 1980's. During these outages, water is purchased by the Navy and trucked by an Italian contractor to various Navy water storage facilities with a majority of the water delivered to the Trinita and Paradiso Housing Complexes.

Over the past several years, concerns have been raised that the Navy is spending an excessive amount of money on trucked and bottled water in response to the unreliability of the City water supply. Acquiring a reliable and adequate supply of water is critical to ensuring that NSALM can continue to fulfill it's military mission, while at the same time, protect the health and safety of those working and living on base.

Recently, the City of La Maddalena developed a strategy for resolving the water shortage problem that affects the whole island. Part of the City's strategy includes a financial contribution by the Navy that would be used to expand the City's water treatment plant. Since the City's proposal appears promising, the NSALM Public Works Department (PWD), EFAMED, and the Utilities Engineering Branch of LANTDIV decided that a comprehensive evaluation of existing deficiencies and possible solutions was needed in order to assist NSALM in pursing the most cost effective and technically sound solution.

PROCUREMENT SENSITIVE

Water System Description

Water is supplied to the Island of La Maddalena by three transmission mains. Two of these mains carry filtered water and one carries raw water. Filtered water delivered to the island enters storage and then is immediately distributed to customers by the City's distribution system. Raw water is delivered to the Puzzoni Reservoir, where it mixes with collected rainwater, and then is drawn in the City's water treatment plant for filtration before being delivered to customers on the island.

The City has a legal, local monopoly that prevents any competition for the distribution of water on the island.

Water distributed to customers on the Island of La Maddalena is, although treated, considered non-potable because of chronically positive coliform counts during sampling. This has been the case since 1994. The City Mayor periodically issues ordinances that either ban or allow the consumption of City water. Both the general public and NSALM use bottled water for consumption.

All NSALM facilities and infrastructure on the Island of La Maddalena are occupied under lease agreements. A majority of NSALM facilities are located in three major compounds: Trinita Housing Complex, Paradiso Housing Complex, and the Support Office Compound (Mordini).

Both the Trinita and Paradiso Housing Complexes have onsite, supplemental water treatment and storage facilities. The water treatment facility at Trinita Housing Complex is currently being bypassed. Mordini has no such treatment.

Water Quantity

Total filtered water available to residents of the island is 14,700 MT/day (3,870,000 gpd) when the City's water treatment plant is operational. Note, however, that not all this water can reach customers because of leaks in the City's distribution system. The City has estimated their current average daily demand at 5,500 MT/day (1,453,000 gpd) and peak demand at 20,000 MT/day (5,283,000 gpd) during summer months.

The Navy's historic average day demand for all major facilities on the island is 277 MT/day (73,200 gpd). This demand is currently satisfied by supplying a combination of City, trucked, and bottled water to NSALM. Although this number was developed using the best data available, it is believed to be lower than the actual current usage.

Based on standards published in MIL-HDBK 1005/7A the average daily demand for all NSALM facilities on La Maddalena is estimated to be 379 MT/day (100,000 gpd). Although this estimate appears to be 37% higher than the recorded average **it must be noted that the historic average daily demand is most likely a significantly low number** due to the lack of strictly kept meter data and the fact that at certain times, insufficient water was available to NSALM.

PROCUREMENT SENSITIVE

Water Quality

The quality of water delivered to NSALM has been a concern since 1994. In 1994, the chronic occurrence of positive coliform counts during sampling of the City water distribution system led the Mayor of La Maddalena to declare City water non-potable. This declaration was adopted by NSALM at the same time for its own facilities. Since 1994 the City has intermittently removed and reinstated the ban on drinking City water. Over the same period, NSALM has continually considered the water non-potable.

Finished water from both ESAF and City water treatment plants appears to meet most of the FGS, Italy standards. Noncompliance seems to be a result of inadequate operation and maintenance of the municipal water transmission and distribution system and not a result of inadequate treatment. These conditions have not changed since 1994. One area of significant concern is that although the City water treatment plant does provide residual disinfection, and reportedly monitors residual chlorine within the distribution system, water supplied to the island by ESAF does not contain residual disinfection and therefore almost guarantees that water delivered to NSALM will be substandard.

The future condition of water quality on the Island of La Maddalena is uncertain. Improvement depends upon the successful completion of many proposed public works projects by the City. The water line replacement project currently underway and the proposed water storage tank improvements will go a long way toward improving water

quality on the island. If the City were able to expand and upgrade the existing water treatment plant, including improved control over disinfection and removal of organic precursor material, additional improvement in water quality would be expected.

Because of uncertainty in the schedule of City improvements and uncertainty in their exact effect on water quality, NSALM is expected to require some continued level of supplemental treatment at Trinita, Paradiso, and Mordini for the foreseeable future. At a minimum, the treatment system at Trinita would need to be restarted and some type of minimal treatment installed at Mordini.

City Proposal

The Navy has learned that the City received €8.5M from the Italian Government to make improvements to their water system.

A portion of these funds will be used to rehabilitate a section of the submerged raw water line between Northern Sardinia and the island of Caprera for €3.5M. This project has a scheduled duration of 24 months with contract award expected in December 2003. Note that this project does not rehabilitate the section on raw water line between Caprera and La Maddalena, but the City reports that this section of pipe is in acceptable condition. Another portion of the funds are already obligated for various distribution system improvements including street-by-street metering, mapping, and leak detection. Street-by-street pipe replacement is currently underway and an effort is being made to replace the majority of cast iron City piping with PVC.

PROCUREMENT SENSITIVE

Funding was not included for expansion of the City water treatment plant. In Oct 2002, the City of La Maddalena proposed that the US Navy participate in sharing the costs for this portion of the work. The City proposed an upfront Navy contribution of €2.5 M in the form of a connection charge. This upfront charge would be reimbursed to the Navy in the form of a 50% water rate rebate over a time period sufficient for refunding the entire €2.5M. The new plant would have the capability of producing filtered water at a rate of 20,736 MT/day (5,478,000 gpd). Total filtered water available to residents of the island would then be 30,236 MT/day (7,987,500 gpd).

Major Recommendations

Assuming the City completes its scheduled improvement projects, see Section 3 and 5.2, water quantity and quality on the island should significantly improve during non-summer months. To ensure this improvement in quantity and quality is able to extend into the high-demand summer months, modernization and expansion of the City water treatment plant is necessary. The economic analysis in Appendix D indicates that an investment by the U.S. Navy that would result in the elimination of the need to truck water during the summer months has an acceptable payback (less than 10 years), is cheaper over a 25-year period than any other alternative or the status quo, and would result in several positive quality-of-life improvements for personnel stationed at NSALM.

At the time of inspection, most water storage tanks were inadequately protected from environmental contaminants. Several service hatches were left open and only one was

locked. Open hatches increase the chance of bacteriological contamination from animal feces or the decomposition of their bodies should they die while inside the tank. Open or unlocked hatches also increase the risk of intentional contamination by vandals. Locking, hinged hatches should be installed on all tanks to prevent unauthorized access to NSALM's water supply. Air and overflow vents should all be screened as well.

While onsite, it was noted that water treatment facilities for Trinita Housing Complex and Trinita Tank were being bypassed. It was also reported that NSALM does not maintain residual disinfection in the Trinita distribution system because the water has been declared non-potable. Simply because the water is no longer being ingested does not mean that their is zero health risk to being exposed to the water, especially since sampling has indicated a persistent presence of coliform bacteria. In distribution systems that serve family housing, like Trinita, it would be prudent to continue disinfecting the water supply. Disinfection would also reduce the accumulation of biological growth in the distribution system should the system later be declared potable.

PROCUREMENT SENSITIVE

1.0 Introduction

1.1 Background

Naval Support Activity, La Maddalena (NSALM) is located on the island of La Maddalena, in the Tyrrhenian Sea, just off the northern coast of Sardinia. A majority of the water supplied to the island originates from the Liscia Reservoir, located in northern Sardinia. This raw water is distributed by Consorzio di Bonifica della Gallura (CBG) and treated by the Ente Sardo Acquedotti e Fognature (ESAF), which is the Sardinian Water and Sewage Authority.

ESAF pumps potable water to the island through two 400 mm (16-inch) transmission mains. The water is then distributed to the local community, including the U.S. Navy (Navy), by the City of La Maddalena (City). The City has a legal, local monopoly over the distribution of water on the island.

Two other sources of water are also available to the island; a 300 mm (12-inch) raw water line from Sardinia and the Puzzoni Reservoir, which is located on the island at Ricciolina. The raw water line discharges into the reservoir. The reservoir then feeds a City owned water treatment plant that supplements the ESAF water supply to the island.

PROCUREMENT SENSITIVE

The quality of water supplied by the City does not meet U.S. Final Governing Standards. In fact, because of operation and maintenance problems within the City's distribution system, water quality often does not even meet Italian standards. To prevent health risks, NSALM provides bottled drinking water to all Navy personnel and their dependants.

Due to regional droughts, high seasonal demands, and the poor condition of the City's infrastructure, NSALM has experienced frequent and regular water outages since the late 1980's. During these outages, water is purchased by the Navy and trucked by an Italian contractor to various Navy water storage facilities with a majority of the water delivered to the Trinita and Paradiso Housing Complexes.

In 2002, the City began operating their water treatment plant (WTP) after many years of idleness. As a result, very few water shortages occurred during the summer months of 2002. After the summer months had passed, the WTP was shutdown to allow maintenance of the Puzzoni Reservoir. The treatment plant was back in operation during the summer of 2003 and maintenance continues on the reservoir.

Because of how the City's storage and distribution system is designed, water outages occur more frequently at higher elevations, such as Trinita Housing Complex.

Over the past several years, concerns have been raised that the Navy is spending an excessive amount of money on trucked and bottled water in response to the unreliability of the City water supply. Acquiring a reliable and adequate supply of water is critical to

ensuring that NSALM can continue to fulfill it's military mission, while at the same time, protect the health and safety of those working and living on base.

Recently, the City of La Maddalena developed a strategy for resolving the water shortage problem that affects the whole island. Part of the City's strategy includes a financial contribution by the Navy that would be used to expand the City's water treatment plant. Since the City's proposal appears promising, the NSALM Public Works Department (PWD), EFAMED, and the Utilities Engineering Branch of LANTDIV decided that a comprehensive evaluation of existing deficiencies and possible solutions was needed in order to assist NSALM in pursing the most cost effective and technically sound solution.

Please note that throughout this report costs are presented in U.S. Dollars. While station funding is managed in U.S. Dollars, bills are paid, and municipal rates are set, in Euros, and before 2001, in Italian Lire. Subtle annual differences in rates are often a result of changes in the official exchange rate each fiscal year.

1.2 Purpose

The purpose of this evaluation is to:

- Document and analyze the current and future condition of water supply to and distribution within NSALM
- Document and analyze the historic, current, and future water demand at NSALM
- Document and analyze the historic and current proposed solutions to the water outages at NSALM
- Recommend the most cost effective and technically sound solution to the water outages at NSALM

PROCUREMENT SENSITIVE

2.0 Water System Description

2.1 Water Supply

2.1.1 Municipal

A majority of the water supplied to the island originates from the Liscia Reservoir, located in northern Sardinia. Raw water on Sardinia is distributed by CBG. CBG distributes a portion of the raw water to agricultural users and the rest is sold to ESAF. ESAF treats this raw water and then distributes it to various communities in Sardinia, as well as, other water suppliers, including the City of La Maddalena.

Filtered water from ESAF is pumped to the Island of La Maddalena through two 400 mm (16-inch) transmission mains. One main originates in Palau and crosses Santo Stefano while the other originates in Cannigione and crosses Caprera. Once on the Island of La Maddalena, the City distributes the water to the local community, including NSALM. The City has a legal, local monopoly that prevents any competition for the distribution of water on the island.

Two other sources of water are also available to the island. A 300 mm (12-inch) raw water line (composed of 300, 225 and 250 mm legs) that originates in Cannigione and crosses Caprera and the Puzzoni Reservoir that is located on the island at Ricciolina. The raw water line discharges into the reservoir. The reservoir then feeds a City owned water treatment plant that supplements the ESAF water supply to the island. See Appendix A, Utility Mapping.

PROCUREMENT SENSITIVE

The City owns and maintains the entire distribution system on the island and owns all the supply mains from mainland Sardinia. Use of the supply mains is given to ESAF in exchange for treated water and to CBG in exchange for raw water.

The City water treatment plant is currently sized to produce 5,184 MT/day (1,369,468 gpd). Treatment is accomplished by rapid sand filtration followed by dual media pressure filtration and chlorination. The City water treatment plant draws water from the Puzzoni Reservoir that has a capacity of 900,000 MT (237,755,000 gal).

The City water distribution consists of approximately 160 km (100 miles) of distribution piping. The original distribution system was installed in the 1940s and is badly deteriorated although improvement projects are currently underway to upgrade the old pipe with new PVC. Distribution losses have been reportedly as high as 40%.

Water distributed to customers on the Island of La Maddalena is, although treated, considered non-potable because of chronically positive coliform counts during sampling. This has been the case since 1994. The City Mayor periodically issues ordinances that either ban or allow the consumption of City water. Both the general public and NSALM use bottled water for consumption.

In 1998 the U.S. Navy and the City signed Master Agreement N13199-98-H-1316. This document sets the general conditions under which the City will deliver water service to the NSALM. Currently, the Master Agreement only includes service specifications for the Santo Stefano connection. It was expected that all existing service contracts would be transferred to the Master Agreement, but this has yet to happen because the City Council has not approved a change to the local Water Service Regulation.

2.1.2 Trucked Water

During water outages, water is purchased by the Navy and then trucked by an Italian contractor to the storage tanks at Trinita and Paradiso Housing. Because of positive coliform counts, trucked water is also considered non-potable. On average, trucked water is delivered within 24 hours of being ordered. In the summer there is a standing order to deliver one truck of water per day to the Trinita tank.

Trucked water is delivered under a contract with an Italian company, Esseti, located in Olbia, Sardinia. The contract is numbered N68171-99-D-4072 and was signed in FY1999 but is extended by 1-year options until May 31, 2004. The trucked water price is fixed at the beginning of each contract renewal period.

2.1.3 Bottled Water

Bottled water is supplied to all those working and living on base. Bottled water is purchased through two separate Supply contracts. One contract with Norda (N68171-99-D-4067) supplies 1.5 liter bottles of mineral water while another contract, signed on 6/27/2002, with Culligan supplies 19 liter bottles of purified water.

PROCUREMENT SENSITIVE

2.2 NSA La Maddalena

2.2.1 Trinita Housing Complex

2.2.1.1 Site Description

Trinita Housing Complex (Trinita) is located on the northwest side of the island and contains 134 family housing units along with a DoDDS school. Occupancy rates at Trinita are typically 97.5 percent and on average each housing unit contains 2.5 people.

The lease contracts for Trinita family housing are: N62470-81-RP-00156, N62470-82-RP-00156, and N62470-91-RP-00098, all of which expire in 2013 except N62470-91-RP-00098, which expires in late 2003. All three contracts are in the process of being consolidated into one contract. The lease contract for DoDDS School is N33191-99-RP-00026 and expires in 2012.

Trinita family housing measures 23,200 m^2 in total area and the school measures 2,334 m^2, including 200 m^2 located into prefabricated containers.

2.2.1.2 Supply

The utility service contract under which Trinita receives water from the City is numbered N62470-84-C-7010. This contract requires water service to be purchased at a minimum annual quantity of 34,840 MT (9,203,754 gal). NSALM pays for at least this volume of water each year regardless of lower actual delivery or lower actual consumption.

According to NSALM PWD, during FY02 Trinita received City water service 84% of the year's days.

2.2.1.3 Demand

The average daily water demand at Trinita is 204 MT/day (54,000 gpd). Currently this demand is satisfied by a combination of City, trucked, and bottled water sources. For details about how this number was derived, see Section 3.2.1.

2.2.1.4 Storage

Water storage at Trinita consists of a single 400 MT (100,000 gal) concrete ground level storage tank. This tank is divided into two equally sized compartments by an interior wall. The two compartments are connected by a treatment system and bypass line that are located in a separate room adjacent to the southwest face of the tank. See Figure 2.2.1.5-1.

PROCUREMENT SENSITIVE

City and trucked water flow into Compartment 1. Compartment 1 is furnished with a float-actuated control valve that prevents overfilling by the City connection and a high level alarm that prevents overfilling by trucked water. A low-level float switch inside Compartment 2 activates the treatment system, which draws water from Compartment 1, treats this water, and then fills Compartment 2. A high-level float switch in Compartment 2 deactivates the treatment system. Water flows from Compartment 2 into the Trinita distribution system by gravity.

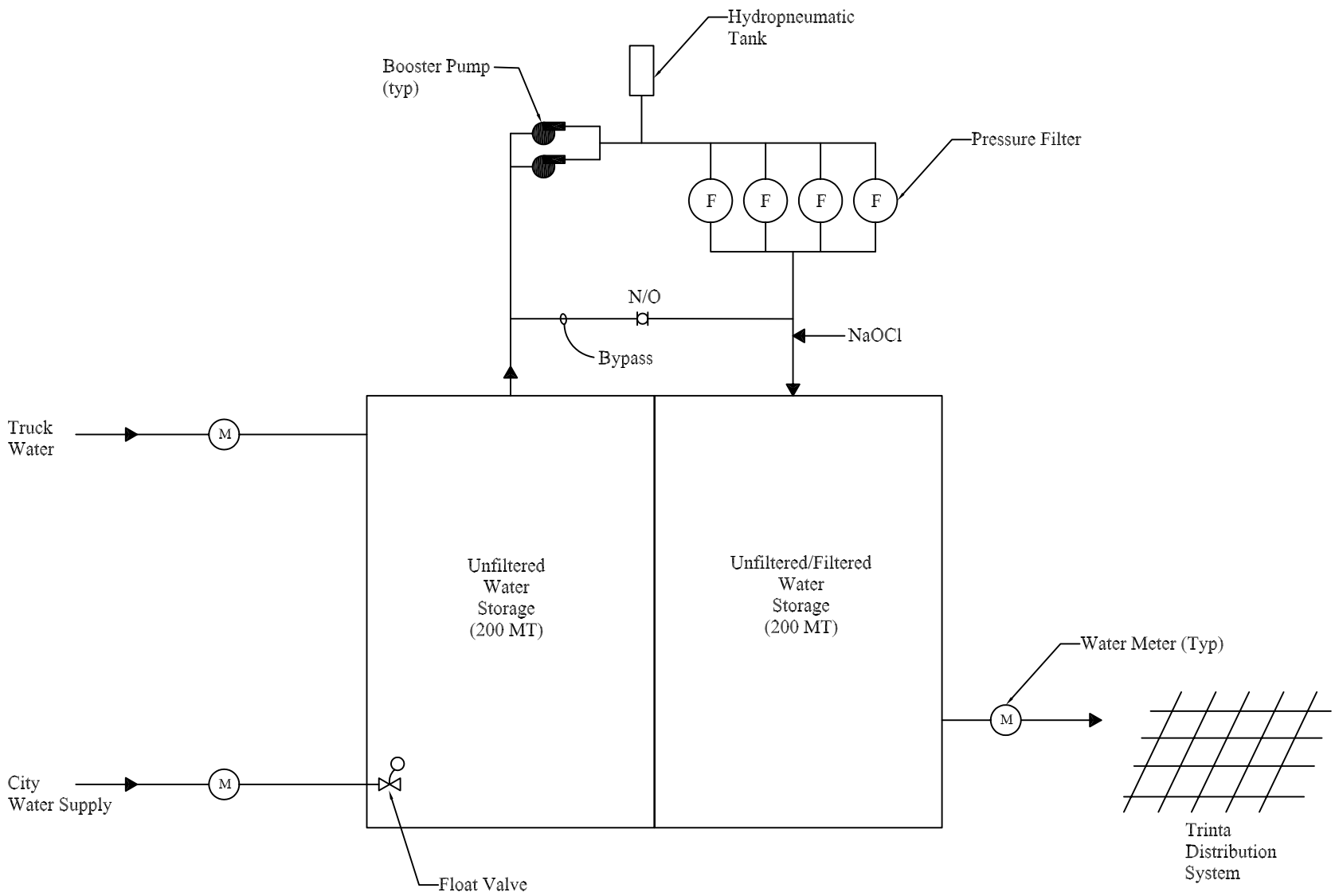
All three supply and discharge lines are metered.

Note: The bulk water supply line and meter are not used for trucked water delivery because the delivery company claims it takes an excessive amount of time to complete delivery using this method. Instead, two plastic hoses are connected to the truck and dropped through an access hatch on the roof of the tank.

2.2.1.5 Treatment

The treatment system for Trinita consists of two duplex centrifugal pumps, one hydropneumatic tank, four dual media pressure filters, and chlorine feed system. See Figure 2.2.1.5-1.

Note: the treatment system described above is currently being bypassed. Both Family Housing and NSALM PWD report that in 1999 a decision was made by the PWO to discontinue use of the treatment system because he believed the volume and cost of water required to backwash the filters was not worth the benefit of increasing the water quality to a distribution system that was labeled non-potable. The chlorine feed system is not currently operating either.



Schematic adapted from drawing produced by AH Environmental Consultants for Water System Evaluation 2001.	**Trinta Water System Schematic** NSA La Maddalena, Italy	Figure 2.2.1.5-1

2.2.1.6 Distribution

The distribution system at Trinita consists of approximately 4.0 km (2.5 miles) of distribution piping ranging 20 to 75 mm (0.8 to 3 in) in diameter. The original distribution system was installed in the mid 1970s, but a majority of it was replaced with PVC by 2002. The system is a combined potable and fire protection system with 18 fire hydrants. Distribution system pressure averages approximately 414 kPa (60 psi). See Appendix A Utility Mapping.

2.2.2 Paradiso Housing Complex

2.2.2.1 Site Description

Paradiso Housing Complex (Paradiso) is located on the southwestern edge of the island and contains a 50 room BEQ, Vet Clinic, Pool, "Building 300", 21 apartment-style family housing units, Chapel, a Child Development Center (CDC), Gym, and MWR Warehouse. Occupancy rates at Paradiso are typically near 100 percent and on average each housing unit contains 3 people and each BEQ room contains 2 people.

The lease contract for Paradiso is: N62470-81-RP-00113 and expires in 2006.

PROCUREMENT SENSITIVE

Paradiso facilities measure 12,290 m^2 in total area, but only 2,000 m^2 is dedicated for Family Housing.

2.2.2.2 Supply

The utility service contract under which Paradiso receives water from the City is Ser. A114-82, signed on 7/30/82. This contract requires water service to be purchased at a minimum annual quantity of 300 MT (79,000 gal) to Building 300 and 12,100 MT (3,200,000 gal) to the rest of the complex. NSALM pays for at least this volume of water each year regardless of lower actual delivery or lower actual consumption.

According to NSALM PWD, during FY02 Paradiso received City water service 94% of the year's days.

2.2.2.3 Demand

The average daily water demand at Paradiso is 68 MT/day (18,000 gpd). Currently this demand is satisfied by a combination of City, trucked, and bottled water sources. For details about how this number was derived, see Section 3.2.1.

2.2.2.4 Storage

There are two separate water systems serving Paradiso each with its own connection to City supply. One system serves the BEQ, Vet Clinic, Pool, "Building 300", and 21 apartment-style family housing units. A second system serves the Chapel, Child Development Center (CDC), Gym, and MWR warehouse.

Paradiso BEQ System

Water storage for the Paradiso BEQ System consists of a nine interconnected fiberglass tanks each capable of holding 10 MT (2,600 gal) each. Total storage at Paradiso BEQ System is therefore 90 MT (24,000 gal). The storage tanks and an accompanying water treatment system are all located in the basement of the BEQ. See Figure 2.2.2.5-1.

City water flows directly into the treatment system and then fills the nine storage tanks. Four pumps draw treated water from the storage tanks and discharge that water into the distribution system. Two hydropneumatic tanks with a total capacity of 5,500 liters (1,450 gal) are located in between the pumps and distribution system help to regulate water pressure in the distribution system.

Trucked water is delivered directly to the nine storage tanks, bypassing treatment. Proper connections do not exist to allow trucked water to flow through the treatment system before storage. Tank 1 contains a high-level alarm that prevents overfilling of the nine storage tanks.

Paradiso Chapel System
Water storage for the Paradiso Chapel System consists of one horizontal fiberglass storage tank with an estimated capacity of 9,500 liters (2,500 gal). The storage tank and an accompanying water treatment system are all located in the basement of the Chapel.

PROCUREMENT SENSITIVE

City water flows directly into the treatment system and then fills the storage tank. Two pumps draw treated water from the storage tank and discharge that water into the Chapel plumbing. One hydropneumatic tank is located in between the pumps and distribution system help to regulate water pressure in the plumbing system.

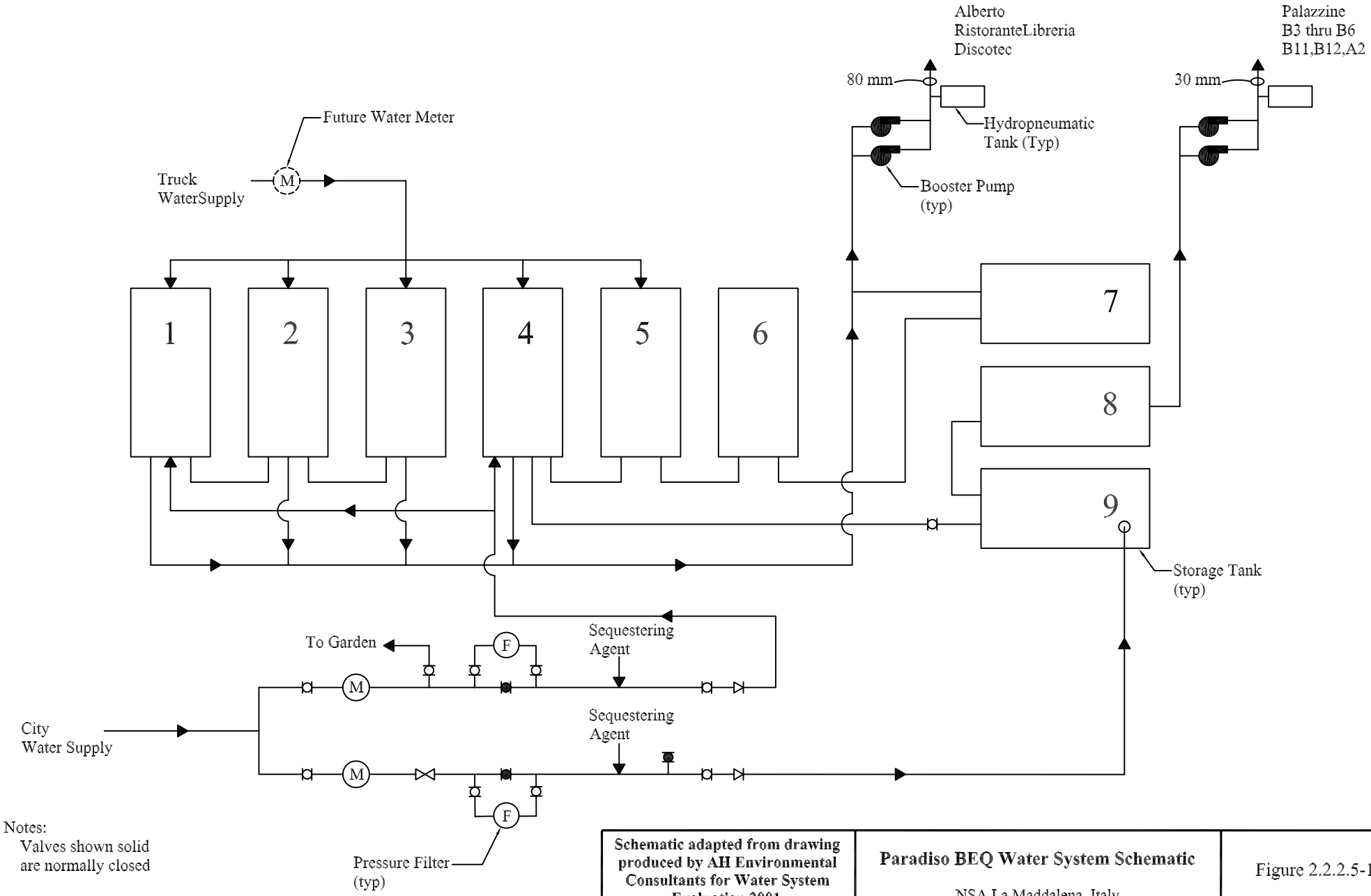
Trucked water is delivered directly to the storage tank, bypassing treatment. Proper connections do not exist to allow trucked water to flow through the treatment system before storage.

Both supply lines are metered.

2.2.2.5 Treatment

Paradiso BEQ System
The treatment system for the Paradiso BEQ/CDC consists of two dual media pressure filters and polyphosphate addition. The treatment system is capable of being bypassed in order to allow City water directly into the distribution system. See Figure 2.2.2.5-1.

Paradiso Chapel System
The treatment system for the Paradiso Chapel consists of a single activated carbon filter and polyphosphate addition. The treatment system is capable of being bypassed in order to allow City water directly into the storage tanks.



Notes:
Valves shown solid
are normally closed

Schematic adapted from drawing produced by AH Environmental Consultants for Water System Evaluation 2001.

Paradiso BEQ Water System Schematic

NSA La Maddalena, Italy

Figure 2.2.2.5-1

2.2.2.6 Distribution

The distribution system at Paradiso consists of approximately 0.8 km (0.5 miles) of distribution piping ranging 20 to 80 mm (0.8 to 4 in) in diameter. The original distribution system was installed in the mid 1970s; a majority of the pipe is still cast iron. The system is a separate potable and fire protection system. Potable water distribution system pressures average 414 kPa (60 psi). Fire protection distribution system utilizes four fire hydrants that draw water from the potable water distribution system. See Appendix A Utility Mapping.

2.2.3 Support Office Compound (Mordini)

2.2.3.1 Site Description

Support Office Compound (Mordini) is located on the south side of the island and contains several small office and personnel support facilities. During an average day, as many as 250 persons may work onsite.

The compound is leased under three contracts with different landlords: N33191-03-RP-00112, N33191-03-RP-00113 and N62470-88-RP-00090. All three contracts expire in 2013.

PROCUREMENT SENSITIVE

Mordini facilities measure 3,870 m^2 in total area.

2.2.3.2 Supply

The water is supplied by the City under a contract signed on the City's standard form on 6/13/73 providing the minimum amount of 2,100 MT/year. The service is supposedly provided under the Master Agreement with the City, even though the old contract has not been converted into one of its enclosures yet.

The utility service contract under which Mordini receives water from the City was signed on the City's standard for 6/13/73. This contract requires water service to be purchased at a minimum annual quantity of 2,100 MT (555,000 gal). NSALM pays for at least this volume of water each year regardless of lower actual delivery or lower actual consumption.

2.2.3.3 Demand

The average daily water demand at Mordini is 19 MT/day (5,000 gpd). Currently this demand is satisfied by a combination of City and bottled water sources. For details about how this number was derived, see Section 3.2.1.

2.2.3.4 Storage

Water storage at Mordini consists of one small fiberglass aboveground storage tank, two plastic aboveground storage tanks, and one underground potable water cistern. Total storage at Mordini is estimated at 150 MT (40,000 gal).

Each of the three City connections serving the compound also employ two pumps and a single small hydropneumatic tank to help regulate water pressure in the distribution system. The underground cistern also has two pumps that discharge water into the distribution system during periods of high demand.

2.2.3.5 Treatment

There is no treatment system for Mordini.

2.2.3.6 Distribution

The Mordini water distribution system is supplied by three separate connections to the City. The distribution system has a total of, approximately, 0.64 km (0.4 miles) of distribution piping ranging 20 to 80 mm (0.8 to 4 in) in diameter. The original distribution system was installed in the mid 1970's. A majority of the belowground pipe remains cast iron, but several new aboveground PVC lines have been installed. The system is a combined potable and fire protection system. Potable water distribution system pressures average 345 kPa (50 psi). Fire protection utilizes two hydrants.

The interior diameter of cast iron distribution piping in Mordini has been greatly reduced due to tuberculation (i.e. corrosion) of the interior iron surface of the pipe. This condition will certainly reduce the available pressure and flow to end users on the Compound.

PROCUREMENT SENSITIVE

2.2.4 Minor Facilities

2.2.4.1 Site Description

In addition to the previously mentioned primary compounds, NSALM has minor facilities at x other locations around the island. The following is a list of the minor facilities:

Site	Area (m^2)	Lease Number	Lease Expiration
Medical - Clinic	826	33191-96-RP-00034	May-06
Carbini - 6 FHUs	540	33191-00-RP-00007	Jan-10
MVRO / NFCU	65	33191-00-RP-00006	Dec-04
NEX/Supply Warehouse	NA	33191-03-RP-00006	Jul-11
NEX Warehouse	988	33191-00-RP-00022	Jun-10
Villa Bargone	278	62470-94-RP-00008	Sep-07
NUGHES - 6 FHUs	600	33191-98-RP-00019	Jun-08
Legal/NIS/ Craftech	345	62470-93-RP-00062	Aug-03
BLLI Warehouse	NA	33191-03-RP-00018	Apr-04
Housing Office	280	62470-93-RP-00054	Jan-04
Villa Gaspa	300	33191-00-RP-00019	Dec-04
POV Moneta	450	33191-01-RP-00040	Sep-09
Dental Clinic	184	33191-98-RP-00023	Jan-06

Security Warehouse	NA	33191-03-RP-00005	Nov-06
Maristella - 2 FHUs	180	33191-00-RP-00024	Jul-05
CAAC Office	120	33191-01-RP-00025	May-08
FFSC/MWR Offices	NA	33191-01-RP-00027	Jun-09
Antenna Repeater	450	33191-00-RP-00005	Feb-10

2.2.4.2 Demand

The total average daily water demand for minor facilities is unknown because historic data is not available for a majority of the facilities. This is not a major concern because the type and size of the facilities would indicate fairly low water consumption, especially when compared to consumption for the rest of NSALM. It is known however that the current demand is satisfied by a combination of City and bottled water sources.

2.2.4.3 Supply

Nine of the above facilities are supplied under water supply contracts in name of the U.S. Navy, supposedly included under the Master Agreement with the City, even though the process to convert the old letter contracts into enclosures could not be completed so far. The remaining ones are supplied through contracts in name of the landlords, as the current City's policy does not allow contract transfers. The pending Service Regulation is expected to remove this limitation.

PROCUREMENT SENSITIVE

2.2.4.4 Storage

Limited storage is provided at these minor facilities. In most cases, a small above ground plastic tank is located in between the City supply and the connection to the building. One exception is the concrete aboveground storage tank located at the NEX. This tank has an estimated capacity of 25 MT (6,700 gal) and is emptied during high demand periods through two pumps.

2.2.4.5 Treatment

No significant treatment is provided at these minor facilities. A few facilities have installed small cartridge-style carbon filters.

2.2.4.6 Distribution

No significant distribution piping exists at these minor facilities.

3.0 Water Quantity

3.1 Supply

3.1.1 Existing Condition

Two transmission mains with a combined capacity 9,500 MT/day (2,500,000 gpd) deliver filtered water to the island from ESAF facilities on Sardinia. Note: Italian law, not physical parameters, limits the rated capacity of these two lines to 9,500 MT/day. The City also intermittently operates a 5,200 MT/day (1,370,000 gpd) treatment plant that draws water from the Puzzoni Reservoir. The Puzzoni Reservoir is filled by a 1,300 MT/day (346,000 gpd) raw water line that originates in Cannigione and crosses Caprera.

Total filtered water available to residents of the island is 14,700 MT/day (3,870,000 gpd). Note, however, that not all this water can reach customers because of leaks in the City's distribution system.

3.1.2 Future Condition (*including City projects and proposals*)

The Navy has learned that the City received € 8.5M from the Italian Government to make improvements to their water system.

PROCUREMENT SENSITIVE

A portion of these funds will be used to rehabilitate a section of the raw water line between Northern Sardinia and the island of Caprera for €3.5M. This project has a scheduled duration of 24 months with contract award expected in December 2003. Note that this project does not rehabilitate the section on raw water line between Caprera and La Maddalena, but the City reports that this section of pipe is in acceptable condition. Another portion of the funds are already obligated for various distribution system improvements including street-by-street metering, mapping, and leak detection. Street-by-street pipe replacement is currently underway and an effort is being made to replace the majority of cast iron City piping with PVC.

Funding was not included for expansion of the City water treatment plant. In Oct 2002, the City of La Maddalena proposed that the US Navy participate in sharing the costs for this portion of the work. The City proposed an upfront Navy contribution of € 2.5 M in the form of a connection charge. This upfront charge would be reimbursed to the Navy in the form of a 50% water rate rebate over a time period sufficient for refunding the entire €2.5M. The new plant would have the capability of producing filtered water at a rate of 20,736 MT/day (5,478,000 gpd).

Total filtered water available to residents of the island would then be 30,236 MT/day (7,987,500 gpd).

3.2 Demand

3.2.1 Existing Condition

The City has estimated their current average daily demand at 5,500 MT/day (1,453,000 gpd) and peak demand at 20,000 MT/day (5,283,000 gpd) during summer months.

The Navy's historic average day demand for all major facilities on the island is 277 MT/day (73,200 gpd). This demand is currently satisfied by supplying a combination of City, trucked, and bottled water to NSALM. See Figure 3.2.1-1 and Figure 3.2.1-2 for the derivation of this demand and values for individual compounds.

Based on standards published in MIL-HDBK 1005/7A the average daily demand for all NSALM facilities on La Maddalena is estimated to be 379 MT/day (100,000 gpd). Although this estimate appears to be 37% higher than the recorded average **it must be noted that the historic average daily demand is most likely a significantly low number** due to the lack of strictly kept meter data and the fact that at certain times, insufficient water was available to NSALM. See Figure 3.2.1-3 for the derivation of this estimate.

The total minimum volume of water to be purchased by NSALM through its various utility service contracts with the City is 49,340 MT/yr (13,034,247 gal/yr), which equates to 135 MT/day (35,710 gpd).

PROCUREMENT SENSITIVE

3.2.2 Future Condition

Growth in City demand cannot be quantified, however, some growth would be expected in the tourist industry with an increase in available water during the summer months.

NSALM is expected to experience significant growth in the next five years. Family Housing plans to add 78 additional family units within 4 years. Including these new units, and an increase in usage due to relaxation of water restrictions, NSALM would be expected to increase its average daily demand to no more than 575 MT/day (152,000 gpd). Excluding the 78 additional housing units, average daily demand would be expected to increase to no more than 424 MT/day (112,000 gpd). Although this appears to be a 53% increase in usage, **it must be noted that the historic average daily demand is most likely a significantly low number** due to the lack of strictly kept meter data and the fact that at certain times, insufficient water was available to NSALM. When compared to the estimated current demand in Section 3.2.1, the differences are much smaller. See Figure 3.2.1-4 and 3.2.1-5 for the derivation of these estimates.

3.3 Storage

3.3.1 Existing Condition

The City has estimated their current total available filtered water storage at 11,000 MT (2,900,000 gal).

Total water storage available at NSALM is 650 MT (172,000 gal). See below for a summary of storage at NSALM facilities.

Demand Summary by Site
4-YR Historic Averages

		CITY WATER	TRUCKED	BOTTLED	CITY WATER	TRUCKED	BOTTLED	TOTAL			
		MT/YR	MT/YR	MT/YR	MT/YR	MT/YR	MT/YR	MT/YR	MT/DAY	GPD	% of Total
Trinita	TRINITA	35,963	23,137	370	35,963	23,137	370	59,469	163	43,041	59%
Paradiso	BEQ	12,135	7,807	125	20,964	13,487	215	34,667	95	25,090	34%
	CHAPEL	1,714	1,103	18							
	APTS	7,115	4,577	73							
Mordini	NSA	6,817	0	70	6,817	0	70	6,887	19	4,984	7%
TOTAL		63,743	36,624	655	63,743	36,624	655	101,022	277	73,116	100%

Figure 3.2.1-1

Demand Detail by Site
4 Year History

		Major Facilities														
		TRINITA			BEQ (Paradiso)			CHAPEL (Paradiso)			APTS (Paradiso)			NSA (Mordini)		
Fiscal Year	Quarter	(MT)	(USD)	($/MT)	(MT)	(USD)	($/MT)	(MT)	(USD)	($/MT)	(MT)	(USD)	($/MT)	(MT)	(USD)	($/MT)
1999	1	8,710	$3,321	$0.38	3,025	$2,115	$0.70	112	$78	$0.70	1,769	$1,556	$0.88	3,630	$2,538	$0.70
1999	2	10,207	$3,892	$0.38	3,025	$2,115	$0.70	495	$346	$0.70	1,782	$1,567	$0.88	1,522	$1,064	$0.70
1999	3	10,207	$3,892	$0.38	3,025	$2,115	$0.70	495	$346	$0.70	1,782	$1,567	$0.88	3,555	$2,485	$0.70
1999	4	10,207	$3,892	$0.38	3,025	$2,115	$0.70	495	$346	$0.70	1,782	$20,630	$11.58	3,555	$2,485	$0.70
2000	1	8,710	$3,321	$0.38	3,025	$2,115	$0.70	954	$667	$0.70	1,769	$1,556	$0.88	756	$509	$0.67
2000	2	8,710	$7,196	$0.83	3,025	$4,261	$1.41	75	$106	$1.41	1,782	$1,567	$0.88	675	$951	$1.41
2000	3	8,710	$7,196	$0.83	3,025	$4,261	$1.41	75	$106	$1.41	1,782	$1,567	$0.88	675	$1,004	$1.49
2000	4	8,710	$7,196	$0.83	3,164	$4,457	$1.41	1,056	$1,488	$1.41	1,782	$20,630	$11.58	753	$1,200	$1.59
2001	1	8,710	$8,784	$1.01	3,025	$4,261	$1.41	304	$428	$1.41	1,769	$1,556	$0.88	848	$1,195	$1.41
2001	2	8,710	$8,784	$1.01	3,025	$4,261	$1.41	575	$810	$1.41	1,782	$1,567	$0.88	1,192	$1,679	$1.41
2001	3	8,710	$8,784	$1.01	3,025	$4,261	$1.41	357	$503	$1.41	1,782	$1,567	$0.88	1,755	$2,616	$1.49
2001	4	8,710	$8,784	$1.01	3,025	$4,261	$1.41	273	$385	$1.41	1,782	$20,630	$11.58	1,505	$2,227	$1.48
2002	1	8,710	$5,480	$0.63	3,025	$3,246	$1.07	309	$331	$1.07	1,769	$1,556	$0.88	1,493	$1,602	$1.07
2002	2	8,710	$5,480	$0.63	3,025	$3,246	$1.07	374	$401	$1.07	1,782	$1,567	$0.88	1,347	$1,445	$1.07
2002	3	8,710	$5,480	$0.63	3,025	$3,246	$1.07	373	$400	$1.07	1,782	$1,567	$0.88	1,347	$1,445	$1.07
2002	4	8,710	$18,187	$2.09	3,025	$3,246	$1.07	535	$574	$1.07	1,782	$20,630	$11.58	2,658	$2,852	$1.07
Averages		8,991	$6,854	$0.77	3,025	$3,246	$1.07	429	$457	$1.10	1,779	$6,330	$3.55	1,704	$1,706	$1.13

	TRINITA			BEQ (Paradiso)			CHAPEL (Paradiso)			APTS (Paradiso)			NSA (Mordini)		
Fiscal Year	(MT)	(USD)	($/MT)	(MT)	(USD)	($/MT)	(MT)	(USD)	($/MT)	(MT)	(USD)	($/MT)	(MT)	(USD)	($/MT)
1999	39,331	$14,997	$0.38	12,100	$8,458	$0.70	1,597	$1,116	$0.70	7,115	$25,320	$3.56	12,262	$8,572	$0.70
2000	34,840	$24,908	$0.71	12,239	$15,094	$1.23	2,160	$2,366	$1.10	7,115	$25,320	$3.56	2,859	$3,663	$1.28
2001	34,840	$35,136	$1.01	12,100	$17,045	$1.41	1,509	$2,126	$1.41	7,115	$25,320	$3.56	5,300	$7,716	$1.46
2002	34,840	$34,628	$0.99	12,100	$12,984	$1.07	1,591	$1,707	$1.07	7,115	$25,320	$3.56	6,845	$7,344	$1.07
Averages	35,963	$27,417	$0.77	12,135	$13,395	$1.10	1,714	$1,829	$1.07	7,115	$25,320	$3.56	6,817	$6,824	$1.13

Figure 3.2.1-2

Demand Detail Summary by Source
4 Year History

		CITY WATER					TRUCKED					BOTTLED				
		Total	Total	Average	Average	Average	Total	Total	Average	Average	Average	Total	Total	Average	Average	Average
Fiscal Year	Quarter	(MT)	(USD)	($/MT)	(MTPD)	(GPD)	(MT)	(USD)	($/MT)	(MTPD)	(GPD)	(MT)	(USD)	($/MT)	(MTPD)	(GPD)
1999	1	17,246	$9,607	$0.56	187	49,521	4,340	$36,043	$8.30	47	12,463	164	$18,422	$112.50	1.78	470
1999	2	17,031	$8,983	$0.53	189	49,990	4,340	$36,043	$8.30	48	12,740	164	$18,422	$112.50	1.82	481
1999	3	19,064	$10,405	$0.55	209	55,343	4,340	$36,043	$8.30	48	12,600	164	$18,422	$112.50	1.80	475
1999	4	19,064	$29,468	$1.55	207	54,741	4,340	$36,043	$8.30	47	12,463	164	$18,422	$112.50	1.78	470
2000	1	15,214	$8,167	$0.54	165	43,686	8,280	$70,699	$8.54	90	23,775	164	$18,422	$112.50	1.78	470
2000	2	14,267	$14,080	$0.99	159	41,877	4,300	$36,716	$8.54	48	12,622	164	$18,422	$112.50	1.82	481
2000	3	14,267	$14,134	$0.99	157	41,417	6,120	$53,166	$8.69	67	17,766	164	$18,422	$112.50	1.80	475
2000	4	15,465	$34,970	$2.26	168	44,407	11,800	$92,530	$7.84	128	33,883	164	$18,422	$112.50	1.78	470
2001	1	14,656	$16,224	$1.11	159	42,084	16,260	$109,096	$6.71	177	46,690	164	$18,422	$112.50	1.78	470
2001	2	15,284	$17,102	$1.12	170	44,862	13,620	$47,906	$3.52	151	39,978	164	$18,422	$112.50	1.82	481
2001	3	15,629	$17,732	$1.13	172	45,371	12,440	$83,941	$6.75	137	36,113	164	$18,422	$112.50	1.80	475
2001	4	15,295	$36,286	$2.37	166	43,919	21,150	$144,743	$6.84	230	60,731	164	$18,422	$112.50	1.78	470
2002	1	15,306	$12,215	$0.80	166	43,950	10,058	$66,215	$6.58	109	28,881	164	$18,422	$112.50	1.78	470
2002	2	15,238	$12,140	$0.80	169	44,727	2,996	$19,727	$6.58	33	8,794	164	$18,422	$112.50	1.82	481
2002	3	15,237	$12,138	$0.80	167	44,233	14,718	$97,339	$6.61	162	42,726	164	$18,422	$112.50	1.80	475
2002	4	16,710	$45,489	$2.72	182	47,982	7,392	$49,653	$6.72	80	21,226	164	$18,422	$112.50	1.78	470
Averages		15,936	$18,696	$1.17	175	46,132	9,156	$63,494	$7.32	100	26,466	164	$18,422	$112.50	1.79	474

	CITY WATER					TRUCKED					BOTTLED				
	Total	Total	Average	Average	Average	Total	Total	Average	Average	Average	Total	Total	Average	Average	Average
Fiscal Year	(MT)	(USD)	($/MT)	(MTPD)	(GPD)	(MT)	(USD)	($/MT)	(MTPD)	(GPD)	(MT)	(USD)	($/MT)	(MTPD)	(GPD)
1999	72,405	$58,463	$0.81	198	52,404	17,361	$144,170	$8.30	48	12,565	655	$73,689	$112.50	1.79	474
2000	59,213	$71,351	$1.20	162	42,856	30,500	$253,112	$8.30	84	22,075	655	$73,689	$112.50	1.79	474
2001	60,864	$87,343	$1.44	167	44,051	63,470	$385,686	$6.08	174	45,937	655	$73,689	$112.50	1.79	474
2002	62,491	$81,982	$1.31	171	45,228	35,164	$232,933	$6.62	96	25,450	655	$73,689	$112.50	1.79	474
Averages	63,743	$74,785	$1.19	175	46,135	36,624	$253,975	$7.33	100	26,507	655	$73,689	$112.50	1.79	474

Figure 3.2.1-2

Demand Detail Summary
4 Year History

		CITY, TRUCKED, & BOTTLED WATER										
		Total	FROM	FROM	FROM	Total	FROM	FROM	FROM	Average	Average	Average
Fiscal Year	Quarter	(MT)	CITY	TRUCK	BOTT	(USD)	CITY	TRUCK	BOTT	($/MT)	(MTPD)	(GPD)
1999	1	21,750	79%	20%	1%	$64,072	15%	56%	29%	$2.95	236	62,454
1999	2	21,535	79%	20%	1%	$63,448	14%	57%	29%	$2.95	239	63,210
1999	3	23,568	81%	18%	1%	$64,869	16%	56%	28%	$2.75	259	68,418
1999	4	23,568	81%	18%	1%	$83,932	35%	43%	22%	$3.56	256	67,674
2000	1	23,658	64%	35%	1%	$97,288	8%	73%	19%	$4.11	257	67,932
2000	2	18,731	76%	23%	1%	$69,219	20%	53%	27%	$3.70	208	54,979
2000	3	20,551	69%	30%	1%	$85,722	16%	62%	21%	$4.17	226	59,659
2000	4	27,429	56%	43%	1%	$145,923	24%	63%	13%	$5.32	298	78,760
2001	1	31,080	47%	52%	1%	$143,742	11%	76%	13%	$4.62	338	89,243
2001	2	29,068	53%	47%	1%	$83,429	20%	57%	22%	$2.87	323	85,321
2001	3	28,233	55%	44%	1%	$120,095	15%	70%	15%	$4.25	310	81,959
2001	4	36,609	42%	58%	0%	$199,452	18%	73%	9%	$5.45	398	105,120
2002	1	25,528	60%	39%	1%	$96,852	13%	68%	19%	$3.79	277	73,301
2002	2	18,398	83%	16%	1%	$50,289	24%	39%	37%	$2.73	204	54,002
2002	3	30,119	51%	49%	1%	$127,899	9%	76%	14%	$4.25	331	87,434
2002	4	24,266	69%	30%	1%	$113,565	40%	44%	16%	$4.68	264	69,678
Averages		25,256	65%	34%	1%	$100,612	19%	60%	21%	$3.88	277	73,071

	CITY, TRUCKED, & BOTTLED WATER										
	Total	FROM	FROM	FROM	Total	FROM	FROM	FROM	Average	Average	Average
Fiscal Year	(MT)	CITY	TRUCK	BOTT	(USD)	CITY	TRUCK	BOTT	($/MT)	(MTPD)	(GPD)
1999	90,421	80%	19%	1%	$276,321	21%	52%	27%	$3.06	248	65,443
2000	90,368	66%	34%	1%	$398,151	18%	64%	19%	$4.41	248	65,405
2001	124,989	49%	51%	1%	$546,718	16%	71%	13%	$4.37	342	90,462
2002	98,310	64%	36%	1%	$388,604	21%	60%	19%	$3.95	269	71,153
Averages	101,022	64%	35%	1%	$402,449	19%	62%	19%	$3.95	277	73,116

Figure 3.2.1-2

MIL-HDBK Estimate Water Demand
Current Occupancy

Housing	Units	Persons	Demand Rate (gpcd)	Demand (gpd)	% Total Demand
Trinita	134	445	135	60,075	60%
Paradiso	21	63	135	8,505	8%
Carbini	6	8	135	1,080	1%
Ciboddo	6	13	135	1,755	2%
Nughes	6	12	135	1,620	2%
Lunetta	2	4	135	540	1%
Villa Gaspa	1	4	135	540	1%
BEQ (Paradiso)	50	100	135	13,500	13%
Future Construction	0	0	135	0	0%
Subtotal	226	649		87,615	

Operations		Persons	Demand Rate (gpcd)	Demand (gpd)	% Total Demand
Medical		10	45	450	0%
Chapel (Paradiso)		25	45	1,125	1%
Mordini		250	45	11,250	11%
Subtotal		285		12,825	

Industrial				Demand (gpd)	
None				0	0%
Subtotal				0	

Total		934		**100,440**	100%

Figure 3.2.1-3

MIL-HDBK Estimate Water Demand
Maximum Occupancy

Housing	Units	Persons	Demand Rate (gpcd)	Demand (gpd)	% Total Demand
Trinita	134	510	135	68,850	62%
Paradiso	21	63	135	8,505	8%
Carbini	6	16	135	2,160	2%
Ciboddo	6	16	135	2,160	2%
Nughes	6	16	135	2,160	2%
Lunetta	2	6	135	810	1%
Villa Gaspa	1	4	135	540	0%
BEQ (Paradiso)	50	100	135	13,500	12%
Future Construction	0	0	135	0	0%
Subtotal	226	731		98,685	

Operations		Persons	Demand Rate (gpcd)	Demand (gpd)	% Total Demand
Medical		10	45	450	0%
Chapel (Paradiso)		25	45	1,125	1%
Mordini		250	45	11,250	10%
Subtotal		285		12,825	

Industrial				Demand (gpd)	
None				0	0%
Subtotal				0	

Total		1,016	**111,510**	100%

Figure 3.2.1-4

MIL-HDBK Estimate Water Demand
Maximum Occupancy w/ Future Construction

Housing	Units	Persons	Demand Rate (gpcd)	Demand (gpd)	% Total Demand
Trinita	134	510	135	68,850	45%
Paradiso	21	63	135	8,505	6%
Carbini	6	16	135	2,160	1%
Ciboddo	6	16	135	2,160	1%
Nughes	6	16	135	2,160	1%
Lunetta	2	6	135	810	1%
Villa Gaspa	1	4	135	540	0%
BEQ (Paradiso)	50	100	135	13,500	9%
Future Construction	78	297	135	40,077	26%
Subtotal	304	1,028		138,762	

Operations		Persons	Demand Rate (gpcd)	Demand (gpd)	% Total Demand
Medical		10	45	450	0%
Chapel (Paradiso)		25	45	1,125	1%
Mordini		250	45	11,250	7%
Subtotal		285		12,825	

Industrial				Demand (gpd)	
None				0	0%
Subtotal				0	

Total		1,313		**151,587**	100%

Figure 3.2.1-5

The following table compares the water storage requirements found in MIL-HDBK 1005/7A to current storage at NSALM.

	Required Storage (MT)				Current Storage
	Fire Flow	Domestic	Maintenance	Total	Total
Trinita	256	102	9	367	400
Paradiso	341	64	5	410	100
Mordini	341	10	1	352	150

Fire Flow: Peak fire flow demand as given in MIL-HDBK-1008C. Assumptions: Trinita quantity requirement equal to the product of a 750 gpm demand over 90 min, Paradiso quantity requirement equal to the product of a 1000 gpm demand over 90 minutes, Mordini quantity requirement equal to the product of a 1000 gpm demand over 90 minutes.

Domestic: 50 percent of average daily consumption (domestic and industrial).

Maintenance: Minimum working volume of one hour at average demand for scheduling equipment maintenance.

PROCUREMENT SENSITIVE

As shown in the table above, only the minimum storage requirement at Trinita is being met. The Fire Protection Engineering Branch of EFAMED has acknowledged this shortage and indicated several reasons that the condition has not yet been fixed:

- NSALM has few hydrants or sprinkler systems that would benefit from additional storage.
- NSALM does not have a fire department to fight fires. It relies on the City's volunteer department.
- The facilities are leased.
- La Maddalena has severe water shortages and storing water that would not be consumed might appear inconsiderate.

Although these obstacles have discouraged money being spent on water storage, Fire Protection Engineers are seeing that adequate protection is being included in all future construction projects, like the 78 additional Family Housing units.

3.2.2 Future Condition

As part of the planned distribution system improvement project, the City expects to increase the Mongiardino Tank capacity from 900 MT (238,000 gal) to 1,800 MT (476,000 gal). The City also plans construction of a parallel line from the Mongiardino Tank to the Sasso Rosso Tank and expects contract award by December 2003. These improvements will benefit the Navy because they will allow the City to store a greater quantity of potable water on the island and, during high demand periods, to allow that

water to flow more easily from the Mongiardino Tank to the Sasso Rosso Tank, which then serves the Trinita Housing Complex. Total City filtered water storage would therefore be increased to 11,900 MT (3,144,000 gal).

Due to the historic unreliability of the City's water supply and delay in receiving trucked water, NSALM is planning to have another 400 MT (100,000 gal) tank constructed beside the existing 400 MT tank at Trinita Housing Complex. A separate 80 MT (21,000 gal) is also proposed for dedicated fire protection water. Both of these construction projects would be accomplished by included them as requirements in the next lease renegotiation between Family Housing and the current Housing Leaser sometime during FY04. Total NSALM water storage would therefore be increase to 880 MT (232,000 gal).

PROCUREMENT SENSITIVE

4.0 Water Quality

4.1 Existing Condition

The quality of water delivered to NSALM has been a concern since 1994. In 1994, the chronic occurrence of positive coliform counts during sampling of the City water distribution system led the Mayor of La Maddalena to declare City water non-potable. This declaration was adopted by NSALM at the same time for its own facilities. Since 1994 the City has intermittently removed and reinstated the ban on drinking City water. Over the same period, NSALM has continually considered the water non-potable.

Finished water from both ESAF and City water treatment plants appears to meet most of the FGS, Italy standards for DoD purchased water. Noncompliance seems to be a result of inadequate operation and maintenance of the municipal water transmission and distribution system and not a result of inadequate treatment. These conditions have not changed since 1994.

One area of significant concern is that although the City water treatment plant does provide residual disinfection, and reportedly monitors residual chlorine within the distribution system, water supplied to the island by ESAF does not contain residual disinfection and therefore almost guarantees that water delivered to NSALM will be substandard.

PROCUREMENT SENSITIVE

AH Environmental Consultants, under contract with the LANTDIV Environmental Branch, conducted water quality analysis from September 2000 through February 2001. The team was unable to determine an exact source of bacteriological contamination of water supplied to NSALM facilities, but instead noted that most samples tested positive for coliform bacteria and several for E.Coli. The most likely causes of bacteriological contamination of the NSALM water supply are:

- The discharge of trucked water through plastic hoses that lay open to the environment between fillings.
- Leaving storage tank lids and access hatches open, allowing environmental contamination to drop in or be carried in by animals.
- Bacteriological growth within the water trucks.
- Inadequate chlorine residual in the storage tanks and distribution system at NSALM.
- Backflow and cross contamination within the City distribution system because of low system pressure.

Although water treatment is operational at Paradiso, it is currently bypassed at Trinita, and has never existed at Mordini.

4.2 Future Condition

The future condition of water quality on the Island of La Maddalena is uncertain. Improvement depends upon the successful completion of many proposed public works

projects by the City. The water line replacement project currently underway and the proposed water storage tank improvements will go a long way toward improving water quality on the island. If the City were able to expand and upgrade the existing water treatment plant, including improved control over disinfection and removal of organic precursor material, additional improvement in water quality would be expected.

Because of uncertainty in the schedule of City improvements and uncertainty in their exact effect on water quality, NSALM is expected to require some continued level of supplemental treatment at Trinita, Paradiso, and Mordini for the foreseeable future. At a minimum, the treatment system at Trinita would need to be restarted and some type of minimal treatment installed at Mordini. Refer to the 2001, AH Environmental Consultants report, Water System Evaluation, for treatment alternatives.

PROCUREMENT SENSITIVE

5.0 Proposed Solutions

5.1 Historic Proposals

From Consorzio Bonifica della Gallura (CBG)
The Navy would fund construction of a dedicated raw water supply pipe from Puzzoni Reservoir to Trinita Housing Complex. The Navy would then build its own dedicated treatment plant at Trinita.

Estimated Cost: 1M Euro apart from the treatment costs.
Pros: Approved by INP and Consorzio di Bonifica della Gallura (CBG). A water supply contract with CBG would not be subject to captive market constrains.
Cons: Raw water flow is limited by the low capacity of the line coming from Sardinia. The City would not allow construction in the existing utility trench because they need the extra space to install a duplicate treated water pipe line. Many other legal and contractual hurdles would make this proposal very difficult.

From Italian National Park (INP)
No proposal can be directly made by the Italian National Park because its charter does not include a provision for supplying water. INP's involvement is related to the approval of any pipeline and/or treatment plant that would be installed on the Island of La Maddalena. Although they have not made a proposal on their own, INP would be involved in the approval process of all other options that involve construction.

PROCUREMENT SENSITIVE

Political Note: INP acted as a sponsor for replacing ESAF with a Consortium of Northern Sardinia's Municipalities that were expected to be more effective in managing the water distribution around the Gallura region. CBG's proposal would help this conversion because it would diminish ESAF's predominance in the Gallura region. To date the chance of ESAF taking charge of La Maddalena water service seems to have diminished.

From the City of La Maddalena
The City of La Maddalena would stop using the pipeline from Cannigione to deliver filtered water from ESAF and would start using it to deliver raw water to the island from CBG. This additional raw water would be filtered in an expanded version of the City's current water treatment plant and used to satisfy peak summer demands.

Estimated Cost: Never defined by the City
Pros: Increases the total amount of water available to the island and would therefore be expected to increase the water available to residents of the island, including the Navy.
Cons: Not politically viable. ESAF would probably not be willing to give up revenue from the sale of filtered water through the pipeline to CBG who would then be making money from their sale of raw water through the same pipe. If the City's treatment plant were to have operational problems, only half of the current volume of filtered water would be available to residents, since one of the pipelines no longer delivers filtered

water. There is additional reliability by maintaining both pipelines as sources of filtered water.

By U.S. Navy
The Navy would construct a salt-water reverse osmosis treatment plant at Trinita Housing Complex. The treatment plant would have the capacity to provide potable water for all NSALM facilities on the island. Tanker trucks would serve sites other than Trinita.

Estimated Cost: 3.1 M USD
Pros: Process fully controlled by the Navy. No limitation on water availability.
Cons: Large annual operating costs. Proposal disapproved by the local Italian National Park (INP) authorities because they believe the high salinity of the reject water from the reverse osmosis treatment plant would harm the environment. INP has full regulatory and land title control over these matters.

By U.S. Navy
Restore the Molo Carbone bulk water supply point. In the past, water barges were filled from this point and delivered water to Santo Stefano. The supply point has been inactive since 1999. If reactivated, this connection could be used during water shortages to fill tanker trucks that would transport bulk water to NSLAM facilities. The small tanker truck currently owned by the Navy could be used to satisfy brief outages at Trinita. Currently trucked water is delivered from Sardinia.

PROCUREMENT SENSITIVE

Estimated Cost: 500 Euro (to reactive the City contract)
Pros: Immediate implementation. Could lower the cost of trucking water to Trinita by delivering water during minor outages and avoiding the use of the contracted trucks.
Cons: The Navy's tanker truck is small and only small outages could be averted. Major outages would require larger volumes of water from sources off the Island.

5.2 Current Proposal

From City
Fund the City's water treatment plant upgrade. Using Navy money, the City quadruples the capacity of the existing plant to allow full supply during peak demands. This expansion would occur once this raw water main was upgraded to allow delivery at a rate of 70 l/s, the pipe from the Mongiardino Tank to Sassorosso Tank had been duplicated, and the Mongiardino Tank had been enlarged to doubling its capacity.

Estimated Cost: 2.5 M Euro
Pros: Increase the quality and quantity of water supplied to all NSALM facilities. The project would also benefit the Navy's reputation in both the local public and political arenas. Alleviates the Navy from having to own, operate, and maintain more facilities that are not directly related to NSALM's mission.

Cons: Difficult to contractually guarantee the desired result.

PROCUREMENT SENSITIVE

6.0 Current Political Climate

The frequent water rationing occurring in La Maddalena generates discontent in the local community so that very high attention is paid to any City Council actions impacting the water service on the island. For this reason, any initiative intended to guarantee a satisfactory water supply to the U.S. community that could be perceived as penalizing the local community and runs a high risk of being rejected by the City Council. This implies that establishing a partnership with the City of La Maddalena into a project evidently beneficial to the entire community would provide two positive results:

a) Resolving the water shortage problem for the US Navy facilities
b) And gaining prestige for the US Navy in front of the local community

6.1 Party In Control

The City of La Maddalena is currently governed by a Right Wing administration. The Mayor belongs to the Alleanza Nazionale party (National Alliance). The Sardinian Region Government is also controlled by a Right Wing coalition. The current political situation is in a state of turmoil: the Sardinian Regional Government has just resigned; the Mayor of La Maddalena is under strong attacks by members of her own Party; the La Maddalena City Council is at war against the National Park because they do not agree on how the Archipelago tourist resources should be managed.

PROCUREMENT SENSITIVE

In summary, there is no political stability or reasonable expectation of future improvement. This prevents any absolute certainty that City funds will remain available or that planned schedules will be complied with. Any agreement with the City for contributions towards construction projects should clearly state that payments would be performed only in conjunction with actual work progress.

6.2 Influential Players

The Archipelago of La Maddalena belongs in its entirety to a National Park. The National Park Authority has considerable political influence on anything that can be done in the area. The Park President belongs to the Alleanza Nazionale party.

7.0 Recommendations

7.1 Supply

Assuming the City completes its scheduled improvement projects, see Section 3 and 5.2, water quantity and quality on the island should significantly improve during non-summer months. To ensure this improvement in quantity and quality is able to extend into the high-demand summer months, modernization and expansion of the City water treatment plant is necessary. The economic analysis in Appendix D indicates that an investment by the U.S. Navy that would result in the elimination of the need to truck water during the summer months has an acceptable payback (less than 10 years), is cheaper over a 25-year period than any other alternative or the status quo, and would result in several positive quality-of-life improvements for personnel stationed at NSALM.

7.2 Demand

Continue to include low flow fixtures in facility renovation projects.

7.3 Storage

NSALM should contact the EFAMED Fire Protection Engineering Branch to schedule a fire protection engineering survey. As shown by estimates in Section 3.2.1, it appears that both Paradiso and Mordini do not currently have the volume of water storage required for fire fighting by MIL-HDBK 1008C. Although this condition and the associated risk may have been deemed acceptable dues to reasons noted in Section 3.2.1, it is recommended that the issue be revisited periodically.

PROCUREMENT SENSITIVE

At the time of inspection, most water storage tanks were inadequately protected from environmental contaminants. Several service hatches were left open and only one was locked. Open hatches increase the chance of bacteriological contamination from animal feces or the decomposition of their bodies should they die while inside the tank. Open or unlocked hatches also increase the risk of intentional contamination by vandals. Locking, hinged hatches should be installed on all tanks to prevent unauthorized access to NSALM's water supply.

Air and overflow vents should all be screened as well.

7.4 Treatment

While onsite, it was noted that water treatment facilities for Trinita Housing Complex and Trinita Tank were being bypassed. It was also reported that NSALM does not maintain residual disinfection in the Trinita distribution system because the water has been declared non-potable. Simply because the water is no longer being ingested does not mean that their is zero health risk to being exposed to the water, especially since sampling has indicated a persistent presence of coliform bacteria. In distribution systems that serve family housing, like Trinita, it would be prudent to continue disinfecting the water supply. Disinfection would also reduce the accumulation of biological growth in the distribution system should the system later be declared potable.

NSALM Environmental should also arrange to have the City deliver a copy of the Mayor's ordinances, which change the status of the City's water from potable to non-potable, directly to their office.

7.5 Distribution

Water distribution piping in Mordini is a mix of new PVC and old cast iron. Any future project that would install fire hydrants or otherwise look to improve fire protection on Mordini should include the replacement of associated cast iron piping. A section of pipe was available for inspection while onsite and the amount of internal corrosion (i.e. tuberculation) present would greatly restrict the flow of water to an open hydrant.

PROCUREMENT SENSITIVE

Appendices

A Utility Mapping
B Summary of Past Studies
C EFAMED Trip Reports
D Economic Analysis (*of recommended alternatives*)
E NSALM Water Rumors

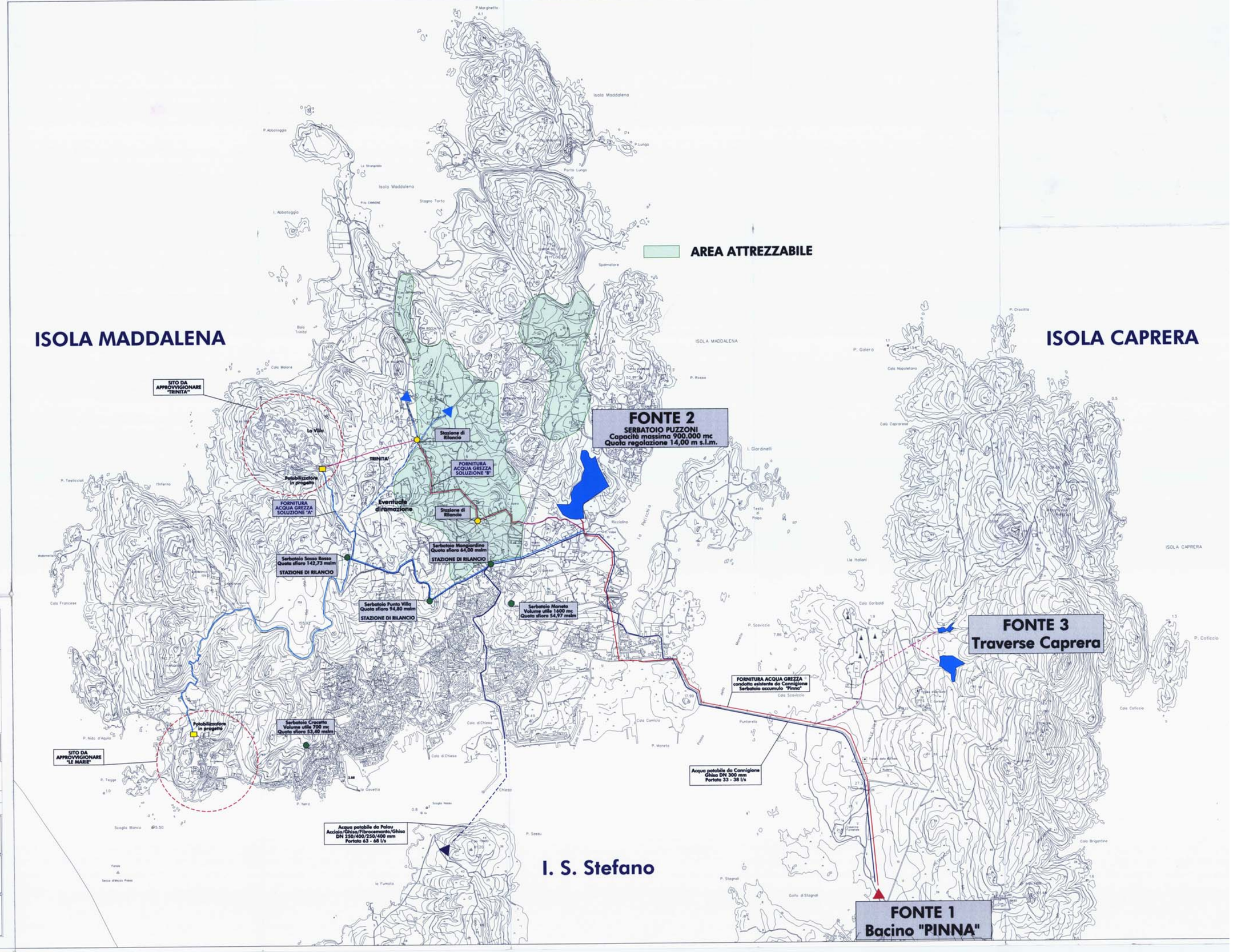
PROCUREMENT SENSITIVE

Appendix A

Utility Mapping

- Regional Municipalities
- Trinita Housing Complex
- Paradiso Housing Complex
- Support Office Compound

PROCUREMENT SENSITIVE



CONSORZIO DI BONIFICA DELLA GALLURA

IPOTESI DI REALIZZAZIONE DELLA RETE DI ADDUZIONE IRRIGUA NELL'ISOLA DELLA MADDALENA

STUDIO DI FATTIBILITA'

Elaborato:

PLANIMETRIA D'INQUADRAMENTO

Scala	Data	Visto
1:10.000	Maggio 2002	
	Sostituisce il n.	Sostituito dal n.

Progettisti

Dott. Ing. Vincenzo Milillo — Dott. Ing. Federico Ferrarese Ceruti

Collaboratori

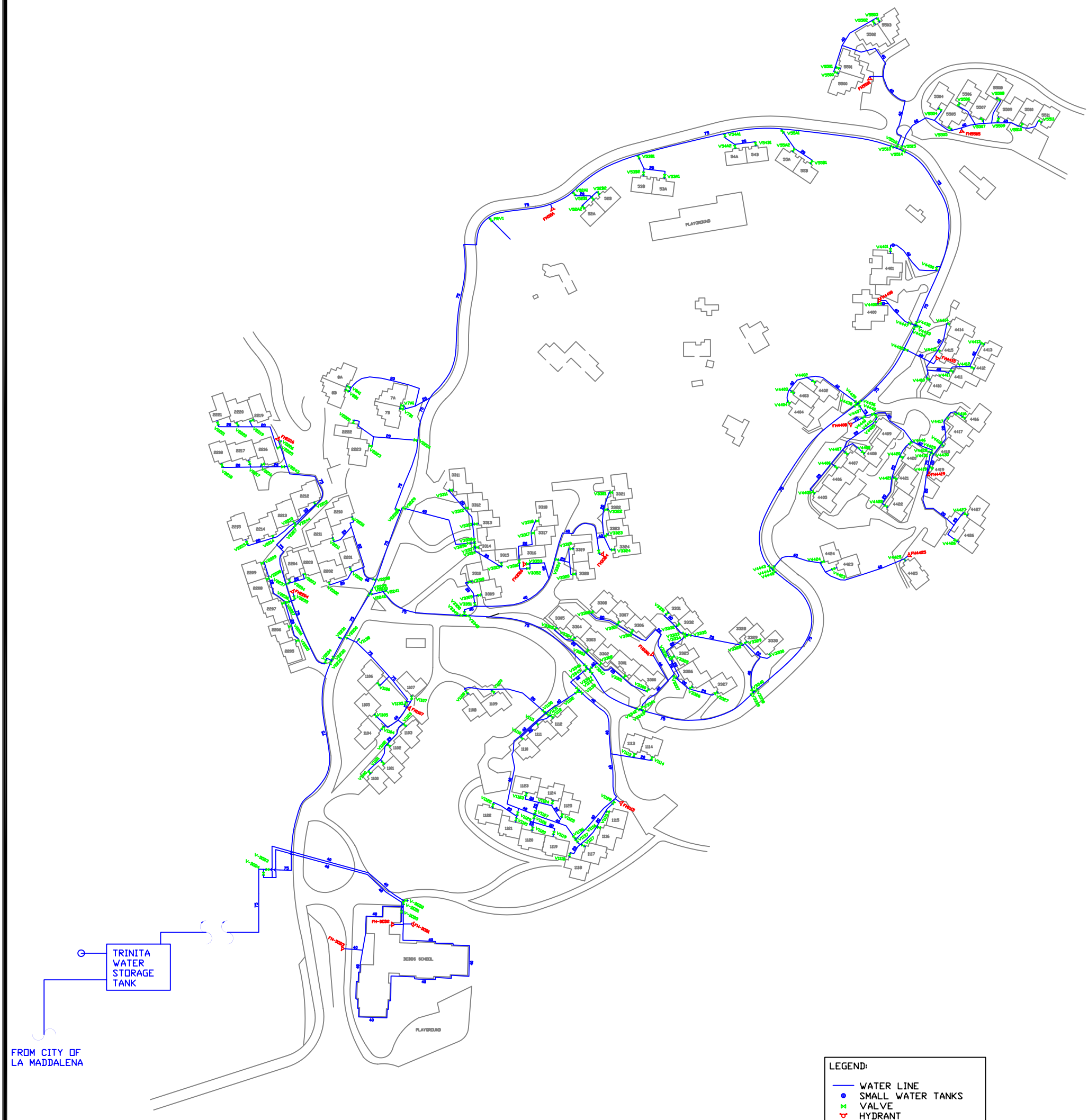
Geom. Francesco Bellu — Geom. Franco Murgia

Geom. Gianni Sini

Tavola

Allegato

Visti



LEGEND:

- WATER LINE
- SMALL WATER TANKS
- VALVE
- HYDRANT
- TRUCK FILL CONNECTION

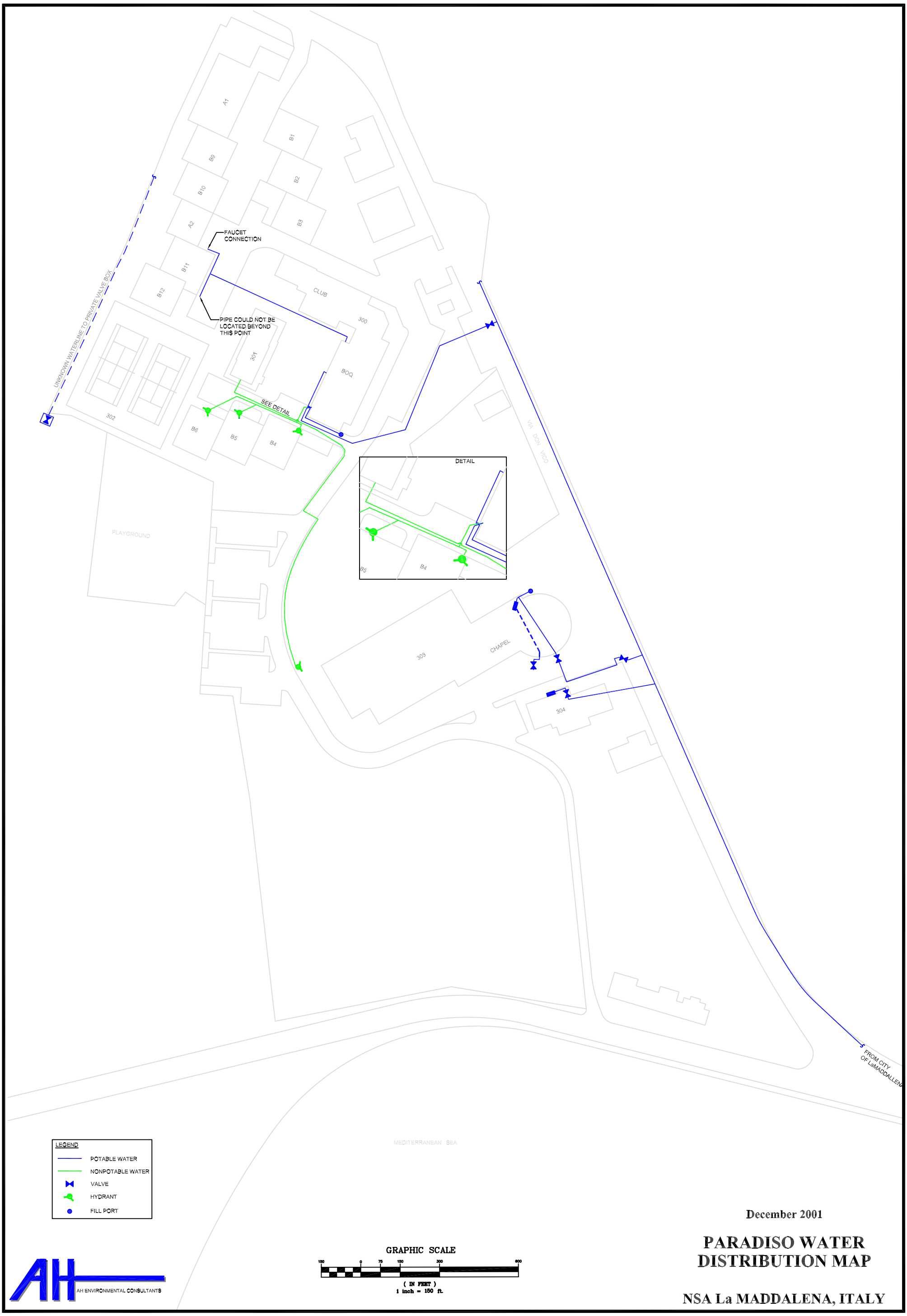
NOTE: ALL PIPE SIZES ARE IN MILLIMETERS

December 2001

TRINITA WATER DISTRIBUTION MAP

NSA La MADDALENA, ITALY

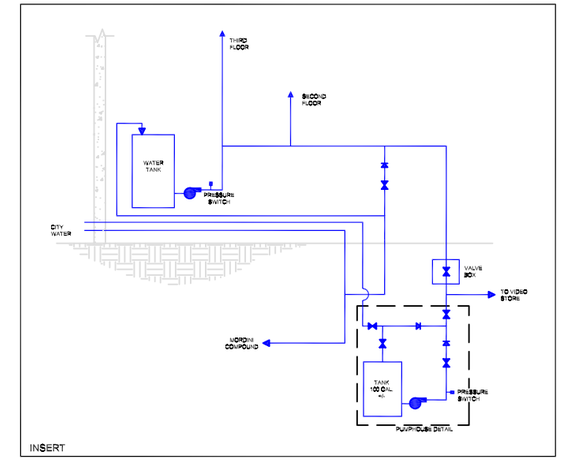
AH ENVIRONMENTAL CONSULTANTS



December 2001

PARADISO WATER DISTRIBUTION MAP

NSA La MADDALENA, ITALY



LEGEND

- POTABLE WATER
- NON-POTABLE WATER
- NON-POTABLE UNDERGROUND WATER RESERVOIRS
- VALVE BOX
- WATER TANK
- WATER PUMP
- REDUCER
- VALVE
- HYDRANT

GRAPHIC SCALE

30 0 15 30 60 120

(IN FEET)
1 inch = 30 ft.

AH ENVIRONMENTAL CONSULTANTS

December 2001

MORDINI WATER DISTRIBUTION MAP

NSA La MADDALENA, ITALY

Appendix B

Summary of Recommendations from Past Studies

1. **Water System Evaluation – AH Environmental, December 2000**
    a. All Sites
        i. Perform additional investigation to determine the source of contamination (fecal coliform and E. Coli) in the system.
        ii. Consider the following options:
            1. Discontinue use of trucked water.
            2. Require certified lab reports for trucked water.
            3. Install treatment facilities that provide primary disinfection.
            4. Declare water non-potable.
    b. Mordini Complex Only
        i. Install UV disinfection followed by chloramines addition. Recommended over GAC because of space limitations.
        ii. Install a 2" flow meter at the service connection for the Public Works building.
    c. Trinita Housing Only
        i. Do not replace dual media in pressure filters with GAC and sand. These tanks are not designed for that media and will fail.
        ii. Install GAC units and chlorine addition to treat water.
    d. Paradiso Housing Only
        i. Do not replace dual media in pressure filters with GAC and sand. These tanks are not designed for that media and will fail.
        ii. Install UV disinfection followed by chloramines addition. Recommended over GAC because of space limitations.
2. **Technical Trip Report – EFA MED, January 2000**
    a. All Sites
        i. When inadequate supply is the City's fault the Navy should contact the City and they will provide trucked water at their own expense. This is a contractual obligation.

PROCUREMENT SENSITIVE

b. Mordini Complex Only
    i. None.
c. Trinita Housing Only
    i. Clean and repair ground level storage tank.
    ii. Install an additional tank, 200 m^3, to increase reserve storage from 3.6 days to 7 days of average demand.
    iii. Drill wells where fresh water is available.
    iv. Ensure supply line valve is completely open.
d. Paradiso Housing Only
    i. Improve reserve water storage by installing fiberglass tanks inside abandoned WWTP tanks. This would increase reserve storage, based on average daily demand, from 4.7 to 9 days.

3. Water Quality and Quantity Study – Malcolm Pirnie, April 1996

a. All Sites
    i. Maintain positive pressure in the distribution system to reduce the chance for contamination from backflow or cross connection.
    ii. Ensure timely and reliable delivery of trucked water to prevent shortages.
    iii. Modify utility contract to ensure that trucked water meets FGS.
    iv. Test trucked water for FGS compliance prior to delivery.
    v. Implement a backflow prevention program to reduce chance of system contamination.
    vi. Ensure municipal supply meets FGS. If not negotiate a solution with municipality.
    vii. Implement system flushing program to increase chlorine residual in system.
    viii. Implement water conservation measures to reduce demand during drought periods.
    ix. Ensure proper storage, use, and disinfection of trucked water connection hoses.
b. Mordini Complex Only

PROCUREMENT SENSITIVE

        i. Do not allow water from underground cistern to enter potable water distribution system.
    c. Trinita Housing Only
        i. Replace dual media in pressure filters with GAC and sand.
        ii. Ensure proper dosing of chlorine at tanks to maintain chlorine residual in system.
    d. Paradiso Housing Only
        i. Replace dual media in pressure filters with GAC and sand.
        ii. Add chlorine injection to tanks.
4. FGS Compliance Study – Malcolm Pirnie, December 1995
    a. Trinita and Paradiso
        i. Water quality testing should be conducted for water trucked to Paradiso and Trinita to verify that it meets the requirements of the FGS, Italy for treated water.
        ii. The filter media at Trinita and Paradiso should be replaced with GAC and sand. The coal media currently inside of the filters does not remove the organic material.
    b. Trinita Housing Only
        i. The chlorine residual within the distribution system at Trinita should be monitored daily and the dose adjusted accordingly to maintain adequate levels for controlling microbial growth.
    c. Paradiso Housing Only
        i. Chlorine should be added to the storage tanks at Paradiso. The chlorine dose should be sufficient to maintain a residual within the distribution system.
    d. Mordini Complex Only
        i. A treatment system similar to Paradiso and Trinita (i.e. GAC and sand filtration followed by chlorination) should be installed at Mordini.
5. **Potable Water Investigation – LANTDIV, April 1989**
    a. All Sites

PROCUREMENT SENSITIVE

i. None.

b. Mordini Complex

i. None.

c. Trinita Housing Only

i. “Like the Paradiso Complex, the Trinita Housing area has a water quality problem of high turbidity and the presence of coliform bacteria. Unlike the Paradiso Complex, there is a lack of adequate storage.”

ii. Install dual media filters and chlorination onsite.

iii. Install a 100,000 gallon ground level concrete tank.

d. Paradiso Housing Only

i. “Water quality is the main concern at this site.”

ii. “The water quality problems are due to high turbidity and the presence of coliform bacteria. “

iii. Install dual media filters and chlorination onsite.

PROCUREMENT SENSITIVE

Appendix C

EFAMED Trip Reports

- Trip Report 07/28/2003
- Memo 06/05/2003
- Point Paper 05/21/2003
- Memo 04/09/2003
- Memo 11/06/2002
- Trip Report 11/04/2002
- Trip Report 06/16/2000

PROCUREMENT SENSITIVE

MEMORANDUM July 28, 2003

To: EFAMED BE, Dawn Polverino
From: EFAMED BE, Sonia Grillo
Cc: NSALM, PWO LCDR Scott Loeschke

Subj: LA MADDALENA 22-24 JULY TRIP REPORT

Purpose of this site visit included the following:

a. Meet Tom Bonner, LantDiv Utilities Eng., to share and discuss the information about the water shortage problem in La Maddalena, to compare and consolidate the versions of NSALM Water Master Plan prepared by the two of us, to agree on the technical options to be recommended for the agreement with the City of La Maddalena
b. Joined survey to the main facilities water treatment plants
c. Joined survey to the existing City's water treatment plant (WTP) and Puzzoni reservoir to figure out how to most efficiently implement the proposed WTP upgrade
d. Get updated by the City about the funding status of the projects included in the water system upgrade and possible unwinding of the technical proposal.
e. Gather missing data about bottled and barged water

JULY 22, 2003

- **Mtg. w/LTGJ J. Cheswick** held at PW Dept. Those present were Tom Bonner, NSALM EV Eng. Dan Jordan, LTGJ Jennifer Cheswick, and myself. Jennifer provided info about how the water trucking is managed in both normal and emergency situation. She stated that one truck a day is regularly unloaded in Trinita during summer months, as a prevention step to avoid the filling level in the tank comes too down due to low pressure. Given the rate of Trinita water consumption in summer, she ensured the water addition never run the tank to overflow. In case of emergency, as soon as an outage is detected, an oral delivery order is issued even though the time taken for the trucks to reach the facilities is almost 24 hours.
- **Site Survey at Trinita and Paradiso Hsg**. Tom Bonner, Dan Jordan and myself surveyed the premises inspecting the tanks, the internal water distribution system and the treatment plants.

All the information gathered will be used to evaluate the most suitable water treatment to be locally installed to get tap water matching the FGS quality standard once the quantity is sufficient.

- **Mtg. w/Hsg. Director** Ms. Patrizia Carrera held at her office. Those present were Tom Bonner, Dan Jordan, and myself. Tom introduced himself and explained how he is involved in the water issue. He asked Patrizia to give a short brief on the water situation from her standpoint, regarding both quantity and quality problems. Patrizia provided all the requested information, and then a short discussion about the expected solution took place. Tom invited Patrizia to attend the mtg. with the CO set up on Thursday.

July 23, 2003

- **Mtg. w/City Water Section** held at City's technical office in La Maddalena. Those present were Mr. Aldo Pireddu, Head of the Water Section's Technical Office and myself. Tom Bonner and Dan Jordan cannot attend due to a concurrent meeting set up in S. Stefano.

Based on what agreed in June, Mr. Pireddu was expected to provide the broad-brush design, which the water system upgrade costs were estimated upon. He apologized for having been too busy to put together the requested documentation till then but promised to prepare it for the next meeting.

He took the opportunity to say that the City will gladly pass to the US Navy whatever draft or final design and relevant drawings of the projects which got funded so far but will not be able to provide any design relevant to projects not funded yet, including the water treatment plant enlargement the US Navy has been proposed to fund.

In fact, since the City does not provide in-house design, an A/E contract with this scope of work should be awarded. Unfortunately, no City's money is intended for this purpose as no request for enlarging the WTP was submitted so far. Mr. Pireddu estimated the cost for the design in 400,000 €.

The City, as a public entity, is due to report to the Corte dei Conti (State's Auditor Department) for all its expenses and investments: awarding such a design contract could not be justified unless at least a pre-agreement between the City and the US Navy is entered in write.

For this reason Mr. Pireddu expressed the hope that the US Navy could provide the design of whatever work is considered missing to complete the entire system upgrade.

He also promised to talk to Mr. Tollis, City's Public Works Assessor, to find out if any alternative path could be taken to have the City paying for that design.

Regarding the funds currently assigned to the City of La Madd for upgrading the water system, following is the update provided by Mr. Pireddu:

- 1,178,000 € Funding already available to duplicate the pipeline from Mongiardino tank to Sassorosso tank and to enlarge Mongiardino tank. Construction contract to be awarded by Nov.03
- 3,500,000 € Appropriated funding expiring by the end of CY03 but subjected to the Region's approval prior to be obligated for replacing the submarine raw water pipeline from Cannigione
- 680,00 € Funding already obligated for paying the first group of connection points that are being adjusted to comply with the updated water service standards. These points are located downtown La Maddalena.
- 360,000 € Funding already obligated for WTP upgrade (sludge canalization and disposal). Work will start in fall in order to let the WTP operate during summer.
- 250,000 € Funding already available for water facilities restoration (construction work) to be obligated by the end of CY03.
- 2,500,000 € Funding intended to complete the adjustment of the connection points in the water distribution system.

- **Mtg. w/NSALM Supply Dept.** rep. Mr. Erio Fiori, held at his office. Those present were Erio and myself.

Erio explained how the contract for the bottled water works and provided all the data in his files relevant to bottled water consumption from FY99 to FY02. Unfortunately the data were just available on paper support, no electronic spreadsheets, so the totals could not be calculated immediately.

He was also able to provide data about the water barged to S.Stefano Site in FY02.

All this information will be incorporated in the Water Master Plan currently being written by Mr. Bonner and myself.

- **Mtg. w/NSALM Budget** rep. Ms. Francesca Natoli, held at his office. Those present were Francesca and myself.

I asked for clarifications about Trinita and Paradiso last FY02 quarter water consumption that was told to be wrong. She explained how the meter readings are taken by military personnel and then communicated to the City for billing purpose: for this reason, the amounts shown in the last FY02 quarters have to be reflecting an erroneous reading and not a reconciliation bill. In fact, the log of the readings taken by the Navy personnel shows that the Sep 02 reading is higher than the Dec 02 one.

- **Mtg. w/Tom Bonner** held at PW Dept. Those present were Tom and myself.

We went through each paragraph of the Master Plan we separately wrote, in order to verify what information was redundant and what insufficient. We compared and motivated our approaches to the work and clarified anything was unclear to the other one. Then we decided how to consolidate the two documents: we agreed to adopt Tom's document format, as it reflects LantDiv standard format, to have Tom incorporating all the contents plus our latest comments into a coherent structure and filling the parts still incomplete except for the chapter on the City's proposal to be more detailed by me. Once the

consolidated document is ready it will be passed to EFAMED and to the Activity for the final review. Tom volunteered to run the economic analysis again in light of the additional information and clarifications collected on-site.

We agreed to complete the Water Utility Master Plan consolidation and review by the first week of August.

July 24, 2003

- **Brief to NSALM CO**. Those present are PWO LCDR Loeschke, Hsg. Director P. Carrera, T. Bonner, D. Jordan, LantDiv EV engineers W. Carter and S. Kotecke, and myself.

The first part of the mtg. was focused on the environmental issues the LantDiv engineers came to La Madd for. Then, Tom briefed the CO about his involvement in the water issue and the work made on-site to collect the missing information and to survey the treatment plants at Trinita and Paradiso. He also mentioned our joint effort to consolidate all the information and comments into a Master Plan and explained the results of his economic analysis encouraging to accept the City's proposal.

The CO asked what actions were to be taken in order to proceed with the agreement with the City. I briefed him on what learnt at the latest meeting with Mr.Pireddu and highlighted the City's difficulty to provide any design to be used as a reference for the estimate and the negotiation.

The PWO expressed his perplexity on the hypothesis of having the design provided by the Navy, as this could expose the Navy to criticism or complaints.

Patrizia pointed out that the City's incapacity could lock the negotiation for years, so she suggested to take care of the design contract and to make the City responsible for the review and the final approval.

- **Site Survey at City's WTP**. Those present are T. Bonner, D. Jordan and L. Faiella (NSALM EV Dept.), City's rep. Mr. A. Pireddu and myself. Mr. Pireddu shown all the facilities and the equipment installed at the site. He also explained the process adopted to treat the water and the improvement to be made to the system shortly. He answered all the questions made by the Navy's engineers on water quality, quantity and distribution.

Comments and recommendations

The new economic analysis to be run by Tom is expected to confirm the previous result, so that the City proposal seems to be acceptable for the Navy in terms of payback. In order to shape the agreement with the City, the funding could be managed as a connection charge to be paid for improving the water service to all the Navy's facilities in La Madd, including S.Stefano Site, under the Water Utility Master Contract already in place with the City of LaMadd.

The design of the project to agree upon is crucial, as the negotiation cannot set it aside: it is highly recommended to carefully evaluate what options can be implemented to avoid of locking the process on this phase.

Bonner, Tom N. (EFDLANT)

From: Grillo, Sonia (EFAMED)
Sent: Thursday, June 05, 2003 12:40 PM
To: Polverino, Dawn M. (EFAMED)
Cc: Pece, Lorenzo (EFAMED); D'Antonio, Gerardo (EFAMED); Damiano, Giuseppe (EFAMED); Moskal, Thomas (ROICC LaMaddelana); "Farmer, Bruce NSALM-PWD' '; Bonner, Tom N. (EFDLANT); Knox, John L. (EFAMED)
Subject: LaMadd Water Issue Update

Dawn,
This is a short brief about the outcome of the meetings held in LaMadd during the last two weeks.

All the information gathered brought up a much clearer picture of current status and next development of 'water scenario' in the island.

I obtained a copy of City's technical report on LaMadd water system describing the status and the needed improvements, plus a copy of City's cost estimate used for requesting funds relevant to each part of the needed works.

To date the City got funded, in the amount of 8M €, the replacement of the damaged raw water pipeline from Cannigione, the duplication of the pipeline from Mongiardino tank to Sassorosso tank and the enlargement of Mongiardino tank. The construction contract has to be awarded by the end of 2002 and the works have to be completed in two years from now. The information provided by City's reps make me think these data are reliable.

All these works would ensure the capability of supplying enough potable water [Italian standard] to the all island provided that City's water treatment plant [WTP] capacity is brought from the current 60 liter/sec to 240 liter/sec. This WTP upgrade hasn't been funded, so that about 25% of the total money needed to make the all system working is missing.

City's proposal is to get this 25% from the Navy as an advance payment for consumption to be returned as a 50% discount on the water rate. Based on a very rough estimate, the payback time shouldn't exceed 5 years but it could even be just 3!

Our idea (Lorenzo's, Gerardo's and mine), successfully sketched today to Assessore Tollis and Mr. Pireddu, is to provide our design and supervision for the WTP upgrade and to subordinate our payment to the work progress, to be started after the other works on the system are implemented up to a percentage to be evaluated and negotiated. Of course, the City shall allow the Navy to install local treatment plants to take the water to the American standards.

Tomorrow morning I'll survey the water system key points with Mr. Pireddu and take some pictures to be attached to the report on the water situation at La Madd.

Next steps will be coordinated with the City after our strategy has been internally discussed and defined.

POINT PAPER

21 May 2003

To: EFAMED BE, Dawn Polverino
From: EFAMED BE, Sonia Grillo

Subj: **LA MADDALENA WATER ISSUE**

BACKGROUND

- Potable water distribution service in Italy is operated under captive market and it is provided by local monopolist entities in charge for each defined area.
- Italian quality standards for potable water are less restrictive than American ones.
- On La Madd Island the potable water service is provided by the City through a network system owned and maintained by the City itself.
- The quality of the supplied water does not meet the American standards. Furthermore, infiltration problems many times take the quality of delivered water even below the Italian standards. NSA La Madd provides bottled drinking water to the U.S. population.
- Like the rest of Sardinia, La Maddalena experiences routine water shortages due to frequent drought periods (mostly occurring in the summer) and chronic infrastructure inadequacy.
- Due to City's water treatment plant (WTP) restoration after many years of idleness, during the summer 2002 the water shortages did not occur. Afterwards, the WTP was turned off again due to the drying up of the raw water reservoir (Puzzoni) feeding the plant.
- To alleviate the shortage, NSA LaMadd trucks in non-drinkable water from Sardinia mainland ($385K in FY01, 233K in FY 02).
- The water outages affect more the upper locations, so that Trinita Housing Complex (134 FHUs) is the most penalized of the Navy's facilities on the island.

INFRASTRUCTURE STATUS

Based on the information gathered to date, the infrastructures impacting the water service in the island of La Madd are:

- Pipelines adducting water from mainland Sardinia: 1 from Palau and 1 from Caprera adducting 12 gal/sec and 14.5 gal/sec of potable water (Italian standards) respectively, plus 1 from Caprera adducting 4 gal/sec of raw water. The potable water flow towards the island cannot be increased due to law limitations
- Puzzoni reservoir (raw water): maximum capacity 1,000,000 CY, never full filled under the current condition of the pipeline feeding raw water
- Local distribution network: 160 km of pipelines, some of which over 60 years old and sometimes duplicated by newer ones. The bad condition of many of them causes high quantity of leaks (up to 40%) and gives place to infiltration in case of low pressure.
- Local potable water main tanks: Sassorosso and Mongiardino, respectively located at 142 m and 64 m above sea level. The first one, in case of low pressure, gets no water from the network. It is the same one feeding Trinita.

- Local water treatment plant, located downstream Puzzoni reservoir.
  OPTIONS
- **RO unit** treating seawater: To be located in Trinita area, with the capacity of providing drinkable water for all the NSA facilities on the island [sites other than Trinita to be served by truck].
  - ESTIMATED COST: 1M $
  - PROS: Process fully controlled by the Navy, no limitation on water availability
  - CONS: Disapproved by the local Italian National Parks (INP) authorities, having regulatory and land title control over this matter, due to the high saline content of its effluent even if it can be designed to meet FGS environmental standards
- **Dedicated pipeline** from Puzzoni to Trinita to be laid in the same excavation already in place for City's waterlines, intended to feed an RO unit treating raw water.
  - ESTIMATED COST: 1M €
  - PROS: Approved by INP and Consorzio di Bonifica della Gallura (CBG), Water supply contract with CBG not subjected to captive market constrains.
  - CONS: Water flow limited by the low capacity of the line coming from Sardinia, no room allowed by the City in the existing excavation due to City's need of duplicating the pipe in there.
- Fund the existing **City's WTP upgrade**: Using Navy's money the City enlarges the WTP as far as quadruplicating its capacity, converts the Caprera pipeline from potable to raw water, with the capacity of 20 gal/sec, increases the flow of potable water coming from Palau up to 16 gal/sec, the Regional Decree threshold still being 30 gal/sec (it would apply only to this supply)

  ESTIMATED COST: 2.5M €

  PROS: Benefit to all the facilities on the island, positive impact on the local public opinion

  CONS: Very low Navy's control on the process, no guaranteed result

Two more options can be taken into consideration as temporary relief to the problem:

- Moneta supply restoration: Water delivery point at sea level easily accessible by truck, in case of shortages water is trucked from this point to where needed at much lower cost compared to water trucked from mainland Sardinia

  ESTIMATED COST: 200 €

  PROS: Immediate implementation, low cost

  CONS: Apparent unavailability of Navy's truck for this service
- Duplication of the water tank at Trinita Hsg: It guarantees 3 days of self-sufficiency in order to allow enough time to receive trucked water even when the shortage occurs during weekends.

  ESTIMATED COST: 300k €

  PROS: Improves the quality of resident's life, facilitates trucked water management

  CONS: Benefit limited to Trinita, no cost reduction

SONIA GRILLO

Bonner, Tom N. (EFDLANT)

From: La Madd FH
Sent: Wednesday, April 09, 2003 10:02 AM
To: Van Hutten, Darrell Y. (EFAMED); Chandler, Donald R. (EFAMED); Dolan, Mike J. CDR (EFAMED); Gardiner, Eddie CAPT (NSALM N00); Pece, Lorenzo (EFAMED); Pfefferkorn, Jessica LCDR (NSALM EXEC)
Cc: Grillo, Sonia (EFAMED); D'Antonio, Gerardo (EFAMED); Polverino, Dawn M. (EFAMED); Reppe, Kurt J. (EFAMED); Archer, Brenda J. (EFAMED); Thumma, John H. (EFAMED); Knox, John L. (EFAMED); Pais, Angelo UA-2 (NSALM PWD); Isbell, David P. (EFAMED)
Subject: LA MADDALENA: WATER - HOUSING LEASE CONSTRUCTION

MSG FROM LORENZO PECE

A brief summary of recent developments on subject issues is provided below.

1. WATER. 7 March. Met with Parco President Cualbu, City Assessor Tollis and Technical Director of Consorzio Bonifica Gallura Ing. Ceruti. Funds IAO $3.5M are allegedly available to rehab the raw water line from North Sardinia to Caprera. No money now for the portion from Caprera to Puzoni reservoir. They hope to find them in the future (would love US funding). Execution timeframe for funded portion: 24 months; not foreseable for second part. They insisted that we continue to cooperate with the objective of solving the water shortage problem on the island. When this line will be available the USN could draw treated water (Italian Standard) from the reservoir and distribute it to Trinita (and possibly to other facilities) via dedicated piping, or via public network. Alternatively, the USN could intercept the raw water line before the reservoir and connect the sites via dedicated piping. With the second option, a higher level of water treatment would be required. The best course of action shall be decided by technical experts. For this purpose, Assessor Tollis proposed to hold a technical mtg in May.
I expressed our appreciation for their good intentions to implement a complete solution to the water shortage on the island, but stressed that something needs to be done immediately to mitigate our problems in Trinita. As an interim measure while we wait for the rehabilitation of the raw water line from Sardinia to Puzoni reservoir, I requested Assessore Tollis if we could install an additional water storage tank at Trinita. Both Tollis and President Cualbu responded positively, with the recommendation that the structure should not be aesthetically in conflict with the surrounding landscape.

NOTE: Two days later I met Assessore Tollis at the City Hall; he told me that he had discussed the water tank issue with the City Tech Dept with positive response. He suggested that we meet with the City Tech Dept and submit a preliminary design of the tank showing its proposed location and features.

2. HOUSING LEASE CONSTRUCTION. 9 Mar. Joined Dr. Nobili, Vice president of Pizzarotti, Ing. Buttini and Soncini, managers, for a meeting with La Madd Mayor Ms. Giudice and with Assessore Columbano, to support their application for Bldg Permits. Guardioli site is not a problem, they can get a permit immediately. Punta Villa could fall victim of proposed changes to the existing City Plan and get a 50% reduction of authorized construction capacity. Fortunately, the Mayor is strongly in support of this initiative and directed Assessore Columbano to do everything required to eliminate this risk. She was shown the Site Development Plan and the Units Floor Plans and said that they are a good example of how those areas should be improved. I expressed the USN interest that the project be realized.

Received and reviewed definitive AT/FP requirements. Our project appears to be in full compliance.

V/R LORENZO PECE

Bonner, Tom N. (EFDLANT)

From: Pece, Lorenzo (EFAMED)
Sent: Wednesday, November 06, 2002 6:45 AM
To: Van Hutten, Darrell Y. (EFAMED); Chandler, Donald R. (EFAMED)
Cc: Moskal, Thomas (ROICC LaMaddelana); Grillo, Sonia (EFAMED); D'Antonio, Gerardo (EFAMED); Polverino, Dawn M. (EFAMED); 'anselmoc@lamad.navy.mil'
Subject: La Mad water mtgs 29-30 Oct 02

MEMORANDUM 6 NOV 2002

FROM: LORENZO PECE
TO: CO/XO EFAMED

SUBJ: LA MADDALENA WATER

1. On 29 – 30 October 2002 I traveled to La Maddalena to hold a series of meetings with local authorities to evaluate the feasibility of installing a new dedicated water supply line for the US Navy Trinita Housing Complex. Meetings were arranged by the Activity with the La Maddalena Parco Authority, with Water Agency ESAF, and with the City. Consorzio Bonifica della Gallura (CBG) reps were not available.
LT Moskal and Mr. Cuneo of NSA La Mad, Eng. Grillo and D'Antonio of EFAMED participated in the meetings.

2. Parco Authority: we met the President Mr. Cualbu and the Director Ms. Fois. The President stated that the Parco has no technical role in this initiative, but wants to act as political sponsor-coordinator of a project to provide an adequate and reliable water supply for Trinita. Their plan is that CBG should supply raw water through an existing pipeline from mainland Sardinia (Cannigione) via Caprera to a delivery point in La Maddalena (Ricciolina). From here, a new pipeline for the exclusive use of the US Navy should run in an existing trench to connect Trinita. A Water Treatment Plant (WTP) should be installed either at Ricciolina or at Trinita. The US Navy should pay approx 1M$ for the dedicated line and for the WTP (very rough estimate). CBG and the City should agree to supply the water and to execute the relevant contract respectively. ESAF would not be involved in this initiative because it will be closed down in the near future.
Mr. Cualbu proposed to host a meeting with the US Navy, CBG and the City at the end of November 02 to evaluate jointly the feasibility of this project.

3. ESAF: Mr. De Muro, Director of ESAF Arzachena, did not show up at the meeting due to an alleged emergency. We spoke with his assistants Mr. Pisano and Ms. Fresi. They stated that their job is to maintain the North Sardinia potable water network, and they don't know anything about the CBG raw water line from Cannigione to Ricciolina. Overall, ESAF reps appeared indifferent to the issue and answered vaguely to our questions.

4. City: we met Assessor Tollis and the City Chief Technician Mr. Pireddu. The Mayor stopped by briefly for a courtesy call and stressed the City's good attitude towards the US Navy. Tollis confirmed the City's desire to improve the water situation at Trinita, but was skeptical about the solution proposed by the Parco President. He stated that the CBG raw water line between Cannigione and Ricciolina is not reliable because in very bad condition; a new pipeline would be required, but its cost would be extremely high. He proposed the following alternative solution, based on the fact that the potable water allotment for La Maddalena is currently fixed by law, but there are no limitations on raw water: feed all potable water to the island through the existing ESAF pipeline coming from Palau-S. Stefano; abandon the existing CBG raw water line Cannigione-Caprera-Ricciolina; convert the existing ESAF potable water line running along the route Cannigione-Caprera-Ricciolina into a raw water line fed by CBG; construct a WTP at Ricciolina to supply additional potable water to the entire community including Trinita. According to Tollis, two things should happen to implement this plan: ESAF should be closed down (by mid November 02) and money should become available for WTP construction (with US contribution). Finally, Tollis stated that he would be glad to participate in the joint meeting arranged by the Parco President.

5. Conclusions: Both Parco and City seem eager to resolve the Trinita water problem, but their proposed methods don't match; they only agree on the expectation that ESAF will be closed down soon. Additionally, neither plan provides the US Navy with the certainty of water supply that could justify a significant expenditure of money. During the meetings, I stated clearly that no commitments could be expected from the US Navy at this point of time, but that we are willing to explore all possible ways to improve the water situation for the US facilities in La Maddalena. Accordingly, we look forward to the future joint meeting with Parco, City and CBG hoping that significant progress can be made in this issue.

LORENZO PECE
Host Nation Political Advisor
EFAMED

MEMORANDUM November 4, 2002

To: EFAMED BE, Dawn Polverino
From: EFAMED BE, Sonia Grillo
Cc: NSA La Madd, PWO LT Moskal

Subj: LA MADDALENA 29-31 OCT 02 TRIP REPORT

Purpose of this site visit included the following:

a. Investigate possible solutions of the water shortage problem in La Maddalena
b. Meet the local entities to sketch a clearer picture of present and expected water distribution system status
c. Gather more information about Consorzio di Bonifica della Gallura (CBG)'s proposal about a water pipeline dedicated to US Navy.
d. Data Logger Installation at Trinita Hsg. Meter performed by Enel.si

OCTOBER 29, 2002

- **Mtg. w/ Ente Parco** (National Park of La Maddalena Authority) at Ente Parco's premises. Those present were: Mr. Gianfranco Cualbu, Parco's President, and Ms. Giovanna Buoi, Parco's Director, LT Thomas Moskal, NSA La Madd PWO, Mr. Anselmo Cuneo, NSA La Madd Planner, Mr. Lorenzo Pece, EFAMED Host Nation Political Advisor, Mr. Gerardo D'antonio, EFAMED Civil Engineer, and myself. Nobody from Consorzio di Bonifica della Gallura was attending due to a last minute contingency.

After introduction, Mr. Cualbu apologized for having no CBG's representative at the meeting but said he was fully able to talk about the CBG's proposal.

What he pointed out can be summarized as follows:

- ***Background:*** Water to La Maddalena Island is supplied by three pipelines coming from Sardinia mainland, one coming from Palau through S.Stefano and two coming from Cannigione through Caprera. One of the two lines coming from Cannigione provides raw water sold from CBG to the City, the others provide potable water sold from ESAF to the City. Ownership of the three pipelines unknown to Mr. Cualbu. Raw water is made potable with City's treatment plant, and then put into the local water distribution system. A study on the water shortage in La Maddalena made by Consorzio Industriali of Olbia estimated in a few hundred thousands euro the cost of the most urgent works to improve the distribution system. City's water system upgrade project already funded in the amount of about 16.5 millions € and just to be awarded by the end of 2002. Full capability of the City to supply enough water to all the customers in the island, even during summer months.
- ***CBG's proposal:*** Install a new pipeline going from the raw water delivery point (Ricciolina) to Trinita following the excavation already in place for the existing potable water distribution system. Install somewhere along this path a RO treatment plant able to provide potable water at US standards. Estimated cost for the work: 1 million $. Expected completion work timeframe: 3 months since the contract signature. Contract to be subscribed with City as the potable water distribution monopolist on the island. Expense to be intended as a connection charge. Payment to be performed through an additional charge to the cubic meter price as long as an agreed amount of cubic meters is consumed. Pipeline and treatment plant dedicated to US Navy but just for technical reasons and per contract Full capability of CBG to supply whatever needed quantity of raw water through the existing pipeline. No leverage of ESAF to prevent City and/or CBG from performing this project.
- ***Ente Parco involvement:*** Ente Parco's official role is just related to the approval for the pipeline and/or treatment plant to be possibly installed on La Maddalena island. From a political standpoint, instead, Ente Parco is acting as a sponsor for replacing ESAF (Ente Sardo Acquedotti e Fognature – Water and Sewage Sardinian Agency) with a Consortium of Northern Sardinia's Municipalities supposed to be more effective and beneficial in managing the water distribution all around Gallura area. CBG's proposal would help this process as it would diminish ESAF's predominance in the said area.

After discussing about the above-mentioned issues, all the attendees agreed to arrange a joint meeting with City and Consorzio Bonifica besides Ente Parco and US Navy, to be set up by Mr. Cualbo during the third or fourth week of November.

- **Brief to NSA La Madd CO**. Those present are LT T. Moskal, Mr. A. Cuneo, Mr. L. Pece, Mr. G. D'Antonio, and myself. After an introduction by LT Moskal, Mr. Pece briefs the CO about the meeting held in the morning with Ente Parco and expressed a cautious optimism about Mr. Cualbu's proposal. He described our expectations from the following meetings with the City and ESAF, substantially consisting in getting confirmation by the City that CBG's proposal is technically, politically and legally feasible and the City itself is open to agree on that proposal; in addition, gathering information, hopefully not conflicting, by ESAF about its role, influence and leverage relevant to this project. He then shortly updated the CO about La Madd lease construction project status.

October 30, 2002

- **Mtg. w/ESAF** held at ESAF's office in Arzachena. Those present were Mr. Pisanu, ESAF technical responsible for the area including La Madd., Ms. Fresi, ESAF technical responsible for areas other than La Madd, LT T. Moskal, Mr. A. Cuneo, Mr. L. Pece, Mr. G. D'Antonio, and myself. Mr. De Muro, ESAF Arzachena Director, did not show up for an unforeseen contingency.

After Mr. Pisanu introduced himself as a very new employee been working for ESAF since just two months, he provides the following information:

- ESAF is responsible to operate and maintain the potable water distribution system all around Sardinia. In particular, ESAF Arzachena's area of responsibility is Northern Sardinia.
- ESAF buys raw water from CBG and, after treatment, sells and distributes potable water to various municipalities in the area, including City of La Madd.
- The potable water is supplied to La Madd through the two pipelines coming from Palau and from Cannigione, but supposedly the pipelines are not owned by ESAF.
- The third pipeline supplying raw water to La Madd is managed by CBG and ESAF has no concern with it.

Mr. Pece's inquiry about getting a water supply, to be flown through a dedicated line, straightly connected into the pipeline coming from Cannigione, raises some technical concerns from Ms. Fresi who says any connection on the main water pipeline impacts the piezometric pressure, so that it has to be authorized by ESAF Headquarter in Cagliari. No additional comment is provided about possible legal constrains.

- **Mtg. w/City of La Madd** held at City Hall. Those present were Mr. Tollis, Public Works Chairman of the City Council, Mr. Pireddu, City's Chief Technician of the water distribution system, LT T. Moskal, Mr. A. Cuneo, Mr. L. Pece, Mr. G. D'Antonio, and myself. Ms. , La Madd Mayor, just showed up to say welcome but had to leave soon.

City's representatives were briefed about CBG's proposal as presented to us by Ente Parco. They expressed their willingness to satisfy US Navy's water requirements. Following are their comments and clarifications:

- The City owns all the pipelines supplying water to the island. They are given in concession to ESAF and CBG for supplying potable and raw water respectively.
- The potable water is supplied through the Cannigione pipeline in the quantity of 55 l/sec and through the Palau pipeline in the amount of 45 l/sec. The raw water is supplied through the second Cannigione pipeline in the quantity of 15 l/sec.
- The above quantities of potable water are currently not increasable as per a Regional Decree setting a threshold of 110 l/sec as the maximum amount of water that can be supplied to La Maddalena from the mainland.
- No limit is imposed on the raw water, but the raw water pipeline is in a very bad condition so that no additional quantity of water could flow into it. The expected lifetime of the pipeline itself does not exceed two years.
- The GBC's proposal could be put in place only after replacing the raw water pipeline with an estimated cost of 10 million $ that the City hopes to get funded in the future. In addition, the City is

planning to duplicate the pipeline running from Ricciolina (Cannigione pipelines delivery point) to Sassorosso Tank (the closest one to Trinita) via Mongiardino Tank, so that no room would be available for the pipe dedicated to the US Navy.

- In order to propose an alternative, Mr. Tollis described a less expensive and quicker solution consisting in:
  - enlarge the WTP as far as quadruplicating its capacity
  - convert the Cannigione pipeline from potable to raw water, with the only constrain imposed by the pipe capacity that is 75 l/sec
  - increase the flow of potable water coming from Palau up to 60 l/sec, the Regional Decree threshold still being 110 l/sec (it would apply only to this supply)

The estimated cost for enlarging the WTP is 1 million $ to be possibly funded by the Us Navy; the estimate completion time is 6 months.

- For a clearer picture, Mr. Pireddu provides more technical details about how the raw water is managed:
  - The raw water flows into the Puzzoni reservoir, located in Ricciolina, which has a capacity of 900,000 cubic meters. From here the water is sent to the City's water treatment plant (WTP), having a maximum treatment capacity of 60 l/sec.
  - This City's WTP has been recently fixed and set up after many years of idleness. It was operating during summer months so that a sufficient quantity of potable water was provided to all the customers during the tourist season *[this occurrence is confirmed by NSA La Madd]*.
  - Due to the large withdrawal of water, the Puzzoni reservoir was almost empty at the end of the summer, so that it has been drained to perform some maintenance work. This is the reason why water shortages are happening again. Given the very limited flow of raw water, the time to have the reservoir filled enough to start drawing water again will be long, although intensive rain could shorten this time.

The alternative of installing a reverse osmosis plant (ROP) to treat the sea water aroused a scarce enthusiasm with the City's reps., as its environmental impact would imply so many constrains that the feasibility itself of such a project would be compromised.

Regarding the already funded 16.5 million € project mentioned by Mr. Cualbu, Mr. Tollis clarifies that the money is not intended to the water distribution system upgrade but only to the sewage system upgrade.

Mr. Tollis and Mr. Pireddu agreed to have a joint meeting with Ente Parco e CBG to be held by the end of November.

October 31, 2002

- **Site Survey at Trinita Hsg**. Mr. Sanna, chief technician of Enel Distribuzione, and Mr. Campagna, Enel.si responsible for the area, are on the site with their workers to install respectively the pulse emitting card and the data logger to store the pulses. The double installation is successfully completed. The system is tested to make sure the device is correctly working. From now on the electrical data measured by main meter are transferred to Enel.si's central server for being processed. They will be make available on the website by the end of the year.

Comments and recommendations. The information provided from Ente Parco and that from City of La Maddalena do not fully match, so that CBG's proposal seems to be not practicable in the short term. Both the entities showed their good attitude to cooperate for solving the US Navy water problem whilst ESAF does not play any role in this picture.

In order to make progress from this stage, it is highly recommended to meet all the players together.

SONIA GRILLO
Utilities Engineer

MEMORANDUM June 16, 2000

To: J. Thumma (N9), J. Gurganus (N2), EFA MED
From: S. Grillo (N93), I. Marinelli (N25), EFA MED
Cc: LT C. Collins, PWO NSA LA MADDALENA

Subj: TRIP REPORT

During our site visit from June 12, 2000 to June 16, 2000 meetings were held and actions were taken on the following:

a. Agreement on Water Supply Tech Specs format (N93-N25)
b. Inclusion of old water supply contracts under Master Contract (N93-N25)
c. Refuse collection service and payment
d. Maria Hsg. electric MV feeding cable (N93)
e. Quality of water discharged into the sea at S. Stefano (N93)
f. Feedback of EFAMED Technical Trip Report of 1/18-21/00 (N93)

June 12, 2000

- An introductive meeting was held w/Anselmo Cuneo at PWD about the trip targets and the procedures to be adopted. A clarification on the general scenario, history and reciprocal roles of EFAMED and NSA La Madd was reached. Anselmo was requested to support EFAMED in the meetings with the City.
- A short Mtg w/Attilio Graziani was held on pending utilities supply issues. A USR dated 4/20/00 regarding a new electrical supply at Carbini Compound was hand delivered; the reason why it never got to EFAMED Utilities Dept. is likely a misrouting due both to the addressing to EFAMED CO and to the use of an ESR cover sheet instead of an USR first page.

June 13, 2000

- A site survey was made at Maria Hsg. and Mtg w/ Mr. U. Rossi, lessor representative, was held in order to be updated on the safety tests performed on the existing MV electrical system that Enel assumed to be dangerous and requested to be converted into a LV supply. This option would have caused a sensitive increase in power costs for the US Navy, so EFAMED was pushing for clarifying the safety situation and, if necessary, to find any alternative technical solution not implying the change from MV to LV supply contract. Mr. Rossi mentioned unofficial positive results of the tests, so that no change in the MV feeding cable and substation was necessary, and showed the consequent technical arrangements agreed with Enel for other improvements on the system. Mr. Rossi committed to prepare a scheme of the existing electrical system within the end of the week. Furthermore he provided the telephone numbers of all the Enel people involved in the tests to be contacted for confirmation about their official position. Mr. Rossi also talked about the City water supply that seems to have been continuously provided during the last 5 months, in spite of the past shortages.
- Mtg w/Alessandra Latte of NSA La Madd - PWD Realty Section about their methods of payment in order to clarify the procedure to be used for the garbage collection bills
- Mtg w/BU1 David Sweet, Shop Supervisor, in charge for the water meter readings, who briefed about consumptions of water supplied from the City; he explained that during last months the general situation has improved and the City water system has been supplying also to Trinita and Maria Complexes, even though the quantity is often insufficient and the water trucking service for those facilities is still operated on daily basis. With regard to Moneta area, he said that the poor condition of City pipeline causing the shortage has been fixed by Seabees; furthermore, a new tank (five times bigger than the existing one) was installed so that an increase in the water supply contract would be appropriate. He provided copies of last months

various sites meter readings. Regarding to S. Stefano water supply, he suggested talking to Mike Childers.

- A Phoncon w/CE1 Mike Childers, MUSE Tech at S. Stefano, was held on the topics of water supply and water discharge into the sea at S. Stefano. He complained the permanent water shortage due to the poor quantity of water supplied from ESAF through the pipeline feeding S. Stefano by means of the T-connection; he stated the intention to install a reverse-osmosis plant for the seawater desalinization. Regarding the water discharges, he was aware about the wastewater treatment plant discharge but was not able to provide information on the pipe coming from the generator's area. He provided "Gemmo Impianti" and Tony Marano of ROICC telephone numbers.
- A Mtg w/Pino Malgari of PWD and Michele Barberi of ROICC was instantaneously arranged: Pino showed his drawing indicating the discharge pipes at S. Stefano and Michele explained that the drainage water coming from generator area passes through a sedimentation manhole and then through an oil/water separator, according with the Cold Iron design that the pipe is part of. He highlighted that also the water coming from the boilers, even part of Cold Iron, could be polluted by acids but it is discharged into the sea with no quality control nor authorization. Even though the Italian Navy approved the whole Cold Iron design, no authorization exists or has never been requested to the Italian authority for discharge waters other than wastewater; so the discharges are still illegal and could cause serious problems to US Navy if brought to Italian authority attention. EFAMED suggests performing quality tests on the water actually discharged into the sea and providing, in case of discrepancy with the Italian law quality parameters, to fix the situation by adjusting the parameters or by routing this water to the wastewater treatment plant.
- PWO LT Collins was briefed about the reasons of this TDY to La Madd, included the contractual topics, since the delay of Iolanda's flight did not allow her to be present; Dave Carte' and Pino Malgari also participated the mtg. A copy of NRCC contract for water trucking, passed to EFAMED by Dave Harris of LANDTIV, has been delivered to the PWO as per his request.

June 14, 2000

- A meeting was held at the City of La Maddalena, Water Section, with the purpose of reaching an agreement on the format of the Technical Specifications to be utilized as standard procedures when applying for a new water supply or modifying an existing one. Present were S. Grillo, EFA MED Utilities Engineer, I. Marinelli, EFA MED Contract Specialist, A. Cuneo, NSA La Madd Engineering Manager, and Mr. Peana, Administrative Responsible for the City Water Section.
- Some issues were discussed as follows:

  Quality of the water supplied by the City: The water supplied in most of the areas on La Maddalena Island is not potable. The City requested the relative paragraph to be removed from the Technical Specifications.

  Water Supply Regulation: Mr. Peana is currently re-writing some clauses of the existing Regulation to be submitted to the City Board approval. The revision would mainly impact the contract transfer procedure and the meter concession to the users. So far, in fact, a contract transfer requests the person in whose name the contract is subscribed to terminate the contract, so that a new supply contract can be subscribed and, even though the location is already connected, the connection charge has to be paid again. With the revised procedure the contract transfer will be achieved through a written request and after payment of a small transfer fee. With regard to the meter concession, so far it is free but the revised regulation would charge a rental fee proportional to the meter size. The amount of said fees has to be determined by the City Board that would approve a tariff table. The Tech Specs will be adjusted accordingly. The City has been requested to provide the new tariff table to US Navy as soon as available.

  Standard Technical Specifications: In an attempt to generate standard contractual procedures for all services locations, the US Navy representatives proposed to include all the

old contracts still effective under the Master Contract (signed by the City and the US Navy in April 1998). Said contract includes service terms and conditions more beneficial to the US Navy. The agreed upon format of the Tech Specs will be applied to all the service locations currently in the name of the US Navy, that were executed years ago via either Letter Agreement or the Supplier's Supply Policy. Mr. Peana's reply was positive, but the City Secretary's concurrence and final approval is necessary. Mr. Peana will brief the City Secretary as soon as practicable.

Sewage and wastewater treatment charges: In application of the new Italian Law, requiring a fee for sewage and wastewater treatment, the City, from now on, will incorporate this fee in the water bill. It was understood that the Tech Specs would include the amount due for said services as a separate line item, in order to have a reliable annual fund appropriation and to make the water bill items easier to be justified.

- Concerning to the EFA MED technical trip report of last January, following are the responses on the issues that Mr. Peana was requested to inform us about:

Status of works on the pipeline feeding Mordini Compound (scheduled to be accomplished by the City within the end of June): they did not start yet and no schedule was currently arranged.

Reuse of former pipeline to feed S. Stefano site: this is just a hypothetical option not applicable until the water system will be globally fixed and the conflicts on management between ESAF and City will be solved.

Water trucking provided by the City: this service is generally granted to the users in case of severe water shortage but the provided quantity is definitively insufficient to US Navy necessities.

Cala Chiesa pump facility: US Navy used to withdraw water from this public point until more then one year ago when the service was dismissed per Major provision; the water cost always paid was much higher than the standard rate but it should correspond to the contract rate mentioned in the trip report.

- Anselmo briefed on the history of various supplies and agreements with the City. He also participated the January meetings with the City and raised a problem with the Cala Chiesa water cost. In his version the City would have stated that this water withdrawn was for free, so during the past years the US Navy would have been paying for a free service; based on this statement and looking forward to a clarification, he suggested the NSA La Madd to suspend the latest payment amounting to 40,000,000 ITL. The NSA has never got any official reply on this subject and intends requesting a reimbursement for all the amounts paid in the past; since seems reliable that City representatives Mr. Pinna and Mr. Ligas were wrong in their affirmation, Anselmo is trying to get a written reply from the City stating the rate, if any, due for that service, in order to avoid a possibly useless legal action.

June 15, 2000

- A meeting was held in the office of Mr. Ronchi at the Fee Collection Section of the City of La Maddalena. Purpose of the meeting was to obtain details on the Refuse Collection Service, which is, by application of an Italian Law, provided by the City in both the urban and extra-urban areas.
- Copy of the regulation was provided to the Navy representatives, along with the latest approved tariffs for 1999 and 2000.
- By effect of the above said Regulation, the old agreement with the City for Trinita' Housing is no longer applicable; therefore it needs to be terminated.
- EFAMED pointed out the necessity to execute a bilateral agreement to establish both parties responsibility. Mr. Ronchi replied that they would only accept a unilateral document, issued by the US Navy. Said document's contents will be as follows.

Acceptance of the City Regulation

Responsibility of the City to forward a copy of the updated tariffs

Tax exemption

Termination of the contract for Trinita' HSG

Method of payment

Responsibility of the US Navy to provide any change in the Lease Contracts

- The new format of the Technical Specifications, revised on the basis of what agreed on 14 June, was provided to Mr. Peana for the Secretary's approval.
- Mr. Peana provided a copy of the old Water Contracts, signed long time ago by the Activity representatives, each one to be filed with the corresponding new contract format.
- Even though we were on the site, we did not take the opportunity to meet the City Major and/or Secretary in order to talk about the rate for Cala Chiesa water, since Anselmo is in charge for this issue and maybe our intervention at this time could be detrimental to the task.
- The Enel-Palau Technical Office Head Mr. Atzori was contacted for Maria Hsg electrical problem and, after consulting the technician who performed the tests, he confirmed that the results allow to let the feeding system (and the MV supply contract) unchanged, so no further action is requested on this issue.
- Out-brief to PWO

For any further questions, please contact us at EFA MED, phone 626 4720, comm. 081-568 4720, extensions 349 and 322 respectively.

Sonia Grillo	Iolanda Marinelli
Utilities Engineer	Contract Specialist

Appendix D

Economic Analysis (of recommended alternatives)

- Summary
- Supporting Data

PROCUREMENT SENSITIVE

Economic Analysis Summary

Description of Alternatives

Status Quo
No change in current management or operation by NSALM. Under this alternative the City would complete the funded construction projects but not upgrade the City water treatment plant. No additional water supply would be available to NSALM. NSALM would continue to purchase City, trucked, and bottled water at current rates.

Net Present Value (NPV) for this alternative is $6,703,259.

Navy Owned Treatment
Although this alternative is not currently viable due to environmental restrictions placed on the Navy by regional Italian authorities, it provides a valuable comparison of costs. Under this alternative NSALM would construct, own, and operate a water supply and treatment system. The Navy would draw seawater from the coast of the island, pump it to Trinita Housing Complex, treat it by reverse osmosis, store the finished water, and discharge the brine back to the ocean. Potable water produced by NSALM would be used exclusively at Trinita Housing Complex and supplement City water at Paradiso and Mordini.

PROCUREMENT SENSITIVE

Net Present Value (NPV) for this alternative is $12,074,931.

City Owned Treatment
Under this alternative, the City would complete the funded construction projects and using a Navy contribution of 2.8 M USD (2.5 M Euro), upgrade the City water treatment plant to produce 20,736 MT/day (5,478,000 gpd). In return for this contribution, NSALM would receive a 50% rebate on all water purchased from the City until the entire $2.8 M contribution was recovered. Once the City treatment plant was operational, NSALM would discontinue use of bottled water and trucked water, relying completely on City supply.

Net Present Value (NPV) for this alternative is $3,657,221.

Comparison of Alternatives

Alternative	NPV	SIR	DPP
Status Quo	$6,532,965	N/A	N/A
Navy Owned Treatment	$12,416,885	-0.7	N/A
City Owned Treatment	$3,657,221	2.1	9.6 yrs

As shown in the table above, the City Owned Treatment alternative delivers significant savings over the 25-year period of analysis. The payback period of initial investment is

9.6 years and over the period of analysis, NSALM will save $5.88 M (2.1 times the amount initially invested).

Although the Navy Owned Treatment alternative would increase the reliability of water supplied to Trinita, and is therefore more favorable than the Status Quo, there appear to be no cost savings by pursuing that alternative. To match the savings of the City Owned Treatment alternative, the Navy would need to find a way to reduce the construction and annual labor costs of the Navy Owned Treatment alternative by 95.3%.

For the Navy Owned Treatment alternative to reach an NPV equivalent to the Status Quo, the Navy would need to find a way to reduce the construction and annual labor costs of the Navy Owned Treatment alternative by 60.82%.

The City Owned Treatment alternative is by far the most economical alternative. The Navy contribution to the City could be increased to $2,900,000 and still achieve a 10 year payback.

Sensitivity Analysis

Sensitivity analysis was run on a variety of inputs including: discount factor, City water rate, trucked water rate, bottled water rate, Navy contribution, and Navy Owned Treatment construction and annual labor costs. The analysis was found to be very insensitive to wide variations in all these inputs. Therefore, confidence that a sound decision can be made from this analysis is high.

PROCUREMENT SENSITIVE

DATE GENERATED: 18 Aug 2003
TIME GENERATED: 13:57:27
VERSION: ECONPACK 2.1.2

NSA La Maddalena Water Quantity Solution
ECONOMIC ANALYSIS

EXECUTIVE SUMMARY REPORT

PROJECT TITLE : NSA La Maddalena WUMP
DISCOUNT RATE : 3.03%
PERIOD OF ANALYSIS : 25 Years
START YEAR : 2005
BASE YEAR : 2005
REPORT OUTPUT : Constant Dollars

PROJECT OBJECTIVE : Determine the most cost effective method of delivering a reliable supply of potable water to NSA La Maddalena.

ASSUMPTIONS OF THE ANALYSIS:

1. The FY-02 water rate (1.01 USD/MT) will remain constant over the analysis period.

2. NSALM will discontinue purchasing bottled and trucked water under the City Owned Treatment alternative.

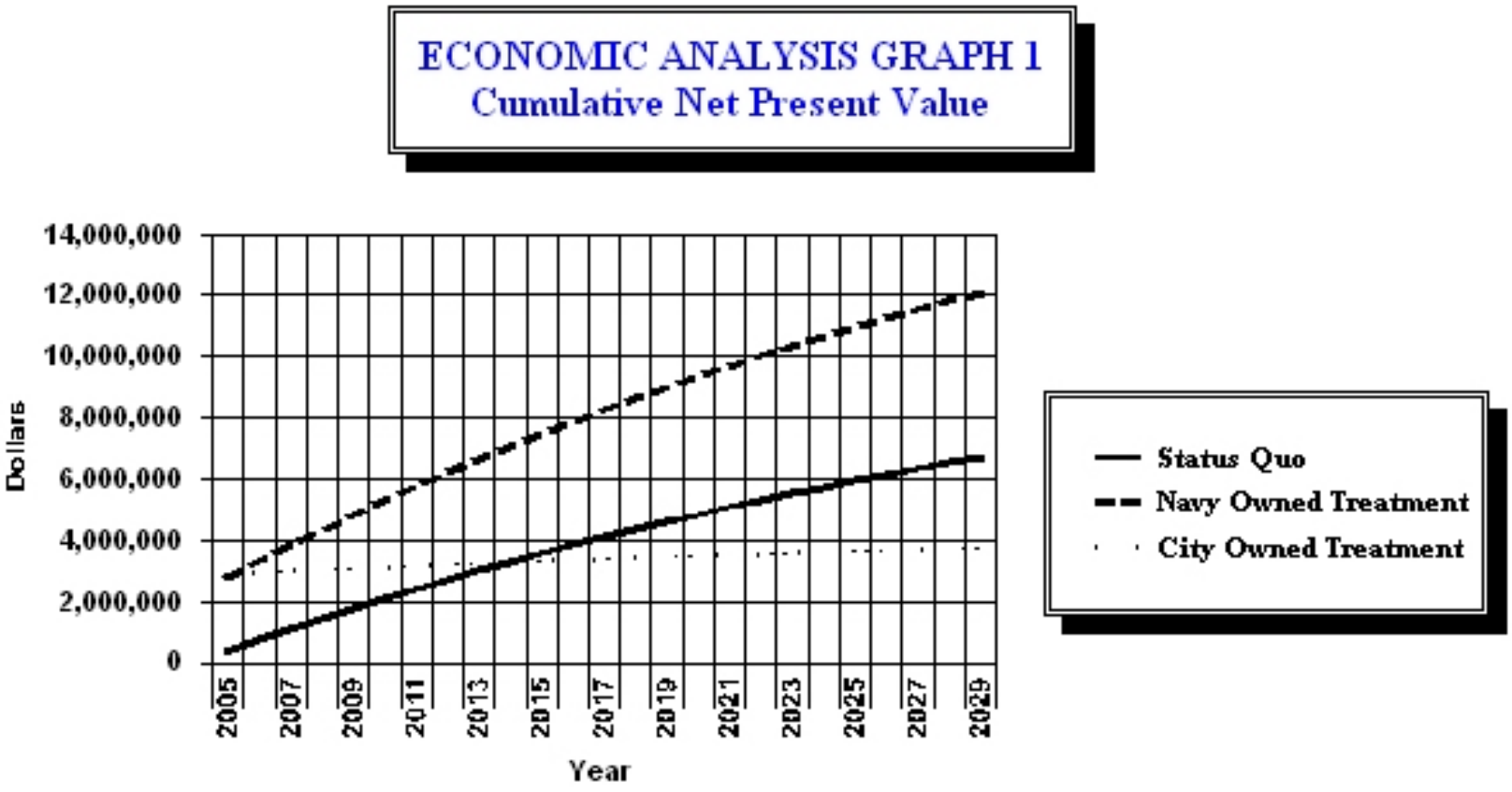
3. NSALM will discontinue purchasing city and bottled water for Trinita and trucked water for all facilities under the Navy Owned Treatment alternative.

3. NSLAM will recieve a 50% rate reduction over the period of analysis in return for the Navy Contribution.

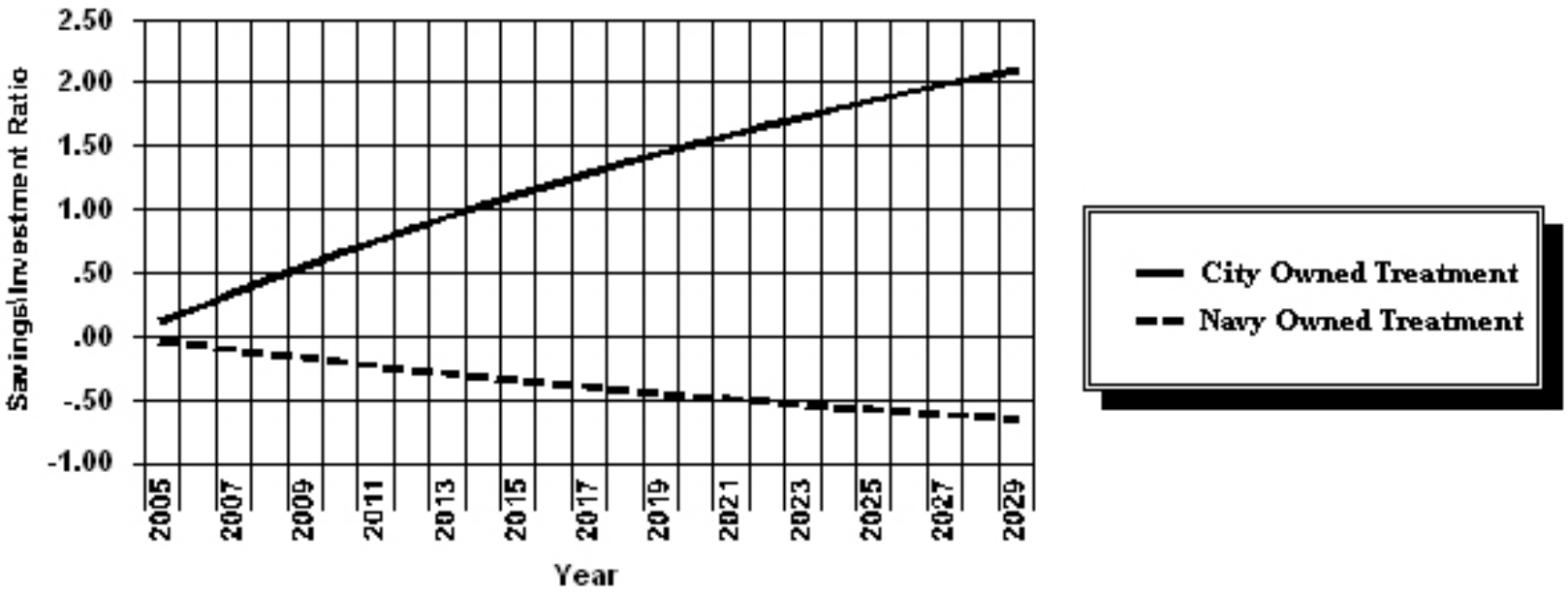
ECONOMIC INDICATORS:

ALTERNATIVE NAME	NPV	SIR	DPP	BIR
1 City Owned Treatment	$3,657,221	2.1	9.6 YEARS	N/A
2 Navy Owned Treatment	$12,074,931	-0.7	N/A	N/A
3 Status Quo	$6,703,259	N/A	N/A	N/A

ACTION OFFICER : Thomas Bonner, P.E.
ORGANIZATION : LANTDIV


ECONOMIC ANALYSIS GRAPH 1
Cumulative Net Present Value
14,000,000
12,000,000
10,000,000
8,000,000
6,000,000
4,000,000
2,000,000
0
Dollars
2005
2007
2009
2011
2013
2015
2017
2019
2021
2023
2025
2027
2029
Year
Status Quo
Navy Owned Treatment
City Owned Treatment

SIR ECONOMIC ANALYSIS GRAPH 1
SIR Vs. Years



LIFE CYCLE COST REPORT

1 City Owned Treatment

YEAR	Navy Contribution (1)	Water Rate (Discounted) (2)	TOTAL ANNUAL OUTLAYS	MIDDLE OF YEAR DISCOUNT FACTORS	PRESENT VALUE
2005	$2,800,000	$51,016	$2,851,016	0.985	$2,808,781
2006	$0	$51,016	$51,016	0.956	$48,782
2007	$0	$51,016	$51,016	0.928	$47,348
2008	$0	$51,016	$51,016	0.901	$45,955
2009	$0	$51,016	$51,016	0.874	$44,604
2010	$0	$51,016	$51,016	0.849	$43,292
2011	$0	$51,016	$51,016	0.824	$42,019
2012	$0	$51,016	$51,016	0.799	$40,783
2013	$0	$51,016	$51,016	0.776	$39,584
2014	$0	$51,016	$51,016	0.753	$38,419
2015	$0	$51,016	$51,016	0.731	$37,290
2016	$0	$51,016	$51,016	0.709	$36,193
2017	$0	$51,016	$51,016	0.689	$35,129
2018	$0	$51,016	$51,016	0.668	$34,095
2019	$0	$51,016	$51,016	0.649	$33,093
2020	$0	$51,016	$51,016	0.630	$32,120
2021	$0	$51,016	$51,016	0.611	$31,175
2022	$0	$51,016	$51,016	0.593	$30,258
2023	$0	$51,016	$51,016	0.576	$29,368
2024	$0	$51,016	$51,016	0.559	$28,505
2025	$0	$51,016	$51,016	0.542	$27,666
2026	$0	$51,016	$51,016	0.526	$26,853
2027	$0	$51,016	$51,016	0.511	$26,063
2028	$0	$51,016	$51,016	0.496	$25,296
2029	$0	$51,016	$51,016	0.481	$24,553
%NPV	75.43	24.57			
	$2,758,520	$898,700			
DISCOUNTING CONVENTION	M-O-Y	M-O-Y			
INFLATION INDEX	No Inflation	No Inflation			

LIFE CYCLE COST REPORT

1 City Owned Treatment

YEAR	CUMULATIVE NET PRESENT VALUE
2005	$2,808,781
2006	$2,857,563
2007	$2,904,910
2008	$2,950,865
2009	$2,995,469
2010	$3,038,761
2011	$3,080,779
2012	$3,121,562
2013	$3,161,146
2014	$3,199,565
2015	$3,236,855
2016	$3,273,048
2017	$3,308,176
2018	$3,342,272
2019	$3,375,365
2020	$3,407,484
2021	$3,438,659
2022	$3,468,917
2023	$3,498,285
2024	$3,526,790
2025	$3,554,456
2026	$3,581,309
2027	$3,607,372
2028	$3,632,668
2029	$3,657,221

3.03% DISCOUNT RATE, 25 YEARS

PRIMARY ECONOMIC ANALYSIS

Status Quo Alternative: Status Quo
Proposed Alternative : City Owned Treatment

Project Year(s)	Recurring Operating Costs Status Quo Alternative	Recurring Operating Costs Proposed Alternative	Differential Costs	Present Value Factor	Present Value of Differential Costs
2005	$380,520	$51,016	$329,504	0.985	$324,623
2006	$380,520	$51,016	$329,504	0.956	$315,076
2007	$380,520	$51,016	$329,504	0.928	$305,810
2008	$380,520	$51,016	$329,504	0.901	$296,816
2009	$380,520	$51,016	$329,504	0.874	$288,087
2010	$380,520	$51,016	$329,504	0.849	$279,615
2011	$380,520	$51,016	$329,504	0.824	$271,392
2012	$380,520	$51,016	$329,504	0.799	$263,410
2013	$380,520	$51,016	$329,504	0.776	$255,664
2014	$380,520	$51,016	$329,504	0.753	$248,145
2015	$380,520	$51,016	$329,504	0.731	$240,847
2016	$380,520	$51,016	$329,504	0.709	$233,764
2017	$380,520	$51,016	$329,504	0.689	$226,890
2018	$380,520	$51,016	$329,504	0.668	$220,217
2019	$380,520	$51,016	$329,504	0.649	$213,741
2020	$380,520	$51,016	$329,504	0.630	$207,455
2021	$380,520	$51,016	$329,504	0.611	$201,354
2022	$380,520	$51,016	$329,504	0.593	$195,432
2023	$380,520	$51,016	$329,504	0.576	$189,685
2024	$380,520	$51,016	$329,504	0.559	$184,106
2025	$380,520	$51,016	$329,504	0.542	$178,692
2026	$380,520	$51,016	$329,504	0.526	$173,437
2027	$380,520	$51,016	$329,504	0.511	$168,336
2028	$380,520	$51,016	$329,504	0.496	$163,386
2029	$380,520	$51,016	$329,504	0.481	$158,581
Totals	$9,513,000	$1,275,400	$8,237,600		$5,804,559

PRIMARY ECONOMIC ANALYSIS

Total present value of investment	$2,758,520
Plus: present value of existing assets to be used	$0
Less: present value of existing assets replaced	$0
Less: present value of proposed alternative salvage value	$0
Total present value of net investment	$2,758,520
Total present value of differential costs	$5,804,559
Plus: present value of status quo investment costs eliminated	$0
Less: present value of status quo salvage value	$0
Total present value of savings	$5,804,559
Savings/Investment Ratio	2.1
Discounted Payback Period	9.6 Years

For Status Quo:

Recurring Costs - Expense Item(s) 1 2 3

For Proposed Alternative:

Recurring Costs - Expense Item(s) 2
Investment Costs - Expense Item(s) 1

2005	$2,260,000	$57,410	$375,000	$68,378	$28,059
2006	$0	$57,410	$375,000	$68,378	$28,059
2007	$0	$57,410	$375,000	$68,378	$28,059
2008	$0	$57,410	$375,000	$68,378	$28,059
2009	$0	$57,410	$375,000	$68,378	$28,059
2010	$0	$57,410	$375,000	$68,378	$28,059
2011	$0	$57,410	$375,000	$68,378	$28,059
2012	$0	$57,410	$375,000	$68,378	$28,059
2013	$0	$57,410	$375,000	$68,378	$28,059
2014	$0	$57,410	$375,000	$68,378	$28,059
2015	$0	$57,410	$375,000	$68,378	$28,059
2016	$0	$57,410	$375,000	$68,378	$28,059
2017	$0	$57,410	$375,000	$68,378	$28,059
2018	$0	$57,410	$375,000	$68,378	$28,059
2019	$0	$57,410	$375,000	$68,378	$28,059
2020	$0	$57,410	$375,000	$68,378	$28,059
2021	$0	$57,410	$375,000	$68,378	$28,059
2022	$0	$57,410	$375,000	$68,378	$28,059
2023	$0	$57,410	$375,000	$68,378	$28,059
2024	$0	$57,410	$375,000	$68,378	$28,059
2025	$0	$57,410	$375,000	$68,378	$28,059
2026	$0	$57,410	$375,000	$68,378	$28,059
2027	$0	$57,410	$375,000	$68,378	$28,059
2028	$0	$57,410	$375,000	$68,378	$28,059
2029	$0	$57,410	$375,000	$68,378	$28,059

LIFE CYCLE COST REPORT

2 Navy Owned Treatment

YEAR	Initial Construction (1)	Maintenance and Repair (2)	Personnel/ Labor (3)	Utilities (4)	City Water (5)
2005	$2,260,000	$57,410	$375,000	$68,378	$28,059
2006	$0	$57,410	$375,000	$68,378	$28,059
2007	$0	$57,410	$375,000	$68,378	$28,059
2008	$0	$57,410	$375,000	$68,378	$28,059
2009	$0	$57,410	$375,000	$68,378	$28,059
2010	$0	$57,410	$375,000	$68,378	$28,059
2011	$0	$57,410	$375,000	$68,378	$28,059
2012	$0	$57,410	$375,000	$68,378	$28,059
2013	$0	$57,410	$375,000	$68,378	$28,059
2014	$0	$57,410	$375,000	$68,378	$28,059
2015	$0	$57,410	$375,000	$68,378	$28,059
2016	$0	$57,410	$375,000	$68,378	$28,059
2017	$0	$57,410	$375,000	$68,378	$28,059
2018	$0	$57,410	$375,000	$68,378	$28,059
2019	$0	$57,410	$375,000	$68,378	$28,059
2020	$0	$57,410	$375,000	$68,378	$28,059
2021	$0	$57,410	$375,000	$68,378	$28,059
2022	$0	$57,410	$375,000	$68,378	$28,059
2023	$0	$57,410	$375,000	$68,378	$28,059
2024	$0	$57,410	$375,000	$68,378	$28,059
2025	$0	$57,410	$375,000	$68,378	$28,059
2026	$0	$57,410	$375,000	$68,378	$28,059
2027	$0	$57,410	$375,000	$68,378	$28,059
2028	$0	$57,410	$375,000	$68,378	$28,059
2029	$0	$57,410	$375,000	$68,378	$28,059
%NPV	18.44	8.38	54.71	9.98	4.09
	$2,226,520	$1,011,337	$6,606,019	$1,204,550	$494,289
DISCOUNTING CONVENTION	M-O-Y	M-O-Y	M-O-Y	M-O-Y	M-O-Y
INFLATION INDEX	No Inflation	No Inflation	No Inflation	No Inflation	No Inflation

LIFE CYCLE COST REPORT

2 Navy Owned Treatment

YEAR	Bottled Water (6)	TOTAL ANNUAL OUTLAYS	MIDDLE OF YEAR DISCOUNT FACTORS	PRESENT VALUE	CUMULATIVE NET PRESENT VALUE
2005	$30,212	$2,819,059	0.985	$2,777,297	$2,777,297
2006	$30,212	$559,059	0.956	$534,579	$3,311,876
2007	$30,212	$559,059	0.928	$518,858	$3,830,734
2008	$30,212	$559,059	0.901	$503,599	$4,334,333
2009	$30,212	$559,059	0.874	$488,789	$4,823,121
2010	$30,212	$559,059	0.849	$474,414	$5,297,535
2011	$30,212	$559,059	0.824	$460,462	$5,757,997
2012	$30,212	$559,059	0.799	$446,920	$6,204,917
2013	$30,212	$559,059	0.776	$433,777	$6,638,694
2014	$30,212	$559,059	0.753	$421,020	$7,059,713
2015	$30,212	$559,059	0.731	$408,638	$7,468,352
2016	$30,212	$559,059	0.709	$396,620	$7,864,972
2017	$30,212	$559,059	0.689	$384,956	$8,249,928
2018	$30,212	$559,059	0.668	$373,635	$8,623,563
2019	$30,212	$559,059	0.649	$362,647	$8,986,210
2020	$30,212	$559,059	0.630	$351,982	$9,338,192
2021	$30,212	$559,059	0.611	$341,630	$9,679,823
2022	$30,212	$559,059	0.593	$331,583	$10,011,406
2023	$30,212	$559,059	0.576	$321,832	$10,333,238
2024	$30,212	$559,059	0.559	$312,367	$10,645,605
2025	$30,212	$559,059	0.542	$303,181	$10,948,786
2026	$30,212	$559,059	0.526	$294,265	$11,243,051
2027	$30,212	$559,059	0.511	$285,611	$11,528,662
2028	$30,212	$559,059	0.496	$277,211	$11,805,873
2029	$30,212	$559,059	0.481	$269,059	$12,074,931

%NPV 4.41

$532,216

DISCOUNTING CONVENTION M-O-Y

INFLATION INDEX No Inflation

3.03% DISCOUNT RATE, 25 YEARS

PRIMARY ECONOMIC ANALYSIS

Status Quo Alternative: Status Quo
Proposed Alternative : Navy Owned Treatment

Project Year(s)	Recurring Operating Costs Status Quo Alternative	Recurring Operating Costs Proposed Alternative	Differential Costs	Present Value Factor	Present Value of Differential Costs
2005	$380,520	$501,649	-$121,129	0.985	-$119,335
2006	$380,520	$501,649	-$121,129	0.956	-$115,825
2007	$380,520	$501,649	-$121,129	0.928	-$112,419
2008	$380,520	$501,649	-$121,129	0.901	-$109,113
2009	$380,520	$501,649	-$121,129	0.874	-$105,904
2010	$380,520	$501,649	-$121,129	0.849	-$102,789
2011	$380,520	$501,649	-$121,129	0.824	-$99,766
2012	$380,520	$501,649	-$121,129	0.799	-$96,832
2013	$380,520	$501,649	-$121,129	0.776	-$93,985
2014	$380,520	$501,649	-$121,129	0.753	-$91,221
2015	$380,520	$501,649	-$121,129	0.731	-$88,538
2016	$380,520	$501,649	-$121,129	0.709	-$85,934
2017	$380,520	$501,649	-$121,129	0.689	-$83,407
2018	$380,520	$501,649	-$121,129	0.668	-$80,954
2019	$380,520	$501,649	-$121,129	0.649	-$78,573
2020	$380,520	$501,649	-$121,129	0.630	-$76,262
2021	$380,520	$501,649	-$121,129	0.611	-$74,020
2022	$380,520	$501,649	-$121,129	0.593	-$71,843
2023	$380,520	$501,649	-$121,129	0.576	-$69,730
2024	$380,520	$501,649	-$121,129	0.559	-$67,679
2025	$380,520	$501,649	-$121,129	0.542	-$65,689
2026	$380,520	$501,649	-$121,129	0.526	-$63,757
2027	$380,520	$501,649	-$121,129	0.511	-$61,882
2028	$380,520	$501,649	-$121,129	0.496	-$60,062
2029	$380,520	$501,649	-$121,129	0.481	-$58,296
Totals	$9,513,000	$12,541,225	-$3,028,225		-$2,133,815

PRIMARY ECONOMIC ANALYSIS

Total present value of investment	$3,237,857
Plus: present value of existing assets to be used	$0
Less: present value of existing assets replaced	$0
Less: present value of proposed alternative salvage value	$0
Total present value of net investment	$3,237,857
Total present value of differential costs	-$2,133,815
Plus: present value of status quo investment costs eliminated	$0
Less: present value of status quo salvage value	$0
Total present value of savings	-$2,133,815
Savings/Investment Ratio	-0.7

SIR is less than one at end of period of analysis

For Status Quo:

Recurring Costs - Expense Item(s) 1 2 3

For Proposed Alternative:

Recurring Costs - Expense Item(s) 3 4 5 6
Investment Costs - Expense Item(s) 1 2

2020	$64,380	$242,451	$73,689	$380,520	0.630
2021	$64,380	$242,451	$73,689	$380,520	0.611
2022	$64,380	$242,451	$73,689	$380,520	0.593
2023	$64,380	$242,451	$73,689	$380,520	0.576
2024	$64,380	$242,451	$73,689	$380,520	0.559
2025	$64,380	$242,451	$73,689	$380,520	0.542
2026	$64,380	$242,451	$73,689	$380,520	0.526
2027	$64,380	$242,451	$73,689	$380,520	0.511
2028	$64,380	$242,451	$73,689	$380,520	0.496
2029	$64,380	$242,451	$73,689	$380,520	0.481

LIFE CYCLE COST REPORT

3 Status Quo

YEAR	City Water (1)	Trucked Water (2)	Bottled Water (3)	TOTAL ANNUAL OUTLAYS	MIDDLE OF YEAR DISCOUNT FACTORS
2005	$64,380	$242,451	$73,689	$380,520	0.985
2006	$64,380	$242,451	$73,689	$380,520	0.956
2007	$64,380	$242,451	$73,689	$380,520	0.928
2008	$64,380	$242,451	$73,689	$380,520	0.901
2009	$64,380	$242,451	$73,689	$380,520	0.874
2010	$64,380	$242,451	$73,689	$380,520	0.849
2011	$64,380	$242,451	$73,689	$380,520	0.824
2012	$64,380	$242,451	$73,689	$380,520	0.799
2013	$64,380	$242,451	$73,689	$380,520	0.776
2014	$64,380	$242,451	$73,689	$380,520	0.753
2015	$64,380	$242,451	$73,689	$380,520	0.731
2016	$64,380	$242,451	$73,689	$380,520	0.709
2017	$64,380	$242,451	$73,689	$380,520	0.689
2018	$64,380	$242,451	$73,689	$380,520	0.668
2019	$64,380	$242,451	$73,689	$380,520	0.649
2020	$64,380	$242,451	$73,689	$380,520	0.630
2021	$64,380	$242,451	$73,689	$380,520	0.611
2022	$64,380	$242,451	$73,689	$380,520	0.593
2023	$64,380	$242,451	$73,689	$380,520	0.576
2024	$64,380	$242,451	$73,689	$380,520	0.559
2025	$64,380	$242,451	$73,689	$380,520	0.542
2026	$64,380	$242,451	$73,689	$380,520	0.526
2027	$64,380	$242,451	$73,689	$380,520	0.511
2028	$64,380	$242,451	$73,689	$380,520	0.496
2029	$64,380	$242,451	$73,689	$380,520	0.481
%NPV	16.92	63.72	19.37		
	$1,134,121	$4,271,029	$1,298,109		
DISCOUNTING CONVENTION	M-O-Y	M-O-Y	M-O-Y		
INFLATION INDEX	No Inflation	No Inflation	No Inflation		

LIFE CYCLE COST REPORT

3 Status Quo

YEAR	PRESENT VALUE	CUMULATIVE NET PRESENT VALUE
2005	$374,883	$374,883
2006	$363,858	$738,741
2007	$353,157	$1,091,898
2008	$342,771	$1,434,670
2009	$332,691	$1,767,360
2010	$322,907	$2,090,267
2011	$313,410	$2,403,678
2012	$304,193	$2,707,871
2013	$295,247	$3,003,118
2014	$286,564	$3,289,683
2015	$278,137	$3,567,820
2016	$269,957	$3,837,777
2017	$262,018	$4,099,795
2018	$254,312	$4,354,107
2019	$246,833	$4,600,941
2020	$239,574	$4,840,515
2021	$232,529	$5,073,044
2022	$225,690	$5,298,734
2023	$219,053	$5,517,787
2024	$212,611	$5,730,398
2025	$206,358	$5,936,756
2026	$200,289	$6,137,045
2027	$194,399	$6,331,444
2028	$188,682	$6,520,126
2029	$183,133	$6,703,259

3.03% DISCOUNT RATE, 25 YEARS

LIFE CYCLE COST REPORT

SOURCE AND DERIVATION OF COSTS AND BENEFITS:

** Status Quo **

City Water: Based on the four year average (FY99-FY02) volume of city water delivered to NSALM facilities (63,743 MT/YR) multiplied by the FY-02 city water rate (1.01 USD/MT).

Trucked Water: Based on the four year average (FY99-FY02) volume of trucked water delivered to NSALM facilities (36,624 MT/YR) multiplied by the FY-02 trucked water rate (6.62 USD/MT).

Bottled Water: Based on the FY-02 cost of 73,689 USD/YR.

** Navy Owned Treatment **

Initial Construction: Based on the Navy constructing a 681 MT/DAY Saltwater Reverse Osmosis Water Treatment Plant at NSALM (Trinita).

Maintenance: Cost to perform routine maintenance and annual recapitalization on Plant.

Personnel/Labor: Cost to employ a 5 shift operator team for the Plant.

Utilities: Cost of electricity and chemicals.

City Water: Based on the four year average (FY99-FY02) volume of city water delivered to all NSALM facilities except Trinita (27,781 MT/YR) multiplied by the FY-02 city water rate (1.01 USD/MT).

Bottled Water: Based on the FY-02 cost of bottled water delivered to all NSALM facilities (73,689 USD) multiplied by the percentage of water used at all NSALM facilities except Trinita (41%).

** City Owned Treatment **

Navy Contribution: $2,500,000 Navy contribution toward the construction of a City of La Maddalena owned and operated Water Treatment Plant.

Water Rate (Discounted): Based on the assumption that the Navy would recieve a 50% rate reduction for at least 25 years as a result of Navy Contribution. The discounted rate is based on the four year average city water rate (1.01 USD/MT) divided by 2. This rate is then multiplied by the four year average (FY99-FY02) volume of city, trucked, and bottled water delivered to NSALM facilities (101,022 MT/YR).

COST SENSITIVITY ANALYSIS 1

TITLE: City Water Rate Increase vs Navy Owned Treatment

This sensitivity analysis checks for alternative 2 to be ranked least cost as a result of changes in the expense item(s) listed below:

ALTERNATIVE	EXPENSE ITEM(S)
3 Status Quo	1 City Water
2 Navy Owned Treatment	** NOTHING CHANGED **

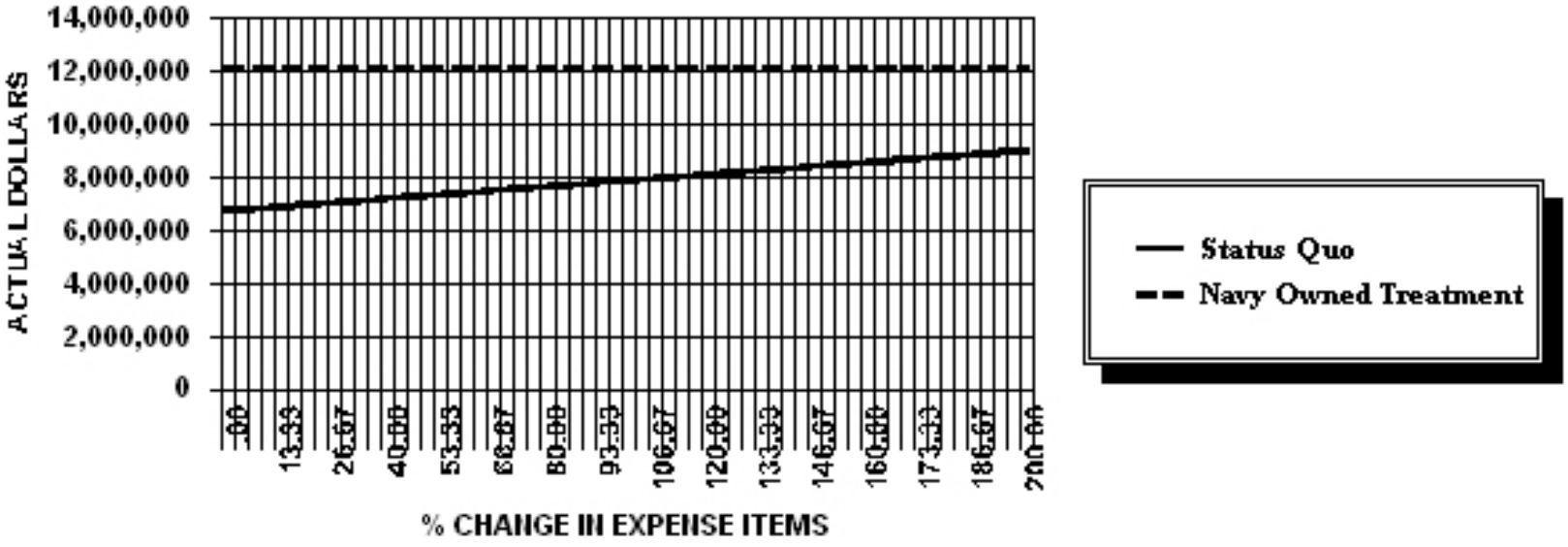
The selected expense items are allowed to vary from a value of .00% to 200.00%

ALTERNATIVE	NET PRESENT VALUE
3 Status Quo	$6,703,259
2 Navy Owned Treatment	$12,074,931

RESULTS:

The ranking of alternatives is insensitive to changes in the selected expense item(s), within the allowable range of variation.

COST SENSITIVITY ANALYSIS 1
City Water Rate Increase vs Navy Owned Treatment
Graph of NPV vs. % change in expense items



COST SENSITIVITY ANALYSIS 2

TITLE: Trucked Water Rate Increase vs Navy Owned Treatment

This sensitivity analysis checks for alternative 2 to be ranked least cost as a result of changes in the expense item(s) listed below:

ALTERNATIVE	EXPENSE ITEM(S)
3 Status Quo	2 Trucked Water
2 Navy Owned Treatment	** NOTHING CHANGED **

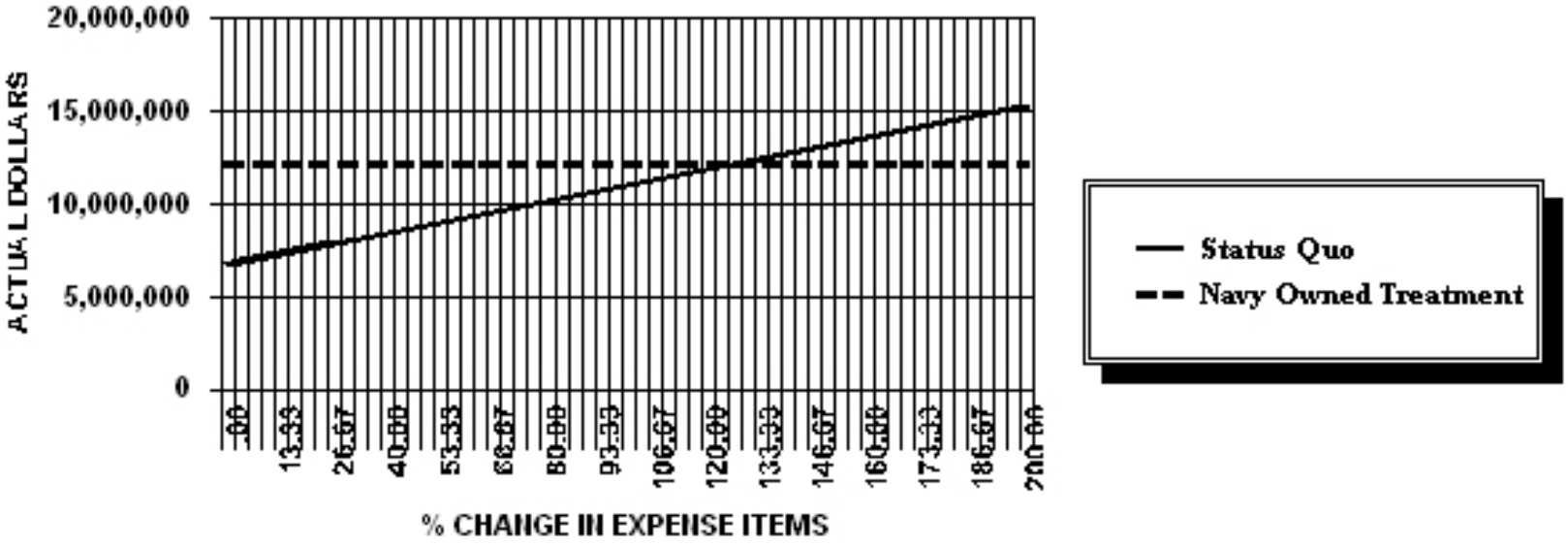
The selected expense items are allowed to vary from a value of .00% to 200.00%

ALTERNATIVE	NET PRESENT VALUE
3 Status Quo	$6,703,259
2 Navy Owned Treatment	$12,074,931

RESULTS:

For alternative 2 to be ranked least cost, increase the selected expense item(s) by more than 125.77%.

COST SENSITIVITY ANALYSIS 2
Trucked Water Rate Increase vs Navy Owned Treatment
Graph of NPV vs. % change in expense items



COST SENSITIVITY ANALYSIS 3

TITLE: Navy Contribution Increase vs Navy Owned Treatment

This sensitivity analysis checks for alternative 2 to be ranked least cost as a result of changes in the expense item(s) listed below:

ALTERNATIVE	EXPENSE ITEM(S)
1 City Owned Treatment	1 Navy Contribution
2 Navy Owned Treatment	** NOTHING CHANGED **

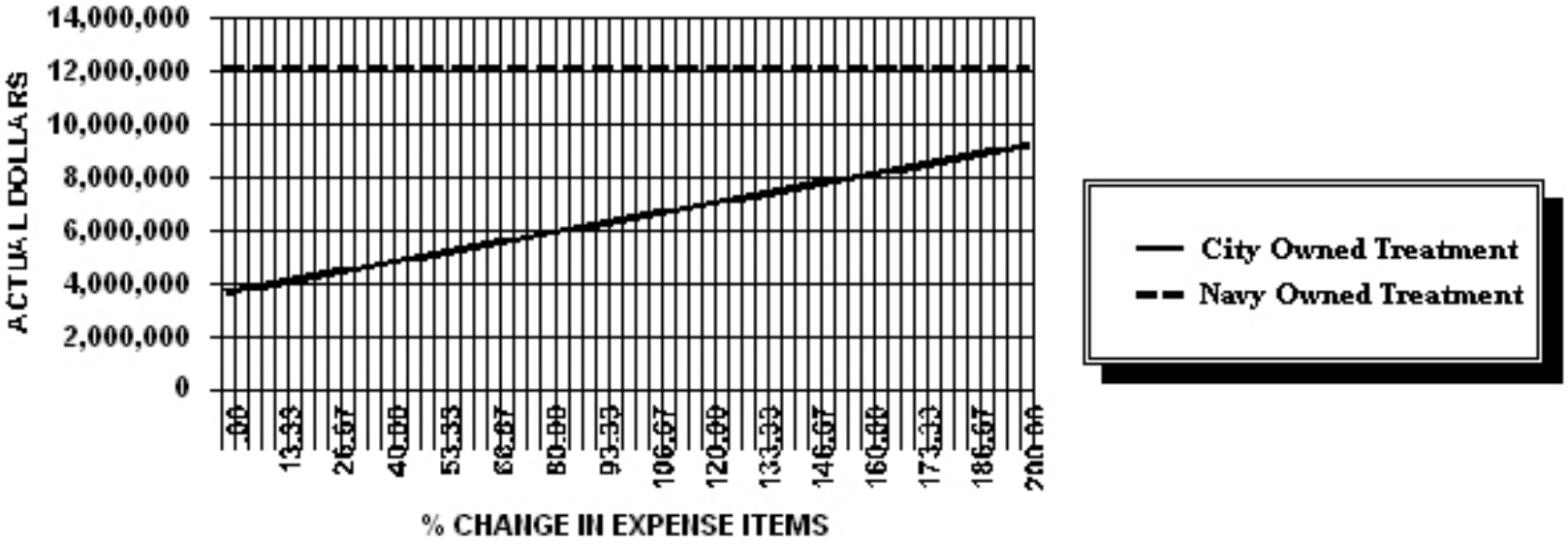
The selected expense items are allowed to vary from a value of .00% to 200.00%

ALTERNATIVE	NET PRESENT VALUE
1 City Owned Treatment	$3,657,221
2 Navy Owned Treatment	$12,074,931

RESULTS:

The ranking of alternatives is insensitive to changes in the selected expense item(s), within the allowable range of variation.

COST SENSITIVITY ANALYSIS 3
Navy Contribution Increase vs Navy Owned Treatment
Graph of NPV vs. % change in expense items



COST SENSITIVITY ANALYSIS 4

TITLE: Water Rate (Discounted) Increase vs Navy Owned Treatment

This sensitivity analysis checks for alternative 2 to be ranked least cost as a result of changes in the expense item(s) listed below:

ALTERNATIVE	EXPENSE ITEM(S)
1 City Owned Treatment	2 Water Rate (Discount
2 Navy Owned Treatment	** NOTHING CHANGED **

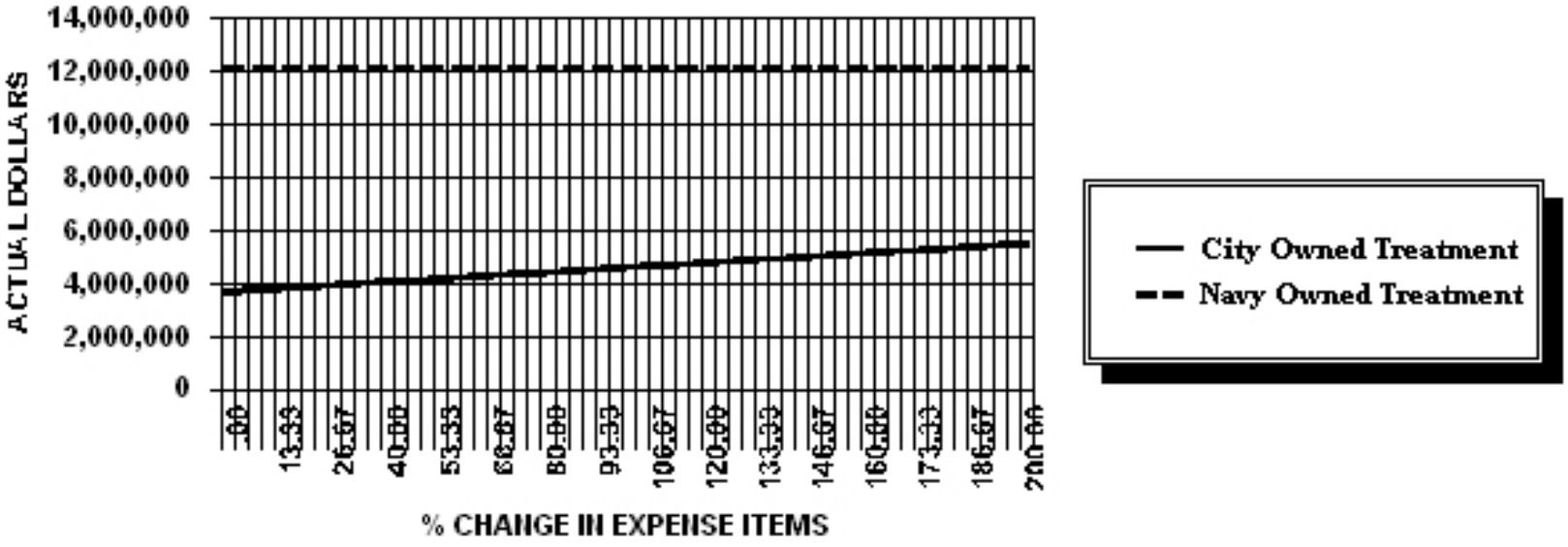
The selected expense items are allowed to vary from a value of .00% to 200.00%

ALTERNATIVE	NET PRESENT VALUE
1 City Owned Treatment	$3,657,221
2 Navy Owned Treatment	$12,074,931

RESULTS:

The ranking of alternatives is insensitive to changes in the selected expense item(s), within the allowable range of variation.

COST SENSITIVITY ANALYSIS 4
Water Rate (Discounted) Increase vs Navy Owned Treatment
Graph of NPV vs. % change in expense items



COST SENSITIVITY ANALYSIS 5

TITLE: Staus Quo vs City Owned Lower Rate Discount

This sensitivity analysis checks for alternative 3 to be ranked least cost as a result of changes in the expense item(s) listed below:

ALTERNATIVE	EXPENSE ITEM(S)
3 Status Quo	** NOTHING CHANGED **
1 City Owned Treatment	2 Water Rate (Discount

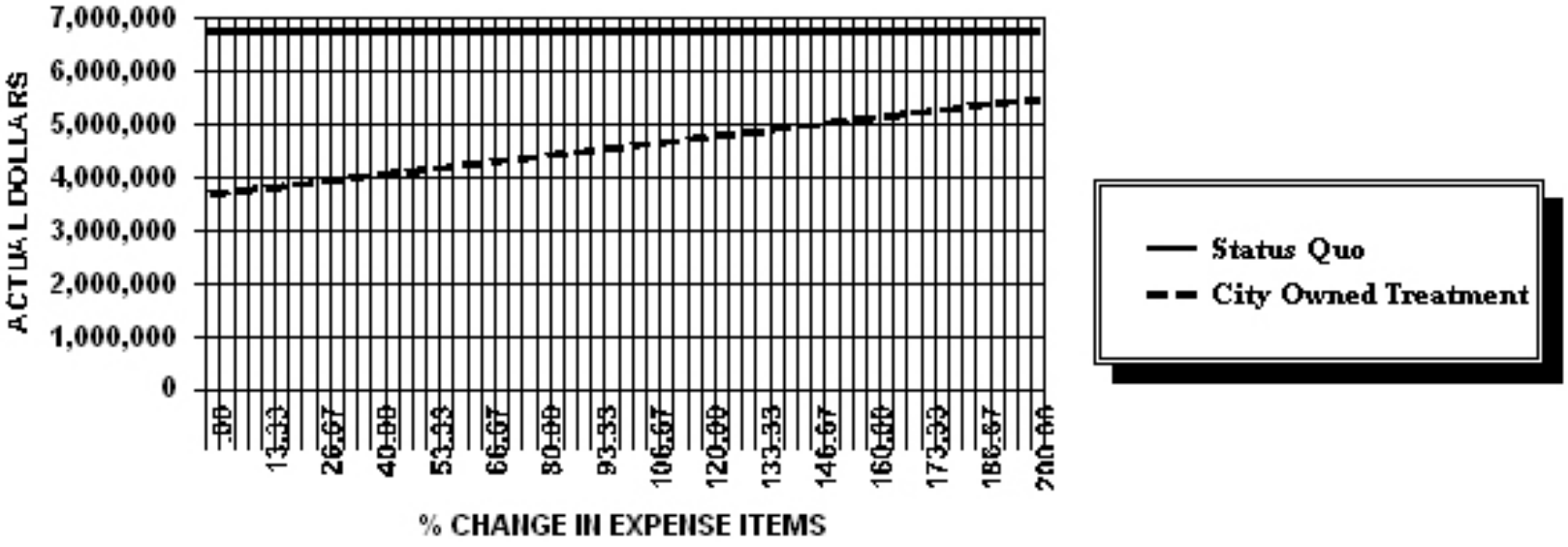
The selected expense items are allowed to vary from a value of .00% to 200.00%

ALTERNATIVE	NET PRESENT VALUE
1 City Owned Treatment	$3,657,221
3 Status Quo	$6,703,259

RESULTS:

The ranking of alternatives is insensitive to changes in the selected expense item(s), within the allowable range of variation.

COST SENSITIVITY ANALYSIS 5
Staus Quo vs City Owned Lower Rate Discount
Graph of NPV vs. % change in expense items



COST SENSITIVITY ANALYSIS 6

TITLE: Navy Owned Treatment vs City Owned Lower Rate Discount

This sensitivity analysis checks for alternative 2 to be ranked least cost as a result of changes in the expense item(s) listed below:

ALTERNATIVE	EXPENSE ITEM(S)
2 Navy Owned Treatment	** NOTHING CHANGED **
1 City Owned Treatment	2 Water Rate (Discount

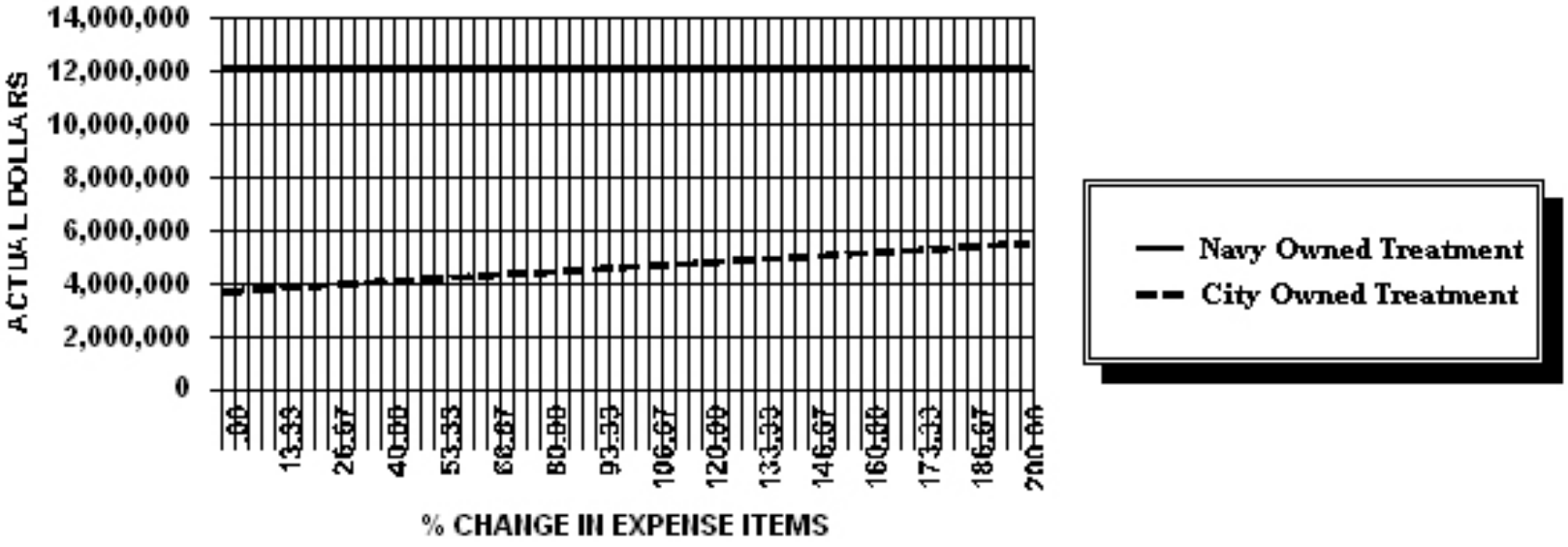
The selected expense items are allowed to vary from a value of .00% to 200.00%

ALTERNATIVE	NET PRESENT VALUE
1 City Owned Treatment	$3,657,221
2 Navy Owned Treatment	$12,074,931

RESULTS:

The ranking of alternatives is insensitive to changes in the selected expense item(s), within the allowable range of variation.

COST SENSITIVITY ANALYSIS 6
Navy Owned Treatment vs City Owned Lower Rate Discount
Graph of NPV vs. % change in expense items



COST SENSITIVITY ANALYSIS 7

TITLE: City Owned vs Lower Navy Owned Construction & Labor Costs

This sensitivity analysis checks for alternative 2 to be ranked least cost as a result of changes in the expense item(s) listed below:

ALTERNATIVE	EXPENSE ITEM(S)
1 City Owned Treatment	** NOTHING CHANGED **
2 Navy Owned Treatment	3 Personnel/ Labor
	1 Initial Construction

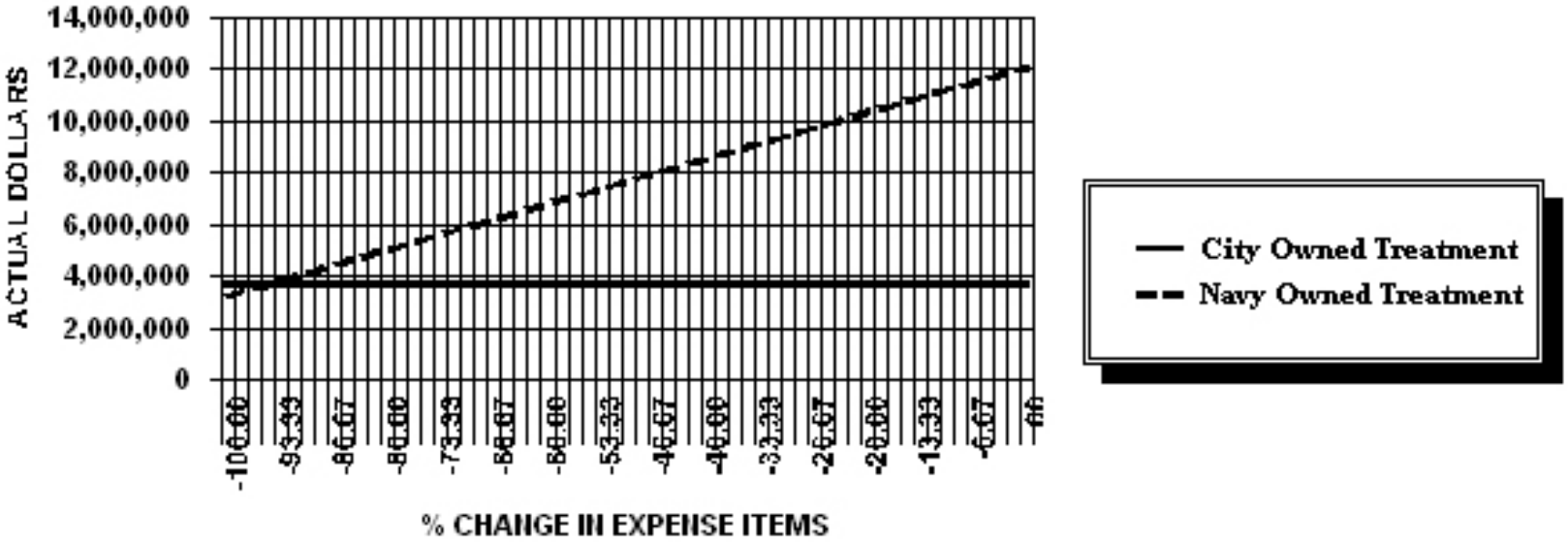
The selected expense items are allowed to vary from a value of -100.00% to .00%

ALTERNATIVE	NET PRESENT VALUE
1 City Owned Treatment	$3,657,221
2 Navy Owned Treatment	$12,074,931

RESULTS:

For alternative 2 to be ranked least cost, reduce the selected expense item(s) by more than 95.3%.

COST SENSITIVITY ANALYSIS 7
City Owned vs Lower Navy Owned Construction & Labor Costs
Graph of NPV vs. % change in expense items



COST SENSITIVITY ANALYSIS 8

TITLE: Status Quo vs Lower Navy Owned Construction & Labor

This sensitivity analysis checks for alternative 2 to be ranked least cost as a result of changes in the expense item(s) listed below:

ALTERNATIVE	EXPENSE ITEM(S)
3 Status Quo	** NOTHING CHANGED **
2 Navy Owned Treatment	1 Initial Construction 3 Personnel/ Labor

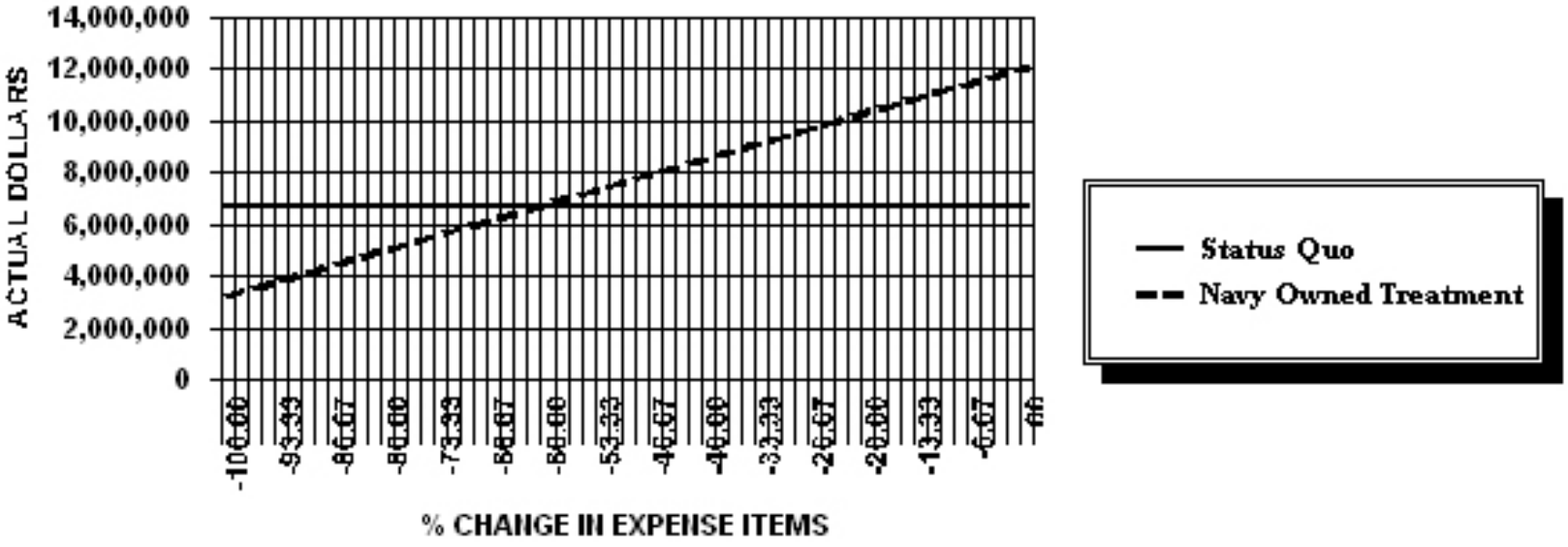
The selected expense items are allowed to vary from a value of -100.00% to .00%

ALTERNATIVE	NET PRESENT VALUE
3 Status Quo	$6,703,259
2 Navy Owned Treatment	$12,074,931

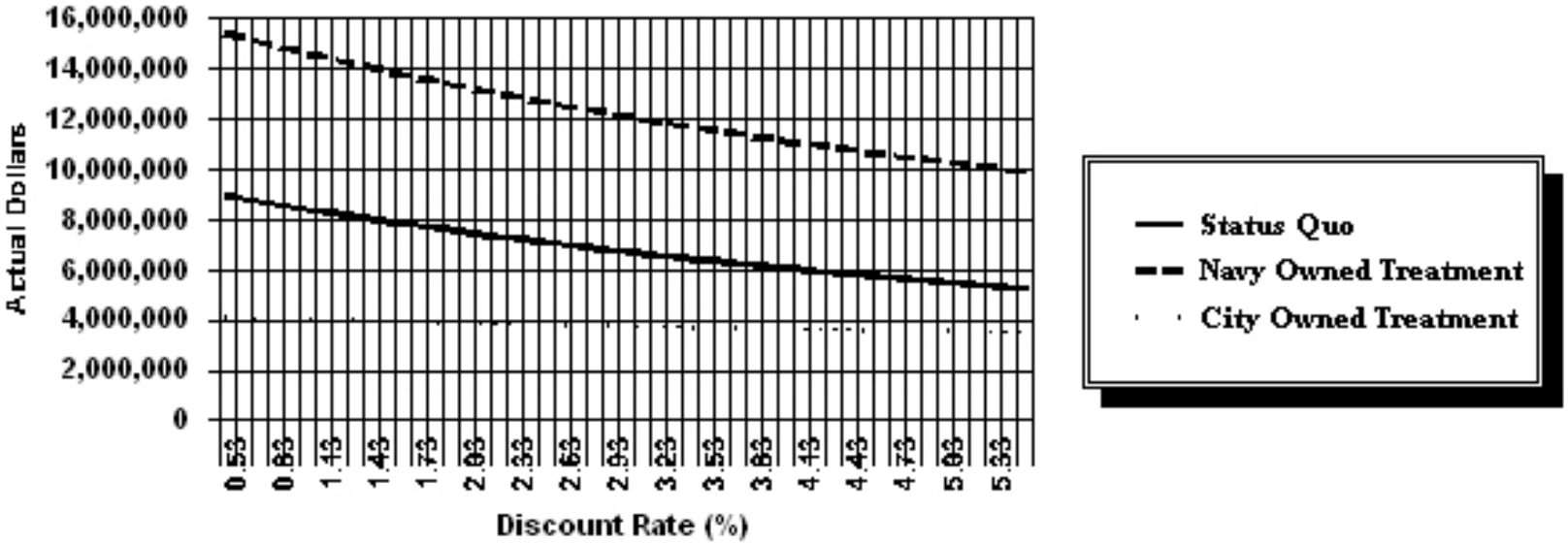
RESULTS:

For alternative 2 to be ranked least cost, reduce the selected expense item(s) by more than 60.82%.

COST SENSITIVITY ANALYSIS 8
Status Quo vs Lower Navy Owned Construction & Labor
Graph of NPV vs. % change in expense items



DISCOUNT RATE SENSITIVITY ANALYSIS 1
DRSA1
Graph of Net Present Value vs. Discount Rate



DISCOUNT RATE SENSITIVITY ANALYSIS 1

TITLE: DRSA1

Summary of Alternative Rankings by Discount Rate

Discount Rate: 3.03 Lower Limit: 00.53 Upper Limit: 05.53

Discount Rate (%)	Alternative Ranking	Discount Rate (%)	Alternative Ranking
0.53	1 3 2	3.13	1 3 2
0.63	1 3 2	3.23	1 3 2
0.73	1 3 2	3.33	1 3 2
0.83	1 3 2	3.43	1 3 2
0.93	1 3 2	3.53	1 3 2
1.03	1 3 2	3.63	1 3 2
1.13	1 3 2	3.73	1 3 2
1.23	1 3 2	3.83	1 3 2
1.33	1 3 2	3.93	1 3 2
1.43	1 3 2	4.03	1 3 2
1.53	1 3 2	4.13	1 3 2
1.63	1 3 2	4.23	1 3 2
1.73	1 3 2	4.33	1 3 2
1.83	1 3 2	4.43	1 3 2
1.93	1 3 2	4.53	1 3 2
2.03	1 3 2	4.63	1 3 2
2.13	1 3 2	4.73	1 3 2
2.23	1 3 2	4.83	1 3 2
2.33	1 3 2	4.93	1 3 2
2.43	1 3 2	5.03	1 3 2
2.53	1 3 2	5.13	1 3 2
2.63	1 3 2	5.23	1 3 2
2.73	1 3 2	5.33	1 3 2
2.83	1 3 2	5.43	1 3 2
2.93	1 3 2	5.53	1 3 2
3.03	1 3 2		

RESULTS:

No change in the alternative ranking occurred.

DISCOUNT RATE SENSITIVITY ANALYSIS 1

TITLE: DRSA1

Table of Net Present Value for each Discount Rate

Disc Rate = 00.53%	Disc Rate = 00.63%	Disc Rate = 00.73%	Disc Rate = 00.83%
Alt - NPV	Alt - NPV	Alt - NPV	Alt - NPV
1 - $3,987,329	1 - $3,971,537	1 - $3,955,996	1 - $3,940,699
3 - $8,911,215	3 - $8,803,784	3 - $8,698,198	3 - $8,594,421
2 - $15,346,369	2 - $15,187,410	2 - $15,031,166	2 - $14,877,580

Disc Rate = 00.93%	Disc Rate = 01.03%	Disc Rate = 01.13%	Disc Rate = 01.23%
Alt - NPV	Alt - NPV	Alt - NPV	Alt - NPV
1 - $3,925,641	1 - $3,910,819	1 - $3,896,227	1 - $3,881,860
3 - $8,492,416	3 - $8,392,148	3 - $8,293,583	3 - $8,196,685
2 - $14,726,599	2 - $14,578,173	2 - $14,432,248	2 - $14,288,777

Disc Rate = 01.33%	Disc Rate = 01.43%	Disc Rate = 01.53%	Disc Rate = 01.63%
Alt - NPV	Alt - NPV	Alt - NPV	Alt - NPV
1 - $3,867,715	1 - $3,853,786	1 - $3,840,071	1 - $3,826,563
3 - $8,101,423	3 - $8,007,763	3 - $7,915,674	3 - $7,825,125
2 - $14,147,709	2 - $14,008,997	2 - $13,872,595	2 - $13,738,457

Disc Rate = 01.73%	Disc Rate = 01.83%	Disc Rate = 01.93%	Disc Rate = 02.03%
Alt - NPV	Alt - NPV	Alt - NPV	Alt - NPV
1 - $3,813,260	1 - $3,800,158	1 - $3,787,252	1 - $3,774,539
3 - $7,736,086	3 - $7,648,526	3 - $7,562,417	3 - $7,477,730
2 - $13,606,538	2 - $13,476,795	2 - $13,349,185	2 - $13,223,666

Disc Rate = 02.13%	Disc Rate = 02.23%	Disc Rate = 02.33%	Disc Rate = 02.43%
Alt - NPV	Alt - NPV	Alt - NPV	Alt - NPV
1 - $3,762,014	1 - $3,749,675	1 - $3,737,518	1 - $3,725,539
3 - $7,394,438	3 - $7,312,513	3 - $7,231,928	3 - $7,152,659
2 - $13,100,198	2 - $12,978,740	2 - $12,859,253	2 - $12,741,699

Disc Rate = 02.53%	Disc Rate = 02.63%	Disc Rate = 02.73%	Disc Rate = 02.83%
Alt - NPV	Alt - NPV	Alt - NPV	Alt - NPV
1 - $3,713,734	1 - $3,702,102	1 - $3,690,637	1 - $3,679,337
3 - $7,074,678	3 - $6,997,962	3 - $6,922,485	3 - $6,848,225
2 - $12,626,041	2 - $12,512,242	2 - $12,400,266	2 - $12,290,078

DISCOUNT RATE SENSITIVITY ANALYSIS 1

TITLE: DRSA1

Table of Net Present Value for each Discount Rate

Disc Rate = 02.93%	Disc Rate = 03.03%	Disc Rate = 03.13%	Disc Rate = 03.23%
Alt - NPV	Alt - NPV	Alt - NPV	Alt - NPV
1 - $3,668,200	1 - $3,657,221	1 - $3,646,398	1 - $3,635,727
3 - $6,775,157	3 - $6,703,259	3 - $6,632,509	3 - $6,562,884
2 - $12,181,645	2 - $12,074,931	2 - $11,969,905	2 - $11,866,535

Disc Rate = 03.33%	Disc Rate = 03.43%	Disc Rate = 03.53%	Disc Rate = 03.63%
Alt - NPV	Alt - NPV	Alt - NPV	Alt - NPV
1 - $3,625,207	1 - $3,614,834	1 - $3,604,605	1 - $3,594,518
3 - $6,494,364	3 - $6,426,927	3 - $6,360,552	3 - $6,295,220
2 - $11,764,788	2 - $11,664,634	2 - $11,566,044	2 - $11,468,986

Disc Rate = 03.73%	Disc Rate = 03.83%	Disc Rate = 03.93%	Disc Rate = 04.03%
Alt - NPV	Alt - NPV	Alt - NPV	Alt - NPV
1 - $3,584,570	1 - $3,574,759	1 - $3,565,081	1 - $3,555,535
3 - $6,230,911	3 - $6,167,606	3 - $6,105,286	3 - $6,043,933
2 - $11,373,434	2 - $11,279,357	2 - $11,186,729	2 - $11,095,523

Disc Rate = 04.13%	Disc Rate = 04.23%	Disc Rate = 04.33%	Disc Rate = 04.43%
Alt - NPV	Alt - NPV	Alt - NPV	Alt - NPV
1 - $3,546,118	1 - $3,536,828	1 - $3,527,662	1 - $3,518,618
3 - $5,983,528	3 - $5,924,053	3 - $5,865,492	3 - $5,807,828
2 - $11,005,712	2 - $10,917,270	2 - $10,830,171	2 - $10,744,391

Disc Rate = 04.53%	Disc Rate = 04.63%	Disc Rate = 04.73%	Disc Rate = 04.83%
Alt - NPV	Alt - NPV	Alt - NPV	Alt - NPV
1 - $3,509,694	1 - $3,500,888	1 - $3,492,197	1 - $3,483,620
3 - $5,751,044	3 - $5,695,123	3 - $5,640,051	3 - $5,585,810
2 - $10,659,906	2 - $10,576,691	2 - $10,494,723	2 - $10,413,979

Disc Rate = 04.93%	Disc Rate = 05.03%	Disc Rate = 05.13%	Disc Rate = 05.23%
Alt - NPV	Alt - NPV	Alt - NPV	Alt - NPV
1 - $3,475,154	1 - $3,466,797	1 - $3,458,548	1 - $3,450,405
3 - $5,532,387	3 - $5,479,765	3 - $5,427,931	3 - $5,376,870
2 - $10,334,438	2 - $10,256,076	2 - $10,178,872	2 - $10,102,806

DISCOUNT RATE SENSITIVITY ANALYSIS 1

TITLE: DRSA1

Table of Net Present Value for each Discount Rate

Disc Rate = 05.33% Alt - NPV	Disc Rate = 05.43% Alt - NPV	Disc Rate = 05.53% Alt - NPV
1 - $3,442,365	1 - $3,434,427	1 - $3,426,589
3 - $5,326,568	3 - $5,277,012	3 - $5,228,187
2 - $10,027,857	2 - $9,954,004	2 - $9,881,228

Appendix E

NSALM Water Rumors

- Excess water that is left in tanker trucks after filling Trinita Tank is dumped on the ground: **FALSE**. The water that may have been seen flowing on the ground near Trinita Tank was most likely "old" water being emptied from the small Navy tanker truck because it had been become non-potable and could not be introduced back into the water system. Even this practice has been stopped. PWC reports that this water is now emptied on flowerbeds and used for irrigation purposes.
- Worms have come out of residents' faucets in Trinita Housing Complex: **TRUE**. A single occurrence has been confirmed by Dan Jordan, NSALM Environmental Director. This was most likely the result of poor sanitary protection of the tanks (e.g. leaving hatches open) and the lack of residual disinfection in the Trinita Tank and distribution system. These two factors probably allowed the growth of these small worms.

PROCUREMENT SENSITIVE

Appendix F

Utility Service Contracts

PROCUREMENT
SENSITIVE

CONTRATTO N33191-98-H-1316

CON IL

COMUNE DI LA MADDALENA

PER

FORNITURA ACQUA POTABILE

Amministrato da: Commanding Officer
Engineering Field Activity
Naval Facilities Engineering
Command
Napoli, Italia

CONTRACT N33191-98-H-1316

WITH

CITY TOWN OF LA MADDALENA

FOR

POTABLE WATER SERVICE

Administered by: Commanding Officer
Engineering Field Activity
Naval Facilities Engineering
Command
Naples, Italy

CONTRATTO QUADRO
DI FORNITURA SERVIZIO

FORNITURA POTABLE WATER
DIPARTIMENTO DELLA MARINA U. S. A.

BASE LOGISTICA DI S. STEFANO ED ALTRE UTENZE IN VARIE LOCALITA', LA MADDALENA, ITALY
(Localita'da essere servita)

COMUNE DI LA MADDALENA
(ENTE Fornitore)

Le localita' sono' in locazione alla Marina USA.

Costo di allacciamento: V. allegate Specifiche Tecniche di Fornitura Acqua Potabile, qui di seguito chiamate Specifiche Tecniche..

Stanziamento: Vari stanziamenti da addebitarsi successivamente secondo quanto riportato sulle fatture, bollette, o altro strumento come disposto dall'Ufficiale Incaricato di questo contratto,all'atto della sottomissione per il pagamento.

Le fatture per i consumi ed il contributo d'allacciamento dovranno essere inviate al Public Works Officer, Naval Support Activity, La Maddalena, Italy. I pagamenti saranno eseguiti da: Commercial Bill Paying Office, Naval Support Activity, Napoli, Italia.

Questo contratto e' negoziato in conformita' al 10 U.S.C. 2304 (c)(1).

Questo contratto e' stato stipulato il 28/04/1998 tra gli Stati Uniti D'America, qui di seguito chiamati il Governo degli Stati Uniti rappresentati dall'Ufficiale Contraente che firma il contratto, e il COMUNE DI LA MADDALENA il cui indirizzo e': P.zza Garibaldi, 07024, La Maddalena, Italia, qui di seguito chiamato il Fornitore.

UTILITY SERVICE
MASTER CONTRACT

POTABLE WATER SERVICE
DEPARTMENT OF THE US NAVY

LOGISTIC BASE OF S. STEFANO AND VARIOUS LOCATIONS, LA MADDALENA, ITALY
(Premises to be served)

CITY HALL OF LA MADDALENA
(Supplier)

Premises are leased by the U. S. Government.

Connection charge will be indicated in the Potable Water Service Technical Specifications, hrerinafter called Technical Specifications.

Appropriation: Various appropriations chargeable, based on distribution to appropriation ultimately chargeable on invoices, public vouchers, or other instrument as directed by the Officer in Charge of this contract, when submitted for payment.

Bills for service and the connection charge will be rendered to Public Works Officer, Naval Support Activity, La Maddalena, Italy. The payments will be executed by: Commercial Bill Paying Office, Naval Support Activity, Naples, Italy.

This contract is negotiated pursuant to 10 U.S.C. 2304(c) (1).

This contract is entered into as of 28 April 1998 by and between the UNITED STATES OF AMERICA, hereinafter called the United States Government, represented by the Contracting Officer executing this contract, and CITY TOWN OF LA MADDALENA, whose address is P.zza Garibaldi, 07024, La Maddalena, Italy hereinafter called the Supplier.

PER IL FORNITORE / FOR THE SUPPLIER

COMUNE DI LA MADDALENA
CITY TOWN, LA MADDALENA

Il Segretario Generale
(Dr. Mario SPANU)

PER IL GOVERNO DEGLI STATI UNITI /
FOR THE U.S. GOVERNMENT

WILLIAM S. BARKER
Contracting Officer

Copy to: NSA La Maddalena, Public Works Department
NSA La Maddalena, Housing Department
NSA Naples Commercial Bill Paying Office

The Provisions and the Contract Clauses are herein modified pursuant to the authority of FAR 41.501.

NORME E CLAUSOLE CONTRATTUALI

PROVISIONS AND CONTRACT CLAUSES

DISCORDANZE

In caso di incoerenza fra le clausole di questo contratto e le clausole di qualsiasi appendice, codicillo, o allegato incorporato in questo contratto, per riferimento o altro, o qualsiasi norma o regolamento del Fornitore, le clausole di questo contratto faranno testo.

ORDER OF PRECEDENCE - UTILITIES (FAR 52.241-2) (FEB 1995)

In the event of any inconsistency between the terms of this contract (including the specifications) and any schedule, rider or exhibit incorporated in this contract by reference or otherwise, or any of the Supplier's rules and regulations, the terms of this contract shall control.

INTENDIMENTO E DURATA DEL CONTRATTO

(a) In base ai termini ed alle condizioni qui esposte, il Fornitore fornira', ed il Governo degli Stati Uniti acquistera' e ricevera' fornitura di acqua potabile (qui di seguito chiamata fornitura) richiesta dal Governo degli Stati Uniti al Fornitore nei locali da essere serviti (qui di seguito chiamati utenza). Le Specifiche Tecniche qui accluse, numerate progressivamente e facenti parte integrante del contratto, definiscono le caratteristiche di ciascuna utenza. Il servizio viene reso in conformita' al Regolamento per la distribuzione dell'acqua, e sue successive modificazioni, qui accluso e facente parte integrante del presente contratto quadro.

(b) Questo contratto restera' in vigore finche' la fornitura terminera' a richiesta dell'una o dell'altra parte dando preavviso scritto non meno di sessanta giorni prima della data effettiva della cessazione.

SCOPE AND DURATION OF CONTRACT (52.241-3) (FEB 95) MODIFIED

(a) Subject to the terms and conditions hereinafter set forth, the Supplier shall furnish, and the United States Government shall purchase and receive, Potable waterservice (hereinafter called service) requested by the United States Government from the Supplier at the premises to be served thereunder (hereinafter called the service location). The Technical Specifications attached hereto and made a part hereof, which are progressively numbered and made part of this master contract, define each service location. The supply is provided in conformance with the suppliers Service Conditions, and any further modifications, attached hereto and made a part of this contract.

(b) This contract shall continue in effect until service is terminated at the option of either party by the giving of written notice not less than 60 days in advance of the effective date of termination.

CAMBIO DELLA CATEGORIA DI UTENZA

(a) Nel caso siano previste diverse categorie di utenza, e si verificasse una variazione nella categoria di utenza, tale servizio dovra' essere fornito in conformita' alle tabelle tariffarie del fornitore ed applicabili alla stessa categoria di utenza.

(b) Laddove il fornitore non possieda

CHANGE IN CLASS OF SERVICE (FAR 52.241-4)

(a) In the event of an allowable change in category and a change in the class of service itself, such service shall be provided at the Supplier's available rate schedule applicable to the class of service furnished.

(b) Where the Supplier does not have on

delle tabelle di tariffe applicabili al servizio approvate dalle autorita' competenti, nessuna clausola di questo contratto potra' precludere la possibilita' di negoziare una tabella tariffaria applicabile alla categoria di utenza.

file with the regulatory body approved rate schedules applicable to services provided, no clause of this contract shall preclude the parties from negotiating a rate schedule applicable to the class of service furnished.

IMPIANTI DEL FORNITORE

(a) Il Fornitore, a sue spese, dovra' fornire, installare, esercire, e mantenere in efficienza tutti gli impianti occorrenti per provvedere alla fornitura in oggetto sino al punto di consegna indicato nelle Specifiche di Fornitura. Tutti questi impianti rimarranno di proprieta' del Fornitore. Tutti questi impianti rimarranno di proprieta' del Fornitore ed egli sara' responsabile per ogni perdita o danno, eccettuati quelli derivanti da manchevoleze o negligenze del Governo dgli Stati Uniti, suoi rappresentanti, o suoi impiegati. Tutte le tasse ed altri oneri conessi, assieme a tutte le responsabilita' causate da negligenza del Fornitore nella costruzione, esercizio o manutenzione di questi impianti verranno assunte dal Fornitore.

(b) Per forniture rese all'interno di installazioni militari il Governo degli Stati Uniti concede al Fornitore, senza richiedere il pagamento di un fitto o di altro simile onere, ma soggetto alle limitazioni specificate in questo contratto, un permesso per l'accesso all'utenza per ogni giustificato scopo relativo a questo contratto, incluso l'uso del luogo o dei luoghi concordati fra le parti per la istallazione, funzionamento e manutenzione degli impianti del Fornitore che si richieda siano ubicati entro gli immobili del Governo degli Stati Uniti. A rappresentanti autorizzati del Fornitore verra' concesso l'accesso agli impianti del Fornitore, a tempo debito, per adempiere gli impegni contrattuali connessi a questi impianti. Viene espressamente inteso che il Governo degli Stati Uniti puo' limitare o ridurre il diritto di accesso qui concesso in qualsiasi maniera considerata necessaria per ragioni di sicurezza.

SUPPLIER'S FACILITIES (FAR 52.241-5) (FEB 1995) MODIFIED

(a) The Supplier, at his expense, shall furnish, install, operate, and maintain all facilities required to furnish service thereunder to the delivery point specified in the Service Specifications. Title to all such facilities shall remain with the Supplier and he shall be responsible for all loss or damages to those facilities except that arising out of the fault or negligence of the United Stastes Government, its agents or its employees.
All taxes and other charges in connection therewith, together with all liability arising out of the negligence of the Supplier in the construction, operation, or maintenance of these facilities, shall be assumed by the Supplier.

(b) The United States Government hereby grants to the Supplier, free of any rental or similar charge, but subject to the limitations specified in this contract, a permit to enter the service location for any proper purpose under this contract, including use of the site or sites agreed upon by the parties hereto for the installation, operation, and maintenance of the facilities of the Supplier required to be located upon United States Government premises. Authorized representatives of the Supplier will be allowed to access to the facilities of the Supplier at suitable times to perform the obligations of the Supplier with respect to these facilities. It is expressly understood that the United States Government may limit or restrict the right of access herein granted in any manner considered to be necessary for the national security.

PROVVEDIMENTI SULLA FORNITURA

(a) **Misurazione della fornitura**

(1) Tutta la fornitura di acqua potabile fornita dal Fornitore, salvo diverso accordo da riportarsi di volta in volta nelle Specifiche Tecniche, sara' misurata da un contatore di fabbricazione standard, fornito, installato, tenuto in manutenzione, tarato e letto dal Fornitore a sue spese. Nel caso in cui un contatore non funzioni o misuri in maniera inesatta, si dovra' determinare la quantita' di fornitura erogata attraverso di esso durante tale periodo ed un equo adeguamento, basato sui consumi storici, sara' fatto sulle bollette per il Governo degli Stati Uniti (a tal proposito, qualsiasi contatore che misura non piu' del 5 % o in meno o in piu' sara' considerato esatto). Gli adeguamenti saranno limitati al periodo di fatturazione precedente il controllo del misuratore.

(2) Il Fornitore, a proprie spese, periodicamente ispezionera' i contatori da lui installati, in conformita' alle sue procedure standard. Su richiesta scritta dell' Ufficiale Contraente, il Fornitore, in presenza di rappresentanti del Governo degli Stati Uniti, effettuera' prove su alcuni o tutti i contatori. Il costo di tali prove sara' sostenuto dal Governo degli Stati Uniti se la percentuale di errore trovata non e' maggiore del 5% in piu' o in meno.

(b) **Prova dei contatori** Il Fornitore verifichera' e provera' tutti i contatori ad intervalli periodici in conformita' alle procedure standard del Fornitore.

(c) **Cambiamento del volume o del tipo di fornitura** L'ufficiale contraente dara' un ragionevole preavviso al Fornitore per qualsiasi cambiamento previsto del volume o del tipo di utilizzazione dell'Acqua potabile.

(d) **Continuita' della fornitura** Il Fornitore usera' ogni ragionevole diligenza per provvedere una fornitura regolare ed ininterrotta all'utente, ma non sara' responsabile verso il Governo degli Stati Uniti per danni, violazione del contratto, o simili, per mancanze, sospensioni, diminuzioni o altre

SERVICE PROVISIONS (FAR 52.241-6) (FEB 1995) MODIFIED

(a) **Measurement of Service**

(1) All Potable water service furnished by the Supplier, shall be measured by metering equipment of standard manufacture, furnished, installed, maintained, calibrated and read by the Supplier at his expense, unless otherwise agreed upon in the Technical Specifications. In the event that any meter fails to register or registers incorrectly, the quantity of service delivered through it during that period shall be determined and an equitable adjustment based thereon shall be made for the United States Government's bills (for this purpose, any meter which registers not more than five (5) percent slow or fast shall be deemed correct). The adjustments will reflect the billing period before the meter was inspected and tested.

(2) At the written request of the Contracting Officer, the Supplier, in the presence of United States Government representatives, shall make additional tests of any or all meters. The cost of such additional tests shall be borne by the United States Government if the percentage of error is found to be not more than five (5) percent slow or fast.

(b) **Meter Test**. The Supplier, at his expense, shall periodically inspect and test the meters installed by him, in accordance with his standard procedures.

(c) **Change In Volume or Character of Service** The Contracting Officer shall give reasonable notice to the Supplier respecting any material changes anticipated in the volume or characteristics of the potable water service.

(d) **Continuity of Service** The Supplier shall use reasonable diligence in providing a regular and uninterrupted supply of service at the service location, but shall not be liable to the United States Government for damages, breach of contract, or otherwise, for failure, suspension, diminution, or other variations of

variazioni della fornitura e non dovuti a colpa o negligenza del Fornitore. Tali cause includono, ma non sono limitate a: cause di Forza Maggiore, azioni nemiche, azioni del Governo, sia nella sua qualita' di autorita' superiore sia per la sua capacita' contrattuale, incendi, alluvioni, epidemie, quarantene, scioperi, avarie o rotture di organi di trasporto o altri impianti.

service occasioned by any cause beyond the control and without the fault or negligence of the Supplier. Such causes may include, but are not restricted to, acts of God or the public enemy, acts of the Government in either its sovereign or contractual capacity, fires, floods, epidemics, quarantine restrictions, strikes, or failure or breakdown of transmission or other facilities.

CAMBIO DI TARIFFE O TERMINI E CONDIZIONI DEL SERVIZIO REGOLATO DA NORMATIVA

Per tutta la fornitura all' utenza, in base a questo contratto, il Governo degli Stati Uniti paghera' al Fornitore in base alle tariffe indicate nelle Specifiche di Fornitura di Acqua potabile, qui accluse.

(a) Se, nel corso di questo contratto, l' Autorita' competente stabilisce variazioni nelle tariffe rispetto a quelle stipulate in questo contratto, in aumento o in diminuzione, il Fornitore continuera' la fornitura come stipulato in questo contratto ed il Governo degli Stati Uniti paghera' per la fornitura gli oneri maggiori o minori dalla data effettiva di entrata in vigore delle nuove tariffe.

(b) Il Fornitore concorda che per tutta la durata del Contratto la tabella tariffaria applicabile non dovra' eccedere il costo minimo applicato a qualsiasi altro utente per la stessa classe di utenza alle stesse condizioni di fornitura e servizio.

(c) Se l'autorita' competente stabilisce una nuova o emendata tabella tariffaria che contiene condizioni piu' favorevoli al Governo degli Stati Uniti, il fornitore inviera' all'Ufficiale Contraente una copia della nuova o emendata tabella di tariffe entro 15 giorni dalla data di entrata in vigore delle nuove tariffe, e su richiesta scritta da parte del Governo degli Stati Uniti sostituira' la vecchia tabella di tariffe con quella nuova o emendata.

(d) Qualsiasi variazione nella tabella delle tariffe o nei termini e condizioni di fornitura dovra' essere reso parte del presente

CHANGE IN RATES OR TERMS AND CONDITIONS OF SERVICE FOR REGULATED SERVICES (FAR 52.241-7) (FEB 95) MODIFIED

For all service furnished under this contract to the service location, the United States Government shall pay the Supplier at the rate specified in the Potable water Service Specifications, herewith enclosed.

(a) If during the term of this contract, the regulatory body having jurisdiction approves any changes in the rate schedule, the Supplier shall forward to the Contracting Officer a copy of such changes within 15 days after effective date thereof. The Supplier shall continue to furnish service as stipulated in this contract and the United States Government shall pay for such service at the higher or lower charges from the effective date thereof, subject to judicial appeal.

(b) The Supplier agrees that throughout the life of this contract the applicable rate schedule shall not be in excess of the lowest cost available to any other customer of the same class under similar conditions of use and service.

(c) In the event that the regulatory body promulgates any new or amended rate schedule which contains conditions more favorable to the United States Government, the Supplier shall forward to the Contracting Officer a copy of the new or amended rate schedule within fifteen (15) days after the effective date thereof, and upon receipt of written request from the United States Government shall substitute the old rate schedule with the new or amended.

(d) Any changes to rates and terms and conditions of service shall be made part of this contract by the issuance of a contract

contratto mediante una modifica contrattuale. La data effettiva del sumenzionato cambiamento sara' quella dell'entrata in vigore di tali variazioni.

modification. The effective date of the change shall be the effective date by the regulatory body.

COSTI DI ALLACCIAMENTO

(a) **Costi**. In considerazione del fatto che il Fornitore fornisce e potenzia a sue spese gli impianti occorrenti per gli allacci in oggetto, all'atto dell'attivazione di ciascuna utenza e' dovuto al Fornitore un "contributo di allacciamento". In caso di utenza gia' allacciata, sono dovuti i soli diritti amministrativi legati alla pratica di subentro. Il pagamento avverra' secondo quanto concordato tra le parti e consentito dalle leggi applicabili.

(b) **Proprieta', operativita', manutenzione e riparazione degli impianti forniti.** Gli impianti forniti dal Fornitore come dalla presente clausola, indipendentemente dal pagamento da parte del Governo degli oneri di allacciamento, dovranno, per tutta la durata del contratto o di ogni suo rinnovo, essere eserciti, manutenuti e riparati dal Fornitore a sue spese. Tutte le tasse, imposte e ogni altro costo di allacciamento insieme a tutte le responsabilita' derivanti dalla costruzione di detti impianti, saranno di responsabilita' del Fornitore.

CONNECTION CHARGE (FAR 52.241-9) (FEB 95) MODIFIED

(a) **Charges.** In consideration of the Supplier furnishing and strengthens at its expense the new connection facilities described herein, the Government shall pay the Supplier a connection charge. In the case of a service location which has already been previously connected, only contract transfer administrative costs will be charged (e.g. start up of service station expenses). The payment shall be in the form agreed upon by the parties and as permitted by applicable law.

(b) **Ownership, operation, maintenance and repair of new facilities to be provided**. The facilities to be supplied by the Supplier under this clause, notwithstanding the payment by the Government of a connection charge, shall be and remain the property of the Supplier and shall , at all times during the life of this contract or any renewals thereof, be operated, maintained, and repaired by the Supplier at its expense. All taxes and other charges in connection therewith, together with all liability arising out of the construction, operations, maintenance, or repair of such facilities shall be the responsibility of the Supplier.

VARIE UBICAZIONI DI UTENZA

(a) Tramite richiesta scritta l'Ufficiale Contraente puo' in ogni momento individuare utenze, entro l'area di competenza del Fornitore, per le quali il servizio deve essere fornito, interrotto, o variato. Il contratto quadro sara' modificato per iscritto conformemente aggiungendo, con numerazione progressiva, opportune Specifiche Tecniche di Fornitura Acqua Potabile e modulo di modifica standard SF 30.

MULTIPLE SERVICE LOCATIONS (FAR 52.241-11) (FEB 1995) MODIFIED

(a) By written order, the Contracting Officer may at any time designate any service location within the service area of the Supplier at which service shall be furnished or discontinued thereunder. The master contract will be modified in writing by the issuance of a sequentially numbered Potable Water Service Technical Specifications and contract modification Standard Form 30 (SF 30).

PAGAMENTO

(a) Il Fornitore sara' pagato dal Commercial Bill Paying Officer di Naval Support Activity (NSA) Napoli designato, per la fornitura erogata alle tariffe e quote fisse mensili designate dal fornitore e verificate dal C.I.P. (Comitato Interministeriale Prezzi).

(b) I pagamenti non saranno effettuati in anticipo alla fornitura.

(c) Tutte le bollette saranno pagate senza penalita' o interessi e il Governo degli Stati Uniti avra' diritto a qualsiasi sconto abitualmente applicabile al pagamento delle bollette di tutti I clienti del Fornitore. Le bollette per essere esenti da sovrapprezzo per ritardato pagamento dovranno essere pagate entro 60 giorni dalla data di ricezione della fattura). Trascorsi i 60 giorni, saranno addebitati gli interessi di mora in conformita' alle normali regolamentazioni del fornitore (il tasso di interesse per morosita' e' del 6%).

(d) Le fatture per la fornitura effettuata indicheranno le letture dei contatori all' inizio e alla fine del periodo di fatturazione, il consumo durante il periodo di fatturazione.

(e) Il Fornitore qui dichiara che le tariffe non sono in eccesso alle tariffe generali relative a qualsiasi cliente presente o futuro a pari condizioni di fornitura, ed acconsente che per la durata di questo contratto il Governo degli Stati Uniti continuera' ad essere fatturato alla tariffa piu' bassa possibile per simili condizioni di fornitura.

DEFINIZIONI

(a) "Capo di Agenzia" (chiamato anche "Capo-Agenzia") o "Segretario" significa il Segretario (o procuratore generale, amministratore, governatore, presidente, o altro capo ufficiale, secondo le circostanze) di Agenzia Federale degli Stati Uniti, includendo ogni rappresentante o assistente capo ufficiale di Agenzia Federale degli Stati Uniti e, nel Dipartimento della Difesa degli Stati Uniti, il Sotto Segretario ed ogni Assistente Segretario dei Dipartimenti dell' Esercito, della Marina e dell' Aviazione degli Stati Uniti ed il Direttore ed il Rappresentante del Direttore delle agenzie

PAYMENT

(a) The Supplier shall be paid by the designated Commercial Bill Paying Officer of Naval Support Activity (NSA) Naples for the service furnished hereunder at the rates specified in the Potable Water Service Specifications and verified by C.I.P.

(b) Pyments shall not be made in advance of the service rendered.

(c) All bills for service shall be paid without penalty or interest and the United States Government shall be entitled to any discounts customarily applicable to payment of bills by all customers of the Supplier.
To avoid late payment charges, bills shall be paid no later than sixty days following the date of receipt of the invoice. In case of delayed payment, a late payment fee will be charged in accordance with the supplier's regulations (a late payment interest fee will be charged at the rate of 6%).

(d) Invoices for service rendered hereunder shall contain statements of meter readings at the beginning and ending of the billing period, consumption during the billing period.

(e) The Supplier hereby declares that the rates are not in excess of the prevailing rates to any existing or prospective customer under like conditions of service, and agrees that during the life of this contract, the United States Government shall continue to be billed at the lowest available rate for similar conditions of service.

DEFINITIONS (FAR 52.202-1) (OCT 1995) MODIFIED

(a) "Head of the agency (also called "agency head") or "Secretary" means the Secretary (or Attorney General, Administrator, Governor, Chairperson, or other chief official, as appropriate) of the United States Federal agency, including any deputy or assistant chief official of the United States Federal agency, and the term "authorized representative" means any person, persons, or board (other than the Contracting Officer) authorized to act for the head of the agency or Secretary. (END OF THE CLAUSE)

della Difesa degli Stati Uniti; ed il termine "Rappresentante Autorizzato" significa ogni persona, persone, o consiglio (diverso dall' Ufficiale Contraente) autorizzato ad agire per conto del Capo Agenzia o del Segretario.
(b) "Ufficiale Contraente" significa una persona con l' autorita' di fare, amministrare, e/o rescindere i contratti e prendere le relative decisioni e trarre le conclusioni. Il termine include alcuni rappresentanti autorizzati dell'Ufficiale Contraente che agiscono, entro i limiti della loro autorita', come delegati dell' Ufficiale Contraente.
(c) Tranne che non sia altrimenti stabilito in questo contratto, il termine "subappalti" include, ma non e' limitato a ordini d' acquisto e cambiamenti e modifiche a ordini d' acquisto in base a questo contratto

(b) "Contracting Officer" means a person with the authority to enter into, administer, and/or terminate the contracts and make related determinations and findings. The term includes certain authorized representatives of the Contracting Officer acting within the limits of their authority as delegated by the Contracting Officer.

(c) Except as otherwise provided in this contract, the term "subcontracts" includes, but is not limited to, purchases order and changes and modifications to purchase orders under this contract.

CESSIONE DI CREDITI

a) Nessun credito per compensi dovuti, o da divenire dovuti, potra' essere ceduto dal Fornitore a meno che: (i) cio' non sia approvato per iscritto dall' Ufficiale Contraente; (ii) cio' sia fatto in ottemperanza alle leggi e regolamenti degli Stati Uniti d'America; (iii) cio' sia permesso dalle leggi e regolamenti del paese del Fornitore.

(b) In nessun caso copie di questo contratto, o qualsiasi disegno, specifica o altro documento similare relativo a lavori inerenti al contratto, se marcati "TOP SECRET", "SECRET", o "CONFIDENTIAL" dovranno essere forniti ad alcun assegnatario di qualsiasi ammontare derivante da questo contratto o a qualsiasi altra persona non autorizzata a riceverli. Comunque, una copia di qualsiasi parte o dell' intero contratto cosi' marcato puo' essere fornita, o qualsiasi informazione in esso contenuta puo' essere divulgata a tale assegnatario previa autorizzazione scritta dell' Ufficiale Contraente.

(c) Qualsiasi cessione relativa a questo contratto di fornitura dovra' coprire tutti i compensi pagabili in virtu' di questo contratto e non ancora pagati e non dovra' essere fatta a piu' di un assegnatario eccetto che tale

ASSIGNMENT OF CLAIMS (USEUCOM 52.232-9901) (JUN 1965-E) MODIFIED

(a) No claims for moneys due or to become due shall be assigned by the Supplier unless (i) approved in writing by the Contracting Officer; (ii) made in accordance with the laws and regulations of the United States of America; and (iii) permitted by the laws and regulation of the Supplier's country.

(b) In no event shall copies of this contract or of any plans, specifications, or other similar documents relating to work under this contract, if marked "TOP SECRET, SECRET", or "CONFIDENTIAL", be furnished to any assignee of any claim arising under this contract or to any other person not entitled to receive the same. However, a copy of any part or all of this contract so marked may be furnished, or any information contained therein may be disclosed, to such assignee upon the prior written authorization of the Contracting Officer.

(c) Any assignment under this contract shall cover all amounts payable under this contract and not already paid, and shall not be made to more than one party except that any such assignment may be made to one party as

assegnazione puo' essere fatta ad un assegnatario come agente o fiduciario di piu' partecipanti a tale operazione finanziaria. Su ciascun mandato o bolletta di pagamento di questo contratto di fornitura per il quale e' applicabile una cessione e per il quale un pagamento diretto deve essere fatto ad un assegnatario, il Fornitore dovra' indicare l' assegnatario, specificando il nome e l' indirizzo completo, e dovra' certificare la validita' della cessione ed il diritto dell' assegnatario nominato a ricevere il pagamento per l' ammontare indicato dal mandato o dalla bolletta .

agent or trustee for two or more parties participating in such financing. One each invoice or voucher submitted for payment under this contract to which any assignment applies and for which direct payment thereof is to be made to an assignee, the Supplier shall identify the assignee by name and complete address and shall acknowledge the validity of the assignment and the right of the named assignee to received payment in the amount invoiced or vouchered.

TASSE

(a) I prezzi indicati nel contratto, inclusi i prezzi di subappalti qui compresi, non includono alcuna tassa o imposta che il Governo degli Stati Uniti e della Repubblica Italiana hanno stabilito non dovranno applicarsi in Italia a carico degli Stati Uniti di America o ogni altra tassa o imposta non applicabile a questo contratto in base alle leggi italiane. Qualora qualsiasi tassa o imposta e' stata inclusa nel prezzo del contratto, per errore o altra ragione, il prezzo del contratto sara' corrispondentemente ridotto.

(b) Se posteriormente alla data del contratto il Governo degli Stati Uniti e quello dalla Repubblica Italiana stabiliscono che tasse o imposte incluse nei prezzi del contratto non sono applicabili alle spese in Italia da parte degli Stati Uniti d' America, i prezzi del contratto saranno ridotti corrispondentemente.

(c) Pertanto, la U.S. Navy e' esonerata dal pagamento di qualsiasi imposta, bolli e/o tassa nazionale o locale come da accordo "Dunn-Vanoni" del 5 Marzo 1952 tra il Governo Italiano e il Governo degli Stati Uniti d' America. In particolare, come previsto dall' art. 66, comma 21, D.L. 331 del 30/8/93, la presente e' attestazione che trattasi di somministrazione di acqua potabile relativa a locali di personale dipendente del comando militare di stato membro NATO, e pertanto le fatturazioni sono esenti IVA ai sensi dell'art. 72 comma 3, DPR IVA 663 del 26 /10/72. In particolare facciamo riferimento all' esenzione

TAXES

(a) The contract prices, including the prices in subcontracts thereunder, do not include any tax or duty which the United States Government and the Italian Government have agreed shall not be applicable to expenditures in Italy by the United States, or any other tax or duty has been included in the contract prices through error or otherwise, the contract prices shall be correspondingly reduced.

(b) If, after the contract date, the United States Government and the Italian Government shall agree that any tax or duty included in the contract prices shall not be applicable to expenditures in Italy by the United States, the contract prices shall be reduced accordingly.

(c) Therefore, all invoices rendered to the U.S. Navy will be exempt from the paying of taxes, duties, stamps and any other burden to taxasion, per the "Dunn-Vanoni" Agreement of 5 March 1952 between the United States and the Italian Governments. We herein declare that the invoices are exempt from I.V.A. per the art. 72 comma 3, DPR IVA No 663 of 26/10/72 being a potable water supply dwellings occupied by personnel of military command set up under the North Atlantic Treaty (NATO), (art. 66, comma 21, D.L. 331 of 8/30/93). In particular, we reference art. 15, law 427 of 10/29/93 for the "Imposta di consumo".

dall' imposta di consumo come da art. 15 legge 427 del 29/10/93.

ACCORDO CONTRO COMPENSI CONDIZIONATI

(a) Il Fornitore garantisce che nessuna persona o agenzia e' stata impegnata per sollecitare o assicurarsi questo contratto con l' accordo o l' intesa di provvigioni percentuali, mediazioni o compensi condizionati, eccezion fatta per impiegati ed agenzie in buona fede. Per l' infrazione e violazione di questa garanzia il Governo degli Stati Uniti avra' il diritto di annullare questo contratto senza alcuna responsabilita' o, a sua discrezione, di dedurre dal prezzo o corrispettivo del contratto l' intero ammontare di tali compensi.

(b) "Agenzia in buona fede", come, usato in questa clausola, sta ad indicare una costituita agenzia commerciale o di vendita, mantenuta dal Fornitore allo scopo di procurare affari, che ne' esercita, ne' si propone di esercitare indebite influenze per sollecitare o ottenere contratti del Governo degli Stati Uniti, ne' si dichiara di essere capace di ottenere qualsiasi contratto del Governo degli Stati Uniti o contratti attraverso indebite influenze.

"Impiegato in buona fede", come usato in questa clausola, sta ad indicare una persona impiegata da un Fornitore e soggetta alla supervisione e controllo del Fornitore per quanto riguarda l' orario, il luogo e il modo di esecuzione del lavoro, la quale persona non esercita, ne' si propone di esercitare indebite influenze per sollecitare o ottenere contratti del Governo degli Stati Uniti, ne' dichiara di essere capace di ottenere qualsiasi contratto del Governo degli Stati Uniti o contratti attraverso indebite influenze.

"Compenso condizionato", come viene usato in questa clausola, sta ad indicare qualsiasi commissione, percentuale, senseria, o altro compenso che e' condizionato al successo che una persona o una societa' ha nell' ottenere un contratto del Governo degli Stati Uniti.

"Indebita influenza" come viene usata in questa clausola, sta a significare qualsiasi influenza che induce o tende a indurre un

COVENANT AGAINST CONTINGENT FEES (FAR 52.203-5) (APR 1984) MODIFIED

(a) The Supplier warrants that no person or agency has been employed or retained to solicit or obtain this contract upon an agreement or understanding for a contingent fee, except a bona fide employee or agency. For breach or violation of this warranty, the United States Government shall have the right to annul this contract without liability or, in its discretion, to deduct from the contract price or consideration, or otherwise recover, the full amount of the contingent fee.

(b) "Bona fide agency," as used in this clause, means an established commercial or selling agency, maintained by a Supplier for the purpose of securing business, that neither exerts nor proposes to exert improper influence to solicit or obtain United States Government contract nor holds itself out as being able to obtain any United States Government contract or contracts through improper influence.

"Bona fide agency," as used in this clause, means a person, employed by a Supplier and subject to the Supplier's supervision and control as to time, place, and manner of performance, who neither exerts nor proposes to exert improper influence to solicit or obtain United States Government contracts no holds out as being able to obtain any United States Government contract or contracts through improper influence.

"Contingent fee," as used in this clause, means any commission, percentage, brokerage, or other fee that is contingent upon the success that a person or concern has in securing a United States Government contract.

"Improper influence," as used in this clause, means any influence that induces or tends to induce a United States Government

impiegato o un ufficiale del Governo degli Stati Uniti a dare considerazione o ad agire, riguardo a un contratto del Governo degli Stati Uniti, in base a motivi diversi dai meriti dell' argomento.

employee or officer to give consideration or to act regarding a United States Government contract on any basis other than the merits of the matter.

GRATIFICHE

a. Il diritto del Fornitore a continuare la fornitura puo' essere interrotto con comunicazione scritta se, dopo notifica ed udienza, il Capo Agenzia o un suo rappresentante, accerta che il Fornitore, un suo mandatario o altri suoi rappresentanti abbiano:
(1) Offerto o dato una gratifica (per esempio un divertimento o un dono), ad un Ufficiale, Funzionario o Impiegato del Governo degli Stati Uniti; e

(2) Inteso, con tale gratifica, ottenere un contratto o un trattamento favorevole in un contratto.

b. I fatti a sostegno di questa determinazione possono essere riveduti da un qualsiasi tribunale avente giurisdizione legale.

c. Se viene posto fine a questo contratto in base al precedente paragrafo (a) il Governo degli Stati Uniti ha diritto a:

(1) Perseguire gli stessi rimedi come nel caso di rottura di contratto; e

(2) In aggiunta ad ogni altro risarcimento previsto dalla legge, richiedere un risarcimento esemplare di non meno di tre volte e non piu' di dieci volte il costo in cui e' incorso il Fornitore nell' elargire la gratifica alla persona interessata, come determinato dal Capo Agenzia o suo rappresentante. (Questo sottoparagrafo c. (2) e' applicabile solo se questo contratto utilizza danaro stanziato dal Dipartimento della Difesa).

d. I diritti a risarcimenti del Governo degli Stati Uniti previsti in questa clausola non sono esclusivi e sono in aggiunta ad ogni altro diritto e risarcimento previsto dalla legge o da questo contratto.

GRATUITIES (FAR 52.203-3) (APR 1984)

(a) The right of the Supplier to proceed may be terminated by written notice if, after notice and hearing, the agency head or a designee determines that the Supplier, its agent, or another representative--

(1) Offered or gave a gratuity (e.g., an entertainment or gift) to an officer, official, or employee of the United States Government; and

(2) Intended, by the gratuity, to obtain a contract or favorable treatment under a contract.

(b) The facts supporting this determination may be reviewed by any court having lawful jurisdiction.

(c) If this contract is terminated under paragraph (a) above, the United States Government is entitled--

(1).To pursue the same remedies as in a breach of the contract; and

(2) In addition to any other damages provided by law, to exemplary damages of not less than three nor more than ten times the cost incurred by the Supplier in giving gratuities to the person concerned, as determined by the agency head or a designee. (This subparagraph (c)(2) is applicable only if this contract uses money appropriated to the Department of Defense).

(d) The rights of remedies of the United States Government provided in this clause shall not exclusive and are in addition to any other rights and remedies provided by law or under this contract.

ALLEGATO (2) AL
CONTRATTO **N33191-98-H-1316**

SPECIFICHE TECNICHE PER LA FORNITURA DI ACQUA POTABILE

1. UTENTE: Governo U.S.A.
Rappresentato da: JANICE L. GURGANUS
Nella qualita' di: Utilities Contracting Officer

2. FORNITORE: Comune di La Maddalena
Rappresentato da: _____
Nella qualita' di: Dirigente Area Tecnica

3. UBICAZIONE UTENZA:
"Dental Clinic"
Via dei Mille, La Maddalena (SS)

4. DECORRENZA:

5. CARATTERISTICHE DEL SITO:
Superficie dei Locali: m²
Pertinenze: ☐ giardino m²
☐ piscina m³
☐ altro _____

6. FABBISOGNO PREVISTO:
Minimo Fisso Trimestrale: 150 m³
Categoria tariffaria: Tariffa Unica

(Il Governo degli Stati Uniti non e' in alcun modo obbligato ad utilizzare ne' e' limitato alla utilizzazione del suddetto fabbisogno)

7. MATRICOLA CONTATORE:_____
Il contatore e' di proprieta' del Comune che lo cede in concessione. L'Utente lo custodisce e risponde di qualsiasi danno ad esso arrecato, impegnandosi a riconsegnarlo in buono stato al termine della concessione.

8. MISURAZIONE E FATTURAZIONE:
La fornitura sara' misurata mediante un contatore unico. La fatturazione avverra' in base alle tariffe del Fornitore in vigore, qui riportate ai punti 12 e 13.

9. DIRITTO FISSO DI ALLACCIO: Lit 60,000

10. DIRITTO FISSO DI SUBENTRO: Lit 0

11. LAVORI DI ALLACCIAMENTO:
Nessuno, l'utenza e' gia' allacciata.

ENCLOSURE (2) TO THE
CONTRACT **N33191-98-H-1316**

TECHNICAL SPECIF ICATIONS FOR POTABLE WATER PROVISION

1. CONSUMER: U.S.A. Government
Represented by: JANICE L. GURGANUS
As: Utilities Contracting Officer

2. SUPPLIER: City of La Maddalena
Represented by: _____
As: Technical Area Manager

3. SERVICE LOCATION (Premises to be served):
"Dental Clinic"
Via dei Mille, La Maddalena (SS)

4. EFFECTIVE DATE:

5. SITE CHARACTERISTICS:
Premises Surface: m²
Relevances: ☐ yard m²
☐ swimming pool m³
☐ other_____

6. ESTIMATED REQUIREMENTS:
Minimum Quarterly Demand: 150 m³
Tariff Category: Sole Tariff

(The United States Government is in no way obligated to use, nor restricted, to the above estimated requirements)

7. METER NUMBER:_____
The meter is owned by the City that cedes it in concession. The User takes care of it and is responsible for any damage caused to it; the User promises to return the meter in a good state at the end of concession.

8. METERING AND BILLING:
Service will be measured by a single meter. Billing for service will be in accordance with the Supplier's Tariff, hereunder quoted at the points 12 and 13.

9. FIXED CONNECTION FEE: Lit 60,000

10. FIXED CONTRACT TRANSFER FEE: Lit 0

11. CONNECTION WORK:
None, service is already connected.

12. TARIFFAZIONE:

Il costo dell'acqua e' di 2,040 ITL/m³; ad esso va aggiunto il costo del servizio fognario e quello del servizio di depurazione, pari rispettivamente a 120 ITL/m³ ed a 500 ITL/m³; l'importo corrispondente al Minimo Fisso (Canone) va comunque corrisposto anche quando il consumo sia stato inferiore al Minimo. Ciascun m³ o frazione di m³ consumato nel trimestre in eccesso al Minimo sara' fatturato in aggiunta al Canone.

13. ONERI FISSI CONTRATTUALI TRIMESTRALI:

Nolo contatore:	ITL	
Canone acqua	ITL	306,000
Canone fognatura	ITL	18,000
Canone depurazione	ITL	75,000

14. LETTURE E MANUTENZIONE:

Per interventi di manutenzione o di lettura consumi rivolgersi a:

15. INDIRIZZO PER L'INOLTRO DELLE FATTURE:

U.S. Naval Support Activity
Public Works Officer
P.zza P. Amedeo, La Maddalena, Italy

16. I VERSAMENTI SARANNO EFFETTUATI DA:

Commercial Bill Paying Office
Naval Support Activity, Naples, Italy

17. Il presente Allegato (2) e' parte integrante del Contratto N33191-98-H-1316. In caso d'incoerenza fra i termini del presente allegato ed il "Regolamento Servizi" del Fornitore, faranno testo le condizioni contenute nell'allegato.

Questo contratto e' stato negoziato secondo il 10 U.S. Code 2304 (c)(1).

12. RATES:

The water cost is 2,040 ITL/m³; the costs for sewage and waste water treatment service, equal to 120 ITL/m³ and 500 ITL/m³ respectively, are to be added to the water cost; the amount corresponding to the Minimum Demand (Canone) shall be paid regardless, even in case the consumption is lower than the Minimum. Each m³ o fraction of m³ drawn in excess to the Minimum during the quarter shall be invoiced in addition to the Canone.

13. CONTRACT FIXED QUARTERLY CHARGES:

Meter rental	ITL	
Canone for water	ITL	306,000
Canone for sewage	ITL	18,000
Canone for waste water treatment	ITL	75,000

14. READINGS AND MAINTENANCE:

For all maintenance service calls or meter readings, please contact:

15. BILLS FOR SERVICE WILL BE RENDERED TO:

U.S. Naval Support Activity
Public Works Officer
P.zza P. Amedeo, La Maddalena, Italy

16. PAYMENTS WILL BE MADE BY:

Commercial Bill Paying Office
Naval Support Activity, Naples, Italy

17. Present Enclosure (2) is made an integral part of Contract N33191-98-H-1316. In case of any inconsistency between the terms of this Enclosure and the Supplier's Service Regulation, the terms of the enclosure shall control.

This contract is negotiated pursuant to 10 U.S. Code 2304 (c)(1).

DATA/*DATE*

PER IL COMUNE DI LA MADDALENA
FOR THE CITY OF LA MADDALENA

Il Dirigente Area Tecnica
The Technical Area Manager

PER IL GOVERNO DEGLI STATI UNITI
FOR THE U.S. GOVERNMENT

JANICE L. GURGANUS
Contracting Officer

DEPARTMENT OF THE NAVY
EUROPEAN BRANCH, ATLANTIC DIVISION
NAVAL FACILITIES ENGINEERING COMMAND
NSA BOX 81
FPO NEW YORK 09621

IN REPLY REFER TO:
09:WAB:db
11330
Ser: 302
N62470-84-C-7003
16 July 1984

Azienda Idrica Muncipale
Citta Di La Maddalena
La Maddalena Sassari
Sardinia, Italy

Subj: Letter request N62470-84-C-7003 covering Water Service to Trinita Housing Complex, La Maddalena Sassari, Sardinia, Italy

Encl: (1) City of La Maddalena Water Supply Subscription Policy and Application Form

Gentlemen:

It is requested the City of La Maddalena furnish potable water service to the Trinita Housing Complex, La Maddalena, Sardinia, Italy. The City's water supply application form, enclosure (1), is signed on behalf of the United States Government and is attached hereto and made a part hereof. The effective date of this agreement shall be 26 June 1984.

The City shall have required gallons per minute of water continuously available to the Trinita Housing Complex at the City's standard line pressure. The water delivered by the City will be measured by suitable metering equipment of standard manufacture which will be furnished, installed, maintained, calibrated and read by the city at its expense. Private residences served beyond the United States Government connection point shall have separate meters installed. Evidence shall be furnished with the quarterly billing that these meter readings have been subtracted from the billing submitted to the United States Government.

The United States Government agrees to pay a 12.276.680 Lire line connection charge covering connection of facilities required to supply water service to the Trinita Housing Complex. Installation of the permanent supply line to replace the existing temporary line will be accomplished by SEIS S.P.A, under cognizance of the City of La Maddalena. However, should SEIS S.P.A. fail to complete the installation within 180 days from the effective date of this contract, the City of La Maddalena will assume this responsibility and complete the permanent water line within 360 days from the effective date of this agreement.

For and in consideration of water service, the United States Government will pay in accordance with your 408 lire per cubic meter rate, a copy of which is attached hereto and made a part hereof (enclosure (1)).

Subj: Letter request N62470-84-C-7003 covering Water Service to Trinita Housing Complex, La Maddalena Sassari, Sardinia, Italy

The service furnished shall be at the lowest rate available to any customer under like conditions of service and does not include any Italian Government taxes from which the United States Government is exempted in accordance with existing agreements between the two Governments. It is requested that the paying activity be advised of any revisions or changes in rates applicable to the water service furnished the United States Government.

Service rendered under this letter request N62470-84-C-7003 will continue from year to year without necessity for renewal, but subject to the availability of appropriations. This letter request may be cancelled by either party on thirty (30) days written notice.

Bills covering the connection charge and water services will be rendered to the Public Works Officer, U.S. Navy Support Office, La Maddalena, Italy.

Payment of the connection charge will be made by the Disbursing Officer, U. S. Navy Support Office, La Maddalena, Italy chargeable to:

AA1741804 6120 243 32960 0 062863 4HRVSX 0084 ROR7414

Payment of the water service bills will be made by the Disbursing Officer, U. S. Navy Support Office, La Maddalena, Italy chargeable to:

Various appropriations ultimately chargeable as indicated on bills and/or inspection reports.

Sincerely yours,

D. L. CARNELL, P. E.
CDR, CEC, USN
By direction of the
Commander
Atlantic Division
Naval Facilities
Engineering Command

Copy to w/encl:
CO NSO LA MADDALENA
PWO NSO LA MADDALENA
DISOFF NSO LA MADDALENA
LANTNAVFACENGCOM (Code 1131)

Bollo straordinario autorizzato dall'Ufficio Registro di Tempio con foglio 2472 del 22-12-1961.

CITTA' DI LA MADDALENA
PROVINCIA DI SASSARI

POLIZZA DI ABBONAMENTO
per fornitura di acqua

Sig. The United States Government, U.S. Navy Support Office, La Maddalena,
Via Italy, TRINITA Housing Complex n. Piano
Consumo minimo mensile metri cubi XXXXX a L. 408.
Versa L. quale deposito e L. diritto fisso di apertura
bolletta deposito N. in data

mc 8710

SCRITTURA PRIVATA

Tra l'Amministrazione Comunale rappresentata nel presente dal Sig. ed il Sig. The United States Government si è convenuto di concedere all'Utente che a sua volta accetta la somministrazione di acqua a contatore e che quindi, l'acqua da questo registrata per qualsiasi causa dovrà tutta fatturarsi ~~espressamente in misura di concessione in base al prezzo di cui sopra e l'eccedenza in~~ ragione di L. 408 il mc.

L'Utente dichiara di prendere in consegna N. ZERO contatore di proprietà del Comune, di custodirlo, rispondendo di qualsiasi danno venisse allo stesso arrecato e di consegnarlo in buono stato al termine della concessione.

Per il nolo, manutenzione ed altro, l'Utente dichiara di accettare tutte le condizioni stabilite dal Regolamento, approvato con delibera Podestarile n. 31 del 21 febbraio 1936.

La Maddalena, li

L'UTENTE

IL SINDACO

Il Segretario Generale

ENCLOSURE (1)

SUPPO FORM 11102

CITY OF LA MADDALENA

Province of SASSARI

WATER SUPPLY SUBSCRIPTION POLICY

The United States Government, U.S. Navy Support Office, La Maddalena, Italy, TRINITA Housing Complex

MINIMUM MONTHLY CONSUMPTION, LIRE PER CU. MT. 408

CONNECTION CHARGE AND DEPOSIT RECEIPT NO.

DATE OF RECEIPT

PRIVATE DEED

BETWEEN the City, represented in this DEED by Mr.

and The United States Government

It is agreed to concede to the user, who in return accepts, the metered water supply

Therefore the water measured by said meter for whatsoever reason shall be entirely charged to the user at

LIRE 408 per cubic meter.

The user declared to be entrusted with ZERO meters of City' property.

He shall take care of them, being responsible for every damage which may occur, givi them back to the City in good condition at the end of the present DEED. For the maintenance and for other matters, the user declares to accept all the conditions provided by the City Water Supply Regulations approved by the PODESTA' of the City with deliberation #31 of 21 February 1936.

LA MADDALENA

THE USER

THE MAYOR

THE GENERAL SECRETARY

ENCLOSURE (1)

DEPARTMENT OF THE NAVY
OFFICER IN CHARGE OF CONSTRUCTION
U. S. NAVY SUPPORT OFFICE
FPO NEW YORK 09533

ROICC:MGB:pm
11000
Ser A 114-82
30 July 1982

Azienda Idrica
Comune di La Maddalena
LA MADDALENA (SS)

Subj: Water Services to Maria Complex, Padule, La Maddalena

Ref: (a) ROICC letter of 15 July 1981
(b) Navy Contract Manual P-68 section 8-801

Encl: (1) City of La Maddalena Letter of 21 July 1982

1. Reference (a) requested water service to the Maria Complex facilities. Enclosure (1) forwarded the rate schedule for the requested service which is the rate available to all customers under like conditions of service. In accordance with reference (b) this letter is to advise the City of La Maddalena that this command will accept invoices and make payments for the subject services in accordance with the rate of 240 lire per cubic meter and connection and meter charges detailed in enclosure (1).

2. Invoices should be sent to the Navy Support Office, Public Works Department, via Principe Amedeo La Maddalena. These invoices must show the amount of water consumed, rate applicable, and effective date. It is requested that this office be informed of any future changes to the rate schedule if and when they occur.

Sincerely,

M.G. BERRY,
LCDR,CEC,USN

PWD Superior.

DEPARTMENT OF THE NAVY
OFFICER IN CHARGE OF CONSTRUCTION
U. S. NAVY SUPPORT OFFICE
FPO NEW YORK 09533

ROICC:PM:pm
11000
Ser A 114-82
30 LUG 82

TRADUZIONE

Spett.le
Azienda Idrica
Comune di La Maddalena
LA MADDALENA (SS)

Ogg: Fornitura acqua complesso Maria, Padule, La Maddalena

Rif: (a) Lettera ROICC del 15 luglio 1981
(b) Guida ai contratti della Marina USA, Manuale P-68 sezione 8-801

All: (1) Lettera del Comune di La Maddalena del 21 luglio 1982

1. Con il riferimento (a) richiedevamo la fornitura di acqua potabile presso il complesso Maria. Con l'allegato (1) ci avete fornito il prezzo che dobbiamo pagare per il servizio suddetto, prezzo applicato a tutti gli utenti i quali rientrano nelle stesse condizioni di servizio. In conformita' con quanto previsto dal riferimento (b), con questa lettera intendiamo informare il Municipio di La Maddalena che questo Comando accettera' le fatture ed effettuera' i pagamenti per i suddetti servizi in base al prezzo di L. 240 al metro cubo, nonche' le spese di allaccio indicate dall'allegato (1).

2. Le fatture dovranno essere inviate al seguente indirizzo: U.S. Navy Support Office, Public Works Department, Via Principe Amedeo La Maddalena. Tali fatture dovranno riportare i quantitativi di acqua consumata, il prezzo applicato e la data di erogazione. Vi preghiamo di voler tener informato questo ufficio di qualsiasi cambiamento di tariffe qualora cio' dovesse verificarsi.

Distinti saluti,

M.G. BERRY,
LCDR,CEC,USN

OPTIONAL FORM 99 (7-90)
FAX TRANSMITTAL
# of pages ▶ 9
To H. CASCHERO
From Docuto
Dept./Agency
Phone #
Fax # 626 4346
Fax #
NSN 7540-01-317-7368 5099-101 GENERAL SERVICES ADMINISTRATION

1 WD superior.

Bollo straordinario autorizzato dall'Ufficio Registro di Tempio con foglio 2472 del 22-12-1961.

CITTA' DI LA MADDALENA
PROVINCIA DI SASSARI

POLIZZA DI ABBONAMENTO
per fornitura di acqua

Sig. U.S. NAVY SUPPORT OFFICE

Via DON VICO (PADULE) N. 5 Piano

Consumo minimo mensile metri cubi a L.

Versa L. 504.000 quale deposito e L. 630.000 diritto fisso di apertura

bolletta deposito N. 546 in data 10.08.82

SCRITTURA PRIVATA

Tra l'Amministrazione Comunale rappresentata nel presente dal Sig. Ins. Romeo ARMELI I =SINDACO= ed il Sig. U.S. NAVY SUPPORT OFFICE

si è convenuto di concedere all'Utente che a sua volta accetta la amministrazione di acqua a contatore e che quindi, l'acqua da questo registrata per qualsiasi causa dovrà tutta fatturarsi e precisamente il minimo di concessione in base al prezzo di cui sopra e l'eccedenza in ragione di L. 240 il mc.

L'Utente dichiara di prendere in consegna N. 1 contatore di proprietà del Comune di custodirlo, rispondendo di qualsiasi danno venisse allo stesso arrecato e di consegnarlo in buono stato al termine della concessione.

Per il nolo, manutenzione ed altro, l'Utente dichiara di accettare tutte le condizioni stabilite dal Regolamento, approvato con delibera Podestarile n. 31 del 21 febbraio 1936.

La Maddalena, li 10 Agosto 82

L'UTENTE
Per LT CDR H. BERRY USN
Michele Barbieri

Il Segretario Generale

IL SINDACO

[redacted]

Bollo straordinario autorizzato dall'Ufficio Registro di Tempio con foglio 2472 del 22-12-1961.

CITTA' DI LA MADDALENA
PROVINCIA DI SASSARI

POLIZZA DI ABBONAMENTO per fornitura di acqua

Sig. U.S. NAVY SUPPORT OFFICE

Via DON VICO (PADULE) N. 5 Piano

Consumo minimo mensile metri cubi a L.

Versa L. 1.920.000 quale deposito e L. 2.400.000 diritto fisso di apertura

bolletta deposito N. 545 in data 10.8.82

SCRITTURA PRIVATA

Tra l'Amministrazione Comunale rappresentata nel presente dal Sig. Ins N Romeo ARMELLI =SINDACO= ed il Sig. U.S. NAVY SUPPORT OFFICE si è convenuto di concedere all'Utente che a sua volta accetta la somministrazione di acqua a contatore e che quindi, l'acqua da questo registrata per qualsiasi causa dovrà tutta fatturarsi e precisamente il minimo di concessione in base al prezzo di cui sopra e l'eccedenza in ragione di L. 240 il mc.

L'Utente dichiara di prendere in consegna N. 1 contatore di proprietà del Comune di custodirlo, rispondendo di qualsiasi danno venisse allo stesso arrecato e di consegnarlo in buono stato al termine della concessione.

Per il nolo, manutenzione ed altro, l'Utente dichiara di accettare tutte le condizioni stabilite dal Regolamento, approvato con delibera Podestarile n. 31 del 21 febbraio 1936.

La Maddalena, li 10 Agosto 82

L'UTENTE
Per TODR M.C. BERRY PWD
Michele Barberi
PWD Supervisor.

IL SINDACO
Romeo Armelli

Il Segretario Generale

Bollo straordinario autorizzato dell'Ufficio Registro di Tempio con foglio 2472 del 22-12-1961.

CITTÀ DI LA MADDALENA

PROVINCIA DI SASSARI

POLIZZA DI ABBONAMENTO
per fornitura di acqua

Sig. U.S. NAVY SUPPORT OFFICE

Via P.O. BOX 18 LA MADDALENA - VIA PRIN. AMEDEO N. - 5 Piano -

Consumo minimo mensile metri cubi 8 a L. 100.

Versa L. — quale deposito e L. diritto fisso di apertura bolletta deposito N. in data

Scrittura privata

Tra l'Amministrazione Comunale rappresentata nel presente dal Sig. Giuseppe DELIGIA =SINDACO= ed il Sig. U.S. NAVY SUPPORT OFFICE si è convenuto di concedere all'Utente che a sua volta accetta la somministrazione di acqua a contatore e che quindi, l'acqua da questo registrata per qualsiasi causa dovrà tutta fatturarsi e precisamente il minimo di concessione in base al prezzo di cui sopra e l'eccedenza in ragione di L. 100 il mc.

L'Utente dichiara di prendere in consegna N. UNO oontatore di proprietà del Comune di custodirlo rispondendo di qualsiasi danno venisse allo stesso arrecato e di consegnarlo in buono stato al termine della concessione.

Per il nolo, manutezione ed altro, l'Utente dichiara di accettare tutte le condizioni stabilite dal Regolamento, approvato con delibera Podestarile n. 31 del 21 febbraio 1936.

La Maddalena, lì 13 - 6 - 73

L'UTENTE

IL SINDACO

Il Segretario Comunale

Bollo straordinario autorizzato dell'Ufficio Registro di Tempio con foglio 2472 del 22-12-1961

CITTÀ DI LA MADDALENA

PROVINCIA DI SASSARI

POLIZZA DI ABBONAMENTO
per fornitura di acqua

Sig. MEDICAL / DENTAL - US NSO - LA MADDALENA

Via Principe Amedeo N. 105 Piano Secondo

Consumo minimo mensile metri cubi 4 a L. 100.

Versa L. ..... quale deposito e L. ..... diritto fisso di apertura bolletta deposito N. ..... in data .....

Scrittura privata

Tra l'amministrazione Comunale rappresentata nel presente dal Sig. Giuseppe DELIGIA =SINDACO= ed il Sig. MEDICAL DENTAL -US NSO =LA MADDALE

si è convenuto di concedere all'Utente che a sua volta accetta la somministrazione di acqua a contatore e che quindi, l'acqua da questo registrata per qualsiasi causa dovrà tutta fatturarsi e precisamente il minimo di concessione in base al prezzo di cui sopra e l'eccedenza in ragione di L. 100 il mc.

L'Utente dichiara di prendere in consegna N. UNO contatore di proprietà del Comune di custodirlo rispondendo di qualsiasi danno venisse allo stesso arrecato e di consegnarlo in buono stato al termine della concessione.

Per il nolo, manutenzione ed altro, l'Utente dichiara di accettare tutte le condizioni stabilite dal Regolamento, approvato con delibera Podestarile n. 31 del 21 febbraio 1936.

La Maddalena, li 19 Febbraio 74

L'UTENTE

C.V. McCONNELL 2/19/74

IL SINDACO

G. Deligia

Il Segretario Comunale

Bollo straordinario autorizzato dell'Ufficio Registro di Tempio con foglio 2472 del 22-12-1961

CITTÀ DI LA MADDALENA

PROVINCIA DI SASSARI

POLIZZA DI ABBONAMENTO per fornitura di acqua

Sig. MEDICAL / DENTAL - US NSO - LA MADDALENA

Via Principe Amedeo N. 105 Piano INTERRATO

Consumo minimo mensile metri cubi 4 a L. 100.

Versa L. ..... quale deposito e L. ..... diritto fisso di apertura bolletta deposito N. ..... in data .....

Scrittura privata

Tra l'amministrazione Comunale rappresentata nel presente dal Sig. Giuseppe DELIGIA =SINDACO= ed il Sig. MEDICAL DENTAL - US NSO=LA MADDALENA= si è convenuto di concedere all'Utente che a sua volta accetta la somministrazione di acqua a contatore e che quindi, l'acqua da questo registrata per qualsiasi causa dovrà tutta fatturarsi e precisamente il minimo di concessione in base al prezzo di cui sopra e l'eccedenza in ragione di L. 100 il mc.

L'Utente dichiara di prendere in consegna N. UNO contatore di proprietà del Comune di custodirlo rispondendo di qualsiasi danno venisse allo stesso arrecato e di consegnarlo in buono stato al termine della concessione.

Per il nolo, manutenzione ed altro, l'Utente dichiara di accettare tutte le condizioni stabilite dal Regolamento, approvato con delibera Podestarile n. 31 del 21 febbraio 1936.

La Maddalena, li 19 Febbraio 74

L'UTENTE

2/19/74

C.V. McCONNELL

IL SINDACO

Il Segretario Comunale

Bollo straordinario autorizzato dell'Ufficio Registro di Tempio con foglio 2472 del 22-12-1961.

CITTÀ DI LA MADDALENA

PROVINCIA DI SASSARI

POLIZZA DI ABBONAMENTO
per fornitura di acqua

Sig. U.S. NAVY SUPPORT OFFICE

Via P.O. BOX 18 LA MADDALENA - VIA PRIN. AMEDEO N. - 5 Piano -

Consumo minimo mensile metri cubi 8 a L. 100.

Versa L. — quale deposito e L. diritto fisso di apertura bolletta deposito N. in data

Scrittura privata

Tra l'Amministrazione Comunale rappresentata nel presente dal Sig. Giuseppe DELIGIA =SINDACO= ed il Sig. U.S. NAVY SUPPORT OFFICE si è convenuto di concedere all'Utente che a sua volta accetta la somministrazione di acqua a contatore e che quindi, l'acqua da questo registrata per qualsiasi causa dovrà tutta fatturarsi e precisamente il minimo di concessione in base al prezzo di cui sopra e l'eccedenza in ragione di L. 100 il mc.

L'Utente dichiara di prendere in consegna N. UNO oontatore di proprietà del Comune di custodirlo rispondendo di qualsiasi danno venisse allo stesso arrecato e di consegnarlo in buono stato al termine della concessione.

Per il nolo, manutezione ed altro, l'Utente dichiara di accettare tutte le condizioni stabilite dal Regolamento, approvato con delibera Podestarile n. 31 del 21 febbraio 1936.

La Maddalena, lì 13 - 6 - 73

L'UTENTE

IL SINDACO

Il Segretario Comunale

Bollo straordinario autorizzato dell'Ufficio Registro di Tempio con foglio 2472 del 22-12-1961

CITTÀ DI LA MADDALENA

PROVINCIA DI SASSARI

POLIZZA DI ABBONAMENTO
per fornitura di acqua

Sig. MEDICAL / DENTAL - US NSO - LA MADDALENA

Via Principe Amedeo N. 105 Piano Secondo

Consumo minimo mensile metri cubi 4 a L. 100.

Versa L. ..... quale deposito e L. ..... diritto fisso di apertura bolletta deposito N. ..... in data .....

Scrittura privata

Tra l'amministrazione Comunale rappresentata nel presente dal Sig. Giuseppe DELIGIA =SINDACO= ed il Sig. MEDICAL DENTAL -US NSO =LA MADDALE

si è convenuto di concedere all'Utente che a sua volta accetta la somministrazione di acqua a contatore e che quindi, l'acqua da questo registrata per qualsiasi causa dovrà tutta fatturarsi e precisamente il minimo di concessione in base al prezzo di cui sopra e l'eccedenza in ragione di L. 100 il mc.

L'Utente dichiara di prendere in consegna N. UNO contatore di proprietà del Comune di custodirlo rispondendo di qualsiasi danno venisse allo stesso arrecato e di consegnarlo in buono stato al termine della concessione.

Per il nolo, manutenzione ed altro, l'Utente dichiara di accettare tutte le condizioni stabilite dal Regolamento, approvato con delibera Podestarile n. 31 del 21 febbraio 1936.

La Maddalena, li 19 Febbraio 74

L'UTENTE

C.V. McCONNELL 2/19/74

IL SINDACO

G. Deligia

Il Segretario Comunale

Bollo straordinario autorizzato dell'Ufficio Registro di Tempio con foglio 2472 del 22-12-1961

CITTÀ DI LA MADDALENA

PROVINCIA DI SASSARI

POLIZZA DI ABBONAMENTO per fornitura di acqua

Sig. MEDICAL / DENTAL - US NSO - LA MADDALENA

Via Principe Amedeo N. 105 Piano INTERRATO

Consumo minimo mensile metri cubi 4 a L. 100.

Versa L. ..... quale deposito e L. ..... diritto fisso di apertura bolletta deposito N. ..... in data .....

Scrittura privata

Tra l'amministrazione Comunale rappresentata nel presente dal Sig. Giuseppe DELIGIA =SINDACO= ed il Sig. MEDICAL DENTAL - US NSO=LA MADDALENA= si è convenuto di concedere all'Utente che a sua volta accetta la somministrazione di acqua a contatore e che quindi, l'acqua da questo registrata per qualsiasi causa dovrà tutta fatturarsi e precisamente il minimo di concessione in base al prezzo di cui sopra e l'eccedenza in ragione di L. 100 il mc.

L'Utente dichiara di prendere in consegna N. UNO contatore di proprietà del Comune di custodirlo rispondendo di qualsiasi danno venisse allo stesso arrecato e di consegnarlo in buono stato al termine della concessione.

Per il nolo, manutenzione ed altro, l'Utente dichiara di accettare tutte le condizioni stabilite dal Regolamento, approvato con delibera Podestarile n. 31 del 21 febbraio 1936.

La Maddalena, li 19 Febbraio 74

L'UTENTE

2/19/74

C.V. McCONNELL

IL SINDACO

Il Segretario Comunale

MODIFICATION OF CONTRACT/MODIFICA DI CONTRATTO P00001	1. Contract No./Contratto No. N33191-98-H-1316
No. of Modification/Numero di Modifica: P00001	3. Effective date/In vigore dal: Exec. date/data della firma
6. Issued by:/Richiesta da parte del: DEPARTMENT OF THE NAVY Represented by:/Rappresentato da: Engineering Field Activity Mediterranean Palazzo Cristallo Mirabella Viale Delle Acacie SS Domitiana 81030 Castelvolturno (CE)	7. Contract administered by: Contratto amministrato da: NAVAL SUPPORT ACTIVITY PUBLIC WORKS OFFICER LA MADDALENA, ITALY
8. Name and address of the Contractor: Nome ed indirizzo del Fornitore: COMUNE DI LA MADDALENA Citta' di La Maddalena P.zza Garibaldi 07024 La Maddalena	10A Modification to Contract No. N33191-98-H-1316 Modifica al Contratto No. N33191-98-H-1316 Encl./All. P00001 10B Date/data: 28 April 1998

12. Accounting data/Dati contabili: AA 1781804 61B0 230 32960 0 062863 2D QR8223 329608HRFFLQ Lit 30.323.500

13. MODIFICATION TO THE CONTRACT AS INDICATED IN PARA. 14/MODIFICA AL CONTRATTO COME INDICATO AL PARAGRAFO 14

☐ A. This modification is issued pursuant to:/Questa Modifica e' stata effettuata in base a:
ADDITION TO MASTER CONTRACT/APPENDICE AL CONTRATTO GENERALE
The changes set forth in Item 14 are made in the Contract Number in item 10A
Le modifiche stabilite alla voce 14 si intendono fatte al Contratto di cui alla voce 10A

☐ B. The above numbered contract is modified to reflect the administrative changes set forth in paragraph 14/Il contratto, il cui numero e' sopra indicato, e' stato modificato in conseguenza di variazione amministrativa come specificato al paragrafo 14

☐ C. This supplemental agreement is entered into pursuant to:/Questo accordo aggiuntivo viene introdotto a seguito di:
ACTIVITY REQUEST FOR SERVICE/RICHIESTA DELL'ACTIVITY PER FORNITURA GAS METANO

☐ D. Other/Altre voci: N/A/Non pertinente
(Specify type of Modification and Authority/Indicare il tipo di Modifica e la regolamentazione pertinente):

☑ E. Contractor [X] is not [ ] is required to sign this document and return 0 copy to the issuing office indicated at paragraph 6. Provision of potable water to this location constitutes THE CITY OF LA MADDALENA acceptance of this modification./Il Fornitore [X] non e' [ ] e' tenuto a firmare questo documento e restituire No. 0-copia all'Utente all'indirizzo indicato al paragrafo 6. La fornitura di acqua potabile per l'utenza in oggetto costituisce accettazione da parte della CITTA' DI LA MADDALENA della presente modifica.

14. MODIFICATION DESCRIPTION/DESCRIZIONE MODIFICA

(See "POTABLE WATER SERVICE SPECIFICATION" attached/Vedi le "SPECIFICHE TECNICHE DI FORNITURA DI ACQUA POTABILE" allegate).Except as provided herein, all terms and conditions of the document referenced in items 10A, as heretofore changed, remains unchanged and in full force and effect/Tranne per quanto qui sopra specificato, tutti i termini e condizioni stabiliti nel documento indicato al paragrafo 10A rimangono invariati.

15A. Name and title of Contractor's signer
Nome e qualifica di chi firma per il Fornitore

16A. Name and Title of the Contracitng Officer
Nome e Titolo dell'Ufficiale Contraente

William S. Barker
Contracting Officer

15B.	15C. Date signed Data della firma	16B.	16C. Date signed Data della firma
Authorized signer (Firma della Persona Autorizzata)		Signature of Contracting Officer (Firma dell' Ufficiale Contraente)	28 APR 1998

STANDARD FORM 30 (Rev 4-89) Italian Utilities
Note/Nota: Sequential Block Number not appearing do not apply/I numeri consecutivi mancanti da questo modulo Standard (SF-30) non sono menzionati poiche' non pertinenti

N33191-98-H-1316

a. Description of modification / *Descrizione della modifica*:
Present modification provides water supply to U.S. Section of NATO Compound, S. Stefano Island, City of La Maddalena (SS), Italy, as per attached Potable Water Service Specifications./ *La presente modifica riguarda una fornitura di acqua potabile presso la sezione U.S.A. del Complesso NATO, Isola di S. Stefano, Citta' di La Maddalena (SS), Italia, secondo le specifiche tecniche allegate*

b. Service to be furnished will be in accordance with Master Contract N33191-98-H-1316./*Le caratteristiche della fornitura saranno in conformita' al contratto quadro N33191-98-H-1316.*

c. Bills for service will be rendered to:/ *Indirizzo per l'inoltro delle fatture:*
Public Works Officer, Naval Support Activity, La Maddalena (SS), Italy/*Public Works Officer, Naval Support Activity, La Maddalena (SS), Italia*

ALLEGATO No (1) AL
CONTRATTO N33191-98-H-1316

SPECIFICHE TECNICHE DI FORNITURA ACQUA POTABILE

1. UBICAZIONE UTENZA: Sezione U.S.A. del Complesso NATO, Isola di S. Stefano, Citta' di La Maddalena.

2. FABBISOGNO STIMATO:
Punta giornaliera:
m^3/giorno 550
Consumo annuale stimato:
m^3/anno 75.000
(il Governo degli Stati Uniti non e' in alcun modo obbligato ad utilizzare, ne' e'limitato alla utilizzazione del suddetti fabbisogni stimati).

3. PUNTO DI CONSEGNA: Il punto di consegna dell' acqua potabile avverra' a valle della saracinesca posta sul collare di innesto in foranea, ed a monte del regolatore di flusso e del sistema di misura del Fornitore collocato in apposito manufatto.

4. DESCRIZIONE DELLA FORNITURA DI ACQUA POTABILE: Il Fornitore dovra' avere la richiesta quantita' di metri cubi di acqua potabile continuamente disponibile al punto di consegna, alla pressione di linea normale del Fornitore.

5. CARATTERISTICHE DELL' ACQUA POTABILE: Il fornitore fornira' acqua potabile i cui parametri saranno in conformita' alla normativa italiana vigente. La fornitura verra' resa alla pressione di esercizio della foranea pari a circa 7 bar.

6. MISURAZIONE E FATTURAZIONE: Il consumo sara' misurato mediante un contatore standard installato dal Governo

ENCLOSURE No (1)
TO THE CONTRACT N33191-98-H-1316

POTABLE WATER SERVICE TECHNICAL SPECIFICATIONS

1. SERVICE LOCATION: U. S. Section of NATO Compound, S. Stefano Island, Citta' di la Maddalena.

2. ESTIMATED SERVICE REQUIREMENTS:
Daily peak demand:
m^3/day 550
Estimated annual consumption:
m^3/year 75,000
(The United States Government is in no way obligated to use nor is it restricted to the above estimated requirements).

3. POINT OF DELIVERY: The point of delivery of potable water shall be downstream of the valve at the collar installed on the feeder, and upstream of the flow regulator and the Supplier's water meter located in the dedicated room.

4. DESCRIPTION OF POTABLE WATER SERVICE: The Supplier shall have required cubic meters of potable water continuously available at the point of delivery at Supplier's standard line pressure.

5. QUALITY OF POTABLE WATER: The Supplier will supply potable water whose parameters will be in compliance with the applicable Italian regulations. The delivery pressure will be the water feeder service pressure of about 7 bar.

6. METERING AND BILLING. Service will be measured downstream of the delivery point by means of a standard water meter installed by the

degli Stati Uniti a valle del punto di consegna. Pertanto, riguardo al misuratore, si conviene che quanto di competenza del Fornitore, secondo l'articolo" Provvedimenti sulla Fornitura - dell' accordo quadro, sia di competenza del Governo degli Stati Uniti. La fatturazione sara' unica ed avverra' in base alle tariffe del Fornitore, delibera N. 983 del 21/12/94 una copia della quale e' acclusa e costituisce parte integrante del presente allegato. L'utenza e'classificata come II[a] categoria. Per quanto concordato riguardo al contatore, il Governo degli Stati Uniti non paghera' al Fornitore alcun importo per nolo contatore.

7. OPERE DI ALLACCIAMENTO:
Intervento di allaccio in foranea secondo quanto previsto dalla normativa ESAF (Ente Sardo Acquedotti e Fognature).

8. ONERI PER ALLACCIAMENTO, FORNITURA ED AMMINISTRATIVI:
Lire 30.323.500

United States Government. Therefore, as far as the responsibility of the meter is concerned, it has been agreed, as stated in the master contract, - under the Service Provisions clause -, that the responsibility for the meter will be transferred to the United States Government. Billing for service will be in accordance with the Supplier's Tariff, City Resolution N. 983 of 12/21/94 a copy of which is attached hereto and made a part hereof. The tariff category adopted for this service is "II[a] categoria". As previously agreed upon regarding the meter the United States Government shall not pay the Supplier any fee for the rent of the meter.

7. CONNECTION WORK: Connection to main water feeder as prescribed by ESAF (Ente Sardo Acquedotti e Fognature) norms.

8. CONNECTION, PROVISION AND ADMINISTRATIVE CHARGES:
Lire 30,323,500.

PER IL GOVERNO DEGLI STATI UNITI / FOR THE U.S. GOVERNMENT

WILLIAM S. BARKER
Contracting Officer

PER IL FORNITORE / FOR THE SUPPLIER

COMUNE DI LA MADDALENA/CITY TOWN LA MADDALENA

Il Segretario Generale
(Dr. Mario SPANU)

Copy to:
NSA La Maddalena Public Works Office
NSA Naples Commercial Bill Paying Office