03/25/99
Ord
a99-1:mil8

Introduced By: GREG NICKELS

Clerk 03/31/99

Proposed No.: **1999-0196**

ORDINANCE NO. 13508

AN ORDINANCE approving the Gold Beach Water Company Small Water System Plan.

PREAMBLE:

K.C.C. chapter 13.24 requires approval of comprehensive plans for water utilities as a prerequisite for granting right-of-way franchises and approval of right-of-way construction permits.

The Gold Beach Water Company (company) provides water utility service to one hundred sixty-two single-family homes and a community clubhouse located on the east side of Maury Island. The company's water is obtained from two wells that have the capacity to provide water sufficient to meet demands at buildout (two hundred thirty-eight connections).

Water rights for the company's withdrawal are currently in dispute. Evidently, the company did not submit materials to the Washington State Department of Ecology sufficient to perfect its water rights permit. Until the matter is resolved, no new connections to the system will be allowed. This dispute does not affect service provision to the existing customers.

Capital improvements being proposed in the Small Water System Plan (plan) include a treatment system to reduce the corrosivity of the water, repairs to a leaking storage tank and construction of new storage tanks.

The King County utilities technical review committee reviewed and conditionally approved the plan on April 15, 1998. The conditions of approval, technical changes to the plan, were met by the company and are reflected in the attachment to this ordinance.

King County prepared a determination of nonsignificance for the plan on January 25, 1999, in accordance with the State Environmental Policy Act.

The utilities technical review committee recommends that the council approve the plan.

SECTION 1. The Gold Beach Water Company Small Water System Plan, Attachment A, is hereby approved without conditions.

INTRODUCED AND READ for the first time this 12th day of April, 1999.

PASSED by a vote of 12 to 0 this 17th day of May, 1999.

KING COUNTY COUNCIL
KING COUNTY, WASHINGTON

Louise Miller
Chair

ATTEST:

Clerk of the Council

APPROVED this 27 day of May, 1999.

King County Executive

Attachments: Gold Beach Water Company Small Water System Plan

13508

SMALL WATER SYSTEM PLAN

For

GOLD BEACH WATER COMPANY, INC.
VASHON ISLAND, WASHINGTON 98070

Prepared by

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Revision 2
December 10, 1998

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PREFACE

REGULATION AND WATER COMPANIES

An overview of the function of the WUTC as a state agency regulating investor-owned water companies

COMMISSION STRUCTURE

The Washington Utilities and Transportation Commission is a three-member board appointed by the Governor and confirmed by the state Senate. It is responsible for regulating the investor-owned utility and transportation businesses in the state.

The Utilities Division of the Commission regulates more than 70 water companies that meet certain customer and revenue minimums. The Commission is responsible to see that regulated water companies provide safe and reliable service to their customers at rates that are reasonable, yet give the companies an opportunity to earn a reasonable rate of return.

Publicly owned water companies are already under public review. For example, water service may be offered by a cooperative owned by customers and managed by the board they elect. Other municipally operated utilities and transportation systems, like water, power, or bus systems are controlled by city councils. The Commission regulates only privately owned companies offering services to the public.

FILING RATE AND SERVICE SCHEDULES

All regulated utilities must file rate and service schedules, that is tariffs, with the Commission. With few exceptions, before a water company may change rates or terms of a regulated service, it must get permission from the Commission. When first coming under regulation by the Commission, water companies file specific rate and service schedules or tariffs, listing the company's existing rates and services.

COMMISSION OPEN MEETINGS

An open meeting is a regularly scheduled public meeting held by the Commission. Pre-announced business items or filings are presented to, and addressed by, the Commission. Commission staff reviews and presents recommendations to either approve a filing or suspend for formal hearing to allow additional time for investigation.

The Commission is a quasi-judicial body. This means that the commission conducts hearings with proceedings similar to a court of law. Administrative Law Judges, employed by an independent state agency, conduct the proceedings.

NOTE: For more information on the rate hearing process, you may request, at no cost, a copy of "Your Guide to a Rate Hearing", by calling the Public Affairs office of the Commission at (360) 753-6423.

WATER COMPANY ACCOUNTING AND RECORD KEEPING

Commission accountants review the records of regulated water companies to ensure that the company's financial books and records are properly maintained. Accountants analyze the legitimacy of company operating expenses and investments.

WATER COMPANY PHYSICAL OPERATIONS

A staff engineer provides the Commission with field surveys of physical operations, and recommendations of ensure adequacy of service and quality of water.

A staff financial specialist reviews water company contracts. This may include affiliated interest transactions, and security application for debt issues. These individuals also study the financial, management and operating characteristics of water companies in addition to the sale or transfer of water systems.

The Tariff Specialist reviews proposed tariff filings for compliance with State laws and Administrative Codes and studies the company's rate design and rate spread options. Tariff Specialists recommend Commission jurisdiction when water companies meet criteria for regulation and they assist the company in the initial regulatory process.

NOTE: Technical questions regarding water company operations may be directed to the Commission's water section. Contact the Utilities Water Program Manager at (360) 753-6423.

MAJOR ISSUES EXAMINED IN A GENERAL RATE CASE

The Commission looks at four major issues in a general rate case:

- the company's legitimate annual operating expenses and how they have increased or decreased since the last rate case.
- the company's rate base: the total investment in plant and assets, less depreciation and contributions, on which rate-payers pay the company a return.
- the company's rate of return (profit) it can earn on its investment or rate base.
- the company's rate design, or the specific rates it charged for its different services.

PUBLIC INVOLVEMENT

The WUTC is firmly committed to providing the public the opportunity to participate in the regulatory process. Regulating water companies notify their customers of proposed rate increases. The Commission's public involvement coordinator is available to advise water company staff when they are writing a rate increase notice to customers in order to comply with Commission rules. The coordinator may be contacted by calling the WUTC at (360) 753-6423.

CONSUMER AFFAIRS

The Commission also provides help to consumers through the Consumer Affairs Section. When consumers cannot resolve a dispute with a regulated company, they may speak with a service examiner in Consumer Affairs and may file a complaint. Customers may call the Consumer Affairs section toll-free1-800-562-6150.

Section 1

Description of Gold Beach Water Company

1.1 Identification of Ownership and Management

Gold Beach Water Company is a privately held company and is the sole owner of the Gold Beach Water System.

The place of business of the Gold Beach Water Company is:

Courthouse Square Bldg; Suite 103
19001 Vashon Highway SW
Vashon, WA 98070

The mailing address for Gold Beach Water Company is:

Gold Beach Water Company, Inc.
PO Box 2138
Vashon, WA 98070

The phone number for Gold Beach Water Company is:

(206) 463-9958

The owners of the Gold Beach Water Company are heirs of the founders, Dominic and Mary Spano, to wit:

R. Michael Spano; President
George Spano; Vice President
Jane Spano-Connors; Secretary/Treasurer

1.2 History of Gold Beach Water System Development

Gold Beach Water Company, Inc. was organized on September 24, 1969, as a corporation to provide water service to the community of Gold Beach. Dom Spano and William Joslin doing business as Gold Beach Company began development in 1966. The company bought approximately 135 acres from Lloyd and Harriet Raab on a deed release. As lots were sold, the deed to the land was transferred to the Gold Beach Company. The development is located in Section 28, Township 22N, Range 3E, WM, in King County, state of Washington.

Gold Beach Company drilled its first well in the spring of 1965. The ownership and operation of the water system were assumed by Gold Beach Water Company in September, 1969. Well #2 was drilled in 1976. The distribution system was developed in stages, as each division was platted and sold. The system for division 1 was developed in 1971; Division 2 in 1974; Division 3 in 1976; and Division 4 in 1979. These dates are approximate as the development of a division might span more than a year. Customer metering was completed in 1991. All system development and upgrading has been under the jurisdiction of the State of Washington Department of Social and Health Services and the Seattle-King County Health Department.

1.3 Identification of Service Area and Service Area Policies

The Gold Beach Water Company service area is located on the southeast shore of Maury Island. Maury Island is attached to Vashon Island by a narrow isthmus, southwest of Seattle in Puget Sound. The elevation of the 135-acre development of Gold Beach ranges from sea level to approximately 400 feet. The zoning for the entire system is single family residential. Maps of the service area can be found on pages A1 and A2 of the Appendix.

The service area policy of the Gold Beach Water Company is to provide safe and reliable water to Gold Beach residents at affordable rates. The company has no plans to expand its service area beyond the defined limits of the service area map provided at this time. Should any water system adjacent to the Gold Beach Water Company service area fail and request water service from the company, every effort will be made to serve that system. However, no service will be provided to any system if such service adversely impacts either the water supply or financial stability of the company.

1.4 Relationship with Other Plans

The Gold Beach Water Company service area abuts no approved neighboring public water systems. Nearby systems include Maury Mutual Water Company, Dockton Water Association, and several smaller water systems elsewhere on Maury Island. Purveyors on Maury Island have been offered an opportunity to comment on this WSP but to date have declined to do so. No service area agreement pertaining to the Gold Beach Water Company's service area has been executed with any other drinking water provider and none is considered necessary at this time.

Section 2

Basic Planning Data

2.1 System Identification Number

The Identification Number of the Gold Beach Water Company, Inc. is 283508.

2.2 Existing Population and Current Number of Service Connections

The Gold Beach Water Company water system currently serves 163 service connections.

2.3 Water Usage by Customer Class

With one exception, all customers served by Gold Beach Water Company are single family residences. The one exception is the community clubhouse, a community-owned and operated cooperative, which has rest rooms, a kitchen, and one 70,000-gallon swimming pool. Existing regulations governing land use in Gold Beach include the 1986 Vashon Community Plan and the King County Comprehensive Plan. The platted areas are zoned single family residence with an approximate density of 4.0 dwelling units per acre. All other areas within the Gold Beach Water Company service area are zoned RA-2.5 and Mineral, and RA-10 and Mineral within the franchise area adjacent to the service area.

State Department of Health guidelines stipulate the minimum production capacity of the source and pumping equipment shall be 800 gallons per day per residential connection. Gold Beach Water Company's system currently produces over 1,130 gpd per residential unit at maximum build-out of 238 customers. At the current 163 connections, the system is producing 1,652 gpd per customer. Gold Beach Water Company's average customer usage over the past five years has ranged from a low of approximately 150 gallons per day in winter months to a high of approximately 500 gallons per day in the driest month of a summer, well within both the required and actual capacity of supply.

2.4 Future Population and Service Connection Projections

The service area policy of the Gold Beach Water Company is to provide safe and reliable drinking water to Gold Beach residents. With no plans to expand the Gold Beach Water Company service area, the maximum number of service connections expected at any time in the future is limited to the number of single family residence building lots within the service area: 238. The existing system was designed and constructed to service the entire Gold Beach community of 238 building lots and remains capable of doing so.

Further, Gold Beach Water Company will provide water service for any water system existing within its service area or immediately adjacent to it, should such water systems fail and request service. However, should that service adversely impact either Gold Beach Water Company's water supply or its financial stability, Gold Beach Water Company will be compelled to refuse service in order to protect its ability to continue to adequately serve its existing customers.

Section 3

System Analysis

3.1 Identification of System Design Criteria

The Gold Beach Water Company facilities are required to comply with the design criteria identified below. Those criteria, when applied to Gold Beach Water Company operations, establish the prescriptive requirements for the system given in paragraph 3.1.2.

3.1.1 Water System Design Criteria

The design of public water systems in the State of Washington is required to comply with the following regulations, ordinances and rules:

Chapter 246-290 WAC, "Drinking Water Regulations"; Washington State Board of Health

Chapter 173-160 WAC, "Minimum Standards for Construction and Maintenance of Wells"

In the analysis of Gold Beach Water Company facilities, the following publications may be used for guidance. These references are widely accepted for sizing and evaluating public water supply systems in Washington State and are considered to constitute an adequate basis for planning water system improvements.

"Recommended Standards for Water Works," Committee of the Great Lakes, Upper Mississippi River Board of State of Public Health and Environmental Managers

PVC Pipe – Design and Installation, AWWA Manual M23

"Design Standards for Public Water Supplies" Office of Environmental Programs, State of Washington Department of Social and Health Services, March, 1973; Third Reprint, October, 1977

"Sizing Guidelines for Public Water Supplies," Office of Environmental Health Programs, Division of Drinking Water, September, 1983

"Group A Public Water Systems Waterworks Design Standards", Office of Environmental Health Programs, Division of Drinking Water, April, 1996 Draft

3.1.2 Water System Prescriptive Requirements

Specific requirements applicable to the Gold Beach Water Company's system are as follows:

- The minimum diameter of all distribution mains shall be six inches unless justified by hydraulic analysis.

- In instances where pumping from storage to the distribution system is necessary, multiple booster pumps are required which have sufficient capacity to meet 50% of peak demand with the largest pump out of service.

- Minimum production capability of the system shall be 800 gallons per day per residential connection. For the projected maximum 238 residential connections, the daily demand would be 190,400 gallons.

- The Gold Beach Water Company is exempt from fire flow requirements because it is an existing, non-expanding system. If fire flow were to be provided, State guidelines require that the distribution system shall be designed to provide the required fire flow at a pressure of at least 20-psi during maximum instantaneous demand conditions. Since Gold Beach Water Company's service area is established and no expansion of the main distribution system is anticipated, regulations related to increased size of new mains for fire hydrants are not applicable.

- Construction of the Gold Beach Water Company system facilities began in 1966 with the drilling of Well #1 and was substantially completed in 1976 with the installation of Well #2. The design requirements in effect at the time of completion of construction were the 1973 issue of the Design Standards. New public water systems or additions to existing systems are required to comply with the current design standards given in the 1983 Sizing Guidelines. Since Gold Beach Water Company's system is neither new nor expanding, the minimum design requirements applicable are given in the 1973 Design Standards. For information purposes, requirements based on both references are given below, as well as the 1996 Draft Standards as proposed revisions:

Table 3.1.2 Storage Capacities
For projected 238 connections capability:

Performance Requirement	1973 Standard	1983 Guideline	1996 Draft Standards
Maximum Instantaneous Demand (1996 PHD*)	274 gpm	250 gpm	245 gpm
Standby Storage Volume (note 1)	47,600 gal	47,600 gal	47,600 gal
Equalization Storage Volume (note 2)	**	9,390 gal	8,820 gal
Existing Total Storage Volume	58,600 gal	58,600 gal	58,600 gal
Minimum Delivery Pressure (note 3)	20 psi	30 psi	30 psi

* 1996 Draft standards changed terminology to Peak Hour Demand (PHD)
** We provide storage in excess of that required by 1973 standards.

Note 1: The recommended standby storage volume for 238 service connections is the same under both the old Design Standards and the new Sizing Guidelines. The minimum storage for the Gold Beach Water Company system is equal to 800 gallons per connection less an amount equal to the daily production capacity of the multiple sources with the largest single source out of action but in no case less than 200 gallons per connection. The reduction in standby storage allowed where multiple sources are available applies only when the electrical power source is shown to be reliable. Outages of more than thirty minutes duration shall average not more than three per year over the past three years with an average duration of less than four hours and with no single outage lasting longer than eight hours.
Note 2: If source production capability is less than the maximum instantaneous demand, equalization storage volume is required. Since Gold Beach Water Company's source production exceeds the maximum instantaneous demand requirement, no equalization storage volume is needed.

Note 3: The delivery pressure requirement set forth in the Design Standards for Public Water Supplies (March, 1973 edition) requires that the system deliver water "at a pressure of not less than 20 psi under normal peak flow conditions, measured at the water meter, or at the property line of the premises when meters are not used".

3.2 Evaluation of Existing System

The residential development at Gold Beach is bounded on the southeast by Puget Sound. The development consists of approximately 238 lots, divided into three interconnected pressure zones of 118 lower lots, 110 upper lots, and 10 uppermost lots.

The lower pressure zone abuts Puget Sound on the southeast and ranges from sea level to approximately 100 feet above sea level. Divisions 1, 3, and 4, the bulk of the lower section, consist of 34, 16, and 56 lots respectively. There is a meets and bounds division of 12 large lots at the southeast corner of the development. The clubhouse and swimming pool for the development are located in this section.

The upper pressure zone ranges in elevation from approximately 300 to 400 feet above sea level. The upper area is made up of the 100 lots of Division 2, four 2-1/2 acre lots at the southwest corner of the development, and six lots surrounding the upper reservoir in the northwest portion of the community. The uppermost zone is comprised of ten lots of a meets and bounds division.

The system was designed to serve approximately 238 connections. As of October 31, 1997, there were a total of 163 service connections. There is an additional potential build-out of 17 more connections in the identified future service area, for a total of 255 connections. At an approximated demand of 800 gallons per connection per day, the potential demand for a completely developed community of 255 connections would equal 204,000 gallons per day. Gold Beach Water Company's current supply of 187 gallons per minute, or 269,280 gallons per day, is more than adequate to service a maximized community.

The water system is divided into three sections or pressure zones; lower, upper, and uppermost. A map delineating the three zones can be found in the Appendix on page A4. The lower zone is gravity fed from a 28,000-gallon concrete reservoir located approximately halfway up the hillside. This tank has been previously erroneously described as having a capacity of 50,000 gallons.

The upper zone is gravity fed from a 30,600-gallon glass-lined reservoir located at the top of the hill.

The uppermost zone is served by two pressure tanks and one reserve tank located in a small building adjacent to the upper reservoir.

3.2.1 Source

The system is supplied by two wells located in the lower zone. Well #1 is served by a 7.5 hp, three phase Gould submersible pump installed October 31, 1988 and capable of a maximum discharge of 160 gallons per minute at system pressure. Well #2 is served by a 10 hp, three phase Grundfos submersible pump installed December 7, 1994, capable of a maximum discharge of 360 gallons per minute at system pressure.

Each well is equipped with a sampling tap and source meter. The water from each well is pumped through a continuous chlorinator before being pumped up to the reservoirs.

Table 3.2.1 Well Characteristics

Characteristic	Well Number 1	Well Number 2
Casing Diameter	8 inches	8 inches
Completed Depth	113 feet	118 feet
Static Water Level	~ 80 feet	~ 77 feet
Max Operating Discharge	160gpm	360 gpm
Well Pump; Make	Gould	Grundfos
Well Pump Size	7.5 hp	10 hp
Drop Pipe Size	2"	4 "
Pump Setting	102 feet	99 feet
Elevation of Well Head	100 feet MSL	100 feet MSL
Tested Discharge	70 gpm	117 gpm

3.2.2 Storage and Distribution

Water is pumped from the wells through a 4" line to the first of two reservoirs, a 28,000-gallon rectangular concrete tank with a shed roof located at 196 feet above MSL on the side of the hill above the lowest part of the system. The capacity of this reservoir was earlier reported erroneously as 50,000 gallons. This lower reservoir supplies the lower zone by gravity feed through a looped design of 2" to 6" pipes. A system pressure of 44 to 70 psi is maintained in the lower zone. This reservoir is equipped with an on-demand float switch that automatically activates the pumps at the wells when the level drops three feet below its maximum level. The height of the float switch was previously reported erroneously as five feet below maximum level.

Two 15 hp, single phase Cornell booster pumps located at the lower reservoir supply the upper reservoir through a 4" cast-iron line. These pumps are both on line and are used alternately, switched manually from one to the other each month, to extend pump life and ensure reliability to the upper zones. Each pump is capable of 160 gallons per minute at system pressures. This is more than the 138.5 Peak Hourly Demand (PHD) calculated for the upper pressure zone.

Located at the top of the hill 412 feet above MSL, the upper reservoir is a 30,600-gallon glass-lined horizontally mounted steel tank twelve feet in diameter. This upper reservoir is equipped with an on-demand float switch, which activates the mid-level booster pumps located at the lower reservoir when the level in the upper reservoir drops approximately three feet below its maximum level. The height of the float switch was previously reported erroneously as six feet below maximum level.

The upper reservoir supplies the upper zone (the distribution system on the hill above the lower reservoir but below the upper reservoir) by gravity feed through a looped design of 4" to 6" pipes. A system pressure of 22 to 56 psi is maintained in the upper zone.

The upper reservoir also supplies the uppermost zone, the distribution system higher in altitude than either reservoir, with a 3 hp, single phase pump capable of 80 gallons per minute, and two 75 gallon bladder pressure tanks which are set at a pressure range of 30 to 60 psi. The booster pump switch settings are 30 psi minimum and 60 psi maximum. In addition, there is a 1,000-gallon steel storage tank (not pressurized) for reserve. This uppermost zone is comprised of ten service connections. The existing system maintains adequate pressures for this smallest zone, so no need is perceived to add a second booster pump at this time.

Gold Beach Water Company has considered the installation of a Pressure Relief Valve station between the lower and upper pressure zones to allow a controlled reflux of water from the upper reservoir to the lower, or to serve the entire system from a single reservoir site. Benefits of installing a PRV station include using a single reservoir site, the upper location, and requiring only one on and off switch mechanism. Additionally, installation of a PRV station would allow the Company to take the lower reservoir off-line to service and repair it without fear of service interruption to the lower pressure zone.

Drawbacks to the installation of a PRV station between the lower and upper pressure zones include the cost of installing a PRV station, the cost of larger well pumps, the loss of realized value of the lower reservoir, potential damage to fixtures and appliances, and the risk of harm to the residents who live in the lower pressure zone. Of all the drawbacks, the greatest is the risk to the residents. The topography of the Gold Beach Community and its water system is unusual in that the two primary pressure zones are separated by a great change in elevation, from 136 feet to 410 feet above sea level. PRV stations are best suited for systems with smaller differences in elevation, where failure of the valve will not cause much damage. Should a PRV fail in the Gold Beach system, pressures in the lower zone would become so great that extensive damage would be done to fixtures and customers could be harmed. Consequently, Gold Beach Water Company has determined that the cost and potential hazards of installing a PRV station between the upper and lower pressure zones far outweigh the benefits.

Table 3.2.2 Storage Reservoirs

Characteristic	Lower Reservoir	Upper Reservoir
Elevation of Base	196 feet above MSL	412 feet above MSL
Elevation of Overflow	204 feet above MSL	422 feet above MSL
Diameter of Reservoir	NA	12 feet
Height of Reservoir	11 feet	12 feet
Usable Volume of Reservoir	28,000 gallons	30,600 gallons

The standby storage volume credit for multiple sources applies when the commercial power supply can provide reliable electrical service. Gold Beach Water Company records indicate annual power outage incidents to be less than the prescribed minimum, therefore the system qualifies for the multiple source standby storage credit.

3.2.3 Hydraulics

A summary of the hydraulic analysis of the Gold Beach Water Company water supply system can be found in the Appendix beginning on page A5. Criteria of the analysis is as follows:

- Steady State
- Hazen-Williams Formula
- Forty (40) trials

Locations of the nodes used in the analysis are identified in two maps: Gold Beach Lower Loop Div. 1,3 & 4; and Upper Loops Gold Beach Div 2. Included in the analysis are measurements for all pipes, junctions, and pumps within the system.

To accomplish peak hour flow modeling, maximum demand was figured using the worst-case scenario, or the State Department of Health's proposed 1996 Draft Standards, which are more stringent than the 1983 guidelines. For instance, Division #2, the upper pressure zone, contains 79 service connections. Using the 1996 Draft Standards proposed guidelines (equation for 15 to 100 connections) the Peak Hourly Demand, or PHD (equivalent to the Maximum Instantaneous Demand, or MID) is considered to be 138.5 gpm. Using the 1983 guidelines, the MID would be 132 gpm.

3.2.4 Fire Flow

There are 14 fire hydrants on the system: seven in each of the lower and upper pressure zones. Gold Beach Water Company does not guarantee fire flow nor is it required to provide it under existing ordinances. King County Fire Protection Ordinance requirements for fire flow for a lot less than 35,000 square feet is 1,000 gallons per minute at 20 psi for a period of 2 hours with a hydrant located within 350 feet of the lot line. However, King County Ordinance No. 5828 does not impose fire flow requirements on existing water systems such as Gold Beach. Such fire flow requirements would apply only if the company's facilities were to be expanded and then would only apply to the area of new construction. A copy of the King County fire regulations is available at the Vashon Island Fire Department.

Recognizing that adequate fire flow can only be beneficial to a community, Gold Beach Water Company asked the nine members of the Gold Beach Community Board to prioritize concerns within their neighborhood. Of five concerns listed, fire flow placed third. Water quality and increased pressure received higher priority; consumption during power outages and water rates were ranked lower.

According to the King County Fire Marshall and Fire District #13 Fire Department Chief, the lower pressure zone would not benefit from facilities improvements because County fire trucks are not required to service areas where access is over a 15% grade or greater. The single access road to the lower pressure zone is such a grade. All homes constructed in the lower zone are currently required to install private sprinkler systems for fire suppression. Pressure in the lower zone meets the required 22 gpm for home sprinkler systems.

Facility improvements that would benefit the upper pressure zone with regard to fire flow include the installation of an additional storage tank next to the uppermost existing reservoir, installation of four (4) additional fire hydrants, the performance of a hydraulic analysis to determine which, if any, lines must be replaced, and the replacement of the lines identified by the study.

The installation of an additional storage tank in the uppermost zone would increase both system pressure and the volume of system standby storage capacity to meet the requirements of adequate fire flow. Cost of the installation of a 72,000-gallon storage tank is estimated at $0.75 @ gallon: $54,000.

The installation of four (4) additional fire hydrants is estimated at $1,800 @ hydrant: $7,200.

The hydraulic analysis to determine which, if any, lines must be replaced to provide adequate fire flow pressures and flow is estimated at $2000.

The replacement of lines to provide adequate fire flow pressures and flow is targeted to be approximately 1000 feet. Cost is estimated at a rate of $40 @ foot: $40,000.

The estimated cost to provide adequate fire flow for the upper pressure zone totals $101,200. With a ten percent cost overrun factor, the total becomes $111,320. As rate increases are granted by the Utilities and Transportation Commission for expenses incurred, not expected, payment of this improvement would have to be passed onto the community in the form of a surcharge. If all the customers of Gold Beach Water Company were to benefit from the improvements to provide adequate fire flow, a surcharge based on a five-year payback would equal a charge of $11.02 per month in addition to the regular rates. Because only the upper pressure zone residents would benefit from the improvement of fire flow, and all customers would benefit indirectly from an increase of standby storage, a proportionate surcharge would be difficult to implement and even more difficult to explain satisfactorily to a community that is ambivalent regarding a need for these improvements anyway. However, since the installation of an additional storage tank next to the upper reservoir is planned as a capital improvement, the fulfillment of adequate fire flow to upper pressure zone residents will continue to be addressed with the Gold Beach Community.

3.2.5 Metering

All service connections are metered. Customer metering was completed in 1991. Source metering was installed in November, 1994.

3.2.6 Treatment

Gold Beach Water Company chlorinates source water to ensure bacteriological contamination cannot occur. As a direct result of customer complaints, Gold Beach is additionally in the process of installing a system to lower pH levels found in the source water. Water Treatment Consultant James Shunn was retained to perform a study of the Gold Beach Water System and subsequently designed a treatment system to lower the pH levels, which naturally occur in the source water. Shunn's system is similar in design to the constant chlorination system currently in place at both Gold Beach Water Systems wellheads. The Shunn system will automatically feed soda ash into the source water after it emerges from the submergible pumps and before being pumped to storage at the reservoirs, thus lowering pH levels to acceptable standards. (See Capital Improvement #1) You can find the Shunn system analysis beginning on page A18 in the Appendix.

3.2.7 Water Rights

Application for water rights was made when the wells were originally drilled. Another application for a Certificate of Water Right was made March 25, 1994 for the two wells combined, and is still pending approval as of this writing. A letter was recently discovered from the Department of Conservation, dated January 25, 1966, to Consulting Geologist Richard Rongey. This letter refers to a permit (#6470) granting water rights to "Gold Beach Company" and recommends Gold Beach withdraw their duplicate applications. Copies of the letter, the earlier application, and the latest re-application (DOE Application No. G1-27448) are included in the Appendix. A decision regarding whether or not water rights were granted Gold Beach Water Company is pending. Documents related to water rights can be found in the Appendix beginning with page A59.

Until formal water rights are issued for the system's two wells, DOH will only approve projects needed to address health and reliability issues. Projects will not be approved for growth beyond the existing platted lots within Gold Beach's existing service area and for areas not covered by the original system design approved by DOH. When the water rights situation is resolved, DOH will consider an amendment to this Water System Plan to allow for expansion of the system.

3.2.8 Franchise

Public water systems are permitted to use public rights of way through franchises issued by their respective Counties. These franchises are valid for a period of twenty-five years, after which they must be renewed. Gold Beach Water Company has applied to King County for a franchise renewal. King County has responded by promising that the renewal will be immediately forthcoming upon approval of this Comprehensive Water System Plan.

3.3 Water Quality

The State of Washington, under WAC 246-290, has set established rules to define basic regulatory requirements and to protect the health of consumers using public drinking water supplies. The rules in WAC 246-290-300 and WAC 246-290-310 set forth water quality standards and monitoring requirements for public drinking water. These regulations identify maximum contaminant levels (MCL) for physical, chemical, and bacteriological properties of the supply. All test results are on file at the office of the Gold Beach Water Company, Inc.

3.3.1 Bacteriological Tests

Total coliform testing is conducted once a month on a regular basis in accordance with State regulations. Gold Beach Water Company's Coliform Monitoring Plan consists of three major components: Narrative Description, Plan Maintenance Program, and System Map.

COLIFORM MONITORING PLAN

NARRATIVE DESCRIPTION

System Information; Gold Beach Water Company, Inc.
I D Number: 283508
King County, WA

Sources:	DOH - SO1	Well #1	(Depth 113 feet)
	DOH - SO2	Well #2	(Depth 118 feet)
Storage:	Mid-level concrete tank		(28,000 gal capacity)
	Hill-top lined steel tank		(30,600 gal capacity)
	Uppermost steel tank		(1000 gal capacity)
	Uppermost steel pressure tanks (2)		(@ 75 gal capacity)

Pressure Stations:
Water is pumped from the wells by submersible pumps, then through two booster pumps located in the respective well-houses to the mid-level reservoir. This reservoir supplies the lower zone by gravity feed.

Two booster pumps located in a pump-house adjacent to the mid-level reservoir supply the hill-top reservoir. This reservoir supplies the upper zone by gravity feed.

A booster pump located in a pump-house adjacent to the hill-top reservoir supplies the 1000 gallon storage tank and two 75 gallon pressure tanks. These pressure tanks supply the uppermost pressure zone.

Treatment Plant:
Water emanating from both wells is treated with Chlorine by automatic chlorinators located in each well-house to ensure a product free of bacterial contamination.

Total Population Served: @ average of 2.5 persons per household: 408

Total Number of Service Connections: 163

Total Number of Lots to be Serviced: 238

Number of Pressure Zones: 3
(Lower; Div 1, 3, 4)
(Upper; Div 2)
(Uppermost; 'off-plat homes')

Approximate Population Served by Pressure Zone:

Lower:	205
Upper:	183
Uppermost:	20

Service Connections in Each Pressure Zone:

Lower:	118 lots;	82 service connections
Upper:	110 lots;	73 service connections
Uppermost:	10 lots;	8 service connections

SAMPLING INFORMATION

Routine Sampling Required by Regulation: one (1) per month

Total Number of Sampling Sites Needed: seven (7)

Location of Routine Sampling Sites Needed:
One @ pressure zones = 3
One @ reservoir = 2
One @ wellhead = 2

Number of Samples Required: one (1) per month

Monthly Rotation Cycles: Sampling sites are rotated by pressure zone

Repeat Sampling Site Availability: Repeat sampling sites are available if required

Example: 1998 Sampling Sites:

Date	Customer	Div #; Lot #	
1/98	Rauen	Div 2; lot 82	routine
2/98	Raisio	Div 4; lot 35	routine
3/98	Rauen	Div 2; lot 82	routine
4/98	upper storage tank		routine
5/98	Rauen	Div 2; lot 82	routine
6/98	Adderson	Div 4; lot 41	routine
7/98	Potter	Div 1; lot 14	routine
8/98	Tello	Div 2; lot 37	routine
9/98	Radke	Div 3; lot 4	routine
10/98	Raisio	Div 4; lot 35	routine
11/98	Rauen	Div 2; lot 82	routine

Sampling yet to be performed:

12/98	Upper reservoir		routine
	Smaller upper storage tanks		repeat, if required
	Rauen	Div 2; lot 82	repeat, if required
	Mantle	Div 2; lot 61	repeat, if required
1/99	Potter	Div 1; lot 14	routine
	Sievers	Div 1; lot 10	repeat, if required
	Snell	Div 1; lot 20	repeat, if required
	Merritt	Lot L	repeat, if required

NOTE: A listing of the sampling sites and respective results for the past five years can be found on pages A24 and A25 in the Appendix.

SYSTEM MAP

For exact Division and lot locations, please refer to the map found on page A26 in the Appendix.

PLAN PREPARATION INFORMATION

Name of Plan Preparer: Marilyn Hills

Title of Preparer: Office Manager/Manager of Water Sampling Personnel

Preparer's Telephone Number: (206) 463-9958 or 463-2463

PLAN MAINTENANCE PROGRAM

The Coliform Monitoring Plan is updated and maintained by Marilyn Hills, Office Manager, and all records are kept at the Gold Beach Water Company office.

3.3.2 Inorganic Chemical Analysis

Gold Beach is also required to have a complete inorganic chemical analysis every thirty-six months. The latest results are shown in Table 3.3.2.

Table 3.3.2 Inorganic Chemical Analysis Summary
Date collected: 10/20/97

Substance	MCL	Unit	Well #1	Well #2
Arsenic	0.05	mg/l	ND	ND
Barium	2.00	mg/l	ND	ND
Cadmium	0.005	mg/l	ND	ND
Chromium	0.10	mg/l	ND	ND
Iron	0.30	mg/l	0.12	0.15
Lead	0.015*	mg/l	ND	ND
Manganese	0.05	mg/l	ND	ND
Mercury	0.002	mg/l	ND	ND
Selenium	0.05	mg/l	ND	ND
Silver	0.05	mg/l	ND	ND
Sodium		mg/l	10.0	10.0
Hardness			120.0	120.0
Conductivity	700.00	umhos/c	300.0	290.0
Turbidity	1.00	NTU	0.14	0.14
Color	15.00	color units	ND	ND
Fluoride	4.00	mg/l	ND	ND
Nitrate	10.00	mg/l	1.7	1.7
Chloride	250.00	mg/l	10.0	10.0
Sulfate	250.00	mg/l	21.0	21.0
Total Dissolved Solids	500.00	mg/l	NA	NA
Copper	1.30*	mg/l	.005	.005
Zinc	5.00	mg/l	.018	.016
Beryllium	.004	mg/l	ND	ND
Nickel	.10	mg/l	.002	.002
Antimony	.006	mg/l	ND	ND
Thallium	.002	mg/l	ND	ND
Cyanide	.20	mg/l	ND	ND
Magnesium		mg/l	17.0	17.0
Calcium		mg/l	21.0	21.0

NOTES:

MCL = maximum contaminant level
ND = not detected
NA = not analyzed
* = Federal Action Levels, not MCLs

3.3.3 Volatile Organic Chemical Tests – Synthetic Organic Chemical Tests

The water supply is also tested every 36 months for a range of chlorinated hydrocarbons. The National Primary Drinking Water Regulations require the EPA to determine maximum contaminant levels (MCL) for specified contaminants. The results of the most recent Volatile Organic Chemical Report, dated November 12, 1997, can be found in the Appendix beginning with page A87. Gold Beach Water Company has been awarded a Synthetic Organic Chemical-monitoring waiver due to lack of need. This waiver is re-submitted, reviewed and approved every three years. The most recent waiver was approved August 8, 1997, for the 1996 through 1998 compliance period. Waiver documents can be found in the Appendix beginning with page A103.

3.3.4 Radionuclides Tests

Tests for Radionuclides are performed every 48 months, in accordance with requirements of Group A water systems. Results have always been within guidelines. Information regarding the testing for Radionuclides can be found in the Appendix beginning with page A101.

3.3.5 Compliance

If water quality does not meet the standards set by DOH, Gold Beach Water Company will follow guidelines required by WAC 246-290-320. If notification of the water system users is required as a result of testing non-compliance, the company will follow the instructions as set forth in WAC 246-290-330 for public notification. Rapid notification is ensured by the small number of customers in the Gold Beach Water system.

3.3.6 Customer Complaints

Gold Beach Water Company receives a few customer complaints regarding water quality each year. Most complaints are in regard to water color or corrosivity. Gold Beach employees test customers' water at the site following each complaint, attempting to address individual situations adequately. Complaints regarding color have been found to either be subjective and without merit or related to the corrosivity. Complaints regarding corrosivity have led to further testing and investigation of possible solutions. The problem is discussed in the following Facility and Operations and Maintenance System Deficiencies, section 3.4, and the solution is described in Capital Improvements, section 6.1.1.

3.4 Facility, Operations and Maintenance System Deficiencies

The lower reservoir, a 28,000-gallon concrete tank located on the side of the hill between the lower and upper pressure zones, is leaking. Three corners evidence seepage to different degrees. Water loss is not of concern as the seepage is slight and the supply is adequate. Engineering inspections indicate the structural integrity of the tank is not of concern; no cracking or failing is evident in any portion. Repairs are necessary, however, as the leaks could allow bacteria access to the storage tank and contaminate the water. However, this potential source of contamination is not likely a major concern.

Previous attempts to seal the leaks have not been successful. Current solutions under consideration include but are not limited to: sealing the interior walls of the tank with a rubber-like paint; sealing the interior walls of the tank with a rubber-like bladder; sealing the interior walls with fiberglass. Discussion of the respective costs of these solutions can be found in the Capital Improvements section.

Complaints of corrosive water caused Gold Beach Water Company to test for pH factors at the source. Additionally, a sanitary survey of the Gold Beach Water system was conducted by the DOH, NW Drinking Water Operation, in 1996. A copy of the survey and a December 19, 1996 letter accompanying it are included in Appendix beginning with page A18. pH levels were measured at that time as follows: Well #1 = 6.58, Well #2 = 6.45. Gold Beach Water Company addressed all recommended system improvements.

Gold Beach Water Company retained a Water Treatment Consultant, James Shunn, who has performed a study and recommended a solution. The treatment process Shunn will implement for Gold Beach Water Company is discussed in both the Water Quality and Capital Improvements sections. The completed plan for treatment to raise the pH levels in source water to acceptable standards has been submitted to the Department of Health for approval. A copy of this submission can be found beginning with page A27 in the Appendix. Implementation is expected to occur sometime in 1999.

Section 4

Conservation Program

4.1 Program Development and Implementation

The Gold Beach Water Company water conservation program is new and in the process of being implemented fully. Due to the small size of the system and staff, the program expects to take advantage of all public education, technical, and administrative services provided in support of small water systems by state and regional programs. The Gold Beach water conservation program is designed in accordance with criteria provided in the publication "Conservation Planning Requirements", WS Dept. of Ecology, pub #94-24.

4.1.1 Objective

The objective of the Gold Beach Water Company's water conservation program is to minimize water waste, educate water users in methods of water conservation, and motivate water users to reduce their usage. Conservation efforts will focus on maximizing utilization of current supplies and reductions in peak daily, monthly, and annual consumption. These goals will be achieved through system repairs and public education programs to increase awareness.

4.1.2 Evaluation of Conservation Measures

Measures identified for systems the size of Gold Beach Water Company (under 1000 connections) include:

- Program Promotion
- Source Meters
- Service Meters
- Unaccounted Water Leak and Detection
- Conservation Pricing

Descriptions of measures identified for Gold Beach Water Company are as follows:

- Program Promotion: Evaluation of public promotion measures indicates advisability of implementation of water system billing inserts, distribution through mail or door-to-door of Ecology/Health brochures or other printed material, informing customers during routine service contacts, and informing contractors of new plumbing codes and conservation fixtures available. Articles can be additionally published in the local newspaper regarding different means to conserve water and the education of school-age children in the home by parents. An article related to conservation was included in Gold Beach Water Company's first newsletter, published and distributed in July, 1998. A copy of the newsletter can be found on page A106 in the Appendix.

- Source Meters: Use of source meters to identify and manage source supplies of water is advisable. Source meters were first implemented by the Gold Beach Water Company in January, 1995. (See Table 4.2.1)

- Service Meters: Use of service meters to identify and manage customer consumption, including identification and location of leakage, is advisable. Gold Beach Water Company first implemented Service meters in July, 1991. (With the exception of a meter for the Gold Beach Community Club; see evaluation below and also Improvement #3, Capital Improvement section.) (See Table 4.2.1 for Service Meters)

- Unaccounted water leak and detection: Use of meter records can be an effective tool in detecting water leaks and unaccounted use. However, in order to monitor usage with meters, all source and service connections must be metered. Due to an operating agreement with the Gold Beach Community Club, no fees for water use have ever been billed for their facility, and so no meter has ever been installed at their service connection. In order to use meter records to detect leakage and loss, Gold Beach Water Company will install a service meter at the Gold Beach Community Club connection, even though there is no intention of billing for usage. Additionally, leakage visible at the lower reservoir will be repaired. Amount of water lost and therefore, the amount that will be saved by repairing the leaks has not been determined due to the lack of a meter on the Community Club service connection.

- Conservation Pricing: Gold Beach Water Company uses progressive conservation pricing in its rate schedule Seasonal water rates are not contemplated at this time. Since moving from unmetered rates to a multi-level, WUTC approved rate schedule, customers have used less water in an effort to reduce their monthly water bills.

4.1.3 Identification of Selected Activities

Conservation measures selected for implementation include public education, source meters, service meters, unaccounted water leak and detection, and conservation pricing. Please see the Table 4.1.3 for scheduled implementation and cost:

Table 4.1.3 Conservation Activities

Conservation Activity	Description	Scheduled	Annual Cost
Public Education	a) inserts in service billings	Implemented	$ 1,250.00
	b) distribution of DOE/DOH collateral	Implemented	300.00
	c) routine public contact	Implemented	600.00
	d) contractor information	Implemented	negligible
Source Meters	installation of meters at both wellheads	Implemented	2,500.00
Service Meters	installation of system-wide service meters	Implemented	13,134.00
Unaccounted leak	a) installation; meter at Community Club	Implemented	500.00
	b) repair of lower reservoir leaks	Sept, 1999	see Cap. Imp.
Conservation Pricing	stepped rate increase by use	Implemented	N/A

NOTE: Please be advised that the Gold Beach Water Company further employs conservation measures with regular inspections and inquiries. At the time of each bi-monthly billing, customers are called and requested to check for leaks if use appears abnormally high. Such attention to leak detection has minimized water loss. Every aspect of operating a public water system is approached with conservation of resources in mind.

4.1.4 Target Water Savings Projections

Gold Beach Water Company expects to accomplish a five percentage (5%) reduction in average water usage as a result of the aforementioned selected conservation measures.

4.2 Water Use Data

Gold Beach Water Company collects and analyzes water use data as a means to identify water conservation needs and monitor usage. Installation of service meters throughout the system was completed in 1991. Source metering, however was not implemented until 1995. Without the ability to compare source to consumption, water loss could not be determined.

4.2.1 Water Supply and Use

All billed service connections are for single family residences. Gold Beach Water Company participates with no interties, and has no wholesale customers. Source Supply quantities listed are the combined flow of two wells. All service meters are read and recorded every two months. Source meters are read daily, weekly and monthly to accomplish chlorination and residual recordation, as well as to monitor consumption.

Table 4.2.1 Historical Water Data

Dates	Source Supply (cf)	Connections	Consumption (cf)	Consumption (gal)	Usage (gpdpc)
7/91 - 8/91		140	624,574	4,671,814	538
9/91 - 10/91		140	317,499	2,374,893	278
11/91 - 12/91		140	181,428	1,357,081	159
1/92 - 2/92		142	169,491	1,267,793	149
3/92 - 4/92		144	224,827	1,681,706	191
5/92 - 6/92		144	518,523	3,878,552	442
7/92 - 8/92		144	614,377	4,595,540	515
9/92 - 10/92		145	299,292	2,238,704	253
11/92 - 12/92		145	190,623	1,425,860	161
1/93 - 2/93		146	189,465	1,417,198	162
3/93 - 4/93		146	192,711	1,441,478	162
5/93 - 6/93		146	353,516	2,644,300	297
7/93 - 8/93		146	558,631	4,178,560	462
9/93 - 10/93		147	442,116	3,307,028	369
11/93 - 12/93		148	203,762	1,524,140	169
1/94 - 2/94		148	203,783	1,524,297	175
3/94 - 4/94		149	234,891	1,756,985	193
5/94 - 6/94		150	476,064	3,560,959	389
7/94 - 8/94		150	808,016	6,043,960	650
9/94 - 10/94		150	398,420	2,980,182	326
11/94 - 12/94		151	203,890	1,525,097	166
1/95 - 2/95	264,480	154	187,734	1,404,250	155
3/95 - 4/95	*	155	215,407	1,611,244	170
5/95 - 6/95	871,560	156	564,952	4,225,841	444
7/95 - 8/95	725,860	156	656,830	4,913,088	508
9/95 - 10/95	399,520	156	401,036	2,999,749	315
11/95 - 12/95	251,080	157	221,050	1,653,454	173
1/96 - 2/96	260,740	157	210,796	1,576,754	170
3/96 - 4/96	257,080	157	199,219	1,490.158	156
5/96 - 6/96	556,260	157	472,467	3,534,053	369
7/96 - 8/96	933,930	157	843,461	6,309,088	648
9/96 - 10/96	389,280	158	330,204	2,469,926	256
11/96 - 12/96	269,420	160	216,683	1,620,789	166
1/97 - 2/97	249,670	160	182,486	1,364,995	145
3/97 - 4/97	232,150	161	184,093	1,377,016	140
5/97 - 6/97	462,590	163	428,496	3,205,150	322
7/97 - 8/97	736,620	163	726,133	5,431,475	537

* Source meters were not recorded due to illness

4.2.2 Population

The population of the Gold Beach Water Company service area is estimated at 2.5 persons per service connection. With 163 connections currently serviced, the population of Gold Beach stands at 408 persons. The maximum number of service connections Gold Beach Water Company expects to service is 238. Based on a population of 2.5 persons per household, the greatest population expected within the Gold Beach Water Company's service area would be 595 persons.

4.2.3 Zoning

The Gold Beach Water Company service area is zoned RA-2.5 and Mineral. The Gold Beach Water Company franchise area is zoned RA-2.5, RA-10, and Mineral. The Gold Beach Community consists solely of single family residences with the exception of the Community Club building. No commercial or multi-family dwellings are anticipated.

4.2.4 Water Rates

Rates for water companies are set by the WUTC. Rates are periodically reviewed and adjusted to reflect inflation in costs of operation and maintenance, as well as funding for capital improvements and a reasonable return on investment for shareholders.

Table 4.2.4 Rate Schedule

RATE	PER MONTH
First 800 cubic feet, or less	$ 26.16
800 to 3,000 cubic feet, per 100 cubic feet	.32
Over 3,000 cubic feet, per 100 cubic feet	.58
Minimum monthly charge	$ 26.16

NOTE: Table 4.2.4 reflects rates set in June, 1998.

4.3 Water Demand Projections

The following forecast projects both the water demand **with** the conservation program in place and **without** a conservation program. The conservation program at Gold Beach Water Company is relatively new and so no data reflecting the impact of the program has yet been collected. Consequently, and in accordance with requirements of DOE/DOH Publication #94-24, "Conservation Planning Requirements", an expected reduction estimated at 5% in per capita water use has been targeted in the forecast.

Table 4.3 Water Demand Projections
in cubic feet
Projections in ( )

Year	number of connections	consumption w/out conserv.	per connection /per person w/out conserv.	consumption w/conserv.	Per connection /per person w/conservation	gallons per day, per conn /person	% of reduction
1991	140	incomplete	Incomplete				
1992	145	2,017,133	13,911/5,920			38.1 /16.2	
1993	148	1,940,201	13,109/5,578			35.9 /15.3	
1994	151	2,325,064	15,398/6,552			42.2 /18.0	
1995	157	2,236,755	14,247/6,062			39.0 /16.6	
1996	160	2,272,830	14,205/6,045			38.9 /16.6	
1997	163	(2,341,015)	(14,362/6,112)	(2,317,605)	(14,218/6,050)	(38.9 /16.6)	1%
1998	166	(2,384,102)	(14,362/6,112)	(2,336,420)	(14,075/5,989)	(38.6 /16.4)	2%
1999	169	(2,427,178)	(14,362/6,112)	(2,354,363)	(13,931/5,928)	(38.3 /16.2)	3%
2000	172	(2,470,264)	(14,362/6,112)	(2,371,453)	(13,788/5,867)	(37.8 /16.1)	4%
2001	175	(2,513,350)	(14,362/6,112)	(2,387,683)	(13,644/5,806)	(37.4 /15.9)	5%
2002	178	(2,556,436)	(14,362/6,112)	(2,428,614)	(13,644/5,806)	(37.4 /15.9)	5%
2003	182	(2,613,884)	(14,362/6,112)	(2,483,190)	(13,644/5,806)	(37.4 /15.9)	5%

NOTE: Water consumption increased an average 3 % per year for five years (1992 -1996), while the number of service connections increased an average 2 % per year for six years (1991 - 1996). However, this water demand forecast assumes a baseline of 0% increase per year per connection without conservation while maintaining the expected 2% increase per year in number of service connections.

Section 5

Source Water Protection

5.1 Wellhead Protection Program

Gold Beach Water Company pursued financing of a wellhead protection study in conjunction with other purveyors on Vashon Island and in cooperation with King County Water District #19. In an Interlocal Agreement dated February 14, 1995, between the Vashon Water Alliance and KC Water District #19, Gold Beach Water Company requested matching State funds to finance a wellhead protection study. The grant was not funded.

Gold Beach Water Company subsequently pursued development and implementation of a Wellhead Protection Program on its own. The company now has completed the development of its Protection Program and is proceeding with implementation. The draft Vashon and Maury Island Ground Water Management Plan currently being considered by the King County Council contains policy recommendations that may help to protect source water quality. Gold Beach Water Company has utilized these recommendations in the design and implementation of its Wellhead Protection Program.

5.1.1 Susceptibility Assessment

Pursuant to the completion of its Wellhead Protection Program, Gold Beach Water Company has completed susceptibility assessments for both system wells. These assessments were submitted to the Department of Health on December 10, 1996. They contain susceptibility rankings and delineation of the time of travel zones for each well. The Susceptibility Assessment is included beginning on page A107 in the Appendix of this Plan.

5.1.2 Delineation

A map delineating the boundaries of the Gold Beach Water Company Wellhead Protection area is included in the Susceptibility Assessment found in the Appendix section of this Plan.

Notifications of the existence of the Program and Wellhead area boundaries have been sent to local officials and public works personnel. Identification of the protected area and cautions regarding potential sources of contamination were provided to customers in the first Gold Beach Water Company newsletter. Following is a list of agencies notified by letter of the Gold Beach Wellhead Protection Program. A copy of a notification letter can be found on page A134 in the Appendix of this Plan.

King County Department of Development and Environmental Services
Land Use Services Division
Attn: Wellhead Protection Program Notification
900 Oaksdale Avenue SW
Renton, WA 98055

Mr. Greg Nickels;
King County Council
King County Courthouse
516 Third Avenue; Room 1200
Seattle, WA 98104-3272

Seattle/King County Dept of Public Health
Attn: Wellhead Protection Program Notification
2124 Fourth Avenue
Seattle, WA 98121

Washington State Department of Ecology
Northwest Regional Office
Attn: Wellhead Protection Notification
3190 160th Avenue SE
Bellevue, WA 98008

Wellhead Protection Program
Northwest Regional Office
Attn: Richard Rodriguez
1511 Third Avenue; Suite 719
Seattle, WA 98101

5.1.3 Inventory

An essential element of wellhead protection is an inventory of all potential sources of ground water contamination in and around delineated wellhead protection areas. Potential sources of contamination within the Gold Beach Wellhead Protection area are restricted to the normal activities of residential homeowners and suppliers of residential services in the Gold Beach community. Although this includes such potential sources of contamination as septic systems, the Gold Beach water is probably not significantly at risk because of its wells are deep, properly constructed, and draw from a confined aquifer. Residential sources may include: Fuel storage systems, household hazardous products, household lawns (chemical application), septic systems, water softeners, and swimming pools, Notification of these potential sources for contamination is regularly accomplished by providing information and reminders in the Gold Beach Water Company newsletter. A copy of the newsletter can be found on page A106 of the Appendix.

5.1.4 Contingency Plan

Gold Beach Water Company has developed a contingency plan to provide an alternate source of water should a contamination of the wellhead source occur. Customers would be notified by telephone or in person if the source became contaminated. Supply lines from both Well #1 and Well #2 would be shut, eliminating continued contamination of storage facilities. All storage tanks would be tested to determine extent of contamination to storage supply. Tank trucks would be contracted to transport water to the uppermost storage facility. Customers would be notified of an emergency schedule for water usage until such time when the contamination could be either treated adequately to allow safe consumption or alternative sources could be brought on line. A third well exists in private ownership within the upper pressure zone area identified as 'possible future service area'. Should contamination of the both wells in the lower zone occur, negotiations for use and possible purchase of this upper well would be pursued. All appropriate tests and assurances of water quality to meet with State approval would be performed and submitted prior to initiating customer service from an alternate source.

5.1.5 Emergency Response Plan

King County Fire District 13 has been notified of the Gold Beach Water Company Wellhead Protection Plan, the Protection Plan area, and all potential sources of contamination within that area. Should a hazardous material spill occur within the Protection area, Gold Beach Water Company personnel will notify Fire District 13. Fire District 13 will notify the Washington State Department of Ecology, which will dispatch the appropriate emergency spill response team.

Should an emergency potential contamination situation arise, witnesses are urged to immediately call the following telephone numbers:

Gold Beach Water Company offices:	(206) 463-9958
Fire District 13:	9-1-1
Water District Manager; Harley Miedema	(206) 463-6193/463-5159
Field Superintendent; Jim Matsumoto	(206) 463-2284
Office Manager; Marilyn Hills	(206) 463-2463
President; Mike Spano	(425) 774-8542
	(425) 353-1119 Ext 18 (daytime)

Section 6

Capital Improvement Program

6.1 Identification of Improvements

The Gold Beach Water Company is committed to providing clean water and responsive service to the Gold Beach Community. In recent years the company has replaced a 15-hp pump and motor at mid-station between the reservoirs, rebuilt a second pump, and installed source meters and pressure gauges on both wells. A new valve has been installed between the lower and upper reservoirs, the middle pump house has been rewired, and a new storage and equipment building was constructed between the wells. Both well houses have been cleaned, repaired, lighted, and insulated. The lower reservoir has been cleaned, disinfected, and repaired, though the repair proved not to be successful.

6.1.1 Improvement #1

Complaints of corrosiveness led Gold Beach Water Company administration to investigate pH levels of the system's source supply. Tests indicated the pH levels were lower than acceptable standards. A consultant was retained to design a treatment system to raise the pH to levels acceptable to Gold Beach Water Company customers. Water Treatment Consultant James Shunn was retained to perform a study and subsequently designed a treatment system to accomplish raising the pH levels of the source water. The proposed treatment system introduces soda ash to the source supply at each wellhead prior to pumping the water to the reservoirs. A plan for the proposed treatment system has been submitted to DOH for approval. A copy can be found beginning on page A27 in the Appendix.

6.1.2 Improvement #2

In response to requests from customers residing in the upper zone, Gold Beach Water Company intends to increase water pressure throughout the upper system by installing an additional reservoir adjacent to the existing upper reservoir. The added reservoir will be 12 feet in diameter and 32 feet high, effectively adding 10 psi to the system with its increased head. The additional reservoir will also increase storage volume for the system by 27,000 gallons.

6.1.3 Improvement #3

The lower reservoir is leaking from three corners. The small amount of water being lost is inconsequential to a system such as this, with more than adequate sources, but any potential for bacterial contamination is of concern. Three options to rectify the problem are being studied: 1) seal the interior of the reservoir with a rubber-like sealant; 2) seal the interior of the reservoir with a rubber-like bladder; 3) seal the interior of the reservoir with fiberglass.

6.1.4 Improvement #4

In order to accomplish repairs to the lower reservoir (see Improvement #3), it will be necessary to take the reservoir off-line. In order to take the lower reservoir off-line, a back-up reservoir must be acquired and installed to maintain service to customers residing in the lower zone. A smaller tank will be installed on an existing concrete pad adjacent to the reservoir to be repaired. The advantages of adding a reserve reservoir are two-fold: addition of 5,000 more gallons of storage capacity; and the ability to perform regular repairs and maintenance to the main lower reservoir without interruption of service.

6.1.5 Improvement #5

Under an operating agreement dating back to the inception of the Gold Beach Community development, the Gold Beach Community Club has never been billed for water used at its facility. To adequately monitor use and loss within the system, Gold Beach Water Company has installed a meter to measure the amount of water used by the Community for its clubhouse and pool.

6.1.6 Improvement #6

Office support equipment is badly antiquated. To maintain the level of professionalism expected of modern utilities today, new equipment will be purchased. Equipment either being replaced or obtained for the first time includes but is not limited to: computer; printer; copy machine; FAX machine.

6.2 Costs and Schedule of Improvements

Costs and schedule of satisfaction can be found in the Capital Improvement summary table below:

Table 6.2 Capital Improvement Summary

Problem	Solution	Start Date	End Date	Cost
#1) Corrosiveness	Design & install treatment	Oct, 1997	Sept, 1999	$ 8000.00
#2) Upper zone pressure	Install taller tank	Jan, 1998	Sept, 1999	35000.00
#3) Storage leakage	a)seal interior w/ sealant	Oct, 1998	Sept, 1999	5100.00
	b)seal interior w/ bladder	Oct, 1998	Sept, 1999	Unknown
	c)seal interior w/fiberglass	Oct, 1998	Sept, 1999	Unknown
#4) Avoid service interruption	Install reserve reservoir	June, 1998	Sept, 1999	4000.00
#5) Establish source/use base*	Install meter	March, 1998	March, 1998	500.00
#6) Out-dated equipment	Purchase office equipment	Jan, 1999	Jan, 1999	5000.00

* completed

NOTE: Only one of the solutions listed for problem #3 will be selected. Therefore, the sum of items listed in the 'Cost' column does NOT represent a total of expected Capital Improvement expenses.

Section 7

Financial Program

7.1 Purpose

The objective of the financial program is to define the financial objectives of the utility and to delineate the policies and methods for achieving the objectives. The plan includes budget projections and analysis to evaluate the financial viability of the utility and validate the feasibility of its future operations. The analysis contains a description of the financial performance of the utility covering the past seven years and a projection of the financial operation of the utility each year from 1998 through 2003, inclusive. Long-range financial forecasts are included for the years 2005, 2010, and 2015 to demonstrate continuing feasibility of the financial plan. The following information conforms to the direction provided by Department of Health support documents.

7.2 Key Elements

The Gold Beach Water Company's financial program consists of the following key elements:

- Operating Budget The Company shall plan a detailed financial budget covering the forthcoming twelve month period. The plan shall be updated at six month intervals and include an income and expense analysis and cash flow analysis. The cash flow analysis shall specifically identify anticipated cash receipts, segregated as to operating income, other income, new investment, loan proceeds, and prepayments; and identify anticipated cash demands segregated as to operating and maintenance disbursements, capital improvement expenditures, and other expenses.
- Capital Improvement Budgeting and Funding The Company shall identify, schedule and budget for all capital improvements covering the forthcoming five year planning period; such budget to be updated annually. Funding arrangements for capital improvements planned to commence in the next year shall be identified, scheduled, and budgeted. It is the policy of the Company that wherever possible capital improvements will be funded by owner supplied capital investment so as to promote a favorable Capital Asset Ratio. Improvements to be funded in part or entirely by rate increases shall be included in the rate management plan.
- Rate Management Planning The Company shall continuously identify, schedule and define future rate adjustments required to fund routine operations and capital improvements.
- Retained Earnings It is an objective of the Gold Beach Water Company to retain not less than 10% of the annual net earnings as equity growth.
- Operating Reserves The Company shall maintain sufficient cash reserves, held as cash, bank account, or money market fund, to cover operation and maintenance cash flow for a minimum of one billing cycle.
- Emergency Reserves The Company shall establish a ready source of emergency funds sufficient to cover the replacement cost of the most expensive submersible pump in the system. The emergency reserve may be in the form of a bank account, money market fund, treasury bills, or certificate of deposit available on demand or suitable as collateral for a prearranged loan.
- Cash Management Policy Company funds in excess of near term requirements shall be invested in interest bearing accounts or instruments of reasonable financial risk and that are available for withdrawal in no more than six months.

- Credit Arrangements The Company shall establish one or more sources of pre-approved credit to provide quick access to borrowed funds to cover emergency needs. The funding source may be a banking institution or private investor.
- Public Information Policy The Company shall endeavor to keep customers informed as to matters pertaining to future rates and service policies.

7.3 Historical Financial Information

7.3.1 Income Summary

Financial operation of the Gold Beach Water Company for the past seven years is summarized in the following table:

Table 7.3.1 Operating Statements

Account Name	1990	1991	1992	1993	1994	1995	1996
Operating Revenue	26066	29066	29189	37848	39857	40589	41541
Operating Expenses	15307	15265	16081	21012	22509	23260	23392
Depreciation Expenses	2490	2612	2744	2759	3750	4745	4282
Taxes-Other than Income	1534	1543	1619	2052	2223	2350	2780
Income Taxes-15%	1010	1447	1382	616	457	0	0
Total Operating Expenses	20341	20867	21826	26439	28939	30355	30454
Interest Expense	0	0	0	8948	0	+3258	0
Net Income:	5725	8199	7363	2461	10918	13492	11087

During the past seven years, the company has had few non-recurring costs. The only significant non-recurring expense is the cost of preparing this Water System Plan.

7.3.2 Balance Sheet Summary

The financial condition of the Gold Beach Water Company at the end of each of the past seven years of operation is summarized in tables 7.3.2A and 7.3.2B.

Table 7.3.2.A Balance Sheet Data
(as of December 31 of indicated year)

Account Name	1990	1991	1992	1993	1994	1995	1996
ASSETS:							
Utility Plant	91252	95406	96906	97836	114587	116915	124116
Less:Accum.Deprec.	23466	26078	28822	31581	35331	40076	44358
Net Utility Plant	67786	69328	68084	66255	79256	76839	79758
Cash	2358	6861	12425	17757	17810	11688	7205
Customer A/Rec.	1570	2994	2070	3152	2174	1286	1640
Misc. Assets	539	29	29	29	29	29	0
Shareholders Loan	0	0	1931	5845	10044	15044	19073
FIT Refund	0	0	0	772	315	0	0
Total Assets	72253	79212	84539	93810	109628	104886	107676
LIABILITIES & CAPITAL							
Capital Stock Issued	10000	10000	10000	10000	10000	10000	10000
Other Paid-In Capital	14271	14271	14271	14271	14271	14271	14271
Retained Earnings	28063	36262	43703	46318	55986	59277	60366
Total Capital	52334	60533	67974	70589	80257	83548	84637
LIABILITIES:							
Long-Term Debt	0	0	0	0	0	0	0
Accounts Payable	10069	5069	0	6000	8750	3418	3519
Accrued Taxes	248	909	1651	362	413	0	0
Contrib.to Construct.	7700	10468	12750	14850	16950	17920	19520
Other Liabilities	1902	2233	2164	2009	3258	0	0
Total Liabilities	19919	18679	16565	23221	29371	21338	23039
Total Liabilities & Capital	72253	79212	84539	93810	109628	104886	107676
Customers Billed	120	140	145	148	151	156	160

Table 7.3.2.B Utility Plant Balance Sheet

Account Names-#'s:	1990	1991	1992	1993	1994	1995	1996
304 Struct/Improvements	4223	4223	4223	4223	4223	4223	11423
307 Wells	8838	8838	8838	8838	8838	8838	8838
311 Pumping Equipt.	14510	14510	14510	14510	20211	22322	22322
330 Distr. Reservoirs	32071	32071	32071	32071	32071	32071	32071
331 Trans/Distr. Mains	20144	20144	20144	20144	24070	24070	24070
333 Services	1341	1341	1341	1341	1341	1341	1341
334 Meters-Installation	6008	10162	11662	12592	12592	13134	13134
335 Fire Hydrants	3200	3200	3200	3200	3200	3200	3200
340 Office Furn/Equipt.	917	917	917	917	1017	1017	1017
341 Transp.Equipt.	0	0	0	0	6700	6700	6700
Totals	91252	95406	96906	97836	114263	116916	124116
Contrib. Aid Constr.	7700	10468	12750	14850	17920	17920	19520
Hook-Ups: Total Year	120	140	146	152	158	161	160

7.4 Future Financial Planning Information

7.4.1 Projected Costs Operation and Maintenance

Future operation and maintenance costs are projected by extrapolating the actual expenses incurred during recent years and incorporating the following assumptions:

- Revenue increase to be pro-rata over prior years based on new hook-ups.
- Annual inflation to increase at 4%
- Annual management cost to increase at 4%
- State B&O taxes to remain at 5%
- Income tax rates to remain at 15%
- No income distributions to owners due to cash flow limitations
- Development of comprehensive plan estimated at $20,000 every six years, which includes the following: accounting expense, $6,000; engineering expenses, $8,000; consultant expenses, $6,000.

NOTE: In 1998 the company used cash from shareholder loan repayment of $19,073 to fund capital improvements. In addition to the loan repaid from shareholders, it is assumed additional funds will be borrowed from shareholders and repaid as cash flow permits. The shareholder loan will not be necessary if rates are increased adequately to fund operations.

Please see comprehensive analyses, including historical and projected financial statements, in the Appendix. Appendices include:

- Operating Statement Summary (page A135)
- Operating Statements (page A136)
- Balance Sheet (page A137)
- Water Utility Plant (page A138 & A139)
- Cash Flow Analysis (page A140)

7.4.2 Operating Budget

Near-term operating and maintenance cost projections are contained in the following table:

Table 7.4.2A Near-term Operating Statement Summary Projections

Operating Statements	1997	1998	1999	2000	2001	2002	2003
Operating Revenue	42,306	43,070	43,835	44,599	45,364	46,128	47,142
Operating Expenses	38,769	29,919	31,116	42,361	33,655	35,002	46,402
Depreciation Expense	4,282	5,799	6,537	6,537	6,537	6,537	6,537
Taxes-Other than income	2,746	2,809	2,873	2,939	3,005	3,073	3,155
Net Taxable Income	-3,491	4,543	3,308	-7,237	2,166	1,517	-8,951
Income Taxes	0	681	496	-1,086	325	228	-1,343
Net Income	-3,491	3,861	2,812	-6,152	1,841	1,289	-7,608

NOTE: Negative balances every three years reflect averaged cost of consultants to maintain records and studies required for comprehensive water system plans; costs usually absorbed by salaries of employees in the course of their regular duties.

Table 7.4.2B Out-year Operating Statement Summary Projections

Operating Statements	2005	2010	2015
Operating Revenue	48,079	50,327	52,000
Operating Expenses	37,858	39,372	40,947
Depreciation Expense	6,537	6.537	6,537
Taxes-Other than income	3,265	3,379	3,497
Net Taxable Income	1,050	1,040	1,019
Income Taxes	157	156	153
Net Income	892	884	866

7.4.3 Capital Improvement Budgeting and Funding

Capital funding requirements are detailed in Table 6.2 Capital Improvement Summary. Costs are expressed in 1997 dollars. Funding for the capital improvements will be provided by new capital investment supplied by the owners of Gold Beach Water Company. This arrangement is simple and promotes a favorable Capital Asset Ratio.

7.4.4 Rate Management Planning

Gold Beach Water Company has not applied for a tariff revision since 1992. Current rates are listed in Table 4.2.4 Gold Beach Water Company Rate Schedule. As the improvements identified in Table 6.2 Capital Improvement Summary are implemented, it is anticipated that water rates will be increased to cover increased operation expenses due to project costs, labor, materials, depreciation, and maintenance.

Rate filings with the Washington Utilities and Transportation Commission will be projected once all estimates for capital improvements are completed and project costs are known. Gold Beach Water Company is unable to file for a rate revision until such time as the Department of Health approves this Comprehensive Water System Plan.

7.5 Financial Viability Assessment

Financial viability is the ability of the Investor Owned Utility to obtain sufficient funds, on a continuing basis, to cover the total cost of developing, constructing, operating and maintaining the company in compliance with Federal, State, and local drinking water requirements.

7.5.1 Positive Annual Income Test

Financial viability requires that the utility have a positive annual income in two of the past three years. Gold Beach Water Company has generated positive annual income for each of the past seven years. Please see Table 7.3.1 Operating Statements.

7.5.2 Positive Retained Earnings Test

The Positive Retained Earnings Test of the Financial Viability Determination requires that the utility have positive retained earnings for two of the past three years. Retained earnings are considered to be the summation of past performances (annual income/loss) retained by the company. As shown in Table 7.3.2A Balance Sheet Data, Gold Beach Water Company has maintained positive retained earnings for the past seven years.

7.5.3 No Outstanding Agency Orders

Financial viability requires that the utility must not have any outstanding agency departmental orders (DO) or unresolved notice of violations (NOV) for the last three years of operation. Gold Beach Water Company does not have any outstanding DO or NOV at this time.

7.5.4 Capital Asset Ratio

A utility is considered to be financially viable if its most recent balance sheet shows a capital asset ratio equal to or greater than 30%. For this determination, the capital assets ratio is defined as

$$\frac{TA-(CP + AD)}{TA}$$

where TA is total asset value (utility plant plus plant held for future use), CP is contributed plant value,(Contributions in Aid of Construction), and AD is accumulated depreciation.

The Gold Beach Water Company's current capital asset ratio is 41%.

The Gold Beach Water Company complies with all of the Financial Viability tests.

7.6 Financial Plan Feasibility Assessment

The Department of Health and the Washington Utilities and Transportation Commission consider a financial program to be feasible if that program reflects the company's ability to provide sufficient quantity and quality of water service for the planning period.

7.6.1 Positive Annual Income Test

The projected operating budget shown in Table 7.4.2A anticipates an operating surplus in two of every three years of the six-year planning period. This projection fulfills the requirement of the Positive Annual Income Test of the Feasibility Determination.

7.6.2 Positive Retained Earnings Test

The future retained earnings of the company will reflect management decisions made at that time. As previously discussed in 7.2 Key Elements, it is an objective of the Gold Beach Water Company to retain not less than 10% of the annual net earnings as equity growth. A rate increase will assist in the accomplishment of this goal. This projection fulfills the requirement of the Positive Retained Earnings Test for Financial Feasibility.

7.6.3 No Outstanding Agency Orders

With no outstanding agency orders, Gold Beach Water Company meets the requirements of this test for Financial Feasibility.

7.6.4 Capital Asset Ratio

A company is considered to be financially feasible in the future if: 1) they continue to maintain at least a 30% capital asset ratio, or 2) they are making progress toward achieving the minimum 30% capital asset ratio. Future financial projections show that the Gold Beach Water Company will continue to exceed the minimum capital asset ratio every year.

The Gold Beach Water Company complies with all of the Financial Feasibility tests.

Section 8

Operations and Maintenance Plan

8.1 Scope

The Operations and Maintenance Plan identifies the owners of Gold Beach Water Company, and the persons responsible for all of its functions as a utility. The plan further describes management practices and service policies, explains emergency response and safety procedures, and identifies any planned operations and maintenance improvements.

8.2 System Management and Personnel

8.2.1 Owners/Officers

The owners of the Gold Beach Water Company, Inc. are R. Michael Spano, George Spano, Jane Spano-Connors. R. Michael Spano serves as President. George Spano serves as Vice President. Jane Spano-Connors serves as Secretary/Treasurer.

8.2.2 General Manager

The President of Gold Beach Water Company performs the duties of General Manager. These duties include taking responsibility and authority for overall as well as day-to-day supervision of all water service operations. All operating and maintenance employees and sub-contractors of the company are under the management of the General Manager. In the absence or incapacitance of the General Manager, the Office Manager will discharge his duties.

8.2.3 Office Manager

The Office Manager is responsible for maintaining all records of company operations, executing legal documents, and filing periodic reports and returns on behalf of the company. The Office Manager is also responsible for collecting, handling, and disbursing funds for the company, and for keeping financial records of company operations, including the bi-monthly billing of customers and all bookkeeping. The Office Manager is further responsible for the daily operations of the office; providing customer support and assistance, and performing secretarial services and general office duties.

8.2.4 Water District Manager

The Water District Manager is certified by the State of Washington. The Water District Manager is in direct charge of the daily technical direction and supervision of the system. The Water District Specialist answers directly to the Water District Manager.

8.2.5 Water District Specialist

The Water District Specialist is certified by the State of Washington. The Water District Specialist is responsible for the operation of any treatment systems such as chlorination, and any monitoring and testing required. The Water District Specialist works under the direction of the Water District Manager.

8.2.6 Field Superintendent

The Field Superintendent is responsible for all water hook-ups, installations and repairs. The Field Superintendent works closely with the General Manager, Office Manager, and Water District Manager. The Field Superintendent oversees any work performed by mechanical contractors for the company, and locates and marks any water mains when excavation is required within the system.

8.2.7 Meter Reader

The Meter Reader is responsible for reading all service connection meters on a bi-monthly basis. The Meter Reader reports directly to the Office Manager, additionally noting any signs of leakage and dirty or obscured meters.

8.2.8 Test Specialist

The Test Specialist is responsible for testing the chlorine content on a daily basis. The Test Specialist reports directly to the Office Manager and submits monthly residual reports to the DOH.

8.3 Operator Certification

8.3.1 Both the Water District Manager and the Water District Specialist are certified by the State of Washington as required by WAC 246-290-400.

8.4 System Operation and Control

8.4.1 Major System Components

Please see Section 3.2 Evaluation of Existing System to identify the major components of the Gold Beach Water System.

8.4.2 Service Policies

The fundamental operating objective of Gold Beach Water Company is to provide safe and reliable water to its users at affordable rates, while at the same time returning adequate earnings to the owners. Implied in this objective is the compliance with all applicable county, state and federal regulations required of water system operation.

8.4.3 Connection Policy

Property owners can request service initiation by contacting the Office Manager. The Office Manager will verifies eligibility of the applicant, identifies additions or modifications to the system to accommodate the new connection, and arranges financial obligation and payment. A schedule for the Field Superintendent to oversee connection is then agreed.

Connection fee for new service; including ¾ inch meter and labor: $ 350.00
(If required, larger meters are charged parts and labor in addition to the $350.00 minimum fee.)

8.4.4 Disconnection Policy

Water service connections are rarely terminated for any reason other than non-payment of water service charges. In the case of non-payment, the Office Manager mails a notification of delinquency, followed by a notification of termination to the property owner. If payment is not received within the prescribed deadline of the notice of termination, the Office Manager directs the Field Superintendent to close and padlock the shutoff valve at the service connection. The company may also choose to file a claim of lien for arrearages and costs with the County Auditor and foreclose, as provided by law. At any time following termination, the property owner may apply for resumption of service upon payment to the Office Manager of past due amounts, plus collection costs and penalties, in accordance with the WUTC approved tariff.

8.4.5 Preventative Maintenance Program

In the pursuit of effective preventative maintenance, Gold Beach Water Company requires periodic examinations of its entire system. Each major component is visually inspected weekly. Water levels in the reservoirs is checked regularly, but monitored more closely during periods of high usage. All valves in the system are exercised at least semi-annually. Well and booster pumps are check weekly. Pumps are inspected for vandalism as well as mechanical malfunction. All pumps and motors are maintained per manufacturers' recommendations. Dead-end water mains in the system are flushed every six months and the main transmission lines are flushed every year. Fire hydrants are inspected annually to ensure proper operation. Each storage reservoir is drained, inspected for leaks, and disinfected annually. A record of the routine maintenance is kept including the results of each system and item inspection.

Source meters are read at least weekly. Readings are recorded and compared to service usage to monitor chlorination treatment and residuals, as well as any possible system breaks or leaks.

Gold Beach Water Company maintains an inventory of service materials and replacement parts. Repair materials are maintained in a variety and quantity sufficient to minimize any periods of shut down due to system failure, as further supplies are at least a ferry ride distant.

8.5 Comprehensive Monitoring Plan

8.5.1 Water Quality Monitoring

Gold Beach Water Company collects and submits samples for analysis as prescribed by the State Department of Health, Drinking Water Regulations. (WAC 248-54-165) Please see Section 3.3 Water Quality for specific requirements and test results for the Gold Beach system.

Additionally, tests for chlorine residuals content are performed daily and the results are reported to the Office Manager, and submitted to the DOH monthly.

8.6 Emergency Response Program

Should water service be interrupted, Gold Beach Water Company has an Emergency Response Plan to be implemented by its employees.

Service interruptions are usually first signified by low water levels in the reservoirs. Should the water level in either reservoir fall below prescribed levels, a low-water alarm automatically dials the phone number of the Water District Manager. Should there be no response, the low-water alarm automatically dials the phone number of the Water District Specialist. The Field Superintendent is next on the list; then the Office Manager. Emergency repairs will be performed by the Field Superintendent and/or the Water District Specialist.

8.6.1 Personnel Emergency Phone List

Gold Beach Water Company personnel to be called in case of emergency are listed below:

Water District Manager; Harley Miedema	(206) 463-6193/463-5159
Field Superintendent; Jim Matsumoto	(206) 463-2284
Office Manager; Marilyn Hills	(206) 463-2463
General Manager; Mike Spano	(425) 774-8542
	(425) 353-1119 Ext 18 (daytime)

Other numbers to be called in case of emergencies not related to water service are:

King County Police Department	911
Fire Department	911
Medical Aid	911
Electrical service (Puget Sound Energy)	1-888-225-5773
Telephone service (PTI)	6-1-1

8.6.2 Notification Procedures

Should Gold Beach Water System ever require shut-down due to failure to pass water quality tests, procedures to notify customers will be performed in accordance with WAC 248-54-187. Due to the small number of customers within the Gold Beach service area, notification will be performed by telephoning each individual home to alert the inhabitants.

In the event of an unacceptable water quality test result, the Water District Manager will take the actions prescribed in the Drinking Water Regulations (WAC 248-54-185). Specifically, the Manager will notify the state Department of Health within 48 hours, and notify the public according to the procedures outlined in WAC 246-290-330. Immediately upon discovery of contamination, all customers will be notified of the condition. After the problem has been resolved, all customers will be advised of the resolution. Should the resolution not be immediately forthcoming, interim public health measures will be arranged by consultation with state Department of Health specialists and promptly distributed to all customers in writing.

8.6.3 Vulnerability Analysis

The Gold Beach Water system has a long history of compliance with water quality standards. Storage reservoirs are protected from potential contamination and exceed required stand-by volumes. The system is supplied with shut-off valves at each wellhead, pump and storage reservoir. System weaknesses are few. Vulnerability of the system to emergency response requirements are deemed limited to the below conditions:

Water Line Break: Any break in water lines will be reported to the Field Superintendent for repair. Breaks can be isolated by valves within the system, minimizing both the effects on customers and loss of pressure and supply.

Power Failure: System pressures are maintained for zones #1 and #2 by gravity feed from the reservoirs. In the event that power should fail, water can still be supplied to all but seven customers. The storage capacity of the reservoirs is sufficient to supply average use for two days, more than adequate time to restore power to the system. In the unlikely event that a power outage should last longer than supplies can last, emergency generators can be brought in to power the system. As the new reservoirs discussed in the Capital Improvement section are brought on line, the increased volume of storage will provide an even greater buffer.

Water Supply Contamination: Should source flows become tainted and require interruption, shut-off valves within the system will isolate the contamination. Storage volumes at the reservoirs are sufficient to supply all customers for two days of average use, depending upon the time of year, and for longer on a reduced schedule, a period adequate to implement treatment solutions addressing any contamination. As the new reservoirs discussed in the Capital Improvement section are brought on line, the increased volume of storage will provide an even greater buffer.

8.7 Safety Procedures

8.7.1 Employees of Gold Beach Water Company are required to follow OSHA and WISHA regulations in the work place. Employees exposed to chemicals in the treatment process are provided with Material Safety Data Sheets for each chemical and trained accordingly.

8.8 Cross-Connection Control Program

8.8.1 Backflow Prevention

Backflow prevention assemblies are now required to be installed, at the expense of the property owner, for all home irrigation installations within the Gold Beach water system. The installed assembly shall be one approved by the State of Washington Department of Health. Upon contemplating a new installation, the property owner shall notify Gold Beach Water Company of his intention to install a home irrigation system, arrange for its inspection and accomplish such tests of the completed installation as required by the utility. No irrigation system shall be connected and supplied by water from Gold Beach Water Company without written approval from the utility.

8.8.2 Program Procedures

Gold Beach Water Company has implemented the following procedures as integral components of its Cross-Connection Control Program:

- Sample water quality according to established monitoring requirements.
- Physically examine the water system on a regular basis.
- Inspect existing facilities where cross-connection contamination might occur.
- Provide a list of all approved backflow prevention assemblies to customers inquiring about installation of residential irrigation systems.
- Inspect and approve plans for all new backflow prevention assemblies prior to installation.
- Inspect, test, and approve all new backflow prevention assemblies after installation but prior to connection to the system.
- Test backflow prevention systems annually by a certified technician.
- Maintain the following records:
    - Date of inspections
    - Results of inspections
    - Recommended action or protection
    - List of backflow prevention assemblies connected to the system
    - Test and maintenance reports of backflow prevention assemblies
    - Correspondence with both regulatory agencies and the customers
- Notify customers in writing that all new fixtures and equipment attached to the water system shall meet the minimum protection standards set by the CCCM.
- Refer to the Cross-Connection Control Manual published by PNWS-AWWA, or contact the Association's Cross Connection Control Committee if more information is required.

8.9 Customer Complaint Response Program

Gold Beach Water Company attempts to address complaints by their customers as soon as possible. Customer complaints are usually addressed to the Office Manager, who receives most phone calls and inquiries. The Gold Beach Community has elected a Board to oversee the operation of the Gold Beach Community Club and to represent the residents on a variety of issues including water service provided by the Gold Beach Water Company. The Gold Beach Community Board meets regularly with both the President/General Manager and Office Manager of Gold Beach Water Company to discuss concerns of customers as well as receive updates regarding solutions to previous complaints and programs such as Conservation. In response to a meeting with Board members, Gold Beach Water Company offered a questionnaire with which to determine the highest priorities of the community they serve. Improvements #1 and #2 identified in Section 6.2 Cost and Schedule of Improvements are a direct reflection of the results of that questionnaire.

8.10 Recordkeeping and Reporting

8.10.1 Recordkeeping

Gold Beach Water Company maintains the following records in its office:

- All records related to water quality testing and results
- All records related to water supply and consumption
- All records related to operations and maintenance of the water system and company
- All records related to customer complaints and contact
- All records related to regulatory agencies and requirements
- All records related to billings and individual customer connections
- All records related to the history of Gold Beach Water Company and its water system
- All records related to treatment of source water

All records have been kept without scheduled destruction or discard.

8.10.2 Reporting

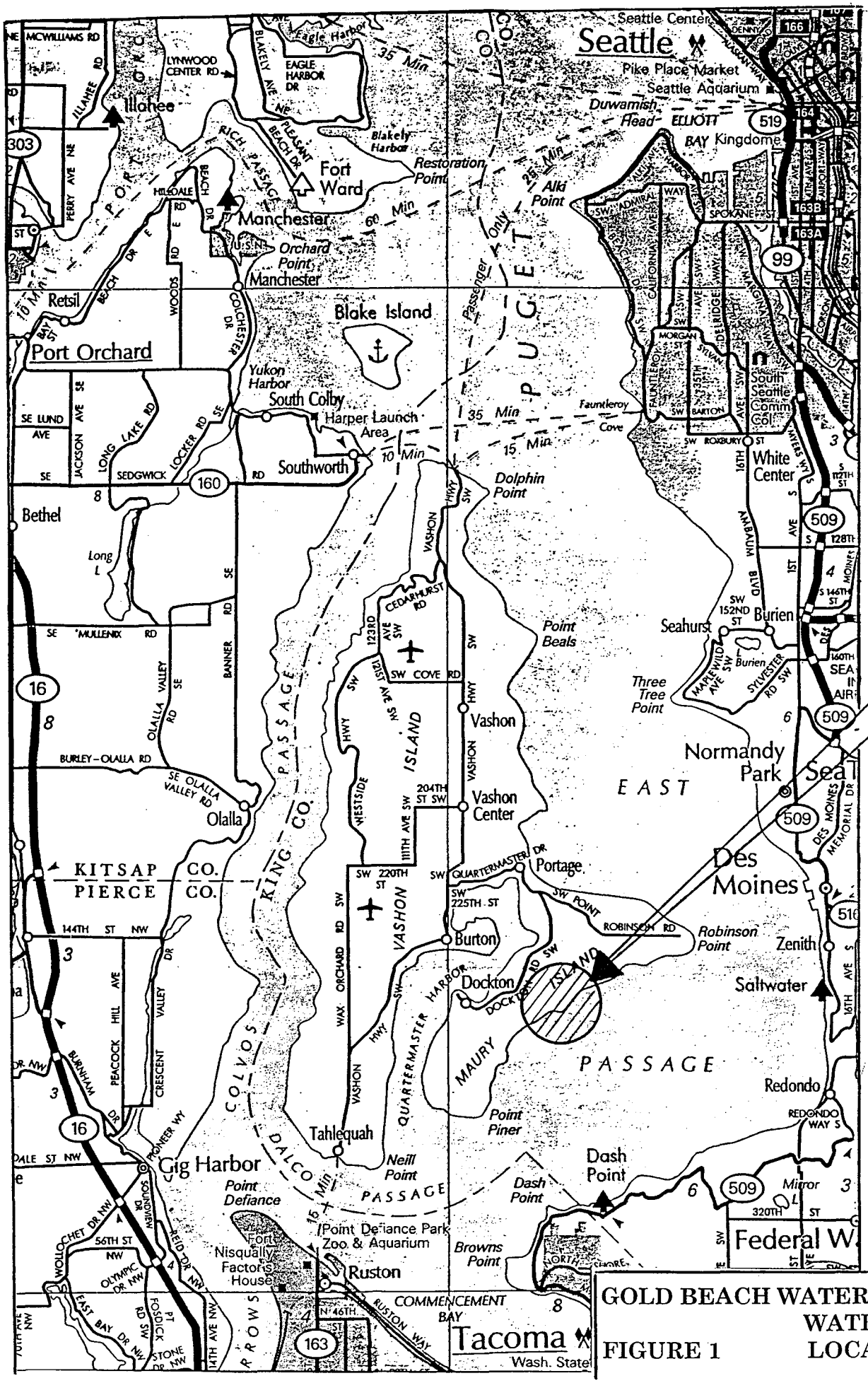
The Office Manager of Gold Beach Water Company provides reports required by regulatory agencies. The Gold Beach Water Company Accountant prepares the annual Water Report required by the WUTC, as well as all Federal income tax statements required.

APPENDIX

SMALL WATER SYSTEM PLAN

GOLD BEACH WATER COMPANY, INC.
VASHON ISLAND, WA 98070

APPENDIX
TABLE OF CONTENTS



GOLD BEACH WATER COMPANY
WATER SYSTEM
LOCATION MAP

FIGURE 1

POSSIBLE FUTURE SERVICE AREA

POSSIBLE FUTURE SERVICE AREA

POSSIBLE FUTURE SERVICE AREA

EXISTING SERVICE AREA

POSSIBLE FUTURE SERVICE AREA

EX. WELL

8 – 5 ACRE LOTS

N-4

2" PVC

76TH AVE SW

POSSIBLE FUTURE TANK LOCATION

30,500 GALLON RESERVOIR

PRESSURE TANK & BUILDING

4" CI

PRESSURE LINE

COMMUNITY TRACT B

27,900 GALLON RESERVOIR

COMMUNITY TRACT A

SW 256TH STREET

SW 257th ST

SW 258th ST

SW 259th ST

SW 260th St

SW 261st STREET

70th CT

72nd AVE SW

73rd AVE SW

75th AVE SW

78th AVE SW

79th AVE SW

EDWARDS ROAD

G. EDWARDS CEMETERY

PUMP HOUSE & WELL #2

PUMP HOUSE & WELL #1

TRACT A

CLUB HOUSE

PUGET SOUND

GRAPHIC SCALE

300 0 150 300 600 900

(IN FEET)
1 inch = 300 ft.

NOTE:
WE REALIZE THE SERVICE AREA IDENTIFIED AS "FUTURE SERVICE AREA" IS OUTSIDE THE APPROVED CWSP SERVICE AREA BOUNDARY. WE CONTINUE TO WORK WITH NEARBY PURVEYORS TO REACH NEW SERVICE AREA AGREEMENTS.

LEGEND

- PROPERTY LINE
- R/W CENTERLINE
- GATE VALVE
- FIRE HYDRANT
- BLOW-OFF
- METER & BOX
- WATER LINE
- VASHON GROUNDWATER SERVICE BOUNDARY–1986
- FUTURE SERVICE BOUNDARY
- EXISTING CONTOURS
- EASEMENT
- BOX

DFD DESIGN
DFD DESIGN
2731 WETMORE #240
EVERETT, WA 98201
(425) 252-2455
harold@dfd-design.com

GOLD BEACH WATER COMPANY

DATE: 11-24-98	DRAWN: DFD DESIGN
SCALE: 1" = 300'	PROJECT #: 97055

SERVICE AREA MAP

A 3

STATE OF WASHINGTON
DEPARTMENT OF LICENSING
MASTER LICENSE SERVICE
Renewal Agent for SECRETARY OF STATE

9732-W 98070
OFFICE USE ONLY

01P-400-731-0003

PROFIT CORPORATION LICENSE RENEWAL & ANNUAL REPORT

Profit Corporation Name, Registered Agent & Registered Office Address:

0008099 AT **AUTO H1 0 0860 98070-213838

GOLD BEACH WATER COMPANY
C/O ~~DOM~~ SPANO R. Michael Spano
~~8912 SW HARBOR DR~~
PO BOX 2138
VASHON WA 98070 2138

Unified Business ID #: 601 090 091
Corporation Account #: 22006670
State of Incorporation: WA
Date of WA Inc./Auth.: 09-24-1969
Expiration Date*: 09-30-1997*

If the registered agent and/or office address shown above has changed, mark the box and complete the reverse side.

Submit completed renewal/annual report & fees by the expiration date to avoid $25.00 late fee, or possible dissolution/revocation

LICENSE RENEWAL SECTION

* After renewal your new expiration date will be: 09-30-1998

DOMESTIC PROFIT CORPORATION	$50.00
RENEWAL APPLICATION FEE	9.00

FAILURE TO RETURN COMPLETED FORM AND PAY FEES BY THE EXPIRATION DATE WILL RESULT IN DELINQUENCY FEES AND MAY LEAD TO THE DISSOLUTION OF YOUR CORPORATION

Make check payable to **STATE TREASURER** in **U.S. FUNDS** only

TOTAL FEES DUE: $59.00

FEES & REPORT REQUESTED BY: 09-15-1997

ANNUAL REPORT SECTION

You must COMPLETE THE ITEMS BELOW each year. Type or print *legibly* in dark ink.

Telephone number of corporation: (206) 463-9559

Address of principal place of business in WA: P.O. Box #2138 — Vashon, WA. 9807
(STREET) (CITY) (STATE) (ZIP)

If incorporated outside of Washington give the principal office address in the state or country of origin: _____
(STREET) (CITY) (STATE) (ZIP)

Briefly describe the nature of your business conducted in Washington: Small Residencial Community Water Comp

Below list the name & address of all corporate officers, & all directors: (Attach additional sheets in the same format, if necessary. Include your UBI# on each page.)

PRESIDENT'S NAME: R. Michael Spano	ADDRESS: P.O. Box #2138	CITY: Vashon	STATE: WA.	ZIP: 9807
VICE PRES.'S NAME: George Spano	ADDRESS: "	CITY: "	STATE: "	ZIP: "
SECRETARY'S NAME: Jane Spano-Connors	ADDRESS: "	CITY: "	STATE: "	ZIP: "
TREASURER'S NAME: Jane Spano-Connors	ADDRESS: "	CITY: "	STATE: "	ZIP: "
CHAIR, BOARD OF DIRECTORS NAME: (none)	ADDRESS:	CITY:	STATE:	ZIP:

IF YOU SAY YOU HAVE "NO DIRECTORS" YOU MUST LIST WHO HANDLES THE DUTIES NORMALLY PERFORMED BY CORPORATE DIRECTORS

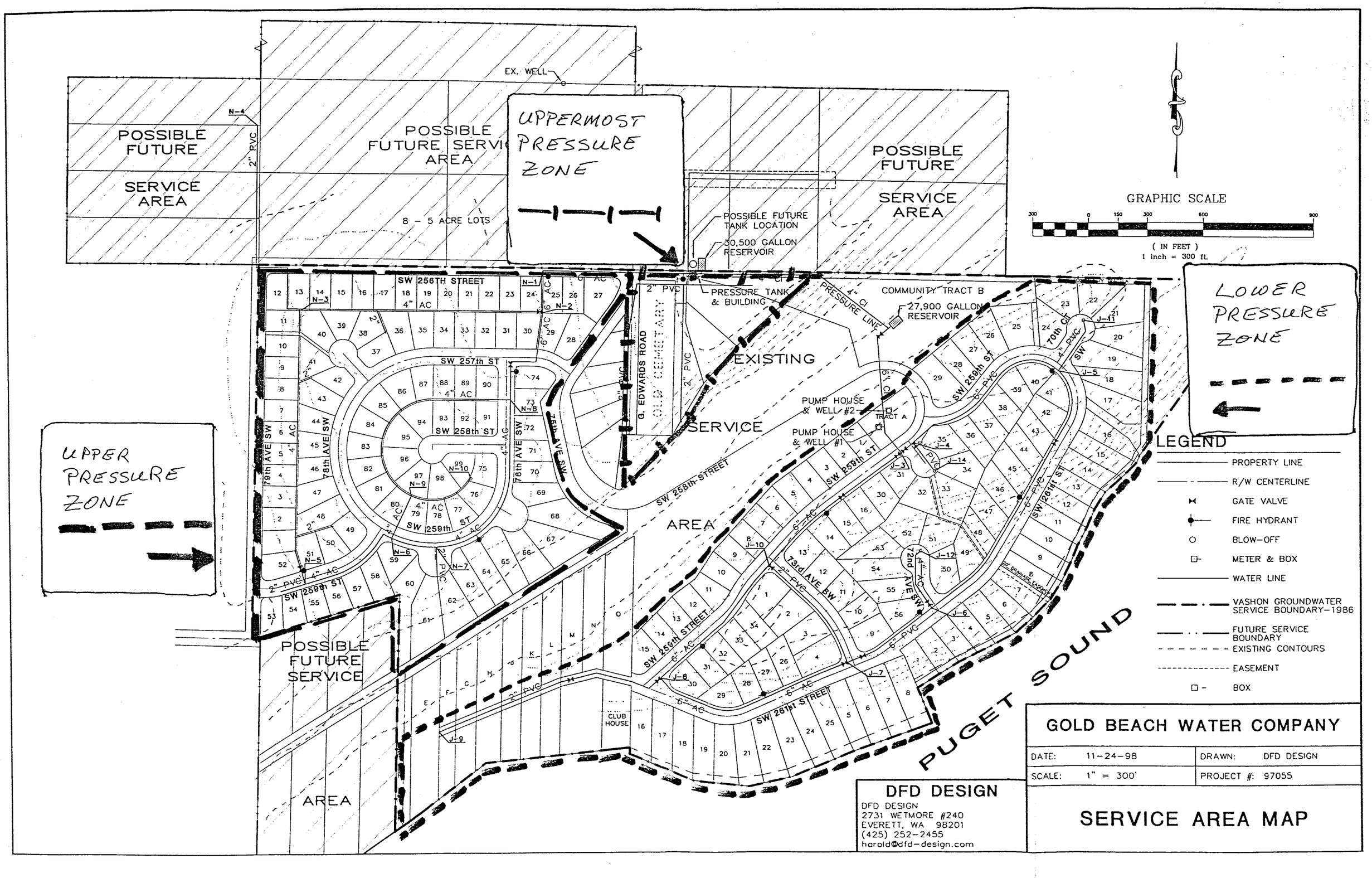
X R. Michael Spano
SIGNATURE OF AN OFFICER OR BOARD CHAIR (NAME MUST APPEAR ON ANNUAL REPORT)

President
TITLE

8/30/97
DATE SIGNED

Please return to: **DEPARTMENT OF LICENSING**
MASTER LICENSE SERVICE
PO BOX 9034
OLYMPIA WA 98507-9034

The Department of Licensing has a policy of providing equal access to its services. If you need special accommodation, please call (360) 753-4401 or TDD (360) 586-2788.



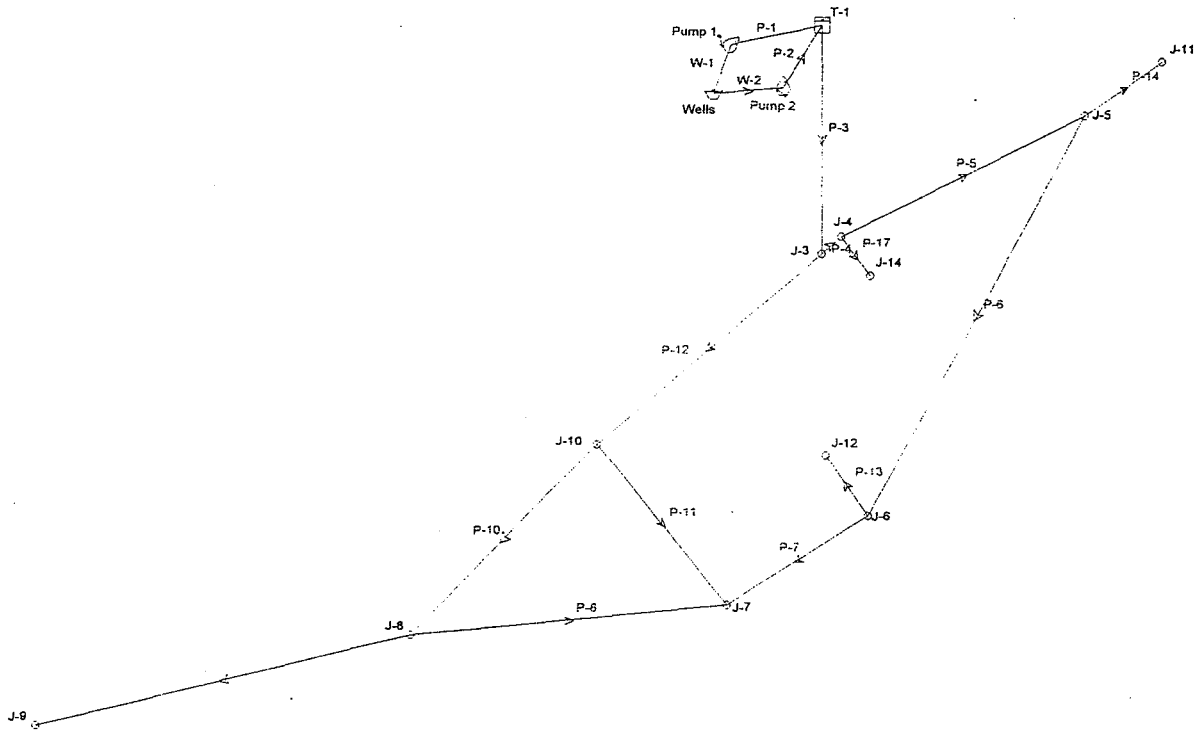
GOLD BEACH WATER COMPANY

DATE: 11–24–98	DRAWN: DFD DESIGN
SCALE: 1" = 300'	PROJECT #: 97055

SERVICE AREA MAP

DFD DESIGN
DFD DESIGN
2731 WETMORE #240
EVERETT, WA 98201
(425) 252–2455
harold@dfd–design.com

Steady State Analysis



GOLD BEACH
LOWER LOOP Div. 1,3 & 4

Analysis Results
Steady State Analysis

Project Title: Gold Beach Water System
Project Engineer: Mike Spano
Project Date: 12/21/97
Comments: Drafted and Modelled by DFD Design

Hydraulic Analysis Summary			
Analysis	Steady State	Demand Scenario	Default-Peak Hour
Friction Method	Hazen-Williams Formula	Accuracy	0.001000
Trials	40		

Liquid Characteristics			
Liquid	Water at 20C(68F)	Specific Gravity	1.00
Kinematic Viscosity	0.108e-4 ft²/s		

Network Inventory			
Number of Pipes	17	Number of Reservoirs	1
Number of Junctions	11	Number of Tanks	1
Number of Pumps	2	Number of Valves	0
- Constant Power:	0	- FCV's:	0
- One Point (Design Point):	2	- PBV's:	0
- Standard (3 Point):	0	- PRV's:	0
- Standard Extended:	0	- PSV's:	0
- Custom Extended:	0	- TCV's:	0

Junctions @ 0.00 hr

Label	Constituent (mg/l)	Hydraulic Grade (ft)	Pressure (psi)	Demand (gpm)	Pressure Head (ft)
J-3	0.0	202.57	51.71	12.40	119.57
J-4	0.0	202.54	51.69	9.30	119.54
J-5	0.0	202.23	44.21	20.00	102.23
J-6	0.0	202.00	70.05	35.50	162.00
J-7	0.0	202.00	61.84	30.90	143.00
J-8	0.0	202.03	61.42	13.90	142.03
J-9	0.0	197.48	63.78	15.40	147.48
J-10	0.0	202.17	44.18	23.20	102.17
J-11	0.0	202.22	52.85	6.20	122.22
J-12	0.0	201.99	61.40	7.70	141.99
J-14	0.0	202.53	61.64	4.70	142.53

Tanks @ 0.00 hr

Label	Constituent (mg/l)	Hydraulic Grade (ft)	Tank Level (ft)	Pressure (psi)	Percent Full (%)	Current Storage Volume (ft³)	Tank Inflow (gpm)	Tank Outflow (gpm)	Status
T-1	0.0	204.00	9.00	0.00	100.0	3,730.50	105.55	N/A	Filling

Reservoirs @ 0.00 hr

Label	Constituent (mg/l)	Hydraulic Grade (ft)	Reservoir Inflow (gpm)	Reservoir Outflow (gpm)
Wells	0.0	100.00	N/A	284.75

Analysis Results
Steady State Analysis

Pipes @ 0.00 hr

Label	Status	Constituent (mg/l)	Flow (gpm)	Velocity (ft/s)	From Grade (ft)	To Grade (ft)	Friction Loss (ft)	Minor Loss (ft)	Total Headloss (ft)	Headloss Gradient (ft/1000ft)
P-1	Open	0.0	-0.47e-3	0.53e-5	204.00	204.00	0.00	0.00	0.00	0.00
P-2	Open	0.0	284.75	3.23	204.80	204.00	0.80	0.00	0.80	7.30
P-3	Open	0.0	-179.20	2.03	202.57	204.00	1.43	0.00	1.43	3.10
P-4	Open	0.0	90.06	1.02	202.57	202.54	0.04	0.00	0.04	0.67
P-5	Open	0.0	76.06	0.86	202.54	202.23	0.31	0.00	0.31	0.49
P-6	Open	0.0	49.86	0.57	202.23	202.00	0.23	0.00	0.23	0.22
P-7	Open	0.0	6.66	0.08	202.00	202.00	0.19e-2	0.00	0.19e-2	0.01
P-8	Open	0.0	20.48	0.23	202.03	202.00	0.04	0.00	0.04	0.05
P-9	Open	0.0	15.40	1.57	202.03	197.48	4.55	0.00	4.55	5.35
P-10	Open	0.0	49.78	0.56	202.17	202.03	0.14	0.00	0.14	0.25
P-11	Open	0.0	3.76	0.38	202.17	202.00	0.18	0.00	0.18	0.39
P-12	Open	0.0	-76.74	0.87	202.17	202.57	0.40	0.00	0.40	0.65
P-13	Open	0.0	7.70	0.20	202.00	201.99	0.01	0.00	0.01	0.06
P-14	Open	0.0	6.20	0.16	202.23	202.22	0.01	0.00	0.01	0.03
P-17	Open	0.0	4.70	0.12	202.54	202.53	0.24e-2	0.00	0.24e-2	0.02
W-1	Open	0.0	0.00	0.00	100.00	100.00	0.00	0.00	0.00	0.00
W-2	Open	0.0	284.75	3.23	100.00	99.99	0.01	0.00	0.01	7.31

Pumps @ 0.00 hr

Label	Status	Constituent (mg/l)	From Grade (ft)	To Grade (ft)	Flow (gpm)	Head (ft)	Relative Speed	Useful Power (Hp)
Pump 1	Off	0.0	100.00	204.00	0.00	0.00	0.00	0.00
Pump 2	On	0.0	99.99	204.80	284.75	104.82	1.00	7.54

Detailed Report for Pump: Pump 1

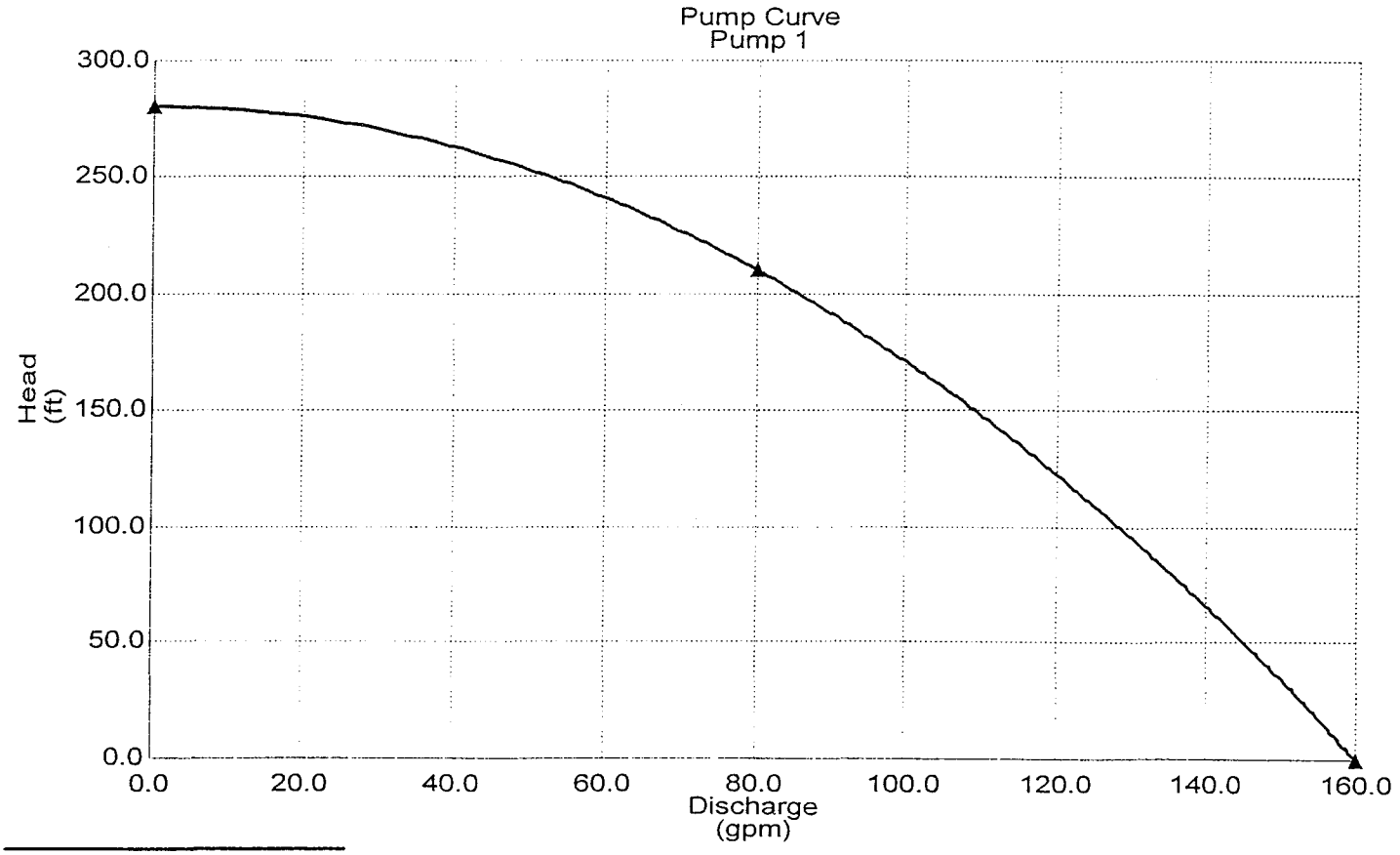
Loading Summary			
Demand Scenario	Default-Peak Hour		

Calibration Summary			
Demand	<none> 0.0	Roughness	<none> 0.0

Geometric Summary			
X	5,727.33 ft	From Pipe	W-1
Y	6,261.30 ft	To Pipe	P-1
Elevation	100.00 ft		

Initial Condition Summary			
Status	Off	Relative Speed Factor	1.00

Pump Definition Summary			
Pump Type	Design Point (1 Point)		
Shutoff Head	280.00 ft	Shutoff Discharge	0.00 gpm
Design Head	210.00 ft	Design Discharge	80.00 gpm
Maximum Operating Head	0.00 ft	Maximum Operating Discharge	160.00 gpm



Operating Controls Summary
Controls
On if node T-1 below 196.00 ft
Off if node T-1 above 204.00 ft

Detailed Report for Pump: Pump 2

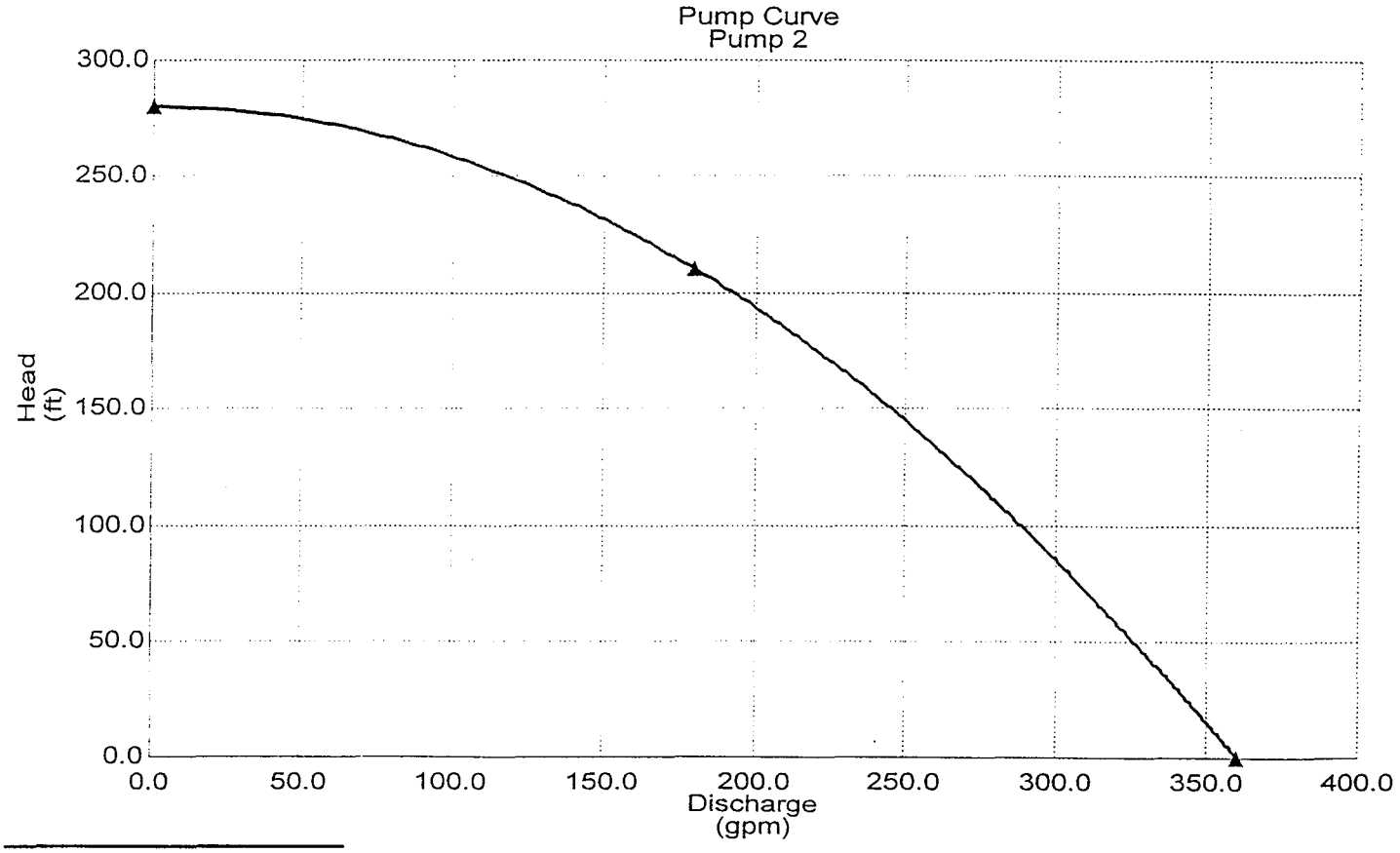
Loading Summary			
Demand Scenario	Default-Peak Hour		

Calibration Summary			
Demand	<none> 0.0	Roughness	<none> 0.0

Geometric Summary			
X	5,840.31 ft	From Pipe	W-2
Y	6,171.27 ft	To Pipe	P-2
Elevation	100.00 ft		

Initial Condition Summary			
Status	On	Relative Speed Factor	1.00

Pump Definition Summary			
Pump Type	Design Point (1 Point)		
Shutoff Head	280.00 ft	Shutoff Discharge	0.00 gpm
Design Head	210.00 ft	Design Discharge	180.00 gpm
Maximum Operating Head	0.00 ft	Maximum Operating Discharge	360.00 gpm



Operating Controls Summary
Controls
On if node T-1 below 200.00 ft
Off if node T-1 above 204.00 ft

Detailed Report for Tank: T-1

Loading Summary	
Demand Scenario	Default-Peak Hour

Calibration Summary			
Demand	<none> 0.0	Roughness	<none> 0.0

Geometric Summary			
X	5,921.71 ft	Base Elevation	195.00 ft
Y	6,304.04 ft		

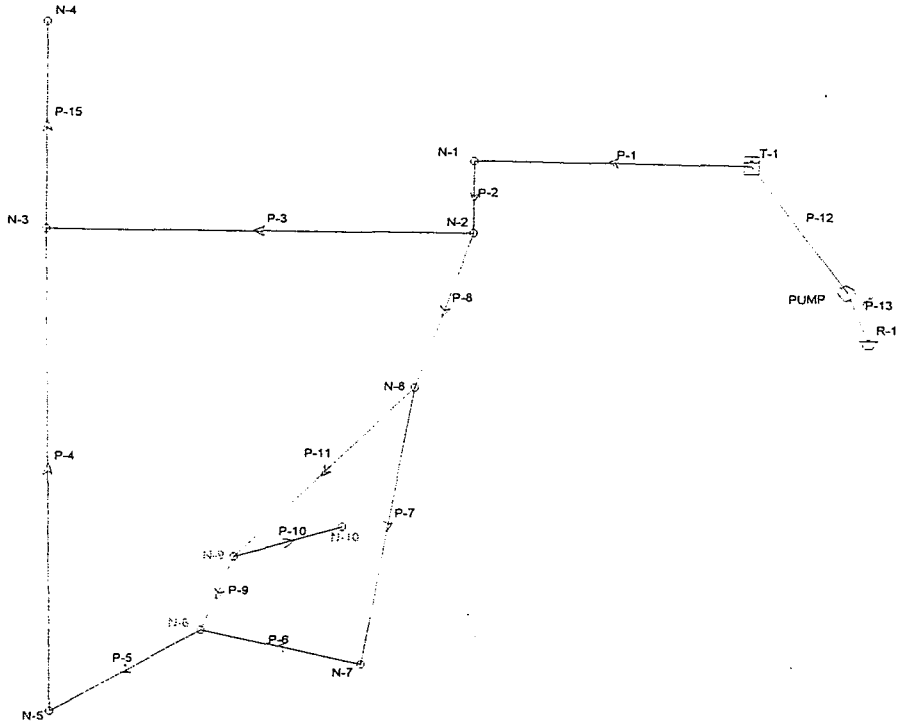
Connecting Pipes
P-2
P-1
P-3

Storage Summary			
Cross Section	Non-Circular		
Tank Diameter	N/A ft	Average Area	414.5 ft^2
Inactive Volume	414.50 ft^3	Total Storage Capacity	3,730.50 ft^3
Maximum Elevation	204.00 ft	Maximum Level	9.00 ft
Minimum Elevation	196.00 ft	Minimum Level	1.00 ft

Calculated Results Summary

Time	Constituent (mg/l)	Hydraulic Grade (ft)	Tank Level (ft)	Pressure (psi)	Percent Full (%)	Current Storage Volume (ft^3)	Tank Inflow (gpm)	Tank Outflow (gpm)	Status
0.00 hr	0.0	204.00	9.00	0.00	100.0	3,730.50	105.55	N/A	Filling

Steady State Analysis



UPPER LOOPS

GOLD BEACH Div. 2

Analysis Results
Steady State Analysis

Project Title: Gold Beach Water
Project Engineer: R. Mike Spano
Project Date: 12/21/97
Comments: Modelled and Drafted by DFD Design

Hydraulic Analysis Summary			
Analysis	Steady State	Demand Scenario	Default-Peak Hour
Friction Method	Hazen-Williams Formula	Accuracy	0.001000
Trials	40		

Liquid Characteristics			
Liquid	Water at 20C(68F)	Specific Gravity	1.00
Kinematic Viscosity	0.108e-4 ft²/s		

Network Inventory			
Number of Pipes	14	Number of Reservoirs	1
Number of Junctions	10	Number of Tanks	1
Number of Pumps	1	Number of Valves	0
- Constant Power:	0	- FCV's:	0
- One Point (Design Point):	1	- PBV's:	0
- Standard (3 Point):	0	- PRV's:	0
- Standard Extended:	0	- PSV's:	0
- Custom Extended:	0	- TCV's:	0

Junctions @ 0.00 hr

Label	Constituent (mg/l)	Hydraulic Grade (ft)	Pressure (psi)	Demand (gpm)	Pressure Head (ft)
N-1	0.0	421.06	32.89	5.25	76.06
N-2	0.0	420.83	34.95	15.75	80.83
N-3	0.0	419.81	34.51	35.25	79.81
N-4	0.0	419.30	55.91	7.00	129.30
N-5	0.0	419.82	43.17	19.25	99.82
N-6	0.0	419.97	29.83	5.25	68.97
N-7	0.0	420.03	30.72	12.25	71.03
N-8	0.0	420.59	32.69	14.00	75.59
N-9	0.0	419.98	25.07	17.50	57.98
N-10	0.0	419.97	24.64	7.00	56.97

Tanks @ 0.00 hr

Label	Constituent (mg/l)	Hydraulic Grade (ft)	Tank Level (ft)	Pressure (psi)	Percent Full (%)	Current Storage Volume (ft³)	Tank Inflow (gpm)	Tank Outflow (gpm)	Status
T-1	0.0	422.00	12.00	0.00	100.0	4,077.60	N/A	138.50	Draining

Reservoirs @ 0.00 hr

Label	Constituent (mg/l)	Hydraulic Grade (ft)	Reservoir Inflow (gpm)	Reservoir Outflow (gpm)
R-1	0.0	195.00	0.1e-2	N/A

Analysis Results
Steady State Analysis

Pipes @ 0.00 hr

Label	Status	Constituent (mg/l)	Flow (gpm)	Velocity (ft/s)	From Grade (ft)	To Grade (ft)	Friction Loss (ft)	Minor Loss (ft)	Total Headloss (ft)	Headloss Gradient (ft/1000ft)
P-1	Open	0.0	138.50	1.57	422.00	421.06	0.94	0.00	0.94	1.68
P-2	Open	0.0	133.25	1.51	421.06	420.83	0.23	0.00	0.23	1.56
P-3	Open	0.0	39.25	1.00	420.83	419.81	1.02	0.00	1.02	1.17
P-4	Open	0.0	-3.00	0.08	419.81	419.82	0.01	0.00	0.01	0.01
P-5	Open	0.0	-22.25	0.57	419.82	419.97	0.15	0.00	0.15	0.41
P-6	Open	0.0	-20.32	0.52	419.97	420.03	0.06	0.00	0.06	0.35
P-7	Open	0.0	32.57	0.83	420.59	420.03	0.56	0.00	0.56	0.83
P-8	Open	0.0	78.25	0.89	420.83	420.59	0.24	0.00	0.24	0.58
P-9	Open	0.0	-7.18	0.18	419.97	419.98	0.01	0.00	0.01	0.05
P-10	Open	0.0	7.00	0.18	419.98	419.97	0.01	0.00	0.01	0.05
P-11	Open	0.0	31.68	0.81	420.59	419.98	0.61	0.00	0.61	0.79
P-12	Open	0.0	-0.1e-2	0.12e-4	422.00	422.00	0.00	0.00	0.00	0.00
P-13	Open	0.0	-0.1e-2	0.12e-4	195.00	195.00	0.00	0.00	0.00	0.00
P-15	Open	0.0	7.00	0.71	419.81	419.30	0.51	0.00	0.51	1.24

Pumps @ 0.00 hr

Label	Status	Constituent (mg/l)	From Grade (ft)	To Grade (ft)	Flow (gpm)	Head (ft)	Relative Speed	Useful Power (Hp)
PUMP	Off	0.0	195.00	422.00	0.00	0.00	0.00	0.00

Detailed Report for Pump: PUMP

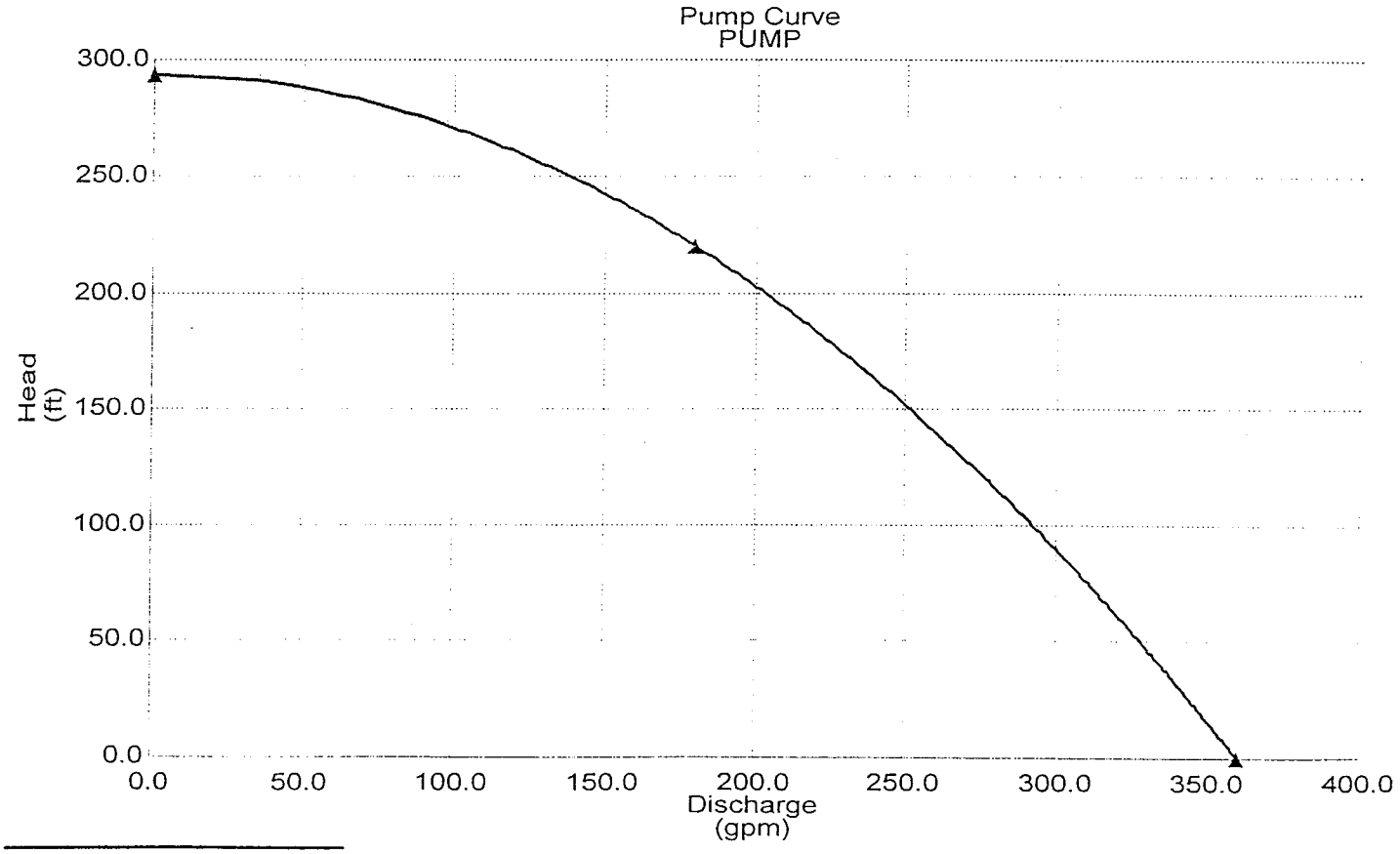
Loading Summary			
Demand Scenario	Default-Peak Hour		

Calibration Summary			
Demand	<none> 1.0	Roughness	<none> 0.0

Geometric Summary			
X	5,417.60 ft	From Pipe	P-13
Y	6,206.57 ft	To Pipe	P-12
Elevation	205.00 ft		

Initial Condition Summary			
Status	Off	Relative Speed Factor	1.00

Pump Definition Summary			
Pump Type	Design Point (1 Point)		
Shutoff Head	293.33 ft	Shutoff Discharge	0.00 gpm
Design Head	220.00 ft	Design Discharge	180.00 gpm
Maximum Operating Head	0.00 ft	Maximum Operating Discharge	360.00 gpm



Operating Controls Summary
Controls
On if node T-1 below 414.00 ft
Off if node T-1 above 422.00 ft

Detailed Report for Tank: T-1

Loading Summary	
Demand Scenario	Default-Peak Hour

Calibration Summary			
Demand	<none> 1.0	Roughness	<none> 0.0

Geometric Summary			
X	5,218.44 ft	Base Elevation	410.00 ft
Y	6,462.08 ft		

Connecting Pipes
P-12
P-1

Storage Summary			
Cross Section	Non-Circular		
Tank Diameter	N/A ft	Average Area	339.8 ft²
Inactive Volume	679.60 ft³	Total Storage Capacity	4,077.60 ft³
Maximum Elevation	422.00 ft	Maximum Level	12.00 ft
Minimum Elevation	412.00 ft	Minimum Level	2.00 ft

Calculated Results Summary

Time	Constituent (mg/l)	Hydraulic Grade (ft)	Tank Level (ft)	Pressure (psi)	Percent Full (%)	Current Storage Volume (ft³)	Tank Inflow (gpm)	Tank Outflow (gpm)	Status
0.00 hr	0.0	422.00	12.00	0.00	100.0	4,077.60	N/A	138.50	Draining

WATER LEVEL MEASUREMENTS FROM THE GOLD BEACH #1 WELL

LOCATION: 22N/03E-28B01
SITEID NO: 472224122252301
MP HEIGHT: 0.00
MP ELEVATION: 85.00

SITEID	RECORD_NO	DATE_MSRD	TIME_MSRD	WL_DEPTH	WL_ELEV	STATUS	METHOD	ACC_CODE	TRANS_DATE
472224122252301	001	19890809	1530	92.00	-7.00	P	V	2	02/15/199(
472224122252301	002	19891004	1355	89.38	-4.38	R	V	2	02/15/199(
472224122252301	003	19891031	0855	88.79	-3.79	R	V	2	02/15/199(
472224122252301	004	19891129	1145	88.33	-3.33	R	V	2	02/15/199(
472224122252301	005	19891228	1035	91.29	-6.29	P	V	2	02/15/199(
472224122252301	006	19900131	0950	90.29	-5.29	P	V	2	02/15/199(
472224122252301	007	19900228	1048	85.19	-0.19	R	V	2	06/15/199(
472224122252301	008	19900330	1108	88.66	-3.66	P	V	2	06/15/199(
472224122252301	009	19900417	0855	87.86	-2.86	P	V	2	06/15/199(
472224122252301	010	19900417	0905	84.15	0.85	R	V	2	06/15/199(
472224122252301	011	19900531	1038	84.78	0.22	R	V	2	06/15/199(
472224122252301	012	19900629	1014	89.10	-4.10	P	V	2	07/13/199(
472224122252301	013	19900727	1029	91.74	-6.74	P	V	2	08/01/199(
472224122252301	014	19900830	1140	89.29	-4.29	R	V	2	03/05/1991
472224122252301	015	19900925	1035	93.23	-8.23	P	V	2	03/05/1991
472224122252301	016	19901023	0855	88.98	-3.98	R	V	2	03/05/1991
472224122252301	017	19901129	1058	87.23	-2.23	R	V	2	03/05/1991
472224122252301	018	19910131	1028	84.94	0.06	R	V	2	03/05/1991
472224122252301	019	19910228	0953	87.13	-2.13	P	V	2	03/05/1991
472224122252301	020	19910319	1010	84.46	0.54	P	V	2	04/09/1991
472224122252301	021	19910419	1147	81.21	3.79	R	V	2	07/31/1991
472224122252301	022	19910524	1027	80.26	4.74	R	V	2	07/31/1991
472224122252301	023	19910618	1053	81.38	3.62	R	V	2	07/31/1991
472224122252301	024	19910730	1005	86.41	-1.41	P	V	2	07/31/1991
472224122252301	025	19910830	1005	84.49	0.51	R	V	2	01/13/1992
472224122252301	026	19911001	1015	83.15	1.85	R	V	2	01/13/1992
472224122252301	027	19911101	1003	87.85	-2.85	P	V	2	01/13/1992
472224122252301	028	19911202	1058	86.20	-1.20	P	V	2	01/13/1992
472224122252301	029	19920313	1015	82.69	2.31	P	V	2	05/06/1992
472224122252301	030	19920605	1101	83.78	1.22	R	V	2	12/11/1992
472224122252301	031	19920710	1135	84.86	0.14	R	V	2	12/11/1992
472224122252301	032	19920807	1115	87.93	-2.93	R	V	2	12/11/1992
472224122252301	033	19920904	1000	87.06	-2.06	R	V	2	12/11/1992
472224122252301	034	19921009	0948	86.86	-1.86	R	V	2	12/11/1992
472224122252301	035	19921113	1100	88.81	-3.81	P	V	2	12/11/1992
472224122252301	036	19921209	1241	86.40	-1.40	R	V	2	12/11/1992

WATER LEVEL MEASUREMENTS FROM THE GOLD BEACH #2 WELL

LOCATION: 22N/03E-28B01
SITEID NO: 472225122252101
MP HEIGHT: 0.00
MP ELEVATION: 82.00

SITEID	RECORD_NO	DATE_MSRD	TIME_MSRD	WL_DEPTH	WL_ELEV	STATUS	METHOD	ACC_CODE	TRANS_DATE
2225122252101	001	19890809	1540	86.13	-4.13	R	V	2	02/15/1990
2225122252101	002	19891004	1350	87.35	-5.35	R	V	2	02/15/1990
2225122252101	003	19891031	0845	86.79	-4.79	R	V	2	02/15/1990
2225122252101	004	19891129	1135	86.38	-4.38	R	V	2	02/15/1990
2225122252101	005	19891228	1030	85.50	-3.50	R	V	2	02/15/1990
2225122252101	006	19900131	0945	84.42	-2.42	R	V	2	02/15/1990
2225122252101	007	19900228	1057	83.22	-1.22	R	V	2	06/15/1990
2225122252101	008	19900330	1112	82.60	-0.60	R	V	2	06/15/1990
2225122252101	009	19900417	0849	82.13	-0.13	R	V	2	06/15/1990
2225122252101	010	19900531	1044	82.77	-0.77	R	V	2	06/15/1990
2225122252101	011	19900629	1021	83.72	-1.72	R	V	2	07/13/1990
2225122252101	012	19900727	1035	93.11	-11.11	P	V	2	08/01/1990
2225122252101	013	19900830	1145	87.29	-5.29	R	V	2	03/05/1991
2225122252101	014	19900925	1040	87.55	-5.55	R	V	2	03/05/1991
2225122252101	015	19901022	0859	86.97	-4.97	R	V	2	03/05/1991
2225122252101	016	19901129	1103	85.22	-3.22	R	V	2	03/05/1991
2225122252101	017	19910131	1033	82.93	-0.93	R	V	2	03/05/1991
2225122252101	018	19910228	1000	81.86	0.14	R	V	2	03/05/1991
2225122252101	019	19910319	1015	80.93	1.07	R	V	2	04/09/1991
2225122252101	020	19910419	1150	79.20	2.80	R	V	2	07/31/1991
2225122252101	021	19910524	1035	78.46	3.54	R	V	2	07/31/1991
2225122252101	022	19910618	1102	79.38	2.62	R	V	2	07/31/1991
2225122252101	023	19910730	1009	88.51	-6.51	P	V	2	07/31/1991
2225122252101	024	19910830	1010	82.49	-0.49	R	V	2	01/13/1992
2225122252101	025	19911001	1008	85.19	-3.19	R	V	2	01/13/1992
2225122252101	026	19911101	1008	82.73	-0.73	R	V	2	01/13/1992
2225122252101	027	19911202	1103	82.77	-0.77	R	V	2	01/13/1992
2225122252101	028	19920313	1018	80.67	1.33	R	V	2	05/06/1992
2225122252101	029	19920605	1107	81.80	0.20	R	V	2	12/11/1992
2225122252101	030	19920904	1003	85.06	-3.06	R	V	2	12/11/1992
2225122252101	031	19931009	0957	84.81	-2.81	R	V	2	12/11/1992
2225122252101	032	19921113	1107	84.50	-2.50	R	V	2	12/11/1992
2225122252101	033	19921209	1240	84.39	-2.39	R	V	2	12/11/1992

TOTAL RECORD COUNT: 33

STATE OF WASHINGTON
DEPARTMENT OF HEALTH
1511 Third Ave., Suite 719 • Seattle, Washington 98101-1632

December 19, 1996

MR MIKE SPANO
GOLD BEACH WATER COMPANY
PO BOX 2138
VASHON WA 98070

Subject: Gold Beach Water Company (ID# 283508)
King County
Water System Sanitary Survey

Dear Mr Spano:

Thank you (and Larry Niece also) for meeting with me and showing me around the water system on December 5th. This letter is in follow-up to my site visit and routine sanitary survey.

The focus of a routine survey is to identify any immediate health concerns and to assess the operation, maintenance and management of the water system. My inspection revealed no acute health concerns. However, we did discuss several items which need to be addressed that should provide additional sanitary protection and ensure that the provisions of the drinking water regulations are being met.

Enclosed is a copy of my *System Inspection / Meeting Summary* notes. Please review these notes for content and accuracy. Also, please address each of the items in the *Deficiencies and Needed Improvements* section. You will also find enclosed a completed "Water Quality Monitoring Requirements for Small Systems" form. Note that you must sample for nitrate only from each well before the end of the year. This table is intended for guidance only; the purveyor is expected to be knowledgeable of and in compliance with WAC 246-290.

One of the issues we discussed was the fact that your water system has exceeded the Action Level for copper. As a result, there are certain follow-up actions you must do, as outlined in the "Lead and Copper Initial Monitoring Guidance" document which I gave to you during the survey. You must begin monitoring for water quality parameters immediately. Also, you will be receiving a letter soon from this department indicating additional follow-up actions you will need to do, including conducting a study to determine corrosion control recommendations.

Again, thanks for taking the time to review the system with me. If you have any questions regarding this survey please call me in Seattle at (206) 464-7962.

Sincerely,

Steve Hulsman

Steve Hulsman
Public Health Advisor
NW Drinking Water Operations

Enclosures

cc: King County Health Department
Bob James, P.E. - DOH
Suellen Sedies - DOH

STATE OF WASHINGTON

DEPARTMENT OF HEALTH

1511 Third Ave., Suite 719 • Seattle, Washington 98101-1632

SYSTEM INSPECTION / MEETING SUMMARY
Date: 12/05/96

System: GOLD BEACH WATER COMPANY (ID#283508) King County

Persons Attending: Mike Spano, "owner"; Larry Niece, operator
Steve Hulsman, Bob James - DOH

Purpose: Routine Sanitary Survey

System Summary / Findings
Background: System was surveyed in Aug '94 in response to customers' concerns regarding corrosion.
A water system plan was submitted in Apr '95, but has not yet been approved. There are currently 158 connections; however, the number of approved connections not yet been determined.

WATER QUALITY HISTORY:
Bacteriological - positive sample in Nov 96 - follow-up samples in late Nov OK
IOC - DOH has received several complaints regarding CORROSIVE water
Nitrate - OK (constantly around 1 to 1.3 mg/l)
VOC - '94, nothing detected
SOC - One completed Susceptibility Assessment (covering both wells) submitted to DOH in Sept '95. DOH apparently did not process it in '95, and so a waiver was not officially granted for the '93-'95 Compliance Period; however, the system effectively received the waiver. Both wells are ranked "moderate" susceptibility to contamination in general, and are ranked "moderately" vulnerable to pesticide contamination specifically. Because of the moderate vulnerability ranking, both wells would have needed to be sampled for one quarter of SOC methods 525.2 and 515 as a condition of the "Area Waiver" for the '93-'95 Compliance Period; this sampling will need to be done in the '96-'98 Compliance Period as a condition of waiver renewal.
Rad - 8/81, OK
Lead/Copper - 90TH % VALUE FOR COPPER EXCEEDS THE ACTION LIMIT!!
See the enclosed "Water Quality Monitoring Requirements for Small Systems" table. This table is intended for guidance only; the purveyor is expected to be knowledgeable of and in compliance with WAC 246-290.

SOURCES: Wells 1 & 2 are located on a community lot at ~ 100 ft MSL elevation near the base of the hill at the "U" in the road coming down from the upper part of the system. Both wells are metered, have wellhead sampling faucets, and are located in locked well houses with concrete floors. During the survey, the pH of each well was measured using a high-quality calibrated Corning pH meter: Well 1 - pH = 6.58
Well 2 - pH = 6.45

SO1 Well #1 - permanent source; 8" casing, 113' deep, screened at 102', SWL ~ 80' (per well log); capacity reportedly 80 gpm

SO2 Well #2 - permanent source; 8" casing, 118' deep, screened at 99', SWL ~ 77' (per well log); capacity reportedly 175 gpm (115 gpm per purveyor's measurement as listed in the Suscept. Asmnt.)

NOTE - the wells can not be designated a "wellfield" because they each pump into a single main which leads to distribution on the well # 1 side and to the reservoir on the well # 2 side, and there is currently no location to install a sampling faucet that will yield water from both wells combined without having a chance of some water feeding back from distribution and/or storage.

Water Rights: NOTE: Water right permits 6470 and 6471, which were initially assigned to Dom Spano for three wells for this system, were canceled in 1966 or 67 for failure to submit "Beginning of Construction" forms to the Dept. of Conservation.
3/25/94 - G1-27448 - 2250 gpm - application pending

TREATMENT: hypochlorination
Purpose: disinfection
Facilities: metered pumps go on when wells are on. Daily chlorine residual reports show a relatively constant level of about 0.5 ppm (measured in the lower portion of the system).

STORAGE: "lower" reservoir - 50,000 gal rectangular concrete tank w/ angled wood roof; elev ~ 200 ft MSL; located on the side of the hill above the lower part of the system (north of the wells); water is pumped through 2 15 hp pumps up to the upper reservoir. Observations: three corners of the tank are leaking (and apparently have been for some time); attempted internal and external repairs by the owner have not been successful. One of the screens on the eastern end of the tank needs to be secured tightly to the wall.

"upper" reservoir - 35,000 gal glass-lined steel tank (formerly a brewery tank); has common inlet/outlet; elevation ~ 400 ft MSL.

DISTRIBUTION: Two main pressure zones and a 3rd smaller pressure zone:
Lower part of system gravity-fed by lower reservoir.
Upper part of system gravity-fed by the upper reservoir, except for 7 lots adjacent to the upper reservoir which are a separate (non-intertied) "mini-pressure zone" served by a 3 hp booster pump and 2 ~75 gal pressure tanks (and there is also a ~1000 gal steel tank but it is basically storage as it is not pressurized by a bladder or an air compressor).

All connections are metered (according to the water system plan).

OPERATIONS & MAINTENANCE
O&M Manual: in the water system plan

Complaints: DOH has received complaints regarding the corrosivity of the water and the resulting blue staining caused by corroding copper plumbing in houses.

Cross Connection Control Program: in the water system plan

Coliform Monitoring Plan: ?

DEFICIENCIES AND NEEDED IMPROVEMENTS:
1) For well 2 wellhead: add a screened vent and seal the hole through which the well pump power wires go,

2) Repair the leaks in the walls at the corners of the lower reservoir. Such leaks can allow bacteria easy entrance into the reservoir, which could lead to bacterial contamination on the water.

3) Clean the "pumphouse" near the upper reservoir (remove cobweb net and accumulated junk, etc.). Unclean and cluttered conditions can create unsafe and unsanitary conditions when working in the room.

4) Apply a fine mesh metal screen to the open end of the free-standing ~1 inch PVC pipe adjacent to the booster pump shed near the lower reservoir.

WASHINGTON STATE DEPARTMENT OF HEALTH

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Gold Beach Water Co. ID# 283508 TYPE Comm COUNTY King

SERVICES ~158 POPULATION ~350 SOURCES: S01 - Well 1 - 108' deep S02 - Well 2 - 108' deep - both wells chlorinated

When to Sample

Quarter / Type of Sample	1996 Q1	1996 Q2	1996 Q3	1996 Q4	1997 Q1	1997 Q2	1997 Q3	1997 Q4	1998 Q1	1998 Q2	1998 Q3	1998 Q4	Where to sample	Most recent sample on file	Notes
Coliform Bacteria	Note = the early Nov '96 coli sample was positive; the late Nov follow-up samples were OK												Distribution system per your coliform monitoring plan		1 routine sample(s) per month
Inorganic Chemical and Physical Parameters (Ichem) (1)								S01 + S02					Each source after treatment	11/7/94 - S01 and S02	1 sample per source every 36 months (2)
Nitrite								included in IOC					Each source	11/7/94 - S01+S02	1 sample by 12/95 (1)
Nitrate				S01 S02				included in IOC				S01 S02	Each source	11/7/94 - S01+S02	1 sample per year
Volatile Organic Chemicals (VOCs)								S01 + S02					Each source after treatment	11/7/94 composite smpl	Requirements based on past monitoring history (3)
Synthetic Organic Chemicals (SOCs)	DOH apparently did not process the susceptibility assessment for both wells. The sources, however, effectively received a waiver. You will be notified in early 1997 regarding SOC waiver renewal.												Each source after treatment	submitted in 4/95	See footnote 3.
Lead and Copper	Sampling in 4/96 and 6/96 has shown that the Action Level for Copper has been exceeded! DOH will send a letter soon regarding follow up actions. You should begin monitoring for water quality parameters now.														DOH is phasing in implementation and will notify you. (Federal rule may require earlier sampling.)
Chlorine Residual													Distribution system	Oct 96	Submit monthly reports to DOH.
Asbestos													Distribution system		If A/C pipe present, one sample by 12/31/95.
Radionuclides													Each source	8/81 - OK	1 sample/48 months(4)
Trihalomethanes													Distribution system	N/A	

NOTES:

(1) Ask for a complete Phase 2/5 Ichem analysis which includes antimony, beryllium, nickel, thallium, cyanide and nitrite.

(2) For groundwater. Surface water systems to sample each source every 12 months.

(3) It may be possible to obtain a waiver from future VOC & SOC monitoring requirements by completing a Susceptibility Assessment and going through DOH's waiver evaluation process.

(4) DOH is not enforcing this federal monitoring requirement.

Completed by Steve Hulsman Date 12/13/96

Please note: The above monitoring requirements are a minimum for your system. Additional monitoring may be required if compounds are detected or sample results indicate a potential prob . Contact your regional office for further information.

Rev. 10/95 c:\wpfiles\for mon.cht

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BASE WATER QUALITY MONITORING REQUIREMENTS FOR SMALL SYSTEMS

(Applies to all group A systems unless otherwise noted)

Coliform bacteria

Population	samples/month
1-1000	1
1001-2500	2
2500-3300	3

Inorganic chemical and physical parameters - "Complete Phase 2/5 Ichem" - (Comm & NTNC systems only)
One sample per source every 36 months for ground water; every 12 months for surface water.

Nitrite
One sample per source by 12/31/95 (included in phase 2/5 ichem)

Nitrate
One sample per year for each groundwater source. For each surface water source, 4 quarterly samples and annually thereafter.

VOCs (Comm/NTNC systems only)
One sample per source every 36 months (for sources without previous VOC detections).
Current state implementations schedule:

Completed initial monitoring? (at least one sample before 1/1/93)	Collected 1 sample between 10/01/92 & 9/30/93-Chafee-Lautenberg Amendment	
	YES	NO
YES	No further VOC monitoring required before 1/1/96	1 sample by 12/31/95
NO	No further VOC monitoring required before 1/1/96	Complete 4 quarterly samples*

*May be able to have some monitoring waived by going through DOH's waiver evaluation process.

SOCs (Comm/NTNC systems only)
May be able to have some or all SOC monitoring waived by going through DOH's waiver evaluation process. Monitor as determined by waiver evaluation process. If no waiver, 4 quarterly samples (for each source).

Lead and Copper (Comm/NTNC systems only)
DOH is phasing in implementation. (Federal rule requires all systems serving 3300 or less people to have begun monitoring July 1993)

Population Served	# Samples for Initial Two Consecutive Six Month Periods	# Samples for Reduced (annual) Monitoring
25-100	5	5
101-500	10	5
501-3300*	20	10

*Plus all surface water and schools (except high schools)

Chlorine Residual
Daily for systems which chlorinate. Daily for systems which purchase treated surface water (may be reduced for regional systems)

Asbestos (Comm/NTNC system only)
One sample for systems with A/C pipe in the distribution system or with surface water source.

Radionuclides (Comm systems only)
1984 Policy states that DOH will not enforce federal requirement for repeat monitoring, except in certain eastern Washington cases.

Trihalomethanes (Comm systems only)
Surface water systems or system purchasing surface water sample quarterly for 1 year and then every 36 months thereafter. For systems with population served > 10,000, see WAC 246-290-300(6).

Rec'd 10/24/97

STATE OF WASHINGTON
DEPARTMENT OF HEALTH

WATER BACTERIOLOGICAL ANALYSIS

SAMPLE COLLECTION: READ INSTRUCTIONS ON BACK OF GOLDENROD COPY
If instructions are not followed, sample will be rejected.

A 23

DATE COLLECTED (MONTH / DAY / YEAR)	TIME COLLECTED	COUNTY NAME
10/20/97	10:15 ☒ AM ☐ PM	King

TYPE OF SYSTEM: ☒ PUBLIC ☐ INDIVIDUAL (serves only 1 residence)

IF PUBLIC SYSTEM, COMPLETE: I.D. No. 283508 CIRCLE GROUP (A) B

NAME OF SYSTEM: Gold Beach Water Co.-Vashon, WA

SPECIFIC LOCATION WHERE SAMPLE COLLECTED: Rajsic's Hse-Outside Tap-Front of Hse

TELEPHONE NO. DAY 206 463-995. EVENING 206 463-24

SAMPLE COLLECTED BY: (Name) M. Wells

SYSTEM OWNER/MGR.: (Name) Dem Spano

SOURCE TYPE ☐ GROUND WATER UNDER SURFACE INFLUENCE

☐ SURFACE ☒ WELL or WELL FIELD ☐ SPRING ☐ PURCHASED or INTERTIE ☐ COMBINATION or OTHER

SEND REPORT TO: (Print Full Name, Address and Zip Code)
Gold Beach Water Co., Inc.
P.O. Box # 2138
Vashon, WA. 98070 WASHINGTON

TYPE OF SAMPLE (check only one in this column)

☒ ROUTINE DRINKING WATER check treatment → ☒ Chlorinated (Residual: ___ Total ___ Free)
☐ Filtered
☐ Untreated or Other ___

☐ REPEAT SAMPLE Previous coliform presence Lab # ___ Date ___ / ___ / ___

☐ RAW SOURCE WATER Source # S
☐ NEW CONSTRUCTION or REPAIRS
☐ OTHER (Specify) ___

☐ Total Coliform
☐ Fecal Coliform

REMARKS:

(LAB USE ONLY) DRINKING WATER RESULTS

☐ UNSATISFACTORY, Coliforms present
REPEAT SAMPLES REQUIRED: ☐ E. Coli present ☐ E. Coli absent ☐ Fecal present ☐ Fecal absent

☒ SATISFACTORY, Coliforms absent

OTHER LABORATORY RESULTS

TOTAL COLIFORM 0 /100 ml E. COLI 0 /100ml
FECAL COLIFORM ___ /100 ml PLATE COUNT ___ /ml

ANOTHER SAMPLE REQUIRED

SAMPLE NOT TESTED BECAUSE:
☐ Sample too old
☐ Wrong container
☐ Incomplete form
☐ ___

TEST UNSUITABLE BECAUSE:
☐ Confluent growth
☐ TNTC
☐ Turbid culture
☐ Excess debris

SEE REVERSE SIDE OF GREEN COPY FOR EXPLANATION OF RESULTS

LAB NO. (7 DIGITS)	DATE, TIME RECEIVED	RECEIVED BY
1500590	10/20/97 11:00 A	DH

DATE REPORTED	LABORATORY:
10-21-97	SEATTLE-KING COUNTY H. D. LAB 1303 PUBLIC SAFETY BLDG. SEATTLE, WA 98104 296-4740

REMARKS

DOH 305-002 (REV. 4/92) WATER SUPPLIER COPY

COLIFORM MONITORING PLAN

Date:	Where:	Lot/Div:	When:	Taken By:	Results:
1/11/94	Shigley Kit.	14/4	11:00AM	Dom	Satisfactory
2/2/94	Clubhouse		10:00AM	Dom	OK
3/3/94	Rauen O.Tap	82/2	9:25AM	Dom	OK
4/14/94	Raisio Kit.	35/4	9:45AM	Dom	OK
5/9/94	Shigley Kit.	14/4	11:00AM	Dom	Coliforms
5/12/94	Shigley Kit.	14/4	11:00AM	Dom	Repeat/OK
6/8/94	Lindseth Bath	11:30AM	11:30AM	Dom	OK
7/6/94	Upper Tank		10:45AM	Dom	OK
8/3/94	Starr Hse.	97/2	1:50PM	Dom	OK
9/19/94	Pump Hse.		9:15AM	Dom	OK
10/25/94	Pump Hse.		10:15AM	Dom	OK
11/7/94	Pump Hse.		11:10AM	Dom	OK
12/5/94	Pump Hse.		10:00AM	Dom	OK
1/3/95	Pump Hse.		9:00AM	Dom	Satisfactory
2/22/95	Shigley Kit.	14/4	11:45AM	Dom	OK
3/5/95	Raisio Hse.	35/4	11:30AM	Dom	OK
4/24/95	Church Hse.	?	11:30AM	Dom	OK
5/12/95	Rauen Hse.	81/2	10:00AM	Dom	OK
6/9/95	Upper Tank		11:15AM	Dom	OK
7/20/95	Rauen Hse.	81/2	10:00AM	Marilyn	OK
8/16/95	Rauen Hse.	81/2	9:30AM	MH	OK
9/14/95	Rauen Hse.	81/2	10:15AM	MH	OK
10/12/95	Rauen Hse.	81/2	9:30AM	MH	OK
11/16/95	Shigley Kit.	14/4	9:45AM	MH	OK
12/7/95	Shigley Kit.	14/4	10:10AM	MH	Coliforms
12/19/95	Shigley Kit.	14/4	10:10AM	MH	Repeat/OK
12/19/95	Shigley Gar.	14/4	10:15AM	MH	Repeat/OK
12/19/95	Raisio Hse.	35/4	10:20AM	MH	Repeat/OK
12/19/95	Hammond Hse.	31/1	10:30AM	MH	Repeat/OK
1/22/96	Rauen Hse.	81/2	9:15AM	MH	OK
2/15/96	Rauen Hse.	81/2	9:45AM	MH	OK
3/14/96	Rauen Hse.	81/2	10:00AM	MH	OK
4/2/96	Rauen Hse.	81/2	7:30AM	MH	OK
5/16/96	Rauen Hse.	81/2	11:00AM	MH	OK
6/13/96	Rauen Hse.	81/2	8:45AM	MH	OK
7/16/96	Shigley Gar.	14/4	10:15AM	MH	OK
8/8/96	Rauen Hse.	81/2	8:00AM	MH	OK
9/9/96	Rauen Hse.	81/2	9:30AM	MH	OK
10/16/96	Rauen Hse.	81/2	10:00AM	MH	OK
11/18/96	Shigley Hse.	14/4	9:00AM	MH	Coliforms
11/27/96	Shigley Kit.	14/4	8:45AM	MH	Repeat/OK
11/27/96	Shigley Hse.	14/4	8:55AM	MH	Repeat/OK
11/27/96	Raisio Hse.	35/4	9:10AM	MH	Repeat/OK
11/27/96	Johnson Hse.		9:15AM	MH	Repeat/OK

COLIFORM MONITORING PLAN

Date:	Where:	Lot/Div:	When:	Taken By:	Results:
12/11/96	Raisio Hse.	35/4	10:00AM	MH	Satisfactory
12/11/96	Purdom Hse.	25/4	10:15AM	MH	OK
12/11/96	Snell Hse.	20/1	10:30AM	MH	OK
12/11/96	Riddell Hse.	28/1	10:45AM	MH	OK
12/11/96	Tello Hse.	37/2	11:00AM	MH	OK
1/6/97	Rauen Hse.	81/2	10:10AM	MH	OK
2/21/97	Rauen Hse.	81/2	9:15AM	MH	OK
3/6/97	Rauen Hse.	81/2	10:00AM	MH	OK
4/15/97	Rauen Hse.	81/2	10:00AM	MH	OK
5/16/97	Rauen Hse.	81/2	9:30AM	MH	OK
6/9/97	Raisio Hse.	35/4	10:30AM	MH	OK
7/16/97	B.Metz Hse.	78/2	9:45AM	MH	OK
8/11/97	Herring O.Tap	38/4	10:35AM	MH	Coliforms
8/18/97	Herring Bath	38/4	9:20AM	BS	Repeat/OK
8/18/97	Mears Up-Bath	25/4	9:35AM	BS	Repeat/OK
8/18/97	Raisio Bath	35/4	9:45AM	BS	Repeat/OK
8/18/97	Uppper S.Tank		10:00AM	BS	Repeat/OK
9/18/97	Rauen Hse.	81/2	10:30AM	MH	OK
10/20/97	Raisio Hse.	35/4	10:15AM	MH	OK
11/12/97	Upper S.Tank		10:45AM	MH	OK
12/17/97	Rauen Hse.	81/2	11:20AM	MH	OK
1/22/98	Rauen/Backyd.	81/2	10:00AM	MH	OK
2/11/98	Raisio F.Fauc.	35/4	9:30AM	MH	OK
3/24/98	Rauen/Backyd.	81/2	9:30AM	MH	OK
4/1/98	Upper S.Tank		9:45AM	MH	OK
5/21/98	Rauen/Backyd.	81/2	10:15AM	MH	OK
6/17/98	Adderson/F.F.	41/4	10:00AM	MH	OK
7/20/98	Potter/Util.R.	14/1	10:20AM	MH	OK
8/ /98					

System Map
Coliform Monitoring Plan

GRAPHIC SCALE

300 0 150 300 600 900

(IN FEET)
1 inch = 300 ft.

Division # 4

Division # 2

Division # 1

Division #3

POSSIBLE FUTURE SERVICE AREA

8 – 5 ACRE LOTS

POSSIBLE FUTURE SERVICE AREA

POSSIBLE FUTURE SERVICE AREA

EXISTING SERVICE AREA

POSSIBLE FUTURE SERVICE AREA

EX. WELL

POSSIBLE FUTURE TANK LOCATION

30,500 GALLON RESERVOIR

PRESSURE TANK & BUILDING

27,900 GALLON RESERVOIR

COMMUNITY TRACT B

PUMP HOUSE & WELL #2

PUMP HOUSE & WELL #1

TRACT A

CLUB HOUSE

SW 256TH STREET

SW 257th ST

SW 258th ST

SW 259th ST

SW 258th STREET

SW 259th STREET

SW 261st STREET

SW 259th ST

SW 261st ST

70th Ct

72nd AVE SW

73rd AVE SW

75th AVE SW

76TH AVE SW

78th AVE SW

G. EDWARDS ROAD

OLD CEMETARY

PRESSURE LINE

LEGEND

- PROPERTY LINE
- R/W CENTERLINE
- GATE VALVE
- FIRE HYDRANT
- BLOW-OFF
- METER & BOX
- WATER LINE
- VASHON GROUNDWATER SERVICE BOUNDARY–1986
- FUTURE SERVICE BOUNDARY
- EXISTING CONTOURS
- EASEMENT
- BOX

DFD DESIGN
DFD DESIGN
2731 WETMORE #240
EVERETT, WA 98201
(425) 252-2455
harold@dfd-design.com

GOLD BEACH WATER COMPANY

DATE: 11-24-98	DRAWN: DFD DESIGN
SCALE: 1" = 300'	PROJECT #: 97055

SERVICE AREA MAP

15th July 1998

Robert E. James P. E.
Washington State Department of Health
1511 Third Ave., Suite 719
Seattle, WA. 98101-1612

Re: Corrosion Control Recommendation Report for Gold Beach Water Company
ID # 283508

Dear Reviewer;

Attached is the Corrosion Control Report prepared by my Subconsultant, Mr. James C. Stunn, for your review. Hopefully we have addressed all the important items necessary for your analysis of the Gold Beach Water System.

As you will note in the Report, we have chosen to add Sodium Hydroxide to both of our well's water to increase the PH. As the preliminary sketch indicates, we will be adding this at a point where flows from both wells will be connecting. This will require some piping and plumbing along with construction of a new building. The building will also be used as a small laboratory for our testing and storage of chemicals.

We realize that there is a health consideration in handling the Sodium Hydroxide. To minimize this, we have decided to use a 25% liquid solution to alleviate the problems that can occur with mixing.

The proposal is to construct the facility and begin adding chemical in a reduced amount and monitor its effectiveness in raising the PH. We plan to raise the PH incrementally until it reaches approximately 7.5. We anticipate that this may take at least six months to determine the proper amounts of chemical to be added. We may also find that our original chemical may not be the most effective and we may choose to review that after some time of operation.

I have a concern that the chemical added may have an effect on our chlorine dosage and we plan to attend to the chlorine residue as we proceed.

Please contact us if you have any questions.

Respectfully Submitted
R. Michael Spano P. E.
President- Gold Beach Water Company

TABLE OF CONTENTS FOR GOLD BEACH WATER SYSTEM CORROSION CONTROL DESIGN REPORT

James C. Shunn
WDM II, WTPO II
Thunderbird Terrace Water
P.O.Bx 434 Carnation, WA 98014
Phone 360-794-0715

Gold Beach Water Co., Inc.
P.O. Bx 2138
Vashon, WA 98070

PWS ID #283508

Subject: **Corrosion Control Strategies for pH adjustment / reduction of Copper Levels (<1.3 mg/L)**

Attached, please find my draft recommendations; for your water systems **Corrosion Control Strategies**; for increasing the well (s) water pH level, and to promote a decrease in the copper level within the distribution system.
Most of my corrosion control decisions were made from information extracted from the AWWA reference texts, and other texts, related to pH adjustments and corrosion control strategies.
The basic corrosion control strategy selection, was developed from the EPA Guidance manual.

The EPA guidance procedures, indicate that the Gold Beach system can use the chemical products of: Soda Ash, Potassium Carbonate, and Sodium Hydroxide. The Sodium Hydroxide product is either in dry form, or, liquid. The liquid is available in drums, and strengths of 25% and 50%. Feeding a liquid product reduces an operators exposure to chemical dusts, and related design considerations, for the treatment facility.
Attached **Bench Tests** results, which I performed on samples collected from the GB water system, (untreated water) indicate, that the pH levels can be elevated to required levels, and at a much lower chemical dosage, by selecting the Sodium Hydroxide (liquid) product.
Using a chemical that will elevate the pH, at a lower dosage, means that a lower capacity chemical feed pump can be selected, and at a cost savings - it will also allow for selecting a chemical feed solution vat that will be smaller and extend the time periods between refillings.
Another advantage of a liquid product, is that mechanical mixers can be eliminated - another cost savings. A chemical cost comparison is attached.

Treatment design Considerations

The well source water will be treated as a combined flow, and as such, it will be necessary to make plumbing modifications to the existing distribution lines to facilitate the treatment.
Since the #1 well delivery rate is the lowest of the two, it would seem practical to plumb that flow to connect with the #2 well. The #1 well would then serve as a "flooded" delivery line, and carry the injected chemicals, to blend with the #2 well flow.
Since chlorine is most effective, at a lower pH level, the chlorine would be injected first, and near the discharge of the #1 well - the Soduim Hydroxide solution (or other selected chemical) would

James C. Shunn
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Then be injected "down stream" – after the chlorine injection point.
The only other corrosion chemical, that would precede chlorine, would be a *phosphate* product; which is mostly added to *sequest* Iron & Manganese.

The treatment facility design should not be *conservative*, but should incorporate flexibility for future updating and expansion; to accommodate the installation of additional chemical feed equipment.
The treatment facility should also be sized for a adequate floor area, for a small laboratory, with a sink, and sample lines plumbed to the sink; so that samples of the raw source water; as well as, samples of treated water entering the distribution system, may be easily collected and analyzed within the lab..
Should there be a future requirement for performing *pilot testing*, for corrosion study, then the lab will have the plumbing installed to accommodate any attachments necessary.
If the water lines are to be exposed, for making the well tie modifications, it would seem prudent to install service taps for future chemical injection, and the sample lines.

Chemical Feed Pumps

It may be estimated, that the combined flow, of well 1 & 2, may be approximately 230 GPM, X 60 minutes= 13800 GPH. To convert this value into a dosage factor: $\frac{13800}{1{,}000{,}000} = 0.0138 \times 8.34 = 0.115$ Mil lbs..

If we have chosen to use the liquid Sodium Hydroxide (Caustic Soda) and the 25% strength – here are the computations: $\frac{\text{Specific Gravity } 1.53 \times 8.34 \times 25\% = 3.19 \text{ pounds per gallon (of 100\% product)}}{100}$

From the corrosion selection computations, the maximum pH is about 7.9. From the Bench Test, on the Sodium Hydroxide dosages, it will require a dosage of 18 ppm; to elevate the source water to a 7.9 pH level. Using the *dosage factor* of 0.115 X 18 ppm = 2.07 pounds per hour of solution.
$\frac{3.19 \text{ lbs/ gal.}}{2.07 \text{ lbs}} = 1.54$ gals per hour feed pump capacity – so a feed pump rated at 2.0 GPH is needed.
The same sizing calculations can be applied for determining the rating requirements, for pumping the powdered chemicals – except one must determine the maximum amount of dry chemical per gallon of feed solution.

Sodium Hydroxide liquid, cost about $0.19 per pound - $0.19 per lb X 2.07 lbs per hour = $0.39
Or, $0.029 per 1000 gallons treated - $23.00 per month.
Soda Ash (dry product) would cost about $57 per month.
Potassium Carbonate (dry product) would cost about $210 per month.

A good rule to follow in implementing to corrosion program, is to ***Apply the pH adjuster, and Monitor*** The effectiveness.

GOLD BEACH WATER SYSTEM WELL WATER ANALYSIS

Date of collection: 4 January 1998 **Time:** 0900 **Collected by:** Marilyn Hills
Type of sample: Grab samples, of untreated water; from Well Sites # 1 & # 2
Purpose: To determine pH, Alkalinity, and Calcium Hardness, for Corrosion Control
Date & Time Analysed: 4 January 1998 @ 6:30 p.m.
Analyst: James Shunn, WDM/WTPO II

Note: Samples are identified by the container - W1a = Well # 1, and container "a", "b", etc..

Sample I.D.	Temperature C.	pH	Alkalinity (mg/l)	Calcium (mg/l)
W1a	4.2 C.	6.67	125.0 mg/l	139.0 mg/l
W2a	4.2 C.	6.64	93.7 mg/l	111.0 mg/l

Second analysis on 31 January 1998 - Days in storage=27

W1a	7.3 C.	6.66	125.6 mg/l	118.0 mg/l
W2a	7.3 C.	6.72	92.3 mg/l	110.8 mg/l

The following results are from testes performed on each individual container.
The pH meter used was calibrated with three (3) buffer solutions: 4.01, 7.01, 10.01

W1a	7.3 C.	6.64	125.3 mg/l	118.0 mg/l
W1b	7.3 C.	6.68	126.0 mg/l	118.0 mg/l
W2a	7.3 C.	6.73	91.5 mg/l	110.8 mg/l
W2b	7.3 C.	6.59	92.0 mg/l	110.8 mg/l
W2c	7.3 C.	6.83	93.5 mg/l	110.8 mg/l

The following results are from blending the samples from well #1 & well #2
Since well #1 produces about 1/3 of the daily flow - one liter was blended with two liters from well #2.

W1a + W2a + W2b	7.5 C.	6.76	104.0 mg/l	118.2 mg/l

The following are Jar Test results with chemical dosages added. Samples were blended as stated above. Tests were performed at room temperature - dosage could be highier at lower temps.

Chemical Product	Dosage (mg/l)	pH	Alkalinity	Calcium
Soda Ash	25 ppm	6.99	129.8	118.2
Soda Ash	40 ppm	7.72	142.8	110.2
Caustic Soda	25 ppm	8.01	134.8	110.8
Potassium Carbonate	40 ppm	7.23	131.6	117.4

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Laucks 1908

Testing Laboratories, Inc.

940 South Harney St., Seattle, WA 98108 (206) 767-5060 FAX (206) 767-5063

Chemistry, Microbiology, and Technical Services

CLIENT : Gold Beach Water Co.

Certificate of Analysis

Work Order # 98-02-334 Date Received: 2/11/98
Date of Report: 2/25/98

TESTS PERFORMED AND RESULTS:

Analyte	Units	01
Alkalinity, Bicarb, CaCO3	mg/L	100.
Alkalinity, Carb as CaCO3	mg/L	2. U
Alkalinity, Total as CaCO3	mg/L	100.
Calcium (Method 6010)	mg/L	21.
Carbon Dioxide (Nomograph)	mg/L	50.
Chloride (Method 300.0)	mg/L	9.
Fluoride (Method 300.0)	mg/L	0.2 U
Hardness (Calculated)	mg/L	130
Magnesium (Method 6010)	mg/L	18.
Silica as SiO2	mg/L	33.
Specific Conductance	umhos/cm	310.
Sulfate as SO4 (300.0)	mg/L	20.
Total Dissolved Solids	mg/L	140.
Total Phosphate as P	mg/L	0.09
pH	gl elec @25C	6.6

(over)

Figure 1
pH for Calcium Precipitation

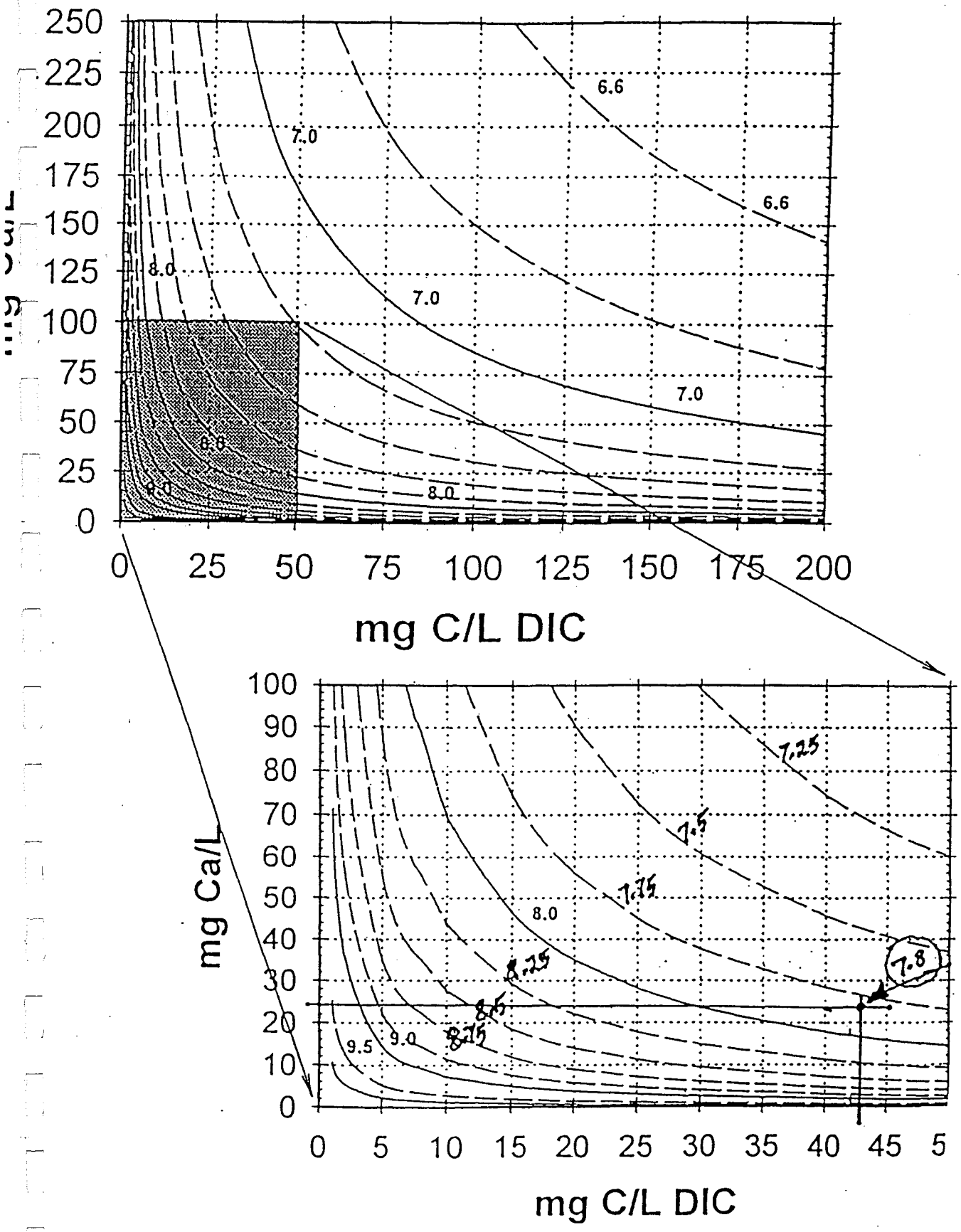
250
225
200
175
150
125
100
75
50
25
0
6.6
7.0
8.0
0
25
50
75
100
125
150
175
200
mg C/L DIC
mg Ca/L
100
90
80
70
60
50
40
30
20
10
0
7.25
7.5
7.75
8.0
8.25
8.5
8.75
9.0
9.5
7.8
0
5
10
15
20
25
30
35
40
45
5
mg C/L DIC

Table 1. DIC Determination

Inc[illegible]ic C[illegible]pna[illegible]DIC [illegible]/L) Fu[illegible]n c[illegible] an[illegible]kali[illegible] (as [illegible]O3)

For a Purely Carbonate+H2O Closed System at 10 C (50 F); Ionic Strength = 0.005 (TDS @ 200 or Cond. @ 312)

Alpha H2CO3*	0.98	0.97	0.96	0.94	0.91	0.86	0.79	0.71	0.60	0.49	0.38	0.28	0.20
Alpha HCO3-	0.02	0.03	0.04	0.06	0.09	0.14	0.21	0.29	0.40	0.51	0.62	0.72	0.80
Alpha CO3=	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

pH	4.6	4.8	5	5.2	5.4	5.6	5.8	6	6.2	6.4 (4.5)	6.6	6.8	7
Alkalinity													
0	18.67	7.50	3.03	1.23	0.51	0.21	0.09	0.04	0.02	0.01	0.00	0.00	0.00
5	92.93	54.80	33.32	20.79	13.29	8.72	5.90	4.15	3.05	2.37	1.93	1.66	1.49
10	167.19	102.10	63.60	40.34	26.07	17.23	11.71	8.26	6.09	4.72	3.86	3.32	2.98
15	241.46	149.40	93.89	59.89	38.85	25.73	17.52	12.37	9.12	7.08	5.80	4.98	4.47
20	315.72	196.70	124.18	79.44	51.63	34.24	23.33	16.47	12.16	9.44	7.73	6.64	5.96
25	389.98	244.00	154.46	99.00	64.41	42.74	29.14	20.58	15.19	11.80	9.66	8.30	7.45
30	464.24	291.30	184.75	118.55	77.19	51.25	34.95	24.69	18.23	14.15	11.59	9.96	8.94
35	538.50	338.59	215.04	138.10	89.96	59.76	40.76	28.80	21.26	16.51	13.52	11.63	10.43
40	612.76	385.89	245.32	157.65	102.74	68.26	46.57	32.91	24.30	18.87	15.45	13.29	11.92
45	687.03	433.19	275.61	177.20	115.52	76.77	52.38	37.02	27.33	21.23	17.38	14.95	13.41
50	761.29	480.49	305.89	196.76	128.30	85.27	58.19	41.12	30.37	23.59	19.31	16.61	14.90
55	835.55	527.79	336.18	216.31	141.08	93.78	64.00	45.23	33.40	25.94	21.24	18.27	16.39
60	909.81	575.09	366.47	235.86	153.86	102.29	69.81	49.34	36.44	28.30	23.17	19.93	17.88
65	984.07	622.39	396.75	255.41	166.64	110.79	75.62	53.45	39.47	30.66	25.10	21.59	19.37
70	1058.34	669.69	427.04	274.96	179.42	119.30	81.43	57.56	42.51	33.02	27.03	23.25	20.86
75	1132.60	716.99	457.33	294.52	192.20	127.80	87.24	61.67	45.54	35.37	28.96	24.91	22.35
80	1206.86	764.28	487.61	314.07	204.98	136.31	93.05	65.77	48.58	37.73	30.89	26.57	23.84
85	1281.12	811.58	517.90	333.62	217.76	144.82	98.86	69.88	51.61	40.09	32.82	28.23	25.33
90	1355.38	858.88	548.18	353.17	230.54	153.32	104.67	73.99	54.65	42.45	34.75	29.89	26.82
95	1429.65	906.18	578.47	372.73	243.32	161.83	110.48	78.10	57.68	44.80	36.68	31.55	28.31
100	1503.91	953.48	608.76	392.28	256.10	170.33	116.28	82.21	60.72	47.16 (4.3)	38.61	33.21	29.80
110	1652.43	1048.08	669.33	431.38	281.65	187.34	127.90	90.43	66.79	51.88	42.47	36.53	32.78
120	1800.95	1142.67	729.90	470.49	307.21	204.36	139.52	98.64	72.86	56.59	46.33	39.85	35.76
130	1949.48	1237.27	790.48	509.59	332.77	221.37	151.14	106.86	78.93	61.31	50.19	43.17	38.74
140	2098.00	1331.87	851.05	548.69	358.33	238.38	162.76	115.08	85.00	66.02	54.05	46.49	41.72
150	2246.53	1426.47	911.62	587.80	383.89	255.39	174.38	123.29	91.07	70.74	57.91	49.81	44.70
160	2395.05	1521.07	972.19	626.90	409.45	272.40	186.00	131.51	97.14	75.45	61.77	53.14	47.68
170	2543.57	1615.66	1032.77	666.01	435.01	289.42	197.62	139.73	103.21	80.17	65.63	56.46	50.66
180	2692.10	1710.26	1093.34	705.11	460.56	306.43	209.24	147.94	109.28	84.88	69.49	59.78	53.64
190	2840.62	1804.86	1153.91	744.22	486.12	323.44	220.86	156.16	115.35	89.60	73.35	63.10	56.62
200	2989.14	1899.46	1214.48	783.32	511.68	340.45	232.48	164.38	121.42	94.31	77.21	66.42	59.60

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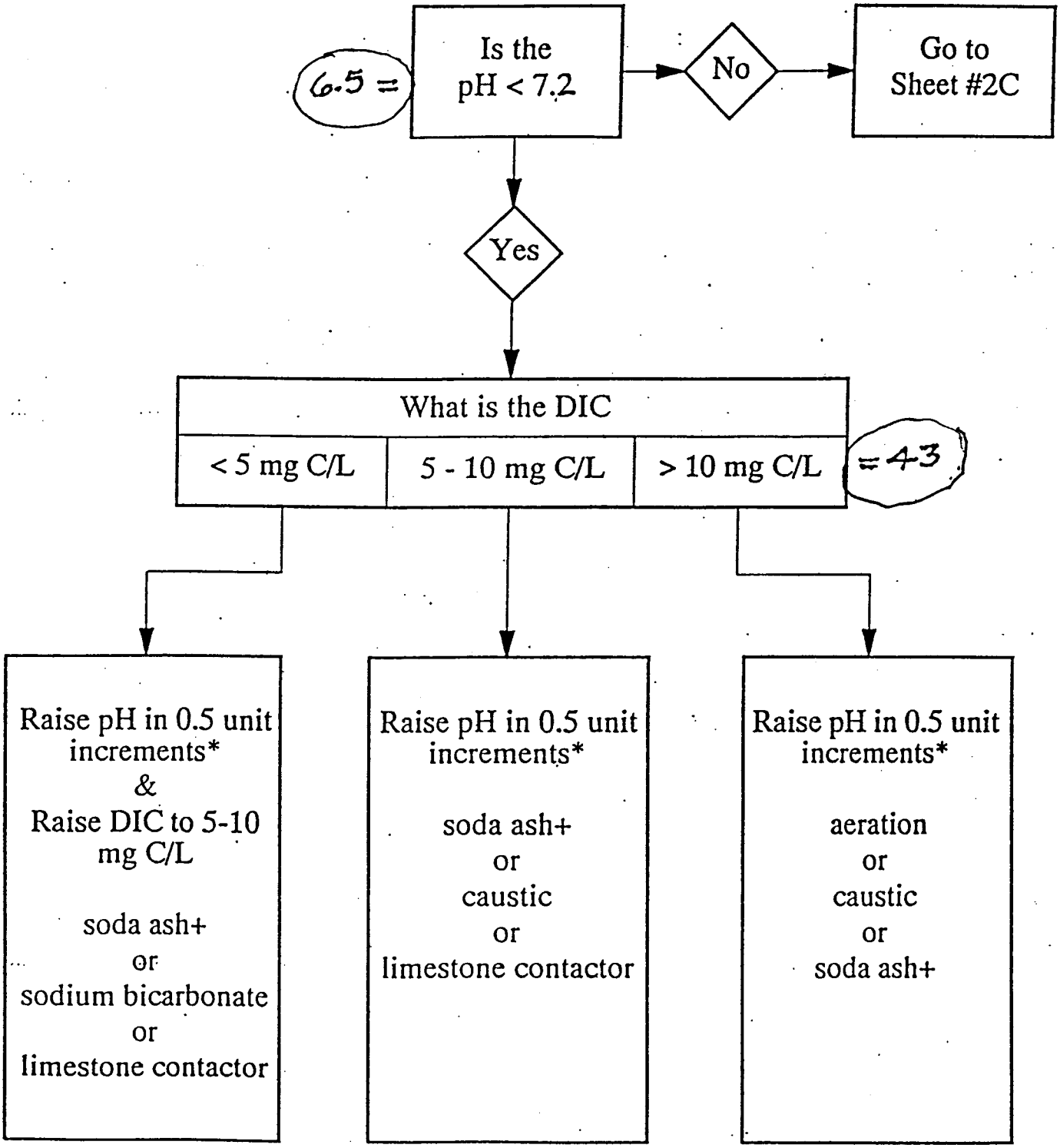
EXCEEDED COPPER ACTION LEVEL
Sheet 1C



See Section 4 describing pH adjustment

Potassium Carbonate (Potash) may be used in lieu of Soda Ash

Section 2 - Water Treatment Checklist

After identifying possible appropriate treatment strategies using the flow charts in Section 1, the following Water Treatment Checklist should be consulted. The criteria listed under a specific treatment method must be met in order for that treatment to be selected.

ORTHOPHOSPHATE

1. pH in the range of 7.0-7.8
2. DIC $\geq$ 5 mg C/L

CAUSTIC SODA

1. DIC $\geq$ 5 mg C/L
   DIC=43

SODIUM BICARBONATE (baking soda)

1. DIC < 5 mg C/L

SODIUM CARBONATE (soda ash)

1. 3 mg C/L $\leq$ DIC < 30 mg C/L

POLYPHOSPHATE (blended phosphate)

1. Iron or manganese over secondary limits* or creating water quality problems (red or black water)

   Or, calcium precipitation is a problem

2. pH 7.0-7.8
3. DIC $\geq$ 5 mg C/L

* Federal secondary contaminant levels for iron and manganese are as follows:
  iron = 0.30 mg/L
  manganese = 0.05 mg/L

Section 3 - Selection Considerations.

For some water systems more than one treatment option may be chemically viable. The purpose of this section is to provide general information regarding the operation, and secondary impacts associated with each treatment option which may further influence which final treatment option should be chosen for your water system.

pH Adjustment Systems Caustic (sodium or potassium hydroxide), soda ash, limestone contactors (calcite filters) and aeration are the principal methods for increasing the pH.

Caustic (Hydroxide) - Caustic, a liquid chemical, is very hazardous if not handled carefully. It can cause severe burns and damage the eyes. Caustic feed systems at a minimum should include an eye washing system, full shower, eye goggles, protective gloves, boots, aprons, easy-to-handle barrels and chemical containment areas. For very small systems such as schools, trailer parks etc. another option such as soda ash should be used if possible.

Soda Ash - Soda ash, or sodium carbonate, is a dry compound which is relatively safe to handle compared to caustic. Soda ash will not cause skin irritation. When soda ash is added to a water it also increases the DIC slightly. Because soda ash is safe to handle, it is strongly suggested as the pH adjustment chemical for schools, condominiums, or any facility where technical resources are limited. It dissolves more easily than lime. Potassium carbonate, (potash) can be used in lieu of soda ash, since it dissolves more readily than soda ash.

Aeration Systems - Aeration systems can increase the pH without adding chemicals to the water. The exception is that some aeration systems may require intermittent or continuous chlorine disinfection to control bacterial growth. There are a wide variety of pH adjustment systems including diffused bubble systems, packed or tray tower, and venturi systems. Any aeration system selected for pH adjustment should be capable of removing at least 80-90% of the carbon dioxide. One of the disadvantages associated with aeration is that repumping of the water is required.

Limestone Contactors - A limestone contactor is usually an enclosed filter containing crushed limestone. As the water passes through the limestone the limestone dissolves, raising the pH, calcium and alkalinity of the water. Since the system does not require any pumps it is very simple and requires very little maintenance. Occasionally the limestone must be replaced. The limestone is not a hazardous material. When selecting a limestone contactor from a supplier it is important to ensure that it is adequately sized to produce sufficiently high pHs.

Secondary Water Quality Impacts - When the pH of a water supply is increased, several unwanted side effects may occur. Water systems with a low pH (<7) and elevated levels of iron and manganese may notice a significant increase in black and red water complaints when the pH is increased. Water systems with this condition should consider using either a silicate or blended phosphate.

The effectiveness of chlorine is sharply affected by pH. An increase in pH reduces the ability of chlorine to kill microorganisms. Water systems using surface water are subject to the Surface Water Treatment Rule (SWTR) and must meet certain disinfection criteria. This includes maintaining adequate contact time with chlorine at a specific pH and temperature. A corrosion control strategey that causes an increase in pH may affect your ability to maintain adequate chlorine contact. Increases in finished water pH for surface water supplies should be performed after the chlorine contact chamber.

DIC Adjustment Systems - The adjustment systems for DIC include aeration (described above) and sodium bicarbonate (baking soda).

Sodium Bicarbonate - Sodium bicarbonate is a dry chemical which substantially increases the DIC, while providing a very minimal increase in pH. This chemical is typically applied to waters with very minimal DIC (< 5 mg C/L). It is a dry chemical which must be dissolved in a tank of water. It is very safe to handle and will not increase the pH above 8.3.

Phosphate Adjustment - The addition of orthophosphate to a water supply can be achieved by adding any one of several different formulations. These include zinc orthophosphate, potassium or sodium orthophosphate, and phosphoric acid. The goal is to ensure that an adequate dosage of orthophosphate is maintained throughout the distribution system. Phosphoric acid is not recommended for small systems because it is difficult to handle.

Secondary Water Quality Impacts - The addition of orthophosphate may cause the temporary release of particles (turbidity) from the inside surfaces of pipes. Over time, the conditions will stabilize and turbidity and color levels should return to existing levels.

Orthophosphate compounds that contain zinc may promote problems with receiving wastewater treatment plants. Many wastewater systems have limitations on how much zinc can be discharged to a receiving water body or remain in the sludge. Also because orthophosphate is a nutrient, some wastewater treatment plants will be limited in the amount of orthophosphate they can discharge to the receiving stream . It is important to check with the wastewater treatment plant to ensure that zinc or orthophosphate are not a problem. If zinc is a problem, a non-zinc based orthophosphate should be used.

Section 4 - Optimizing Treatment

Once the best treatment strategy has been identified using the Flow Charts in Section 1, Water Treatment Checklist in Section 2 and the Selection Considerations in Section 3, the appropriate operating pH must be determined. In addition, if orthophosphate is added, an appropriate distribution system orthophosphate concentration must be maintained.

pH Adjustments - When using treatment chemicals including caustic (sodium or potassium hydroxide) or soda ash (sodium or potassium carbonate), adjustments of pH should be made in 0.5 unit increments. The pH should never be increased beyond 9.5. At a minimum, for systems with a pH of less than 7.0, the pH should be increased to at least 7.0. **For other pH increasing systems, either aeration or limestone contactors, the final pH will be established by the specifics of the water chemistry and design of the contactor or aerator.**

Increasing the pH of a water that contains calcium may promote the precipitation of calcium carbonate. In some circumstances, precipitation of calcium carbonate can clog hot water heaters and produce cloudy water. To limit the problems associated with calcium precipitation, the pH at which calcium is likely to precipitate can be estimated by use of Figure 1. The pH of calcium precipitation is estimated by finding the point on the figure that corresponds to the DIC and calcium level. The calcium must be expressed as calcium (Ca) and not calcium carbonate (CaCO3). Note that maintaining the pH below the level estimated on the chart should minimize, not eliminate, the potential for precipitating calcium carbonate. In many cases, it will be possible to exceed the estimated pH levels without having a calcium precipitation problem because the precipitation of calcium is affected by many factors, such as temperature and other dissolved metals.

Systems with unlined cast-iron pipe or large amounts of galvanized pipe need to consider the impacts of pH adjustment on iron corrosion. Although, the water quality impacts that impact iron corrosion are poorly understood, it appears that lower buffer intensity may accelerate iron corrosion. Water's minimal buffering intensity occurs approximately in the pH range of 8.0 - 8.5. Water systems that move their pH into this range may experience iron corrosion and red water.

Lead and copper levels should be monitored at representative homes or buildings four to six months after the pH has been adjusted. The state should then be consulted to determine if another pH increase is needed. A decision to increase the pH should not be made before this time because it usually takes at least four to six months for lead and copper levels to stabilize after a pH

AMTEST

Amtest Inc.
Professional Analytical Services
14603 N.E. 87th St.
Redmond, WA 98052
Fax: 206 883 3496
Tel: 206 885 1664

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ANALYSIS REPORT

Gold Beach Water Co., Inc.
P.O. Box 2138
Tashon, WA 98070

Date Received: 6/ 4/96
Date Reported: 6/10/96
Phone Number: 463-9958

Drinking Water Samples
SOURCE 93, LEAD and COPPER RULE

[redacted]

System Name: Gold Beach Water
System ID #: 283508

Not to Exceed
1.3 mg/L .015 mg/L

Lab #	Site	Date Collected	Copper (mg/L)	Lead (mg/L)	Year Bld. House Age:
06607684	Tom Radke Lot #14, Div 3	6/ 2/96	1.1	0.006	1982
06607685	John Potter Lot 14, Div. 1	6/ 3/96	[redacted]	< 0.001	1987
06607686	Mike Rossi Lot 67, Div. 2	6/ 1/96	[redacted]	0.001	1987
06607687	Robert Morgan Lot 31, Div. 4	6/ 3/96	[redacted]	0.006	1983
06607688	Clarence Cole Lot 2, Div. 4	6/ 3/96	0.42	0.002	1985
06607689	William DeLancey Lot 55, Div 4	6/ 3/96	[redacted]	0.002	1984
06607690	Rick Walters Lot 32, Div 4	6/ 3/96	[redacted]	0.002	1987
06607691	Maurice Carpenter Lot 7, Div 3	6/ 3/96	0.54	< 0.001	1984
06607692	Ralph Riddell Lot 28, Div. 1	6/ 3/96	[redacted]	[redacted]	1987
06607693	Tom Ball Lot 25, Div. 1	6/ 2/96	[redacted]	0.002	1987

[redacted]

XX February 1998

GOLD BEACH WATER COMPANY INC.

Re: Maximum Contaminent Level (MCL) for Copper exceeded at several residents sink taps.

Dear Gold Beach Water Customer:

During our mandated sampling, for dissolved Lead & Copper levels (date) at homeowner sink taps - the analysis results indicated that Copper levels were elevated above the MCL's of the Safe Drinking Water requirements.

Because ten percent (10%) of the total samples collected, within the water system, exceeded the MCL for Copper, Gold Beach Water Co. is required to notify its customers, and begin to develop a treatment stratogy; which will inhibit copper from dissolving into the drinking water.

In the fall of 1997, we enlisted the support of water treatment specialists, to conduct a survey of our water system, and develop a treatment stratogy to correct the copper problem.
The treatment survey is nearing completion, and following review by Gold Beach Water Co., the survey will be submitted to the Department Of Health, for its review and approval.

Those homeowners, who have installed water treatment devices, to correct staining of plumbing fixtures - should be aware that water treatment products, to be used to correct the copper problem, <u>may</u> impact the operation of their treatment devices. It is recomended, that you contact your equipment dealer for advice, following our notification, to you, of when the treatment products will be applied, product name, and quanity (dosage) applied.
It would be appreciated, if you would provide us with your name and address, and a brief description of your water treatment device, as soon as possible.

We would appreciate your support and participation in our endeavor to improve the GB systems water quality.

Please be advised, that the new water treatment program, will not be implemented any time soon, as GB must work through the usual DOH review and approval phases - you will be apraised of the progress in future letters.

GOLD BEACH WATER SYSTEM WELL WATER ANALYSIS

Date of collection: 4 January 1998 **Time:** 0900 **Collected by:** Marilyn Hills
Type of sample: Grab samples, of untreated water; from Well Sites # 1 & # 2
Purpose: To determine pH, Alkalinity, and Calcium Hardness, for Corrosion Control
Date & Time Analysed: 4 January 1998 @ 6:30 p.m.
Analyst: James Shunn, WDM/WTPO II

Note: Samples are identified by the container - W1a = Well # 1, and container "a", "b", etc..

Sample I.D.	Temperature C.	pH	Alkalinity (mg/l)	Calcium (mg/l)
W1a	4.2 C.	6.67	125.0 mg/l	139.0 mg/l
W2a	4.2 C.	6.64	93.7 mg/l	111.0 mg/l

Second analysis on 31 January 1998 - Days in storage=27

W1a	7.3 C.	6.66	125.6 mg/l	118.0 mg/l
W2a	7.3 C.	6.72	92.3 mg/l	110.8 mg/l

The following results are from testes performed on each individual container.
The pH meter used was calibrated with three (3) buffer solutions: 4.01, 7.01, 10.01

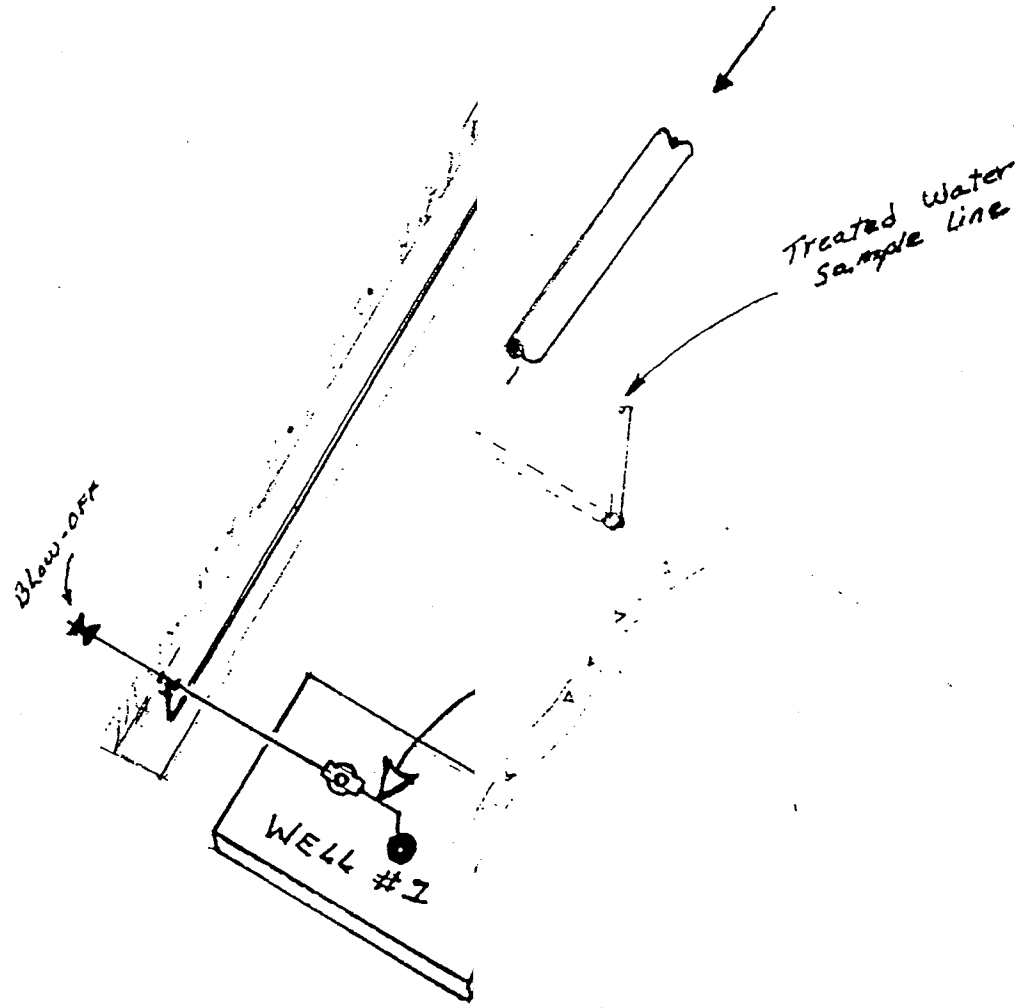
W1a	7.3 C.	6.64	125.3 mg/l	118.0 mg/l
W1b	7.3 C.	6.68	126.0 mg/l	118.0 mg/l
W2a	7.3 C.	6.73	91.5 mg/l	110.8 mg/l
W2b	7.3 C.	6.59	92.0 mg/l	110.8 mg/l
W2c	7.3 C.	6.83	93.5 mg/l	110.8 mg/l

The following results are from blending the samples from well #1 & well #2
Since well #1 produces about 1/3 of the daily flow - one liter was blended with two liters from well #2.

W1a + W2a + W2b	7.5 C.	6.76	104.0 mg/l	118.2 mg/l

The following are Jar Test results with chemical dosages added. Samples were blended as stated above. Tests were performed at room temperature - dosage could be highier at lower temps.

Chemical Product	Dosage (mg/l)	pH	Alkalinity	Calcium
Soda Ash	25 ppm	6.99	129.8	118.2
Soda Ash	40 ppm	7.72	142.8	110.2
Caustic Soda	25 ppm	8.01	134.8	110.8
Potassium Carbonate	40 ppm	7.23	131.6	117.4


Treated Water
Sample Line
Blow-off
WELL #1

Corrosion Control Water Quality/Water System Data Sheet

-Please mark one of the following options and complete the information sheet-

☐ I am requesting that the Department of Health (DOH) use this information to select an appropriate corrosion control treatment process for the public water system listed below. I understand that the water system will be billed $162.00 for the first source, and $81.00 for each additional source that is considered in selecting the treatment process.

☒ I (will have) or (have had) a corrosion control recommendation report prepared by a private consultant and submitted to DOH by the date assigned by DOH in the cover letter.

System Name: Gold Beach Water System

Contact Person: Harley Miedema

PWS ID#: _____ - ___

Phone Number: (206) 463-9958

Address: P.O. Box 218
Vashon, WA 98070

(Attach copies of lab report forms for general IOC and WQP sampling, and all field pH and Temp results taken by a qualified lab or person)

Sampling Site Location and Date	pH field test	Alkalinity mg/L CaCO3	Calcium mg/L CaCO3	Conductivity (optional)	Temperature degrees (optional)	Lead mg/L (if needed)	Manganese mg/L (if needed)
1. Well #1	6.6			270uS	16 C		
2. Well #2	6.6			270uS	16 C		
3. Community Clubhouse	6.7			240uS	16 C		
4. Boetel	6.7	Lot #33	Div #4	240uS	16 C		
5. Hamilton	6.6	Lot #56	Div #4	260uS	17 C		
6. Peppard	6.6	Lot #16	Div #2	250uS	17 C		
7. Lunbom	6.7	"off Plot" SW corner		260uS	17 C		
8. Upper Level Tank	6.7			250uS			
9.							
10.							

Signature: [signature]

Date: 21 Jul 98

A48

7 December 1997

To: Marilyn Hills
Gold Beach Water Company, Inc.
P.O.Bx 2138
Vashon, WA 98070

From: Jim Shunn
WTPO
Thunderbird Terrace Water
P.O.Bx 7
Monroe, WA 98272

Dear Marilyn:

I received your 12/4 letter, and was hoping that I would finish with my draft letter, and get it off to you and Mike on the first of this week, but, I am going to anticipate that I will be interrupted; so I will just put this in the mail as an interim response.

I will just touch on some items, that were mentioned in your letter, as more will be discussed, in detail, in my draft letter.

In regards to the Inorganic Chemical results - you will notice that many detectable contaminate levels, listed on the 11/7/94 report, are actually Not Detected (ND) on the recent analysis. And, most of the expected contaminate levels, are very close to being at the same concentrations. Let's just look at three, that we should watch for increasing. **Iron 11/94=0.18 mg/l 10/97=0.12 mg/l**
Lead 11/94=0.002 mg/l 10/97=ND
Sodium 11/94=9.0 mg/l 10/97=10.0 mg/l
Sample pH was not requested, nor was TDS (Total Dissolved Solids), they were included in the 9/76 analysis. It would have been good, to have these results, and performed by the Certified Lab., but, we can get them later on.

I have enclosed copies of some items, that may answer several of your questions. First, read Item #6, and, Item #15, on the " Helpful Hints" attachment.
Item # 6 indicates, that the GB wells should be tied together, to form a **Well Field = one sample.**
Item # 15, indicates, that you could have collected a sample from each well head, but, asked the Lab to perform a **composite analysis = one combined analysis = one analysis charge.**

Where to collect well samples? Refer to attachment #2, Water Quality Monitoring. **Where to sample = Each source, after treatment, and before the Distribution System = sample collected after Chlorine Injection fitting** (unless DOH has specified otherwise?)

Since I usually submit my samples to AMTEST, I thought I would just send along their price listing; for future comparisons.

As for the price of my services - they are $30.00 / Hour, or, a total fee of $500, which ever comes out least.
I do not log in full service time expended, if a portion of time expended is for my personal use, and/or anothers benefit.

I should mention, that I am doing some initial bench tests on chemicals, to determine approximate feed dosages; to correct your system pH. I am simulating your water pH at 6.5, and adding dosages, to bring the samples up to 7.00. and 8.00 pH.
Following these initial tests, I will need about 5 gallons of the **untreated** well water; so that I can repeat the bench tests on your water. An empty 5 gallon chlorine pail, or, jugs, that have been rinsed with the untreated well water, will do - but, the containers **must be** rinsed of **all** traces of chlorine!
Let me know, in a week or so, if someone can collect the water and send it across on the Ferry - I'll retrieve it on the other side. Or, what ever we can arrange.

Sincerely,

Jim Shunn

A50

12 January 1998

Marilyn Hills
Gold Beach Water Co.
P.O.Bx 2138
Vashon, WA 98070

Dear Marilyn:

Enclosed is a copy of my initial test results, of the wells samples. You will notice that well #1 results were the highest. I am quite surprised, at the results of the Alkalinity (125 mg/L), and the Calcium (139 mg/L)- these two results are very close. And, the results from the well #2 samples are also very close. This indicates that the well waters are in a state of being "equal", as for the Alkalinity and Calcium; so there isn't any additional of either to cause the pH to increase.
I will perform the tests again, and see if there are any changes, after the samples have been stored for a period. The samples are now stored outside, and in the dark.

I will be away from my work, and up to my place at Port Angeles; until Thursday the 22nd.; so if you should need to get in touch with me, please do call me at 360-457-5731, or, give me a Page.

I have finally received some of the text books, on corrosion, and they will provide a great deal of information, for developing the Corrosion Strategies for the GB system. I have made you a copy, of some information from one of the manuals, and I think it will help answer some of the questions you had on water problems, and there solutions.

I have also included a reduced copy of the GB development map, and you can use it to indicate where the Lead & Copper samples were collected. If you would - please highlite the lots that had the highest Copper levels.

Please do give me a call, if you have any questions.

Best Regards,

Jim Shunn

30 January 1998

Marilyn Hills
Gold Beach Water Co., Inc.
P.O.Bx 2138
Vashon, WA 98070

Dear Marilyn:

Thanks ever so much, for the additional information, as it provides me with more information on the Gold Beach water system, and how it functions.
I will be quite candid, with my coments, on what I have learned about the Gold Beach water system thus far, and I hope that everyone will view them as being supportive, for our objective goals, and not take them personal.

First off, you will notice that I have enclosed copies of a membership form; for the Evergreen Rural Water Association. This is a great group of professionals that are a good source of help and information for small systems - they will come and visit your system and provide what-ever help that they are capable of providing - and it is *free* to members; which includes their training seminars.
I have also enclosed, a copy of the Rural Water Conference, to be held next month in Ellensburg, and I would recommend that you try and attend. I think that you will gather a great deal of information from the conference.

Chlorination Report
I have reviewed the chlorination reports that you sent and I will make some coments in regards to the information entered. I have also made some *simulated* reports for discussion.
In reviewing of the most recent chlorination reports, I notice that the *Chlorine Residuals* are all the same test results; throughout the entire monitoring period, i.e., 0.5 ppm, and all taken from the same location, in the upper level housing area.
Well, chlorine *is not* stable, and the residuals will very, from samlping point to sampling point, and also from day to day **at the same sampling location.**
It is a requirement, that chlorine residual sampling, be performed at different locations; throughout the distribution system; for detection of a ***measurable residual.*** The upper level housing, I would presume, would have the lowest residuals, as they have taps fartherest from the point of chlorine injection. Those samples will be measured for **Total Chlorine**, since the **Free Available Chlorine** will have been consumned, or, changed, due to contact time in the system.

Between the point of chlorine injection (at the well sites) and, at or before the first customer, in the distribution system, the Chlorine Residual is usually measured for the **Free Available Chlorine** level. Herewith, is what is stated in WAC 246-290-440, on page 72: *The purveyor of a system using ground water and required to disinfect, shall meet the following requirements:*
*(a) Minimum contact time at a point at or before the first customer - Thirty (30) minutes if a 0.2 ppm **free available** chlorine residual is maintained,* or, *ten minutes if a 0.6 ppm free available chlorine residual is maintained.*

The question is: Is there ten minutes of contact time; during the maximum distribution flows; between the well sites, and the first customer? For the upper level, it would be a YES, but I would guess that the lower level would not meet the requirements. At maximum flows, I believe the treated water would reach Lot # 1 in less than ten minutes.
Only when water is being withdrawn from the lower level storage reservoir, would the contact time be met.
So, Lot #1 in the lower level housing should be one of the primary chlorine samlping sites.
I have indicated on the enclosed distribution map, where chlorine samples might be collected.
"F" indicates measurement for *Free Chlorine* and "T" for *Total Chlorine*, on the simulated report entries.

You will also notice, on the bottom of the report, that I have changed the chlorine mixing recipe,by converting the gallons of 5.25% stock solution added, to ounces per gallon of water, instead of gallons per gallons of water. It is easier to calculate ounces to add, when the solution vat is at 16.8 gallons used, and one would want to refill - one would not be dumping in an extra amount of stock solution, which would increase the chlorine dosage.

Most all of the dosage calculations are in Pounds (lbs) per Million Gallons of water treated, and no matter what chemical is being applied to the drinking water. The 5.25% bleach has 0.44 pounds of available chlorine per gallon of solution: computed 5.25 X 8.34 (pounds per gallon of water) and divided by 100 = 0.43785 pounds.
In the present recipe, it is one gallon of 5.25 % bleach for each two gallons of water - you actually have 0.43785 pounds in 3 gallons of water, or, 0.14595 pounds per gallon of feed solution.
Lets compute our dosage, for the 87000 gallons of water treated, on the simulated report.
87000 gallons divided by 1,000,000 =0.087 million gallons X 8.34 =0.72558 million pounds of water. We added one gallon of the feed solution, or, 0.14595 pounds of available chlorine - 0.14595 pounds of chemical divided by 0.72558 million pounds of water=0.20 ppm Free Chlorine

I wanted to use the chlorine calculations for an example, as they will be relevent with adding a chemical to increase the water pH - pounds chemical per million pounds of water, for to raise the pH from 6.5 to 8.0, my require adding 2 pounds per day of a dry chemical.

Visiting other water facilities

In answer to your question, of touring other water treatment systems, that have implemented corrosion control strategies, and to apply to the Gold Beach corrosion problem.
There are quite a number of systems throughout the state, that have implemented corrosion control, and I should think that you would find the names through contact with those at the Evergreen Rural Water Conference. One person to contact is Cas Hancock - her name is on the membership form.

Every system is somewhat different than the other, and in many respects the treatment applications are the same, e.g., chemical feed equipment and chemical products applied, like Soda Ash; which is probably the most common chemical. But, you will drop back to " ground zero" when you try to go beyond the basic applications, and try to fit others treatment methods to the Gold Beach system.

One thing that I know you will find not to compare, is that Gold Beach has two wells that are not tied to each other, and that Gold Beach has a common water line for Filling and Drawing from the storage reservoir - most have a fill line to the top of the storage tank, and the withdrawl out from the bottom. What this double line provides, is that of longer water holding time, and that the treated water is continuely *turning over*, i.e., if you have a 30,000 gallon tank, and use that volumn in a 24 hour period, the tank volumn is exchanged over that 24 hours.
There can be a significant change to the stored water, during that holding period; which can influence the pH. A water with a pH of 6.7 going into the top of the tank, may come out to the distribution system at above a 7.0, and loose its ability to be as corrosive.

In brief, what I am contemplating, for the Gold Beach water system is, (1) installing a line, from the #1 well; to connect to the #2 well, which would create a tye and a common discharge line to the distribution system; (2) the #1 well discharge line would, in effect, be a **flooded** chemical feed line, that would carry the injected chemicals to the #2 well water.
Since chlorine is more effective at a lower pH, the chlorine would be injected at the #1 well, and the chemical, or, chemicals required for increasing the pH, would be injected near the #2 well.
If we wanted to treat for the Iron, then we have a different dilema, as treatment for Iron uaually preceedes the chlorine injection - what then do we do for treating the Iron from the #2 well water?

Where is my information and all coming from? From other operators and professionals, and from texts on corrosion control methods.

Thanks again for the information, and I'll watch for the next set of test results. As always, do give me a call if you should have a question - and we shall be meeting again soon.

Best Regards,

Jim Shunn

A 54

12 February 1998

Marilyn Hills
Gold Beach Water Co., Inc.
P.O.Bx 2138
Vashon, WA 98070

Marilyn:

Glad to hear that you have purchased the pH Meter, but I forgot to ask you which one that you decided on. In regards to the pH meter, and setting the temperature, here is a basic method to use; when one does not have a certified thermometer to make a comparison to.
Tip: Fill a coffee cup with crushed ice (not cubes) and insert the pH meters temperature probe - when the ice has taken on a "wet" appearance, the temperaure is near 32 degrees, or, 0.00 degrees C.

As I mentioned, inregards to the pH buffers, they should be near the temperature of the water sample that you will be measuring. This may require that you place the buffers in the refrigerator, to bring the temperature down to the calibration range - actually going a little below, as the buffers will start gaining heat; as soon as you insert the pH & Temp. probes.
There should be a chart of pH values and temperatures on the side of the pH buffer bottles, and will indicate just what pH values should be at given temperatures.

I have enclosed the test results, of the samples you collected, and the results of the jar tests. As I mentioned, that I had blended the samples from each of the wells. It appears (from your Disinfection Reports) that well #1 produces about 1/3 the total daily water production; so, I blended one liter of well #1 sample to two liters of well #2 sample.
The dosages of each product, are reflective of the sample water temperature; at the time of testing, and the actual dosages, for the well water will most likely be slightly highier. This test just give us a "ball park" value, and we will have to perform more tests at the well sites, before we actually commence with adding the chemicals.
The costs of the chemicals are close, but, I will have better figures this week, now that I have a better idea of approximately how many pounds per month the system will be consuming.

I have enclosed a copy of a map of the GB distribution system, and circled the lots where chlorine residuals and pH measurements *might* be collected; so that one would get a better idea of chlorine and pH values throught the distribution system.
Has DOH specified where they want you to collect chlorine residual samples? Tests for **Free Chlorine** is usually performed right after chlorine injection, and **Total Chlorine** samples collected at other selected sampling locations, throughout the distribution system.
There must be a "detectable" residual; at all active parts of the system. I doubt that you can obtain a detectable residual, with the color comparator that you are now using, e.g., at the fartherest sampling sites?

Page 2.

Made you a monitoring form, to enter your chlorine, pH, and temperature test results on. This form is just for your system monitoring, and historic record; not to be sent to DOH.
DOH may, on a future visit, ask for a "sampling site location" listing.

Please do give me a call if you need me to provide an explanation on the information sent, or any thing else I can help you with.

Best Regards,

James Shunn

cc: Mike Spano

Gold Beach Water System

Subject: Second analysis results of **untreated** well (s) water samples that were collected on Sunday, January 4th, 1998; at 9:00 a.m., by Marilyn Hills.

Discussion:

The grab samples (well pumps operating) were collected prior to any treatment and stored in clean, one gallon plastic containers. The air temperature was near 35 degrees F. and sample temperature remained at that value until analysed at 6:30 p.m., on January 4th..
The samples were analyzed, with Hach Chemical Co. test equipment, and by methods described in the Hach Water Analysis Handbook. (current addition) The sample pH was measured with a calibrated Orion #501 Ionanalyzer meter. (one point calibration)

The second sample analysis was performed on January 30th, - the samples were stored, outdoors and in a cool; dark location. The samples were analysed,to determine if there had been any significant changes, since the initial examination.
The second examination includes the results of the Jar Tests performed, to determine the chemical dosages required, to elevate the pH. Three chemicals were examined: Dense Soda Ash (Sodium Carbonate), Sodium Hydroxide (Caustic Soda/Lye), and Potassium Carbonate.
These three chemicals were tested, since they are ones most commonly used for pH adjustment; for corrosion control, readily available from local distributors, and are not difficult to feed into the water stream.
The second analysis was performed using Hach Chemical Co. equipment and supplies, but the pH was measured with a digital pH meter, calibrated with three pH buffers. (4.01, 7.01, 10.01)

It should be noted, that the Jar Tests were performed, using a *blend* of both, well #1 and well #2 samples - 1 liter of well #1 sample blended with 2 liters of well #2 sample; assuming that the well supplies will be tied together, and treated as a combined stream.

James Shunn
WDM II, WTPO II

Thursday, May 07, 1998

A 57

James C. Shunn
WDM II, WTPO II
Thunderbird Terrace Water
P.O.Bx 434 Carnation, WA 98014
Phone 360-794-0715

Mike Spano, Mgr.
Marilyn Hills, Bookkeeper

Gold Beach Water Co., Inc.
P.O. Box 2138
Vashon, WA 98070

Dear Friends:
Well, I finally accomplished getting my new computer set up; here at the Thunderbird Terrace Water plant Lab/Office - I've been trying for over five months, but there was always something getting in my way! I wanted the office set up so that I could write up my Gold Beach report, but ended up doing most of the writing at my two work location computers, and on my old Word Processor; so the report took on the appearance of being prepared by several different individuals! Forgive me, but I just couldn't be satisfied with submitting the report in that condition!
I just decided to put my new computer to work, and rewrite everything; even though I had promised to have the report out to you this week.

Now, I'm not a real "Wiz-Kid" on a computer - I'm still learning! So, please accept this report as being completed; to the best of my abilities. O.K.?

No, this letter is not for submittle to DOH, but just a "general" discussion of the Gold Beach Corrosion Study, and the related information gathered to date. It will serve to guide you through the report,and, give you an overview of the findings and proposed Corrosion Strategies.

Herewith is how I set up the Table of Contents, for the Corrosion Report:

1. **Correspondence**
   Letters, To & From Gold Beach Water Co.
   Discussion of Corrosion Strategies-
   Water Quality Monitoring Tests-
   Sampling Site Location Map-
   Test Equipment & Procedures
2. **Letters From Department Of Health**
   On-Site Inspections
   DOH Recommendations/Requirements
3. **DOH Corrosion Control Recommendation Report**
   WAC 246-290-115
4. **Lead & Copper Guidance Manual**
   EPA Guidance for Small System Corrosion Control
5. **Analytical Results from Certified Labs**
6. **Jar Test Results on Gold Beach Water Samples**
   Discussion on Jar Tests - Dosages - Chemicals Tested
   Langelier Index & Aggressive Index

A58

James C. Shunn
WDM II, WTPO II
Thunderbird Terrace Water
P.O.Bx 434 Carnation, WA 98014
Phone 360-794-0715

7. **Reference Texts**
   AWWA & Other Texts on Corrosion
8. **Corrosion Control Strategies - Gold Beach Water Co.**
   Discussion - Implementing Strategies
9. **System Modifications Needed**
   Discussion - Chemical Injection - Plumbing Schematic - Chemical Feed Pumps
10. **Water Quality Monitoring**
    Test Equipment - Analysis procedures - Quality Assurance - Report Forms - Laboratory Set-Up

Marilyn:
You had presented the question, about where there might be another water system that was experiencing corrosion problems similar to the Gold Beach water system, and that one might tour, and gather information on treatment practices? Well, I am still trying to locate names of systems; which have treatment problems similar to Gold Beach Wtr..

I called the operator (Don Smith) at the Arlington, WA. water treatment plant, today, and talked with him about what water problems he had encountered.
The City of Arlington, draws water from wells near the Stillgawaumish River, and the well water is under the influence of the river water. It was found, that the well water turbidity did indeed increase; when the river turbidity was elevated - not much of a turbidity increase, but enough that the well water could not be designated as a Ground Water Source.
Also, the well water has low pH valves of 6.5, and less; contains levels of iron and manganese.
So, with this information, it can be said that Arlingtons water is somewhat similar to that of the Gold Beach water - except that the Gold Beach water isn't impacted by sea water or surface water.
Arlington does pass there well water through sand filters, and I would assume that the filters may help remove some portion of the iron and manganese, but, from information gathered - they aren't doing anything special, to remove the iron and manganese at the filters?

The Arlington operator stated that they had performed the Lead & Copper survey, but had it performed by a consulting firm, (Ecology & Enviornmental Inc. ?) and the bill was $25,000.
What is Arlington doing to treat for the low pH? Nothing! At least not yet, and they aren't sure just what they will be doing - DOH is in the process of re-classifing the treatment plant.
What are they doing for Corrosion Control, for the Lead and Copper?
They are applying a Polyphosphate (AquaMag), which has corrected the copper leaching, but the lead levels are still above the MCL's, at some sampling locations.
The polyphosphate dosages, that is being applied, is around 0.3 ppm; from my experience with polyphospate dosages, the 0.3 ppm is too low.
When I was using the polyphosphate product (Aquadene), my dosage started out at 2.0 ppm, and remained at that dosage for almost a year - then it was reduced to match the level of iron in the water. (0.5ppm)

A59

STATE OF WASHINGTON
Department of Conservation
H. MAURICE AHLQUIST, DIRECTOR
335 GENERAL ADMINISTRATION BUILDING
OLYMPIA

DANIEL J. EVANS
GOVERNOR

DIVISION
RECLAMATION
FLOOD CONTROL
WATER RESOURCES
MINES AND GEOLOGY
COLUMBIA BASIN PROJECT
POWER RESOURCES
WEATHER MODIFICATION
SOIL & WATER CONSERVATION
COMMITTEE

January 25, 1966

Mr. Richard L. Rongey
Consulting Geologist
16804 - 12th Place Southwest
Seattle, Washington

Dear Sir:

RE: Unnumbered Application, Gold Beach Company
and Ground Water Permit No. 6470
Dom Spano and William P. Joslin

This letter will confirm our telephone conversation this date and undertake to clarify the apparent duplication between the current filing by the Gold Beach Company for appropriation from a well in Government Lot 2, Sec. 28, T. 22 N., R. 3 E.W.M. and Ground Water Permit No. 6470, held by Dom Spano and William P. Joslin, covering appropriation from three wells in Government Lots 1 and 2, Sec. 28, T. 22 N., R. 3 E.W.M. Also in confirmation of your request, correspondence relative to this matter is being sent to you.

We enclose herewith a copy of Permit No. 6470. This permit was initially issued to the Auto Sales Co., Inc., and assigned by that entity to Messrs. Spano and Joslin on June 8, 1965. No well log has as yet been received for any of these three wells.

We enclose, also, a copy of the current unnumbered application which has not yet been accepted. Please note that the well described in this application is at the approximate location of Well No. 2 described in Permit No. 6470. If, as you surmised by phone today, and as appears to be the case, the Gold Beach Company submitted the current application without realizing that they already have a valid permit for this well (and two others), we would recommend that the Gold Beach Company withdraw its application. Based on the presumption that they will do so, we enclose, also, their check for examination fee in the amount of ten ($10.00) dollars.

Additionally, if we are correct in our presumption that the Gold Beach Company desires to withdraw its application, one other matter remains to be resolved--viz., the legal description of the lands upon which the water under Permit No. 6470 will be used. The Gold Beach Company indicated on a plat that this area is larger than that described under Permit No. 6470. If Messrs. Spano and Joslin desire Permit No. 6470 to be amended to include added lands, they should request this office to do so (i.e. amend the permit) and furnish us with the exact legal mete-and-bound description (not tax

description) of the lands upon which the water, under Permit No. 6470, is to be used.

We request comments and advice on the above matters.

Very truly yours,

DEPARTMENT OF CONSERVATION

BENJAMIN WEISBERG, Engineer
Division of Water Resources

BW:es

Encls. 3

A61

GOLD BEACH CO.
BOX 462 TEL: 463-3581
VASHON, WASHINGTON

No 105

DATE Jan 20 1966

19-11
1250

PAY TO THE ORDER OF State of Washington, Dept. of Conservation $ 10 00/100 DOLLARS

THE BANK OF CALIFORNIA
National Association
SEATTLE, WASHINGTON

GOLD BEACH CO.
BY Wm P Joslin
BY Dom Spano

1:1250:00111: 04:01621:81

FORM 1A BANK CHECK SUPPLY

Consulting Geologist
16804 - 12th Place Southwest
Seattle, Washington

Dear Sir:

RE: Unnumbered Application, Gold Beach Company
and Ground Water Permit No. 6470
Dom Spano and William P. Joslin

This letter will confirm our telephone conversation this date and undertake to clarify the apparent duplication between the current filing by the Gold Beach Company for appropriation from a well in Government Lot 2, Sec. 28, T. 22 N., R. 3 E.W.M. and Ground Water Permit No. 6470, held by Dom Spano and William P. Joslin, covering appropriation from three wells in Government Lots 1 and 2, Sec. 28, T. 22 N., R. 3 E.W.M. Also in confirmation of your request, correspondence relative to this matter is being sent to you.

We enclose herewith a copy of Permit No. 6470. This permit was initially issued to the Auto Sales Co., Inc., and assigned by that entity to Messrs. Spano and Joslin on June 8, 1965. No well log has as yet been received for any of these three wells.

We enclose, also, a copy of the current unnumbered application which has not yet been accepted. Please note that the well described in this application is at the approximate location of Well No. 2 described in Permit No. 6470. If, as you surmised by phone today, and as appears to be the case, the Gold Beach Company submitted the current application without realizing that they already have a valid permit for this well (and two others), we would recommend that the Gold Beach Company withdraw its application. Based on the presumption that they will do so, we enclose, also, their check for examination fee in the amount of ten ($10.00) dollars.

Additionally, if we are correct in our presumption that the Gold Beach Company desires to withdraw its application, one other matter remains to be resolved--viz., the legal description of the lands upon which the water under Permit No. 6470 will be used. The Gold Beach Company indicated on a plat that this area is larger than that described under Permit No. 6470. If Messrs. Spano and Joslin desire Permit No. 6470 to be amended to include added lands, they should request this office to do so (i.e. amend the permit) and furnish us with the exact legal mete-and-bound description (not tax

A62

STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY
Northwest Regional Office, 3190 - 160th Ave. S.E. • Bellevue, Washington 98008-5452 • (206) 649-7000

July 7, 1993

Dear Applicant:

Please be advised that this year the Legislature passed a new law requiring applicants to pay a $100 surcharge on all water right applications received between July 1, 1993 and June 30, 1994. This new law applies to your application. This is in addition to the $10 minimum fee that must accompany your application as indicated on the application form. Additional fees may also be due depending on the amount of water requested.

If the $100 surcharge is not submitted with your application, the Department of Ecology will notify you that additional fees must be paid before your application will be processed. Please submit one check or money order (not cash) in the amount of $110 to the Department of Ecology.

If you have any questions regarding the surcharge or other fees, please call the appropriate regional office indicated on the application form.

Sincerely,

Water Resources Program

STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY
Northwest Regional Office, 3190 - 160th Ave. S.E. • Bellevue, Washington 98008-5452 • (206) 649-7000

March 7, 1994

Mr. Dom Spano
P.O. Box 2138
Vashon, Wa. 98070

Dear Mr. Spano:

Re: Gold Beach Water Company

Enclosed are copies of water right permit Nos. 6470 and 6471. Both of these permits were cancelled in 1966 for failure to submit Beginning of Construction forms. I am also enclosing two water right applications. I am assuming that your public water system is appropriating water in a quantity that requires a water right.

If you have any questions about the cancelled permits or filling out the applications, please call me at 649-7077.

Sincerely,

Dorothy Glenn

for Mark C. Schuppe
Water Resources

MS:ms
Enclosures

A64

WASHINGTON STATE DEPARTMENT OF ECOLOGY

APPLICATION FOR PERMIT

TO APPROPRIATE PUBLIC WATERS OF THE STATE OF WASHINGTON

☐ SURFACE WATER ☒ GROUND WATER

$10.00 MINIMUM STATUTORY EXAMINATION FEE REQUIRED WITH APPLICATION

(GRAY BOXES FOR OFFICE USE ONLY)

LICATION NO.	W.R.I.A.	COUNTY	PRIORITY DATE	TIME	ACCEPTED
6470		King	Existing System		

APPLICANT'S NAME — PLEASE PRINT

Dom Spano / Owner
Gold Beach Water Company, Inc.

Bus. Tel. (206) 463-9958
Home Tel (206) 463-9249
Other Tel.

DRESS (STREET)	(CITY)	(STATE)	(ZIP CODE)
P.O. Box # 2138	Vashon,	WA	98070

ATE & PLACE OF INCORPORATION IF APPLICANT IS A CORPORATION
September 24, 1969

SOURCE OF SUPPLY

IF SURFACE WATER

SOURCE (NAME OF STREAM, LAKE, SPRING, ETC.) (IF UNNAMED, SO STATE)

BUTARY

IF GROUND WATER

SOURCE (WELL, TUNNEL, INFILTRATION TRENCH, ETC.
Well # 1 8 inch X 113 Feet Deep (Approximatel

SIZE AND DEPTH
Well# 2 8 inch X 113 Feet Deep (Approx.)

USE

USE TO WHICH WATER IS TO BE APPLIED (DOMESTIC SUPPLY, IRRIGATION, MINING, MANUFACTURING, ETC.)
Domestic Use

ER QUANTITY OF WATER EQUESTED USING UNITS OF:	CUBIC FEET PER SECOND (CFS)	*OR*	GALLONS PER MINUTE (GPM)	ACRE FEET PER YEAR
			2250	N/A

IMES DURING YEAR WATER WILL BE REQUIRED
Yearround

IF IRRIGATION, NUMBER OF ACRES	IF DOMESTIC USE, NUMBER OF UNITS BY TYPE, E.G. 1-HOME, 1-MOBILE HOME, 2-CAMPSITES, ETC.	IF MUNICIPAL USE, ESTIMATED POPULATION 20 YEARS FROM TODAY
None	148 Users/currently (Total 235 possible)	N/A

E PROJECT WAS OR WILL BE STARTED	DATE PROJECT WAS OR WILL BE COMPLETED	
Existing System	(Well # 1 = 8/30/66 & Well# 2 =	9/23/76)

LOCATION OF POINT OF DIVERSION/WITHDRAWAL

IF IN PLATTED PROPERTY

OT	BLOCK	OF (GIVE NAME OF PLAT OR ADDITION)	SECTION	TOWN	RANGE	ALSO, PLEASE ENCLOSE A COPY OF THE PLAT AND MARK THE POINT(S) OF WITHDRAWAL OR DIVERSION
A	- -	Gold Beach Div. # 1	28	22N	3E, WM	

B. IF NOT IN PLATTED PROPERTY

ACCOMPANYING SECTION MAPS, ACCURATELY MARK AND IDENTIFY EACH POINT OF DIVERSION, SHOW RTH-SOUTH AND EAST-WEST DISTANCES FROM NEAREST SECTION CORNER OR PROPERTY CORNER

LSO, ENTER BELOW THE DISTANCES FROM THE NEAREST SECTION OR PROPERTY CORNER TO THE DIVERSION OR WITHDRAWAL

CATED WITHIN (SMALLEST LEGAL SUBDIVISION)	SECTION	TOWNSHIP N	RANGE (E OR W) W.M	COUNTY

DO YOU OWN THE LAND ON WHICH THIS SOURCE IS LOCATED. IF NOT, INSERT NAME & ADDRESS OF OWNER
Yes

LEGAL DESCRIPTION OF PROPERTY *ON WHICH WATER IS TO BE USED*

TTACH A COPY OF THE LEGAL DESCRIPTION OF THE PROPERTY (ON WHICH THE WATER WILL BE USED) TAKEN FROM REAL ESTATE CONTRACT, PROPERTY DEED OR TITLE INSURANCE POLICY OR, COPY CAREFULLY IN THE SPACE BELOW

Domestic Use

ER QUANTITY OF WATER QUESTED USING UNITS OF:	CUBIC FEET PER SECOND (CFS)	OR	GALLONS PER MINUTE (GPM) 2250	ACRE FEET PER YEAR N/A

A65

MES DURING YEAR WATER WILL BE REQUIRED
Yearround

IRRIGATION, NUMBER OF ACRES	IF DOMESTIC USE, NUMBER OF UNITS BY TYPE, E.G. 1-HOME, 1-MOBILE HOME, 2-CAMPSITES, ETC.	IF MUNICIPAL USE, ESTIMATED POPULATION 20 YEARS FROM TODAY
None	148 Users/currently (Total 235 possible)	N/A
TE PROJECT WAS OR WILL BE STARTED	DATE PROJECT WAS OR WILL BE COMPLETED	
Existing System	(Well # 1 = 8/30/66 & Well # 2= 9/23/76)	

3. LOCATION OF POINT OF DIVERSION/WITHDRAWAL

IF IN PLATTED PROPERTY

T	BLOCK	OF (GIVE NAME OF PLAT OR ADDITION)	SECTION	TOWN	RANGE	ALSO, PLEASE ENCLOSE A COPY OF THE PLAT AND MARK THE POINT(S) OF WITHDRAWAL OR DIVERSION
A	- -	Gold Beach Div. # 1	28	22N	3E,WM	

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OCATED WITHIN (SMALLEST LEGAL SUBDIVISION)	SECTION	TOWNSHIP N.	RANGE (E. OR W.) W.M	COUNTY

DO YOU OWN THE LAND ON WHICH THIS SOURCE IS LOCATED. IF NOT, INSERT NAME & ADDRESS OF OWNER
Yes

5. LEGAL DESCRIPTION OF PROPERTY *ON WHICH WATER IS TO BE USED*

ATTACH A COPY OF THE LEGAL DESCRIPTION OF THE PROPERTY (ON WHICH THE WATER WILL BE USED) TAKEN FROM **A REAL ESTATE CONTRACT, PROPERTY DEED OR TITLE INSURANCE POLICY.** OR, COPY CAREFULLY IN THE SPACE BELOW

Gold Beach #1, Section 28, Township 22 N, Range 3 E, W.M. This plat of Gold Beach #1 embraces that portion of Government Lot #2 in Section 28, Twnsp. 22 N, Range 3 E, W.M. on Maury Island in King County, Washington. (Full legal attached on Real Estate Contract)

Map of Platted Divisions: Gold Beach Div.#1, Vol. 81, Page 64

Gold Beach Div.#2, Vol. 82, Page 59

Gold Beach Div. #3, Vol. 86, Page 53

Gold Beach Div. #4, Vol. 102, Page 54..all on Maury Island in King County, Washington.

CY 040-1-14
Rev. 8/91 F

WHAT IS YOUR INTEREST IN THE PROPERTY ON WHICH THE WATER IS TO BE USED (PROPERTY OWNER, LESSEE, CONTRACT PURCHASER, ETC.)
Property Owner

HE THERE ANY EXISTING WATER RIGHTS RELATED TO THE LAND ON WHICH THE WATER IS TO BE USED (INCLUDING WATER PROVIDED BY IRRIGATION DISTRICTS OR DITCH COMPANIES.) ☐ YES ☒ NO

YES, FROM WHAT SOURCE (i.e. SURFACE OR GROUND WATER) AND UNDER WHAT AUTHORITY

DESCRIPTION OF SYSTEM PROPOSED OR INSTALLED

OR EXAMPLE: SIZE OF PUMP, CAPACITY OF PUMP, PUMP MOTOR HORSE POWER, PIPE DIAMETER, NUMBER OF SPRINKLERS, ETC.

See attached: Water System as Built drawings (Recorded 7/10/78)

2 - Wells Drilled - Approximately 113 Feet Deep / Each

2 - Pumps - 20 H.P. / Each

2 - Water Storage Tanks: Bottom Tank = 20,000 gal. Reservoir

Upper Tank = 14,870 gal. Reservoir

MARKS

3.

COMPLETE THIS SECTION ONLY IF THIS APPLICATION INCLUDES IRRIGATION AS A USE

IN ORDER TO IMPLEMENT THE PROVISIONS OF INITIATIVE MEASURE NUMBER 59, THE FAMILY FARM WATER ACT WHICH WAS PASSED BY THE VOTERS ON NOVEMBER 3, 1977, WE MUST ASK THE FOLLOWING QUESTIONS:

DOES THE TOTAL NUMBER OF ACRES IN WHICH YOU HAVE CONTROLLING INTEREST IN THE STATE OF WASHINGTON EXCEED 2000 ACRES FOR THE FOLLOWING THREE CATEGORIES:

1. LANDS THAT ARE BEING IRRIGATED UNDER WATER RIGHTS ACQUIRED AFTER DECEMBER 8, 1977. YES ☐ NO ☒
2. LANDS THAT MAY BE IRRIGATED UNDER APPLICATIONS NOW ON FILE WITH THE DEPARTMENT OF ECOLOGY. YES ☐ NO ☒
3. LANDS THAT MAY BE IRRIGATED UNDER THIS APPLICATION. YES ☐ NO ☒

IF 10 ACRE-FEET OR MORE OF WATER IS TO BE STORED AND/OR IF THE WATER DEPTH WILL BE 10 FEET OR MORE AT THE DEEPEST POINT, A STORAGE PERMIT MUST BE FILED IN ADDITION TO THIS PERMIT. THESE FORMS CAN BE SECURED, TOGETHER WITH INSTRUCTIONS, FROM THE DEPARTMENT OF ECOLOGY.

SIGNATURES

Dom Spano
APPLICANT'S SIGNATURE

Dom Spano / Gold Beach Water Company, Inc.
LEGAL LANDOWNERS NAME (PLEASE PRINT)

LEGAL LANDOWNER'S SIGNATURE (OWNER OF PROPERTY DESCRIBED IN ITEM NUMBER 5)

P.O. Box # 2138
Vashon, WA 98070
LEGAL LANDOWNER'S ADDRESS

FOR OFFICE USE ONLY

STATE OF WASHINGTON
DEPARATMENT OF ECOLOGY } ss.

This is to certify that I have examined this application together with the accompanying maps and data.

COMPLETE THIS SECTION ONLY IF THIS APPLICATION INCLUDES IRRIGATION AS A USE

A67

IN ORDER TO IMPLEMENT THE PROVISIONS OF INITIATIVE MEASURE NUMBER 59, THE FAMILY FARM WATER ACT WHICH WAS PASSED BY THE VOTERS ON OVEMBER 3, 1977, WE MUST ASK THE FOLLOWING QUESTIONS:

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. LANDS THAT ARE BEING IRRIGATED UNDER WATER RIGHTS ACQUIRED AFTER DECEMBER 8, 1977. YES ☐ NO ☒

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Vashon, WA 98070

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STATE OF WASHINGTON
DEPARATMENT OF ECOLOGY } ss.

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.....

.....

In order to retain its priority date, this application must be returned to the Department of Ecology, with corrections, on or before ....., *19*.....

Witness my hand this .....*day of* ....., *19*.....

.....
Department of Ecology

Y 040-1-14
Rev. 8/91 F

A68

WASHINGTON STATE DEPARTMENT OF ECOLOGY

APPLICATION FOR PERMIT

TO APPROPRIATE PUBLIC WATERS OF THE STATE OF WASHINGTON

☐ SURFACE WATER ☒ GROUND WATER

$10.00 MINIMUM STATUTORY EXAMINATION FEE REQUIRED WITH APPLICATION

(GRAY BOXES FOR OFFICE USE ONLY)

APPLICATION NO.	W.R.I.A.	COUNTY	PRIORITY DATE	TIME	ACCEPTED
6471		King	Existing System		

APPLICANT'S NAME — PLEASE PRINT
Dom Spano / Owner
Gold Beach Water Company, Inc.

Bus. Tel. (206) 463-9958
Home Tel. (206) 463-9249
Other Tel.

ADDRESS (STREET)	(CITY)	(STATE)	(ZIP CODE)
P.O. Box # 2138	Vashon,	WA	98070

DATE & PLACE OF INCORPORATION IF APPLICANT IS A CORPORATION
September 24, 1969

SOURCE OF SUPPLY

IF SURFACE WATER

SOURCE (NAME OF STREAM, LAKE, SPRING, ETC.) (IF UNNAMED, SO STATE)

TRIBUTARY

IF GROUND WATER

SOURCE (WELL, TUNNEL, INFILTRATION TRENCH, ETC.)
Well # 1 8 inch X 113 Feet Deep (approxima

SIZE AND DEPTH
Well # 2 8 inch X 113 Feet Deep (approx.)

USE

USE TO WHICH WATER IS TO BE APPLIED (DOMESTIC SUPPLY, IRRIGATION, MINING, MANUFACTURING, ETC.)
Domestic Use

ENTER QUANTITY OF WATER REQUESTED USING UNITS OF:	CUBIC FEET PER SECOND (CFS)	OR	GALLONS PER MINUTE (GPM)	ACRE FEET PER YEAR
			2250	N/A

TIMES DURING YEAR WATER WILL BE REQUIRED
Yearround

IF IRRIGATION, NUMBER OF ACRES	IF DOMESTIC USE, NUMBER OF UNITS BY TYPE, E.G. 1-HOME, 1-MOBILE HOME, 2-CAMPSITES, ETC.	IF MUNICIPAL USE, ESTIMATED POPULATION 20 YEARS FROM TODAY
None	148 Users/currently (Total 235 possible)	N/A

DATE PROJECT WAS OR WILL BE STARTED	DATE PROJECT WAS OR WILL BE COMPLETED
Existing System	(Well # 1 = 8/30/66 & Well # 2= 9/23/76)

LOCATION OF POINT OF DIVERSION/WITHDRAWAL

IF IN PLATTED PROPERTY

LOT	BLOCK	OF (GIVE NAME OF PLAT OR ADDITION)	SECTION	TOWN	RANGE	ALSO, PLEASE ENCLOSE A COPY OF THE PLAT AND MARK THE POINT(S) OF WITHDRAWAL OR DIVERSION
A	- -	Gold Beach Div. # 1	28	22N	3E,WM	

B. IF NOT IN PLATTED PROPERTY

ON ACCOMPANYING SECTION MAPS, ACCURATELY MARK AND IDENTIFY EACH POINT OF DIVERSION. SHOW NORTH-SOUTH AND EAST-WEST DISTANCES FROM NEAREST SECTION CORNER OR PROPERTY CORNER

ALSO, ENTER BELOW THE DISTANCES FROM THE NEAREST SECTION OR PROPERTY CORNER TO THE DIVERSION OR WITHDRAWAL.

LOCATED WITHIN (SMALLEST LEGAL SUBDIVISION)	SECTION	TOWNSHIP N.	RANGE (E. OR W.) W.M.	COUNTY

DO YOU OWN THE LAND ON WHICH THIS SOURCE IS LOCATED. IF NOT, INSERT NAME & ADDRESS OF OWNER
Yes

LEGAL DESCRIPTION OF PROPERTY *ON WHICH WATER IS TO BE USED*

ATTACH A COPY OF THE LEGAL DESCRIPTION OF THE PROPERTY (ON WHICH THE WATER WILL BE USED) TAKEN FROM **REAL ESTATE CONTRACT, PROPERTY DEED OR TITLE INSURANCE POLICY** OR, COPY CAREFULLY IN THE SPACE BELOW

USE

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Domestic Use

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MES DURING YEAR WATER WILL BE REQUIRED

Yearround

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Existing System	(Well # 1 = 8/30/66 & Well# 2 =	9/23/76)

LOCATION OF POINT OF DIVERSION/WITHDRAWAL

3A. IF IN PLATTED PROPERTY

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LOCATED WITHIN (SMALLEST LEGAL SUBDIVISION)	SECTION	TOWNSHIP N.	RANGE (E. OR W.) W.M.	COUNTY

DO YOU OWN THE LAND ON WHICH THIS SOURCE IS LOCATED. IF NOT, INSERT NAME & ADDRESS OF OWNER

Yes

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Gold Beach #1, Section 28, Township 22 N, Range 3 E, W.M. This plat of Gold Beach #1 embrace that portion of Government Lot #2 in Section 28, Twnsp.22N, Range 3 E, W.M. on Maury Island in King County, Washington (Full legal attached on Real Estate Contract)

Map of Platted Divisions: Gold Beach Div. #1, Vol. 81, Page 64

Gold Beach Div. #2, Vol. 82, Page 59

Gold Beach Div. #3, Vol. 86, Page 53

Gold Beach Div. #4, Vol. 102, Page 54 ... all on Maury Island in King County, Washington.

WHAT IS YOUR INTEREST IN THE PROPERTY ON WHICH THE WATER IS TO BE USED (PROPERTY OWNER, LESSEE, CONTRACT PURCHASER, ETC.)

Property Owner

HE THERE ANY EXISTING WATER RIGHTS RELATED TO THE LAND ON WHICH THE WATER IS TO BE USED (INCLUDING WATER ROVIDED BY IRRIGATION DISTRICTS OR DITCH COMPANIES.) ☐ YES ☒ NO

YES, FROM WHAT SOURCE (i.e. SURFACE OR GROUND WATER) AND UNDER WHAT AUTHORITY

DESCRIPTION OF SYSTEM PROPOSED OR INSTALLED

OR EXAMPLE: SIZE OF PUMP, CAPACITY OF PUMP, PUMP MOTOR HORSE POWER, PIPE DIAMETER, NUMBER OF SPRINKLERS, ETC.

See attached : Water System as Built drawings (Recorded 7/10/78)

2 - Wells Drilled - Approximately 113 feet deep / each

2 - Pumps - 20 H.P. / each

2 - Storage Tanks : Bottom Tank = 20,000 gal. Reservoir

Upper Tank = 14,870 gal. Reservoir

MARKS

3.

COMPLETE THIS SECTION ONLY IF THIS APPLICATION INCLUDES IRRIGATION AS A USE

IN ORDER TO IMPLEMENT THE PROVISIONS OF INITIATIVE MEASURE NUMBER 59, THE FAMILY FARM WATER ACT WHICH WAS PASSED BY THE VOTERS ON NOVEMBER 3, 1977, WE MUST ASK THE FOLLOWING QUESTIONS:

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1. LANDS THAT ARE BEING IRRIGATED UNDER WATER RIGHTS ACQUIRED AFTER DECEMBER 8, 1977. YES ☐ NO ☒
2. LANDS THAT MAY BE IRRIGATED UNDER APPLICATIONS NOW ON FILE WITH THE DEPARTMENT OF ECOLOGY. YES ☐ NO ☒
3. LANDS THAT MAY BE IRRIGATED UNDER THIS APPLICATION. YES ☐ NO ☒

IF 10 ACRE-FEET OR MORE OF WATER IS TO BE STORED AND/OR IF THE WATER DEPTH WILL BE 10 FEET OR MORE AT THE DEEPEST POINT, A STORAGE PERMIT MUST BE FILED IN ADDITION TO THIS PERMIT. THESE FORMS CAN BE SECURED, TOGETHER WITH INSTRUCTIONS, FROM THE DEPARTMENT OF ECOLOGY.

SIGNATURES

Dom Spano

APPLICANT'S SIGNATURE

Dom Spano / Gold Beach Water Company, Inc.

LEGAL LANDOWNERS NAME (PLEASE PRINT)

LEGAL LANDOWNER'S SIGNATURE (OWNER OF PROPERTY DESCRIBED IN ITEM NUMBER 5)

P.O. Box # 2138
Vashon, WA 98070

LEGAL LANDOWNER'S ADDRESS

FOR OFFICE USE ONLY

STATE OF WASHINGTON
DEPARATMENT OF ECOLOGY } ss.

This is to certify that I have examined this application together with the accompanying maps and data,

COMPLETE THIS SECTION ONLY IF THIS APPLICATION INCLUDES IRRIGATION AS A USE

A71

IN ORDER TO IMPLEMENT THE PROVISIONS OF INITIATIVE MEASURE NUMBER 59, THE FAMILY FARM WATER ACT WHICH WAS PASSED BY THE VOTERS ON OVEMBER 3, 1977, WE MUST ASK THE FOLLOWING QUESTIONS:

OES THE TOTAL NUMBER OF ACRES IN WHICH YOU HAVE CONTROLLING INTEREST IN THE STATE OF WASHINGTON EXCEED 2000 ACRES FOR THE FOLLOWING THREE CATEGORIES:

. LANDS THAT ARE BEING IRRIGATED UNDER WATER RIGHTS ACQUIRED AFTER DECEMBER 8, 1977. YES ☐ NO ☒

. LANDS THAT MAY BE IRRIGATED UNDER APPLICATIONS NOW ON FILE WITH THE DEPARTMENT OF ECOLOGY. YES ☐ NO ☒

3. LANDS THAT MAY BE IRRIGATED UNDER THIS APPLICATION. YES ☐ NO ☒

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SIGNATURES

Dom Spano

APPLICANT'S SIGNATURE

Dom Spano / Gold Beach Water Company, Inc.

LEGAL LANDOWNERS NAME (PLEASE PRINT)

LEGAL LANDOWNER'S SIGNATURE (OWNER OF PROPERTY DESCRIBED IN ITEM NUMBER 5)

P.O. Box # 2138
Vashon, WA 98070

LEGAL LANDOWNER'S ADDRESS

FOR OFFICE USE ONLY

STATE OF WASHINGTON
DEPARATMENT OF ECOLOGY } ss.

This is to certify that I have examined this application together with the accompanying maps and data, and am returning it for correction or completion as follows: .....

.....

.....

In order to retain its priority date, this application must be returned to the Department of Ecology, with corrections, on or before ....., *19*.....

Witness my hand this.....*day of*....., *19*.....

.....
Department of Ecology

[Y 040-1-14
Rev. 8/91 F

A72

S. F. No. 7354—OS—1

STATE OF WASHINGTON
DEPARTMENT OF CONSERVATION
DIVISION OF WATER RESOURCES

Permit to Appropriate Public Ground Waters of the State of Washington

Book No. 33 of Ground Water Permits, on page 6470 under Application No. 6693

AUTO [illegible], INC. Assigned to:- Don Spano & William P. Joslin 6-8-65

of Vashon, Washington

is hereby granted a permit to appropriate the following described public ground waters of the State of Washington, subject to existing rights, and to the limitations and provisions set out herein.

Priority date of this permit is April 2[illegible], 1963

Source of the proposed ground water appropriation is Three (3) wells

within .... area, ... sub-area

.... zone. Name or number of works is ....

Quantity of water appropriated shall be limited to the amount which can be beneficially applied and not to exceed 400 gallons per minute; 640 acre-feet per year, to be used for the following purposes: Community domestic supply

A73

DESCRIPTION OF WORKS FROM WHICH WATER IS TO BE WITHDRAWN

The well will be drilled (Dug or drilled) and have a diameter of 12 inches, and depth of 500 feet.

Description of tunnel or infiltration trench:

(Please read carefully provisions below)

Particular specifications required by the Supervisor of Water Resources for the purpose of preventing waste of public waters:

Construction work shall begin on or before February 1, 1965 -2-1-66

A74

S. F. No. 370-B—OS— —75C.

$10.00 examination fee should accompany each application.

STATE OF WASHINGTON
DEPARTMENT OF CONSERVATION
Division of Water Resources

Priority
Date _____
Time _____
Accepted _____

APPLICATION FOR A PERMIT

To Appropriate Public Ground Waters
OF THE STATE OF WASHINGTON

Application No. G. W......

I, Gold Beach Company P.O. Box 462
(Name of applicant)

of Vashon, Washington
(Complete post office address)

do hereby make application for a permit to appropriate the following described public ground waters of the State of Washington, subject to existing rights. This application is made under the provisions of Chap. 263 of the Session Laws of 1945, and amendments thereto of the State of Washington and subject to the rules and regulations of the Department of Conservation, Division of Water Resources.

1. *The proposed appropriation will be from* Well
(Well, tunnel, infiltration trench)

located Maury Island
(Give approximate distance and direction from nearest city or town)

Area.....

6. DESCRIPTION OF WORKS:

(a) Well will be drilled (Dug or drilled) and have a diameter of 8 inches and an estimated depth of 114 feet.

(b) Tunnels or trenches to be described: (Attach additional sheets if needed for full description.)

(c) Distribution system to be described:

to be designed

(d) If pumps are to be used, give size and type:

to be designed

(e) Give capacity and type of motor or engine to be used:

(f) If the location of the well, tunnel, or other works is less than one-fourth mile from a natural stream or stream channel, give the distance to the nearest point on each of such channels and the difference in elevation between the stream bed and the ground surface at the

A76

9. *Legal Description of Property on which water is to be used for all purposes other than municipal supply:*

(Copy legal description from deed)
(If more space is required, attach separate sheet)

Northwest ¼ of Northeast ¼ of Section 28, T. 22 N., R. 3 E.

(On accompanying plat show location of the existing wells or works)

10. *What interest do you have in the above described property?* Owner

(Owner, lessee, contract buyer, etc.)

11. *Do you have any other water rights appurtenant to the above described property?* No

If so, from what source? [illegible]

12. *Construction work will begin on or before* 6 Well completed

13. *Construction work will be completed on or before*

14. *Water will be put to complete beneficial use on or before* Summer 1966

Gold Beach Water Company, Inc.
P.O. Box 2138
Vashon, WA 98070
(206) 463-9958

July 23, 1998

Dept. of Ecology
N.W. Regional Office
3190 - 160th Ave. S.E.
Bellevue, WA 98008

RE: Water Application #G1-27499
For K.C. Water District #19

To whom it may concern:

This letter - submitted to the Dept. of Ecology - notifies you that Gold Beach Water Company, Inc. want to go on record as opposing Application #G1-27499 submitted by King County Water District #19 to drill a test well and to appropriate water from inside the service area of Maury Mutual Water Association on Maury Island.

When Gold Beach Water began developing it's Small Water System Plan in 1994, we became aware that we had no water rights - because Ground Water Permit 6470 and 6471 submitted in 1965-66 when we were drilling our original well - had been canceled through some confusing letters and correspondence from the Department of Conservation to our Geologist, Richard Rongey. We re-applied for our Water Rights on March 24, 1994 and have been waiting for years for the Department of Ecology to approve it. It would not be acceptable for the Department of Ecology to approve a new Water Right to Water District #19 in 1998 - when an established company like Gold Beach Water has been in line and waiting for our approval for over four years!

The older established water utilities on Maury Island should have the first right to take all the water they need to service their current and future water customers and not have to worry about Water District #19 coming into our area and taking such a large quantity of water that all of the other wells run low or run out of water. There is only a very limited amount of water in the aquifer under Vashon and Maury Island and all the water utilities must work together for the benefit of the whole. Just because Water District #19 is the largest water purveyor on the island does not give them the right to cross over others boundaries. Maury Mutual customers have a long history of water shortages during the summer months & have conserved water - even before the state mandates to do so.

It is not in the public interest of Maury Island water customers to approve Application #G1-27499 to King County Water District #19 for drilling a test well and taking water from Maury Island. Gold Beach Water Company, Inc. is asking the Department of Ecology NOT to grant the approval of this application.

Along with this letter, Gold Beach Water has enclosed a second copy of our Water Right Application #G1-27448 and the accompanying letters and documentation - just in case you have lost or misplaced our original copy. There should be a "grandfather clause" to speed up the approval of these simple older cases. We are asking the Department of Ecology to put Gold Beach Water at the top of their pile of applications to be processed. Thanks in advance for your help in this matter.

Sincerely,

Marilyn Hills

Marilyn Hills
Office Manager

July 27, 1998

ADDENDUM

TO: Pat Svoboda

It was good to meet you at the Vashon Island meeting on Thursday, July 23, 1998. Glad to know that there is a real person at the Department of Ecology who is assigned to the Water Right situation on Vashon Island.

I have added some additional documentation to my original July 23rd letter - when you said that Ecology was most interested in water Quality and Quantity.
Items Enclosed:

1. Our July '98 Newsletter that was mailed out to every customer of Gold Beach Water. It includes a history of our Water Quality along with many other issues that effect our water utility - including the possible opening of the mining area just to the south of Gold Beach and the impact that might have on our water.
2. Our Hydrogeologist, Richard Rongey's 1998 report (paid for by Lonestar Concrete) is current and enclosed for your benefit in deciding our water rights as well as maybe some other neighboring water rights.
3. Plat map of Gold Beach Div. 1, 2, 3 & 4.
4. Dept. of Health Letter - 4/20/98. Our Water System Plan draft was submitted in January and we are completing items noted for their final approval.
5. Several pages from our Gold Beach Water System Plan. Evaluation of Existing System including: Source; Storage; Water Quality Tests & results on Bacterial testing; IOCS; and Water Data Usage from '91-'97.
6. Seattle-King County - Well Water Measurements from 2/90 thru 12/92 (Static Level & Drawdowns) Well #1 & #2.
7. Fixed Radius Well Map from our Wellhead Protection and SOC Monitoring Waiver '96 - '98.
8. Washington Utilities & Transportation Commission letter 6/26/98 - Approval of a $6 per month rate increase effective July 1, 1998 for Gold Beach Water Company, Inc.
9. Construction Documentation: Well #2 Log - 9/23/76; Well #1 Log - 5/27/65; Ground Water Investigations at site development - Proposed Plat of Gold Beach - 12/11/64.

I tried to include everything from the most current - to the oldest information and anything else that you might need to investigate our case in the speediest manner. If there is anything else that you need, please give me a call at the office (206) 463-9958 or at my home office 463-2463. Thanks for your help and I will be waiting to hear from you soon.

Marilyn Hills

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STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY

NOTICE OF APPLICATION TO APPROPRIATE PUBLIC WATERS

TAKE NOTICE:

That GOLD BEACH WATER COMPANY, INC.

of VASHON, WASHINGTON, on MARCH 25, 1994 under

Application No. G1-27448 filed for permit to appropriate public waters, subject to existing rights,

from 2 WELLS

in the amount of 500 GALLONS PER MINUTE

each year, for MULTIPLE DOMESTIC SUPPLY - YEAR ROUND AS NEEDED.

The source of the proposed appropriation is located within LOT A OF GOLD BEACH DIVISION #1

of Section 28, Township 22N, Range 3E, W.M., in KING County.

Protests or objections to approval of this application must include a detailed statement of the basis for objections: protests must be accompanied by a two ($2.00) recording fee and filed with the Department of Ecology at the address shown below, within thirty (30) days from

_____.

(Last date of publication to be entered above by publisher)

Department of Ecology
Northwest Regional Office
3190 - 160th SE
Bellevue, WA 98008

STATE OF WASHINGTON
DEPARTMENT OF HEALTH
1511 Third Ave., Suite 719 • Seattle, Washington 98101-1632

Dear Water System Manager:

Enclosed is an updated copy of the Water Facilities Inventory (WFI) report form for your water system. **If this information is correct, then keep this copy for your water system records.** If any information is incorrect, please make necessary changes on the form and return it to our office. Records of operation, such as the WFI, well logs, and some water quality analyses are to be kept on file for as long as the system is an active public water system.

The coliform bacteriological monitoring schedule for your system is printed on the bottom portion of the WFI.

Please contact me at (206) 389-2634, if you have any questions.

Sincerely,

Jennifer A. Kropack

Jennifer A. Kropack
Northwest Drinking Water Operations

Enclosures

JK:jf

a:\wfirev.ltr

Washington State Department of Health
Environmental Health

WATER FACILITIES INVENTORY (WFI)

Read Instructions on back before completing

OK

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DATE UPDATED: 07/01/97

SYSTEM ID NO.	2. COUNTY	GROUP	TYPE	WRIA
089588	KING	A	COMM	15

3. SYSTEM NAME: GOLD BEACH WATER COMPANY, INC.

STREET ADDRESS:

P.O. BOX (IF APPLICABLE): PO BOX 2139

CITY: VASHON | STATE: WA | ZIP CODE: 98070

4. OWNER'S NAME (LAST, FIRST): GOLD BEACH WATER COMPANY. | OWNER NO.: 2193

STREET ADDRESS:

P.O. BOX (IF APPLICABLE): PO BOX 2139

CITY: VASHON | STATE: WA | ZIP CODE: 98070

5. SYSTEM CONTACT PERSON: MARILYN MILLS | TITLE: BOOKKEEPER

DAY TELEPHONE: 206-463-9959 | EVENING TELEPHONE: 206-463-2463

6. OWNERSHIP (CHECK ONE ONLY)

- [ ] PRIVATE: NON-PROFIT
- [X] PRIVATE: FOR-PROFIT
- [ ] LOCAL GOVERNMENT (COUNTY / CITY / PUD / WATER DISTRICT)
- [ ] STATE
- [ ] FEDERAL

7. PREDOMINANT CHARACTERISTIC (CHECK ONE ONLY)

- [X] RESIDENTIAL
- [ ] RECREATIONAL
- [ ] BUSINESS / INDUSTRIAL / AGRICULTURAL / COMMERCIAL
- [ ] LODGING / FOOD SERVICE
- [ ] SCHOOL / DAY CARE
- [ ] OTHER (CHURCHES, ETC.)

WFI COMPLETED BY | TITLE

DAY TELEPHONE | DATE

8. SUBMITTED FOR: [ ] NEW SYSTEM [ ] NO CHANGE [ ] REACTIVATE [ ] SYSTEM NAME CHANGE* [ ] UPDATE [ ] DELETE

*OLD SYSTEM NAME - ENTER ONLY IF CHANGING WITH **THIS** WFI

SYSTEMS SERVING ANY RESIDENTS (PEOPLE LIVING IN A DWELLING SERVED BY THE SYSTEM), COMPLETE THIS SECTION

9. NUMBER ACTIVE RESIDENTIAL CONNECTIONS	10. NUMBER ACTIVE RESIDENTIAL POPULATION
160	320

SYSTEMS SERVING ANY NON-RESIDENTS (I.E., TRAVELERS, EMPLOYEES, STUDENTS, ETC.), COMPLETE THIS SECTION

11. NUMBER NON-RESIDENTIAL CONNECTIONS

12. ENTER **AVERAGE DAILY** NON-RESIDENTIAL POPULATION SERVED FOR EACH MONTH. MAKE ENTRY FOR EACH MONTH

JAN.	APR.	JULY	OCT.
FEB.	MAY	AUG.	NOV.
MAR.	JUNE	SEP.	DEC.

13. DOES THE SYSTEM SERVE AT LEAST 25 OF THE SAME NON-RESIDENTS FOR 4 OR MORE DAYS PER WEEK FOR AT LEAST 180 DAYS PER YEAR?

[ ] YES [X] NO

14. TOTAL NUMBER CONNECTIONS METERED	15. DISTRIBUTION RESERVOIR(S) TOTAL CAPACITY
160	95,000 GALLONS

16. DOH SOURCE NUMBER	17. SOURCE NAME (LIST UTILITY'S NAME FOR SOURCE. IF SOURCE IS PURCHASED OR INTERTIED, LIST SELLER'S ID# AND NAME USING FOLLOWING FORMAT: XXXXX / NAME EXAMPLE: 77050Y / SEATTLE)	18. SOURCE CATEGORY: WELL	WELL FIELD	SURFACE	SPRING	RANNEY / INF. GAL.	INTERTIE	PURCHASE-TREATED	PURCHASE-UNTREATED	19. USE: PERMANENT	SEASONAL	EMERGENCY	20. SOURCE METERED	21. TREATMENT: NONE	CHLORINATION	FILTRATION	FLUORIDATION	OTHER	22. WELL DEPTH (FEET)	23. SOURCE CAPACITY (GPM)	24. SOURCE LOCATION: 1/4, 1/4 SEC.	SEC. NO.	TWP	RNG.	SWTR EVALUATION / VOC EVALUATION
S01	WELL # 1	X								X				X					108	80	NW/NE	28	22N	03E		
S02	WELL # 2	X								X				X					108	175	NW/NE	28	22N	03E		

MINIMUM REQUIRED BACTERIOLOGICAL SAMPLING SCHEDULE

25.	26.	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
		1	1	1	1	1	1	1	1	1	1	1	1

NO. APPROVED SERVICES (PER PLANS) | DATE OF LAST SANITARY SURVEY: 00 00 0000 | BY DOH [ ] LHD [ ]

SYSTEM IN CRITICAL WATER SUPPLY SERVICE AREA? [ ] YES [ ] NO | GW MGMT AREA? [ ] YES [ ] NO | FOR LHD USE ONLY

EFFECTIVE DATE RETRO. CHANGES | SIGNATURE OF DOH REVIEWER | DATE

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STANDARD WATER ANALYSIS REPORT

Orlando Laboratories, Inc.

P. O. Box 8025A • Orlando, Florida 32806 • 305/843-1661

Report to: Keywest Realty / Gold Beach Water Co. Appearance: Clear

Date: 23 Sept. 76 Sampled by: Client

Report Number: 12291 Identification: Gold Beach Well #2

METHODS

This water was analyzed according to "Standard Methods for the Examination of Water and Wastewater," Latest Edition, APHA, AWWA and WPCF.

RESULTS

Determination	Data Significance	mg/l	Determination	Data Significance	mg/l
Total Dissolved Solids	x.	220	Total Hardness, as $CaCO_3$	x.	132
Phenolphthalein Alkalinity, as $CaCO_3$	x.	0	Calcium Hardness, as $CaCO_3$	x.	54
Total Alkalinity, as $CaCO_3$	x.	129	Magnesium Hardness, as $CaCO_3$	x.	78
Carbonate Alkalinity, as $CaCO_3$	x.	0	Calcium, as Ca	x.	22
Bicarbonate Alkalinity, as $CaCO_3$	x.	129	Magnesium, as Mg	.x	19
Carbonates, as CO_3	x.	0	Sodium, as Na	x.	11
Bicarbonates, as HCO_3	x.	157	Iron, as Fe	.x	0.2
Hydroxides, as OH	x.	0	Manganese, as Mn	.x	0.2
Carbon Dioxide, as CO_2	x.	129	Copper, as Cu	.x	<0.1
Chloride, as Cl	x.	9	Silica, as SiO_2	x.	26
Sulfate, as SO_4	x.	20	Color, PCU	x.	0
Fluoride, as F	.x	0.3	Odor Threshold	x.	0
Phosphate, as PO_4	.x	<0.1	Turbidity, NTU	x.	1.5
pH (Laboratory)	.x	6.3			
[illegible]	.x	[illegible]			
Stability Index	.x	9.9			
Saturation Index	[illegible]	-1.8			

Signed: Donna Furbish
Chemist

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Laucks Since 1908
Testing Laboratories, Inc.
940 South Harney St., Seattle, WA 98108 (206) 767-5060 FAX (206) 767-5063

Chemistry, Microbiology, and Technical Services

CLIENT: Gold Beach Water Co.
P.O. Box 2138
Vashon, WA 98070

ATTN : Larry Niece

Certificate of Analysis

Work Order# : 97-10-585
DATE RECEIVED : 10/20/97
DATE OF REPORT: 11/05/97
CLIENT JOB ID : $500#2117

Work ID : Drinking Water
Taken By : Client
Transported by: Hand Delivered
Type : Water, System ID#283508-A

SAMPLE IDENTIFICATION:

	Sample Description	Collection Date
01	Well #1 Wellhead #1	10/20/97 10:30
02	Well #2 Wellhead #2	10/20/97 10:40

Unless otherwise instructed all samples will be discarded on 12/18/97 with the exception of samples which are consumed during the analysis, such as microbiological samples.

Respectfully submitted,
Laucks Testing Laboratories, Inc.

J. M. Owens

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Laucks Testing Laboratories, Inc.

940 South Harney St., Seattle, WA 98108 (206) 767-5060 FAX (206) 767-5063

Chemistry, Microbiology, and Technical Services

INORGANICS CHEMICALS (IOCS) REPORT FOR SAMPLE 9710585-01

System ID No.: 283508 System Name: Gold Beach Water Co.
Lab Sample No.: 08149376 Date Collected: 10/20/97 DOH Source No: S01
Multiple Source Nos.: _____ Sample Type: B Purpose: C
Date Received : 10/20/97 Date Reported: 11/05/97 Supervisor: BL
Date Digested: 10/21/97 Date Analyzed: 10/27/97 Analyst: N/A
County: King Group: A
Sample Location: Well #1 Wellhead #1
Send Report To: Gold Beach Water Co. Bill To: Gold Beach Water Co.

DOH #	ANALYTES	RESULTS	UNITS	SRL	TRIGGER	MCL	METHOD/ANALYST
	******* EPA REGULATED *******						
4	Arsenic	ND	MG/L	0.010	0.050	0.050	
5	Barium	ND	MG/L	0.10	2.0	2.0	EPA 200.7/KP
6	Cadmium	ND	MG/L	0.0020	0.0050	0.0050	EPA 200.7/KP
7	Chromium	ND	MG/L	0.010	0.10	0.10	EPA 200.7/KP
11	Mercury	ND	MG/L	0.0005	0.0020	0.0020	EPA 245.1/JM
12	Selenium	ND	MG/L	0.0050	0.050	0.050	
110	Beryllium	ND	MG/L	0.0030	0.0040	0.0040	EPA 200.8/ABN
111	Nickel	0.0020	MG/L	0.040	0.10	0.10	EPA 200.8/ABN
112	Antimony	ND	MG/L	0.0050	0.0060	0.0060	EPA 200.8/ABN
113	Thallium	ND	MG/L	0.0020	0.0020	0.0020	EPA 200.8/ABN
116	Cyanide	ND	MG/L	0.050	0.20	0.20	SM 4500CN E/JK
19	Fluoride	ND	MG/L	0.20	2.0	4.0	EPA 300.0/RLA
114	Nitrite - N	ND	MG/L	0.50	0.50	1.0	EPA 300.0/RLA
20	Nitrate - N	1.7	MG/L	0.50	5.0	10	EPA 300.0/RLA
161	Total Nitrate / Nitrite						
	** EPA REGULATED (secondary) **						
8	Iron	0.12	MG/L	0.10	0.30	0.30	EPA 200.7/KP
10	Manganese	ND	MG/L	0.010	0.050	0.050	EPA 200.7/KP
13	Silver	ND	MG/L	0.010	0.050	0.050	EPA 200.8/ABN
21	Chloride	10	MG/L	20	250	250	EPA 300.0/RLA
22	Sulfate	21	MG/L	10	250	250	EPA 300.0/RLA
24	Zinc	0.018	MG/L	0.20	5.0	5.0	EPA 200.7/KP
	******* STATE REGULATED *******						
14	Sodium	10.	MG/L	5.0			EPA 200.7/KP
15	Hardness	120	MG/L	10			SM 2340B/KP
16	Conductivity	300.	UMHOS/C	10	700	700	SM 2510B/SS
17	Turbidity	0.14	NTU	0.10	1.0	1.0	EPA 180.1/JM
18	Color	ND	COLOR	5.0	15	15	SM 2120B/JM
26	Total Dissolved Solids (TDS)	N/A	MG/L	150	500	500	SM 2540C/ABN
	******* STATE UNREGULATED *******						
9	Lead	ND	MG/L	0.0020		0.015*	EPA 200.8/ABN
23	Copper	0.0050	MG/L	0.20		1.3*	EPA 200.8/ABN
	*** OTHER (optional) ***						
171	Orthophosphate						
172	Silica						
402	Aluminum						
403	Alkalinity						
404	Magnesium	17.	MG/L	0.10			EPA 200.7/KP
405	Calcium	21.	MG/L	0.50			EPA 200.7/KP

NOTES:

SRL (State Reporting Level): indicates the minimum reporting level required by the Washington Department of Health (DOH).

Trigger Level: DOH Drinking water response level. Additional sampling required. Contact regional DOH office for additional information.

MCL (Maximum Contaminant Level): If the contaminant amount exceeds the MCL, contact your regional DOH office immediately.

NA (Not analyzed)
ND (Not detected)
* These are Federal Action Levels, not MCLs

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Laucks Testing Laboratories, Inc.

940 South Harney St., Seattle, WA 98108 (206) 767-5060 FAX (206) 767-5063

Chemistry, Microbiology, and Technical Services

INORGANICS CHEMICALS (IOCS) REPORT FOR SAMPLE 9710585-02

System ID No.: 283508 System Name: Gold Beach Water Co.
Lab Sample No.: 08149377 Date Collected: 10/20/97 DOH Source No: S02
Multiple Source Nos.: _____ Sample Type: B Purpose: C
Date Received : 10/20/97 Date Reported: 11/05/97 Supervisor: BL
Date Digested: 10/21/97 Date Analyzed: 10/27/97 Analyst: N/A
County: King Group: A
Sample Location: Well #2 Wellhead #2
Send Report To: Gold Beach Water Co. Bill To: Gold Beach Water Co.

DOH #	ANALYTES	RESULTS	UNITS	SRL	TRIGGER	MCL	METHOD/ANALYST
	* * * * * * * EPA REGULATED * * * * * * *						
4	Arsenic	ND	MG/L	0.010	0.050	0.050	
5	Barium	ND	MG/L	0.10	2.0	2.0	EPA 200.7/KP
6	Cadmium	ND	MG/L	0.0020	0.0050	0.0050	EPA 200.7/KP
7	Chromium	ND	MG/L	0.010	0.10	0.10	EPA 200.7/KP
11	Mercury	ND	MG/L	0.0005	0.0020	0.0020	EPA 245.1/JM
12	Selenium	ND	MG/L	0.0050	0.050	0.050	
110	Beryllium	ND	MG/L	0.0030	0.0040	0.0040	EPA 200.8/ABN
111	Nickel	0.0020	MG/L	0.040	0.10	0.10	EPA 200.8/ABN
112	Antimony	ND	MG/L	0.0050	0.0060	0.0060	EPA 200.8/ABN
113	Thallium	ND	MG/L	0.0020	0.0020	0.0020	EPA 200.8/ABN
116	Cyanide	ND	MG/L	0.050	0.20	0.20	SM 4500CN E/JK
19	Fluoride	ND	MG/L	0.20	2.0	4.0	EPA 300.0/RLA
114	Nitrite - N	ND	MG/L	0.50	0.50	1.0	EPA 300.0/RLA
20	Nitrate - N	1.7	MG/L	0.50	5.0	10	EPA 300.0/RLA
161	Total Nitrate / Nitrite						
	* * EPA REGULATED (secondary) * *						
8	Iron	0.15	MG/L	0.10	0.30	0.30	EPA 200.7/KP
10	Manganese	ND	MG/L	0.010	0.050	0.050	EPA 200.7/KP
13	Silver	ND	MG/L	0.010	0.050	0.050	EPA 200.8/ABN
21	Chloride	10	MG/L	20	250	250	EPA 300.0/RLA
22	Sulfate	21	MG/L	10	250	250	EPA 300.0/RLA
24	Zinc	0.016	MG/L	0.20	5.0	5.0	EPA 200.7/KP
	* * * * * * * STATE REGULATED * * * * * * *						
14	Sodium	10.	MG/L	5.0			EPA 200.7/KP
15	Hardness	120	MG/L	10			SM 2340B/KP
16	Conductivity	290.	UMHOS/C	10	700	700	SM 2510B/SS
17	Turbidity	0.14	NTU	0.10	1.0	1.0	EPA 180.1/JM
18	Color	ND	COLOR	5.0	15	15	SM 2120B/JM
26	Total Dissolved Solids (TDS)	N/A	MG/L	50	500	500	SM 2540C/ABN
	* * * * * * * STATE UNREGULATED * * * * * * *						
9	Lead	ND	MG/L	0.0020		0.015*	EPA 200.8/ABN
23	Copper	0.0050	MG/L	0.20		1.3*	EPA 200.8/ABN
	* * * OTHER (optional) * * *						
171	Orthophosphate						
172	Silica						
402	Aluminum						
403	Alkalinity						
404	Magnesium	17.	MG/L	0.10			EPA 200.7/KP
405	Calcium	21.	MG/L	0.50			EPA 200.7/KP

NOTES:

SRL (State Reporting Level): indicates the minimum reporting level required by the Washington Department of Health (DOH).

Trigger Level: DOH Drinking water response level. Additional sampling required. Contact regional DOH office for additional information.

MCL (Maximum Contaminant Level): If the contaminant amount exceeds the MCL, contact your regional DOH office immediately.

NA (Not analyzed)
ND (Not detected)
* These are Federal Action Levels, not MCLs

Laucks Since 1908
Testing Laboratories, Inc.
4611 Seattle Hardwood St., Seattle, WA 98118 (206) 767-5060 FAX (206) 767-5063
Chemistry, Microbiology, and Technical Services

Certificate of Analysis

CLIENT: Gold Beach Water Co.
P.O. Box 2138
Vashon, WA 98070

ATTN : Larry Niece

Work Order# : 97-11-373
DATE RECEIVED : 11/12/97
DATE OF REPORT: 11/26/97
CLIENT JOB ID : $245#2133

Work ID : Drinking Water
Taken By : Client
Transported by: Hand Delivered
Type : Water

SAMPLE IDENTIFICATION:

	Sample Description	
01	Well #1	11/12/97 11:05
02	Well #2	11/12/97 11:15
03	Well #1 / Well #2 (Comp)	11/12/97
04	Trip Blank	

GENERAL COMMENTS ON VOLATILE ORGANICS TICs:

Tentatively Identified Compounds, or TICs, are reported on a separate page if you requested this additional analytical work or if a regulatory agency requires that TICs be reported. (For instance, the State of Washington requires TIC reporting for all official 524.2 analyses.) In the heading information on the TIC report, the number of tentatively identified compounds found is noted. If no TICs were found, the report will say so and there will be no further information on the report. If TICs were found, they will be listed and an estimated concentration will be shown for each.

FLAGGING:

The flag "U" indicates the analyte of interest was not detected, to the limit of detection indicated.

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Laucks Since 1908

Testing Laboratories, Inc.

[illegible] Seattle, WA [illegible] (206) 767-5060 FAX (206) 767-5063

Chemistry, Microbiology, and Technical Services

CLIENT : Gold Beach Water Co.

Certificate of Analysis

Work Order# : 97-11-373

Unless otherwise instructed all samples will be discarded on 01/10/98 with the exception of samples which are consumed during the analysis, such as microbiological samples.

Respectfully submitted,
Laucks Testing Laboratories, Inc.

J. M. Owens

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Laucks Since 1908
Testing Laboratories, Inc.
941 South Harney St., Seattle, WA 98108 (206) 767-5060 FAX (206) 767-5063
Chemistry, Microbiology, and Technical Services

VOLATILE ORGANIC CHEMICAL REPORT

Results of Analysis by EPA Method 524.2
Measurement of Purgeable Organic Compounds in Water by Capillary Column
Gas Chromatography/Mass Spectrometry

Send Report To: Gold Beach Water Co.
P.O. Box 2138
Vashon, WA 98070

COUNTY	: King	LABORATORY NO.	: 08149935
SYSTEM NAME	: GoldBeachWat	EPA METHOD	: 524.2
SYSTEM ID NO.	: 283508	DATA FILE	: 08149935
DATE COLLECTED	: 11/12/97	ANALYST	: JA
DATE ANALYZED	: 11/21/97	DATE OF REPORT	: 11/26/97
SOURCE NUMBER	: S01,S02	SUPERVISOR'S INITIALS	: MC
SOURCE TYPE	: WELL	LTL #	: 9711373-03A
MULTIPLE SOURCES	:	SAMPLE ID	: Well #1 / Well #2 (Comp)

Regulated Compounds

EPA Code	NAME OF COMPOUND	* MCL (ug/L)	** Amount (ug/L)
2976	VINYL CHLORIDE	2	ND
2977	1,1-DICHLOROETHYLENE	7	ND
2981	1,1,1-TRICHLOROETHANE	200	ND
2982	CARBON TETRACHLORIDE	5	ND
2990	BENZENE	5	ND
2980	1,2-DICHLOROETHANE	5	ND
2984	TRICHLOROETHYLENE	5	ND
2969	P-DICHLOROBENZENE	75	ND
2979	T-1,2-DICHLOROETHYLENE	100	ND
2380	CIS-1,2-DICHLOROETHYLENE	70	ND
2983	1,2-DICHLOROPROPANE	5	ND
2991	TOLUENE	1000	ND
2987	TETRACHLOROETHYLENE	5	ND
2989	CHLOROBENZENE	100	ND
2992	ETHYL BENZENE	700	ND

* Maximum Contaminant level

** NOTE: ND indicates that the true concentration is
less than the method detection limit of 0.5 ug/L.

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(illegible) (illegible) (illegible) (206) 767-5060 FAX (206) 767-5063
Chemistry, Microbiology, and Technical Services

Results of Analysis by EPA Method 524.2 (continued)

LABORATORY NO. : 08149935

Regulated Compounds (continued)

EPA Code	NAME OF COMPOUND	* MCL (ug/L)	** Amount (ug/L)
2995	M/P-XYLENE (total xylene MCL=10000)		ND
2997	O-XYLENE (total xylene MCL=10000)		ND
2996	STYRENE	100	ND
2968	O-DICHLOROBENZENE	600	ND
2964	METHYLENE CHLORIDE	5	1.6
2985	1,1,2-TRICHLOROETHANE	5	ND
2378	1,2,4-TRICHLOROBENZENE	70	ND

Trihalomethanes (THM)

2941	CHLOROFORM	ND
2943	BROMODICHLOROMETHANE	ND
2944	CHLORODIBROMOMETHANE	ND
2942	BROMOFORM	ND

* Maximum Contaminant level

** NOTE: ND indicates that the true concentration is less than the method detection limit of 0.5 ug/L.

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Chemistry, Microbiology, and Technical Services

Results of Analysis by EPA Method 524.2 (continued)

LABORATORY NO. : 08149935

Unregulated Compounds

EPA Code	NAME OF COMPOUND	** Amount (ug/L)
2210	CHLOROMETHANE	ND
2214	BROMOMETHANE	ND
2216	CHLOROETHANE	ND
2978	1,1-DICHLOROETHANE	ND
2416	2,2-DICHLOROPROPANE	ND
2410	1,1-DICHLOROPROPENE	ND
2408	DIBROMOMETHANE	ND
2412	1,3-DICHLOROPROPANE	ND
2986	1,1,1,2-TETRACHLOROETHANE	ND
2993	BROMOBENZENE	ND
2414	1,2,3-TRICHLOROPROPANE	ND
2988	1,1,2,2-TETRACHLOROETHANE	ND
2965	O-CHLOROTOLUENE	ND
2966	P-CHLOROTOLUENE	ND
2967	M-DICHLOROBENZENE	ND
2212	DICHLORODIFLUOROMETHANE	ND
2218	TRICHLOROFLUOROMETHANE	ND
2430	BROMOCHLOROMETHANE	ND
2994	ISOPROPYLBENZENE	ND
2998	N-PROPYLBENZENE	ND
2424	1,3,5-TRIMETHYLBENZENE	ND
2426	TERT-BUTYLBENZENE	ND
2428	SEC-BUTYLBENZENE	ND
2030	P-ISOPROPYLTOLUENE	ND
2422	N-BUTYLBENZENE	ND
2418	1,2,4-TRIMETHYLBENZENE	ND
2248	NAPHTHALENE	ND
2246	HEXACHLOROBUTADIENE	ND
2420	1,2,3-TRICHLOROBENZENE	ND
2228	CIS-1,3-DICHLOROPROPENE	ND
2224	TRANS-1,3-DICHLOROPROPENE	ND

** NOTE: ND indicates that the true concentration is less than the method detection limit of 0.5 ug/L.

All detected non-THM compounds have been confirmed by reanalysis.

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Laucks Since 1908
Testing Laboratories, Inc.
940 South Harney St., Seattle, WA 98108 (206) 767-5060 FAX (206) 767-5063

Chemistry, Microbiology, and Technical Services

REPORT ON SAMPLE: 9711373-03A
Client Sample ID: Well #1 / Well #2 (Comp)

Date Received : 11/12/97 Collection Date : 11/12/97
Test Code : TIC_V Test Method : 524.2

TENTATIVELY IDENTIFIED VOLATILE COMPOUNDS

Number of TICs found: 0 Conc Units: ug/L

CAS Number	Compound Name	RT	Est. Conc

Form LTL-TIC-V

Laucks Since 1908
Testing Laboratories, Inc.
(206) 767-5060 FAX (206) 767-5063
Chemistry, Microbiology, and Technical Services

VOLATILE ORGANIC CHEMICAL REPORT

Results of Analysis by EPA Method 524.2
Measurement of Purgeable Organic Compounds in Water by Capillary Column
Gas Chromatography/Mass Spectrometry

Send Report To: Gold Beach Water Co.
P.O. Box 2138
Vashon, WA 98070

COUNTY	:	LABORATORY NO.	:
SYSTEM NAME	:	EPA METHOD	: 524.2
SYSTEM ID NO.	:	DATA FILE	:
DATE COLLECTED	: N/A	ANALYST	: JCW
DATE ANALYZED	: 11/13/97	DATE OF REPORT	: 11/26/97
SOURCE NUMBER	:	SUPERVISOR'S INITIALS	: MC
SOURCE TYPE	:	LTL #	: 9711373-04A
MULTIPLE SOURCES	:	SAMPLE ID	: Trip Blank

Regulated Compounds

EPA Code	NAME OF COMPOUND	* MCL (ug/L)	** Amount (ug/L)
2976	VINYL CHLORIDE	2	ND
2977	1,1-DICHLOROETHYLENE	7	ND
2981	1,1,1-TRICHLOROETHANE	200	ND
2982	CARBON TETRACHLORIDE	5	ND
2990	BENZENE	5	ND
2980	1,2-DICHLOROETHANE	5	ND
2984	TRICHLOROETHYLENE	5	ND
2969	P-DICHLOROBENZENE	75	ND
2979	T-1,2-DICHLOROETHYLENE	100	ND
2380	CIS-1,2-DICHLOROETHYLENE	70	ND
2983	1,2-DICHLOROPROPANE	5	ND
2991	TOLUENE	1000	ND
2987	TETRACHLOROETHYLENE	5	ND
2989	CHLOROBENZENE	100	ND
2992	ETHYL BENZENE	700	ND

* Maximum Contaminant level

** NOTE: ND indicates that the true concentration is
less than the method detection limit of 0.5 ug/L.

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Testing Laboratories, Inc.
[illegible] SEATTLE, WA [illegible] (206) 767-5060 FAX (206) 767-5063
Chemistry, Microbiology, and Technical Services

Results of Analysis by EPA Method 524.2 (continued)

LABORATORY NO. :

Regulated Compounds (continued)

EPA Code	NAME OF COMPOUND	* MCL (ug/L)	** Amount (ug/L)
2995	M/P-XYLENE (total xylene MCL=10000)		ND
2997	O-XYLENE (total xylene MCL=10000)		ND
2996	STYRENE	100	ND
2968	O-DICHLOROBENZENE	600	ND
2964	METHYLENE CHLORIDE	5	0.78
2985	1,1,2-TRICHLOROETHANE	5	ND
2378	1,2,4-TRICHLOROBENZENE	70	ND

Trihalomethanes (THM)

EPA Code	NAME OF COMPOUND	* MCL (ug/L)	** Amount (ug/L)
2941	CHLOROFORM		ND
2943	BROMODICHLOROMETHANE		ND
2944	CHLORODIBROMOMETHANE		ND
2942	BROMOFORM		ND

* Maximum Contaminant level

** NOTE: ND indicates that the true concentration is less than the method detection limit of 0.5 ug/L.

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Testing Laboratories, Inc.
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Chemistry, Microbiology, and Technical Services

Results of Analysis by EPA Method 524.2 (continued)

LABORATORY NO. :

Unregulated Compounds

EPA Code	NAME OF COMPOUND	** Amount (ug/L)
2210	CHLOROMETHANE	ND
2214	BROMOMETHANE	ND
2216	CHLOROETHANE	ND
2978	1,1-DICHLOROETHANE	ND
2416	2,2-DICHLOROPROPANE	ND
2410	1,1-DICHLOROPROPENE	ND
2408	DIBROMOMETHANE	ND
2412	1,3-DICHLOROPROPANE	ND
2986	1,1,1,2-TETRACHLOROETHANE	ND
2993	BROMOBENZENE	ND
2414	1,2,3-TRICHLOROPROPANE	ND
2988	1,1,2,2-TETRACHLOROETHANE	ND
2965	O-CHLOROTOLUENE	ND
2966	P-CHLOROTOLUENE	ND
2967	M-DICHLOROBENZENE	ND
2212	DICHLORODIFLUOROMETHANE	ND
2218	TRICHLOROFLUOROMETHANE	ND
2430	BROMOCHLOROMETHANE	ND
2994	ISOPROPYLBENZENE	ND
2998	N-PROPYLBENZENE	ND
2424	1,3,5-TRIMETHYLBENZENE	ND
2426	TERT-BUTYLBENZENE	ND
2428	SEC-BUTYLBENZENE	ND
2030	P-ISOPROPYLTOLUENE	ND
2422	N-BUTYLBENZENE	ND
2418	1,2,4-TRIMETHYLBENZENE	ND
2248	NAPHTHALENE	ND
2246	HEXACHLOROBUTADIENE	ND
2420	1,2,3-TRICHLOROBENZENE	ND
2228	CIS-1,3-DICHLOROPROPENE	ND
2224	TRANS-1,3-DICHLOROPROPENE	ND

** NOTE: ND indicates that the true concentration is less than the method detection limit of 0.5 ug/L.

All detected non-THM compounds have been confirmed by reanalysis.

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Laucks Since 1908
Testing Laboratories, Inc.
940 South Harney St., Seattle, WA 98108 (206) 767-5060 FAX (206) 767-5063

Chemistry, Microbiology, and Technical Services

REPORT ON SAMPLE: 9711373-04A
Client Sample ID: Trip Blank

Date Received : 11/12/97 Collection Date :
Test Code : TIC_V Test Method : 524.2

TENTATIVELY IDENTIFIED VOLATILE COMPOUNDS

Number of TICs found: 0 Conc Units: ug/L

CAS Number	Compound Name	RT	Est. Conc

Form LTL-TIC-V

Laucks Since 1908
Testing Laboratories, Inc.
860 South Harney St., Seattle, WA 98108 (206) 767-5060 FAX (206) 767-5063
Chemistry, Microbiology, and Technical Services

Appendix

Method Blank Report

Laucks Since 1908
Testing Laboratories, Inc.
940 South Harney St., Seattle, WA 98108 (206) 767-5060 FAX (206) 767-5063
Chemistry, Microbiology, and Technical Services

Quality Control Report
Method Blanks for Work Order 9711373

Blank Name	Samples Verified	Test Description	Result	Units	Control Limit
B111397_MV0_W02	3-4Q	Vinyl chloride	0.50 U	ug/L	0.50
		1,1-Dichloroethylene	0.50 U		0.50
		1,1,1-Trichloroethane	0.50 U		0.50
		Carbon tetrachloride	0.50 U		0.50
		Benzene	0.50 U		0.50
		1,2-Dichloroethane	0.50 U		0.50
		Trichloroethylene	0.50 U		0.50
		p-Dichlorobenzene	0.50 U		0.50
		Chloromethane	0.50 U		0.50
		Bromomethane	0.50 U		0.50
		Chloroethane	0.50 U		0.50
		Methylene chloride	0.50 U		2.5
		trans-1,2-Dichloroethylene	0.50 U		0.50
		1,1-Dichloroethane	0.50 U		0.50
		2,2-Dichloropropane	0.50 U		0.50
		cis-1,2-Dichloroethylene	0.50 U		0.50
		1,1-Dichloropropene	0.50 U		0.50
		1,2-Dichloropropane	0.50 U		0.50
		Dibromomethane	0.50 U		0.50
		Toluene	0.50 U		0.50
		1,1,2-Trichloroethane	0.50 U		0.50
		Tetrachloroethylene	0.50 U		0.50
		1,3-Dichloropropane	0.50 U		0.50
		Chlorobenzene	0.50 U		0.50
		1,1,1,2-Tetrachloroethane	0.50 U		0.50
		Ethyl benzene	0.50 U		0.50
		m/p-Xylene	0.50 U		0.50
		o-Xylene	0.50 U		0.50
		Styrene	0.50 U		0.50
		Bromobenzene	0.50 U		0.50

A method blank can validate more than one analyte on more than one work order. The method blanks in this report may validate analytes not determined on this work order, but nonetheless determined in the associated blank.

Because they validate more than one work order, method blank results are not always reported in the same concentration units or to the same detection limits that are used for sample results.

* = blank exceeds control limit

Laucks Since 1908
Testing Laboratories, Inc.
940 South Harney St., Seattle, WA 98108 (206) 767-5060 FAX (206) 767-5063
Chemistry, Microbiology, and Technical Services

Quality Control Report
Method Blanks for Work Order 9711373

nk Name	Samples Verified	Test Description	Result	Units	Control Limit
		1,2,3-Trichloropropane	0.50 U		0.50
		1,1,2,2-Tetrachloroethane	0.50 U		0.50
		o-Chlorotoluene	0.50 U		0.50
		p-Chlorotoluene	0.50 U		0.50
		m-Dichlorobenzene	0.50 U		0.50
		o-Dichlorobenzene	0.50 U		0.50
		Dichlorodifluoromethane	0.50 U		0.50
		Trichlorofluoromethane	0.50 U		0.50
		Bromochloromethane	0.50 U		0.50
		Isopropylbenzene	0.50 U		0.50
		n-Propylbenzene	0.50 U		0.50
		1,3,5-Trimethylbenzene	0.50 U		0.50
		tert-Butylbenzene	0.50 U		0.50
		1,2,4-Trimethylbenzene	0.50 U		0.50
		sec-Butylbenzene	0.50 U		0.50
		p-Isopropyltoluene	0.50 U		0.50
		n-Butylbenzene	0.50 U		0.50
		1,2,4-Trichlorobenzene	0.50 U		0.50
		Naphthalene	0.50 U		0.50
		Hexachlorobutadiene	0.50 U		0.50
		1,2,3-Trichlorobenzene	0.50 U		0.50
		Chloroform	0.50 U		0.50
		Bromodichloromethane	0.50 U		0.50
		Chlorodibromomethane	0.50 U		0.50
		Bromoform	0.50 U		0.50
		t-1,3-Dichloropropene	0.50 U		0.50
		cis-1,3-dichloropropene	0.50 U		0.50

A thod blank can validate more than one analyte on more than one work order. The method blanks in this report may va date analytes not determined on this work order, but nonetheless determined in the associated blank.

Be use they validate more than one work order, method blank results are not always reported in the same concentration un s or to the same detection limits that are used for sample results.

* = blank exceeds control limit

A100

Laucks Since 1908
Testing Laboratories, Inc.
940 South Harney St., Seattle, WA 98108 (206) 767-5060 FAX (206) 767-5063

Chemistry, Microbiology, and Technical Services

Quality Control Report
Multi-Component Method Blanks
Surrogate Recoveries for Work Order 9711373

Blank Name	Test Description	Surrogate Compound	Recov	LCL	UCL
B111397_MVO_W02	Volatile Organics in Water for WA State	d4-1,2-Dichloroethane	109	60	140
		d8-Toluene	100	60	140
		p-Bromofluorobenzene	106	60	140

* = Recovery exceeds control limit

Recov = Percent recovery of surrogate compound
LCL = Lower Control Limit
UCL = Upper Control Limit

A101

KRISTINE GEBBIE
Secretary

STATE OF WASHINGTON
DEPARTMENT OF HEALTH
DIVISION OF DRINKING WATER
Airdustrial Center, Bldg. 3 • P.O. Box 47822 • Olympia, Washington 98504-7822

May 7, 1992

TO: Purveyors of Community Drinking Water Systems Subject to the Federal Safe Drinking Water Act

FROM: Office of Radiation Laboratories
and
Division of Drinking Water
Washington Department of Health

SUBJECT: Early Sampling for Radionuclides.

In July of last year, the EPA proposed new rules to deal with future monitoring of radionuclides in drinking water (A summary of the monitoring requirements is on the next page). It will probably take until 1993 or 1994 before EPA promulgates their final rule for this series of monitoring requirements, and implementation is not expected until January, 1996. In the meantime, it is expected that public concern over radionuclides will increase, especially for Radon which is receiving considerable national attention. The Office of Radiation Laboratories is available to provide an opportunity for your water system to perform some monitoring before the federal requirements are in effect. This early sampling may be valuable to you for dealing with concerns of your service population, your budgeting problems, or to resolve any possible concerns you may have regarding your water quality.

The State Laboratory has developed the analytical methods for conduct of the analyses in concert with the EPA program. The analytical methods available will meet the requirements of EPA's final Rule. **The Laboratory can do analyses for all parameters described by the proposed rule, including the primary tests for Radon, Gross Alpha, Gross Beta, and Lead-210.**

The large number of public water systems in the state are expected to impact the ability of the Radiation Laboratory to fulfill all analytical demands once full scale regulatory monitoring is initiated. With only very limited laboratory service capability (possibly, two labs may be available by 1996) in the state, the costs for analyses will continually increase in the future. Systems are, therefore, urged to begin sampling now to meet their compliance requirements for the future.

Radionuclide analyses performed by the Radiation Laboratory can be used to satisfy the eventual requirements of the upcoming EPA Radionuclide Rule. If you wish to discuss the requirements of the upcoming rule in greater detail or would like to arrange for sampling to meet the monitoring requirements of the rule, please contact Don Russell at (206) 361-2896 (Office of Radiation Laboratories, Public Health Laboratories, 1610 NE 150th Street, Seattle, WA 98155-7224).

Below is a summary of the proposed monitoring requirements for the Radionuclide Rule:

Proposed Monitoring Requirements for Radionuclides for All Systems

Contaminant	Base Requirements: Initial	Base Requirements: Repeat	System is Out of Compliance IF:	Increased Frequency Triggered by Noncompliance	Waiver Conditions	Reduced Frequency (With Waiver)
Gross beta* (vulnerable systems)	Quarterly	Quarterly	Average of 1 sample plus 1 mandatory confirmation sample >MCL	Monthly if out of compliance; return to base when 3 months <MCL	None	None
Tritium, strontium-90	Annually	Annually				
Radon—groundwater	Year 1, Initial Period: Quarterly	Annually	Year 1, Initial Period: Annual average of quarterly samples >MCL	Year 1, Initial Period: Continue quarterly if out of compliance; annually when average of 4 quarters <MCL	State discretion; consistently meeting MCL	Waiver reduces to 1 per 3-year period
	Years 2 & 3, Initial Period: Annually	Annually	All Other Years: 1 sample >MCL	All Other Years: Quarterly if out of compliance; return to annually when average of 4 quarters <MCL	State discretion; consistently meeting MCL	Waiver reduces to 1 per 3-year period
Gross alpha†—radium-226, radium-228, uranium (compositing is permitted)	Groundwater/surface water—annually	Groundwater/surface water—1 per 3-year period	Average of 1 sample plus 1 mandatory confirmation sample >MCL	Groundwater/surface water—annually if out of compliance; return to 1 per 3-year period when 3 years <MCL	State discretion; consistently meeting MCL	Waiver reduces to 1 per 9-year period
Unregulated contaminant lead-210	One sample	Not applicable	Not applicable	Not applicable	Not applicable	Not applicable

*Gross beta is a screen for radium-228 and an MCL standard.
†Gross alpha is a screen for radium-226 and uranium, and an MCL standard.

A103

STATE OF WASHINGTON
DEPARTMENT OF HEALTH
DIVISION OF DRINKING WATER
Airdustrial Center, Bldg. 8 • P.O. Box 47829 • Olympia, Washington 98504-7829
TDD Relay 1-800-833-6388

September 1997

Dear Water System Purveyor:

Enclosed you will find the following:

- **Invoice.** This is the invoice for the 1996-1998 SOC/VOC chemical monitoring waiver(s) you recently requested. The invoice shows the total amount due for all waivers being invoiced at this time.

- **SOC/VOC Waiver Status Sheet.** This report lists all of your currently active sources. For those sources that have been billed for a waiver; the report also lists the waiver type, cost, invoice number and invoice billing date associated with that source.

  For those sources that do not require a waiver; *"No Waiver Needed"* is shown under waiver type. If the source is not currently eligible for a waiver, the waiver type will be listed as *"No Waiver Option"*. If you did not request a waiver for an eligible source, the listing will be: *"No waiver Requested"*. If you have a source that is still being reviewed by DOH, it will be listed as *"Pending"*. Currently, all surface water sources have been listed as "*Pending*". Waiver and invoice information for these sources are being handled separately.

Please tear off the lower portion of the invoice and return it with a check or money order made payable to Department of Health at the address shown on the invoice. Payment is due within 30 days. If you have questions concerning the waiver status of any of your sources, you should contact your DOH regional office water quality specialist. Their names and numbers are listed below.

Sincerely,

Ginny Stern
Source Monitoring Program Manager

Regional Dept of Health Contacts:
Scott Fink - Eastern Regional Office (509)456-2475
Steve Hulsman - Northwest Regional Office (206)464-7962
Belle Fuchs - Southwest Regional Office (360)586-5179

SOC / VOC Chemical Monitoring Waiver Status Sheet

Report Date: *21-Sep-97*

PWSID: 28350 8 **System Name:** GOLD BEACH WATER COMPANY, INC.

Region: NW **County:** KING **System Type** COMM **Total Connections:** 160

Source		Src Type	Use Code	Waiver Type	Waiver Fee	Invoice#:	Invoice Date:
01	WELL # 1	W	S	Area Waiver Renewal	$275.00	41583	9/19/97
02	WELL # 2	W	P	Area Waiver Renewal	$275.00	41583	9/19/97

A104

A105

Washington State Department of Health
Division of Drinking Water

Invoice # 41583

INVOICE
SUSCEPTIBILITY / USE WAIVER REVIEW

Attention: MARILYN HILLS

To:

GOLD BEACH WATER ASSOCIATION PWS ID: 28350 8

PO BOX 2138

VASHON WA 98070

DATE	DESCRIPTION	AMOUNT
9/19/97	Area Waiver Renewal 2 Sources @ 275.00 each	$550.00
	Total:	$550.00
	A detailed description of the billing can be found on the accompanying SOC/VOC Waiver Status Sheet.	

Paid - 10/15/97
Ck #2114 = $550.00
MH

Make check or money order payable to ***Department of Health****. Tear off lower portion and* ***send payment and lower portion within 30 days to:***

DEPARTMENT OF HEALTH
PO BOX 1099
OLYMPIA WA 98507-1099

A106

GOLD BEACH WATER

July 1998 Gold Beach Water Company, Inc. PO Box 2138, Vashon Island, WA 98070 Volume 1; Issue 1

A HISTORY OF GOLD BEACH WATER QUALITY

Inorganic Chemicals (IOCS) Report for Water Samples: Gold Beach Water Co., Inc.
(Department of Health; State of Washington)

EPA REGULATED #1(#2)⬇ WELLS ⬇ ⬇New Hilltop Tank

DOH #	MCL	10/97	11/94	11/90	4/87	2/85	4/82	9/76
4 Arsenic	0.050	ND	0.010	0.010	0.010	0.010	0.010	
5 Barium	2.0	ND	0.10	0.25	0.25	0.25	0.25	
6 Cadmium	0.0050	ND	0.002	0.002	0.002	0.002	0.002	
7 Chromium	0.10	ND	0.010	0.010	0.010	0.010	0.010	
11 Mercury	0.0020	ND	0.0005	0.0005	0.001	0.0005	0.0005	
12 Selenium	0.050	ND	0.005	0.005	0.005	0.003	0.005	
110 Beryllium	0.0040	ND	0.003					
111 Nickel	0.10	0.0020	0.02					
112 Antimony	0.0060	ND	0.002					
113 Thallium	0.0020	ND	0.001					
116 Cyanide	0.20	ND	0.005					
19 Fluoride	4.0	ND	0.2	0.2	0.2	0.2	0.2	0.3
114 Nitrite	1.0	ND	0.05					
20 Nitrate	10.0	1.7	1.5 (0.9)	1.6	1.2	1.1	0.8	

EPA REGULATED (secondary)

8 Iron	0.30	0.12 (0.15)	0.18 (0.10)	0.10	0.41	0.05	0.05	0.2
10 Manganese	0.050	ND	0.010	0.010	0.010	0.010	0.010	0.02
13 Silver	0.050	ND	0.010	0.010	0.010	0.010	0.010	
21 Chloride.	250.	10.0	10.0 (5.0)	10.0	10.0	5.0	5.0	9.0
22 Sulfate	250.	21.0						20.0
24 Zinc	5.0	0.018 (.016)	0.2 (0.3)	0.25				

STATE REGULATED

14 Sodium		10.0	9.0 (7.0)	10.0	10.0	10.0	10.0	11.0
15 Hardness		120.0	116.0 (112.0)	130.0	130.0	100.0	130.0	132.0
16 Conductivity	700.0	300.0 (290.0)	270.0 (220.0)	300.0	260.0	280.0	270.0	
17 Turbidity	1.0	0.14	3.1 (0.1)	0.1	0.5	0.1	0.1	0.15
18 Color	15.0	ND	10.0 (5.0)	5.0	5.0	5.0	5.0	
26 TDS	500.0	N/A						220

STATE UNREGULATED

9 Lead	0.015✦	ND	0.002 (0.004)	0.002	0.010	0.010	0.010	
23 Copper	1.3✦	0.0050	0.20	0.25 (0.006)				<0.1

OTHER (optional)

403 Alkalinity								129.0
404 Magnesium		17.0						19.0
405 Calcium		21.0						22.0

MCL= Maximum Contaminant Level
ND = Non-Detected
✦Per the EPA and the 1986 Safe Drinking Water Act
TDS = Total Dissolved Solids
NA = Not Analzyed

A LEGACY OF CLEAN WATER

The high quality of Gold Beach water has remained consistent throughout the years. Compare our numbers on this chart with the Maximum Contaminant Levels (MCL) set by the State and Federal jurisdictions. Notice that the number of contaminants we test for has increased dramatically since 1976. In 1986 we tested for 23 elements. Just ten years later in 1996 the number had increased to 84. By the year 2010 we'll have to test for a total of 130.

Gold Beach Water Company follows all the State Department of Health requirements. Our testing schedule is rigorous and vigilant: Chlorine residuals every day; Coliform/Bacterial samples once or more each month; Nitrate samples every year; and Inorganic Chemicals (IOCS) every three years.

We follow the Federal EPA, Safe Drinking Water Act of 1986, and State requirements: a Volatile Organic Chemical (VOC) test every three years; a Synthetic Organic Chemical (SOC) waiver every year; and testing for Radio nuclides and Asbestos as well.

In the past, water utilities were required to provide clean water to a customer's meter box. When the EPA stepped in, testing for Lead and Copper inside the customers' homes began. In June, 1996, ten homes built between 1980 and 1987 with copper plumbing passed the MCL (Maximum Contaminant Level) for Lead (0.015 mg/l), but did not pass the MCL for copper (1.3 mg/l) in a test conducted by the homeowners on water that had been standing in their pipes overnight or 6-8 hours undisturbed.

Additional testing concluded that our water had a lower than normal (7.0) pH level. A test performed by the DOH with a Corning pH meter gave the following results: Well #1 - 6.58 pH; Well #2 - 6.45pH. Our own field and bench tests performed over the past nine months indicate pH levels ranging from 6.5 to 6.83. As a result, Gold Beach Water Company is designing a treatment system to raise the pH levels to within the normal range. Our water consultant's bench study results are expected to be submitted by our engineer to the DOH in July, 1998. Chemicals tested to raise the pH are: Sodium Hydroxide (Caustic Soda), Soda Ash, and Potassium Carbonate. However, whenever the pH level of water is increased, several unwanted side effects may occur. Elevated levels of Iron (red stains) and Manganese (black water) may result. Additionally, the increased pH may reduce the ability of chlorine to kill microorganisms and can cause a build-up in the distribution system's pipes.

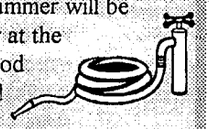
Raising the pH level of water is a lengthy and costly process. We're not allowed to simply go out and do it. After we submit the treatment's chemical composition for approval, the DOH has six months to reply. Upon approval, we will submit engineering drawings of the plant and equipment required to administer the treatment. The DOH has another six months in which to respond. If the design is approved, we will have 24 months in which to construct it. When the plant is ready to go on-line, the DOH must inspect and approve it again. Once begun, the treatment will require daily testing by a State Licensed Water Management Operator, adding to the operating costs of the system. As you can see, the solution to one problem often creates several other problems.

WHY A RATE INCREASE?

Why are we seeing a rate increase? Because our current rates have not increased for five and a half years while our costs continued to rise. Remember, we don't set our own water rates. We're a utility regulated by the State of Washington Utilities and Transportation Commission. The Commission audits utility companies' books and determines a rate based on costs and expenditures.

As a regulated water utitlity, we do not make a profit, just receive a ten percent return on investment. Rising costs do not profit the water company any more than they profit you. We are always searching for new ways to keep costs down. The State recently required that we produce a Small Water System Plan. Although the average cost of such a document for our size company exceeds $14,000, we were able to produce it for just over $10,000.

The current rate increase is only catching us up to the past five years inflation. It went into effect July 1, 1998, so remember that the water you use over the summer will be billed in September at the higher rates -- a good reason to conserve!



CROSSCONNECTION BACKFLOW CHECK

We are currently compiling records of all homes with Fire Suppression Systems and/or Irrigation Systems. Your plumber or system installer should have provided you with a document showing the installation of an approved device designed to prevent "crossconnection" or "backflow". If you have this information, please send us a copy for our files. If you do not, you could be required to pay for a backflow inspection by a qualified operator. This is just one more of the many issues currently being addressed by our State DOH. If you have a question, call 463-9958.

TAP TIPS

You can take some simple steps to reduce the levels of copper and lead in your drinking water. Always use COLD water for drinking and for any potable water you draw from a faucet. Hot water may pick up copper. If the water in your home has not been used for over six hours, "flush" the pipes for two minutes before using. Use this water to flush your toilet, water your plants, take a bath or shower, or wash a load of clothes.

LONESTAR MINING: HYDROGEOLOGICAL REPORT

Richard Rongey, the hydrogeologist who has been with Gold Beach Water since the 1960s, has finished his report regarding the potential impact on our aquifer by Lonestar's mining of the pit just South of Gold Beach.

According to Lonestar's plans, the bottom grade would range from 50 to 75 feet above mean sea level over an area of about 57 acres. Both of our wells draw from a depth 60 to 85 feet beneath that grade, about ten feet below mean sea level. The wells maintain a static water level approximately 30 feet above mean sea level with seasonal fluctuations. This has not changed since the wells were drilled.

According to Mr. Rongey's report, both wells "produce from an independent aquifer system, a very restricted, unconfined, glacial gravel aquifer positioned at the heel of a large post glacial landslide block."

Rongey's study discovered that "The Gold Beach wells produce from an aquifer geologically unrelated to the 'primary aquifer' under the Lone Star Pit but both aquifers have hydraulic continuity with a common recharge source." (*In other words, the aquifers are like two separate pools that are filled from the same faucet.)*

Due to a lack of contaminants usually found in water coming from surface rechargment, Rongey reasons that "The preponderance of recharge from the confined sea level aquifer is similarly suggested by the excellent Gold Beach water quality." (*In other words, our water shows no sign of contaminants typically coming from surface sources such as drainfiields or fertilizers.)*

He found that the sea level aquifer was "largely replaced by deposits of fine to very fine sand in the area of the proposed expanded pit. The water table and springs issuing from this sand and possible sea level aquifer gravels below this sand would appear to remain well below the proposed bottom grade of the pit."

Rongey concludes, "the proposed protection of this aquifer in the pit area will equivalently protect the Gold Beach wells. In this regard no conflicts are anticipated." (*In other words, as long as Lonestar protects the aquifer as they have stated they will, he sees no problems.)*

Of course Gold Beach Water will continue to monitor the Lone Star operation. The quality and supply of our water remain our highest priorities.

CONSERVATION

In accordance with the requirements of the Department of Ecology and the State Department of Health Publication #94-24, "Conservation Planning Requirements", we are expected to reduce our water consumption by an estimated 5% per connection by the year 2001. The enclosed "Outdoor Water Saving Guideline 3" will give you ideas on how to save water in your household. Report any water leaks as soon as possible. Select plants for your garden that require less watering and set automatic timers for less watering time. Buy low-flow fixtures when remodeling or building a new home. Our water is a resource we cannot take for granted. Make it a habit to use water wisely! You'll save money on your water bill, too.

WELLHEAD PROTECTION

Remember that your home is sitting above the source of your drinking water. Do not dump old crankcase oil, gasoline, paints, thinners, antifreeze or any solvents on the ground. Think twice before you use pesticides and fertilizers. Gold Beach is your community. Don't mess in your nest. Let's keep our water clean!

SAMPLING TAPS

As the DOH requires more water testing, we are in constant need of more good sampling taps. Individual hot and cold faucets in utility rooms, bathrooms, or kitchens without swivel spouts are best. Outside faucets will qualify if they are clean and are not of the newer frost-free variety. Have you cleaned the filter or spout in your faucet lately? Call the office to volunteer your faucets: 463-9958.

CLEAN OUT THOSE METER BOXES

A reminder: it's your responsibility to keep your meter boxes clean and in good order so that our meter reader has easy access to them. Before July 1st, please check the inside of your meter box to be sure it's not full of dirt and that the numbers can be read easily. If you find any parts broken or missing, please report it to the GBW office for replacement. Remember too, do not plant any trees or shrubs on or near to the boxes. Do not park over the meter box or stack lumber or debris nearby. Thanks for your help!

A107

GOLD BEACH WATER CO. INC.

P.O. Box [redacted]—Vashon, Wa 98070 [redacted]
P.O. Box # 2138, Vashon, WA 98070
(206) 463-9958

September 18, 1995

State of Washington
Department of Health
Div. of Drinking Water
P.O. Box 47822
Olympia, WA 98504

RE: Gold Beach Water Co., Inc.
ID # 283508
Monitoring Waiver - SOC

Dear Sir:

Thank you for the time extention. Enclosed are the following:

- SOC Survey Form (10 Pages) -

- Gold Beach Water Check # 1793 = $ 75.00 Fee -

- Well Logs = for 2 Wells in Wellfield -

DOH = Bacteriological Results - for July & August, 1995 -

- Chlorination Report - for July, 1995 -

- Map - with Fixed Radius' -

- VOC Report - taken Nov. 7, 1994 -

Sincerely,

Dom Spano

Dom Spano, Owner
Gold Beach Water Co., Inc.

A108

Ground Water Contamination
Susceptibility Assessment Survey Form
Version 2.2

IMPORTANT! Please complete one form for each ground water source (well, wellfield, spring) used in your water system. Photocopy as necessary.

PART I: System Information

Well owner/manager : Dom Spano

Water system name : Gold Beach Water Co., Inc.

County: King, WA. (on Vashon Island)

Water system number: 283508 Source number: —

Well depth: 113' (ft.) *(From WFI form)* (both wells)

Source name: Gold Beach Water - Wellfield

WA well identification tag number: 283-508

___ well not tagged

Number of connections: 156 Homes Population served: 235 Homes (total possible)

Township: 22N Range: 3E - W.M.

Section: 28 1/4 1/4 Section: Lot A - Gold Beach #1 Tract A to platter in Gov't Lot #3

Latitude/longitude (if available): — / —

How was lat./long. determined?

___ global positioning device X survey ___ topographic map
___ other: _____

* Please refer to Assistance Packet for details and explanations of all questions in Parts II through V.

PART II: Well Construction and Source Information

1) Date well originally constructed: ● = 1st 5/27/65 month/day/year Well #1 } = 1 Wellfield

~~last reconstruction~~: ● = 2nd 9/23/76 month/day/year Well #2 }

_____ information unavailable

A109

2) Well driller: Wallace

___ well driller unknown

3) Type of well:

X **Drilled:** X rotary ___ bored ___ cable (percussion) ___ **Dug**

___ **Other:** ___ spring(s) ___ lateral collector (Ranney)

___ driven ___ jetted ___ other: _____

Additional comments: _____

4) Well report available? X YES (attach copy to form) ___ NO

If no well log is available, please attach any other records documenting well construction; e.g. boring logs, "as built" sheets, engineering reports, well reconstruction logs.

5) Average pumping rate: 205 (gallons/min) # 1 = 90 gpm # 2 = 115 gpm 205 gpm total

Source of information: Dom Spano, Owner

If not documented, how was pumping rate determined? _____

Look at watch & time how much pumped per minute.

___ Pumping rate unknown

6) Is this source treated? X YES ___ NO

If so, what type of treatment:

X disinfection ___ filtration ___ carbon filter ___ air stripper ___ other

Purpose of treatment (describe materials to be removed or controlled by treatment):

Chlorinate to Kill bacteria - Chlorination

7) If source is chlorinated, is a chlorine residual maintained: X YES ___ NO

Residual level: .50 (*At the point closest to the source.*) "Copy" - July & Aug '95 (attached)

Checked every weekday & sent to:
DOH - NW Drinking Water Oper.
811 - 3rd Ave #719
Seattle, WA. 98101-1632

A110

PART III: Hydrogeologic Information

1) Depth to top of open interval: [check one]

___ (less than) 20 ft ___ 20-50 ft X 50-100 ft ___ 100-200 ft ___ (greater than) 200 ft

___ information unavailable

2) Depth to ground water (static water level): (77-80')

___ (less than) 20 ft ___ 20-50 ft X 50-100 ft ___ (greater than) 100 ft

___ flowing well/spring (artesian)

How was water level determined?

X well log ___ other: _____

___ depth to ground water unknown

3) If source is a flowing well or spring, what is the confining pressure:

N/A psi (pounds per square inch)

or

_____ feet above wellhead

4) If source is a flowing well or spring, is there a surface impoundment, reservoir, or catchment associated with this source: ___ YES X NO

5) Wellhead elevation (height above mean sea level): 1131' (ft)

How was elevation determined? X topographic map X Drilling/Well Log ___ altimeter

___ other: _____

___ information unavailable

6) Confining layers: (This can be completed only for those sources with a drilling log, well log or geologic report describing subsurface conditions. Please refer to assistance package for example.)

___ evidence of a confining layer in well log

X no evidence of a confining layer in well log

If there is evidence of a confining layer, is the depth to ground water more than 20 feet above the **bottom** of the **lowest confining layer**? ___ YES X NO

___ information unavailable

7) Sanitary setback:

___ (less than) 100 ft* ___ 100-120 ft X 120-200 ft ___ (greater than) 200 ft
* if less than 100 ft describe the site conditions:

8) Wellhead construction:

X wellhead enclosed in a wellhouse

X controlled access (describe): locking Door

X other uses for wellhouse (describe): Storage of reserve meters, Boxes, pipe fittings & chlorine

___ no wellhead control

9) Surface seal:

___ 18 ft

___ (less than) 18 ft (no Department of Ecology approval)

___ (less than) 18 ft (Approved by Ecology, include documentation)

X (greater than) 18 ft (20') for both wells

___ depth of seal unknown

___ no surface seal

10) Annual rainfall (inches per year):

___ (less than) 10 in/yr ___ 10-25 in/yr X (greater than) 25 in/yr
(48 on map)

PART IV: Mapping Your Ground Water Resource

1) Annual volume of water pumped: 160 X 300 X 365 = 17,520,000 (gallons) per year

How was this determined?

___ meter

X estimated: ___ pumping rate (75 gpm + 130 gpm = 205 gpm)

___ pump capacity (_____)

___ other: _____

2) "Calculated Fixed Radius" estimate of ground water movement:
(see Instruction Packet)

6 month ground water travel time : 440' (ft)

1 year ground water travel time : 620' (ft)

5 year ground water travel time: 1,390' (ft)

10 year ground water travel time: 1,970' (ft)

Information available on length of screened/open interval?

X YES ___ NO

Length of screened/open interval: _____(ft)

3) Is there a river, lake, pond, stream, or other obvious surface water body within the 6 month time of travel boundary? ___ YES X NO (mark and identify on map).

4) Is there a stormwater and/or wastewater facility, treatment lagoon, or holding pond located within the 6 month time of travel boundary? ___ YES X NO (mark and identify on map).

Comments: _____

_____

_____

_____

_____

PART V: Assessment of Water Quality

1) Regional sources of risk to ground water:

Please indicate if any of the following are present within a circular area around your water source having a radius up to and including the five year ground water travel time:

	6 month	1 year	5 year	unknown	
likely pesticide application	___	___	___	X	
stormwater injection wells	___	___	___	___	No
other injection wells	___	___	___	___	No
abandoned ground water well	___	___	___	___	No
landfills, dumps, disposal areas	___	___	___	___	No
known hazardous materials clean-up site	___	___	___	___	No
water system(s) with known quality problems	___	___	___	X	No * Dockton & Maury Isle Water Co
population density (greater than) 1 house/acre	X	X	X	___	
residences commonly have septic tanks	X	X	X	___	
Wastewater treatment lagoons	___	___	___	___	No
sites used for land application of waste	___	___	___	X	No

Mark and identify on map any of the risks listed above which are located within the 6 month time of travel boundary? (*Please include a map of the wellhead and time of travel areas with this form. Please locate and mark any of the following.*)

If other recorded or potential sources of ground water contamination exist within the ten year time of travel circular zone around your water supply, please describe:

A114

2) Source specific water quality records:

Please indicate the occurrence of any test results since 1986 that meet the following conditions: (Unless listed on assessment, MCLs are listed in assistance package.)

A. Nitrate: (Nitrate MCL = 10 mg/l)	YES	
Results greater than MCL	___	No
(less than) 2 mg/liter nitrate	___	0.05 Both Wells
2-5 mg/liter nitrate	___	
(greater than) 5 mg/liter nitrate	___	
Nitrate sampling records unavailable	___	

B. VOCs: (VOC detection level 0.5 ug/l or 0.0005 mg/l.)	YES	
Results greater than MCL or SAL	___	None
VOCs detected at least once	___	
VOC test performed but never detected	X	last VOC Results (attached)
VOC sampling records unavailable	___	

C. EDB/DBCP:	YES	
(EDB MCL = 0.05 ug/l or 0.00005 mg/l. DBCP MCL = 0.2 ug/l or 0.0002 mg/l.)		
EDB/DBCP detected below MCL at least once	___	N/A - in King County
EDB/DBCP detected above MCL at least once	___	
EDB/DBCP never detected	___	
EDB/DBCP tests required but not yet completed	___	
EDB/DBCP tests not required	___	

D. Other SOCs (pesticides and other synthetic organic chemicals):	YES	
Other SOCs detected	___	
Other SOC tests performed but none detected *	___	
Other SOC tests not performed	X	(Waiver Applicat

*If any SOCs in addition to EDB/DBCP were detected, please identify and date. If other SOC tests were performed, but no SOCs detected, list test methods here: _____

_____

_____

_____

E. Bacterial contamination: YES

Any bacterial detection(s) in the past 3 years in samples taken from the source (not distribution sampling records). ___ None

Has source (in past 3 years) had a bacteriological contamination problem found in distribution samples that was attributed to the source. ___ No

Source sampling records for bacteria unavailable DOH has all up-to-date records - Taken Monthly - July & Aug '95 (attached

Part VI: Geographic or Hydrologic Factors Contributing to a Non-Circular Zone of Contribution

The following questions will help identify those ground water systems which may not be accurately represented by the calculated fixed radius (CFR) method described in Part IV. For these sources, the CFR areas should be used as a preliminary delineation of the critical time of travel zones for that source. As a system develops its Wellhead Protection Plan for theses sources, a more detailed delineation method should be considered.

1)Is there evidence of obvious hydrologic boundaries within the 10 year time of travel zone of the CFR? (Does the largest circle extend over a stream, river, lake, up a steep hillside, and/or over a mountain or ridge?) & Puget Sound Shoreline

X YES ___ NO

Describe with references to map produced in Part IV:

_____

_____

2) Aquifer Material:

A) Does the drilling log, well log or other geologic/engineering reports identify that the well is located in an area where the underground conditions are identified as fractured rock and/or basalt terrain?

___ YES X NO

B) Does the drilling log, well log or other geologic/engineering reports indicate that the well is located in an area where the underground conditions are primarily identified as coarse sand and gravel?

X YES ___ NO (Well Logs - Attached)

3) Is the source located in an aquifer with a high horizontal flow rate? (These can include sources located on flood plains of large rivers, artesian wells with high water pressure, and/or shallow flowing wells and springs.)

__ YES X NO

4) Are there other high capacity wells (agricultural, municipal and/or industrial) located within the CFRs?

a) Presence of ground water extraction wells removing more than approximately 500 gal/min within...

	YES	NO	unknown
6 month travel time	__	X	__
6 month–1 year travel time	__	X	__
1–5 year travel time	__	X	__
5–10 year travel time	__	X	__

b) Presence of ground water recharge wells (dry wells) or heavy irrigation within...

	YES	NO	unknown
1 year travel time	__	X	__
1–5 year travel time	__	X	__
5–10 year travel time	__	X	__

Please identify or describe additional hydrologic or geographic conditions that you believe may affect the shape of the zone of contribution for this source. Where possible, reference them to locations on the map produced in Part IV.

— None to my knowledge —

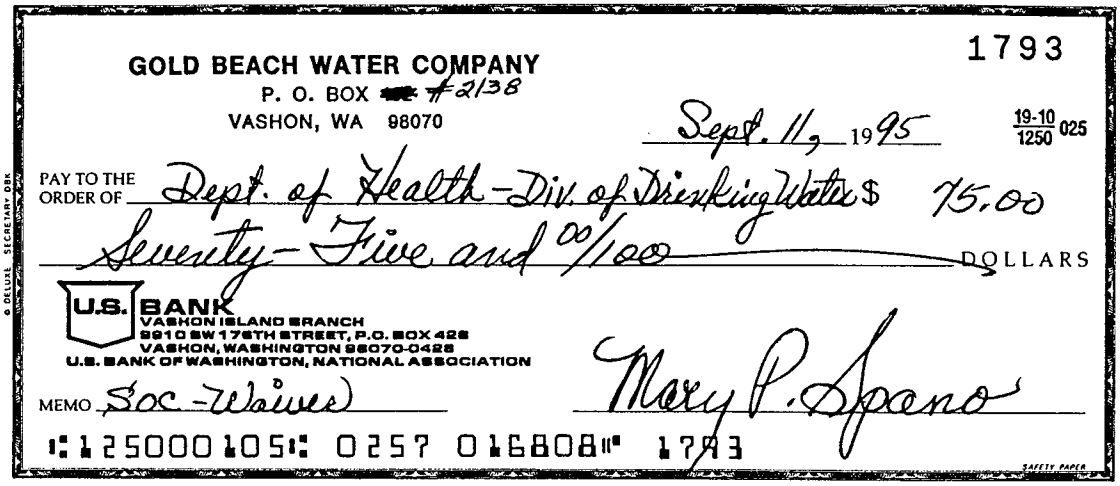
Suggestions and Comments

Did you attend one of the susceptibility workshops?	__ YES	X NO
Did you find it useful?	= YES	= NO
Did you seek outside assistance to complete the assessment?	__ YES	X NO

This form and instruction packet are still in the process of development. Your comments, suggestions and questions will help us upgrade and improve this assessment form. If you found particular sections confusing or problematic please let us know. How could this susceptibility assessment be improved or made clearer? Did the instruction package help you find the information needed to complete the assessment? How much time did it take you to complete the form? Were you able to complete the assessment without additional/outside expertise? Do you feel the assessment was valuable as a learning experience? Any other comments or constructive criticisms you have would be appreciated.

No!!

A118



GOLD BEACH WATER COMPANY
P. O. BOX [redacted] #2138
VASHON, WA 98070

1793

Sept. 11, 1995

19-10 / 1250 025

PAY TO THE ORDER OF Dept. of Health - Div. of Drinking Water $ 75.00

Seventy-Five and 00/100 DOLLARS

U.S. BANK
VASHON ISLAND BRANCH
9910 SW 176TH STREET, P.O. BOX 428
VASHON, WASHINGTON 98070-0428
U.S. BANK OF WASHINGTON, NATIONAL ASSOCIATION

MEMO Soc - Waives

Mary P. Spano

⑈125000105⑈ 0257 016808⑈ 1793

© DELUXE SECRETARY FORM

SAFETY PAPER

A119

R.J. Rongey Inc.

16804 12TH AVENUE S.W.
SEATTLE, WASHINGTON 98166

243-5349

September 23, 1976

Dom Spano
Keywest Realty
P. O. Box 462
Vashon, Washington 98070

Re: Gold Beach, Well No. 2

Dear Sir:

The attached drawings outline the construction and the results of test pumping Gold Beach Well No. 2. The well was pumped for 6 hours at a rate of 200 gpm with a maximum drawdown of 76 inches. The theoretical maximum well capacity approaches 800 gpm. This is far in excess of the capacity of pumping equipment which could be physically accommodated by the 8 inch well bore.

Field tests indicate the water quality is good with low turbidity and no taste or odor. A sample has been forwarded to a commercial laboratory for a complete analysis.

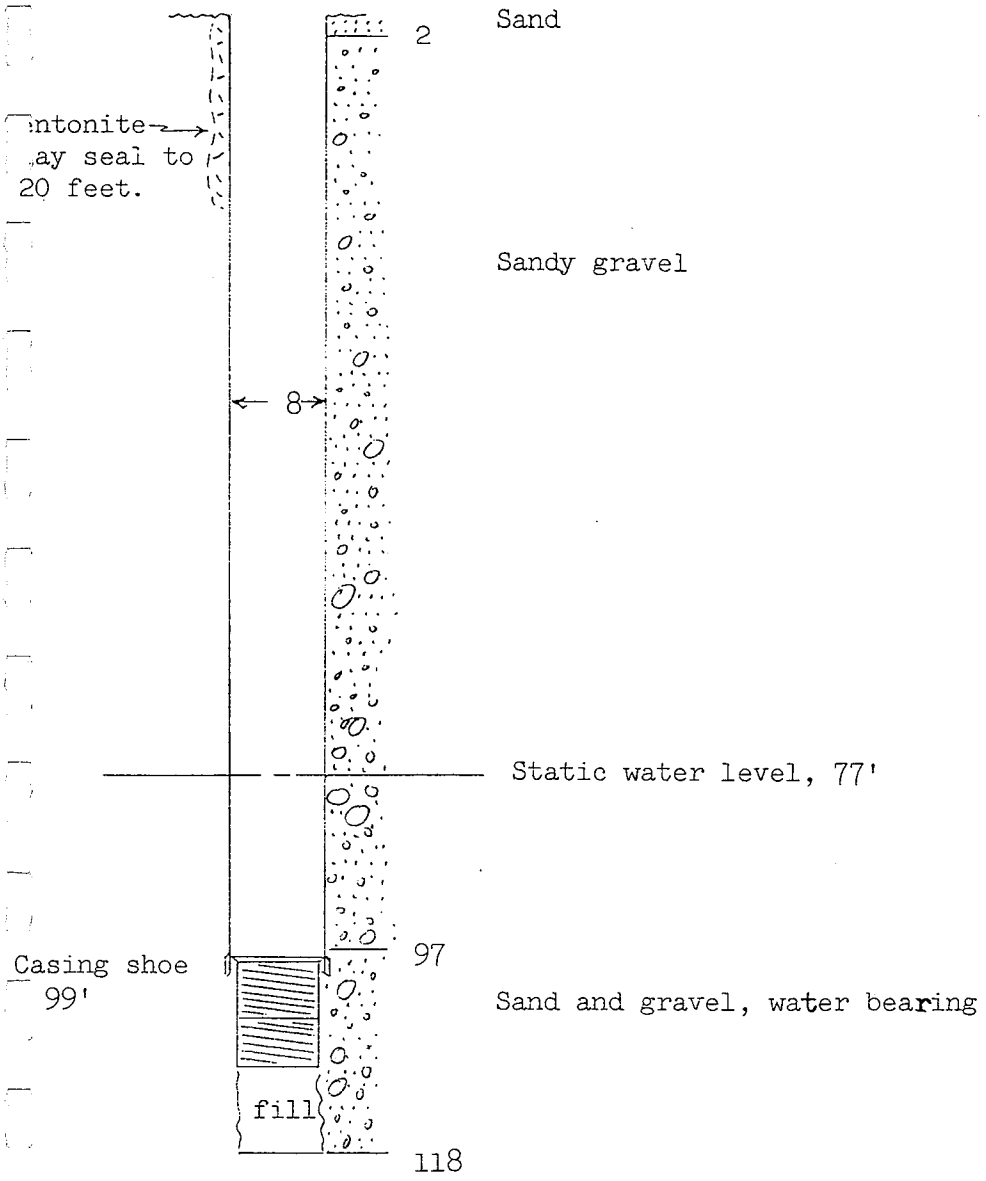
Sincerely,

Richard J. Rongey
Geologist

cc: A Kegel & Assoc.

Driller's Log

A120



Johnson, stainlesssscreen;.080" slot, 99' - 104'
.100" slot, 104' - 109', bail bottom, lead packer seal.

GOLD BEACH

Well No. 2

DATE 9/23/76	SCALE 1" = 20'

R. J. Rongey Inc.

Plate 1

Pumping Test
GOLD BEACH
Well No. 2

DATE 9/23/76

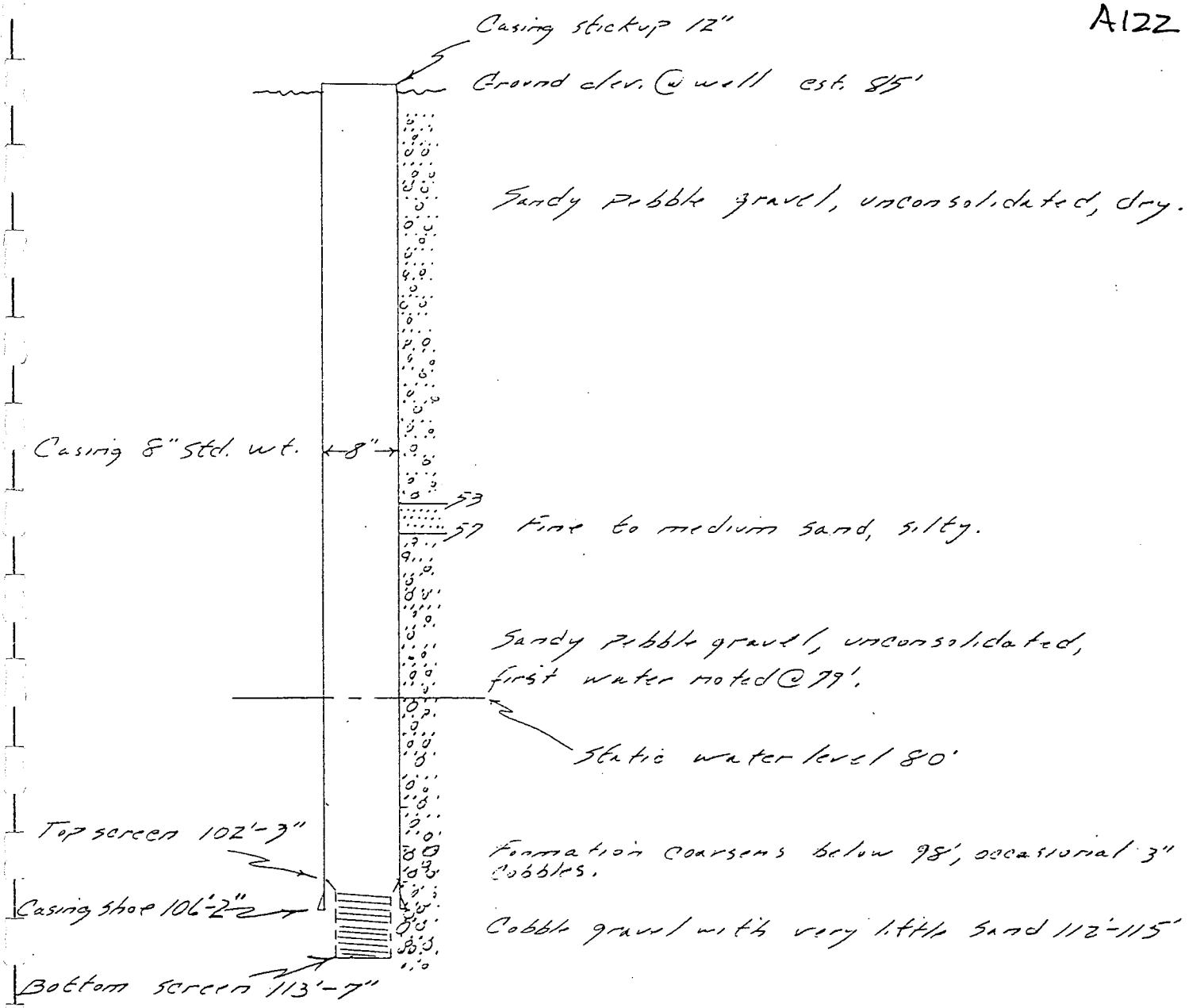
SCALE

R.J. Rongey Inc.

A121

Plate 2

A122



Screen Data

Make - Cook
Type - Stainless, wire wound
Size - 8" nom.
Length - 10'
Equipment - Ball bottom, lead packer.

WELL COMPLETION DATA
COLD BEACH WELL NO. 1

DATE 5/27/65	SCALE 1" = 20'

Bonney Associates

A123

RICHARD J. RONGEY
CONSULTING GEOLOGIST
16804 12TH AVE. S.W., SEATTLE 66, WASH.
CHerry 3-5349

December 11, 1964

Mr. Lloyd Raab
Vashon, Washington

Re: Ground-Water Investigations,
Proposed Plat of Gold Beach.

Dear Sir:

A investigation of ground-water conditions under the proposed plat of Gold Beach and vicinity has been completed. The study included the collection of available data on existing wells in the local area and geophysical exploration with electrical resistivity equipment.

Ground-Water Conditions

The subsurface section, A-A', plate 2, illustrates the geological relationships controlling the occurrence of ground water under the proposed plat. The stratigraphic sequence includes from youngest to oldest (top to bottom) a 100 to 200 foot thickness of highly permeable sandy gravel grading downward to fine sandy silt all of outwash origin attendant to the Vashon glaciation. These materials are in turn underlain by an older sequence of clay and silt with occasional thin interbedded sands and pebble gravels.

Structurally the geology of the area is fairly complex in that the eastern half of the property extending from the base of the ridge to tidewater is a large landslide block. The slide which is intricately splintered along numerous slip planes probably dates back several thousand years and appears well stabilized at present. Total displacement at the heal of the slide is estimated to be about 200 feet and has resulted in a lowering of the gravel/silt contact from near the 150 foot elevation to slightly below sea level in the vicinity of survey points No.s 1, 4 and 10. This area which generally corresponds to the favorable well area as outlined on plate 1 appears to be the only point on the property where the coarser Vashon sands and gravels as exposed in the adjacent gravel pit occur below the water table. Elsewhere both to the east toward the Sound and west under the higher portions of the property these sands and gravels are well above the water table and have no potential for ground-water development.

The zone B horizon, plate 2, appears to be the only aquifer within the explored depths of the pre Vashon section capable of community well development. This aquifer occurs fairly consistently under the higher or upland parts of the property as well as under neighboring properties to the west and north. As shown by section A-A' the aquifer has probably been

December 11, 1964

intercepted by the Schmidt well, 21 J1, where a coarse sand with some gravel was found to be about 4 feet in thickness. Although this well has never been tested for maximum productivity interpretation of the drilling records suggests a maximum yield in the 50 - 75 gpm range. This same aquifer in the vicinity of and under the Raab property is expected to average about 10 feet in thickness and should have a yield potential somewhat greater than that of the Schmidt well.

Geophysical work on the higher parts of the property was carried 50 to 100 feet below zone B and failed to find further aquifers. Survey point No. 1, plate 2, starting at about the 100 foot elevation indicated no aquifers below zone B to the -300 foot elevation while at survey point No. 2 some permeability is indicated at the -250 foot elevation . No prominant widespread aquifers suitable for community well development are expected to occur below zone B to at least the -300 foot elevation.

Ground water quality in zone B as indicated by field analyses of water from the Schmidt well is excellent for all community uses with both low iron and hardness. The water quality in zone A, plate 2, is expected to be of similar good quality.

Ground-Water Development.

The recommended location for exploratory well drilling is shown on plates 1 and 2. The site was selected to explore both Vashon sands and gravels and the zone B aquifer within the pre Vashon section. Maximum drilling depth is estimated at 180 feet. Due to the complexities of faulting at this location a pre drilling estimate of well yield based on the geophysical data is not possible.

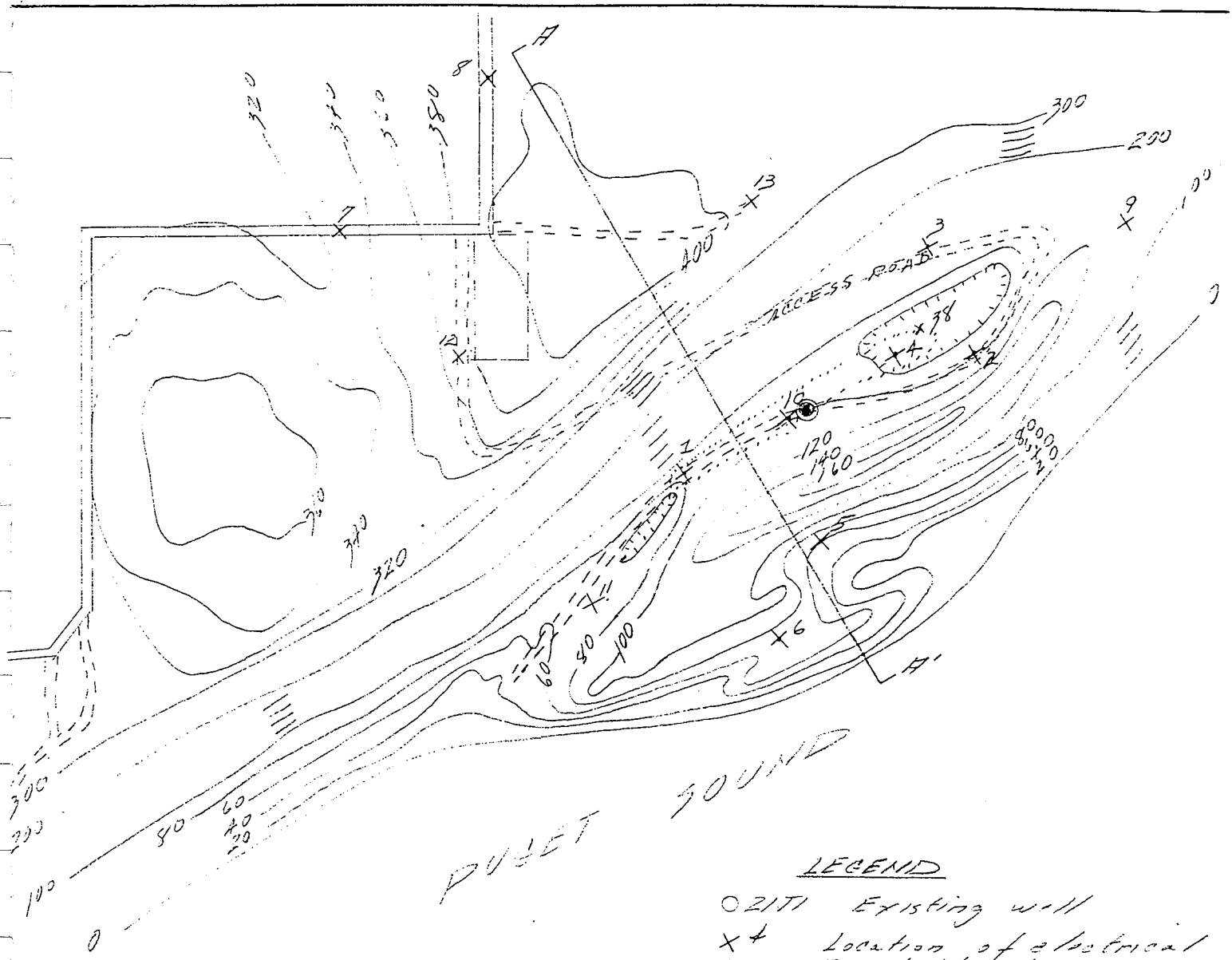
Expected drilling costs are summarized below.

1. Drilling and casing; 180 feet of 8" @ $9.50/ft.		=$1710.00
2. Well screen;		=$ 400.00
3. Development and test pumping; 40 hrs. @ $17/hr.		=$ 680.00
4. Miscl. including drive shoe, ferry fares;		=$ 250.00
	Total	$3040.00

No further recommendations are made with regard to drilling exploration elsewhere on the property pending the results of the initial effort.

Sincerely yours,

Richard J. Rongey



LEGEND

○ZITI Existing well

× Location of electrical resistivity surveys.

A-A' Location of geologic section.

Favorable well area and recommended site location for drilling exploration.

GROUND-WATER INVESTIGATIONS

PROPOSED PLAT OF OLD BEACH

DATE 12/10/64 | SCALE 1"=500'

RICHARD J. RONGEY

CONSULTING GEOLOGIST

A126

DEPARTMENT OF HEALTH
WATER BACTERIOLOGICAL ANALYSIS

SAMPLE COLLECTION: READ INSTRUCTIONS ON BACK OF GOLDENROD COPY
If instructions are not followed, sample will be rejected.

DATE COLLECTED (MONTH / DAY / YEAR)	TIME COLLECTED	COUNTY NAME
7 / 20 / 95	10:00 ☒ AM ☐ PM	KING

TYPE OF SYSTEM: ☒ PUBLIC ☐ INDIVIDUAL (serves only 1 residence)

IF PUBLIC SYSTEM, COMPLETE: I.D. No. 28350B

CIRCLE GROUP: (A) B

NAME OF SYSTEM: Gold Beach Water Co.

SPECIFIC LOCATION WHERE SAMPLE COLLECTED: Jim Rauen's Home Outside Tap

TELEPHONE NO.: DAY (206) 463-9958 EVENING (206) 463-9249

SAMPLE COLLECTED BY: (Name) Marilyn Nills

SYSTEM OWNER/MGR.: (Name) Don Speck

SOURCE TYPE: ☐ GROUND WATER UNDER SURFACE INFLUENCE
☐ SURFACE ☒ WELL or WELL FIELD ☐ SPRING ☐ PURCHASED or INTERTIE ☐ COMBINATION or OTHER

SEND REPORT TO: (Print Full Name, Address and Zip Code)
Gold Beach Water Co.
P.O. Box 2138
Vashon, 98070 WASHINGTON 98070

TYPE OF SAMPLE (check only one in this column)
☒ ROUTINE DRINKING WATER — check treatment → ☒ Chlorinated (Residual: ___ Total ___ Free) ☐ Filtered ☐ Untreated or Other
☐ REPEAT SAMPLE Previous coliform presence Lab # ___ Date ___
☐ RAW SOURCE WATER Source # S ☐ Total Coliform
☐ NEW CONSTRUCTION or REPAIRS ☐ Fecal Coliform
☐ OTHER (Specify) ___

REMARKS:

(LAB USE ONLY) DRINKING WATER RESULTS

☐ UNSATISFACTORY, Coliforms present
REPEAT SAMPLES REQUIRED: ☐ E. Coli present ☐ E. Coli absent ☐ Fecal present ☐ Fecal absent
☒ SATISFACTORY, Coliforms absent

OTHER LABORATORY RESULTS

TOTAL COLIFORM 0 /100 ml E. COLI 0 /100ml
FECAL COLIFORM ___ /100 ml PLATE COUNT ___ /ml

ANOTHER SAMPLE REQUIRED

SAMPLE NOT TESTED BECAUSE:
☐ Sample too old
☐ Wrong container
☐ Incomplete form
☐ ___

TEST UNSUITABLE BECAUSE:
☐ Confluent growth
☐ TNTC
☐ Turbid culture
☐ Excess debris

SEE REVERSE SIDE OF GREEN COPY FOR EXPLANATION OF RESULTS

LAB NO. (7 DIGITS)	DATE, TIME RECEIVED	RECEIVED BY
7509868	7-20-95 11:30 A.M.	PK

DATE REPORTED: 7-21-95 LABORATORY: SEATTLE-KING COUNTY H. D. LAB 1303 PUBLIC SAFETY BLDG.

REMARKS
DOH 305-002 (REV. 4/92)

A127

STATE OF WASHINGTON
DEPARTMENT OF HEALTH

WATER BACTERIOLOGICAL ANALYSIS

Tx mailed 8/17/95 KW

SAMPLE COLLECTION: READ INSTRUCTIONS ON BACK OF GOLDENROD COPY
If instructions are not followed, sample will be rejected.

DATE COLLECTED (MONTH / DAY / YEAR)	TIME COLLECTED	COUNTY NAME
8 / 16 / 95	9 : 30 ☒ AM ☐ PM	King

TYPE OF SYSTEM: ☒ PUBLIC ☐ INDIVIDUAL (serves only 1 residence)

IF PUBLIC SYSTEM, COMPLETE: I.D. No. 2 8 3 5 0 8

CIRCLE GROUP (A) B

NAME OF SYSTEM: Gold Beach Water Co.-Vashon, WA.

SPECIFIC LOCATION WHERE SAMPLE COLLECTED: Jim Rauch's Home Outside Tap

TELEPHONE NO.: DAY (206) 463-9958 EVENING (206) 463-9249

SAMPLE COLLECTED BY: (Name) Marilyn Hills

SYSTEM OWNER/MGR.: (Name) Dom Spano

SOURCE TYPE: ☐ GROUND WATER UNDER SURFACE INFLUENCE
☐ SURFACE ☒ WELL or WELL FIELD ☐ SPRING ☐ PURCHASED or INTERTIE ☐ COMBINATION or OTHER

SEND REPORT TO: (Print Full Name, Address and Zip Code)
Gold Beach Water Co.
P.O. Box 2138
Vashon, WA. 98070 WASHINGTON

TYPE OF SAMPLE (check only one in this column)
☒ ROUTINE DRINKING WATER check treatment → ☒ Chlorinated (Residual: ___ Total ___ Free)
☐ Filtered
☐ Untreated or Other ___
☐ REPEAT SAMPLE Previous coliform presence Lab # ___ Date ___ / ___ / ___

☐ RAW SOURCE WATER Source # S ☐☐ ☐ Total Coliform
☐ NEW CONSTRUCTION or REPAIRS ☐ Fecal Coliform
☐ OTHER (Specify) ___

REMARKS:

(LAB USE ONLY) DRINKING WATER RESULTS

☐ UNSATISFACTORY, Coliforms present
REPEAT SAMPLES REQUIRED: ☐ E. Coli present ☐ E. Coli absent ☐ Fecal present ☐ Fecal absent

☒ SATISFACTORY, Coliforms absent

OTHER LABORATORY RESULTS

TOTAL COLIFORM 0 /100 ml E. COLI 0 /100ml
FECAL COLIFORM ___ /100 ml PLATE COUNT ___ /ml

ANOTHER SAMPLE REQUIRED

SAMPLE NOT TESTED BECAUSE:
☐ Sample too old
☐ Wrong container
☐ Incomplete form
☐ ___

TEST UNSUITABLE BECAUSE:
☐ Confluent growth
☐ TNTC
☐ Turbid culture
☐ Excess debris

SEE REVERSE SIDE OF GREEN COPY FOR EXPLANATION OF RESULTS

LAB NO. (7 DIGITS)	DATE, TIME RECEIVED	RECEIVED BY
7500133	8-16-95 11:30	LP

DATE REPORTED	LABORATORY:
8-17-95	SEATTLE-KING COUNTY H. D. LAB 1303 PUBLIC SAFETY BLDG. SEATTLE, WA.

A128

CHLORINATION REPORT FORM

System Name Cold Beach Water Co ID# 283508 County King

Mailing Address P.O. Box 2138 (street) Month July 1995 Phone # 463-5124

Kirkland, WA 98076 (city, zip) Source # (i.e., S01, S02, or Well # or

Manager Larry Nuce Name) Robin M Tullo

Day	WATER PRODUCTION		DISINFECTION PROCESS				
	Meter Reading	Total Gal/cu ft	Tank Level (gal)	Sol'n Used (gal)	Free Residual (ppm)	Residual Sample Location	Init
1					0.50	7716 SW 257th	R Tullo
2					0.50		
3					0.50		
4					0.50		
5					0.50		
6					0.50		
7					0.50		
8					0.50		
9					0.50		
10					0.50		
11					0.50		
12					0.50		
13					0.50		
14					0.50		
15					0.50		
16					0.50		
17					0.50		
18					0.50		
19					0.50		
20					0.50		
21					0.50		
22					0.50		
23					0.50		
24					0.50		
25					0.50		
26					0.50		
27					0.50		
28					0.50		
29					0.50		
30					0.50		
31					0.50		

Type & Strength of Chlorine Used

Granular _____ %

Liquid _____ %

Mix Tank Solution Concentration

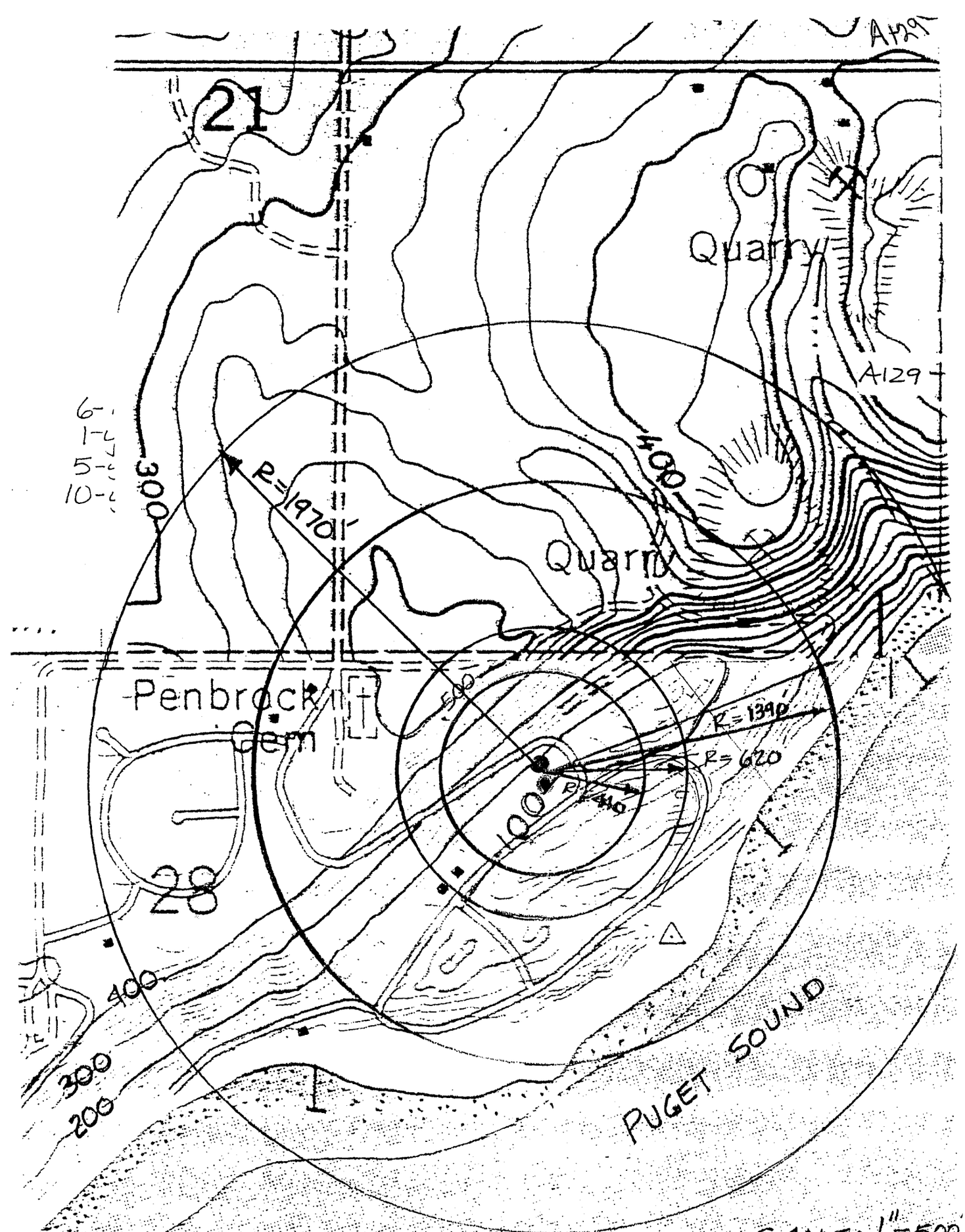
_____ (lbs, oz, gal, cups) added

for every _____ gals of water

KEEP A COPY FOR YOUR RECORDS
PLEASE SEND REPORT BY THE 10TH OF THE FOLLOWING MONTH TO:

Washington State Department of Health
NW Drinking Water Operations
1511 Third Ave., Suite 719
Seattle, WA 98101-1632

For assistance call
(206) 464-7670



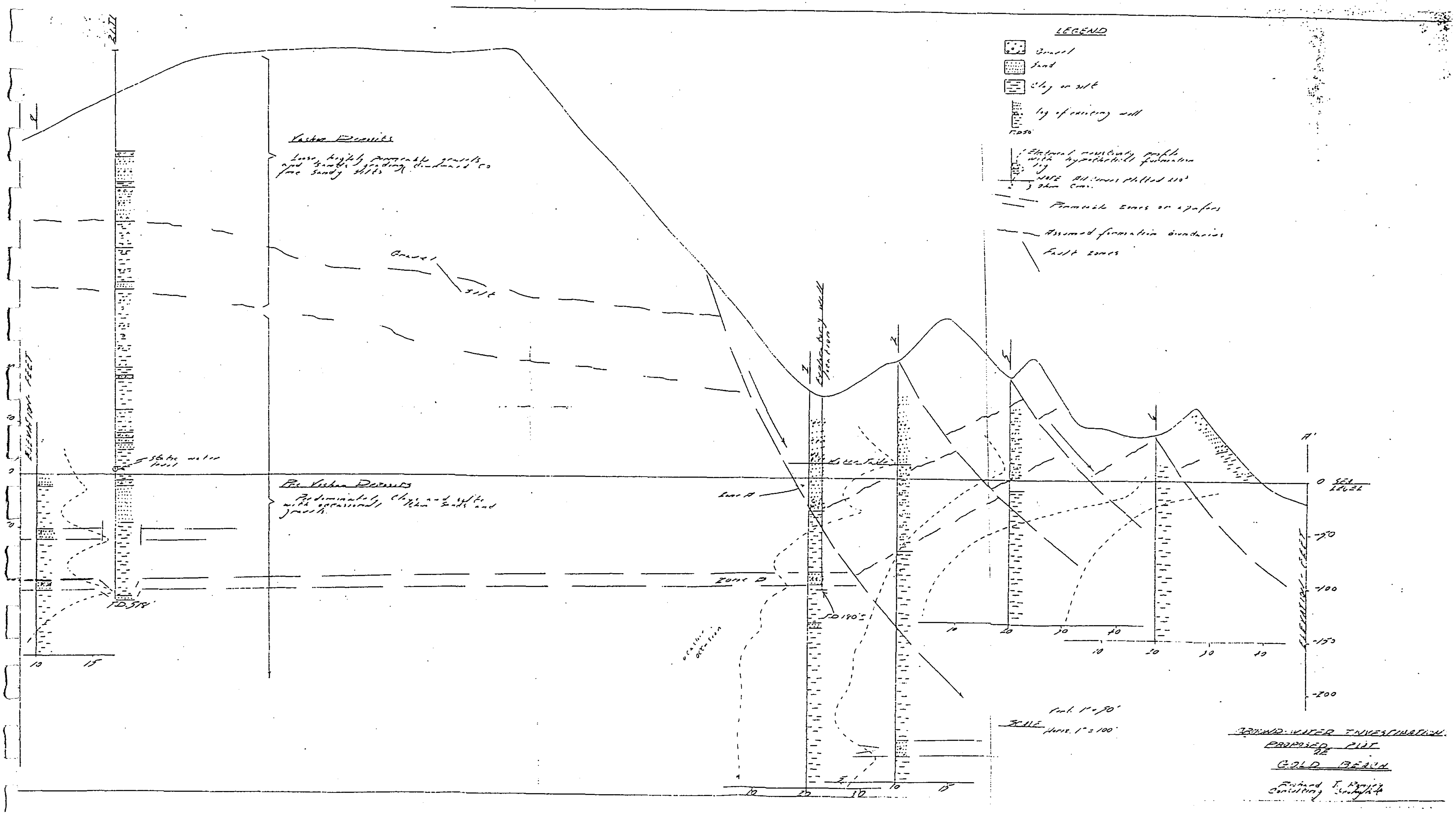
CALCULATED FIXED RADIUS WELL MAP
FOR GOLD BEACH WATER CO.

SEPT 1995

6-MONTH — 440'
1-year — 620'
5-year — 1390'
10-year — 1970'

ID # 283508

● = WELL #2
● = WELL #1


LEGEND
Gravel
Sand
Clay or silt
Log of existing well
Fault zones
Vashon Deposits
Pre Vashon Deposits
Static water level
Zone D
0 SEA LEVEL
-100
-150
-200
SCALE Vert. 1" = 50' Horiz. 1" = 100'
GROUND-WATER INVESTIGATION
PROPOSED PLAT OF
GOLD BEACH

A131

Washington State Department of Health
PUBLIC HEALTH LABORATORIES
1610 N.E. 150th Street,
Seattle, WA 98155 -- (206) 361-2898

VOLATILE ORGANIC CHEMICAL REPORT

Results of Analysis by EPA Method 524.2
Measurement of Purgeable Organic Compounds in Water by Capillary Column
Gas Chromatography/Mass Spectrometry

Send Report To: GOLD BEACH WATER CO.
P.O. BOX 2138
VASHON ISLAND, WA 98070

Lab. Number 5409029A & B
Date Collected 11/07/94
Date Analyzed 11/09/94
E.P.A. Method 524.2

System Name	GOLD BEACH WATER CO., INC.		
System I.D. #	283508	County	King
Source #		Source Type	Well #1 & 2
Specific Loc.	Wellhead		
Bill To:	Gold Beach Water Co., Inc. SAME	$225.00	Analyst: H. Ruark Data File: 3K09F Supv. Initials: HN Date of Report: 12-8-94

EPA CODE	NAME OF COMPOUND	MCL* µg/L	AMOUNT µg/L
	REGULATED COMPOUNDS		
2976	VINYL CHLORIDE	2	ND
2977	1,1-DICHLOROETHYLENE	7	ND
2981	1,1,1-TRICHLOROETHANE	200	ND
2982	CARBON TETRACHLORIDE	5	ND
2990	BENZENE	5	ND
2980	1,2-DICHLOROETHANE	5	ND
2984	TRICHLOROETHYLENE	5	ND
2969	P-DICHLOROBENZENE	75	ND
2979	T-1,2-DICHLOROETHYLENE	100	ND
2380	CIS-1,2-DICHLOROETHYLENE	70	ND
2983	1,2-DICHLOROPROPANE	5	ND
2991	TOLUENE	1000	ND
2987	TETRACHLOROETHYLENE	5	ND
2989	CHLOROBENZENE	100	ND
2992	ETHYL BENZENE	700	ND
2995	M/P-XYLENE (total xylene MCL = 10000)		ND
2997	O-XYLENE (total xylene MCL = 10000)		ND
2996	STYRENE	100	ND
2968	O-DICHLOROBENZENE	600	ND
2964	METHYLENE CHLORIDE	5	ND
2985	1,1,2-TRICHLOROETHANE	5	ND
2378	1,2,4-TRICHLOROBENZENE	70	ND
	TRIHALOMETHANES (THM)		
2941	CHLOROFORM		ND
2943	BROMODICHLOROMETHANE		ND
2944	CHLORODIBROMOMETHANE		0.5
2942	BROMOFORM		ND

MCL : Maximum Contaminant level
NOTE : ND indicates that the true concentration is less than the method detection limit of 0.5 µg/L.

EPA CODE	NAME OF COMPOUND	AMOUNT µg/L
	UNREGULATED COMPOUNDS	
2210	CHLOROMETHANE	ND
2214	BROMOMETHANE	ND
2216	CHLOROETHANE	ND
2978	1,1-DICHLOROETHANE	ND
2416	2,2-DICHLOROPROPANE	ND
2410	1,1-DICHLOROPROPENE	ND
2408	DIBROMOMETHANE	ND
2412	1,3-DICHLOROPROPANE	ND
2986	1,1,1,2-TETRACHLOROETHANE	ND
2993	BROMOBENZENE	ND
2414	1,2,3-TRICHLOROPROPANE	ND
2988	1,1,2,2-TETRACHLOROETHANE	ND
2965	O-CHLOROTOLUENE	ND
2966	P-CHLOROTOLUENE	ND
2967	M-DICHLOROBENZENE	ND
2212	DICHLORODIFLUOROMETHANE	ND
2218	TRICHLOROFLUOROMETHANE	ND
2430	BROMOCHLOROMETHANE	ND
2994	ISOPROPYLBENZENE	ND
2998	N-PROPYLBENZENE	ND
2424	1,3,5-TRIMETHYLBENZENE	ND
2426	TERT-BUTYLBENZENE	ND
2428	SEC-BUTYLBENZENE	ND
2030	P-ISOPROPYLTOLUENE	ND
2422	N-BUTYLBENZENE	ND
2418	1,2,4-TRIMETHYLBENZENE	ND
2248	NAPHTHALENE	ND
2246	HEXACHLOROBUTADIENE	ND
2420	1,2,3-TRICHLOROBENZENE	ND
2228	CIS-1,3-DICHLOROPROPENE	ND
2224	TRANS-1,3-DICHLOROPROPENE	ND

Please Print Plainly and Heavily

A132

Department of Health
PUBLIC HEALTH LABORATORIES
1610 NE 150th Street, Seattle, WA 98155-9701 Tel. (206) 361-2898

WATER SAMPLE INFORMATION FOR INORGANIC CHEMICAL ANALYSES

DO NOT WRITE IN SHADED AREAS. PLEASE FILL BOXES NUMBERED 1 THRU 14. SEE BACK FOR INSTRUCTIONS

1. LABORATORY NUMBER: 511 5130

DATE RECEIVED: 11-7-94

DATE COLLECTED: 11-7-94

2. SYSTEM NAME:
Gold Beach Water Co. Inc
P.O. Box # 2138
Vashon Island, WA. 98070

SYSTEM ID #: 283508

4. CIRCLE GROUP: (A) B

COUNTY: King

6. SOURCE TYPE:
☐ SURFACE ☒ WELL
☐ SPRING ☐ PURCHASE

7. SAMPLE TAKEN:
☒ BEFORE TREATMENT ☐ AFTER TREATMENT

8. SOURCE NO.: Well # 1

9. SOURCE NAME: Wellhead # 1

10. COLLECTED BY: Dom Spano
TELEPHONE: (206) 463-9958

11. IF TAKEN AFTER TREATMENT, CHECK TREATMENT:
☐ FLUORIDATION
☒ CHLORINATION
☐ FILTRATION
☐ WATER SOFTENER,
TYPE: _____
☐ OTHER: _____

12. IF TAKEN FROM DISTRIBUTION, INDICATE ADDRESS:
Well # 1

13. PARTY TO PAY FOR TESTING:
SIGNATURE: Dom Spano
NAME: Gold Beach Water Co Inc
ADDRESS: P.O. Box # 2138
Vashon, WA. 98070
TELEPHONE: (206) 463-9958

14. REMARKS: (water quality problems, address for extra copies, etc.)

LABORATORY REPORT
(DO NOT WRITE INSIDE THIS BOX)

TESTS		MCL[1]	LESS THAN <	RESULTS	UNITS	COMPLIANCE YES	COMPLIANCE NO	CHEMIST INITIALS
Antimony	Sb	0.006	<	0.002	mg/l	✓		CRW
Arsenic[P]	As	0.05	<	0.010	mg/l	✓		JM
Barium[P]	Ba	2.0	<	0.10	mg/l	✓		PO
Beryllium	Be	0.004	<	0.003	mg/l	✓		PO
Cadmium[P]	Cd	0.005	<	0.002	mg/l	✓		JM
Chromium[P]	Cr	0.1	<	0.010	mg/l	✓		PO
Copper	Cu	1.0[2]	<	0.2	mg/l	✓		PO
Iron	Fe	0.3	<	0.18	mg/l	✓		PO
Lead[P]	Pb	0.05[2]	<	0.002	mg/l	✓		JM
Manganese	Mn	0.05	<	0.010	mg/l	✓		PO
Mercury[P]	Hg	0.002	<	.0005	mg/l	✓		KK
Nickel	Ni	0.1	<	0.02	mg/l	✓		PO
Selenium[P]	Se	0.05	<	0.005	mg/l	✓		JM
Silver	Ag	0.1	<	0.010	mg/l	✓		PO
Sodium[P]	Na			9	mg/l			PO
Thallium	Tl	0.002	<	0.001	mg/l	✓		CRW
Zinc	Zn	5.0		0.2	mg/l	✓		PO
Hardness				116	mg/l as $CaCO_3$			PO
Conductivity		700		270	µmhos/cm 25° C	✓		
Turbidity[P]		1.0		3.1	NTU		✓	
Color		15.0		10.0	Color Units	✓		
Chloride	Cl	250		10	mg/l	✓		KK
Cyanide	CN	0.2	<	0.005	mg/l	✓		11/30
Fluoride	F	2.0	<	0.2	mg/l	✓		
Nitrate[P]	as N	10.0		1.5	mg/l	✓		KK
Nitrite	as N	1.0	<	0.05	mg/l	✓		KK
Sulfate	SO_4	250			mg/l			
TDS		500			mg/l			

LABORATORY COMMENTS:

Iron (Fe) = 0.18 mg/l PO (in compliance)
CN tested at Lancks. work order # 94-11-358

CRW

CHARGE:	LABORATORY SUPERVISOR:	DATE OF REPORT:
$295.00	PJ Navajo	12-13-94

1 - MCL: Maximum Contamination Level; 2 - This is the State MCL, Federal Action Levels are 0.015 mg/L for Lead and 1.3 mg/L for Copper; P - Primary Standard; TDS - Total Dissolved Solids

DOH 307-001 (7/94) Frame

WATER SUPPLIER COPY

...eavily

A133

State of Washington
Department of Health
PUBLIC HEALTH LABORATORIES
1610 NE 150th Street, Seattle, WA 98155-9701 Tel. (206) 361-2898

WATER SAMPLE INFORMATION FOR INORGANIC CHEMICAL ANALYSES

DO NOT WRITE IN SHADED AREAS. PLEASE FILL BOXES NUMBERED 1 THRU 14. SEE BACK FOR INSTRUCTIONS

LABORATORY NUMBER: 511513|

DATE RECEIVED: 11-7-94

1. DATE COLLECTED: 11-7-94

2. SYSTEM NAME: Gold Beach Water Co INC.
P.O. Box #2138
Vashon Island, WA. 98070

3. SYSTEM ID #: 83508

4. CIRCLE GROUP: (A) B

5. COUNTY: King

6. SOURCE TYPE:
- ☐ SURFACE
- ☒ WELL
- ☐ SPRING
- ☐ PURCHASE

7. SAMPLE TAKEN:
- ☒ BEFORE TREATMENT
- ☐ AFTER TREATMENT

8. SOURCE NO.: Well #2

9. SOURCE NAME: Wellhead #2

10. COLLECTED BY: Dom Spano

TELEPHONE: (206) 463-9958

11. IF TAKEN AFTER TREATMENT, CHECK TREATMENT:
- ☐ FLUORIDATION
- ☒ CHLORINATION
- ☐ FILTRATION
- ☐ WATER SOFTENER, TYPE:
- ☐ OTHER:

12. IF TAKEN FROM DISTRIBUTION, INDICATE ADDRESS: Well #2

13. PARTY TO PAY FOR TESTING:

SIGNATURE: Dom Spano

NAME: Gold Beach Water Co. Inc

ADDRESS: P.O. Box #2138
Vashon, WA. 98070

TELEPHONE: (206) 463-9958

14. REMARKS: (water quality problems, address for extra copies, etc.)

LABORATORY REPORT

(DO NOT WRITE INSIDE THIS BOX)

TESTS		MCL[1]	LESS THAN <	RESULTS	UNITS	COMPLIANCE YES	COMPLIANCE NO	CHEMIST INITIALS
Antimony	Sb	0.006	<	0.002	mg/l	✓		CKW
Arsenic[P]	As	0.05	<	0.010	mg/l	✓		JDW
Barium[P]	Ba	2.0	<	0.10	mg/l	✓		PO
Beryllium	Be	0.004	<	0.003	mg/l	✓		PO
Cadmium[P]	Cd	0.005	<	0.002	mg/l	✓		JDW
Chromium[P]	Cr	0.1	<	0.010	mg/l	✓		PO
Copper	Cu	1.0[2]	<	0.2	mg/l	✓		PO
Iron	Fe	0.3	<	0.10	mg/l	✓		PO
Lead[P]	Pb	0.05[2]		0.004	mg/l	✓		JDW
Manganese	Mn	0.05	<	0.010	mg/l	✓		PO
Mercury[P]	Hg	0.002	<	.0005	mg/l	✓		KK
Nickel	Ni	0.1	<	0.02	mg/l	✓		PO
Selenium[P]	Se	0.05	<	0.005	mg/l	✓		JDW
Silver	Ag	0.1	<	0.010	mg/l	✓		PO
Sodium[P]	Na			7	mg/l			PO
Thallium	Tl	0.002	<	0.001	mg/l	✓		CKW
Zinc	Zn	5.0		0.3	mg/l	✓		PO
Hardness				112	mg/l as $CaCO_3$			PO
Conductivity		700		220	µmhos/cm 25° C	✓		✓
Turbidity[P]		1.0		0.1	NTU	✓		✓
Color		15.0		5.0	Color Units	✓		✓
Chloride	Cl	250		5	mg/l	✓		KK
Cyanide	CN	0.2	<	0.005	mg/l	✓		✓/SO
Fluoride	F	2.0	<	0.2	mg/l	✓		✓
Nitrate[P]	as N	10.0		0.9	mg/l	✓		KK
Nitrite	as N	1.0	<	0.05	mg/l	✓		KK
Sulfate	SO_4	250			mg/l			
TDS		500			mg/l			

LABORATORY COMMENTS:

CN tested at Lancks work order # 94-11-558

CKW

CHARGE:	LABORATORY SUPERVISOR:	DATE OF REPORT:
$295.00	[signature]	12-[illegible]-94

1 - MCL: Maximum Contamination Level; 2 - This is the State MCL, Federal Action Levels are 0.015 mg/L for Lead and 1.3 mg/L for Copper; P - Primary Standard; TDS - Total Dissolved Solids

DOH 307-001 (7/94)

BILLING COPY

A134

GOLD BEACH WATER COMPANY, INC.

PO BOX 2138
Vashon Island, WA 98070
(206) 463-9958

Wellhead Protection Program
Northwest Regional Office
Attn: Richard Rodriguez
1511 Third Avenue; Suite 719
Seattle, WA 98101

December 7, 1998

Re: Wellhead Protection Program;
Gold Beach Water Company, Inc.
System ID #: 283508

Dear Mr. Rodriguez,

As part of the wellhead protection program for the Gold Beach Water Company, we are hereby informing you of the findings of our wellhead protection area delineation. This is in accordance with State regulations (WAC 246-290-135).

Our company has 163 service connections and seryes a population of approximately 400 people. The State Department of Health has given our system a rating of 'low' regarding susceptibility. This means that our drinking water supply is not very vulnerable to contamination.

The enclosed map shows the 1, 5, and 10 year travel boundaries for our wellhead protection area. Any ground water contamination that occurs within this wellhead protection area has a low, though still possible, potential to reach our well. It is therefore of importance to us that all reasonable steps be taken to ensure that land use activities within this area do not contaminate our customers' drinking water supplies.

Thank you for your support in protecting our drinking water.

Sincerely,

Marilyn Hills

Marilyn Hills
Office Manager

GOLD BEACH WATER COMPANY
OPERATING STATEMENT SUMMARY

Operating statements	Historical			Projected								
	1995	1996	1997	1998	1999	2000	2001	2002	2003	2005	2010	2015
Operating Revenue	40,590	41,541	42,306	43,070	43,835	44,599	45,364	46,128	47,142	48,709	50,327	52,000
Operating Expenses	23,218	23,392	38,769	29,919	31,116	42,361	33,655	35,002	46,402	37,858	39,372	40,947
Depreciation expense	4,745	4,282	4,282	5,799	6,537	6,537	6,537	6,537	6,537	6,537	6,537	6,537
Taxes-Other than Income	2,393	2,780	2,746	2,809	2,873	2,939	3,005	3,073	3,155	3,265	3,379	3,497
Net taxable income	10,234	11,087	-3,491	4,543	3,308	-7,237	2,166	1,517	-8,951	1,050	1,040	1,019
Income Taxes-15%	0	0	0	681	496	-1,086	325	228	-1,343	157	156	153
Net Income:	10,234	11,087	-3,491	3,861	2,812	-6,152	1,841	1,289	-7,608	892	884	866

GOLD BEACH WATER COMPANY
OPERATING STATEMENTS

	Historical			Projected								
Operating statements	1995	1996	1997	1998	1999	2000	2001	2002	2003	2005	2010	2015
Operating income - water sales	40,590	41,541	42,306	43,070	43,835	44,599	45,364	46,128	47,142	48,709	50,327	52,000
Expenses												
Operating expenses												
Power	3,519	3,607	3,751	3,901	4,057	4,220	4,388	4,564	4,747	4,936	5,134	5,339
Chemicals and testing	2,849	811	843	877	912	949	987	1,026	1,067	1,110	1,154	1,200
Engineering/consulting	3,180	3,019	3,140	3,265	3,396	3,532	3,673	3,820	3,973	4,132	4,297	4,469
Accounting	4,274	6,108	6,352	6,606	6,871	7,145	7,431	7,729	8,038	8,359	8,694	9,041
Management		1,500	6,000	6,240	6,490	6,749	7,019	7,300	7,592	7,896	8,211	8,540
Other	4,470	3,843	3,997	4,157	4,323	4,496	4,676	4,863	5,057	5,259	5,470	5,689
Rent	1,200	1,812	1,884	1,960	2,038	2,120	2,205	2,293	2,384	2,480	2,579	2,682
Other expenses	3,726	2,693	2,801	2,913	3,029	3,150	3,276	3,408	3,544	3,686	3,833	3,986
Comprehensive plan			10,000			10,000			10,000			
Depreciation	4,745	4,282	4,282	5,799	6,537	6,537	6,537	6,537	6,537	6,537	6,537	6,537
Taxes other than income												
B & O	2,146	2,172	2,115	2,154	2,192	2,230	2,268	2,306	2,357	2,435	2,516	2,600
Local property	205	206	214	223	232	241	251	261	271	282	293	305
Regulatory assessment	42	400	416	433	450	468	487	506	526	547	569	592
Total expenses	30,356	30,453	45,796	38,527	40,526	51,837	43,198	44,612	56,093	47,659	49,288	50,981
	10,234	11,088	(3,491)	4,543	3,308	(7,237)	2,166	1,517	(8,951)	1,050	1,040	1,019
Income tax				681	496	(1,086)	325	228	(1,343)	157	156	153
Net Income (loss)	10,234	11,088	(3,491)	3,861	2,812	(6,152)	1,841	1,289	(7,608)	892	884	866
Earnings distributions	(10,200)	(10,000)										
Beginning retained earnings	59,244	59,278	60,366	56,875	60,737	63,549	57,397	59,238	60,528	51,385	46,129	67,013
Ending retained earnings	59,278	60,366	56,875	60,737	63,549	57,397	59,238	60,528	52,919	52,277	47,013	67,879

1 REVENUE INCREASE IS ASSUMED TO BE A PRO-RATA INCREASE OVER PRIOR YEARS BASED ON NEW HOOK-UPS
2 ANNUAL INFLATION AT 4%
3 ANNUAL MANAGEMENT INCREASE AT 4%
4 STATE B&O TAX RATE AT 5%
5 NO INCOME DISTRIBUTIONS TO OWNERS IS PROJECTED BECAUSE OF CASH FLOW LIMITATIONS
6 INCOME TAX RATES AT 15%
7 COMPREHENSIVE PLAN EVERY THREE YEARS ESTIMATED AT $10,000

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GOLD BEACH WATER COMPANY
BALANCE SHEET

Account Name		Historical			Projected								
		1995	1996	1997	1998	1999	2000	2001	2002	2003	2005	2010	2015
ASSETS:													
Utility Plant		116,915	124,116	124,116	176,716	188,856	193,856	198,856	203,856	208,856	218,856	243,856	268,856
Less:Accum.Deprec.		40,076	44,358	48,640	54,439	60,976	67,512	74,049	80,586	87,123	100,196	132,880	139,417
Net Utility Plant		76,839	79,758	75,476	122,277	127,880	126,344	124,807	123,270	121,733	118,660	110,976	129,439
Cash		11,688	7,205	6,611	5,000	5,000	5,000	5,000	5,000	5,000	5,000	5,000	5,000
Customer A/Rec.		1,286	1,640	1,706	1,774	1,845	1,919	1,995	2,075	2,158	2,244	2,334	2,428
Misc. Assets		29											
Shareholders Loan		15,044	19,073	19,073									
Total Assets		104,886	107,676	102,866	129,051	134,725	133,262	131,802	130,345	128,891	125,904	118,310	136,867
CAPITAL													
Capital Stock Issued		10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000
Other Paid-In Capital		14,271	14,271	14,271	14,271	14,271	14,271	14,271	14,271	14,271	14,271	14,271	14,271
Retained Earnings		59,277	60,366	56,875	60,737	63,549	57,397	59,238	60,528	52,919	52,277	47,013	67,879
Total Capital		83,548	84,637	81,146	85,008	87,820	81,668	83,509	84,799	77,190	76,548	71,284	92,150
LIABILITIES:													
Shareholder loan					21,123	22,785	26,274	21,773	17,826	22,381	17,636	9,306	997
Accounts Payable		3,418	3,519	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000
Contrib.to Construct.		17,920	19,520	20,720	21,920	23,120	24,320	25,520	26,720	28,320	30,720	36,720	42,720
Total Liabilities		21,338	23,039	21,720	44,043	46,905	51,594	48,293	45,546	51,701	49,356	47,026	44,717
Total Liabilities & Capital		104,886	107,676	102,866	129,051	134,725	133,262	131,802	130,345	128,891	125,904	118,310	136,867
Customers Billed		156	160	163	166	169	172	175	178	182	185	188	191

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GOLD BEACH WATER COMPANY
WATER UTILITY PLANT

Account Names-#'s:	Historical			Projected								
	1995	1996	1997	1998	1999	2000	2001	2002	2003	2005	2010	2015
304 Struct/Improvements	4,223	11,423	11,423	11,423	11,423	11,423	11,423	11,423	11,423	11,423	11,423	11,423
307 Wells	8,838	8,838	8,838	8,838	15,978	15,978	15,978	15,978	15,978	15,978	15,978	15,978
311 Pumping Equip.	22,322	22,322	22,322	30,322	30,322	30,322	30,322	30,322	30,322	30,322	30,322	30,322
330 Distr.Reservoirs	32,071	32,071	32,071	76,171	76,171	76,171	76,171	76,171	76,171	76,171	76,171	76,171
331 Trans/Distr.Mains	24,070	24,070	24,070	24,070	24,070	24,070	24,070	24,070	24,070	24,070	24,070	24,070
333 Services	1,341	1,341	1,341	1,341	1,341	1,341	1,341	1,341	1,341	1,341	1,341	1,341
334 Meters-Installation	13,134	13,134	13,134	13,634	13,634	13,634	13,634	13,634	13,634	13,634	13,634	13,634
335 Fire Hydrants	3,200	3,200	3,200	3,200	3,200	3,200	3,200	3,200	3,200	3,200	3,200	3,200
340 Office Furn/Equipt.	1,017	1,017	1,017	1,017	6,017	6,017	6,017	6,017	6,017	6,017	6,017	6,017
341 Transp.Equipt.	6,700	6,700	6,700	6,700	6,700	6,700	6,700	6,700	6,700	6,700	6,700	6,700
Contingency						5,000	10,000	15,000	20,000	30,000	55,000	80,000
Totals	116,916	124,116	124,116	176,716	188,856	193,856	198,856	203,856	208,856	218,856	243,856	268,856
Contrib.Aid Constr.	17,920	19,520	20,720	21,920	23,120	24,320	25,520	26,720	28,320	30,720	36,720	42,720
Hook-Ups:Total Year	161	160	163	166	169	172	175	178	182	185	188	191

GOLD BEACH WATER COMPANY
WATER UTILITY PLANT

Water Usage-Yearly (in cubic feet)													
80 gpm	Pump #1												
125 gpm	Pump #2												
Hilltop Hs.	75 gal Tank												
Contin.	Chlorinator												
Additions					52,600	12,140	5,000	5,000	5,000	5,000	5,000	5,000	5,000
Depreciation expenses prior to 1998			4,282	4,282	4,282	4,282	4,282	4,282	4,282	4,282	4,282	4,282	4,282
			Useful										
Depreciation of additions			Life										
	Pumping equip		20		400	400	400	400	400	400	400	400	400
	Reservoirs		40		1,103	1,103	1,103	1,103	1,103	1,103	1,103	1,103	1,103
	Meters		35		14	14	14	14	14	14	14	14	14
	Office equip		7			500	500	500	500	500	500	500	500
	Wells		30			238	238	238	238	238	238	238	238
	Depreciation expense				5,799	6,537	6,537	6,537	6,537	6,537	6,537	6,537	6,537
Note: beyond 1998 depreciation of contingent additions will offset plant items fully depreciated													

GOLD BEACH WATER COMPANY
CASH FLOW ANALYSIS

Cash Flow Analysis	Historical			Projected								
	1995	1996	1997	1998	1999	2000	2001	2002	2003	2005	2010	2015
Net Income	10,234	11,088	(3,491)	3,861	2,812	(6,152)	1,841	1,289	(7,608)	892	884	866
Depreciation expense	4,745	4,282	4,282	5,799	6,537	6,537	6,537	6,537	6,537	6,537	6,537	6,537
Addition to utility plant	(2,328)	(7,201)	0	(52,600)	(12,140)	(5,000)	(5,000)	(5,000)	(5,000)	(5,000)	(5,000)	(5,000)
(Increase) decrease other assets	1,203	(325)	(66)	(67)	(71)	(74)	(76)	(80)	(83)	(86)	(90)	(94)
(Increase) decrease shareholder loan	(5,000)	(4,029)		19,073								
Increase (decrease) other liabilities	(5,746)	102	(2,519)									
Increase contrib. in aid of construction	970	1,600	1,200	1,200	1,200	1,200	1,200	1,200	1,600	2,400	6,000	6,000
Shareholder distribution	(10,200)	(10,000)										
Loan from shareholder				21,122	1,662	3,489	(4,502)	(3,946)	4,554	(4,743)	(8,330)	(8,309)
Increase (decrease) in cash	(6,122)	(4,483)	(594)	(1,612)	(0)	0	0	0	(0)	(0)	1	0
Beginning cash	17,810	11,688	7,205	6,611	5,000	4,999	4,999	4,999	5,000	4,999	4,999	5,000
Ending cash	11,688	7,205	6,611	5,000	4,999	4,999	4,999	5,000	4,999	4,999	5,000	5,000

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