

Gleason-Mann Beach Common Disposal Leach field

PROJECT REPORT

1.0 Introduction

1.1. The Problem

The community known as "Gleason-Mann Beach" is located in Sonoma County and lies between Highway 1 and the coastal bluffs five miles north of Bodega Bay. The subject area includes 21 developed parcels with residences clustered at the highway frontage. The rear of the properties, ocean side, slope to the beach.

The community has older residential units where individual onsite sewage disposal systems (septic systems) are the method of sewage disposal. Typically, the units have old septic tanks, and leach fields located in contained sand pits adjacent to the beach.

In 1983, the Sonoma County Board of Supervisors directed the County Public Health Service to conduct a survey of the status of the individual sewage disposal systems in this area to determine if there was an overall problem with wastewater disposal. The County contracted with Rich Lincoln and Sons, a consulting Sanitarian, to perform a sanitary survey. The results of the 1983 survey found 20% of the systems malfunctioning; 20% satisfactory; and 60% marginal. The survey confirmed the location of the drain fields, malfunction rate, and discharges of effluent into public access areas where beach activities occur.

Because the parcels in the area are extremely small and constrained, most having 40-100 ft. of frontage and 30-100 ft. of depth, the ability to repair septic systems "onsite" is impossible.

In 1994, working with the Sonoma County Environmental Health Department, residents of Gleason-Mann Beach sought a community based solution to the septic system problem. Between December, 1994 and February, 1995, Rich Lincoln and Sons, REHS, evaluated the potential for an on-site system at a location adjacent, but on the east side of Highway 1. The groundwater determination tests, soils percolation, soil profiles and groundwater flow model by Lincoln and Sons found this area very suitable for a community sized septic system, and the community commissioned the company to design a system.

1.2 The Solution

The leach field system designed by Rich Lincoln and Sons is located on a +2.2 acre portion of a 151 acre ranch, APN 101-11-05 contiguous on the east side of Highway 1 to eight of the Gleason-Mann Beach parcels. An option for purchase of a leach field easement is secured from Richard and Kaye Hopee Hoffmaster, owners of the 151 acre ranch.

USE PERMIT - SUPPLEMENTAL APPLICATION INFORMATION

EXISTING SITE CHARACTERISTICS:

Existing use of property: grazing Acreage: ± 2.2 ac of 151 ac. ranch
Proximity to creeks, waterways and impoundment areas: none
Vegetation on site: grasses
General topography: less than 5% slope
Surrounding uses to North: grazing South: grazing
East: hills West: residential
New buildings proposed (size, height, type): none
Number of Employees (total): none
Operating days: _____ Hours of operation: _____
Expected traffic (amount, type): 1 truck quarterly
Water source: NA Sewage disposal: _____
Noise Generated: none
Grading Required - Cut Max.: _____ Fill Max.: _____
Fill Area: _____ Approx. total yds.: _____
Vegetation to be removed: grasses will be removed during construction
Will proposal require annexation to a district in order to obtain public services? yes but will resee no X
Are there currently any hazardous materials (chemicals, oils, gasoline) etc. stored, used, or processed on this site? yes _____ no X
Were there any hazardous materials used, stored, or processed on this site anytime in the past? yes _____ no X
Will the use, storage, or processing of hazardous materials occur on this site in the future if this project is authorized? yes _____ no X

ENVIRONMENTAL STATUS:

ADDITIONAL INFORMATION: Letter from Archeologic Resources to be provided March 17, 1998



SONOMA COUNTY
DEPARTMENT OF PLANNING

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UP:6/91

USE PERMIT

1.3. Administration and Management

The Gleason Mann Beach Common Disposal Leach Field System will be constructed and operated by a non profit mutual benefit Corporation organized under the Nonprofit Mutual Benefit Corporation Laws of the State of California, and consisting of all participating property owners within the Gleason Mann Beach service area. All 21 parcels are eligible to participate upon purchase of Membership. A Board of Directors shall be elected, and a General Manager hired to discharge the duties of the Corporation. Dues, fees and assessments shall be levied equally to all members of the Corporation. The General Manager shall oversee the construction of the leach field, and its long term maintenance and operation, and shall be responsible for required monitoring, testing and reporting to the County.

1.4. Financing

The Gleason Mann Beach Common Disposal Leach Field shall be constructed, operated and maintained by dues paid equally by all members of the District. No public funding is anticipated for this project.

Individual septic systems which connect to the common disposal leach field shall be owned, operated, maintained and paid for by each member individually, including but not limited to on-site permits, monitoring, testing, reporting and fees from the County of Sonoma.

1.5 Project Location

The subject 21 residential parcels are located approximately 5 miles north of Bodega Bay on the west side of Highway 1. The proposed leach field is located on +2.2 acres on the east side of Highway 1, generally contiguous to 6135 through 6033 State Highway 1. The southern boundary of the service area is 5877 Highway 1, adjacent to public undeveloped property owned by the Coastal Conservancy; the northern end is defined by the north property line of 6175 State Highway 1 adjacent to the State Parks' property.

The service area includes and is limited to the following Assessors Parcels:

| | | |
|-------------|-------------|-------------|
| 101-120-001 | 101-120-012 | 101-120-049 |
| 101-120-002 | 101-120-018 | 101-120-050 |
| 101-120-007 | 101-120-021 | 101-120-052 |
| 101-120-008 | 101-120-039 | 101-120-053 |
| 101-120-009 | 101-120-043 | 101-120-055 |
| 101-120-010 | 101-120-046 | 101-120-056 |
| 101-120-011 | 101-120-048 | 101-120-057 |

The solution designed by Rich Lincoln and Sons consists of:

- All existing septic tanks and sumps must meet County criteria; new, watertight LAPMO approved tanks and sumps will serve individual parcels. Individual home systems will be designed by a Registered Civil Engineer (RCE) or Registered Environmental Health Specialist (REHS) and will be permitted individually.
- The septic system design will accommodate a per day peak flow for a maximum number of 21 residences with standard leach trench lines, sized at 200% of required capacity.
- Effluent will be piped underneath Highway 1 at specific crossings approved by CALTRANS.
- The common disposal leach field is designed to permit the connection of all 21 parcels, but connection is not mandatory unless dictated by Sonoma County Permit and Resource Management Department policies. A minimum of 14 connections are anticipated prior to construction.
- The common disposal leach field system will be placed under Sonoma County's Operational Permit Program, self-monitoring every six months and county inspections once per year. Monitoring reports will be submitted to the County every six months. Participating homeowners will individually apply for, obtain and pay for individual Operational permits for the home portion of the system. The common Operational Permit for the leach field will be applied for, and paid for by the common ownership of a Non Profit Mutual Benefit Corporation.
- The new common disposal leach field will meet current requirements for an onsite wastewater system.

In 1996, the Sonoma County Board of Supervisors in Resolution No. 96-0095 waived the provisions of resolutions 58439 and 70712, which prohibited the creation of common septic systems for new development. The Board recognized the unique status of the Gleason Mann Beach area, noting that all 21 parcels support existing development, that the common disposal leach field will take care of possible future health issues and provide code compliant septic disposal for the area.

Also in 1996, the State Regional Water Quality Control Board waived the issuance of waste discharge requirements for the proposed Gleason Mann Beach Community Leach field System. (Attachment A)

The *el nino* storms of 1998 have necessitated immediate action on the common disposal leach field system. Homes damaged by the storms cannot be repaired until an approved septic system is in place, which requires the construction of a common disposal leach field on the east side of Highway 1. The common disposal leach field will also mitigate future disaster loss.

2.2.2 Post-1998 Storm Analysis by Engineering Geologist

The storms of January and February 1998 eroded the Gleason-Mann Beach cliffs. As of mid-February, 1998, a number of the 21 homes have experienced significant damage. A class 1 septic system will be required by the County prior to repair or reconstruction of any of these homes. The common disposal leach field will provide for a class 1 system, and will mitigate future storm damage loss. Erik Olsborg, Engineering Geologist, has reviewed Richard Lincolns' design for the leach field, and the plans for the road crossings.

2.2.3 System Design

The wastewater system which will serve each of the participating properties is comprised of two parts: the common leach field and the individual home system.

County requirements call for 150 gal./day/bedroom. A 20% reduction of flow is permitted for use of low-flow toilets and a dual leach field. This system assumes 100% low flow toilets and thus, 120 gal/day/bedroom. Final system design will dictate the number of bedrooms that the leach field can accommodate. Although not all 21 property owners may connect to the leach field initially, the leach field and crossings will be constructed for its ultimate maximum design.

The table below indicates by Assessor's Parcel Number the current number of bedrooms in each dwelling, the additional bedrooms desired [+1], and the maximum possible number of bedrooms, given the size of the lot, height and setback requirements and the capacity of the common leach field disposal system [(+1)].

The total number of existing bedrooms is 45. One additional bedroom is desired by eight property owners, for a maximum total of 53 bedrooms.

2.2.3.1 Common Leach field

The field is designed as a standard system with 200% capacity. The system design will be submitted to the Well and Septic Division of PRMD with the Operations Permit.

The Sonoma County Permit and Resource Management Department, Field Operations Division will have jurisdiction to review, permit and inspect the construction phases of the common leach field system. The common system will be required to maintain, monitor and manage the common system under Sonoma County's Operational Permit Program, and will be required to submit monitoring reports to the County every six months.

2.2.3.2 Common Connections

1.6 Required Permits

The following permits are required to be obtained prior to the construction of the Gleason Mann Beach Common Leach Field System:

- Use Permit and Coastal Permit subject to CEQA compliance, obtained from County of Sonoma, PRMD, Planning Division.
- Individual and Common Operational Permits obtained from County of Sonoma, PRMD, Well and Septic Division.
- Encroachment Permit for collection lines, penetrations to cross Highway 1, and driveway to access leach field, obtained from CALTRANS.
- *Waste Discharge Requirements waived by Letter from RWQCBd, dated January 18, 1996.*

2.0 Project Description

2.1 Leach field Easement

An option to purchase an easement for a +2.2 acre portion of Assessor's Parcel 101-110-005 (151 acres) is being secured from Kaye and Richard Hoffmaster, property owners. The ranch is zoned AE CC B6, 1 unit per 160 acres; 640 acre minimum lot size, and cannot be further subdivided. The property has a Type 2 Williamson Act Contract for grazing, and is and has been under a long term grazing lease. The leach field area will be protected from grazing by a fence constructed and maintained by the Corporation; gates to the fenced area can and will be open 6 months a year, during the dry season, to maintain a fire safe standard. During the wet season, cattle will be precluded from grazing the leach field. Withdrawal of the 2.2 acres of grass will not adversely impact the ranch's grazing operation. (Attachment B, Option to Purchase 2.2 ac. Leach Field Easement).

2.2 Leach field Design

2.2.1 Preliminary Technical Analysis

Initial study and analysis of the feasibility of utilizing the Hoffmaster Ranch as a common leach field was performed between December 1994 and February 1995 by Richard Lincoln, REHS. Based on percolation testing and soils profiles, Mr. Lincoln then designed a leach field system that would serve the 21 existing homes.

The groundwater flow model demonstrated subsurface water movement to the south and west directions, maintaining the majority of the nitrate plume within the easement boundary and roadway. As such, the Sonoma County Permit and Resource Management Department, Field Operations Division, waived the cumulative impact analysis for large wastewater systems.

3.1 Purpose

The specific purpose of the Corporation is to acquire, develop and operate a wastewater leach field and disposal system for the exclusive domestic use, at cost, to the participating owners and occupants of 21 developed residential parcels of land located on the Pacific Ocean coastline in the County of Sonoma, State of California, near the Gleason-Mann Beach on the west side of Highway 1. The leach field and disposal system has been created to accommodate all 21 existing developed residential parcels in the service area. Participation in the Corporation is voluntary.

3.2 Membership

Membership in the Corporation is available to any person who owns or acquires ownership of any parcel of land in the service area, upon application and approval of membership by the Board, and on timely payment of such dues and fees as the Board may fix from time to time. The service area contains 21 residential parcels. There shall be no more than 21 Membership Certificates issued by the Corporation.

3.3. Dues, Fees and Assessments

Each Member must pay, within the time and on the conditions set by the Board of Directors of the Corporation, the dues, fees, and assessments as defined in the By laws of the Corporation and in amounts to be fixed from time to time by the Board of Directors. A pay back equation may be established for Members joining the Corporation after March, 1998.

3.4 Connection to Common Disposal Leach Field System

3.4.1 Connection to the common facilities shall be made and paid for as defined in the By laws of the Corporation. Each Member must have received an Individual Operational Permit from the County of Sonoma prior to connection to the common facilities, and the Corporation must be in receipt of an Operational Permit from the County of Sonoma Permit and Resource Management Department for the Common Disposal Leach Field System.

3.4.2 The Corporation at the sole cost and expense of the Members respectively for whom connections are made, shall make all connections with the main access line to the Common Leach Field. All such connections and installations shall be made by the Corporation for the respective Members at the actual cost to the Corporation. Once the connections are made, the Corporation shall have the right and obligation to repair or replace them.

Individual septic systems will be connected to the common leach field by pressurized header pipes, which will be commonly held. The pipes will cross Highway 1 at 10 or 11 undercrossing locations, which will serve all 21 parcels. An encroachment permit from Caltrans has been applied for, and initial discussions held.

2.2.3.3 Individual Home Systems

All existing septic tanks and sumps serving each participating dwelling unit must be abandoned under permit. All homes will be served with new, watertight LAPMO approved tanks and sumps. An unacceptable existing tank will be pumped, filled, collapsed and replaced by a watertight tank. Where feasible and appropriate, a second tank will be added as a sump chamber. Shared septic tank units may be permitted between adjoining units. Access risers will be inserted at the rate of one per tank opening, with a maximum of three. A control panel and pump will be installed. Rep Plumbing will occur as necessary. Check valves and piping will be installed, and retrofitting of each home with low flow toilets will occur as needed. Costs for each individual home system, including annual individual operational permits, will be borne by the property owner and will not be part of the common system.

2.2.4 Future Accommodation for Non Participants

The Gleason-Mann Beach Common Leach Field System has been designed in accordance with County requirements to accommodate all 21 parcels in the service area, as described above. Some property owners choose not to participate in the Corporation at the current time. Those who choose not to participate recognize that participation in the Corporation will be required by the County should certain building or development permits be sought by that property owner in the future. At the time of the filing for the Common Disposal Leach Field Operational Permit, 14 property owners have joined the Corporation. Any property owner joining the Corporation after the contract for the construction of the disposal leach field has been let shall be required to obtain an individual home system permit from the Sonoma County Permit and Resource Management Department and to pay the dues, fees and assessments required for Membership in the Corporation, prior to connection to the leach field. A pay back formula will be established for all Members after the initial construction.

3.0 Operation of the Corporation

A non profit, mutual benefit corporation is being established and organized under the Nonprofit Mutual Benefit Corporation Law of the State of California. Draft bylaws have been written, and are attached hereto to describe the operation of the Corporation. The following information summarizes the Administration and Management provisions and the financing structure provided for in the Bylaws.

4.0 Budget (COSTS SUBJECT TO CHANGE BASED ON FINAL DESIGN AND CONSTRUCTION BID)

4.1 Construction Budget

4.1.1 Individual Home Costs: *Costs borne by private property owner.*

Total cost of an individual home system is estimated at between \$7500 and \$15,000. The components of this cost are as follows:

- The unacceptable existing tank will be pumped, filled, collapsed and replaced by a watertight tank. Where feasible and appropriate, a second tank will be added as a sump chamber. **Est. Cost: \$1,000 per tank**
- Access risers will be inserted at the rate of one per tank opening, maximum 3. **Est. Cost: \$100/access riser**
- A control panel and pump will be installed. Repumbing will occur as necessary. **Est. Cost: \$1,000 + plumbing**
- Check valves and piping will be installed. **Est. Cost: \$350 + labor**
- Professional Services
 - Plumber: appx. \$1,000
 - Electrician: appx. \$500
 - Equipment (backhoe) Operator: appx. \$2500
- Retrofitting home, as needed **Est. Cost: \$200/low flow toilet**
- Engineering Design **Est. Cost: \$1,000**
- Individual Permits from Sonoma County PRMD
 - Septic Tank Repair (Destruction of old and Installation of new Tank) **Est. Cost: \$283/property**
 - Operating Permit **Est. Cost: \$228/property**

4.1.2 Commonly Held Road Crossings and Leach Field System

The total anticipated cost for the commonly held portions of the System is estimated to be \$400,000. *These costs will be borne by the Corporation.*

- Construction of System and Crossings **Est. Cost: \$115,000**
 - Undercrossings
 - Caltrans encroachment permit
 - Construction, including system and amenities as parking, fencing

3.5 Administration

The Members of the Corporation shall elect a Board of Directors. It shall be the responsibility of the Board of Directors to hire a General Manager, whose responsibility, at a minimum, shall be to monitor and test the common and individual systems on a quarterly basis and to report twice yearly to the County of Sonoma, Permit and Resource Management Department and to the California Regional Water Quality Control Board.

The quarterly Monitoring Program shall be carried out by a Registered Environmental Health Specialist or Registered Civil Engineer. The General Manager shall report twice a year to the County of Sonoma, Permit and Resources Management Department, the results of the quarterly monitoring. The Monitoring Program shall include:

- Physical check of all tank and pump parts, and the control panel.
- Recordation of levels in the leach field, and level in the pump chamber.
- A run time check at the main pump.
- Visual inspection of the leach field and areas around the tanks and piping.
- Taking of lab samples for total coliform and fecal coliform and nitrates.
- Any such other requirements of the common leach field operational permit.

A Service Contract shall be maintained for ordinary service with a licensed C42 contractor, whose name is on file at the County of Sonoma Department of Permit and Resource Management. The Service Contract will assure as needed and at a minimum annual inspection, maintenance and repair of pumps, alarms, floats, associated plumbing and piping, dose counters, pressurized piping, effluent filters, risers, and cleaning of each pump. Costs related to an individual home system will be paid by the individual property owner; costs related to the common disposal leach field system shall be incurred by the Corporation.

The General Manager shall also, with the concurrence of a majority of the Board of Directors, assess and collect dues and fees, and pay bills related to the common facilities, including but not limited to all fees required for permitting and monitoring of the common leach field by the County of Sonoma.

A Reserve Fund shall be maintained adequate to repair components of the common system, and to replace that system based on a 30 year life span.

Any Member whose dues, fees and assessments are not in good standing may be disconnected from the common system 30 days after the General Manager provides concurrent notification to said Member and to the County of Sonoma, Permit and Resource Management Department.