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COPY

CONDIT. USE PERMIT APP.

Mr. Ernie Schmidt
 Director Solid Wastes
 DEQ

Coffin Butte Conditional Use
 Permit Application

SWP # 306 1974

From ^{Free} ^{standing} ^{in box}
 66 RCU60
 Box 00-39
 4 of 4
 1974-1998

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SOLID WASTE SECTION

Roger W. Emmons
ATTORNEY AT LAW
362-1526
4645 18th PLACE S.
SALEM, OREGON 97302

February 12, 1974

Mr. Jim Davenport, Chairman
Benton County Planning Commission
C/O Planning Department

Dear Mr. Davenport: Re: Conditional Use Permit, RA Zone, for Landfill
and Intregal Operations at Coffin Butte Solid
Waste Site

The enclosed application is for expansion of the 25 year old present use of a portion of the south face of Coffin Butte as a landfill to become a comprehensive solid waste site based on a landfill with possible shredding and processing facilities as an intregal part of the landfill operation.

The formal application is contained behind the yellow tab. For convenience in review, a summary of the need for the site and support for it is behind the clear tab.

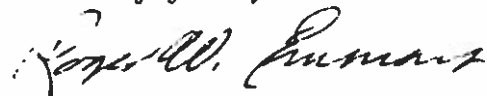
This site is critical for both disposal operations and as a base for volume waste utilization after processing when that becomes technologically and economically feasible.

Selection of this site by the Benton County Solid Waste Committee, Benton County Health Officer and Sanitarian, Benton County Commissioners and the Chemeketa Region for Solid Waste Management comes after three years search for alternate sites or systems with many thousands of dollars in on-site reviews, research, meetings, engineering and volunteer effort.

A previous informational hearing was held on the site, but this will be the first formal public hearing.

We look forward to reviewing this application with you and with the Commission.

Sincerely yours,



Roger Emmons, Counsel
Corvallis Disposal Co.

CC: Members of the Commission
Larry Bauer

APPLICATION TO THE BENTON COUNTY PLANNING COMMISSION

FOR

CONDITIONAL USE PERMIT
COFFIN BUTTE SOLID WASTE SITE

Applicant: Robert Bunn, Corvallis
Disposal Co, and others.

Prepared: Roger Emmons, Counsel
Corvallis Disposal Co.

CONTENTS OF APPLICATION

SUMMARY OF NEED AND SUPPORT FOR THE SITE	Clear Tab
FORMAL APPLICATION WITH LOCATION MAP	Yellow Tab
DOCUMENTATION IN SUPPORT OF APPLICATION:	
Favorable report Benton County Solid Waste Advisory Committee	Blue Tab
Favorable feasibility report by Chemeketa Region and engineering consultants	Red Tab
Exhibits include general operational plan, alternate sites, environmental protection and other information.	
Selection by Benton County Commission, excerpts from minutes.	Green Tab
Selection by Chemeketa Region Board, excerpts from minutes.	Green Tab
Soils study	Orange Tab
Factors in selection by Chemeketa Staff	Orange Tab

CHEMEKETA REGION ALTERNATE PLANS Included with application mailing.

ADDED FILINGS WITH PLANNING DEPARTMENT

Minutes, Chemeketa informational hearing.

Minutes, Solid Waste Committee, Benton County Commissioners and Chemeketa Board.

Benton County Solid Waste Projections by Chemeketa Staff and consultants.

Environmental impact rating on Graeger and alternate sites by Chemeketa staff and others.

Set of five larger exhibit maps of location and of alternate sites.

**NATIONAL INERTABLE-TAB INDEXES ENABLE YOU TO
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23-686

SUMMARY OF NEED AND SUPPORT FOR COFFIN BUTTE SOLID WASTE SITE

RESPONSIBILITY ACCEPTED BY CORVALLIS DISPOSAL Franchised for collection of solid wastes in Benton County, Corvallis and other cities in the County, Corvallis Disposal has supplied the disposal site for almost all wastes generated in the County. With the exception of hazardous materials, demolition materials and others that cannot be handled at the present facility, Corvallis Disposal has accepted all wastes. In addition, they provide for most of the demolition material at their Roche Road Site located across the river from Corvallis in Linn County.

Opened 25 years ago this month, their Coffin Butte site has been upgraded from an open burning dump to a full, modern and efficient sanitary landfill meeting DEQ operating requirements.

Corvallis Disposal accepts the challenge and responsibility to provide:

- (1) A modern and environmentally acceptable solid waste facility to handle all but DEQ restricted wastes generated in Benton County and from adjacent areas where necessary to assure the economic vitality of the site.
- (2) Disposal service at minimum cost to all our users and our collection customers.
- (3) A site that fully meets environmental protection standards established by the many governmental agencies having jurisdiction.
- (4) Additional facilities required for volume utilization of large volumes of wastes instead of burying them. These facilities depend upon economic and technological feasibility now being demonstrated elsewhere.

We are ready to invest some \$100,000 in additional land, many thousands in engineering, more thousands in environmental protection systems, all upon approval of a conditional use by you and approval of the other governmental agencies for the various franchises and permits required.

THE NEED The existing site has a short useful life. When filled, there is no alternate site in Benton County or the two adjoining counties. See "the Search for Alternates" later in this summary.

Where do we put the nearly 40,000 tons of solid wastes estimated for this year for this site...a volume that is fast growing each year. (1)

-
- (1) Chemeketa Region staff estimate of 38,900 Tons plus that to be transported in when a regional site is created for a total of some 88,000 Tons.

Is recycling the whole answer? No! A landfill will still be needed to dispose of residual wastes that far exceed current volume of wastes being disposed of at Coffin Butte.

The five counties have been planning through a coordinated group called the Chemeketa Region for Solid Waste Management. Their Board, which includes Commissioner Mel Hawkins, has reached a consensus on "Plan B" out of the three alternatives shown in the attached brochure.

Recycling would be accomplished by:

- (1) Separation at source of large volumes of clean cardboard and possibly newsprint and other items.
- (2) The remaining volume would be gathered from the largest possible area and be concentrated at two resource recovery centers. One of these is projected for Benton County in 1976.

Assuming the technology and economic feasibility prove out, the system would involve a pre-separation belt where clean cardboard would be pulled out; a pulverizer to reduce the materials to a smaller, more uniform size; an air classifier to pull off the light papers, cardboards and plastics for fuel; a magnetic separator to pull out ferrous metals; and, where markets are available for the material, additional separators.

Chemeketa engineers and the engineering consulting firm of Stevens, Thompson and Runyon estimate recovery at the resource center between 50% and a very optimistic 67% of material coming in.

At a 50% rate, Chemeketa forecasts 1,100,000 Tons to be recycled with 1,759,000 Tons to be disposed of during the next twenty years. An average of 51,000 Tons to 113,000 Tons would be disposed of each year, an annual average of 88,000 Tons or more than twice the current Coffin Butte volume.

Central to the whole resource recovery program is the expanded Coffin Butte site for disposal of residual materials and as a backup for the system in the event of mechanical or market failure. In the initial years, it would also serve as a regional site until the facility can be built and put into operation.

APPROVALS TO DATE

- (1) Benton County Solid Waste Advisory Committee. See Blue Tab.
- (2) Chemeketa staff. This was based upon a review by five members of the staff based on a criteria of 29 items ranging from public acceptance to environmental protections. Details have been filed with the Planning Department.
- (3) Consulting Engineers for Chemeketa. Dr. Fred Cooper, head of solid waste programs for Stevens, Thompson and Runyon selected the Coffin Butte site over alternates based upon 25 criteria. His work appears in the feasibility report, Red Tab.
- (4) Benton County Commissioners. After a public informational hearing by the Chemeketa Region and the Commissioners, and based upon the above recommendations, the Board of Commissioners selected

- (2) subject to considerations of nearby water users. At the same time, on the basis of recommendations of the hydrologist working for the State Engineer on this and alternate sites, five more areas and sites were recommended. All proved inferior to the Granger Site and had substantial problems. These ranged from sites north of Coffin Butte to the ryegrass country south of Albany. A detailed environmental analysis was made, a copy of which is field with the Department for your review. The review included DEQ, Industry, Soil Conservation Service, Health Officer and Sanitarian and Chemeketa Staff.
- (3) As increasing problems developed in connection with Granger, an all out search was made for alternatives. The Tremaine and Hilbert Farm sites were located and analysed. Shortly after this, Robert Bunn found that he could purchase the additional land adjacent to Coffin Butte. For the first time, there would be adequate room, cover material and enconical operations.

Mr. Bunn and Roger Emmons asked Benton County Sanitarian Roger Heyden, the DEQ District Engineer Rich Reiter and his assistant Craig Starr, Hydrologist Randy Sweet and members of the Chemeketa staff together with Mr. Bunn's engineer, Jim Newton of CH₂M Hill, to make a detailed on site analysis. As a result, all agreed the site had real potential and should be further investigated. Key issues were available cover and environmental protection systems. These were developed. See soil study, Orange Tab and feasibility report, Red Tab.

- (4) As a result of comparisions of all the advantages and disadvantages of the four remaining sites, Coffin Butte was approved as noted previously.
- (5) In summary, no other area of Oregon has been more intensively searched for alternate locations nor has more review been done on alternate systems. No other site has been more carefully select- ed.

Hilbert alone does not have requisite life and posses other problems. Flood plain sites such as Tremaine will probably need even more expensive site protection after recent flooding experience. In addition to high cost, the whole disposal system is endangered by flooding. Albany was forced out one day and transported to Coffin Butte. Browns Island at Salem was closed when the all-weather access road was first flooded then partially washed out. All Salem collection with exceptions of restaurants and institutions was closed down for a week. Oregon City was forced out for a short time, mne of only two sites in the Tri-County area around Portland. And City of Portland had to contend with trucks stuck in mud. All this time, Coffin Butte operated every day and with required cover.

ZONING AND COMPREHENSIVE LAND USE Site is zoned R-A and projected for AT under the Comprehensive plan. Under both zones, landfills are permitted as a conditional use. A stated purpose in both the existing and proposed zone ordinances is "to facilitate adequate provision of community facilities" of which this is a critical one.

The area surrounding the site for at least one-half mile is all proposed for a minimum of 20 acre development with a limit of one house plus housing for farm or ranch hands according to the comprehensive plan. Problems of use of septic tanks and others precludes residential development.

The site has been and is a disposal site. Property owners in the adjacent areas knew of the site when they purchased their land. Many purchased when it was an open burning site, far from a sanitary landfill. The permit would continue, expand and move to a better operational area a 25 year old existing facility to serve the public.

OPERATIONS Projected by Chemeketa for at least 20 years with shredding-processing reducing volume, the site will be subject to the highest operational standards in Oregon under DEQ and Benton County Control.

Surface drainage diversion and a leachate drainage, capture and treatment system are included in the preliminary operational plan and are required by DEQ regulations. Operations are continuing with an existing neighbor to resolve leachate problems from the first operational area which was not subject to rigorous engineering requirements. The operator has already provided a 14 foot deep interception trench with ponding below the site to take care of tainted water flowing through the very old operational area. The problem first became evident when burning was shut down to comply with requirements of the Mid Willamette Valley Air Pollution Authority.

Wells are protected. There are none nearby. Court testimony some twenty years ago from the head of the OSU Geology Department proved that an underlying formation prevents penetration to groundwater. Had such a problem been possible and developed, DEQ would long ago have closed the site or required a change in operations.

AESTHETIC CONSIDERATIONS

- (1) Subject to DEQ permit requirements and operational limits, we will attempt to alleviate the "battle scars" from years of gravel mining operations.
- (2) Where possible, buffers will be used.
- (3) The site will be returned to agricultural use with an option that will be tested that a portion might be used as a tree farm.
- (4) The operational areas are all set back more than 1,100 feet from the edge of the right of way of U. S. 99W, a requirement of the Federal Highway Beautification Act and of the Oregon Law implementing that Act in Oregon. In fact, the 1,100 feet is 100 feet more than required under federal law.
- (5) The completed areas will be graded and seeded immediately upon completion as is being done on the existing site. This will minimize visually the use of the site.
- (6) The site does not open undisturbed farm land or conflict with potential parks or gateway development along a river.

COST Operationally, the site is projected by Chemeketa and their consultants to cost substantially less than any alternate site. Capital investment is substantially less as well. Development and O & M costs are available from Chemeketa and Dr. Cooper of STR. Both will be represented at the hearing.

While cost is not controlling, it is critical. It is one of the key reasons for support of Corvallis Mayor Cecil Barker who is very concerned about the affect on collection rates in that City.

Out of the dollars you pay for collection, we already have demands for capital for recycling and facilities, better collection equipment, noise abatement equipment, safety equipment, air emmission controls, decent wages for employees during inflation and many more. Unless we keep disposal site operations and capital costs within reason, there are only two alternatives, slight other critical areas or charge you more.

REGIONAL ASPECTS

Solid waste does not stop at county boundaries. A substantial part of the demolition in Benton County winds up buried in Linn County for example. Regional sites will be needed to meet this cross county generation of solid wastes.

Large volumes must be cncntrated to provide for the cost of upgrading the sites and providing new equipment. The day of the small landfill is gone. Again, to obtain that minimum volume, the site must accept wastes from Linn and Polk counties. The same will be true of the resource recovery center with the site as a backup and residual disposal site.

DEQ is requiring volume concentration at Regional Sites. Their initial plans and the recommendations of the State Citizens Committee that advises DEQ is to close 126 of 188 landfills in Oregon.

INSURANCE FOR BENTON COUNTY By having the regional site in Benton County, the county is assured not only of control but of access for use by all of the residents of the County directly, through collectinn systems or through transfer systems.

APPLICATION FOR A CONDITIONAL USE PERMIT
TO BENTON COUNTY PLANNING COMMISSION
FOR COFFIN BUTTE SOLID WASTE SITE

Land Affected Two parcels:

- (1) Robert Bunn and Daniel Bunn, brothers, owner on which is located the existing Coffin Butte Sanitary Landfill described as follows:

Beginning on the East line of and North 1992.14 feet from the Southeast corner of the Joseph T; Hughart D.L.C. in Township 10 South, Range 4 and 5 West of the Willamette Meridian in Benton County, Oregon; and running thence North along the Claim line 600 feet; then North 81° 44' West 2617.73 feet to a 3/8" iron rod; thence South 23° 56' West 741.0 feet to a 1 1/4" pipe; thence South 35° 08' East 1269.61 feet to the center of a county road; thence South 72° 59' East along the center line 1230.21 feet to Rohner land, Deed Records, Book 79, page 11; thence North along Rohner West line 0.03' East 729.84 feet to a 1/2" pipe being the Rohner Northwest corner; thence North 69° 25' East 1050.72 feet to a yew post at the place of begining and containing 83.97 acres, more or less. Recorded, Deed Records, Book 179, page 366.

- (2) Byron Powell and Charlotte Powell, owners with purchase option to Robert Bunn or his assigns described as follows:

Approximately a 100 acre parcel of ground described in County Survey No. 4066, dated March 31, 1965, and also being all of that portion lying northerly of County Roads No. 46-01 and 45-12 on Benton County Assessor's Map 18-10-4; Code 9-02; Account No. 1100.

Applicant Robert Bunn, Corvallis Disposal Co. will purchase the optioned property upon approval of the land use through conditional use permit and upon obtaining requisite county franchise and DEQ permit.

Use Expansion and modification of the existing Coffin Butte Sanitary Landfill into a comprehensive solid waste management site based upon a landfill operation in compliance with all Planning Commission, Benton County Commission franchise and DEQ permit requirements and conditions. As an intregal part of the landfill operation, shredding and processing facilities may be installed to reduce the volume of materials disposed of on site, allow utilization of a portion of the wastes handled and improve disposal through changing the physical character of the material to be disposed. As an alternate, dependent upon economic feasibility, such facilities may be located off-site with transport of residual wastes to the site for disposal. Some on site storage of salvaged materials would be included. No scavenging would be permitted on the site. For additional details, see Summary under Operations.

APPLICATION FOR CONDITIONAL USE PERMIT - 2

APPLICATION Consists of these two pages; Summary of Need and Support for the Site; and, Documentation in support of application, all as listed in the table of contents with the application. Supporting documents have been filed with the Planning Department as indicated on the table of contents. The booklet on Chemeketa Region alternate plans is included for information and is not a part of the application.

VERIFICATION I, Robert Bunn and I, Daniel Bunn severally state that the information contained in this application for a conditional use is true to our best knowledge and belief.

2-12-74
Date

/s/ Robert E. Bunn

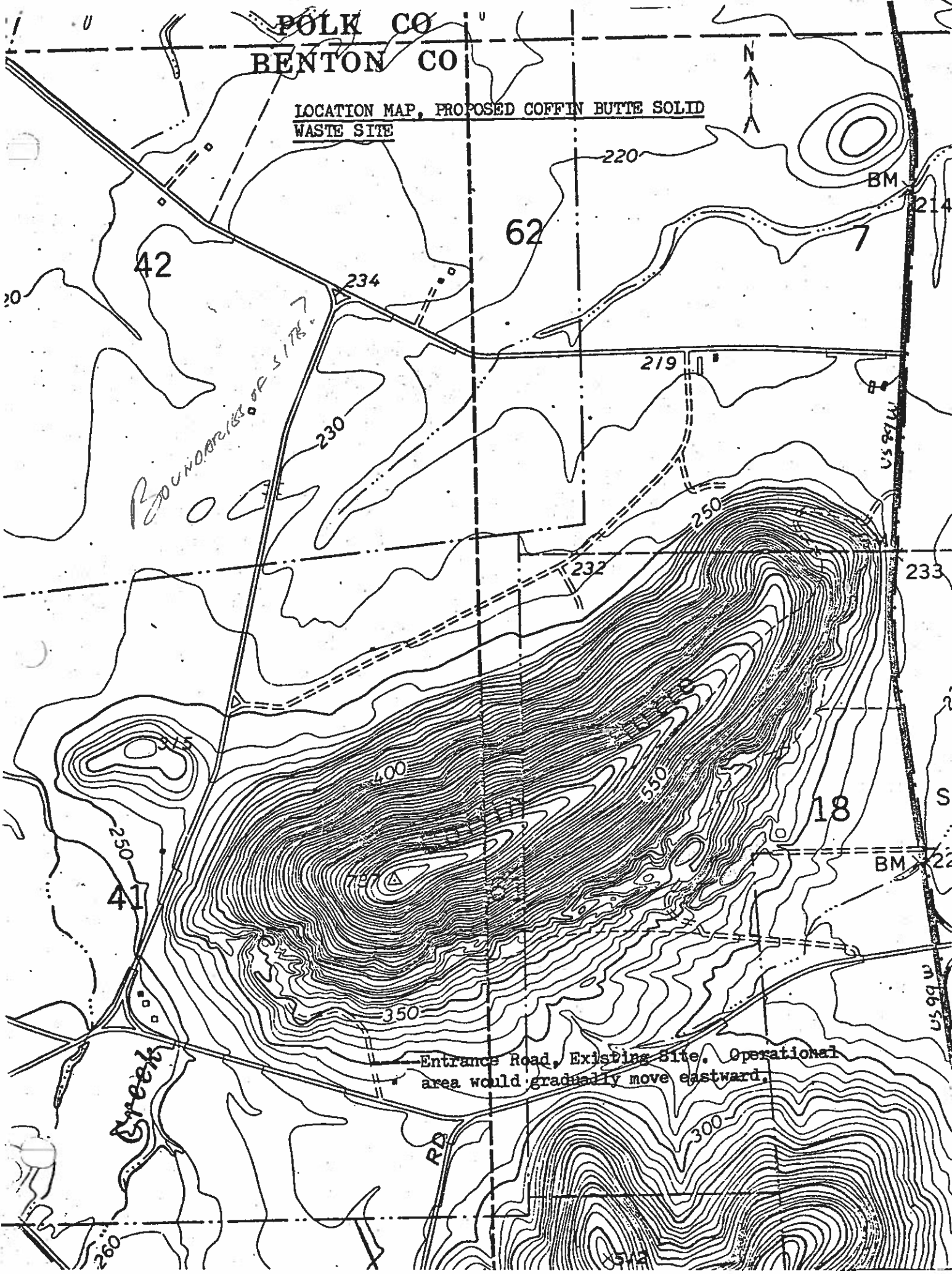
2-12-74
Date

/s/ Daniel E. Bunn
Business Address: 2555 N. Highway 99W,
Corvallis, Oregon 97330 752-3496

Note: Original copy filed with the Planning Department has been executed.
This copy has not signed.

POLK CO
BENTON CO

LOCATION MAP, PROPOSED COFFIN BUTTE SOLID
WASTE SITE



BOUNDARIES OF SITE

Entrances Road, Existing Site. Operational area would gradually move eastward.

January 21, 1974

To: Benton County Commissioners

Transmitted herewith are the recommendations of the Solid Waste Advisory Committee pertaining to the selection of a solid waste disposal site. These recommendations are based on a review of the feasibility studies prepared by Stevens, Thompson & Runyan for the Chemeketa Region Solid Waste Management Program and by information gathered at public presentations by the Chemeketa Region Staff. A recent citizens' petition requesting studies on the feasibility of incineration has been brought to our attention. It is our understanding that Stevens, Thompson & Runyan is undertaking such a study for the Chemeketa Region. This committee did not consider incineration as an alternative in its recommendations.

Alternate regional plans A, B & C for solid waste management are under present consideration and our recommendations will be forthcoming.

Respectfully yours,



Donald C. Phillips
Chairman

lls

Introduction:

The Benton County Solid Wastes Advisory Committee has reviewed the feasibility studies prepared by Stevens, Thompson & Runyan. The committee has also obtained and reviewed information presented at various public meetings. In addition, several members of the committee have been seeking and evaluating disposal sites in Benton County over the period of the last two to three years.

It should be emphasized that this committee perceives its function as being one of reviewing information as developed and presented by various participating groups, agencies and individuals. The committee has not attempted to generate basic data or develop plans of its own.

Recommendations:

- I. The New Coffin Butte site should be selected in preference to the Hilbert, Hector or Tremaine sites.

This recommendation is based on the following considerations.

1. Land Use

Presently the land lies essentially dormant and is being put to no productive use. The rock that can be quarried will produce only a low grade aggregate. There will be no loss of useful land or resources. Eventual completion of the landfill will return the land in a more productive state.

2. Ground & Surface Water Contamination

The new site has been relocated eastwardly to eliminate leachate and runoff contamination of Soap Creek. The proposed leachate collection and treatment system should minimize ground water contamination. At the present time there are no producing wells in the immediate vicinity of the proposed site.

3. Esthetic Considerations

The Coffin Butte area has been used for many years as a disposal site. It existed many years as an open, burning dump. Recently the operation has been a landfill. The next stage of operation which will incorporate proper screening and buffer zones will further upgrade the operation. An important consideration here is that the esthetic conditions at Coffin Butte will be improved whereas relocation to another site can only result in a net esthetic insult.

4. Economics

Analysis by Steven, Thompson & Runyan indicates that the Coffin Butte site is the cheapest at 62¢ per cubic yard. The nearest competitor is the Hilbert Farm site at 68¢ per cubic yard. However, the short life of the Hilbert site (only 60% of the Coffin Butte site) makes it unattractive.

5. Resource Recovery

The availability of land in the nearby, industrially-zoned Adair area together with railroad facilities makes the Coffin Butte site most attractive. Resource recovery is a worthy goal but immediate accomplishment should not be anticipated. If resource recovery can be in full operation by 1982 there will still be sufficient capacity for landfill of the residues at Coffin Butte until about 1995. Under the same conditions the Hilbert and Hector sites would last only until about 1986.

6. Implementation

The present Coffin Butte site is owned and operated by a private company. This company presently owns 84 acres with an option to purchase an additional 106 acres. This has tremendous advantages from the standpoint of making the transition from one site to another. Men, equipment and material can be used jointly in phasing out the old site and developing the new site. Standby capacity will be available at the old site to cover delays and contingencies. This will result in savings to the public in terms of disposal costs.

7. Operation

The availability of cover material suitable for use during the wet winter season is critical. This material is readily available, on site, at Coffin Butte. The Hilbert site will require hauling the material from another source.

II. It is not recommended that Benton County become involved in operating a landfill site.

1. Privately owned and properly franchised companies have the equipment, personnel and experience to carry out such an operation. The public is properly protected through the exercising of the franchising and rate setting powers of the county government.

2. Acquisition of the land on which the Corvallis Disposal Company presently holds an option may be an alternative to be considered. Acquisition by the county would open the possibility of grants and low interest loans for property costs and capital expenditures.

FEASIBILITY STUDY - COFFIN BUTTE

- (1) BACKGROUND OF SERVICE AREA: The existing portion of the site contains approximately 60 usable acres out of a total of 84 acres and is located approximately 8 miles north of Corvallis and 1 1/4 miles west of 99W on County Road 45-01. The site is commonly known as "Coffin Butte" and legally described as Tax Lot 1000, Section 13, Township 10 South, Range 5 West, W.M. of Benton County, Oregon. An area recently obtained for expansion lies directly to the east and contains approximately 100 acres. Extension of the site would be in Section 18, T10S, R4W. The entire operation is under permit to a private firm on private land.

The climate for the Valley region would be classified as mild, wet winter as tabulated on the attached Exhibit M-1 and would be covered by the Corvallis and Dallas stations. Weather can adversely affect operations during the winter due to the effect of saturated cover soils and ability to move traffic to the working face of active landfill operations. The site, which is in an uplands setting, presently serves the cities of Corvallis, Philomath, Monroe, and rural Benton County. It lies 1 1/4 miles west of Highway 99W near Camp Adair and the Southern Pacific Railroad is 2.4 miles to the east. The major contributors to the service area's economy are agriculture, lumber, education, and

research and development with food processing and wood products industries having major impact on both the economic base and disposal requirements.

The present service area (Benton County) has a population density of 90 per square mile, and it has been projected that the population density of Benton County will increase by 56 percent by the year 2000. Should the site be declared a regional site, the amount of wastes received would be tripled by inclusion of the Albany area, Dallas, Monmouth-Independence and rural Linn and Polk Counties.

- (2) **PRESENT DISPOSAL PRACTICES:** The present service area (Benton County) generates approximately 190,190 cubic yards (38,190 tons) of solid waste per year. The types of waste received are residential, commercial, industrial and white goods. The percentage of wastes entering the collection and disposal stream is probably the highest in the Region. The area's primary private collector has a system for recovering cardboard picked up by his collection vehicles. This is processed and baled in Corvallis for resale. White goods are presently stockpiled at the site and are delivered to scrap dealers on a regular basis. The disposal method for the remaining solid waste is a ramp method sanitary landfill.
- (3) **COMPATABILITY WITH THE REGIONAL PLAN:** A regional plan embracing Yamhill, Polk, Benton, Linn and Marion Counties

will not be finalized until April, 1974. The preliminary recommendation at this time is for closure of the existing site. However, it has further been proposed that a regional site be established in the area and since it is well-located and is potentially expandable, the existing Coffin Butte site should be included in the detailed studies for the Granger Vicinity Regional Site. Further studies are being directed at the possibility of using this site with the Hilbert Farm site. The site picked for the Granger Vicinity Regional Site may also be developed with a resource recovery center by 1982. As such, it offers great flexibility for residue deposit.

- (4) PROPOSED DISPOSAL METHODS: The site would continue operating with the salvaging of cardboard and the stockpiling of white goods for delivery to scrap dealers as off-site activities. The remainder of the materials would be disposed of in a ramp method sanitary landfill but east of present operations. Anticipated quantities for the regional site are projected to reach 182,150 tons by 1980. To reduce the volumes of wastes and thereby maintain a reasonable life for the landfill area, processing with milling should be considered as an early phase of the regional plan. This equipment should be off-site and will become an integral part of any resource recovery operation. At present, the operator has two D-8 tractors and an 18-20 yard scraper operation at the disposal site. It is felt that for an

efficient expansion of operations, at least 1 compactor in the 55-60,000 pound class should be added to the operational equipment at a minimum. The usable area of the optional property together with the existing landfill would give the site a minimum life of 15 years. Additional details of future development regarding surface water diversion, leachate control, operation phases, access and soil cover are shown in Exhibit M-4. Final disposition of the site would occur in phases, being agricultural in nature.

The general location of the site is delineated on the attached Quadrangle Map, Exhibit M-2 with excellent access via Highway 99W. Albany traffic will have to use Route 20 to the Lewisberg cutoff thence north on 99W. The proximity to the Camp Adair industrial area allows flexibility for off-site processing or resource recovery in an industrial zone with rail access. It is well above floodplain of Soap Creek.

(5) SITE CHARACTERISTICS:

- a. Groundwater and Geology: Thirty-four well logs located within a one mile radius of the site boundary were obtained from the Oregon State Engineers' Office. These were reviewed for depth of water, type of water-bearing strata, sub-soil characteristics and well yields for domestic or irrigation usage. A number of the recorded wells are either abandoned or filled because of poor yield.

The entire site, both the existing operation and the proposed expansion area, is overlying a black basalt formation. The basalt dips rapidly to the south with overburden consisting of clays, some gravel, silt and broken rock. Typically the basalt is 20 to 60 feet below the ground surface in the lower site elevations and has up to 20 feet of broken rock immediately above. This strata has been developed for numerous low yield wells in the area with moderate yields obtainable only by rotary drilling deep into the basalt. Typical logs are presented in Exhibit M-5. The static water table is generally 10-20 feet below ground level but as close as 4 feet in low areas adjoining Soap Creek. The ground-water probably is recharged locally with drainage off Coffin Butte and other surrounding hills. This is evidenced by the ability for springs to occur during extreme wet seasons such as on the west face of Coffin Butte. The sharp interface of overburden and basalt outcroppings at the base of the hill also simplifies interception and diversion of watershed runoff.

A PROBL
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- b. Soils: The on-site soils have not been fully explored as to depths and characteristics for landfill cover or leachate control. The soil has been classified as Witzel very cobbly, silty, clay loam, AASHO A-6 as tabulated on attached Exhibit M-3. The depth of soil varies from 2 feet to 15 feet and appears that it can be

excavated readily. Experience has shown that usable soils must be well-drained to serve as cover material either by excavation from higher areas or by stockpiling.

- c. Other Factors: The site being on a hillside has seasonal surface water problems not only in the operational area but the runoff goes to adjacent property and in certain areas it flows to Soap Creek. This problem can be remedied by the developing of a series of subsurface drains all of which will feed to a treatment facilities. The treated leachate could be irrigated over a reserved area or the final landfill cover. The on-site access road has a crushed rock base and is adequate for the present service area only. The increased traffic at a regional site would necessitate upgrading including widening and paving of the existing County Road and future entrance road. There is a residence and service building to the southwest of the property near Soap Creek at a distance of approximately 500 feet. This property is partially screened from the operational area by creek vegetation but cannot be screened from hillside operations. A residence about 400 feet west of the northwest corner of the site has an unobstructed view of a completed portion of the existing landfill. Final grading and movement of operations eastward is now being accomplished thereby eliminating this problem. There is also an old residence on the existing site near

the entrance. The access road passes within 150 feet of this house. There is a portable operations shack at the operations area.

The nearest surface drainage is Soap Creek, approximately 400 feet to the west of the site. There is an intermitant spring near the northwest corner of the existing site. Three ponds are located just north of the proposed operational area with outflows passing through the site. A scheme for protection of surface waters is shown in the proposed development plan, Exhibit M-4.

The existing contours and key features for the site area are also delineated on Exhibit M-4. Land use in the immediate vicinity is agriculture or undeveloped area. The zoning, at the present time, is R-A suburban residential/agriculture, however because of poor soils for septic tanks the suburban residential classification has been considered for elimination.

The population projections for the regional service area are identical to those reported in the September 1, 1973 report for Granger disposal sites with waste capacity largely dependent on whether the site receives all wastes or only residue. These volume projections exclusive of the Lebanon service area have been previously reported.

The prevailing regional wind characteristics have been reported previously and were generally referred to as southerly and southwesterly, but when broken down seasonally the prevailing wind usually occurs from September to May with the remainder of the year experiencing northerly and northwesterly winds. Locally, the steep slopes to the north protect future operating areas from strong winds.

- (6) ENVIRONMENTAL PROTECTION MEASURES: In reference to protection and conservation of the air, water and land environments, site conditions will restrict on-site open burning and hazardous waste disposal. Sewage sludge or waste oil sludge could be received in moderate amounts. Landfill leachate which is collected will not be discharged to streams but drained to a treatment facility and spray irrigated on site. Additional area screening will be required along the County Road. Traffic impact to the site is moderate with a lessening projected with full plan implementation. Interim use may require temporary separation of on-site public and commercial traffic primarily with respect to winter trafficability of the working areas.
- (7) COMPARISON OF ALTERNATIVES: This site may be compared to three alternative sites previously reported. To facilitate the comparison, a summary of key factors exclusive of costs for development and operation has been shown in Exhibit M-6.

COMMUNITY INTERPRETATIONS

Use	Soil	Limitation	Major Factors Affecting Use
Dwellings	1,2,3,4	Severe	Steep slopes; 12-20" to bedrock.
Septic tank sewage disposal	1,2,3,4	Severe	12-20" to bedrock; moderately slow permeability; steep slopes.
Lagoon sewage disposal	1,2,3,4	Severe	See above.

RECREATION INTERPRETATIONS

Use	Soil	Limitation	Major Factors Affecting Use
Playgrounds	1,2,3,4	Severe	Steep slopes; cobbly silty clay loam surface soil; 12 to 20" to bedrock.
Camp Areas	1,2,3,4	Severe	See above.
Picnic Areas	4 1,2,3	Moderate Severe	Cobbly silt loam surface; 3-12% slopes. Less than 20" to bedrock; very cobbly or stony silty clay loam surface.
Paths & Trails	1,3,4 2	Mod-severe Severe	See above.

AGRICULTURE INTERPRETATIONS

Major Crops	Soil	Suitability	Optimum Yields	Major Factors Affecting Use
Native pasture	1,3,4 2	Fair Poor	1-2 AUMs/ac.	Shallow, stony, and steep.
Subclover pasture	1,3,4 2	Fair Poor	2-3 AUMs/ac.	Same as above.
Land Capability	1. VIIIs 2. VIIs 3. VIIs 4. VIIs			

WOODLAND INTERPRETATIONS

Species	Soil	Site Index	Limitations					Native Species
			Seedling mortality	Erosion hazard	Windthrow hazard	Plant Competition	Equipment Limitations	
Ponderosa Pine	1,2,3,4	97	Moderate	Moderate	Moderate	Moderate	Moderate	ponderosa pine Douglas-fir incense cedar Oregon white oak

RANGE INTERPRETATIONS

Site Name	Soil	Key Species and %	Pot. Yields		Normal Season	
			Total Lb/Ac	Usable Ac/AUM	Growing	Grazing
		Not applicable...				

filed with the

STATE OF OREGON

State Well No. 10S/4W-12

STATE ENGINEER, SALEM, OREGON 97301

1972 (Please type or print)

within 30 days from the date

of well completion

STATE ENGINEER (Do not write above this line)

State Permit No.

SALEM, OREGON

1) OWNER:

Name Robert Westfall
Rt 1 Box 303E
CORVALLIS, OREGON

2) TYPE OF WORK (check):

New Well [X] Deepening [] Reconditioning [] Abandon []
If abandonment, describe material and procedure in Item 12.

3) TYPE OF WELL:

Rotary [X] Driven []
Cable [] Jetted []
Dug [] Bored []

4) PROPOSED USE (check):

Domestic [X] Industrial [] Municipal []
Irrigation [] Test Well [] Other []

5) CASING INSTALLED:

6" Diam. from 0 ft. to 26 ft. Gage 250
Threaded [] Welded [X]

6) PERFORATIONS:

Perforated? [] Yes [X] No
Type of perforator used
Size of perforations in. by in.
perforations from ft. to ft.
perforations from ft. to ft.
perforations from ft. to ft.

7) SCREENS:

Well screen installed? [] Yes [X] No
Manufacturer's Name
Type Model No.
Diam. Slot size Set from ft. to ft.
Diam. Slot size Set from ft. to ft.

8) WELL TESTS:

Drawdown is amount water level is lowered below static level
Was a pump test made? [] Yes [X] No If yes, by whom?
Yield: gal./min. with ft. drawdown after hrs.
Pump test 20 gal./min. with 47 ft. drawdown after 2 hrs.
Artesian flow g.p.m.
Temperature of water Depth artesian flow encountered ft.

9) CONSTRUCTION:

Well seal-Material used Cement
Well sealed from land surface to 20 ft.
Diameter of well bore to bottom of seal 9 in.
Diameter of well bore below seal 6 in.
Number of sacks of cement used in well seal 1 sacks
Number of sacks of bentonite used in well seal sacks
Brand name of bentonite
Number of pounds of bentonite per 100 gallons of water lbs./100 gals.
Was a drive shoe used? [] Yes [X] No Plugs Size: location ft.
Do strata contain unusable water? [] Yes [X] No
Type of water? depth of strata
Method of sealing strata off
Was well gravel packed? [] Yes [X] No Size of gravel:
Gravel placed from ft. to ft.

(10) LOCATION OF WELL:

County Benton Driller's well number
SW 1/4 SW 1/4 Section 18 T. 10S R. 4W W
Bearing and distance from section or subdivision corner

(11) WATER LEVEL: Completed well.

Depth at which water was first found 48
Static level 17 ft. below land surface. Date 9/15
Artesian pressure lbs. per square inch. Date

(12) WELL LOG:

Diameter of well below casing 6
Depth drilled 74 ft. Depth of completed well 74
Formation: Describe color, texture, grain size and structure of material and show thickness and nature of each stratum and aquifer penetrated with at least one entry for each change of formation. Report each change position of Static Water Level and indicate principal water-bearing strata

Table with columns: MATERIAL, From, To, SW. Rows include SOIL, CLAY, yellow, BROKEN SAND, dark, IN. CLAY, yellow, SAND, dark, hard, blue, SAND, dark, blue, broken, WATER STRATUM, SAND, dark, blue.

Work started Sept 14 1972 Completed Sept 14 1972
Date well drilling machine moved off of well Sept 15 1972

Drilling Machine Operator's Certification:

This well was constructed under my direct supervision. Materials used and information reported above are true to best knowledge and belief.
[Signed] Fred W. Mutschler Date 9/15, 1972
(Drilling Machine Operator)
Drilling Machine Operator's License No. 80

Water Well Contractor's Certification:

This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.
Name Fred W. Mutschler Well Drilling
(Person, firm or corporation) (Type or print)
Address 755 N. Lincoln Creek Dr. Corvallis, OR 97331
[Signed] Fred W. Mutschler
(Water Well Contractor)
Contractor's License No. 237 Date Sept 15, 1972

NOTICE TO WATER WELL CONTRACTOR

The original and first copy of this report are to be filed with the

STATE ENGINEER, SALEM, OREGON 97310 within 30 days from the date of well completion.

Exhibit M-5-3

WATER WELL REPORT

STATE OF OREGON
(Please type or print)

State Well No. 10/5W-1

State Permit No.

(1) OWNER: Charles Whitaker
Rt 1, Box 176-A4
Millamette Oregon 97361

(2) LOCATION OF WELL:
County Benton Driller's well number
1/4 Section 13 T. 12S R. 5W W.M.
Bearing and distance from section or subdivision corner

(3) TYPE OF WORK (check):
New Well Deepening Reconditioning Abandon
Abandonment, describe material and procedure in Item 12.

(4) PROPOSED USE (check):
Domestic Industrial Municipal
Irrigation Test Well Other

(5) TYPE OF WELL:
Rotary Driven
Cable Jetted
Dug Bored

(6) CASING INSTALLED: Threaded Welded
6 Diam. from 0 ft. to 4.5 ft. Gage 280
" Diam. from ft. to ft. Gage
" Diam. from ft. to ft. Gage

(7) PERFORATIONS: Perforated? Yes No
Type of perforator used
Size of perforations in. by in.
perforations from ft. to ft.
perforations from ft. to ft.
perforations from ft. to ft.
perforations from ft. to ft.
perforations from ft. to ft.

(8) SCREENS: Well screen installed? Yes No
Manufacturer's Name
Type Model No.
Slot size Set from ft. to ft.
Diam. Slot size Set from ft. to ft.

(9) CONSTRUCTION:
Well seal—Material used in seal Bentonite Cement
Depth of seal 3.0 ft. Was a packer used?
Diameter of well bore to bottom of seal 10 in.
Were any loose strata cemented off? Yes No Depth
Was a drive shoe used? Yes No
Was well gravel packed? Yes No Size of gravel:
Gravel placed from ft. to ft.
Did any strata contain unusable water? Yes No
If water? depth of strata
Method of sealing strata off

(10) WATER LEVELS:
Static level 7 ft. below land surface Date 7-7-64
Artesian pressure lbs. per square inch Date

(11) WELL TESTS: Drawdown is amount water level is lowered below static level
Was a pump test made? Yes No If yes, by whom?
Yield: gal./min. with ft. drawdown after
" " " " " "
" " " " " "
Ballor test 10 gal./min. with 100 ft. drawdown after 1
Artesian flow g.p.m. Date
Temperature of water 57 Was a chemical analysis made? Yes No

(12) WELL LOG: Diameter of well below casing 6
Depth drilled 50 ft. Depth of completed well 50
Formation: Describe by color, character, size of material and structure, show thickness of aquifers and the kind and nature of the material in stratum penetrated, with at least one entry for each change of format

MATERIAL	FROM	TO
Soil	0	9
Blue grey clay	9	20
Broken up clay	20	24
Brown clay	24	42
Yellow sand	42	43
Black sand	43	43
Sand, gravel clay	43	50

5 1/2 T.S.
No Iron Unavailable
9 gr hard

Work started 7-3 1964 Completed 7-7 1964
Date well drilling machine moved off of well 7-7 1964

(13) PUMP:
Manufacturer's Name
Type: H.P.

Water Well Contractor's Certification:
This well was drilled under my jurisdiction and this report true to the best of my knowledge and belief.
NAME Millamette Irrigation & Equip
(Person, firm or corporation) (Type or print)
Address Star Route #2, Box 5, Salem
Drilling Machine Operator's License No. 31
[Signed] Carl H. Saunders
(Water Well Contractor)
Contractor's License No. 49 Date 7-7, 1964

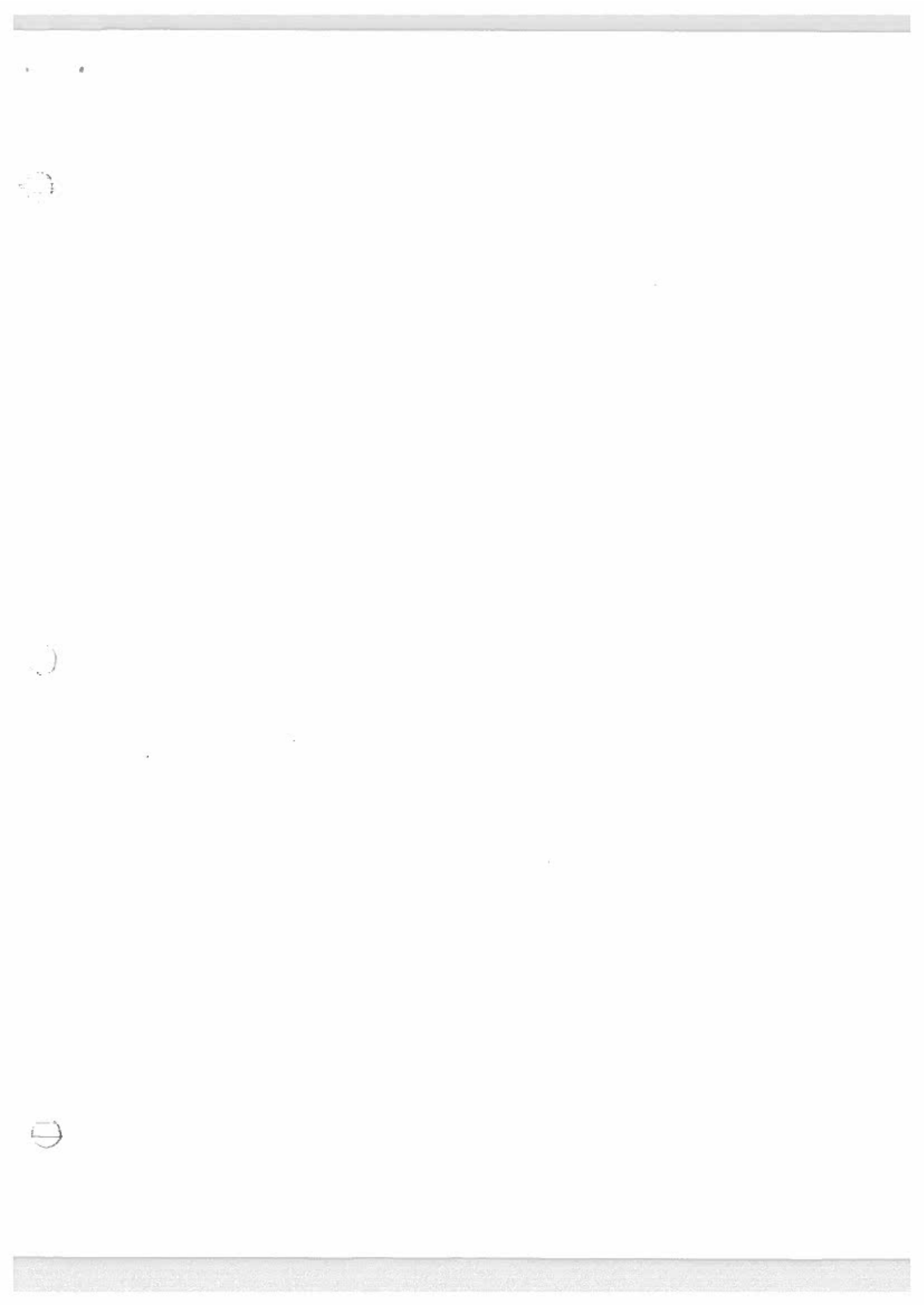
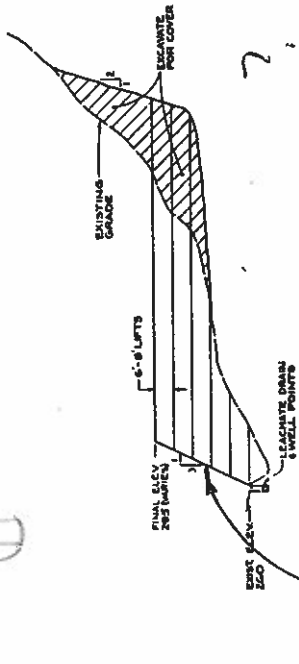


EXHIBIT E-13
GRANGER REGIONAL SITE
COMPARISON SUMMARY

Factor	Hector Farm No. 1	Tremaine Pits	Hilbert Farm
Location			
County			
Disposal Type			
Area total			
Area for Disposal			
Capacity			
Life Without Recycling			
Life With Recycling (50% recovery)			
Area Accessibility			
Road System			
Haul Distance			
11a. From Albany			
11b. From Corvallis			
Land Use			
Zoning			
Land Availability			
Final Use			
Auxiliary Transportation			
Flood Protection for Disposal Site			
Flood Protection for Resource Recovery Center			
Leachate and Silt Control			
Groundwater			
Springs and Surface Water			
Traffic Congestion Potential			
Soils and Geology			
Resource Recovery Center			
Buffer Zone			
	<ol style="list-style-type: none"> 1. T11S, R4W, Section 9 2. Benton 3. Area Sanitary Landfill 4. 138.2 Acres 5. 110 Acres (assumed) 6. 1,702,800 Tons Solid Waste 7. 9 years (1975-1984) 8. 18 years (1975-1993) 9. Paved; Highway 20; Fair for all users 10. U.S.—State Highway 11a. 4.5 miles approximately 11b. 6.6 miles approximately 12. Agriculture 13. Residential-Urban and Flood Plain Agriculture 14. Lease in 10-acre increments 15. Agriculture 16. Barge with new dock and road construction 17. Major dikes to elevation 202.3 (2' freeboard) for 20-year flood (5% frequency) 18. Area fill above elevation 204.0 for 100-year (1% frequency) 19. Collection and treatment in Lagoons; Siltation Ponds 20. At 20 to 40-foot depths or more; 10 feet seasonal fluctuation; influenced by Willamette River 21. Willamette River—no springs 22. Moderate on Hwy 20 and at entrance 23. Cloquato silt loam, McBee silty clay loam, Newberg fine sandy loam, of less than 10 feet depth overlying sand and gravel deposits; excavation limited to 5 feet 24. Development potential good; barge shipment possible with dock and road construction; no major energy user nearby; flood protection required 25. Natural vegetation and isolation 	<ol style="list-style-type: none"> 1. T11S, R4W, Sections 8,9,16, & 17 2. Linn 3. Area Sanitary Landfill in Cells 4. 400 5. 350 6. 580,500 tons now, 7,353,000 tons total 7. 42 years (1974-2016) 8. 84 years (1974-2058) 9. Paved; Highway 20; Fair for all users 10. U.S.—State Highway 11a. 6.5 miles approximately 11b. 4.6 miles approximately 12. Industrial (sand & gravel) 13. FPA—Flood Plain Agriculture 14. Lease (details unknown) 15. Agriculture 16. Barge with new dock and road construction 17. Major dikes and raised access road to elevation 206.3 (2' freeboard) for 50-year (2% frequency); dewatering pumps required 18. Locate off site out of flood plain; acquire other property 19. Sump pump, treatment in lagoons; land disposal 20. Same as Hector Farm Site 21. Willamette River—major infiltration through gravel strata 22. Moderate on Hwy. 20, severe at entrance 23. Approximately 10 feet of silt loam overlying deep sand and gravel deposits; highly permeable material 24. Development potential fair; barge shipment possible with dock and road construction; no major energy user nearby; locate off site above flood plain 25. Not needed; industrial area and isolation 	<ol style="list-style-type: none"> 1. T10S, R4W, Sections 8 & 9 2. Benton 3. Ramp Sanitary Landfill 4. 150 Acres 5. 107 Acres 6. 1,657,216 tons solid waste 7. 9 years (1975-1984) 8. 18 years (1975-1993) 9. Paved; Highway 20 and 99W new access needed through Camp Adair; good for transfer vehicles and fair for Albany traffic 10. U.S.—State Highway, county road, and new road on State Game Commission land 11a. 10 miles approximately 11b. 11.3 miles approximately 12. Agriculture 13. R-A—Suburban Residential and Agriculture 14. Unknown 15. Agriculture 16. Rail 17. None required for proposed site development 18. None required 19. Collection sewer, treatment in lagoons; land disposal 20. Not shallower than 25 feet; generally 40-55 feet in depth 21. No significant surface water or springs on proposed site development 22. Minor on Hwy. 20 and 99W; minor at entrance if access provided from 99W; Independence Road not usable 23. Mostly deep Willamette silt loam and Woodburn silt loam, Waldo silt loam in area for structures 24. Development potential excellent; rail shipment available; major energy user nearby; no flood protection required. 25. Buffer zone required on east side; industrial area on west side



SECTION A-A
TYPICAL CROSS-SECTION
OF METHOD OF LANDFILLING

KEY
 TOTAL AREA
 USABLE AREA
 DRAINAGE
 FUTURE PHASING

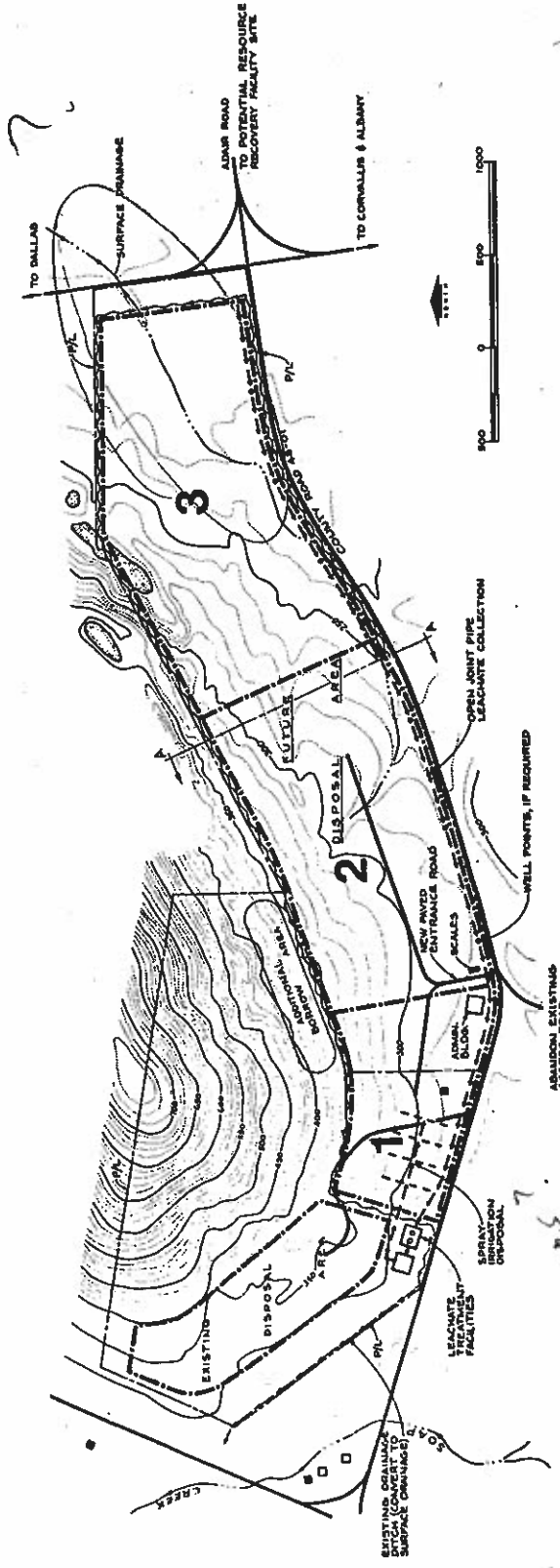


EXHIBIT
M-4

**CHEMEKETA REGION
COFFIN BUTTE SITE
PRELIMINARY DEVELOPMENT PLAN**

Geotechnical, Thompson & Rutledge, Inc.
 Engineers/Planners
 PORTLAND BUTTE BOSTON SEASIDE
 SEPTEMBER 22, 1973

5-21-000

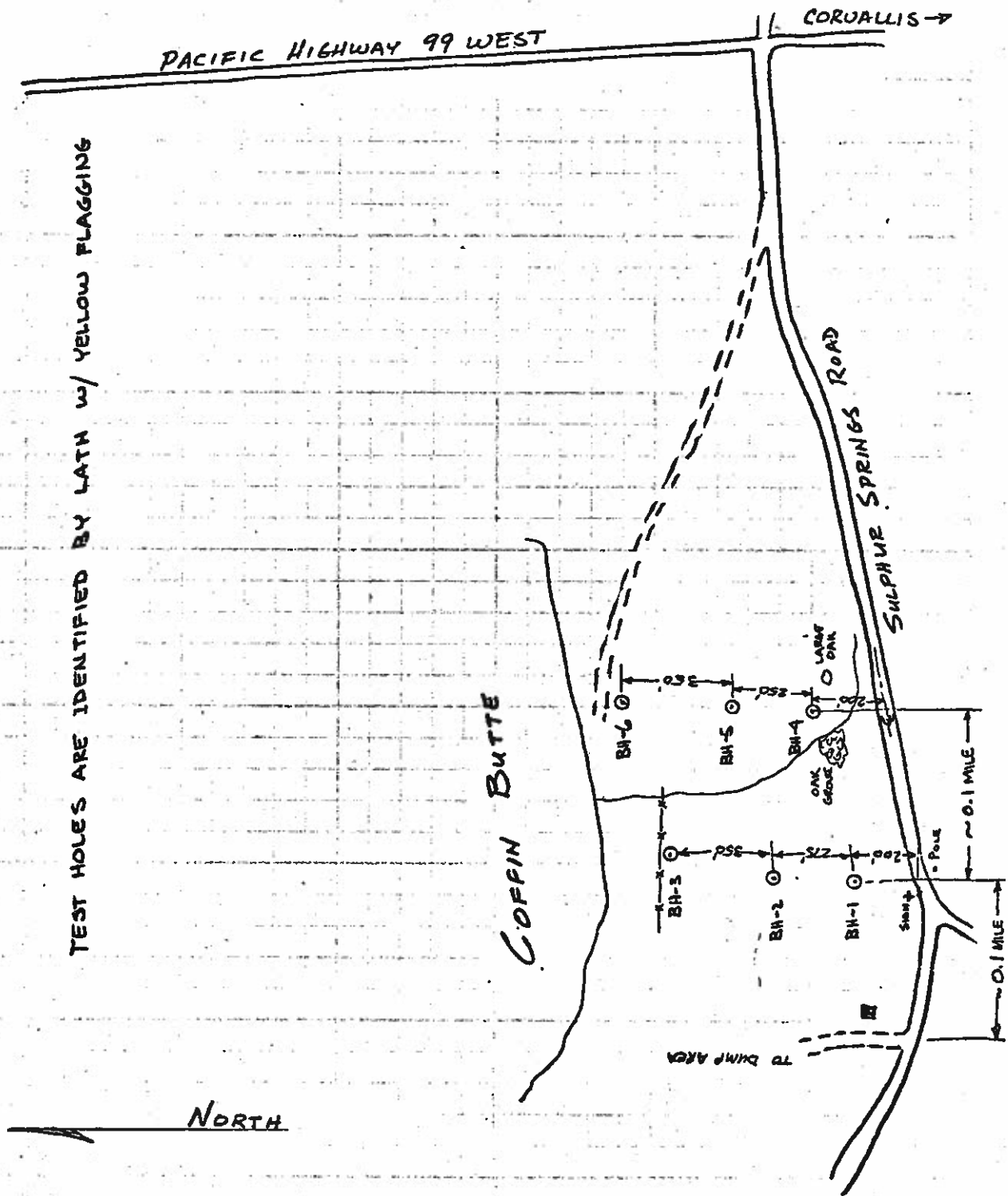


ENGINEERS
PLANNERS
ECONOMISTS

SUBJECT: CORVALLIS DISPOSAL COMPANY
SOLID WASTE DISPOSAL SITE

DATE: 1/15/81
SHEET NO. 1 OF 2
PROJECT NO. C7140.0

TEST HOLES ARE IDENTIFIED BY LATH W/ YELLOW FLAGGING





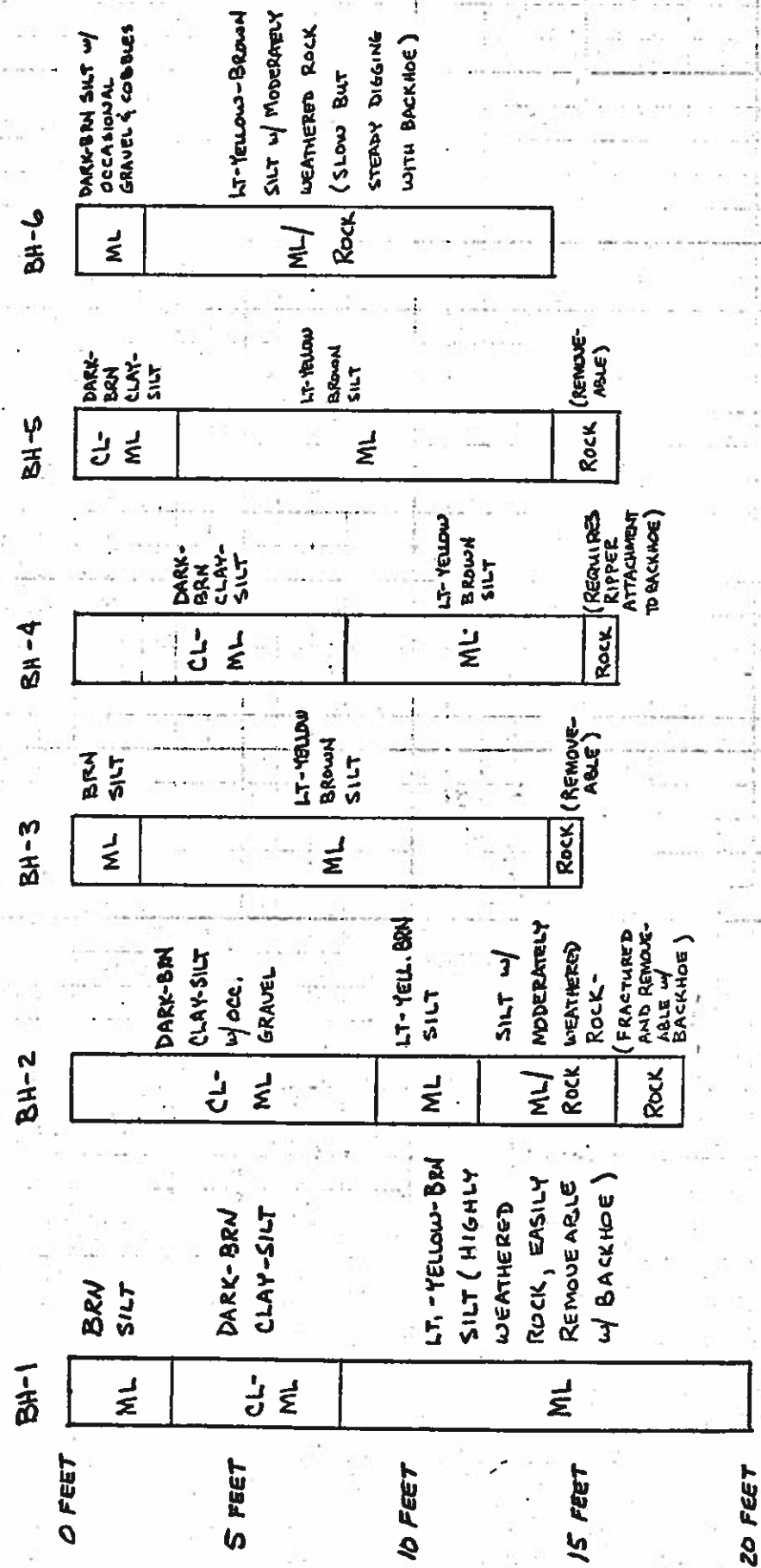
PLANNERS
ECONOMISTS

CORVALLIS DISPOSAL COMPANY -
SOLID WASTE DISPOSAL SITE

SHEET NO. 2 OF 2
PROJECT NO. C7140.0

LOCATION: SOUTH EAST SIDE OF COFFIN BUTTE, BENTON COUNTY
EQUIPMENT USED: JOHN DEERE JD 500 SERIES B BACKHOE
OPERATED BY MIKE MURPHY (FOR DON LANFORD)

DEPTH
FROM
SURFACE



FACTORS IN CHEMEKETA STAFF SELECTION OF COFFIN BUTTE SITE

All twenty-five factors listed in the feasibility report and rated there by Stevens, Thompson and Runyon were used.

In addition, four factors were added:

- (1) Development Cost
- (2) Leachate Control and treatment
- (3) Drainage
- (4) Access road.

The staff also considered, as a minor point, electrical service for processing and/or shredding equipment and other equipment for site.

The five staff members assigned weights to the factors as to which are most important.

Additional details are available in the material filed with the Planning Department.

In summary, on a point rating system:

Coffin Butte	5,399.2
Tremaine	5,046.6
Hilbert	4,607.2
Hector Farm	3,907.2

} ?