

Decision 83 03 009 MAR 2 1983

ORIGINAL

BEFORE THE PUBLIC UTILITIES COMMISSION OF THE STATE OF CALIFORNIA

In the Matter of the Application)
of DEAN W. KNIGHT & SONS, INCOR-)
PORATED, for an increase in sewer)
rates in Inyo County (Advice)
Letter).)

Application 60485
(Filed April 27, 1981;
amended December 4, 1981)

Dean W. Knight and Denis Tillemans,
for applicant.
Dennis L. Myers, Attorney at Law, for
Inyo County; and Paul Rudder, Attorney
at Law, for Sierra House; protestants.
Jasjit S. Sekhon, for the Commission staff.

INTERIM OPINION

Summary

By amended application, Dean W. Knight & Sons, Incorporated (applicant) requested a \$26,664 increase in sewer revenues, from \$13,896 to \$40,560 or 191.9%. The rates were designed to yield a rate of return of 15% on applicant's estimated rate base of \$95,504. Applicant estimates its 1982 loss at present rates is \$12,796. The following table shows the rates proposed in amendment and the magnitude of the proposed increases:

: Class of Service	: Present :Monthly Rate:	: Proposed :Monthly Rate:	: Increase :\$ \$: %
Single-Family Residential	\$ 6	\$ 12	\$ 6	100
Knight Manor	12 ^{a/}	222	210	1750
Sanitorium	30	926	896	2987

a/ This rate is not on file with the Commission.

Applicant requires rate relief because it is operating at a loss. In addition, applicant must install and operate sewage treatment plant improvements to reduce the biological oxygen demand (BOD) and methylene blue active substance (MBAS) in its sewage effluent to meet the standards adopted by the California Regional Water Quality Control Board, Lahontan Region (Lahontan).

At the hearings on the amended application, applicant stipulated to the summary of earnings study and rate recommendations of the Commission staff. Sam Gershon, a consulting engineer, testified for Sierra House, the operator of the Inyo County (County) Sanitorium (Sanitorium) which is served by applicant. Gershon challenges the adequacy of applicant's showing. He developed conditional rates^{1/} from a cost allocation method which differs from the methods used by applicant and the staff. Gershon also testified that applicant's proposal for installing an impervious lining in the second and third sewage treatment ponds of its five-pond system to increase the sewage retention time is not cost-effective. He recommends aeration of sewage in applicant's existing impervious pond. Applicant chose not to be represented at the last day of hearing in this proceeding. On that day the staff testimony was completed and Sierra House presented testimony on its cost study, including its aeration treatment concept.

^{1/} Gershon derived a rate base of \$77,954 which does not contain any amount for treatment plant improvements. He recommends a further rate reduction if the Commission adopts a rate base below that amount due to a reduction in plant, an increase in contributed plant, or to reflect a saturation adjustment.

In a subsequent ruling Administrative Law Judge (ALJ)
Levander summarized Gershon's testimony and directed applicant
to file late-filed Exhibit 26 to develop the capital and
operating costs attributable to installing aeration equipment
in its lined pond if Lahontan would permit applicant to use
an aeration concept to meet applicant's sewage discharge
requirements. Since Dean W. Knight, applicant's manager
and co-owner,^{2/} testified that Lahontan would require appli-
cant to deepen the ponds and increase the thickness of the
lining in those ponds, the ALJ permitted applicant to update
its improvement estimate. Sierra House and the staff were
afforded the opportunity to submit late-filed Exhibits 27
and 28, respectively, in response to Exhibit 26.

The Commission agrees with Gershon's contention
(in late-filed Exhibit 27) that applicant's late-filed
Exhibit 26 does not adequately analyze the cost of an
aeration treatment process. Applicant will be required to
provide further information on the alternative treatment.
This decision adopts an interim rate increase which does not
reflect any revenue requirement attributable to additional
treatment.

2/ Mr. and Mrs. Knight own all of applicant's capital stock.

The following table shows rates recommended by staff, Gershon's conditional rate recommendations, adopted interim rates, and the magnitude of the adopted increases. These rates will increase applicant's revenues by \$20,120 (143.8%).

Monthly Rates

: Class of Service	: Staff :Proposal:	:Sierra House: Proposal :	:Interim: Rates :	: Increase \$:	: % :
Single-Family Residential	\$ 12	\$ 12	\$ 12	\$ 6	100
Knight Manor	150	152	110	98	816.7
Sanitorium	550	222	505	475	1,583.3

The Commission has adopted a policy of limiting small utility general rate increases to 100% per year unless system improvements or other compelling reasons require larger increases. In this proceeding system improvements are required but the revenue requirement for those improvements cannot be established at this time.

Sierra House concedes that the rate charged the Sanitorium is inadequate; its witness conditionally recommends an increase of \$192 (640%) to the Sanitorium based on Gershon's allocation method. The staff limited its recommendation of the increase to residential customers to 100%. Based on its cost allocation method, the staff recommends an increase of \$138 (1,150.0%) for the Knight Manor Swimming and Tennis Club (Knight Manor) and an increase of \$520 (1,733.3%) to the Sanitorium.

Both the staff and Gershon indicated that a 10 to 11% rate of return would be reasonable for applicant. The staff overall rate of return recommendation is reduced to 7.6% due to the 100% limitation on residential rates proposed by applicant. Applicant stipulated to the staff rates.

including an 1150% increase to its subsidiary, Knight Manor. Given the position of the parties, our general policy limiting increases to 100% should not be applied to Knight Manor or the Sanitorium in either this interim decision or in the final decision in this proceeding.

Background

Applicant operates a sewer corporation north of Big Pine in Inyo County. In 1965 a predecessor corporation owned by Mr. and Mrs. Dean W. Knight began a subdivision development in a portion of applicant's service area to serve their proposed subdivisions. At that time, sewer corporations were not under the jurisdiction of the Commission. The Knights formed an affiliated public utility company, Rolling Green Utilities, Inc. (RGU) to provide water and propane utility service in their tracts. By Decision (D.) 69724 dated September 28, 1965 in Application (A.) 47642, the Commission certificated RGU to provide water and gas service.^{3/} By Resolution 65-1 dated March 30, 1965, Lahontan authorized a company controlled by Mr. Knight to install a private sewer system to serve 278 individual homes in Knight Manor's subdivision and the Sanitorium. Knight agreed to provide sewer service to the Sanitorium for \$30 per month to obtain the necessary County sewer system franchise.

^{3/} In 1979 the definition of gas plant in Public Utilities (PU) Code Section 221 was amended to exclude systems delivering propane gas service. Thus, RGU is no longer a gas corporation as defined in PU Code Section 222.

Process

H-3

A. 5635

In 1970 the PU Code was amended to bring sewer system corporations under the jurisdiction of the Commission. On February 6, 1973 applicant filed the rates established in 1965, \$3 per month for residential service and \$30 per month for the Sanitorium. The Commission authorized an increase in applicant's residential service rate to \$6 per month on August 13, 1973. In Advice Letter 3 applicant filed tariff rules governing its service, which were made effective on August 23, 1981.

On July 1, 1980 applicant increased its rates to the Sanitorium to \$750 per month without the required authorization of the Commission. This increase led County to file a formal complaint. D.92982 dated May 5, 1980 in Case 10911 ordered the utility to stop billing the Sanitorium for sewer service at any rate not contained in its tariffs, to recompute prior billings to County which were made at other than its filed and effective tariff rate, and to credit the Sanitorium's account for overcharges. The decision states that "if rates do not cover costs, defendant's recourse is to file an application for an increase in rates."

Subsequently, the utility submitted a draft advice letter to the Commission and furnished a copy to the Sanitorium. Applicant requested authority to increase the Sanitorium's rate to \$750 per month. County filed a protest which contained a request for an opportunity to present evidence in opposition to the requested increase. In order to provide County with an opportunity to be heard, the advice letter, County's letter, and a cover sheet were docketed as A.60485.

Initial Hearings

The initial hearings in this proceeding were held before ALJ Levander in Bishop. Applicant's witnesses were Mr. Knight and the operator of his wastewater facility, Denis Tillemans. Knight testified that his estimates did not reflect current sewer utility operations. But his testimony indicated that applicant was incurring substantial expenses not reflected in its estimates. Knight stated that applicant would also seek to increase the sewer rates of its 179 residential customers and of the Knight Manor, which discharges sewage from a restaurant, a cocktail lounge, showers, and toilet facilities. A Commission staff engineer briefly testified on the scope of his investigation of applicant's sewer utility operations. He stated he would prepare a revised study based on the amended application.

The ALJ directed Knight to amend the application, to provide customer notice of the amended filing, and to prepare Exhibit 10 to reflect applicant's 1981 operations. The ALJ suggested that applicant consider being represented by an attorney.

In addition, Knight had made an unauthorized transfer of his sewer system to RGU. The ALJ advised Knight to file an application to secure Commission authorization for the transfer. A.61103 was filed in response to that suggestion. ✓

Further Hearings

At applicant's request, further hearings in this proceeding were deferred to give it more time to prepare its amendment. After notice, further hearings were held in Los Angeles. The proceeding was submitted subject to receipt of late-filed exhibits which have been received.

The Commission received letters of protest from Sierra House (the new operator of the Sanitorium), a residential customer, and three petitions signed by 28 customers.

Since the test year 1982 material in the amendment superseded the showing required in Exhibit 10, the ALJ ruled that applicant would not have to prepare Exhibit 10.

Summary of Earnings

Applicant and the staff prepared summary of earnings studies for test year 1982. Sierra House did not prepare a summary of earnings study; it developed a cost allocation study and recommended a revenue requirement study which addresses the reasonableness of certain estimates.

The following table shows the 1982 summary of earnings estimates of applicant and the staff and the adopted summary of earnings at present and at authorized rates for this interim decision.

Item	Applicant		Staff		Adopted	
	Present	Proposed	Present	Proposed	Present	Authorized
	Rates	Rates	Rates	Rates	Rates	Rates

Estimated Year 1982

<u>Operating Revenues</u>	\$ 13,896	\$40,560	\$ 13,820	\$40,420	\$ 13,820	\$34,020
<u>Deductions</u>						
Salaries & Wages	5,600	5,600	5,600	5,600	5,600	5,600
Repairs & Maint.	3,611	3,611	3,610	3,610	3,610	3,610
Outside Services	3,932	3,932	3,930	3,930	3,930	3,930
Acctg. Legal & Other	2,604	2,604	2,600	2,600	2,600	2,600
Rents (DWP Lease)	1,710	1,710	1,710	1,710	1,710	1,710
Subtotal	17,457	17,457	17,450	17,450	17,450	17,450
Property Taxes	4,232	4,232	4,230 ^{a/}	4,230 ^{a/}	2,250	2,250
Depreciation	5,003	5,003	3,875	3,875	3,340	3,340
Income Taxes	-	-	200	3,580	200	2,640
Total Deductions	26,692	26,692	25,755	29,135	23,240	25,680
Net Revenue	(12,796)	13,868	(11,935)	11,285	(9,420)	8,340
Deprec. Rate Base	95,504	95,504	95,102	95,102	78,220	78,220
Rate of Return	Loss	15.0%	Loss	11.9%	Loss	10.7%

(Negative Figure)

^{a/} The staff recommends a reduction of property tax expense to conform with a reduction in the assessed values on applicant's sewer system plant.

Summarized below is the testimony of John T. Cocherell, a certified public account (CPA) retained by applicant. Cocherell prepared the summary of earnings studies, including a study for test year 1982, as the basis for applicant's amended rate request. The areas of controversy concerning the estimates of applicant, the staff, and Sierra House follow the summary of Cocherell's testimony. In addition, we will address cost allocation issues raised in this proceeding.

Cocherell testified as follows:

1. He used information contained in the books and records of applicant and of RGU. In addition, he relied on discussions with Knight on expense allocations and direct assignment of expenses between the three utility operations controlled by Knight. Knight's utilities use common personnel, office supplies, and services. Absent detailed payroll, time, or material records, he made equal one-third allocations of certain payroll expenses, postage, and office expenses and accounting expenses⁴ to Knight's sewer, water, and gas operations. He directly assigned other expenses to a particular utility operation, e.g., power for pumping was assigned to water operations, propane purchases to gas operations, and the salary of Tillemans, the sewer system operator, and laboratory testing of sewage effluent were assigned to applicant's sewer operations.

4/ Based on his experience, a larger allocation of his accounting charges could be assigned to sewer operations.

2. His 1982 estimate of depreciable plant in rate base contains one-half of the preliminary estimate of \$42,800 of needed system improvements prepared by Knight's civil engineering consultant, Holmes Engineering and Development Corporation. The \$42,800 estimate includes the cost of drying and cleaning up two treatment ponds, installation of an impervious polyethylene membrane, and a decomposed granite cover for the membrane in each of the two treatment ponds.
3. He used volumetric cost responsibility allocations supplied by Tillemans to develop proposed rates for residential customers, Knight Manor, and the Sanitorium.
4. He brought forward the utility plant and reserve for depreciation records prepared by the CPA who had previously prepared applicant's accounting records. He made determinations of whether to expense or capitalize items pertaining to applicant's sewer operations. He believes that the amounts expended by applicant and his determinations of whether to capitalize or expense items are reasonable. He does not provide applicant with audited financial statements because his fees for providing audited statements are approximately three times as costly as providing unaudited statements. None of his clients request audited statements if they do not require them.

Operating Revenues

The staff estimate is based on one less customer than applicant. We adopt the staff estimate of revenues of \$13,820 at present rates and \$40,420 at proposed rates.

Operating and Maintenance Expenses

The differences in operating and maintenance expenses are due to rounding. We adopt the staff estimate of \$17,450.

Property Taxes

Applicant estimated its property taxes at approximately \$4,230 based on an assessment it was appealing. During the hearings protestant was advised that the County Assessor had reduced applicant's sewer system assessment. This reduction was confirmed in late-filed Exhibit 21. The County Assessor reduced the market value of applicant's sewer system improvements from \$374,972 to \$221,791. The adopted property tax expense of \$2,250 is based on the revised assessment, excluding a 10% penalty surcharge due to applicant's failure to file timely property tax statements.

Income Taxes

Applicant did not estimate income taxes at present or proposed rates. There would be a minimum State Franchise Tax of \$200 at present rates. The staff estimated income taxes of \$3,580 at proposed rates. At adopted rates, applicant's income taxes total \$2,640.

Installed Utility Plant

Before the Commission was authorized to regulate sewer utilities, applicant capitalized its expenditures for installing a sewer collection system and sewage treatment facilities. Knight initially chose to capitalize sewer system expenditures for income tax purposes^{5/} but nevertheless the plant was capitalized without thought of regulatory treatment by the Commission. Knight's accountants generally continued that process for subsequent additions. The staff determined that the plant amounts recorded were not unreasonable. Protestant County (which initially retained Gershon) requested that the Commission or a CPA audit applicant's records. The staff stated it did not have the resources to do so. County then requested the right to inspect applicant's records. Applicant agreed to make those records available. After applicant filed its amendment, an ALJ ruling reaffirmed the right to inspection of those records by the parties, including Sierra House. Neither County, Sierra House, nor their consultant took advantage of the discovery procedures made available to them. The Uniform System of Accounts for Class D water utilities does not require that a CPA audit utility plant records. The Commission has not established a Uniform System of Accounts for small sewer utilities. There is no justification for establishing a requirement that applicant have its records audited. If we did so, applicant would be entitled to a substantial increase in its expenses to pay for such audits. Applicant's

5/ He testified that he originally could have written off his sewer system costs as developmental costs against the profits from his subdivision; but since his subdivision business was not showing a profit, he followed his accountant's recommendations to capitalize utility plant costs and form separate entities to conduct his sewer, water, and gas operations.

uncontroverted testimony is that its initial system, consisting of sewer lines and services, a 50,000-gallon septic tank, and two sewer ponds, was installed by a nonaffiliated contractor. Subsequent additions, including three additional sewage ponds, additional sewer lines, and service laterals, were installed by applicant's own crews on a time and material basis, without overheads.^{6/} It would be reasonable for the Commission to adopt applicant's recorded plant estimates. Since we need further information on the aeration treatment alternative, this interim decision does not reflect the cost of treatment system improvements in plant, the reserve for depreciation, depreciation expense, or operating expenses. Applicant did not propose any other plant additions for 1982. We adopt an average plant estimate of \$146,660.

Contributions in Aid of Construction

The staff treated additions for sewer mains or service laterals installed after the Commission assumed jurisdiction over applicant's sewer operations as contributions in aid of construction because sewer utilities extending service use a contribution rule for such sewer main installations. The staff treated the costs of mains, service laterals, and treatment plant recorded before applicant came under Commission jurisdiction as equity-funded plant which is how applicant had recorded them. Gershon contends that in a comparable situation the Commission treated the in-tract sewer plant of Rossmoor Sanitation, Inc. (Rossmoor), built before 1973, as contributed plant and excluded that plant from rate base (see D.84040 and D.88079). However, he did not know if Rossmoor's parent corporation expensed those facilities or recorded them as equity or capitalized plant.

^{6/} Applicant holds a contractor's license.

Rossmoor's parent expensed that plant; therefore, treatment as a contribution was appropriate in those proceedings. It is not appropriate in this proceeding.

Since 1973, the Commission has required sewer utilities to treat main extensions as contributed plant. Applicant should have a rule on file to reflect that policy, but it was not provided with a rule governing sewer main extensions when it received sets of tariff rules for filing. We will direct applicant to file a main extension rule. The staff also treated service connections installed since 1973 as contributed plant. As noted above, applicant stipulated to the staff study, which treats costs of post-1973 main and service lateral installations as contributions. Knight's testimony indicates he may have expensed those service costs as developmental expenses. In that context, the staff treatment of post-1973 service laterals is appropriate. We adopt the staff estimate of net contributions in aid of construction of \$12,290.^{7/}

Applicant's tariff Rule 16 states in part:

"SERVICE CONNECTIONS, METERS, AND
CUSTOMER'S FACILITIES

"A. General

"1. Utility's Responsibility

- "a.(1) In urban areas with dedicated front streets, rear service roads, or public utility easements the utility will furnish and install its portion of the service line for the purpose of connecting its collection system to the customer's piping, except for temporary services, and as otherwise provided in Rule No. 15, Main Extensions. The connection to the customer's portion of the service will be made at a convenient place between the property line and the curb, or inside the customer's property line where necessary.

^{7/} At December 31, 1982, recorded contributed plant was \$13,060. Accrued depreciation on this plant was \$770.

- "(2) In areas which do not have dedicated front streets, rear service roads, or public utility easements the utility will furnish and install the service line as above provided but at a convenient point on or near the customer's property. An easement should be obtained for installations on the customer's property."

Applicant should capitalize the cost of future service connections, rather than treating such costs as contributions in aid of construction, in accordance with its Rule 16 or secure advance Commission approval for any deviation from that rule.

Depreciation Expense and Reserve
for Depreciation

The staff used a 2.5% depreciation accrual rate based on the straight-line remaining life method. The staff depreciation expense estimate is \$3,875 for 1982, which is \$1,128 less than applicant's estimate. Consistent with our exclusion of treatment plant in rate base in this decision, we adopt a depreciation expense allowance of \$3,340 and an average reserve for depreciation of \$58,450.^{8/}

Working Cash and Materials
and Supplies

There is no controversy on the adoption of a working cash allowance of \$1,800 or of a \$500 estimate for materials and supplies.

^{8/} The end-of-year reserve for depreciation is \$60,120.

Other Rate Base Adjustments

Applicant uses the same amount of straight-line depreciation for book and tax purposes. The staff appropriately uses a normalization treatment for deferred tax depreciation and deferred investment tax credit. Since we are not giving consideration to the appropriate amount to be used for treatment plant in this interim decision and no other plant additions are planned, we will not reflect that normalization treatment in the adopted rate base.

Rate Base

The adopted rate base is \$78,220.

Rate of Return

Applicant predicated its request for a 15% rate of return on investment based on the return available for alternate investments.

The staff witness recommended as reasonable for applicant a rate of return between 10 and 11%. However, because he did not want to recommend a domestic rate above the \$12 rate (a 100% increase) proposed by applicant, the resulting rate of return of 7.6% is below the staff's range. Gershon also testified that a 10 to 11% rate of return would be a reasonable range using a rationale similar to the staff's. His resulting rate of return recommendation is 8.6%.

A rate of return of 11% is reasonable for applicant. However, we have limited the one-year increase of domestic rates to 100% which yields less than 11% on an allocated basis and reduces the overall rate of return to 10.7%.

Cost Allocations

Applicant designed its proposed rates based upon pro rata apportionments of the volume of sewage discharged into the system by the Sanitorium, Knight Manor, and its residential customers. Tillemans operates applicant's sewer system, takes flow measurements and sewage samples for BOD and MBAS tests, and prepares reports for Lahontan.

At Knight's request, Tillemans engaged an engineering firm experienced in installing equipment for making flow measurements to install V-notch weirs in manholes to measure the flow of sewage at the connection between the 1,400-foot-long county-owned line from the Sanitorium and at the entry of the discharge from the entire system into applicant's 50,000-gallon septic tank. While Tillemans and his assistants conducted those flow tests, they also used battery-operated sampling devices to collect sewage from the manholes every minute during the 24-hour duration of their tests on June 29 and 30, 1981. The composite sewage samples were analyzed by an approved testing laboratory to measure the BOD and MBAS in the sewage. Based on his flow test and the concentrations of BOD and MBAS measured by the laboratory, he estimates that the Sanitorium is responsible for 35% of the system BOD load and 21% of the system MBAS load. ✓

While retained by County, Gershon had County engineering personnel run a seven-day test of the Sanitorium flow from October 23 to October 29, 1981 and a seven-day test of the total system flow from October 13 to October 19, 1981.

County installed a V-notch weir and a depth-recording meter at the locations used in Tillemans' tests. Gershon determined flows from the recorded data. He believes that seven-day tests provide more representative flow measurements than one-day tests and that more accurate measurements are obtained from continuous depth readings than from measurements made several times per hour. He did not use one-day measurements of the Sanitorium flow of 9,882 gallons per day (gpd) made by County at a different location than used by Tillemans. The seven-day tests showed average flows of 8,600 gpd from the Sanitorium and 46,800 gpd from the entire system, which are lower than Tillemans' measurements and reflect a lower percentage contribution from the Sanitorium than determined by Tillemans (18.4% versus 26.8%). Gershon multiplied each of those flows by the BOD and MBAS measurements determined from Tillemans' samples to obtain an appropriate weighing of the demand on the system for the Sanitorium.

Gershon apportioned the elements of applicant's revenue requirement into customer, volumetric, and demand components to arrive at his recommended rates. The customer component consists of items which have no relationship to quantity or quality of flow. The volumetric component consists of items which change directly with the quantity of discharge into the system. The demand component consists of the quantity of BOD and MBAS which must be treated to meet effluent discharge requirements, which are a function of the product of the assigned demand flow and concentration of BOD and/or MBAS.

In order to arrive at more representative flow estimates the staff averaged the Sanitorium flow measurements made by County in 1980 and by Tillemans in 1981 to estimate the Sanitorium flows and averaged the measurements made by Tillemans and by County in its seven-day test to estimate total system flows. The staff witness also apportioned applicant's revenue requirements into customer, volumetric, and demand components to arrive at his recommended rates.

Discussion on Volumetric
and Demand Apportionments

There are substantial differences between the average flows determined by Tillemans and by Gershon. The seven-day test would tend to eliminate fluctuations in daily flows and produce a better flow estimate for a period of time than a one-day sample using periodic measurements. Tillemans' measurements would tend to be less accurate than continuously recorded measurements, but flows measured from readings at a V-notch weir are relatively accurate. Measurements made by skilled individuals should not vary as much as the test results indicate (17,737 gpd in Tillemans' test versus 8,600 gpd in the County test of the Sanitorium's flow). Both Tillemans and Gershon agree that infiltration into sewers would affect flow volumes. But no infiltration measurements were taken. Based on Bishop weather records, infiltration during those tests is more likely to have come from irrigated pastureland above the 1,400-foot-long County sewer line than from rainfall.

Changes in sewage flow are affected by infiltration and by variations in interior domestic water uses. Tillemans made his test during the summer vacation season. In addition to the recreational activities at Knight Manor, there are many outdoor summer recreational activities in the vicinity of Big Pine which can trigger an influx of visitors in applicant's service area, which in turn could increase water uses discharged into applicant's system. Dropping fall and winter temperatures are likely to reverse that pattern. Big Pine is not a likely base for round trips to ski resorts.

We conclude that an apportionment of applicant's revenue requirements based on assignments to customer, volumetric, and demand components is reasonable. Tillemans' flow measurements provide a reasonable basis for determining volumetric assignments.

Applicant assigned 27% of the flow volume to the Sanitorium, 6.5% to Knight Manor, and 66.4% to residential customers. This assignment is based on Tillemans' estimate of the requirements of the three classes of customers. Tillemans' measurement of the Sanitorium flow equals 26.8% of the total system volume of 66,084 gpd.

The staff estimates the flow from Knight Manor at 3,500 gpd. Gershon's estimate of 7.5% of a total flow of 46,800 gpd equates to 3,510 gpd. We will adopt a flow of 3,500 gpd for Knight Manor. This is 5.3% of the adopted flow for volumetric assignment purposes. The remaining 67.9% of the flow is assigned to the residential class.

However, in allocating demand the seven-day flow volumes measured by County should be used in the weighing process. During the winter lower air and water temperatures and a reduction in the amount of sunlight falling on the ponds cause the bacteria breaking down sewage in the lined pond to function at a lower level of activity. Thus, during the summertime a 20-day retention period processing higher sewage flows provides adequate time to permit the bacteria to break down the sewage to meet the effluent discharge standards for BOD and MBAS. Tillemans proposes lining two additional ponds to increase the retention period during the winter to enable applicant to meet its discharge requirements. In the past applicant has added bacterial cultures to the lined pond during colder weather to increase the rate of sewage decomposition. Since the seven-day flow measurements requested by Gershon were taken during the period bacterial activity was slowing down, those measurements are more useful than flows measured when there is no treatment problem.

In summary, during cold weather applicant's discharge requirements can be met either by increasing retention time through lining additional ponds or by acceleration of bacterial activity which can be accomplished either through the addition of bacterial cultures or by aeration of the sewage. For demand purposes we will adopt the product of the seven-day Sanitorium and total flow measurements, each multiplied by the respective concentrations of BOD determined in the tests performed for Tillemans. We will make proportional reductions of the flow of Knight Manor and the residential customers to estimate demand for those customers. The resultant demand assignments are Sanitorium 24.3%, Knight Manor 5.5%, and residential 70.2%.

Gershon has considerable experience in making sewage and wastewater studies. He testified that the BOD concentrations measured for Tillemans were less than half of the normal range of those constituents but the MBAS levels appeared reasonable. He also testified that the Sanitorium occupancy was stable, kitchen waste in the Sanitorium's sewage was minimal because the Sanitorium brought in prepared food and did not grind up leftover food, and the Sanitorium discharged water from large tubs used for therapeutic purposes. At the initial hearing, County discussed taking sewage samples and testing those samples for BOD and MBAS. Gershon was present for part of those initial hearings. However, County did not make any sewage tests. In evaluating the amount of treatment required, Gershon correctly states that the substantial portion of the BOD is reduced in the septic tank and that measurements should be made at the septic tank outfall. Possible causes for low BOD readings are: sewage dilution by groundwater or surface flow infiltration into sewers or because of testing error. A testing laboratory may dilute a sewage sample prior to testing for BOD concentrations. If the wrong multiplier reflecting that dilution is used, the test results would be in error.

The following table compares the customer, volumetric, and demand cost allocations made by staff and Sierra House exclusive of return on rate base.

Item	Staff Allocations			Sierra House Allocations		
	Cust.	Vol.	Demand	Cust.	Vol.	Demand
Acctg., Legal, Insurance, Misc., and Off. Supplies	\$2,600	\$	\$	\$2,600	\$	\$
Salaries & Wages		3,600	2,000	1,000	2,600	2,000
Outside Services			1,930			1,930
Outside Testing		2,000			2,000	
Repairs and Maint.		2,000	1,610		2,000	1,610
DWP Lease	1,710			1,710		
Property Tax		4,230 ^{a/}		2,000		
Depreciation		3,875		3,340		
Income Taxes		3,580		2,012		
Summary	\$4,310	\$19,285	\$5,540	\$12,662	\$6,600	\$5,540

^{a/} Staff recommends adjusting this amount to reflect any revised assessment for applicant's sewer system.

Gershon and the staff both allocated \$2,000 of payroll expense to demand. The staff allocated the remaining \$3,600 of payroll to volume. Gershon's allocation of \$1,000 of that \$3,600 to customer and \$2,600 to volume gives appropriate recognition to office payroll expense.

The allocations not at issue are reasonable and will be adopted. The amounts adopted will be consistent with the adopted summary of earnings. The following paragraphs discuss the remaining allocations at issue.

Gershon assigned property tax, depreciation expense, and income taxes to the customer component because he saw no relationship between those expenses and volume or quality of discharge. He testified that a system may be designed with a large user in mind but that user may leave and the depreciation

and property tax burden on that plant remains, but as a customer component. The staff witness testified that property taxes and depreciation are functions of the size of plant which in turn is determined by the volume of sewage the plant had to handle. He allocated income taxes to the volumetric component because (a) taxes are based on earnings; (b) earnings are based on plant investment; and (c) investment is governed by the volume of sewage to be handled by the plant.

Both staff and Gershon assigned the return on rate base to customer costs. However, the staff witness conceded that to be consistent with his assignments of property taxes, depreciation, and income taxes, the return should be assigned on a volumetric basis. The assignments of those three costs were made on a judgmental basis by staff and Gershon.

The costs of in-tract facilities are primarily associated with minimum sizing for meeting customer requirements. The costs of enlarging in-tract sewers to provide trunking capacity, and the entire cost of trunk sewers not connected to customer laterals should be assigned on a volumetric basis. The cost of treatment plant should be primarily assigned on a demand basis, but since the plant was designed to process a 100,000 gpd volume, a portion of those costs should be assigned on a volumetric basis. Absent a detailed study, it would be reasonable to apportion depreciation expense, property taxes, income taxes, and return on rate base equally among customer, volume, and demand components since all of those costs ultimately tie back to the cost of plant. All of the additional treatment plant assignments, when determined, will be used exclusively to meet applicant's demand requirements.

The total adopted cost assignments are \$10,950 to customer, \$12,240 to volume, and \$11,180 to demand. Based on the volumetric and demand allocations discussed above and to the assignment of equal customer costs to each of applicant's 185 residential customers and to Knight Manor and the Sanitorium, we derived the monthly assignments and adopted rates shown below.

: Allocated Monthly Cost Per Customer: Adopted:					
: Class of Service:	Customer:	Volume :	Demand :	Total :	Rates :
Residential	\$4.88	\$ 3.74	\$ 3.54	\$ 12.16	\$ 12.00
Knight Manor	4.88	54.06	51.24	110.18	110.00
Sanitorium	4.88	273.36	226.40	504.64	505.00

The adopted rates are below the allocated cost for residential service because we are limiting the residential increase to 100% consistent with our general policy and with applicant's request. Implicit in the rate proposals of applicant, of the staff, and of Gershon for the Sanitorium is a recognition that the rates for applicant's commercial customers are unreasonably low. Therefore, we will not give recognition to a 100% limitation for either Knight Manor or the Sanitorium in this decision or in the final decision in this proceeding. Those additional charges will be determined after we receive additional information on revenue requirements associated with treatment plant additions.

This decision adopts a monthly residential rate of \$12. The final decision in this proceeding will adopt a revenue requirement for treatment plant improvements attributable to residential customers. Since we are limiting applicant's residential increase to 100% for one year, we will not authorize additional residential increases with an effective date sooner than one year after the \$12 rate goes into effect. Applicant may file an advice letter increase to offset that increased residential revenue requirement plus an amortization of the deferred amount and interest on the deferred amount. It would be reasonable to authorize an interest rate of 11% on the deferred amount of increase.

Treatment Plant Improvements

Applicant submitted a copy of an unsigned contract for \$65,264 with an outside contractor to do the work necessary to install impervious linings in two additional treatment ponds in compliance with Lahontan's requirements. Gershon asserts that the proposed contract lacks several essential elements needed to protect applicant and ultimately its ratepayers.

Tillemans' estimate of the cost of installing aeration plant consists of \$38,000 to install a 5,800-foot extension to bring power to applicant's existing lined treatment ponds and \$16,300 to install three five-horsepower floating aerators. In addition, he estimates that the aerators would require 8,100 kilowatt-hours per month to operate which equates to an annual power bill of \$7,800. Furthermore, Tillemans states that the mechanical aeration of its existing lined pond would satisfy Lahontan's BOD requirements, but an additional pond would still have to be lined and used as a polishing pond to satisfy

Lahontan's MBAS requirements because the single aerated pond would not provide the detention time required to break down the detergents and grease in this sewage. Tillemans did not estimate the cost of an additional lined pond, mechanical aeration, or increased maintenance expenses.

The staff estimates that the cost of lining an additional pond would be approximately \$42,400, 65% of the cost required for lining two ponds. The staff witness contends that Gershon's proposal to aerate the sewage appears to be expensive initially and would increase annual operating expenses. He concludes that the aeration scheme is not a viable alternative to lining two ponds and should not be considered.

Gershon calculated the aeration requirement within the pond based upon his flow measurements of 46,800 gpd and the BOD of the effluent of 93 milligrams per liter. He previously testified that a portion of the BOD load would be removed in the septic tank but for the purposes of his study he assumed that the entire BOD load goes to the lined pond. The BOD load would equal 36.25 pounds per day. He assumed an average oxygen demand requirement of two pounds of oxygen added per pound of BOD load or 72.5 pounds per day of added oxygen. Based on an assumed field transfer rate of two pounds of oxygen per horsepower per hour, he estimates that applicant would need a 1.5-horsepower aerator. He estimates that a 30% reduction of BOD within the septic tank

would reduce that requirement (to approximately 1.05 horsepower). He supplied a brochure from an aerator manufacturer which indicates that a 1-horsepower unit using single-phase current with a list price of \$599 could provide the necessary aeration. He calculated an energy bill to run that aerator at one-tenth of applicant's estimate based on continuous operation. Furthermore, he states that since detergents currently used are biodegradable, the floating aerator would enhance its degradation and he questioned the need for another lined pond. He contends that Tillemans' statement that a single aerated pond would not provide the detention time required to break down the detergents and grease and would require an additional lined pond is a conclusion not supported by a study of the problem. He recommends a study be submitted to provide data to justify applicant's need to line a second pond in an aeration process and to compare the cost-effectiveness of the alternative treatment processes. He further recommends that the Commission direct applicant to retain a registered civil engineer with experience in the sanitary engineering field to evaluate the alternative means of achieving the waste discharge requirements in a cost-effective manner. He recommends a concurrence be achieved as to the required horsepower of the floating aerator and that applicant obtain a letter from its electrical supplier, Southern California Edison (Edison), in regard to the cost of bringing power to the ponds as a necessary precondition for determining the revenue requirement for that improvement.

Discussion

As noted above, applicant states that a 5,800-foot electrical extension is needed to bring power to its lined pond. However, applicant's service area map shows the location of applicant's septic tank and its lined pond. That map also shows the distance between the septic tank and the lined pond along applicant's easement is 1,240 feet. The septic tank is within applicant's service area. The distance to the nearest residential tract in applicant's service area is less than 1,000 feet from the septic tank. There would be single-phase power available in that tract. It is likely that there is three-phase power supplying Knight Manor, which is a few hundred feet from the residence closest to the septic tank. Furthermore, applicant's cost estimate does not reflect the charges and free footage allowances contained in Edison's tariffs. Tillemans' estimate presumes that 100,000 gpd of sewage will be aerated on a daily basis throughout the year. This volume is the design volume for the treatment plant. It exceeds the volume measured by Tillemans by over 50%. His estimate for bringing power to the treatment pond is substantially overstated. The basis of his sizing estimate for aerators is unsupported and he has not demonstrated that a finishing pond would be required to meet MBAS requirements. Furthermore, Tillemans testified that the existing treatment process is adequate during the summer. Thus, there does not appear to be a need for aeration in the summertime or for continuous aeration during other periods of the year. Furthermore, the action of the bacteria in the pond would be supplemented, not replaced by aeration. The disparities discussed above are so

large that further analysis is required. Applicant will be required to engage a registered civil engineer experienced in sanitary engineering to evaluate the cost and effectiveness of an aeration process. As part of that evaluation, applicant will be required to measure the volume of the effluent from its septic tank for one week based on continuously recorded measurements. Applicant will also be required to collect a 24-hour sample of that effluent for BOD and MBAS testing. The sampling interval should be varied to approximate measured daily flow variations.^{9/} Those test results will permit an analysis of the BOD and MBAS load on the lined treatment pond which will govern the aerator capacity. Applicant's registered civil engineer should also evaluate Gershon's comments on the adequacy of applicant's contract^{10/} for lining two additional ponds, if that option appears to be feasible. Applicant should come forth with the most cost-effective means of improving the treatment of its sewage to meet mandated discharge requirements.

9/ The laboratory was furnished with a composite of samples taken at a constant interval which increases sample weighting at low flows and decreases weighting at heavy flows. Modification of the frequency of the sampling based upon flow patterns could produce a representative sample.

10/ Gershon's comments on the contract are:

" . . . The proposed contract appears to lack several essential elements needed to protect Dean W. Knight and Sons, Inc. and, ultimately, the rate payers of the utility. The elements lacking in the Contract include Bidder's Plan for Construction; Bidder's Statement of Experience, Financial Condition and References; Bid Bond; Contract Performance Bond; Bidder's Statement which includes name, address, and title of all officers of the corporation; Labor and Material Payment Bond; California Contractor's License No., license class, corporate seal and notary seals and certificate as to corporate principal. In addition, we have never seen a non-refundable deposit (\$24,500) accruing to the Contractor in a public works contract as proposed in this one."

Applicant's unexecuted contract provides for a 15-day notice prior to commencement of work and for completion of the pond lining work within 90 days. Applicant should file its new study with the Commission within 90 days after the effective date of this order. Copies of the study should be furnished to Sierra House and to the staff. Their comments on the study may be filed not later than 20 days after the date of mailing. Applicant will be expected to complete the improvements ordered in the final decision within 120 days after the effective date of that decision. Applicant may request further rate relief in a separate application. However, if applicant does not proceed on a timely basis, the interim rates authorized here may be reduced until the improvements are made. In its study applicant should include revenue requirements based on the cost of its recommended treatment option and any incremental expenses. ✓

Findings of Fact

1. The utility plant installed by applicant prior to the time applicant came under Commission jurisdiction should be treated as equity-funded capital.
2. In-tract sewer main extensions installed after the Commission assumed jurisdiction over applicant should be treated as contributed plant.
3. Applicant has not filed a sewer main extension rule.
4. Applicant is required to install facilities to improve the quality of the effluent from its sewage treatment plant to meet Lahontan's requirements. Those requirements are not being met during periods of colder weather.
5. Applicant has not demonstrated that its treatment proposal is the most cost-effective means of meeting those discharge requirements. Further studies evaluating alternate means of meeting the discharge standards should be filed with the Commission. The scope of those studies is discussed in the body of this decision. These studies should be prepared by a registered civil engineer with experience in sanitary engineering.
6. The summary of earnings contained in the table on page 9 at authorized and adopted rates for 1982 is reasonable.
7. The interim adopted rates do not give consideration to the revenue requirements associated with additional treatment plant.
8. The revenue requirement associated with treatment plant additions should be developed including the factors set forth on page 32.

Conclusions of Law

1. The adopted rates are just, reasonable, and nondiscriminatory.
2. The application should be granted to the extent provided by the following order.
3. Applicant should promptly file the study described in Finding 5 within 90 days after the effective date of this order.
4. Because of the immediate need for additional revenue, the order should be effective today.

INTERIM ORDER

IT IS ORDERED that:

1. Dean W. Knight & Sons, Incorporated shall:
 - a. File the revised rate schedules in Appendix A in compliance with General Order Series 96 after the effective date of this order. The revised schedules shall apply only to service rendered on and after their effective date, which shall be 5 days after filing.
 - b. File the sewer main extension rule in Appendix B in compliance with General Order Series 96 within 45 days after the effective date of this order. The tariff shall become effective 5 days after filing.

2. Within 90 days after the effective date of this order, applicant shall file with the Hydraulic Branch an original and 2 copies of a study prepared by a registered civil engineer experienced in sanitary engineering as described in Finding 5. One copy will be placed in the formal file by Hydraulic Branch. Applicant shall concurrently serve a copy of the study by mail on all interested parties to this application. Staff and Sierra House may file and serve their comments on the study within 20 days after its date of mailing.

This order is effective today.

Dated MAR 2 1983, at San Francisco, California.

LEONARD M. GRIMES, JR.
President

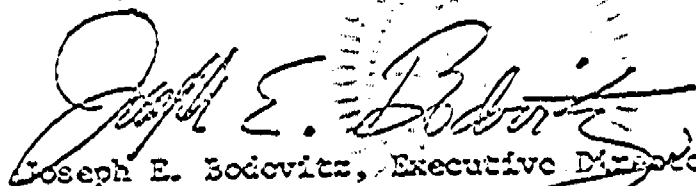
VICTOR CALVO

PRISCILLA C. GREW

DONALD VIAL

Commissioners

I CERTIFY THAT THIS DECISION
WAS APPROVED BY THE ABOVE
COMMISSIONERS TODAY.


Joseph E. Bodovitz, Executive Director

APPENDIX A

Page 1

SCHEDULE NO. 1

GENERAL RESIDENTIAL SERVICE

APPLICABILITY

Applicable to General Residential Sewer Service.

TERRITORY

Rolling Green Terrace Subdivision (Tracts 1, 2, 3, and 4) near the town of Big Pine, Inyo County.

RATES

Single-family Residence \$12.00 per month (I)

APPENDIX A
Page 2

SCHEDULE NO. 2
COMMERCIAL AND INDUSTRIAL SERVICE

APPLICABILITY

Applicable to Commercial and Industrial Sewer Service.

TERRITORY

Rolling Green Terrace Subdivision (Tracts 1, 2, 3, and 4) near the town of Big Pine, Inyo County.

RATES

	<u>Per Month</u>
Knight Manor	\$110.00
Sanitarium	505.00

(END OF APPENDIX A)

APPENDIX B

Rule No. 15

MAIN EXTENSIONS

A. Responsibility

All main extensions shall be the responsibility of the developer and shall be built to specifications provided by the utility. Upon completion and acceptance by the utility, all sewer facilities shall be transferred to the utility as contributions in aid of construction. Upon transfer, the utility shall be provided a bill of materials and a detailed cost of summary of facilities installed.

(END OF APPENDIX B)

In 1970 the PU Code was amended to bring sewer system corporations under the jurisdiction of the Commission. On February 6, 1973 applicant filed the rates established in 1965, \$3 per month for residential service and \$30 per month for the Sanitorium. The Commission authorized an increase in applicant's residential service rate to \$6 per month on August 13, 1973. In Advice Letter 3 applicant filed tariff rules governing its service, which were made effective on August 28, 1981.

On July 1, 1980 applicant increased its rates to the Sanitorium to \$750 per month without the required authorization of the Commission. This increase led County to file a formal complaint. D.92982 dated May 5, 1980 in Case 10910 ordered the utility to stop billing the Sanitorium for sewer service at any rate not contained in its tariffs, to recompute prior billings to County which were made at other than its filed and effective tariff rate, and to credit the Sanitorium's account for overcharges. The decision states that "if rates do not cover costs, defendant's recourse is to file an application for an increase in rates."

Subsequently, the utility submitted a draft advice letter to the Commission and furnished a copy to the Sanitorium. Applicant requested authority to increase the Sanitorium's rate to \$750 per month. County filed a protest which contained a request for an opportunity to present evidence in opposition to the requested increase. In order to provide County with an opportunity to be heard, the advice letter, County's letter, and a cover sheet were docketed as A.60485.

Initial Hearings

The initial hearings in this proceeding were held before ALJ Levander in Bishop. Applicant's witnesses were Mr. Knight and the operator of his wastewater facility, Denis Tillemans. Knight testified that his estimates did not reflect current sewer utility operations. But his testimony indicated that applicant was incurring substantial expenses not reflected in its estimates. Knight stated that applicant would also seek to increase the sewer rates of its 179 residential customers and of the Knight Manor, which discharges sewage from a restaurant, a cocktail lounge, showers, and toilet facilities. A Commission staff engineer briefly testified on the scope of his investigation of applicant's sewer utility operations. He stated he would prepare a revised study based on the amended application.

The ALJ directed Knight to amend the application, to provide customer notice of the amended filing, and to prepare Exhibit 10 to reflect applicant's 1981 operations. The ALJ suggested that applicant consider being represented by an attorney.

In addition, Knight had made an unauthorized transfer of his sewer system to RGU. The ALJ advised Knight to file an application to secure Commission authorization for the transfer. A.61163 was filed in response to that suggestion.

Rossmoor's parent expensed that plant; therefore, treatment as a contribution was appropriate in those proceedings. It is not appropriate in this proceeding.

Since 1973, the Commission has required sewer utilities to treat main extensions as contributed plant. Applicant should have a rule on file to reflect that policy, but ^{it} was not provided with a rule governing sewer main extensions when it received sets of tariff rules for filing. We will direct applicant to file a main extension rule. The staff also treated service connections installed since 1973 as contributed plant. As noted above, applicant stipulated to the staff study, which treats costs of post-1973 main and service lateral installations as contributions. Knight's testimony indicates he may have expensed those service costs as developmental expenses. In that context, the staff treatment of post-1973 service laterals is appropriate. We adopt the staff estimate of net contributions in aid of construction of \$12,290.^{7/}

SS

Applicant's tariff Rule 16 states in part:

"SERVICE CONNECTIONS, METERS, AND
CUSTOMER'S FACILITIES

"A. General

"1. Utility's Responsibility

- "a.(1) In urban areas with dedicated front streets, rear service roads, or public utility easements the utility will furnish and install its portion of the service line for the purpose of connecting its collection system to the customer's piping, except for temporary services, and as otherwise provided in Rule No. 15, Main Extensions. The connection to the customer's portion of the service will be made at a convenient place between the property line and the curb, or inside the customer's property line where necessary.

^{7/} At December 31, 1982, recorded contributed plant was \$13,060. Accrued depreciation on this plant was \$770.