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PUC DOCKET NO. 43069

2016 FEB -2 PM 2: 13

APPLICATION OF INLINE DEVELOPMENT LLC FOR A RATE/TARIFF CHANGE 2 20 20

PUBLIC UTILITY COMMISSION:
OF TEXAS

INLINE DEVELOPMENT LLC'S SUPPLEMENTAL APPLICATION INFORMATION, REQUEST TO REMOVE ABATEMENT, AND REVISED PROCEDURAL SCHEDULE

COMES NOW Inline Development LLC ("Inline"), by and through its attorneys of record, and files this Supplemental Application Information, Request to Remove Abatement, and Revised Procedural Schedule, and would show the following:

I. BACKGROUND

On August 28, 2014. Inline filed an Application for a Water and Sewer Rate/Tariff Change (the "Application") with the Public Utility Commission of Texas (the "Commission"). Most recently, on December 3, 2015, the Administrative Law Judge ("ALF") issued Order No. 14 in this matter, setting a deadline of February 2, 2016 for Inline to provide additional information for its Application and for Inline and the Commission to jointly request to remove the abatement and provide a revised procedural schedule.

II. SUPPLEMENTAL APPLICATION INFORMATION

As previously noted, Inline and Commission Staff have conducted meetings to discuss additional information that Commission Staff needs to complete its review of Inline's Application. Accordingly, Inline has engaged consultants to prepare such additional information. Attached hereto as Attachment A is Inline's trending study, along with other supplemental, supporting materials.

III. REQUEST TO REMOVE ABATEMENT AND PROCEDURAL SCHEDULE

Inline believes that the supplemental materials provided in <u>Attachment A</u> should address the Commission's Staff's requests for additional information. Thus, Inline requests that this Application proceed, unabated, through the Commission's review process. Further, it is Inline's understanding that the Commission will provide the proposed Revised Procedural Schedule through a separate, joint filing.

Respectfully submitted.

LLOYD GOSSELINK ROCHELLE & TOWNSEND, P.C.

816 Congress Avenue, Suite 1900 Austin. Texas 78701 (512) 322-5800 (512) 472-0532 (Fax)

DAVID Y KLEIN

State Bar No. 24041257 dklein@lglawfirm.com

CHRISTIE DICKENSON State Bar No. 24037667 edickenson@lglawfirm.com

ATTORNEYS FOR INLINE DEVELOPMENT LLC

CERTIFICATE OF SERVICE

I hereby certify that a true and correct copy of the foregoing document was transmitted by fax, hand-delivery and/or regular, first class mail on this 2nd day of February, 2016, to the parties of record.

David J. Klein

ATTACHMENT A

TRENDING STUDY AND SUPPLEMENTAL SUPPORTING MATERIALS

To: PUC Staff

From: Inline Development LLC

In our past communications, you have indicated that you need Inline to provide a Trending Study and other additional information to continue processing Inline's rate change application. To this end, Inline provides the following:

- 1. <u>Trending Study and Supporting Documents</u>. Enclosed behind Exhibit 1 is Inline's Trending Study, performed by GDS Associates, Inc. This Trending Study is based upon sound economic valuation principles, commonly used by experts in the field of water and wastewater utilities, to determine the original cost and current valuation of the Inline system. Additionally, Exhibit 1 contains a summary of the indices used in the Trending Study, as well as an explanation of why such indices were used. There is also a spreadsheet detailing which index was applied to each significant asset.
- 2. <u>Photographs</u>. To further support the Trending Study, Inline submits the photographs included in Exhibit 2. These pictures provide the additional detail requested by Commission Staff to prove-up the significant (above-ground) assets contained in the Trending Study.
- 3. Meters. Staff informally raised additional questions regarding the counting and accounting of meters in the Inline System. In response, Inline included the costs of the meters in the net cost of the system because all of the meters were initially installed at each lot- even if there was not a retail customer at that location yet. The development served by Inline is a zero lot-line development, and it is Inline's understanding that installing the meters initially was the most cost efficient solution with minimal disruption to the residents in the neighborhood.
- 4. Applying the Trending Study to Requested Rate Change Application. Per the Commission's request, the ALJ's prior order directs Inline to consider modifying its Application to take into consideration the net value of the larger assets that were used as a basis for determining the proposed rate increases. This request is a follow-up to the Commission's previous call for a Trending Study to determine the current net value of the assets after their total depreciation.

To this end, a detailed Trending Study, with supplemental comments, is provided in this filing. As noted above, this Trending Study lists the trended value of all major water and sewer service assets, the date the assets were installed, and the index used. Such data was then used to list the current trended values, age and total depreciation of the assets, and the net value of the assets (after depreciation).

Then, Inline used this information to modify all applicable PUC Water and Sewer Tariff Rate Change forms. Those forms are attached hereto as Exhibit 3 and are submitted to supplement the Application. Since most of the assets were installed a long time ago, the depreciated net value of those assets decreased substantially. As you will see in the revised forms in Exhibit 3, when these costs were applied to Inline's annual operating expenses, it provided further support to Inline's decision to apply for the "Alternate Method of Rate Design" as authorized in SECTION X of the application. (Note that Section X of the application has this statement: "After you have performed the calculations in Section IX, you may find that the cost increase per 1,000 gallons is not what you think your customers will approve. If that is the case, then the following will allow you to suggest your own increase...etc.")

Ultimately, the application of the Trending Study to the pending Application reveals that Inline could, and should, increase its rates above what it originally requested in the Application. However, in order to avoid rate shock to its retail customers, Inline has opted to continue seeking Commission approval for the rate increase it originally requested in the Application. Said another way, while Inline modified most Rate/Tariff Change application forms, it has not changed Table X.A. (the water rate per 1.000 gallons or the base rate). This is in compliance with the Section IX suggestions and has the additional benefit of not needing to send additional rate change notices to customers.

Exhibit 1

Trending Study/Summary of Trending Study/Spreadsheet Detailing Trending Study



Thomas G. Gebhard, Jr., P.E., Ph.D. Executive Engineer Ph: 512 494 0369 Fax: 512.494.0205 tom.gebhard@gdsassociates.com

To Whom It May Concern,

This report was prepared to establish the original cost and current value of the systems. Verification of assets, replacement cost valuation and the installation date of assets were provided to GDS Associates by Jerry Ince, P.E. of Ince Engineering, LLC. The replacement cost valuation is not an appraisal, but is reflective of the value of the systems based on recent contractor estimates.

The replacement costs and installed dates provided by Ince Engineering were then used to estimate the original cost of the plant. Indices used to estimate the original value of the system include the Handy-Whitman Cost Trending Index, the Engineering News-Record Building Cost Index History, and the United States Bureau of Reclamation Construction Cost Trends. The organizations compiling these indices gather construction cost information that includes materials, labor, equipment, overhead and profit. That information is summarized into an index number that is a percentage ratio between the cost of an item at any stated time and its cost at a base period. Engineers doing utility asset evaluations often rely upon these types of indices for estimating costs in different time periods for water and sewer utilities, as well as electric and natural gas utilities.

The trended original value of the assets was then used to calculate current net value of the assets. For those assets assigned a service life in Schedule III-3 of the Public Utility Commission's current Class B rate change application, those service lives were used to determine the net value of the assets using straight-line depreciation. Sewer assets were assigned service lives based on Schedule III.B. of the previous Commission application as service lives for sewer assets are not included in the current Class B application. For assets not assigned a service life by the Commission (identified by an asterisk in Column k of the report), the following service lives have been used:

Fire Hydrants	50 Years
Electrical Equipment	20 Years
Generators	20 Years
Sewer Pipe	50 Years
Structures – Metal	50 Years

If you have any questions about this project, please contact me at (512) 494-0369.

Sincerely,

Tomas G. Gebhard, Jr., P.E., Ph.D.

14/ Yella ()

Texas Registered Engineer No. 39577

212 E HWY 90 A Richmond, Texas 77406 281-232-7075 jgince@gmail.com

JERRY GLENN INCE

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ONAL ENGINEERING

STONAL MINING

Ince Engineering, LLC

November 6, 2015

To whom it may concern.

Re: Sugarberry Place and Cottage Gardens Trending Study

This letter is to acknowledge that Ince Engineering. LLC provided an evaluation of the installed components at the above referenced locations Ince Engineering field verified the above ground and visible items covered in the report. Below ground feature and items not accessible were taken from the construction drawings. The installation prices were evaluated from recent contractor estimates on similar items. Dates for the installations were obtained from interviews with the developer and system operator

If you have any questions regarding this project, please contact Jerry G. Ince. P.E. 281-232-7075, fax 281-232-7075.

Sincerely.

Jerry G. Ince. P.E. President/Engineer

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Page 1 of 2

			Current	San Links	Asset Age (Yrs.)	Town Code	Install Transling	Current Date	Trended Original	Asset	Annual Depreciation	Accumulated	1
at a state		The state of the s	Replacement Cent		12/31/2013	name manual function of	A Property	į	Asset Cost		Enpents	Depraciation	
3	3	l (e)	(4)	101	(1)	101	4	(1)	(1)	1	(1)	(w)	(8)
Sugarberry Place	Fencing	S' Chainkink Fernce 1,230 ft	056,015		13.6	ENR	353	2497	\$ 19.675	70	\$ 984	13.498	6,378
Sugarberry Place	fenting	Wooden Esternor 2850 ft	68,400	١,	136	ENR	1531	2497	44.215	20	1177		14,186
Sugarberry Place	Fencing	{	32		13.6	CNR	1953	7675	445	2	**	826	350
Sugarberry Place	Building Wood	Wooden Building	2,500		13.6	HW-62	314	534	3,490	13	667		700
Sugarberry Place	Welts	2 Complete well	710,000	,	13.6	10-744	362	439	341,348	3	\$60°\$	38,464	103,130
Sugarberry Place	Pump > Shp	2-25 ha baaster pumps	35,000	1	13.6	HW-03	132	628	20,045	9			•
Sugarberry Place	Pressure Tanks		000'59	1	13.6	HW-D3	370	742	23,652	3	473		17,227
Sugarberry Place	Ground Storage Tanks	125,000 gal GST	250,000		901	HW-Q7	370	743	90,970	95	8171		857'99
Sugarberry Place	Destribution System		37.75		13.6	41:744	301	334	34.824	3	955		25,364
Sugarberry Place	Distribution System	6" 1260 Pape 426 ft	35,740	١.	981	MV:17	302	334	15,010	95	300		10,932
Sugarberry Place	Distribution System	4" 1260 Pipe 13,472 ft	431,104	. '	3116	HW-17	301	334	256.367	3	\$,127		186,725
Suparberry Place	Distribution System	2" 1260 Pape 5,938 R	113,022	٠ :	116	1644-127	301	334	67,002	2	1,342		798,84
Suparberry Place	Detribution System	Fire Hydratts, 3	11,700		13.6	HW-21	146	316	7,113	3	201		5,180
Sugarberry Place	Meters and Services	3/4" Meters and service corrections, 402	241,700		13.6	HW-18	275	ž	131,607	30	085'9	1/6,91	42,230
Sugarberry Place	Mik	Electric Contrats - water plant	33,000		13.6	HW-03	532	828	12,612	. 02	631	\$95'8	4,047
	Mir	Plant Electric ca 20HP	33,000	1	13.6	HW-03	532	928	12,612	2	631	9.565	78,4
	Mix	Diesel Generator	75,000		2	14-44	302	35.	64,755	- 20	3,330	15,298	51,458
Sugarberry Place	Mrsc	CI2 Facilities	1,000	6/1/2000	13.6	HW-06	342	76	480	22			
Sugarberry Place	Distribution System	Yard Papmg	75,000		13.6	HW-13	314	647	36,398	3	128		26.511
Sugarberry Place	Collection System	10" 50A26 Sewer Pape - 10,708 ft	CH2,360		136	HW-17	201	336	381,995	8	2,640		378,226
Sugarberry Place	Collection System	6" 5DR26 Sevrer Pipe - 1,676 ft	92,180		13.6	HW-17	100	336	54,817	. 05	960'1		35,926
Sugarberry Place	Collection System	6" SDR26 Sewer Pipe - 2,947 ft	147,350	١:	13.6	HW-1.7	1Q2	336	87,425	3	1,753	23,803	63,822
Sugarberry Place	Sewer Service	402 service connections	72,000		13.6	HW-18	275	705	38,286	92	1,964		12,606
Sugarberry Place	Plant Sewers	200,000 gpd	2,000,000		3.6	ENE	3553	5497	1,292,705	2	25,85	1	P1.542
Sugarberry Place	Suldeng Metal	Metal Building no roof	208,000	- 1	13.6	HW-OR	314	524	124,641	20	2,493		90,782
Sugarberry Place	Luft Station	2 Lift Stations	170,000	1	13.6	HW-13	356	523	66,399	93	1,328		48,362
Ì	Misc	Electrical controls sewerplant	30,000		13.6	HW-03	532	924	17,198		998		815.8
Sugarberry Place	Mix	Dessel Generator	000.09	1	\$ 7	X-44	253	ĭ	53,404	۰ 02	7,670	12,239	41,166
Sugarberry Place	Land	i Lots for plants -3	111.400		13.6	USBACSI	202	618	37,674	٧.		•	37,674
Sugarberry Place Total			\$ 5,231,316						\$ 3,144,977		\$ 74,026	\$ 973,949	2.173.028

			Custom		Asset Sec. No. 1		Total Second			ľ			
	Asset Type	Asset Description	Repletement Cost	Dette Installed	12/11/2013	Trunding Index Code			Anna Crema		Annual Depreciation	Accumulation	Not Value
[8]	(4)	(4)	9	:	5	•	3	=	1				
Cottage Gardens	Fencing	8' Chavilink Fence 500'	\$ 12,500	\$/1/3004	•	3		3	200,5	Ł	\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\	١.	
Cottage Gardens	Feating	Gate - 8	900'9	\$/1/2004	6	100	100	653		+			
Cottage Gardens	Building Wood	Weaden Building	1250	2/1/2004	- 6	MAGOS	35						1577
Cottage Gardens	Building -Metal	Metal Building - Maintenance	135,000	\$/1/2004	-6	WW.G3	1						3,019
Cottage Gardens	¥e#.	2-Complete well	210,000	1000/1/3	-	10.70	1	1			K		13,984
	Pume 4: Sho	2 15 ha basether durings	1000 71	CALCIONA							1,47,5	-	130.474
ı	Promote Char	1.00		200		7		2	3	2	1196		326
		of the decorate beauty		3/1/2004		B	3	ž	87	\$ 10	169		163
1	Venue lance	12,000 gal Pressure Lank	2,900	7/7/3004	,	TW-07	313	742	37,43	2 50	633		35.50
The Carrow Harry	Crowne Storage Lane	126 000 gal GST	25.000	20/1/2	<u>.</u>	MA-D)	313	742	106,30	2	817		85.749
The state of the s	Date marines syriem	17 1200 Prog -1,375 TI	25,20	2/1/2004	6.5	M4.17	230	2	9675)	L	1,310		23.13
1	Maturage and tem	10 1400 Figs 4, 188 II	277,270	70/70	9.7	M4-17	97	356	15,21	ш	3,705		149.623
	Unitroduced system	1200 rate - 2.024 R	123.664	2007/7	7	FW-1.7	Š	33	10,14	Щ	1,640		67.770
The state of the s	Controlled System	1200 mpe -/, 351 m	090'197	200	2	HW-17	230	300	1000	L	603	distribution.	242.100
Control of Control	United the System	4 1360 Page -3,234 R	195,068	7000/5	2,	HW-17	230	336	1817	L	1.430		197 65
Course	Distribution System	Fire Hydrants, 16	40,000	7002/1/5	3,	HW-21	288	977	20,55	L	2		21837
Collage Galdens	Moters and Services	3/4" Meters and service connections, 570	351,690	\$/1/2004	9.7	HW-18	927	ğ	27.74	_	11.174		113 616
Contract Cardens	Mark Commercial Commer	Electric Controls Water Plant	2,000	\$/1/2004	2	HW-03	986	228	24	1	*25		C 860 A
Columbia Cardenia	Mik	Plant Electric cu 204P	22,000	\$/1/2004	•	HW-03	265	226	1261				6 516
College Cornens	Mark	Diesel Generator	2,080	\$4/200	\$	N-44	Ø,	¥	2	L	3338		2713
Colore Cardens		U.Z. F.K. British	887	\$4/2004	2,	MW-06	283	765	*	<u>. </u>	3		11
Cottons Cardens	Collection Collect	Supplied to the supplied to th	288	700/1/3	2	M#-13	358	(47	4779	05	2	703	33.475
College Gerden	Callactors Custom	AND CARROL CHAMPER A LOS C.	66.50	TO THE	2	TW-3 2	027	3	906,09	Н	1,218		49.130
Coffee Gardens	Collection System	Se Critical Service Bine : 2 624 6	1	2	' 2"	144-17	8	×	196,30	ш	3,926		158,348
Cottage Gardens	Collection System	4" 50836 Count Bles 2 351 ft	27711	+	1	W-17	2	2	75,750	7	1817		61,104
Cottage Gardens	Collection System	4" CORDS County Bons . 3 784 fts		- 1700	:	HW-17	82	X.	230,30		200'S		201,750
Coltage Gardens	Collection System	Manhates C7		+	+	14.17	2	77	78.23	_	1,964		63.091
Collage Gerderts	Sewer Service	570 service connections	AND SUC	- 1000 M	+ 1:	W-12	20	Š	206.82		4,136		166,834
Cottage Gardens	Land	tots for adants . 3			+	M.18	200	ş	X Z	2	3,316		34,286
Cottage Garden	Mark	Sohave			- 	TO WAS	7	875	56.72	Ş			\$6,723
Cottage Gardens Total				500	,,	10-MX	255	200	16,05	20	100	2,759	673
			1 101700000						****				

Attachment A -

Resume of Thomas G. Gebhard, Jr., P.E., Ph. D.

EDUCATION

- B.S. Civil Engineering, University of Texas at Austin, June 1962.
- M.S. Environmental Health Engineering, University of Texas at Austin, January 1964.
- Ph.D., University of Texas at Austin, June 1968.

PROFESSIONAL MEMBERSHIP

Texas, No. 39577

PROFESSIONAL SOCIETIES

American Society of Civil Engineers

American Water Works Association

CONTINUING EDUCATION

- Short Course in Engineering Systems Analysis at Massachusetts Institute of Technology in June 1969.
- Second International Seminar for Hydrology Professors at Utah State University in Austin 1970.
- EPA Short Course in Water Quality Management at Edison, N.J. Water Quality Laboratory in March 1971.
- NSF Short Course in Flow Through Porus Media with Applications to Ground Water Hydrology at University of Wisconsin, Madison, Wisconsin, July 1971.
- Short Course in Energy Conservation and Management in Manufacturing Facilities at The University of Texas at Austin, June 1977.
- EPA Seminar on Small Wastewater Flows, Dallas, Texas, August 1977.
- EPA Seminar on Pretreatment of Industrial Wastes, Dallas, July 1978.
- EPA Seminar in Troubleshooting at Wastewater Treatment Plants Process Control, Sludge Handling and Conditioning, Dallas, August 1978.
- ASCE Seminar on Flood Plain and Drainage Analysis, Lubbock, October 1978.
- EPA Seminar on Sludge Treatment and Disposal, Dallas, November 1978.
- > Cost of Capital for Regulated Utilities, Public Utilities Reports, Washington, D.C., September 1983.

PROFESSIONAL SERVICE

GDS Associates, Inc.

Dr. Gebhard joined GDS Associates, Inc. on July 30, 1997 and became a shareholder on January 1, 2001. The following summarizes Dr. Gebhard's significant project work.

Representation of East Texas Electric Coops as Hydroelectric Power Customers of Southwestern Power Administration at Meetings of (a) Southwestern Power Resources Association on O&M expenditures, (b) Corps of Engineers on Hydropower issues, and (c) joint meetings of Southwestern Power Administration and Corps of Engineers on operations, maintenance and capital replacements.

- Canyon Lake Water Supply Corporation: Provided an independent review of the proposed purchase of this 6,600 connection member owned water system by a major publicly traded investor owned water utility. The review included a general evaluation of the assets and facilities, evaluation of the ownership capabilities, and assessment of the proposed purchase price which included a comparison with purchases of similar systems. The resulting report was submitted to the WSC's directors, and the customers ultimately approved the sale.
- AquaTexas, Inc.: Supervised a project team that prepared a complete update to the Company's Texas capital asset rate base accounts to meet state filing requirements. Prepared responses to financial, accounting and technical questions, and provided support testimony in the regulatory proceedings. The capital asset valuation update included adding over \$50 million dollars of capital additions and a complete asset valuation for 10 purchased systems for which no records were available.
- SJWTX Water, Inc.: Performed an evaluation of four water systems offered for purchase by SJWTX Water, Inc. Inspected systems, reviewed plans, developed inventory, and computed a trended evaluation of net book value.
- Aqua Texas, Inc.: Performed an evaluation of the water and wastewater systems at Cypress Bayou, north of Orange, Texas. Performed field inspection and determined the value of Replacement Cost Depreciated from asset summaries. Also evaluated ratio of market capitalization to book value, comparable sales values, and net present value of future cash flows. The valuation was used in negotiations between Aqua Texas and the City of Orange, Texas.
- 2 Aqua Texas, Inc.: Performed an evaluation of the water and wastewater systems at Crighton Ridge, south of the City of Conroe, Texas. Performed field inspection and determined the value of Comparable Sales, Ratio of Market Capitalization to Book Value, and net present value of future cash flows. The valuation was used in negotiations between Aqua Texas and the City of Conroe, Texas.
- AquaSource Utility, Inc.: Provided a valuation of purchased assets by developing an inventory, using financial records and trending to determine original cost, depreciation, value at acquisition, and replacement cost depreciated in Docket Nos. 2000-1074-UCR, 2000-1075-UCR, 2000-1366-UCR, 2000-1367-UCR, 2000-1368-UCR and 2000-1369-UCR before the Texas Natural Resource Conservation Commission and Dockets Nos. 582-01-0416 and 582-01-1365 before State Office of Administrative Hearings.
- Maverick County Water Control and Improvement District No. 1: Analysis of electrical marketing and value of power produced by deliveries of water by MCWCID, analysis of FERC licensing status, and alternate hydroelectric power generation capabilities.
- American States Utility Services, Inc.: Preparation of proposal for purchase of water and wastewater utility systems of Channel Islands, Kingsley Field, Fresno Air Terminal Air National Guard Stations, and Corpus Christi Naval Stations.
- Southwest Utilities, Inc.: Providing expert witness services and regulatory assistance for an application to change the company's water and sewer rates in Dockets 31791-R and 31792-R before the Texas Natural Resource Conservation Commission.
- H-M-W Water Supply Corporation: Preparation of an Engineering Report for the conversion of a Water Supply Corporation to a Special Utility District and the provision of regulatory services before the Texas Natural Resource Conservation Commission.
- Ables Springs Water Supply Corporation: Provision of regulatory assistance and expert witness services in support of an application to amend the certificated service area before the Texas Natural Resource Conservation Commission.



- Brushy Creek Municipal Utility District: Providing an analysis of water utility rates charged by the City of Round Rock and performing true-up calculations based upon a mutual agreement to use a methodology used by TNRCC in a docket to settle a rate dispute between the parties.
- Utility Center, Inc. of Fort Wayne, Indiana (A subsidiary of AquaSource Utility, Inc.): Computation of Replacement Cost New Less Depreciation (RCNLD) as part of a rate case before the Indiana Utility Regulatory Commission (IURC), Cause No. 41968, requiring a review of plant asset accounts, inspection of assets, evaluation of electronic maps, and trending of original cost data.
- Azurix North America, Inc.: Planning study for support of Request for Waiver of 75/90 Rule of Texas
 Natural Resource Conservation Commission for Southwest Utilities, Inc.
- B&D Environmental Inc.: Providing support services in valuation of water and wastewater utility assets.
- AquaSource Utility Inc.: Performing a valuation study for water and wastewater utility assets of Central Jefferson County Utility Company of Missouri for litigation support in Cause No. 4:00CV863DDN in the United States District Court, Eastern District of Missouri.
- Acquisition Partners, Inc. (A former subsidiary of AquaSource Inc.): Preparation of Statements of Interest in acquiring utility assets of U.S. military bases, and investigation of opportunities on specific military installations.
- J.W. Lightfoot: Protest of Connection Fee

Dr. Gebhard has been active in providing volunteer services to professional committees. The committees and activities include:

Electric Power Research Institute: Probable Maximum Flood Guidelines Committee

EPRI with the cooperation of the Federal Energy Regulatory Commission (FERC) developed a set of guidelines for the determination of the Probable Maximum Flood. The committee provided peer review for the contractor, Bechtel Corporation, and has reviewed the draft document. 1992 - 1994.

American Society of Civil Engineers: Energy Division - Hydro Power Committee Hydro Power Guidelines: Small-Scale Hydropower Subcommittee

A comprehensive set of guidelines for planning and designing the civil engineering aspects of hydroelectric facilities was produced in a five-volume set over within a five-year period. Dr. Gebhard chaired the subcommittee that produced the volume on small-scale hydropower. The ASCE publication, Civil Engineering Guidelines for Planning and Designing Hydroelectric Developments, won the 1990 ASCE Rickey Medal. 1984-1989.

Task Committee on Rehabilitation of Hydroelectric Power Plants

A set of guidelines for the rehabilitation of civil engineering facilities at hydroelectric plants was produced as a companion set to the design guidelines. Dr. Gebhard was a member of the control group that produced the ASCE publication, *Guidelines for Rehabilitation of Civil Works of Hydroelectric Plants*. 1989-1991.

Task Committee on Lessons Learned from the Design, Construction, and Operation of Hydroelectric Facilities

This committee effort is to compile information on the powerhouse and the facilities that convey water to, through, and from the powerhouse. The ASCE publication, Lessons Learned from the Design, Construction, and Operation of Hydroelectric Facilities, that was produced by the committee, won the 1995 ASCE Rickey Medal. 1991 - 1994.



Gebhard Sarma Group, Inc.

The engineering firm was founded by Dr. Gebhard in March 1977 in Austin, Texas. After June 1984, the firm was known as Gebhard Engineers. The company changed its name from Gebhard Engineers, Inc. to Gebhard Sarma Group, Inc. on March 3, 1992 when principals of Sarma & Associates and Project Design Consultants joined Gebhard Engineers, Inc. The firm provided engineering services in the development and management of water and energy resources, as well as civil engineering services for land development and utility companies. The following summarizes his participation on some projects until he left on July 25, 1997.

- U.S. Department of Energy: Conducted Field Reconnaissance Studies to Evaluate the Development of Hydroelectric Power. Visited, Examined, and Reported on Over 110 Dams in the States of Kansas, Missouri, Iowa, Kentucky, Tennessee, Mississippi, Georgia, South Carolina, Florida, Alabama, and North Carolina and in the Commonwealth of Puerto Rico to Determine Feasibility of Adding Hydroelectric Power Generation Facilities to Existing or Abandoned Sites.
- State of Kansas, Department of Energy: Performed feasibility study for the addition of hydroelectric power to Rocky Ford Dam on the Big Blue River near Manhattan, Kansas. The dam initially had turbines and generators, but they had been removed. A detailed hydrologic analysis was made to determine the a suitable investment strategy to obtain more power during peak summer months. As Rocky Ford Dam established the tailwater elevation for a Corps of Engineers Dam, a detailed dam safety study was conducted and reviewed by the Corps of Engineers. Suitable enhancements to the fishery were designed to accompany the addition of hydroelectric power to the dam.
- American Hydro of Peterborough, New Hampshire: Design and Construction Supervision for 700 KW Hydroelectric Plant, Included Negotiations with Corps of Engineers for Construction and Operation at Corps Owned Dam, Design of Intake Structure, Penstock, Powerhouse, and Tailrace.
- Energy Law Institute of Concord, New Hampshire: On Contract with Metropolitan District Commission (Boston, Mass) to Determine Potential for Developing Hydroelectric Power at Water Supply Dams.
- U.S. Agency for International Development for K&M Engineering Co.: Conducted Field Reconnaissance Studies to Evaluate the Potential for Developing Small Hydroelectric Power Sites. Visited, Examined, and Reported on Four Small Hydroelectric Projects in the Republic of Armenia. Reviewed the Armenia Plan to produce more hydroelectric power. Recommended the Purchase of Hydroelectric Equipment produced in Russia and Armenia.
- U.S. Agency for International Development for K&M Engineering Co.: Visited Republic of India to negotiate the wording of a model power purchase agreement with the Federal Government. The model agreement would enable the state governments to purchase power from independent power producers who have built run-of-the-river hydroelectric plants.
- City of Charleston, Illinois: Consultant for Development of Hydroelectric Power at Breached Water Supply Dam.
- International Boundary and Water Commission, El Paso, Texas: Planning for Proposed Hydroelectric Dam to be combined with a new bridge, border crossing on Rio Grande upstream from Laredo, Texas.
- U.S. Section, International Boundary and Water Commission, El Paso, Texas: Developed hydraulic and hydrologic flow model of Rio Grande below Falcon Dam for use in assessing the availability of water pursuant to an application for a water right at the Texas Natural Resource Conservation Commission.
- Justice: Department of Justice: Preparing Surface Water Hydrology Study of 26,000 Square Mile River Basin in New Mexico and Arizona in Support of Indian Water Rights Claims in Arizona and New Mexico.



- U.S. Department of Justice: Supervision of Modifications to SWRRB Rainfall Runoff Model by U.S. Agricultural Research Service and Texas A&M Research Foundation, Modifications to Add Routing Model for Application in Large Drainage Basins.
- Earthworks, Inc., New Hampshire: Consultant for Design and Construction for Addition of Turbine at Dam.
- International Boundary and Water Commission, El Paso, Texas: Performed an analysis of drought conditions on Rio Grande in vicinity of El Paso.
- ² City of Austin: Seven Contracts (a) Performed Hydrologic Studies for Addition of Hydroelectric Power to Longhorn Dam, (b) Performed Analysis of the Addition of Hydroelectric Power to Onion Creek Wastewater Treatment Plant, (c) Design of Storm Sewers in Areas with Excessive Drainage Waters, (d) Design of Wastewater Interceptor Sewer for Slaughter Creek to Bear Creek Segment using a 54 Inch Diameter Tunnel through the Austin Chalk Formation, (e) Analysis of Water Availability and Rights Related to Charges for Water By LCRA, (f) Master Planning for Stormwater Runoff in the Walnut Creek Watershed, and (g) Erosion Controls in Miscellaneous Watersheds.
- City of Cedar Park, Texas: Rate Consultant for Establishing Water and Wastewater Utility Rates in 1987. Provided Advisory Services on Water Rates in 1991. Conducted 1993 Rate Study.
- City of Pasadena, Texas: Consultant for Water Rates in Dispute with City of Houston before Texas Water Commission. Provided Prefiled Expert Witness Testimony in Docket Nos. RC-022 and RC-023. Provided consultation in settlement agreement and negotiation of new contract. This docket was settled before hearing began.
- ² Kirtland Air Force Base, New Mexico: Water and Wastewater Rate Study for Contract Renewal with the City of Albuquerque, New Mexico. Reviewed the Impact of Ground Water Rights, Recharge from the Rio Grande, and Water Purchases from the City on Base Operations. Both City and Base adopted recommendations for Rates and Operational Modifications.
- Coe Utilities, Inc.: Prepared "Valuation Studies for Facilities of Coe Utilities, Inc." that was used to support a loan from the Texas Water Development Board to H-M-W Water Supply Corporation for the purchase of water and wastewater facilities owned by Coe Utilities, Inc., May 1996.
- Southwest Utilities, Inc., Texas: Prepared Application and Provided Expert Witness Testimony for Rate Increase in Docket No. 4824 before the Public Utility Commission of Texas in 1983. Prepared Application for Rate Increase in TWC Docket No. 7456-R. Prepared Application for Rate Increase in TWC Docket No. 9296-R.
- Military Highway Water Supply Corporation, Relampago, Texas: Analyzed water use and financial data to develop a recommendation for new water and wastewater utility rates. Examined water supply alternatives for colonia located in service area of WSC.
- Greystone Country Estates, Inc., Texas: Provided Expert Witness Testimony in TWC Docket No. 9954-X for establishing extension fee for a developer served by Hill Country Waterworks, Inc. Performed used and useful analysis of transmission system of Hill Country Waterworks, Inc.
- Onion Creek Wastewater Corporation, Texas: Prepared the application for a Certificate of Convenience and Necessity, and developed a rate structure for a newly formed Investor Owned Utility. Changed the rates in a subsequent proceeding.
- North Runnels Water Supply Corporation, Texas: Provided Expert Witness Testimony in TWC Docket No. 8496-W for Review of Water Rates Charged by the City of Winters.
- Staff Water Supply Corporation, Texas: Provided Expert Witness Testimony in TWC Docket No. 9240-M for Review of Water Rates Charged by the City of Carbon.
- Woodcreek Utilities, Inc., Texas: Provided Assistance in Creating Capital Structure and Acquisition Adjustment for Company whose rates were being Arbitrated as condition of sale by Federal Deposit Insurance Corporation in TWC Docket No. 7486-R.



- City of Truth or Consequences, New Mexico: Analyzed Local Groundwater Conditions and Testified at Hearing of New Mexico State Engineers Office for Water Right. Developed Project and Obtained Funding from Three Agencies to Develop a Low Temperature Geothermal Well for Providing Energy for Space Heating of the Senior Citizens Center.
- City of Georgetown and City of Round Rock, Texas: Provided Expert Witness Testimony in TWC Docket No. 8169-M, Dow Chemical Company v. Brazos River Authority, regarding issues on water management, Hydrologic system of Brazos River, dam failures, and other engineering and water management issues affecting water rates.
- West Leonard Water Supply Corporation, Texas: Provided Water Utility Rate Advisory Services in Rate Appeal before the Texas Water Commission.
- Poetry Water Supply Corporation and Lawrence Water Supply Corporation, Texas: Provided Rate Advisory Services in Review of Rates of the City of Terrell in TWC Docket 7331-M.
- Coe Utilities, Inc., Texas: Prepared Application and Provided Expert Witness Testimony for Rate Increase In Docket No. 5757 before the Public Utility Commission of Texas.
- Consultant to Protestants of Rate Increase of H&J Water Company. Provided Expert Witness Testimony in Docket No. 7054-R before the Texas Water Commission.
- consultant to Utilities for Rates and Capital Improvement Programs for Utilities with Wells. Utilities include Southwest Utilities, Inc., Coe Utilities, Inc., Shoreline Utilities, Inc., and Green Valley Water Supply Corporation.
- Hornsby Bend Water Company: Prepared Application for Certificate of Convenience and Necessity, Wrote Tariff, Prepared Layout of Water and Wastewater Utility, Locating Source of Well Water in Eastern Travis County.
- Cap-View Utility Company: Prepared Application for Certificate of Convenience of Necessity, Wrote Tariff, and Testified on Water Quality Issues at Hearing on Discharge Permit.
- . Creedmoor-Maha Water Supply Corporation: Prepared Testimony Against Applicant for Certificate of Convenience and Necessity in Certificated Service of Creedmoor-Maha.
- City of Rollingwood, Texas: Served as Hydrologist for City, Obtained Amendment for Change of 100
 Year Flood Plain from Federal Emergency Management Agency, Review Plans for Development in
 100 Year Flood Plain and for Detention and Filtration Ponds.
- Southern Rio Grande Council of Governments: Provided Consulting Services to Improve Energy Use Efficiency of Six Municipal Utilities Providing Water, Wastewater, Electric and Natural Gas Service. Included Analysis of Groundwater Conditions for Each Municipal Utility.
 - New Mexico Energy Institute: Performed Two Studies Relating to Planning for the Use of Geothermal Waters in Dona Ana County, New Mexico. Coordinated Planning of City, County, and State Governments.
- New Mexico Solar Energy Institute: Performed Feasibility Analysis of Proposed Bioconversion Project to Produce Ethanol from Algae.
- Subcontractor to Walsh Engineering Co: Advised and Assisted in Proposed Conversion of Municipal Water Well to Low Temperature Geothermal Heating Source for Hubbard, Texas.
- Willow Springs Water Supply Corporation: Conducted Examination of Well in Karst Aquifer with High Concentration of Chlorides and Recommended New Source of Water from Adjacent Utilities.

Public Utility Commission of Texas

Director of Public Utilities

From November, 1975 through February, 1977, I was the Chief Administrative Officer of the Public Utility Commission (PUC). The PUC was created on September 1, 1975, and began regulating the rate and services of over 2,000 electric, telephone, water and sewer utilities on September 1, 1976. During my employment, the PUC went from an organization of administrative support personnel to a



functioning regulatory agency composed of accountants, attorneys, economists and engineers. The following summarizes my administrative responsibilities:

- (1) Hiring of Key Personnel
- (2) Hiring Facilities and Equipment
- (3) Establishing Administrative Procedures
- (4) Approving Expenditures
- (5) Contracting Company Officials to Resolve Consumer Complaints
- (6) Coordinating the Drafting of Substantive Rules to Regulate Rates and Services of Public Utilities

City of Las Cruces, New Mexico

Director of Utilities

From January, 1974 through October, 1975, I directed the planning engineering and operations of the municipal water, wastewater and natural gas systems, and I was Operations Manager for the Rio Grande Natural Gas Association. The following summarizes my administrative experiences:

- (1) Prepared and Administered \$5.3 Million Operations Budget
- (2) Administered Engineering Contracts for over \$3 Million in Capital Improvement
- (3) Supervised 130 Employees
- (4) Developed merit award system which doubled the number of certified operators, laboratory technicians and welders
- (5) Established Engineering Section
- (6) Developed an Accounting and Work Order System based upon Uniform System of Utility Accounting
- (7) Contracted for Engineering Work with Five Consulting Engineering Firms

The following summarizes my experience on the water distribution system:

- (1) Coordinated City Participation in Regional Study of Groundwater Resources by U.S. Geological Survey
- (2) Contracted for Wells in a New Field
- (3) Began Installation of Telemetry Equipment for Remote Monitoring and Operation

The following summarizes my experience on the natural gas distribution system:

- (1) Began Operation of Telemetry Equipment for Remote Monitoring and Operation
- (2) Began Installation of Cathodic Protection
- (3) Established Curtailment Allotments
- (4) Testified on Curtailment Problems before the Federal Power Commission and Committees of the New Mexico Legislature
- (5) Testified at Rate Hearing of the New Mexico Public Service Commission
- (6) Proposed Separation of Service Area Served by Dual Facilities of Two Companies

New Mexico State University

Department of Civil Engineering

From September, 1967 through August, 1971, I was an Assistant Professor. From September, 1971 through January, 1975, I was an Associate Professor with tenure. From January, 1975, through December, 1975, I was an Adjunct Associate Professor. The following summarizes my teaching experiences:

1) Teaching of Graduate Courses in



- (a) Water Resources Engineering
- (b) Open Channel Hydraulics
- (c) Groundwater Hydrology
- (d) Surface Water Hydrology
- (e) Introduction to Research (Statistics, Regression Analysis, Dimensional Analysis, Nomography)
- 2) Teaching of Undergraduate Courses in
 - (a) Hydraulics
 - (b) Advances Hydraulics
 - (c) Groundwater Hydrology
 - (d) Sanitary Engineering
 - (e) Strength of Materials
 - (f) Statics
 - (g) Introduction to Engineering II (Slide Rule Operations and FORTRAN Programming)
- 3) Advisory Duties
 - (a) 20 Undergraduate Students per year
 - (b) 8 EPA Graduate Traineeships per year
 - (c) Directed program of Study for 5 M.S. Students
 - (d) Directed program of Study for 2 Sc. D. Students
 - (e) Participated on 22 Thesis Review Committees

The following summarizes my research experiences:

- : Grant on Flood Control Planning in New Mexico
- Grant on Water Utilization of Rio Grande to analyze Economic Impact of Water Use Alternatives
- Supervised Thesis Research in Groundwater Modeling, Recharge Wells, Dispersion Analysis, Water Quality Modeling and Flooding in Detroit
- Management of \$292,777 in Grant Funds from 1969 through 1974

The following summarizes my service activities:

- Delegate to UCOWR from 1970 through 1975; Chairman of Committee on Education and Research in Water Resources Engineering
- . Chairman of Technical Advisory Committee of Southern Rio Grande Council of Governments for performing A-95 Reviews
 - Member of New Mexico Water Conference Planning Committee
- Member of New Mexico Land Use Conference Planning Committee
- Consultant to Elephant Butte Irrigation District
- New Mexico Delegate to O.W.R.R. Conferences to Establish Research Priorities for Southern Plains and Great Basis Regions
- Director for Developing Curriculum and Writing Grant Proposal for Training Program of Water and Wastewater Utility Operators which was created in the College of Continuing Education

University of Texas, 1966-1967

Research Engineer Assistant

- Toledo Bend Dam Model Study. I supervised the construction of the model, conducted the tests and evaluated the data. 1964.
- Wind Wave Flume. I designed and built the flume, conducted tests on overtopping of seawalls and evaluated the test data. 1964.



Thomas G. Gebhard, Jr., P.E., PhD

- Teaching Associate. I taught the undergraduate civil engineering course of Fluid Mechanics. 1966.
- Dispersion in Reservoirs, I performed field tests using tracers in Lake Travis. Using numerical analysis techniques, I solved the two dimensional convective dispersion equation explicitly, implicitly and characteristically.

Dr. Frank D. Masch, 1963

Consultant

Performed the engineering analysis for a water well for the Austin Country Club.

U.S. Geological Survey, 1960-1963

Hydraulic Engineer

Performed field duties of streamflow measurement and streamflow station maintenance.



Trending Comments for Inline Utilities

Various groups and agencies compile construction cost indices, in which materials, labor, equipment, overhead, and profit are summarized into an index number that is a percentage ratio between the cost of an item at any stated time and its cost at a base period. These cost indices are sometimes referred to by their functional use — trending indices. Because these construction indices relate construction costs to the same base period, indices can be used to relate costs from one time period to another time period by their ratio. Thus, known construction costs from an earlier period can be used to estimate construction costs at a later time period or from a later date to an earlier period. Three separate indices for this study for Inline Utilities: (1) Handy-Whitman Index of Water Utility Construction Costs for the South Central Region (Region 4); (2) the ENR (formerly Engineering News Record) Index of Building Cost Trends; and (3) the Bureau of Reclamation Construction Cost Trends.

The Handy-Whitman Index was the primary reference source used for this study because utility regulators and the industry routinely accept it. The Handy-Whitman Index is commonly used in Texas ratemaking dockets. Whitman, Requardt and Associates from Baltimore, Maryland, prepare the Handy-Whitman Index for six different geographical regions of the United States. For wastewater treatment facilities and fencing, the Building Cost Index of ENR is the most suitable alternative when the Handy-Whitman Index is not applicable. The ENR Building Cost Index is preferable to the ENR Construction Cost Index because it has a slightly lower inflation rate. The U.S. Bureau of Reclamation Construction Cost Trends Index is used for land costs and other specialized items not covered by the Handy-Whitman Index and the ENR Building Cost Index.

The three indices exist in tabular form by utility item and dates. The Handy-Whitman Index is through a copyrighted, subscription service available at https://www.wrallp.com/about-us/handy-whitman-index The ENR Building Cost Index is available through http://www.enr.com/economics/historical_indices The U.S. Bureau of Reclamation Construct Cost Trends Index is located at http://www.usbr.gov/tsc/techreferences/mands/cct.html. A list of which index and asset type was used for each class of item is attached to these comments.

To estimate the original cost of an item, one uses the replacement cost of the item for current date, and multiplies that cost by the ratio of the trending index of the installation date to the

trending index of the current date. The resulting value is an appropriate estimate of the original cost of the utility asset:

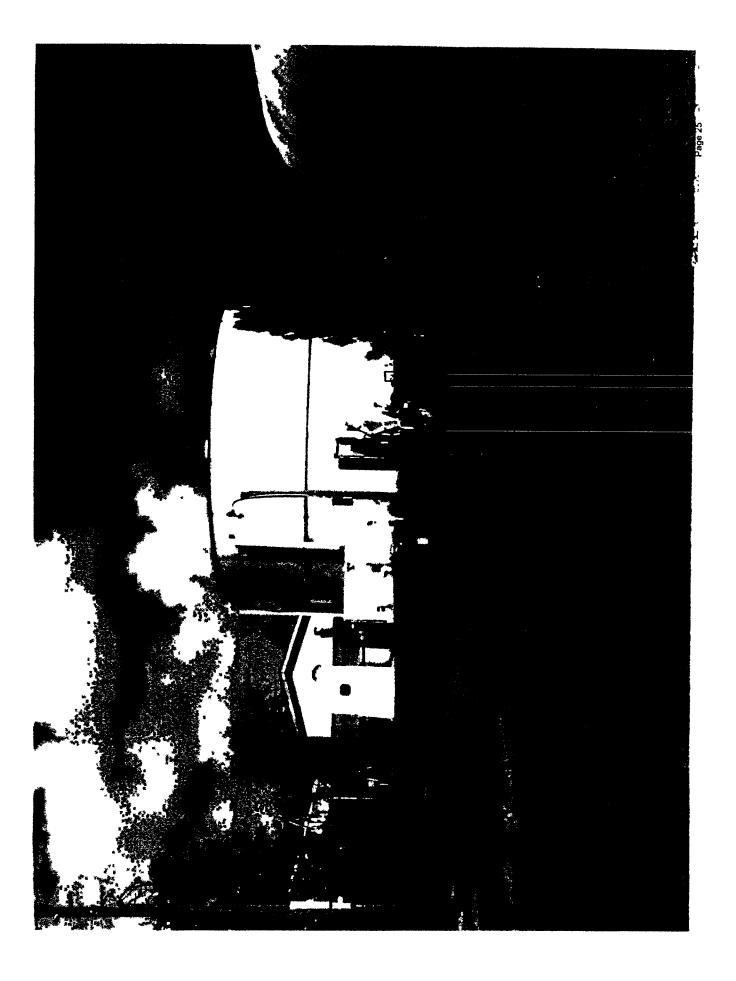
For example, to estimate the original purchase price of 8" plastic pipes with a current replacement cost of \$58,560 and an installation date of 6/1/2000, you must first determine the correct index to use for the item. In this case, the Handy-Whitman Index is appropriate, specifically the line for PVC Mains. The current index value for PVC Mains is 338 and the index value for the installation date is 201. The original cost of \$58,560 is multiplied by the ratio of the two trending values in order to come up with an original cost of \$34,824.

Similarly for land, if the current cost is estimated to be \$111,400 and the ratio of the applicable USBR trending ratios is 209/618, the estimate of the original purchase price is \$37,674. The estimated original costs determined by the trending study are then depreciated to find the net value of the assets at the end of the Inline Utilities' test year.

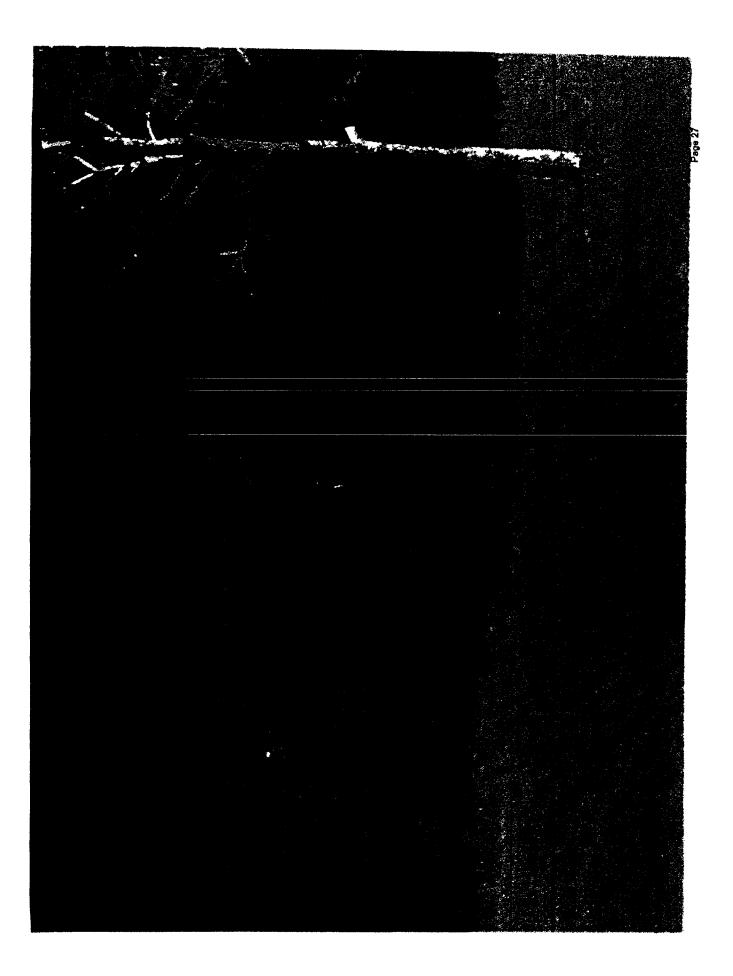
Asset Type	Index Used	index Line No.	Index Category Description
Fencing	Engineering News Report	N/A	Building Cost Index History
Building · Wood	Handy Whitman Water	8	Pumping Plant Structures and Improvements
Building - Metal	Handy Whitman - Water	8	Pumping Plant Structures and Improvements
Wells	Handy Whitman Water	2	Collecting & Impounding Res.
Pump <= Shp	Handy Whitman - Water	9	Electric Pumping Equipment
Pump > Shp	Handy Whitman - Water	9	Electric Pumping Equipment
Pressure Tanks	Handy Whitman - Water	23	Steel Reserviors
Ground Storage Tanks	Handy Whitman Water	23	Steel Reserviors
Distribution System	Handy Whitman - Water	38	PVC Mains
Meters and Services	Handy Whitman - Water	39	Services Installed
Misc Electrical	Handy Whitman - Water	9	Electric Pumping Equipment
Misc - Diesel Generator	Handy Whitman - Materials	50	Construction Equipment
Misc Chloranators	Handy Whitman - Water	17	Small Treatment Plant Equipment
Misc. · Yard Piping	Handy Whitman - Water	34	Mains - Average all Types
Collection System	Handy Whitman - Water	34	Mains - Average all Types
Sewer Service	Handy Whitman - Water	39	Services Installed
Plant - Sevier	Engineering News Report	N/A	Building Cost Index History
Lift Station	Handy Whitman - Water	34	Mains - Average all Types
Land	U.S. Bureau of Reclamation	151	Land - Texas

Exhibit 2

Photographs of Inline System











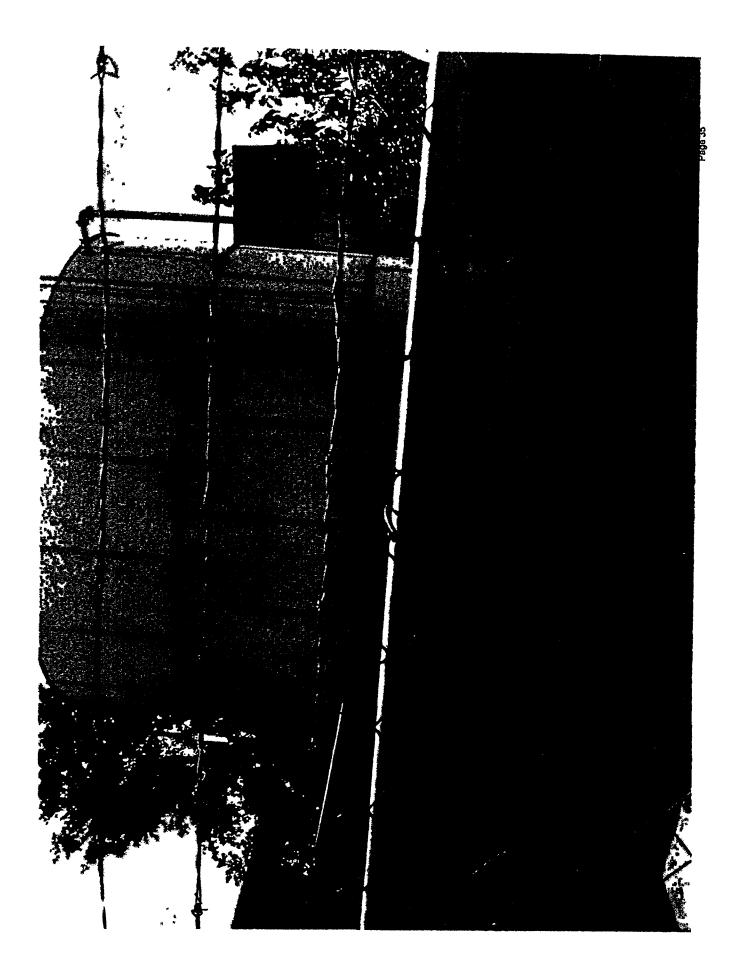














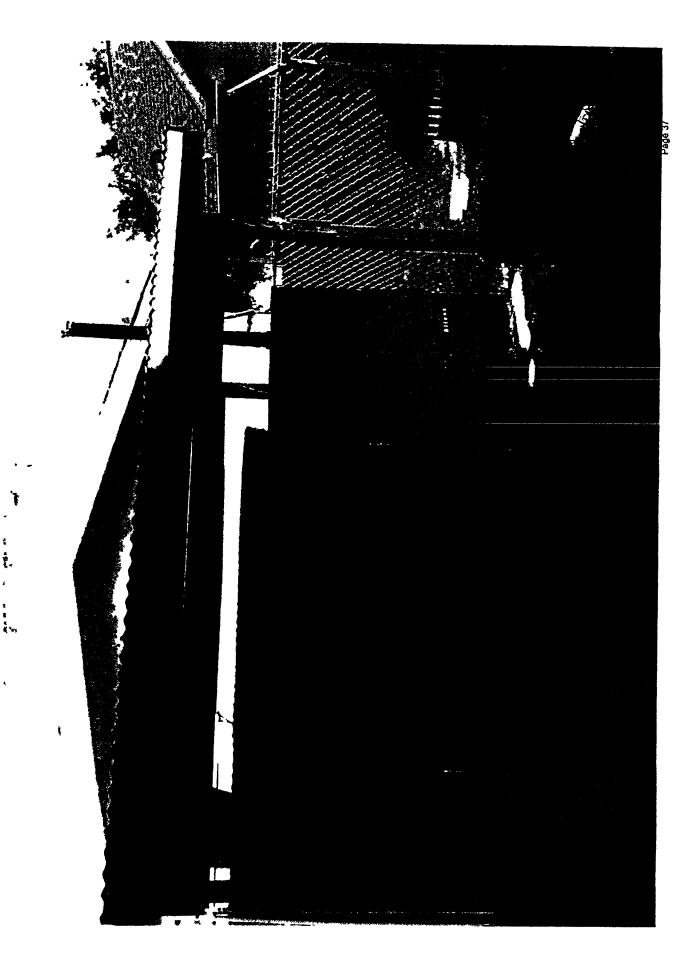




Exhibit 3

Modified PUC Water and Sewer Tariff Rate Change Forms

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B. ORIGINAL COST & DEPRECIATION SCHEDULE - WATER

supporting this information with invoices or other documentation. Round your figures to the nearest dollar. Amounts should be computed as of the end of Please provide the following inventory of the water utility plant being used to provide water service at the end of the test year. You will be responsible for Table III. B.

1573589(3) Net Book Value [d] = [d] 132756 149927 144260 210477 42020 66775 7090 881706(2) Accumulated 9 92803.9 215489 46098 19913 20065 14715 47345 13269 85496 66775 81317(1) (E) = [D]/[C]Annual Depreciation 9 6065.6 13355 17957 3546 1106 8550 1659 2006 3945 1471 Mos Days OO OOO Years in Service THE RESIDENCE OF THE PARTY OF T YR 15.3 Θ ខ្ព 7 12 12 2 20065 Cost when installed Original **12335213** 359149 303281 197272 133550 55289 85496 14715 53188 **B3189** Life (yrs) * Service $\overline{\Omega}$ **8**/2 20 2 2 ಜ 20 2 2 င္တ 20 200 Installation 1/1/2004 Date Of 1/1/2004 1/1/2001 1/1/2004 1/1/2004 1/1/2009 1/1/2004 1/1/2004 1/1/2004 画 Meters and Service (taps not covered by fees) Heavy Equipment (diesel gen.) Distribution System (mains and lines) Office Equipment Greater than 5 hp Greater than 5 hp Pressure Tanks Storage Tanks Chlorinators Shop Tools 5 hp or less 5 hp or less Vehicles Masonry Fencing Vells Wood Total Land Tem Em \leq the "test year." Other: (Please list)

* TCEQ Suggested Service Life ** Other Service Life (B) (B) Enter this number in Table IV. E., Line [A] (B) Enter this number in Table IV. E., Line [A] - Attach additional sheet(s) if necessary -

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E. INVESTED CAPITAL & RETURN - WATER

Table IV. E.		
Net Book Value - From Table III. B., Box (3)	[A]	\$1,573,589
Working cash allowance -Amount From Table VI. A., Line [L] Column (3), Box @(+®)	[B]	\$35,015
Materials and supplies		
Subtotal - Sum of [A] thru [C]	Dì	\$1,720,637
Developer Contributions - From Table III. C., Box (1)	[E]	\$0
Total invested capital [D] - [E]	F	\$1,720,637
Rate of return - From Table IV. D., Box ®	[G]	11.0%
Return/Interest - If [F] is greater than -0-, then enter [F] * [G]. If [F] is less than -0-, enter -0 Enter this amount in Table V., Line [A] and Table VI. A., Line [Q], Column (2)	[H]	\$189,270

SECTION V - INCOME TAX CALCULATION - WATER

Use the following table to determine the amount of income tax that can be included in your revenue requirement.

Table V.

Return - From Table IV. E., Line [H]	[A]	\$189,270
Interest Calculation		
Total Invested Capital - From Table IV. E., Line [F]	IB1	\$147,048
Weighted Cost of Debt Capital - Percentage From Table IV. D., Box 6	ici	11.0%
Interest [B]*[C]	[D]	\$16,175
Taxable Income [A] - [D]	[E]	\$173,095
Enter Income Tax from Tax Table (Appendix A)	IFI	\$56,536

SECTION IX - RATE DESIGN - WATER

VARLABLE RATE CALCULATIONS

Table IX. A.	Instructions	[A] \$104,252 From Table VI. A., Line [T], Box @ or Line [U], Box W	From Table VIII, Line [B]	Divide Line [B] by 1,000	Divide Line [A] by Line [C] Transfer to Table IX. B., Lines [L.] unough [M. Don C.	
		\$104,252	30.084M	30,084	\$3.47	
	Line	[Y]	(B)	<u>S</u>	回	
A. WARIABLE RATE CALCULATIONS		Total Variable Costs	Total # of Gallons Billed to Customers	Total # of 1 000 Gallons billed	Verights Cost ner 1.000 gallons	

BASE RATE CALCULATIONS

D. Denna manual de		Table IX. B.						
		Line		# of 1000	Variable	Variable	Total base	
				gallons	cost per	cost to be	rate per	
				in base	1,000 gals	added to	meter sizo	
				ભાા		base rate		
			Θ	(3)	3	6-2.3	O+O-0	
Tree Swad couts - Prom Table VI. A.: Line IT.	L. Line ITI, Box @ or Line [U], Box @	[A]	\$ 240,959					
Total mater somitwhents at end of test		[B]	689					
Base charge per meter equivalent or for each un	for each unmetered connection [A] +[B]	[2]	\$ 26.37					
and then divide by 12								
Rase charge per meter size					H	•	28.87	
6/0" > 2/4" or mometered	Multiply [C] by 1	<u>e</u>	26.37	0			1000	
WILL ALL WALLES	Multiply (C) by 1.5	<u> </u>	39.56	0	3.47 (6)	0	210.80	•
3/4·	1/2/14/15 [C] has 5	E	65.93	0	3.47 (6)	0	210.98	
	Multiply [5] by 4:3		121.85	c	3.47 (6)	0	210.98	
11/2"		力	9000		347	0	210.96	
2"	Multiply [C] by 8.0		20.012		1	6	395.65	
3"	Multiply [C] by 15.0		389.00		1			_
Other:		5						

(6) From Table IX. A., Line [D]

SECTION X - ALTERNATE METHOD OF RATE DESIGN - WATER

After you have performed the calculations in SECTION IX, you may find that the cost per 1,000 gallons is not what you think your customers will approve. If that is the case, then the following will allow you to calculate a rate structure that still recovers your revenue requirement, but with rates that you think may be more appropriate for your customers.

Table X. A.

	Line		
Cost per 1,000 gallons	[¥]	\$3.47	This is the rate that you think is appropriate Enter in Table X. B Column (3) . Lines [B] through [H]
Total # of 1,000 Gallons billed	[8]	30,084	From Table IX. A., Line [C]
Total Cost to be recovered through gallonage charge [C]	(C)	\$104,391	Multiply Line [A] times Line [B]
Total Revenue Requirement	(a)	\$315,915	From Table VI. A., Line [T] Box @
Total to be recovered through base rate	(E)	\$211,524	Subtract Line [C] from Line [D]
Total number of meter equivalents	[8]	699	From Table VII, Line [K], Box ©
Base rate per meter equivalent	· [<u>b]</u>	[G] \$26.37	Divide Line [B] by Line [F] & then divide by 12months Enter this in Table X. B, Line [A] Column (1)
		T-11-7	

Total base bill per meter size **6**-0+4 131.85 26.37 39.56 210.96 395,55 65.93 Variable cost **6-2***3 added to base 0 9 <u>၀</u> ၜ 0 **ම** 0 9 per 1,000 gais Variable cost **©** 3.47 3.47 3.47 3.47 3.47 gallons in base bill # of 1000 0 0 0 0 0 0 Lable X. B. \$ 26.37 131.85 210.98 395.55 39.56 65.93 26.37 Line \leq Ξ **[B]** <u>e</u> <u>ত</u> Base rate per meter size Multiply [A] (1) by 15.0 Base charge per meter equivalent or for each unmetered Multiply [A] (1) by 8.0 Multiply [A] (1) by 2.5 Multiply [A] (1) by 5.0 Multiply [A] (1) by 1.5 Multiply [A] (1) by 1 connection From Table X. A, Line [G] 5/8" x 3/4" or unmetered Other: 11/2" 3/4" m

(6) From Table X. A., Line [A]

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B. ORIGINAL COST & DEPRECIATION SCHEDULE.—SEWEN.
Please provide the following inventory of the water utility plant being used to provide water service at the end of the test year (for sewer attach a please provide the following inventory of the water utility plant being used to provide water service at the end of the test year (for sewer attach a similar list). You will be responsible for supporting this information with invoices or other documentation. Round your figures to the nearest dollar. ORIGINAL COST & DEPRECIATION SCHEDULE – SEWER

Table III. B. Figures should be computed as of the end of the test year.

		TONY	ROIE LAL. D.	-		ć			
[4]	(B)	<u></u>	<u>e</u>			5	Depreciation		נטן - נטן
Ψ.		Service Life	<u> </u>		Vears in Service	Nice.	回	E	
	2017	(yrs)					[b]/[c]	[F]	Net Book
Item	Installation	*	•• when installed •• (S)		Yra Mos	Days 0000		(S)	Value (S)
Tond		17/a							
O-11-ceton Comment									COLUCTION DESCRIPTION DE LA COLUCTION DE LA CO
1	1/1/2002	20	1099681	12					10,000
	1/1/2002	8	77898	12			1558	18695	20769
Solor		v	٥						
Pumping Equipment		,	4994004	3			53279	639356	692635
Treatment & Disposal Equipment	1/1/2002	22	TECTECT			THE BURNEY OF THE		医线性阴阳性初期阴 期	
Structures							andies de la lieura de la company	HEREN THE THE PROPERTY OF THE PROPERTY OF	
Wood		13	0	+	1	1			
Masonry		8	0	+		ľ			257735
Plant Sewers	1/1/2002	50	324006	1			2000	1707	
Ouffell sewer lines		50	o	-		1			
I shoretory Equipment		10	Q	-					4 202744
ad hy feet	11/1/2002	20	277482	암		٦	13874	138/41	77/067
Inferior and Scrivice (tabs not sovered to the sove	1/1/2002	2	27687	12			2769	27687	
Vehicles		5							
Shon Tools		15		-				04,000	3
ent (Diesel Gen	1,1/1/2002	10	120159	7			120159	nz0159	
		50		1	illementation in	en presidente	SHAME PROPERTY.		THE REPORT OF THE PARTY OF THE
									A7807
	1/1/2002		50 66399	14			1328	76001	02,000
Lift Stations			3325303				221441(1	221441(1) 1279842(2)202686/(3)	750792077
Total						ć			

(1) Enter this number in Table VI. A., Line [O], Column (1), (2) if [F] is greater than [D], enter the total for [D], (3) Enter this number in Table IV.E., Line [A]
-Attach additional sheet(s) if necessary-* Commission Suggested Service Life ** Other Service Life

Item	Date of installation or Contribution	Total Cost	Amount of Developer Contribution	Net Book Value (from Table III.B.)
Total	197.73			(1)
items and the associate				
		Table III. C.		
EQUITY How much equity or to Enter also in Table IV.		company have in	the utility? \$1,086,	.889 ① ti
How much equity or to Enter also in Table IV.	D., Box 3 below ofit) on investment i		•	amou
How much equity or to Enter also in Table IV. RATE OF RETURN What rate of return (pre Enter also in Table IV. NOTE: You may choose	D., Box (3) below ofit) on investment in D., Box (4) below on established by the u think is fair that is	n plant (equity) is e staff each year a less than the rate	s expected? 11.0% and included with the established by the stables.	amou in Annual Report Instructions
How much equity or to Enter also in Table IV. RATE OF RETURN What rate of return (pre Enter also in Table IV. NOTE: You may choose an average equity retur OR an interest rate that yo to use the Rate of Ret	D., Box (3) below ofit) on investment in D., Box (4) below on established by the u think is fair that is	n plant (equity) is e staff each year a less than the rate	s expected? 11.0% and included with the established by the stables.	amou in Annual Report Instructions
How much equity or to Enter also in Table IV. RATE OF RETURN What rate of return (pre Enter also in Table IV. NOTE: You may choose an average equity retur OR an interest rate that yo to use the Rate of Ret	D., Box (3) below ofit) on investment in D., Box (4) below on established by the unthink is fair that is turn Worksheet who	n plant (equity) is e staff each year a less than the rate ich is attached to	s expected? 11.0% and included with the established by the state the Instructions.	amou in Annual Report Instructions

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DEBT & EQUITY - SEWER List the following information concerning debt and equity of the utility and attach copies of notes payable:

Round all percentages to two (2) decimal places.

Table IV. D. SEWER

9%	Rate of Return	9	Total Debt & Equity \$1,086,892	Total De
119,558%®	11.0%		Part 2 - Investment/Equity \$100%	vest
				10101
9.5%(6)	,	8	(F)	
%	%	S	\$	1_
%	%	s	6	1_
9.5%	%5'6	\$1.086.892	4	_
%	%	S	v.	
0/	8	59	~	
%	/0			
Weighted Average	Interest	Unpaid Balance	Loan	
2	<u> </u>	Outstanding or	Original Amount of	

Total amount of original loans
 Total amount of the outstanding balance on the loans
 Equity in the utility - From Section IV. A.
 Return on Equity - From Section IV. B.

Total of 2+3

⑤ Total weighted average of debt · To Table V, Line [C]
⑦ Weighted average of Investment/Equity ③+⑤*④
⑥ Sum of ⑥ + ⑦ · To Table IV. E., Line [G]

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E. INVESTED CAPITAL & RETURN - SEWER

Table IV. E.

Working cash allowance - (Amount From Table VI. A., Line [L] Column (3), Box (3) [A] \$52026867 Working cash allowance - (Amount From Table VI. A., Line [L] Column (3), Box (2) + 8) [B] \$53210 Materials and supplies [C] \$60419 Subtotal - Sum of [A] thru [C] [D] \$2125496 Developer Contributions - From Table III. C., Box (1) [E] \$0 Rate of return - From Table IV. D., Box (2) [G] \$11.10% Return/Interest - If [F] is greater than -0-, then enter [F] * [G]. If [F] is less than -0-, enter -0. [H] \$233804 Enter this amount in Table V., Line [A] and Table VI. A., Line [Q], Column (2)	
Subtotal capture Column (3), Box (2) Box (3) Box (4)	Net Book Value - From Table III. B., Box (3) [[A] \$2026867
Materials and supplies [C] \$60419 Subtotal - Sum of [A] thru [C] [D] \$2125496 Developer Contributions - From Table III. C., Box (1) [E] \$0 Total invested capital [D] - [E] [F] \$2125496 Rate of return - From Table IV. D., Box © [G] Rate of return - From Table IV. D., Box © [G] s amount in Table V., Line [A] and Table VI. A., Line [Q], Column (2)	allowance - (Amount From
Subtotal - Sum of [A] thru [C] [D] \$2125496 Developer Contributions - From Table III. C., Box (1) [E] \$0 Total invested capital [D] - [E] [F] \$2125496 Rate of return - From Table IV. D., Box © [G] Rate of return - From Table IV. D., Box © [G] Rate of return - From Table IV. D., Box © [G] Rate of return - From Table IV. D., Box © [G] Rate of return - From Table IV. D., Box © [G]	Materials and supplies [C] \$60419
Developer Contributions - From Table III. C., Box (1) [E] \$0 Total invested capital [D] - [E] [F] \$2125496 Rate of return - From Table IV. D., Box © [G] F] is greater than -0-, then enter [F] * [G]. If [F] is less than -0-, enter -0 [H] \$233804 s amount in Table V., Line [A] and Table VI. A., Line [Q], Column (2)	Subtotal - Sum of [A] thru [C] [D] \$2125496
Total invested capital [D] - [E] [F] \$2125496 Rate of return - From Table IV. D., Box © [G] F] is greater than -0-, then enter [F] * [G]. If [F] is less than -0-, enter -0 [H] \$233804 s amount in Table V., Line [A] and Table VI. A., Line [Q], Column (2)	Developer Contributions - From Table III. C., Box (1) [E] \$0
Rate of return - From Table IV. D., Box © [G] [G] is greater than -0-, then enter [F] * [G]. If [F] is less than -0-, enter -0 [H] \$233804 s amount in Table V., Line [A] and Table VI. A., Line [Q], Column (2)	Total invested capital [D] - [E] [F] \$2125496
Return/Interest - If [F] is greater than -0-, then enter [F] * [G]. If [F] is less than -0-, enter -0 [H] \$233804 Enter this amount in Table V., Line [A] and Table VI. A., Line [Q], Column (2)	Rate of return - From Table IV. D., Box @ [G]
Enter this amount in Table V., Line [A] and Table VI. A., Line [O], Column (2)	Return/Interest - If [F] is greater than -0-, then enter [F] * [G]. If [F] is less than -0-, enter -0-, [H] \$233804
	Enter this amount in Table V., Line [A] and Table VI. A., Line [Q], Column (2)

SECTION V - INCOME TAX CALCULATION - SEWER

Use the following table to determine the amount of income tax that can be included in your revenue requirement.

Table V.

Return - From Table IV. E., Line [Hi [A] \$233804	233804
Interest Calculation	
Total Invested Capital - From Table IV. E., Line [F] [B] \$2125496	2125496
Weighted Cost of Debt Capital - Percentage From Table IV. D., Box (6) [C]	9.5%
Interest [B]*[C] [D] \$201922	201922
Taxable Income [A] - [D] [E] \$31882	31882
Enter Income Tax from Tax Table (Appendix A) [F] \$5647	5647

(1)To Table VI. A., Line [P], Column (2)

Please provide the following information regarding the cost to the utility of providing sewer utility service over your selected twelve month "test year.@ Note 1 - Instead of using the percentages listed, you may take the Total Cost and multiply it by 67% to determine the fixed portion and 33% for the variable portion.

Line 12 Month Known and Revenue
"test
year" per Changes
©
[A] 20400
ı
(D) 11161
[E] 21620
[F] 60419
1_
1
1
II) 2738
le E
Τ_
1
[0] 145734
1
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TTCSC4 N
(T) 459511

Divide this amount by 8 and enter the result in Table IV. E., Line [B], To Table X. A., Line [D] To Table IX. B., Line [A] To Table IX. A., Line [A]

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SECTIC 41 - UTILITY INCOME & EXPENSE INFORMATION – SEWER A REVENUE REQUIREMENT

Please provide the following information regarding the cost to the utility of providing sewer utility service over your selected twelve month "test year.@ Note 1 - Instead of using the percentages listed, you may take the Total Cost and multiply it by 67% to determine the fixed portion and 33% for the variable portion. variable portion.

	1 fre 10 1 / 2 mil		4			
	A INJOINING	_	Kevenne	% of (3)	Fixed Expenses	Variable
	"test	Measurable	Requirement	that is	(Note1)	Rynenese
<u>X</u>	year" per		for next yr	fixed		Note 1
۵.	ooks		•	(Note 1)		(Tanasa)
	7.		1. 我不知不敢事		京都の一大大学の大学の大学	Colored Colored
Ĭ.	20.400		007.00	- 03		
╀	82.228		200.00	28		
<u> </u>	٥		04,440	2		
lacksquare	11,161		11.161			
Ц	21,620		21.620	, 0		
(F)	6419 (60.419	50		
[0]	22,130		22.130	Ş		
IHI 2	28,108		28.108	3 2		
III	3827		3,827	38		
	3738	-	3,738	8		
	106,053		106.053	20		
3	305,681		305,681			
M	9000			Ş		
N				3 2		
<u>[0</u>				3 5		
<u>a</u>		3178	2474	3 8		
Ō		131 636	194 604	315		
Ļ		301101	131,030	201		
4	313,777	471,032	585,847			
2			134,811	100		
-	313,777	167,256	471,032		315.591	155 441 M
5	\$13.777	157.255	471 CCO - CT	L S		_ [
4		1 224,120		- ò	315,591	188 441 B.

ODIVIDE this amount by 8 and enter the result in Table IV. E., Line [B], OTo Table X. A., Line [D] OTo Table IX B., Line [A] OTO Table IX A., Line [A]