Koch California Ltd.
662 Eucalyptus Road, P.O. Box 1127
Nipomo, CA 93444

Phone: (805) 929-4153
Fax: (805) 929-5598
Email: kochcal@earthlink.net

September 16, 1999

CITY OF PISMO BEACH
SEP 1? 1999
RECEIVED
CITY CLERK

Michael Fuson, City Manager
The City of Pismo Beach
760 Mattie Road
Pismo Beach, CA 93449

(805) 773-4657 Phone
(805) 773-7006 Phone

Re: Request to Inspect and Copy Public Records

Dear Michael Fuson:

This letter is a request to inspect public records which are in the possession of the **CITY OF PISMO BEACH** pursuant to the California Public Records Act (Govt. Code §6250, et seq.). **Following the inspection, we may request copies** of some or all of the records. In the event we request copying by the **CITY OF PISMO BEACH** we will, at that time, tender any required copying charges. However, we reserve the right to have copies of the records made at your location by an independent copying service of our choosing.

Please make the records available for inspection beginning on **October 8th, 1999 at 10:00 a.m.** Unless we are notified otherwise, we shall expect that the records will be available for inspection in the **CITY OF PISMO BEACH** office. The following is a list of the reasonably identifiable public records which we desire to inspect on or after **October 8th, 1999 at 10:00 a.m.**

1. **All "Well Completion Reports" for each water well owned and/or operated by CITY OF PISMO BEACH.**

2. **For any water well for which a Well Completion Report is not in the possession of CITY OF PISMO BEACH, such other documents as are in the possession of CITY OF PISMO BEACH which show any of the following information: a) the well location, b) the name and address of the well driller, c) the date the well was completed, d) depth to first water below surface e) total depth of completed well.**

3. **Documents which show the amount of water produced from each water well owned and/or operated by CITY OF PISMO BEACH for each month from the completion of the well through to July 31st 1999.**

4. **All reports of hydraulic test results for each water well owned and/or operated by CITY OF PISMO BEACH, for the period beginning with the construction of the each well and ending July 31, 1999, which show any of the following information: a) standing water level, b)**

pumping water level, c) pumping amount, capacity or GPM.

5. **All reports created during repair or maintance of CITY OF PISMO BEACH wells with a measure of: a) standing water level, b) pumping water level, c) pumping capacity or GPM during pumping water levels (such as those commonly found on Floyd wells or other contractor's Invoice, Repair order Invoice, or Well Drilling logs etc.) for the period beginning with the construction of the each well and ending July 31, 1999.**

If a portion of the information contained in the records we have requested is exempt from disclosure by express provisions of law, Govt. Code §6254 requires segregation and deletion of that material in order that the remainder of the information may be released.

Please take note that Govt. Code §6256 requires the **CITY OF PISMO BEACH** to determine, within ten (10) days after receipt of this request, whether the **CITY OF PISMO BEACH** will comply with this request. If the **CITY OF PISMO BEACH** decides not to comply with all or any portion of this request, Govt. Code §6256 requires notification to us of the reasons for the determination not later than ten (10) days from your receipt of this request. Further, Govt. Code §6256.2 prohibits the use of any provision of the Public Records Act to delay access for the purposes of inspecting public records. Govt. Code §6256.2 also requires that any notification of denial of this request for records must set forth the names and titles or positions of each person responsible for the denial.

Thank you for your timely attention to our request.

John Snyder
Vice President

City of Pismo Beach
760 Mattie Road
Pismo Beach, CA 93449
(805)773-4657 Fax: (805) 773-7006

September 29, 1999

Mr. John Snyder, Vice President
Koch California Ltd.
662 Eucalyptus Road
P.O. Box 1127
Nipomo, CA 93444

Re: Request to Inspect and Copy Public Records

Dear Mr. Snyder:

My office received your request to inspect and copy records on September 17, 1999. I apologize for the delay in getting back to you. Your request has been forwarded to the pertinent staff.

Pursuant to the Public Records Act, we are requesting a 10-day extension on complying with the request. I will call you as soon as the records are available for inspection at City Hall.

There will be a charge for copies but no charge for viewing the documents. The charge is 75 cents for the first page and 20 cents for each page after that, plus clerical staff time to copy at an hourly rate of approx. $10.00.

If you have any questions, please let me know.

Sincerely,

Sharon Jones

Sharon Jones
City Clerk

cc: File

cc: City Clerk
D. Belzeit
R. Rogers

Koch California Ltd.
662 Eucalyptus Road, P.O. Box 1127
Nipomo, CA 93444

Phone: (805) 929-4153
Fax: (805) 929-5598
Email: kochcal@earthlink.net

September 16, 1999

CITY OF PISMO BEACH
SEP 17 1999
RECEIVED
CITY CLERK
Hand delivered

Michael Fuson, City Manager
The City of Pismo Beach
760 Mattie Road
Pismo Beach, CA 93449

(805) 773-4657 Phone
(805) 773-7006 Phone

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Please make the records available for inspection beginning on **October 8th, 1999 at 10:00 a.m.** Unless we are notified otherwise, we shall expect that the records will be available for inspection in the **CITY OF PISMO BEACH** office. The following is a list of the reasonably identifiable public records which we desire to inspect on or after **October 8th, 1999 at 10:00 a.m.**

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pumping water level, c) pumping amount, capacity or GPM.

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Thank you for your timely attention to our request.

John Snyder
Vice President

CLINICAL LABORATORY OF SAN BERNARDINO, INC. EDT
21881 BARTON ROAD
GRAND TERRACE, CA 92313
ORGANIC CHEMICAL ANALYSIS (3/96)

Date of Report: 03/27/97 Sample ID No.M71425X-1A
Laboratory Signature Lab
Name: CLINICAL LABORATORIES OF SAN BERNARDINO Director: [signature]
Name of Sampler:W. TYLER Employed By:PISMO BEACH
Date/Time Sample Collected: 97/03/12/0930 Date/Time Sample Received @ Lab: 97/03/13/1700 Date Analyses Completed: 97/03/21

System Name: CITY OF PISMO BEACH System Number: 4010008
Name or Number of Sample Source: WELL 05

* User ID: TAP Station Number: 32S/13E-19Q02 M *
* Date/Time of Sample: |97|03|12|0930| Laboratory Code: 3761 *
* YY MM DD TTTT YY MM DD *
* Date Analysis Completed: |97|03|21| *
* Submitted by:_____ Phone #:_____ *

PAGE 1 OF 1

REGULATED ORGANIC CHEMICALS

TEST METHOD	CHEMICAL ALL CHEMICALS REPORTED ug/L	ENTRY #	ANALYSES RESULTS	MCL ug/L	DLR ug/L
508	Endrin	39390	ND	2	0.10
508	Lindane (gamma-BHC)	39340	ND	.2	0.20
508	Methoxychlor	39480	ND	40	10.0
508	Toxaphene	39400	ND	3	1.0
508	Chlordane	39350	ND	.1	0.1
508	Heptachlor	39410	ND	.01	0.01
508	Heptachlor Epoxide	39420	ND	.01	0.01
508	Hexachlorobenzene	39700	ND	1	0.5
508	Hexachlorocyclopentadiene	34386	ND	50	1.0
508	Polychlorinated Biphenyls (Total PCB's)	39516	ND	.5	0.5

UNREGULATED ORGANIC CHEMICALS

508	Aldrin	39330	ND		0.075
508	Chlorothalonil (DACONIL, BRAVO)	70314	ND		5.0
508	Dieldrin	39380	ND		0.02
508	Propachlor	38533	ND		0.5

CLINICAL LABORATORY OF SAN BERNARDINO, INC. EDT
21881 BARTON ROAD
GRAND TERRACE, CA 92313

GENERAL MINERAL & PHYSICAL, & INORGANIC ANALYSIS (4/95)

Date of Report: 03/19/97 Sample ID No.M71425-1A
Laboratory Signature Lab
Name: CLINICAL LABORATORIES OF SAN BERNARDINO Director: Bob Glaub
Name of Sampler:W.TYLER Employed By:CITY OF PISMO BEACH
Date/Time Sample Collected: 97/03/12/0930 Date/Time Sample Received @ Lab: 97/03/13/1700 Date Analyses Completed: 97/03/14

System Name: CITY OF PISMO BEACH
System Number: 4010008
Name or Number of Sample Source: WELL 05

* User ID: TAP Station Number: 32S/13E-19Q02 M *
* Date/Time of Sample: |97|03|12|0930| (YY MM DD TTTT) Laboratory Code: 3761 *
* (YY MM DD) Date Analysis Completed: |97|03|14| *
* Submitted by:_____ Phone #:_____ *

MCL	REPORTING UNITS	CHEMICAL	ENTRY #	ANALYSES RESULTS	DLR
	mg/L	Total Hardness (as CaCO3)	00900		
	mg/L	Calcium (Ca)	00916		
	mg/L	Magnesium (Mg)	00927		
	mg/L	Sodium (NA)	00929		
	mg/L	Potassium (K)	00937		
Total Cations		Meq/L Value: 0.0			
	mg/L	Total Alkalinity (AS CaCO3)	00410		
	mg/L	Hydroxide (OH)	71830		
	mg/L	Carbonate (CO3)	00445		
	mg/L	Bicarbonate (HCO3)	00440		
*	mg/L+	Sulfate (SO4)	00945		0.5
*	mg/L+	Chloride (Cl)	00940		
45	mg/L	Nitrate (as NO3)	71850	< 2.0	2.0
**	mg/L	Fluoride (F) Temp. Depend.	00951		0.1
Total Anions		Meq/L Value: 0.0			
	Std.Units+	PH (Laboratory)	00403		
***	umho/cm+	Specific Conductance (E.C.)	00095		
****	mg/L+	Total Filterable Residue at 180C (TDS)	70300		
	Units	Apparent Color (Unfiltered)	00081		
	TON	Odor Threshold at 60 C	00086		
	NTU	Lab Turbidity	82079		
0.5	mg/L+	MBAS	38260		

* 250-500-600 ** 1.4-2.4 *** 900-1600-2200 **** 500-1000-1500

+ Indicates Secondary Drinking Water Standards

REVISED REPORT

CLINICAL LABORATORY OF SAN BERNARDINO, INC. EDT
21881 BARTON ROAD
GRAND TERRACE, CA 92313
ORGANIC CHEMICAL ANALYSIS (3/96)

Date of Report: 03/26/97 Sample ID No.95-10947
Laboratory Signature Lab
Name: CLINICAL LABORATORIES OF SAN BERNARDINO Director: _____
Name of Sampler:W.D.TYLER Employed By:CITY OF PISMO BEACH
Date/Time Sample Collected: 95/11/07/1345 Date/Time Sample Received @ Lab: 95/11/09/1700 Date Analyses Completed: 95/11/25

System Name: CITY OF PISMO BEACH System Number: 4010008
Name or Number of Sample Source: WELL 05

* User ID: TAP Station Number: 32S/13E-19Q02 M *
* Date/Time of Sample: |95|11|07|1345| Laboratory Code: 3761 *
* YY MM DD TTTT YY MM DD *
* Date Analysis Completed: |95|11|25| *
* Submitted by: _____ Phone #: _____ *

PAGE 1 OF 3 REGULATED ORGANIC CHEMICALS Neg Def No. 502.2

TEST METHOD	CHEMICAL ALL CHEMICALS REPORTED ug/L	ENTRY #	ANALYSES RESULTS	MCL ug/L	DLR ug/L
502.2	Bromodichloromethane	32101	ND		0.5
502.2	Bromoform	32104	ND		0.5
502.2	Chloroform (Trichloromethane)	32106	ND		0.5
502.2	Dibromochloromethane	32105	ND		0.5
502.2	Total Trihalomethanes (THM'S/ TTHM)	82080	ND	100	0.5
502.2	Benzene	34030	ND	1	0.5
502.2	Carbon Tetrachloride	32102	ND	.5	0.5
502.2	1,2-Dichlorobenzene (o-DCB)	34536	ND	600	0.5
502.2	1,4-Dichlorobenzene (p-DCB)	34571	ND	5	0.5
502.2	1,1-Dichloroethane (1,1-DCA)	34496	ND	5	0.5
502.2	1,2-Dichloroethane (1,2-DCA)	34531	ND	.5	0.5
502.2	1,1-Dichloroethylene (1,1-DCE)	34501	ND	6	0.5
502.2	cis-1,2-Dichloroethylene (c-1,2-DCE)	77093	ND	6	0.5
502.2	trans-1,2-Dichloroethylene (t-1,2-DCE)	34546	ND	10	0.5
502.2	Dichloromethane (Methylene Chloride)	34423	ND	5	0.5
502.2	1,2-Dichloropropane	34541	ND	5	0.5
502.2	Total 1,3-Dichloropropene	34561	ND	.5	0.5
502.2	Ethyl Benzene	34371	ND	700	0.5
502.2	Monochlorobenzene (Chlorobenzene)	34301	ND	70	0.5
502.2	Styrene	77128	ND	100	0.5
502.2	1,1,2,2-Tetrachloroethane	34516	ND	1	0.5
502.2	Tetrachloroethylene (PCE)	34475	ND	5	0.5
502.2	Toluene	34010	ND	150	0.5
502.2	1,2,4-Trichlorobenzene	34551	ND	70	0.5
502.2	1,1,1-Trichloroethane (1,1,1-TCA)	34506	ND	200	0.5
502.2	1,1,2-Trichloroethane (1,1,2-TCA)	34511	ND	5	0.5
502.2	Trichloroethylene (TCE)	39180	ND	5	0.5
502.2	Trichlorofluoromethane (FREON 11)	34488	ND	150	5.0
502.2	Trichlorotrifluoroethane (FREON 113)	81611	ND	1200	10.0
502.2	Vinyl Chloride (VC)	39175	ND	.5	0.5

 UNREGULATED ORGANIC CHEMICALS CONTINUED 95-10947

TEST METHOD	CHEMICAL ALL CHEMICALS REPORTED ug/L	ENTRY #	ANALYSES RESULTS	MCL ug/L	DLR ug/L
502.2	Naphthalene	34696	ND		0.5
502.2	n-Propylbenzene	77224	ND		0.5
502.2	1,1,1,2-Tetrachloroethane	77562	ND		0.5
502.2	1,2,3-Trichlorobenzene	77613	ND		0.5
502.2	1,2,3-Trichloropropane	77443	ND		0.5
502.2	1,2,4-Trimethylbenzene	77222	ND		0.5
502.2	1,3,5-Trimethylbenzene	77226	ND		0.5
507	Bromacil (HYVAR)	82198	ND		10.0
531.1	Carbaryl (Sevin)	77700	ND		5.0
507	Diazinon	39570	ND		0.25
507	Dimethoate (CYGON)	38458	ND		10.0
507	Prometryn (CAPAROL)	39057	ND		2.0

ORGANIC CHEMICAL ANALYSES

Date of Report: September 11, 1992 Sample ID No. 692-4086.3

Laboratory Name: The Twining Laboratories, Inc. Signature Lab Director: Jon L. Strutzel

Name of Sampler: Tina Grietens Employed By: City of Pismo Beach

Date/Time Sample Collected: 07-27-92/1055 Date/Time Sample Received @ Lab 07-28-92/1000 Date Analyses Completed: 08-16-92

System Name: System Number:

Name or Number of Sample Source: Well #5 (792-1-1003)(792-1-1006)(792-1-1009)

User ID: Source Number:

Date/Time of Sample: 9 2 0 7 2 7 1 0 5 5 (Y Y M M D D T T T T) Laboratory Code:

Date Analyses Completed: 9 2 0 8 1 6 (Y Y M M D D)

Submitted by: City of Pismo Beach Phone # (805) 773-7067

REGULATED ORGANIC CHEMICALS

TEST METHOD	CONSTITUENT ALL CONSTITUENTS REPORTED ug/L	ENTRY #	ANALYSES RESULTS	MCL ug/L	* DLR ug/L
	Bromodichloromethane	32101	< 0.5		0.50
	Bormoform	32104	< 0.5		0.50
	Chloroform (Trichloromethane)	32106	< 0.5		0.50
	Dibromochloromethane	32105	< 0.5		0.50
	Total Trihalomethanes (THM'S/TTHM)	82080	< 0.5	100	0.50
	Benzene	34030	< 0.5	1	0.50
	Carbon tetrachloride	32102	< 0.5	.5	0.50
	Ethyl benzene	34371	< 0.5	680	5.0
	1,4-Dichlorobenzene (p-DCB)	34571	< 0.5	5	0.50
	1,1-Dichloroethane (1,1-DCA)	34496	< 0.5	5	0.50
	1,2-Dichloroethane (1,2-DCA)	34531	< 0.5	.5	0.50
	1,1-Dichloroethylene (1,1-DCE)	34501	< 0.5	6	0.50
	cis-1,2-Dichloroethylene	77093	< 0.5	6	0.50
	trans-1,2-Dichloroethylene	34546	< 0.5	10	0.50
	1,2-Dichloropropane	34541	< 0.5	5	0.50
	Total 1,3-Dichloropropene	34561	< 0.5	.5	0.50
	Monochlorobenzene (Chlorobenzene)	34301	< 0.5	30	1.0
	1,1,2,2-Tetrachloroethane	34516	< 0.5	1	0.50
	Tetrachloroethylene (PCE)	34475	< 0.5	5	0.50
	1,1,1-Trichloroethane (1,1,1-TCA)	34506	< 0.5	200	1.0
	1,1,2-Trichloroethane (1,1,2-TCA)	34511	< 0.5	32	1.0
	Trichloroethylene (TCE)	39180	< 0.5	5	0.50

* Detection Limit for Reporting Purposes

INORGANIC CHEMICALS

92-12646

MCL	REPORTING UNITS	CONSTITUENT	ENTRY #	ANALYSES RESULTS	DLR
1000	ug/L	Aluminum (Al)	01105	<100.00	100.0
50	ug/L	Arsenic (As)	01002	< 10.00	10.0
1000	ug/L	Barium (Ba)	01007	<100.00	100.0
10	ug/L	Cadmium (Cd)	01027	< 1.00	1.0
50	ug/L	Chromium (Total Cr)	01034	< 10.00	10.0
1000	ug/L	Copper (Cu)	01042	< 50.00	50.0
300	ug/L	Iron (Fe)	01045	<100.00	100.0
50	ug/L	Lead (Pb)	01051	< 5.00	5.0
50	ug/L	Manganese (Mn)	01055	34.00	30.0
2	ug/L	Mercury (Hg)	71900	< 1.00	1.0
10	ug/L	Selenium (Se)	01147	< 5.00	5.0
50	ug/L	Silver (Ag)	01077	< 10.00	10.0
5000	ug/L	Zinc (Zn)	01092	< 50.00	50.0
		RADIOACTIVITY ANALYSIS			
15	PCi/L	Total Alpha	01501		
	PCi/L	Total Alpha Counting Error	01502		
50	PCi/L	Total Beta	03501		4.0
	PCi/L	Total Beta Counting Error	03502		
20	PCi/L	Natural Uranium	28012		2.0
	PCi/L	Total Radium 226	09501		0.5
	PCi/L	Total Radium 226 Counting Error	09502		
	PCi/L	Total Radium 228	11501		0.5
	PCi/L	Total Radium 228 Counting Error	11502		
5	PCi/L	Ra 226 + Ra 228	11503		
	PCi/L	Ra 226 + Ra 228 Counting Error	11504		
	PCi/L	Total Radon 222 Counting Error	82302		
	PCi/L	Total Radon 222	82303		100.0
20000	PCi/L	Total Tritium	07000		1.0
	PCi/L	Total Tritium Counting Error	07001		
8	PCi/L	Total Strontium - 90	13501		2.0
	PCi/L	Total Strontium - 90 Counting Error	13502		
		ADDITIONAL ANALYSES			
	NTU	Field Turbidity	82078		0.1
	C	Source Temperature C	00010		
		Langelier Index Source Temp.	71814		
		Langelier Index at 60 C	71813		
	Std. Units	Field PH	00400		
		Agressiveness Index	82383		
	mg/L	Silica	00955		
	mg/L	Phosphate	00650		
	mg/L	Iodide	71865		
		Sodium Absorption Ratio	00931		
		Asbestos	81855		
	ug/L	Boron	01020		

Central Coast Analytical Services

...ater, & Hazardous Waste Sampling, ... s, & Consultation
Sta... ...rtified Hazardous Waste, Chemistry, ...riology Laboratories

141 Suburban Road, Suite C-4
San Luis Obispo, Ca 93401
Fax (805) 543-2685
(805) 543-2553

6483-D Calle Real
Goleta, CA 93117
Fax (805) 976-4386
(805) 964-7838

TITLE 22 CHEMICAL ANALYSES

Date of Report: August 26, 1988	Lab Sample ID Number: E-8438
Laboratory Name: Central Coast Analytical Services	Signature Lab Director: Mam Hardcastle
Name of Sampler: Gil Contreras	Sampler Employed By: City of Pismo Beach
Date/Time Sample Collected: August 24, 1988 @ 0828	Date/Time Sample Received at Lab.: August 24, 1988 @ 1700
Were Holding Times Observed?: Yes	
System Name: City of Pismo Beach	System Number:
Description of Sampling Point: Well #5, in general mineral bottle, H+ in lab	
Name/Number of Sample Source:	Station Number:
Date and Time of Sample (YYMMDDTTTT): 8 8 0 8 2 4 0 8 2 8	Water Type: G (G/S)
User ID:	Submitted to SWQIS By:

MCL	Reporting Units		Constituent	TT	Storet Code	Analyses Results
			Analyzing Agency (Laboratory)		28	
	mg/L		Total Hardness (as CaCO3)		900	
	mg/L		Calcium (Ca)		916	
	mg/L		Magnesium (Mg)		927	
	mg/L		Sodium (Na)		929	
	mg/L		Potassium (K)		937	
Total Cations	meq/L	Value:				
	mg/L		Total Alkalinity (as CaCO3)		410	
	mg/L		Hydroxide (OH)		71830	
	mg/L		Carbonate (CO3)		445	
	mg/L		Bicarbonate (HCO3)		440	
*	mg/L	+	Sulfate (SO4)		945	
*	mg/L	+	Chloride (Cl)		940	
45	mg/L		Nitrate (NO3)		71850	
1.4-2.4	mg/L		Fluoride (F) Temp. Depend.		951	
Total Anions	meq/L	Value:				
	Std Units		pH (Laboratory)		403	
**	umho/cm	+	Specific Conductance (E.C.)		95	
***	mg/L	+	Total Filterable Residue at 180° C (TDS)		70300	
	UNITS		Apparent Color (Unfiltered)		81	
	TON		Odor Threshold at 60° C		86	
	NTU		Lab Turbidity		82079	
0.5	mg/L	+	MBAS		38260	

* 250-500-600 ** 900-1600-2200 *** 500-1000-1500

DHS 8251 (11/86)

TEST METHOD	CONSTITUENT ALL CONSTITUENTS REPORTED ug/L	ENTRY #	ANALYSES RESULTS	* DLR ug/L
	Naphthalene	34696	< 0.5	0.50
	n-Propylbenzene	77224	< 0.5	0.50
	Styrene	77128	< 0.5	0.50
	1,1,1,2-Tetrachloroethane	77562	< 0.5	0.50
	Toluene	34010	< 0.5	10.0
	1,2,3-Trichlorobenzene	77613	< 0.5	0.50
	1,2,4-Trichlorobenzene	34551	< 0.5	0.50
	1,2,3-Trichloropropane	77443	< 0.5	0.50
	1,2,4-Trimethylbenzene	77222	< 0.5	0.50
	1,3,5-Trimethylbenzene	77226	< 0.5	0.50
	Methyl ethyl ketone (MEK, Butanone)	81595	N/A	5.0
	Methyl isobutyl ketone (MIBK)	81596	N/A	5.0
	bis (2-Chloroethyl) Ether	34273	N/A	5.0
	Alachlor (Alanex)	77825	N/A	1.0
	Bromacil (Hyvar)	82198	N/A	10.
	Diazinon	39570	N/A	0.02
	Prometryn (Caparol)	39057	N/A	2.0
	Chlorothalonil (Daconil, Bravo)	70314	N/A	5.0
	Dimethoate (Cygon)	38458	N/A	10.
	Aldicarb (Temik)	39053	N/A	3.0
	Diuron	39650	N/A	1.0

Laboratory comments and description of any additional compounds found:

Central Coast Analytical Services

141 Suburban Road, Suite C-4
San Luis Obispo, Ca 93401
Fax (805) 543-2685
(805) 543-2553

Lab #3759
Sample ID No. F-13,184

Date of Report: October 20, 1989

Laboratory Name: Central Coast Analytical Services
Signature Lab Director: Mary Hardcastle
Name of Sampler: Ed Salla
Employed By: CCAS SLO
Date/Time Sample Collected: 10/12/89@1030
Date/Time Sample Received @ Lab: 10/12/89@1031
Date Analyses Completed: 10/20/89

System Name: City of Pismo Beach
System Number:

Name or Number Of Sample Source: Raw Drinking Water, Well #5

Water Type: (G/S) [ ] Station Number: [ ]

Date/Time of Sample: [8|9|1|0|1|2|1|0|3|0] (Y Y M M D D T T T T) User ID: [ ]

Analyzing Agency Code: [3|7|5|9] Date Analyses Completed: [8|9|1|0|2|0] (Y Y M M D D)

Submitted by: City of Pismo Beach Phone #:

Place an "X" in box to delete all data for this station/date/time. [ ]

REGULATED ORGANIC CHEMICALS

TEST METHOD	CONSTITUENT ALL CONSTITUENTS REPORTED uG/L	ENTRY #	ANALYSES RESULTS	MCL uG/L	* DLR
524.2	Bromodichloromethane	32101	N D		0.50
524.2	Bromoform	32104	N D		0.50
524.2	Chloroform	32106	N D		0.50
524.2	Dibromochloromethane	32105	N D		0.50
524.2	Total trihalomethanes	82080	N D	100	0.50
524.2	Benzene	34030	N D	1	0.50
524.2	Carbon tetrachloride	32102	N D	.5	0.50
524.2	Ethylbenzene	34371	N D	680	0.50
524.2	1,4-Dichlorobenzene (p-DCB)	34571	N D	5	0.50
524.2	1,2-Dichloroethane (1,2-DCA)	34531	N D	.5	0.50
524.2	1,1-Dichloroethylene (1,1-DCE)	34501	N D	6	0.50
524.2	Total 1,3-Dichloropropene	34561	N D	.5	0.50
524.2	Monochlorobenzene (Chlorobenzene)	34301	N D	30	0.50
524.2	1,1,2,2-Tetrachloroethane	34516	N D	1	0.50
524.2	Tetrachloroethylene (PCE)	34475	N D	5	0.50
524.2	1,1,1-Trichloroethane (1,1,1-TCA)	34506	N D	200	0.50
524.2	1,1,2-Trichloroethane (1,1,2-TCA)	34511	N D	32	0.50
524.2	Trichloroethylene (TCE)	39180	N D	5	0.50
524.2	Vinyl chloride (VC)	39175	N D	.5	0.50
524.2	m,p-Xylene	A-014	N D		
524.2	o-Xylene	77135	N D		
524.2	Total Xylenes (m,p & o)	81551	N D	1750	0.50

* Detection Limit for Reporting purposes

REGULATED ORGANIC CHEMICALS CONTINUED F-13,184

TEST METHOD	CONSTITUENT ALL CONSTITUENTS REPORTED uG/L	ENTRY #	ANALYSES RESULTS	MCL uG/L	* DLR
	Bentazon (Basagran)	38710		18	2.0
504	Dibromochloropropane (DBCP)	38761	ND	.2	0.01
504	Ethylene Dibromide (EDB)	77651	ND	.02	0.02
507	Atrazine (AAtrex)	39033	ND	3	1.0
	Molinate (Ordram)	82199		20	2.0
507	Simazine (Princep)	39055	ND	10	1.0
	Thiobencarb (Bolero)	A-001		70	0.50
	Endrin	39390		.2	0.01
	Lindane (gamma-BHC)	39340		4	0.40
	Methoxychlor	39480		100	10.
	Toxaphene	39400		5	0.50
	2,4-D	39730		100	10.
	2,4,5-TP (Silvex)	39045		10	1.0

UNREGULATED ORGANIC CHEMICALS

TEST METHOD	CONSTITUENT ALL CONSTITUENTS REPORTED uG/L	ENTRY #	ANALYSES RESULTS		* DLR
524.2	Bromobenzene	81555	ND		0.50
524.2	Bromochloromethane	A-012	ND		0.50
524.2	Bromomethane (Methyl Bromide)	34413	ND		0.50
524.2	n-Butylbenzene	A-010	ND		0.50
524.2	sec-Butylbenzene	77350	ND		0.50
524.2	tert-Butylbenzene	77353	ND		0.50
524.2	Chloroethane	34311	ND		0.50
524.2	2-Chloroethylvinyl ether	34576	ND		1.0
524.2	Chloromethane (Methyl Chloride)	34418	ND		0.50
524.2	2-Chlorotoluene	A-008	ND		0.50
524.2	4-Chlorotoluene	A-009	ND		0.50
524.2	Dibromomethane	77596	ND		0.50
524.2	1,2-Dichlorobenzene (o-DCB)	34536	ND		0.50
524.2	1,3-Dichlorobenzene (m-DCB)	34566	ND		0.50
524.2	Dichlorodifluoromethane	34668	ND		0.50
524.2	1,1-Dichloroethane (1,1-DCA)	34496	ND		0.50
524.2	cis-1,2-Dichloroethylene	77093	ND		0.50
524.2	trans-1,2-Dichloroethylene	34546	ND		0.50
524.2	1,2-Dichloropropane	34541	ND		0.50
524.2	1,3-Dichloropropane	77173	ND		0.50
524.2	2,2-Dichloropropane	77170	ND		0.50
524.2	1,1-Dichloropropene	77168	ND		0.50
524.2	Hexachlorobutadiene	34391	ND		0.50
524.2	Isopropylbenzene	77223	ND		0.50
524.2	p-Isopropyltoluene	A-011	ND		0.50
524.2	Methylene chloride	34423	ND		0.50
524.2	Naphthalene	34696	ND		0.50
524.2	n-Propylbenzene	77224	ND		0.50
524.2	Styrene	77128	ND		0.50
524.2	1,1,1,2-Tetrachloroethane	77562	ND		0.50
524.2	Toluene	34010	ND		0.50
524.2	1,2,3-Trichlorobenzene	77613	ND		0.50
524.2	1,2,4-Trichlorobenzene	34551	ND		0.50
524.2	Trichlorofluoromethane (Freon 11)	34488	ND		0.50
524.2	1,2,3-Trichloropropane	77443	ND		0.50
524.2	Trichlorotrifluoroethane (Freon 113)	81611	ND		0.50
524.2	1,2,4-Trimethylbenzene	77222	ND		0.50

UNREGULATED ORGANIC CHEMICALS CONTINUED F-13.184

TEST METHOD	CONSTITUENT ALL CONSTITUENTS REPORTED UG/L	ENTRY #	ANALYSES RESULTS		* DLR
524.2	1,3,5-Trimethylbenzene	77226	N D		0.50
524.2	Methyl ethyl ketone (MEK, Butanone)	81595			5.0
524.2	Methyl isobutyl ketone (MIBK)	81596			5.0
	Alachlor (Alanex)	77825			
	Chlordane	39350			0.10
	Heptachlor	39410			0.01
	Heptachlor epoxide	39420			0.01
	Bromacil (Hyvar)	82198			
	Diazinon	39570			
	Prometryn (Caparol)	39057			
	Chlorothalonil (Daconil, Bravo)	70314			
	Dimethoate (Cygon)	38458			
	Diethylhexylphthalate (DEHP)	39100			5.0
	Aldicarb (Temik)	39053			
	Carbofuran (Furadan)	81405			
	Glyphosate	79743			

Note and describe any additional compounds found: _____

MH/ke
11/13/89

PACIFIC GAS AND ELECTRIC COMP.
*** PUMP TEST REPORT ***

---------- CUSTOMER AND FACILITY DATA ----------

PLANT LOCATION : WELL #5
MOTOR MAKE : Other H.P. : 100.0
PUMP MAKE : Peerless TYPE : Submersible
MAILING ADDRESS :

CITY OF PISMO BEACH
1000 BELLO ST
PISMO BEACH CA 93449

PG&E PLANT ID.# : 2202
CONTROL# : 0224081-0 SUF. = A
ACCOUNT# : NBV-57-69301
METER# : T71060
C.G.C. # :
ENERGY USAGE : 317080 KWH/YR
ENERGY COST : 8.50 CENTS/KWH
THOU.GALS/YR : 130043.3

---------- TEST RESULTS ----------

TEST DATE : 06-30-87 TESTER : HAROLD HARRIS PHONE : (805)546-8651

RUN NUMBER	1
MEASURED RPM	-
STANDING WATER LEVEL (FT)	87.0
DRAWDOWN (FT)	59.5
PUMPING WATER LEVEL (FT)	146.5
DISCHARGE LEVEL (FT)	256.4
DISCHARGE PRESSURE AT GAUGE (PSI)	111.0
TOTAL LIFT (FT)	402.9
SURVEY LIFT (FT)	-
PGE WATER FLOW RATE (GPM)	553
CUSTOMER WATER FLOW RATE (GPM)	539
WELL YIELD (GPM/FT DRAWDOWN)	9.3
THOU.GALS PER 24 HOURS	796.3
HORSEPOWER INPUT TO MOTOR	108.4
PERCENT OF RATED MOTOR LOAD	93
KILOWATT INPUT TO MOTOR	80.9
KILOWATT HOURS PER THOU.GALS	2.4
OVERALL PLANT EFFICIENCY (%)	52.0

RECEIVED
JUL 2 1987
CITY OF PISMO BEACH
FINANCE DEPT.

---------- REMARKS ----------

* THE OVERALL EFFICIENCY OF THIS PLANT IS CONSIDERED TO BE LOW ASSUMING RUN NUMBER 1 REPRESENTS THE PLANT'S NORMAL OPERATING CONDITIONS.
* DATUM IS CENTER LINE OF DISCHARGE PIPE UNLESS OTHERWISE SPECIFIED.
* WATER LEVELS DETERMINED USING CUSTOMER AIR LINE.

---------- POTENTIAL SAVINGS ----------

THE POTENTIAL SAVINGS SHOWN BELOW ARE POSSIBLE IF THE EFFICIENCY OF YOUR PUMPING PLANT COULD BE IMPROVED TO THE LEVEL INDICATED. NORMAL PLANT OPERATION IS ASSUMED TO BE RUN NUMBER 1.

	PRESENT CONDITIONS	ESTIMATED AFTER REPAIRS	POTENTIAL SAVINGS/IMPROVEMENTS
OVERALL PLANT EFFICIENCY (%)	52.0	66.9	-
ANNUAL ENERGY USED (KWH)	317080	257795	59285
ANNUAL COST ($)	26952	21913	5039
ANNUAL OPERATING HOURS	3919	2972	948
WATER FLOW RATE (GPM)	553	729	176
TOTAL LIFT (FT)	402.9	422	-
% OF RATED MOTOR LOAD	93	100	-
KILOWATT HOURS PER THOU.GALS	2.4	2.0	0
ANNUAL THOU.GALS PUMPED	130043.3	130043.3	-

PACIFIC GAS AND ELECTRIC COMPANY
*** PUMP TEST REPORT ***

CUSTOMER AND FACILITY DATA

PLANT LOCATION : **WELL #5**
MOTOR MAKE : Other
H.P. : 100.0
PUMP MAKE : Peerless
TYPE : Submersible
MAILING ADDRESS :

CITY OF PISMO BEACH
1000 BELLO ST
PISMO BEACH CA 93449

PG&E PLANT ID.# : 2202
CONTROL# : 0224081-0 SUF. = A
ACCOUNT# : NBV-57-69301
METER# : T71060
C.G.C. # :
ENERGY USAGE : 317080 KWH/YR
ENERGY COST : 8.50 CENTS/KWH
THOU.GALS/YR : 138226.2

TEST RESULTS

TEST DATE : **05-01-87** TESTER : HAROLD HARRIS PHONE : (805)546-8651

RUN NUMBER	1
MEASURED RPM	-
STANDING WATER LEVEL (FT)	81.0
DRAWDOWN (FT)	71.0
PUMPING WATER LEVEL (FT)	152.0
DISCHARGE LEVEL (FT)	254.1
DISCHARGE PRESSURE AT GAUGE (PSI)	110.0
TOTAL LIFT (FT)	406.1
SURVEY LIFT (FT)	-
PGE WATER FLOW RATE (GPM)	566
WELL YIELD (GPM/FT DRAWDOWN)	8.0
THOU.GALS PER 24 HOURS	815.0
HORSEPOWER INPUT TO MOTOR	104.4
PERCENT OF RATED MOTOR LOAD	90
KILOWATT INPUT TO MOTOR	77.9
KILOWATT HOURS PER THOU.GALS	2.3
OVERALL PLANT EFFICIENCY (%)	56.0

REMARKS

* THE OVERALL EFFICIENCY OF THIS PLANT IS CONSIDERED TO BE LOW ASSUMING RUN NUMBER 1 REPRESENTS THE PLANT'S NORMAL OPERATING CONDITIONS.
* DATUM IS CENTER LINE OF DISCHARGE PIPE UNLESS OTHERWISE SPECIFIED.
* WATER LEVELS DETERMINED USING CUSTOMER AIR LINE.

POTENTIAL SAVINGS

THE POTENTIAL SAVINGS SHOWN BELOW ARE POSSIBLE IF THE EFFICIENCY OF YOUR PUMPING PLANT COULD BE IMPROVED TO THE LEVEL INDICATED. NORMAL PLANT OPERATION IS ASSUMED TO BE RUN NUMBER 1.

	PRESENT CONDITIONS	ESTIMATED AFTER REPAIRS	POTENTIAL SAVINGS/IMPROVEMENTS
OVERALL PLANT EFFICIENCY (%)	56.0	66.9	-
ANNUAL ENERGY USED (KWH)	317080	276545	40535
ANNUAL COST ($)	26952	23506	3446
ANNUAL OPERATING HOURS	4070	3188	882
WATER FLOW RATE (GPM)	566	723	157
TOTAL LIFT (FT)	406.1	426	-
% OF RATED MOTOR LOAD	90	100	-
KILOWATT HOURS PER THOU.GALS	2.3	2.0	0
ANNUAL THOU.GALS PUMPED	138226.2	138226.2	-

PACIFIC GAS AND ELECTRIC COMPANY
* PUMP TEST REPORT ***

CUSTOMER AND FACILITY DATA

PLANT LOCATION : WELL #5
MOTOR MAKE : Other H.P. : 100.0
PUMP MAKE : Peerless TYPE : Submersible
MAILING ADDRESS :

CITY OF PISMO BEACH
1000 BELLO
PISMO BEACH CA 93449

PG&E PLANT ID.# : 2202
CONTROL# : 0224081-0 SUF. = A
ACCOUNT# : NBV-57-69301
METER# : T43990
C.G.C. # :
ENERGY USAGE : 194240 KWH/YR
ENERGY COST : 8.50 CENTS/KWH
THOU.GALS/YR : 81834.9

TEST RESULTS

TEST DATE : 02-27-86 CREW : RUSS CRACKNELL PHONE : (805)546-8651

RUN NUMBER	1
MEASURED RPM	-
STANDING WATER LEVEL (FT)	65.0
DRAWDOWN (FT)	76.3
PUMPING WATER LEVEL (FT)	141.3
DISCHARGE LEVEL (FT)	314.1
DISCHARGE PRESSURE AT GAUGE (PSI)	136.0
TOTAL LIFT (FT)	455.4
SURVEY LIFT (FT)	-
PGE WATER FLOW RATE (GPM)	672
CUSTOMER WATER FLOW RATE (GPM)	680
WELL YIELD (GPM/FT DRAWDOWN)	8.8
THOU.GALS PER 24 HOURS	967.7
HORSEPOWER INPUT TO MOTOR	128.3
PERCENT OF RATED MOTOR LOAD	110
KILOWATT INPUT TO MOTOR	95.7
KILOWATT HOURS PER THOU.GALS	2.4
OVERALL PLANT EFFICIENCY (%)	60.2

REMARKS

* THE OVERALL EFFICIENCY OF THIS PLANT IS CONSIDERED TO BE FAIR ASSUMING RUN NUMBER 1 REPRESENTS THE PLANT'S NORMAL OPERATING CONDITIONS.
* DATUM IS CENTER LINE OF DISCHARGE PIPE UNLESS OTHERWISE SPECIFIED.

PACIFIC GAS AND ELECTRIC COMPANY
* PUMP TEST REPORT ***

---------- CUSTOMER AND FACILITY DATA ----------

PLANT LOCATION : WELL #5
MOTOR MAKE : Unknown H.P. : 100
PUMP MAKE : Peerless TYPE : Submersible
MAILING ADDRESS :

CITY OF PISMO BEACH
1000 BELLO ST
PISMO BEACH CA 93449

PG&E PLANT ID.# : 2202
CONTROL# : 0224081-0 SUF.
ACCOUNT# : MBV-57-69301
METER# : T71060
C.G.C. # :
ENERGY USAGE : 205400 KWH/YR
ENERGY COST : 8 CENTS/KWH
THOU.GALS/YR : 85703.3

---------- TEST RESULTS ----------

TEST DATE : **12-04-86** TESTER : RUSS CRACKNELL PHONE : (805)546-8651

RUN NUMBER	1
MEASURED RPM	-
STANDING WATER LEVEL (FT)	77.5
DRAWDOWN (FT)	58.5
PUMPING WATER LEVEL (FT)	136
DISCHARGE LEVEL (FT)	263.3
DISCHARGE PRESSURE AT GAUGE (PSI)	114
TOTAL LIFT (FT)	399.3
SURVEY LIFT (FT)	-
PGE WATER FLOW RATE (GPM)	548
CUSTOMER WATER FLOW RATE (GPM)	553
WELL YIELD (GPM/FT DRAWDOWN)	9.4
THOU.GALS PER 24 HOURS	789.1
HORSEPOWER INPUT TO MOTOR	105.6
PERCENT OF RATED MOTOR LOAD	91
KILOWATT INPUT TO MOTOR	78.8
KILOWATT HOURS PER THOU.GALS	2.4
OVERALL PLANT EFFICIENCY (%)	52.0

---------- REMARKS ----------

* THE OVERALL EFFICIENCY OF THIS PLANT IS CONSIDERED TO BE LOW ASSUMING RUN NUMBER 1 REPRESENTS THE PLANT'S NORMAL OPERATING CONDITIONS.
* DATUM IS CENTER LINE OF DISCHARGE PIPE UNLESS OTHERWISE SPECIFIED.

---------- POTENTIAL SAVINGS ----------

THE POTENTIAL SAVINGS SHOWN BELOW ARE POSSIBLE IF THE EFFICIENCY OF YOUR PUMPING PLANT COULD BE IMPROVED TO THE LEVEL INDICATED. NORMAL PLANT OPERATION IS ASSUMED TO BE RUN NUMBER 1.

	PRESENT CONDITIONS	ESTIMATED AFTER REPAIRS	POTENTIAL SAVINGS/IMPROVEMENTS
OVERALL PLANT EFFICIENCY (%)	52.0	66.9	-
ANNUAL ENERGY USED (KWH)	205400	168805	36595
ANNUAL COST ($)	16432	13504	2928
ANNUAL OPERATING HOURS	2607	1946	661
WATER FLOW RATE (GPM)	548	734	186
TOTAL LIFT (FT)	399.3	419	-
% OF RATED MOTOR LOAD	91	100	-
KILOWATT HOURS PER THOU.GALS	2.4	2.0	0
ANNUAL THOU.GALS PUMPED	85703.3	85703.3	-

F CIFIC GAS AND ELECTRIC C NY
*** PUMP TEST REPORT ***

---------- CUSTOMER AND FACILITY DATA ----------

PLANT LOCATION : WELL #5
MOTOR MAKE : Other H.P. : 100.0
PUMP MAKE : Peerless TYPE : Submersible
MAILING ADDRESS :

CITY OF PISMO BEACH
1000 BELLO ST
PISMO BEACH CA 93449

PG&E PLANT ID.# : 2202
CONTROL# : 0224081-0 SU
ACCOUNT# : MBV-57-69301
METER# : 171060
C.G.C. # :
ENERGY USAGE : 205400 KW
ENERGY COST : 8.50 CENTS
THOU.GALS/YR : 89289.

---------- TEST RESULTS ----------

TEST DATE : **10-28-86** TESTER : RUSS CRACKNELL PHONE : (805)546

RUN NUMBER	1
MEASURED RPM	-
STANDING WATER LEVEL (FT)	79.0
DRAWDOWN (FT)	72.0
PUMPING WATER LEVEL (FT)	151.0
DISCHARGE LEVEL (FT)	272.6
DISCHARGE PRESSURE AT GAUGE (PSI)	118.0
TOTAL LIFT (FT)	423.6
SURVEY LIFT (FT)	-
PGE WATER FLOW RATE (GPM)	576
CUSTOMER WATER FLOW RATE (GPM)	**576**
WELL YIELD (GPM/FT DRAWDOWN)	8.0
THOU.GALS PER 24 HOURS	**829.4**
HORSEPOWER INPUT TO MOTOR	106.6
PERCENT OF RATED MOTOR LOAD	91
KILOWATT INPUT TO MOTOR	79.5
KILOWATT HOURS PER THOU.GALS	2.3
OVERALL PLANT EFFICIENCY (%)	59.7

---------- REMARKS ----------

* THE OVERALL EFFICIENCY OF THIS PLANT IS CONSIDERED TO BE FAIR ASSUM
RUN NUMBER 1 REPRESENTS THE PLANT'S NORMAL OPERATING CONDITIONS.
* DATUM IS CENTER LINE OF DISCHARGE PIPE UNLESS OTHERWISE SPECIFIED.

---------- POTENTIAL SAVINGS ----------

HE POTENTIAL SAVINGS SHOWN BELOW ARE POSSIBLE IF THE EFFICIENCY OF Y
UMPING PLANT COULD BE IMPROVED TO THE LEVEL INDICATED. NORMAL PLANT
S ASSUMED TO BE RUN NUMBER 1.

	PRESENT CONDITIONS	ESTIMATED AFTER REPAIRS	POTENT SAVINGS/IMP
VERALL PLANT EFFICIENCY (%)	**59.7**	66.9	-
NNUAL ENERGY USED (KWH)	205400	184267	21133
NNUAL COST ($)	17459	15663	1796
NNUAL OPERATING HOURS	2584	2124	459
ATER FLOW RATE (GPM)	576	701	125
OTAL LIFT (FT)	423.6	439	-
OF RATED MOTOR LOAD	91	100	-
ILOWATT HOURS PER THOU.GALS	2.3	2.1	
NUAL THOU.GALS PUMPED	89289.1	89289.1	

P[illegible]IC GAS AND ELECTRIC COMP.
** PUMP TEST REPORT ***

---------- CUSTOMER AND FACILITY DATA ----------

PLANT LOCATION : WELL #5
MOTOR MAKE : Other
PUMP MAKE : Peerless
MAILING ADDRESS :

H.P. : 100.0
TYPE : Submersible

CITY OF PISMO BEACH
1000 BELLO ST
PISMO BEACH CA 93449

PG&E PLANT ID.# : 2202
CONTROL# : 0224081-0 SL
ACCOUNT# : MBV-57-69301
METER# : T71060
C.G.C. # :
ENERGY USAGE : 205400 KWH/Y
ENERGY COST : 8.50 CENTS/KWH
THOU.GALS/YR : 89289.1

---------- TEST RESULTS ----------

TEST DATE : 10-28-86 TESTER : RUSS CRACKNELL PHONE : (805)546-8651

RUN NUMBER	6-30-86	1	12/4/86
MEASURED RPM		-	
STANDING WATER LEVEL (FT)	76	79.0	77.5
DRAWDOWN (FT)	91.0	72.0	58.5
PUMPING WATER LEVEL (FT)	167.	151.0	136.0
DISCHARGE LEVEL (FT)	267.9	272.6	263.3
DISCHARGE PRESSURE AT GAUGE (PSI)	116.0	118.0	114
TOTAL LIFT (FT)	434.9	423.6	399.3
SURVEY LIFT (FT)		-	-
PGE WATER FLOW RATE (GPM)	633.	576	548
CUSTOMER WATER FLOW RATE (GPM)		576	553 @ 74 ft³/min
WELL YIELD (GPM/FT DRAWDOWN)	7.0	8.0	9.3
THOU.GALS PER 24 HOURS	911.5	829.4	789.1
HORSEPOWER INPUT TO MOTOR	107.1	106.6	105.68
PERCENT OF RATED MOTOR LOAD	92.	91	91
KILOWATT INPUT TO MOTOR	79.9	79.5	78.8
KILOWATT HOURS PER THOU.GALS	2.1	2.3	2.4
OVERALL PLANT EFFICIENCY (%)	64.9	59.7	52.0

$\frac{I_{HP}}{W_{HP}} \frac{105.68}{55.34} = 52\%$ OPE

---------- REMARKS ----------

* THE OVERALL EFFICIENCY OF THIS PLANT IS CONSIDERED TO BE FAIR ASSUMING RUN NUMBER 1 REPRESENTS THE PLANT'S NORMAL OPERATING CONDITIONS. DATUM IS CENTER LINE OF DISCHARGE PIPE UNLESS OTHERWISE SPECIFIED.

---------- POTENTIAL SAVINGS ----------

HE POTENTIAL SAVINGS SHOWN BELOW ARE POSSIBLE IF THE EFFICIENCY OF YOUR UMPING PLANT COULD BE IMPROVED TO THE LEVEL INDICATED. NORMAL PLANT OPERATION S ASSUMED TO BE RUN NUMBER 1.

	PRESENT CONDITIONS	ESTIMATED AFTER REPAIRS	POTENTIAL SAVINGS/IMPROVEMENTS
VERALL PLANT EFFICIENCY (%)	59.7	66.9	-
NNUAL ENERGY USED (KWH)	205400	184267	21133
NNUAL COST ($)	17459	15663	1796
NNUAL OPERATING HOURS	2584	2124	459
ATER FLOW RATE (GPM)	576	701	125
OTAL LIFT (FT)	423.6	439	-
OF RATED MOTOR LOAD	91	100	-
ILOWATT HOURS PER THOU.GALS	2.3	2.1	0
NNUAL THOU.GALS PUMPED	89289.1	89289.1	-

PACIFIC GAS AND ELECTRIC COMPANY
*** PUMP TEST REPORT ***

CUSTOMER AND FACILITY DATA

PLANT LOCATION : WELL #5
MOTOR MAKE : Unknown H.P. : 100
PUMP MAKE : Delta TYPE : Submersible
MAILING ADDRESS :

CITY OF PISMO BEACH
1000 BELLO
PISMO BEACH CA 93449

PG&E PLANT ID.# : 2202
CONTROL# : 0224081-0 SUF. = B
ACCOUNT# : MBV-57-69301
METER# : T71060
C.G.C. # :
ENERGY USAGE : 194240 KWH/YR
ENERGY COST : 8.5 CENTS/KWH
THOU.GALS/YR : 92329.0

TEST RESULTS

TEST DATE : 06-30-86 TESTER : RUSS CRACKNELL PHONE : (805)546-8651

RUN NUMBER	1
MEASURED RPM	-
STANDING WATER LEVEL (FT)	76
DRAWDOWN (FT)	91.0
PUMPING WATER LEVEL (FT)	167
DISCHARGE LEVEL (FT)	267.9
DISCHARGE PRESSURE AT GAUGE (PSI)	116
TOTAL LIFT (FT)	434.9
SURVEY LIFT (FT)	-
PGE WATER FLOW RATE (GPM)	**633**
WELL YIELD (GPM/FT DRAWDOWN)	7.0
THOU.GALS PER 24 HOURS	**911.5**
HORSEPOWER INPUT TO MOTOR	107.1
PERCENT OF RATED MOTOR LOAD	92
KILOWATT INPUT TO MOTOR	79.9
KILOWATT HOURS PER THOU.GALS	2.1
OVERALL PLANT EFFICIENCY (%)	64.9

REMARKS

* THE OVERALL EFFICIENCY OF THIS PLANT IS CONSIDERED TO BE GOOD ASSUMING RUN NUMBER 1 REPRESENTS THE PLANT'S NORMAL OPERATING CONDITIONS.
* DATUM IS CENTER LINE OF DISCHARGE PIPE UNLESS OTHERWISE SPECIFIED.

POTENTIAL SAVINGS

THE POTENTIAL SAVINGS SHOWN BELOW ARE POSSIBLE IF THE EFFICIENCY OF YOUR PUMPING PLANT COULD BE IMPROVED TO THE LEVEL INDICATED. NORMAL PLANT OPERATION IS ASSUMED TO BE RUN NUMBER 1.

	PRESENT CONDITIONS	ESTIMATED AFTER REPAIRS	POTENTIAL SAVINGS/IMPROVEMENTS
OVERALL PLANT EFFICIENCY (%)	**64.9**	66.9	-
ANNUAL ENERGY USED (KWH)	194240	192469	1771
ANNUAL COST ($)	16510	16360	151
ANNUAL OPERATING HOURS	2431	2219	212
WATER FLOW RATE (GPM)	633	694	61
TOTAL LIFT (FT)	434.9	444	-
% OF RATED MOTOR LOAD	92	100	-
KILOWATT HOURS PER THOU.GALS	2.1	2.1	0
ANNUAL THOU.GALS PUMPED	92329.0	92329.0	-

E. S. File

≈ Jan. 1987

WELL #5 REPORT

The pump, motor, and column pipe were removed this week to determine why its efficiency had dropped from 70% to 50%.

This is the new pump and motor that was installed in February of this year. The old pump failed after producing a total 1519 acre feet from 1974 to 1985 inclusive. The apparent cause of the old pump failure was scouring, erosion, and/or corrosion to the pump and the metal casing.

As a result of these observations, a new PVC casing was inserted inside the old casing with a new submersible pump and motor. In May of 1986 after producing only 155 acre feet the new pump and motor failed due to gravel pack sand stoppage forcing the motor to rupture its electric leads. The pump and motor were repaired. In addition the bottom part of the casing was filled with coarse gravel to reduce gravel pack sand production to an acceptable level. A sand tester was also installed so that the sand production could be monitored. There has been very little sand produced since May of 1986 which indicates that sand and the casing are no longer considered a problem.

The problem now and the reason for the drop in efficiency from 70% to 50% appears to be corrosion not mechanical sand wear. While corrosion has not been a problem experienced by Grover City, Oceano, or Arroyo Grande in this area corrosion is a problem in many areas where either the soil or the water is agressive. Eliminating corrosion due to current is not easy. Jim Garing is checking with Goleta and consultants to determine how methods of cathodic protection are used in other areas. Floyd V. Wells is getting costs of stainless steel, brass, or epoxy coated pumps and columns that are more corrosion resistant. It may be more economical to purchase these more expensive pumps and pipes if they will last longer. If we continue to use the present kind of pipe and pumps they will need to be replaced every year or more often at a cost of $14,000 to $20,000 per year which adds a cost of at least $20.00 per acre foot. Although this isn't an excessive cost every method possible to reduce the cost should be investigated. Summarizing, Floyd V. Wells Inc. is investigating more resistant pump and pipe materials, Jim Garing is checking with consultants and other agencies to determine their success in handling corrosion with materials and cathodic protection. When the cost of the alternatives can be determined, an economic analysis can be made before placing a new pump, column pipe, and cathodic protection into the well.

The above experience has come at a good time to allow consideration on other alternatives on Well #12 where a decision had already been made to install a stainless steel well casing. However if the aggressive water or soil cannot attack the stainless steel casing it will attack the pump and column pipe as it did on Well #5 where a PVC casing was used. what is learned on Well #5 will be applied to Well #12. As a result of discussions with Cleath and Garing there may be several additional recommendations at the Well #12 site. The probable recommendations are as follows:

1. Drill a permanent well into the shallow Paso Robles aquifer. The water produced is expected to contain nitrates which may require blending with water from the deep well originally proposed at the site. There is a possibility that the nitrate content of the water will not requires blending. This water is not corrosive compared to the water in the deeper acquifer. This water will not cost as much to pump and is considered to be a better quality water except for the nitrates.
2. If it is determined that the nitrate content is too high and blending is required, the second well into the deeper acquifer should be drilled to a shallower depth than originally proposed. The shallower depth would result in a lower cost for the stainless steel casing that was proposed. The cost saving with the shorter casing and the smaller pump size required because of the shallower depth and the reduced flow required because of the blending with shallow well water will pay the cost of the shallow well and for much of the extra cost of installing a more corrosion resistant pump and column pipe.

   There is a possibility that this well will not have to be constructed at all if the water in the first well does not require blending. If this is the case the development of Well #12 will cost considerably less than the proposed cost. If blending is required the cost may be a little more.

The above are possible recommendations dependant upon the nitrate level in the shallow well.

K'nut Hockett

CITY OF PISMO BEACH, CALIFORNIA
Public Services Department
Planning Department
Building Department
Engineering Department
Public Works Department
Parks and Recreation Department

CITY HALL
1000 BELLO ST
PISMO BEACH,
TELEPHONE 80
80

Pls. file
Well #5

MEMORANDUM

TO: DIRECTOR OF PUBLIC SERVICES

FROM: CITY ENGINEER

SUBJECT: WELL #5

DATE: JANUARY 19, 1989

Well #5 has now operated for 12 consecutive months without a breakdown. We may have solved its problems to the extent it can be considered a very dependable well. It is recommended that the pump be pulled in February or March to make the final determination. While the pump is down, it is also recommended that another length of stainless steel column pipe be installed.

The above work is estimated to cost $11,000. While the above work is being completed, it will be necessary to use the water treatment plant. Before the treatment plant operation is started again there is work to be done which was scheduled over a month ago. The work should have been completed within one or two weeks at the most with most of the work assigned to the two-man crew. Very little has been accomplished. I have requested Pat Mills to advise me what work has been completed and when the balance of the work will be finished. It is important in the overall operation of the water department that the work at the treatment plant be a priority. Your assistance will be appreciated.

Hal Halldin

HAL HALLDIN
City Engineer

HH:tq

This wasn't done but it should be done next winter
(prior to [illegible])
→ Well #5 [illegible] yrs old [illegible] where [illegible] further south [illegible] Well # [illegible] where [illegible]
(we have [illegible] for future well [illegible])
→ Not used for many years, [illegible] yrs ago, [illegible]
[illegible] Then [illegible]
we now have stainless stl pump [illegible] column [illegible]
→ we [illegible] this well [illegible], 700 [illegible]
→ Hall says [illegible], pull pump [illegible] column [illegible]

Jan. 1987

WELL #5 REPORT

The pump, motor, and column pipe were removed this week to determine why its efficiency had dropped from 70% to 50%.

This is the new pump and motor that was installed in February of this year. The old pump failed after producing a total 1519 acre feet from 1974 to 1985 inclusive. The apparent cause of the old pump failure was scouring, erosion, and/or corrosion to the pump and the metal casing.

As a result of these observations, a new PVC casing was inserted inside the old casing with a new submersible pump and motor. In May of 1986 after producing only 155 acre feet the new pump and motor failed due to gravel pack sand stoppage forcing the motor to rupture its electric leads. The pump and motor were repaired. In addition the bottom part of the casing was filled with coarse gravel to reduce gravel pack sand production to an acceptable level. A sand tester was also installed so that the sand production could be monitored. There has been very little sand produced since May of 1986 which indicates that sand and the casing are no longer considered a problem.

The problem now and the reason for the drop in efficiency from 70% to 50% appears to be corrosion not mechanical sand wear. While corrosion has not been a problem experienced by Grover City, Oceano, or Arroyo Grande in this area, corrosion is a problem in many areas where either the soil or the water is agressive. [redacted] Jim Garing is checking with Goleta and consultants to determine how methods of cathodic protection are used in other areas. Floyd V. Wells is getting costs of stainless steel, brass, or epoxy coated pumps and columns that are more corrosion resistant. It may be more economical to purchase these more expensive pumps and pipes if they will last longer. If we continue to use the present kind of pipe and pumps they will need to be replaced every year or more often at a cost of $14,000 to $20,000 per year which adds a cost of at least $20.00 per acre foot. Although this isn't an excessive cost every method possible to reduce the cost should be investigated. Summarizing, Floyd V. Wells Inc. is investigating more resistant pump and pipe materials, Jim Garing is checking with consultants and other agencies to determine their success in handling corrosion with materials and cathodic protection. When the cost of the alternatives can be determined, an economic analysis can be made before placing a new pump, column pipe, and cathodic protection into the well.

Les. This is what I wanted to talk to you about. I'll be here at 2:00 Hal

The above experience has come at a good time to allow consideration on other alternatives on Well #12 where a decision had already been made to install a stainless steel well casing. However if the aggressive water or soil cannot attack the stainless steel casing it will attack the pump and column pipe as it did on Well #5 where a PVC casing was used. what is learned on Well #5 will be applied to Well #12. As a result of discussions with Cleath and Garing there may be several additional recommendations at the Well #12 site. The probable recommendations are as follows:

1. Drill a permanent well into the shallow Paso Robles aquifer. The water produced is expected to contain nitrates which [redacted] blending with water from the deep well originally proposed at the site. There is a possibility that the nitrate content of the water [redacted] not required blending. This water is [redacted] compared to the water in the deeper acquifer. This water will not cost as much to pump and is considered to be a better quality water except for the nitrates.
2. If it is determined that the nitrate content is too high and blending is required, the second well into the deeper acquifer [redacted] be drilled to [redacted] shallower depth than originally [redacted] The shallower depth would result in a lower cost for the stainless steel casing that was proposed. The cost saving with the shorter casing and the smaller pump size required because of the shallower depth and the reduced flow required because of the blending with shallow well water will pay the cost of the shallow well and for much of the extra cost of installing a more [redacted] resistant pump and column pipe.

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The above are possible recommendations dependant upon the nitrate level in the shallow well.

CITY OF P BEACH
Finance Department - (805) 773-4655
P.O. Box 3 - 1000 Bello Street
Pismo Beach, California 93449

REQUEST FOR PURCHASE ORDER

Purchase Order No.

VENDOR: Floyd V. Wells Inc
1337 W. Betteravia Rd.
Santa Maria, Ca 93455

Date: 12/13/89

Dept. Public Works

Unless otherwise stated all prices F.O.B. Destination

QUANTITY	DESCRIPTION	Unit Price	Amount	Account No.
	Remove Well #5 Pump and Motor, replace 20ft. section of Stainless Steel column, replace. (per attached quotation)		*4240.00	12-4930-180

REMARKS AND/OR DELIVERY INSTRUCTIONS:

Department Head /Authorized Representative

Purchasing Official

(Rob Thompson)

FLOYD V. WELLS, INC.

DEPEND ON WELLS FOR WATER

QUOTATION • ORDER FORM

PUMP SALES & SERVICE
WATER WELL DRILLING CONTRACTOR
1337 W. BETTERAVIA RD.
SANTA MARIA, CA 93455
805/925-8626 · FAX 805/928-7820
CA LIC #C57-229570

Date December 15, 1989

TO Garing, Taylor & Associates, ATTN: Jim Garing
141 East Elm
Arroyo Grande, California 93420

DESCRIPTION Estimate To Pull Submersible Pump, Change Pipe, Re-Install Well No. 5, 8th Street, City Of Pismo Beach Unit

		Selling Price
Three Sections Of Stainless Steel Pipe On Bottom Of Column String, One Of Those Sections Coated With Kordell 600 Epoxy.		
Labor Estimate:		
A) Move-In, Set-Up, Pull Pump, Measure Well Depth	10 Hours At $118.00	$1180.00
B) Disassemble Pump And Motor, Tear Down Pump End To Check	2 Hours At $ 40.00	80.00
C) Reassemble Pump	2 Hours At $ 40.00	80.00
D) Re-Install Equipment, Start-Up	10 Hours At $118.00	1180.00
	Labor Estimate:	$2520.00
Material:		
20' Column Pipe 6"x20' Section T&C, 304 Stainless Steel, .280 Wall		$1720.00
	TOTAL ESTIMATE INCLUDING TAX:	$4240.00
Actual Time And Material To Be Charged.		
Pricing For Acceptance Within 15 Days.		

Rec'd on GTA Fax
15 Dec 89. RT

I/We agree to pay this account within 30 days after billing. In the event I/We fail to pay said account on or before said date, I/We agree to pay any collection costs, including attorney's fees incurred by you plus service charges on the amount due at the rate of 1 1/2% per month.

Warrantee Conditions: New pumps are under a one-year factory warrantee from date of installation by Floyd V. Wells, Inc. Labor not included unless proved to be the result of poor workmanship of Floyd V. Wells, Inc.

FLOYD V. WELLS, INC.

Accepted by _____ By Rob Thompson

Rob Thompson

GARING, TAYLOR & ASSOCIATES, INC.
CIVIL ENGINEERS SURVEYORS PLANNERS

December 15, 1989

Jim Ashcraft, City Engineer, Director of Public Works
City of Pismo Beach
P.O. Box 3
Pismo Beach, CA 93449

Dear Mr. Ashcraft:

Enclosed find an estimate of cost by Rob Thompson of Floyd V. Wells, Inc., to remove and replace the underground mechanical components of well No. 5 for inspection and replacement of one 6-inch, 20 foot carbon steel column pipe with one of stainless steel.

Unless there is an extreme emergency, Floyd V. Wells, Inc., could not begin work until after January 2, 1990. If, after inspection, more column pipe is needed than the expected one joint, I am told that lead time would be about ten days or more for delivery of the stainless steel column. Barring that, the work would be finished by January 5, 1990 if a P.O. is issued soon enough for the material to be ordered and ready by the 2nd of January.

Very truly yours,

GARING, TAYLOR & ASSOCIATES, INC.

Jim Garing

R. James Garing, P.E.
President

Enclosure

typtext\ltr4jg.jgn

FAX # (805) 489-6723

141 SOUTH ELM STREET ARROYO GRANDE, CA 93420 (805) 489-1321

DEPARTMENT OF HEALTH SERVICES
Sanitary Engineering Branch
P. O. Box 4339
402 East Carrillo Street
Santa Barbara, CA 93140-4339
(805) 963-8616

August 5, 1985

File - AB 1803
Water Quality
Reports

Pismo Beach Water Department
P. O. Box 3
Pismo Beach, CA 93449

Attention: Mr. Hal Halldin
Public Works Director

Gentlemen:

SYSTEM NO. 40-008

On July 23, 1985, the State Department of Health Services collected an AB 1803 follow-up sample from Well No. 5. The well was sampled for volatile organic chemical analyses (VOA's). The results of the analyses are attached.

Sincerely,

John Curphey, P.E.
District Sanitary Engineer

Attachment
cc: San Luis Obispo County Health Agency
JNC/PG:seh

State of California - Department of Health Services
Sanitation and Radiation Laboratory Section
Southern California Laboratory Section

SAMPLE FOR CHEMICAL ANALYSIS

Date Received: 7-26-85 (Leave Blank)

Lab. No.: 15776

Purveyor and Address (include city and county): City of Pismo Beach SLO Co.

System Number: 40X008

Serial Number: C 05564

Sampling Point: Well No. 5 (AB-1803)

Collected by: P. Gavlinkel

Date and Hour Collected: 7-23-85 14:00

Type of Sample:
- ☐ Raw Surface Water
- ☒ Drinking Water
  - ☒ Raw
  - ☒ Treated
- ☐ Waste water:
  - ☐ Raw ☐ Chlorinated
  - ☐ Trade Waste
  - ☐ Other

Send Report To:
- ☐ WSS Dist. # ☐ County HD
- ☐ DOT Dist. # ☐ National Park Serv.
- ☐ RWQCB # ☐ Other

Results are expressed as mg/l unless specified

☐ GENERAL MINERAL ANALYSIS

		(mg/las Ca CO_3)	
☐ Ca		☐ Hardness	
☐ Mg		☐ HCO_3	
☐ Fe Total		☐ CO_3	
☐ Mn		☐ OH	
☐ Na		☐ Total Alk.	
☐ K		☐ Cl	
☐ pH		☐ SO_4	
☐ Total Dissolved Solids		☐ F	
		☐ NO_3	

TRACE ELEMENTS

- ☐ Al
- ☐ Ag
- ☐ As
- ☐ B
- ☐ Cd
- ☐ Cr
- ☐ Cu
- ☐ Hg
- ☐ Pb
- ☐ Ni
- ☐ Se
- ☐ Zn
- ☐

☐ Other analyses desired (specify):

VOA's particularly: Methylene chloride

No volatile organics detected. (< 0.5 mg/l)

Date Reported: 7-26-85

Analyst: P.A.

☐ Turb. TU	☐ NH_3-N	☐ BOD	☐ Susp. Solids	☐ PO_4
☐ Spec. Cond. µmhos/cm	☐ ORG N	☐ Grease	☐ Set Solids ml/l/hour	☐ MBAS

Form LAB 800 (2-80)

Central Coast Analytical Services

Air, Water, & Hazardous Waste
Sampling, Analysis, & Consultation
State Certified Hazardous Waste,
Chemistry, & Bacteriology Laboratory

141 Suburban Road, Suite C-4
San Luis Obispo, Ca 93401
(805) 543-2553 Fax (805) 543-2685

6483-D Calle Real
Goleta, CA 93117
(805) 964-7838

AGRICULTURAL AND MISCELLANEOUS ORGANIC CHEMICAL ANALYSES

Date of Report: June 6, 1987
Laboratory Name: Central Coast Analytical Services
Name of Sampler: Dale Stephen
Date/Time Sample Collected: 5/12/87 @0920
Test Methods: EPA Method 608/8080
Lab Sample ID No. D-3317
Signature Lab Director: Mary Hawkins
Sampler Employed By: City of Pismo Beach
Date/Time Sample Received @ Lab: 5/12/87 @0941
Were Holding Times Observed? Yes
Were all the constituents listed below quantified? Yes

System Name: City of Pismo Beach
System Number:
Description of Sampling Point: Well #5 @ 177 Eighth St., Grover City
County Name: San Luis Obispo
Name/No. Of Sample Source:
Station Number:
Date & Time of Sample: 8 7 0 6 1 2 0 9 2 0 (Y Y M M D D T T T T)
Water Type: G/S: G
User ID:
Submitted to SWQIS By:

Place an "X" in box to delete all data for this station/date/time. ☐

REPORTING UNITS	CONSTITUENT	TT	STORET CODE	ANALYSES RESULTS	DETECTION LIMIT
	Date All Agricultural/Misc Organic Analyses Completed		73672	8 7 0 5 1 9 (Y Y M M D D)	
	Analyzing Agency Code (Lab)		28		
	Intensive Survey Number		116		
ug/L	2,4 - D		39730	N. D.	0.1
ug/L	2,4,5 - TP, Silvex		39045	N. D.	0.1
ug/L	Lindane (gamma-BHC)		39340	N. D.	0.01
ug/L	Endrin		39390	N. D.	0.02
ug/L	Methoxychlor		39480	N. D.	0.1
ug/L	Toxaphene		39400	N. D.	0.2
ug/L					
ug/L					
ug/L					
ug/L					
ug/L					
ug/L					
ug/L					
ug/L					
ug/L					
ug/L					

RADIOACTIVITY ANALYSES

ate of Report: 12/02/88	CCAS: E-11,452 Lab Sample ID No. SCOTT: 6512-1
aboratory ame: Scott Laboratories, Inc.	Signature of Lab Director: Kent H. Sahnts
ame of ampler: Shannen	Sampler Employed By: SOCI
ate/Time Sample ollected: 11/04/88 @ 1455	Date/Time Sample Received @ Lab: 11/11/88 11:00
Were Holding Times Observed: YES	
ystem Name: SOCI City of Pismo Beach	System Number:
escription of ampling Point: Well Water, Grab Sample, Well #5	
ame/No. of Sample ource:	Station Number:
ate & f Time ample: Y Y M M D D T T T T	Water Type: G G/S
User ID:	Submitted to SWQIS By:

MCL	REPORTING UNITS	CONSTITUENT	TT	STORET CODE	ANALYSES RESULTS
		Analyzing Agency		28	5641
		Date Analyses Completed		73672	881202 (Y Y M M D D)
5	pC/l	Total Alpha		1501	0.75
	PC/l	Total Alpha Counting Error		1502	2.55
50	pC/l	Total Beta		3501	
	pC/l	Total Beta Counting Error		3502	
	pC/l	Natural Uranium		28012	
3	pC/l	Total Radium 226		9501	
	pC/l	Total Radium 226 Counting Error		9502	
	pC/l	Total Radium 228		11501	
	pC/l	Total Radium 228 Counting Error		11502	
5	pC/l	Ra 226 + Ra 228		11503	
	pC/l	Ra 226 + Ra 228 Counting Error		11504	
20,000	pC/l	Total Tritium		7000	
	pC/l	Total Tritium Counting Error		7001	

Central Coast Analytical Services

Air, Water, & Hazardous Waste Sampling, Analysis, & Consultation
State Certified Hazardous Waste, Chemistry, & Bacteriology Laboratories

~~141~~ Suburban Road, Suite C–4
San Luis Obispo, Ca 93401
Fax (805) 543-2685
(805) 543-2553

6483–D Calle Real
Goleta, CA 93117
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(805) 964-7838

TITLE 22 CHEMICAL ANALYSES

Date of Report: August 9, 1988	Lab Sample ID Number: E-7431
Laboratory Name: Central Coast Analytical Services	Signature Lab Director: Mary Hardesty
Name of Sampler: Shannen	Sampler Employed By: City of Pismo Beach
Date/Time Sample Collected: August 3, 1988 @ 1518	Date/Time Sample Received at Lab.: August 3, 1988 @ 1630
Were Holding Times Observed?: Yes	
System Name: City of Pismo Beach	System Number:
Description of Sampling Point: Well Water, Well #5, Lab #801-1-12644	
Name/Number of Sample Source:	Station Number:
Date and Time of Sample (Y Y M M D D T T T T): 8 8 0 8 0 3 1 5 1 8	Water Type (G/S): G
User ID:	Submitted to SWQIS By:

MCL	Reporting Units		Constituent	TT	Storet Code	Analyses Results
			Analyzing Agency (Laboratory)		28	
	mg/L		Total Hardness (as CaCO3)		900	
	mg/L		Calcium (Ca)		916	
	mg/L		Magnesium (Mg)		927	
	mg/L		Sodium (Na)		929	
	mg/L		Potassium (K)		937	
Total Cations	meq/L	Value:				
	mg/L		Total Alkalinity (as CaCO3)		410	
	mg/L		Hydroxide (OH)		71830	
	mg/L		Carbonate (CO3)		445	
	mg/L		Bicarbonate (HCO3)		440	
*	mg/L	+	Sulfate (SO4)		945	
*	mg/L	+	Chloride (Cl)		940	
45	mg/L		Nitrate (NO3)		71850	
1.4–2.4	mg/L		Fluoride (F) Temp. Depend.		951	
Total Anions	meq/L	Value:				
	Std Units		pH (Laboratory)		403	
**	umho/cm	+	Specific Conductance (E.C.)		95	
***	mg/L	+	Total Filterable Residue at 180° C (TDS)		70300	
	UNITS		Apparent Color (Unfiltered)		81	
	TON		Odor Threshold at 60° C		86	
	NTU		Lab Turbidity		82079	
0.5	mg/L	+	MBAS		38260	

* 250–500–600 ** 900–1600–2200 *** 500–1000–1500

Central Coast Analytical Services

Air, Water, & Hazardous Waste Sampling, Analysis, & Consultation
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TITLE 22 CHEMICAL ANALYSES

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Name of Sampler: Shannen	Sampler Employed By: City of Pismo Beach
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Were Holding Times Observed?: Yes	
System Name: City of Pismo Beach	System Number:
Description of Sampling Point: Well Water, Well #5, Lab #801-1-12644	
Name/Number of Sample Source:	Station Number:
Date and Time of Sample: 8 8 0 8 0 3 1 5 1 8 (Y Y M M D D T T T T)	Water Type: G (G/S)
User ID:	Submitted to SWQIS By:

MCL	Reporting Units		Constituent	TT	Storet Code	Analyses Results
			Analyzing Agency (Laboratory)		28	
	mg/L		Total Hardness (as CaCO3)		900	
	mg/L		Calcium (Ca)		318	
	mg/L		Magnesium (Mg)		927	
	mg/L		Sodium (Na)		929	
	mg/L		Potassium (K)		937	
Total Cations		meq/L	Value:			

	mg/L		Total Alkalinity (as CaCO3)		410	
	mg/L		Hydroxide (OH)		71830	
	mg/L		Carbonate (CO3)		445	
	mg/L		Bicarbonate (HCO3)		440	
*	mg/L	+	Sulfate (SO4)		945	
*	mg/L	+	Chloride (Cl)		940	
45	mg/L		Nitrate (NO3)		71850	
1.4-2.4	mg/L		Fluoride (F) Temp. Depend.		951	
Total Anions		meq/L	Value:			

	Std Units		pH (Laboratory)		403	
**	umho/cm	+	Specific Conductance (E.C.)		95	
***	mg/L	+	Total Filterable Residue at 180° C (TDS)		70300	
	UNITS		Apparent Color (Unfiltered)		81	
	TON		Odor Threshold at 60° C		86	
	NTU		Lab Turbidity		82079	
0.5	mg/L	+	MBAS		38260	

Central Coast Analytical Services

Air, Water, & Hazardous Waste Sampling, Analysis, & Consultation
State Certified Hazardous Waste, Chemistry, & Bacteriology Laboratories

141 Suburban Road, Suite C-4
San Luis Obispo, Ca 93401
Fax (805) 543-2685
(805) 543-2553

6483-D Calle Real
Goleta, CA 93117
Fax (805) 976-4386
(805) 964-7838

TITLE 22 CHEMICAL ANALYSES

Date of Report: July 26, 1988	Lab Sample ID Number: E-6932
Laboratory Name: Central Coast Analytical Services	Signature Lab Director: Mary Barbeato
Name of Sampler: Pat Mills	Sampler Employed By: City of Pismo Beach
Date/Time Sample Collected: July 26, 1988 @ 1300	Date/Time Sample Received at Lab.: July 26, 1988 @ 1700
Were Holding Times Observed?: Yes	
System Name: City of Pismo Beach	System Number:
Description of Sampling Point: #2, 8th St. Well, Running Well #5	
Name/Number of Sample Source	Station Number
Date and Time of Sample: 8 8 0 7 2 6 1 3 0 0 (Y Y M M D D T T T T)	Water Type: G (G/S)
User ID	Submitted to SWQIS By

MCL	Reporting Units		Constituent	TT	Storet Code	Analyses Results
			Analyzing Agency (Laboratory)		28	
	mg/L		Total Hardness (as CaCO3)		900	
	mg/L		Calcium (Ca)		916	
	mg/L		Magnesium (Mg)		927	
	mg/L		Sodium (Na)		929	
	mg/L		Potassium (K)		937	
Total Cations		meq/L	Value:			
	mg/L		Total Alkalinity (as CaCO3)		410	
	mg/L		Hydroxide (OH)		71830	
	mg/L		Carbonate (CO3)		445	
	mg/L		Bicarbonate (HCO3)		440	
*	mg/L	+	Sulfate (SO4)		945	
*	mg/L	+	Chloride (Cl)		940	
45	mg/L		Nitrate (NO3)		71850	
1.4-2.4	mg/L		Fluoride (F) Temp. Depend.		951	
Total Anions		meq/L	Value:			
	Std Units		pH (Laboratory)		403	
**	umho/cm	+	Specific Conductance (E.C.)		95	
***	mg/L	+	Total Filterable Residue at 180° C (TDS)		70300	
	UNITS		Apparent Color (Unfiltered)		81	
	TON		Odor Threshold at 60° C		86	
	NTU		Lab Turbidity		82079	
0.5	mg/L	+	MBAS		38260	

* 250-500-600 ** 900-1600-2200 *** 500-1000-1500

Central Coast Analytical Services

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6483–D Calle Real
Goleta, CA 93117
Fax (805) 976-4386
(805) 964-7838

TITLE 22 CHEMICAL ANALYSES

Date of Report: July 26, 1988	Lab Sample ID Number: E-6931
Laboratory Name: Central Coast Analytical Services	Signature Lab Director: Mary Hawkins
Name of Sampler: Pat Mills	Sampler Employed By: City of Pismo Beach
Date/Time Sample Collected: July 26, 1988 @ 1300	Date/Time Sample Received at Lab.: July 26, 1988 @ 1700
Were Holding Times Observed?: Yes	
System Name: City of Pismo Beach	System Number:
Description of Sampling Point: #1, 8th St. Well, Not Running	Well #5 File
Name/Number of Public Source	Station Number
Date and Time of Sample: 880726 1300 (YYMMDD TTTT)	Water Type: G/S
User ID	Submitted to SWQIS By

MCL	Reporting Units		Constituent	T T	Storet Code	Analyses Results
			Analyzing Agency (Laboratory)		28	
	mg/L		Total Hardness (as CaCO3)		900	
	mg/L		Calcium (Ca)		916	
	mg/L		Magnesium (Mg)		927	
	mg/L		Sodium (Na)		929	
	mg/L		Potassium (K)		937	
Total Cations		meq/L	Value:			

	mg/L		Total Alkalinity (as CaCO3)		410	
	mg/L		Hydroxide (OH)		71830	
	mg/L		Carbonate (CO3)		445	
	mg/L		Bicarbonate (HCO3)		440	
*	mg/L	+	Sulfate (SO4)		945	
*	mg/L	+	Chloride (Cl)		940	
45	mg/L		Nitrate (NO3)		71850	
1.4–2.4	mg/L		Fluoride (F) Temp. Depend.		951	
Total Anions		meq/L	Value:			

	Std Units		pH (Laboratory)		403	
**	umho/cm	+	Specific Conductance (E.C.)		95	
***	mg/L	+	Total Filterable Residue at 180° C (TDS)		70300	
	UNITS		Apparent Color (Unfiltered)		81	
	TON		Odor Threshold at 60° C		86	
	NTU		Lab Turbidity		82079	3.0
0.5	mg/L	+	MBAS		38260	

* 250–500–600 ** 900–1600–2200 *** 500–1000–1500

S O C I INC.

31133 W. VIA COLINAS-ST-101
WESTLAKE VILLAGE, CA. 91362
(818) 889-4256

CITY OF PISMO BEACH

SAMPLE TYPE- WELL #5/RAW WATER SPIGOT
DATE SAMPLED- 2/19/88
DATE RECEIVED- 2/22/88
DATE REPORTED- 3/3/88
LOG NO.- 801-1-11815

LAB ANALYSIS

CONSTITUENT	QUANTITY	MAXIMUM LIMIT
GROSS ALPHA-	<1 +/- 0.5 PCI/L	5.0
GROSS BETA-	16 +/- 2.5 PCI/L	50

I DECLARE UNDER PENALTY OF PERJURY, THAT THE FOREGOING IS TRUE AND ACCURATE AS FOR THE SAMPLES AS DELIVERED & RECEIVED.

Robert Kunze

ROBERT KUNZE
LAB MANAGER

RECEIVED
MAR 7 1988
CITY OF PISMO BEACH
FINANCE DEPT.

INVOICE NO. 1097
INV. DATED 3/3/88

A TOTAL OPERATION SERVICES CORPORATION

E III-13. GROUNDWATER QUALITY AT PISMO BEACH WELL NO. 5 [a]

Constituent [b]	Concentration	State Drinking Water Standard [c]
Calcium	96	-
Magnesium	34	-
Sodium	57	-
Bicarbonate	268	-
Chloride	29	250 [f,g]
Fluoride	0.0	2.2 [h]
Nitrate	0.1 [d]	45
Sulfate	271	250 [f,g]
Total Dissolved Solids	652	500 [f,g]
Electrical Conductivity, µmho/cm	1,050	900 [f,g]
Total Hardness as $CaCO_3$	460	-
Total Alkalinity as $CaCO_3$	440	-
Iron	<0.005	0.3 [f]
Manganese	0.06	0.05 [f]
pH, units	7.6	-
Color, units	10	15 [f]
MBAS	0.0	0.5 [f]
Odor, TON	ND [e]	3 [f]
Turbidity, units	1.7	5 [f]
Arsenic	<0.0001	0.05
Barium	<0.001	1
Cadmium	<0.0002	0.010
Chromium	0.01	0.05
Copper	0.013	1.0 [f]
Lead	<0.01	0.05
Mercury	<0.0001	0.002
Selenium	<0.01	0.01
Silver	<0.002	0.05
Zinc	0.06	5.0 [f]

[a] Sample taken June 23, 1981.
[b] Expressed as mg/l of constitutent unless otherwise noted.
[c] Unless otherwise indicated, maximum contaminant level above which exists a risk to health of humans when continually used for drinking or culinary purposes.
[d] From sample taken August 7, 1980.
[e] None detected.
[f] Maximum contaminant level above which may be objectionable to an appreciable number of people, but is not generally hazardous to health.
[g] Recommended limit. Higher limits are acceptable under certain conditions.
[h] Based upon average annual maximum daily air temperature of 58°F.

Place . . Water Quality #2

SANITATION AND OPERATION CONSULTANTS INC

31133 W. VIA COLINAS-ST-101
WESTLAKE VILLAGE, CA. 91362
(818) 889-4256

CITY OF PISMO BEACH
SAMPLE TYPE-POTABLE / WELL #5
DATE SAMPLED-9/25/86
DATE REPORTED-10/14/86
LOG NO.-915-1-10229

LAB ANALYSIS

CONSTITUENT	QUANTITY		MAXIMUM LIMIT
CHLORIDE-	30	MG/L	
CALCIUM-	132	MG/L	
COPPER-	<0.01	MG/L	
IRON-	0.391	MG/L	
MAGNESIUM-	40.3	MG/L	
ZINC-	0.022	MG/L	
SODIUM-	41.1	MG/L	
CADMIUM-	<0.01	MG/L	
TOTAL CHROMIUM-	<0.04	MG/L	
LEAD-	<0.02	MG/L	
SILVER-	<0.01	MG/L	
MERCURY-	<0.002	MG/L	
ARSENIC-	<0.05	MG/L	
SELENIUM-	<0.01	MG/L	

UPON SAMPLING, A SULFUR ODOR WAS DETECTED.

I DECLARE UNDER PENALTY OF PERJURY, THAT THE FOREGOING IS TRUE AND ACCURATE AS FOR THE SAMPLES AS DELIVERED & RECEIVED.

J Lovelace

LAB DIVISION

INVOICE NO. 3807
INV. DATED 10-16-86

SANITATION AND OPERATION CONSULTANTS INC

31133 W.VIA COLINAS-ST-101
WESTLAKE VILLAGE, CA. 91362
(818)889-4256

CITY OF PISMO BEACH
SAMPLE TYPE-POTABLE / WELL #5
DATE SAMPLED-9/25/86
DATE REPORTED-10/14/86
LOG NO.-915-1-10229

LAB ANALYSIS

CONSTITUENT	QUANTITY	MAXIMUM LIMIT
COLOR-	10	COLOR UNITS
ODOR-	2.8	T.O.N.
TURBIDITY-	2.4	N.T.U.
ALKALINITY (AS CACO3)-	366	MG/L
SULFATE-	140	MG/L
T.D.S.-	668	MG/L
HARDNESS-	502	MG/L
E.C.@ 25DEGREES C-	991	UMHOS/CM
PH (H+)-	7.4	(H+)
MBAS-	<0.1	MG/L
NITRATE-NITROGEN-	<0.2	MG/L
FLUORIDE-	0.5	MG/L
BORON-	0.15	MG/L

I DECLARE UNDER PENALTY OF PERJURY, THAT THE FOREGOING IS TRUE AND ACCURATE AS FOR THE SAMPLES AS DELIVERED & RECEIVED.

J Lovelace
LAB DIVISION

INVOICE NO. 3807
INV. DATED 10-16-86

A TOTAL OPERATION SERVICES CORPORATION

AREA SER: 40-008
ATTENTION: ~~CHARLES JOHNSON~~ DAVE WATSON
PISMO BEACH WATER DEPARTMENT
PO BOX 3
PISMO BEACH CA 93449

WATER UTILITY STATISTICS

YEAR 1984

1. CLASSIFICATION AND NUMBER OF ACTIVE ACCOUNTS:

	INSIDE CITY LIMITS		OUTSIDE CITY LIMITS	
	FLAT-RATE	METERED	FLAT RATE	METERED
RESIDENTIAL				
COMMERCIAL				
INDUSTRIAL (MFG.)				
PUBLIC AUTHORITY				
IRRIGATION				
OTHER (Specify)				
TOTAL		2199		

2. APARTMENTS:

PLEASE INDICATE: (A) Number of Apartment Structures you serve _____

(B) Average Number of dwelling units, per apartment _____

3. SOURCE OF WATER: (million gallons)

		AMOUNT
WELL PRODUCTION	106 AF	34.5 MG
SURFACE WATER (streams, reservoirs, lakes, ect.	1212 AF	394.9 MG
PURCHASED FROM _____		

4. ESTIMATED POPULATION SERVED:

INSIDE CITY LIMITS	6000
OUTSIDE CITY LIMITS	0

5. MONTHLY WATER PRODUCTION AND DELIVERIES: (In millions of gallons)

	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	YEAR TOTAL
[1] TOTAL PRODUCTION													
DELIVERIES TO: RESIDENTIAL													
COMMERCIAL													
INDUSTRIAL (MFG.)													
PUBLIC AUTHORITY													
LANSCAPE IRRIGATION (City)													
OTHER	49.2	39.4	36.2	32.9	25.4	26.1	28.0	27.7	38.4	34.9	47.2	44.0	429.4 MG
TOTAL DELIVERED (Your Service Area)	151	121	111	101	78	80	86	85	118	107	145	135	1318 A.F.

DELIVERY(IES) TO OTHER AGENCY(IES) ___ YES X NO NAME(S) OF OTHER AGENCY(IES) _____

[1] BECAUSE OF NORMAL SYSTEM LOSSES, PRODUCTION MUST ALWAYS BE HIGHER THAN TOTAL DELIVERED.

6. NAME, TITLE AND PHONE NUMBER OF OFFICIAL RESPONSIBLE FOR DATA:

HAL HALLDIN, CITY ENGR 805 773 4656

The water utility statistics form showing active accounts and twelve months of water consumption data is optional. If you do not have the information for any item on this, there is no requirement by Sanitary Engineering Personnel that you make the effort to aquire it.

Please fill in any data that you have and return it with the Annual Report. The data will be used by various State agencies for statistical purposes.

FILE WELL # 5

PACIFIC GAS AND ELECTR COMPANY
*** PUMP TEST REPORT ***

---------- CUSTOMER AND FACILITY DATA ----------

PLANT LOCATION : WELL #5
MOTOR MAKE : Other H.P. : 100.0
PUMP MAKE : Peerless TYPE : Submersible
MAILING ADDRESS :

CITY OF PISMO BEACH
1000 BELLO ST
PISMO BEACH CA 93449

PG&E PLANT ID.# : 2202
CONTROL# : 0224081-0 SUF. = A
ACCOUNT# : NBV-57-69301
METER# : T71060
C.G.C. # :
ENERGY USAGE : 317080 KWH/YR
ENERGY COST : 8.50 CENTS/KWH
THOU.GALS/YR : 130043.3

---------- TEST RESULTS ----------

TEST DATE : 06-30-87 TESTER : HAROLD HARRIS PHONE : (805)546-8651

RUN NUMBER	1
MEASURED RPM	-
STANDING WATER LEVEL (FT)	87.0
DRAWDOWN (FT)	59.5
PUMPING WATER LEVEL (FT)	146.5
DISCHARGE LEVEL (FT)	256.4
DISCHARGE PRESSURE AT GAUGE (PSI)	111.0
TOTAL LIFT (FT)	402.9
SURVEY LIFT (FT)	-
PGE WATER FLOW RATE (GPM)	553
CUSTOMER WATER FLOW RATE (GPM)	539
WELL YIELD (GPM/FT DRAWDOWN)	9.3
THOU.GALS PER 24 HOURS	796.3
HORSEPOWER INPUT TO MOTOR	108.4
PERCENT OF RATED MOTOR LOAD	93
KILOWATT INPUT TO MOTOR	80.9
KILOWATT HOURS PER THOU.GALS	2.4
OVERALL PLANT EFFICIENCY (%)	52.0

---------- REMARKS ----------

* THE OVERALL EFFICIENCY OF THIS PLANT IS CONSIDERED TO BE LOW ASSUMING RUN NUMBER 1 REPRESENTS THE PLANT'S NORMAL OPERATING CONDITIONS.
* DATUM IS CENTER LINE OF DISCHARGE PIPE UNLESS OTHERWISE SPECIFIED.
* WATER LEVELS DETERMINED USING CUSTOMER AIR LINE.

---------- POTENTIAL SAVINGS ----------

THE POTENTIAL SAVINGS SHOWN BELOW ARE POSSIBLE IF THE EFFICIENCY OF YOUR PUMPING PLANT COULD BE IMPROVED TO THE LEVEL INDICATED. NORMAL PLANT OPERATION IS ASSUMED TO BE RUN NUMBER 1.

	PRESENT CONDITIONS	ESTIMATED AFTER REPAIRS	POTENTIAL SAVINGS/IMPROVEMENTS
OVERALL PLANT EFFICIENCY (%)	52.0	66.9	-
ANNUAL ENERGY USED (KWH)	317080	257795	59285
ANNUAL COST ($)	26952	21913	5039
ANNUAL OPERATING HOURS	3919	2972	948
WATER FLOW RATE (GPM)	553	729	176
TOTAL LIFT (FT)	402.9	422	-
% OF RATED MOTOR LOAD	93	100	-
KILOWATT HOURS PER THOU.GALS	2.4	2.0	0
ANNUAL THOU.GALS PUMPED	130043.3	130043.3	-

PACIFIC GAS AND ELECTRIC COMPANY
*** PUMP TEST REPORT ***

---------- CUSTOMER AND FACILITY DATA ----------

PLANT LOCATION : WELL #5
MOTOR MAKE : Other H.P. : 100.0
PUMP MAKE : Peerless TYPE : Submersible
MAILING ADDRESS :

CITY OF PISMO BEACH
1000 BELLO ST
PISMO BEACH CA 93449

PG&E PLANT ID.# : 2202
CONTROL# : 0224081-0 SUF. = A
ACCOUNT# : NBV-57-69301
METER# : T71040
C.G.C. # :
ENERGY USAGE : 317080 KWH/YR
ENERGY COST : 8.50 CENTS/KWH
THOU.GALS/YR : 130629.6

---------- TEST RESULTS ----------

TEST DATE : 06-22-87 TESTER : HAROLD HARRIS PHONE : (805)546-8651

RUN NUMBER	1
MEASURED RPM	-
STANDING WATER LEVEL (FT)	92.0
DRAWDOWN (FT)	53.0
PUMPING WATER LEVEL (FT)	145.0
DISCHARGE LEVEL (FT)	254.1
DISCHARGE PRESSURE AT GAUGE (PSI)	110.0
TOTAL LIFT (FT)	399.1
SURVEY LIFT (FT)	-
PGE WATER FLOW RATE (GPM)	550
WELL YIELD (GPM/FT DRAWDOWN)	10.4
THOU.GALS PER 24 HOURS	792.0
HORSEPOWER INPUT TO MOTOR	107.4
PERCENT OF RATED MOTOR LOAD	92
KILOWATT INPUT TO MOTOR	80.1
KILOWATT HOURS PER THOU.GALS	2.4
OVERALL PLANT EFFICIENCY (%)	52.0

---------- REMARKS ----------

* THE OVERALL EFFICIENCY OF THIS PLANT IS CONSIDERED TO BE LOW ASSUMING RUN NUMBER 1 REPRESENTS THE PLANT'S NORMAL OPERATING CONDITIONS.
* DATUM IS CENTER LINE OF DISCHARGE PIPE UNLESS OTHERWISE SPECIFIED.

---------- POTENTIAL SAVINGS ----------

THE POTENTIAL SAVINGS SHOWN BELOW ARE POSSIBLE IF THE EFFICIENCY OF YOUR PUMPING PLANT COULD BE IMPROVED TO THE LEVEL INDICATED. NORMAL PLANT OPERATION IS ASSUMED TO BE RUN NUMBER 1.

	PRESENT CONDITIONS	ESTIMATED AFTER REPAIRS	POTENTIAL SAVINGS/IMPROVEMENTS
OVERALL PLANT EFFICIENCY (%)	52.0	66.9	-
ANNUAL ENERGY USED (KWH)	317080	256069	61011
ANNUAL COST ($)	26952	21766	5186
ANNUAL OPERATING HOURS	3959	2952	1007
WATER FLOW RATE (GPM)	550	738	188
TOTAL LIFT (FT)	399.1	417	-
% OF RATED MOTOR LOAD	92	100	-
KILOWATT HOURS PER THOU.GALS	2.4	2.0	0
ANNUAL THOU.GALS PUMPED	130629.6	130629.6	-

F IFIC GAS AND ELECT[illegible] COM. NY
*** PUMP TEST REP ***

---------- CUSTOMER AND FACILITY DATA ----------

PLANT LOCATION : WELL #5
MOTOR MAKE : Other H.P. : 100.0
PUMP MAKE : Peerless TYPE : Submersible
MAILING ADDRESS :

CITY OF PISMO BEACH
1000 BELLO ST
PISMO BEACH CA 93449

PG&E PLANT ID.# : 2202
CONTROL# : 0224081-0 SUF. = A
ACCOUNT# : NBV-57-69301
METER# : T71060
C.G.C. # :
ENERGY USAGE : 317080 KWH/YR
ENERGY COST : 8.50 CENTS/KWH
THOU.GALS/YR : 138226.2

---------- TEST RESULTS ----------

TEST DATE : 05-01-87 TESTER : HAROLD HARRIS PHONE : (805)546-8651

RUN NUMBER	1
MEASURED RPM	-
STANDING WATER LEVEL (FT)	81.0
DRAWDOWN (FT)	71.0
PUMPING WATER LEVEL (FT)	152.0
DISCHARGE LEVEL (FT)	254.1
DISCHARGE PRESSURE AT GAUGE (PSI)	110.0
TOTAL LIFT (FT)	406.1
SURVEY LIFT (FT)	-
PGE WATER FLOW RATE (GPM)	566
WELL YIELD (GPM/FT DRAWDOWN)	8.0
THOU.GALS PER 24 HOURS	815.0
HORSEPOWER INPUT TO MOTOR	104.4
PERCENT OF RATED MOTOR LOAD	90
KILOWATT INPUT TO MOTOR	77.9
KILOWATT HOURS PER THOU.GALS	2.3
OVERALL PLANT EFFICIENCY (%)	56.0

---------- REMARKS ----------

* THE OVERALL EFFICIENCY OF THIS PLANT IS CONSIDERED TO BE LOW ASSUMING RUN NUMBER 1 REPRESENTS THE PLANT'S NORMAL OPERATING CONDITIONS.
* DATUM IS CENTER LINE OF DISCHARGE PIPE UNLESS OTHERWISE SPECIFIED.
* WATER LEVELS DETERMINED USING CUSTOMER AIR LINE.

---------- POTENTIAL SAVINGS ----------

THE POTENTIAL SAVINGS SHOWN BELOW ARE POSSIBLE IF THE EFFICIENCY OF YOUR PUMPING PLANT COULD BE IMPROVED TO THE LEVEL INDICATED. NORMAL PLANT OPERATION IS ASSUMED TO BE RUN NUMBER 1.

	PRESENT CONDITIONS	ESTIMATED AFTER REPAIRS	POTENTIAL SAVINGS/IMPROVEMENTS
OVERALL PLANT EFFICIENCY (%)	56.0	66.9	-
ANNUAL ENERGY USED (KWH)	317080	276545	40535
ANNUAL COST ($)	26952	23506	3446
ANNUAL OPERATING HOURS	4070	3188	882
WATER FLOW RATE (GPM)	566	723	157
TOTAL LIFT (FT)	406.1	426	-
% OF RATED MOTOR LOAD	90	100	-
KILOWATT HOURS PER THOU.GALS	2.3	2.0	0
ANNUAL THOU.GALS PUMPED	138226.2	138226.2	-

PA[illegible]IC GAS AND ELECTR[illegible] COMPA[illegible]
*** PUMP TEST REPO ***

---------- CUSTOMER AND FACILITY DATA ----------

PLANT LOCATION : WELL #5
MOTOR MAKE : Unknown H.P. : 100
PUMP MAKE : Peerless TYPE : Submersible
MAILING ADDRESS :

CITY OF PISMO BEACH
1000 BELLO ST
PISMO BEACH CA 93449

PG&E PLANT ID.# : 2202
CONTROL# : 0224081-0 SUF. = A
ACCOUNT# : MBV-57-69301
METER# : T71060
C.G.C. # :
ENERGY USAGE : 205400 KWH/YR
ENERGY COST : 8 CENTS/KWH
THOU.GALS/YR : 85703.3

---------- TEST RESULTS ----------

TEST DATE : 12-04-86 TESTER : RUSS CRACKNELL PHONE : (805)546-8651

RUN NUMBER	1
MEASURED RPM	-
STANDING WATER LEVEL (FT)	77.5
DRAWDOWN (FT)	58.5
PUMPING WATER LEVEL (FT)	136
DISCHARGE LEVEL (FT)	263.3
DISCHARGE PRESSURE AT GAUGE (PSI)	114
TOTAL LIFT (FT)	399.3
SURVEY LIFT (FT)	-
PGE WATER FLOW RATE (GPM)	548*
CUSTOMER WATER FLOW RATE (GPM)	553
WELL YIELD (GPM/FT DRAWDOWN)	9.4
THOU.GALS PER 24 HOURS	789.1
HORSEPOWER INPUT TO MOTOR	105.6
PERCENT OF RATED MOTOR LOAD	91
KILOWATT INPUT TO MOTOR	78.8
KILOWATT HOURS PER THOU.GALS	2.4
OVERALL PLANT EFFICIENCY (%)	52.0

[illegible] 10 1987
CITY [illegible] BEACH
PUBLIC SERVICES

---------- REMARKS ----------

* THE OVERALL EFFICIENCY OF THIS PLANT IS CONSIDERED TO BE LOW ASSUMING RUN NUMBER 1 REPRESENTS THE PLANT'S NORMAL OPERATING CONDITIONS.
* DATUM IS CENTER LINE OF DISCHARGE PIPE UNLESS OTHERWISE SPECIFIED.

---------- POTENTIAL SAVINGS ----------

THE POTENTIAL SAVINGS SHOWN BELOW ARE POSSIBLE IF THE EFFICIENCY OF YOUR PUMPING PLANT COULD BE IMPROVED TO THE LEVEL INDICATED. NORMAL PLANT OPERATION IS ASSUMED TO BE RUN NUMBER 1.

	PRESENT CONDITIONS	ESTIMATED AFTER REPAIRS	POTENTIAL SAVINGS/IMPROVEMENTS
OVERALL PLANT EFFICIENCY (%)	52.0	66.9	-
ANNUAL ENERGY USED (KWH)	205400	168805	36595
ANNUAL COST ($)	16432	13504	2928
ANNUAL OPERATING HOURS	2607	1946	661
WATER FLOW RATE (GPM)	548	734	186
TOTAL LIFT (FT)	399.3	419	-
% OF RATED MOTOR LOAD	91	100	-
KILOWATT HOURS PER THOU.GALS	2.4	2.0	0
ANNUAL THOU.GALS PUMPED	85703.3	85703.3	-

PACIFIC GAS AND ELECTRIC COMPANY

PG&E

406 HIGUERA - BOX 500 - SAN LUIS OBISPO, CALIFORNIA 93406 - (805) 544-3334

DON KENNADY
DIVISION MANAGER

May 6, 1987

Mr. Pat Mills
City of Pismo Beach
1000 Bello Street
Pismo Beach, CA 93449

Dear Mr. Mills:

The attached pump test report reflects valuable information gathered during our recent field test. Please evaluate the results carefully by comparing them to previous test results and with pump manufacturers' data to gain a more complete picture of your pump's performance. We suggest that you discuss these results with your pump dealer, who will be able to interpret the results for your particular pumping location.

A Pumping Plant Efficiency Comparison Report will be generated if the overall plant efficiency of your pump is found to be low and we were able to obtain all required information. This comparison report will illustrate potential energy and dollar savings that can be achieved if the pump efficiency is improved.

The obvious objective in having your pump tested is to insure that you are getting the most water for your energy dollar. The best figure on the test to reflect this is kilowatt hours per acre-foot of water pumped (kwh/ac.ft.). Keeping this number as low as possible while still getting the proper amount of water needed is the overall objective. Many factors can affect this figure, so when comparing it to previous tests consider the following:

1. The efficiency shown is for the conditions under which the pump was operated on the day of the test.

2. Efficiency and GPM may vary as operating pressure changes. Be sure to compare the test to normal operating conditions.

3. Efficiency and GPM may vary as water tables fluctuate with the season and rainfall amounts.

4. Pumping water level may change according to the length of time the pump has run.

5. Efficiency may be lower or higher if the pump is not being operated under the conditions for which it was designed. Check with your pump dealer and compare the design conditions to today's normal operating condition.

Your pump test report is a valuable piece of information. If you would like further assistance in interpreting test results or would like me to meet with you and your pump dealer, please feel free to contact me at (805) 546-8651.

Sincerely,

Harold Harris

Harold Harris
Pump Test Engineer

HH(665-5522):nss
931.1:AG2

Enclosure

Jami - Please file in Well #5 after making copy for Well #9

STATE OF CALIFORNIA—HEALTH AND WELFARE AGENCY

GEORGE DEUKMEJIAN, Governor

DEPARTMENT OF HEALTH SERVICES
Sanitary Engineering Branch
P. O. Box 4339
Santa Barbara, CA 93140-4339
(805) 963-8616

March 24, 1987

City of Pismo Beach
P.O. Box 3
Pismo Beach, CA 93449

Attention: Mr. Dave Watson
Director of Public Works

Gentlemen:

SYSTEM NO. 40-008

On March 12, 1987, Perry Garfinkel, Sanitary Engineering Associate, from the State Department of Health Services, met with Mr. Hal Halldin, City Engineer, to review the City's operation and maintenance program and to obtain information regarding issuing the City an amended domestic water supply permit for the addition of two wells.

The following deficiencies were noted:

1. Well No. 5 is due for a complete chemical analyses including general mineral, general physical, and inorganic analyses. Required 7-5-87

2. Wells Nos. 9 and 10's water needs to be analyzed for radioactivity and volatile organic compounds.

3. The City should initiate a yearly main flushing and valve exercising program.

If you have any questions concerning the above items, please contact Perry Garfinkel or myself at (805) 9638616.

Sincerely,

John Curphey

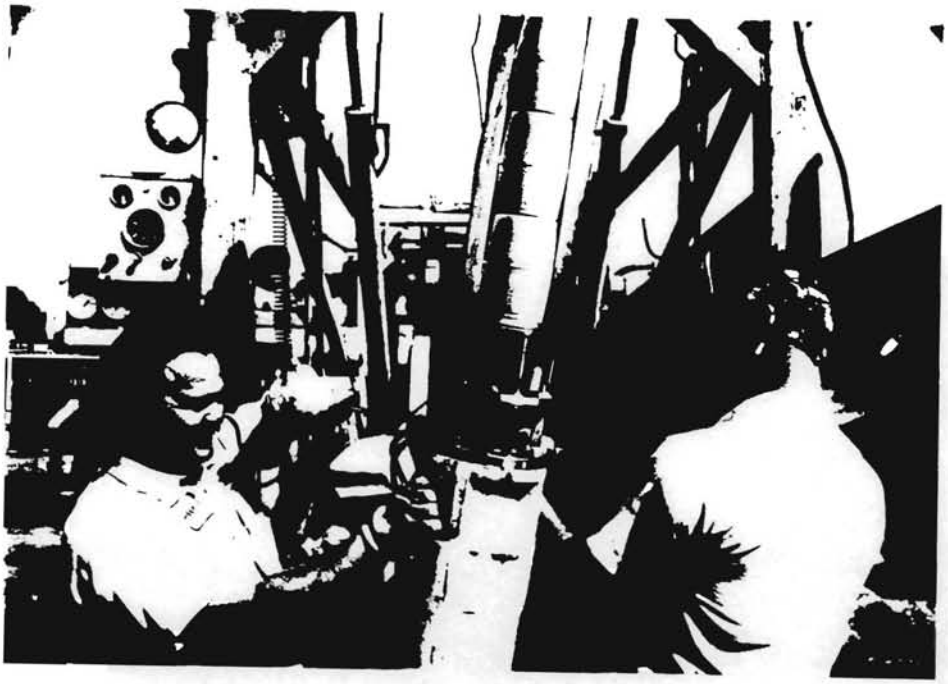
John Curphey, P.E.
District Sanitary Engineer

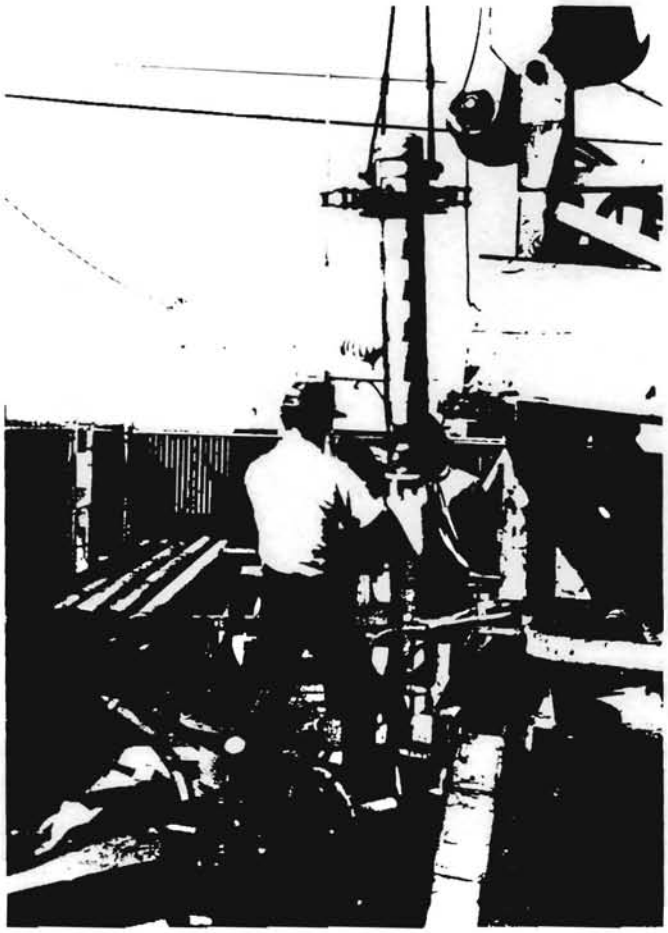
cc: San Luis Obispo County Health Agency
JNC/PG:seh

Well #5 = New Stainless Steel Pump.

177 8th St.

Crown City





Call Terry

FLOYD V. WELLS, INC.

"Depend on Wells for Water"
1337 WEST BETTERAVIA ROAD
SANTA MARIA, CALIFORNIA 93454
(805) 925-8626
CALIFORNIA LICENSE NO. C57-229570

REMIT TO
P.O. BOX 1007
SANTA MARIA, CA 93456

INVOICE NO. 014303
INVOICE DATE 04/30/87
ACCOUNT NO. 000270
ORDER NO.
ORDER DATE 12/16/86
JOB NO. 6807
TERMS: NET 30 DAYS

CITY OF PISMO BEACH
1000 BELLO
PISMO BEACH, CA
93449

DESCRIPTION

INSTRUCTIONS

1. PULL PUMP/INSPECT FOR CAUSE OF DECREASED PRODUCTION
2. RUN PRIOR TO PULLING TO CHECK SAND ON START-UP
3. REPLACE PUMP END W/GRUNDFOS S.S. UNIT/COAT PIPE/2 JOINTS

EIGTH ST. WELL - GROVER CITY
WELL NO.5 - PISMO SYSTEM

PUMP DATA

WELL SIZE:	14"W/10"PVC LINER
WELL DEPTH:	452'OH
PUMP MAKE:	PEERLESS/HITACHI
PUMP SIZE:	6'T&C 3/4TAPER
PUMP SETTING:	252'
No. Ft. SUCTION:	
PUMP DESCRIPTION:	8HXB-6STG
STANDING LEVEL:	54'
REMARKS:	

MATERIAL

INV #	DESCRIPTION	QTY	U/M	PRICE	AMOUNT
75-06807	GRUNDFOS SPP120-6DS PUMP END/SS MATERIAL SELECTION	1.00	EA	4493.000	4493.00
75-06807	6"x 21' COLUMN PIPE T&C .280 WALL 3/4 TAPER	210.00	EA	21.300	4473.00
75-06807	6"x 21' JOINTS COATED I.D.x O.D. KORDELL 600	10.00	EA		
75-06807	6"x.280 WALL STAINLESS STEEL PIPE 304SS	20.00	EA	71.450	1429.00
75-06807	6"x 20' JOINT COATED I.D.x O.D. KORDELL 600	1.00	EA		
75-06807	6".280 WALL 304SS COLUMN PIPE T&C WITH SWEDGE TO 5" ON LOWER END	20.00	EA	68.950	1379.00
29-4097	PORTERS #4836 EPOXY-BUFF	.50	GAL	72.000	36.00
29-4096	AQUATA POXY PAINT	1.00	QT	78.000	78.00
12-0109	SCOTCH RBR SPLICE #130C	12.00	EA	5.250	63.00
12-0102	PIPE WRAP 2" 10 MIL	10.00	EA	4.500	45.00

ERCHANDISE & MATERIALS	LABOR	SUB-LET REPAIRS	SUB-TOTAL ▶	
			SALES TAX	
			FREIGHT	
			MISCELLANEOUS	
			INVOICE TOTAL ▶	

agree to pay this account within 30 days after billing. In the event I/We fail to pay said unt on or before said date, I/We agree to any collection costs, including attorney's incurred by you plus interest on the amount due at the rate of 1½% per month.

FLOYD V. WELLS, INC.

"Depend on Wells for Water"
1337 WEST BETTERAVIA ROAD
SANTA MARIA, CALIFORNIA 93454
(805) 925-8626
CALIFORNIA LICENSE NO. C57-229570

REMIT TO
P.O. BOX 1007
SANTA MARIA, CA 93456

INVOICE NO. 014303
INVOICE DATE 04/30/87
ACCOUNT NO. 000270
ORDER NO.
ORDER DATE 12/16/86
JOB NO. 6807
TERMS: NET 30 DAYS

CITY OF PISMO BEACH
1000 BELLO
PISMO BEACH, CA
93449

	DESCRIPTION				
25-3419A	T&B 60530 TAN #1/0 2-WAY	6.00	EA	7.500	45.00
15-0603	1/2" SCH 80 PVC PIPE PE	80.00	FT	.250	20.00
12-0111	1/4" PP AIRLINE TUBING	260.00	FT	.140	36.40
12-0139	BAND-IT SS 5/8" BAND MATL	50.00	FT	.650	32.50
12-0136	BAND-IT SS 5/8" BUCKLE	13.00	EA	.350	4.55
22-2689	DROP-IN RING GASKET 4"	4.00	EA	2.000	8.00
12-0119	1/4" 100# GAUGE	1.00	EA	4.250	4.25
25-3255A	CARFLEX ST CONDUIT 1/2	10.00	FT	1.200	12.00
25-3261	STRGHT FLEX CONNECT 1/2	4.00	EA	2.350	9.40
25-3432	S-1/0-S SPLIT BOLT CONN	3.00	EA	4.500	13.50

LABOR DATE	SERVICE WORK	HRS/ FT	#MEN/ RIG	RATE	AMOUNT
12/16/86	RUN TEST/MOVE PIPING/MOVE-IN RIG/	2.5	2M	102.00	255.00
12/16/86	SET-UP				
12/17/86	PULL PUMP/TAKE PUMP & MOTOR TO YARD	6.0	3M	120.00	720.00
12/17/86	FOR INSPECTION				
12/17/86	DISASSEMBLE BOWLS/INSPECT	1.5	2M	40.00	60.00
03/19/87	COAT MOTOR/PORTER EPOXY	3.0	1M	25.00	75.00
03/31/87	PICK-UP PIPE AT COATERS	6.0	TRK	42.00	252.00
04/11/87	LOAD PIPE ON STINGER RIG	2.0	2M	40.00	80.00
04/14/87	TAKE PIPE TO JOB/MOVE OLD PIPE/SET	3.0	BT	85.00	255.00
04/14/87	NEW PIPE IN PLACE FOR INSTALLATION				
04/14/87	ASSEMBLE PUMP & MOTOR/Ssplice CABLE/	6.0	2M	102.00	612.00
04/14/87	START TO INSTALL PUMP				
04/15/87	COMPLETE PUMP INSTALLATION/RIG DOWN/	11.0	2M	102.00	1122.00
04/15/87	MOVE TO ALLOW RESETTING OF				
04/15/87	DISCHARGE PIPING W/BOOM TRUCK				
04/16/87	HOOK UP ELECTRICAL/REWIRE PANEL TO	4.0	2M	60.00	240.00
04/16/87	ALLOW UNIT TO OPERATE				

RECEIVED
MAY 4 1987
CITY OF PISMO BEACH
FINANCE DEPT.

ok to pay
Hal 5-15-87

12,181.60	3,671.00	0.00	SUB-TOTAL ▶	15,852.60
MERCHANDISE & MATERIALS	LABOR	SUB-LET REPAIRS	SALES TAX	730.90
			FREIGHT	.00
			MISCELLANEOUS	.00
			INVOICE TOTAL ▶	16,583.50

I/We agree to pay this account within 30 days after billing. In the event I/We fail to pay said account on or before said date, I/We agree to any collection costs, including attorney's fees incurred by you plus interest on the amount due at the rate of 1½% per month.

Floyd Well #5

CITY OF PISMO BEACH
PUBLIC SERVICES DEPARTMENT
P.O. BOX 3, PISMO BEACH, CA. 93449
(805) 773-4656

Bill To: FLOYD Wells

Job No.: No#5 water Well

Location: 177 S. 8th. ST.

Attention: GROVER CITY

Description of Job: INSTall 6" FLange gasket ON 6" FLange connection, which had Know FLange gasket INSTalled FROM INSTallation

Labor	Title	Hours Reg	Hours OT	Rate Reg	Rate OT	Extended Reg	Extended OT	Total Earnings
Pat	M.SupV.	1½		13.80	6.90	20.70		$20.70
CLYDE	IV	1½		11.92	5.96	17.88		17.88

Materials & Outside Rentals		
1-6" Flange gasket	$1	00
Materials Sub Total	$1	00

Labor	$38.58
P.R. Taxes & Ins. @ of Labor	
Sub Total Labor	
Equipment Rentals	

Eqmt.	Hrs.	Rate	Amt.

Subtotal Eqmt. Rental	
Sub Total Material	$1.00
Sub Total	39.58
Admin. Chg. @ 10%	3.95
GRAND TOTAL	$43.53

Pismo Well #5

M. J. SCHIFF & ASSOCIATES

Consulting Corrosion Engineers

1291 NORTH INDIAN HILL BOULEVARD
CLAREMONT, CALIFORNIA 91711
(714) 626-0967

February 10, 1987

Garing Taylor & Associates Inc.
141 South Elm Street
Arroyo Grande, California 93420

Attention: Mr. Jim Garing, P.E.

Re: Water Well #5
Pismo Beach, California
MJS&A #87011

Gentlemen:

This letter will summarize the results of our inspection of the pump removed from Water Well 5 and our subsequent meetings with Mr. Rob Thompson at Floyd Wells Inc. and Mr. Ed Bobbick at Peerless Pumps in Montebello, California.

The pump and column pipe of the subject well were removed due to reduced production from the well. Disassembly revealed that the lateral bowl wear rings had been displaced from their normal position and drawn into the water passageway. Normally these rings are held in position by their rigid steel core. Photograph 1 shows one of the wear rings with the metal essentially destroyed. The mating surface machined into the pump bowl which bears against the metallic portion of the seal ring is heavily corroded. Photograph 2 includes a new wear ring for comparison.

Photograph 3 shows the interior of one of the pump bowls. Corrosion has occurred at two locations on the interior of the bowl and on the leading edges of the bowl vanes.

This submersible pump replaced a vertical line shaft pump which was removed when there was heavy sand production. A plastic liner was installed inside the original casing with finer slots to eliminate the sanding. It is our understanding (which may be incorrect) that gravel was placed in the bottom of the well when the replacement casing was gravel packed.

Peerless Pump personnel expressed the opinion that the damaged vitreous enamel coating inside the bowls and the wear on the leading edge of the water vanes was due to impact and erosion from produced sand and gravel. Mr. Rob Thompson of Floyd Wells Inc. indicated that this pump was used not only for the initial testing and clean out, but also for continuous use thereafter. A separate pump was not provided for the initial testing and clean out.

If sand and gravel damaged the vitreous enamel coating, the exposed metal of the bowls would be exposed to the water flow which might not only erode the exposed metal but also would keep those surfaces clean so that corrosion could remove metal as well. The corrosion rate would be accelerated by the dissimilar metal cell between the cast iron bowls and bronze impellers.

Photograph 4 shows loss of metal from the inside of the column pipe section that was connected to the pump. There is severe attack and undercutting at the end of this section. Pitting up to .060 inches was measured within a of foot from the end. The remaining portions of the column pipe are in relatively good condition as were the upper lengths shown in photographs 5 and 6.

The corroded areas on the lowest column section have probably suffered from a combination of sand abrasion immediately above the pump, possible cavitation effects from carbon dioxide gases, and dissimilar metal corrosion effects due to the bronze impeller and cast iron bowls of the pump. 3 things

Assuming that abrasive effects from entrained sand are now eliminated, we recommended coating the internal and external surfaces of the lowest section of column pipe with the Kordell 600 Floyd Wells is presently using on some of their parts. The coating thickness has been specified at 6 to 8 mils. The parts we measured in Floyd Wells' shop had coating thicknesses of about 10 mils. We recommend that this coating be applied to a minimum of 10 mils, up to 12 mils.

Care should be taken to insure that the internal coating on the column pipe does not contain holidays. This can be checked with a low voltage sponge type holiday detector.

To reduce the dissimilar metal effects of the cast iron pump bowls on the exterior of the column pipe, we recommend that the exterior of the pump bowls also receive a protective coating. This could be the Kordell 600 (about $60 per pump stage) or a coating similar to Engard 482 HiBuild epoxy coating (at a cost of about $40 to $50 per stage). After the pump is assembled to the lower column length, apply a primer and half lapped 10 mil polyethlyene coating from the top pump bowl across the threaded connection onto the bottom 12 inches or column pipe.

Both Mr. Thompson and Mr. Bobbick indicated that they rarely experience problems such as occurred here on the lateral wear rings. The inside diameter of these wear rings was slightly smaller than the ID of the mating surface in the pump bowl. There may have been considerable turbulence and abrasion at the interface of the metallic portion of the wear ring and the cast iron bowl which might have quickly allowed entrance of the turbulent water into the interface, with rapid dissimilar metal corrosion on the bare steel of the wear ring and cast iron seat.

Mr. Ed Bobbick of Peerless Pumps suggested using their "type B construction" which has all bronze bearings rather than a combination of bronze and rubber bearings and does not have the lateral wear rings which failed before.

A stainless steel pump would perform well in this application, provided that sand is not produced. Sand would tend to remove the oxide film that normally protects stainless steel (a similar effect would also occur with carbon steel).

In this case I would recommend that the lowest two sections of column pipe also be stainless. Apply a coating to the interior and exterior of the lengths of stainless steel and carbon steel that connect together (coating only ten feet each side of the joint would be sufficient).

For the lengths of carbon steel column pipe higher than those discussed above, a protective coating, inside and out, is recommended. This may be a less sophisticated coating, such as coat tar epoxy, 16 mils minimum. Photographs 5 show these pipe sections from well 5.

The difference in coating quality, thickness, and application on the pump motor body and cable guide is evident in photograph 6.

Please let us know if there are any questions.

Very truly yours,
M. J. SCHIFF & ASSOCIATES

M. J. Schiff, P.E.

cb
Enc.
WS12

GROVER WE #5

167 South 8th St. Installed in 1973 by Floyd Wells Inc.
55' above sea level

Motor - 100 HP
230/460 Volts
60 Cycle
3 phase
1775 RPM

Pump - 750 GPM/ft HD 550 502 lbs. static head psi.
6x8x16½ Discharge Head
Peerless Pump
6" Inlet-Outlet on desander

Well - 500 Ft. Deep
28" Bore
14" Casing
15 Stage
6" Suction Pipe/6" Discharge
Top of Motor to Strainer 402' 10 7/8"

July 10, 1981 Standing level 57'
Draw Down to 143'

Goes up 8th St. to Grover City Tank then through
5 Cities area to Bello St. Tank

STATE OF CALIFOR
DEPARTMENT OF HEALTH SERVICES

WELL DATA

(1) Place and Owner: City of Pismo Beach

(2) Source of Information: Charles Johnson

Collected by: Patrick Wells Date: 8-25-83

(3) Number or Name	Well No. 5
Date drilled	1973
(4) Location: Neighborhood	Residential
Size of lot	40 x 80 ft.
Distance to: Sewer	85 ft.
Sewage disposal	None
Abandoned well	None
Nearest property line	15 ft.
(5) Housing: Type	None
Condition	-
Pit depth *(if any)*	None
Floor *(material)*	Concrete
Drainage	Good
(6) Well Depth	574 ft.
(7) Casing: Depth	500 ft.
Diameter	14 in.
Kind	Steel
Height above floor	6 in.
Distance to highest perforations	150 ft.
Surface sealed *(yes or no)*	Yes
Gravel pack *(yes or no)*	Yes
Second casing depth	51 ft.
Second casing diameter	30 in.
Annular seal *(depth)*	150 ft.
(8) Impervious Strata: Penetrated — Thickness	4 ft.
(8) Impervious Strata: Penetrated — Depth to	11 ft.
(9) Water Levels: Depth to — Surface	
(9) Water Levels: Depth to — Static	30 ft.
(9) Water Levels: Depth to — When pumping	
(10) Pump: Make	Peerless
Type	DWT
Capacity, g.p.m.	750
Lubrication	Oil
Power	Electric
Auxiliary power	None
Control	Automatic
Discharge location	Above ground
Discharge to	Distribution
(11) Frequency of Use	Daily
(12) Flood Hazard	None
(13) Remarks and Defects (Use other side if necessary)	32S/13E-19Q02

(14) Show well log on other side.

STATE OF CALIFORNIA
DEPARTMENT OF PUBLIC HEALTH

(3744-450 8-81 10M ① OSP)

REV. 1-1-51
FORM 228-1402

Peerless Pumps
Irrigation System
Sales and Service

Licensed
Drilling
Contractors

FLOYD V. WELLS, INC.

1337 West Betteravia Road • Phone WAlnut 5-3626
SANTA MARIA, CALIFORNIA 93454

Mailing Address:
Post Office Box 1007
Santa Maria, California

Goleta Office:
5798 Dawson Ave
Phone 967-4124
Santa Maria
Phone ZEnith 2-7726

Log of well drilled for : City of Pismo Beach

Well Number : Grover City well, Rotary

Location : 20 ft. from south property line, 35 ft. from east property line. 101 & South 8 th Street, Grover City, CA

Surface pipe : 51 ft. of 30 " x .281 wall pipe cemented in

Casing : 500 ft. of 14" I.D. x ¼" wall pipe, 20% copper

Perforations : 500 ft. to 150 ft. - Horizontal louver perforations, 1/8" x 1½", 96 openings per foot

Well bore : 28", 38"

Well completed : 29 March 1973

Formation

From	0	to	6	feet	Fine brown sand
"	6	"	11	"	Sandy brown clay and sand
"	11	"	15	"	Brown clay
"	15	"	28	"	Brown clay and sand
"	28	"	35	"	Coarse sand (brown)
"	35	"	40	"	Brown sandy clay
"	40	"	60	"	Coarse sand and gravel with clay strips
"	60	"	100	"	Coarse sand and gravel
"	100	"	110	"	Sandy brown clay with boulders
"	110	"	125	"	Sandy brown clay and coarse sand
"	125	"	135	"	Sandy brown clay with small amount of coarse sand
"	135	"	150	"	Brown sandy clay
"	150	"	155	"	Brown sandy clay with coarse sand
"	155	"	175	"	Coarse brown sand with fine sand
"	175	"	180	"	Fine brown sand
"	180	"	185	"	Coarse sand and gravel with sandy clay
"	185	"	195	"	Coarse sand
"	195	"	200	"	Coarse sand and gravel
"	200	"	225	"	Coarse and fine brown sand
"	225	"	250	"	Coarse and fine brown sand with white clay strips and small amount of gravel

- continued -

For on

From	250	to	255	feet	Coarse and fine sand
"	255	"	268	"	Coarse sand and small amount of clay
"	268	"	273	"	Coarse sand and gravel
"	273	"	276	"	Sandy clay and coarse sand with small amount of gravel
"	276	"	285	"	Brown sand and blue sandy clay
"	285	"	310	"	Coarse brown sand with small amount blue sandy clay
"	310	"	320	"	Blue sandy clay
"	320	"	325	"	Brown sand with blue sandy clay
"	325	"	350	"	Brown sand with blue sandy clay with small amount of gravel
"	350	"	370	"	Blue sandy clay with brown sand
"	370	"	400	"	Brown sand with small amount of blue and brown clay
"	400	"	435	"	Blue sandy clay
"	435	"	455	"	Blue-gray coarse sand and sea shells
"	455	"	460	"	Brown sand and clay
"	460	"	485	"	Blue-gray coarse sand and sea shells
"	485	"	500	"	Dark gray sand and clay with small amount of sea shells
"	500	"	505	"	Dark gray clay and sandstone
"	505	"	525	"	Dark gray clay
"	525	"	540	"	Dark gray clay with sand strips
"	540	"	574	Blue clay with strips of sandy clay	

ORIGINAL
File with DWR

SEP 30 1973

STATE OF CALIFORN
THE RESOURCES AGE
DEPARTMENT OF WATER RESOURCES
WATER WELL DRILLERS REPORT

Do Not Fill In
No. 78836
State Well No. 32S/13E-19Q2
Other Well No.

(1) OWNER:
Name City of Pismo Beach
Address Pismo Beach, Calif.

(2) LOCATION OF WELL:
County San Luis Obispo Owner's number, if any
Township, Range, and Section 20 ft. from south property line
Distance from cities, roads, railroads, etc. 101 south 8th St., Grover City, Calif.

(3) TYPE OF WORK (check):
New Well [X] Deepening [ ] Reconditioning [ ] Destroying [ ]
If destruction, describe material and procedure in Item 11.

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

(5) EQUIPMENT:
Rotary [X]
Cable [ ]
Other [ ]

(6) CASING INSTALLED:
STEEL: OTHER:
SINGLE [X] DOUBLE [ ]

From ft.	To ft.	Diam.	Gage or Wall
500	0	14" ID	.281

If gravel packed

Diameter of Bore	From ft.	To ft.
9 7/8	0	
20"		
28",38"	0	574

Size of shoe or well ring:
Size of gravel:
Describe joint: Butt welded

(7) PERFORATIONS OR SCREEN:
Type of perforation or name of screen

From ft.	To ft.	Perf. per row	Rows per ft.	Size in. x in.
500	150	Horrizontal louver perf.		
		1/8 x 1¼	96 openings per ft.	

(8) CONSTRUCTION:
Was a surface sanitary seal provided? Yes [X] No [ ] To what depth 50 ft.
Were any strata sealed against pollution? Yes [ ] No [X] If yes, note depth of strata
From ft. to ft.
From ft. to ft.
Method of sealing

(9) WATER LEVELS:
Depth at which water was first found, if known 40 ft.
Standing level before perforating, if known - ft.
Standing level after perforating and developing 25' ft.

(10) WELL TESTS:
Was pump test made? Yes [X] No [ ] If yes, by whom? F.V.Wells
Yield: 675 gal./min. with 270 ft. drawdown after 39 hrs.
Temperature of water Was a chemical analysis made? Yes [X] No [ ]
Was electric log made of well? Yes [X] No [ ] If yes, attach copy

(11) WELL LOG:
Total depth 574 ft. Depth of completed well 500 ft.
Formation: Describe by color, character, size of material, and structure

ft.	to	ft.	
0	to	6	Fine brown sand
6	"	11	Sandy brown clay & sand
11	"	15	Brown clay
15	"	28	Brown " & sand
28	"	35	Coarse sand (brown)
35	"	40	Brown sandy clay
40	"	60	Coarse sand & gravel w/clay stripe
60	"	100	coarse sand & gravel.
100	"	110	Sandy brown clay w/ boulders.
110	"	125	Sandy brown clay & coarse sand
125	"	135	Sandy " " w/ sm. amt. coarse sand
135	"	150	Brn. sandy clay.
150	"	155	Brn. " " w/coarse sand.
155	"	175	Coarse brn. sand w/fine sand.
175	"	180	Fine brn. sand.
180	"	185	Coarse sand & gravel w/sandy clay.
185	"	195	Coarse sand
195	"	200	Coarse sand & gravel.
200	"	225	Coarse & fine brn. sand.
225	"	250	Coarse & fine brn. sand w/white clay strips & small amt. gravel.
250	"	255	Coarse & fine sand
255	"	268	Coarse sand w/ sm. amt. of clay
268	"	276	Sandy clay & coarse sand w/ sm. amt. of gravel.
276	"	285	Brn. sand & blue sandy clay
285	"	310	Coarse brn. sand w/sm.amt.Blue clay
310	"	320	Blue sandy clay.
320	"	325	Brown sand w/blue sandy clay
325	"	350	Brn. sand w/blue sandy clay w/ small amt. gravel.
350	"	370	Blue sandy clay w/brn. sand.
370	"	400	Brn. sand w/sm. amt. of blue &brn.cl.
400	"	435	Blue sandyclay.
435	"	455	Blue gray coarse sand & sea shells
455	"	460	Brn. sand & clay.
460	"	485	Blue gray coarse sand & seashells.

NOT PUBLIC RECORD

Work started 2-22- 19 73 Completed 3-29 19 73

WELL DRILLER'S STATEMENT:
This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.

NAME Floyd V. Wells, Inc.
(Person, firm, or corporation) (Typed or printed)
Address P. O. Box 1007, Santa Maria, Calif.
[SIGNED] F.V.Wells (Well Driller)
License No. C57-229570 Dated Sept. 14, 19 73

SKETCH LOCATION OF WELL ON REVERSE SIDE

OVER

DWR 188 (REV 9-68)

SEP 3 0 1973

Log for City of Pismo Beach, continued

From	485 feet	to	500 feet	Dark gray sand & clay with small amt of sea shells.
	500 "		505	Dark gray clay & sandstone
	505 "		525 "	Dark gray ~~sandy~~ clay.
	525 "		540 "	Dark gray clay w/ sand strips.
	540 "		574 "	Blue clay w/ strips of sandy clay.

32/13-1 Q2

Test Pump - City of Pismo Beach

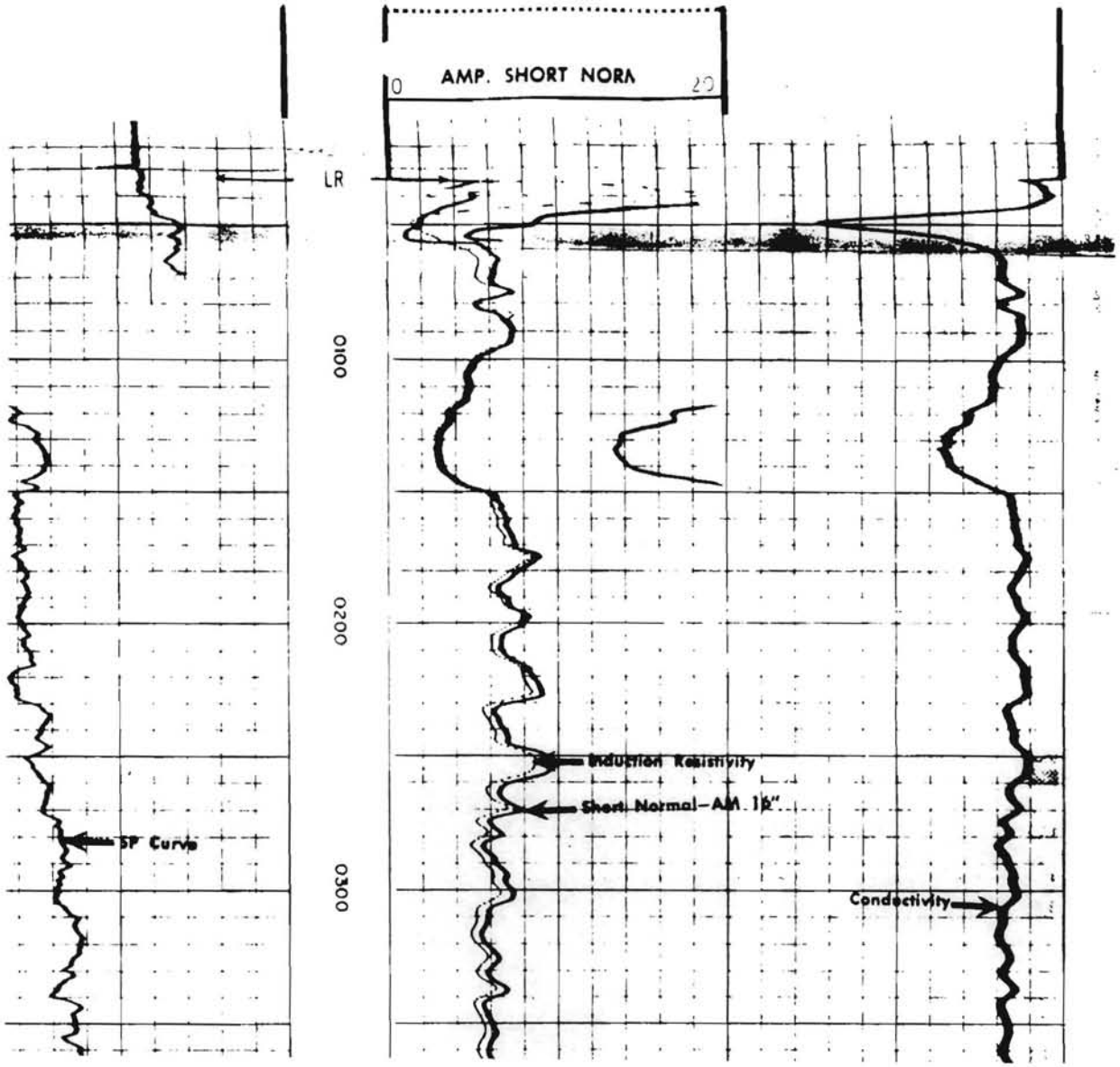
DATE	TIME	GPM	FEET	CONDITION
4-5-73	1:00 P.M.	300	192	Sandy with lost of color
	2:00	300	192	Large amount of dark gray sand
	3:00	300	192	Large amount of dark gray sand. Well surged at this time.
	4:00	300	152	Sandy with lots of color in water
	4:45	300	152	Still sandy with dark gray color in water. Stopped pumping at this time.
4-6-73	8:15 A.M.			
	8:30	300	132	Sandy and color in water
	8:35	300	132	Water clearing. Small amount of sand.
	8:37	300	132	Pumping large quantity of dark gray sand.
	9:00	300	132	Water clearing. Still has small amount of sand and color in water.
	9:25	300	132	Surged
	9:30	360	152	Sandy
	9:33	360	157	Sandy with color in water
	9:42	350	157	Sandy and light gray color in water.
	10:00	380	172	Sandy and light gray color. Well surged at this time.
	10:30	380	172	Small amount of sand and light gray color in water.
	11:00	430	177	Very small amount of fine sand and pale gray color. Surged well and increased gallonage and RPM's.
	11:05	430	177	Pumping dark gray sand in large quantity.
	11:25	430	177	Dark gray sand and color in water,
	11:50	450	205	Dark gray sand and color in water. Surged, raised RPM's and changed to 6" orafice.
	12:15 P.M.	450	205	Dark gray sand and color in water
	12:30	450	245	Light gray color and small amount of sand
	12:45	450	245	Light gray color and small amount of sand
	1:00	450	247	Light gray color and small amount of sand. Well surged.

DATE	TIME	M	FEET	CONDITION
	1:15	450	247	Little sand and small amount of color
	1:25	450	247	Starting to pump dark gray sand. Dark gray color in water.
	1:30	475	247	Clearing with small amount of sand. Surged.
	1:50	525	272	Water cloudy with slight amount sand
	2:00	525	272	Clearing with small amount of sand surged.
	2:15	575	270	Clearing wit- small of sand.
	2:30	575	270	Water clearing. Small amount of sand. Surged.
	3:00	575	270	Clearing with small amount of sand. Increase RPM's.
	3:15	575	Off air line	No change.
	3:25	525	Off air line	Holding same gallonage clears up well. Does not fluctuate. When pumping higher starts to fluctuate. Lowered RPM.
	3:45	525	357+	Clear, little sand. Surged. Lowered RPM.
	4:00	425	357+	Clear, Small amount of sand. Surged and changed to 4½" orifice.
	4:15	525	257	Clear with small of sand.
	4:20	525	257	Dark gray sand and color in water. Large amount of sand
	4:35	365	197	Dark gray sand in small amounts and color in water.
	5:00	370	197	Clear small amount of sand.
4-7-73	Start 9:00 A.M.		Standing Water Level - 62 ft.	
	9:15 A.M.	500	252	Small amount of fine sand and cloudy color in water.
	9:25	500	252	Surged. Water has sand (dark gra and color.
	9:30	548	260	Large amount of fine dark gray and color in water.
	9:38	548	260	Pumping very large quantity coarse dark gra y sand with pieces of white clay and r Water very dirty gray.

DATE	TIME	GPM	FEET	CONDITION
4-7-73	10:00	560	270	Water dark gray with fine gray sand. Surged.
	10:30	675	270	Changed orifice to 6" and surged. Water dirty and gray with large amour of sand.
	10:45	675	270	Surged. Well condition same as above
	10:50	675	270	Pumping large chunks of shell and dark clay in large quantities.
	11:00	675	270	Same as above.
	11:15	675	270	Large shunks of clay, gravel and shells.
	11:30	375	165	Pumping light gray with small amount of sand, clay, gravel and shell. Changed to 4½" orifice and try to clear up water.
	11:50	375	165	Water clearing. Small amount of color and sand, well surged.
	12:00 P.M.	375	165	Water clearing but still slightly cloudy. Small amount fine sand.
	12:15	410	170	Same as above.
	12:30	525	267+	Water clear, no color. Very slight amount of sand. Hardy noticeable. Surged.
	12:45	525	267+	Clear, very small amount of fine sand. Surged, changed to 6" orifice.
	1:00	625	267+	Same as above. Surged.
	1:15	575	267+	Clear, small amount sand. Surged
	1:30	575	267+	Clear, little sand.
	1:45	575	267+	Same as above.
	2:00	575	267+	Same as above.
	2:15	575	267+	Same as above.
	2:30	575	267+	Same as above.
	2:30	575	267+	Surge well. Water clears after 2 - 3 min. Small amount of fine s
	2:45	575	267+	Same.
	3:00	550	267+	Same.
	3:15	550	267+	Same.
	3:30	550	267+	Same.
	3:45	550	267+	Cloudy water with small amc fine sand. Clears 2 - 5 m surging.

DATE	TIME	GPM	FEET	CONDITION
4-7-73	4:00	550	267+	Cloudy and sandy
	5:00	525	257	Water clearing
4-9-73	Start 8:10 A.M.		Standing Water Level	- 60 ft.
	8:10	600		Rusty, very sma;; amount of sand
	9:00	600	225	Cloudy with fine grains of sand
	10:00	625	225	Water clearing, still has small amount of dark gray sand
	11:00	625	225	Same as above.
	12:00 P.M.	530	180	Same as above.
	1:00	650	218	Same as above.
	2:00	660	235	Same as above.
	3:00	650	238	Same as above.
	4:00	650	238	Same as above.
	5:00	650	238	Same as above.
4-10-73	Start 7:30 A.M.		Standing Water Level - 60 ft.	
	8:00	675	238	Water clear, particles of sand.
	9:00	625	223	Water clear, some sand. Surged.
	10:00	650	225	Surged. Started steady run.
	10:30	625	232	"
	11:00	625	234	Very little air.
	11:30	620	231	"
	12:00 P.M.	620	231	"
	12:30	620	231	"
	1:00	620	231	"
	1:30	620	231	Increased RPM's.
	2:00	625	236	More air.
	2:30	625	236	Air.
	2:45	625	236	Air.
	3:00	625	236	Air.
	3:15	550	213	No Air.
	3:30	550	212	"
	3:40	550	212	"
	3:55	500	183	"
	4:10	500	182½	"
	4:25	400	164	"
	4:40	400	164	"

DATE	TIME	M	FEET	CONDITION
4-10-73	4:55	325	143	No air.
	5:00	325	143	"



Schlumberger

INDUCTION-ELECTRICAL LOG

COUNTY SAN LUIS OBISPO
FIELD or LOCATION GROVER CITY
WELL PISMO BEACH ROTARY TEST NO. 1
COMPANY FLOYD V. WELLS

COMPANY FLOYD V. WELLS, INC.
WELL PISMO BEACH ROTARY TEST NO. 1
FIELD GROVER CITY
COUNTY SAN LUIS OBISPO STATE CALIFORNIA
LOCATION INTERSECTION OF 8TH AND GRAND STREETS
Sec. - - - Twp. - - - Rge. - - -
(BALLOON SCALE)

Other Services: NONE

Elev.: K.B. N A
D.F.
G.L. N A

Permanent Datum: GL Elev. - -
Log Measured From GL - - Ft. Above Perm. Datum
Drilling Measured From GL

Date	2-28-73		
Run No.	ONE		
Depth—Driller	574		
Depth—Logger	574		
Btm. Log Interval	573		
Top Log Interval	33		
Casing—Driller	12" @ 12'	@	@
Casing—Logger	- - - - -		
Bit Size	9 7/8"		
Type Fluid in Hole	FWG		
Visc.	91		
Fluid Loss	- - - ml	ml	ml
Source of Sample	PIT		
R_m @ Meas. Temp.	14.4 @ 66 °F	@ °F	@ °F
R_{mf} @ Meas. Temp.	7.7 @ 66 °F	@ °F	@ °F
R_{mc} @ Meas. Temp.	9.0 @ 80 °F	@ °F	@ °F
Source: R_{mf} R_{mc}	M C		
R_m @ BHT	12.0 @ 80 °F	@ °F	@ °F

The well name, location and borehole reference data were furnished by the customer.

S.O. 69451

Mud Type or Additional Samples			
ple No.			
iller			
in Hole			
Visc.			
d Loss	ml		
Sample			
as. Temp.	@ °F	@ °F	
as. Temp.	@ @ °F	@ @ °F	
as. Temp.	@ °F	@ °F	
R_{mc}			
r	@ °F	@ °F	
r	@ @ °F	@ @ °F	
r	@ °F	@ @ °F	

Scale Changes			
Type Log	Depth	Scale Up Hole	Scale Down Hole

Equipment Data			
Run No.	Tool Type	Tool Position	Other
ONE	IRT-F	CENTRALIZED	

Run No.: ONE
C.D.: USED
S.O.: [illegible]
NEL No.: IRP-N-560
RT. No.: IRC-F-404
DE No.: IRS-N-293
IAP No.: MMR-B-286
S.B.R.: 1

Check one, filling in blanks where applicable:
- [X] Surface determined sonde errors used for 6FF40.
- [ ] 6FF40 sonde error corrected for ____ inch borehole signal at Rm =
- [ ] 6FF40 zero set in hole at depth of ____ feet.

SPONTANEOUS-POTENTIAL	DEPTHS	RESISTIVITY	CONDUCTIVITY
MILLIVOLTS		OHMS. M² M	MILLIMHOS M
10		A-16"-M SHORT NORMAL 0 100	6FF40 INDUCTION 200 0
		0 1000	400 200
		INDUCTION	

File Well #5

Questions

1. Why haven't other deep wells encountered these corrosion problems
2. Is it possible that there is stray current coming from the motor
3. Why wasn't to motor corroding
4. Should we call the pump company
5. Call Seal Beach - re zinc phospate & coupon testing - Who was contact for material, Alan?
6. Called Rich Hill to see if he has had problems - none - used stainless steel screen
7. William Harper

FLOYD V. WELLS, INC.

Licensed Water Well Drilling Contractor

PUMP SALES AND SERVICE

(805) 925-8626

SANTA BARBARA — ZENITH 27726
1337 W. BETTERAVIA ROAD P.O. BOX 1007
SANTA MARIA, CALIFORNIA 93456
LIC. # C57-229570

ROB THOMPSON

File - Well #5

FLOYD V. WELLS INC.
1337 W. BETTERAVIA RD.
SANTA MARIA, CA 93455

(805) 925-8626

TO Jim Gaerins

DATE January 9, 1987

SUBJECT Pismo Well No 5

Quotation attached represents a $3650.00 increase over the cost of Cast Iron/Bronze Equipment and uncoated steel pipe.

Please review the attached curve vs. PG&E Test Data and let me have your concurrence.

Thank you for allowing us to assist you.

cc: Hal Halldrin - Pismo

Rob Thompson

FOLD AT (—) TO FIT DRAWING BOARD ENVELOPE REV-9DW

FLOYD V. WELLS, INC.
"Depend on Wells for Water"
1337 WEST BETTERAVIA ROAD
SANTA MARIA, CALIFORNIA 93455
(805) 925-8626
CALIFORNIA LICENSE NO. C57-229570

QUOTATION --- ORDER FORM

Date 1/7/87

TO City of Pismo Beach Attn: Hal Halldrin
1000 Bello Street
Pismo Beach, CA 93449

DESCRIPTION

		Selling Price
	Pump Repair - Well No. 5	
	Stainless Steel Pump End/Coated Pipe	
	Design Point Estimate: 600 GPM at 400' Lab. Head	
	Hitachi 100HP motor to be re-used. Megs O.K. 1/7/87	
	Shaft movement within tolerences - acceptable to be re-run	
	without repair per Hitachi Repair Facility.	
	Well top pressure 120 PSI (277'), Est. P.W.L. - 130',	
	Friction 12', Est. Field Head 419'	
	Equipment Selection:	
1	Grundfos SP120-6DS Pump End Stainless Steel	4,770.00
250'	Column Pipe 6" T&C - Kordell 600 Coated In & Out x 20' sections	5,670.00
1	Swedge Nipple 5"x 6" - Coated	93.00
1	Aquatapoxy Touch-up Material	83.00
1	Taped Joints	40.00
	Material Total w/Tax:	10,656.00
	Labor to Remove Unit/Inspect	1,035.00
	Labor to re-install, move old	
	Column, set up piping - Estimated:	1,700.00
	Total	13,391.00
	Notes:	
	A) Grundfos performance curve attached.	

I/We agree to pay this account within 30 days after billing. In the event I/We fail to pay said account on or before said date, I/We agree to pay any collection costs, including attorney's fees incurred by you plus service charges on the amount due at the rate of 1½% per month.

Warrantee Conditions: New pumps are under a one-year factory warrantee from date of installation by Floyd V. Wells, Inc. Labor not included unless proved to be the result of poor workmanship of Floyd V. Wells, Inc.

FLOYD V. WELLS, INC.

CONTINUED ON PAGE 2

By

Accepted by

FLOYD V. WELLS, INC.
"Depend on Wells for Water"
1337 WEST BETTERAVIA ROAD
SANTA MARIA, CALIFORNIA 93455
(805) 925-8626
CALIFORNIA LICENSE NO. C57-229670

QUOTATION --- ORDER FOI

Date 1/7/87

TO City of Pismo Beach

DESCRIPTION

		Selling Price
	Well Pump No. 5 Repair - Continued	
	B) For all 40 Bronze Bowl Assembly - Peerless 8HXB-6Stage pricing would be approximately 2 3/4 times the quoted Grundfos price. Due to special Foundry/Factory run for bronze casings.	
	C) For 6" - 304SS Column Pipe - 280 wall in random lengths for total of 250' the price becomes $16,442.00.	
	Pricing for Acceptance Within 30 Days	
	cc: Jim Garring - Garring, Taylor & Associates	

I/We agree to pay this account within 30 days after billing. In the event I/We fail to pay said account on or before said date, I/We agree to pay any collection costs, including attorney's fees incurred by you plus service charges on the amount due at the rate of 1½% per month.

Warrantee Conditions: New pumps are under a one-year factory warrantee from date of installation by Floyd V. Wells, Inc. Labor not included unless proved to be the result of poor workmanship of Floyd V. Wells, Inc.

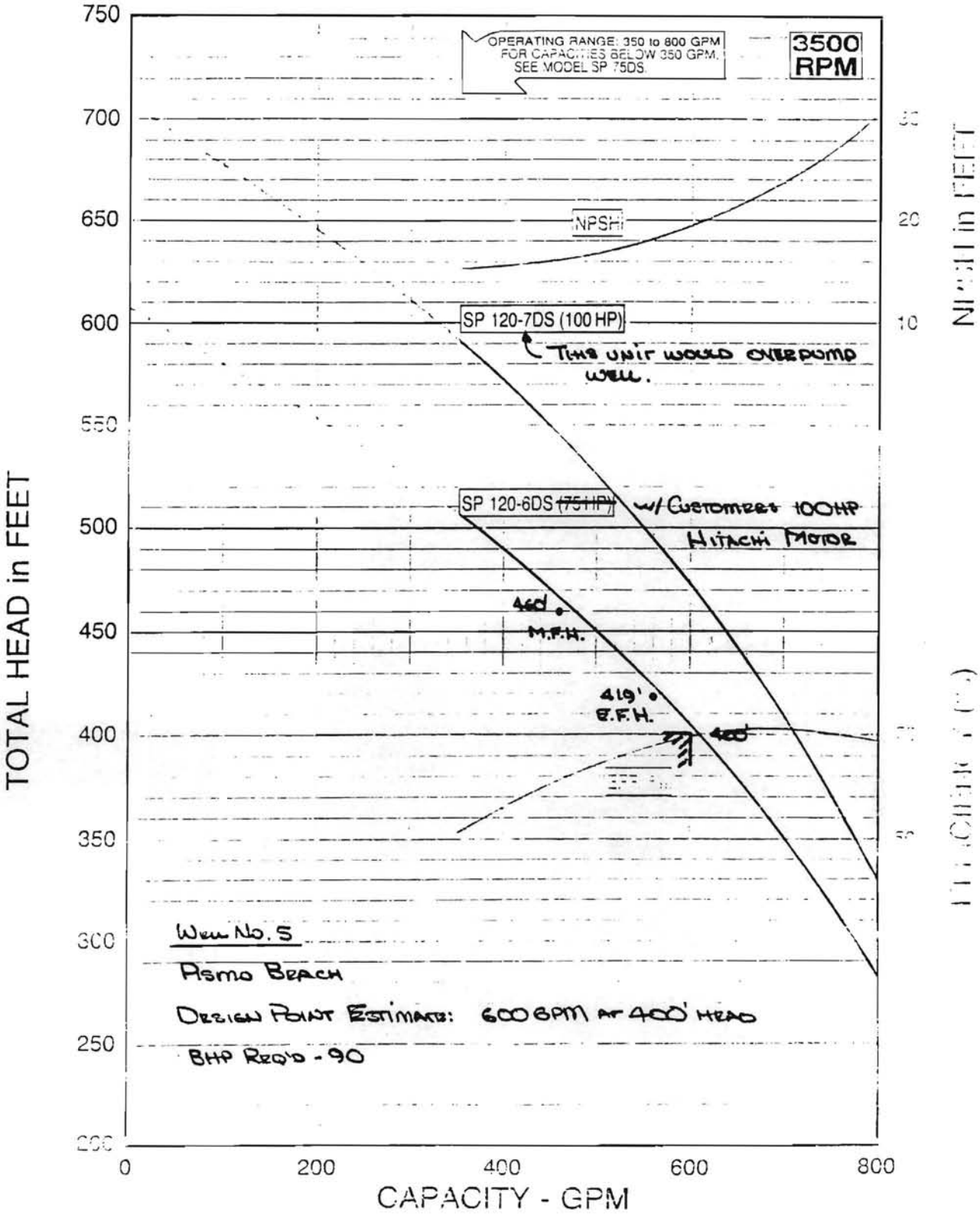
FLOYD V. WELLS, INC.

By

Accepted by

MODEL
SP 120
DEEP SET

Performance Curves



NOM. FLOW RATE	FLOW RANGE	PUMP OUTLET
600 GPM	350-800 GPM	5" NPT

FLOYD V. WELL' NC.
1337 W. BETTERAVIA RD.
SANTA MARIA, CA 93455

(805) 925-8626

TO

DATE Jan 9, 1987

Jim Gardiner

SUBJECT Pismo Beach
Well No 9 & 10

Alternate Performance Curves for these Well Pumps are attached.
Please Review. If O.K I will run pricing through R. Baker.

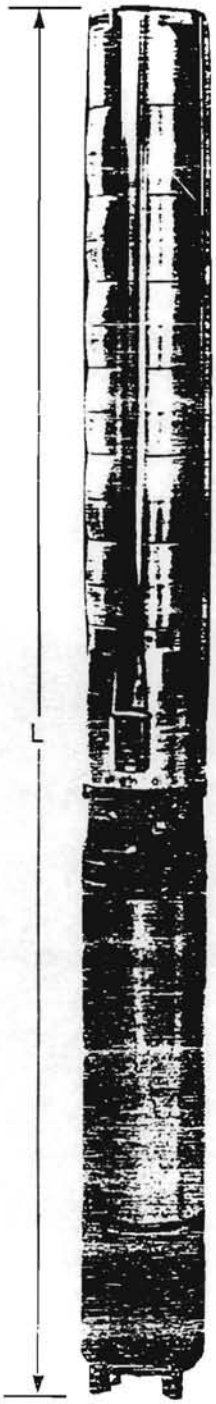
Thanks,
Rob Thomas

cc: Hal Hendrix

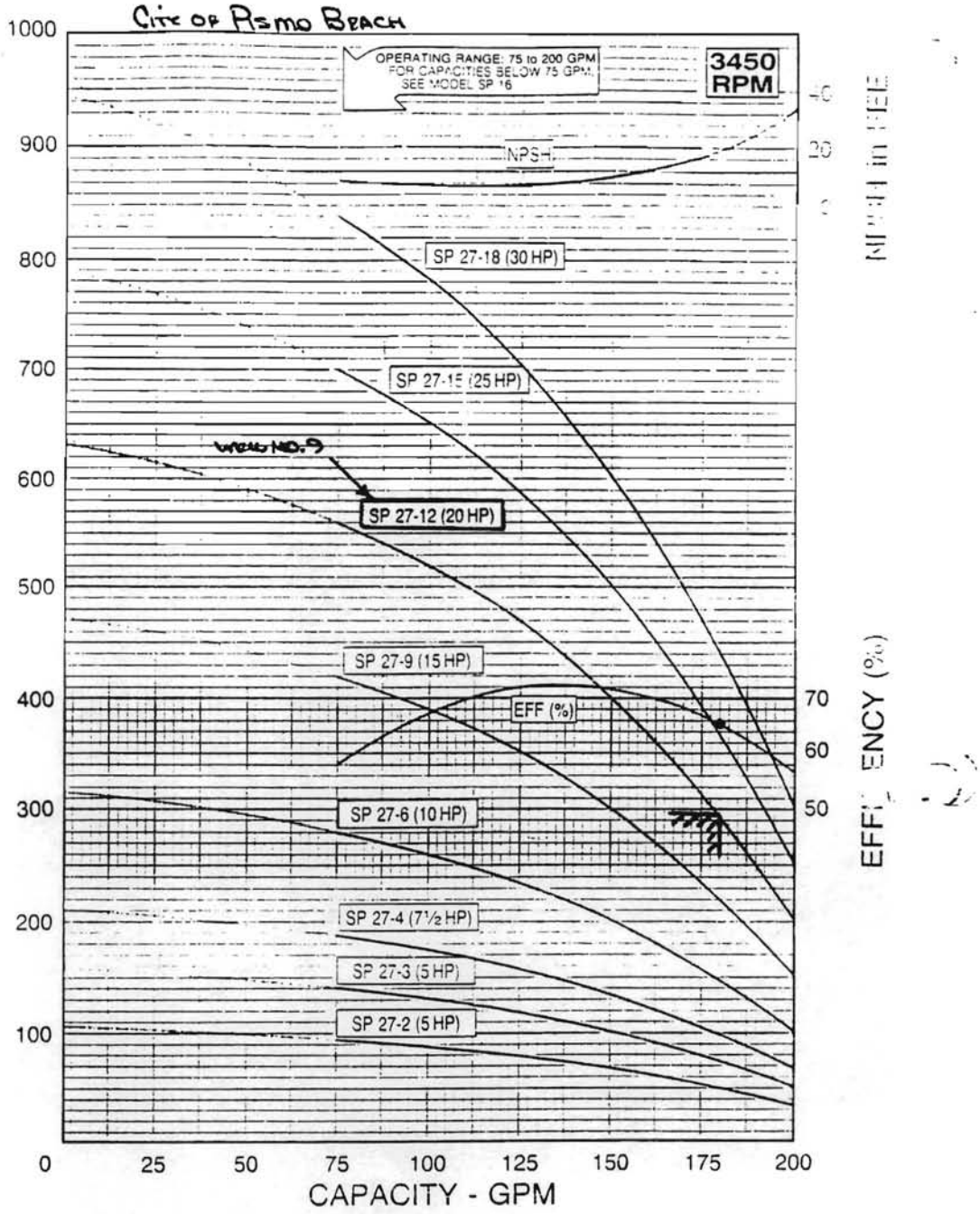
FOLD AT (—) TO FIT DRAWING BOARD ENVELOPE #EW9DW

MODEL SP 27

NOM. FLOW RATE
135 GPM
FLOW RANGE
75 to 200 GPM
PUMP OUTLET
3" NPT



Performance Curves



DIMENSIONS AND WEIGHTS

MODEL NO.	HP	MIN. WELL SIZE	LENGTH (L)	APPROX. UNIT SHIPPING WT. (LBS.)
SP 27-2	5①	6"	42½"	84
SP 27-3	5①	6"	47"	88
SP 27-4	7½	6"	51½"	146
SP 27-6	10	6"	59⅞"	167
SP 27-9	15	6"	73"	186
SP 27-12	20	6"	86¼"	225
SP 27-15	25	6"	99¼"	243
SP 27-18	30	6"	112⅜"	268

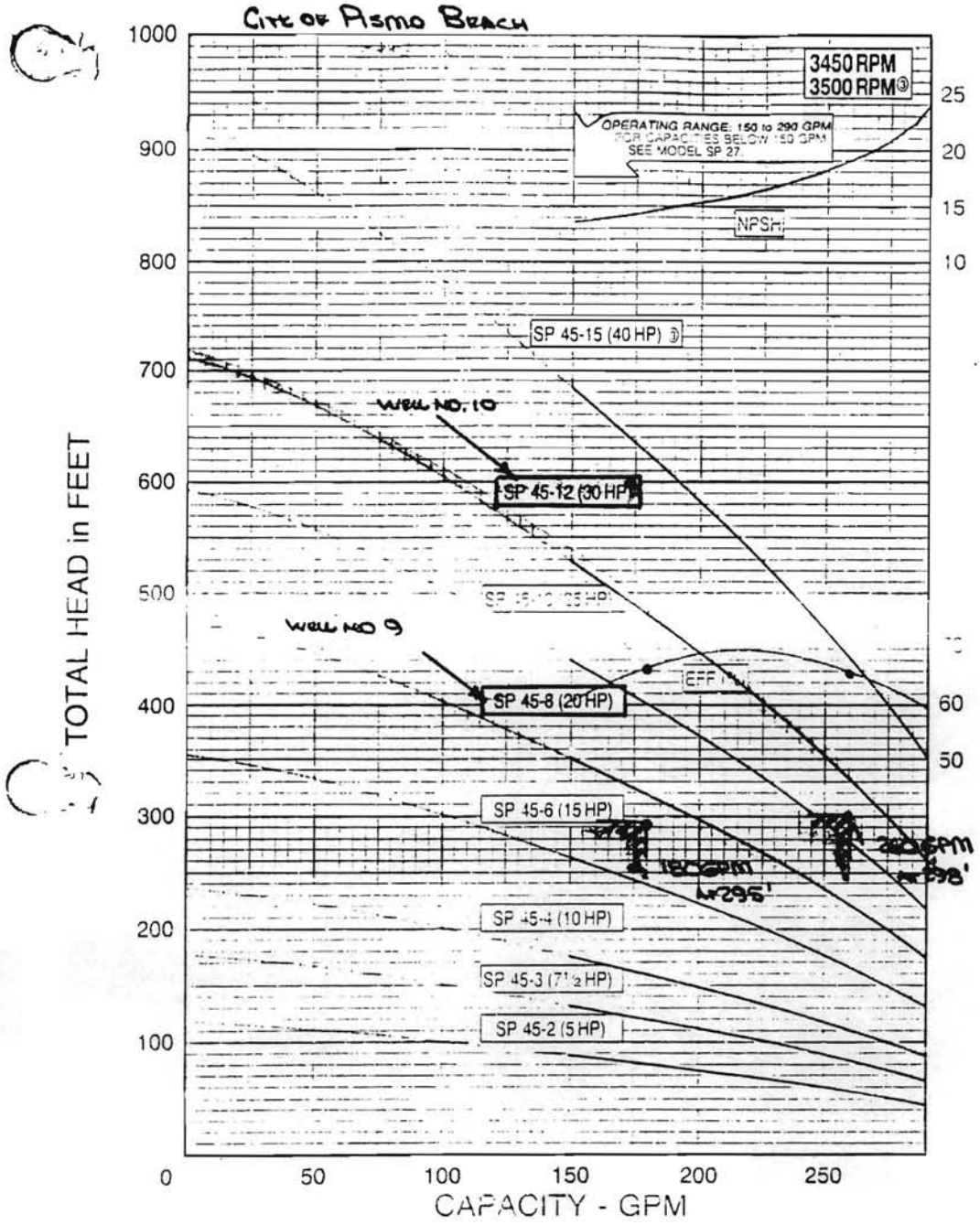
① 4 Inch Motor

Specifications are subject to change without notice

Performance Curves

MODEL SP 45

NOM. FLOW RATE
225 GPM
FLOW RANGE
150 to 290 GPM
PUMP OUTLET
3" NPT



DIMENSIONS AND WEIGHTS

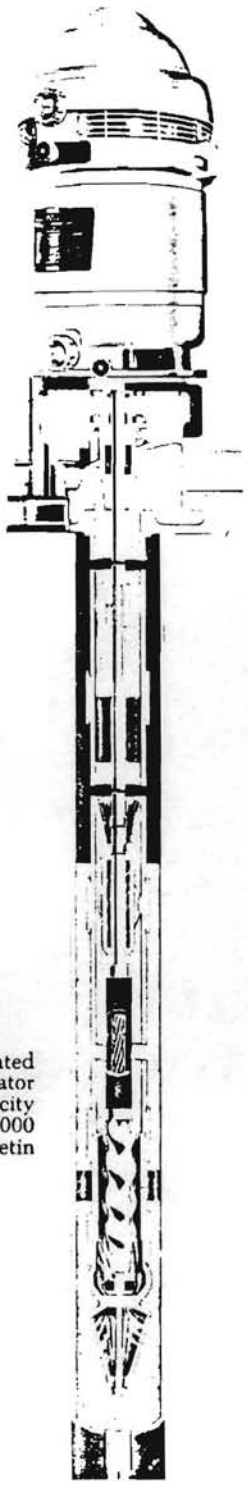
MODEL NO.	HP	MIN. WELL SIZE	LENGTH (L)	APPROX. UNIT SHIPPING WT. (LBS.)
SP 45-2	5	6"	43¾"	86
SP 45-3	7½	6"	48½"	133
SP 45-4	10	6"	54⅜"	145
SP 45-6	15	6"	64¾"	174
SP 45-8	20	6"	75¼"	195
SP 45-10	25	6"	85⅝"	221
SP 45-12	30	6"	96⅛"	260
SP 45-15	40 ②	8"	114"	456

① 4 Inch Motor ② 8 Inch Motor

Specifications are subject to change without notice.

FMC

Peerless Pumps for Application in Water Lifting from Wells



POSITIVE DISPLACEMENT LINESHAFT PUMP
THE PEERLESS HI-LIFT

This pump employs a helical-contoured chrome-plated rotor rotating within a bi-helical contoured rubber stator to literally squeeze well water upward. It has a capacity range of 500 to 3300 gallons per hour, lifts up to 1000 feet plus surface pressures to 90 psi. Ask for Bulletin B-142.

DEEP WELL
SUBMERSIBLE PUMP
THE PEERLESS
SUBMERSIBLE

A wide selection of head-capacity ranges assures plenty of water from deep wells. Incorporates many of the same quality construction features found in the lineshaft turbine pump. Range: heads to 1000 feet, capacities to 3000 gpm, motors to 500 hp. Ask for Bulletin B-700.

PEERLESS™
horizontal and vertical centrifugal pumps

FMC Corporation
Pump Division 2005 Northwestern Avenue Indianapolis, Indiana 46208 (317) 925-9661
1200 Sycamore Street Montebello, California 90640 (213) 726-1232

Fifth Street Well

WE PULLED THE OLD PUMP
IT COULD HAVE BEEN REBUILT
BUT IT WAS RECOMMENDED THAT
WE COULD INSERT A NEW CASING
AND A SUBMERSIBL
WE MIGHT LOSE A LITTLE CAPACITY BUT WITH
THE NEW CASING AND THE MONTEREY SAND

THE EXACT SAME PROCEDURE

ARE THE FOLLOWING STATEMENTS TRUE

1. THERE WERE NO HOLES IN THE OLD CASING
(There was a hole)
2. SAND WAS NOT A PROBLEM WITH THE OLD WELL
(It was a problem)
June 3. TO SPEED UP GETTING THE WELL BACK IN
OPERATION IT WAS DECIDED TO PUT A NEW
CASING, PUMP AND SUBMERSIBLE MOTER IN
June 4 IT WAS EXPECTED THAT THE PUMPING
CAPACITY MIGHT BE REDUCED
June 5 IT WAS EXPECTED THAT THERE WOULD
BE LESS SAND THAN BEFORE BECAUSE
OF THE NEW CASING WITH MONTEREY SAND

WHAT HAPPENED
THE WELL WAS PUMPED WHEN FIRST
INSTALLED WITHOUT SAND PRODUCTION
NOW ITS PUMPING SAND (Something changed)

FY 85-86 LOPEZ AND BASIN WATER ~~PROD~~ DELIVERIES

4/95/886 — Lopez to date →

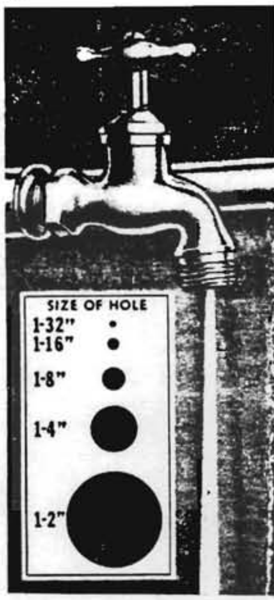
240 used Lopez

274 af avail.

	JULY	AUG.	SEPT.	OCT.	NOV.	DEC.	JAN.	FEB.	MAR.	APR.	MAY	JUNE		
LOPEZ Entitle.	118.43	96.25	127.7	128.4	100 [illegible]	100 [illegible]	Ø [illegible]	Ø [illegible]	68.5 [illegible]	68.5 [illegible]	[illegible]	[illegible]	[illegible] a.f.	985 avail 11+3 - 471 514.0c
Cum. Subtotal →				470.78			20	20	[illegible] a.f.		38.0	Ø		
							shell Beach							
AG BASIN	43.02	51.77	14.65	Ø	Ø	Ø	70 ~~90~~	70 ~~10~~	41.5	46.5	71.5	81.5		
							[illegible] / [illegible]							
LOPEZ SURPLUS fall = 95af/12 = 4af/											30.5	68.5	99.0 a.f.	
SAN LUIS HILLS														
DEMAND	164.46	148.02	142.35	128.40	100	100	90	90	110	115	140	150	1,475.00	

515 (MAR.–JUNE)

580.23 a.f. (JULY–OCT.) | 895.00 a.f. (NOV.–JUNE)



STOP WASTE!

Do not let water run to waste. It costs money. If your water bill seems large investigate your pipes, faucets and toilets for leaks and stop them at once. It will save you money.

At ordinary city pressure (40 to 60 lbs. per sq. in.) the amount of water that will pass through holes of the sizes given in the following table at 50c per 1000 gallons will waste the amount of water and cost approximately the amount given in the following table:

Size of hole	Gallons per hour		Cost per month	
1-32"	10.02		$ 3.61	0.77 AF/YR.
1-16"	40.08		14.43	
1-8"	160.52		57.79	4.32 AF/YR
1-4"	641.28	24 hrs.	230.86	
1-2"	2565.12	61560.	923.44	68.96 AF/YR.

Parks
REC
Ranger Trail 6?9-8655

(OVER)

STATE OF CALIFORNIA—HEALTH AND WELFARE AGENCY GEORGE DEUKMEJIAN, Governor

DEPARTMENT OF HEALTH SERVICES
714/744 P STREET
SACRAMENTO, CA 95814

January 4, 1985

To: All Large Public Water Systems

TANK COATINGS

In 1982, we alerted you of our concerns regarding possible organic chemical contamination resulting from improper selection, application, and use of coatings for water storage facilities. At that time we suggested special precautions to be taken to minimize the hazards of this problem. Our experience has revealed that in many cases, organic chemical contaminants (i.e., TCE, PCE) leached from the coating material, exceed State action levels. When this occurs, we will not allow the storage facility to be placed into service until the contaminated levels are reduced to below the action level.

To verify the concentration of any organic chemical contaminant, the following actions shall be required whenever a storage facility is coated:

1. Following a seven day soaking period, the water in the tank shall be sampled to determine the presence of any leached organic chemicals. Samples of the water shall be analyzed by a laboratory certified by the State Department of Health Services for the presence of any volatile organics;

2. A report of the test results must be sent to our district office for evaluation and approval before delivering water from the tank to consumers.

Since it is difficult to correct coating problems after they are discovered, considerable care should be exercised in the selection and application of coating materials. Some of the important precautions to be considered are indicated below for your guidance:

1. Whenever a tank is proposed to be coated, you should contact our district office regarding the proposal. Although we have no authority to approve proprietary products, we may be able to advise you of additional precautions to be taken for certain coatings. This could help you avoid some problems later;

2. Only experienced and competent applicators should be employed to apply the coatings. The coating manufacturer's application recommendations must be closely followed, especially the curing ventilation and curing time. Whenever forced air ventilation is recommended, it should be used for proper curing. Air should be drawnout from the lowest part of the tank since the volatile organic vapors are heavier than air. If there is any

FLOYD V. WELLS, INC.
"Depend on Wells for Water"
1337 WEST BETTERAVIA ROAD
SANTA MARIA, CALIFORNIA 93455
(805) 925-8626
CALIFORNIA LICENSE NO. C57-229670

QUOTATION --- ORDER FORM

File 8th Street Well

Date August 28, 1985

TO City Of Pismo Beach Attn: Pat Mills
1000 Bello Street
Pismo Beach, CA 93449

DESCRIPTION 100HP V.T. Pump Repair - Budget Estimate
14" Dia. Well - 500' Deep
Equipment Installed In New Well Sept. 1973/370'Pump Setting: 8"x2½"x1½"

		Selling Price
	LABOR ESTIMATE:	
A)	Move-In, Pull Pump, Check Well Depth	
B)	Inspect Equipment For Repair, Disassemble Bowls	
C)	Re-Install Unit, Start, Check	
		$ 2,110.0
	MATERIAL ESTIMATE:	
D)	Complete Inner Column 20' Sections 2⅓x1⅓ - 370'	
E)	Column Pipe 8"x20' Lont T&C - 60'	
F)	Rebuild Bowl Assembly To New Mech. Tolerances 12"-9Stage Unit	
		$ 8,808.0
	TOTAL BUDGET ESTIMATE:	$ 10,918.0

Normal procedure is to pull the pump, inspect the components, firm up final pricing, and proceed with the repair.
Our material portion will be reduced if lesser repairs can be made.

Budget Estimate Only - Firm Pricing Later After Removal And Inspection Of Unit.

I/We agree to pay this account within 30 days after billing. In the event I/We fail to pay said account on or before said date, I/We agree to pay any collection costs, including attorney's fees incurred by you plus service charges on the amount due at the rate of 1½% per month.

Warrantee Conditions: New pumps are under a one-year factory warrantee from date of installation by Floyd V. Wells, Inc. Labor not included unless proved to be the result of poor workmanship of Floyd V. Wells, Inc.

FLOYD V. WELLS, INC.

By Rob Thomas

Accepted by _____

337 WEST BETTERAVIA ROAD
P.O. BOX 1007
SANTA MARIA, CALIFORNIA, 93454
(805) 925-8626

5788 DAWSON AVE.
GOLETA, CALIF.
(805) 967-4124

Repair Order
Invoice
Floyd V. Wells, Inc.

No. 1527

Date Sept, 1973

Name City of Pismo Beach

Address 1000 Bello Street, Pismao Beach 93449

Bus. Phone _____ Res. Phone _____ Cust. Order No. _____

INSTRUCTIONS	MATERIAL USED		
Install new pump 100 HP	Per Contract	11,950	00
	See Attached Material List		

PUMP DATA

SIZE WELL	14" ID
DEPTH WELL	500'
PUMP MAKE	Peerless
PUMP SIZE	8" X 2½" Ø1½"
SER. No. PUMP	
PUMP SETTING	370'
No. Ft. SUCTION	10'
No. BOWLS	9 SIZE 12" X 9'
STANDING LEVEL	45'

REMARKS

Impeller #2623849

Impeller Diameter 9 1/32 X 9 1/8

Curve 2840985

Sublet Repair				
			Mdse. and Materials	
			Labor	
			Sublet Repair	
			Sub-Total	
Total			Sales Tax	
			TOTAL AMOUNT	$11,950 00

SIGNED
BY _____

KEN VERTREES, PRINTER - SANTA MARIA

PLEASE PRINT OR TYPE

Form Approved O.M.B. 2000-0139
Expire 04-30-86

QUALITY CONTROL SAMPLE REQUEST

Name _____ Telephone _____
Company _____
Laboratory _____
Street Address _____
City _____ State _____ Zip Code _____
Approval of Laboratory Director _____

Check Programs for which samples are requested: |__| Ambient Monitoring |__| Superfund (CERCLA)
|__| Drinking Water |__| Wastewater |__| Toxics (TSCA) |__| Solid Waste/Hazardous Wastes (RCRA)

WATER QUALITY/WATER POLLUTION SAMPLES

_____ Demand
EPA/API Reference Oils
_____ Arabian Light Crude
_____ Prudhoe Bay Crude
_____ South Louisiana Crude
_____ No. 2 Fuel (high arom.)
_____ No. 6 Fuel (high visc.)
Bunker C
_____ LAS
_____ Mineral
_____ Mun. Digested Sludge
_____ Nutrients
_____ Oil & Grease
_____ Pesticides in Fish
_____ Phenols (4AAP Method)
_____ Residues
_____ Other _____
_____ Other _____

PCBs in Oils
_____ Aro. 1016 in Capac.
_____ Aro. 1016 in Hydraul.
_____ Aro. 1016 in Trans.
_____ Aro. 1242 in Capac.
_____ Aro. 1242 in Hydraul.
_____ Aro. 1242 in Trans.
_____ Aro. 1254 in Capac.
_____ Aro. 1254 in Hydraul.
_____ Aro. 1254 in Trans.
_____ Aro. 1260 in Capac.
_____ Aro. 1260 in Hydraul.
_____ Aro. 1260 in Trans.
_____ Trace Metals WP - I
_____ Trace Metals WP - II
_____ Trace Metals WP - III
_____ Trace Metals in Fish
_____ Volatile Organics

WATER SUPPLY SAMPLES

_____ WS Corrosivity/Sodium
_____ WS Herbicides
_____ WS Nitrate/Fluoride
_____ WS Chl. Hyd. Pest. I
_____ WS Chl. Hyd. Pest. II
_____ WS Res. Free Chlorine
_____ WS Temik
_____ WS Trace Metals
_____ WS Trihalomethanes
_____ WS Turbidity
_____ Other _____
_____ Other _____

PRIORITY POLLUTANTS/HAZARDOUS WASTES/TOXIC CHEMICALS

_____ n-Alkanes
_____ Aromatic Purgeables
_____ Chlorinated Hydrocarbons
_____ Chl. Hyd. Pest. WP - II
_____ Chl. Hyd. Pest. WP - III
_____ Cyanide
_____ Dichlorobenzenes
_____ EP Metals
_____ GC/MS Acids
_____ GC/MS Base Neutrals - I
_____ GC/MS Base Neutrals - II
_____ GC/MS Base Neutrals - III
_____ GC/MS Pesticides - II

_____ GC/MS Purgeables - I
_____ GC/MS Purgeables - II
_____ GC/MS Purgeables - III
_____ GC/MS Purgeables - IV
_____ Other _____

_____ Haloethers
_____ Halo. Purgeables - I
_____ Nitroaro. & Isophorone
PCBs (specific Aroclors)
_____ Aroclor 1016
_____ Aroclor 1221
_____ Aroclor 1232
_____ Aroclor 1242
_____ Aroclor 1248
_____ Aroclor 1254
_____ Aroclor 1260
_____ Aroclor 1262
_____ Phenols (GC)

_____ Phthalate Esters
_____ Polynuclear Aromatics I
_____ Polynuclear Aromatics II
_____ Polynuclear Aro. SRM 1647
_____ Other _____

BIOLOGICAL SAMPLES

_____ Algae for Identific.
Bacteria Indicator Strains
_____ _____. _____
_____ _____. _____
_____ Chlorophyll Fluoro.
_____ Chlorophyll Spectro.
_____ Phytoplankton
Reference Toxicants
_____ Sod. Dodecyl Sulfate
_____ Sod. Pentachlorophen.
_____ Cadmium Chloride
_____ Simulated Plankton
_____ Other _____

_____ Other _____

==========

DATE REQUESTED: _____ DATE SHIPPED: _____

EPA-360 (Cin) (Rev. 6/83, Pt. 1)

PACIFIC GAS AND ELECTRIC COMPANY

PG&E

406 HIGUERA • BOX 592 • SAN LUIS OBISPO, CALIFORNIA 93406 • (805) 544-3334

D. L. KENNADY
DISTRICT MANAGER

Please File into 8th St. Grover Well file - Thanks.
Pat

March 10, 1986

Mr. Pat Mills
City of Pismo Beach
1000 Bello
Pismo Beach, CA 93449

Dear Mr. Mills:

The attached pump test report reflects valuable information gathered during our recent field test. Please evaluate the results carefully by comparing them to previous test results and with pump manufacturers' data to gain a more complete picture of your pump's performance. We suggest that you discuss these results with your pump dealer, who will be able to interpret the results for your particular pumping location.

A Pumping Plant Efficiency Comparison Report will be generated if the overall plant efficiency of your pump is found to be low and we were able to obtain all required information. This comparison report will illustrate potential energy and dollar savings that can be achieved if the pump efficiency is improved.

The obvious objective in having your pump tested is to ensure that you are getting the most water for your energy dollar. The best figure on the test to reflect this is kilowatt hours per acre-foot of water pumped(kwh/ac. ft.). Keeping this number as low as possible while still getting the proper amount of water needed is the overall objective. Many factors can affect this figure, so when comparing it to previous tests consider the following:

1. The efficiency shown is for the conditions under which the pump was operated on the day of the test.

2. Efficiency and GPM may vary as operating pressure changes. Be sure to compare the test to normal operating conditions.

3. Efficiency and GPM may vary as water tables fluctuate with the season and rainfall amounts.

4. Pumping water level may change according to the length of time the pump has run.

5. Efficiency may be lower or higher if the pump is not being operated under the conditions for which it was designed. Check with you pump dealer and compare the design conditions to today's normal operating condition.

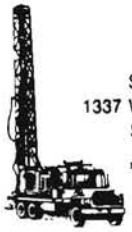
Your pump test report is a valuable piece of information. If you would like further assistance in interpreting test results or would like me to meet with you and your pump dealer, please feel free to contact me at (805) 546-8651.

Sincerely,

Russ Cracknell
Pump Test Engineer

RC:sl
931.1
Enclosure

FLOYD V. WELLS, INC.
Licensed Water Well Drilling Contractor
PUMP SALES AND SERVICE
(805) 925-8626
SANTA BARBARA — ZENITH 27726
1337 W. BETTERAVIA ROAD P.O. BOX 1007
SANTA MARIA, CALIFORNIA 93456
ROB THOMPSON



FLOYD V. WELLS INC.
1337 W. BETTERAVIA RD.
SANTA MARIA, CA 93455

(805) 925-8626

File - Well #5

TO Gabbins, Taylor & Assoc. Engrs.
Attn: Jim Gabbins

DATE 12-15-86

SUBJECT Pismo Wells, 8th Street

RECEIVED
DEC 16 1986
CITY OF PISMO BEACH
PUBLIC SERVICES

Jim,

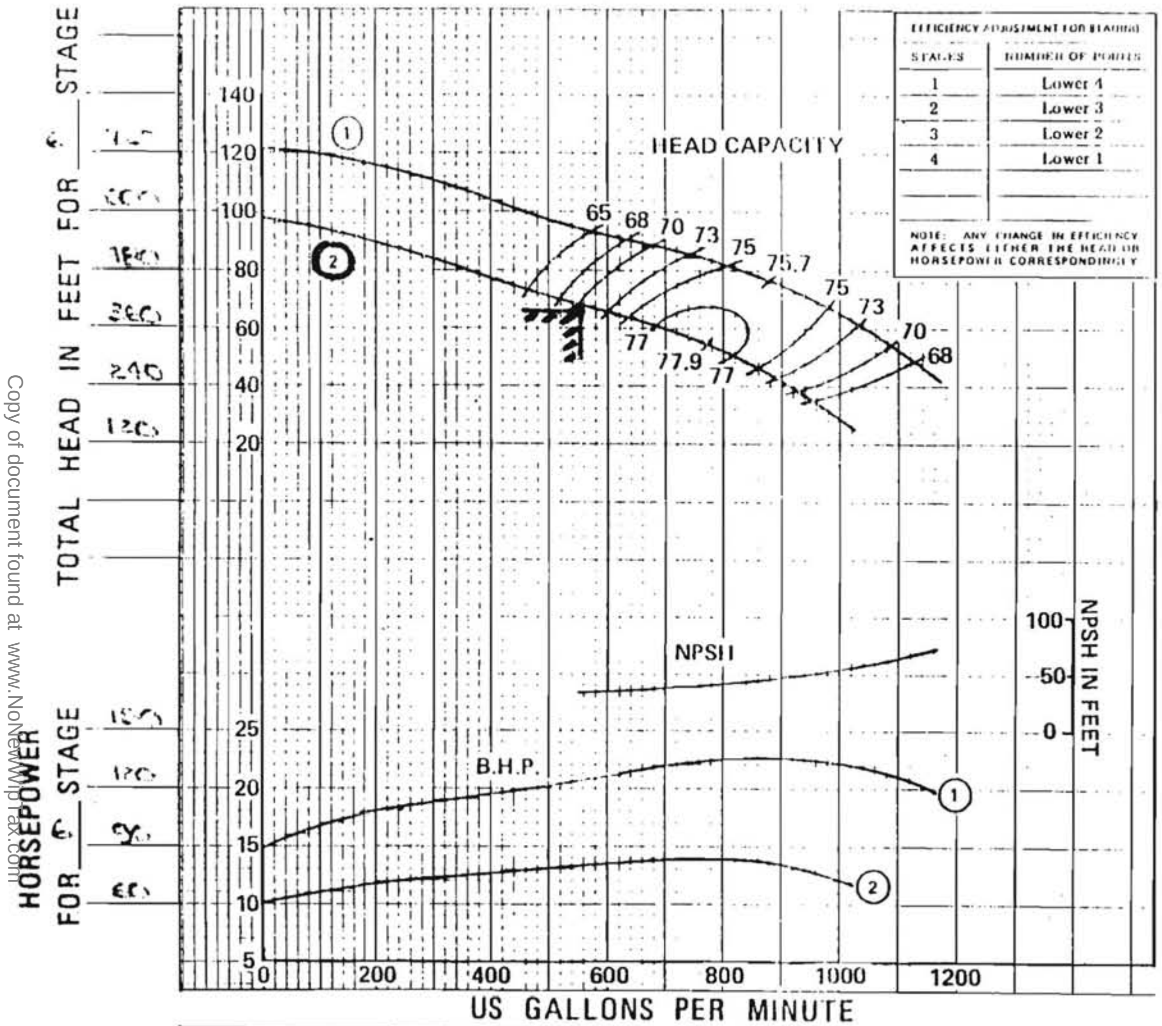
Pumping Test Data has not been absolutely conclusive. Due to the importance of the well to the City, I would suggest shutting down immediately and pulling the unit for inspection. If there is a high pressure jetting action downhole PVC casing damage could result.

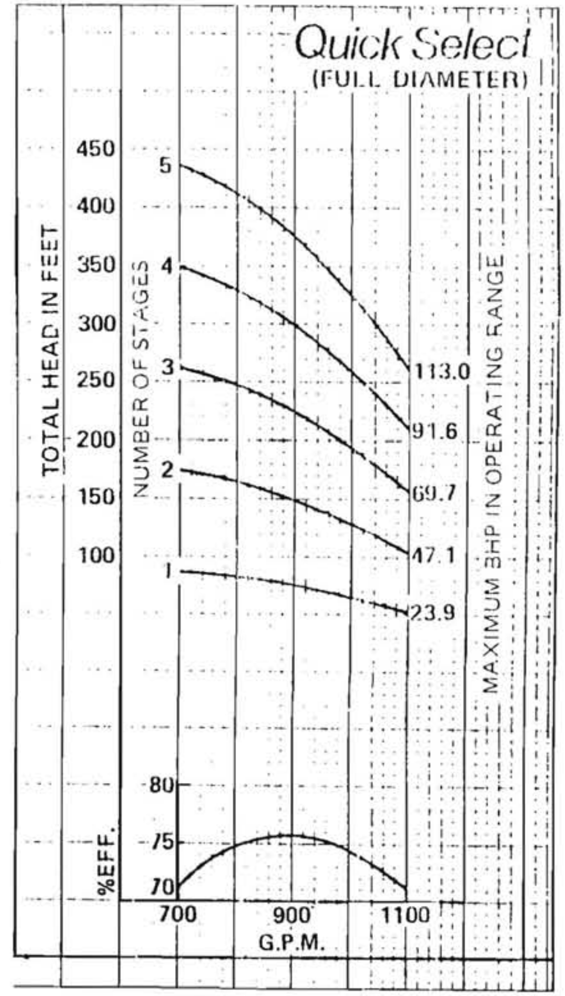
Performance Curve Attached.

Rob Thompson

cc: Pat Mills - Pismo
Hal Hallorin - Pismo

FOLD AT ... TO FIT DRAWING BOARD ENVELOPE (FLAT)





Peerless Pump

SUBMERSIBLE TURBINE PUMPS

HYDRAULIC PERFORMANCE WARRANTY	CURVE NO.	IMPELLER NO.	IMPELLER DIA	TAKEN FROM
Guaranteed at designated point only, and contingent on:	1	2616348	5-3/16" x 6"	55684
Proper flow to pump suction Proper submergence Fluid free of gas, air & abrasives	2	2616348	4-13/16" x 5-5/8"	55745

Submersible motors are rated for operation in water to 86°F (30°C) maximum. Adequate cooling flow past the motor is required when the pump is running.

Customer Hemo Beach

Item Well #5 - 8th Street [illegible] City

Peerless Ref. No:

Laboratory Performance		BOWL 2616346 CIE
SIZE 8HXB	RPM 3460	CURVE 4806066R

PUMP DESCRIPTION: Motor 100 HP Hitachi; Surface Plate 14"x6"; Drop Pipe 6"

GUARANTEED BOWL ☐ FIELD ☐ PERFORMANCE: Capacity [illegible] gpm; Head 400' ft; Eff [illegible] %; BHP 82

ESTIMATED

Section 740
10-84

File Well #5

QUOTATION --- ORDER FORM

FLOYD V. WELLS, INC.
"Depend on Wells for Water"
1337 WEST BETTERAVIA ROAD
SANTA MARIA, CALIFORNIA 93455
(805) 925-8626
CALIFORNIA LICENSE NO. C57-229570

Date May 23, 1986

TO City Of Pismo Beach

DESCRIPTION 8th Street Well Pump

	Estimate Of Repairs/ Re-Installation	Selling Price
A)	Move-In, Pull Pump, Take To Shop For Inspection/Repair	1,020.00
B)	Ship Pump To Fresno/ Peerless Facility	90.00
C)	Rewind/ Repair Motor (25 To 30 Days Turn Around Time)	3,660.00
D)	Option - New Motor	5,460.00
E)	Rebuild Bowl Assembly To New Mechanical Tolerances	2,132.00
F)	Install And Remove Test Pump To Attempt To Clean-Up Well - Estimated	2,900.00
G)	Test Pump Operating Time 12 Hrs. At $85/Hr.	1,020.00
H)	Install Submersible Unit	1,200.00

Total With Repaired Motor 30 Days Estimated Time -
$ 12,022.00

Total With New Motor 7 To 10 Days Estimated Time -
$ 13,822.00

* Directed Wells to proceed 5-28-86 DW

ESTIMATE ONLY - Actual Time And Material To Be Charged.
Pricing For Acceptance Within 30 Days.

I/We agree to pay this account within 30 days after billing. In the event I/We fail to pay said account on or before said date, I/We agree to pay any collection costs, including attorney's fees incurred by you plus service charges on the amount due at the rate of 1½% per month.

Warrantee Conditions: New pumps are under a one-year factory warrantee from date of installation by Floyd V. Wells, Inc. Labor not included unless proved to be the result of poor workmanship of Floyd V. Wells, Inc.

FLOYD V. WELLS, INC.

By _____

Accepted by _____

CONFERENCE MEMORANDUM

NATURE OF CONTACT

Person(s): Rob Thompson – Floyd Wells
Jim Casing – G&T.

Date: 5-28-86
Agency(s): HH, DW
Time: 8am

( ) Telephone
(✓) Meeting
Tele.#:
Location: City Hall.
Regarding:

REMARKS

→ material passed thru pump has caused problem

- Motor Burnt Out
- Pump worn unusually – sand thru pump
  - grey sand (gravel pack?)
  - montesay sand (formation)
- Impeller locked up
- Bearing wear

→ unit has been sent to Peerless (Manufacturer), has taken apart, the

- RT believes that the equipment was working properly
- JG – possibly a break in screen or lining
- ✱ motor worn out should have been covered by over load conditions
- HH – pump failure caused by unusual wear
- RT – possible control problem / start-up and down continuously

FOLLOW-UP

( ) Send Materials – $10,000 for new pump & motor when installed
( ) Awaiting Transmittal of:
( ) Future/Next Meeting Scheduled for:
( ) Contact will call back on:
( ) Return Call on:

- TV the casing
- check the controller
- secure quotes to refurbish / time
- check normal operation on pumps w/ Peerless

(– 5,460 – new
– 3,660 – motor redo
– 2132 – bowl)

PACIFIC GAS AND ELECTRIC COMPANY

PG&E

406 HIGUERA • BOX 592 • SAN LUIS OBISPO, CALIFORNIA 93406 • (805) 544-3334

DON KENNADY
DIVISION MANAGER

December 8, 1986

Mr. Pat Mills
City of Pismo Beach
1000 Bello Street
Pismo Beach, CA 93449

Dear Mr. Mills:

The attached pump test report reflects valuable information gathered during our recent field test. Please evaluate the results carefully by comparing them to previous test results and with pump manufacturers' data to gain a more complete picture of your pump's performance. We suggest that you discuss these results with your pump dealer, who will be able to interpret the results for your particular pumping location.

A Pumping Plant Efficiency Comparison Report will be generated if the overall plant efficiency of your pump is found to be low and we were able to obtain all required information. This comparison report will illustrate potential energy and dollar savings that can be achieved if the pump efficiency is improved.

The obvious objective in having your pump tested is to insure that you are getting the most water for your energy dollar. The best figure on the test to reflect this is kilowatt hours per acre-foot of water pumped (kwh/ac.ft.). Keeping this number as low as possible while still getting the proper amount of water needed is the overall objective. Many factors can affect this figure, so when comparing it to previous tests consider the following:

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5. Efficiency may be lower or higher if the pump is not being operated under the conditions for which it was designed. Check with your pump dealer and compare the design conditions to today's normal operating condition.

Your pump test report is a valuable piece of information. If you would like further assistance in interpreting test results or would like me to meet with you and your pump dealer, please feel free to contact me at (805) 546-8651.

Sincerely,

Russell C. Cracknell
Pump Test Engineer

RCC(665-5522):nss
931.1:AG1

Enclosure

PACIFIC GAS AND ELECTRIC COMPANY

PG&E

406 HIGUERA • BOX 592 • SAN LUIS OBISPO, CALIFORNIA 93406 - (805) 544-3334

DON KENNADY
DIVISION MANAGER

November 3, 1986

Mr. Pat Mills
City of Pismo Beach
1000 Bello Street
Pismo Beach, CA 93449

Dear Mr. Mills:

The attached pump test report reflects valuable information gathered during our recent field test. Please evaluate the results carefully by comparing them to previous test results and with pump manufacturers' data to gain a more complete picture of your pump's performance. We suggest that you discuss these results with your pump dealer, who will be able to interpret the results for your particular pumping location.

A Pumping Plant Efficiency Comparison Report will be generated if the overall plant efficiency of your pump is found to be low and we were able to obtain all required information. This comparison report will illustrate potential energy and dollar savings that can be achieved if the pump efficiency is improved.

The obvious objective in having your pump tested is to insure that you are getting the most water for your energy dollar. The best figure on the test to reflect this is kilowatt hours per acre-foot of water pumped (kwh/ac.ft.). Keeping this number as low as possible while still getting the proper amount of water needed is the overall objective. Many factors can affect this figure, so when comparing it to previous tests consider the following:

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Your pump test report is a valuable piece of information. If you would like further assistance in interpreting test results or would like me to meet with you and your pump dealer, please feel free to contact me at (805) 546-8651.

Sincerely,

Russell C. Cracknell
Pump Test Engineer

RCC(665-522):nss
931.1

Enclosure

Baywood Park well springs sand leak

By Gary Taylor
Telegram-Tribune

Upward of 10,000 Baywood Park residents have been forced to reduce their water use 10 percent because of a major "sand leak" in a well.

The leak at the 232-foot deep County Service Area-9 well is so severe that it continues to dump more than 15 feet of sand per hour in the well when it is pumping, making it unusable, said Hal Wilkinson, county hydraulic operations engineer.

In the meantime, Los Osos residents affected by the loss of water from the 130,000 gallon-per-minute well must continue to reduce consumption for at least another week, Wilkinson said.

The leak, first detected by engineers five days before the well was closed May 23, appears to have seriously eroded the well's quarter-inch steel casing, he said.

"We lowered a television camera into the well to photograph the casing earlier this week," Wilkinson said. "The photos aren't very clear because the well is so encrusted with debris, but as far as we can tell, the erosion appears to be quite serious."

The photos did not pinpoint the exact location of the leak. As a result, engineers unable to isolate a single rupture were forced to clean the entire casing from top to bottom.

Although the cleaning did not reveal the source of the leak, engineers at the site were able to determine that the flow of sand into the well was "more significant and more rapid than we had originally thought," Wilkinson said.

"Less than one hour after the cleaning, more than 15 feet of sand had accumulated in the well," he said.

"That's an awful lot of sand to be flowing into any well at any time."

Though there is no quick way to repair the well casing, Wilkinson said engineers are considering two options: inserting a smaller new steel casing inside the existing casing or abandoning the well and drilling a new one.

Both options are expensive, Wilkinson said.

"If we insert a new casing, it would cost about $7,500," he said. "If we drill a new well, it would cost anywhere from $12,000 to $14,000. Either way, it's going to cost a lot of money."

The county has already spent $1,500 trying to find the source of the leak, Wilkinson said.

Before the county approves either option, engineers will lower the television camera into the well at least once more early next week in another attempt to find the leak, Wilkinson said.

If engineers are unable to determine where the leak is, Wilkinson said the engineering department "will probably recommend a new casing or a new well" as a solution.

GROVER WELL #5

167 South 8th St. Installed in 1973 by Floyd Wells Inc.
55' above sea level

Motor - 100 HP
230/460 Volts
60 Cycle
3 phase
1775 RPM

Pump - 750 GPM/ft HD 550
6x8x16½ Discharge Head
Peerless Pump
6" Inlet-Outlet on desander

Well - 500 Ft. Deep
28" Bore
14" Casing
15 Stage
6" Suction Pipe/6" Discharge
Top of Motor to Strainer 402' 10 7/8"

July 10, 1981 Standing level 57'
Draw Down to 143'

Goes up 8th St. to Grover City Tank then through 5 Cities area to Bello St. Tank

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Top of Motor to Strainer 402' 10 7/8"

July 10, 1981 Standing level 57'
Draw Down to 143'

Goes up 8th St. to Grover City Tank then through 5 Cities area to Bello St. Tank

Dave - I believe Gu is going ahead

DW

Hal

File Well #5

M E M O R A N D U M

DATE: APRIL 21, 1986

TO: DAVE WATSON

FROM: HAL HALLDIN

RE: STANDBY WELL AND NITRATE TREATMENT PLANT

The city plans to construct a standby well in the Arroyo Grande acquifer. The wells can be drilled into the shallow or deep acquifer.

The present city well is in the deeper acquifer where the water does not have to be treated except for chlorine to make it potable. However, the water is considered hard and corrosive. City water mains have to be flushed more often when this well water is used.

Water from the shallower acquifer is the best quality water available except for nitrates which can be removed with a treatment plant. The reduction in the shallower well cost, reduced pumping cost and reduced maintenance cost to obtain better water may offset or partially offset the cost of the treatment plant to remove the nitrates.

It is even possible grants or low interest loans may be available for this purpose. If grants are available, the City should definitely construct a standby well and a nitrate removal plant. In fact, this well should then be considered the primary well because it produces better water cheaper. The deeper well can then serve as the standby well.

There are two other reasons the shallower acquifer should be used.

First, the shallower acquifer is more likely to be recharged from Lopez Lake down stream releases. Second, it is possible the high concentration of nitrate water will be removed by the wells and be diluted by the recharge water so that nitrate treatment is no longer necessary. There was a time many years ago when the nitrate levels of the water were very low. Then, due to sewage disposal into the ground and farm fertilization the nitrates rose to an unacceptable level. The nitrate level has dropped considerably for two reasons. Sewage effluent is transported to an ocean outfall and urban development has replaced farmland that was formerly irrigated and fertilized.

The cities of Arroyo Grande and Grover City are considering the installation of nitrate removal plants and have invited Pismo Beach to consider it. The interest of the three cities might result in more favorable grants with assistance of our elected officials in Sacramento.

Hal Halldin

City Engineer

HH/af

Boyle Engineering Corporation

Suite 176
1300 East Shaw Avenue
Fresno, California 93710

consulting engineers / architects

209 / 222-8436

CITY OF GROVER CITY
Attn: Mr. Tom Sullivan
Community Development Director
154 South 8th Street
Grover City, CA 93433

April 7, 1986

State Super Fund

The State Super Fund is administered by the Toxics Substances Control Division of the State Department of Health Services in Sacramento. Mr. Stan Phillippe, Acting Chief of the Super Fund Unit (Tel: 916-324-2441) has recently expressed the possibility that some of the remaining funds might best be spent by giving grants to water utilities suffering from groundwater contamination problems, including those caused by agricultural, non-point, pollution sources.

Nitrate contamination of groundwater is the single biggest groundwater quality problem in California and the United States. Nitrate contamination has very significantly affected the unconfined groundwater aquifer in the Grover City, Arroyo Grande, Morro Bay and Oceano areas of San Luis Obispo County. The local agricultural activities, which may have caused this problem, are continuing.

Nitrate removal treatment is a very feasible approach in your particular area because of the close proximity to the Pacific Ocean. The ocean could serve as a source of salt for regenerating the treatment removal units and as disposal of the waste brine. In inland areas brine wastewater disposal is much more difficult and expensive.

I recommend that you attempt to initiate a meeting with State Assemblyman Seastrand and/or State Senator Maddy to discuss the feasibility of securing State Super Fund moneys for the construction nitrate removal treatment plants in Grover City, Arroyo Grande, Pismo Beach and perhaps Oceano, thus solving a regional groundwater problem. This would free a certain amount of treated surface water currently used for nitrate blending. I would estimate that each of the four communities might need up to one million dollars for constructing a 2 mgd treatment plant in each community.

Ernie Kartinen and I contacted the City of Arroyo Grande and Oceano C.S.D. after leaving your office. Arroyo Grande was interested but Oceano was not. Oceano volunteered however to extend you their strong support for such funds.

If you are interested in arranging such a meeting with either Mr. Seastrand or Mr. Maddy you might also want to invite the Health Officer of San Luis Obispo. I also would be most happy to attend.

I feel that an inquiry as to availability of grants through California Super Fund would carry more weight if it came from the elected official representing the whole regional problem area of Grover City, Pismo Beach, Arroyo Grande and Oceano.

Please call me if you have any questions or if I can be of any assistance. I think it is important to move rather quickly on this matter.

BOYLE ENGINEERING CORPORATION

Gunter A. Redlin

Gunter A. Redlin, P. E.

cc: Ernie Kartinen

BK-B99-197-00

Boyle Engineering Corporation

2601 F Street
P.O. Box 670
Bakersfield, California 93302

Consulting Engineers · Architects

805 / 325-7253

CITY OF GROVER CITY
P.O. Box 365
Grover City, CA 93433

March 31, 1986

Attention Mr. Tom Sullivan

Proposal to Study Costs and Feasibility
of Nitrate Removal from Municipal Wells

Boyle Engineering Corporation is pleased to submit this proposal for the preparation of a report regarding the feasibility and costs for the design, construction and operation of a nitrate removal plant. The proposed plant would treat water from existing City owned wells. Our firm is the leader in this field having performed the research, design, and operation of a 1 mgd prototype nitrate removal plant in McFarland, California.

The nitrate removal process proposed is based on ion exchange. The nitrate and other ions in the source water are exchanged for chloride ions as the water passes through vessels filled with one of several types of resin. The treatment process depends on the concentration of nitrate and other ions in the source water, the volume and type of resin, and other water quality factors. There is a finite ion exchange capacity available in any particular ion exchange column. When this capacity is exhausted, nitrate "breakthrough" takes place.

Prior to breakthrough, the ion exchange column is taken out of service and regenerated, usually using a brine (salt) solution. As the salt solution flows through the resin bed, the chloride ions in the brine displace the nitrate ions on the resin. The nitrate rich product is discharged to waste.

The above is a very brief and simplified description of the nitrate removal process. The sizing of equipment, selection of resin type, the frequency of regeneration, the amount of salt required, the quantity and quality of wastewater and other factors all impact the feasibility and total system costs. Therefore, the costs for constructing, operating, and maintaining a nitrate removal plant must be studied in detail. This proposal addresses preparation of such a study.

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As discussed in our meeting on March 6, 1986, the proposed study will consider the nitrate removal plant as a "stand alone" facility. Using data supplied by the City, we will prepare a preliminary process design which will include;

- Estimates of quantity and quality of the raw untreated well water that will be delivered to the proposed plant for treatment.
- Quantity and quality of treated water discharged from the plant will be estimated.
- Quantity and quality of wastewater discharged from the plant will be estimated and methods of disposal identified.
- Pressure drop through the plant will be estimated along with plant regeneration cycle times.

The City and its engineer would then use this information to determine how to best incorporate the plant into the water system. For example, the treated water will have a nitrate concentration less than the maximum allowable. Blending of the treated with untreated water may be desirable to minimize treatment costs. Where and how to blend, if desired, requires detailed analysis and knowledge of the City's water system. There will be a pressure drop through the plant. Is a system booster pump required and, if so, where will it be located; ahead or following the plant?

The following specific tasks would be involved in the study.

1. Raw Water Quality and Quantity

Data on the quantity and quality of the water from the supply wells will be compiled and studied to determine treatability. Changes which may affect various process parameters and operational costs will be identified.

2. Water Treatability Study

A water treatability study will be made based on the analysis of the chemical characteristics of the source water. Estimates will be made of the amount of water which can be treated per service cycle and the amount of salt required for regeneration. Estimates of the changes in water quality resulting from treatment by this process will also be made. Breakthrough curves will be estimated

using computer programs developed by Boyle to determine and demonstrate changes in water quality as treatment occurs. From this data, quantity and quality of the wastewater will be estimated. These studies will also assist in determining the type and quantity of ion exchange resin used in the process. Other process characteristics will also be estimated which will influence operation and costs such as brine recirculation, resin declassification, sizing of vessels and piping requirement.

3. Waste Disposal

As noted above, the quantity and quality of wastewater generated by the nitrate plant will be estimated. At this time, discharge into the community sewer system to the local wastewater treatment plant is anticipated to be the waste disposal method used.

4. Cost Estimates

Preliminary cost estimates for the design and construction of the nitrate removal plant will be prepared. Operation and maintenance costs will be estimated.

5. Report Preparation

A report will be prepared presenting the above data and information. The report will include:

- An analysis of water quality data as it relates to feasibility and operation of a nitrate removal facility at the selected well site.
- A description of the proposed process including estimates of the quantities and qualities of the product water and waste streams.
- An estimate of the capital cost for construction of a plant.
- An estimate of the operation and maintenance costs of the plant.

Preparation of a draft of the report will take about two months. We suggest that the City review the draft report and then after review comments are received we will finalize the report. The final report will include the comments and questions stemming from the review. The final report will be finished two weeks after the review process is completed.

We propose that the work be done in our Bakersfield office by Dr. Gerry Guter (resume attached) under the project management direction of Mr. Ernest Kartinen, Jr. One meeting will be necessary during review of the draft report at the City offices.

We will request the City to provide us with copies of previous water quality analyses and to have samples taken and analyzed. We will provide you with the parameters to be tested for in the source water. The City should also determine the design flowrate to be used in the analysis.

We propose to do the work described for a lump sum fee of $12,000 payable in two payments; 80% when the draft report is submitted and 20% upon delivery of the final report. This fee includes furnishing two (2) draft and fifteen (15) final copies of the report and one visit to the City to review the draft report with the City staff. If desired, we will also make a presentation to the City Council to discuss the final report. (To prepare this letter we have made two visits to the City during which data and background has been obtained relative to this nitrate removal plant proposal. This results in fewer visits to the City during report preparation.)

Some other tasks may arise during or as a result of this work. Possible tasks the City might wish us to participate in include review of the impact of the nitrate removal plant's waste discharge on the sewerage system and meeting and corresponding with funding agencies. These subjects were discussed briefly at our meeting. For tasks such as these, we propose that the City compensate us on an hourly "time and materials" basis per the attached fee schedule.

We look forward to working with you on this water supply project for the City. If you have any questions about this study proposal, please do not hesitate to contact me.

BOYLE ENGINEERING CORPORATION

Ernest O. Kartinen, Jr., PE
Principal Engineer

mgm

Enclosures

BK-B99-197-00

GERALD A. GUTER, Ph.D.
Principal Environmental Scientist

FIELDS of SPECIAL COMPETENCE	Chemical Process Design, Water Treatment Wastewater Treatment, Environmental Science, Environmental Impact Assessments Analytical Chemistry
EDUCATION	BS/Chemistry/Loras College/1948 Ph.D./Physical Organic Chemistry, Advanced Fundamental Chemical and Physiology/Iowa State University/1955
YEARS of EXPERIENCE	Joined Boyle 1972 - With Others 16 Years
PROFESSIONAL AFFILIATIONS	American Water Works Association American Chemical Society Division of Organic Chemistry Division of Physical Chemistry Division of Water and Wastewater Chemistry Water Pollution Control Federation

EXPERIENCE SUMMARY

For the past seven years Dr. Guter has done experimental research studies on nitrate and arsenic removal from water supplies for municipalities in the San Joaquin Valley. His innovative work resulted in a recent U.S. Patent and is now being supported by a research and demonstration grant at the McFarland Mutual Water Company. The grant involves research and pilot testing of ion exchange and membrane processes for eduction of nitrate and arsenic in well water. The grant approximates $600,000 and will run through 1985. This grant is unique in that it is the only one of its kind funded by EPA. Dr. Guter has also done research on removal of organics, boron and selenium.

For six years Dr. Guter was manager of the Department of Environmental Studies where he directed a staff of experts in the fields of planning, and natural and social science for environmental impact studies.

As Director of the multidisciplinary group, he was responsible for the completion of over one-hundred such studies and reports. These studies include a variety of projects such as private land developments, water storate reservoirs, and wastewater collection, treatment and disposal facilities for numerous water and sanitation districts.

1959 to 1972

Previously, Dr. Guter was employed at McDonnell-Douglas and Aerojet General Corporations where he participated in several programs relating to water and wastewater treatment, including reverse osmosis, electrodialysis, carbon absorption, electrochemical treatment, ammonia removal, zeolite regeneration, and actived carbon regeneration.

Dr. Guter was the program manager for over $1 million worth of contracts on desalination and advanced waste treatment. In this capacity, he was responsible for the management of all financial and technical aspects of these R & D programs.

The following is a list of federally funded projects for which Dr. Guter acted as Principal Investigator or Program Manager during this time:

Client	
OSW	Research on Porous Glass Membranes
NASA-OSW	Research on Porous Glass Membranes
OSW	Investigation of Inorganic Ion Exchange Membranes for Electrodialysis Application
OSW	In-Situ Formation of Regenerative Cellulose Acetate Membranes on Porous Tubular Supports
OSW	In-Situ Regenerable Membranes for Reverse Osmosis
OSW	Development of Design for an Electrochemical Water Reclamation System
NASA-FWQA	Electrochemical Regeneration of Spent Activated Carbon
FWQO	Tertiary Treatment by Reverse Osmosis
OSW	Study of Electrical Analogue for Electrodialysis
OSW	Hydrodynamic Studies for Electrodialysis

OSW = Office of Saline Water
FWQA = Federal Water Quality Agency, now EPA
NASA = National Aeronautics and Space Administration

Related Patents, Publications, Lectures, Courses Given, Etc.

U.S. Patent 3582481, issued June 1, 1971, Water Purifications, a process using an electrochemical methods for removal of organic materials from wastewater.

U.S. Patent 4160738, issued July 10, 1979, Water Purification Device and System, a household demineralizer.

U.S. Patent (to be issued in 1980) Application No. 9249333, Process for Purification of Contaminated Water. Reverse osmosis and ion exchange processes for removal of nitrate and arsenic.

U.S. Patent 4479877, issued October 30, 1984, Removal of Nitrate from Water Supplies Using A Tributyl Amine Strong Base Resin. A nitrate removal process using a resin with high nitrate selectivity for use with waters containing

interfering amounts of sulfate.

Guter, G. A. and G. Belfort, "Water Management in Closed Systems Especially for Space Flights," presented to the University of California, Irvine; Seminar: Space, Man and Society - Their Interactions and Implications for the Future, June 28, 1968.

Guter, G. A. and G. Belfort, "An Electrical Analogue for Electrodialysis," presented at the 133rd National Electrochemistry Society Meeting, Boston, May 8, 1968. Published in Desalination 10 (1972) 221-262. Also presented at a seminar to the Sea Water Conversion Laboratory, Membrane Process Group, University of California, Berkeley, June 16, 1968.

Guter, G. A., "Environmental and Cost Advantages of Two Carbon Regeneration Methods for Small Treatment Systems," presented at the WWEMA Industrial Pollution Conference and Exposition, Chicago, Illinois, April 2, 1975.

Guter, G. A., Ryan, T. C., Westermeir, J. F., "Computer Simulation of Long Term Secondary Impacts of Water and Wastewater Projects," Proceedings of the EPA Conference on Modeling and Simulation.

Guter, G. A., Ryan, T. C., Westermeir, J. F., "Assessment of Long Term Environmental Impacts by Computer Modeling," presented at the July, 1976, Summer Computer Simulation Conference, Washington, D.C.

"Is the Engineer an Endangered Species?" a discussion of the impact of the EIS on the engineering profession. Engineers Club of Ventura County, December 10, 1972.

"Environmental Research Opportunities for Public Projects," lecture given by Dr. Guter at California State College, Fullerton, April, 1974.

"Impact of the Environment on Engineering," presented to the Southern Chapter of Arizona Society of Professional Engineers, December 9, 1975.

"Environmental Impact Analysis," one quarter course in EIR preparation given by Dr. Guter winter 1978, Cal State Fullerton.

September 20, 1978, in Bakersfield a presentation by Dr. Guter at a meeting of Valley Counties Water Works Association, a group of water works managers, manufacturing reps and engineers.

November 6, 1979, in Merced. Presentation and panel participation by Dr. Guter on nitrate research at McFarland to California Environmental Health Association, an organization of County and State health professionals.

"Alternatives for Reducing Nitrate in Municipal Water Supplies at McFarland, California." Presented at the National Conference on Environmental Engineering, ASCE, New York, July, 1980.

"Seminar on Nitrate Removal by Ion Exchange." Graduate School of Engineering, University of Houston, Houston, Texas, February 12, 1981.

"A Study of Ion Exchange Resins for Nitrate Removal." Gordon Research

Conference Invitee, Mereden, New Hampshire, August, 1981.

Guter, G. A. "Removal of Nitrate from Contaminated Water Supplies for Public Use, Final Report," Municipal Environmental Research Laboratory, Office of Research and Development, U.S. EPA, Cincinnati, Ohio. EPA-600/2-82-042, August 1982.

Guter, G. A. "Operation, Performance and Cost of the McFarland, CA Nitrate Removal Plant." Proceedings AWWA Seminar on Control of Inorganic Contaminants, sponsored by the Water Quality Division, AWWA, Las Vegas, Nevada, June, 1983.

Guter, G. A. and Lauch, R. P., "A One MGD Ion Exchange Plant for Removal of Nitrate From Well Water," AWWA 1984 Annual Conference Proceedings, Dallas, Texas, June 10-14, 1984.

Guter, G. A. "Estimation of Effects of Resin and Water Composition on Column Performance in Nitrate Ion Exchange," ibid.

Papers In Progress

Guter, G. A. and Hardan, D. L. "Computer Simulation of Nitrate Removal by Ion Exchange." To be presented at AWWA 1985 Annual Conference, Washington D.C.

Guter, G. A. and Lauch, R. P. "A One MGD Ion Exchange Plant for Removal of Nitrate from Well Water," National Well Water Conference on Aquifer Restoration and Groundwater Monitoring, Columbus, Ohio, May 21-24, 1985.

BOYLE ENGINEERING CORPORATION

FEES FOR PROFESSIONAL SERVICES

Classification	Rate
Engineering	
Principal Engineer	$ 78.00 an hour
Senior Engineer II	$ 68.00 an hour
Senior Engineer I	$ 58.00 an hour
Associate Engineer	$ 48.00 an hour
Assistant Engineer	$ 38.00 an hour
Designing/Drafting	
Senior Designer/Technician	$ 48.00 an hour
Designer/Technician	$ 41.00 an hour
Senior Drafter	$ 34.00 an hour
Drafter	$ 27.00 an hour
Miscellaneous	
Clerical	$ 25.00 an hour
Printing and Blueprinting	Actual Cost + 10%
Travel - Automobile	$ 0.25 per mile
Travel - Other Than Automobile	Actual Cost
Materials Testing and In-Plant Inspection	Actual Cost + 10%
Aerial Photogrammetry Service and Surveys	Actual Cost + 10%
Soils Investigation and Field Tests	Actual Cost + 10%
Computer Services	
Outside Services	Actual Cost + 10%
Bakersfield Office Computers	$ 25.00 an hour
Corporate Office Computers	See Next Page
Computer Services	See Separate Schedule

It is understood and agreed that the aforementioned rates and charges include all normal equipment and materials used in connection with the production of the required engineering services. Boyle Engineering Corporation will furnish monthly billings for all services rendered and supplies furnished in accordance with the above compensation provisions. Payments shall be due and payable to Boyle Engineering Corporation upon presentation. A late payment finance change will be computed at the periodic rate of 1.5 percent per month and will be applied to any unpaid balance commencing thirty (30) days after the date of the original invoice.

Rates subject to general revision December 1, 1986.

BOYLE ENGINEERING CORPORATION

COMPUTER SERVICES RATE SCHEDULE

Microcomputers (IBM PC/AT, HP-125, and similar equipment)	$ 20.00 an hour
Computer-Aided Design and Drafting (CADD) System	
Graphic Workstation	$ 20.00 an hour
Pen Plotter	$ 20.00 an hour
Terminal (CRT or Printer)	$ 5.00 an hour
Central Process Unit	$ 5.00 a minute
HP-3000 Computer System	
Central Processing Unit	$ 5.60 a minute
Terminal Connect Time	$ 0.70 an hour
Lines Printed	$ 0.20 per hundred
Plot Records	$ 2.35 per hundred
Outside Computer Services	Cost + 10%
Special Software	Cost + 10%

Rates subject to general revision December 1, 1986.

Boyle Engineering Corporation

Suite 176
1300 East Shaw Avenue
Fresno, California 93710

consulting engineers / architects

209 / 222-8436

CITY OF GROVER CITY
Attn: Mr. Tom Sullivan
Community Development Director
154 South 8th Street
Grover City, CA 93433

April 7, 1986

State Super Fund

The State Super Fund is administered by the Toxics Substances Control Division of the State Department of Health Services in Sacramento. Mr. Stan Phillippe, Acting Chief of the Super Fund Unit (Tel: 916-324-2441) has recently expressed the possibility that some of the remaining funds might best be spent by giving grants to water utilities suffering from groundwater contamination problems, including those caused by agricultural, non-point, pollution sources.

Nitrate contamination of groundwater is the single biggest groundwater quality problem in California and the United States. Nitrate contamination has very significantly affected the unconfined groundwater aquifer in the Grover City, Arroyo Grande, Morro Bay and Oceano areas of San Luis Obispo County. The local agricultural activities, which may have caused this problem, are continuing.

Nitrate removal treatment is a very feasible approach in your particular area because of the close proximity to the Pacific Ocean. The ocean could serve as a source of salt for regenerating the treatment removal units and as disposal of the waste brine. In inland areas brine wastewater disposal is much more difficult and expensive.

I recommend that you attempt to initiate a meeting with State Assemblyman Seastrand and/or State Senator Maddy to discuss the feasibility of securing State Super Fund moneys for the construction nitrate removal treatment plants in Grover City, Arroyo Grande, Pismo Beach and perhaps Oceano, thus solving a regional groundwater problem. This would free a certain amount of treated surface water currently used for nitrate blending. I would estimate that each of the four communities might need up to one million dollars for constructing a 2 mgd treatment plant in each community.

Ernie Kartinen and I contacted the City of Arroyo Grande and Oceano C.S.D. after leaving your office. Arroyo Grande was interested but Oceano was not. Oceano volunteered however to extend you their strong support for such funds.

If you are interested in arranging such a meeting with either Mr. Seastrand or Mr. Maddy you might also want to invite the Health Officer of San Luis Obispo. I also would be most happy to attend.

I feel that an inquiry as to availability of grants through California Super Fund would carry more weight if it came from the elected official representing the whole regional problem area of Grover City, Pismo Beach, Arroyo Grande and Oceano.

Please call me if you have any questions or if I can be of any assistance. I think it is important to move rather quickly on this matter.

BOYLE ENGINEERING CORPORATION

Gunter A. Redlin

Gunter A. Redlin, P. E.

cc: Ernie Kartinen

BK-B99-197-00

PG and E

55-1

PUMP TEST REPORT

R205CE
11/18/83

COAST VALLEYS Division SAN LUIS OBISPO Office

Dear CITY OF PISMO BEACH : Test Date 11/14/83

Below are the results of the recent test on your pumping plant. Please let us know if you have any questions or if we can be of further service.

PGandE

CITY OF PISMO BEACH

1000 BELLO ST

PISMO BEACH CA 93449

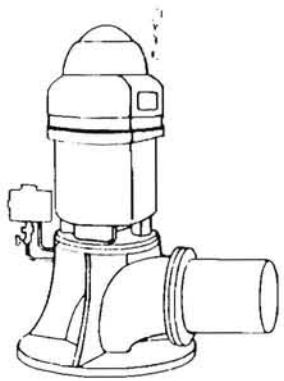
Customer Account # NBV5769301 Location # 02512165160007
Meter # T43990
Motor U.S. H.P. 100.0 Volts 460
Rated RPM 1775 Serial # DC7005674
Pump PEERLESS Type TURBINE

Remarks:

- THE WATER PUMPED AS MEASURED BY THE CUSTOMER'S WATER METER WAS 853 GPM.
- MOTOR LOAD IS 99% OF FULL LOAD CAPACITY.
- THE OVERALL EFFICIENCY OF THIS PLANT IS GOOD UNDER EXISTING WATER AND OPERATING CONDITIONS.
- THE TEST RESULTS MAY BE IMPAIRED DUE TO A POOR HYDRAULIC TEST SECTION.

Number of Copies:
Customer 1
Office 2

Plant Location- EIGHTH ST WELL GROV CTY
Customer Plant Identification- 2202
Test Engineer- RUSS CRACKNELL



	TEST 1	
Shutdown Time	*	Min. (*=24 hrs.)
Standing Water Level Below CENTER LINE OF DISCHARGE PIPE	48.0	Ft.
Draw Down from Standing to Pumping Level	104.5	Ft.
Pumping Water Level Below CENTER LINE OF DISCHARGE PIPE	152.5	Ft.
Discharge Level Above CENTER LINE OF DISCHARGE PIPE	214.8	Ft.
Discharge Pressure Measured at Gauge	93	P.S.I.
TOTAL LIFT (Water to Water)	367.3	Ft.
WATER PUMPED	745	G.P.M.
Yield of Well (G.P.M. per foot draw down)	7.1	G.P.M./Ft.
Water Pumped in 24 Hours	1072.80	1000 GAL.
HORSEPOWER INPUT TO MOTOR	108.7	H.P.
Kilowatt Input to Motor	81.1	KW.
KILOWATT HOURS PER 1000 GAL. OF WATER PUMPED	1.81	Kwh/1000 GAL.
OVERALL PLANT EFFICIENCY	64	%

GET THE MOST GALLONS FOR YOUR MONEY WITH EFFICIENT PUMPS!

REPRESENTATIVE WATER USE VALUES FOR PLANNING 5/30/79 RJ

COMMUNITY	PRODUCTION GAL/CAP/DAY	CONSUMPTION FACTOR	CONSUMPTION GAL/CAP/DAY	FACTOR BASIS *
CAMBRIA	135	1.00	135	COASTAL PERMIT CONDITION
CAYUCOS	130	1.00	130	NO RECHARGE OF RESERVOIR
MORRO BAY	165	0.85	140	SOME RECLAMATION ANTICIPATED
SOUTH BAY	140	0.42	60	BROWN AND CALDWELL, 1974
SAN LUIS	155	1.00	155	NO RECHARGE OF RESERVOIRS
AVILA	130	1.00	130	NO RECHARGE OF RESERVOIR
PISMO	170	1.00	170	NO RECHARGE OF SOURCES
OCEANO	175	0.65	115	RESERVOIR RECHARGE OF BASIN
GROVER CITY	130	0.45	60	RESERVOIR RECHARGE OF BASIN
ARROYO GRANDE	150	0.80	120	GROUNDWATER USE ANTICIPATED
NIPOMO	150	0.65	100	PARTIAL RECHARGE OF BASIN
ATASCADERO	235	0.65	150	PARTIAL RECHARGE OF BASIN
SAN MARGARITA	230	0.55	125	RECHARGE OF LIMITED BASIN
PASO ROBLES	320	0.65	210	PARTIAL RECHARGE OF SOURCE
SAN MIGUEL	245	0.60	150	LOCAL RECHARGE OF BASIN
TEMPLETON	250	0.70	175	PARTIAL LOCAL RECHARGE

CONSUMPTION IS WATER USED WHICH DOES NOT REPLENISH THE SOURCE

* FACTORS RELATE TO CURRENT (AND IMMEDIATELY ANTICIPATED) SOURCES OF SUPPLY. SHOULD NEW SOURCES BE UTILIZED, EXISTING RATIOS OF CURRENT SOURCES BE CHANGED, STORAGE BE INITIATED, EXISTING SEWAGE DISPOSAL METHODS BE CHANGED, WATER CONSERVATION MEASURES BECOME EFFECTIVE, RESTRICTIONS BE IMPOSED, OR COMMUNITY CHARACTERISTICS BECOME CHANGED, THE FACTORS WILL CHANGE.

VALUES GIVEN ARE FOR AVERAGE CONDITIONS; HIGH RAINFALL YEARS WILL RESULT IN LESS USE; DROUGHT YEARS WILL RESULT IN MORE (20%? ... BE OFFSET BY CONSERVATION).

CITY OF PISMO BEACH

PUBLIC WORKS DEPARTMENT
P.O. BOX 3, PISMO BEACH, CA 93449
(805) 773-4656

BILL TO: ______________________

DATE: 9-18-84

LOCATION: 8th st. Well

T.C.R. #: Grover City

DESCRIPTION OF REPAIR WORK:

Pump Well —

Start = 8-22-84 - 468112 00 / 58.26 A. =

End - 9-18-84 - 493489 00 / ⟨5.82 AC'⟩

LABOR				MATERIALS/EQUIPMENT			
NAME	REG/OT	REG/OT	TOTAL	HRS./ QNTY	RATE/ UNIT	DESCRIPTION	COST
Dale B.						493 48900	
						468 11200	
						25377 00 ÷ 43530 = 58.–	
					11-1-84	53648100	
						493 48900	99.24

SUBTOTAL LABOR

TAXES & INS. @ 40% OF LABOR

TOTAL LABOR

TOTAL MATERIALS

SUBTOTAL

15% ADMIN. CHARGE

TOTAL

TOTAL MATERIALS & EQUIP.

FOR OFFICE SPACE ONLY

Prepared By: ______________________

Comments: ______________________

CITY OF PISMO BEACH

PUBLIC WORKS DEPARTMENT
P.O. BOX 3, PISMO BEACH, CA 93449
(805) 773-4656

BILL TO: _____ DATE: _____

_____ LOCATION: _____

_____ T.C.R. #: _____

DESCRIPTION OF REPAIR WORK: Run Well and flush De-sander

Start - 7-26-84 = 46499~~00~~

End - 8-22-84 - 46811200

3140000 (7.14 AC') 7.32

LABOR				MATERIALS/EQUIPMENT			
NAME	REG/OT	REG/OT	TOTAL	HRS./ QNTY	RATE/ UNIT	DESCRIPTION	COST
Dale S							

SUBTOTAL LABOR

TAXES & INS. @ 40% OF LABOR

TOTAL LABOR

TOTAL MATERIALS

SUBTOTAL

15% ADMIN. CHARGE

TOTAL

TOTAL MATERIALS & EQUIP.

FOR OFFICE SPACE ONLY

Prepared By: _____

Comments: _____

CITY OF PISMO BEACH

PUBLIC WORKS DEPARTMENT
P.O. BOX 3, PISMO BEACH, CA 93449
(805) 773-4656

BILL TO: _____ DATE: 8-7-84

LOCATION: 8TH ST. GROVER Well

T.C.R. #: _____

DESCRIPTION OF REPAIR WORK:

Pump Well - FLUSH DESANDER 464922
7-27-84 START READ - 465944.00
8-3-84 STOP READ - 467173.00
2.83 AC.FT. 5.17

LABOR				MATERIALS/EQUIPMENT			
NAME	REG/OT	REG/OT	TOTAL	HRS./ QNTY	RATE/ UNIT	DESCRIPTION	COST
PAT	2						
CLYDE	2						
						464922	
						412190	
						1212 ÷ 5	
SUBTOTAL LABOR						202	1363.00
TAXES & INS. @ 40% OF LABOR							
TOTAL LABOR							
TOTAL MATERIALS							
SUBTOTAL							
15% ADMIN. CHARGE							
TOTAL							

FOR OFFICE SPACE ONLY

Prepared By: _____

Comments: _____

TOTAL MATERIALS & EQUIP.

CITY OF PISMO BEACH

PUBLIC WORKS DEPARTMENT
P.O. BOX 3, PISMO BEACH, CA 93449
(805) 773-4656

BILL TO: _____ DATE: 5-30-84

LOCATION: Grover Well site

T.C.R. #: 8th st. Grover City

DESCRIPTION OF REPAIR WORK: Ran well and flushed disorder

5- -84 Start - 458114 00

5-30-84 Cmd - 463472 00

12.3 AC' X

LABOR

NAME	REG/OT	REG/OT	TOTAL
Kale II			2 hrs

SUBTOTAL LABOR

TAXES & INS. @ 40% OF LABOR

TOTAL LABOR

TOTAL MATERIALS

SUBTOTAL

15% ADMIN. CHARGE

TOTAL

FOR OFFICE SPACE ONLY

Prepared By: _____

Comments: _____

MATERIALS/EQUIPMENT

HRS./ QNTY	RATE/ UNIT	DESCRIPTION	COST
		M-2 Truck	

TOTAL MATERIALS & EQUIP.

CITY OF PISMO BEACH

PUBLIC WORKS DEPARTMENT
P.O. BOX 3, PISMO BEACH, CA 93449
(805) 773-4656

BILL TO: Please file Thank you Pat

DATE: 5-18-84

LOCATION: 8th st. Well site

T.C.R. #: Grover City

DESCRIPT ?n well and flush desander

Start - 5-17-84 - 457846 00

End - 5-18-84 - 458114 00

AC'

LABOR				MATERIALS/EQUIPMENT			
NAME	REG/OT	REG/OT	TOTAL	HRS./ QNTY	RATE/ UNIT	DESCRIPTION	COST
Dale - II			1½ hrs.				
Pat - Sup.							
Clyde - LM							
						Chevy M-4	
						Ford M-13	

SUBTOTAL LABOR

TAXES & INS. @ 40% OF LABOR

TOTAL LABOR

TOTAL MATERIALS

SUBTOTAL

15% ADMIN. CHARGE

TOTAL

TOTAL MATERIALS & EQUIP.

FOR OFFICE SPACE ONLY

Prepared By:

Comments:

CITY OF PISMO BEACH

PUBLIC WORKS DEPARTMENT
P.O. BOX 3, PISMO BEACH, CA 93449
(805) 773-4656

BILL TO: _____ DATE: 5-12-84

LOCATION: Grover City

T.C.R. #: 8th st. Well

DESCRIPTION OF REPAIR WORK: Ran well & flush Desander

457303.00

Start-5- -84-463472.00

End-5-12-84-464922.00

3.3 AC. 17.49 flat

LABOR				MATERIALS/EQUIPMENT			
NAME	REG/OT	REG/OT	TOTAL	HRS./ QNTY	RATE/ UNIT	DESCRIPTION	COST
Pat			1 hr				
Clyde			1 hr				
Dale			1 hr.				
						M-13 truck	

SUBTOTAL LABOR

TAXES & INS. @ 40% OF LABOR

TOTAL LABOR

TOTAL MATERIALS

SUBTOTAL

15% ADMIN. CHARGE

TOTAL

TOTAL MATERIALS & EQUIP.

FOR OFFICE SPACE ONLY

Prepared By: _____

Comments: _____

CITY OF PISMO BEACH

PUBLIC WORKS DEPARTMENT
P.O. BOX 3, PISMO BEACH, CA 93449
(805) 773-4656

BILL TO: _____ DATE: 4-30-84

LOCATION: Grover City

T.C.R. #: 8th st. Well site

DESCRIPTION OF REPAIR WORK: Rem Well & flushed Desander.

— Start- 457156 00

— End- 457303 00 1.84 Total

.33 AC'

LABOR				MATERIALS/EQUIPMENT			
NAME	REG/OT	REG/OT	TOTAL	HRS./ QNTY	RATE/ UNIT	DESCRIPTION	COST
Rule II			2 hrs				
						0.33	
						13.90	
						4.09	
						18.32	
						457303	
						457156 00	18.32
SUBTOTAL LABOR							
TAXES & INS. @ 40% OF LABOR							
TOTAL LABOR							
TOTAL MATERIALS							
SUBTOTAL							
15% ADMIN. CHARGE							
TOTAL							
						W-4 Rodger	
						TOTAL MATERIALS & EQUIP.	

FOR OFFICE SPACE ONLY

Prepared By: _____

Comments: _____

CITY OF PISMO BEACH

PUBLIC WORKS DEPARTMENT
P.O. BOX 3, PISMO BEACH, CA 93449
(805) 773-4656

BILL TO: _____ DATE: 4-18-84

LOCATION: Grover City

T.C.R. #: 8th st. Well site

DESCRIPTION OF REPAIR WORK: Pump well and flush desander

Start - 4-18-84 = ~~45~~ 45100 ~~2846~~ 00

End - 4-23-84 - 45 7156 00

9.89 AC' 13.90

LABOR				MATERIALS/EQUIPMENT			
NAME	REG/OT	REG/OT	TOTAL	HRS./ QNTY	RATE/ UNIT	DESCRIPTION	COST
Clyde	12						

SUBTOTAL LABOR

TAXES & INS. @ 40% OF LABOR

TOTAL LABOR

TOTAL MATERIALS

SUBTOTAL

15% ADMIN. CHARGE

TOTAL

FOR OFFICE SPACE ONLY

Prepared By: _____

Comments: _____

1		W-4 Chng.	

TOTAL MATERIALS & EQUIP.

CITY OF PISMO BEACH

PUBLIC WORKS DEPARTMENT
P.O. BOX 3, PISMO BEACH, CA 93449
(805) 773-4656

BILL TO: ____________________

DATE: 4-13-84
LOCATION: Grover City
T.C.R. #: 8th st Well site

DESCRIPTION OF REPAIR WORK:

Run Well and flush desander
-4-11-84 Start- ~~441045.00~~ 449 319
-4-13-84 End- 451100.00
~~2.30~~ AC' 4.09 Hal

LABOR				MATERIALS/EQUIPMENT			
NAME	REG/OT	REG/OT	TOTAL	HRS./ QNTY	RATE/ UNIT	DESCRIPTION	COST
Dale B. II			2 hrs			A-1 Truck	

SUBTOTAL LABOR
TAXES & INS. @ 40% OF LABOR
TOTAL LABOR
TOTAL MATERIALS
SUBTOTAL
15% ADMIN. CHARGE
TOTAL

TOTAL MATERIALS & EQUIP.

FOR OFFICE SPACE ONLY

Prepared By: ____________________
Comments: ____________________

CITY OF PISMO BEACH

PUBLIC WORKS DEPARTMENT
P.O. BOX 3, PISMO BEACH, CA 93449
(805) 773-4656

BILL TO: _____ DATE: 3-27-84 - 3-29-84

LOCATION: 8TH Well GROVER CITY

T.C.R. #: _____

DESCRIPTION OF REPAIR WORK: Pump Well and Flush.

78

3-27-84 START 447581.00

3-29-84 STOP 449319.00 OK Hal

4.00

3.99 AC'

LABOR				MATERIALS/EQUIPMENT			
NAME	REG/OT	REG/OT	TOTAL	HRS./ QNTY	RATE/ UNIT	DESCRIPTION	COST
CLYDE	2					4.00	
ERNIE	1					2.22	
						3.89	
						10.11	
						447157.00	
						447473	

SUBTOTAL LABOR

TAXES & INS. @ 40% OF LABOR

TOTAL LABOR

TOTAL MATERIALS

SUBTOTAL

15% ADMIN. CHARGE

TOTAL

FOR OFFICE SPACE ONLY

Prepared By: _____

Comments: _____

TOTAL MATERIALS & EQUIP.

CITY OF PISMO BEACH

PUBLIC WORKS DEPARTMENT
P.O. BOX 3, PISMO BEACH, CA 93449
(805) 773-4656

BILL TO: _____ DATE: 3-26-84

LOCATION: 9th st Well

T.C.R. #: Grover Well

DESCRIPTION OF REPAIR WORK: Pump Well & Run Desander

3-25-84 Start - 446609.00

3-26-84 End - 447578.00

2.22 O/C

LABOR				MATERIALS/EQUIPMENT			
NAME	REG/OT	REG/OT	TOTAL	HRS./ QNTY	RATE/ UNIT	DESCRIPTION	COST
Clyde	/						
Eddie	/						

SUBTOTAL LABOR

TAXES & INS. @ 40% OF LABOR

TOTAL LABOR

TOTAL MATERIALS

SUBTOTAL

15% ADMIN. CHARGE

TOTAL

TOTAL MATERIALS & EQUIP.

FOR OFFICE SPACE ONLY

Prepared By: _____

Comments: _____

CITY OF PISMO BEACH

PUBLIC WORKS DEPARTMENT
P.O. BOX 3, PISMO BEACH, CA 93449
(805) 773-4656

BILL TO: _____ DATE: 3-1-84

LOCATION: 8th at Well

T.C.R. #: Brown City

DESCRIPTION OF REPAIR WORK:

Run Well & Flush Re-sander

Start - 2-28-84 - 444915 00

End - 3-1-84 - 446609 00

3.88 A.C.F.

LABOR

NAME	REG/OT	REG/OT	TOTAL
Dale II			2 hrs
Clyde Lm			1 hrs.

SUBTOTAL LABOR

TAXES & INS. @ 40% OF LABOR

TOTAL LABOR

TOTAL MATERIALS

SUBTOTAL

15% ADMIN. CHARGE

TOTAL

FOR OFFICE SPACE ONLY

Prepared By: _____

Comments: _____

MATERIALS/EQUIPMENT

HRS./ QNTY	RATE/ UNIT	DESCRIPTION	COST
		Chevy W-4	

TOTAL MATERIALS & EQUIP.

CITY OF PISMO BEACH

PUBLIC WORKS DEPARTMENT
P.O. BOX 3, PISMO BEACH, CA 93449
(805) 773-4656

for splice

DATE: 2-24-84

LOCATION: 8th St. Well Site

T.C.R. #: Grover City

WORK: Pump Well & Run De-Sander

Start - 2-19-84 - 441674.00

End - 2-24-84 - 444915.00

7.44 AC' OK

LABOR				MATERIALS/EQUIPMENT 1.44 8.88			
NAME	REG/OT	REG/OT	TOTAL	HRS./ QNTY	RATE/ UNIT	DESCRIPTION	COST
Dale II			2 hrs.	2 hrs.		Chevy - W-4	
						444,500	
						441,000	

SUBTOTAL LABOR

TAXES & INS. @ 40% OF LABOR

TOTAL LABOR

TOTAL MATERIALS

SUBTOTAL

15% ADMIN. CHARGE

TOTAL

TOTAL MATERIALS & EQUIP.

FOR OFFICE SPACE ONLY

Prepared By: _____

Comments: _____

CITY OF PISMO BEACH

PUBLIC WORKS DEPARTMENT
P.O. BOX 3, PISMO BEACH, CA 93449
(805) 773-4656

BILL TO:

DATE: Feb. 6 1984

LOCATION: 8th St. Well

T.C.R. #:

DESCRIPTION OF REPAIR WORK: Pump Well, flush desander —

2-5-84-Start - 441045.00

2-6-84-Stop - 441674.00 1.44 AC'

62 | 900

LABOR				MATERIALS/EQUIPMENT			
NAME	REG/OT	REG/OT	TOTAL	HRS./ QNTY	RATE/ UNIT	DESCRIPTION	COST
Dale II			2 hrs.				

SUBTOTAL LABOR

TAXES & INS. @ 40% OF LABOR

TOTAL LABOR

TOTAL MATERIALS W-4 Chevy

SUBTOTAL

15% ADMIN. CHARGE

TOTAL

FOR OFFICE SPACE ONLY

Prepared By:

Comments:

TOTAL MATERIALS & EQUIP.

CITY OF PISMO BEACH

PUBLIC WORKS DEPARTMENT
P.O. BOX 3, PISMO BEACH, CA 93449
(805) 773-4656

BILL TO: _____ DATE: 1-20-84

LOCATION: 8th St. Grove Well

T.C.R. #: _____

DESCRIPTION OF REPAIR WORK: Pump Well, Flush Quandra

Snow - -

1-17-84 - Start - ~~438883.00~~ 439,56 00

1-20-84 - Stop - 441045.00 4.96 ac'

LABOR				MATERIALS/EQUIPMENT			
NAME	REG/OT	REG/OT	TOTAL	HRS./ QNTY	RATE/ UNIT	DESCRIPTION 148,200 : 23560 = 3.41	COST 3.-
Dale A.			2 hrs.			W-2 Chevy	
Pete M			1 hr.				

SUBTOTAL LABOR

TAXES & INS. @ 40% OF LABOR

TOTAL LABOR

TOTAL MATERIALS

SUBTOTAL

15% ADMIN. CHARGE

TOTAL

FOR OFFICE SPACE ONLY

Prepared By: _____

Comments: _____

TOTAL MATERIALS & EQUIP.

CITY OF PISMO BEACH
PUBLIC WORKS DEPARTMENT
P.O. BOX 3, PISMO BEACH, CA. 93449
PHONE 805-773-4657

Bill To: _____ Job No. 29 NOV - 30 NOV 1983

_____ Location 8TH ST. GROVER Well

_____ Attention _____

Description of Job: Pump Well. Flush DESANDER.

START — 29NOV-83 — 438902.00 ~ Read

STOP — 30 NOV-83 - 439561.00 ~ Read

H20 — Pumped < 1.5 AC' >

Labor	Title	Hours Reg	Hours OT	Rate Reg	Rate OT	Extended Reg	Extended OT	Total Earnings
PAT	L.M.	1					438702	
DALE	II	2					438663 219	1.5 0.0 L.E. 55

Materials & Outside Rentals			Labor	
0			P.R. Taxes & Ins. @ of Labor	
			Sub Total Labor	
			Equipment Rentals	

Equip.	Hrs.	Rate	Amt.
Chevy	3		

			Sub Total Equip Rental
			Sub Total Material
			Sub Total
			Admin. Chg. @ 10%
Materials Sub Total			Grand Total

CITY OF PISMO BEACH
PUBLIC WORKS DEPARTMENT
P.O. BOX 3, PISMO BEACH, CA. 93449
PHONE 805-773-4657

Bill To: ____________________ Job No. 10-6-83

Location 8TH ST. GROVER Well

Attention ____________________

Description of Job: Pump Well, Flush DESANDER

10-5-83 START - 438254.00 READ
10-6-83 STOP - 438883.00 READ
[illegible] 1.44
62900 ÷ 43560 = 1.44

Labor	Title	Hours Reg	Hours OT	Rate Reg	Rate OT	Extended Reg	Extended OT	Total Earnings
PAT	L.M	1						
CLYDE	L.M.	1						

Materials & Outside Rentals

0			Labor	
			P.R. Taxes & Ins. @ of Labor	
			Sub Total Labor	
			Equipment Rentals	

Equip.	Hrs.	Rate	Amt.
Chevy	1		
COURIER	1		

Sub Total Equip Rental	
Sub Total Material	
Sub Total	
Admin. Chg. @ 10%	
Materials Sub Total	Grand Total

CITY OF PISMO BEACH
PUBLIC WORKS DEPARTMENT
P.O. BOX 3, PISMO BEACH, CA. 93449
PHONE 805-773-4657

Bill To: _____ Job No. 7-26-83

Location 8TH ST. GROVER Well

Attention _____

Description of Job: Pump Well AND FLUSH

START -432252.00 7-25-83
STOP - 434052.00 7-28-83
4.13 AC. FT

Labor	Title	Hours Reg	Hours OT	Rate Reg	Rate OT	Extended Reg	Extended OT	Total Earnings
PAT	L.M.	3					438,254 ✓	4.13 ✓
							434,052	9.65 ✓ AF
								39.78
								6.27 ✓
								54.83 ✓
							438,254	54.22
							434,052	

Materials & Outside Rentals			Labor	
~~0~~			P.R. Taxes & Ins. @ of Labor	
			Sub Total Labor	
			Equipment Rentals	

Equip.	Hrs.	Rate	Amt.
CHEVY	3		

			Sub Total Equip Rental
			Sub Total Material
			Sub Total
			Admin. Chg. @ 10%
Materials Sub Total			Grand Total

CITY OF PISMO BEACH
PUBLIC WORKS DEPARTMENT
P.O. BOX 3, PISMO BEACH, CA. 93449
PHONE 805-773-4657

Bill To: _____ Job No. 7-18-83

Location 8TH ST. GROVER Well

Attention _____

Description of Job: Pump AND Flush well.

START - 414926.00 7-10-83
STOP - 432252.00 7-25-83
39.78 AC FT.

Labor	Title	Hours Reg	Hours OT	Rate Reg	Rate OT	Extended Reg	Extended OT	Total Earnings
Pat	L.M.	12						

Materials & Outside Rentals			Labor	
⊖			P.R. Taxes & Ins. @ of Labor	
			Sub Total Labor	
			Equipment Rentals	

Equip.	Hrs.	Rate	Amt.
Chevy	12		

			Sub Total Equip Rental	
			Sub Total Material	
			Sub Total	
			Admin. Chg. @ 10%	
Materials Sub Total			Grand Total	

CITY OF PISMO BEACH
PUBLIC WORKS DEPARTMENT
P.O. BOX 3, PISMO BEACH, CA. 93449
PHONE 805-773-4657

Bill To: _____ Job No. 7-2-83

_____ Location 8TH GROVER Well

_____ Attention _____

Description of Job: Pump Well AND Flush.

START - 412196.00
STOP - 414926.00
6.27 AC. FT.

Labor	Title	Hours Reg	Hours OT	Rate Reg	Rate OT	Extended Reg	Extended OT	Total Earnings
Pat	L.M.	6						

Materials & Outside Rentals			Labor			
0			P.R. Taxes & Ins. @		of	Labor
			Sub Total Labor			
			Equipment Rentals			
			Equip.	Hrs.	Rate	Amt.
			Chevy	6		
			Sub Total Equip Rental			
			Sub Total Material			
			Sub Total			
			Admin. Chg. @ 10%			
Materials Sub Total			Grand Total			

FILE
Monthly
Water
USE R

CITY OF PISMO BEACH
PUBLIC WORKS DEPARTMENT
P.O. BOX 3, PISMO BEACH, CA. 93449
PHONE 305-773-4657

Bill To: _____ Job No. _____

Location GROVER Well

Attention 8TH & GRAND AV.

Description of Job: Pump Well, check daily and flush desander.

Acre FT. Pumped - 43.40

5-24-82 START - 295684.00

6-16-82 STOP - 314.590.00

Labor	Title	Hours Reg	Hours OT	Rate Reg	Rate OT	Extended Reg	Extended OT	Total Earni.
PAT	L.M.	9						
Dennis	II	8						

Materials & Outside Rentals			Labor				
0			P.R. Taxes & Ins. @ of Labor				
			Sub Total Labor				
			Equipment Rentals				
			Equip.	Hrs.	Rate	Amt.	
			Dodge	8			
			chevy	9			
			Sub Total Equip Rental				
			Sub Total Material				
			Sub Total				
			Admin. Chg. @ 10%				
Materials Sub Total			Grand Total				

CITY OF PISMO BEACH
PUBLIC WORKS DEPARTMENT
P.O. BOX 3, PISMO BEACH, CA. 93449
PHONE 805-773-4657

Bill To: _____ Job No. 8-11-82

Location 8TH ST. GROVER well

Attention _____

Description of Job: Pump well, FLUSH DESANDER. EACH DAY.

45.12 ACRE

8-11-82 START READ - 321025.00

9-8-82 STOP READ - 340681.00

Labor	Title	Hours Reg	Hours OT	Rate Reg	Rate OT	Extended Reg	Extended OT	Total Earn
PAT	L.M.	18						
Joe	WORK EXPIERENCE	1						
Dennis	II	6						
Ben	I	2						

Materials & Outside Rentals			Labor			
2 QTS DELO 30#			P.R. Taxes & Ins. @		of Labor	
			Sub Total Labor			
			Equipment Rentals			
			Equip.	Hrs.	Rate	Amt.
			FORD CHEVY DODGE	17		
			Sub Total Equip Rental			
			Sub Total Material			
			Sub Total			
			Admin. Chg. @ 10%			
Materials Sub Total			Grand Total			

MEMORANDUM

TO: DIRECTOR OF PUBLIC SERVICES

FROM: BUILDING INSPECTOR

SUBJECT: WATER SYSTEM CHLORINATOR PROJECT AT WELL #5

DATE: JANUARY 10, 1984

As per your instructions I have secured a relatively firm cost estimate for installation of a chlorinator for Well #5.

In discussion with the manufacturer, the estimated cost would be approximately $4,400 including installation. However, in addition to this cost we would have to allocate other resources to construct a supporting concrete slab and equipment enclosure. I estimate those additional costs at approximately $1,500 thus bringing the total cost to about $5,900 - $6,000.

Mick Andrade

MEMORANDUM

TO: CITY CLERK

FROM: DIRECTOR OF PUBLIC WORKS/CITY ENGINEER

RE: FLOODING OF ART SUPPLY STORE ADJACENT TO GROVER CITY WELL SITE:

DATE: AUGUST 16, 1983

The following is a brief report as to the circumstances surrounding the flooding that occured on August 4, 1983:

According to Pat Mills, our Water Leadman, he was called out in the early morning hours, approximately 1:30 a.m., on August 4, 1983, relative to the fire that occured at the intersection at Cypress and Hinds Streets in Pismo Beach. Apparently the Fire Cheif, in his efforts to obtain as much water in the downtown area as possible for firefighting purposes, Mr. Mills was requested to activate the City's well located in Grover City at the subject location. Said well was left to operate the remainder of the a.m. hours, until mid-morning, when Mr. Dale Stephen, a maintenance man, was assigned to go to the well site and turn off the pump and open the valve of the desanding device. According to Mr. Stephen, it was his understanding that the water from the desander would run for approximately one minute and would then stop on its own accord. He claims that he was not instructed to turn off the valve from the desander, thus he left the well pumping facility with the desanding drain valve open.

Approximately 11:30 a.m. Mr. Tom Stone came to this office and reported the flooding of the art supply store within his complex fronting of Eight Street within Grover City. Immediately Mr. James Caruso of this office, was dispatched to the well site to investiage the source of flooding and found that the drain-down valve was in fact still open and the entire area of the well site completely flooded. He then waded through the water to the valve and turned it off which immediately stopped the flow of water out of the 2" valve. He reported that it was obvious that the water had been running for quite some time as flooding was apparent on surrounding properties, particularly the art store. Subsequently, in conversations with Mr. Stone, he advised me that there would be a considerable amount of clean-up and replacement of flooring materials within his buildings. I then told him to gather all the appropriate information he has and submit it in the form of an insurance claim to the City which he has done this date (Augsut 15, 1983).

This incident brings two major points to bear, 1) instructions on the operation of the well equipment need to be made clearer to lesser experienced personnel, and 2) drainage from the well site enclosure fence needs to be formally directed to the driveway area behind the Chamber of Commerce building which resides on City of Pismo Beach-owned property.

Charles Johnson

Charles Johnson

DEPARTMENT OF HEALTH SERVICES
Sanitary Engineering Branch
3704 State Street, Suite 212
Santa Barbara, CA 93105
(805) 687-0729

September 2, 1982

Pismo Beach Water Department
P. O. Box 3
Pismo Beach, CA 93449

Attention: Mr. Roger McPherson

Gentlemen:

SYSTEM NO. 40-008

Thank you for the cooperation shown during the inspection of your facilities on August 17, 1982, by Perry Garfinkel, Sanitary Engineer, from the State Department of Health Services.

The findings of the inspection are:

1. A complete chemical analysis of Well No. 5's water, including general mineral, inorganics, and general physical, is due. The well water should be analyzed once every three years.

2. A chlorinator should be provided for Well No. 5.

Please advise us by mail within 45 days concerning the above items. If you have any questions concerning this letter, please contact this office at (805) 687-0729.

Sincerely,

John Curphey
District Sanitary Engineer

cc: San Luis Obispo County Health Agency
JNC/PG:seh

CITY OF PISMO BEACH, CALIFORNIA

CITY HALL
1000 BELLO ST. • P.O. BOX 3
PISMO BEACH, CALIFORNIA, 93449
TELEPHONE 805/773/4657

September 15, 1982

Deaprtment of Health Services
Sanitary Engineering Branch
3704 State Street, Suite 212
Santa Barbara, CA 93105

ATTN: Mr. John Curphey
District Sanitary Engineer

RE: System #40-008

Dear Mr. Curphey:

Pursuant to your comments of September 2, 1982, the City has responded to your two findings in the following manner:

1) A complete chemical analysis of Well #5 water including general mineral, inorganics, and general physical has been initiated. A copy of the report will be forwarded to your office at an early date.

2) Even though it is our understanding that our Well #5 is not required to incorporate chlorine injection (it is not imperative due to the date of construciton of the well) we are considering the installation of an injector system as part of various capital improvements ultimately needed for our water system.

We will advise you of any further developments relative to the above matters as they occur.

Sincerely,

A. Charles E. Johnson
Dir. of Public Works/City Engineer

cc: San Luis Obispo Health Agency
Public Works Foreman

ACEJ:kd

STATE OF CALIFORNIA—HEALTH AND WELFARE AGENCY GEORGE DEUKMEJIAN, Governor

DEPARTMENT OF HEALTH SERVICES
Sanitary Engineering Branch
3[redacted] State Street, Suite 212
Santa Barbara, CA 93105
(805) 687-0729

March 14, 1984

FILE: WATER OF WELL No. 5

Gentlemen:

REQUIRED RADIOACTIVITY SAMPLING

We have not received the radioactivity analysis results for your system. California Drinking Water Standards require that all surface water supplies and representative wells be sampled quarterly during one year, every four years, for gross alpha measurement. The samples for your system need to be collected in January, April, July, and October of 1984. Compliance with maximum radioactivity levels shall be based on the average of the four consecutive quarterly sample analyses' results. All four quarterly samples must be collected from the same source (well, and/or surface water supply). The results are to be submitted to this office within 40 days following each analysis.

Failure to provide the analyses will result in public notification as specified in Article 7, Section 64463, Chapter 15, Title 22, California Aomininstrative Code.

Enclosed are a copy of our November 8th letter, the Radioactivity Sampling Guidelines, and a list of approved laboratories.

Please submit the first analyses by return mail as soon as possible. If the samples have not been collected, please collect them now.

If you have any questions concerning this letter, please contact this office at (805) 687-0729.

Sincerely,

John Curphey

John Curphey, P.E.
District Sanitary Engineer

Enclosures
cc: Santa Barbara County Health Care Services
Ventura County Environmental Resources Agency
San Luis Obispo County Health Agency
JNC:seh

STATE OF CALIFORNIA—HEALTH AND WELFARE AGENCY George Deukmejian, Governor

DEPARTMENT OF HEALTH SERVICES
Sanitary Engineering Branch
3704 State Street, Suite 212
Santa Barbara, CA 93105
(805) 687-0729

November 8, 1983

Gentlemen:

RADIOACTIVITY MONITORING

The California Domestic Water Quality and Monitoring Regulations, Title 22, require that all public water systems sample their water supplies for radioactivity every four years. The sampling program shall consist of four consecutive, quarterly samples for gross alpha measurement. Compliance with a maximum alpha radioactivity level shall be based on the average of the four quarterly sample analyses' results. If the gross alpha activity exceeds 5 pC/l, measurement of radium must be made. Limits for radium are: radium 226 - 3 pC/l; total combined radium 226 and 228 - 5 pC/l. All four quarterly samples shall be collected from the same source (well, surface water supply). All surface water supplies must be sampled and a system can either sample all wells or elect to sample representative wells from a group of wells which produce water from the same aquifer. If possible, the representative wells selected to be sampled should be different from the wells sampled four years ago. Purchased water from another system does not have to be sampled if the system selling the water has analyzed the water. The results of the analyses should be obtained by the system purchasing the water. The samples need to be collected in January, April, July, and October of 1984. The results of each quarterly analysis must be submitted to this office within 40 days of the analysis. Systems with more than 30,000 service connections shall also sample their surface water supplies for man-made radioactivity as per California Domestic Water Quality and Monitoring Regulations. A copy of the Radioactivity Sampling Guidelines and a list of approved laboratories for radioactivity analysis are enclosed. Please call this office at (805) 687-0729 if you have any questions concerning the required radioactivity sampling.

Sincerely,

John Curphey

John Curphey, P.E.
District Sanitary Engineer

Attachments
cc: Ventura County Environmental Resources Agency
San Luis Obispo County Health Agency
Santa Barbara County Health Care Services
JNC:seh

...NIA HEALTH AND WELFARE ...ICY
...MENT OF HEALTH SERVICES
...RKELEY WAY
...ELEY, CA 94704
15) 540-2154

Radioactivity Sampling Guidelines
July 1979

The following questions and answers have been prepared to clarify water quality monitoring requirements for radioactivity as described in Article 5 of the Domestic Water Quality and Monitoring Regulations:

1. Q. Who is responsible for monitoring?

   A. All community water suppliers.

2. Q. What sources must be tested for natural radioactivity?

   A. All groundwater and surface sources must be tested. Proposed testing of groundwater sources should be reviewed with the Sanitary Engineering Section's District Engineers. Cooperative basin sampling of representative wells is encouraged. The Department may accept sampling of certain wells on a rotating basis as being representative of the group where it is clearly shown by the water supplier that several wells are producing similar quality water from the same aquifer. In suspect areas, all wells must be sampled. Water suppliers are encouraged to sample different wells each year so that eventually all wells are sampled.

3. Q. What are the sampling requirements for natural radioactivity?

   A. Sampling shall begin promptly in order for reasonable compliance with EPA deadline of June 1980. Compliance with radioactivity standard shall be based on the average of the analyses of four samples collected at quarterly intervals (consecutive 3 month-periods).

   For groundwater sources where seasonal variations in radioactivity is not expected and the supplier can show that collection and storage of samples can be properly and reliably controlled, the Department of Health Services may permit compliance with the natural radioactivity standard based on the analysis of an annual composite of four consecutive quarterly samples.

4. Q. What natural radioactivity analyses should be made?

   A. Analysis should be made for gross alpha radioactivity. If the screening level of 5 pCi/l is not exceeded, the water

is deemed in compliance with standard. When sample exceeds 5 pCi/l, the supplier shall notify the appropriate office of the Sanitary Engineering Section. The Department of Health Services may require repeat sampling of the source but will undertake analysis for radium if required.

5. Q. How often should analysis for natural radioactivity be made?

A. Repeat sampling for natural radioactivity shall be performed at least once every four years. If the result of the initial annual average concentration shows gross alpha radioactivity of less than 2.5 pCi/l, analysis of a single sample may be substituted for the quarterly sampling procedure.

6. Q. What sources must be tested for man-made radioactivity?

A. Water systems with greater than 30,000 service connections or serving a population of 100,000 or greater and using surface water sources shall monitor such sources for man-made radioactivity.

7. Q. What are the sampling requirements for man-made radioactivity?

A. Sampling requirements are the same for natural radioactivity, see question 3.

8. Q. What man-made radioactivity analyses should be made?

A. Analyses should be made for gross beta particle activity, tritium, and strontium-90. If the following levels are not exceeded the water is deemed in compliance with standard:

gross beta	50 pCi/l
tritium	20,000 pCi/l
strontium-90	8 pCi/l

If gross beta activity exceeds 50 pCi/l, an analysis of the sample shall be performed to identify the major radioactive constituents present and the appropriate organ and total body dose shall be calculated.

9. Q. How often should analysis for man-made radioactivity be made?

A. Repeat sampling for man-made radioactivity shall be made at least once every four years. Compliance with standard shall be based on four quarterly samples.

10. Q. How large and what type of sample container should be used for radioactivity sampling?

A. The laboratory performing the analysis should be contacted on this matter before sampling commences.

SES/070979

...RNIA—HEALTH AND WELFARE A... Y
...rge Deukmejian, Governor
...RTMENT OF HEALTH SERVICES
...BERKELEY WAY
...RKELEY, CA 94704
Sanitation & Radiation Laboratory Section
Room 465
(415) 540-2201

Laboratories Approved for Radiochemistry

Brown and Caldwell 373 South Fair Oaks Avenue Pasadena, CA 91105 (213) 795-7553	Gross Alpha and Beta
Coachella Valley Co WD P. O. Box 1058 Coachella, CA 92236 (714) 398-2651	Gross Alpha and Beta
Cranmer Engineering, Inc. 1188 E. Main Street Grass Valley, CA 95945 (916) 273-7284	Gross Alpha and Beta
EAL Corporation 2030 Wright Avenue Richmond, CA 94804 (415) 235-2633	Complete Radionuclides
Fruit Growers P. O. Box 272 Santa Paula, CA 93060 (805) 525-2146	Gross Alpha and Beta
General Electric Company P. O. Box 460 Pleasanton, CA 94566 (415) 862-2211, Ext. 4589	Gross Alpha and Beta Gamma Emitters
Hawksley Laboratories 220 Cutting Blvd. Richmond, CA 94804 (415) 235-5780	Gross Alpha and Beta
CH_2M Hill P. O. Box 2088 Redding, CA 96001 (916) 243-5831	Gross Alpha and Beta
Lawrence Livermore National Laboratory P. O. Box 5505 Livermore, CA 94550 (415) 422-7736	Gross Alpha and Beta Tritium

City of Los Angeles Department of Water and Power 111 North Hope Street Room A-18 Los Angeles, CA 90012 (213) 481-3136	Gross Alpha and Beta Total Radium
James M. Montgomery 555 East Walnut Street Pasadena, CA 91101 (213) 796-9141	Gross Alpha and Beta
Morse Laboratories 1525 Fulton Avenue Sacramento, CA 95825 (916) 481-3141	Gross Alpha and Beta
City of Sacramento American River WTP 1301 Jedsmith Drive Sacramento, CA 95819 (916) 449-5366	Gross Alpha and Beta
Safety Specialists, Inc. 3284 F Edward Avenue Santa Clara, CA 95050 (408) 988-1111	Gross Alpha and Beta Tritium
Sanitation & Operation Consultants, Inc. 31133 West via Colinas, Suite 101 Westlake Village, CA 91361 (213) 889-4256	Gross Alpha and Beta
Scott Laboratories, Inc. P. O. Box 3576 San Rafael, CA 94901 (415) 457-8460	Gross Alpha and Beta
USAF Occupational & Environmental Health Brooks Air Force Base, TX 78235 (512) 536-1110	Complete Radionuclides
U.S. Army Environmental Hygiene Agency Aberdeen Proving Ground, MD 21010 (301) 671-3639	Gross Alpha and Beta Radium-226, 228 Strontium-89, 90 Tritium Uranium
Water Testing and Consulting 4744 Avalon Avenue Santa Barbara, CA 93110 ~~(805) 687-5361~~ (805) 964-6086 (805) 964-7446	Gross Alpha and Beta

031083

(f) Results from samples collected and analyzed by water wholesalers shall be reported to retail customers and the Department, in accordance with Section 64451.

Article 5. Radioactivity

64441. Natural Radioactivity. (a) All public water systems shall monitor their water supplied for radium-226 and radium-228 at least once every four years. Compliance with maximum radioactivity levels shall be based on the average of the analysis of four consecutive quarterly samples.

(b) Gross alpha particle measurement may be substituted for measurement of radium-226 and radium-228.

(1) The supply is considered to be in compliance with maximum radioactivity levels if the gross alpha particle activity does not exceed 5 pico Curies per liter (pC/l).

(2) If gross alpha activity exceeds 5 pC/l, measurement of radium-226 shall be made.

(3) If radium-226 exceeds 3 pC/l, measurement of radium-228 shall be made.

(4) The sum of the radium-226 and radium-228 shall not exceed 5 pC/l.

(c) If the average maximum contaminant level for gross alpha particle activity or total radium exceeds the levels shown on Table 5, the water supplier shall report this information to the Department within 48 hours.

64443. Man-Made Radioactivity. Water systems with greater than 30,000 service connections and using surface water sources shall monitor their water supplies for tritium, strontium-90 and gross beta particle activity at least once every four years.

(a) The average concentration of beta particle activity and photon radioactivity from man-made radionuclides in drinking water shall not produce an annual dose equivalent to the total body or any internal organ greater than four millirem/year.

(b) Compliance with this requirement is assumed if the average concentration of gross beta particle activity is less than 50 pC/l and if the average concentration of tritium and strontium-90 are less than those listed on Table 5.

(c) If the gross beta particle activity exceeds 50 pC/l, an analysis of the sample shall be performed to identify the major radioactive constituent present and the appropriate organ and total body doses shall be calculated.

(d) The water supplier shall report information on sample results that exceed the maximum contaminant levels to the Department within 48 hours.

Table 5

MCL Radioactivity

Constituent	*Maximum Contaminant Level, pCi/l*
Combined Radium-226 and Radium-228	5
Gross Alpha particle activity (including Radium-226 but excluding Radon and Uranium)	15
Tritium	20,000
Strontium-90	8
Gross Beta particle activity	50

Article 6. Records and Reporting

64451. Reporting Requirements. (a) Analytical results of tests performed pursuant to these regulations shall be reported to the Department on the following schedules:

(1) Bacteriological and turbidity samples taken to comply with monthly testing schedules shall be analyzed and submitted to the Department by the 15th day of the following month in form and manner specified by the Department.

(2) Inorganic, organic, general mineral, general physical and radiological sampling results shall be analyzed and submitted to the Department within 40 days following a test, measurement or analysis.

(3) Failure to comply with primary drinking water standards, or monitoring requirements shall be reported to the Department within 48 hours of the determination.

64453. Record Maintenance. (a) Each water supplier shall maintain records on all water quality and system water outage complaints, both verbal and written, received and corrective action taken. These records shall be retained for a period of five years for Department review.

(b) Each water supplier shall retain, on or at a convenient location near the water utility premises, records as indicated below:

(1) Records of bacteriological analyses for at least the 5 most recent years and chemical analyses for at least the most recent 10 years. Actual laboratory reports may be kept, or data may be transferred to tabular summaries, provided that the following information is included:

(A) The date, place and time of sampling and identification of the person who collected the sample.

(B) Identification of the sample as a routine sample, check sample, raw or finished water or other special sample.

(C) Date of Report.

(D) Name of the laboratory and either the person responsible for performing the analysis or the laboratory director.

(E) The analytical technique or method used.

(F) The results of the analysis.

AGENDA SUMMARY

SUBJECT: REQUEST FOR AUTHORIZATION TO PROCEED WITH THE INSTALLATION OF OF A WATER SYSTEM CHLORINATOR AT THE CITY'S GROVER CITY WELL #5

SUMMARY OF THE MATTER:

In November of 1983 a Mr. John Curphey from the Water Quality Control Board made an inspection of the City's water system. Among questions and dialogue with the City's Building Offical, Mr. Curphey identified two (2) priority issues to be done by the City as soon as possible. These items were (1) the re-roofing of the Bello Street reservoir and (2) the installation of a chlorinator at the City's Grover City Well #5.

The staff is presently working on the Bello Street roof. This was a budgeted item in the 83-84 budget (some $11,000). The chlorinator is not, however, in the budget and would require council authorization to purchase and install. In the attached memo, Mr.Andrade indicates a two step process of erecting a slab and equipment enclosure and the purchase and installation of the chlorinator to run $1500 & $4,400.

Mr. Curphey has not indicated precisely the consequences the City would endure if we did not adhere to his recommendations but suffice it to say that the "ire" of Water Quality Control is manifested in several forms. Staff beleives it to be in the best interests of the City and the water system to request additional funding to pursue this concern (chlorinator).

RECOMMENDED ACTION:

Authorize expenditure of up to $6,000 to install a chlorinator at Grover Well #5 in two (2) phases as identified above.

Account No.(if NOT budgeted) 18-4432-330 IF BUDGETED: _____

Appropriation Requested: $6,000.00 Fund Name: _____

Citizens Advised: _____

Requested by: _____

Prepared by: Dir. of Public Services

Coordinated with: Building Official MEETING DATE: 1-23-84

Attachments: Memorandum AGENDA ITEM NO. _____

APPROVED: _____
City Administrator

MEMORANDUM

TO: DIRECTOR OF PUBLIC SERVICES

FROM: BUILDING INSPECTOR

SUBJECT: WATER SYSTEM CHLORINATOR PROJECT AT WELL #5

DATE: JANUARY 10, 1984

As per your instructions I have secured a relatively firm cost estimate for installation of a chlorinator for Well #5.

In discussion with the manufacturer, the estimated cost would be approximately $4,400 including installation. However, in addition to this cost we would have to allocate other resources to construct a supporting concrete slab and equipment enclosure. I estimate those additional costs at approximately $1,500 thus bringing the total cost to about $5,900 - $6,000.

Nick Andrade

PG and E

PUMP TEST REPORT

B2050
02/047

55-1

COAST VALLEYS Division SAN LUIS OBISPO Office

Dear CITY OF PISMO BEACH : Test Date 02/02/82

Below are the results of the recent test on your pumping plant. Please let us know if you have any questions or if we can be of further service.

PGandE

CITY OF PISMO BEACH

1000 BELLO ST

PISMO BEACH CA 93449

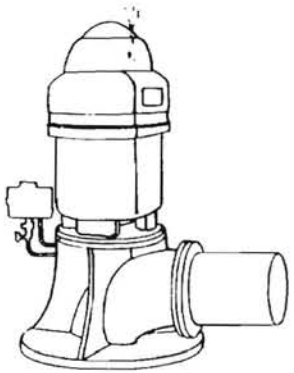
Number of Copies:
Customer 1
Office 2

Customer Account # NBV9645671 Location # 02512165160007
Meter # T43990
Motor U.S. H.P. 100.0 Volts 460
Rated RPM 1775 Serial # DC7005674
Pump PEERLESS Type TURBINE

Remarks:

- MOTOR LOAD IS 105% OF FULL LOAD CAPACITY.
- THE OVERALL EFFICIENCY OF THIS PLANT IS FAIR UNDER EXISTING WATER AND OPERATING CONDITIONS.

Plant Location- EIGHTH ST WELL GROV CTY
Customer Plant Identification- 2202
Test Engineer- CHRIS COUPER



	TEST 1
Shutdown Time	* Min. (*=24 hrs.)
Standing Water Level Below CENTER LINE OF DISCHARGE PIPE	51.9 Ft.
Draw Down from Standing to Pumping Level	72.9 Ft.
Pumping Water Level Below CENTER LINE OF DISCHARGE PIPE	124.8 Ft.
Discharge Level Above CENTER LINE OF DISCHARGE PIPE	374.2 Ft.
Discharge Pressure Measured at Gauge	162 P.S.I.
TOTAL LIFT (Water to Water)	499.0 Ft.
WATER PUMPED	570 G.P.M.
Yield of Well (G.P.M. per foot draw down)	7.8 G.P.M./Ft.
Water Pumped in 24 Hours	820.80 1000 GAL.
HORSEPOWER INPUT TO MOTOR	115.7 H.P.
Kilowatt Input to Motor	86.3 KW.
KILOWATT HOURS PER 1000 GAL OF WATER PUMPED	2.52 Kwh/ 1000 GAL
OVERALL PLANT EFFICIENCY	62%

GET THE MOST GALLONS FOR YOUR MONEY WITH EFFICIENT PUMPS!

PG and E

55-2

PUMPING PLANT EFFICIENCY COMPARISON

R210CE

12/09/81

COAST VALLEYS Division SAN LUIS OBISPO Office

Dear CITY OF PISMO BEACH : Test Date 11/16/81

Below is a pumping plant efficiency comparison made on your pump which we recently tested. This report compares the pump's present operating condition to a higher efficiency level which your pump should obtain.

PG and E

CITY OF PISMO BEACH

1000 BELLO ST

PISMO BEACH CA 93449

Number of Copies:
Customer 1
Office 2

Customer Account # NBV9645671 Location # 02512165160007
Customer Plant Identification— 2202

Plant Location— EIGHTH ST WELL GROV CTY
Meter # T43990 Serial # DC7005674
Motor U.S. H.P. 100.0
Pump PEERLESS T Type TURBINE

Remarks:

The higher plant efficiency figure selected for comparison is one that we anticipate your pump should be achieving.

We suggest that you consult your pump dealer to determine what can be done to increase the overall pumping plant efficiency.

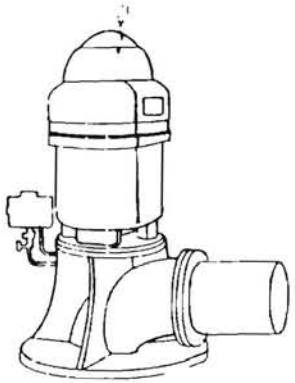
Please contact us when the necessary repair or adjustment is made so a retest of your pump may be made.

Results:

Our estimates indicate that by improving your plant efficiency the following will be realized:

Annual Energy Saved	6236	Kilowatt Hours
Annual Dollars Saved	5.50$	
Annual Operating Time Saved	77	Hours
Savings per 1000 GAL.	.3	Kilowatt Hours

Energy costs are based on the current electric rate for your size of motor and usage.



	Operating Condition At Present		Operating Condition After Repair/Adjustment	
Water Pumped	695	G.P.M.	834	G.P.M.
Total Lift	336.7	Ft.	354.5	Ft.
Horsepower Input to Motor	109.1	H.P.	110.0	H.P.
Kilowatt Input to Motor	81.4	K.W.	82.0	K.W.
K.W.H. Per 1000 GAL. Pumped	1.95	KWH/1000 GAL.	1.63	KWH/1000 GAL
Overall Plant Efficiency	54	%	68	%
Annual K.W.H. Consumption	38000	K.W.H.	31764	K.W.H.
Annual Cost	34.20	$	28.70	$
1000 GAL. Pumped Annually	19,487.17	1000 GAL.	19,487.17	1000 GAL.
Cost Per 1000 GAL.		$/1000 GAL.		$/1000 GAL.
Annual Operating Time	466	Hours	389	Hours

GET THE MOST GALLONS FOR YOUR MONEY WITH EFFICIENT PUMPS!

PG and E

55-1

PUMP TEST REPORT

R2
12/09/8

COAST VALLEYS Division SAN LUIS OBISPO Office

Customer Account NBV9645671 Location #2512165160007
Meter T43990
Motor U.S. H.P. 100.0 Volts 460
Rated RPM 1775 Serial # DC7005674
Pump PEERLESS Type TURBINE

Dear CITY OF PISMO BEACH : Test Date 12/16/81

Below are the results of the recent test on your pumping plant. Please let us know if you have any questions or if we can be of further service.

PGandE

CITY OF PISMO BEACH

1000 BELLO ST

PISMO BEACH CA 93449

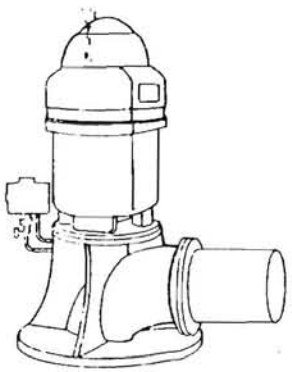
Number of Copies:
Customer 1
Office 2

Remarks:

- MOTOR LOAD IS 99% OF FULL LOAD CAPACITY.
- THE OVERALL EFFICIENCY OF THIS PLANT IS LOW UNDER EXISTING WATER AND OPERATING CONDITIONS.
- THE TEST RESULTS MAY BE IMPAIRED DUE TO A POOR HYDRAULIC TEST SECTION.

RECEIVED
DEC 16 1981
CITY OF PISMO BEACH
FINANCE DEPT.

Plant Location- EIGHTH ST WELL GROV CTY
Customer Plant Identification- 2202
Test Engineer- CHRIS COUPER



	TEST 1	
Shutdown Time	*	Min. (*=24 hr)
Standing Water Level Below CENTER LINE OF DISCHARGE PIPE	50.4	Ft.
Draw Down from Standing to Pumping Level	85.4	Ft.
Pumping Water Level Below CENTER LINE OF DISCHARGE PIPE	135.8	Ft.
Discharge Level Above CENTER LINE OF DISCHARGE PIPE	200.9	Ft.
Discharge Pressure Measured at Gauge	87	P.S.I.
TOTAL LIFT (Water to Water)	336.7	Ft.
WATER PUMPED	695	G.P.M.
Yield of Well (G.P.M. per foot draw down)	8.1	G.P.M./Ft.
Water Pumped in 24 Hours	1000.80	1000 GAL.
HORSEPOWER INPUT TO MOTOR	109.1	H.P.
Kilowatt Input to Motor	81.4	KW.
KILOWATT HOURS PER 1000 GAL. OF WATER PUMPED	1.95	Kw/1000 GAL.
OVERALL PLANT EFFICIENCY	54	%

GET THE MOST GALLONS FOR YOUR MONEY WITH EFFICIENT PUMPS!

PG and E

55-1

PUMP TEST REPORT

R705CE
11/18/83

COAST VALLEYS Division SAN LUIS OBISPO Office

Dear CITY OF PISMO BEACH : Test Date 11/14/83

Below are the results of the recent test on your pumping plant. Please let us know if you have any questions or if we can be of further service.

PGandE

CITY OF PISMO BEACH

1000 BELLO ST

PISMO BEACH CA 93449

Number of Copies:
Customer 1
Office 2

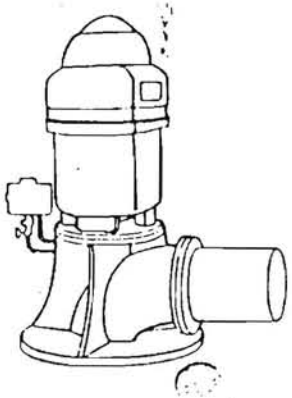
Customer Account # NBV5769301 Location # 02512165160007
Meter # T43990
Motor U.S. H.P. 100.0 Volts 460
Rated RPM 1775 Serial # DC7005674
Pump PEERLESS Type TURBINE

Remarks:

- THE WATER PUMPED AS MEASURED BY THE CUSTOMER'S WATER METER WAS 853 GPM.
- MOTOR LOAD IS 99% OF FULL LOAD CAPACITY.
- THE OVERALL EFFICIENCY OF THIS PLANT IS GOOD UNDER EXISTING WATER AND OPERATING CONDITIONS.
- THE TEST RESULTS MAY BE IMPAIRED DUE TO A POOR HYDRAULIC TEST SECTION.

F

Plant Location- EIGHTH ST WELL GROV CTY
Customer Plant Identification- 2202
Test Engineer- RUSS CRACKNELL



	TEST 1	
Shutdown Time	*	Min. (*=24 hrs.)
Standing Water Level Below CENTER LINE OF DISCHARGE PIPE	48.0	Ft.
Draw Down from Standing to Pumping Level	104.5	Ft.
Pumping Water Level Below CENTER LINE OF DISCHARGE PIPE	152.5	Ft.
Discharge Level Above CENTER LINE OF DISCHARGE PIPE	214.8	Ft.
Discharge Pressure Measured at Gauge	93	P.S.I.
TOTAL LIFT (Water to Water)	367.3	Ft.
WATER PUMPED	745	G.P.M.
Yield of Well (G.P.M. per foot draw down)	7.1	G.P.M./Ft.
Water Pumped in 24 Hours	1072.80	1000 GAL.
HORSEPOWER INPUT TO MOTOR	108.7	H.P.
Kilowatt Input to Motor	81.1	KW.
KILOWATT HOURS PER 1000 GAL. OF WATER PUMPED	1.81	Kwh/1000 GAL.
OVERALL PLANT EFFICIENCY	64	%

GET THE MOST GALLONS FOR YOUR MONEY WITH EFFICIENT PUMPS!

City of Pismo Beach

8th St. Well - Grover City

	TEST 7/2/82	TEST 11/16/81
GPM	570	695
PSI	162	87
1000 ga/24 hr.	821.4	1001.5
* KWH/1000ga	2.52	1.95
S.W.L.	51.9	50.4
P.W.L.	124.8	135.8
* O.P.E.	62.1 %	54.2

If you have any questions, give me a call. Official report will be mailed in 2 wks.

Wayne

Roger -

As you expected valving this down increased the efficiency by increasing the amount of work done (162psi vs 87psi). However: note that it is costing more (KWH/1000ga) to run at higher efficiency. Apparently the system was designed to do more work than it needs to. It is probably designed to pump from deeper than it is pumping from.

GER TRANSACTIONS - 1/31/78

LACNO	DRAMT	CRAMT
1-4300-150	500.00	.00
1-5000-000	12.00	.00
1-2160-000	3,083.91	.00
1-3551-000	6.15	.00
1-4230-150	150.00	.00
1-4100-140	160.00	.00
1-4230-150	139.75	.00
1-4230-150	131.44	.00
1-4310-270	38.00	.00
1-4100-120	86.10	.00
1-2164-000	3.40	.00
1-2160-000	35.37	.00
1-3551-000	6.15	.00
1-2160-000	2,898.53	.00
1-1000-000	.00	38,092.24
1-1000-000	.00	1,296.20
2-1000-000	.00	7,562.68
6-1000-000	.00	6,308.70
9-1000-000	.00	3,598.15
01-3020-00	37.30 **	**

Hole
Well Reading
8th in Ground

438254.00

10-5-83

9-23-84

497879.00

11-1-84

536981.00

12" well
Reading
8th in Gravel

438254.00

10-5-84

9-23-84

497879.00

11-1-84

536981.00

SANITATION AND OPERATION CONSULTANTS INC

31133 W. VIA COLINAS-ST-101
WESTLAKE VILLAGE, CA. 91362
(818) 889-4256

CITY OF PISMO BEACH
SAMPLE TYPE-POTABLE / WELL #5
DATE SAMPLED-9/25/86
DATE REPORTED-10/14/86
LOG NO.-915-1-10229

LAB ANALYSIS

CONSTITUENT	QUANTITY	MAXIMUM LIMIT
COLOR-	10	COLOR UNITS
ODOR-	2.8	T.O.N.
TURBIDITY-	2.4	N.T.U.
ALKALINITY (AS CACO3)-	366	MG/L
SULFATE-	140	MG/L
T.D.S.-	668	MG/L
HARDNESS-	502	MG/L
E.C.@ 25DEGREES C-	991	UMHOS/CM
PH (H+)-	7.4	(H+)
MBAS-	<0.1	MG/L
NITRATE-NITROGEN-	<0.2	MG/L
FLUORIDE-	0.5	MG/L
BORON-	0.15	MG/L

I DECLARE UNDER PENALTY OF PERJURY, THAT THE FOREGOING IS TRUE AND ACCURATE AS FOR THE SAMPLES AS DELIVERED & RECEIVED.

J Lovelace
LAB DIVISION

INVOICE NO. 3807
INV. DATED 10-15-86

A TOTAL OPERATION SERVICES CORPORATION