

QUARTERLY GROUNDWATER MONITORING REPORT

City of Patterson Wastewater Treatment Plant Groundwater Monitoring Program

Conducted in Accordance with
Waste Discharge Requirements Order No. 5-00-146

Prepared by:



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Prepared for:

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June 1, 2001

**FIELD WORK CONDUCTED UNDER THE SUPERVISION OF AND REPORT
PREPARED BY:**

Tambrey Tosk *6/1/01*

Tambrey A. Tosk
Registered Geologist
Certified Hydrogeologist

(DATE)

California No. 5848
California No. HG 439

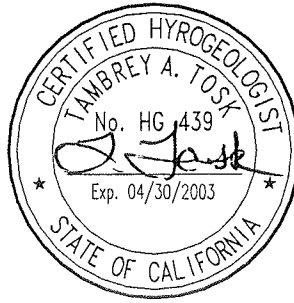


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1. INTRODUCTION

This Groundwater Monitoring Report has been prepared in accordance with the Waste Discharge Requirements for the City of Patterson Wastewater Treatment Plant in the City of Patterson, Stanislaus County, California (see **Figure 1**). The wells were installed as part of the groundwater monitoring program developed to determine if groundwater has been, or has the potential to be, adversely impacted by wastewater treatment and disposal operations. The monitoring program will include an assessment of background conditions and a determination if there has been any impact from wastewater disposal. The groundwater monitoring program consists of the construction and quarterly sampling of five monitoring wells.

The wells were constructed March 26-29, 2001, developed April 2 and 3, 2001, and purged and sampled April 4, 2001 and purged and re-sampled for additional microbiology testing on April 24, 2001.

This report provides groundwater elevation summaries and contour maps as well as groundwater quality sampling results for the initial sampling of the wells after construction.

2. HYDROGEOLOGIC SETTING

The plant is located on a gently sloping plain at the edge of a ten-foot high bluff overlooking the San Joaquin River (approximately 1/2 mile to the east) (see **Figure 2**). The area between the plant and the river is occupied by ox-bow lake ponds formed by cut-off meanders of the river. Surface and groundwater flow is generally eastward toward the river. The April 2001 groundwater level measurements show mounding below the percolation ponds, increasing the groundwater elevation by approximately 2 ft.

The near-surface lithology consists of sand, silt, and clay flood plain deposits of the Holocene age Dos Palos Alluvium. Silt or clay was found in the upper portion of each boring. Sand was found at depths ranging from 10 ft to 20 ft bgs in each borehole except MW-2, where sand was not encountered until the depth of 30 ft. Sand continued to the total depth reached in each borehole except in MW-1, where clay was encountered at 25 ft, and in MW-4, where clay was encountered at 31 ft. **Figure 4** is a fence diagram of the lithologies encountered.

3. GROUNDWATER MONITORING WELLS

Two background wells and three downgradient wells are located at the plant site. **Figure 3** shows the monitoring well locations.

The wells have 15 feet of screen per well. The total depths range from 27 to 30 feet below ground surface (bgs). A summary of well characteristics is provided in **Table 1**.

Table 1
Well Construction Summary

	<u>MW-1</u>	<u>MW-2</u>	<u>MW-3</u>	<u>MW-4</u>	<u>MW-5</u>
Well Depth (ft)	28	29	28	30	29
Completion Type	Below	Above	Above	Above	Above
Slot Size (inch)	0.01	0.02	0.02	0.01	0.02
Elevation of Slab Surface	55.58	57.93	52.18	56.99	53.79
Elevation of Top of Casing	54.93	59.68	53.80	58.58	55.21
Northing	63170.83	65646.16	63426.28	64632.54	65640.07
Easting	27600.60	26971.88	29651.79	28630.20	28819.87

4. GROUNDWATER ELEVATIONS

Groundwater depths were measured prior to well purging for sampling on April 4, 2001 and April 24, 2001. A third set of water level measurements was taken May 23, 2001. The results are presented in **Table 2**. A groundwater elevation contour map of the April 4, 2001 measurements is presented in **Figure 5**. The elevation in MW-1 is less than that in MW-2 during both sampling events, showing that mounding occurs under the percolation ponds.

The upper clay layer extended to a greater depth in MW-2 than in any of the other monitoring wells and the sand aquifer material was not found until the depth of 25 ft, well below the measured water depth of 15.89 to 19.38 feet below the top of the casing which is approximately 2 ft above grade. The aquifer is therefore confined in that area. The 3.59 ft difference in groundwater elevation in MW-2 between the April 4 and April 24 sampling events, if it was not a measurement error, indicates an increased response due to the confined conditions in that area. The May 23 results were similar to those measured April 4, 2001.

Table 2
Groundwater Elevations
April and May 2001

	<u>MW-1</u>	<u>MW-2</u>	<u>MW-3</u>	<u>MW-4</u>	<u>MW-5</u>
Water Depth 4/4/01 (ft)	16.83	19.38	17.90	21.40	19.36
Water Elevation 4/4/01 (ft msl)	38.10	40.30	35.90	37.18	35.85
Water Depth 4/24/01 (ft)	16.36	15.89	17.95	21.73	19.90
Water Elevation 4/24/01 (ft msl)	38.57	43.79	35.85	36.85	35.31
Water Depth 5/23/01	15.69	18.88	18.00	21.64	18.69
Water Elevation 5/23/01 (ft msl)	39.24	40.81	35.80	36.94	36.52

5. MONITORING WELL SAMPLING

Wells sampling was conducted on April 4, 2001 according to the procedures specified in the workplan. The initial samples were analyzed for coliform using drinking water protocols and the results were reported as out of the range of the test. The wells were therefore purged and sampled again on April 24, 2001 and the samples were analyzed using a wastewater method. Purge logs are presented in **Appendix A**.

6. GROUNDWATER QUALITY RESULTS

Laboratory reports are presented in **Appendix B**. Analytical results are summarized in **Table 3** below. A spider diagram showing the analytical results is presented in **Figure 7**.

Table 3
Groundwater Analytical Results
April 2001

	<u>Unit</u>	<u>MW-1</u>	<u>MW-2</u>	<u>MW-3</u>	<u>MW-4</u>	<u>MW-5</u>
pH	Unit	7.5	7.4	7.2	7.4	6.9
Electrical Conductivity	uS/cm	3,600	2,900	4,100	930	1,500
Total Dissolved Solids	mg/L	2,400	1,800	2,800	550	1,500
Nitrate as Nitrogen	mg/L	25	4.9	17	0.48	9.8
<i>Drinking Water Method</i>						
Total Coliform Organisms	MPN/100 mL	5.1	>23	>23	>23	>23
Fecal Coliform Organisms	MPN/100 mL	<1.1	<1.1	<1.1	1.1	<1.1
<i>Wastewater Method</i>						
Total Coliform Organisms	MPN/100 mL	4	17	22	7	500
Fecal Coliform Organisms	MPN/100 mL	<2	2	<2	<2	<2

7. COMPARISON WITH EFFLUENT QUALITY

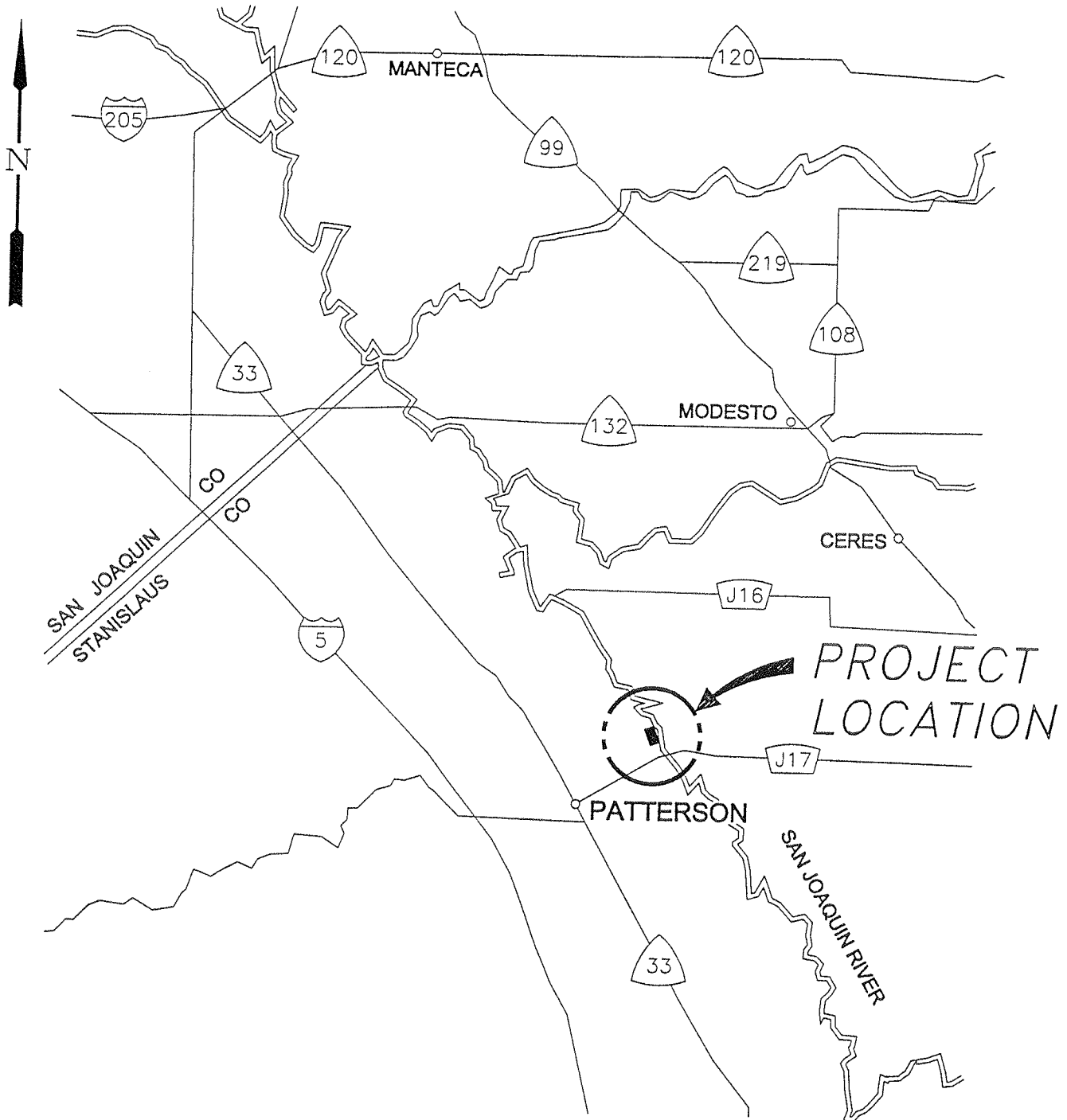
The average data for the plant's influent, effluent, treatment ponds, and percolation ponds are summarized in **Table 4** below. Complete tables are provided in **Appendix C**.

The results show that the groundwater quality is improved by dilution with the plant effluent.

Table 4
Plant Samples Analytical Results
January through March, 2001

Analyte	Date	Unit	Influent	Activated Sludge		Effluent	AIPS Effluent	Pond #1	Pond #2	Pond #3	Pond #4	Pond #5
				Effluent	Sludge							
Flow	January Average	Mgd	0.8	0.5		0.3						
	February Average		0.7	0.5		0.3						
	March Average		0.7	0.5		0.3	NA	NA	NA	NA	NA	NA
Electrical Conductivity	January Average	uS/cm	NS	1335		1408	NS	NS	NS	NS	NS	NS
	February Average		2376	1716		1613	NS	NS	NS	NS	NS	NS
	March Average		3069	1556		1628	1244	1288	1231	1355	1362	1362
Suspended Solids	January Average	mg/L	143	15		40						
	February Average		177	13		27						
	March Average		175	30		265	NA	NA	NA	NA	NA	NA
BOD (five day)	January Average	mg/L	230	3		23						
	February Average		270	4		34						
	March Average		240	2		37	NA	NA	NA	NA	NA	NA
Settleable Solids	January Average	ml/L		NS		0						
	February Average			0		0						
	March Average		NA	0		0	NA	NA	NA	NA	NA	NA
Total Dissolved Solids	January Average	mg/L		1090		NS						
	February Average			1260		NS						
	March Average		NA	1130		1100	NA	NA	NA	NA	NA	NA
Nitrate (as N)	January Average	mg/L		69		NS						
	February Average			78		NS						
	March Average		NA	31		33	NA	NA	NA	NA	NA	NA
Dissolved Oxygen	January Average	mg/L	0.2	2.9		2.3	6.3	4.4	3.8	7.7	1.7	1.7
	February Average		0.4	4.5		2.6	9.3	11.0	9.2	10.4	5.2	5.2
	March Average		0.1	2.5		1.4	3.2	4.7	6.6	6.4	2.6	2.6

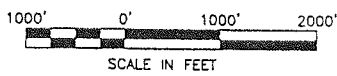
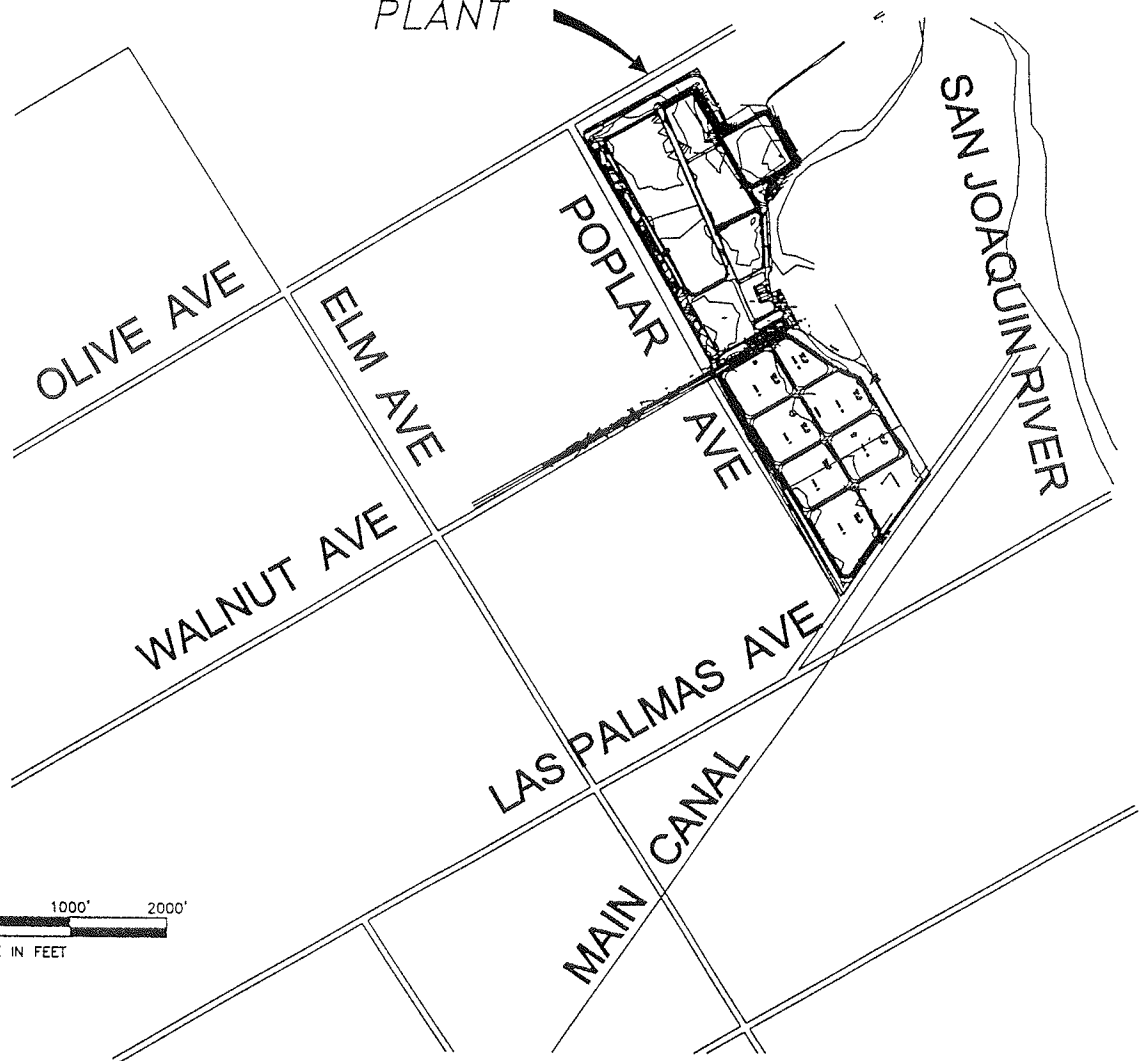
FIGURE 1
VICINITY MAP



NOT TO SCALE

FIGURE 2 LOCATION MAP

CITY OF PATTERSON
WASTEWATER TREATMENT
PLANT



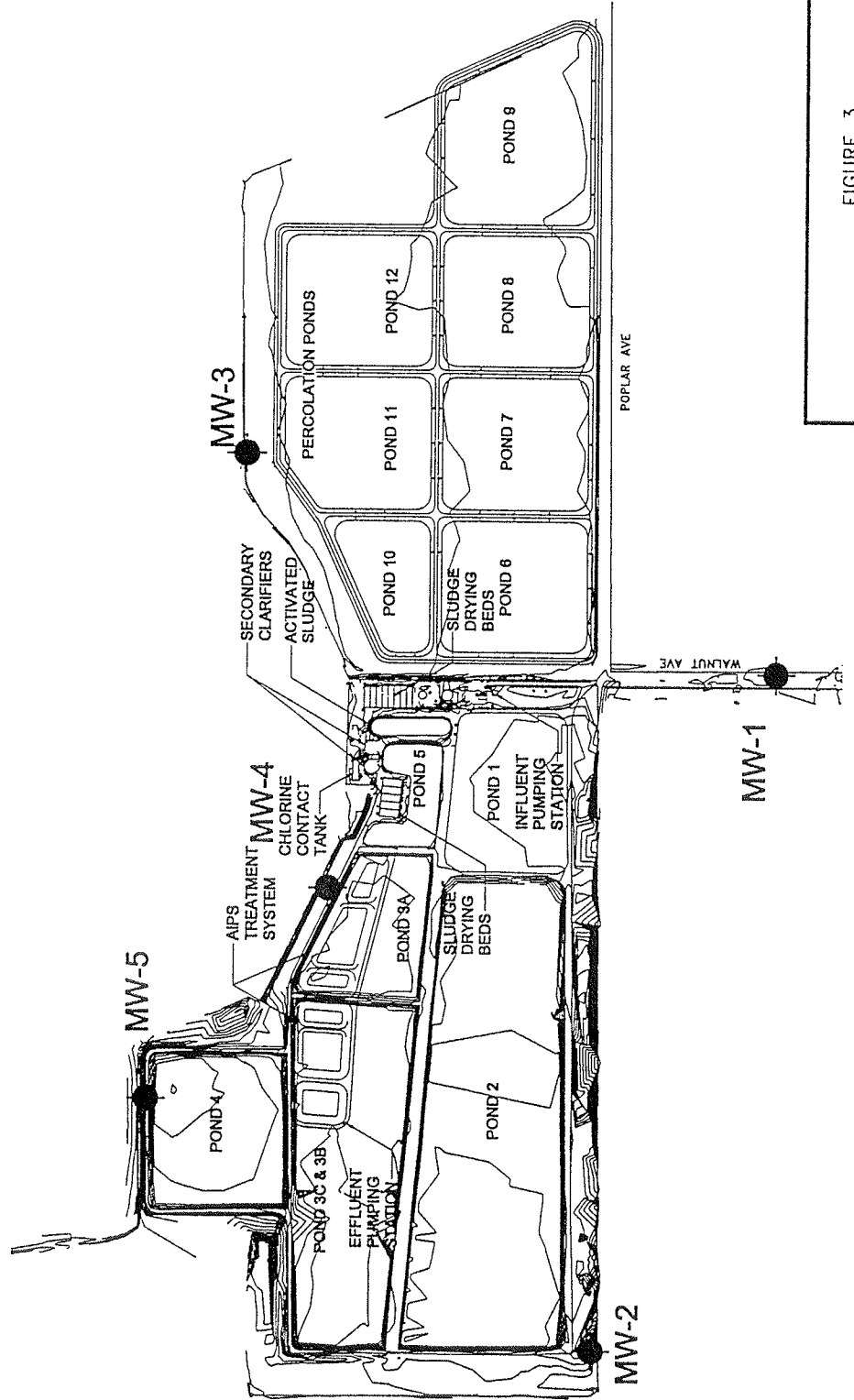
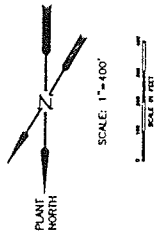
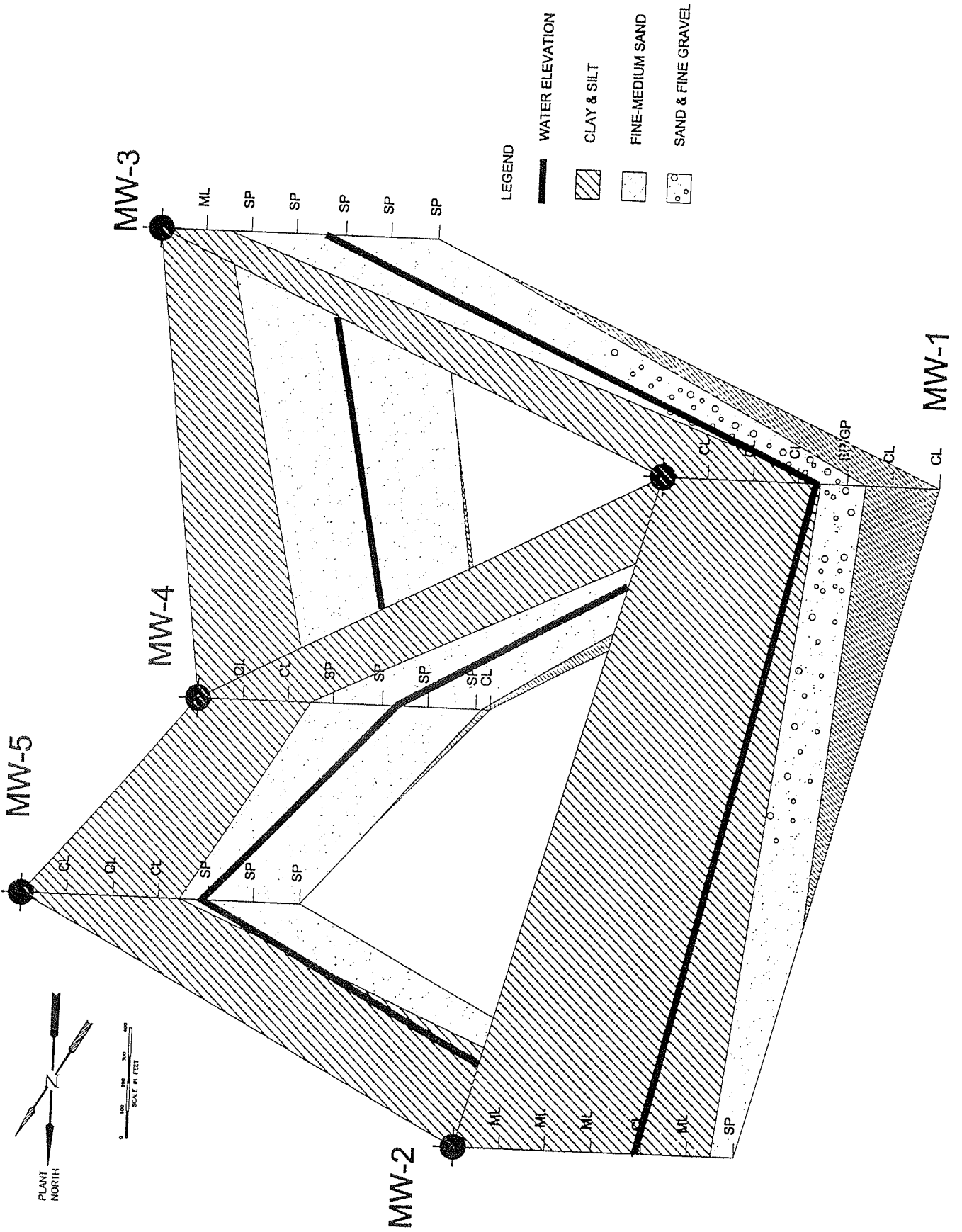


FIGURE 3
MONITORING WELL LOCATION MAP

FIGURE 4
WELL BORING FENCE DIAGRAM





SCALE: 1"=400'



SCALE IN FEET

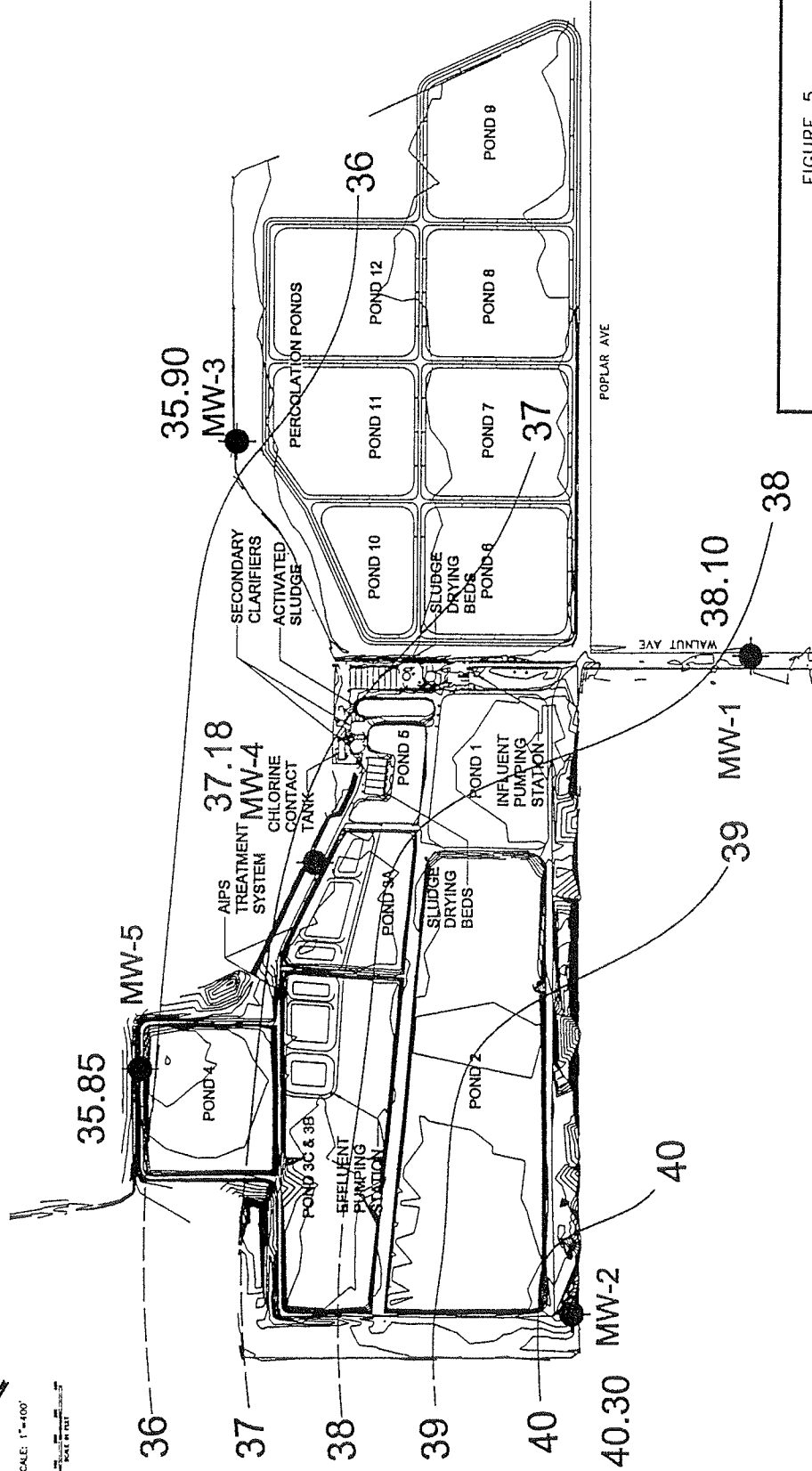


FIGURE 5
GROUNDWATER ELEVATION MAP
APRIL 4, 2001

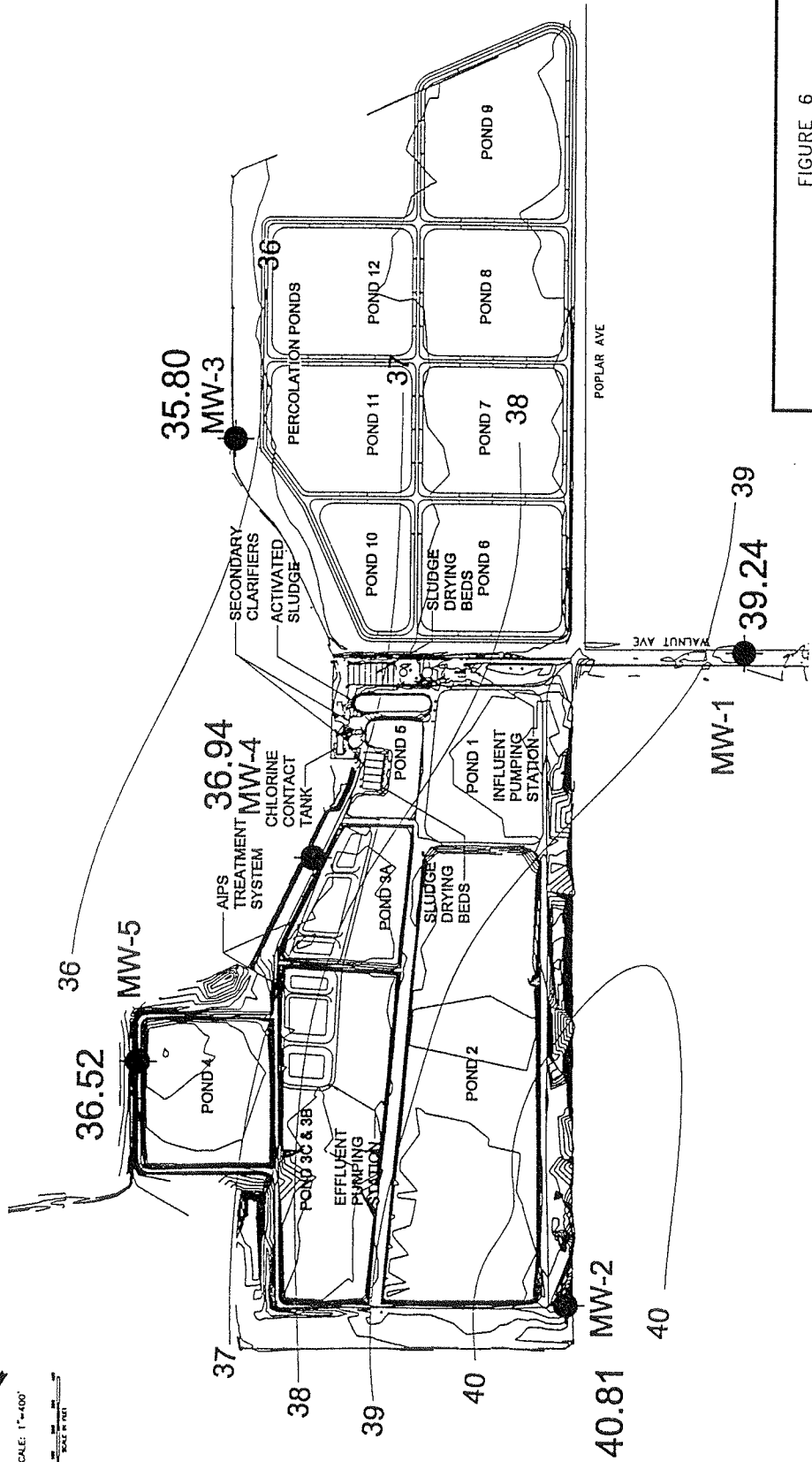
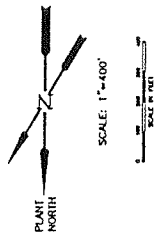
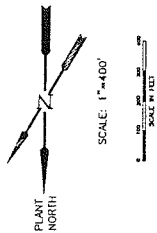


FIGURE 6
GROUNDWATER ELEVATION MAP
MAY 23, 2001

10/20/01 11:00 AM



MW-5

pH	6.9
EC	2,500 uS/cm
TDS	1,500 mg/L
Nitrate-N	9.8 mg/L
Total Coliform*	500
Fecal Coliform*	<2
*Unit MPN/100mL	

MW-4

pH	7.4
EC	930 uS/cm
TDS	550 mg/L
Nitrate-N	0.48 mg/L
Total Coliform*	7
Fecal Coliform*	<2
*Unit MPN/100mL	

MW-3

pH	7.2
EC	4,100 uS/cm
TDS	2,800 mg/L
Nitrate-N	17 mg/L
Total Coliform*	22
Fecal Coliform*	<2
*Unit MPN/100mL	

MW-2

pH	7.4
EC	2,900 uS/cm
TDS	1,800 mg/L
Nitrate-N	4.9 mg/L
Total Coliform*	17
Fecal Coliform*	2
*Unit MPN/100mL	

MW-1

pH	7.5
EC	3,600 uS/cm
TDS	2,400 mg/L
Nitrate-N	25 mg/L
Total Coliform*	4
Fecal Coliform*	<2
*Unit MPN/100mL	

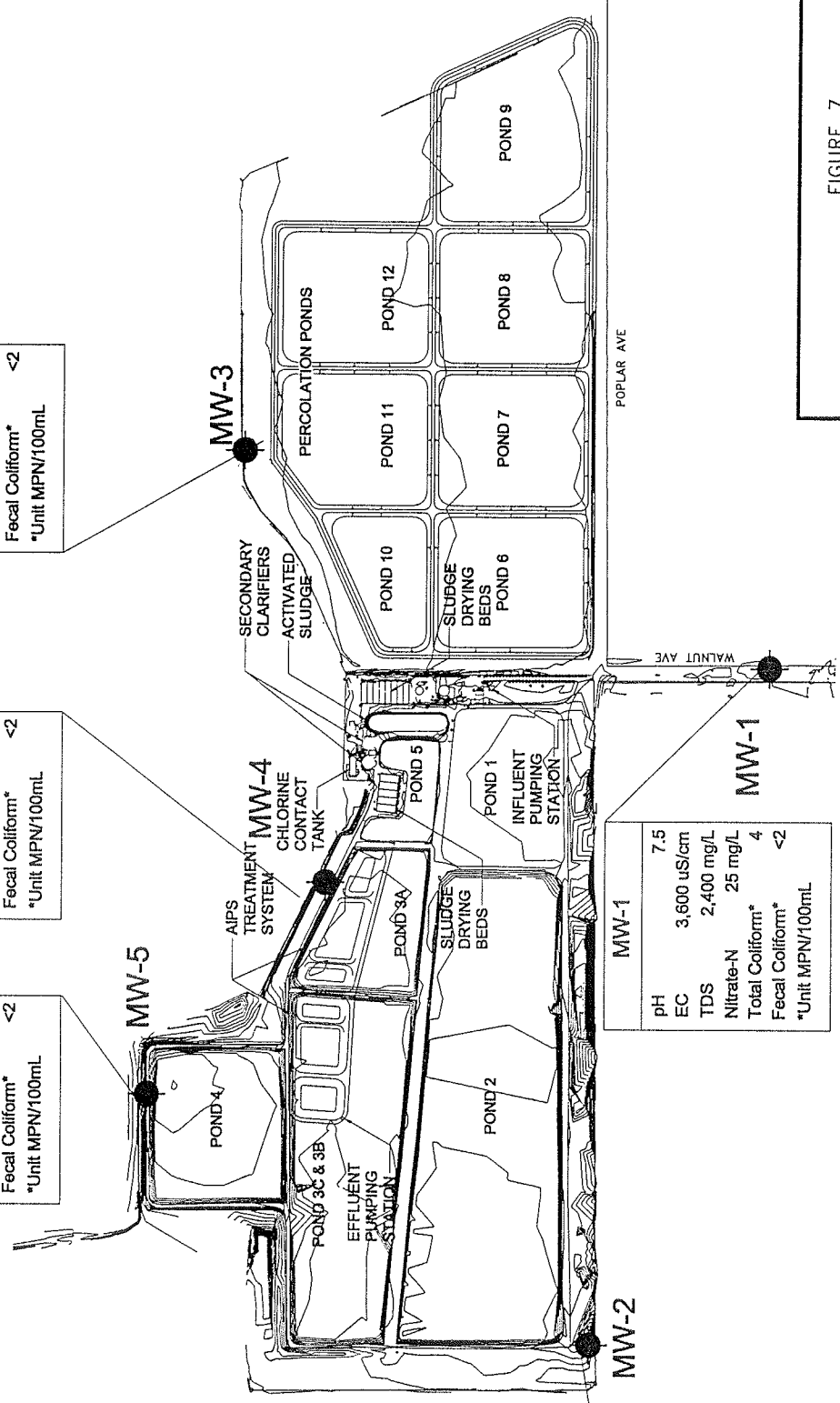


FIGURE 7
GROUNDWATER QUALITY RESULTS
APRIL 2001

**APPENDIX A
PURGE LOGS**

Sampling

The Twining Laboratories

WELL SAMPLING/DEVELOPMENT LOGS

Project Patterson WWTP

Date: 4/4/01

Project #: A5330101

Personnel: Josh Coist

Project Location: _____

Monitoring Well # MW-1

Weather Conditions Partly cloudy - 50's

Sample # GWAW-1

Sample Date/Time 4/4/01 10:05

Casing Diameter: 2" 4" 6" 4"

Purge Method: Bailer Pump

Casing Depth (DB): _____

Pump/Bailer Type: Gravel

Depth to Water (DW): 16.83

Sampling Method: disposable

Water Column Height: _____

Well Volume: _____

Conversion Factors
 2" well = 0.164 gal/ft
 4" well = 0.654 gal/ft
 6" well = 1.471 gal/ft

Purge Volume: 25 gal

Time	Volume	Temperature (F)	pH	Conductivity uS/mS	Redox (mV)	Dissolved Oxygen (%SAT/ (mg/L))
9:51	5 gal	62.4	7.96	2780	lgt. Brown	
9:53	10 gal	63.9	7.78	2950	mostly clear	
9:55	15 gal	64.7	7.74	3100		
9:56	20 gal	63.0	7.75	3110		
9:58	25 gal	64.8	7.77	3090	clear	

Technician Josh Coist

Notes: _____

Date 4/4/01

Sampling

The Twining Laboratories

WELL SAMPLING/DEVELOPMENT LOGS

Project: Patterson WWT

Date: 4/4/01

Project #: A5330101

Personnel: J. East

Project Location: _____

Monitoring Well # 19W-2

Weather Conditions Sunny

Sample # GLW-2

Sample Date/Time 4/4/01 - 11:05

Casing Diameter: 2" 4" 6"

Purge Method: Bailer Pump

Casing Depth (DB): _____

Pump/Bailer Type: Grout/Cas

Depth to Water (DW): 19.38

Sampling Method: disposable bailer

Water Column Height: _____

Well Volume: _____

Conversion Factors
 2" well = 0.164 gal/ft
 4" well = 0.654 gal/ft
 6" well = 1.471 gal/ft

Purge Volume: 25 gal

Time	Volume	Temperature (F)	pH	Conductivity uS/mS	Redox (mV)	Dissolved Oxygen (%SAT/ (mg/L))
6:56	5gal	62.9	7.86	2340		
10:56	10gal	64.0	7.68	2340	1st bawl	
11:00	15gal	63.6	7.67	2380		
11:02	20gal	63.9	7.65	2410	mostly clear	
11:04	25gal	64.0	7.64	2420	↓	

Technician J. East

Notes: _____

Date 4/4/01

Sampling

The Twining Laboratories

WELL SAMPLING/DEVELOPMENT LOGS

Project Patterson Date: 4/4/01
 Project #: A53301 01 Personnel: Spide Post
 Project Location: _____
 Monitoring Well # BL-3 Weather Conditions Sunny 60's
 Sample # GW MW-3 Sample Date/Time 4/4/01 12:15
 Casing Diameter: 2" 4" 6" 4" Purge Method: Bailer Pump
 Casing Depth (DB): _____ Pump/Bailer Type: Ground For
 Depth to Water (DW): 17.9 Sampling Method: Disposable Bailer
 Water Column Height: _____
 Well Volume: _____
 Purge Volume: 75

Conversion Factors
 2" well = 0.164 gal/ft
 4" well = 0.654 gal/ft
 6" well = 1.471 gal/ft

Time	Volume	Temperature (F)	pH	Conductivity uS/mS	Redox (mV)	Dissolved Oxygen (%SAT/ (mg/L))
1:47	5 gal	63.3	7.60	3230		
17:43	10 gal	64.3	7.52	3330	lt brown	
17:46	75 gal	64.5	7.41	3490	mostly clear	
11:48	20 gal	64.6	7.40	3400	↓	
11:50	25 gal	64.5	7.41	3450	clear	

Technician Carl Todd Notes: _____
 Date _____

Sampling

The Twining Laboratories

WELL SAMPLING/DEVELOPMENT LOGS

Project: Dutton WWTP Date: 4/4/01
 Project #: A5330101 Personnel: J. East
 Project Location: _____
 Monitoring Well #: MV-4 Weather Conditions: Sunny 60's
 Sample #: GW-4 Sample Date/Time: 4/4/01 13:05
 Casing Diameter: 2" 4" 6" 4" Purge Method: Bailer Pump
 Casing Depth (DB): _____ Pump/Bailer Type: Ground For
 Depth to Water (DW): 21.4 Sampling Method: disposal bailer
 Water Column Height: _____
 Well Volume: _____
 Purge Volume: _____

Conversion Factors
 2" well = 0.164 gal/ft
 4" well = 0.654 gal/ft
 6" well = 1.471 gal/ft

Time	Volume	Temperature (F)	pH	Conductivity uS/mS	Redox (mV)	Dissolved Oxygen (%SAT/ (mg/L))
12:34	5 gal	69.1	7.90	7040		
12:36	10 gal	67.8	7.61	1200	noth clear	
12:38	15 gal	67.1	7.51	1220	↓	
12:40	20 gal	66.9	7.49	1180		
12:43	25 gal	67.1	7.47	1190	Clear	

Technician: [Signature] Notes: _____
 Date: 4/4/01

Sampling

The Twining Laboratories

WELL SAMPLING/DEVELOPMENT LOGS

Project Patterson WWTP Date: 4/6/01
Project #: A5330101 Personnel: J. East
Project Location: _____
Monitoring Well # MW-5 Weather Conditions Sunny W/SEA
Sample # GW MW-5 Sample Date/Time 4/6/01 13:45
Casing Diameter: 2" 4" 6" 4" Purge Method: Bailer Pump
Casing Depth (DB): _____ Pump/Bailer Type: Grundfos
Depth to Water (DW): 19.36 Sampling Method: disposal bail
Water Column Height: _____
Well Volume: _____
Purge Volume: 20

Conversion Factors
2" well = 0.164 gal/ft
4" well = 0.654 gal/ft
6" well = 1.471 gal/ft

Time	Volume	Temperature (F)	pH	Conductivity uS/mS	Redox (mV)	Dissolved Oxygen (%SAT/ (mg/L))
13:23	5 gal	64.4	7.54	2090	mostly clear	
13:25	10 gal	63.8	7.26	2150	↓	
13:27	15 gal	63.9	7.10	2040	↓	
13:28	20 gal	63.4	7.15	2100	clear	
13:30	25 gal	63.6	7.13	1960	clear	

Technician Jim East Notes: _____
Date 4/6/01

THE TWINING LABORATORIES, INC.

GEOLOGIC/ENVIRONMENTAL FIELD ACTIVITY REPORT

Project No: A53301.01 Date: 4/24/01

Project: Patterson WWTP

Work Scope: Sample 5 wells for Coliform

Contacts:

Personnel: <u>Josh East</u>			
Vehicle: <u>49</u>	Mileage <u>190</u>		
	Start:	End:	Total:
Time: <u>8:45</u>			
Leave: <u>1:15</u>	On Site:	Leave Site:	Return: <u>3:00</u>

Equipment and Material Utilization:				
Equipment	Model	Serial No.	Materials	Units Expended
Hydric - Ph Electrode			10 disposable batteries	5
Grundfos pump				
Control Box				
Sounder				
Generator				

Description of Activities (time, occurrence, and observation/data):

Arrived @ 8:45 checked in @ office - proceeded to
 MW-2 -
 Purged well w/ Grundfos 2" pump. (ex the well volume
 decontaminated pump w/ Alconex (sodium phosphate) detergent in 5
 gallons of water then pumped 10 gallons tap water then
 5 gallons deionized water. Sampled wells w/ disposable
 battery. Emptied 3 batteries before sampling. Sampled using
 latex gloves (new pair for each well). Samples held in
 ice chest, cooled w/ blue ice.

Signature: _____ (continued on reverse)

The Twining Laboratories

WELL SAMPLING/DEVELOPMENT LOGS

Project Patterson WWTP Date: 4/24/01
 Project #: A53301.01 Personnel: Josh East
 Project Location: Patterson
 Monitoring Well # MU-1 Weather Conditions Sunny 70's
 Sample # GUWV-1 Sample Date/Time 9:46
 Casing Diameter: 2" (4") 6" Purge Method: Bailer Pump
 Casing Depth (DB): 27.52 Pump/Bailer Type: Grudfos
 Depth to Water (DW): 16.36 Sampling Method: Disposable Bailer
 Water Column Height: 11.16
 Well Volume: 7.29
 Purge Volume: 45 gallons

Conversion Factors
 2" well = 0.164 gal/ft
 4" well = 0.654 gal/ft
 6" well = 1.471 gal/ft

Time	Volume	Temperature (F)	pH	Conductivity uS/mS	Redox (mV)	Dissolved Oxygen (%SAT/ (mg/L))
9:17	5 gal	71.3	7.05	2900	very light	6.0 ml
9:18	10 gal	70.1	7.31	2940	↓	
9:20	15 gal	69.1	7.43	2870	mostly clear	
9:21	20 gal	69.2	7.51	2990	↓	no sediment
9:24	30 gal	68.7	7.65	2970	↓	
9:27	40 gal	68.5	7.67	3010	↓	
9:28	45 gal	68.4	7.65	2970	↓	

Technician Josh East Notes: water remained clear
 Date 4/24/01 of sediment

The Twining Laboratories

WELL SAMPLING/DEVELOPMENT LOGS

Project: Patterson WWTP Date: 4/24/01
 Project #: A53301.01 Personnel: Josh East
 Project Location: Patterson
 Monitoring Well #: MW-2 Weather Conditions: Sunny 70's
 Sample #: GWMW-2 Sample Date/Time: 4/24/01 10:45
 Casing Diameter: 2" 4" 6" 4" Purge Method: Bailer Pump
 Casing Depth (DB): 31.26 Pump/Bailer Type: Grundfos
 Depth to Water (DW): 15.89 Sampling Method: Get Disposable Bailer
 Water Column Height: 15.39
 Well Volume: 10 gal
 Purge Volume: 60 gal

Conversion Factors
 2" well = 0.164 gal/ft
 4" well = 0.654 gal/ft
 6" well = 1.471 gal/ft

Time	Volume	Temperature (F)	pH	Conductivity uS/mS	Redox (mV)	Dissolved Oxygen (%SAT/ (mg/L))
10	10:12	68.2 66.9	7.36	2470	WAT brown	
20	10:14	66.9	7.54	2430	↓	
30	10:17	66.3	7.51	2480	clear	no sediment
40	10:19	66.2	7.60	2420		
50	10:22	66.0	7.56	2420		
60 gal	10:25	65.8	7.55	2440		

Technician: Josh East Notes: _____
 Date: _____

The Twining Laboratories

WELL SAMPLING/DEVELOPMENT LOGS

Project Patterson WWTP Date: 4/24/01
 Project #: A5301.01 Personnel: Joey East
 Project Location: Patterson
 Monitoring Well # MW-3 Weather Conditions Sunny 70's
 Sample # 6WMW-3 Sample Date/Time 4/24/01 11:25
 Casing Diameter: 2" 4" 6" 4" Purge Method: Bailer Pump
 Casing Depth (DB): 30.86 Pump/Bailer Type: Grundfos
 Depth to Water (DW): 12.95 Sampling Method: Disposable Bailer
 Water Column Height: 12.95
 Well Volume: 8.4
 Purge Volume: 50 gallons

Conversion Factors
 2" well = 0.164 gal/ft
 4" well = 0.654 gal/ft
 6" well = 1.471 gal/ft

Time	Volume	Temperature (F)	pH	Conductivity uS/mS	Redox (mV)	Dissolved Oxygen (%SAT/ (mg/L))
11:00	10 gal	67.8	6.89	3570	mostly	clear
11:02	20 gal	67.2	7.30	3600	clear	
11:05	30 gal	66.8	7.40	3400		
11:07	40 gal	66.6	7.37	3390		
11:10	50 gal	66.7	7.38	3410		

Technician Joey East Notes: _____
 Date _____

The Twining Laboratories

WELL SAMPLING/DEVELOPMENT LOGS

Project: Patterson WWTP
 Project #: A53301.01
 Project Location: Patterson
 Monitoring Well #: MW#4
 Sample #: GW MW #4
 Casing Diameter: 2" 4" 6" 4"
 Casing Depth (DB): 31.64
 Depth to Water (DW): 21.73
 Water Column Height: 9.91
 Well Volume: 16.48
 Purge Volume: 40 gallons

Date: 4/24/01
 Personnel: Jessie East
 Weather Conditions: Sunny 275°
 Sample Date/Time: 4/24/01 12:15
 Purge Method: Bailer Pump
 Pump/Bailer Type: Grundfos
 Sampling Method: Disposable Teflon Bailer

Conversion Factors
 2" well = 0.164 gal/ft
 4" well = 0.654 gal/ft
 6" well = 1.471 gal/ft

Time Vol	Volume ft ³	Temperature (F)	pH	Conductivity uS/mS	Redox (mV)	Dissolved Oxygen (%SAT/ mg/L)
10	11:44	71.6	6.90	2090	1153 + brown	
20	11:47	69.1	7.13	2000	↓	
30	11:50	68.8	72.1	1920	mostly clear	
35	11:52	69.0	72.0	1950		
40	11:53	69.1	72.0	1970		

Technician: Jessie East
 Date: _____

Notes: _____

The Twining Laboratories

WELL SAMPLING/DEVELOPMENT LOGS

Project: Patterson WWTP Date: 4/24/01
 Project #: A53301.01 Personnel: Josh East
 Project Location: Patterson
 Monitoring Well #: MW-5 Weather Conditions: Sunny - 75
 Sample #: GWMW-5 Sample Date/Time: 4/24/01 1:10
 Casing Diameter: 2" 4" 6" 4" Purge Method: Bailer Pump
 Casing Depth (DB): 30.5 Pump/Bailer Type: Groundlog
 Depth to Water (DW): 19.9 Sampling Method: Disposable Bailer
 Water Column Height: 10.6
 Well Volume: 6.9
 Purge Volume: 45 gal/hr

Conversion Factors
 2" well = 0.164 gal/ft
 4" well = 0.654 gal/ft
 6" well = 1.471 gal/ft

Time	Volume	Temperature (F)	pH	Conductivity uS/mS	Redox (mV)	Dissolved Oxygen (%SAT/ (mg/L))
12:30	10	66.3	7.30	2130		
12:32	20	64.1	7.24	1960	very clear ↓ ↓ ↓	
12:35	30	63.9	7.19	1970		
12:38	40	63.9	7.16	1980		
12:40	45	63.7	7.18	2000		

Technician: Josh East
 Date: 4/24/01

Notes: _____

**APPENDIX B
LABORATORY ANALYTICAL REPORTS
AND CUSTODY FORMS**

THE


TWINING

LABORATORIES, INC.

TRANSMITTAL

REC'D JOB#
APR 30 2001
LEE & RO, INC.

2527 Fresno Street, Fresno, California 93721
Phone: (559) 268-7021; FAX: (559) 268-7126

To: Ms. Tambrey Tosk Lee & Ro P.O. Box 93070 City of Industry, CA 91715-3070	Date: 25 April 2001
From: Jerry Kazynski 	Project: A53301.01
	RE: City of Patterson MWs

Attached are the laboratory data sheets for the analyses performed on the groundwater monitoring wells at the City of Patterson wastewater treatment plant.

As you know, the coliform analyses of these samples were analyzed in accordance with a drinking water method. At your request, we resampled the wells on April 24, 2001. Those results will be provided when available.

If you have any questions or require additional information, please call.

PROJECT COVER SHEET

REPORT DATE : April 20, 2001
LABORATORY ID : 701-1684.1-5

INVOICE# 70101684
PROJECT MANAGER: JERRY K.

ATTENTION : MS. SHERRI BACCARO
CLIENT CITY OF PATTERSON
33 S. DEL PAERTO
PATTERSON CA 95363

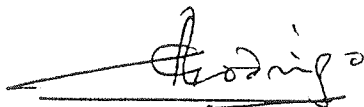
PROJECT INFO : PATTERSON WWTP
PROJECT# : A53301.01

The Twining Laboratories is accredited by the State of California Department of Health Services for the analysis of Drinking Water, Wastewater and Hazardous Waste under Certificate No. 1371.

In accordance with your instructions, the samples submitted were analyzed for the components specified. The analytical results are enclosed on the following pages.

Please contact us if you have any questions concerning the analyses or results. Thank you for letting us serve you.

rs 1c: DRILLING



William E. Elliott
Laboratory Director

Rev. 1 8/94 (COVER)

CORPORATE OFFICE
2527 Fresno Street
Fresno, CA 93721-1804
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Modesto, CA 95256-9322
(209) 545-1050 • Fax 545-1147

VISALIA
130 North Kelsey St., #H6
Visalia, CA 93291-9000
(559) 651-8280 • Fax 651-8288

BAKERSFIELD
3701 Pegasus Drive, #124
Bakersfield, CA 93308-6843
(661) 393-5088 • Fax 393-4643

MONTEREY
4 Justin Court Suite D
Monterey, CA 93940
(831) 333-1180 • Fax 333-1182

REPORT DATE : April 20, 2001
LABORATORY ID : 701-1684.1-5

THE TWINING LABORATORIES, INC.
PAGE 1 of 9

DATE SAMPLED : 04/04/01 at As Listed by Client
DATE RECEIVED : 04/05/01 at 0817 from J. East

CLIENT : CITY OF PATTERSON

ANALYZED BY : I. Castellanos
REVIEWED BY : G. Rodrigo

DATE PREPARED : 04/05/01
DATE ANALYZED : 04/05/01

SAMPLE TYPE : Ground Water

CONSTITUENT : pH

LAB ID #	SAMPLE ID	RESULT	UNITS	DLR	METHOD
1	GWMW-1 @ 1005	7.5	pH	—	150.1
2	GWMW-2 @ 1125	7.4	pH	—	150.1
3	GWMW-3 @ 1215	7.2	pH	—	150.1
4	GWMW-4 @ 1315	7.4	pH	—	150.1
5	GWMW-5 @ 1345	6.9	pH	—	150.1

ND: None Detected DLR: Detection Limit for Reporting purposes
mg/L: Milligrams per liter (ppm) SM: Standard Methods (18th Edition)

REPORT DATE : April 20, 2001
LABORATORY ID : 701-1684.1-5

THE TWINING LABORATORIES, INC.
PAGE 2 of 9

DATE SAMPLED : 04/04/01 at As Listed by Client
DATE RECEIVED : 04/05/01 at 0817 from J. East

CLIENT : CITY OF PATTERSON

ANALYZED BY : E. Scott
REVIEWED BY : G. Rodrigo

DATE PREPARED : 04/10/01
DATE ANALYZED : 04/10/01

SAMPLE TYPE : Ground Water

CONSTITUENT : ELECTRICAL CONDUCTANCE (EC)

LAB ID #	SAMPLE ID	RESULT	UNITS	DLR	METHOD
1	GWMW-1 @ 1005	3600	uS/cm	1	SM2510B
2	GWMW-2 @ 1125	2900	uS/cm	1	SM2510B
3	GWMW-3 @ 1215	4100	uS/cm	1	SM2510B
4	GWMW-4 @ 1315	930	uS/cm	1	SM2510B
5	GWMW-5 @ 1345	2500	uS/cm	1	SM2510B

ND: None Detected DLR: Detection Limit for Reporting purposes
uS/cm: Microsiemens per centimeter (EC) SM: Standard Methods (18th Edition)

REPORT DATE : April 20, 2001
LABORATORY ID : 701-1684.1-5

THE TWINING LABORATORIES, INC.
PAGE 3 of 9

DATE SAMPLED : 04/04/01 at As Listed by Client
DATE RECEIVED : 04/05/01 at 0817 from J. East

CLIENT : CITY OF PATTERSON

ANALYZED BY : E. Scott
REVIEWED BY : G. Rodrigo

DATE PREPARED : 04/11/01
DATE ANALYZED : 04/12/01

SAMPLE TYPE : Ground Water

CONSTITUENT : TOTAL DISSOLVED SOLIDS (TDS)

LAB ID #	SAMPLE ID	RESULT	UNITS	DLR	METHOD
1	GWMW-1 @ 1005	2400	mg/L	10	SM2540C
2	GWMW-2 @ 1125	1800	mg/L	10	SM2540C
3	GWMW-3 @ 1215	2800	mg/L	10	SM2540C
4	GWMW-4 @ 1315	550	mg/L	10	SM2540C
5	GWMW-5 @ 1345	1500	mg/L	10	SM2540C

ND: None Detected DLR: Detection Limit for Reporting purposes
mg/L: Milligrams per liter (ppm) SM: Standard Methods (18th Edition)

REPORT DATE : April 20, 2001
LABORATORY ID : 701-1684.1-5

THE TWINING LABORATORIES, INC.
PAGE 4 of 9

DATE SAMPLED : 04/04/01 at As Listed by Client
DATE RECEIVED : 04/05/01 at 0817 from J. East

CLIENT : CITY OF PATTERSON

ANALYZED BY : N. Tyler
REVIEWED BY : G. Rodrigo

DATE PREPARED : 04/05/01
DATE ANALYZED : 04/05/01

SAMPLE TYPE : Ground Water

CONSTITUENT : NITRATE (NO₃-N)

LAB ID #	SAMPLE ID	RESULT	UNITS	DLR	METHOD
1	GWMW-1 @ 1005	25	mg/L	2	300
2	GWMW-2 @ 1125	4.9	mg/L	0.4	300
3	GWMW-3 @ 1215	17	mg/L	0.8	300
4	GWMW-4 @ 1315	0.48	mg/L	0.4	300
5	GWMW-5 @ 1345	9.8	mg/L	0.4	300

ND: None Detected
mg/L: Milligrams per liter (ppm)

DLR: Detection Limit for Reporting purposes
SM: Standard Methods (18th Edition)

REPORT DATE : April 20, 2001
 LABORATORY ID : 701-1684.1

THE TWINING LABORATORIES, INC.
 PAGE 5 of 9

DATE SAMPLED : 04/04/01 at 1005 by Client
 DATE RECEIVED : 04/05/01 at 0817 from J. East

CLIENT : CITY OF PATTERSON

ANALYZED BY : S. Samora, J. Aguirre
 SAMPLE TYPE : Ground Water
 METHOD : SM9221B&E

DATE PREPARED: 04/05/01
 DATE ANALYZED: 04/06/01 through 04/08/01

LAB ID#	CLIENT SAMPLE ID	PRESUMPTIVE TEST		CONFIRMATION TEST		TOTAL COLIFORM RESULT MPN/100ML
		24hr.	48hr.	24hr.	48hr.	
1	GWMW-1	5		0	1	5.1
		5		0	3	
LAB ID#	CLIENT SAMPLE ID			FECAL COLIFORM RESULT 24 hr.	FECAL COLIFORM RESULT MPN/100ML	
1	GWMW-1			0	< 1.1	
				0		

Presumptive Test: Five 10ml, 1.0ml and 0.1 ml Portions. Lauryl Tryptose Broth.

Confirmation Test: Brilliant Green Bile.

SM: Standard Methods, 18th Edition

Fecal Coliform Test: EC Medium.

REPORT DATE : April 20, 2001
 LABORATORY ID : 701-1684.2

THE TWINING LABORATORIES, INC.
 PAGE 6 of 9

DATE SAMPLED : 04/04/01 at 1125 by Client
 DATE RECEIVED : 04/05/01 at 0817 from J. East

CLIENT : CITY OF PATTERSON

ANALYZED BY : S. Samora, J. Aguirre
 SAMPLE TYPE : Ground Water
 METHOD : SM9221B&E

DATE PREPARED: 04/05/01
 DATE ANALYZED: 04/06/01 through 04/08/01

LAB ID#	CLIENT SAMPLE ID	PRESUMPTIVE TEST		CONFIRMATION TEST		TOTAL COLIFORM RESULT MPN/100ML
		24hr.	48hr.	24hr.	48hr.	
2	GWMW-2	5		5	5	> 23.0
		5		1	5	
LAB ID#	CLIENT SAMPLE ID			FECAL COLIFORM RESULT 24 hr.	FECAL COLIFORM RESULT MPN/100ML	
2	GWMW-2			0	< 1.1	
				0		

Presumptive Test: Five 10ml, 1.0ml and 0.1 ml Portions. Lauryl Tryptose Broth.
 Confirmation Test: Brilliant Green Bile. SM: Standard Methods, 18th Edition
 Fecal Coliform Test: EC Medium.

REPORT DATE : April 20, 2001
 LABORATORY ID : 701-1684.3

THE TWINING LABORATORIES, INC.
 PAGE 7 of 9

DATE SAMPLED : 04/04/01 at 1215 by Client
 DATE RECEIVED : 04/05/01 at 0817 from J. East

CLIENT : CITY OF PATTERSON

ANALYZED BY : S. Samora, J. Aguirre
 SAMPLE TYPE : Ground Water
 METHOD : SM9221B&E

DATE PREPARED: 04/05/01
 DATE ANALYZED: 04/06/01 through 04/07/01

LAB ID#	CLIENT SAMPLE ID	PRESUMPTIVE TEST		CONFIRMATION TEST		TOTAL COLIFORM RESULT MPN/100ML
		24hr.	48hr.	24hr.	48hr.	
3	GWMW-3	5		5		> 23.0
		5		5		
LAB ID#	CLIENT SAMPLE ID			FECAL COLIFORM RESULT 24 hr.	FECAL COLIFORM RESULT MPN/100ML	
3	GWMW-3			0	< 1.1	
				0		

Presumptive Test: Five 10ml, 1.0ml and 0.1 ml Portions. Lauryl Tryptose Broth.
 Confirmation Test: Brilliant Green Bile. SM: Standard Methods, 18th Edition
 Fecal Coliform Test: EC Medium.

REPORT DATE : April 20, 2001
 LABORATORY ID : 701-1684.4

THE TWINING LABORATORIES, INC.
 PAGE 8 of 9

DATE SAMPLED : 04/04/01 at 1315 by Client
 DATE RECEIVED : 04/05/01 at 0817 from J. East

CLIENT : CITY OF PATTERSON

ANALYZED BY : S. Samora, J. Aguirre
 SAMPLE TYPE : Ground Water
 METHOD : SM9221B&E

DATE PREPARED: 04/05/01
 DATE ANALYZED: 04/06/01 through 04/08/01

LAB ID#	CLIENT SAMPLE ID	PRESUMPTIVE TEST		CONFIRMATION TEST		TOTAL COLIFORM RESULT MPN/100ML
		24hr.	48hr.	24hr.	48hr.	
4	GWMW-4	5		4	5	> 23.0
		5		4	5	
LAB ID#	CLIENT SAMPLE ID	FECAL COLIFORM RESULT 24 hr.		FECAL COLIFORM RESULT MPN/100ML		
4	GWMW-4	1		1.1		
		0				

Presumptive Test: Five 10ml, 1.0ml and 0.1 ml Portions. Lauryl Tryptose Broth.

Confirmation Test: Brilliant Green Bile.

SM: Standard Methods, 18th Edition

Fecal Coliform Test: EC Medium.

REPORT DATE : April 20, 2001
 LABORATORY ID : 701-1684.5

THE TWINING LABORATORIES, INC.
 PAGE 9 of 9

DATE SAMPLED : 04/04/01 at 1345 by Client
 DATE RECEIVED : 04/05/01 at 0817 from J. East

CLIENT : CITY OF PATTERSON

ANALYZED BY : S. Samora, J. Aguirre
 SAMPLE TYPE : Ground Water
 METHOD : SM9221B&E

DATE PREPARED: 04/05/01
 DATE ANALYZED: 04/06/01 through 04/08/01

LAB ID#	CLIENT SAMPLE ID	PRESUMPTIVE TEST		CONFIRMATION TEST		TOTAL COLIFORM RESULT MPN/100ML
		24hr.	48hr.	24hr.	48hr.	
5	GWMW-5	0	5	5		> 23.0
		0	5	5		
LAB ID#	CLIENT SAMPLE ID			FECAL COLIFORM RESULT 24 hr.	FECAL COLIFORM RESULT MPN/100ML	
5	GWMW-5			0	< 1.1	
				0		

Presumptive Test: Five 10ml, 1.0ml and 0.1 ml Portions. Lauryl Tryptose Broth.
 Confirmation Test: Brilliant Green Bile. SM: Standard Methods, 18th Edition
 Fecal Coliform Test: EC Medium.

ORDER ID # 70101684.1



2527 FRESNO STREET
 FRESNO, CA 93721
 (209) 268-7021 FAX:(209) 268-0740

MO

CHAIN OF CUSTODY/ANALYSIS REQUEST

REPORT TO: MS. SHERI BACCARO	INVOICE TO: (OTHER THAN CLIENT)	COPY REPORT (Circle One) <input type="checkbox"/> State Dept. of Health (DOHS) <input type="checkbox"/> Fresno Madera Mariposa <input type="checkbox"/> Tulare Kings Merced Kern OTHER:
ATTENTION: CITY OF PATTERSON	ATTENTION: Drinking 04	
NAME/CC: Tambrey Tosk, LEE+RO	NAME: Jerry K. AZINSKI	
ADDRESS: 33 S. DEL PUERTO PATTERSON CA 95363	ADDRESS:	
PHONE: 209.892.2041	CONTRACT / PO #	
FAX: 209.892.6119		

COMMENTS Samples held @ 4°C in field	BACTERIOLOGICAL SAMPLES ONLY		PROJECT INFO:
	PUBLIC	ROUTINE	Patterson WWTP
	SURFACE WATER	REPEAT	-
	CONSTRUCTION	REPLACEMENT	PRJ#: A53301.01
	OTHER	OTHER	MGR: Jerry K.
PRIVATE			

TURNAROUND REQUESTED: (circle one)					ANALYSIS REQUESTED									
ROUTINE					RUSH (Specify Date):									
SAMPLED BY (PRINT NAME):					PH-Ec					Total Dissolved Solids				
SIGNATURE:					Nitrate as Nitrogen					Total Coliform				
TYPE KEY: Drinking Water-DW Solid/Soil-SL					Waste Water-WW					Aqueous-AQ				
ID#	SAMPLE ID	SAMPLED DATE TIME		TYPE	PH-Ec	Total Dissolved Solids	Nitrate as Nitrogen	Total Coliform	Organisms SM9223	Total Coliform Organism	SM9223			
1	GWAW-1	4/4/01	10:05	GW	X	X	X	X	X	X	X	14P8B3		
2	GWAW-2		11:25									AXM		
3	GWAW-3		12:15											
4	GWAW-4		13:15											
5	GWAW-5		13:45											

RELINQUISHED BY	COMPANY	DATE	TIME	RECEIVED BY	COMPANY
Tosk East		4/6/01	8:17	MG	TL

THE

TWINING

LABORATORIES, INC.

2527 Fresno Street, Fresno, California 93721
Phone: (559) 268-7021; FAX: (559) 268-7126

REC'D JOB#

MAY 14 2001

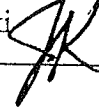
LEE & RO. INC.

TRANSMITTAL

To: Ms. Tambrey Tosk
Lee & Ro, Inc.
P.O. Box 93070
City of Industry, CA 91715-3070

Date: 10 May 2001

Project: A53301.01

From: Jerry Kazynski 

RE: Patterson resampling

Enclosed are copies of the sampling logs and analytical data sheets for the resampling of the City of Patterson WWTP monitoring wells. As you know, the original samples were analyzed for coliform using a drinking water method. These samples were analyzed using a wastewater method.

If you have any questions or require additional information, please call.

PROJECT COVER SHEET

REPORT DATE : May 3, 2001
LABORATORY ID : 701-1982.1-5

INVOICE# 70101982
PROJECT MANAGER: JERRY KAZYNSKI

ATTENTION : Ms. Sherri Baccaro
CLIENT : City of Patterson
33 S. Del Puerto
Patterson , CA 95363

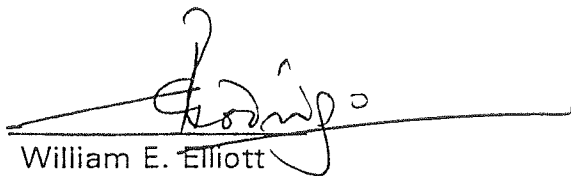
PROJECT INFO - : PATTERSON WWTP
PROJECT# : A53301.01

The Twining Laboratories is accredited by the State of California Department of Health Services for the analysis of Drinking Water, Wastewater and Hazardous Waste under Certificate No. 1371.

In accordance with your instructions, the samples submitted were analyzed for the components specified. The analytical results are enclosed on the following pages.

Please contact us if you have any questions concerning the analyses or results. Thank you for letting us serve you.

Ijt 1c: DRILLING



William E. Elliott
Laboratory Director

Rev. 1 8/94 (COVER)

CORPORATE OFFICE
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Visalia, CA 93291-9000
(559) 651-8280 • Fax 651-8288

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Bakersfield, CA 93308-6843
(661) 393-5088 • Fax 393-4643

MONTEREY
4 Justin Court Suite D
Monterey, CA 93940
(831) 333-1180 • Fax 333-1182

REPORT DATE : May 3, 2001
 LABORATORY ID : 701-1982.1

THE TWINING LABORATORIES, INC.
 PAGE 1 of 5

DATE SAMPLED : 04-24-01 at 0940 by Josh East
 DATE RECEIVED : 04-24-01 at 1530 from Josh East

CLIENT : MS. SHERRI BACCARO / CITY OF PATTERSON

ANALYZED BY : S. Samora, J. Aguirre
 SAMPLE TYPE : Wastewater
 METHOD : SM9221B&E

DATE PREPARED: 04-24-01
 DATE ANALYZED: 04-25-01 through 04-28-01

LAB ID#	CLIENT SAMPLE ID	PRESUMPTIVE TEST		CONFIRMATION TEST		TOTAL COLIFORM RESULT MPN/100ML
		24hr.	48hr.	24hr.	48hr.	
.1	GWMW-1	0	5	0	2	4
		0	1	0	0	
		0	0	0	0	
LAB ID#	CLIENT SAMPLE ID			FECAL COLIFORM RESULT 24 hr.	FECAL COLIFORM RESULT MPN/100ML	
.1	GWMW-1			0	<2	
				0		
				0		

Presumptive Test: Five 10ml, 1.0ml and 0.1 ml Portions. Lauryl Tryptose Broth.
 Confirmation Test: Brilliant Green Bile. SM: Standard Methods, 18th Edition
 Fecal Coliform Test: EC Medium.

REPORT DATE : May 3, 2001
 LABORATORY ID : 701-1982.2

THE TWINING LABORATORIES, INC.
 PAGE 2 of 5

DATE SAMPLED : 04-24-01 at 1045 by Josh East
 DATE RECEIVED : 04-24-01 at 1530 from Josh East

CLIENT : MS. SHERRI BACCARO / CITY OF PATTERSON

ANALYZED BY : S. Samora, J. Aguirre
 SAMPLE TYPE : Wastewater
 METHOD : SM9221B&E

DATE PREPARED: 04-24-01
 DATE ANALYZED: 04-25-01 through 04-28-01

LAB ID#	CLIENT SAMPLE ID	PRESUMPTIVE TEST		CONFIRMATION TEST		TOTAL COLIFORM RESULT MPN/100ML
		24hr.	48hr.	24hr.	48hr.	
.2	GWMW-2	0	3	3		17
		0	3	3		
		0	0	0		
LAB ID#	CLIENT SAMPLE ID			FECAL COLIFORM RESULT 24 hr.	FECAL COLIFORM RESULT MPN/100ML	
.2	GWMW-2			0	2	
				1		
				0		

Presumptive Test: Five 10ml, 1.0ml and 0.1 ml Portions. Lauryl Tryptose Broth.
 Confirmation Test: Brilliant Green Bile. SM: Standard Methods, 18th Edition
 Fecal Coliform Test: EC Medium.

REPORT DATE : May 3, 2001
 LABORATORY ID : 701-1982.3

THE TWINING LABORATORIES, INC.
 PAGE 3 of 5

DATE SAMPLED : 04-24-01 at 1125 by Josh East
 DATE RECEIVED : 04-24-01 at 1530 from Josh East

CLIENT : MS. SHERRI BACCARO / CITY OF PATTERSON

ANALYZED BY : S. Samora, J. Aguirre
 SAMPLE TYPE : Wastewater
 METHOD : SM9221B&E

DATE PREPARED: 04-24-01
 DATE ANALYZED: 04-25-01 through 04-28-01

LAB ID#	CLIENT SAMPLE ID	PRESUMPTIVE TEST		CONFIRMATION TEST		TOTAL COLIFORM RESULT MPN/100ML
		24hr.	48hr.	24hr.	48hr.	
.3	GWMW-3	0	4	4		22
		0	2	2		
		0	0	0		
LAB ID#	CLIENT SAMPLE ID	FECAL COLIFORM RESULT 24 hr.		FECAL COLIFORM RESULT MPN/100ML		
.3	GWMW-3	0		<2		
		0				

Presumptive Test: Five 10ml, 1.0ml and 0.1 ml Portions. Lauryl Tryptose Broth.
 Confirmation Test: Brilliant Green Bile. SM: Standard Methods, 18th Edition
 Fecal Coliform Test: EC Medium.

REPORT DATE : May 3, 2001
 LABORATORY ID : 701-1982.4

THE TWINING LABORATORIES, INC.
 PAGE 4 of 5

DATE SAMPLED : 04-24-01 at 1215 by Josh East
 DATE RECEIVED : 04-24-01 at 1530 from Josh East

CLIENT : MS. SHERRI BACCARO / CITY OF PATTERSON

ANALYZED BY : S. Samora, J. Aguirre
 SAMPLE TYPE : Wastewater
 METHOD : SM9221B&E

DATE PREPARED: 04-24-01
 DATE ANALYZED: 04-25-01 through 04-28-01

LAB ID#	CLIENT SAMPLE ID	PRESUMPTIVE TEST		CONFIRMATION TEST		TOTAL COLIFORM RESULT MPN/100ML
		24hr.	48hr.	24hr.	48hr.	
.4	GWMW-4	0	3	0	2	7
		0	1	0	1	
		0	0	0	0	
LAB ID#	CLIENT SAMPLE ID			FECAL COLIFORM RESULT 24 hr.	FECAL COLIFORM RESULT MPN/100ML	
.4	GWMW-4			0	<2	
				0		
				0		

Presumptive Test: Five 10ml, 1.0ml and 0.1 ml Portions. Lauryl Tryptose Broth.
 Confirmation Test: Brilliant Green Bile. SM: Standard Methods, 18th Edition
 Fecal Coliform Test: EC Medium.

REPORT DATE : May 3, 2001
 LABORATORY ID : 701-1982.5

THE TWINING LABORATORIES, INC.
 PAGE 5 of 5

DATE SAMPLED : 04-24-01 at 1310 by Josh East
 DATE RECEIVED : 04-24-01 at 1530 from Josh East

CLIENT : MS. SHERRI BACCARO / CITY OF PATTERSON

ANALYZED BY : S. Samora, J. Aguirre
 SAMPLE TYPE : Wastewater
 METHOD : SM9221B&E

DATE PREPARED: 04-24-01
 DATE ANALYZED: 04-25-01 through 04-28-01

LAB ID#	CLIENT SAMPLE ID	PRESUMPTIVE TEST		CONFIRMATION TEST		TOTAL COLIFORM RESULT MPN/100ML
		24hr.	48hr.	24hr.	48hr.	
.5	GWMW-5	0	5	5		500
		0	5	5		
		0	2	2		
LAB ID#	CLIENT SAMPLE ID			FECAL COLIFORM RESULT 24 hr.	FECAL COLIFORM RESULT MPN/100ML	
.5	GWMW-5			0	<2	
				0		
				0		

Presumptive Test: Five 10ml, 1.0ml and 0.1 ml Portions. Lauryl Tryptose Broth.

Confirmation Test: Brilliant Green Bile.

SM: Standard Methods, 18th Edition

Fecal Coliform Test: EC Medium.

ORDER ID # 70101982.1



108-110
2527 FRESNO STREET
FRESNO, CA 93721
(559) 268-7021 FAX: (559) 268-0740

CHAIN OF CUSTODY/ANALYSIS REQUEST

REPORT TO: Ms. Sherril Baccaro	INVOICE TO/COPY REPORT: (Circle one)	REGULATOR (Circle one) State Dept. of Health (DOHS) Fresno Madera Mariposa Tulare Kings Merced Kern Other:
ATTENTION City of Patterson	ATTENTION: Jerry Kazyski	
NAME: CC's Tankrey Josh, Lic. #	NAME:	
ADDRESS: 33 S. Del Puerto Patterson CA 95363	ADDRESS: Jerry Kazyski	
PHONE: (209) 892-2041	CONTRACT/P.O. #	
FAX: (209) 892-6119		

COMMENTS: Samples held @ 4°C in field SEA	BACTERIOLOGICAL SAMPLES ONLY			PROJECT INFO:
	PUBLIC		ROUTINE	Patterson WWTP
	SURFACE WATER		REPEAT	
	CONSTRUCTION		REPLACEMENT	PRJ#: A53301.01
	OTHER		OTHER	MGR: Jerry Kazyski
PRIVATE		ANALYSIS REQUESTED		

TURNAROUND REQUESTED: (Circle one)					Fecal Coliforms 3x5F	Total Coliforms															
ROUTINE		RUSH (Specify Date):																			
SAMPLED BY (PRINT NAME): Josh Eagl																					
SIGNATURE:																					
TYPE KEY: Drinking Water-DW Ground Water-GW Other-O (Describe in Comments)																					
Surface Water-SW Storm Water-STM Biosolid-BS Waste Water-WW Solid/Soil-SL																					
ID#	SAMPLE ID	SAMPLED		TYPE																	
		DATE	TIME																		
1	GW MW-1	4/24/01	9:40	WW	X	X															
2	GW MW-2		10:45																		
3	GW MW-3		11:25																		
4	GW MW-4		12:15																		
5	GW MW-5		13:10																		

RELINQUISHED BY: Jack Eagl	COMPANY: TL	DATE: 4/24/01	TIME: 15:30	RECEIVED BY: MD	COMPANY: TL

APPENDIX C
PLANT SAMPLE TABLES

City of Patterson, CA (209) 892-2041	Water Quality Control Facility			WDR Order No. 5-00-146		
George Lambert, City Manager	Monitoring Report			Monthly Summary		

Constituent / Parameter	Frequency (Daily = Weekdays Only)	Units (mgd = Million Gallons per Day)	Action / Sample Type	WDR Limit	January Ave.	January Max.	January Min.
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Weather							
Ambient Air Temperature:	Daily	°F	-		38	49	28
Precipitation (inches):	Daily	Inches	24HC	total-->	3	1	0

INFLUENT - Raw							
Total Plant Influent Flow (MCC-A)	Continuous	mgd	OIP	1.3 Max.	0.8	1.1	0.7
Biochemical Oxygen Demand, 20°C BOD ₅	Weekly	lbs/day	Calc.		1400	1700	900
Biochemical Oxygen Demand, 20°C BOD ₅	Weekly	mg/l	24HC		230	270	160
Total Suspended Solids (TSS)	Weekly	mg/l	24HC		143	230	60
Electrical Conductivity	Twice Monthly	µmhos/cm	24HC		Note 2	-	-
Dissolved Oxygen (DO)	Weekly	mg/l	Grab		0.2	0.2	0.1
Temperature	Weekly	°C	Grab		18	19	18
pH	Weekly	pH	Grab		7	8	7
Total Plant Influent Flow (MCC-A)	Monthly	mgd	Calc.	Total=	23		

EFFLUENT - Activated Sludge Treatment, ASF							
Effluent Flow	Daily	Calc. mgd	-		0.5	0.7	0.4
Biochemical Oxygen Demand, 20°C BOD ₅	Twice Monthly	lbs/day	Calc.		11	11	10
Biochemical Oxygen Demand, 20°C BOD ₅	Twice Monthly	mg/l	8HC	30 Ave.	3	3	3
BOD Removal Efficiency	Twice Monthly	%	Calc.		99	99	98
Total Suspended Solids (TSS)	Twice Monthly	mg/l	8HC		15	20	10
TSS Removal Efficiency	Twice Monthly	%	Calc.		80	93	67
Settleable Solids (SS)	Weekly	ml/l	8HC				
Total Dissolved Solids (TDS)	Monthly	mg/l	8HC		1090		
Electrical Conductivity	Weekly	µmhos/cm	Grab		1335	1411	1224
Nitrate (as N)	Monthly	mg/l	8HC		69		
Standard Minerals	Annually	mg/l	Grab		yrly rpt		
Dissolved Oxygen	Weekly	mg/l	Grab		2.9	3.4	2.4
Temperature	Weekly	°C	Grab		15	16	14
pH	Weekly	pH	Grab		8	9	8

City of Patterson, CA (209) 892-2041	Water Quality Control Facility			WDR Order No. 5-00-146			
George Lambert, City Manager	Monitoring Report			Monthly Summary			
Constituent / Parameter	Frequency (Daily = Weekdays Only)	Units (mgd = Million Gallons per Day)	Action / Sample Type	WDR Limit	January Ave.	January Max.	January Min.

EFFLUENT - Advanced Integrated Pond System, AIPS

Effluent Flow	Daily	Calc. mgd	-		0.3	0.4	0.3
Freeboard (calc. from Staff Gage readings)	Daily	0.1 Feet	Min.		2.0	2.0	2.0
Biochemical Oxygen Demand, 20°C BOD ₅	Weekly	1000lbs/day	Calc.		52	78	30
Biochemical Oxygen Demand, 20°C BOD ₅	Weekly	mg/l	24HC	45 Ave.	23	33	14
Total Suspended Solids (TSS)	Weekly	mg/l	24HC		40	40	40
Settleable Solids (SS)	Weekly	ml/l	Grab		0	0	0
Electrical Conductivity	Weekly	µmhos/cm	Grab		1408	1551	1253
Standard Minerals	Annually	mg/l	Grab		see rpt		
Dissolved Oxygen	Twice Weekly	mg/l	Grab	>=1.0	2.3	3.9	1.0
Temperature	Twice Weekly	°C	Grab		9	10	8
pH	Twice Weekly	pH	Grab		8	8	8

Pre 2000 Expansion Pond System

Pond #1; Auxillary Aeration Treatment

Freeboard	Daily	0.1 Feet	>2-ft ?				>2.0
Dissolved Oxygen (DO)	Weekly	mg/l	Grab	>=1.0	6.3	6.6	5.8
Temperature	Weekly	°C	Grab		8	9	7
pH	Weekly	pH	Grab		8	8	7
Electrical Conductivity	Monthly	µmhos/cm	Grab		Note 2		

Pond #2

Freeboard	Daily	0.1 Feet	>2-ft ?				>2.0
Dissolved Oxygen (DO)	Weekly	mg/l	Grab	>=1.0	4.4	5.5	3.1
Temperature	Weekly	°C	Grab		7	8	7
pH	Weekly	pH	Grab		8	8	8
Electrical Conductivity	Monthly	µmhos/cm	Grab		Note 2		

Pond #3

Freeboard	Daily	0.1 Feet	>2-ft ?				>2.0
Dissolved Oxygen (DO)	Weekly	mg/l	Grab	>=1.0	3.8	4.0	3.6
Temperature	Weekly	°C	Grab		8	9	7
pH	Weekly	pH	Grab		8	8	8
Electrical Conductivity	Monthly	µmhos/cm	Grab		Note 2		

City of Patterson, CA (209) 892-2041		Water Quality Control Facility			WDR Order No. 5-00-146		
George Lambert, City Manager		Monitoring Report			Monthly Summary		
Constituent / Parameter	Frequency (Daily * Weekdays Only)	Units (mgd = Million Gallons per Day)	Action / Sample Type	WDR Limit	January Ave.	January Max.	January Min.
Pond #4							
Freeboard	Daily	0.1 Feet	>2-ft ?				>2.0
Dissolved Oxygen (DO)	Weekly	mg/l	Grab	>=1.0	7.7	7.7	7.7
Temperature	Weekly	°C	Grab		7	8	6
pH	Weekly	pH	Grab		8	9	8
Electrical Conductivity	Monthly	µmhos/cm	Grab		Note 2		
Pond #5							
Freeboard	Daily	0.1 Feet	>2-ft ?				>2.0
Dissolved Oxygen (DO)	Weekly	mg/l	Grab	>=1.0	1.7	2.1	1.1
Temperature	Weekly	°C	Grab		11	12	10
pH	Weekly	pH	Grab		8	8	7
Electrical Conductivity	Monthly	µmhos/cm	Grab		Note 2		
AIPS No. 1 Pond System							
Pond #6 - AIPS Percolation / Evaporation							
Dissolved Oxygen (DO)	Weekly	mg/l	Grab	>=1.0			
Temperature	Weekly	°C	Grab				
pH	Weekly	pH	Grab				
Electrical Conductivity	Monthly	µmhos/cm	Grab				
Pond #7 - AIPS Percolation / Evaporation							
Dissolved Oxygen (DO)	Weekly	mg/l	Grab	>=1.0			
Temperature	Weekly	°C	Grab				
pH	Weekly	pH	Grab				
Electrical Conductivity	Monthly	µmhos/cm	Grab				
Pond #8 - AIPS Percolation / Evaporation							
Dissolved Oxygen (DO)	Weekly	mg/l	Grab	>=1.0			
Temperature	Weekly	°C	Grab				
pH	Weekly	pH	Grab				
Electrical Conductivity	Monthly	µmhos/cm	Grab				
Pond #9 - AIPS Percolation / Evaporation							
Dissolved Oxygen (DO)	Weekly	mg/l	Grab	>=1.0			
Temperature	Weekly	°C	Grab				
pH	Weekly	pH	Grab				
Electrical Conductivity	Monthly	µmhos/cm	Grab				

City of Patterson, CA
(209) 892-2041

Water Quality Control
Facility

WDR Order
No. 5-00-146

George Lambert,
City Manager

Monitoring Report

Monthly Summary

Constituent / Parameter	Frequency (Daily = Weekdays Only)	Units (mgd = Million Gallons per Day)	Action / Sample Type	WDR Limit	January Ave.	January Max.	January Min.
Pond #10 - AIPS Percolation / Evaporation							
Dissolved Oxygen (DO)	Weekly	mg/l	Grab	>=1.0			
Temperature	Weekly	°C	Grab				
pH	Weekly	pH	Grab				
Electrical Conductivity	Monthly	µmhos/cm	Grab				
Pond #11 - AIPS Percolation / Evaporation							
Dissolved Oxygen (DO)	Weekly	mg/l	Grab	>=1.0			
Temperature	Weekly	°C	Grab				
pH	Weekly	pH	Grab				
Electrical Conductivity	Monthly	µmhos/cm	Grab				
Pond #12 - AIPS Percolation / Evaporation							
Dissolved Oxygen (DO)	Weekly	mg/l	Grab	>=1.0			
Temperature	Weekly	°C	Grab				
pH	Weekly	pH	Grab				
Electrical Conductivity	Monthly	µmhos/cm	Grab				

Note 1: Dissolved Oxygen readings not valid due to malfunctioning probe; Jan 19 thru Feb 1.

Note 2: Electrical Conductivity tests were missed on influent and on holding ponds this month; conductivity will be determined in subsequent months.

Note 3: AIPS Perc Ponds (Pond #6 thru #12) were not utilized this month; basically empty, i.e., no readings

City of Patterson, CA
 (209) 892-2041
 George Lambert,
 City Manager

Daily

Data

Concurrent / Parameter	1-Jan	2-Jan	3-Jan	4-Jan	5-Jan	6-Jan	7-Jan	8-Jan	9-Jan	10-Jan	11-Jan	12-Jan	13-Jan	14-Jan	15-Jan	16-Jan	17-Jan	18-Jan
Units (mgd + million gallons per day)	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday	Monday	Tuesday	Wednesday	Thursday
Ambient Air Temperature		28.0	28.0	26.0	30.0			48.0	40.0	44.0	42.0	42.0						
Precipitation (inches)	0.0	0.0								1.1	0.8							

Weather

INFLUENT - Raw

Parameter	1-Jan	2-Jan	3-Jan	4-Jan	5-Jan	6-Jan	7-Jan	8-Jan	9-Jan	10-Jan	11-Jan	12-Jan	13-Jan	14-Jan	15-Jan	16-Jan	17-Jan	18-Jan
Total Plant Influent Flow (MGCA)	0.751	0.679	0.713	0.713	0.752	0.752	0.752	0.738	0.728	1.058	1.114	0.695	0.695	0.695	0.695	0.711	0.682	0.734
Biological Oxygen Demand, 20°C BOD ₅			1600															
Chemical Oxygen Demand, 20°C COD _{Cr}			288															
Total Suspended Solids (TSS)			60.0															
Electrical Conductivity																		
Dissolved Oxygen (DO)												0.14						
Temperature												18.2						
pH												7.5						
Total Plant Influent Flow (MGCA)																		

EFFLUENT - AST

Parameter	1-Jan	2-Jan	3-Jan	4-Jan	5-Jan	6-Jan	7-Jan	8-Jan	9-Jan	10-Jan	11-Jan	12-Jan	13-Jan	14-Jan	15-Jan	16-Jan	17-Jan	18-Jan
Effluent Flow	0.5	0.4	0.4	0.4	0.5	0.5	0.5	0.5	0.5	0.7	0.7	0.4	0.4	0.4	0.4	0.4	0.4	0.5
Biological Oxygen Demand, 20°C BOD ₅			11															
Chemical Oxygen Demand, 20°C COD _{Cr}			28															
BOD Removal Efficiency			89															
Total Suspended Solids (TSS)			20.0															
TSS Removal Efficiency			87															
Settleable Solids (SS)			0.0															
Total Dissolved Solids (TDS)			1090.0															
Electrical Conductivity					1372.0													
Nitrate (as N)			89.0															
Standard Nitrate																		
Dissolved Oxygen					3.42							2.82						
Temperature					14.2							15.6						
pH					8.1							8.3						

EFFLUENT - AIPS

Parameter	1-Jan	2-Jan	3-Jan	4-Jan	5-Jan	6-Jan	7-Jan	8-Jan	9-Jan	10-Jan	11-Jan	12-Jan	13-Jan	14-Jan	15-Jan	16-Jan	17-Jan	18-Jan
Effluent Flow	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.4	0.4	0.3	0.3	0.3	0.3	0.3	0.3	0.3
Flowboard (calc. from Staff Gauge reading)	0.1 Feet	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Biological Oxygen Demand, 20°C BOD ₅			30															
Chemical Oxygen Demand, 20°C COD _{Cr}			13.6															
Total Suspended Solids (TSS)			40.0															
Settleable Solids (SS)			0.0															
Total Dissolved Solids (TDS)					1551.0													
Electrical Conductivity																		
Nitrate (as N)																		
Standard Nitrate																		
Dissolved Oxygen					0.95							1.80						
Temperature					9.1							8.5						
pH					8.1													

City of Patterson, CA
 (209) 892-2041
 George Lambert,
 City Manager

Daily
 Data

Constituent / Parameter	1-Jan	2-Jan	3-Jan	4-Jan	5-Jan	6-Jan	7-Jan	8-Jan	9-Jan	10-Jan	11-Jan	12-Jan	13-Jan	14-Jan	15-Jan	16-Jan	17-Jan	18-Jan	19-Jan
Units (read = million gallons per day)	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday

Pond #8

Dissolved Oxygen (DO)	mg/l																			
Temperature	°C																			
pH	pH																			
Electrical Conductivity	µmhos/cm																			

Pond #9

Dissolved Oxygen (DO)	mg/l																			
Temperature	°C																			
pH	pH																			
Electrical Conductivity	µmhos/cm																			

Pond #10

Dissolved Oxygen (DO)	mg/l																			
Temperature	°C																			
pH	pH																			
Electrical Conductivity	µmhos/cm																			

Pond #11

Dissolved Oxygen (DO)	mg/l																			
Temperature	°C																			
pH	pH																			
Electrical Conductivity	µmhos/cm																			

Pond #12

Dissolved Oxygen (DO)	mg/l																			
Temperature	°C																			
pH	pH																			
Electrical Conductivity	µmhos/cm																			

Note 1: Dissolved Oxygen readings not valid due to malfunctioning probe; Jan 18 thru Feb 1.
 Note 2: Electrical Conductivity fields were missed on Pump #1 and on holding ponds this month; conductivity will be determined in subsequent months.
 Note 3: All 8 Perc Ponds (Pond #8 thru #12) were not cultured this month; basically empty, i.e., no readings

City of Patterson, CA
(209) 892-2041
George Lambert,
City Manager

Daily
Data

Constituent / Parameter	Units (mgd = million gallons per day)	1-Jan	2-Jan	3-Jan	4-Jan	5-Jan	6-Jan	7-Jan	8-Jan	9-Jan	10-Jan	11-Jan	12-Jan	13-Jan	14-Jan	15-Jan	16-Jan	17-Jan	18-Jan	
		Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday
Pond #8																				
Dissolved Oxygen (DO)	mg/l																			
Temperature	°C																			
pH	pH																			
Electrical Conductivity	µmhos/cm																			
Pond #9																				
Dissolved Oxygen (DO)	mg/l																			
Temperature	°C																			
pH	pH																			
Electrical Conductivity	µmhos/cm																			
Pond #10																				
Dissolved Oxygen (DO)	mg/l																			
Temperature	°C																			
pH	pH																			
Electrical Conductivity	µmhos/cm																			
Pond #11																				
Dissolved Oxygen (DO)	mg/l																			
Temperature	°C																			
pH	pH																			
Electrical Conductivity	µmhos/cm																			
Pond #12																				
Dissolved Oxygen (DO)	mg/l																			
Temperature	°C																			
pH	pH																			
Electrical Conductivity	µmhos/cm																			

Note 1: Dissolved Oxygen readings not valid due to malfunctioning probe, Jan 18 thru Feb 1.

Note 2: Electrical Conductivity tests were missed on influent and on holding ponds this month; conductivity will be determined in subsequent months.

Note 3: AFS Part Ponds (Pond #8 thru #12) were not sampled this month; basically empty, i.e., no readings.

Conductivity / Parameter	19-Jan	20-Jan	21-Jan	22-Jan	23-Jan	24-Jan	25-Jan	26-Jan	27-Jan	28-Jan	29-Jan	30-Jan	31-Jan
Units (mg/L unless otherwise specified)	Friday	Saturday	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday	Monday	Tuesday	Wednesday
Ambient Air Temperature	40.0			49.0	44.0	42.0	39.0	39.0			41.0	41.0	36.0
Precipitation (inches)				0.1			0.8						

Weather

Parameter	19-Jan	20-Jan	21-Jan	22-Jan	23-Jan	24-Jan	25-Jan	26-Jan	27-Jan	28-Jan	29-Jan	30-Jan	31-Jan
Ambient Air Temperature	40.0			49.0	44.0	42.0	39.0	39.0			41.0	41.0	36.0
Precipitation (inches)				0.1			0.8						

INFLUENT - Raw

Parameter	19-Jan	20-Jan	21-Jan	22-Jan	23-Jan	24-Jan	25-Jan	26-Jan	27-Jan	28-Jan	29-Jan	30-Jan	31-Jan
Total Plant Influent Flow (MGCA)	0.741	0.741	0.742	0.733	0.700	0.682	0.682	0.749	0.749	0.749	0.785	0.722	0.734
Biological Oxygen Demand, 20°C BOD ₅						900					1700		
Biological Oxygen Demand, 20°C BOD ₂₀						158					289		
Total Suspended Solids (TSS)						140.0					230.0		
Electrical Conductivity													
Dissolved Oxygen (DO)	0.17									Note 1			
Temperature	18.8									17.8			
pH	6.8									7.8			
Total Plant Influent Flow (MGCA)													

EFFLUENT - AST

Parameter	19-Jan	20-Jan	21-Jan	22-Jan	23-Jan	24-Jan	25-Jan	26-Jan	27-Jan	28-Jan	29-Jan	30-Jan	31-Jan
Effluent Flow	0.5	0.5	0.5	0.5	0.4	0.4	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Biological Oxygen Demand, 20°C BOD ₅						10							
Biological Oxygen Demand, 20°C BOD ₂₀						2.9							
BOD Removal Efficiency						98							
Total Suspended Solids (TSS)						9.9							
TSS Removal Efficiency						93							
Sulfide Solids (SS)						0.0							
Total Dissolved Solids (TDS)										1296.0			
Electrical Conductivity													
Nitrate (as N)													
Standard Nitrate													
Dissolved Oxygen	2.41									Note 1			
Temperature	15.7									15.5			
pH	7.9									8.5			

EFFLUENT - AIPS

Parameter	19-Jan	20-Jan	21-Jan	22-Jan	23-Jan	24-Jan	25-Jan	26-Jan	27-Jan	28-Jan	29-Jan	30-Jan	31-Jan
Effluent Flow	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
Flowboard Calc. from Staff Gaug. readings	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Biological Oxygen Demand, 20°C BOD ₅						49					78		
Biological Oxygen Demand, 20°C BOD ₂₀						23.0					33.0		
Total Suspended Solids (TSS)						40.0					40.0		
Sulfide Solids (SS)						0.0					0.0		
Total Dissolved Solids (TDS)													
Electrical Conductivity										1253.0			
Nitrate (as N)													
Standard Nitrate													
Dissolved Oxygen	3.90									Note 1		Note 1	
Temperature	8.1									9.0		9.2	
pH	7.9									8.3		7.7	

George Lambert,
City Manager

Units (mg/L -
MDS - Ours for
Cov)

19-Jun	20-Jun	21-Jun	22-Jun	23-Jun	24-Jun	25-Jun	26-Jun	27-Jun	28-Jun	29-Jun	30-Jun	31-Jun
Friday	Saturday	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday	Monday	Tuesday	Wednesday

Pre 2000 Ponds

Pond #1: Aeration Treatment

Freeboard	0.1 Feet											
Dissolved Oxygen (DO)	mg/l	6.57					Note 1					
Temperature	°C	8.9					8.8					
pH		7.4					7.9					
Electrical Conductivity	µmhos/cm											

Pond #2

Freeboard	0.1 Feet											
Dissolved Oxygen (DO)	mg/l	4.60					Note 1					
Temperature	°C	6.5					8.3					
pH		7.7					7.9					
Electrical Conductivity	µmhos/cm											

Pond #3

Freeboard	0.1 Feet											
Dissolved Oxygen (DO)	mg/l	3.64					Note 1					
Temperature	°C	8.1					7.5					
pH		7.8					8.1					
Electrical Conductivity	µmhos/cm											

Pond #4

Freeboard	0.1 Feet											
Dissolved Oxygen (DO)	mg/l	7.74					Note 1					
Temperature	°C	6.4					7.8					
pH		8.5					8.4					
Electrical Conductivity	µmhos/cm											

Pond #5

Freeboard	0.1 Feet											
Dissolved Oxygen (DO)	mg/l	2.06					Note 1					
Temperature	°C	12.0					9.7					
pH		7.4					7.7					
Electrical Conductivity	µmhos/cm											

AIPS Ponds

Pond #6

Freeboard	0.1 Feet											
Dissolved Oxygen (DO)	mg/l											
Temperature	°C											
pH												
Electrical Conductivity	µmhos/cm											

Pond #7

Freeboard	0.1 Feet											
Dissolved Oxygen (DO)	mg/l											
Temperature	°C											
pH												
Electrical Conductivity	µmhos/cm											

City of Patterson, CA
 (209) 892-2041

Daily

George Lambert,
 City Manager

Data

Conductivity / Parameter	18-Jan	19-Jan	20-Jan	21-Jan	22-Jan	23-Jan	24-Jan	25-Jan	26-Jan	27-Jan	28-Jan	29-Jan	30-Jan	31-Jan
	Friday	Saturday	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday	Monday	Tuesday	Wednesday	Thursday

Pond #8	18-Jan	19-Jan	20-Jan	21-Jan	22-Jan	23-Jan	24-Jan	25-Jan	26-Jan	27-Jan	28-Jan	29-Jan	30-Jan	31-Jan
Dissolved Oxygen (DO)														
Temperature														
pH														
Electrical Conductivity														

Pond #9	18-Jan	19-Jan	20-Jan	21-Jan	22-Jan	23-Jan	24-Jan	25-Jan	26-Jan	27-Jan	28-Jan	29-Jan	30-Jan	31-Jan
Dissolved Oxygen (DO)														
Temperature														
pH														
Electrical Conductivity														

Pond #10	18-Jan	19-Jan	20-Jan	21-Jan	22-Jan	23-Jan	24-Jan	25-Jan	26-Jan	27-Jan	28-Jan	29-Jan	30-Jan	31-Jan
Dissolved Oxygen (DO)														
Temperature														
pH														
Electrical Conductivity														

Pond #11	18-Jan	19-Jan	20-Jan	21-Jan	22-Jan	23-Jan	24-Jan	25-Jan	26-Jan	27-Jan	28-Jan	29-Jan	30-Jan	31-Jan
Dissolved Oxygen (DO)														
Temperature														
pH														
Electrical Conductivity														

Pond #12	18-Jan	19-Jan	20-Jan	21-Jan	22-Jan	23-Jan	24-Jan	25-Jan	26-Jan	27-Jan	28-Jan	29-Jan	30-Jan	31-Jan
Dissolved Oxygen (DO)														
Temperature														
pH														
Electrical Conductivity														

Note 1: Dissolved Oxygen readings not valid due to malfunctioning probe, Jan 18 thru Feb 1.

Note 2: Electrical Conductivity levels were missed on tributary and on holding ponds this month; conductivity will be determined in subsequent months.

Note 3: AFS Part Ponds (Pond #8 thru #12) were not tested this month; testably empty, i.e., no readings.

George Lambert

Monitoring Report

Constituent / Parameter	Frequency (Only if necessary Only)	Units (mg/L, µmhos/cm, gals per day)	Action / Sample Type	WDR Limit	February Summary			
					February Avg.	February Max.	February Min.	February Com.
Ambient Air Temperature	Daily	°F			41	50	29	
Precipitation (inches)	Daily	inches	24HC	total →	1.7	0.8	0.0	

Weather

	1-Feb	2-Feb	3-Feb	4-Feb	5-Feb	6-Feb	7-Feb	8-Feb	9-Feb	10-Feb	11-Feb	12-Feb	13-Feb	14-Feb	15-Feb	16-Feb	17-Feb	18-Feb
36.0	36.0	36.0	0.0	0.0	29.0	46.0	41.0	41.0	42.0	40.0	41.0	40.0	41.0	39.0	37.0	38.0		

INFLUENT - Raw

	0.4	0.5	0.5	0.5	0.5	0.4	0.4	0.5	0.5	0.5	0.5	0.5	0.4	0.4	0.4	0.5	0.5	0.5
0.618	0.726	0.726	0.726	0.726	0.685	0.674	0.811	0.638	0.739	0.739	0.739	0.744	0.687	0.687	0.709	0.767	0.767	0.767

EFFLUENT - A. Sludge

	0.4	0.5	0.5	0.5	0.5	0.4	0.4	0.5	0.5	0.5	0.5	0.5	0.4	0.4	0.4	0.5	0.5	0.5
1384	1384	1384	1384	1384	1384	1384	1384	1384	1384	1384	1384	1384	1384	1384	1384	1384	1384	1384

EFFLUENT - AIPS

	0.2	0.3	0.3	0.3	0.3	0.2	0.2	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
1374	1374	1374	1374	1374	1374	1374	1374	1374	1374	1374	1374	1374	1374	1374	1374	1374	1374	1374

Pre 2000 Ponds

	10.3	9.0	8.0	8.0	8.0	8.4	8.4	8.6	8.6	8.1	8.1	8.1	8.1	8.1	8.1	8.1	8.1	8.1
10.3	10.3	10.3	10.3	10.3	10.3	10.3	10.3	10.3	10.3	10.3	10.3	10.3	10.3	10.3	10.3	10.3	10.3	10.3

George Lambert

Monitoring Report

Monthly Summary

Constituent / Parameter	Frequency (Days = Weekends Only)	Units mg/L or Micrograms per Liter	Action / Sample Type	WDR Limit	February Summary																				
					February Ave.	February Max.	February Min.	1 Feb	2 Feb	3 Feb	4 Feb	5 Feb	6 Feb	7 Feb	8 Feb	9 Feb	10 Feb	11 Feb	12 Feb	13 Feb	14 Feb	15 Feb	16 Feb	17 Feb	18 Feb
Pond #2																									
Dissolved Oxygen (DO)	Weekly	mg/L	Grab	>=1.0	11.0	13.1	8.1																		
Temperature	Weekly	°C	Grab		9	11	7																		
pH	Weekly	ph	Grab		9	10	9																		
Electrical Conductivity	Monthly	µmhos/cm	Grab		0	0	0																		
Pond #3																									
Dissolved Oxygen (DO)	Weekly	mg/L	Grab	>=1.0	9.2	12.7	6.5																		
Temperature	Weekly	°C	Grab		9	12	7																		
pH	Weekly	ph	Grab		9	9	9																		
Electrical Conductivity	Monthly	µmhos/cm	Grab		0	0	0																		
Pond #4																									
Dissolved Oxygen (DO)	Weekly	mg/L	Grab	>=1.0	10.9	12.9	7.7																		
Temperature	Weekly	°C	Grab		8	10	6																		
pH	Weekly	ph	Grab		10	10	10																		
Electrical Conductivity	Monthly	µmhos/cm	Grab		0	0	0																		
Pond #5																									
Dissolved Oxygen (DO)	Weekly	mg/L	Grab	>=1.0	5.2	6.3	3.8																		
Temperature	Weekly	°C	Grab		11	13	10																		
pH	Weekly	ph	Grab		8	9	8																		
Electrical Conductivity	Monthly	µmhos/cm	Grab		0	0	0																		
AIPS No. 1 Ponds																									
Pond #6																									
Freeboard	Daily	0.1 Feet	>2.0																						
Dissolved Oxygen (DO)	Weekly	mg/L	Grab	>=1.0	0.0	0.0	> 2.0																		
Temperature	Weekly	°C	Grab		0	0	0																		
pH	Weekly	ph	Grab		0	0	0																		
Electrical Conductivity	Monthly	µmhos/cm	Grab		0	0	0																		
Pond #7																									
Freeboard	Daily	0.1 Feet	>2.0																						
Dissolved Oxygen (DO)	Weekly	mg/L	Grab	>=1.0	0.0	0.0	> 2.0																		
Temperature	Weekly	°C	Grab		0	0	0																		
pH	Weekly	ph	Grab		0	0	0																		
Electrical Conductivity	Monthly	µmhos/cm	Grab		0	0	0																		
Pond #8																									
Freeboard	Daily	0.1 Feet	>2.0																						
Dissolved Oxygen (DO)	Weekly	mg/L	Grab	>=1.0	0.0	0.0	> 2.0																		
Temperature	Weekly	°C	Grab		0	0	0																		
pH	Weekly	ph	Grab		0	0	0																		
Electrical Conductivity	Monthly	µmhos/cm	Grab		0	0	0																		
Pond #9																									
Freeboard	Daily	0.1 Feet	>2.0																						
Dissolved Oxygen (DO)	Weekly	mg/L	Grab	>=1.0	0.0	0.0	> 2.0																		
Temperature	Weekly	°C	Grab		0	0	0																		
pH	Weekly	ph	Grab		0	0	0																		
Electrical Conductivity	Monthly	µmhos/cm	Grab		0	0	0																		
Pond #10																									
Freeboard	Daily	0.1 Feet	>2.0																						
Dissolved Oxygen (DO)	Weekly	mg/L	Grab	>=1.0	0.0	0.0	> 2.0																		
Temperature	Weekly	°C	Grab		0	0	0																		
pH	Weekly	ph	Grab		0	0	0																		
Electrical Conductivity	Monthly	µmhos/cm	Grab		0	0	0																		

City of Palmdale, CA (209) 892-2041		Waste Facility		WDR No. 5-00-146		
George Lambert		Monitoring Report		Monthly Summary		
Constituent / Parameter	Frequency (Only 2 weekdays) Or/1	Units (mg/L, mg/l, °C, pH, µmhos/cm)	Action / Sample Type	February Ave.	February Max.	February Min.
Pond #11						
Freeboard	Daily	0.1 Feet	>2 ft 7			
Dissolved Oxygen (DO)	Weekly	mg/l	Grab	0.0	0.0	> 2.0
Temperature	Weekly	°C	Grab	0.0	0.0	0.0
pH	Weekly	pH	Grab	0.0	0.0	0.0
Electrical Conductivity	Monthly	µmhos/cm	Grab	0	0	0
Pond #12						
Freeboard	Daily	0.1 Feet	>2 ft 7			
Dissolved Oxygen (DO)	Weekly	mg/l	Grab	0.0	0.0	> 2.0
Temperature	Weekly	°C	Grab	0.0	0.0	0.0
pH	Weekly	pH	Grab	0.0	0.0	0.0
Electrical Conductivity	Monthly	µmhos/cm	Grab	0	0	0

Gayle Jordan

Note 1: Electrical Conductivity tests are currently performed in holding ponds.
 Note 2: AIPS Perc Ponds (Pond #6 thru #12) were not utilized this month, basically empty, i.e., no readings.

Constituent / Parameter	Frequency (Date/Weekday/Day)	Units (mg/L, lbs/day, etc)	Action / Sample Type	19 Feb Monday	20 Feb Tuesday	21 Feb Wednesday	22 Feb Thursday	23 Feb Friday	24 Feb Saturday	25 Feb Sunday	26 Feb Monday	27 Feb Tuesday	28 Feb Wednesday
Ambient Air Temperature:	Daily	°F	24HC		46.0	44.0	44.0	41.0			50.0	43.0	
Precipitation (inches):	Daily	Inches	24HC		0.5	0.0	0.3				0.8		

INFLUENT - Raw

Constituent / Parameter	Frequency	Units	Method	19 Feb Monday	20 Feb Tuesday	21 Feb Wednesday	22 Feb Thursday	23 Feb Friday	24 Feb Saturday	25 Feb Sunday	26 Feb Monday	27 Feb Tuesday	28 Feb Wednesday
Total Plant Influent Flow (MCC-A)	Continuous	mgd	OIP	0.768	0.623	0.681	0.728	0.873	0.873	0.873	0.721	0.706	0.706
Biochemical Oxygen Demand, 20°C BOD ₅	Weekly	lb/day	Calc.	1300									
Biochemical Oxygen Demand, 20°C BOD ₅	Weekly	mg/l	24HC	258									
Total Suspended Solids (TSS)	Weekly	mg/l	24HC	180.0									
Electrical Conductivity	Twice Monthly	µmhos/cm	24HC		2550								
Dissolved Oxygen (DO)	Weekly	mg/l	Grab		0.1								
Temperature	Weekly	°C	Grab		18.3								
pH	Weekly	pH	Grab		8.1								
Total Plant Influent Flow (MCC-A)	Monthly	mgd	Calc.										

EFFLUENT - A. Sludge

Constituent / Parameter	Frequency	Units	Method	19 Feb Monday	20 Feb Tuesday	21 Feb Wednesday	22 Feb Thursday	23 Feb Friday	24 Feb Saturday	25 Feb Sunday	26 Feb Monday	27 Feb Tuesday	28 Feb Wednesday
Effluent Flow	Daily	Calc. mgd	-	0.5	0.4	0.4	0.5	0.5	0.5	0.5	0.5	0.4	0.4
Biochemical Oxygen Demand, 20°C BOD ₅	Twice Monthly	lb/day	Calc.	10									
Biochemical Oxygen Demand, 20°C BOD ₅	Twice Monthly	mg/l	BHC	2.9									
BOD Removal Efficiency	Twice Monthly	%	Calc.	99									
Total Suspended Solids (TSS)	Twice Monthly	mg/l	BHC	10.0									
TSS Removal Efficiency	Twice Monthly	%	Calc.	94									
Settleable Solids (SS)	Weekly	ml	BIC	0.0									
Total Dissolved Solids (TDS)	Monthly	mg/l	BHC					2100					
Electrical Conductivity	Weekly	µmhos/cm	Grab										
Nitrate (as N)	Monthly	mg/l	BHC										
Standard Minerals	Annually	mg/l	Grab										
Dissolved Oxygen	Weekly	mg/l	Grab					4.5					
Temperature	Weekly	°C	Grab					16.7					
pH	Weekly	pH	Grab					8.0					

EFFLUENT - AIPS

Constituent / Parameter	Frequency	Units	Method	19 Feb Monday	20 Feb Tuesday	21 Feb Wednesday	22 Feb Thursday	23 Feb Friday	24 Feb Saturday	25 Feb Sunday	26 Feb Monday	27 Feb Tuesday	28 Feb Wednesday
Effluent Flow	Daily	Calc. mgd	-	0.3	0.2	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
Biochemical Oxygen Demand, 20°C BOD ₅	Weekly	lb/day	Calc.	50									
Biochemical Oxygen Demand, 20°C BOD ₅	Weekly	mg/l	24HC	26.0									
BOD Removal Efficiency	Weekly	%	Calc.	90									
Total Suspended Solids (TSS)	Weekly	mg/l	24HC	30.0									
TSS Removal Efficiency	Weekly	%	Calc.	83									
Settleable Solids (SS)	Weekly	ml	Grab	0.0									
Total Dissolved Solids (TDS)	Monthly	mg/l	BHC					1900.0					
Electrical Conductivity	Weekly	µmhos/cm	Grab										
Nitrate (as N)	Monthly	mg/l	BHC										
Standard Minerals	Annually	mg/l	Grab										
Dissolved Oxygen	Twice Weekly	mg/l	Grab		2.4			0.2			0.1		
Temperature	Twice Weekly	°C	Grab		11.1			11.7			11.3		
pH	Twice Weekly	pH	Grab		8.3			8.3			8.1		

Pre 2000 Ponds

Pond #1: Aux. Aeration

Constituent / Parameter	Frequency	Units	Method	19 Feb Monday	20 Feb Tuesday	21 Feb Wednesday	22 Feb Thursday	23 Feb Friday	24 Feb Saturday	25 Feb Sunday	26 Feb Monday	27 Feb Tuesday	28 Feb Wednesday
Dissolved Oxygen (DO)	Weekly	mg/l	Grab					10.1					
Temperature	Weekly	°C	Grab					11.4					
pH	Weekly	pH	Grab					9.6					
Electrical Conductivity	Monthly	µmhos/cm	Grab										

Constituent / Parameter	Frequency (Daily = Weekly, Weekly = Monthly)	Units (mg/L = Micrograms per Liter)	Action / Sample Type	19 Feb	20 Feb	21 Feb	22 Feb	23 Feb	24 Feb	25 Feb	26 Feb	27 Feb	28 Feb
				Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday	Monday	Tuesday	Wednesday
Pond #2													
Dissolved Oxygen (DO)	Weekly	mg/l	Grab					13.1					
Temperature	Weekly	°C	Grab					11.3					
pH	Weekly	pH	Grab					9.5					
Electrical Conductivity	Monthly	µmhos/cm	Grab										
Pond #3													
Dissolved Oxygen (DO)	Weekly	mg/l	Grab					12.7					
Temperature	Weekly	°C	Grab					11.7					
pH	Weekly	pH	Grab					9.1					
Electrical Conductivity	Monthly	µmhos/cm	Grab										
Pond #4													
Dissolved Oxygen (DO)	Weekly	mg/l	Grab										
Temperature	Weekly	°C	Grab										
pH	Weekly	pH	Grab										
Electrical Conductivity	Monthly	µmhos/cm	Grab										
Pond #5													
Dissolved Oxygen (DO)	Weekly	mg/l	Grab					6.3					
Temperature	Weekly	°C	Grab					12.6					
pH	Weekly	pH	Grab					8.5					
Electrical Conductivity	Monthly	µmhos/cm	Grab										
AIPS No. 1 Ponds													
Pond #6													
Freeboard	Daily	0.1 Feet	>2 ft										
Dissolved Oxygen (DO)	Weekly	mg/l	Grab										
Temperature	Weekly	°C	Grab										
pH	Weekly	pH	Grab										
Electrical Conductivity	Monthly	µmhos/cm	Grab										
Pond #7													
Freeboard	Daily	0.1 Feet	>2 ft										
Dissolved Oxygen (DO)	Weekly	mg/l	Grab										
Temperature	Weekly	°C	Grab										
pH	Weekly	pH	Grab										
Electrical Conductivity	Monthly	µmhos/cm	Grab										
Pond #8													
Freeboard	Daily	0.1 Feet	>2 ft										
Dissolved Oxygen (DO)	Weekly	mg/l	Grab										
Temperature	Weekly	°C	Grab										
pH	Weekly	pH	Grab										
Electrical Conductivity	Monthly	µmhos/cm	Grab										
Pond #9													
Freeboard	Daily	0.1 Feet	>2 ft										
Dissolved Oxygen (DO)	Weekly	mg/l	Grab										
Temperature	Weekly	°C	Grab										
pH	Weekly	pH	Grab										
Electrical Conductivity	Monthly	µmhos/cm	Grab										
Pond #10													
Freeboard	Daily	0.1 Feet	>2 ft										
Dissolved Oxygen (DO)	Weekly	mg/l	Grab										
Temperature	Weekly	°C	Grab										
pH	Weekly	pH	Grab										
Electrical Conductivity	Monthly	µmhos/cm	Grab										

George Lambert Monitoring Report

Constituent / Parameter	Frequency (Days - Weekends - Ours)	Units (mg/L, Micrograms per Liter)	Action / Sample Type	February						
				19 Feb Monday	20 Feb Tuesday	21 Feb Wednesday	22 Feb Thursday	23 Feb Friday	24 Feb Saturday	25 Feb Sunday
Pond #11										
Freeboard	Daily	0.1 Feet	>2-ft ?							
Dissolved Oxygen (DO)	Weekly	mg/L	Grab							
Temperature	Weekly	°C	Grab							
pH	Weekly	pH	Grab							
Electrical Conductivity	Monthly	µmhos/cm	Grab							
Pond #12										
Freeboard	Daily	0.1 Feet	>2-ft ?							
Dissolved Oxygen (DO)	Weekly	mg/L	Grab							
Temperature	Weekly	°C	Grab							
pH	Weekly	pH	Grab							
Electrical Conductivity	Monthly	µmhos/cm	Grab							

Signature

Note 1: Electrical Conductivity tests are currently performed in holding ponds.

Note 2: AIPS Pestic Ponds (Pond #6 thru #12) were not utilized this month; basically empty, i.e., no readings

Constituent / Parameter	Frequency (Only a Weekday Sample Type)	Units (mg/L unless Calcs per Day)	Action / Limit	March																		
				1-Mar	2-Mar	3-Mar	4-Mar	5-Mar	6-Mar	7-Mar	8-Mar	9-Mar	10-Mar	11-Mar	12-Mar	13-Mar	14-Mar	15-Mar	16-Mar	17-Mar	18-Mar	
				Thursday	Friday	Saturday	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday	
Weather				41.0	43.0	see3/5	see3/5	51.0	59.0	43.0	49.0	42.0	49.0	52.0	50.0	53.0	51.0	51.0	51.0	51.0	51.0	51.0
Ambient Air Temperature: °F				41.0	43.0	see3/5	see3/5	51.0	59.0	43.0	49.0	42.0	49.0	52.0	50.0	53.0	51.0	51.0	51.0	51.0	51.0	51.0
Precipitation (inches):				0.0	0.0	see3/5	see3/5	2.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
INFLUENT - Raw				0.695	1.141	1.141	1.142	0.716	0.707	0.758	0.741	0.741	0.741	0.741	0.703	0.718	0.731	0.731	0.731	0.731	0.731	0.732
Total Plant Influent Flow (MCC-A)				0.695	1.141	1.141	1.142	0.716	0.707	0.758	0.741	0.741	0.741	0.741	0.703	0.718	0.731	0.731	0.731	0.731	0.731	0.732
Biochemical Oxygen Demand, 20°C BOD ₅				1400	235	240.0	240.0	3308	0.08	19.0	7.3	7.4	7.4	7.4	7.4	7.4	7.4	7.4	7.4	7.4	7.4	7.4
Biochemical Oxygen Demand, 20°C BOD ₅				1400	235	240.0	240.0	3308	0.08	19.0	7.3	7.4	7.4	7.4	7.4	7.4	7.4	7.4	7.4	7.4	7.4	7.4
Total Suspended Solids (TSS)				3096	3308	3308	3308	3308	3308	3308	3308	3308	3308	3308	3308	3308	3308	3308	3308	3308	3308	3308
Electrical Conductivity				0.1	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Dissolved Oxygen (DO)				20	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21
Temperature				20	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21
pH				7.3	7.3	7.3	7.3	7.3	7.3	7.3	7.3	7.3	7.3	7.3	7.3	7.3	7.3	7.3	7.3	7.3	7.3	7.3
Total Plant Influent Flow (MCC-A)				22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22
EFFLUENT - A. Sludge				0.4	0.7	0.7	0.7	0.5	0.4	0.5	0.5	0.5	0.5	0.4	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Effluent Flow				0.4	0.7	0.7	0.7	0.5	0.4	0.5	0.5	0.5	0.5	0.4	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Biochemical Oxygen Demand, 20°C BOD ₅				0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Biochemical Oxygen Demand, 20°C BOD ₅				0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
BOD Removal Efficiency				100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Total Suspended Solids (TSS)				50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50
TSS Removal Efficiency				100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Settleable Solids (SS)				0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Dissolved Solids (TDS)				1130	1130	1130	1130	1130	1130	1130	1130	1130	1130	1130	1130	1130	1130	1130	1130	1130	1130	1130
Electrical Conductivity				1558	1558	1558	1558	1558	1558	1558	1558	1558	1558	1558	1558	1558	1558	1558	1558	1558	1558	1558
Nitrate (as N)				31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31
Standard Minerals				see annual rpt	see annual rpt	see annual rpt	see annual rpt	see annual rpt	see annual rpt	see annual rpt	see annual rpt	see annual rpt	see annual rpt	see annual rpt	see annual rpt	see annual rpt	see annual rpt	see annual rpt	see annual rpt	see annual rpt	see annual rpt	see annual rpt
Dissolved Oxygen				2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
Temperature				18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18
pH				8.1	8.1	8.1	8.1	8.1	8.1	8.1	8.1	8.1	8.1	8.1	8.1	8.1	8.1	8.1	8.1	8.1	8.1	8.1
EFFLUENT - AIPS				0.3	0.4	0.4	0.4	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
Effluent Flow				0.3	0.4	0.4	0.4	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
Biochemical Oxygen Demand, 20°C BOD ₅				59	59	59	59	59	59	59	59	59	59	59	59	59	59	59	59	59	59	59
Biochemical Oxygen Demand, 20°C BOD ₅				59	59	59	59	59	59	59	59	59	59	59	59	59	59	59	59	59	59	59
BOD Removal Efficiency				100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Total Suspended Solids (TSS)				40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40
TSS Removal Efficiency				100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Settleable Solids (SS)				0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Dissolved Solids (TDS)				1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100
Electrical Conductivity				1628	1628	1628	1628	1628	1628	1628	1628	1628	1628	1628	1628	1628	1628	1628	1628	1628	1628	1628
Nitrate (as N)				33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33
Standard Minerals				see annual rpt	see annual rpt	see annual rpt	see annual rpt	see annual rpt	see annual rpt	see annual rpt	see annual rpt	see annual rpt	see annual rpt	see annual rpt	see annual rpt	see annual rpt	see annual rpt	see annual rpt	see annual rpt	see annual rpt	see annual rpt	see annual rpt
Dissolved Oxygen				1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4
Temperature				16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16
pH				8.1	8.1	8.1	8.1	8.1	8.1	8.1	8.1	8.1	8.1	8.1	8.1	8.1	8.1	8.1	8.1	8.1	8.1	8.1
Pre 2000 Ponds				5.92	12.0	9.7	12.0	1.88	14.3	7.6	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0
Dissolved Oxygen (DO)				5.92	12.0	9.7	12.0	1.88	14.3	7.6	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0
Temperature				16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16
pH				8.1	8.1	8.1	8.1	8.1	8.1	8.1	8.1	8.1	8.1	8.1	8.1	8.1	8.1	8.1	8.1	8.1	8.1	8.1
Electrical Conductivity				1244	1244	1244	1244	1244	1244	1244	1244	1244	1244	1244	1244	1244	1244	1244	1244	1244	1244	1244

Constituent / Parameter	Frequency (Daily = Weekly)	Units (mg/L = Micrograms per Liter)	Action / Sample Type	WDR Limit	Monthly Summary															
					March Ave.	March Max.	March Min.	1-Mar Thursday	2-Mar Friday	3-Mar Saturday	4-Mar Sunday	5-Mar Monday	6-Mar Tuesday	7-Mar Wednesday	8-Mar Thursday	9-Mar Friday	10-Mar Saturday	11-Mar Sunday	12-Mar Monday	13-Mar Tuesday

Pond #2																									
Dissolved Oxygen (DO)	Weekly	mg/L	Grab	>=1.0	4.7	4.9	2.1																		
Temperature	Weekly	°C	Grab		16	19	21																		
pH	Weekly		Grab		8	10	8																		
Electrical Conductivity	Monthly	µmhos/cm	Grab		1288	1288	1288																		

Pond #3																									
Dissolved Oxygen (DO)	Weekly	mg/L	Grab	>=1.0	6.6	9.5	1.2																		
Temperature	Weekly	°C	Grab		15	19	19																		
pH	Weekly		Grab		8	9	7																		
Electrical Conductivity	Monthly	µmhos/cm	Grab		1231	1231	1231																		

Pond #4																									
Dissolved Oxygen (DO)	Weekly	mg/L	Grab	>=1.0	6.4	8.8	2.6																		
Temperature	Weekly	°C	Grab		12	15	18																		
pH	Weekly		Grab		8	10	7																		
Electrical Conductivity	Monthly	µmhos/cm	Grab		1355	1355	1355																		

Pond #5																									
Dissolved Oxygen (DO)	Weekly	mg/L	Grab	>=1.0	2.6	5.5	0.6																		
Temperature	Weekly	°C	Grab		15	19	13																		
pH	Weekly		Grab		8	8	7																		
Electrical Conductivity	Monthly	µmhos/cm	Grab		1362	1362	1362																		

AIPS No. 1 Ponds

Pond #6																									
Freeboard	Daily	0.1 Feet	>=2.0																						
Dissolved Oxygen (DO)	Weekly	mg/L	Grab	>=1.0	#DIV/0!	#DIV/0!	#DIV/0!																		
Temperature	Weekly	°C	Grab		#DIV/0!	#DIV/0!	#DIV/0!																		
pH	Weekly		Grab		#DIV/0!	#DIV/0!	#DIV/0!																		
Electrical Conductivity	Monthly	µmhos/cm	Grab		#DIV/0!	#DIV/0!	#DIV/0!																		

Pond #7																									
Freeboard	Daily	0.1 Feet	>=2.0																						
Dissolved Oxygen (DO)	Weekly	mg/L	Grab	>=1.0	#DIV/0!	#DIV/0!	#DIV/0!																		
Temperature	Weekly	°C	Grab		#DIV/0!	#DIV/0!	#DIV/0!																		
pH	Weekly		Grab		#DIV/0!	#DIV/0!	#DIV/0!																		
Electrical Conductivity	Monthly	µmhos/cm	Grab		#DIV/0!	#DIV/0!	#DIV/0!																		

Pond #8																									
Freeboard	Daily	0.1 Feet	>=2.0																						
Dissolved Oxygen (DO)	Weekly	mg/L	Grab	>=1.0	#DIV/0!	#DIV/0!	#DIV/0!																		
Temperature	Weekly	°C	Grab		#DIV/0!	#DIV/0!	#DIV/0!																		
pH	Weekly		Grab		#DIV/0!	#DIV/0!	#DIV/0!																		
Electrical Conductivity	Monthly	µmhos/cm	Grab		#DIV/0!	#DIV/0!	#DIV/0!																		

Pond #9																									
Freeboard	Daily	0.1 Feet	>=2.0																						
Dissolved Oxygen (DO)	Weekly	mg/L	Grab	>=1.0	#DIV/0!	#DIV/0!	#DIV/0!																		
Temperature	Weekly	°C	Grab		#DIV/0!	#DIV/0!	#DIV/0!																		
pH	Weekly		Grab		#DIV/0!	#DIV/0!	#DIV/0!																		
Electrical Conductivity	Monthly	µmhos/cm	Grab		#DIV/0!	#DIV/0!	#DIV/0!																		

Pond #10																									
Freeboard	Daily	0.1 Feet	>=2.0																						
Dissolved Oxygen (DO)	Weekly	mg/L	Grab	>=1.0	#DIV/0!	#DIV/0!	#DIV/0!																		
Temperature	Weekly	°C	Grab		#DIV/0!	#DIV/0!	#DIV/0!																		
pH	Weekly		Grab		#DIV/0!	#DIV/0!	#DIV/0!																		
Electrical Conductivity	Monthly	µmhos/cm	Grab		#DIV/0!	#DIV/0!	#DIV/0!																		

City of Patterson, CA
(209) 892-2041

Water Quality Control
Facility

WDR Order
No. 5-00-146

George Lambert - City Manager

Monitoring Report

Monthly Summary

Constituent / Parameter	Frequency (Day - Weekly Only)	Units (mg/L, Mhos/cm, etc)	Action / Sample Type	WDR Limit	March Ave.	March Max.	March Min.
Freeboard	Daily	0.1 Feet	>2.0' Grab				
Dissolved Oxygen (DO)	Weekly	mg/l	>1.0 Grab				
Temperature	Weekly	°C	Grab				
pH	Weekly	pH	Grab				
Electrical Conductivity	Monthly	µmhos/cm	Grab				

1-Mar	2-Mar	3-Mar	4-Mar	5-Mar	6-Mar	7-Mar	8-Mar	9-Mar	10-Mar	11-Mar	12-Mar	13-Mar	14-Mar	15-Mar	16-Mar	17-Mar	18-Mar
Thursday	Friday	Saturday	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
MT	MT	MT	MT	MT	MT	MT	MT	MT	MT	MT	MT	MT	MT	MT	MT	MT	MT

Pond #11	1-Mar	2-Mar	3-Mar	4-Mar	5-Mar	6-Mar	7-Mar	8-Mar	9-Mar	10-Mar	11-Mar	12-Mar	13-Mar	14-Mar	15-Mar	16-Mar	17-Mar	18-Mar
Freeboard																		
Dissolved Oxygen (DO)																		
Temperature																		
pH																		
Electrical Conductivity																		

Pond #12	1-Mar	2-Mar	3-Mar	4-Mar	5-Mar	6-Mar	7-Mar	8-Mar	9-Mar	10-Mar	11-Mar	12-Mar	13-Mar	14-Mar	15-Mar	16-Mar	17-Mar	18-Mar
Freeboard																		
Dissolved Oxygen (DO)																		
Temperature																		
pH																		
Electrical Conductivity																		

Note 1:

Note 2:

Note 3: AFS Here Ponds (Pond #9 thru #12) were not utilized this month, basically empty, i.e., no readings

George Lambert - City Manager Monitoring Report

Constituent / Parameter	Frequency (Daily = Weekday Only)	Units (mgd = Million Gallons per Day)	Action / Sample Turn	19-Mar	20-Mar	21-Mar	22-Mar	23-Mar	24-Mar	25-Mar	26-Mar	27-Mar	28-Mar	29-Mar	30-Mar	31-Mar
				Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
Ambient Air Temperature:	Daily	°F		52.0	59.0	56.0	52.0	52.0			58.0	58.0	54.0	54.0	64.0	
Precipitation (inches):	Daily	Inches	24HC	0.0	0.0	0.0	0.0	0.0			0.0	0.0	0.0	0.0	0.0	0.0

Weather

Constituent / Parameter	Frequency	Units	Value
Ambient Air Temperature:	Daily	°F	52.0
Precipitation (inches):	Daily	Inches	0.0

INFLUENT - Raw

Constituent / Parameter	Frequency	Units	Value
Total Plant Influent Flow (MCC-A)	Continuous	mgd	0.739
Biochemical Oxygen Demand, 20°C BOD ₅	Weekly	lbs/day	0
Biochemical Oxygen Demand, 20°C BOD ₅	Weekly	mg/l	244
Total Suspended Solids (TSS)	Weekly	mg/l	110.0
Electrical Conductivity	Twice Monthly	µmhos/cm	
Dissolved Oxygen (DO)	Weekly	mg/l	0.21
Temperature	Weekly	°C	20.6
pH	Weekly	pH	7.5
Total Plant Influent Flow (MCC-A)	Monthly	mgd	7.1

EFFLUENT - A. Sludge

Constituent / Parameter	Frequency	Units	Value
Effluent Flow	Daily	Calc. mgd	0.5
Biochemical Oxygen Demand, 20°C BOD ₅	Twice Monthly	lbs/day	1.9
Biochemical Oxygen Demand, 20°C BOD ₅	Twice Monthly	mg/l	9.9
BOD Removal Efficiency	Twice Monthly	%	
Total Suspended Solids (TSS)	Twice Monthly	mg/l	
TSS Removal Efficiency	Twice Monthly	%	
Settleable Solids (SS)	Weekly	ml/l	
Total Dissolved Solids (TDS)	Monthly	mg/l	
Electrical Conductivity	Monthly	µmhos/cm	1611.0
Nitrate (as N)	Monthly	mg/l	
Standard Minerals	Annually	mg/l	
Dissolved Oxygen	Weekly	mg/l	2.33
Temperature	Weekly	°C	20.2
pH	Weekly	pH	7.1

EFFLUENT - AIPS

Constituent / Parameter	Frequency	Units	Value
Effluent Flow	Daily	Calc. mgd	0.3
Biochemical Oxygen Demand, 20°C BOD ₅	Weekly	Calc. lbs/day	0
Biochemical Oxygen Demand, 20°C BOD ₅	Weekly	mg/l	46.0
BOD Removal Efficiency	Weekly	%	
Total Suspended Solids (TSS)	Weekly	mg/l	490.0
TSS Removal Efficiency	Weekly	%	
Settleable Solids (SS)	Weekly	ml/l	
Total Dissolved Solids (TDS)	Monthly	mg/l	
Electrical Conductivity	Weekly	µmhos/cm	1636.0
Nitrate (as N)	Monthly	mg/l	
Standard Minerals	Annually	mg/l	
Dissolved Oxygen	Twice Weekly	mg/l	0.76
Temperature	Twice Weekly	°C	17.1
pH	Twice Weekly	pH	7.5

Pre 2000 Ponds

Constituent / Parameter	Frequency	Units	Value
Dissolved Oxygen (DO)	Weekly	mg/l	0.89
Temperature	Weekly	°C	19.7
pH	Weekly	pH	7.3
Electrical Conductivity	Monthly	µmhos/cm	7.5

George Lambert - City Manager Monitoring Report

Constituent / Parameter	Frequency (Daily = Weekly = Monthly)	Units (mg/L = Micro Grams per Liter)	Action / Sample Type	19-Mar	20-Mar	21-Mar	22-Mar	23-Mar	24-Mar	25-Mar	26-Mar	27-Mar	28-Mar	29-Mar	30-Mar	31-Mar
				Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
Pond #2																
Dissolved Oxygen (DO)	Weekly	mg/L	Grab					2.81							5.49	
Temperature	Weekly	°C	Grab					19.0							17.2	
pH	Weekly	pH	Grab					7.5							7.8	
Electrical Conductivity	Monthly	µmhos/cm	Grab													
Pond #3																
Dissolved Oxygen (DO)	Weekly	mg/L	Grab					1.17							7.89	
Temperature	Weekly	°C	Grab					19.4							16.2	
pH	Weekly	pH	Grab					7.4							9.2	
Electrical Conductivity	Monthly	µmhos/cm	Grab													
Pond #4																
Dissolved Oxygen (DO)	Weekly	mg/L	Grab					8.38							LOW	
Temperature	Weekly	°C	Grab					8.3								
pH	Weekly	pH	Grab					7.6								
Electrical Conductivity	Monthly	µmhos/cm	Grab													
Pond #5																
Dissolved Oxygen (DO)	Weekly	mg/L	Grab					0.59							3.08	
Temperature	Weekly	°C	Grab					18.3							18.5	
pH	Weekly	pH	Grab					7.3							7.5	
Electrical Conductivity	Monthly	µmhos/cm	Grab													
AIPS No. 1 Ponds																
Pond #6																
Freeboard	Daily	0.1 Feet	>2-ft ?													
Dissolved Oxygen (DO)	Weekly	mg/L	Grab												LOW	
Temperature	Weekly	°C	Grab													
pH	Weekly	pH	Grab													
Electrical Conductivity	Monthly	µmhos/cm	Grab													
Pond #7																
Freeboard	Daily	0.1 Feet	>2-ft ?													
Dissolved Oxygen (DO)	Weekly	mg/L	Grab												LOW	
Temperature	Weekly	°C	Grab													
pH	Weekly	pH	Grab													
Electrical Conductivity	Monthly	µmhos/cm	Grab													
Pond #8																
Freeboard	Daily	0.1 Feet	>2-ft ?													
Dissolved Oxygen (DO)	Weekly	mg/L	Grab												MT	
Temperature	Weekly	°C	Grab													
pH	Weekly	pH	Grab													
Electrical Conductivity	Monthly	µmhos/cm	Grab													
Pond #9																
Freeboard	Daily	0.1 Feet	>2-ft ?													
Dissolved Oxygen (DO)	Weekly	mg/L	Grab												MT	
Temperature	Weekly	°C	Grab													
pH	Weekly	pH	Grab													
Electrical Conductivity	Monthly	µmhos/cm	Grab													
Pond #10																
Freeboard	Daily	0.1 Feet	>2-ft ?													
Dissolved Oxygen (DO)	Weekly	mg/L	Grab												MT	
Temperature	Weekly	°C	Grab													
pH	Weekly	pH	Grab													
Electrical Conductivity	Monthly	µmhos/cm	Grab													

City of Patterson, CA (209) 892-2041		Water Quality Control Facility														
George Lambert - City Manager		Monitoring Report														
Constituent / Parameter	Frequency (Daily = Weekdays Only)	Units (mg/L = Million Gallons per Day)	Action / Sample Type	19-Mar	20-Mar	21-Mar	22-Mar	23-Mar	24-Mar	25-Mar	26-Mar	27-Mar	28-Mar	29-Mar	30-Mar	31-Mar
				Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
Pond #11																
Freeboard	Daily	0.1 Feet	>2 ft. 7													
Dissolved Oxygen (DO)	Weekly	mg/L	Grab													
Temperature	Weekly	°C	Grab													
pH	Weekly	pH	Grab													
Electrical Conductivity	Monthly	µmhos/cm	Grab													
Pond #12																
Freeboard	Daily	0.1 Feet	>2 ft. 7													
Dissolved Oxygen (DO)	Weekly	mg/L	Grab													
Temperature	Weekly	°C	Grab													
pH	Weekly	pH	Grab													
Electrical Conductivity	Monthly	µmhos/cm	Grab													

Note 1:

Note 2:

Note 3: AHS's Prec Ponds (Pond #6 thru #12) were not utilized this month; basically any no readings

