# **County of Los Angeles Department of Public Works**

Water Quality Monitoring 2002 Annual Report

for the

Master Mitigation Plan for the Big Tujunga Wash Mitigation Bank

February 2003



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for

## Master Mitigation Plan for the Big Tujunga Wash Mitigation Bank

February 2003

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## Water Quality Monitoring Report 2002 Annual Report

#### ANNUAL SUMMARY

Water quality sampling was conducted at four sampling stations at the County of Los Angeles Department of Public Works (LADPW) Big Tujunga Wash mitigation bank for four quarters of 2002. Samples were collected at three points along Haines Canyon Creek (the inflow to the Tujunga ponds, the outflow from the ponds, and in Haines Canyon Creek leaving the mitigation bank site) and in Big Tujunga Wash in March, June, September, and December of 2002. Parameters monitored included temperature, dissolved oxygen, pH, nutrients, turbidity, and bacteria levels. Both field meters and laboratory analyses were used in the water quality sampling program.

In Big Tujunga Wash, flow was not observed on any of the sampling dates during 2002. Water was present at all other stations for all four sampling dates. For most parameters, observed water quality met Regional Water Quality Control Board (Regional Board) Basin Plan objectives and EPA's recommended water quality criteria for freshwaters. Temperatures were cool enough and dissolved oxygen concentrations generally high enough for growth and survival of warmwater fish species. Observed pH values ranged from 7.1 to 8.3 units; residual chlorine was not present; and turbidity levels were generally low. Excessive nutrient conditions were not noted, but nitrate-nitrogen values at the Tujunga ponds were somewhat higher in 2002 than in 2001. A degree of nitrogen reduction was observed between inflow and outflow from the Tujunga ponds. Fecal coliform levels were observed in excess of water contact recreation standards in one location on one date (December), although the duplicate sample did not exceed standards.

Quarterly sampling will continue through 2005. Future results will be compared with baseline 2000 data and with the 2001 and 2002 results. Development of the Canyon Trails Golf Course upstream is on-going. Once operational, water quality in the mitigation bank area will be compared with 2000/2001 conditions to determine the impact, if any, of neighboring developments.

### **BACKGROUND**

LADPW purchased a 207-acre parcel in Big Tujunga Wash as a mitigation bank for County flood control projects throughout Los Angeles. In coordination with local agencies, the County defined a number of measures to improve habitat quality at the site. A Master Mitigation Plan (MMP) was prepared to guide the implementation of these enhancements. The MMP also includes a five-year monitoring program to gather data on conditions at the site during implementation of the improvements. The MMP was prepared and is being implemented by Chambers Group, Inc. MWH, a subconsultant to Chambers Group, is responsible for the water quality monitoring program described in the MMP. This is the annual water quality report for 2002 – data from the fourth quarter of 2002 are included. The five-year program began in the fourth quarter of 2000.

The project site is located just east of Hansen Dam in the Shadow Hills area of unincorporated Los Angeles County. Both Big Tujunga Wash, an intermittent stream, and Haines Canyon Creek, a perennial stream, traverse the project site in an east-to-west direction. The two Tujunga ponds are located at the far eastern portion of the site.

### **Project Site Activities**

A timeline of project-related activities that could influence water quality is presented in **Table 1**. This table will be updated and expanded as the monitoring program progresses.

Table 1
Major Activities to Date at the Big Tujunga Wash Mitigation Bank

Month/Year	Activity					
4/00	Baseline water quality sampling					
11/00 to present	Arundo, tamarisk, and pepper tree removal					
	Chemical (Rodeo®) application Upland planting					
12/00 to present	Water hyacinth removal					
12/14/00	Water quality sampling					
1/01 to present	Exotic animal (crayfish and bullfrog) removal					
2/01	Partial riparian planting					
3/01	Selective clearing at Canyon Trails Golf Course					
3/12/01	Water quality sampling					
6/19/01	Water quality sampling					
9/11/01	Water quality sampling					
12/12/01	Water quality sampling					
1/02	Final riparian planting					
2/02	Upland replacement planting					
3/26/02	Water quality sampling					
3/02 to 6/02	Continued removal of crayfish, bullfrogs and their tadpoles, and exotic fish species; periodic spraying for <i>Arundo</i> control					
6/25/02	Water quality sampling					
9/12/02	Water quality sampling					
10/02	Grading at Canyon Trails Golf Course begins					
12/19/02	Water quality sampling					

### **Water Quality Monitoring Program**

In order to establish water quality upstream and downstream of the site, quarterly sampling and analysis will be performed for five years, for a total of 20 individual sampling days. The monitoring program has been designed to specifically address inputs to the site from upstream land uses such as the Canyon Trails Golf Course. Potential impacts to aquatic species from run-on to the site that contains excessive nutrients or pesticides are of primary concern.

According to Joe Shohtoku of Foothill Golf (pers. comm. October 3, 2002), grading at the Canyon Trails Golf Course began in October 2002. The golf course has established and is implementing an erosion control plan including catchment basins and silt beds, and has also prepared a stormwater pollution prevention plan. Therefore, the impact of golf course grading on turbidity in the incoming water is anticipated to be minimal at present. The golf course is monitoring on a quarterly basis the quality of water entering the property and of downstream groundwater near Foothill Boulevard. These data will be shared with LADPW. Sampling parameters of the LADPW monitoring program will be modified as appropriate as more information on golf course-related pesticides and herbicides become available. Testing for pesticides and herbicides will be conducted at the Big Tujunga Wash sampling stations after use begins at the golf course, which is scheduled to be June 2003 according to Mr. John Reidinger of Foothill Golf (pers. comm. January 30, 2003).

#### **MATERIALS AND METHODS**

### **Sampling Stations**

Four sampling locations have been identified for the five-year monitoring program (**Figure 1**). **Table 2** summarizes sampling locations and the conditions observed on December 19, 2002. The coordinates of the sampling stations were determined by a hand-held Global Positioning System.

Table 2
Big Tujunga Wash
Water Quality Sampling Locations and Conditions for the 4<sup>th</sup> Quarter 2002

Date	December 19, 2002						
Air Temperature	Approximately 68 deg	rees Fahrenheit					
Skies	Clear						
Water Volume	Big Tujunga Wash sar	npling station dry					
Sampling Locations	Latitude	Longitude	Time of sample				
Haines Canyon Creek, just	N 34 16' 2.9"	W 118 21' 22.2"	11:40				
before exit from site							
Haines Canyon Creek, inflow	N 34 16' 6.9"	W 118 20' 18.7"	12:45				
to Tujunga Ponds							
Haines Canyon Creek, outflow	N 34 16' 7.1"	W 118 20' 28.3"	13:25				
from Tujunga Ponds							
Big Tujunga Wash	N 34 16' 11.7"	W 118 21' 4.0"	Station dry				



### **Sampling Parameters**

**Table 3** summarizes the sampling parameters included in the water quality monitoring program. The following meters were used in the field:

- YSI Model 57 dissolved oxygen and temperature
- HACH DR 700 total residual chlorine
- Orion 230A pH

All other analyses were performed in duplicate at MWH Laboratories, Monrovia, California. Samples were taken at mid-depth, along a transect perpendicular to the stream channel alignment. Note that sampling for pesticides and herbicides will begin after specific chemicals have been identified by the golf course owners. Quality assurance/quality control (QA/QC) procedures in the laboratory followed the methods described in the MWH Laboratories *Quality Assurance Manual*.

Table 3
Big Tujunga Wash
Water Quality Sampling Parameters

Parameter	Analysis Location	Analytical Method
total Kjeldahl nitrogen (TKN)	laboratory	EPA 351.2
nitrate (NO <sub>2</sub> )	laboratory	EPA 300.0 by IC
nitrate (NO <sub>3</sub> )	laboratory	EPA 300.0 by IC
ammonia (NH <sub>4</sub> )	laboratory	EPA 350.1
orthophosphorus	laboratory	EPA 365.1
total coliform	laboratory	Standard Methods 9221
fecal coliform	laboratory	Standard Methods 9221
total organic halogens (organochlorides)	not sampled in 2002	
total phosphorus	laboratory	EPA 365.4
organophosphate (total P minus ortho-P)	calculation	
turbidity	laboratory	EPA 180.1
glyphosate (Roundup)	not sampled in 2002	
1 golf course herbicide (if not Roundup)	not sampled in 2002	
1 golf course insecticide	not sampled in 2002	
1 golf course fungicide	not sampled in 2002	

## Table 3 (Continued) Big Tujunga Wash Water Quality Sampling Parameters

Parameter	Analysis Location	Analytical Method
dissolved oxygen	field	Standard Methods 4500-O G
total residual chlorine	field	Standard Methods 4500-Cl D
temperature	field	Standard Methods 2550
рН	field	Standard Methods 4500-H+

Sources for analytical methods:

EPA. Method and Guidance for Analysis of Water.

American Public Health Association, American Waterworks Association, and Water Environment Federation.

1998. Standard Methods for the Examination of Water and Wastewater, 20<sup>th</sup> Edition. Washington D.C.

**Discharge Measurements.** In addition to the water quality monitoring conducted in December 2002, flows in the outlet of Big Tujunga Ponds and in Haines Canyon Creek leaving the site were estimated using a simple field procedure. The technique uses a float (an object such as an orange, ping-pong ball, pine cone, etc.) to measure stream velocity.

Calculating flow then involves solving the following equation:

$$Flow = ALC / T$$

#### Where:

- A = Average cross-sectional area of the stream (stream width multiplied by average water depth)
- L = Length of the stream reach measured (usually 20 ft)
- C = A coefficient or correction factor (0.8 for rocky-bottom streams or 0.9 for muddy-bottom streams). This allows you to correct for the fact that water at the surface travels faster than near the stream bottom due to resistance from gravel, cobble, etc. Multiplying the surface velocity by a correction coefficient decreases the value and gives a better measure of the stream's overall velocity.
- T = Time, in seconds, for the float to travel the length of L

#### RESULTS

### **Baseline Water Quality**

Sampling and analysis conducted by LADPW prior to implementation of the MMP is considered the baseline for water quality conditions at the site. The results of analyses conducted in April 2000 are presented in **Table 4**.

Table 4
Big Tujunga Wash Baseline Water Quality (2000)

Parameter	Units	Date	Haines Canyon Creek, inflow to Tujunga Ponds	Haines Canyon Creek, outflow from Tujunga Ponds	Big Tujunga Wash	Haines Canyon Creek, just before exit from site
Total	MPN/	4/12/00	3000	5000	170	1700
coliform	100 ml	4/18/00	2200	170000	2400	70000
Fecal	MPN/	4/12/00	500	300	40	80
coliform	100 ml	4/18/00	500	30000	2400	50000
Ammonia-N	mg/L	4/12/00	0	0	0	0
		4/18/00	0	0	0	0
Nitrate-N	mg/L	4/12/00	8.38	5.19	0	3.73
		4/18/00	8.2	3.91	0.253	0.438
Nitrite-N	mg/L	4/12/00	0.061	0	0	0
		4/18/00	0.055	0	0	0
Kjeldahl-N	mg/L	4/12/00	0	0.1062	0.163	0
		4/18/00	0	0.848	0.42	0.428
Dissolved	mg/L	4/12/00	0.078	0.056	0	0.063
phosphorus		4/18/00	0.089	0.148	0.111	0.163
Total	mg/L	4/12/00	0.086	0.062	0	0.066
phosphorus		4/18/00	0.113	0.153	0.134	0.211
pН	std	4/12/00	7.78	7.68	7.96	7.91
	units	4/18/00	7.18	7.47	7.45	7.06
Turbidity	NTU	4/12/00	1.83	0.38	1.75	0.6
		4/18/00	4.24	323	4070	737

### 2002 Water Quality Results

### **Water Quality**

Results of water quality analyses conducted by MWH Laboratories for samples collected in 2002 are appended to this report (**Appendix A**) and summarized in **Tables 5**, **6**, **7** and **8**, and on **Figures 2**, **3**, **4**, **5** and **6**. Where duplicate analyses were conducted, the average value is graphed. Note that the yields (percent recoveries) of QC samples were within acceptable limits (percentages) for all except one sample in 2002. The yield for the Matrix Spike Duplicate of the total phosphorus sample exceeded the upper limit of 110 percent by 2.5 percentage points.

Table 5 Summary of Big Tujunga Wash Water Quality Results 1<sup>st</sup> Quarter 2002 (3/26/02)

Parameter	Units	Inflow to Tujunga Ponds 1	Inflow to Tujunga Ponds 2 (duplicate)	Outflow from Tujunga Ponds 1	Outflow from Tujunga Ponds 2 (duplicate)	Big Tujunga Wash 1	Big Tujunga Wash 2 (duplicate)	Haines Cyn Creek exiting site 1	Haines Cyn Creek exiting site 2 (duplicate)
Temperature	°C	18.5		18.0		*		17.0	
Dissolved Oxygen	mg/L	9.3		9.2		*		8.9	
pН	std units	7.3		7.7		*		8.3	
Total residual chlorine	mg/L	ND		ND		*		ND	
Ammonia-Nitrogen	mg/L	ND	ND	ND	ND	*	*	ND	ND
Kjeldahl Nitrogen	mg/L	0.28	0.30	ND	ND	*	*	ND	ND
Nitrite-Nitrogen	mg/L	ND	ND	ND	ND	*	*	ND	ND
Nitrate-Nitrogen	mg/L	9.1	8.9	7.3	7.0	*	*	6.4	6.4
Orthophospate-P	mg/L	ND	ND	ND	ND	*	*	0.015	0.014
Total phosphorus-P	mg/L	ND	ND	ND	ND	*	*	ND (MRL 0.02)	ND (MRL 0.02)
Turbidity	NTU	1.2	1.1	0.70	0.70	*	*	0.35	0.30
Fecal Coliform Bacteria	MPN/100ml	4	<2	4	8	*	*	50	50
Total Coliform Bacteria	MPN/100ml	500	900	130	220	*	*	900	900

No sample on this date – station dry nephelometric turbidity units NTU method reporting limit MRL most probable number MPN

ND non-detect

Table 6
Summary of Big Tujunga Wash Water Quality Results
2<sup>nd</sup> Quarter 2002 (6/25/02)

Parameter	Units	Inflow to Tujunga Ponds 1	Inflow to Tujunga Ponds 2 (duplicate)	Outflow from Tujunga Ponds 1	Outflow from Tujunga Ponds 2 (duplicate)	Big Tujunga Wash 1	Big Tujunga Wash 2 (duplicate)	Haines Cyn Creek exiting site 1	Haines Cyn Creek exiting site 2 (duplicate)
Temperature	°C	22.5		22.5		*		20.5	
Dissolved Oxygen	mg/L	8.3		8.4		*		8.6	
рН	std units	7.5		7.6		*		8.2	
Total residual chlorine	mg/L	ND		ND		*		ND	
Ammonia-Nitrogen	mg/L	ND	ND	ND	ND	*	*	ND	ND
Kjeldahl Nitrogen	mg/L	0.56	0.37	0.32	0.60	*	*	0.26	0.28
Nitrite-Nitrogen	mg/L	ND	ND	ND	ND	*	*	ND	ND
Nitrate-Nitrogen	mg/L	8.9	8.9	7.1	6.7	*	*	5.6	5.9
Orthophospate-P	mg/L	ND	ND	0.05	0.02	*	*	0.02	0.02
Total phosphorus-P	mg/L	ND	ND	ND	ND	*	*	ND (MRL 0.02)	0.37 (MRL 0.02)
Turbidity	NTU	0.70	0.70	1.0	1.5	*	*	1.4	1.6
Fecal Coliform Bacteria	MPN/100ml	8	7	11	13	*	*	170	60
Total Coliform Bacteria	MPN/100ml	1300	1400	300	300	*	*	2300	3000

\* No sample on this date – station dry
NTU nephelometric turbidity units

NTU nephelometric turbidity un MRL method reporting limit MPN most probable number

ND non-detect

Table 7
Summary of Big Tujunga Wash Water Quality Results
3<sup>rd</sup> Quarter 2002 (9/12/02)

Parameter	Units	Inflow to Tujunga Ponds 1	Inflow to Tujunga Ponds 2 (duplicate)	Outflow from Tujunga Ponds 1	Outflow from Tujunga Ponds 2 (duplicate)	Big Tujunga Wash 1	Big Tujunga Wash 2 (duplicate)	Haines Cyn Creek exiting site 1	Haines Cyn Creek exiting site 2 (duplicate)
Temperature	°C	21.4		22.0		*		21.0	
Dissolved Oxygen	mg/L	8.5		8.3		*		8.3	
рН	std units	7.1		7.3		*		8.3	
Total residual chlorine	mg/L	ND		ND		*		ND	
Ammonia-Nitrogen	mg/L	ND	ND	ND	ND	*	*	ND	ND
Kjeldahl Nitrogen	mg/L	0.20	0.47	ND	ND	*	*	0.23	ND
Nitrite-Nitrogen	mg/L	ND	ND	ND	ND	*	*	ND	ND
Nitrate-Nitrogen	mg/L	9.1	9.0	6.8	6.8	*	*	6.1	6.1
Orthophospate-P	mg/L	0.014	0.016	ND	ND	*	*	0.011	0.011
Total phosphorus-P	mg/L	0.03	0.05	ND	ND	*	*	0.02 (MRL 0.02)	ND (MRL 0.02)
Turbidity	NTU	2.4	2.7	0.75	0.70	*	*	2.6	4.5
Fecal Coliform Bacteria	MPN/100ml	7	2	4	2	*	*	<2	<2
Total Coliform Bacteria	MPN/100ml	2400	3000	5000	500	*	*	500	3000

\* No sample on this date – station dry NTU nephelometric turbidity units

NTU nephelometric turbidity units
MRL method reporting limit
MPN most probable number

ND non-detect

Table 8
Summary of Big Tujunga Wash Water Quality Results
4<sup>th</sup> Quarter 2002 (12/19/02)

Parameter	Units	Inflow to Tujunga Ponds 1	Inflow to Tujunga Ponds 2 (duplicate)	Outflow from Tujunga Ponds 1	Outflow from Tujunga Ponds 2 (duplicate)	Big Tujunga Wash 1	Big Tujunga Wash 2 (duplicate)	Haines Cyn Creek exiting site 1	Haines Cyn Creek exiting site 2 (duplicate)
Temperature	°C	15.8		14.7		*		11.7	
Dissolved Oxygen	mg/L	6.98		6.31		*		9.75	
рН	std units	7.06		7.12		*		8.19	
Total residual chlorine	mg/L	ND		ND		*		ND	
Ammonia-Nitrogen	mg/L	ND	ND	ND	ND	*	*	ND	ND
Kjeldahl Nitrogen	mg/L	ND	0.2	0.51	0.24	*	*	0.29	ND
Nitrite-Nitrogen	mg/L	ND	ND	ND	ND	*	*	ND	ND
Nitrate-Nitrogen	mg/L	10	9.8	7.8	7.9	*	*	4.9	5.0
Orthophospate-P	mg/L	0.043	0.046	0.029	0.028	*	*	0.035	0.032
Total phosphorus-P	mg/L	0.03	0.04	0.03	0.03	*	*	0.06	0.021
Turbidity	NTU	0.65	0.60	0.60	0.65	*	*	4.8	2.8
Fecal Coliform Bacteria	MPN/100ml	30	13	94	80	*	*	300	30
Total Coliform Bacteria	MPN/100ml	1400	2800	300	1700	*	*	5000	3000

\* No sample on this date – station dry

NTU nephelometric turbidity units
MRL method reporting limit
MPN most probable number

ND non-detect



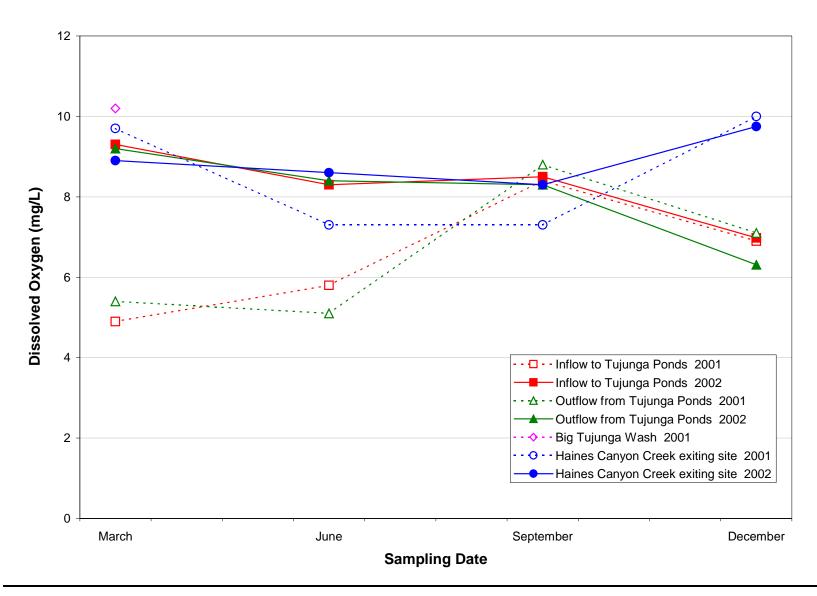
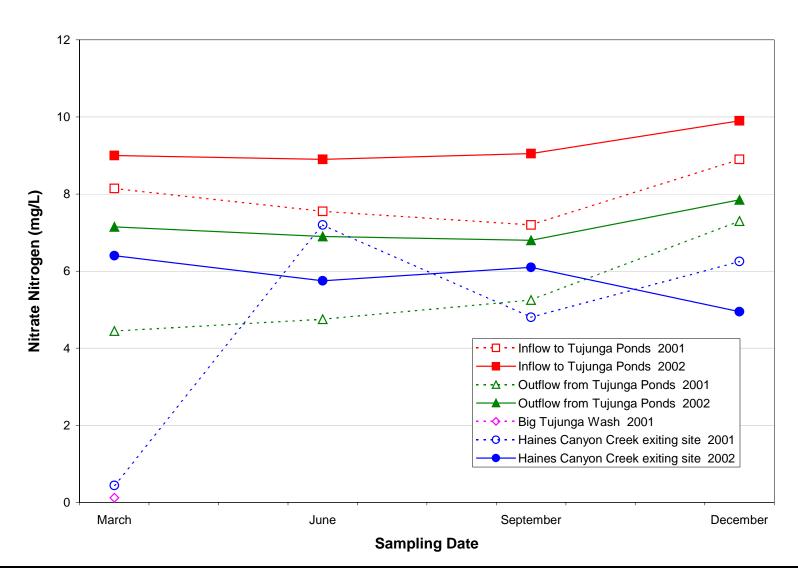
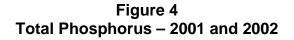
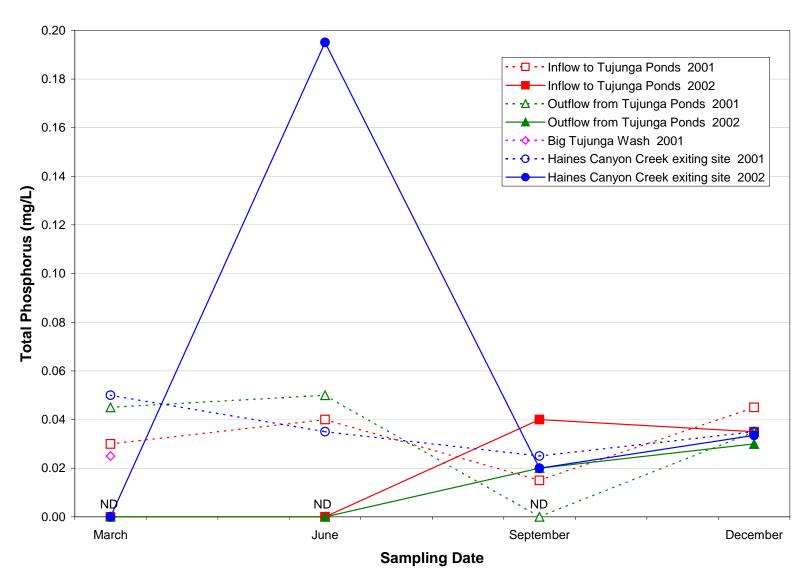


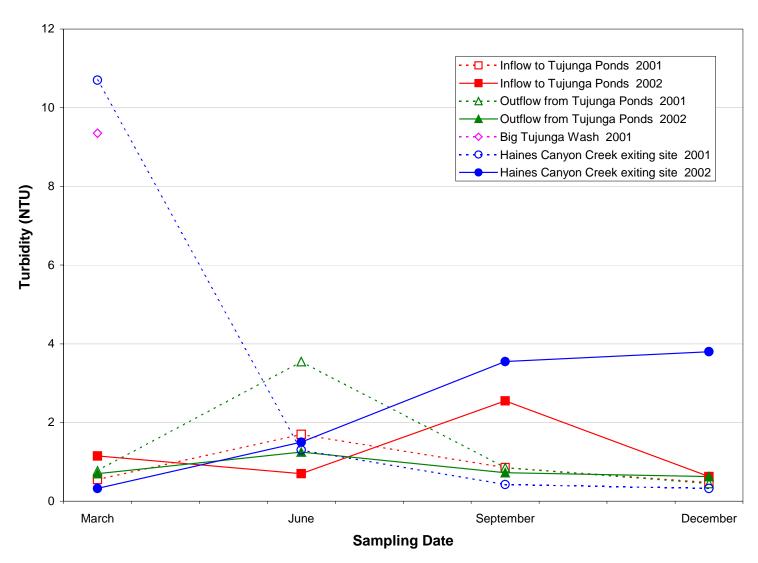
Figure 3
Nitrate Nitrogen – 2001 and 2002



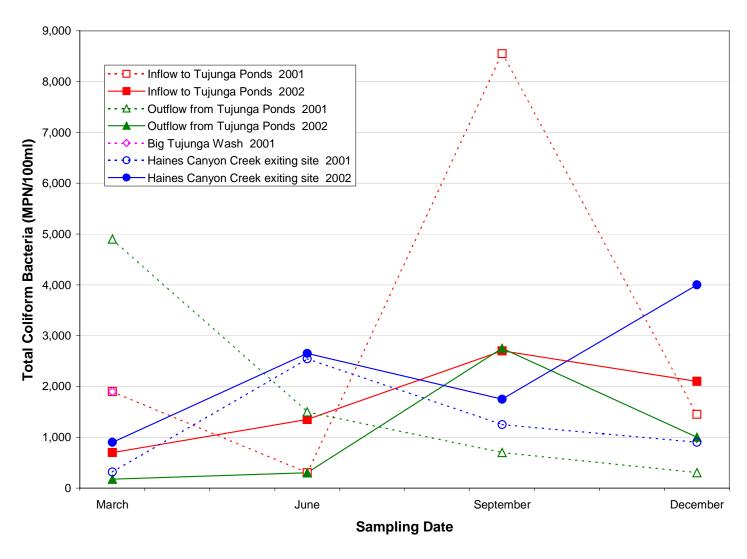












### **Discharge Measurements**

Using the field technique described above, flows in the outlet from Big Tujunga Ponds and in Haines Canyon Creek leaving the site were approximated. Estimated flows for the four sampling dates in 2002 are summarized in **Table 9.** 

Table 9
Estimated Flows for 2002
(cubic feet per second)

Sampling Date	Outlet of Big Tujunga Ponds	Haines Canyon Creek leaving the site
3/26/02	3.10	4.80
6/25/02	3.92	4.85
9/12/02	3.44	3.16
12/19/02	4.31	6.57

For future sampling events, these and future approximated flow volumes will be compared with water quality data.

### **Aquatic Life Criteria**

**Tables 10** and **14** present objectives established by the Los Angeles Regional Water Quality Control Board (Regional Board) for protection of beneficial uses in Big Tujunga Wash including wildlife habitat. EPA's criteria for freshwater aquatic life are also presented in **Tables 10, 11, 12, 13** and **15**.

Table 10
National and Local Recommended Water Quality Criteria - Freshwaters

Parameter	Basin Plan		EPA Criteria	
rarameter	<b>Objectives</b> <sup>a</sup>	CMC	CCC	<b>Human Health</b>
Temperature (°C)		See Table 15	See Table 15	
Dissolved oxygen	>7.0 mean	5.0 <sup>b</sup>	$6.0^{b}$	
(mg/L)	>5.0 min	(warmwater, early life stages, 1-day minimum)	(warmwater, early life stages, 7-day mean)	
рН	6.5 - 8.5		6.5-9.0 <sup>c,d</sup>	5.0-9.0 <sup>c,d</sup>
Total residual	0.1	0.019 <sup>c,d</sup>	0.011 <sup>c,d</sup>	4.0
chlorine (mg/L)				(maximum residual
				disinfectant level goal)

### Table 10 (Continued) National and Local Recommended Water Quality Criteria – Freshwaters

D	Basin Plan		EPA Criteria	
Parameter	<b>Objectives</b> <sup>a</sup>	CMC	CCC	Human Health
Fecal coliform	200 <sup>e</sup>			Swimming stds:
(MPN/100 ml)	(water contact recreation)			33 <sup>f</sup> (geometric mean for enterococci)
				126 <sup>f</sup> (geometric mean for <i>E. coli</i> )
Ammonia-	See Table 14	See Tables 11,	See Tables 11,	
nitrogen (mg/L)		12, and 13	12, and 13	
Nitrite-nitrogen	1			1
(mg/L)				(primary drinking water std.)
Nitrate-nitrogen	10			10
(mg/L)				(primary drinking water std.)
Total phosphates		< 0.05	$5 - 0.1^{d}$	
(mg/L)		(recommendation for	r streams, no criterion)	
Turbidity (NTU)	g	h	h	5 (secondary drinking water standard)
				0.5-1.0 (std. for systems that filter)

### Table 10 - Footnotes

CMC Criteria Maximum Concentration or acute criterion

CCC Criteria Continuous Concentration or chronic criterion

- a Source: California Regional Water Quality Control Board, Los Angeles Region. 1994. Water Quality Control Plan (Basin Plan).
- b Source: USEPA. 1986. Ambient Water Quality Criteria for Dissolved Oxygen. EPA 440-5-86-003. Washington, D.C.
- c Source: USEPA. 1999. National Recommended Water Quality Criteria Correction. EPA 822-Z-99-001. Washington, D.C.
- d Source: USEPA. 1986. Quality Criteria for Water. EPA 440/5-86-001. Washington, D.C.
- e Standard based on a minimum of not less than four samples for any 30-day period, 10% of total samples during any 30-day period shall not exceed 400/100ml.
- f Source: USEPA. 1986. Ambient Water Quality Criteria for Bacteria 1986. EPA 440-5-84-002. Washington, D.C.
- g Narrative criterion: "Waters shall be free of changes in turbidity that cause nuisance or adversely affect beneficial uses."
- h Narrative criterion for freshwater fish and other aquatic life: "Settleable and suspended solids should not reduce the depth of the compensation point for photosynthetic activity by more than 10 percent from the seasonally established norm for aquatic life."

Table 11
Numeric Values of the Criterion Maximum Concentration (CMC) with
Salmonids Present and Absent and the Criterion Continuous Concentration
(CCC) for Ammonia Nitrogen (mg/L)

pН	CMC with Salmonids Present	CMC with Salmonids Absent	CCC
6.5	32.6	48.8	3.48
6.6	31.3	46.8	3.42
6.7	29.8	44.6	3.36
6.8	28.1	42.0	3.28
6.9	26.2	39.1	3.19
7.0	24.1	36.1	3.08
7.1	22.0	32.8	2.96
7.2	19.7	29.5	2.81
7.3	17.5	26.2	2.65
7.4	15.4	23.0	2.47
7.5	13.3	19.9	2.28
7.6	11.4	17.0	2.07
7.7	9.65	14.4	1.87
7.8	8.11	12.1	1.66
7.9	6.77	10.1	1.46
8.0	5.62	8.4	1.27
8.1	4.64	6.95	1.09
8.2	3.83	5.72	0.935
8.3	3.15	4.71	0.795
8.4	2.59	3.88	0.673
8.5	2.14	3.2	0.568
8.6	1.77	2.65	0.480
8.7	1.47	2.2	0.406
8.8	1.23	1.84	0.345
8.9	1.04	1.56	0.295
9.0	0.885	1.32	0.254

Source: USEPA. 1999. 1999 Update of Ambient Water Quality Criteria for Ammonia. EPA 822-R-99-014. Washington, D.C.

Table 12
Temperature and pH-Dependent Values of the Ammonia-Nitrogen CCC (Chronic Criterion) for Fish Early Life Stages Absent

	CCC for Fish Early Life Stages Absent, mg N/L									
	Temperature (°Celsius)									
pН	0-7	8	9	10	11	12	13	14	15*	16*
6.5	10.8	10.1	9.51	8.92	8.36	7.84	7.35	6.89	6.46	6.06
6.6	10.7	9.99	9.37	8.79	8.24	7.72	7.24	6.79	6.36	5.97
6.7	10.5	9.81	9.20	8.62	8.08	7.58	7.11	6.66	6.25	5.86
6.8	10.2	9.58	8.98	8.42	7.90	7.40	6.94	6.51	6.10	5.72
6.9	9.93	9.31	8.73	8.19	7.68	7.20	6.75	6.33	5.93	5.56
7.0	9.60	9.00	8.43	7.91	7.41	6.95	6.52	6.11	5.73	5.37
7.1	9.20	8.63	8.09	7.58	7.11	6.67	6.25	5.86	5.49	5.15
7.2	8.75	8.20	7.69	7.21	6.76	6.34	5.94	5.57	5.22	4.90
7.3	8.24	7.73	7.25	6.79	6.37	5.97	5.60	5.25	4.92	4.61
7.4	7.69	7.21	6.76	6.33	5.94	5.57	5.22	4.89	4.59	4.30
7.5	7.09	6.64	6.23	5.84	5.48	5.13	4.81	4.51	4.23	3.97
7.6	6.46	6.05	5.67	5.32	4.99	4.68	4.38	4.11	3.85	3.61
7.7	5.81	5.45	5.11	4.79	4.49	4.21	3.95	3.70	3.47	3.25
7.8	5.17	4.84	4.54	4.26	3.99	3.74	3.51	3.29	3.09	2.89
7.9	4.54	4.26	3.99	3.74	3.51	3.29	3.09	2.89	2.71	2.54
8.0	3.95	3.70	3.47	3.26	3.05	2.86	2.68	2.52	2.36	2.21
8.1	3.41	3.19	2.99	2.81	2.63	2.47	2.31	2.17	2.03	1.91
8.2	2.91	2.73	2.56	2.40	2.25	2.11	1.98	1.85	1.74	1.63
8.3	2.47	2.32	2.18	2.04	1.91	1.79	1.68	1.58	1.48	1.39
8.4	2.09	1.96	1.84	1.73	1.62	1.52	1.42	1.33	1.25	1.17
8.5	1.77	1.66	1.55	1.46	1.37	1.28	1.20	1.13	1.06	0.990
8.6	1.49	1.40	1.31	1.23	1.15	1.08	1.01	0.951	0.892	0.836
8.7	1.26	1.18	1.11	1.04	0.976	0.915	0.858	0.805	0.754	0.707
8.8	1.07	1.01	0.944	0.885	0.829	0.778	0.729	0.684	0.641	0.601
8.9	0.917	0.860	0.806	0.756	0.709	0.664	0.623	0.584	0.548	0.513
9.0	0.790	0.740	0.694	0.651	0.610	0.572	0.536	0.503	0.471	0.442

<sup>\*</sup> At 15° C and above, the criterion for fish ELS absent is the same as the criterion for fish ELS present.

Source: USEPA. 1999. 1999 Update of Ambient Water Quality Criteria for Ammonia. EPA 822-R-99-014. Washington, D.C.

Table 13
Temperature and pH-Dependent Values of the Ammonia-Nitrogen CCC (Chronic Criterion) for Fish Early Life Stages Present

		CCC	C for Fis	h Early	Life Sta	ges Pres	sent, mg	N/L		
	Temperature (° Celsius)									
pН	0	14	16	18	20	22	24	26	28	30
6.5	6.67	6.67	6.06	5.33	4.68	4.12	3.62	3.18	2.80	2.46
6.6	6.57	6.57	5.97	5.25	4.61	4.05	3.56	3.13	2.75	2.42
6.7	6.44	6.44	5.86	5.15	4.52	3.98	3.50	3.07	2.70	2.37
6.8	6.29	6.29	5.72	5.03	4.42	3.89	3.42	3.00	2.64	2.32
6.9	6.12	6.12	5.56	4.89	4.30	3.78	3.32	2.92	2.57	2.25
7.0	5.91	5.91	5.37	4.72	4.15	3.65	3.21	2.82	2.48	2.18
7.1	5.67	5.67	5.15	4.53	3.98	3.50	3.08	2.70	2.38	2.09
7.2	5.39	5.39	4.90	4.31	3.78	3.33	2.92	2.57	2.26	1.99
7.3	5.08	5.08	4.61	4.06	3.57	3.13	2.76	2.42	2.13	1.87
7.4	4.73	4.73	4.30	3.78	3.32	2.92	2.57	2.26	1.98	1.74
7.5	4.36	4.36	3.97	3.49	3.06	2.69	2.37	2.08	1.83	1.61
7.6	3.98	3.98	3.61	3.18	2.79	2.45	2.16	1.90	1.67	1.47
7.7	3.58	3.58	3.25	2.86	2.51	2.21	1.94	1.71	1.50	1.32
7.8	3.18	3.18	2.89	2.54	2.23	1.96	1.73	1.52	1.33	1.17
7.9	2.80	2.80	2.54	2.24	1.96	1.73	1.52	1.33	1.17	1.03
8.0	2.43	2.43	2.21	1.94	1.71	1.50	1.32	1.16	1.02	0.897
8.1	2.10	2.10	1.91	1.68	1.47	1.29	1.14	1.00	0.879	0.773
8.2	1.79	1.79	1.63	1.43	1.26	1.11	0.973	0.855	0.752	0.661
8.3	1.52	1.52	1.39	1.22	1.07	0.941	0.827	0.727	0.639	0.562
8.4	1.29	1.29	1.17	1.03	0.906	0.796	0.700	0.615	0.541	0.475
8.5	1.09	1.09	0.990	0.870	0.765	0.672	0.591	0.520	0.457	0.401
8.6	0.920	0.920	0.836	0.735	0.646	0.568	0.499	0.439	0.386	0.339
8.7	0.778	0.778	0.707	0.622	0.547	0.480	0.422	0.371	0.326	0.287
8.8	0.661	0.661	0.601	0.528	0.464	0.408	0.359	0.315	0.277	0.244
8.9	0.565	0.565	0.513	0.451	0.397	0.349	0.306	0.269	0.237	0.208
9.0	0.486	0.486	0.442	0.389	0.342	0.300	0.264	0.232	0.204	0.179

Source: USEPA. 1999. 1999 Update of Ambient Water Quality Criteria for Ammonia. EPA 822-R-99-014. Washington, D.C.

Table 14
Maximum One-Hour Average Concentration for Total Ammonia (mg/L NH<sub>3</sub>)

nЦ			Tempe	erature (°C	elsius)		
pН	0	5	10	15	20	25	30
6.50	35	33	31	30	29	20	14.3
6.75	32	30	28	27	27	18.6	13.2
7.00	28	26	25	24	23	16.4	11.6
7.25	23	22	20	19.7	19.2	13.4	9.5
7.50	17.4	16.3	15.5	14.9	14.6	10.2	7.3
7.75	12.2	11.4	10.9	10.5	10.3	7.2	5.2
8.00	8.0	7.5	7.1	6.9	6.8	4.8	3.5
8.25	4.5	4.2	4.1	4.0	3.9	2.8	2.1
8.50	2.6	2.4	2.3	2.3	2.3	1.71	1.28
8.75	1.47	1.40	1.37	1.38	1.42	1.07	0.83
9.00	0.86	0.83	0.83	0.86	0.91	0.72	0.58

Source: California Regional Water Quality Control Board, Los Angeles Region. 1994. Water Quality Control Plan (Basin Plan). Taken from USEPA. 1986. Quality Criteria for Water. EPA 440/5-86-001. Washington, D.C.

Table 15
Example Calculated Values for Maximum Weekly Average Temperature for Growth and Short-Term Maxima for Survival of Juvenile and Adult Fishes
During the Summer

Species	<b>Growth</b> (°Celsius)	<b>Maxima</b> (°Celsius)
Black crappie	27	
Bluegill	32	35
Channel catfish	32	35
Emerald shiner	30	
Largemouth bass	32	34
Brook trout	19	24

Source: USEPA. 1986. Quality Criteria for Water. EPA 440/5-86-001. Washington, D.C.

### **DISCUSSION**

Results from the four quarters of sampling in 2002 are discussed by parameter in **Table 16**.

Table 16
Discussion of 2002 Big Tujunga Wash Sampling Results

Parameter	Discussion
Temperature	• Temperatures in Haines Canyon Creek leaving the site were generally 1-3 °C cooler than temperatures in the Tujunga ponds.
	• Seasonal fluctuations of up to 9 °C were observed – December readings were lowest, and June readings were highest.
	Observed temperatures during all sample periods were below levels of concern for growth and survival of warm water fish species.
Dissolved oxygen	• Dissolved oxygen (DO) levels in Haines Canyon Creek leaving the site correlated with temperature – higher DO values were observed on dates with lower temperature. DO concentrations in the ponds did not follow this pattern, but readings of inflow to and outflow from the ponds were very similar.
	• Seasonal fluctuations of up to 2.9 mg/L in DO were observed – highest overall readings were observed in December.
	• All DO readings in 2002 were above the recommended minimum for warmwater fish species of 5.0 mg/L.
pН	• In general, pH values observed in Haines Canyon Creek leaving the site were approximately 1 unit higher than values observed in the ponds. For any given date, the pH of waters flowing into and out of the ponds varied by 0.4 units or less.
	• The maximum seasonal pH fluctuation at any station in 2002 was 0.58 units.
	• The pH values of water from all stations for all four sampling periods were within the 6.5 to 8.5 range identified in the Basin Plan.
Total residual chlorine	Total residual chlorine readings on all sampling dates were below the detection limit.

### Table 16 (Continued) Discussion of 2002 Big Tujunga Wash Sampling Results

Parameter	Discussion
Nitrogen	• Ammonia-nitrogen and nitrite-nitrogen were not detected in any of the samples during 2002.
	• Kjeldahl nitrogen (organic plus ammonia) readings were consistently low (<1 mg/L) at all stations on all dates.
	• Nitrate-nitrogen was consistently higher in waters flowing into the ponds than the outflow (up to 2.25 mg/L higher). Nitrate in Haines Canyon Creek was consistently lower than values observed in the ponds.
	• Nitrate-nitrogen values observed at the ponds were consistently higher (0.6 to 2.7 mg/L higher) in 2002 than in 2001.
	• All except one (Inflow to Tujunga Ponds 1 in December at 10 mg/L) nitrate-nitrogen readings were below the drinking water standard of 10 mg/L.
Phosphorus	• Phosphorus was not detected from the ponds in March and June. The proportion of total phosphorus present as reactive orthophosphate ranged from all to approximately 30 percent.
	• Baseline total phosphorus observed in April 2000 was significantly higher than 2001 and 2002 readings (up to 0.211 mg/L in April 2000). This may be attributable to releases from sediment disturbances caused by a rain event in 2000.
	• Total phosphorus values at all stations for all four quarters were at or below the low end of EPA's recommendation for streams of <0.05 – 1.0 mg/L total phosphates. (The reading of 0.37 mg/L in June at Haines Canyon Creek is most likely a sampling or laboratory error since the result for the duplicate sample was non-detect.)
Turbidity	• Turbidity values in 2002 were similar to those of 2001.
	• All 2002 turbidity values were below the drinking water standard of 5 NTU and were not excessive for aquatic life.
Bacteria	• Fecal coliform levels in 2002 ranged from <2 to 300 MPN/100 ml. Total coliforms were much higher – up to 5,000 MPN/100 ml in two samples (Outflow from the ponds in September and Haines Canyon Creek leaving the site in December).
	• Again, due to the rain event, baseline coliform data from April 18 <sup>th</sup> 2000 showed the highest total coliform levels (170,000 MPN/100 ml in the outflow from the ponds).
	• Fecal coliform levels exceeded the water contact recreation standard of 200 MPN/100 ml in December in one sample from Haines Canyon Creek leaving the site (although sufficient samples were not taken per the standard). Note, the duplicate sample on this date at this location was lower than the standard.

**Ammonia-Nitrogen** –  $NH_3$ -N is a gaseous alkaline compound of nitrogen and hydrogen that is highly soluble in water. Un-ionized ammonia ( $NH_3$ ) is toxic to aquatic organisms. The proportions of  $NH_3$  and ammonium ( $NH_4^+$ ) and hydroxide ( $OH_3^-$ ) ions are dependent on temperature, pH, and salinity.

**Chlorine, residual** – The chlorination of water supplies and wastewaters serves to destroy or deactivate disease-producing organisms. Residual chlorine in natural waters is an aquatic toxicant.

**Coliform Bacteria** – several genera of bacteria belonging to the family Enterobacteriaceae. Based on the method of detection, the coliform group is historically defined as facultative anaerobic, gram-negative, nonspore-forming, rod-shaped bacteria that ferment lactose with gas and acid formation within 48 hours at 35°C.

**Fecal Coliform Bacteria** – part of the intestinal flora of warm-blooded animals. Presence in surface waters is considered an indication of pollution.

**Kjeldahl Nitrogen** – Named for the laboratory technique used for detection, Kjeldahl nitrogen includes organic nitrogen and ammonia nitrogen.

**Nitrate-Nitrogen** – NO3<sup>-</sup>-N is an essential nutrient for many photosynthetic autotrophs.

**Nitrite-Nitrogen** – NO2<sup>-</sup>-N is an intermediate oxidation state of nitrogen, both in the oxidation of ammonia to nitrate and in the reduction of nitrate.

**Orthophosphorus** – the reactive form of phosphorus, commonly used as fertilizer.

**pH** – the hydrogen ion activity of water (pH) is measured on a logarithmic scale, ranging from 0 to 14. The pH of "pure" water at 25°C is 7.0 (neutral). Low pH is acidic; high pH is basic or alkaline.

**Total Phosphorus** – In natural waters, phosphorus occurs almost solely as orthophosphates, condensed phosphates, and organically bound phosphate. Phosphorus is essential to the growth of organisms.

**Turbidity** – attributable to the suspended and colloidal matter in water, including clay, silt, finely divided organic and inorganic matter, soluble colored organic compounds, and plankton and other microscopic organisms. The reduction of clearness in turbid waters diminishes the penetration of light and therefore can adversely affect photosynthesis.

### **APPENDIX A**

# BIG TUJUNGA WASH WATER QUALITY MONITORING PROGRAM LABORATORY RESULTS

BIG TUJUNGA WASH WATER QUALITY MONITORING PROGRAM MARCH 2002 LABORATORY RESULTS



555 East Walnut Street Pasadene, California 91101 Tel: 626 568 6400 Fax: 626 568 6324 1 800 568 LABS (1 800 568 5227)

### Laboratory Report

for

Applied Research MWA - Joe Marcinko Montgomery Watson

327 West Maple Avenue

Monrovia , CA 91106

Attention: Joe Marcinko Fax: (626) 359-3593

DATE OF ISSUE

HDS Hildary Strayer Project Manager nelac :

Report#: 93807

BIG TJ

Laboratory certifies that the test results meet all **NELAC** requirements unless noted in the Comments section or the Case Narrative. Following the cover page are QC Report, QC Summary, Data Report, Hits Report, totaling 11 page[s].

### Montgomery Watson Laboratories

555 E. Walnut St., Pasadena, CA 91101 PHONE: 626-568-6400/FAX: 626-568-6324

#### ACKNOWLEDGMENT OF SAMPLES RECEIVED

Applied Research MWA - Joe Marcinko

OPO4 (, V

TOTCOL' 10

T-P 12 TKN 🕻 🏌

TURB  $\sqrt[k]{\zeta}$ 

Montgomery Watson

Customer Code: ARD-JM 327 West Maple Avenue PO#: 1341410.5620.011801

Monrovia, CA 91106 Group#: 93807 Attn: Joe Marcinko Project#: BIG TJ

> Orthophosphate-P Total phosphorus-P

Kjeldahl Nitrogen

Total Coliform Bacteria

Turbidity

Proj Mgr: Hillary Strayer Phone: (626) 303-5845 Phone: (626) 568-6412

The following samples were received from you on 03/27/02. They have been scheduled for the tests listed beside each sample. If this information is incorrect, please contact your service representative. Thank you for using Montgomery Watson Laboratories.

Tests Scheduled  2203270128 SITE 1 INFLOW TO TJ POND 1	Sample#	Sample	Id			Matrix		Sample D	ate
FECCOL NH3 NO2-N NO3 OPO4 T-P TKN TOTCOL TURB  2203270132 SITE 1 INFLOW TO TJ POND 2 Water 27-mar-2002 12:55:00 FECCOL NH3 NO2-N NO3 OPO4 T-P TKN TOTCOL TURB  2203270134 SITE 2 OUTFLOW FROM TJ POND 1 Water 27-mar-2002 13:25:00 FECCOL NH3 NO2-N NO3 OPO4 T-P TKN TOTCOL TURB  2203270136 SITE 2 OUTFLOW FROM TJ POND 2 Water 27-mar-2002 13:35:00 FECCOL NH3 NO2-N NO3 OPO4 T-P TKN TOTCOL TURB  2203270137 SITE 4 HAINES CYN CRK 1 Water 27-mar-2002 11:40:00 FECCOL NH3 NO2-N NO3 OPO4 T-P TKN TOTCOL TURB  2203270138 SITE 4 HAINES CYN CRK 1 Water 27-mar-2002 11:40:00 FECCOL NH3 NO2-N NO3 OPO4 T-P TKN TOTCOL TURB  2203270138 SITE 4 HAINES CYN CRK 2 Water 27-mar-2002 11:55:00 FECCOL NH3 NO2-N NO3 OPO4 T-P TKN TOTCOL TURB				Tests S	Scheduled				
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TKN TOTCOL TURB  2203270138 SITE 4 HAINES CYN CRK 2 Water 27-mar-2002 11:55:00 FECCOL NH3 NO2-N NO3 OPO4 T-P TKN TOTCOL TURB			Cota tion alterialism (paparate)				NO3		
2203270138 SITE 4 HAINES CYN CRK 2 Water 27-mar-2002 11:55:00 FECCOL NH3 NO2-N NO3 OPO4 T-P TKN TOTCOL TURB				consistency of the first property of the second section of		en antigan a transportation de la companya de la c			
TKN TOTCOL TURB	2203270138	SITE 4	HAINES	CYN CRE	arramanan markaman m	Water		27-mar-2	002 11:55:00
				FECCOL	NH3	NO2-N	NO3	OP04	T-P
Test Agronym Description				TKN	TOTCOL	TURB	,		
rest Actory to Description	Test Acronym Description								
Test Acronym Description	Test Ac:	ronym	Descr:	iption					
FECCOL 40 Fecal Coliform Bacteria				oalif					
FECCOL + Fecal Coliform Bacteria NH3 5 Ammonia Nitrogen						d			
NH3 35 AMMONIA NICLOGEN NO2-N 5 Nitrite, Nitrogen by IC						a			
NO2-N 5 WILLIAM NICTOGEN BY IC  NO3 <1 Nitrate as Nitrogen by IC									

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Applied Research MWA - Joe Marcinko Joe Marcinko Montgomery Watson 327 West Maple Avenue Monrovia , CA 91106 Samples Received 03/27/02

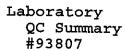
Prepared	l Analyzed	QC Ref	# Method	Analyte	Result	Units	MRL	Dilution
SITE	1 INFLOW T	'O TJ	POND 1	(2203270128)	Sampled on 0	3/27/02 12	:37	
	03/27/02 15:37		( ML/SM922	1C ) Fecal Coliform B	acteria 4	MPNM	2.0	1
	03/28/02 00:00	167327	( ML/EPA 3	50.1 ) Ammonia Nitrogen	ND	mg/l	0.050	1
	03/27/02 16:28	167296	( ML/EPA 3	00.0 ) Nitrite, Nitroge	n by IC ND	mg/l	0.20	2
	03/27/02 16:28	167299	( ML/EPA 3	00.0 ) Nitrate as Nitro	gen by IC 9.1	mg/l	0.20	2
	03/28/02 00:00	167403	( ML/S4500	P-E ) Orthophosphate-P	ND	mg/1	0.010	1
	04/02/02 17:08	167732	( S4500PE/	E365.1) Total phosphorus	-P ND	mg/l	0.020	1
	04/03/02 00:00	168393	( ML/EPA 3	51.2 ) Kjelđahl Nitroge	n 0.28	mg/1	0.20	1
	03/27/02 15:37		( ML/SM922	lB ) Total Coliform B	acteria 500	MPNM	2.0	1
	03/27/02 11:00	167249	( ML/EPA 1	80.1 ) Turbidity	1.2	NTU	0.050	1
SITE	1 INFLOW T	'O TJ	POND 2	(2203270132)	Sampled on 0	3/27/02 12	:55	
	03/27/02 15:46		( ML/SM922:	C ) Fecal Coliform B	acteria <2	MPNM	2.0	1
	03/28/02 00:00	167327	( ML/EPA 3	50.1 ) Ammonia Nitrogen	ND	mg/l	0.050	1.
	03/27/02 16:49	167296	( ML/EPA 3	00.0 ) Nitrite, Nitroge	n by IC ND	mg/1	0.20	2
	03/27/02 16:49	167299	( ML/EPA 3	00.0 ) Nitrate as Nitro	gen by IC 8.9	mg/l	0.20	2
	03/28/02 00:00	167403	( ML/S45001	P-E ) Orthophosphate-P	ND	mg/l	0.010	1
	04/02/02 17:08	167732	( S4500PE/)	3365.1) Total phosphorus	-P ND	mg/l	0.020	1
	04/03/02 00:00	168394	( ML/EPA 3	51.2 ) Kjeldahl Nitroge	n 0.30	mg/l	0.20	1
	03/27/02 15:46		( ML/SM922	LB ) Total Coliform B	acteria 900	MPNM	2.0	1
	03/27/02 11:00	167249	( ML/EPA 18	30.1 ) Turbidity	1.1	NTU	0.050	1
SITE	2 OUTFLOW	FROM	TJ POND	1 (2203270134)	Sampled on	03/27/02	13:25	
	03/27/02 15:57		( ML/SM922	lC ) Fecal Coliform B	acteria 4	MPNM	2.0	1
	03/28/02 00:00	167327	( ML/EPA 35	0.1 ) Ammonia Nitrogen	ND	mg/1	0.050	1
	03/27/02 17:00	167296	( ML/EPA 30	00.0 ) Nitrite, Nitroge	n by IC ND	mg/l	0.20	2
	03/27/02 17:00	167299	( ML/EPA 30	0.0 ) Nitrate as Nitro	gen by IC 7.3	mg/l	0.20	2
	03/28/02 00:00	167403	( ML/S45001	P-E ) Orthophosphate-P	ND	mg/l	0.010	1
	04/02/02 17:08	167732	( S4500PE/E	365.1) Total phosphorus	-P ND	mg/l	0.020	1
	04/03/02 00:00	168394	( ML/EPA 35	31.2 ) Kjeldahl Nitroger	n ND	mg/l	0.20	1
	03/27/02 15:57		( ML/SM9221	.B ) Total Coliform Ba	acteria 130	мрим	2.0	1
	03/27/02 11:00	167249	( ML/EPA 18	0.1 ) Turbidity	0.70	NTU	0.050	1



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Prepared	l Analyzed	QC Ref#	Method	Analyte	Result	Units	MRL	Dilution
SITE	2 OUTFLOW	FROM	TJ POND 2	(2203270136)	Sampled on 03	/27/02	13:35	
	03/27/02 16:00		( ML/SM9221C	) Fecal Coliform Bacteria	8	MPNM	2.0	1
	03/28/02 00:00	167327	( ML/EPA 350.1	) Ammonia Nitrogen	ND	mg/l	0.050	1
	03/27/02 16:39	167296	( ML/EPA 300.0	) Nitrite, Nitrogen by IC	ND	mg/l	0.20	2
	03/27/02 16:39	167299	( ML/EPA 300.0	) Nitrate as Nitrogen by IC	7.0	mg/l	0.20	2
	03/28/02 00:00	167403	( ML/S4500P-E	) Orthophosphate-P	ND	mg/l	0.010	1
	04/02/02 17:08	167732	( S4500PE/E365.	l) Total phosphorus-P	ND	mg/l	0.020	1
	04/03/02 00:00	168394	( ML/EPA 351.2	) Kjeldahl Nitrogen	ND	mg/l	0.20	1
	03/27/02 16:00		( ML/SM9221B	) Total Coliform Bacteria	220	MPNM	2.0	1
	03/27/02 11:00	167252	( ML/EPA 180.1	) Turbidity	0.70	NTU	0.050	1
SITE	4 HAINES C	YN CR	K 1 (22032	70137) Sample	ed on 03/27/02	11:40		
	03/27/02 16:05		( ML/SM9221C	) Fecal Coliform Bacteria	50	MPNM	2.0	1
	03/28/02 00:00	167327	( ML/EPA 350.1	) Ammonia Nitrogen	ND	mg/l	0.050	1
	03/28/02 14:48	167305	( ML/EPA 300.0	) Nitrite, Nitrogen by IC	ND	mg/l	0.20	2
	03/28/02 14:48	167307	( ML/EPA 300.0	) Nitrate as Nitrogen by IC	6.4	mg/l	0.20	2
	03/28/02 00:00	167403	( ML/S4500P-E	) Orthophosphate-P	0.015	mg/l	0.010	1
	04/02/02 17:08	167732	( S4500PE/E365.	l) Total phosphorus-P	ND	mg/l	0.020	1
	04/03/02 00:00	168394	( ML/EPA 351.2	) Kjeldahl Nitrogen	ND	mg/l	0.20	1
	03/27/02 16:05		( ML/SM9221B	) Total Coliform Bacteria	900	MPNM	2.0	1
	03/27/02 11:00	167249	( ML/EPA 180.1	) Turbidity	0.35	NTU	0.050	1
SITE	4 HAINES C	YN CR	K 2 (22032	70138) Sample	ed on 03/27/02	11:55		
	03/27/02 16:04		( ML/SM9221C	) Fecal Coliform Bacteria	50	MPNM	2.0	1
	03/28/02 00:00	167327	( ML/EPA 350.1	) Ammonia Nitrogen	ND	mg/l	0.050	1
	03/28/02 14:58	167305	( ML/EPA 300.0	) Nitrite, Nitrogen by IC	ND	mg/l	0.20	2
	03/28/02 14:58	167307	( ML/EPA 300.0	) Nitrate as Nitrogen by IC	6.4	mg/l	0.20	2
	03/28/02 00:00	167403	( ML/S4500P-E	) Orthophosphate-P	0.014	mg/l	0.010	1
	04/02/02 17:08	167732	( S4500PE/E365.	.) Total phosphorus-P	ИD	mg/l	0.020	1
	04/03/02 00:00	168394	( ML/EPA 351.2	) Kjelđahl Nitrogen	ND	mg/l	0.20	1
	03/27/02 16:04		( ML/SM9221B	) Total Coliform Bacteria	900	MPNM	2.0	1
	03/27/02 11:00	167249	( ML/EPA 180.1	) Turbidity	0.30	NTU	0.050	1



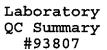


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QC Ref #167249 - Turbidity	Analysis Date: 03/27/2002
2203270128	SITE 1 INFLOW TO TJ POND 1
	SITE 1 INFLOW TO TJ POND 2
2203270134	SITE 2 OUTFLOW FROM TJ POND 1
2203270137	SITE 4 HAINES CYN CRK 1
. 2203270137 2203270138	SITE 4 HAINES CYN CRK 2
	JII I IMINED CIN CRR Z
QC Ref #167252 - Turbidity	Analysis Date: 03/27/2002
2203270136	SITE 2 OUTFLOW FROM TJ POND 2
QC Ref #167296 - Nitrite, Ni	trogen by IC Analysis Date: 03/27/2002
2203270128	SITE 1 INFLOW TO TJ POND 1 SITE 1 INFLOW TO TJ POND 2 SITE 2 OUTFLOW FROM TJ POND 1
2203270132	SITE 1 INFLOW TO TJ POND 2
2203270134	SITE 2 OUTFLOW FROM TJ POND 1
2203270136	SITE 2 OUTFLOW FROM TJ POND 2
QC Ref #167299 - Nitrate as	Nitrogen by IC Analysis Date: 03/27/2002
2203270128	SITE 1 INFLOW TO TJ POND 1
2203270128	SITE I INFLOW TO TO POND I
2203270132	SITE 1 INFLOW TO TJ POND 2 SITE 2 OUTFLOW FROM TJ POND 1
2203270134 2203270136	SITE 2 OUTFLOW FROM TO POND 1 SITE 2 OUTFLOW FROM TJ POND 2
	DITE 2 OUTFLOW FROM TO POND 2
QC Ref #167305 - Nitrite, Ni	trogen by IC Analysis Date: 03/28/2002
2203270137	SITE 4 HAINES CYN CRK 1
2203270138	SITE 4 HAINES CYN CRK 2
OC Pof #167207 Nitrocks	<b>7</b> 11
%c ver #10/30/ - Mittate as I	Nitrogen by IC Analysis Date: 03/28/2002
2203270137	CITE A HAINES GVA ODE 1
2203270137	SITE 4 HAINES CYN CRK 1
2403210130	SITE 4 HAINES CYN CRK 2

Applied Research MWA - Joe Marcinko (continued)

QC	Ref	#167327	- Ammonia	Nitrogen	Analysis Date:	03/28/2002
		22032 22032 22032 22032	70128 70132 70134 70136 70137 70138	SITE 1 SITE 2 SITE 2 SITE 4	INFLOW TO TJ POND 1 INFLOW TO TJ POND 2 OUTFLOW FROM TJ POND 1 OUTFLOW FROM TJ POND 2 HAINES CYN CRK 1 HAINES CYN CRK 2	
QC	Ref	#167403	- Orthoph	osphate-P	Analysis Date:	03/28/2002
		22032 22032 22032 22032	70128 70132 70134 70136 70137 70138	SITE 1 SITE 2 SITE 2 SITE 4	INFLOW TO TJ POND 1 INFLOW TO TJ POND 2 OUTFLOW FROM TJ POND 1 OUTFLOW FROM TJ POND 2 HAINES CYN CRK 1 HAINES CYN CRK 2	
QC	Ref	#167732	- Total p	hosphorus-P	Analysis Date:	04/02/2002
		22032 22032 22032 22032	70128 70132 70134 70136 70137 70138	SITE 1 SITE 2 SITE 2 SITE 4	INFLOW TO TJ POND 1 INFLOW TO TJ POND 2 OUTFLOW FROM TJ POND 1 OUTFLOW FROM TJ POND 2 HAINES CYN CRK 1 HAINES CYN CRK 2	
QC	Ref	#168393	- Kjeldah	l Nitrogen	Analysis Date:	04/03/2002
		22032	70128	SITE 1	INFLOW TO TJ POND 1	
QC	Ref	#168394	- Kjeldah	l Nitrogen	Analysis Date:	04/03/2002
		22032 22032 22032	70132 70134 70136 70137 70138	SITE 2 SITE 2 SITE 4	INFLOW TO TJ POND 2 OUTFLOW FROM TJ POND 1 OUTFLOW FROM TJ POND 2 HAINES CYN CRK 1 HAINES CYN CRK 2	





Applied Research MWA - Joe Marcinko (continued)

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	QC	Ref	#167249	Turbidit	Y				
QC DUP			Analyte Turbidity		Spiked	Recovered	Yield (%)	Limits (%)	RPD (%)
	QC	Ref	#167252	Turbidit	У				
QC DUP			Analyte Turbidity		Spiked	Recovered	Yield (%)	Limits (%)	RPD (%)
	QC	Ref	#167296	Nitrite,	Nitro	gen by 1	rc .		
QC			Analyte		Spiked	Recovered	Yield (%)	Limits (%)	RPD (%)
LCS1			Nitrite, Nitrogen by 1	ıc	1.0	1.03	103.0	( 90.00 - 110.00 )	
LCS2			Nitrite, Nitrogen by	ic	1.0	1.03	103.0	( 90.00 - 110.00 )	0.00
MBLK			Nitrite, Nitrogen by 1	ıc	ND				
MS			Nitrite, Nitrogen by D	tc	1.0	1.04	104.0	( 80.00 - 120.00 )	
MSD			Nitrite, Nitrogen by 1	rc	1.0	1.04	104.0	( 80.00 - 120.00 )	0.00
	QC	Ref	#167299	Nitrate	as Nit	rogen by	, IC		
QC			Analyte		Spiked	Recovered	Yield (%)	Limits (%)	RPD (%)
LCS1			Nitrate as Nitrogen by	7 IC	2.5	2.7	108.0	( 90.00 - 110.00 )	
LCS2			Nitrate as Nitrogen by	, IC	2.5	2.69	107.6	( 90.00 - 110.00 )	0.37
MBLK			Nitrate as Nitrogen by	, IC	ND				
MS			Nitrate as Nitrogen by	/ IC	2.5	2.73	109.2	( 80.00 - 120.00 )	
MSD			Nitrate as Nitrogen by	7 IC	2.5	2.73	109.2	( 80.00 - 120.00 )	0.00

Applied Research MWA - Joe Marcinko (continued)

	QC	Ref	#167305	Nitrite,	Nitro	ogen by	IC		
QC			Analyte		Spiked	Recovered	Yield (%)	Limits (%)	RPD (%)
LCS1	l		Nitrite, Nitrogen by I	c	1.0	1.03	103.0	( 90.00 - 110.00	)
LCS2	2		Nitrite, Nitrogen by I	c	1.0	1.03	103.0	( 90.00 - 110.00	0.00
MBLE	c		Nitrite, Nitrogen by I	С	ND				
MS			Nitrite, Nitrogen by I	c	1.0	1.04	104.0	( 80.00 - 120.00 )	)
MSD			Nitrite, Nitrogen by I	С	1.0	1.03	103.0	( 80.00 - 120.00 )	0.97
	QC	Ref	#167307	Nitrate	as Nit	rogen by	, IC		
QC			Analyte		Spiked	Recovered	Yield (%)	Limits (%)	RPD (%)
LCS1	L		Nitrate as Nitrogen by	IC	2.5	2.72	108.8	( 90.00 - 110.00 )	
LCS2	2		Nitrate as Nitrogen by	IC	2.5	2.71	108.4	( 90.00 - 110.00 )	
MBLK	τ		Nitrate as Nitrogen by	rc	ND				
MS			Nitrate as Nitrogen by	IC	2.5	2.74	109.6	( 80.00 - 120.00 )	•
msd			Nitrate as Nitrogen by	IC	2.5	2.72	108.8	( 80.00 - 120.00 )	0.73
	QC	Ref	#167327	Ammonia	Nitrog	ren			
QC			Analyte		Spiked	Recovered	Yield (%)	Limits (%)	RPD (%)
MS			Spiked sample		Lab # 22	03260195		( 0.00 - 0.00 )	
LCS1			Ammonia Nitrogen		1.00	1.02	102.0	( 90.00 - 110.00 )	
LCS2	!		Ammonia Nitrogen		1.00	1.01	101.0	( 90.00 - 110.00 )	0.99
MBLK			Ammonia Nitrogen		ND				
mblk Ms			-		ND 1.00	0.990	99.0	( 90.00 - 110.00 )	

Applied Research MWA - Joe Marcinko (continued)

	QC	Ref	#167403	Orthopho	sphate	e-P			
QC			Analyte		Spiked	Recovered	Yield (%)	Limits (%)	RPD (%)
MS			Spiked sample		Lab # 22	03270137		( 0.00 - 0.00	)
LCS1			Orthophosphate-P		0.5	0.518	103.6	( 90.00 - 110.00	)
LCS2			Orthophosphate-P		0.5	0.521	104.2	( 90.00 - 110.00	) 0.58
MBLK	:		Orthophosphate-P		ND				
MS			Orthophosphate-P		0.5	0.508	101.6	( 80.00 - 120.00	)
MSD			Orthophosphate-P		0.5	0.517	103.4	( 80.00 - 120.00	) 1.8
	QC	Ref	#167732	Total ph	nosphor	rus-P			
QС			Analyte		Spiked	Recovered	Yield (%)	Limits (%)	RPD (%)
MS			Spiked sample		Lab # 22	03270124		( 0.00 - 0.00	)
LCS1			Total phosphorus-P		0.4	0.440	110.0	( 90.00 - 110.00	)
LCS2			Total phosphorus-P		0.4	0.410	102.5	( 90.00 - 110.00	) 7.1
MBLK	:		Total phosphorus-P		ND				
MS			Total phosphorus-P		0.4	0.411	102.7	( 80.00 - 120.00	)
MSD			Total phosphorus-P		0.4	0.412	103.0	( 80.00 - 120.00	) 0.24
	QC	Ref	#168393	Kjeldahl	. Nitro	gen			
QC			Analyte		Spiked	Recovered	Yield (%)	Limits (%)	RPD (%)
MS			Spiked sample		Lab # 22	03230019		( 0.00 - 0.00	)
LCS1			Kjeldahl Nitrogen		4	4.00	100.0	( 70.00 - 130.00	)
LCS2			Kjeldahl Nitrogen		4	3.60	90.0	( 70.00 - 130.00	) 11
MBLK			Kjeldahl Nitrogen		ND				
MS			Kjeldahl Nitrogen		4	3.76	94.0	( 70.00 - 130.00	)
MSD			Kjeldahl Nitrogen		4	3.76	94.0	( 70.00 - 130.00	0.00



Applied Research MWA - Joe Marcinko (continued)

QC Ref #168394

### Kjeldahl Nitrogen

QC	Analyte	Spiked	Recovered	Yield (%)	Limits (%)	RPD (%)
MS	Spiked sample	Lab # 22	03270129		( 0.00 - 0.00 )	
LCS1	Kjeldahl Nitrogen	4	3.90	97.5	( 70.00 - 130.00 )	
LCS2	Kjeldahl Nitrogen	4	3.90	97.5	( 70.00 - 130.00 )	0.00
MBLK	Kjeldahl Nitrogen	ND				
MS	Kjeldahl Nitrogen	4	4.29	107.2	( 70.00 - 130.00 )	
MSD	Kjeldahl Nitrogen	4	4.16	104.0	( 70.00 - 130.00 ) 3	3.1

BIG TUJUNGA WASH WATER QUALITY MONITORING PROGRAM JUNE 2002 LABORATORY RESULTS



### Laboratory Report

for

Applied Research MWA - Joe Marcinko Montgomery Watson

327 West Maple Avenue

Monrovia , CA 91106

Attention: Joe Marcinko Fax: (626) 359-3593

DATE OF ISSUE

JUL 1 0 2002

HDS Hillary Strayer Project Manager



Report#: 97553

BIG TJ

Laboratory certifies that the test results meet all **NELAC** requirements unless noted in the Comments section or the Case Narrative. Following the cover page are QC Report, QC Summary, Data Report, Hits Report, totaling 9 page[s].

### MWH Laboratories

555 E. Walnut St., Pasadena, CA 91101 PHONE: 626-568-6400/FAX: 626-568-6324

### ACKNOWLEDGMENT OF SAMPLES RECEIVED

Applied Research MWA - Joe Marcinko

Montgomery Watson Customer Code: ARD-JM

327 West Maple Avenue PO#: 1341410.5620.011801

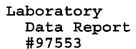
Monrovia, CA 91106 Group#: 97553
Attn: Joe Marcinko Project#: BIG TJ

Phone: (626) 303-5845 Proj Mgr: Hillary Strayer
Phone: (626) 568-6412

The following samples were received from you on 06/25/02. They have been scheduled for the tests listed beside each sample. If this information is incorrect, please contact your service representative. Thank you for using MWH Laboratories.

Sample#	Sample	Id			Matrix		Sample D	ate
			Tests	Scheduled				
2206250093	SITE 1	INFLOW	TO TJ	POND 1	Water		25-jun-2	002 12:10:00
	O ( ) Constant contract contract ( )	om cook southern a community	FECCOI	NEST CONTRACTOR CONTRA	NO2-N	NO3	OPO4	T-P
			TKN	TOTCOL	Action Management of the contract of the contr			
2206250094	SITE 1	INFLOW		POND 2	Water			002 12:17:00
			FECCOI		NO2-N TURB	NO3	OP04	T-P
2206250095	മാനം	വയയാ	TKN	TOTCOL			25-iun-2	002 12:45:00
2206230033	DITE Z	OUTPEO	FECCOI		NO2-N	NO3	OPO4	T-P
			TKN	TOTCOL	A CONTRACTOR CONTRACTO			
2206250096	SITE 2	OUTFLO	W FROM	TJ POND 2	Water		25-jun-2	002 12:55:00
			FECCOI	J NH3	NO2-N	NO3	OPO4	T-P
araaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaa	&10000111100110111111100001000010	oprosessa eta Marti Mari 1920	TKN	TOTCOL	TURB	ete (1881-1885) (1885) (1885) (1886)		000 40 FF 00
2206250097	SITE 4	HAINES		V CREEK 1	Water	NTOO		002 10:55:00
100000000000000000000000000000000000000			FECCOI TKN	L NH3 TOTCOL	NO2-N TURB	NO3	OPO4	T-P
2206250098	ርፐ <b>ጥፑ</b> 4	HATNES		N CREEK 2	Water		25-iun-2	002 11:09:00
2200230030	OTID 4		FECCO	an ann an	NO2-N	NO3	OPO4	T-P
201100100000000000000000000000000000000	()(T)ppoc: abact abact color (c)	801000000000000000000000000000000000000	TKN	TOTCOL	TURB			
			Тея	st Acronym	Descripti	Lon		
Test Ac	ronym	Descr	iption					

Test	Acronym	Description
	FECCOL	Fecal Coliform Bacteria
	NH3	Ammonia Nitrogen
000000000000000000000000000000000000000	102-N	Nitrite, Nitrogen by IC
	NO3 DPO4	Nitrate as Nitrogen by IC Orthophosphate-P
1	<b>r</b> -P	Total phosphorus-P $\Delta = \sqrt{bV}$
000000000000000000000000000000000000000	rkn	Kjeldahl Nitrogen
AMARANTANANANANANANANANANANANANANANANANANA	FOTCOL FURB	Total Coliform Bacteria Turbidity





Applied Research MWA - Joe Marcinko Joe Marcinko Montgomery Watson 327 West Maple Avenue Monrovia , CA 91106

Samples Received 06/25/02

Prepared	Analyzed	QC Ref#	Method	Analyte		Result	Units	MRL	Dilution
SITE	1 INFLOW T	O TJ	POND 1 (22	06250093)	Sampled	on 06/	25/02 12	:10	
	06/25/02 15:41		( ML/SM9221C	) Fecal Coliform Ba	cteria	8	MPNM	2.0	1
	06/27/02 00:00	175125	( ML/EPA 350.1	) Ammonia Nitrogen		ND	mg/1	0.050	1
	06/26/02 14:20	175186	( ML/EPA 300.0	) Nitrite, Nitrogen	by IC	ND	mg/l	0.20	2
	06/26/02 14:20	175187	( ML/EPA 300.0	) Nitrate as Nitrog	en by IC	8.9	mg/l	0.20	2
	06/26/02 00:00	175115	( ML/S4500P-E	) Orthophosphate-P		ND	mg/l	0.010	1
	07/03/02 07:46	175473	( S4500PE/E365.	1) Total phosphorus-	Þ	ND	mg/l	0.020	1
	07/03/02 15:45	175749	( ML/EPA 351.2	) Kjeldahl Nitrogen		0.56	mg/l	0.20	1
	06/25/02 15:41		( ML/SM9221B	) Total Coliform Ba	cteria	1300	MPNM	2.0	1
	06/25/02 15:00	174906	( ML/EPA 180.1	) Turbidity		0.70	NTU	0.050	1
SITE	1 INFLOW T	O TJ	POND 2 (22	06250094)	Sampled	on 06/	25/02 12	:17	
	06/25/02 15:48		( ML/SM9221C	) Fecal Coliform Ba	cteria	7	MPNM	2.0	1
	06/27/02 00:00	175125	( ML/EPA 350.1	) Ammonia Nitrogen		ND	mg/l	0.050	1
	06/26/02 14:31	175186	( ML/EPA 300.0	) Nitrite, Nitrogen	by IC	ND	mg/l	0.20	2
	06/26/02 14:31	175187	( ML/EPA 300.0	) Nitrate as Nitrog	en by IC	8.9	mg/l	0.20	2
	06/26/02 00:00	175115	( ML/S4500P-E	) Orthophosphate-P		ND	mg/l	0.010	1
	07/03/02 07:46	175473	( S4500PE/E365.	1) Total phosphorus-	P	ND	mg/l	0.020	1
	07/03/02 15:45	175749	( ML/EPA 351.2	) Kjeldahl Nitrogen		0.37	mg/l	0.20	1
	06/25/02 15:48		( ML/SM9221B	) Total Coliform Ba	cteria	1400	MPNM	2.0	1
	06/25/02 15:00	174906	( ML/EPA 180.1	) Turbidity		0.70	NTŲ	0.050	1
SITE	2 OUTFLOW	FROM	TJ POND 1	(2206250095)	Sampl	ed on	06/25/02	12:45	
	06/25/02 15:55		( ML/SM9221C	) Fecal Coliform Ba	cteria	11	MPNM	2.0	1
	06/27/02 00:00	175125	( ML/EPA 350.1	) Ammonia Nitrogen		ND	mg/l	0.050	1
	06/26/02 14:41	175186	( ML/EPA 300.0	) Nitrite, Nitrogen	by IC	ND	mg/l	0.20	2
	06/26/02 14:41	175187	( ML/EPA 300.0	) Nitrate as Nitrog	en by IC	7.1	mg/l	0.20	2
	06/26/02 00:00	175115	( ML/S4500P-E	) Orthophosphate-P		0.05	mg/l	0.010	1
	07/03/02 07:46	175473	( S4500PE/E365.	1) Total phosphorus-	P	ND	mg/l	0.020	1
	07/03/02 15:45	175749	( ML/EPA 351.2	) Kjeldahl Nitrogen		0.32	mg/l	0.20	1
	06/25/02 15:55		( ML/SM9221B	) Total Coliform Ba	cteria	300	MPNM	2.0	1
	06/25/02 15:00	174906	( ML/EPA 180.1	) Turbidity		1.0	NTU	0.050	1



## Applied Research MWA - Joe Marcinko (continued)

Prepared	Analyzed	QC Ref#	Method	Analyte	Result	Units	MRL	Dilution
SITE	2 OUTFLOW	FROM	TJ POND 2	(2206250096)	Sampled on	06/25/02	12:55	
	06/25/02 16:01		( ML/SM9221C	) Fecal Coliform Bacteria	13	MPNM	2.0	1
	06/27/02 00:00	175125	( ML/EPA 350.1	) Ammonia Nitrogen	ND	mg/l	0.050	1
	06/26/02 14:52	175186	( ML/EPA 300.0	) Nitrite, Nitrogen by IC	ND	mg/l	0.20	2
	06/26/02 14:52	175187	( ML/EPA 300.0	) Nitrate as Nitrogen by I	6.7	mg/l	0.20	2
	06/26/02 00:00	175115	( ML/S4500P-E	) Orthophosphate-P	ND	mg/l	0.010	1
	07/03/02 07:46	175473	( S4500PE/E365.1	.) Total phosphorus-P	0.02	mg/l	0.020	1
	07/03/02 15:45	175749	( ML/EPA 351.2	) Kjeldahl Nitrogen	0.60	mg/l	0.20	1
	06/25/02 16:01		( ML/SM9221B	) Total Coliform Bacteria	300	MPNM	2.0	1
	06/25/02 15:00	174907	( ML/EPA 180.1	) Turbidity	1.5	NTU	0.050	1
SITE	4 HAINES	CANYON	CREEK 1 (	2206250097)	Sampled on	06/25/02	10:55	
	06/25/02 16:07		( ML/SM9221C	) Fecal Coliform Bacteria	170	MPNM	2.0	1
	06/27/02 00:00	175125	( ML/EPA 350.1	) Ammonia Nitrogen	ND	mg/l	0.050	1
	06/26/02 15:03	175186	( ML/EPA 300.0	) Nitrite, Nitrogen by IC	ND	mg/l	0.20	2
	06/26/02 15:03	175187	( ML/EPA 300.0	) Nitrate as Nitrogen by I	5.6	mg/l	0.20	2
	06/26/02 00:00	175115	( ML/S4500P-E	) Orthophosphate-P	0.02	mg/1	0.010	1
	07/03/02 07:46	175473	( S4500PE/E365.1	) Total phosphorus-P	ND	mg/l	0.020	1
	07/03/02 15:45	175749	( ML/EPA 351.2	) Kjeldahl Nitrogen	0.26	mg/l	0.20	1
	06/25/02 16:07		( ML/SM9221B	) Total Coliform Bacteria	2300	MPNM	2.0	1
	06/25/02 15:00	174906	( ML/EPA 180.1	) Turbidity	1.4	NTU	0.050	1
SITE	4 HAINES	CANYON	CREEK 2 (2	2206250098)	Sampled on	06/25/02	11:09	
	06/25/02 16:14		( ML/SM9221C	) Fecal Coliform Bacteria	60	MPNM	2.0	1
	06/27/02 00:00	175125	( ML/EPA 350.1	) Ammonia Nitrogen	ND	mg/l	0.050	1
	06/26/02 15:13	175186	( ML/EPA 300.0	) Nitrite, Nitrogen by IC	ND	mg/l	0.20	2
	06/26/02 15:13	175187	( ML/EPA 300.0	) Nitrate as Nitrogen by I	5.9	mg/l	0.20	2
	06/26/02 00:00	175115	( ML/S4500P-E	) Orthophosphate-P	0.02	mg/l	0.010	1
	07/03/02 07:46	175473	( S4500PE/E365.1	) Total phosphorus-P	0.37	mg/l	0.020	1
	07/03/02 15:45	175749	( ML/EPA 351.2	) Kjeldahl Nitrogen	0.28	mg/1	0.20	1
	06/25/02 16:14		( ML/SM9221B	) Total Coliform Bacteria	3000	MPNM	2.0	1
	06/25/02 15:00	174906	( ML/EPA 180.1	) Turbidity	1.6	NTU	0.050	1



Applied Research MWA - Joe Marcinko

QC	Ref	#174906	- Turbidity		Analysis Date:	06/25/2002
		220625	0093	SITE 1	INFLOW TO TJ POND 1	
		220625			INFLOW TO TJ POND 2	
		220625			OUTFLOW FROM TJ POND 1	
		220625	0097	SITE 4	HAINES CANYON CREEK 1	
		220625	0098	SITE 4	HAINES CANYON CREEK 2	
QC	Ref	#174907	- Turbidity		Analysis Date:	06/25/2002
		220625	0096	SITE 2	OUTFLOW FROM TJ POND 2	
QC	Ref	#175115	- Orthophosph	ate-P	Analysis Date:	06/26/2002
		220625	0093	SITE 1	INFLOW TO TJ POND 1	e .
		220625			INFLOW TO TJ POND 2	
		220625			OUTFLOW FROM TJ POND 1	
		220625			OUTFLOW FROM TJ POND 2	
			0097		HAINES CANYON CREEK 1	
			0097		HAINES CANYON CREEK 2	
		220625	0096	2116 4	HAINES CANTON CREEK 2	
QC	Ref	#175125	- Ammonia Nit	rogen	Analysis Date:	06/27/2002
		2206250	0093	SITE 1	INFLOW TO TJ POND 1	
			0094		INFLOW TO TJ POND 2	
		220625		SITE 2	OUTFLOW FROM TJ POND 1	
		220625			OUTFLOW FROM TJ POND 2	
			0097		HAINES CANYON CREEK 1	
			0098		HAINES CANYON CREEK 2	
		220025		OIID I	THE THE CENTER OF CHARLES	
QC	Ref	#175186	- Nitrite, Ni	trogen l	by IC Analysis Date:	06/26/2002
		2206250	0093	SITE 1	INFLOW TO TJ POND 1	
		2206250			INFLOW TO TJ POND 2	
		2206250			OUTFLOW FROM TJ POND 1	
		220625			OUTFLOW FROM TJ POND 2	
		2206250			HAINES CANYON CREEK 1	
		2206250			HAINES CANTON CREEK 1	
		2200231		OTIT 4	THINDS CANTON CREEK Z	



2206250098

Applied Research MWA - Joe Marcinko (continued)

QC	Ref	#175187 - Nit	rate as Nitrog	en by IC Analysis Date:	06/26/2002
		2206250093	SITE	1 INFLOW TO TJ POND 1	
		2206250094	SITE	1 INFLOW TO TJ POND 2	
		2206250095	SITE :	2 OUTFLOW FROM TJ POND 1	
		2206250096	SITE :	2 OUTFLOW FROM TJ POND 2	
		2206250097	SITE 4	4 HAINES CANYON CREEK 1	
		2206250098	SITE	4 HAINES CANYON CREEK 2	
QC	Ref	#175473 - Tot	al phosphorus-	Analysis Date:	07/03/2002
		2206250093	SITE :		
		2206250094	SITE :		
		2206250095		2 OUTFLOW FROM TJ POND 1	
		2206250096		2 OUTFLOW FROM TJ POND 2	
		2206250097		4 HAINES CANYON CREEK 1	
		2206250098	SITE	4 HAINES CANYON CREEK 2	
QC	Ref	#175749 - Kje	ldahl Nitrogen	Analysis Date:	07/03/2002
		2206250093	SITE :	L INFLOW TO TJ POND 1	
		2206250094	SITE :	L INFLOW TO TJ POND 2	
		2206250095	SITE 2	OUTFLOW FROM TJ POND 1	
		2206250096	SITE 2	OUTFLOW FROM TJ POND 2	
		2206250097	SITE 4	HAINES CANYON CREEK 1	

SITE 4 HAINES CANYON CREEK 2



Applied Research MWA - Joe Marcinko

	QC	Ref	#174906	Turbidit	Y				
QC DUP			Analyte Turbidity		Spiked	Recovered	Yield (%)	Limits (%)	RPD (%)
	QC	Ref	#174907	Turbidit	y				
QC DUP			Analyte Turbidity		Spiked	Recovered	Yield (%)	Limits (%)	RPD (%)
	QC	Ref	#175115	Orthopho	sphate	e-P			
QC MS			Analyte Spiked sample		Spiked Lab # 22	Recovered	Yield (%)	Limits (%)	RPD (%)
LCS1			Orthophosphate-P		0.5	0.525	105.0	( 90.00 - 110.00	· }
LCS2			Orthophosphate-P		0.5	0.519	103.8	( 90.00 - 110.00	) 1.1
MBLK	:		Orthophosphate-P		ND				
MS			Orthophosphate-P		0.5	0.522	104.4	( 80.00 - 120.00	)
msd			Orthophosphate-P		0.5	0.524	104.8	( 80.00 - 120.00	) 0.38
	QC	Ref	#175125	Ammonia	Nitrog	en			
QC			Analyte		Spiked	Recovered	Yield (%)	Limits (%)	RPD (%)
MS			Spiked sample		Lab # 22	06250093		( 0.00 - 0.00	)
LCS1			Ammonia Nitrogen		1.00	1.06	106.0	( 90.00 - 110.00	)
LCS2			Ammonia Nitrogen		1.00	1.07	107.0	( 90.00 - 110.00	0.94
MBLK			Ammonia Nitrogen		ND				
MS			Ammonia Nitrogen		1.00	1.01	101.0	( 90.00 - 110.00	)
msd			Ammonia Nitrogen		1.00	1.02	102.0	( 90.00 - 110.00	0.99



Applied Research MWA - Joe Marcinko (continued)

QC Ref	#175186 I	Nitrite,	Nitro	gen by I	:C		
QC	Analyte		Spiked	Recovered	Yield (%)	Limits (%)	RPD (%)
LCS1	Nitrite, Nitrogen by IC	2	1.0	1.02	102.0	( 90.00 - 110.00 )	
LCS2	Nitrite, Nitrogen by IC	2	1.0	1.01	101.0	( 90.00 - 110.00 )	0.99
MBLK	Nitrite, Nitrogen by IC	2	ND				
MS	Nitrite, Nitrogen by IC	2	1.0	0.972	97.2	( 80.00 - 120.00 )	
MSD	Nitrite, Nitrogen by IC	2	1.0	0.986	98.6	( 80.00 - 120.00 )	1.4
QC Ref	#175187 I	Nitrate	as Nit	rogen by	, IC		
QC	Analyte		Spiked	Recovered	Yield (%)	Limits (%)	RPD (%)
LCS1	Nitrate as Nitrogen by	IC	2.5	2.52	100.8	( 90.00 - 110.00 )	
LCS2	Nitrate as Nitrogen by	IC	2.5	2.52	100.8	( 90.00 - 110.00 )	0.00
MBLK	Nitrate as Nitrogen by	IC	ND				
MS	Nitrate as Nitrogen by	IC	2.5	2.45	98.0	( 80.00 - 120.00 )	
MSD	Nitrate as Nitrogen by	IC	2.5	2.46	98.4	( 80.00 - 120.00 )	0.41
QC Ref	#175473	rotal ph	osphor	us-P			
QC	Analyte		Spiked	Recovered	Yield (%)	Limits (%)	RPD (%)
MS	Spiked sample		Lab # 22	06250022		( 0.00 - 0.00 )	
LCS1	Total phosphorus-P		0.4	0.410	102.5	( 90.00 - 110.00 )	
LCS2	Total phosphorus-P		0.4	0.430	107.5	( 90.00 - 110.00 )	4.8
LCS2 MBLK	Total phosphorus-P Total phosphorus-P		0.4 ND	0.430	107.5	( 90.00 - 110.00 )	4.8
				0.430	107.5	( 90.00 - 110.00 )	4.8



Applied Research MWA - Joe Marcinko (continued)

QC Ref #175749

### Kjeldahl Nitrogen

QC	Analyte	Spiked	Recovered	Yield (%)	Limits (%)	RPD (%)
MS	Spiked sample	Lab # 22	06250093		( 0.00 - 0.00 )	
LCS1	Kjeldahl Nitrogen	4	3.80	95.0	( 70.00 - 130.00 )	
LCS2	Kjeldahl Nitrogen	4	3.80	95.0	( 70.00 - 130.00 )	0.00
MBLK	Kjeldahl Nitrogen	ND				
MS	Kjeldahl Nitrogen	4	3.77	94.2	( 70.00 - 130.00 )	
MSD	Kjeldahl Nitrogen	4	3.88	97.0	( 70.00 - 130.00 )	2.9

### MWH Laboratories

555 E. Walnut St., Pasadena, CA 91101 PHONE: 626-568-6400/FAX: 626-568-6324

### ACKNOWLEDGMENT OF SAMPLES RECEIVED

Applied Research MWA - Joe Marcinko

Montgomery Watson

327 West Maple Avenue

Monrovia, CA 91106

Attn: Joe Marcinko

Phone: (626) 303-5845

Customer Code: ARD-JM

PO#: 1341410.5620.011801

Group#: 97553 Project#: BIG TJ

Proj Mgr: Hillary Strayer Phone: (626) 568-6412

The following samples were received from you on 06/25/02. They have been scheduled for the tests listed beside each sample. If this information is incorrect, please contact your service representative. Thank you for using MWH Laboratories.

Sample#	Sample	Id	Tests S	Scheduled	Matrix		Sample Da	ate
2206250093	SITE 1	INFLOW	TO TJ 1	POND 1	Water			002 12:10:00
		Mark Assistanti (1886)	FECCOL	with the extension of the control of	NO2-N	NO3	OPO4	T-P
			TKN	TOTCOL				
2206250094	SITE 1	INFLOW	TO TJ ]		Water	****************************		002 12:17:00
			FECCOL		eegeeest suuruman tuurin taraan taraan ta	NO3	OPO4	T-P
santassa seara teoria MANAMANA MANAMANA		10011101011000010010000000000000000000	TKN	TOTCOL			<u>.</u>	
2206250095	SITE 2	OUTFLO						002 12:45:00
		5:5:::0:0::0:0:0:0:0:0:0:0:0:0	FECCOL		NO2-N	NO3	OPO4	T-P
			TKN	TOTCOL	AND			
2206250096	SITE 2	OUTFLO		and the contract of the contra	Water	#88 M 888 S MACCHAGO (LONG 1989 S 1989 S 1		002 12:55:00
			FECCOL		NO2-N	NO3	OPO4	T-P
	5.5.5.5555.5555.5555.5555.555.555	***********	TKN	TOTCOL	TURB			
2206250097	SITE 4	HAINES	ASSESSMENT OF THE PROPERTY OF	CREEK 1				002 10:55:00
snineen seessa saas assaas saatu oo babbabbabbabbab		50050000000000000000000000000000000000	FECCOL		NO2-N	NO3	OPO4	T-P
				TOTCOL				
2206250098	SITE 4	HAINES	Commence of the Commence of th	CREEK 2	Water	800 000 0 <u>00 000 00</u> 00 000 000 000		002 11:09:00
			FECCOL		NO2-N	NO3	OPO4	T-P
			TKN	TOTCOL	TURB			
•••	***************************************		Test	t Acronym	Descript:	ion		
Test Ac	ronym	Descr	iption	<u></u>			•	
——————————————————————————————————————	COT			rm Badteri	<u> </u>			

Test Acronym	Description
FECCOL	Fecal Coliform Bacteria
NH3	Ammonia Nitrogen
NO2-N NO3	Nitrite, Nitrogen by IC Nitrate as Nitrogen by IC
OPO4	Orthophosphate-P
T-P TKN	Total phosphorus-P
TOTCOL	Kjeldahl Nitrogen Total Coliform Bacteria
TURB	Turbidity

1	N N
(	

# CHAIN OF CUSTODY RECORD

ONTGOMERY WATSON LABORATORIES

97553

			1	MWLABS USE ONLY:												2	<b>)</b> -	)	
55 E. Walr	nut St.,	555 E. Walnut St., Pasadena, CA 91101		LOGIN COMMENTS:	ë					SA	APLES	CHEC	SAMPLES CHECKED/LOGGED IN BY:	GGED	N BY:	Omy	2		*********
(626) 568-6400	400	(800) 566-5227				,				SAN	IPLE TI	EMP, RE	SAMPLE TEMP, RECEIPT AT LAB	AT LAB		ا5ٍد	)   	(Compliance: 4 +/- 2*C)	Ç
										SAM	PLES F	ECEIVE	ED DAY	OF 50	SAMPLES RECEIVED DAY OF COLLECTION?	∐ å	(che	(check for yes)	
			÷							BLL	BLUE ICE:		)ZEN /	PAR	TIALLY F	FROZEN PARTIALLY FROZEN		THAWED	
O BE COMP	LETED	TO BE COMPLETED BY SAMPLER:										(che	(check for yes)	es)					
							F	S	PLIAN	COMPLIANCE SAMPLES	MPLES			REGUI	REGULATION:				
IAT requested:	sted:	STD_XXX1	1 week	3 day	1 day				- Rec	- Requires state forms	tate for	ms		(SDW	'A, Phas	(SDWA, Phase V, NPDES, FDA,)	ES, FD,	A,)	
								NON	-COMF	NON-COMPLIANCE SAMPLES	E SAN	IPLES							
ROJECT CODE	DE		PROJECT JOB #/P.O.#		CLIENT CODE	DE		REFER	TO AT	ТАСНЕ	ED BO	TLEO	RDER	FOR AN	REFER TO ATTACHED BOTTLE ORDER FOR ANALYSES	⊔ s	(che	(check for yes)	
Big TJ Sa	ımplir	Big TJ Sampling 13	1341597.5	1341597.5620.011801	ARD-JM/JF	M/JF	<u> </u>	AN/	LYSES	REQUI	RED (n	nark an	'X' in all	tests re	quired 1	ANALYSES REQUIRED (mark an 'X' in all tests required for each sample line)	sample	line)	
SAMPLER(S): F	: PRINT	ED NAME AND SIGNATU	JRE				N-EI	·†·O•	su									SAMPLED	
TIME D	DATE	SITE NAME or LOCATION	IDENTIF	DENTIFIER, STATE ID#	* XIATAM	евув	COMP TKN, T-P, NH	I-O,£ON,2ON TufbidtuT	T & F Colifon									COMMENTS	
1210 25	25-Jun	SITE 1	Inflow to TJ Pond #1	J Pond #1		×		x x	×										
1217 25	25-Jun	SITE 1	Inflow to TJ Pond #2	J Pond #2		×		хх	×										
1245 25	-S-Jun	25-Jun SITE 2	Outflow fro	Outflow from TJ Pond #1		X		хх	×										
1255   25	25-Jun	SITE 2	Outflow fre	Outflow from T.J Pond #2		X		$\mathbf{x} \mid \mathbf{x}$	X										
1055 25	2-Jun	25-Jun SITE 4	Haines Can	Haines Canyon Creek #1		X		$\mathbf{x} \mid \mathbf{x}$	X										
1109 25	25-Jun	SITE 4	Haines Can	Haines Canyon Creek #2		X		$\mathbf{x} \mid \mathbf{x}$	X								!		
																	: '		
* MATRIX TYPES:	X TYP	ES: Reported by Volume:	Volume:						5	SM = Si	= Storm Water	ater				Repor	ted by	Reported by Weight:	
		RSW = Raw Surface Water RGW = Raw Ground Water	Surface Wate Ground Wate		FW = Other Finished Water CFW = Chlor(am)inated Finished Water	ished W	ater ïnished	Water	<b>≱</b> 0	WW = C	Other W	= Other Waste Water	WW = Other Waste Water CWW = Chlorinated Waste Water	1_		SO = Soil SL = Sludge	oil		
		SIGNATIBE	ጃ ጀ			, PDINT	POINT NAME					COMBANY/III E	TILL			<u>څ</u> ا	DATE	TIME	
RELINQUISHED BY:	ED BY:	1									3					š 			
RECEIVED BY:	ټ			Z	M. DE	E MESA	75				M.W	4.01.				(-9	15-2		
SPECIAL INSTRUCTIONS	TRUCT	ions																	
																	E TO	Leady Server Barrer	1

BIG TUJUNGA WASH WATER QUALITY MONITORING PROGRAM SEPTEMBER 2002 LABORATORY RESULTS



### Laboratory Report

for

Applied Research Dept, MWH (Darren Giles) 327 West Maple Avenue

Monrovia , CA 91016

Attention: Darren Giles Fax: (626) 359-3593

DATE OF ISSUE

HDS Hillary Strayer Project Manager enelac =

Report#: 100568 BIG-TJ

Laboratory certifies that the test results meet all **NELAC** requirements unless noted in the Comments section or the Case Narrative. Following the cover page are QC Report, QC Summary, Data Report, Hits Report, totaling 9 page[s].

### MWH Laboratories

555 E. Walnut St., Pasadena, CA 91101 PHONE: 626-568-6400/FAX: 626-568-6324

### ACKNOWLEDGMENT OF SAMPLES RECEIVED

Applied Research Dept, MWH (Darren Giles)

ppiled Research Dept, MMI (Dailen Gires

327 West Maple Avenue Customer Code: ARD-DG
Monrovia, CA 91016 PO#: 1341410.5620.011801

Attn: Darren Giles Group#: 100568
Phone: (626) 303-5945 Project#: BIG-TJ

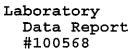
Proj Mgr: Hillary Strayer Phone: (626) 568-6412

The following samples were received from you on 09/12/02. They have been scheduled for the tests listed beside each sample. If this information is incorrect, please contact your service representative. Thank you for using MWH Laboratories.

Sample#	Sample	Id			Matrix		Sample D	ate
F ***	<b>-</b>		Tests	Scheduled			<u>.</u>	
2209120230	SITE 1	INFLOW	angenius gar in en accet tractics	POND 1	Water	et vitvinit et vinentes verbiters	and the contract of the contra	002 12:42:00
			au an indicatoria cara contra de la compa		NO2-N	иоз	OPO4	
100000000000000000000000000000000000000		600400001500510-150010010010	TKN	TOTCOL	TURB		00.000.000.000.000.000.000.000.000.000	
2209120231	SITE 1	INFLOW		POND 2	Water			002 12:50:00
	van taran arang aran		FECCOI	CONTROL CONTROL NO CONTROL CON	NO2-N	иоз	OPO4	T-P
			TKN	TOTCOL	TURB			
2209120232	SITE 2	OUTFLO	√ FROM	TJ POND 1	Water		12-sep-2	002 13:15:00
			FECCOI	NH3 د	NO2-N	NO3	OPO4	T-P
			TKN	TOTCOL	TURB			
2209120233	SITE 2	OUTFLOW	W FROM	TJ POND 2	Water		12-sep-2	002 13:26:00
			FECCOI	∟ NH3	NO2-N	NO3	OPO4	T-P
			TKN	TOTCOL	TURB			
2209120234	SITE 4	HAINES	CANYON	N CREEK 1	Water			002 11:20:00
			FECCOI	L NH3	NO2-N	NO3	OPO4	T-P
per bridge per l'inches l'annous construction anno 1900 et 190			TKN	TOTCOL	TURB			
2209120235	SITE 4	HAINES	CANYON	V CREEK 2	Water		12-sep-2	002 11:35:00
	rappperary and an artist to the state of the		FECCOI	L NH3	NO2-N	NO3	OPO4	Τ-P
			TKN	TOTCOL	TURB			

### Test Acronym Description

Test Acronym	Description
FECCOL	Fecal Coliform Bacteria
NH3	Ammonia Nitrogen
NO2-N	Nitrite, Nitrogen by IC
NO3	Nitrate as Nitrogen by IC
OPO4	Orthophosphate-P
T-P	Total phosphorus-P
TKN	Kjeldahl Nitrogen
TOTCOL	Total Coliform Bacteria
TURB	Turbidity





Applied Research Dept, MWH (Darren Giles) Darren Giles 327 West Maple Avenue Monrovia , CA 91016

Samples Received 09/12/02

SITE 1 INFLOW TO TJ POND 1 (2209120230) Sampled on 09/12/02 12:42  09/12/02 16:15	Prepared	Analyzed	QC Ref‡	# Method	Analyte	Result	Units	MRL	Dilution
09/19/02 00:00	SITE	1 INFLOW	TO TJ	POND 1 (220	9120230) Sampled	on 09/12	2/02 12	:42	
09/13/02 18:36 180976  (ML/EPA 300.0 ) Nitrite, Nitrogen by IC		09/12/02 16:1	5	( ML/SM9221C	) Fecal Coliform Bacteria	7	MPNM	2.0	1
09/13/02 18:36 180977 (ML/EPA 300.0 ) Nitrate as Nitrogen by IC 9.1 mg/1 0.20 2 09/13/02 00:00 180957 (ML/S4500P-E ) Orthophosphate-P 0.014 mg/1 0.010 1 09/18/02 16:23 181232 (S4500PE/E365.1) Total phosphorus-P 0.03 mg/1 0.020 1 09/18/02 13:42 181547 (ML/EPA 351.2 ) Kjeldahl Nitrogen 0.20 mg/1 0.20 1 09/12/02 16:15 (ML/SM9221B ) Total Coliform Bacteria 2400 MFNM 2.0 1 09/12/02 19:00 181016 (ML/EPA 180.1 ) Turbidity 2.4 NTU 0.050 1  SITE 1 TNFLOW TO TJ POND 2 (2209120231) Sampled on 09/12/02 12:50  09/12/02 18:47 180976 (ML/EPA 350.1 ) Ammonia Nitrogen by IC ND mg/1 0.20 2 09/13/02 18:47 180977 (ML/EPA 300.0 ) Nitrate as Nitrogen by IC ND mg/1 0.20 2 09/13/02 18:47 180977 (ML/EPA 350.1 ) Attribute Policy Note ND mg/1 0.00 1 09/18/02 18:47 180977 (ML/EPA 300.0 ) Nitrate as Nitrogen by IC ND mg/1 0.020 1 09/18/02 18:42 181232 (S4500PE/E365.1) Total phosphorus-P 0.016 mg/1 0.020 1 09/18/02 16:23 181232 (S4500PE/E365.1) Total phosphorus-P 0.055 mg/1 0.020 1 09/18/02 16:23 181232 (ML/EPA 350.1 ) Total coliform Bacteria 3000 MFNM 2.0 1 09/12/02 16:25 (ML/EPA 350.1 ) Total Coliform Bacteria 3000 MFNM 2.0 1 09/12/02 16:25 (ML/EPA 351.2 ) Kjeldahl Nitrogen 0.47 mg/1 0.20 1 09/12/02 16:25 (ML/EPA 351.1 ) Total Coliform Bacteria 3000 MFNM 2.0 1 09/12/02 16:25 (ML/EPA 351.2 ) Total Coliform Bacteria 3000 MFNM 2.0 1 09/12/02 16:25 (ML/EPA 351.1 ) Total Coliform Bacteria 3000 MFNM 2.0 1 09/12/02 16:35 (ML/EPA 350.1 ) Ammonia Nitrogen ND mg/1 0.050 1 09/12/02 16:35 (ML/EPA 350.1 ) Ammonia Nitrogen ND mg/1 0.050 1 09/13/02 18:58 180976 (ML/EPA 350.1 ) Ammonia Nitrogen ND mg/1 0.20 2 09/13/02 18:58 180976 (ML/EPA 350.1 ) Ammonia Nitrogen ND mg/1 0.20 2		09/19/02 00:0	0 181291	( ML/EPA 350.1	) Ammonia Nitrogen	ND	mg/l	0.050	1
09/13/02 00:00 180957 (ML/S4500P-E ) Orthophosphate-P 0.014 mg/l 0.010 1 09/18/02 16:23 181232 (S4500PE/E365.1) Total phosphorus-P 0.03 mg/l 0.020 1 09/18/02 13:42 181547 (ML/SPA 351.2 ) Kjeldahl Nitrogen 0.20 mg/l 0.20 1 09/12/02 16:15 (ML/SPA 21.2 ) Total Coliform Bacteria 2400 MPNM 2.0 1 09/12/02 19:00 181016 (ML/SPA 180.1 ) Turbidity 2.4 NTU 0.050 1  SITE 1 INFLOW TO TJ POND 2 (2209120231) Sampled on 09/12/02 12:50  09/12/02 16:25 (ML/SM9221C ) Fecal Coliform Bacteria 2 MPNM 2.0 1 09/13/02 18:47 180976 (ML/SPA 350.1 ) Ammonia Nitrogen ND mg/l 0.20 2 09/13/02 18:47 180977 (ML/SPA 300.0 ) Nitrite, Nitrogen by IC 9.0 mg/l 0.20 2 09/13/02 18:47 180977 (ML/SPA 350.1 ) Total phosphorus-P 0.016 mg/l 0.020 1 09/18/02 16:23 81232 (S4500PE/S355.1) Total phosphorus-P 0.016 mg/l 0.020 1 09/18/02 16:25 (ML/SPA 350.1 ) Total phosphorus-P 0.05 mg/l 0.020 1 09/12/02 16:25 (ML/SPA 350.1 ) Total phosphorus-P 0.05 mg/l 0.020 1 09/12/02 16:25 (ML/SPA 350.1 ) Turbidity 2.7 NTU 0.050 1  SITE 2 OUTFLOW FROM TJ POND 1 (2209120232) Sampled on 09/12/02 13:15  SITE 2 OUTFLOW FROM TJ POND 1 (2209120232) Sampled on 09/12/02 13:15		09/13/02 18:3	6 180976	( ML/EPA 300.0	) Nitrite, Nitrogen by IC	ND	mg/l	0.20	2
09/18/02 16:23 181232 ( S4500FE/E365.1) Total phosphorus-P		09/13/02 18:3	6 180977	( ML/EPA 300.0	) Nitrate as Nitrogen by IC	9.1	mg/l	0.20	2
09/18/02 13:42 181547 ( ML/EPA 351.2 ) Kjeldahl Nitrogen 0.20 mg/l 0.20 1 0.20		09/13/02 00:0	0 180957	( ML/S4500P-E	) Orthophosphate-P	0.014	mg/l	0.010	1
09/12/02 16:15		09/18/02 16:2	3 181232	( S4500PE/E365.1	) Total phosphorus-P	0.03	mg/l	0.020	1
SITE   INFLOW TO TJ   POND 2 (2209120231)   Sampled on 09/12/02 12:50		09/18/02 13:4	2 181547	( ML/EPA 351.2	) Kjeldahl Nitrogen	0.20	mg/l	0.20	1
SITE 1 INFLOW TO TJ POND 2 (2209120231) Sampled on 09/12/02 12:50  09/12/02 16:25		09/12/02 16:1	5	( ML/SM9221B	) Total Coliform Bacteria	2400	MPNM	2.0	1
09/12/02 16:25		09/12/02 19:0	0 181016	( ML/EPA 180.1	Turbidity	2.4	NTU	0.050	i
09/12/02 16:25	SITE :	1 INFLOW	то тј	POND 2 (220	9120231) Sampled	on 09/12	2/02 12	:50	
09/13/02 18:47 180976 (ML/EPA 300.0 ) Nitrite, Nitrogen by IC ND mg/l 0.20 2 09/13/02 18:47 180977 (ML/EPA 300.0 ) Nitrate as Nitrogen by IC 9.0 mg/l 0.20 2 09/13/02 00:00 180957 (ML/S4500P-E ) Orthophosphate-P 0.016 mg/l 0.010 1 09/18/02 16:23 181232 (S4500PE/E365.1) Total phosphorus-P 0.05 mg/l 0.020 1 09/18/02 13:42 181547 (ML/EPA 351.2 ) Kjeldahl Nitrogen 0.47 mg/l 0.20 1 09/12/02 16:25 (ML/SM9221B ) Total Coliform Bacteria 3000 MPNM 2.0 1 09/12/02 19:00 181016 (ML/EPA 180.1 ) Turbidity 2.7 NTU 0.050 1  SITE 2 OUTFLOW FROM TJ POND 1 (2209120232) Sampled on 09/12/02 13:15 09/12/02 16:35 (ML/SM9221C ) Fecal Coliform Bacteria 4 MPNM 2.0 1 09/19/02 00:00 181291 (ML/EPA 350.1 ) Ammonia Nitrogen ND mg/l 0.050 1 09/13/02 18:58 180976 (ML/EPA 300.0 ) Nitrite, Nitrogen by IC ND mg/l 0.20 2 09/13/02 18:58 180976 (ML/EPA 300.0 ) Nitrate as Nitrogen by IC 6.8 mg/l 0.20 2		09/12/02 16:2	5	( ML/SM9221C	Fecal Coliform Bacteria				1
09/13/02 18:47 180977 ( ML/EPA 300.0 ) Nitrate as Nitrogen by IC 9.0 mg/l 0.20 2 09/13/02 00:00 180957 ( ML/S4500P-E ) Orthophosphate-P 0.016 mg/l 0.010 1 09/18/02 16:23 181232 ( S4500PE/E365.1) Total phosphorus-P 0.05 mg/l 0.020 1 09/18/02 13:42 181547 ( ML/EPA 351.2 ) Kjeldahl Nitrogen 0.47 mg/l 0.20 1 09/12/02 16:25 ( ML/SM9221E ) Total Coliform Bacteria 3000 MPNM 2.0 1 09/12/02 19:00 181016 ( ML/EPA 180.1 ) Turbidity 2.7 NTU 0.050 1  SITE 2 OUTFLOW FROM TJ POND 1 (2209120232) Sampled on 09/12/02 13:15 09/12/02 16:35 ( ML/SM9221C ) Fecal Coliform Bacteria 4 MPNM 2.0 1 09/19/02 00:00 181291 ( ML/EPA 350.1 ) Ammonia Nitrogen ND mg/l 0.050 1 09/13/02 18:58 180976 ( ML/EPA 300.0 ) Nitrate as Nitrogen by IC 6.8 mg/l 0.20 2		09/19/02 00:0	0 181291	( ML/EPA 350.1	Ammonia Nitrogen	ND	mg/l	0.050	1
09/13/02 00:00 180957 (ML/S4500P-E ) Orthophosphate-P 0.016 mg/l 0.010 1 09/18/02 16:23 181232 (S4500PE/E365.1) Total phosphorus-P 0.05 mg/l 0.020 1 09/18/02 13:42 181547 (ML/EPA 351.2 ) Kjeldahl Nitrogen 0.47 mg/l 0.20 1 09/12/02 16:25 (ML/SM9221B ) Total Coliform Bacteria 3000 MPNM 2.0 1 09/12/02 19:00 181016 (ML/EPA 180.1 ) Turbidity 2.7 NTU 0.050 1  SITE 2 OUTFLOW FROM TJ POND 1 (2209120232) Sampled on 09/12/02 13:15 09/12/02 16:35 (ML/SM9221C ) Fecal Coliform Bacteria 4 MPNM 2.0 1 09/19/02 00:00 181291 (ML/EPA 350.1 ) Ammonia Nitrogen ND mg/l 0.050 1 09/13/02 18:58 180976 (ML/EPA 300.0 ) Nitrate as Nitrogen by IC ND mg/l 0.20 2 09/13/02 18:58 180977 (ML/EPA 300.0 ) Nitrate as Nitrogen by IC 6.8 mg/l 0.20 2		09/13/02 18:4	7 180976	( ML/EPA 300.0	Nitrite, Nitrogen by IC	ND	mg/l	0.20	2
09/18/02 16:23 181232 ( S4500PE/E365.1) Total phosphorus-P		09/13/02 18:4	7 180977	( ML/EPA 300.0	Nitrate as Nitrogen by IC	9.0	mg/l	0.20	2
09/18/02 13:42 181547 (ML/EPA 351.2 ) Kjeldahl Nitrogen 0.47 mg/1 0.20 1 09/12/02 16:25 (ML/SM9221B ) Total Coliform Bacteria 3000 MPNM 2.0 1 09/12/02 19:00 181016 (ML/EPA 180.1 ) Turbidity 2.7 NTU 0.050 1  SITE 2 OUTFLOW FROM TJ POND 1 (2209120232) Sampled on 09/12/02 13:15 09/12/02 16:35 (ML/SM9221C ) Fecal Coliform Bacteria 4 MPNM 2.0 1 09/19/02 00:00 181291 (ML/EPA 350.1 ) Ammonia Nitrogen ND mg/1 0.050 1 09/13/02 18:58 180976 (ML/EPA 300.0 ) Nitrite, Nitrogen by IC ND mg/1 0.20 2 09/13/02 18:58 180977 (ML/EPA 300.0 ) Nitrate as Nitrogen by IC 6.8 mg/1 0.20 2		09/13/02 00:0	0 180957	( ML/S4500P-E	Orthophosphate-P	0.016	mg/1	0.010	1
09/12/02 16:25		09/18/02 16:2	3 181232	( S4500PE/E365.1	Total phosphorus-P	0.05	mg/l	0.020	1
09/12/02 19:00 181016 (ML/EPA 180.1 ) Turbidity 2.7 NTU 0.050 1  SITE 2 OUTFLOW FROM TJ POND 1 (2209120232) Sampled on 09/12/02 13:15  09/12/02 16:35 (ML/SM9221C ) Fecal Coliform Bacteria 4 MPNM 2.0 1 09/19/02 00:00 181291 (ML/EPA 350.1 ) Ammonia Nitrogen ND mg/1 0.050 1 09/13/02 18:58 180976 (ML/EPA 300.0 ) Nitrite, Nitrogen by IC ND mg/1 0.20 2 09/13/02 18:58 180977 (ML/EPA 300.0 ) Nitrate as Nitrogen by IC 6.8 mg/1 0.20 2		09/18/02 13:4	2 181547	( ML/EPA 351.2	Kjeldahl Nitrogen	0.47	mg/l	0.20	1
SITE 2 OUTFLOW FROM TJ POND 1 (2209120232) Sampled on 09/12/02 13:15  09/12/02 16:35		09/12/02 16:2	5	( ML/SM9221B	Total Coliform Bacteria	3000	MPNM	2.0	1
09/12/02 16:35 (ML/SM9221C ) Fecal Coliform Bacteria 4 MPNM 2.0 1 09/19/02 00:00 181291 (ML/EPA 350.1 ) Ammonia Nitrogen ND mg/l 0.050 1 09/13/02 18:58 180976 (ML/EPA 300.0 ) Nitrite, Nitrogen by IC ND mg/l 0.20 2 09/13/02 18:58 180977 (ML/EPA 300.0 ) Nitrate as Nitrogen by IC 6.8 mg/l 0.20 2		09/12/02 19:0	0 181016	( ML/EPA 180.1	Turbidity	2.7	NTU	0.050	1
09/19/02 00:00 181291 (ML/EPA 350.1 ) Ammonia Nitrogen ND mg/1 0.050 1 09/13/02 18:58 180976 (ML/EPA 300.0 ) Nitrite, Nitrogen by IC ND mg/1 0.20 2 09/13/02 18:58 180977 (ML/EPA 300.0 ) Nitrate as Nitrogen by IC 6.8 mg/1 0.20 2	SITE :	2 OUTFLOW	FROM	TJ POND 1 (	2209120232) Samp	led on 09	9/12/02	13:15	
09/13/02 18:58 180976 ( ML/EPA 300.0 ) Nitrite, Nitrogen by IC ND mg/1 0.20 2 09/13/02 18:58 180977 ( ML/EPA 300.0 ) Nitrate as Nitrogen by IC 6.8 mg/1 0.20 2		09/12/02 16:3	5	( ML/SM9221C	Fecal Coliform Bacteria	4	MPNM	2.0	1
09/13/02 18:58 180977 ( ML/EPA 300.0 ) Nitrate as Nitrogen by IC 6.8 mg/l 0.20 2		09/19/02 00:0	0 181291	( ML/EPA 350.1	Ammonia Nitrogen	ND	mg/l	0.050	1
- · ·		09/13/02 18:5	8 180976	( ML/EPA 300.0	Nitrite, Nitrogen by IC	ND	mg/l	0.20	2
09/13/02 00:00 180957 ( ML/S4500P-E ) Orthophosphate-P ND mg/l 0.010 1		09/13/02 18:5	8 180977	( ML/EPA 300.0	Nitrate as Nitrogen by IC	6.8	mg/l	0.20	2
		09/13/02 00:0	0 180957	( ML/S4500P-E	Orthophosphate-P	ND	mg/l	0.010	1
09/18/02 16:23 181232 ( \$4500PE/E365.1) Total phosphorus-P ND mg/1 0.020 1		09/18/02 16:2	3 181232	( \$4500PE/E365.1	Total phosphorus-P	ND	mg/l	0.020	1
09/18/02 13:42 181547 ( ML/EPA 351.2 ) Kjeldahl Nitrogen ND mg/1 0.20 1		09/18/02 13:4	2 181547	( ML/EPA 351.2	Kjeldahl Nitrogen	ND	mg/l	0.20	1
09/12/02 16:35 ( ML/SM9221B ) Total Coliform Bacteria 5000 MPNM 2.0 1		09/12/02 16:3	5	( ML/SM9221B	Total Coliform Bacteria	5000	MPNM	2.0	1
09/12/02 19:00 181016 ( ML/EPA 180.1 ) Turbidity 0.75 NTU 0.050 1		09/12/02 19:0	0 181016	( ML/EPA 180.1	Turbidity	0.75	NTU	0.050	1



Applied Research Dept, MWH (Darren Giles) (continued)

Prepared	Analyzed	QC Ref#	Method	Analyte	Re	esult	Units	MRL	Dilution
SITE	2 OUTFLOW	FROM	TJ POND 2	(2209120233)	Sampled	on	09/12/02	13:26	
	09/12/02 16:45		( ML/SM9221C	) Fecal Coliform Bacteria	a 2	:	MPNM	2.0	1
	09/19/02 00:00	181291	( ML/EPA 350.1	) Ammonia Nitrogen	1	ID	mg/l	0.050	1
	09/13/02 19:08	180976	( ML/EPA 300.0	) Nitrite, Nitrogen by I		ID O	mg/l	0.20	2
	09/13/02 19:08	180977	( ML/EPA 300.0	) Nitrate as Nitrogen by	IC 6	. 8	mg/l	0.20	2
	09/13/02 00:00	180957	( ML/S4500P-E	) Orthophosphate-P	T .	m	mg/l	0.010	1
	09/18/02 16:23	181232	( S4500PE/E365.	1) Total phosphorus-P	N	TD	mg/l	0.020	1
	09/18/02 13:42	181547	( ML/EPA 351.2	) Kjeldahl Nitrogen	Ŋ	TD CTI	mg/l	0.20	1
	09/12/02 16:45		( ML/SM9221B	) Total Coliform Bacteria	. 5	0.0	MPNM	2.0	1
	09/12/02 19:00	181016	( ML/EPA 180.1	) Turbidity	C	-70	NTU	0.050	1
SITE	4 HAINES	CANYON	CREEK 1 (	2209120234)	Sampled of	n 0	9/12/02	11:20	
	09/12/02 16:50		( ML/SM9221C	) Fecal Coliform Bacteria	. <	2	MPNM	2.0	1
	09/19/02 00:00	181291	( ML/EPA 350.1	) Ammonia Nitrogen	N	TD CT	mg/l	0.050	1
	09/13/02 19:19	180976	( ML/EPA 300.0	) Nitrite, Nitrogen by I	! N	TD.	mg/l	0.20	2
	09/13/02 19:19	180977	( ML/EPA 300.0	) Nitrate as Nitrogen by	IC 6	.1	mg/l	0.20	2
	09/13/02 00:00	180957	( ML/S4500P-E	) Orthophosphate-P	0	.011	mg/l	0.010	1
	09/18/02 16:23	181232	( S4500PE/E365.	1) Total phosphorus-P	0	.02	mg/l	0.020	1
	09/18/02 13:42	181547	( ML/EPA 351.2	) Kjeldahl Nitrogen	0	.23	mg/l	0.20	1
	09/12/02 16:50		( ML/SM9221B	) Total Coliform Bacteria	. 5	00	MPNM	2.0	1
	09/12/02 19:00	181016	( ML/EPA 180.1	) Turbidity	2	.6	NTU	0.050	1
SITE	4 HAINES	ANYON	CREEK 2 (	2209120235)	Sampled o	on 0:	9/12/02	11:35	
	09/14/02 17:00		( ML/SM9221C	) Fecal Coliform Bacteria	. <	2	MPNM	2.0	1
	09/19/02 00:00	181291	( ML/EPA 350.1	) Ammonia Nitrogen	N	D	mg/l	0.050	1
	09/13/02 19:29	180976	( ML/EPA 300.0	) Nitrite, Nitrogen by IC	N	D	mg/1	0.20	2
	09/13/02 19:29	180977	( ML/EPA 300.0	) Nitrate as Nitrogen by	IC 6	.1	mg/l	0.20	2
	09/13/02 00:00	180957	( ML/S4500P-E	) Orthophosphate-P	0	.011	mg/l	0.010	1
	09/18/02 16:23	181232	( S4500PE/E365.	1) Total phosphorus-P	и	D	mg/1	0.020	1
	09/18/02 13:42	181547	( ML/EPA 351.2	) Kjeldahl Nitrogen	N	D	mg/l	0.20	1
	09/12/02 17:00		( ML/SM9221B	) Total Coliform Bacteria	3	000	MPNM	2.0	1
	09/12/02 19:00	181016	( ML/EPA 180.1	) Turbidity	4	. 5	йтu	0.050	1



2209120235

Applied Research Dept, MWH (Darren Giles)

					*****		Trails 1
QC	Ref	#180957	- Orthopho	sphate-P		Analysis Date:	09/13/2002
		220912	20230	SITE 1	INFLOW	TO TJ POND 1	
		220912	20231			TO TJ POND 2	
		220912				FROM TJ POND 1	
		220912	20233			FROM TJ POND 2	
		220912	20234			CANYON CREEK 1	
		220912	20235			CANYON CREEK 2	
ÕС	Ref	#180976	- Nitrite,	Nitrogen :	by IC	Analysis Date:	09/13/2002
		220912	20230	SITE 1	INFLOW	TO TJ POND 1	
		220912	20231			TO TJ POND 2	
		220912	20232			FROM TJ POND 1	
		220912	20233			FROM TJ POND 2	
		220912	20234			CANYON CREEK 1	
		220912	20235			CANYON CREEK 2	
QC	Ref	#180977	- Nitrate a	as Nitroge	n by IC	Analysis Date:	09/13/2002
		220912	20230	STTE 1	TNET.OW	TO TJ POND 1	
		220912				TO TJ POND 2	
			20232			FROM TJ POND 1	
			20233			FROM TJ POND 2	
			20234			CANYON CREEK 1	
			20235			CANYON CREEK 2	
			.0255		111111110	CILITON CHILLIN 2	
QC	Ref	#181016	- Turbidity	7		Analysis Date:	09/12/2002
						<u>-</u>	
		220912				TO TJ POND 1	
		220912				TO TJ POND 2	
		220912				FROM TJ POND 1	
		220912				FROM TJ POND 2	
		220912	:0234	SITE 4	HAINES	CANYON CREEK 1	

SITE 4 HAINES CANYON CREEK 2



Applied Research Dept, MWH (Darren (continued)

# QC Ref #181232 - Total phosphorus-P Analysis Date: 09/18/2002

2209120230	SITE 1 INFLOW TO TJ POND 1
2209120231	SITE 1 INFLOW TO TJ POND 2
2209120232	SITE 2 OUTFLOW FROM TJ POND 1
2209120233	SITE 2 OUTFLOW FROM TJ POND 2
2209120234	SITE 4 HAINES CANYON CREEK 1
2209120235	SITE 4 HAINES CANYON CREEK 2

### QC Ref #181291 - Ammonia Nitrogen

Analysis Date: 09/19/2002

2209120230	SITE 1 INFLOW TO TJ POND 1
2209120231	SITE 1 INFLOW TO TJ POND 2
2209120232	SITE 2 OUTFLOW FROM TJ POND 1
2209120233	SITE 2 OUTFLOW FROM TJ POND 2
2209120234	SITE 4 HAINES CANYON CREEK 1
2209120235	SITE 4 HAINES CANYON CREEK 2

# QC Ref #181547 - Kjeldahl Nitrogen

Analysis Date: 09/18/2002

2209120230	SITE 1 INFLOW TO TJ POND 1
2209120231	SITE 1 INFLOW TO TJ POND 2
2209120232	SITE 2 OUTFLOW FROM TJ POND 1
2209120233	SITE 2 OUTFLOW FROM TJ POND 2
2209120234	SITE 4 HAINES CANYON CREEK 1
2209120235	SITE 4 HAINES CANYON CREEK 2



Applied Research Dept, MWH (Darren Giles)

QC Re:	E #180957	Orthopho	sphate	e-P				
QC MS LCS1	Analyte Spiked sample Orthophosphate-P		Spiked Lab # 22	Recovered 09120230	Units MGL MGL	Yield (%)	Limits (%) ( 0-0 ) ( 90-110 )	RPD (%)
LCS2 MBLK	Orthophosphate-P Orthophosphate-P		0.5 ND	0.516 <0.01	mgl mgl	103.2	( 90-110 )	0.97
MS MSD	Orthophosphate-P Orthophosphate-P		0.5	0.534 0.528	mgl mgl	106.8 105.6	( 80-120 ) ( 80-120 )	1.1
QC Re	#180976	Nitrite,	Nitro	gen by	IC			
QC	Analyte		Spiked	Recovered	Units	Yield (%)	Limits (%)	RPD (%)
LCS1 LCS2 MBLK	Nitrite, Nitrogen by Nitrite, Nitrogen by Nitrite, Nitrogen by	ic	1.0 1.0 ND	1.01 1.00 <0.10	mgl mgl	101.0	( 90-110 ) ( 90-110 )	1.00
MS MSD	Nitrite, Nitrogen by	ıc	1.0	0.943	MGL MGL	94.3 90.2	( 80-120 ) ( 80-120 )	4.4
QC Rei	#180977	Nitrate	as Nit	rogen b	y IC			
QC	Analyte		Spiked	Recovered	Units	Yield (%)	Limits (%)	RPD (%)
LCS1 LCS2 MBLK	Nitrate as Nitrogen b Nitrate as Nitrogen b Nitrate as Nitrogen b	y IC	2.5 2.5 ND	2.5 2.47 <0.10	mgl mgl	100.0 98.8	( 90-110 ) ( 90-110 )	1.2
ms MSD	Nitrate as Nitrogen b Nitrate as Nitrogen b	-	2.5 2.5	2.4 2.36	MGL MGL	96.0 94.4	( 80-120 ) ( 80-120 )	1.7



Applied Research Dept, MWH (Darren Giles) (continued)

QC Ref	#181016	Turbidity	
ÕC.	Analyte	Spiked Recovered Units Yield (%) Limits (%) RP	D (%)
DUP	Turbidity	0.05 0.05 NTU (0-20) 0.	0
QC Ref	#181232	Total phosphorus-P	
QC	Analyte	Spiked Recovered Units Yield (%) Limits (%) RP	D (%)
MS	Spiked sample	Lab # 22 09120230 MGL ( 0-0 )	
LCS1	Total phosphorus-P	0.4 0.420 MGL 105.0 (90-110)	
LCS2	Total phosphorus-P	0.4 0.430 MGL 107.5 (90-110) 2.	4
MBLK	Total phosphorus-P	ND <0.02 MGL	
MS	Total phosphorus-P	0.4 0.420 MGL 105.0 (90-110)	
MSD	Total phosphorus-P	0.4 0.420 MGL 105.0 (90-110) 0.4	00
RPD_LCS	Total phosphorus-P	105.000 107.500 MGL 2.4 ( 0-10 )	
rpd_ms	Total phosphorus-P	105.000 105.000 MGL 0.0 ( 0-10 )	
QC Ref	#181291	Ammonia Nitrogen	
QC	Analyte	Spiked Recovered Units Yield (%) Limits (%) RPI	D (%)
MS	Spiked sample	Lab # 22 09120230 MGL ( 0-0 )	
LCS1	Ammonia Nitrogen	1.00 1.04 MGL 104.0 (90-110)	
LCS2	Ammonia Nitrogen	1.00 1.04 MGL 104.0 (90-110) 0.0	00
MBLK	Ammonia Nitrogen	ND <0.05 MGL	
MS	Ammonia Nitrogen	1.00 0.993 MGL 99.3 (90-110)	
MSD	Ammonia Nitrogen	1.00 0.991 MGL 99.1 (90-110) 0.2	20



Applied Research Dept, MWH (Darren Giles) (continued)

QC Ref #181547	Kjeldahl	Nitrogen
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QC	Analyte	Spiked	Recovered	Units	Yield (%)	Limits (%)	RPD (%)
MS	Spiked sample	Lab # 22	09120060	MGL		( 0-0 )	
LCS1	Kjeldahl Nitrogen	4	3.80	MGL	95.0	( 90-110 )	
LCS2	Kjeldahl Nitrogen	4	3.80	MGL	95.0	( 90-110 )	0.00
MBLK	Kjeldahl Nitrogen	ND	<0.20	MGL			
MS	Kjeldahl Nitrogen	4	3.75	MGL	93.8	( 90-110 )	
MSD	Kjeldahl Nitrogen	4	3.66	MGL	91.5	( 90-110 )	2.4
RPD_LCS	Kjeldahl Nitrogen	95.000	95.000	MGL	0.0	( 0-10 )	
RPD_MS	Kjeldahl Nitrogen	93.750	91.500	MGL	2.4	( 0-10 )	

MONTGOMERY WATSON LABORATORIES

# CHAIN OF CUSTODY RECORD

10058

		MWLABS USE ONLY:	€LY:													;-
55 E. Walnut St	55 E. Walnut St., Pasadena, CA 91101	LOGIN COMMENTS:	MENTS:	1			1	SAMP	LES CH	ECKED	SAMPLES CHECKED/LOGGED IN BY:	NI BY:	ML			
626) 568-6400	(800) 566-5227							SAMPI	E TEMF	, RECEI	SAMPLE TEMP, RECEIPT AT LAB		Co E	(Con	(Compliance: 4 +/- 2*C)	
								SAMPL	ES REC	EIVED D	SAMPLES RECEIVED DAY OF COLLECTION?	LLECTI	∐ ¿NC	(check	(check for yes)	
				***************************************		***************************************		BLUE ICE:	<u>CE</u>	FROZE	E: FROZEN 🚄 PARTIALLY FROZEN	RTIALLY	FROZEN	THAWED	ÆD	
O BE COMPLETED BY SAMPLER:	D BY SAMPLER:									(check for yes)	or yes)					1
					H	S S S	PLIANC	COMPLIANCE SAMPLES	LES	H	REGU	REGULATION:	Ä			
lAT requested:	STD_XXX_	1 week 3 day	1 day_				- Redu	Requires state forms	e forms		(SD	WA, Pha	(SDWA, Phase V, NPDES, FDA,)	ES, FDA,	·	
					-	NON	COMPL	NON-COMPLIANCE SAMPLES	SAMPL	ES						
ROJECT CODE		PROJECT JOB #/P.O.#	CLIENT C	CODE		REFER	то атт	ACHED	ВОТП	E ORD	REFER TO ATTACHED BOTTLE ORDER FOR ANALYSES	NALYS	LI ES	(check	(check for yes)	_
Big TJ Sampling	ing	1341597.5620,611801	ARD-D	DG/JF		ANA	LYSES	REQUIRE	D (mark	can'X'i	all tests	required	ANALYSES REQUIRED (mark an 'X' in all tests required for each sample line)	sample li	ne)	_
AMPLER(S): PRIN Darren Giles	AMPLER(S): PRINTED NAME AND STGNATURE  Darren Giles	RRE V			N-EH	PO4,	su.								SAMPLER	
TIME DATE	SITE NAME or LOCATION	DENTIFIER, STATE ID#	# * XIATAM	вужэ	СОМР	O,504,1403,O-	oʻiloʻ) T & T								COMMENTS	<del></del>
12:42, 12-Sep	SITE 1	Inflow to TJ Pond #1		X	<b>X</b>	X	X									
2:50 12-Sep	SITE 1	Inflow to TJ Pond #2		X	7	XX	X									
12:14 12-Sep	SITE 2	Outflow from TJ Pond #1	1	X	$\begin{bmatrix} \end{bmatrix}$	X	Х									
(3:2¢ 12-Sep	SITE 2	Outflow from TJ Pond #2	7	X		XX	X									_
1/:20 12-Sep	12-Sep SITE 4	Haines Canyon Creek #1		X	F4	X	X		_							
// i 25512-Sep	SITE 4	Haines Canyon Creek #2		X	-	х х	X									-
																_
* MATRIX TYPES:	•						SW		= Storm Water				Repor	Reported by Weight:	eight:	
	RSW = Raw,	RSW = Raw Surface Water FW  RGW = Raw Ground Water CFW	FW = Other Finished Water CFW = Chlor(am)inated Finished Water	nished W a)inated B	ater inished	Water	C W		= Other Waste Water '= Chlorinated Waste	Water Waste V	ater/	••••••	SO = Soil SL = Sludge	oil Sludge		
	SIGNATUR		~	PRIN.	PRINT NAME				COMP	COMPANY/TITLE	ы		DA	DATE	TIME	
RELINQUISHED BY:	of man	3	DARREY	_	Caller			NW		462			9/12	7		
RECEIVED BY:	/	7	7	4.0E	(ME)	A		S	M.W.	· #1			1-6	2-21		
SPECIAL INSTRUCTIONS	TIONS												U Un	This	JED.	
		And the second s					i L								j	

BIG TUJUNGA WASH WATER QUALITY MONITORING PROGRAM DECEMBER 2002 LABORATORY RESULTS



750 Royal Oaks Drive Suite 100 Monrovia, California 91016-3629 Tci: 526 558 6400 . Fax: 626 588 6324 1 800 566 LABS (1 800 566 5227)

# Laboratory Report

for

Applied Research Dept, MWH (Darren Giles) 327 West Maple Avenue

Monrovia , CA 91016

Attention: Darren Giles Fax: (626) 359-3593

DATE OF ISSUE

JAN 2 3 2803

HDS Hillary Strayer Project Manager nelac 1 114CA

Report#: 104298

BIG-TJ

Laboratory certifies that the test results meet all **NELAC** requirements unless noted in the Comments section or the Case Narrative. Following the cover page are Comments, QC Report, QC Summary, Data Report, Hits Report, totaling 10 page[s].





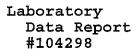
750 Royal Oaks Drive Suite 100 Monrovia, California 91016-3629 Tct: 626 568 6400 Fax: 626 568 6324 1 800 566 LABS (1 800 566 5227).

(QC Ref#: 188611)

Test: Total phosphorus-P (S4500PE/E365.1)

QC Type: MSD

The MSD is within the method limit of 80-120%.





750 Royal Oaks Drive Suite 100 Monrovla, California 91016-3629 Tol: 626 568 6400 Fax: 626 568 6324 1 800 566 LABS (1 800 566 5227)

Applied Research Dept, MWH (Darren Giles) Darren Giles 327 West Maple Avenue Monrovia , CA

91016

Samples Received

12/19/02

Prepared A	nalyzed	QC Ref#	Method	Analyte	Result	Units	MRL	Dilution
SITE 1	INFLOW T	O TJ	POND 1 (221	2190255) Sampled	on 12/19	/02 12	:36	
1:	2/19/02 14:57		( ML/SM9221C )	Fecal Coliform Bacteria	30	MPNM	2.0	1
1:	2/27/02 00:00	188535	( ML/EPA 350.1 )	Ammonia Nitrogen	ND	mg/l	0.10	2
1:	2/19/02 15:58	188154	( ML/EPA 300.0 )	Nitrite, Nitrogen by IC	ND	mg/l	0.20	2
12	2/19/02 15:58	188156	( ML/EPA 300.0 )	Nitrate as Nitrogen by IC	10	mg/l	0.20	2
1:	2/19/02 15:30	188278	( ML/S4500P-E )	Orthophosphate-P	0.043	mg/l	0.010	1
0:	1/15/03 00:00	189383	( S4500PE/E365.1)	Total phosphorus-P	0.03	mg/l	0.020	1
1:	2/27/02 00:00	189214	( ML/EPA 351.2 )	Kjeldahl Nitrogen	ND	mg/l	0.20	1
12	2/19/02 14:57		( ML/SM9221B )	Total Coliform Bacteria	1400	MPNM	2.0	1
1,2	2/19/02 16:00	188261	( ML/EPA 180.1 )	Turbidity	0.65	NTU	0.050	1
SITE 1	INFLOW T	'O TJ	POND 2 (221	2190258) Sampled	on 12/19	/02 12	:45	
1;	2/19/02 14:57		( ML/SM9221C )	Fecal Coliform Bacteria	13	MPNM	2.0	1
12	2/27/02 00:00	188535	( ML/EPA 350.1 )	Ammonia Nitrogen	ND	mg/l	0.050	1
13	2/19/02 16:08	188154	( ML/EPA 300.0 )	Nitrite, Nitrogen by IC	ND	mg/l	0.20	2
12	2/19/02 16:08	188156	( ML/EPA 300.0 )	Nitrate as Nitrogen by IC	9.8	mg/l	0.20	2
12	2/19/02 15:30	188278	( ML/S4500P-E )	Orthophosphate-P	0.046	mg/l	0.010	1
0:	L/15/03 00:00	189383	( S4500PE/E365.1)	Total phosphorus-P	0.04	mg/l	0.020	1
12	2/27/02 00:00	189214	( ML/EPA 351.2 )	Kjeldahl Nitrogen	0.2	mg/l	0.20	1
12	2/19/02 14:57		( ML/SM9221B )	Total Coliform Bacteria	2800	MPNM	2.0	1
12	2/19/02 16:00	188261	( ML/EPA 180.1 )	Turbidity	0.60	NTU	0.050	1
SITE 2	OUTFLOW	FROM	TJ POND 1 (	2212190260) Sampl	led on 12	/19/02	13:15	
12	2/19/02 14:57		( ML/SM9221C )	Fecal Coliform Bacteria	94	MPNM	2.0	1
12	2/27/02 00:00	188535	( ML/EPA 350.1 )	Ammonia Nitrogen	ND	mg/l	0.050	1
12	2/19/02 16:19	188154	( ML/EPA 300.0 )	Nitrite, Nitrogen by IC	ND	mg/l	0.20	2
12	2/19/02 16:19	188156	( ML/EPA 300.0 )	Nitrate as Nitrogen by IC	7.8	mg/l	0.20	2
12	2/19/02 15:30	188278	( ML/S4500P-E )	Orthophosphate-P	0.029	mg/l	0.010	1
07	L/15/03 00:00	189383	( S4500PE/E365.1)	Total phosphorus-P	0.03	mg/l	0.020	1
12	2/27/02 00:00	189214	( ML/EPA 351.2 )	Kjeldahl Nitrogen	0.51	mg/l	0.20	1
12	2/19/02 14:57		( ML/SM9221B )	Total Coliform Bacteria	300	MPNM	2.0	1
12	2/19/02 16:00	188261	( ML/EPA 180.1 )	Turbidity	0.60	NTU	0.050	1



750 Royal Oaks Drive Suite 100 Monrovia, California 91016-3629 Tol: 626 568 6400 Fax: 626 568 6324 1 800 566 LABS (1 800 566 5227)

Applied Research Dept, MWH (Darren Giles) (continued)

Prepared	Analyzed	QC Ref#	Method	Analyte		Result	Units	MRL	Dilution
SITE	2 OUTFLOW	FROM	TJ PLND 2	(2212190261)	Sample	l on	12/19/02	2 13:38	
	12/19/02 14:57		( ML/SM9221C	) Fecal Coliform Bacteria	ı	80	MPNM	2.0	1
	12/27/02 00:00	188535	( ML/EPA 350.1	) Ammonia Nitrogen		ND	mg/l	0.050	1
	12/19/02 16:30	188154	( ML/EPA 300.0	) Nitrite, Nitrogen by IC	2	ND	mg/l	0.20	2
	12/19/02 16:30	188156	( ML/EPA 300.0	) Nitrate as Nitrogen by	IC	7.9	mg/l	0.20	2
	12/19/02 15:30	188278	( ML/S4500P-E	) Orthophosphate-P		0.028	mg/l	0.010	1
	01/15/03 00:00	189383	( S4500PE/E365	.1) Total phosphorus-P		0.03	mg/l	0.020	1
	12/27/02 00:00	189214	( ML/EPA 351.2	) Kjeldahl Nitrogen		0.24	mg/l	0.20	1
	12/19/02 14:57		( ML/SM9221B	) Total Coliform Bacteria	L	1700	мрим	2.0	1
	12/19/02 16:00	188261	( ML/EPA 180.1	) Turbidity		0.65	NTU	0.050	1
SITE	4 HAINES C	CANYON	CREEK 1	(2212190262)	Sampled	on	12/19/02	11:25	
	12/19/02 14:57		( ML/SM9221C	) Fecal Coliform Bacteria	ı	300	MPNM	2.0	1
	12/27/02 00:00	188535	( ML/EPA 350.1	) Ammonia Nitrogen		MD	mg/l	0.050	1
	12/19/02 16:40	188154	( ML/EPA 300.0	) Nitrite, Nitrogen by IC	!	ND	mg/l	0.20	2
	12/19/02 16:40	188156	( ML/EPA 300.0	) Nitrate as Nitrogen by	IC	4.9	mg/l	0.20	2
	12/19/02 15:30	188278	( ML/S4500P-E	) Orthophosphate-P		0.035	mg/l	0.010	1
	01/15/03 00:00	189383	( S4500PE/E365	.1) Total phosphorus-P		0.06	mg/l	0.020	1
	12/27/02 00:00	189214	( ML/EPA 351.2	) Kjeldahl Nitrogen		0.29	mg/l	0.20	1
	12/19/02 14:57		( ML/SM9221B	) Total Coliform Bacteria		5000	MPNM	2.0	1
	12/19/02 16:00	188261	( ML/EPA 180.1	) Turbidity		4.8	ntu	0.050	1
SITE	4 HAINES C	CANYON	CREEK 2	(2212190263)	Sampled	on	12/19/02	11:40	
	12/19/02 14:57		( ML/SM9221C	) Fecal Coliform Bacteria		30	MPNM	2.0	1
	12/27/02 00:00	188535	( ML/EPA 350.1	) Ammonia Nitrogen		ND	mg/l	0.050	1
	12/19/02 17:12	188154	( ML/EPA 300.0	) Nitrite, Nitrogen by IC		ND	mg/l	0.20	2
	12/19/02 17:12	188156	( ML/EPA 300.0	) Nitrate as Nitrogen by	ic	5.0	mg/l	0.20	2
	12/19/02 15:30	188278	( ML/S4500P-E	) Orthophosphate-P		0.032	mg/l	0.010	1
	12/26/02 00:00	188611	( S4500PE/E365	1) Total phosphorus-P		0.021	mg/l	0.020	1
	12/27/02 00:00	189214	( ML/EPA 351.2	) Kjeldahl Nitrogen		ND	mg/l	0.20	1
	12/19/02 14:57		( ML/SM9221B	) Total Coliform Bacteria		3000	MPNM	2.0	1
	12/19/02 16:00	188261	( ML/EPA 180.1	) Turbidity		2.8	NTU	0.050	1



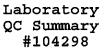
750 Royal Oaks Drive Suite 100 Monrovla, California 91016-3629 Tci: 626 568 6400 Fax: 626 568 6324 1 800 566 LABS (1 800 566 5227)

2212190263

Applied Research Dept, MWH (Darren Giles)

QC	Ref	#188154	- Nitrite, N	Mitrogen l	by IC	Analysis Date:	12/19/2002
		22121	90255	SITE 1	INFLOW	TO TJ POND 1	
			90258				
						FROM TJ POND 1	
						FROM TJ PLND 2	
						CANYON CREEK 1	
						CANYON CREEK 2	
		_					
QC	Ref	#188156	- Nitrate as	Nitroge	n by IC	Analysis Date:	12/19/2002
		22121	90255	SITE 1	INFLOW	TO TJ POND 1	
		22121	90258	SITE 1	INFLOW	TO TJ POND 1 TO TJ POND 2 J FROM TJ POND 1	
		22121	90260	SITE 2	OUTFLOW	FROM TJ POND 1	
		22121	90260 90261	SITE 2	OUTFLOW	FROM TJ PLND 2	
		22121	90262	SITE 4	HAINES	FROM TO FOND 1 FROM TJ PLND 2 CANYON CREEK 1 CANYON CREEK 2	
		22121	90263	SITE 4	HAINES	CANYON CREEK 2	
QC	Ref	#188261	- Turbidity			Analysis Date:	12/19/2002
		22121	90255	SITE 1	INFLOW	TO TJ POND 1	
			90258				
						FROM TJ POND 1	
						FROM TJ PLND 2	
						CANYON CREEK 1	
		22121	90263	SITE 4	HAINES	CANYON CREEK 2	
QC	Ref	#188278	- Orthophosp	hate-P		Analysis Date:	12/19/2002
		22121	90255	SITE 1	INFLOW	TO TJ POND 1	
			90258			TO TJ POND 2	
		22121	90260	SITE 2	OUTFLOW	FROM TJ POND 1	
		22121	90261	SITE 2	OUTFLOW	FROM TJ PLND 2	
		22121	90262	SITE 4	HAINES	CANYON CREEK 1	

SITE 4 HAINES CANYON CREEK 2





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Applied Research Dept, MWH (Darren Giles) (continued)

### QC Ref #188535 - Ammonia Nitrogen

Analysis Date: 12/27/2002

2212190255	SITE 1 IN	FLOW TO TJ	POND 1
2212190258	SITE 1 IN	FLOW TO TJ	POND 2
2212190260	SITE 2 OU	TFLOW FROM	TJ POND 1
2212190261	SITE 2 OU	TFLOW FROM	TJ PLND 2
2212190262	SITE 4 HA	INES CANYON	CREEK 1
2212190263	SITE 4 HA	THES CANYON	CREEK 2

### QC Ref #188611 - Total phosphorus-P

Analysis Date: 12/26/2002

2212190263

SITE 4 HAINES CANYON CREEK 2

### QC Ref #189214 - Kjeldahl Nitrogen

Analysis Date: 12/27/2002

2212190255	SITE 1 INFLOW TO TJ POND 1
2212190258	SITE 1 INFLOW TO TJ POND 2
2212190260	SITE 2 OUTFLOW FROM TJ POND 1
2212190261	SITE 2 OUTFLOW FROM TJ PLND 2
2212190262	SITE 4 HAINES CANYON CREEK 1
2212190263	SITE 4 HAINES CANYON CREEK 2

# QC Ref #189383 - Total phosphorus-P Analysis Date: 01/15/2003

2212190255	SITE	1	INFLOW TO TJ POND 1
2212190258	SITE	1	INFLOW TO TJ POND 2
2212190260	SITE	2	OUTFLOW FROM TJ POND 1
2212190261	SITE	2	OUTFLOW FROM TJ PLND 2
2212190262	SITE	4	HAINES CANYON CREEK 1



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Applied Research Dept, MWH (Darren Giles)

	QC	Ref	#188154	Nitrite,	Nitro	gen by	IC			
QC			Analyte		Spiked	Recovered	Units	Yield (%)	Limits (%)	RPD (%)
LCS1	L		Nitrite, Nitrogen by	IC	1.0	0.991	MGL	99.1	( 90-110 )	
LCS2	!		Nitrite, Nitrogen by	IC	1.0	1.03	MGL	103.0	( 90-110 )	3.9
MBLK	:		Nitrite, Nitrogen by	IC	ND	<0.10	MGL			
MS			Nitrite, Nitrogen by	IC	1.0	1.02	MGL	102.0	( 80-120 )	
MSD			Nitrite, Nitrogen by	IC	1.0	1.02	MGL	102.0	( 80-120 )	0.00
	QC	Ref	#188156	Nitrate	as Nit	rogen b	y IC			
QC			Analyte		Spiked	Recovered	Units	Yield (%)	Limits (%)	RPD (%)
LCS1			Nitrate as Nitrogen b	y IC	2.5	2.6	MGL	104.0	( 90-110 )	
LCS2			Nitrate as Nitrogen b	у іс	2.5	2.58	MGL	103.2	( 90-110 )	0.77
MBLK	:		Nitrate as Nitrogen b	y IC	ND	<0.10	MGL			
MS			Nitrate as Nitrogen b	y IC	2.5	2.5	MGL	100.0	( 80-120 )	
MSD	•		Nitrate as Nitrogen b	Y IC	2.5	2.5	MGL	100.0	( 80-120 )	0.00
	QC	Ref	#188261	Turbidit	У					
QC			Analyte		Spiked	Recovered	Units	Yield (%)	Limits (%)	RPD (%)
DUP			Turbidity		2.8	2.8	NTU		( 0-20 )	0.0
	QC	Ref	#188278	Orthopho	sphate	e-P				
QC			Analyte		Spiked	Recovered	Units	Yield (%)	Limits (%)	RPD (%)
MS			Spiked sample		Lab # 22	12190255	MGL		( 0-0 )	
LCS1			Orthophosphate-P		0.5	0.516	MGL	103.2	( 90-110 )	
LCS2			Orthophosphate-P		0.5	0.522	MGL	104.4	( 90-110 )	1.2
MBLK			Orthophosphate-P		ND	<0.01	MGL			
MS			Orthophosphate-P		0.5	0.524	MGL	104.8	( 80-120 )	
MSD			Orthophosphate-P		0.5	0.517	MGL	103.4	( 80-120 )	1.3



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Applied Research Dept, MWH (Darren Giles) (continued)

QC Re	f #188535	Ammonia	Nitrog	gen				
QC	Analyte		Spiked	Recovered	Units	Yield (%)	Limits (%)	RPD (%)
MS	Spiked sample		Lab # 22	12190255	MGL		( 0-0 )	
LCS1	Ammonia Nitrogen		1.00	1.02	MGL	102.0	( 90-110 )	
LCS2	Ammonia Nitrogen		1.00	1.02	MGL	102.0	( 90-110 )	0.00
MBLK	Ammonia Nitrogen		ND	<0.05	MGL			
MS	Ammonia Nitrogen		1.00	0.932	MGL	93.2	( 90-110 )	
MSD	Ammonia Nitrogen		1.00	0.934	MGL	93.4	( 90-110 )	0.21
QC Re	£ #188611	Total ph	osphor	rus-P				
QC	Analyte		Spiked	Recovered	Units	Yield (%)	Limits (%)	RPD (%)
MS	Spiked sample		Lab # 22	12170029	MGL		( 0-0 )	
LCS1	Total phosphorus-P		0.4	0.409	MGL	102.2	( 90-110 )	
LCS2	Total phosphorus-P		0.4	0.402	MGL	100.5	( 90-110 )	1.7
MBLK	Total phosphorus-P		ND	<0.02	MGL			
MS	Total phosphorus-P		0.4	0.43	MGL	107.5	( 90-110 )	
MSD	Total phosphorus-P		0.4	0.45	MGL	112.5	( 90-110 )	4.5
RPD_LCS	Total phosphorus-P		102.250	100.500	MGL	1.7	( 0-10 )	
rpd_ms	Total phosphorus-P		107.500	112.500	MGL	4.5	( 0-10 )	
	•							
QC Re	f #189214	Kjeldahl	. Nitro	gen				
QC .	Analyte		Spiked	Recovered	Units	Yield (%)	Limits (%)	RPD (%)
LCS1	Kjeldahl Nitrogen		4	3.77	MGL	94.2	( 90-110 )	
LCS2	Kjeldahl Nitrogen		4	4.20	MGL	105.0	( 90-110 )	11
MBLK	Kjeldahl Nitrogen		ND	<0.20	MGL			
RPD_LCS	Kjeldahl Nitrogen		94.250	105.000	MGL	10.8	( 0-20 )	



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Applied Research Dept, MWH (Darren Giles) (continued)

QC Ref #189383 Total phosphorus-P

ОС	Analyte	Spiked	Recovered	Units	Yield (%)	Limits (%)	RPD (%)
MS	Spiked sample	Lab # 22	12190255	MGL		( 0-0 )	
LCS1	Total phosphorus-P	0.4	0.430	MGL	107.5	( 90-110 )	
LCS2	Total phosphorus-P	0.4	0.410	MGL	102.5	( 90-110 )	4.8
WBTK	Total phosphorus-P	ND	<0.02	MGL			
MS	Total phosphorus-P	0.4	0.430	MGL	107.5	( 90-110 )	
MSD	Total phosphorus-P	0.4	0.410	MGL	102.5	( 90-110 )	4.8
RPD_LCS	Total phosphorus-P	107.500	102.500	MGL	4.8	( 0-10 )	
RPD_MS	Total phosphorus-P	107.500	102.500	MGL	4.8	( 0-10 )	

1	W W
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INTGOMERY WATSON LABORATORIES

CHAIN OF CUSTODY RECORD (0.4248

		MWLABS USE ONLY:	Υ:						-			
555 E. Walnut S	55 E. Walnut St., Pasadena, CA 91101	LOGIN COMMENTS:	NTS:				SAMPLES	SAMPLES CHECKED/LOGGED IN BY:	GGED IN BY:			*********
626) 568-6400	(800) 566-5227						SAMPLET	SAMPLE TEMP, RECEIPT AT LAB	TLAB	کے مرج	(Compliance: 4 +/- 2*C)	
							SAMPLES	SAMPLES RECEIVED DAY OF COLLECTION?	P COLLECTIO	L No	(check for yes)	
				***************************************			BLUE ICE:	: FROZEN	PARTIALLY FROZEN	Į	THAWED	
TO BE COMPLETED BY SAMPLER:	ED BY SAMPLER:							(check for yes)	(S			
				į		OMPLIA	COMPLIANCE SAMPLES		REGULATION:	2		
FAT requested:	STD_XXX_	1 week 3 day	_ 1 day_			ď,	Requires state forms	rms	(SDWA, Phase V, NPDES, FDA,)	e V, NPDES	, FDA,)	
						ION-CON	NON-COMPLIANCE SAMPLES	APLES				_
ROJECT CODE		PROJECT JOB #/P.O.#	CLIENT	CODE	IBB	ER TO	ттаснер во	REFER TO ATTACHED BOTTLE ORDER FOR ANALYSES	OR ANALYSE	S	(check for yes)	
Big TJ Sampling	ling /	1341597.5620.011801	ARD-I	-DG/JF		ANALYSE	S REQUIRED (r	ANALYSES REQUIRED (mark an 'X' in all tests required for each sample line)	ests required 1	for each sar	nple line)	
sampler(s): prid Daiten Giles	AMPLER(S): PRINTED NAME AND SKGNATURE  Oarren Giles	ire									SAMPLER	
TIME DATE	SITE NAME or LOCATION	/ IDENTIFIER, STATE ID #	* XIATAM	СОМР	TKN, T-P, W	Turbidity T & F Colifor					COMMENTS	
12:3¢ 19-Dec	SITE 1	Inflow to TJ Pond #1		×	X	XX						
12:4c= 19.Dec	SITE 1	Inflow to TJ Pond #2		×	×	X						
/3:24-19-Dec SITE 2	,	Outflow from TJ Pond #1		X	Х	XX						_
3.38 19-Dec	SITE 2	Outflow from TJ Pond #2		×	×	X						
19-ther	STEE	Big TJ Wash.#1		*	*	*						
\$4.6°	SITE 3	Big TJ Wash #2.		*	*	*						г —
//:2=_19.Dec	SITE 4	Haines Canyon Creek #1		×	×	X						
//: 40 19-Dec	SITE 4	Haines Canyon Creek #2		×	×	X						
* MATRIX TYPES:	VPFS: Reported by Volume:	Volume:					SW = Storm Water	ater		Reported	Reported by Weight:	1
				= Other Finished Water = Chlor(am)inated Finis	r ished Wa		$\mathbf{W}\mathbf{W} = \mathbf{O}\mathbf{t}\mathbf{h}\mathbf{c}\mathbf{r}$ $\mathbf{W}\mathbf{W} = \mathbf{C}\mathbf{h}\mathbf{l}\mathbf{o}\mathbf{r}\mathbf{h}\mathbf{r}$	WW = Other Waste Water CWW = Chlorinated Waste Water		SO = Soil SL = Slndge	۵	
	SIGNATERÉE		•	PRINT NAME	AME		Ö	COMPANY/TITLE	•••	DATE	TIME	
RELINQUISHED BY:	Jan		DAPAGO	61186			Maid	A OF		12/19	120	_
RECEIVED BY:	25	3		52	1/2		3	THE STATE OF THE S	\$	( M	So 22 12	
SPECIAL INSTRUCTIONS	CTIONS /		,									
										<b>7</b>	CANNED	