County of Los Angeles
Department of Public Works

Water Quality Monitoring
2003 Annual Report

for the

Master Mitigation Plan for the Big Tujunga Wash Mitigation Bank

February 2004

MWH

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2003 Annual Report

for

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Water Quality Monitoring Report
2003 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 2003. 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 2003. 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 observed only on the March sampling date during 2003. 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 7.0 to 8.7 units; residual chlorine was not present; and turbidity levels were generally low. Excessive nutrient conditions were not noted. A degree of nitrogen reduction was observed between inflow and outflow from the Tujunga ponds. Fecal coliform levels were below the water contact recreation standards.

Quarterly sampling will continue through 2005. Future results will be compared with baseline 2000 data and with the 2001, 2002 and 2003 results. Construction of the Canyon Trails Golf Course upstream has been completed, and the golf course is scheduled to open in April 2004. 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 5-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 2003 – data from the fourth quarter of 2003 are included. The 5-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 aquatic wildlife (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 *Arundo* 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
3/20/03	Water quality sampling
4/1/03	Meeting with Canyon Trail Golf Club to discuss future use of herbicides and fertilizers
6/23/03	Water quality sampling
9/30/03	Water quality sampling
Fall 2003	Completion of the golf course construction
12/17/03	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 5 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 Mr. Joe Shohtoku of Foothill Golf (pers. comm. to J. Fahey, MWH, 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. 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 are available for review by LADPW.

On April 1, 2003, representatives of LADPW and the Chambers Group met with Mr. John Reidinger at the Golf Club to discuss the plan for herbicide and fertilizer use and any activities that may affect the Big Tujunga mitigation site due to the golf course development. A list of chemicals that might be used for weed abatement, which is included in the Golf Course Management Plan, was provided to LADPW.

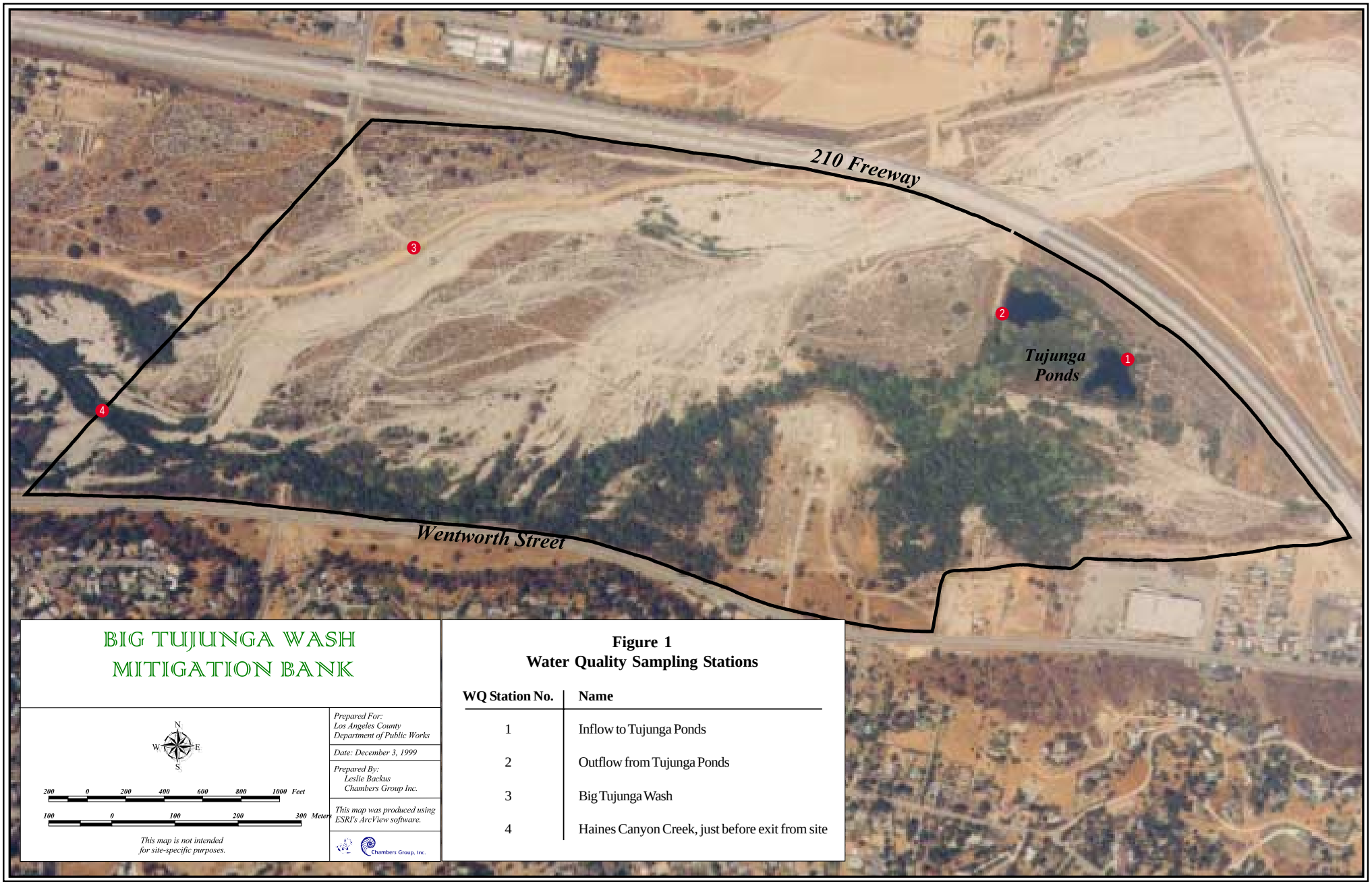
According to Mr. Reidinger (pers. comm. to A. Kawaguchi, MWH, November 26, 2003 and February 11, 2004), construction of the golf course has been completed, and the golf course is scheduled to open in April 2004. Runoff is being captured by onsite percolation basins and retention ponds. To date, chemicals for weed abatement have not been applied at the golf course; weed abatement during construction consisted of hand pulling. Future use of weed abatement chemicals would be as needed only. If any chemical is to be applied, the Golf Club will keep records of its application and inform LADPW.

Sampling parameters of the LADPW monitoring program will be modified as appropriate as more information on golf course-related pesticides and herbicides becomes available. Testing for pesticides and herbicides will be conducted at the Big Tujunga Wash sampling stations after specific chemicals have been identified by the golf course owners.

MATERIALS AND METHODS

Sampling Stations

Four sampling locations have been identified for the 5-year monitoring program (**Figure 1**). **Table 2** summarizes sampling locations and the conditions observed on December 17, 2003. The coordinates of the sampling stations were determined by a hand-held Global Positioning System.



BIG TUJUNGA WASH MITIGATION BANK

N
W E
S

200 0 200 400 600 800 1000 Feet

100 0 100 200 300 Meters

This map is not intended for site-specific purposes.

Prepared For:
Los Angeles County Department of Public Works

Date: December 3, 1999

Prepared By:
Leslie Backus
Chambers Group Inc.

This map was produced using ESRI's ArcView software.

Chambers Group, Inc.

Figure 1
Water Quality Sampling Stations

WQ Station No.	Name
1	Inflow to Tujunga Ponds
2	Outflow from Tujunga Ponds
3	Big Tujunga Wash
4	Haines Canyon Creek, just before exit from site

Table 2
Big Tujunga Wash
Water Quality Sampling Locations and Conditions for the 4th Quarter 2003

Date	December 17, 2003		
Air Temperature	Approximately 74 degrees Fahrenheit		
Skies	Clear		
Water Volume	Big Tujunga Wash sampling station dry		
Sampling Locations	**Latitude**	**Longitude**	**Time of sample**
Haines Canyon Creek, just before exit from site	N 34° 16' 2.9"	W 118° 21' 22.2"	10:30 a.m.
Haines Canyon Creek, inflow to Tujunga Ponds	N 34° 16' 6.9"	W 118° 20' 18.7"	11:45 a.m.
Haines Canyon Creek, outflow from Tujunga Ponds	N 34° 16' 7.1"	W 118° 20' 28.3"	12:45 p.m.
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_2)	laboratory	EPA 300.0 by IC
nitrate (NO_3)	laboratory	EPA 300.0 by IC
ammonia (NH_4)	laboratory	EPA 350.1
orthophosphorus	laboratory	EPA 365.1
total coliform	laboratory	Standard Methods 9221
fecal coliform	laboratory	Standard Methods 9221

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

Parameter	Analysis Location	Analytical Method
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 2003	--
1 golf course herbicide (if not Roundup)	not sampled in 2003	--
1 golf course insecticide	not sampled in 2003	--
1 golf course fungicide	not sampled in 2003	--
dissolved oxygen	field	Standard Methods 4500-O G
total residual chlorine	field	Standard Methods 4500-Cl D
temperature	field	Standard Methods 2550
pH	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, 20th Edition. Washington D.C.

Discharge Measurements. In addition to the water quality monitoring conducted in 2003, flows in the outlet of Big Tujunga Ponds, in Haines Canyon Creek leaving the site, and in Big Tujunga Wash (March sampling date only) 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:

$$\text{Flow} = ALC / T$$

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 correction 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 coliform	MPN/ 100 mL	4/12/00	3000	5000	170	1700
		4/18/00	2200	170000	2400	70000
Fecal coliform	MPN/ 100 mL	4/12/00	500	300	40	80
		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 phosphorus	mg/L	4/12/00	0.078	0.056	0	0.063
		4/18/00	0.089	0.148	0.111	0.163
Total phosphorus	mg/L	4/12/00	0.086	0.062	0	0.066
		4/18/00	0.113	0.153	0.134	0.211
pH	std units	4/12/00	7.78	7.68	7.96	7.91
		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

2003 Water Quality Results

Water Quality

Results of water quality analyses conducted by MWH Laboratories for samples collected in 2003 are appended to this report (**Appendix A**) and summarized in **Tables 5**, **6**, **7** and **8**, and on **Figures 2**, **3**, **4**, **5, 6,** and **7**. 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 samples in 2003.

Table 5
Summary of Big Tujunga Wash Water Quality Results
1st Quarter 2003 (3/20/03)

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	17.4	--	17.0	--	13.0	--	11.2	--
Dissolved Oxygen	mg/L	9.4	--	7.9	--	10.0	--	10.5	--
pH	std units	7.1	--	7.2	--	8.3	--	8.7	--
Total residual chlorine	mg/L	ND	--	ND	--	ND	--	ND	--
Ammonia-Nitrogen	mg/L	ND	ND	ND	ND	ND	ND	ND	ND
Kjeldahl Nitrogen	mg/L	0.60	0.31	0.31	0.36	0.76	0.85	0.76	0.74
Nitrite-Nitrogen	mg/L	ND	ND	ND	ND	ND	ND	ND	ND
Nitrate-Nitrogen	mg/L	8.4	12	6.1	6.0	0.36	0.36	0.54	0.53
Orthophospate-P	mg/L	ND	0.013	0.023	0.023	0.039	0.044	0.045	0.051
Total phosphorus-P	mg/L	0.03	0.04	0.03	0.04	0.19	0.19	0.18	0.16
Turbidity	NTU	1.2	0.40	0.75	0.55	41	39	43	48
Fecal Coliform Bacteria	MPN/100ml	50	22	4	8	80	50	30	30
Total Coliform Bacteria	MPN/100ml	450	1,100	300	500	1,100	1,700	330	900

NTU nephelometric turbidity units
MPN most probable number
ND non-detect

Table 6
Summary of Big Tujunga Wash Water Quality Results
2nd Quarter 2003 (6/23/03)

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	17.5	--	18.0	--	*	--	17.0	--
Dissolved Oxygen	mg/L	5.9	--	8.4	--	*	--	10.6	--
pH	std units	7.0	--	7.3	--	*	--	8.1	--
Total residual chlorine	mg/L	ND	--	ND	--	*	--	ND	--
Ammonia-Nitrogen	mg/L	ND	ND	ND	ND	*	*	ND	ND
Kjeldahl Nitrogen	mg/L	0.49	0.24	0.29	0.23	*	*	0.22	0.28
Nitrite-Nitrogen	mg/L	0.11	ND	ND	ND	*	*	ND	ND
Nitrate-Nitrogen	mg/L	7.3	7.6	5.2	5.2	*	*	4.6	4.5
Orthophospate-P	mg/L	0.027	0.029	0.011	ND	*	*	0.020	0.021
Total phosphorus-P	mg/L	0.07	0.05	0.04	0.05	*	*	0.06	0.05
Turbidity	NTU	3.2	0.90	0.70	0.75	*	*	0.85	1.0
Fecal Coliform Bacteria	MPN/100ml	23	4	8	18	*	*	23	13
Total Coliform Bacteria	MPN/100ml	30,000	5,000	260	600	*	*	2,400	11,000

* no flow
NTU nephelometric turbidity units
MPN most probable number
ND non-detect

Table 7
Summary of Big Tujunga Wash Water Quality Results
3rd Quarter 2003 (9/30/03)

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	20.5	--	20.4	--	*	--	19.7	--
Dissolved Oxygen	mg/L	5.1	--	9.3	--	*	--	10.7	--
pH	std units	7.0	--	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	0.44	0.41	0.37	0.28	*	*	0.43	0.50
Nitrite-Nitrogen	mg/L	ND	ND	ND	ND	*	*	ND	ND
Nitrate-Nitrogen	mg/L	8.1	8.2	6.9	6.9	*	*	5.9	5.9
Orthophospate-P	mg/L	0.017	0.017	ND	ND	*	*	ND	ND
Total phosphorus-P	mg/L	0.04	0.03	0.01	ND	*	*	0.02	0.02
Turbidity	NTU	0.50	0.30	0.25	0.20	*	*	0.25	0.35
Fecal Coliform Bacteria	MPN/100ml	11	14	2	2	*	*	170	50
Total Coliform Bacteria	MPN/100ml	3,500	11,000	36,000	11,000	*	*	11,000	2,200

* no flow
NTU nephelometric turbidity units
MPN most probable number
ND non-detect

Table 8
Summary of Big Tujunga Wash Water Quality Results
4th Quarter 2003 (12/17/03)

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	15.5	--	15.0	--	*	--	12.0	--
Dissolved Oxygen	mg/L	6.1	--	9.0	--	*	--	9.4	--
pH	std units	7.2	--	7.4	--	*	--	8.1	--
Total residual chlorine	mg/L	ND	--	ND	--	*	--	ND	--
Ammonia-Nitrogen	mg/L	ND	ND	ND	ND	*	*	ND	ND
Kjeldahl Nitrogen	mg/L	ND	ND	0.23	ND	*	*	0.26	ND
Nitrite-Nitrogen	mg/L	ND	ND	ND	ND	*	*	ND	ND
Nitrate-Nitrogen	mg/L	9.1	9.1	7.5	7.5	*	*	6.8	6.8
Orthophospate-P	mg/L	0.045	0.046	0.025	0.023	*	*	0.023	0.026
Total phosphorus-P	mg/L	0.09	0.09	0.08	0.07	*	*	0.07	0.08
Turbidity	NTU	0.60	0.50	0.45	0.45	*	*	0.30	0.25
Fecal Coliform Bacteria	MPN/100ml	2.0	8.0	<2.0	2.0	*	*	11	8.0
Total Coliform Bacteria	MPN/100ml	700	3,000	1,100	14,000	*	*	17,000	9,000

* no flow
NTU nephelometric turbidity units
MPN most probable number
ND non-detect

Figure 2
Dissolved Oxygen – 2001, 2002, and 2003

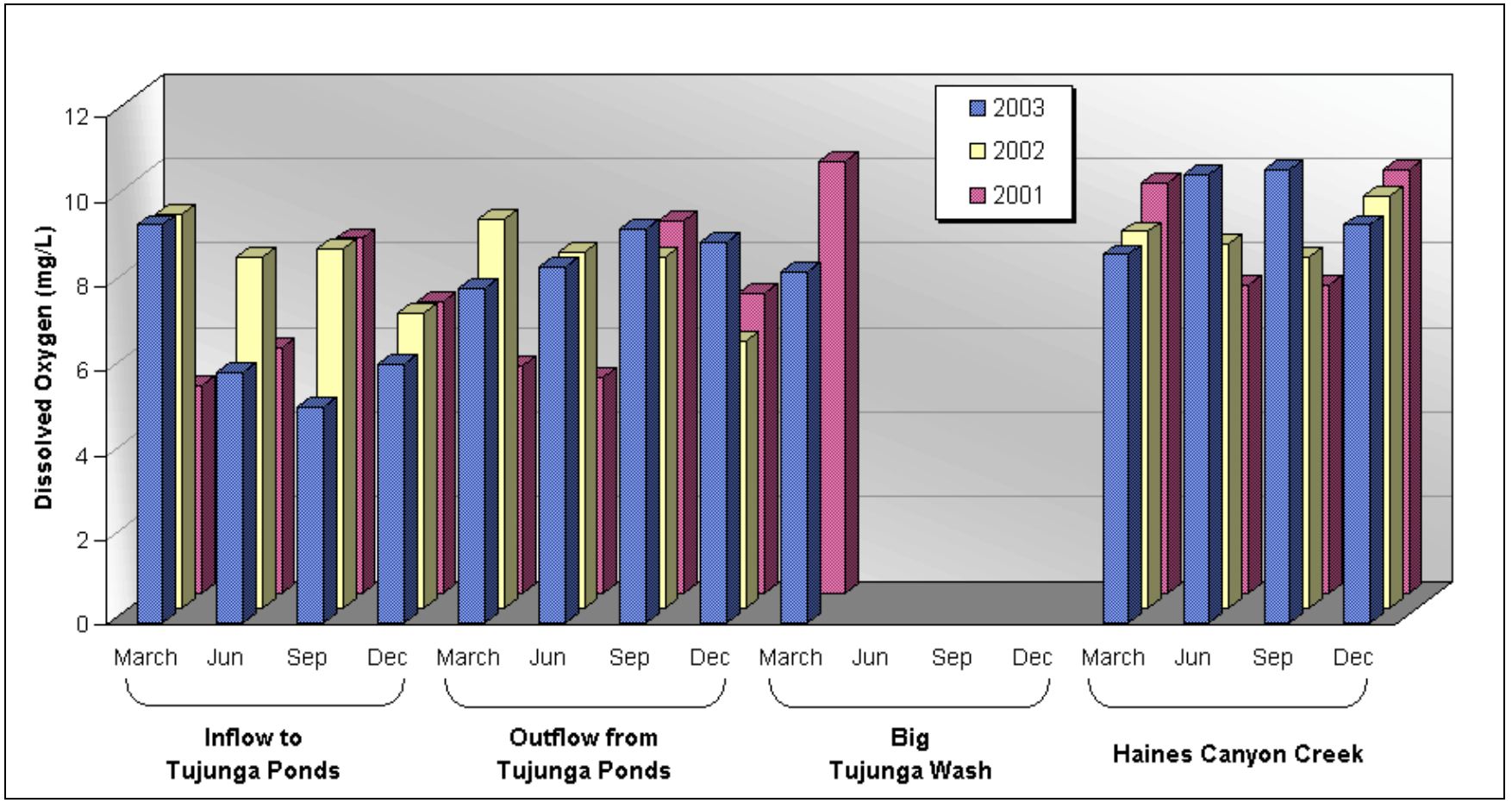


Figure 3
Nitrate Nitrogen – 2001, 2002, and 2003

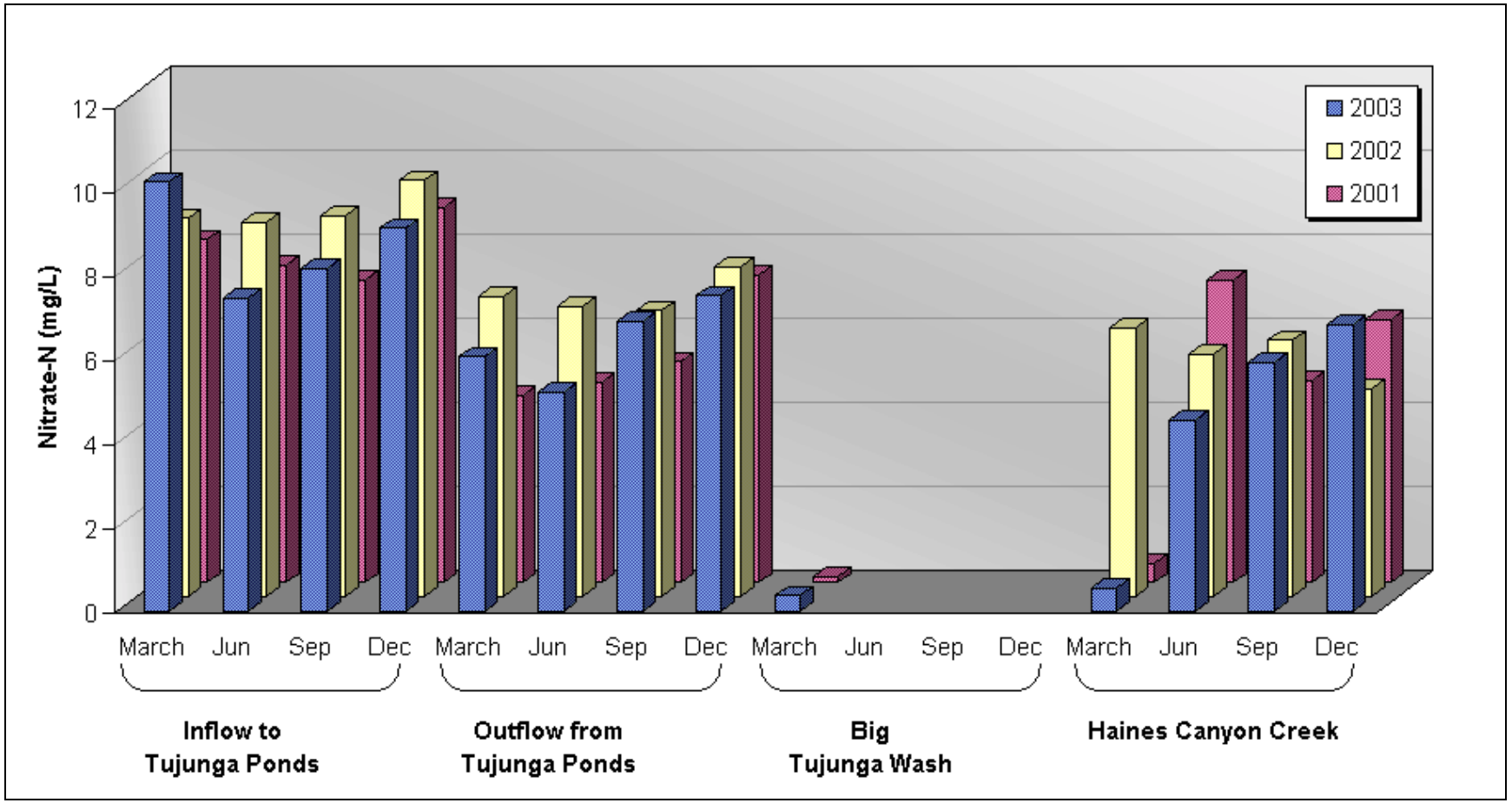


Figure 4
Total Phosphorus – 2001, 2002, and 2003

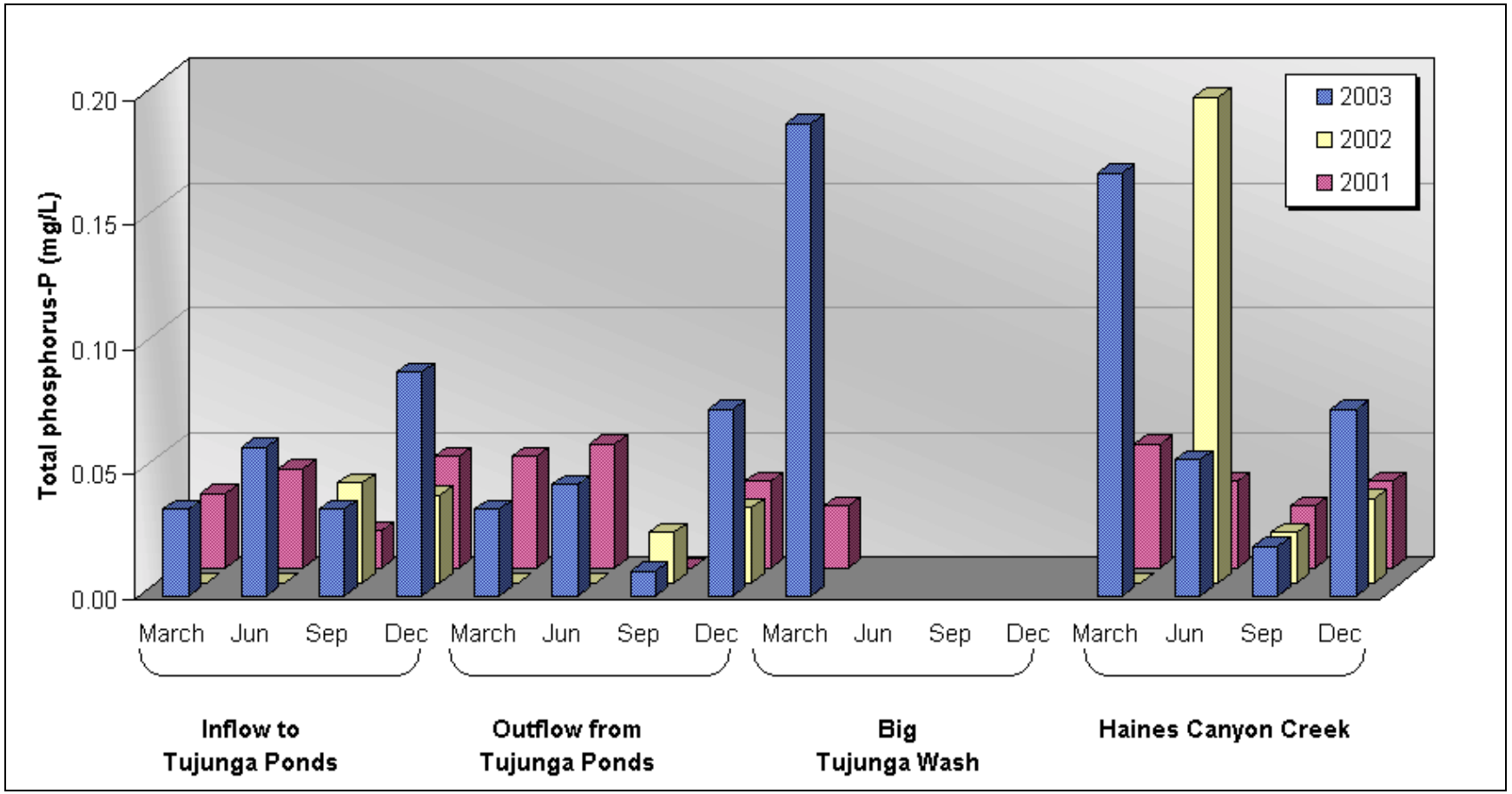


Figure 5
Turbidity – 2001, 2002, and 2003

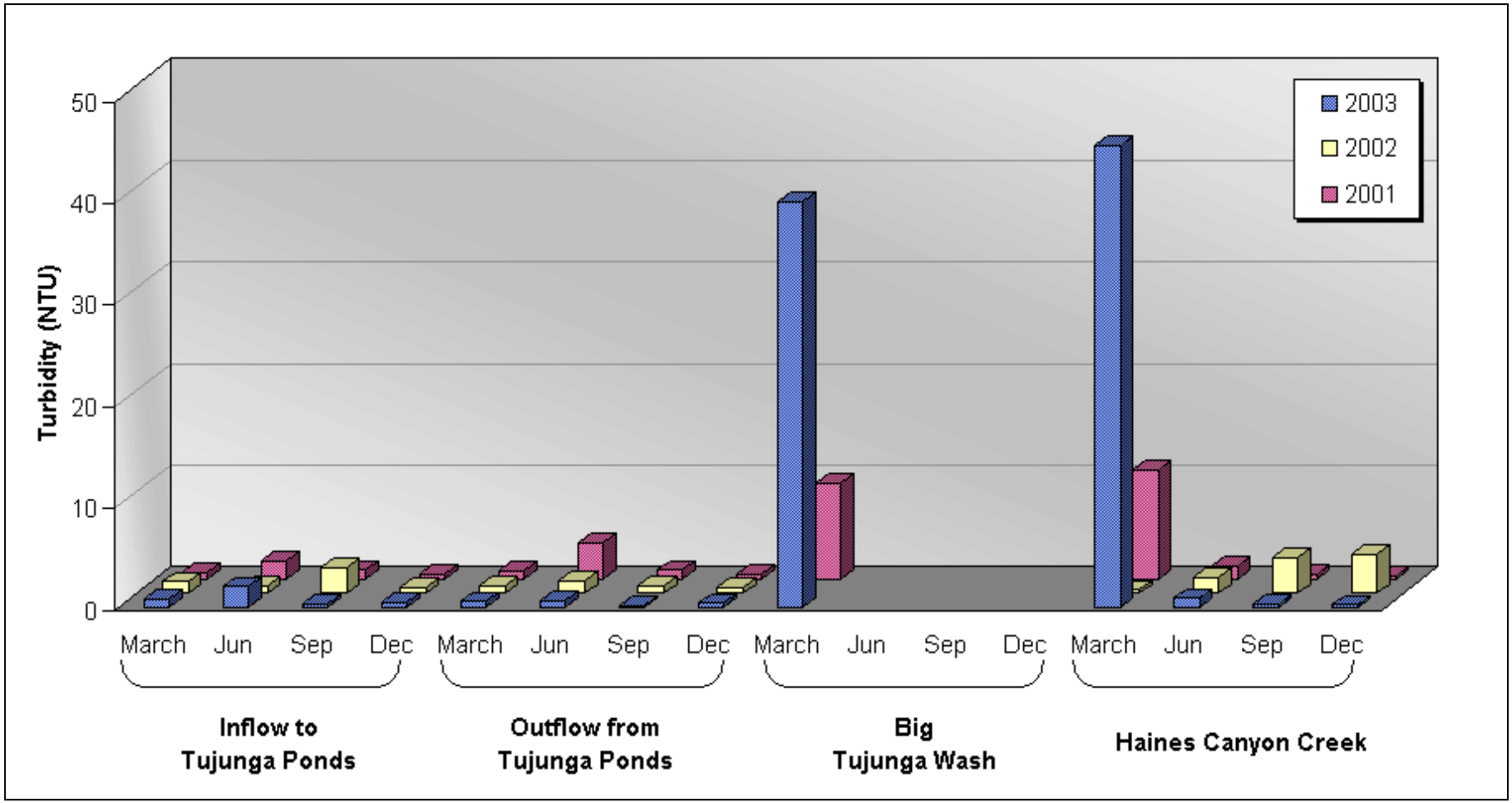


Figure 6
Total Coliform Bacteria – 2001, 2002, and 2003

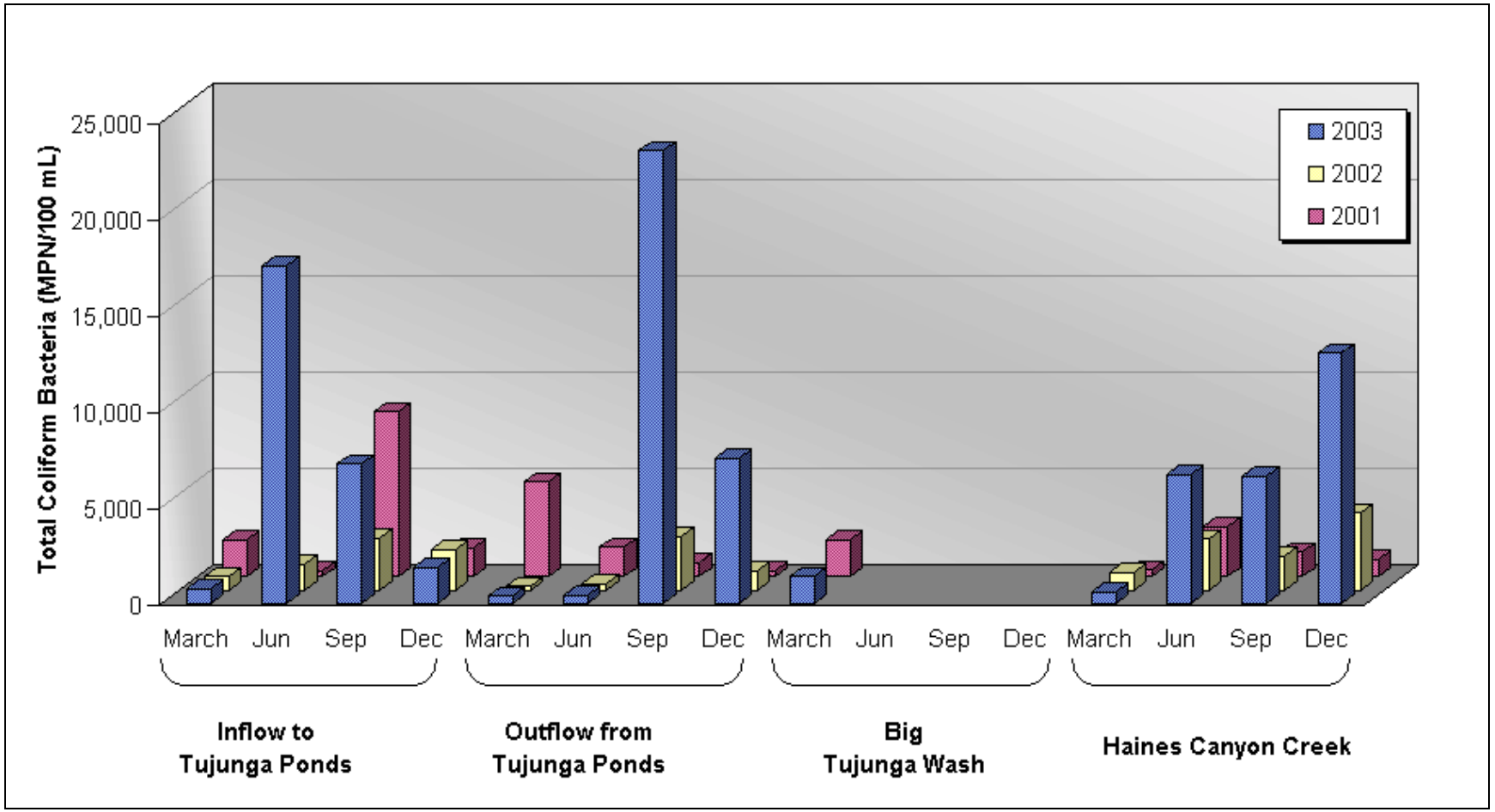
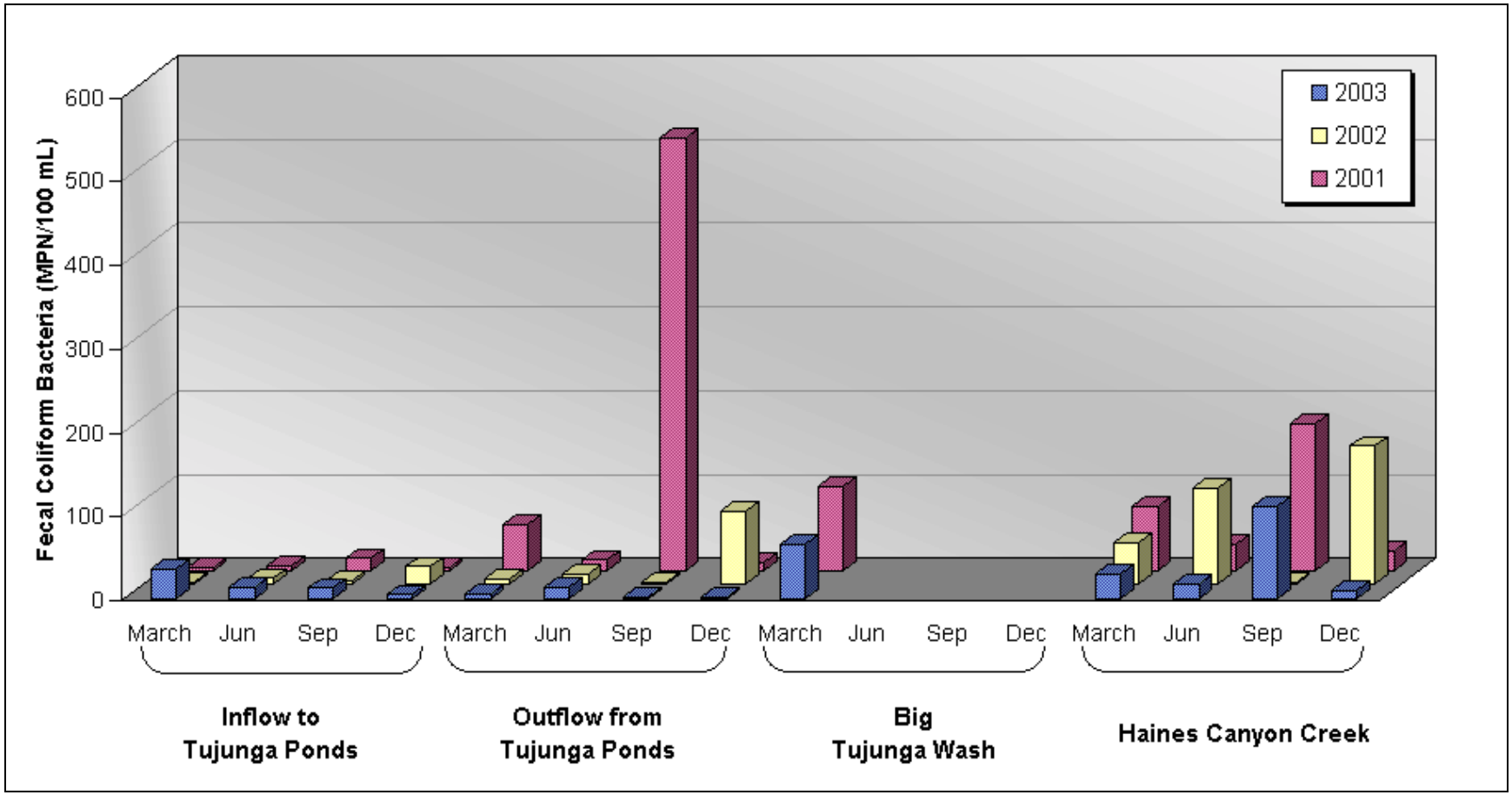


Figure 7
Fecal Coliform Bacteria – 2001, 2002, and 2003



Discharge Measurements

Using the field technique described above, flows in the outlet from Big Tujunga Ponds, in Haines Canyon Creek leaving the site, and in Big Tujunga Wash (March sampling date only) were approximated. Estimated flows for the four sampling dates in 2003 are summarized in **Table 9.**

Table 9
Estimated Flows for 2003
(cubic feet per second)

Sampling Date	Outlet of Big Tujunga Ponds	Haines Canyon Creek leaving the site	Big Tujunga Wash
3/20/03	8.8	18.6	4.2
6/23/03	5.4	3.7	*
9/30/03	3.9	2.7	*
12/17/03	2.2	1.6	*

* no flow

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

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

Parameter	Basin Plan Objectives[a]	EPA Criteria		
		CMC	CCC	Human Health
Fecal coliform (MPN/100 mL)	200[e] (water contact recreation)	--	--	Swimming stds: 33[f] (geometric mean for enterococci) 126[f] (geometric mean for *E. coli*)
Ammonia-nitrogen (mg/L)	See Table 14	See Tables 11, 12, and 13	See Tables 11, 12, and 13	--
Nitrite-nitrogen (mg/L)	1	--	--	1 (primary drinking water std.)
Nitrate-nitrogen (mg/L)	10	--	--	10 (primary drinking water std.)
Total phosphorus (mg/L)		<0.05 – 0.1[d] (recommendation for 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)

pH	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)									
pH	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

* 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 for Fish Early Life Stages Present, mg N/L										
	Temperature (° Celsius)									
pH	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_3)

pH	Temperature (°Celsius)						
	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	**Growth** (°Celsius)	**Maxima** (°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 2003 are discussed by parameter in **Table 16**.

Table 16
Discussion of 2003 Big Tujunga Wash Sampling Results

Parameter	Discussion
Temperature	• Temperatures in Haines Canyon Creek leaving the site were generally (up to 6 ºC) cooler than temperatures in the Tujunga ponds. • Seasonal fluctuations of up to 8 ºC were observed – December readings were lowest, and September readings were highest. • As with all preceding years, observed temperatures during all sample periods were below levels of concern for growth and survival of warm water fish species.
Dissolved oxygen	• For all sampling dates except March, dissolved oxygen (DO) levels in the inflow to the ponds were 2 to 3 mg/L lower than in the outflow from the ponds. • Seasonal fluctuations of up to 4.3 mg/L in DO were observed – highest overall readings were observed in September. • All DO readings in 2003 were above the recommended minimum for warmwater fish species of 5.0 mg/L. During the past three monitoring years, only one DO reading below 5.0 mg/L has been recorded (in the inflow to the ponds in March 2001).
pH	• In general, pH values observed in Haines Canyon Creek leaving the site were approximately 1 unit higher than values observed in the ponds. This pattern has been observed in all three monitoring years. • For any given sampling date in 2003, the pH of waters flowing into and out of the ponds varied by 0.3 units or less. • The maximum seasonal pH fluctuation at any station in 2003 was 0.6 units. • Except at Haines Canyon Creek leaving the site in March (8.7 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	• As with all preceding years, total residual chlorine readings on all sampling dates were below the detection limit.

Table 16 (Continued)
Discussion of 2003 Big Tujunga Wash Sampling Results

Parameter	Discussion
Nitrogen	• Ammonia-nitrogen and nitrite-nitrogen were not detected in any of the samples during 2003. (The reading of 0.11 mg/L in June at Inflow to Tujunga Ponds is most likely a sampling or laboratory error since the result for the duplicate sample was non-detect.) • 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 4.15 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 generally lower (0.4 to 1.7 mg/L lower) in 2003 than in 2002, but were generally higher (0.1 to 2.1 mg/L higher) in 2003 than in 2001. • All nitrate-nitrogen readings except one (Inflow to Tujunga Ponds 1 in March at 12 mg/L) were below the drinking water standard of 10 mg/L.
Phosphorus	• The proportion of total phosphorus present as reactive orthophosphate ranged from all to approximately 20 percent. • Baseline total phosphorus observed in April 2000 was significantly higher than most 2001, 2002, and 2003 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. Higher readings (over 0.10 mg/L) were observed in two samples in 2003 and one sample in 2002. • Except in Big Tujunga Wash and Haines Canyon Creek in March, total phosphorus values at all stations for all four quarters of 2003 were below EPA's recommendation for streams of <0.05 – 0.1 mg/L total phosphates. High total phosphorus levels (up to 0.19 mg/L) observed in Big Tujunga Wash and Haines Canyon Creek in March may be attributable to the high flows (due to the releases from the Big Tujunga Dam preceding the sampling date).
Turbidity	• Except in March in Big Tujunga Wash and Haines Canyon Creek (when high turbidity levels of up to 48 NTU were observed due to the high flows), turbidity values in 2003 were similar to those of 2001 and 2002, and were below the drinking water standard of 5 NTU.
Bacteria	• Fecal coliform levels in 2003 ranged from <2 to 170 MPN/100 mL. Total coliforms were much higher – up to 36,000 MPN/100 mL. • Again, due to the rain event, baseline coliform data from April 18, 2000 showed the highest total coliform levels (170,000 MPN/100 mL in the outflow from the ponds). • Fecal coliform levels were below the water contact recreation standard of 200 MPN/100 mL at all stations for all four quarters (although sufficient samples were not taken per the standard).

Glossary

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^-) 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 – $NO3^-$-N is an essential nutrient for many photosynthetic autotrophs.

Nitrite-Nitrogen – $NO2^-$-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 2003 LABORATORY RESULTS

MWH Laboratories
A Division of MWH Americas, Inc.

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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
APR 15 2003
MWH LABORATORIES

ACCREDITED IN ACCORDANCE WITH nelac 01114CA

JCH Jim Hein
Project Manager

Report#: 107268
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 12 page[s].

MWH Laboratories
750 Royal Oaks Drive, Monrovia, CA 91016
PHONE: 626-386-1100/FAX: 626-386-1101

ACKNOWLEDGMENT OF SAMPLES RECEIVED

Applied Research Dept, MWH (Darren Giles)
327 West Maple Avenue
Monrovia, CA 91016
Attn: Darren Giles
Phone: (626) 303-5945

Customer Code: ARD-DG
PO#: 1341410.5620.011801
Group#: 107268
Project#: BIG-TJ
Proj Mgr: James Hein
Phone: (626) 386-1189

The following samples were received from you on **03/20/03**. 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 Date
	Tests Scheduled		
2303210023	SITE 1 INFLOW TO TJ POND 1	Water	20-mar-2003 11:15:00
	FECCOL NH3 NO2-N NO3 OPO4 T-P		
	TKN TOTCOL TURB		
2303210025	SITE 1 INFLOW TO TJ POND 2	Water	20-mar-2003 11:26:00
	FECCOL NH3 NO2-N NO3 OPO4 T-P		
	TKN TOTCOL TURB		
2303210026	SITE 2 OUTFLOW FROM TJ POND 1	Water	20-mar-2003 11:51:00
	FECCOL NH3 NO2-N NO3 OPO4 T-P		
	TKN TOTCOL TURB		
2303210027	SITE 2 OUTFLOW FROM TJ POND 2	Water	20-mar-2003 12:00:00
	FECCOL NH3 NO2-N NO3 OPO4 T-P		
	TKN TOTCOL TURB		
2303210028	SITE 3 BIG TJ WASH 1	Water	20-mar-2003 12:53:00
	FECCOL NH3 NO2-N NO3 OPO4 T-P		
	TKN TOTCOL TURB		
2303210029	SITE 3 BIG TJ WASH 2	Water	20-mar-2003 12:58:00
	FECCOL NH3 NO2-N NO3 OPO4 T-P		
	TKN TOTCOL TURB		
2303210030	SITE 4 HAINES CANYON CREEK 1	Water	20-mar-2003 10:20:00
	FECCOL NH3 NO2-N NO3 OPO4 T-P		
	TKN TOTCOL TURB		
2303210031	SITE 4 HAINES CANYON CREEK 2	Water	20-mar-2003 10:31:00
	FECCOL NH3 NO2-N NO3 OPO4 T-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

Applied Research Dept, MWH (Darren Giles)
327 West Maple Avenue
Monrovia, CA 91016
Attn: Darren Giles
Phone: (626) 303-5945

Customer Code: ARD-DG
PO#: 1341410.5620.011801
Group#: 107268
Project#: BIG-TJ
Proj Mgr: James Hein
Phone: (626) 386-1189

Test Acronym Description

Test Acronym	Description
T-P	Total phosphorus-P
TKN	Kjeldahl Nitrogen
TOTCOL	Total Coliform Bacteria
TURB	Turbidity

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Laboratory
Hits Report
#107268

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

Samples Received
20-mar-2003 15:59:00

Analyzed	Sample#	Sample ID	Result	UNITS	MRL
	2303210023	**SITE 1 INFLOW TO TJ POND 1**			
03/20/03		Fecal Coliform Bacteria	50	MPN/100 mL	2.000
04/10/03		Kjeldahl Nitrogen	0.60	mg/l	.200
03/20/03		Nitrate as Nitrogen by IC	8.4	mg/l	.200
03/20/03		Total Coliform Bacteria	450	MPN/100 mL	2.000
03/25/03		Total phosphorus-P	0.03	mg/l	.020
03/20/03		Turbidity	1.2	NTU	.050
	2303210025	**SITE 1 INFLOW TO TJ POND 2**			
03/20/03		Fecal Coliform Bacteria	22	MPN/100 mL	2.000
04/10/03		Kjeldahl Nitrogen	0.31	mg/l	.200
03/20/03		Nitrate as Nitrogen by IC	12	mg/l	.200
03/21/03		Orthophosphate-P	0.013	mg/l	.010
03/20/03		Total Coliform Bacteria	1100	MPN/100 mL	2.000
03/25/03		Total phosphorus-P	0.04	mg/l	.020
03/20/03		Turbidity	0.40	NTU	.050
	2303210026	**SITE 2 OUTFLOW FROM TJ POND 1**			
03/20/03		Fecal Coliform Bacteria	4	MPN/100 mL	2.000
04/10/03		Kjeldahl Nitrogen	0.31	mg/l	.200
03/20/03		Nitrate as Nitrogen by IC	6.1	mg/l	.200
03/21/03		Orthophosphate-P	0.023	mg/l	.010
03/20/03		Total Coliform Bacteria	300	MPN/100 mL	2.000
03/25/03		Total phosphorus-P	0.03	mg/l	.020
03/20/03		Turbidity	0.75	NTU	.050
	2303210027	**SITE 2 OUTFLOW FROM TJ POND 2**			
03/20/03		Fecal Coliform Bacteria	8	MPN/100 mL	2.000

SUMMARY OF POSITIVE DATA ONLY.

MWH Laboratories
A Division of MWH Americas, Inc.

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Laboratory
Hits Report
#107268

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

Samples Received
20-mar-2003 15:59:00

Analyzed	Sample#	Sample ID	Result	UNITS	MRL
	2303210027	**SITE 2 OUTFLOW FROM TJ POND 2**			
04/10/03		Kjeldahl Nitrogen	0.36	mg/l	.200
03/20/03		Nitrate as Nitrogen by IC	6.0	mg/l	.100
03/21/03		Orthophosphate-P	0.023	mg/l	.010
03/20/03		Total Coliform Bacteria	500	MPN/100 mL	2.000
03/25/03		Total phosphorus-P	0.04	mg/l	.020
03/20/03		Turbidity	0.55	NTU	.050
	2303210028	**SITE 3 BIG TJ WASH 1**			
03/20/03		Fecal Coliform Bacteria	80	MPN/100 mL	2.000
04/10/03		Kjeldahl Nitrogen	0.76	mg/l	.200
03/20/03		Nitrate as Nitrogen by IC	0.36	mg/l	.100
03/21/03		Orthophosphate-P	0.039	mg/l	.010
03/20/03		Total Coliform Bacteria	1100	MPN/100 mL	2.000
03/25/03		Total phosphorus-P	0.19	mg/l	.020
03/20/03		Turbidity	41	NTU	.100
	2303210029	**SITE 3 BIG TJ WASH 2**			
03/20/03		Fecal Coliform Bacteria	50	MPN/100 mL	2.000
04/10/03		Kjeldahl Nitrogen	0.85	mg/l	.200
03/20/03		Nitrate as Nitrogen by IC	0.36	mg/l	.100
03/21/03		Orthophosphate-P	0.044	mg/l	.010
03/20/03		Total Coliform Bacteria	1700	MPN/100 mL	2.000
03/25/03		Total phosphorus-P	0.19	mg/l	.020
03/20/03		Turbidity	39	NTU	.050
	2303210030	**SITE 4 HAINES CANYON CREEK 1**			
03/20/03		Fecal Coliform Bacteria	30	MPN/100 mL	2.000

SUMMARY OF POSITIVE DATA ONLY.

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Laboratory
Hits Report
#107268

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

Samples Received
20-mar-2003 15:59:00

Analyzed	Sample#	Sample ID	Result	UNITS	MRL
	2303210030	**SITE 4 HAINES CANYON CREEK 1**			
04/10/03		Kjeldahl Nitrogen	0.76	mg/l	.200
03/20/03		Nitrate as Nitrogen by IC	0.54	mg/l	.100
03/21/03		Orthophosphate-P	0.045	mg/l	.010
03/20/03		Total Coliform Bacteria	330	MPN/100 mL	2.000
03/25/03		Total phosphorus-P	0.18	mg/l	.020
03/20/03		Turbidity	43	NTU	.100
	2303210031	**SITE 4 HAINES CANYON CREEK 2**			
03/20/03		Fecal Coliform Bacteria	30	MPN/100 mL	2.000
04/10/03		Kjeldahl Nitrogen	0.74	mg/l	.200
03/20/03		Nitrate as Nitrogen by IC	0.53	mg/l	.100
03/21/03		Orthophosphate-P	0.051	mg/l	.010
03/20/03		Total Coliform Bacteria	900	MPN/100 mL	2.000
03/25/03		Total phosphorus-P	0.16	mg/l	.020
03/20/03		Turbidity	48	NTU	.100

SUMMARY OF POSITIVE DATA ONLY.

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Laboratory
Data Report
#107268

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

Samples Received
03/20/03

Prepared	Analyzed	QC Ref#	Method	Analyte	Result	Units	MRL	Dilution
SITE 1 INFLOW TO TJ POND 1 (2303210023) Sampled on 03/20/03 11:15								
	03/20/03 15:41		(ML/SM9221C)	Fecal Coliform Bacteria	50	MPNM	2.0	1
	03/25/03 00:00	194777	(ML/EPA 350.1)	Ammonia Nitrogen	ND	mg/l	0.050	1
	03/20/03 18:02	194611	(ML/EPA 300.0)	Nitrite, Nitrogen by IC	ND	mg/l	0.20	2
	03/20/03 18:02	194613	(ML/EPA 300.0)	Nitrate as Nitrogen by IC	8.4	mg/l	0.20	2
	03/21/03 17:00	194647	(ML/S4500P-E)	Orthophosphate-P	ND	mg/l	0.010	1
	03/25/03 15:00	194869	(S4500PE/E365.1)	Total phosphorus-P	0.03	mg/l	0.020	1
	04/10/03 17:24	196299	(ML/EPA 351.2)	Kjeldahl Nitrogen	0.60	mg/l	0.20	1
	03/20/03 15:41		(ML/SM9221B)	Total Coliform Bacteria	450	MPNM	2.0	1
	03/20/03 17:00	194556	(ML/EPA 180.1)	Turbidity	1.2	NTU	0.050	1
SITE 1 INFLOW TO TJ POND 2 (2303210025) Sampled on 03/20/03 11:26								
	03/20/03 15:41		(ML/SM9221C)	Fecal Coliform Bacteria	22	MPNM	2.0	1
	03/25/03 00:00	194777	(ML/EPA 350.1)	Ammonia Nitrogen	ND	mg/l	0.050	1
	03/20/03 19:00	194612	(ML/EPA 300.0)	Nitrite, Nitrogen by IC	ND	mg/l	0.20	2
	03/20/03 19:00	194614	(ML/EPA 300.0)	Nitrate as Nitrogen by IC	12	mg/l	0.20	2
	03/21/03 17:00	194647	(ML/S4500P-E)	Orthophosphate-P	0.013	mg/l	0.010	1
	03/25/03 15:00	194869	(S4500PE/E365.1)	Total phosphorus-P	0.04	mg/l	0.020	1
	04/10/03 17:24	196299	(ML/EPA 351.2)	Kjeldahl Nitrogen	0.31	mg/l	0.20	1
	03/20/03 15:41		(ML/SM9221B)	Total Coliform Bacteria	1100	MPNM	2.0	1
	03/20/03 17:00	194556	(ML/EPA 180.1)	Turbidity	0.40	NTU	0.050	1
SITE 2 OUTFLOW FROM TJ POND 1 (2303210026) Sampled on 03/20/03 11:51								
	03/20/03 15:41		(ML/SM9221C)	Fecal Coliform Bacteria	4	MPNM	2.0	1
	03/25/03 00:00	194777	(ML/EPA 350.1)	Ammonia Nitrogen	ND	mg/l	0.050	1
	03/20/03 19:47	194612	(ML/EPA 300.0)	Nitrite, Nitrogen by IC	ND	mg/l	0.20	2
	03/20/03 19:47	194614	(ML/EPA 300.0)	Nitrate as Nitrogen by IC	6.1	mg/l	0.20	2
	03/21/03 17:00	194647	(ML/S4500P-E)	Orthophosphate-P	0.023	mg/l	0.010	1
	03/25/03 15:00	194869	(S4500PE/E365.1)	Total phosphorus-P	0.03	mg/l	0.020	1
	04/10/03 17:24	196299	(ML/EPA 351.2)	Kjeldahl Nitrogen	0.31	mg/l	0.20	1
	03/20/03 15:41		(ML/SM9221B)	Total Coliform Bacteria	300	MPNM	2.0	1
	03/20/03 17:00	194556	(ML/EPA 180.1)	Turbidity	0.75	NTU	0.050	1

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Laboratory
Data Report
#107268

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

Prepared	Analyzed	QC Ref#	Method	Analyte	Result	Units	MRL	Dilution
SITE 2 OUTFLOW FROM TJ POND 2 (2303210027) Sampled on 03/20/03 12:00								
	03/20/03 15:41		(ML/SM9221C)	Fecal Coliform Bacteria	8	MPNM	2.0	1
	03/25/03 00:00	194777	(ML/EPA 350.1)	Ammonia Nitrogen	ND	mg/l	0.050	1
	03/20/03 19:12	194612	(ML/EPA 300.0)	Nitrite, Nitrogen by IC	ND	mg/l	0.10	1
	03/20/03 19:12	194614	(ML/EPA 300.0)	Nitrate as Nitrogen by IC	6.0	mg/l	0.10	1
	03/21/03 17:00	194647	(ML/S4500P-E)	Orthophosphate-P	0.023	mg/l	0.010	1
	03/25/03 15:00	194869	(S4500PE/E365.1)	Total phosphorus-P	0.04	mg/l	0.020	1
	04/10/03 17:24	196299	(ML/EPA 351.2)	Kjeldahl Nitrogen	0.36	mg/l	0.20	1
	03/20/03 15:41		(ML/SM9221B)	Total Coliform Bacteria	500	MPNM	2.0	1
	03/20/03 17:00	194556	(ML/EPA 180.1)	Turbidity	0.55	NTU	0.050	1
SITE 3 BIG TJ WASH 1 (2303210028) Sampled on 03/20/03 12:53								
	03/20/03 15:41		(ML/SM9221C)	Fecal Coliform Bacteria	80	MPNM	2.0	1
	03/25/03 00:00	194777	(ML/EPA 350.1)	Ammonia Nitrogen	ND	mg/l	0.050	1
	03/20/03 19:59	194612	(ML/EPA 300.0)	Nitrite, Nitrogen by IC	ND	mg/l	0.10	1
	03/20/03 19:59	194614	(ML/EPA 300.0)	Nitrate as Nitrogen by IC	0.36	mg/l	0.10	1
	03/21/03 17:00	194647	(ML/S4500P-E)	Orthophosphate-P	0.039	mg/l	0.010	1
	03/25/03 15:00	194869	(S4500PE/E365.1)	Total phosphorus-P	0.19	mg/l	0.020	1
	04/10/03 17:24	196299	(ML/EPA 351.2)	Kjeldahl Nitrogen	0.76	mg/l	0.20	1
	03/20/03 15:41		(ML/SM9221B)	Total Coliform Bacteria	1100	MPNM	2.0	1
	03/20/03 17:00	194556	(ML/EPA 180.1)	Turbidity	41	NTU	0.10	2
SITE 3 BIG TJ WASH 2 (2303210029) Sampled on 03/20/03 12:58								
	03/20/03 15:41		(ML/SM9221C)	Fecal Coliform Bacteria	50	MPNM	2.0	1
	03/25/03 00:00	194777	(ML/EPA 350.1)	Ammonia Nitrogen	ND	mg/l	0.050	1
	03/20/03 20:10	194612	(ML/EPA 300.0)	Nitrite, Nitrogen by IC	ND	mg/l	0.10	1
	03/20/03 20:10	194614	(ML/EPA 300.0)	Nitrate as Nitrogen by IC	0.36	mg/l	0.10	1
	03/21/03 17:00	194647	(ML/S4500P-E)	Orthophosphate-P	0.044	mg/l	0.010	1
	03/25/03 15:00	194869	(S4500PE/E365.1)	Total phosphorus-P	0.19	mg/l	0.020	1
	04/10/03 17:24	196299	(ML/EPA 351.2)	Kjeldahl Nitrogen	0.85	mg/l	0.20	1
	03/20/03 15:41		(ML/SM9221B)	Total Coliform Bacteria	1700	MPNM	2.0	1
	03/20/03 17:00	194556	(ML/EPA 180.1)	Turbidity	39	NTU	0.050	1

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Laboratory
Data Report
#107268

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

Prepared	Analyzed	QC Ref#	Method	Analyte	Result	Units	MRL	Dilution
SITE 4 HAINES CANYON CREEK 1 (2303210030) Sampled on 03/20/03 10:20								
	03/20/03 15:41		(ML/SM9221C)	Fecal Coliform Bacteria	30	MPNM	2.0	1
	03/25/03 00:00	194777	(ML/EPA 350.1)	Ammonia Nitrogen	ND	mg/l	0.050	1
	03/20/03 20:22	194612	(ML/EPA 300.0)	Nitrite, Nitrogen by IC	ND	mg/l	0.10	1
	03/20/03 20:22	194614	(ML/EPA 300.0)	Nitrate as Nitrogen by IC	0.54	mg/l	0.10	1
	03/21/03 17:00	194647	(ML/S4500P-E)	Orthophosphate-P	0.045	mg/l	0.010	1
	03/25/03 15:00	194869	(S4500PE/E365.1)	Total phosphorus-P	0.18	mg/l	0.020	1
	04/10/03 17:24	196299	(ML/EPA 351.2)	Kjeldahl Nitrogen	0.76	mg/l	0.20	1
	03/20/03 15:41		(ML/SM9221B)	Total Coliform Bacteria	330	MPNM	2.0	1
	03/20/03 17:00	194556	(ML/EPA 180.1)	Turbidity	43	NTU	0.10	2
SITE 4 HAINES CANYON CREEK 2 (2303210031) Sampled on 03/20/03 10:31								
	03/20/03 15:41		(ML/SM9221C)	Fecal Coliform Bacteria	30	MPNM	2.0	1
	03/25/03 00:00	194777	(ML/EPA 350.1)	Ammonia Nitrogen	ND	mg/l	0.050	1
	03/20/03 20:33	194612	(ML/EPA 300.0)	Nitrite, Nitrogen by IC	ND	mg/l	0.10	1
	03/20/03 20:33	194614	(ML/EPA 300.0)	Nitrate as Nitrogen by IC	0.53	mg/l	0.10	1
	03/21/03 17:00	194647	(ML/S4500P-E)	Orthophosphate-P	0.051	mg/l	0.010	1
	03/25/03 15:00	194869	(S4500PE/E365.1)	Total phosphorus-P	0.16	mg/l	0.020	1
	04/10/03 17:24	196299	(ML/EPA 351.2)	Kjeldahl Nitrogen	0.74	mg/l	0.20	1
	03/20/03 15:41		(ML/SM9221B)	Total Coliform Bacteria	900	MPNM	2.0	1
	03/20/03 17:00	194556	(ML/EPA 180.1)	Turbidity	48	NTU	0.10	2

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Laboratory
QC Summary
#107268

Applied Research Dept, MWH (Darren Giles)

QC Ref #194556 - Turbidity **Analysis Date: 03/20/2003**

2303210023	SITE 1 INFLOW TO TJ POND 1
2303210025	SITE 1 INFLOW TO TJ POND 2
2303210026	SITE 2 OUTFLOW FROM TJ POND 1
2303210027	SITE 2 OUTFLOW FROM TJ POND 2
2303210028	SITE 3 BIG TJ WASH 1
2303210029	SITE 3 BIG TJ WASH 2
2303210030	SITE 4 HAINES CANYON CREEK 1
2303210031	SITE 4 HAINES CANYON CREEK 2

QC Ref #194611 - Nitrite, Nitrogen by IC **Analysis Date: 03/20/2003**

2303210023	SITE 1 INFLOW TO TJ POND 1

QC Ref #194612 - Nitrite, Nitrogen by IC **Analysis Date: 03/20/2003**

2303210025	SITE 1 INFLOW TO TJ POND 2
2303210026	SITE 2 OUTFLOW FROM TJ POND 1
2303210027	SITE 2 OUTFLOW FROM TJ POND 2
2303210028	SITE 3 BIG TJ WASH 1
2303210029	SITE 3 BIG TJ WASH 2
2303210030	SITE 4 HAINES CANYON CREEK 1
2303210031	SITE 4 HAINES CANYON CREEK 2

QC Ref #194613 - Nitrate as Nitrogen by IC **Analysis Date: 03/20/2003**

2303210023	SITE 1 INFLOW TO TJ POND 1

QC Ref #194614 - Nitrate as Nitrogen by IC **Analysis Date: 03/20/2003**

2303210025	SITE 1 INFLOW TO TJ POND 2
2303210026	SITE 2 OUTFLOW FROM TJ POND 1
2303210027	SITE 2 OUTFLOW FROM TJ POND 2
2303210028	SITE 3 BIG TJ WASH 1
2303210029	SITE 3 BIG TJ WASH 2
2303210030	SITE 4 HAINES CANYON CREEK 1
2303210031	SITE 4 HAINES CANYON CREEK 2

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(continued)

QC Ref #194647 - Orthophosphate-P **Analysis Date: 03/21/2003**

2303210023	SITE 1 INFLOW TO TJ POND 1
2303210025	SITE 1 INFLOW TO TJ POND 2
2303210026	SITE 2 OUTFLOW FROM TJ POND 1
2303210027	SITE 2 OUTFLOW FROM TJ POND 2
2303210028	SITE 3 BIG TJ WASH 1
2303210029	SITE 3 BIG TJ WASH 2
2303210030	SITE 4 HAINES CANYON CREEK 1
2303210031	SITE 4 HAINES CANYON CREEK 2

QC Ref #194777 - Ammonia Nitrogen **Analysis Date: 03/25/2003**

2303210023	SITE 1 INFLOW TO TJ POND 1
2303210025	SITE 1 INFLOW TO TJ POND 2
2303210026	SITE 2 OUTFLOW FROM TJ POND 1
2303210027	SITE 2 OUTFLOW FROM TJ POND 2
2303210028	SITE 3 BIG TJ WASH 1
2303210029	SITE 3 BIG TJ WASH 2
2303210030	SITE 4 HAINES CANYON CREEK 1
2303210031	SITE 4 HAINES CANYON CREEK 2

QC Ref #194869 - Total phosphorus-P **Analysis Date: 03/25/2003**

2303210023	SITE 1 INFLOW TO TJ POND 1
2303210025	SITE 1 INFLOW TO TJ POND 2
2303210026	SITE 2 OUTFLOW FROM TJ POND 1
2303210027	SITE 2 OUTFLOW FROM TJ POND 2
2303210028	SITE 3 BIG TJ WASH 1
2303210029	SITE 3 BIG TJ WASH 2
2303210030	SITE 4 HAINES CANYON CREEK 1
2303210031	SITE 4 HAINES CANYON CREEK 2

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

QC Ref #196299 - Kjeldahl Nitrogen **Analysis Date: 04/10/2003**

2303210023	SITE 1 INFLOW TO TJ POND 1
2303210025	SITE 1 INFLOW TO TJ POND 2
2303210026	SITE 2 OUTFLOW FROM TJ POND 1
2303210027	SITE 2 OUTFLOW FROM TJ POND 2
2303210028	SITE 3 BIG TJ WASH 1
2303210029	SITE 3 BIG TJ WASH 2
2303210030	SITE 4 HAINES CANYON CREEK 1
2303210031	SITE 4 HAINES CANYON CREEK 2

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Laboratory
QC Report
#107268

Applied Research Dept, MWH (Darren Giles)

QC Ref #194556 Turbidity

QC	Analyte	Spiked	Recovered	Units	Yield (%)	Limits (%)	RPD (%)
DUP	Turbidity	0.75	0.75	NTU		(0-20)	0.0

QC Ref #194611 Nitrite, Nitrogen by IC

QC	Analyte	Spiked	Recovered	Units	Yield (%)	Limits (%)	RPD (%)
LCS1	Nitrite, Nitrogen by IC	1.0	0.939	MGL	93.9	(90-110)	
LCS2	Nitrite, Nitrogen by IC	1.0	0.937	MGL	93.7	(90-110)	0.21
MBLK	Nitrite, Nitrogen by IC	ND	<0.10	MGL			
MS	Nitrite, Nitrogen by IC	1.0	0.953	MGL	95.3	(80-120)	
MSD	Nitrite, Nitrogen by IC	1.0	0.942	MGL	94.2	(80-120)	1.2

QC Ref #194612 Nitrite, Nitrogen by IC

QC	Analyte	Spiked	Recovered	Units	Yield (%)	Limits (%)	RPD (%)
LCS1	Nitrite, Nitrogen by IC	1.0	0.964	MGL	96.4	(90-110)	
LCS2	Nitrite, Nitrogen by IC	1.0	0.96	MGL	96.0	(90-110)	0.42
MBLK	Nitrite, Nitrogen by IC	ND	<0.10	MGL			
MS	Nitrite, Nitrogen by IC	1.0	0.986	MGL	98.6	(80-120)	
MSD	Nitrite, Nitrogen by IC	1.0	1.02	MGL	102.0	(80-120)	3.4

QC Ref #194613 Nitrate as Nitrogen by IC

QC	Analyte	Spiked	Recovered	Units	Yield (%)	Limits (%)	RPD (%)
LCS1	Nitrate as Nitrogen by IC	2.5	2.52	MGL	100.8	(90-110)	
LCS2	Nitrate as Nitrogen by IC	2.5	2.52	MGL	100.8	(90-110)	0.00
MBLK	Nitrate as Nitrogen by IC	ND	<0.10	MGL			
MS	Nitrate as Nitrogen by IC	2.5	2.52	MGL	100.8	(80-120)	
MSD	Nitrate as Nitrogen by IC	2.5	2.52	MGL	100.8	(80-120)	0.00

Spikes which exceed Limits and Method Blanks with positive results are highlighted by Underlining. Criteria for MS and DUP are advisory only, batch control is based on LCS. Criteria for duplicates are advisory only, unless otherwise specified in the method.

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(continued)

QC Ref #194614 Nitrate as Nitrogen by IC

QC	Analyte	Spiked	Recovered	Units	Yield (%)	Limits (%)	RPD (%)
LCS1	Nitrate as Nitrogen by IC	2.5	2.52	MGL	100.8	(90-110)	
LCS2	Nitrate as Nitrogen by IC	2.5	2.52	MGL	100.8	(90-110)	0.00
MBLK	Nitrate as Nitrogen by IC	ND	<0.10	MGL			
MS	Nitrate as Nitrogen by IC	2.5	2.32	MGL	92.8	(80-120)	
MSD	Nitrate as Nitrogen by IC	2.5	2.34	MGL	93.6	(80-120)	0.86

QC Ref #194647 Orthophosphate-P

QC	Analyte	Spiked	Recovered	Units	Yield (%)	Limits (%)	RPD (%)
MS	Spiked sample	Lab # 23	03210007	MGL		(0-0)	
LCS1	Orthophosphate-P	0.5	0.520	MGL	104.0	(90-110)	
LCS2	Orthophosphate-P	0.5	0.526	MGL	105.2	(90-110)	1.1
MBLK	Orthophosphate-P	ND	<0.01	MGL			
MS	Orthophosphate-P	0.5	0.519	MGL	103.8	(80-120)	
MSD	Orthophosphate-P	0.5	0.522	MGL	104.4	(80-120)	0.58

QC Ref #194777 Ammonia Nitrogen

QC	Analyte	Spiked	Recovered	Units	Yield (%)	Limits (%)	RPD (%)
MS	Spiked sample	Lab # 23	03210025	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	1.01	MGL	101.0	(90-110)	
MSD	Ammonia Nitrogen	1.00	1.02	MGL	102.0	(90-110)	0.99

Spikes which exceed Limits and Method Blanks with positive results are highlighted by Underlining. Criteria for MS and DUP are advisory only, batch control is based on LCS. Criteria for duplicates are advisory only, unless otherwise specified in the method.

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(continued)

QC Ref #194869 Total phosphorus-P

QC	Analyte	Spiked	Recovered	Units	Yield (%)	Limits (%)	RPD (%)
MS	Spiked sample	Lab # 23	03200270	MGL		(0-0)	
LCS1	Total phosphorus-P	0.4	0.410	MGL	102.5	(90-110)	
LCS2	Total phosphorus-P	0.4	0.410	MGL	102.5	(90-110)	0.00
MBLK	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	0.440	MGL	110.0	(90-110)	2.3
RPD_LCS	Total phosphorus-P	102.500	102.500	MGL	0.0	(0-10)	
RPD_MS	Total phosphorus-P	107.500	110.000	MGL	2.3	(0-10)	

QC Ref #196299 Kjeldahl Nitrogen

QC	Analyte	Spiked	Recovered	Units	Yield (%)	Limits (%)	RPD (%)
MS	Spiked sample	Lab # 23	03210023	MGL		(0-0)	
LCS1	Kjeldahl Nitrogen	4	4.1	MGL	102.5	(90-110)	
LCS2	Kjeldahl Nitrogen	4	4.1	MGL	102.5	(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	3.83	MGL	95.8	(90-110)	2.1
RPD_LCS	Kjeldahl Nitrogen	102.500	102.500	MGL	0.0	(0-20)	
RPD_MS	Kjeldahl Nitrogen	93.750	95.750	MGL	2.1	(0-10)	

Spikes which exceed Limits and Method Blanks with positive results are highlighted by Underlining. Criteria for MS and DUP are advisory only, batch control is based on LCS. Criteria for duplicates are advisory only, unless otherwise specified in the method.

MONTGOMERY WATSON LABORATORIES — CHAIN OF CUSTODY RECORD

107268

555 E. Walnut St., Pasadena, CA 91101
(626) 568-6400 (800) 566-5227

MWLABS USE ONLY:

LOGIN COMMENTS: #4 AS PER DARREN) Giles used 1 of the Haines Canyon Creek 1 to substitute #2.

SAMPLES CHECKED/LOGGED IN BY: MW

SAMPLE TEMP, RECEIPT AT LAB 10 (Compliance: 4 +/- 2*C)

SAMPLES RECEIVED DAY OF COLLECTION? [X] (check for yes)

BLUE ICE: FROZEN ✓ PARTIALLY FROZEN ___ THAWED ___

TO BE COMPLETED BY SAMPLER:

TAT requested: STD __XXX__ 1 week _____ 3 day _____ 1 day _____

COMPLIANCE SAMPLES - Requires state forms [ ]
NON-COMPLIANCE SAMPLES [ ]
REGULATION: _____ (SDWA, Phase V, NPDES, FDA, ...)

REFER TO ATTACHED BOTTLE ORDER FOR ANALYSES [ ] (check for yes)

PROJECT CODE	PROJECT JOB # / P.O.#	CLIENT CODE
Big TJ Sampling	1341597.5620.011801	ARD-DG/JF

SAMPLER(S): PRINTED NAME AND SIGNATURE
Darren Giles

ANALYSES REQUIRED (mark an 'X' in all tests required for each sample line)

TIME	DATE	SITE NAME or LOCATION	IDENTIFIER, STATE ID #	MATRIX *	GRAB	COMP	TKN, T-P, NH3-N	NO2,NO3,O-PO4, Turbidity	T & F Coliforms	SAMPLER COMMENTS
11:15	20-Mar	SITE 1	Inflow to TJ Pond #1		X		X	X	X	
11:20	20-Mar	SITE 1	Inflow to TJ Pond #2		X		X	X	X	
11:51	20-Mar	SITE 2	Outflow from TJ Pond #1		X		X	X	X	
[illegible]	20-Mar	SITE 2 12:00	Outflow from TJ Pond #2		X		X	X	X	
12:53	20-Mar	SITE 3	Big TJ Wash #1		X		X	X	X	
12:58	20-Mar	SITE 3	Big TJ Wash #2		X		X	X	X	
10:20	20-Mar	SITE 4	Haines Canyon Creek #1		X		X	X	X	2 samples for this site.
10:31	20-Mar	SITE 4	Haines Canyon Creek #2		X		X	X	X	No samples MW 3/21/03

* MATRIX TYPES:

Reported by Volume:
RSW = Raw Surface Water
RGW = Raw Ground Water
FW = Other Finished Water
CFW = Chlor(am)inated Finished Water
SW = Storm Water
WW = Other Waste Water
CWW = Chlorinated Waste Water

Reported by Weight:
SO = Soil
SL = Sludge

	SIGNATURE	PRINT NAME	COMPANY/TITLE	DATE	TIME
RELINQUISHED BY:	[signature]	DARREN GILES	MWH ARD	3/20	
RECEIVED BY:	[signature]	[signature]	MWH	3/20/03	15:00

SPECIAL INSTRUCTIONS

SCANNED

BIG TUJUNGA WASH WATER QUALITY MONITORING PROGRAM
JUNE 2003 LABORATORY RESULTS

MWH Laboratories
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750 Royal Oaks Drive, Suite 100
Monrovia, California 91016-3629
Tel: 626 386 1100
Fax: 626 386 1101
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
JUL 0 3 2003
MWH LABORATORIES

JCH Jim Hein
Project Manager

ACCREDITED IN ACCORDANCE WITH nelac 01114CA

Report#: 111065
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
750 Royal Oaks Drive, Monrovia, CA 91016
PHONE: 626-386-1100/FAX: 626-386-1101

ACKNOWLEDGMENT OF SAMPLES RECEIVED

Applied Research Dept, MWH (Darren Giles)
327 West Maple Avenue
Monrovia, CA 91016
Attn: Darren Giles
Phone: (626) 303-5945

Customer Code: ARD-DG
PO#: 1341767.5620.031801
Group#: 111065
Project#: BIG-TJ
Proj Mgr: James Hein
Phone: (626) 386-1189

The following samples were received from you on **06/23/03.** 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 Date
	Tests Scheduled		
2306230085	SITE 1 INFLOW TO TJ POND 1	Water	23-jun-2003 11:20:00
	FECCOL NH3 NO2-N NO3 OPO4 T-P		
	TKN TOTCOL TURB		
2306230086	SITE 1 INFLOW TO TJ POND 2	Water	23-jun-2003 11:35:00
	FECCOL NH3 NO2-N NO3 OPO4 T-P		
	TKN TOTCOL TURB		
2306230087	SITE 2 OUTFLOW FROM TJ POND 1	Water	23-jun-2003 11:48:00
	FECCOL NH3 NO2-N NO3 OPO4 T-P		
	TKN TOTCOL TURB		
2306230088	SITE 2 OUTFLOW FROM TJ POND 2	Water	23-jun-2003 12:08:00
	FECCOL NH3 NO2-N NO3 OPO4 T-P		
	TKN TOTCOL TURB		
2306230089	SITE 4 HAINES CANYON CREEK 1	Water	23-jun-2003 10:00:00
	FECCOL NH3 NO2-N NO3 OPO4 T-P		
	TKN TOTCOL TURB		
2306230090	SITE 4 HAINES CANYON CREEK 2	Water	23-jun-2003 10:15:00
	FECCOL NH3 NO2-N NO3 OPO4 T-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

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Laboratory
Hits Report
#111065

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

Samples Received
23-jun-2003 15:08:41

Analyzed	Sample#	Sample ID	Result	UNITS	MRL
	2306230085	SITE 1 INFLOW TO TJ POND 1			
06/23/03		Fecal Coliform Bacteria	23	MPN/100 mL	2.000
07/02/03		Kjeldahl Nitrogen	0.49	mg/l	.200
06/23/03		Nitrate as Nitrogen by IC	7.3	mg/l	.100
06/23/03		Nitrite, Nitrogen by IC	0.11	mg/l	.100
06/24/03		Orthophosphate-P	0.027	mg/l	.010
06/23/03		Total Coliform Bacteria	30000	MPN/100 mL	2.000
07/01/03		Total phosphorus-P	0.07	mg/l	.020
06/24/03		Turbidity	3.2	NTU	.050
	2306230086	SITE 1 INFLOW TO TJ POND 2			
06/23/03		Fecal Coliform Bacteria	4	MPN/100 mL	2.000
07/02/03		Kjeldahl Nitrogen	0.24	mg/l	.200
06/23/03		Nitrate as Nitrogen by IC	7.6	mg/l	.200
06/24/03		Orthophosphate-P	0.029	mg/l	.010
06/23/03		Total Coliform Bacteria	5000	MPN/100 mL	2.000
07/01/03		Total phosphorus-P	0.05	mg/l	.020
06/24/03		Turbidity	0.90	NTU	.050
	2306230087	SITE 2 OUTFLOW FROM TJ POND 1			
06/23/03		Fecal Coliform Bacteria	8	MPN/100 mL	2.000
07/02/03		Kjeldahl Nitrogen	0.29	mg/l	.200
06/23/03		Nitrate as Nitrogen by IC	5.2	mg/l	.200
06/24/03		Orthophosphate-P	0.011	mg/l	.010
06/23/03		Total Coliform Bacteria	260	MPN/100 mL	2.000
07/01/03		Total phosphorus-P	0.04	mg/l	.020
06/24/03		Turbidity	0.70	NTU	.050
	2306230088	SITE 2 OUTFLOW FROM TJ POND 2			

SUMMARY OF POSITIVE DATA ONLY.

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Laboratory
Hits Report
#111065

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

Samples Received
23-jun-2003 15:08:41

Analyzed	Sample#	Sample ID	Result	UNITS	MRL
	2306230088	SITE 2 OUTFLOW FROM TJ POND 2			
06/23/03		Fecal Coliform Bacteria	18	MPN/100 mL	2.000
07/02/03		Kjeldahl Nitrogen	0.23	mg/l	.200
06/23/03		Nitrate as Nitrogen by IC	5.2	mg/l	.200
06/23/03		Total Coliform Bacteria	600	MPN/100 mL	2.000
07/01/03		Total phosphorus-P	0.05	mg/l	.020
06/24/03		Turbidity	0.75	NTU	.050
	2306230089	SITE 4 HAINES CANYON CREEK 1			
06/23/03		Fecal Coliform Bacteria	23	MPN/100 mL	2.000
07/02/03		Kjeldahl Nitrogen	0.22	mg/l	.200
06/23/03		Nitrate as Nitrogen by IC	4.6	mg/l	.200
06/24/03		Orthophosphate-P	0.020	mg/l	.010
06/23/03		Total Coliform Bacteria	2400	MPN/100 mL	2.000
07/01/03		Total phosphorus-P	0.06	mg/l	.020
06/24/03		Turbidity	0.85	NTU	.050
	2306230090	SITE 4 HAINES CANYON CREEK 2			
06/23/03		Fecal Coliform Bacteria	13	MPN/100 mL	2.000
07/02/03		Kjeldahl Nitrogen	0.28	mg/l	.200
06/23/03		Nitrate as Nitrogen by IC	4.5	mg/l	.200
06/24/03		Orthophosphate-P	0.021	mg/l	.010
06/23/03		Total Coliform Bacteria	11000	MPN/100 mL	2.000
07/01/03		Total phosphorus-P	0.05	mg/l	.020
06/24/03		Turbidity	1.0	NTU	.050

SUMMARY OF POSITIVE DATA ONLY.

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Laboratory
Data Report
#111065

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

Samples Received

06/23/03

Prepared	Analyzed	QC Ref#	Method	Analyte	Result	Units	MRL	Dilution
SITE 1 INFLOW TO TJ POND 1 (2306230085) Sampled on 06/23/03 11:20								
	06/23/03 15:38		(ML/SM9221C)	Fecal Coliform Bacteria	23	MPNM	2.0	1
	06/24/03 00:00	202522	(ML/EPA 350.1)	Ammonia Nitrogen	ND	mg/l	0.050	1
	06/23/03 14:53	202504	(ML/EPA 300.0)	Nitrite, Nitrogen by IC	0.11	mg/l	0.10	1
	06/23/03 14:53	202506	(ML/EPA 300.0)	Nitrate as Nitrogen by IC	7.3	mg/l	0.10	1
	06/24/03 18:00	203130	(ML/S4500P-E)	Orthophosphate-P	0.027	mg/l	0.010	1
	07/01/03 18:35	203447	(S4500PE/E365.1)	Total phosphorus-P	0.07	mg/l	0.020	1
	07/02/03 22:13	203483	(ML/EPA 351.2)	Kjeldahl Nitrogen	0.49	mg/l	0.20	1
	06/23/03 15:38		(ML/SM9221B)	Total Coliform Bacteria	30000	MPNM	2.0	1
	06/24/03 09:30	202568	(ML/EPA 180.1)	Turbidity	3.2	NTU	0.050	1
SITE 1 INFLOW TO TJ POND 2 (2306230086) Sampled on 06/23/03 11:35								
	06/23/03 15:45		(ML/SM9221C)	Fecal Coliform Bacteria	4	MPNM	2.0	1
	06/24/03 00:00	202522	(ML/EPA 350.1)	Ammonia Nitrogen	ND	mg/l	0.050	1
	06/23/03 15:28	202504	(ML/EPA 300.0)	Nitrite, Nitrogen by IC	ND	mg/l	0.20	2
	06/23/03 15:28	202506	(ML/EPA 300.0)	Nitrate as Nitrogen by IC	7.6	mg/l	0.20	2
	06/24/03 18:00	203130	(ML/S4500P-E)	Orthophosphate-P	0.029	mg/l	0.010	1
	07/01/03 18:35	203447	(S4500PE/E365.1)	Total phosphorus-P	0.05	mg/l	0.020	1
	07/02/03 22:13	203483	(ML/EPA 351.2)	Kjeldahl Nitrogen	0.24	mg/l	0.20	1
	06/23/03 15:45		(ML/SM9221B)	Total Coliform Bacteria	5000	MPNM	2.0	1
	06/24/03 09:30	202568	(ML/EPA 180.1)	Turbidity	0.90	NTU	0.050	1
SITE 2 OUTFLOW FROM TJ POND 1 (2306230087) Sampled on 06/23/03 11:48								
	06/23/03 15:52		(ML/SM9221C)	Fecal Coliform Bacteria	8	MPNM	2.0	1
	06/24/03 00:00	202522	(ML/EPA 350.1)	Ammonia Nitrogen	ND	mg/l	0.050	1
	06/23/03 15:40	202504	(ML/EPA 300.0)	Nitrite, Nitrogen by IC	ND	mg/l	0.20	2
	06/23/03 15:40	202506	(ML/EPA 300.0)	Nitrate as Nitrogen by IC	5.2	mg/l	0.20	2
	06/24/03 18:00	203130	(ML/S4500P-E)	Orthophosphate-P	0.011	mg/l	0.010	1
	07/01/03 18:35	203447	(S4500PE/E365.1)	Total phosphorus-P	0.04	mg/l	0.020	1
	07/02/03 22:13	203483	(ML/EPA 351.2)	Kjeldahl Nitrogen	0.29	mg/l	0.20	1
	06/23/03 15:52		(ML/SM9221B)	Total Coliform Bacteria	260	MPNM	2.0	1
	06/24/03 09:30	202568	(ML/EPA 180.1)	Turbidity	0.70	NTU	0.050	1

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Laboratory
Data Report
#111065

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

Prepared	Analyzed	QC Ref#	Method	Analyte	Result	Units	MRL	Dilution
SITE 2 OUTFLOW FROM TJ POND 2 (2306230088) Sampled on 06/23/03 12:08								
	06/23/03 16:00		(ML/SM9221C)	Fecal Coliform Bacteria	18	MPNM	2.0	1
	06/24/03 00:00	202522	(ML/EPA 350.1)	Ammonia Nitrogen	ND	mg/l	0.050	1
	06/23/03 16:14	202504	(ML/EPA 300.0)	Nitrite, Nitrogen by IC	ND	mg/l	0.20	2
	06/23/03 16:14	202506	(ML/EPA 300.0)	Nitrate as Nitrogen by IC	5.2	mg/l	0.20	2
	06/24/03 18:00	203130	(ML/S4500P-E)	Orthophosphate-P	ND	mg/l	0.010	1
	07/01/03 18:35	203447	(S4500PE/E365.1)	Total phosphorus-P	0.05	mg/l	0.020	1
	07/02/03 22:13	203483	(ML/EPA 351.2)	Kjeldahl Nitrogen	0.23	mg/l	0.20	1
	06/23/03 16:00		(ML/SM9221B)	Total Coliform Bacteria	600	MPNM	2.0	1
	06/24/03 09:30	202568	(ML/EPA 180.1)	Turbidity	0.75	NTU	0.050	1
SITE 4 HAINES CANYON CREEK 1 (2306230089) Sampled on 06/23/03 10:00								
	06/23/03 16:07		(ML/SM9221C)	Fecal Coliform Bacteria	23	MPNM	2.0	1
	06/24/03 00:00	202522	(ML/EPA 350.1)	Ammonia Nitrogen	ND	mg/l	0.050	1
	06/23/03 15:51	202504	(ML/EPA 300.0)	Nitrite, Nitrogen by IC	ND	mg/l	0.20	2
	06/23/03 15:51	202506	(ML/EPA 300.0)	Nitrate as Nitrogen by IC	4.6	mg/l	0.20	2
	06/24/03 18:00	203130	(ML/S4500P-E)	Orthophosphate-P	0.020	mg/l	0.010	1
	07/01/03 18:35	203447	(S4500PE/E365.1)	Total phosphorus-P	0.06	mg/l	0.020	1
	07/02/03 22:13	203483	(ML/EPA 351.2)	Kjeldahl Nitrogen	0.22	mg/l	0.20	1
	06/23/03 16:07		(ML/SM9221B)	Total Coliform Bacteria	2400	MPNM	2.0	1
	06/24/03 09:30	202568	(ML/EPA 180.1)	Turbidity	0.85	NTU	0.050	1
SITE 4 HAINES CANYON CREEK 2 (2306230090) Sampled on 06/23/03 10:15								
	06/23/03 16:14		(ML/SM9221C)	Fecal Coliform Bacteria	13	MPNM	2.0	1
	06/24/03 00:00	202522	(ML/EPA 350.1)	Ammonia Nitrogen	ND	mg/l	0.050	1
	06/23/03 16:03	202504	(ML/EPA 300.0)	Nitrite, Nitrogen by IC	ND	mg/l	0.20	2
	06/23/03 16:03	202506	(ML/EPA 300.0)	Nitrate as Nitrogen by IC	4.5	mg/l	0.20	2
	06/24/03 18:00	203130	(ML/S4500P-E)	Orthophosphate-P	0.021	mg/l	0.010	1
	07/01/03 18:35	203447	(S4500PE/E365.1)	Total phosphorus-P	0.05	mg/l	0.020	1
	07/02/03 22:13	203483	(ML/EPA 351.2)	Kjeldahl Nitrogen	0.28	mg/l	0.20	1
	06/23/03 16:14		(ML/SM9221B)	Total Coliform Bacteria	11000	MPNM	2.0	1
	06/24/03 09:30	202568	(ML/EPA 180.1)	Turbidity	1.0	NTU	0.050	1

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Laboratory
QC Summary
#111065

Applied Research Dept, MWH (Darren Giles)

QC Ref #202504 - Nitrite, Nitrogen by IC **Analysis Date: 06/23/2003**

2306230085	SITE 1 INFLOW TO TJ POND 1
2306230086	SITE 1 INFLOW TO TJ POND 2
2306230087	SITE 2 OUTFLOW FROM TJ POND 1
2306230088	SITE 2 OUTFLOW FROM TJ POND 2
2306230089	SITE 4 HAINES CANYON CREEK 1
2306230090	SITE 4 HAINES CANYON CREEK 2

QC Ref #202506 - Nitrate as Nitrogen by IC **Analysis Date: 06/23/2003**

2306230085	SITE 1 INFLOW TO TJ POND 1
2306230086	SITE 1 INFLOW TO TJ POND 2
2306230087	SITE 2 OUTFLOW FROM TJ POND 1
2306230088	SITE 2 OUTFLOW FROM TJ POND 2
2306230089	SITE 4 HAINES CANYON CREEK 1
2306230090	SITE 4 HAINES CANYON CREEK 2

QC Ref #202522 - Ammonia Nitrogen **Analysis Date: 06/24/2003**

2306230085	SITE 1 INFLOW TO TJ POND 1
2306230086	SITE 1 INFLOW TO TJ POND 2
2306230087	SITE 2 OUTFLOW FROM TJ POND 1
2306230088	SITE 2 OUTFLOW FROM TJ POND 2
2306230089	SITE 4 HAINES CANYON CREEK 1
2306230090	SITE 4 HAINES CANYON CREEK 2

QC Ref #202568 - Turbidity **Analysis Date: 06/24/2003**

2306230085	SITE 1 INFLOW TO TJ POND 1
2306230086	SITE 1 INFLOW TO TJ POND 2
2306230087	SITE 2 OUTFLOW FROM TJ POND 1
2306230088	SITE 2 OUTFLOW FROM TJ POND 2
2306230089	SITE 4 HAINES CANYON CREEK 1
2306230090	SITE 4 HAINES CANYON CREEK 2

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

QC Ref #203130 - Orthophosphate-P **Analysis Date: 06/24/2003**

2306230085	SITE 1 INFLOW TO TJ POND 1
2306230086	SITE 1 INFLOW TO TJ POND 2
2306230087	SITE 2 OUTFLOW FROM TJ POND 1
2306230088	SITE 2 OUTFLOW FROM TJ POND 2
2306230089	SITE 4 HAINES CANYON CREEK 1
2306230090	SITE 4 HAINES CANYON CREEK 2

QC Ref #203447 - Total phosphorus-P **Analysis Date: 07/01/2003**

2306230085	SITE 1 INFLOW TO TJ POND 1
2306230086	SITE 1 INFLOW TO TJ POND 2
2306230087	SITE 2 OUTFLOW FROM TJ POND 1
2306230088	SITE 2 OUTFLOW FROM TJ POND 2
2306230089	SITE 4 HAINES CANYON CREEK 1
2306230090	SITE 4 HAINES CANYON CREEK 2

QC Ref #203483 - Kjeldahl Nitrogen **Analysis Date: 07/02/2003**

2306230085	SITE 1 INFLOW TO TJ POND 1
2306230086	SITE 1 INFLOW TO TJ POND 2
2306230087	SITE 2 OUTFLOW FROM TJ POND 1
2306230088	SITE 2 OUTFLOW FROM TJ POND 2
2306230089	SITE 4 HAINES CANYON CREEK 1
2306230090	SITE 4 HAINES CANYON CREEK 2

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Laboratory
QC Report
#111065

Applied Research Dept, MWH (Darren Giles)

QC Ref #202504 Nitrite, Nitrogen by IC

QC	Analyte	Spiked	Recovered	Units	Yield (%)	Limits (%)	RPD (%)
LCS1	Nitrite, Nitrogen by IC	1.0	0.97	MGL	97.0	(90-110)	
LCS2	Nitrite, Nitrogen by IC	1.0	0.962	MGL	96.2	(90-110)	0.83
MBLK	Nitrite, Nitrogen by IC	ND	<0.10	MGL			
MS	Nitrite, Nitrogen by IC	1.0	1.07	MGL	107.0	(80-120)	
MSD	Nitrite, Nitrogen by IC	1.0	1.07	MGL	107.0	(80-120)	0.00

QC Ref #202506 Nitrate as Nitrogen by IC

QC	Analyte	Spiked	Recovered	Units	Yield (%)	Limits (%)	RPD (%)
LCS1	Nitrate as Nitrogen by IC	2.5	2.51	MGL	100.4	(90-110)	
LCS2	Nitrate as Nitrogen by IC	2.5	2.51	MGL	100.4	(90-110)	0.00
MBLK	Nitrate as Nitrogen by IC	ND	<0.10	MGL			
MS	Nitrate as Nitrogen by IC	2.5	2.51	MGL	100.4	(80-120)	
MSD	Nitrate as Nitrogen by IC	2.5	2.5	MGL	100.0	(80-120)	0.40

QC Ref #202522 Ammonia Nitrogen

QC	Analyte	Spiked	Recovered	Units	Yield (%)	Limits (%)	RPD (%)
MS	Spiked sample	Lab # 23	06200107	MGL		(0-0)	
LCS1	Ammonia Nitrogen	1.00	1.02	MGL	102.0	(90-110)	
LCS2	Ammonia Nitrogen	1.00	1.04	MGL	104.0	(90-110)	1.9
MBLK	Ammonia Nitrogen	ND	<0.05	MGL			
MS	Ammonia Nitrogen	1.00	0.962	MGL	96.2	(90-110)	
MSD	Ammonia Nitrogen	1.00	0.972	MGL	97.2	(90-110)	1.0

Spikes which exceed Limits and Method Blanks with positive results are highlighted by Underlining. Criteria for MS and DUP are advisory only, batch control is based on LCS. Criteria for duplicates are advisory only, unless otherwise specified in the method.

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

QC Ref #202568 Turbidity

QC	Analyte	Spiked	Recovered	Units	Yield (%)	Limits (%)	RPD (%)
DUP	Turbidity	0.75	0.75	NTU		(0-20)	0.0

QC Ref #203130 Orthophosphate-P

QC	Analyte	Spiked	Recovered	Units	Yield (%)	Limits (%)	RPD (%)
MS	Spiked sample	Lab # 23	06230089	MGL		(0-0)	
LCS1	Orthophosphate-P	0.5	0.518	MGL	103.6	(90-110)	
LCS2	Orthophosphate-P	0.5	0.523	MGL	104.6	(90-110)	0.96
MBLK	Orthophosphate-P	ND	<0.01	MGL			
MS	Orthophosphate-P	0.5	0.527	MGL	105.4	(80-120)	
MSD	Orthophosphate-P	0.5	0.529	MGL	105.8	(80-120)	0.38

QC Ref #203447 Total phosphorus-P

QC	Analyte	Spiked	Recovered	Units	Yield (%)	Limits (%)	RPD (%)
MS	Spiked sample	Lab # 23	06230016	MGL		(0-0)	
LCS1	Total phosphorus-P	0.4	0.430	MGL	107.5	(90-110)	
LCS2	Total phosphorus-P	0.4	0.430	MGL	107.5	(90-110)	0.00
MBLK	Total phosphorus-P	ND	<0.01	MGL			
MS	Total phosphorus-P	0.4	0.430	MGL	107.5	(90-110)	
MSD	Total phosphorus-P	0.4	0.420	MGL	105.0	(90-110)	2.4
RPD_LCS	Total phosphorus-P	107.500	107.500	MGL	0.0	(0-10)	
RPD_MS	Total phosphorus-P	107.500	105.000	MGL	2.4	(0-10)	

Spikes which exceed Limits and Method Blanks with positive results are highlighted by Underlining. Criteria for MS and DUP are advisory only, batch control is based on LCS. Criteria for duplicates are advisory only, unless otherwise specified in the method.

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

QC Ref #203483 Kjeldahl Nitrogen

QC	Analyte	Spiked	Recovered	Units	Yield (%)	Limits (%)	RPD (%)
MS	Spiked sample	Lab # 23	06250105	MGL		(0-0)	
LCS1	Kjeldahl Nitrogen	4	4.10	MGL	102.5	(90-110)	
LCS2	Kjeldahl Nitrogen	4	4.10	MGL	102.5	(90-110)	0.00
MBLK	Kjeldahl Nitrogen	ND	<0.20	MGL			
MS	Kjeldahl Nitrogen	4	4.26	MGL	106.5	(90-110)	
MSD	Kjeldahl Nitrogen	4	4.27	MGL	106.7	(90-110)	0.23
RPD_LCS	Kjeldahl Nitrogen	102.500	102.500	MGL	0.0	(0-20)	
RPD_MS	Kjeldahl Nitrogen	106.500	106.750	MGL	0.2	(0-10)	

Spikes which exceed Limits and Method Blanks with positive results are highlighted by Underlining.
Criteria for MS and DUP are advisory only, batch control is based on LCS. Criteria for duplicates are advisory only, unless otherwise specified in the method.

MONTGOMERY WATSON LABORATORIES — CHAIN OF CUSTODY RECORD

555 E. Walnut St., Pasadena, CA 91101
(626) 568-6400 (800) 566-5227

MWLABS USE ONLY: 111065

LOGIN COMMENTS: _____

SAMPLES CHECKED/LOGGED IN BY: MD

SAMPLE TEMP, RECEIPT AT LAB 18°C (Compliance: 4 +/- 2*C)

SAMPLES RECEIVED DAY OF COLLECTION? ☑ (check for yes)

BLUE ICE: FROZEN ☑ PARTIALLY FROZEN ☐ THAWED ☐

TO BE COMPLETED BY SAMPLER:

TAT requested: STD __XXX__ 1 week _____ 3 day _____ 1 day _____

COMPLIANCE SAMPLES ☐ (check for yes)
- Requires state forms ☐
NON-COMPLIANCE SAMPLES ☐

REGULATION: _____ (SDWA, Phase V, NPDES, FDA, ...)

PROJECT CODE	PROJECT JOB # / P.O.#	CLIENT CODE
Big TJ Sampling	1341767.5620.031801	ARD-DG/JF

REFER TO ATTACHED BOTTLE ORDER FOR ANALYSES ☐ (check for yes)

SAMPLER(S): PRINTED NAME AND SIGNATURE
Darren Giles

ANALYSES REQUIRED (mark an 'X' in all tests required for each sample line)

TIME	DATE	SITE NAME or LOCATION	IDENTIFIER, STATE ID #	MATRIX *	GRAB	COMP	TKN, T-P, NH3-N	NO2,NO3,O-PO4, Turbidity	T & F Coliforms	SAMPLER COMMENTS
11:20	23-Jun	SITE 1	Inflow to TJ Pond #1		X		X	X	X	
11:35	23-Jun	SITE 1	Inflow to TJ Pond #2		X		X	X	X	
11:48	23-Jun	SITE 2	Outflow from TJ Pond #1		X		X	X	X	
12:08	23-Jun	SITE 2	Outflow from TJ Pond #2		X		X	X	X	
	~~23-Jun~~	~~SITE 3~~	~~Big TJ Wash #1~~		~~X~~		~~X~~	~~X~~	~~X~~	
	~~23-Jun~~	~~SITE 3~~	~~Big TJ Wash #2~~		~~X~~		~~X~~	~~X~~	~~X~~	
10:00	23-Jun	SITE 4	Haines Canyon Creek #1		X		X	X	X	
10:15	23-Jun	SITE 4	Haines Canyon Creek #2		X		X	X	X	

* MATRIX TYPES:

Reported by Volume:
- **RSW** = Raw Surface Water
- **RGW** = Raw Ground Water
- **FW** = Other Finished Water
- **CFW** = Chlor(am)inated Finished Water
- **SW** = Storm Water
- **WW** = Other Waste Water
- **CWW** = Chlorinated Waste Water

Reported by Weight:
- **SO** = Soil
- **SL** = Sludge

	SIGNATURE	PRINT NAME	COMPANY/TITLE	DATE	TIME
RELINQUISHED BY:	DARREN GILES	JRA	MWH ARD	6/23/03	1405
RECEIVED BY:		M. DE MESA	M.W.H	6-23-3	1405

SPECIAL INSTRUCTIONS

BIG TUJUNGA WASH WATER QUALITY MONITORING PROGRAM
SEPTEMBER 2003 LABORATORY RESULTS

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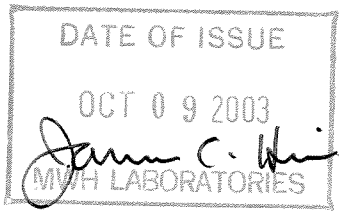
Laboratory Report

for

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

Monrovia , CA 91016

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



JCH Jim Hein
Project Manager

Report#: 115916
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
750 Royal Oaks Drive, Monrovia, CA 91016
PHONE: 626-386-1100/FAX: 626-386-1101

ACKNOWLEDGMENT OF SAMPLES RECEIVED

Applied Research Dept, MWH (Darren Giles)
327 West Maple Avenue
Monrovia, CA 91016
Attn: Darren Giles
Phone: (626) 303-5945

Customer Code: ARD-DG
PO#: 1341767.5620.031801
Group#: 115916
Project#: BIG-TJ
Proj Mgr: James Hein
Phone: (626) 386-1189

The following samples were received from you on **09/30/03**. 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 Date
	Tests Scheduled		
2309300156	SITE 1 INFLOW TO TJ POND 1	Water	30-sep-2003 11:20:00
	FECCOL NH3 NO2-N NO3 OPO4 T-P		
	TKN TOTCOL TURB		
2309300157	SITE 1 INFLOW TO TJ POND 2	Water	30-sep-2003 11:30:00
	FECCOL NH3 NO2-N NO3 OPO4 T-P		
	TKN TOTCOL TURB		
2309300158	SITE 2 OUTFLOW FROM TJ POND 1	Water	30-sep-2003 12:15:00
	FECCOL NH3 NO2-N NO3 OPO4 T-P		
	TKN TOTCOL TURB		
2309300159	SITE 2 OUTFLOW FROM TJ POND 2	Water	30-sep-2003 12:25:00
	FECCOL NH3 NO2-N NO3 OPO4 T-P		
	TKN TOTCOL TURB		
2309300160	SITE 4 HAINES CANYON CREEK 1	Water	30-sep-2003 10:00:00
	FECCOL NH3 NO2-N NO3 OPO4 T-P		
	TKN TOTCOL TURB		
2309300161	SITE 4 HAINES CANYON CREEK 2	Water	30-sep-2003 10:15:00
	FECCOL NH3 NO2-N NO3 OPO4 T-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

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Laboratory
Hits Report
#115916

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

Samples Received
30-sep-2003 13:45:00

Analyzed	Sample#	Sample ID	Result	UNITS	MRL
	2309300156	**SITE 1 INFLOW TO TJ POND 1**			
09/30/03		Fecal Coliform Bacteria	11	MPN/100 mL	2.000
10/04/03		Kjeldahl Nitrogen	0.44	mg/l	.200
10/01/03		Nitrate as Nitrogen by IC	8.1	mg/l	.200
09/30/03		Orthophosphate-P	0.017	mg/l	.010
09/30/03		Total Coliform Bacteria	3500	MPN/100 mL	2.000
10/03/03		Total phosphorus-P	0.04	mg/l	.010
10/01/03		Turbidity	0.50	NTU	.050
	2309300157	**SITE 1 INFLOW TO TJ POND 2**			
09/30/03		Fecal Coliform Bacteria	14	MPN/100 mL	2.000
10/04/03		Kjeldahl Nitrogen	0.41	mg/l	.200
10/01/03		Nitrate as Nitrogen by IC	8.2	mg/l	.200
09/30/03		Orthophosphate-P	0.017	mg/l	.010
09/30/03		Total Coliform Bacteria	11000	MPN/100 mL	2.000
10/03/03		Total phosphorus-P	0.03	mg/l	.010
10/01/03		Turbidity	0.30	NTU	.050
	2309300158	**SITE 2 OUTFLOW FROM TJ POND 1**			
09/30/03		Fecal Coliform Bacteria	2	MPN/100 mL	2.000
10/04/03		Kjeldahl Nitrogen	0.37	mg/l	.200
10/01/03		Nitrate as Nitrogen by IC	6.9	mg/l	.200
09/30/03		Total Coliform Bacteria	36000	MPN/100 mL	2.000
10/03/03		Total phosphorus-P	0.01	mg/l	.010
10/01/03		Turbidity	0.25	NTU	.050
	2309300159	**SITE 2 OUTFLOW FROM TJ POND 2**			
09/30/03		Fecal Coliform Bacteria	2	MPN/100 mL	2.000

SUMMARY OF POSITIVE DATA ONLY.

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Laboratory
Hits Report
#115916

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

Samples Received
30-sep-2003 13:45:00

Analyzed	Sample#	Sample ID	Result	UNITS	MRL
	2309300159	**SITE 2 OUTFLOW FROM TJ POND 2**			
10/04/03		Kjeldahl Nitrogen	0.28	mg/l	.200
10/01/03		Nitrate as Nitrogen by IC	6.9	mg/l	.200
09/30/03		Total Coliform Bacteria	11000	MPN/100 mL	2.000
10/01/03		Turbidity	0.20	NTU	.050
	2309300160	**SITE 4 HAINES CANYON CREEK 1**			
09/30/03		Fecal Coliform Bacteria	170	MPN/100 mL	2.000
10/04/03		Kjeldahl Nitrogen	0.43	mg/l	.200
10/01/03		Nitrate as Nitrogen by IC	5.9	mg/l	.200
09/30/03		Total Coliform Bacteria	11000	MPN/100 mL	2.000
10/03/03		Total phosphorus-P	0.02	mg/l	.010
10/01/03		Turbidity	0.25	NTU	.050
	2309300161	**SITE 4 HAINES CANYON CREEK 2**			
09/30/03		Fecal Coliform Bacteria	50	MPN/100 mL	2.000
10/04/03		Kjeldahl Nitrogen	0.50	mg/l	.200
10/01/03		Nitrate as Nitrogen by IC	5.9	mg/l	.200
09/30/03		Total Coliform Bacteria	2200	MPN/100 mL	2.000
10/03/03		Total phosphorus-P	0.02	mg/l	.010
10/01/03		Turbidity	0.35	NTU	.050

SUMMARY OF POSITIVE DATA ONLY.

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Laboratory
Data Report
#115916

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

Samples Received
09/30/03

Prepared	Analyzed	QC Ref#	Method	Analyte	Result	Units	MRL	Dilution
SITE 1 INFLOW TO TJ POND 1 (2309300156) Sampled on 09/30/03 11:20								
	09/30/03 14:08		(ML/SM9221C)	Fecal Coliform Bacteria	11	MPNM	2.0	1
	10/07/03 00:00	211980	(ML/EPA 350.1)	Ammonia Nitrogen	ND	mg/l	0.050	1
	10/01/03 01:36	211489	(ML/EPA 300.0)	Nitrite, Nitrogen by IC	ND	mg/l	0.20	2
	10/01/03 01:36	211492	(ML/EPA 300.0)	Nitrate as Nitrogen by IC	8.1	mg/l	0.20	2
	09/30/03 14:50	211383	(ML/S4500P-E)	Orthophosphate-P	0.017	mg/l	0.010	1
	10/03/03 19:07	211746	(S4500PE/E365.1)	Total phosphorus-P	0.04	mg/l	0.010	1
	10/04/03 22:44	211750	(ML/EPA 351.2)	Kjeldahl Nitrogen	0.44	mg/l	0.20	1
	09/30/03 14:08		(ML/SM9221B)	Total Coliform Bacteria	3500	MPNM	2.0	1
	10/01/03 21:00	211560	(ML/EPA 180.1)	Turbidity	0.50	NTU	0.050	1
SITE 1 INFLOW TO TJ POND 2 (2309300157) Sampled on 09/30/03 11:30								
	09/30/03 14:15		(ML/SM9221C)	Fecal Coliform Bacteria	14	MPNM	2.0	1
	10/07/03 00:00	211980	(ML/EPA 350.1)	Ammonia Nitrogen	ND	mg/l	0.050	1
	10/01/03 01:48	211489	(ML/EPA 300.0)	Nitrite, Nitrogen by IC	ND	mg/l	0.20	2
	10/01/03 01:48	211492	(ML/EPA 300.0)	Nitrate as Nitrogen by IC	8.2	mg/l	0.20	2
	09/30/03 14:50	211383	(ML/S4500P-E)	Orthophosphate-P	0.017	mg/l	0.010	1
	10/03/03 19:07	211746	(S4500PE/E365.1)	Total phosphorus-P	0.03	mg/l	0.010	1
	10/04/03 22:44	211750	(ML/EPA 351.2)	Kjeldahl Nitrogen	0.41	mg/l	0.20	1
	09/30/03 14:15		(ML/SM9221B)	Total Coliform Bacteria	11000	MPNM	2.0	1
	10/01/03 21:00	211560	(ML/EPA 180.1)	Turbidity	0.30	NTU	0.050	1
SITE 2 OUTFLOW FROM TJ POND 1 (2309300158) Sampled on 09/30/03 12:15								
	09/30/03 14:22		(ML/SM9221C)	Fecal Coliform Bacteria	2	MPNM	2.0	1
	10/07/03 00:00	211980	(ML/EPA 350.1)	Ammonia Nitrogen	ND	mg/l	0.050	1
	10/01/03 01:59	211489	(ML/EPA 300.0)	Nitrite, Nitrogen by IC	ND	mg/l	0.20	2
	10/01/03 01:59	211492	(ML/EPA 300.0)	Nitrate as Nitrogen by IC	6.9	mg/l	0.20	2
	09/30/03 14:50	211383	(ML/S4500P-E)	Orthophosphate-P	ND	mg/l	0.010	1
	10/03/03 19:07	211746	(S4500PE/E365.1)	Total phosphorus-P	0.01	mg/l	0.010	1
	10/04/03 22:44	211750	(ML/EPA 351.2)	Kjeldahl Nitrogen	0.37	mg/l	0.20	1
	09/30/03 14:22		(ML/SM9221B)	Total Coliform Bacteria	36000	MPNM	2.0	1
	10/01/03 21:00	211560	(ML/EPA 180.1)	Turbidity	0.25	NTU	0.050	1

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Laboratory
Data Report
#115916

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

Prepared	Analyzed	QC Ref#	Method	Analyte	Result	Units	MRL	Dilution
SITE 2 OUTFLOW FROM TJ POND 2 (2309300159) Sampled on 09/30/03 12:25								
	09/30/03 14:28		(ML/SM9221C)	Fecal Coliform Bacteria	2	MPNM	2.0	1
	10/07/03 00:00	211980	(ML/EPA 350.1)	Ammonia Nitrogen	ND	mg/l	0.050	1
	10/01/03 02:11	211489	(ML/EPA 300.0)	Nitrite, Nitrogen by IC	ND	mg/l	0.20	2
	10/01/03 02:11	211492	(ML/EPA 300.0)	Nitrate as Nitrogen by IC	6.9	mg/l	0.20	2
	09/30/03 14:50	211383	(ML/S4500P-E)	Orthophosphate-P	ND	mg/l	0.010	1
	10/03/03 19:07	211746	(S4500PE/E365.1)	Total phosphorus-P	ND	mg/l	0.010	1
	10/04/03 22:44	211750	(ML/EPA 351.2)	Kjeldahl Nitrogen	0.28	mg/l	0.20	1
	09/30/03 14:28		(ML/SM9221B)	Total Coliform Bacteria	11000	MPNM	2.0	1
	10/01/03 21:00	211560	(ML/EPA 180.1)	Turbidity	0.20	NTU	0.050	1
SITE 4 HAINES CANYON CREEK 1 (2309300160) Sampled on 09/30/03 10:00								
	09/30/03 14:32		(ML/SM9221C)	Fecal Coliform Bacteria	170	MPNM	2.0	1
	10/07/03 00:00	211980	(ML/EPA 350.1)	Ammonia Nitrogen	ND	mg/l	0.050	1
	10/01/03 01:13	211489	(ML/EPA 300.0)	Nitrite, Nitrogen by IC	ND	mg/l	0.20	2
	10/01/03 01:13	211492	(ML/EPA 300.0)	Nitrate as Nitrogen by IC	5.9	mg/l	0.20	2
	09/30/03 14:50	211383	(ML/S4500P-E)	Orthophosphate-P	ND	mg/l	0.010	1
	10/03/03 19:07	211746	(S4500PE/E365.1)	Total phosphorus-P	0.02	mg/l	0.010	1
	10/04/03 22:44	211750	(ML/EPA 351.2)	Kjeldahl Nitrogen	0.43	mg/l	0.20	1
	09/30/03 14:32		(ML/SM9221B)	Total Coliform Bacteria	11000	MPNM	2.0	1
	10/01/03 21:00	211560	(ML/EPA 180.1)	Turbidity	0.25	NTU	0.050	1
SITE 4 HAINES CANYON CREEK 2 (2309300161) Sampled on 09/30/03 10:15								
	09/30/03 14:39		(ML/SM9221C)	Fecal Coliform Bacteria	50	MPNM	2.0	1
	10/07/03 00:00	211980	(ML/EPA 350.1)	Ammonia Nitrogen	ND	mg/l	0.050	1
	10/01/03 01:24	211489	(ML/EPA 300.0)	Nitrite, Nitrogen by IC	ND	mg/l	0.20	2
	10/01/03 01:24	211492	(ML/EPA 300.0)	Nitrate as Nitrogen by IC	5.9	mg/l	0.20	2
	09/30/03 14:50	211383	(ML/S4500P-E)	Orthophosphate-P	ND	mg/l	0.010	1
	10/03/03 19:07	211746	(S4500PE/E365.1)	Total phosphorus-P	0.02	mg/l	0.010	1
	10/04/03 22:44	211750	(ML/EPA 351.2)	Kjeldahl Nitrogen	0.50	mg/l	0.20	1
	09/30/03 14:39		(ML/SM9221B)	Total Coliform Bacteria	2200	MPNM	2.0	1
	10/01/03 21:00	211560	(ML/EPA 180.1)	Turbidity	0.35	NTU	0.050	1

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Laboratory
QC Summary
#115916

Applied Research Dept, MWH (Darren Giles)

QC Ref #211383 - Orthophosphate-P **Analysis Date: 09/30/2003**

2309300156	SITE 1 INFLOW TO TJ POND 1
2309300157	SITE 1 INFLOW TO TJ POND 2
2309300158	SITE 2 OUTFLOW FROM TJ POND 1
2309300159	SITE 2 OUTFLOW FROM TJ POND 2
2309300160	SITE 4 HAINES CANYON CREEK 1
2309300161	SITE 4 HAINES CANYON CREEK 2

QC Ref #211489 - Nitrite, Nitrogen by IC **Analysis Date: 10/01/2003**

2309300156	SITE 1 INFLOW TO TJ POND 1
2309300157	SITE 1 INFLOW TO TJ POND 2
2309300158	SITE 2 OUTFLOW FROM TJ POND 1
2309300159	SITE 2 OUTFLOW FROM TJ POND 2
2309300160	SITE 4 HAINES CANYON CREEK 1
2309300161	SITE 4 HAINES CANYON CREEK 2

QC Ref #211492 - Nitrate as Nitrogen by IC **Analysis Date: 10/01/2003**

2309300156	SITE 1 INFLOW TO TJ POND 1
2309300157	SITE 1 INFLOW TO TJ POND 2
2309300158	SITE 2 OUTFLOW FROM TJ POND 1
2309300159	SITE 2 OUTFLOW FROM TJ POND 2
2309300160	SITE 4 HAINES CANYON CREEK 1
2309300161	SITE 4 HAINES CANYON CREEK 2

QC Ref #211560 - Turbidity **Analysis Date: 10/01/2003**

2309300156	SITE 1 INFLOW TO TJ POND 1
2309300157	SITE 1 INFLOW TO TJ POND 2
2309300158	SITE 2 OUTFLOW FROM TJ POND 1
2309300159	SITE 2 OUTFLOW FROM TJ POND 2
2309300160	SITE 4 HAINES CANYON CREEK 1
2309300161	SITE 4 HAINES CANYON CREEK 2

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Laboratory
QC Summary
#115916

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

QC Ref #211746 - Total phosphorus-P **Analysis Date: 10/03/2003**

2309300156	SITE 1 INFLOW TO TJ POND 1
2309300157	SITE 1 INFLOW TO TJ POND 2
2309300158	SITE 2 OUTFLOW FROM TJ POND 1
2309300159	SITE 2 OUTFLOW FROM TJ POND 2
2309300160	SITE 4 HAINES CANYON CREEK 1
2309300161	SITE 4 HAINES CANYON CREEK 2

QC Ref #211750 - Kjeldahl Nitrogen **Analysis Date: 10/04/2003**

2309300156	SITE 1 INFLOW TO TJ POND 1
2309300157	SITE 1 INFLOW TO TJ POND 2
2309300158	SITE 2 OUTFLOW FROM TJ POND 1
2309300159	SITE 2 OUTFLOW FROM TJ POND 2
2309300160	SITE 4 HAINES CANYON CREEK 1
2309300161	SITE 4 HAINES CANYON CREEK 2

QC Ref #211980 - Ammonia Nitrogen **Analysis Date: 10/07/2003**

2309300156	SITE 1 INFLOW TO TJ POND 1
2309300157	SITE 1 INFLOW TO TJ POND 2
2309300158	SITE 2 OUTFLOW FROM TJ POND 1
2309300159	SITE 2 OUTFLOW FROM TJ POND 2
2309300160	SITE 4 HAINES CANYON CREEK 1
2309300161	SITE 4 HAINES CANYON CREEK 2

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Laboratory
QC Report
#115916

Applied Research Dept, MWH (Darren Giles)

QC Ref #211383 Orthophosphate-P

QC	Analyte	Spiked	Recovered	Units	Yield (%)	Limits (%)	RPD (%)
MS	Spiked sample	Lab # 23	09290090	MGL		(0-0)	
LCS1	Orthophosphate-P	0.5	0.512	MGL	102.4	(90-110)	
LCS2	Orthophosphate-P	0.5	0.506	MGL	101.2	(90-110)	1.2
MBLK	Orthophosphate-P	ND	<0.010	MGL			
MS	Orthophosphate-P	0.5	0.513	MGL	102.6	(80-120)	
MSD	Orthophosphate-P	0.5	0.505	MGL	101.0	(80-120)	1.6

QC Ref #211489 Nitrite, Nitrogen by IC

QC	Analyte	Spiked	Recovered	Units	Yield (%)	Limits (%)	RPD (%)
LCS1	Nitrite, Nitrogen by IC	1.0	1.05	MGL	105.0	(90-110)	
LCS2	Nitrite, Nitrogen by IC	1.0	1.06	MGL	106.0	(90-110)	0.95
MBLK	Nitrite, Nitrogen by IC	ND	<0.10	MGL			
MS	Nitrite, Nitrogen by IC	1.0	1.04	MGL	104.0	(80-120)	
MSD	Nitrite, Nitrogen by IC	1.0	1.06	MGL	106.0	(80-120)	1.9

QC Ref #211492 Nitrate as Nitrogen by IC

QC	Analyte	Spiked	Recovered	Units	Yield (%)	Limits (%)	RPD (%)
LCS1	Nitrate as Nitrogen by IC	2.5	2.6	MGL	104.0	(90-110)	
LCS2	Nitrate as Nitrogen by IC	2.5	2.61	MGL	104.4	(90-110)	0.38
MBLK	Nitrate as Nitrogen by IC	ND	<0.10	MGL			
MS	Nitrate as Nitrogen by IC	2.5	2.44	MGL	97.6	(80-120)	
MSD	Nitrate as Nitrogen by IC	2.5	2.32	MGL	92.8	(80-120)	5.0

Spikes which exceed Limits and Method Blanks with positive results are highlighted by Underlining. Criteria for MS and DUP are advisory only, batch control is based on LCS. Criteria for duplicates are advisory only, unless otherwise specified in the method.

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

QC Ref #211560 Turbidity

QC	Analyte	Spiked	Recovered	Units	Yield (%)	Limits (%)	RPD (%)
DUP	Turbidity	14	14	NTU		(0-20)	0.0

QC Ref #211746 Total phosphorus-P

QC	Analyte	Spiked	Recovered	Units	Yield (%)	Limits (%)	RPD (%)
MS	Spiked sample	Lab # 23	10010224	MGL		(0-0)	
LCS1	Total phosphorus-P	0.4	0.420	MGL	105.0	(90-110)	
LCS2	Total phosphorus-P	0.4	0.400	MGL	100.0	(90-110)	4.9
MBLK	Total phosphorus-P	ND	<0.010	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)	0.00
RPD_LCS	Total phosphorus-P	105.000	100.000	MGL	4.9	(0-10)	
RPD_MS	Total phosphorus-P	105.000	105.000	MGL	0.0	(0-10)	

QC Ref #211750 Kjeldahl Nitrogen

QC	Analyte	Spiked	Recovered	Units	Yield (%)	Limits (%)	RPD (%)
MS	Spiked sample	Lab # 23	09260106	MGL		(0-0)	
LCS1	Kjeldahl Nitrogen	4	4.06	MGL	101.5	(90-110)	
LCS2	Kjeldahl Nitrogen	4	4.39	MGL	109.7	(90-110)	7.8
MBLK	Kjeldahl Nitrogen	ND	<0.20	MGL			
MS	Kjeldahl Nitrogen	4	3.89	MGL	97.2	(90-110)	
MSD	Kjeldahl Nitrogen	4	3.98	MGL	99.5	(90-110)	2.3
RPD_LCS	Kjeldahl Nitrogen	101.500	109.750	MGL	7.8	(0-20)	
RPD_MS	Kjeldahl Nitrogen	97.250	99.500	MGL	2.3	(0-10)	

Spikes which exceed Limits and Method Blanks with positive results are highlighted by Underlining. Criteria for MS and DUP are advisory only, batch control is based on LCS. Criteria for duplicates are advisory only, unless otherwise specified in the method.

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Laboratory
QC Report
#115916

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

QC Ref #211980 Ammonia Nitrogen

QC	Analyte	Spiked	Recovered	Units	Yield (%)	Limits (%)	RPD (%)
MS	Spiked sample	Lab # 23	09300101	MGL		(0-0)	
LCS1	Ammonia Nitrogen	1.00	1.01	MGL	101.0	(90-110)	
LCS2	Ammonia Nitrogen	1.00	1.01	MGL	101.0	(90-110)	0.00
MBLK	Ammonia Nitrogen	ND	<0.050	MGL			
MS	Ammonia Nitrogen	1.00	0.975	MGL	97.5	(90-110)	
MSD	Ammonia Nitrogen	1.00	0.985	MGL	98.5	(90-110)	1.0

Spikes which exceed Limits and Method Blanks with positive results are highlighted by Underlining. Criteria for MS and DUP are advisory only, batch control is based on LCS. Criteria for duplicates are advisory only, unless otherwise specified in the method.

MONTGOMERY WATSON LABORATORIES — CHAIN OF CUSTODY RECORD

555 E. Walnut St., Pasadena, CA 91101
(626) 568-6400 (800) 566-5227

MWLABS USE ONLY: 115916

LOGIN COMMENTS: _____

SAMPLES CHECKED/LOGGED IN BY: MJD

SAMPLE TEMP, RECEIPT AT LAB 19°C (Compliance: 4 +/- 2*C)

SAMPLES RECEIVED DAY OF COLLECTION? [X] (check for yes)

BLUE ICE: FROZEN ✓ PARTIALLY FROZEN ___ THAWED ___

TO BE COMPLETED BY SAMPLER:

TAT requested: STD __XXX__ 1 week _____ 3 day _____ 1 day _____

COMPLIANCE SAMPLES [ ] (check for yes)
- Requires state forms [ ]
NON-COMPLIANCE SAMPLES [ ]

REGULATION: _____ (SDWA, Phase V, NPDES, FDA, ...)

PROJECT CODE	PROJECT JOB # / P.O.#	CLIENT CODE
Big TJ Sampling	1341767.5620.031801	ARD-DG/JF

REFER TO ATTACHED BOTTLE ORDER FOR ANALYSES [ ] (check for yes)

SAMPLER(S): PRINTED NAME AND SIGNATURE

Darren Giles

ANALYSES REQUIRED (mark an 'X' in all tests required for each sample line)

TIME	DATE	SITE NAME or LOCATION	IDENTIFIER, STATE ID #	MATRIX *	GRAB	COMP	TKN, T-P, NH3-N	NO2,NO3,O-PO4, Turbidity	T & F Coliforms											SAMPLER COMMENTS
1120	30-Sep	SITE 1	Inflow to TJ Pond #1		X		X	X	X											
1130	30-Sep	SITE 1	Inflow to TJ Pond #2		X		X	X	X											
1215	30-Sep	SITE 2	Outflow from TJ Pond #1		X		X	X	X											
1225	30-Sep	SITE 2	Outflow from TJ Pond #2		X		X	X	X											
~~—~~	~~30-Sep~~	~~SITE 3~~	~~Big TJ Wash #1~~		~~X~~		~~X~~	~~X~~	~~X~~											
~~—~~	~~30-Sep~~	~~SITE 3~~	~~Big TJ Wash #2~~		~~X~~		~~X~~	~~X~~	~~X~~											
1000	30-Sep	SITE 4	Haines Canyon Creek #1		X		X	X	X											
1015	30-Sep	SITE 4	Haines Canyon Creek #2		X		X	X	X											

* MATRIX TYPES:

Reported by Volume:

RSW = Raw Surface Water
RGW = Raw Ground Water
FW = Other Finished Water
CFW = Chlor(am)inated Finished Water
SW = Storm Water
WW = Other Waste Water
CWW = Chlorinated Waste Water

Reported by Weight:

SO = Soil
SL = Sludge

	SIGNATURE	PRINT NAME	COMPANY/TITLE	DATE	TIME
RELINQUISHED BY:		DARREN GILES	MWH ARD	9/30	1345
RECEIVED BY:		M. DEMESA	MWH	9-30-3	1345

SPECIAL INSTRUCTIONS

BIG TUJUNGA WASH WATER QUALITY MONITORING PROGRAM
DECEMBER 2003 LABORATORY RESULTS

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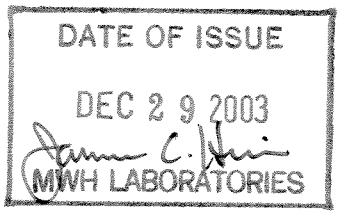
Laboratory Report

for

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

Monrovia , CA 91016

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



JCH Jim Hein
Project Manager

Report#: 119468
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 11 page[s].

MWH Laboratories
750 Royal Oaks Drive, Monrovia, CA 91016
PHONE: 626-386-1100/FAX: 626-386-1101

ACKNOWLEDGMENT OF SAMPLES RECEIVED

Applied Research Dept, MWH (Darren Giles)
327 West Maple Avenue
Monrovia, CA 91016
Attn: Darren Giles
Phone: (626) 303-5945

Customer Code: ARD-DG
PO#: 1341410.5620.011801
Group#: 119468
Project#: BIG-TJ
Proj Mgr: James Hein
Phone: (626) 386-1189

The following samples were received from you on **12/17/03**. 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 Date
	Tests Scheduled		
2312170285	SITE 1 INFLOW TO TJ POND 1	Water	17-dec-2003 11:40:00
	FECCOL NH3 NO2-N NO3 OPO4 T-P		
	TKN TOTCOL TURB		
2312170286	SITE 1 INFLOW TO TJ POND 2	Water	17-dec-2003 12:00:00
	FECCOL NH3 NO2-N NO3 OPO4 T-P		
	TKN TOTCOL TURB		
2312170287	SITE 2 OUTFLOW FROM TJ POND 1	Water	17-dec-2003 12:35:00
	FECCOL NH3 NO2-N NO3 OPO4 T-P		
	TKN TOTCOL TURB		
2312170288	SITE 2 OUTFLOW FROM TJ POND 2	Water	17-dec-2003 12:45:00
	FECCOL NH3 NO2-N NO3 OPO4 T-P		
	TKN TOTCOL TURB		
2312170289	SITE 4 HAINES CANYON CREEK 1	Water	17-dec-2003 10:15:00
	FECCOL NH3 NO2-N NO3 OPO4 T-P		
	TKN TOTCOL TURB		
2312170290	SITE 4 HAINES CANYON CREEK 2	Water	17-dec-2003 10:30:00
	FECCOL NH3 NO2-N NO3 OPO4 T-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

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Report
Comments
#119468

(QC Ref#: 217715)
Test: Kjeldahl Nitrogen (ML/EPA 351.2)
QC Type: MSD
The MSD recovery is within the method limit of 90-110%.

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Laboratory
Hits Report
#119468

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

Samples Received
17-dec-2003 17:30:01

Analyzed	Sample#	Sample ID	Result	UNITS	MRL
	2312170285	**SITE 1 INFLOW TO TJ POND 1**			
12/17/03		Fecal Coliform Bacteria	2.0	MPN/100 mL	2.000
12/17/03		Nitrate as Nitrogen by IC	9.1	mg/l	.200
12/17/03		Orthophosphate-P	0.045	mg/l	.010
12/17/03		Total Coliform Bacteria	700	MPN/100 mL	2.000
12/20/03		Total phosphorus-P	0.09	mg/l	.010
12/17/03		Turbidity	0.60	NTU	.050
	2312170286	**SITE 1 INFLOW TO TJ POND 2**			
12/17/03		Fecal Coliform Bacteria	8.0	MPN/100 mL	2.000
12/17/03		Nitrate as Nitrogen by IC	9.1	mg/l	.200
12/17/03		Orthophosphate-P	0.046	mg/l	.010
12/17/03		Total Coliform Bacteria	3000	MPN/100 mL	2.000
12/20/03		Total phosphorus-P	0.09	mg/l	.010
12/17/03		Turbidity	0.50	NTU	.050
	2312170287	**SITE 2 OUTFLOW FROM TJ POND 1**			
12/20/03		Kjeldahl Nitrogen	0.23	mg/l	.200
12/17/03		Nitrate as Nitrogen by IC	7.5	mg/l	.200
12/17/03		Orthophosphate-P	0.025	mg/l	.010
12/17/03		Total Coliform Bacteria	1100	MPN/100 mL	2.000
12/20/03		Total phosphorus-P	0.08	mg/l	.010
12/17/03		Turbidity	0.45	NTU	.050
	2312170288	**SITE 2 OUTFLOW FROM TJ POND 2**			
12/17/03		Fecal Coliform Bacteria	2.0	MPN/100 mL	2.000
12/17/03		Nitrate as Nitrogen by IC	7.5	mg/l	.200
12/17/03		Orthophosphate-P	0.023	mg/l	.010

SUMMARY OF POSITIVE DATA ONLY.

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Laboratory
Hits Report
#119468

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

Samples Received
17-dec-2003 17:30:01

Analyzed	Sample#	Sample ID	Result	UNITS	MRL
	2312170288	**SITE 2 OUTFLOW FROM TJ POND 2**			
12/17/03		Total Coliform Bacteria	14000	MPN/100 mL	2.000
12/20/03		Total phosphorus-P	0.07	mg/l	.010
12/17/03		Turbidity	0.45	NTU	.050
	2312170289	**SITE 4 HAINES CANYON CREEK 1**			
12/17/03		Fecal Coliform Bacteria	11	MPN/100 mL	2.000
12/20/03		Kjeldahl Nitrogen	0.26	mg/l	.200
12/17/03		Nitrate as Nitrogen by IC	6.8	mg/l	.200
12/17/03		Orthophosphate-P	0.023	mg/l	.010
12/17/03		Total Coliform Bacteria	17000	MPN/100 mL	2.000
12/20/03		Total phosphorus-P	0.07	mg/l	.010
12/17/03		Turbidity	0.30	NTU	.050
	2312170290	**SITE 4 HAINES CANYON CREEK 2**			
12/17/03		Fecal Coliform Bacteria	8.0	MPN/100 mL	2.000
12/17/03		Nitrate as Nitrogen by IC	6.8	mg/l	.200
12/17/03		Orthophosphate-P	0.026	mg/l	.010
12/17/03		Total Coliform Bacteria	9000	MPN/100 mL	2.000
12/20/03		Total phosphorus-P	0.08	mg/l	.010
12/17/03		Turbidity	0.25	NTU	.050

SUMMARY OF POSITIVE DATA ONLY.

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Laboratory
Data Report
#119468

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

Samples Received
12/17/03

Prepared	Analyzed	QC Ref#	Method	Analyte	Result	Units	MRL	Dilution
SITE 1 INFLOW TO TJ POND 1 (2312170285) Sampled on 12/17/03 11:40								
	12/17/03 14:18		(ML/SM9221C)	Fecal Coliform Bacteria	2.0	MPNM	2.0	1
	12/23/03 00:00	217964	(ML/EPA 350.1)	Ammonia Nitrogen	ND	mg/l	0.050	1
	12/17/03 22:29	217455	(ML/EPA 300.0)	Nitrite, Nitrogen by IC	ND	mg/l	0.20	2
	12/17/03 22:29	217458	(ML/EPA 300.0)	Nitrate as Nitrogen by IC	9.1	mg/l	0.20	2
	12/17/03 15:25	217462	(ML/S4500P-E)	Orthophosphate-P	0.045	mg/l	0.010	1
	12/20/03 20:57	217710	(S4500PE/E365.1)	Total phosphorus-P	0.09	mg/l	0.010	1
	12/20/03 23:14	217714	(ML/EPA 351.2)	Kjeldahl Nitrogen	ND	mg/l	0.20	1
	12/17/03 14:18		(ML/SM9221B)	Total Coliform Bacteria	700	MPNM	2.0	1
	12/17/03 16:00	217545	(ML/EPA 180.1)	Turbidity	0.60	NTU	0.050	1
SITE 1 INFLOW TO TJ POND 2 (2312170286) Sampled on 12/17/03 12:00								
	12/17/03 14:25		(ML/SM9221C)	Fecal Coliform Bacteria	8.0	MPNM	2.0	1
	12/23/03 00:00	217964	(ML/EPA 350.1)	Ammonia Nitrogen	ND	mg/l	0.050	1
	12/17/03 21:51	217455	(ML/EPA 300.0)	Nitrite, Nitrogen by IC	ND	mg/l	0.20	2
	12/17/03 21:51	217458	(ML/EPA 300.0)	Nitrate as Nitrogen by IC	9.1	mg/l	0.20	2
	12/17/03 15:25	217462	(ML/S4500P-E)	Orthophosphate-P	0.046	mg/l	0.010	1
	12/20/03 21:02	217711	(S4500PE/E365.1)	Total phosphorus-P	0.09	mg/l	0.010	1
	12/20/03 23:14	217714	(ML/EPA 351.2)	Kjeldahl Nitrogen	ND	mg/l	0.20	1
	12/17/03 14:25		(ML/SM9221B)	Total Coliform Bacteria	3000	MPNM	2.0	1
	12/17/03 16:00	217545	(ML/EPA 180.1)	Turbidity	0.50	NTU	0.050	1
SITE 2 OUTFLOW FROM TJ POND 1 (2312170287) Sampled on 12/17/03 12:35								
	12/17/03 14:37		(ML/SM9221C)	Fecal Coliform Bacteria	<2.0	MPNM	2.0	1
	12/23/03 00:00	217964	(ML/EPA 350.1)	Ammonia Nitrogen	ND	mg/l	0.050	1
	12/17/03 22:41	217455	(ML/EPA 300.0)	Nitrite, Nitrogen by IC	ND	mg/l	0.20	2
	12/17/03 22:41	217458	(ML/EPA 300.0)	Nitrate as Nitrogen by IC	7.5	mg/l	0.20	2
	12/17/03 15:25	217462	(ML/S4500P-E)	Orthophosphate-P	0.025	mg/l	0.010	1
	12/20/03 21:02	217711	(S4500PE/E365.1)	Total phosphorus-P	0.08	mg/l	0.010	1
	12/20/03 23:14	217714	(ML/EPA 351.2)	Kjeldahl Nitrogen	0.23	mg/l	0.20	1
	12/17/03 14:37		(ML/SM9221B)	Total Coliform Bacteria	1100	MPNM	2.0	1
	12/17/03 16:00	217545	(ML/EPA 180.1)	Turbidity	0.45	NTU	0.050	1

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Laboratory
Data Report
#119468

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

Prepared	Analyzed	QC Ref#	Method	Analyte	Result	Units	MRL	Dilution
SITE 2 OUTFLOW FROM TJ POND 2 (2312170288) Sampled on 12/17/03 12:45								
	12/17/03 14:42		(ML/SM9221C)	Fecal Coliform Bacteria	2.0	MPNM	2.0	1
	12/23/03 00:00	217964	(ML/EPA 350.1)	Ammonia Nitrogen	ND	mg/l	0.050	1
	12/17/03 22:03	217455	(ML/EPA 300.0)	Nitrite, Nitrogen by IC	ND	mg/l	0.20	2
	12/17/03 22:03	217458	(ML/EPA 300.0)	Nitrate as Nitrogen by IC	7.5	mg/l	0.20	2
	12/17/03 15:25	217462	(ML/S4500P-E)	Orthophosphate-P	0.023	mg/l	0.010	1
	12/20/03 21:02	217711	(S4500PE/E365.1)	Total phosphorus-P	0.07	mg/l	0.010	1
	12/20/03 23:18	217715	(ML/EPA 351.2)	Kjeldahl Nitrogen	ND	mg/l	0.20	1
	12/17/03 14:42		(ML/SM9221B)	Total Coliform Bacteria	14000	MPNM	2.0	1
	12/17/03 16:00	217545	(ML/EPA 180.1)	Turbidity	0.45	NTU	0.050	1
SITE 4 HAINES CANYON CREEK 1 (2312170289) Sampled on 12/17/03 10:15								
	12/17/03 14:51		(ML/SM9221C)	Fecal Coliform Bacteria	11	MPNM	2.0	1
	12/23/03 00:00	217964	(ML/EPA 350.1)	Ammonia Nitrogen	ND	mg/l	0.050	1
	12/17/03 22:16	217455	(ML/EPA 300.0)	Nitrite, Nitrogen by IC	ND	mg/l	0.20	2
	12/17/03 22:16	217458	(ML/EPA 300.0)	Nitrate as Nitrogen by IC	6.8	mg/l	0.20	2
	12/17/03 15:25	217462	(ML/S4500P-E)	Orthophosphate-P	0.023	mg/l	0.010	1
	12/20/03 21:02	217711	(S4500PE/E365.1)	Total phosphorus-P	0.07	mg/l	0.010	1
	12/20/03 23:18	217715	(ML/EPA 351.2)	Kjeldahl Nitrogen	0.26	mg/l	0.20	1
	12/17/03 14:51		(ML/SM9221B)	Total Coliform Bacteria	17000	MPNM	2.0	1
	12/17/03 16:00	217545	(ML/EPA 180.1)	Turbidity	0.30	NTU	0.050	1
SITE 4 HAINES CANYON CREEK 2 (2312170290) Sampled on 12/17/03 10:30								
	12/17/03 14:58		(ML/SM9221C)	Fecal Coliform Bacteria	8.0	MPNM	2.0	1
	12/23/03 00:00	217964	(ML/EPA 350.1)	Ammonia Nitrogen	ND	mg/l	0.050	1
	12/17/03 22:54	217455	(ML/EPA 300.0)	Nitrite, Nitrogen by IC	ND	mg/l	0.20	2
	12/17/03 22:54	217458	(ML/EPA 300.0)	Nitrate as Nitrogen by IC	6.8	mg/l	0.20	2
	12/17/03 15:25	217462	(ML/S4500P-E)	Orthophosphate-P	0.026	mg/l	0.010	1
	12/20/03 21:02	217711	(S4500PE/E365.1)	Total phosphorus-P	0.08	mg/l	0.010	1
	12/20/03 23:18	217715	(ML/EPA 351.2)	Kjeldahl Nitrogen	ND	mg/l	0.20	1
	12/17/03 14:58		(ML/SM9221B)	Total Coliform Bacteria	9000	MPNM	2.0	1
	12/17/03 16:00	217545	(ML/EPA 180.1)	Turbidity	0.25	NTU	0.050	1

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Laboratory
QC Summary
#119468

Applied Research Dept, MWH (Darren Giles)

QC Ref #217455 - Nitrite, Nitrogen by IC **Analysis Date: 12/17/2003**

2312170285	SITE 1 INFLOW TO TJ POND 1
2312170286	SITE 1 INFLOW TO TJ POND 2
2312170287	SITE 2 OUTFLOW FROM TJ POND 1
2312170288	SITE 2 OUTFLOW FROM TJ POND 2
2312170289	SITE 4 HAINES CANYON CREEK 1
2312170290	SITE 4 HAINES CANYON CREEK 2

QC Ref #217458 - Nitrate as Nitrogen by IC **Analysis Date: 12/17/2003**

2312170285	SITE 1 INFLOW TO TJ POND 1
2312170286	SITE 1 INFLOW TO TJ POND 2
2312170287	SITE 2 OUTFLOW FROM TJ POND 1
2312170288	SITE 2 OUTFLOW FROM TJ POND 2
2312170289	SITE 4 HAINES CANYON CREEK 1
2312170290	SITE 4 HAINES CANYON CREEK 2

QC Ref #217462 - Orthophosphate-P **Analysis Date: 12/17/2003**

2312170285	SITE 1 INFLOW TO TJ POND 1
2312170286	SITE 1 INFLOW TO TJ POND 2
2312170287	SITE 2 OUTFLOW FROM TJ POND 1
2312170288	SITE 2 OUTFLOW FROM TJ POND 2
2312170289	SITE 4 HAINES CANYON CREEK 1
2312170290	SITE 4 HAINES CANYON CREEK 2

QC Ref #217545 - Turbidity **Analysis Date: 12/17/2003**

2312170285	SITE 1 INFLOW TO TJ POND 1
2312170286	SITE 1 INFLOW TO TJ POND 2
2312170287	SITE 2 OUTFLOW FROM TJ POND 1
2312170288	SITE 2 OUTFLOW FROM TJ POND 2
2312170289	SITE 4 HAINES CANYON CREEK 1
2312170290	SITE 4 HAINES CANYON CREEK 2

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

QC Ref #217710 - Total phosphorus-P **Analysis Date: 12/20/2003**

2312170285	SITE 1 INFLOW TO TJ POND 1

QC Ref #217711 - Total phosphorus-P **Analysis Date: 12/20/2003**

2312170286	SITE 1 INFLOW TO TJ POND 2
2312170287	SITE 2 OUTFLOW FROM TJ POND 1
2312170288	SITE 2 OUTFLOW FROM TJ POND 2
2312170289	SITE 4 HAINES CANYON CREEK 1
2312170290	SITE 4 HAINES CANYON CREEK 2

QC Ref #217714 - Kjeldahl Nitrogen **Analysis Date: 12/20/2003**

2312170285	SITE 1 INFLOW TO TJ POND 1
2312170286	SITE 1 INFLOW TO TJ POND 2
2312170287	SITE 2 OUTFLOW FROM TJ POND 1

QC Ref #217715 - Kjeldahl Nitrogen **Analysis Date: 12/20/2003**

2312170288	SITE 2 OUTFLOW FROM TJ POND 2
2312170289	SITE 4 HAINES CANYON CREEK 1
2312170290	SITE 4 HAINES CANYON CREEK 2

QC Ref #217964 - Ammonia Nitrogen **Analysis Date: 12/23/2003**

2312170285	SITE 1 INFLOW TO TJ POND 1
2312170286	SITE 1 INFLOW TO TJ POND 2
2312170287	SITE 2 OUTFLOW FROM TJ POND 1
2312170288	SITE 2 OUTFLOW FROM TJ POND 2
2312170289	SITE 4 HAINES CANYON CREEK 1
2312170290	SITE 4 HAINES CANYON CREEK 2

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Laboratory
QC Report
#119468

Applied Research Dept, MWH (Darren Giles)

QC Ref #217455 Nitrite, Nitrogen by IC

QC	Analyte	Spiked	Recovered	Units	Yield (%)	Limits (%)	RPD (%)
LCS1	Nitrite, Nitrogen by IC	1.0	1.05	MGL	105.0	(90-110)	
LCS2	Nitrite, Nitrogen by IC	1.0	1.09	MGL	109.0	(90-110)	3.7
MBLK	Nitrite, Nitrogen by IC	ND	<0.10	MGL			
MS	Nitrite, Nitrogen by IC	1.0	1.1	MGL	110.0	(80-120)	
MSD	Nitrite, Nitrogen by IC	1.0	1.08	MGL	108.0	(80-120)	1.8

QC Ref #217458 Nitrate as Nitrogen by IC

QC	Analyte	Spiked	Recovered	Units	Yield (%)	Limits (%)	RPD (%)
LCS1	Nitrate as Nitrogen by IC	2.5	2.58	MGL	103.2	(90-110)	
LCS2	Nitrate as Nitrogen by IC	2.5	2.58	MGL	103.2	(90-110)	0.00
MBLK	Nitrate as Nitrogen by IC	ND	<0.10	MGL			
MS	Nitrate as Nitrogen by IC	2.5	2.41	MGL	96.4	(80-120)	
MSD	Nitrate as Nitrogen by IC	2.5	2.42	MGL	96.8	(80-120)	0.41

QC Ref #217462 Orthophosphate-P

QC	Analyte	Spiked	Recovered	Units	Yield (%)	Limits (%)	RPD (%)
MS	Spiked sample	Lab # 23	12170180	MGL		(0-0)	
LCS1	Orthophosphate-P	0.5	0.497	MGL	99.4	(90-110)	
LCS2	Orthophosphate-P	0.5	0.494	MGL	98.8	(90-110)	0.61
MBLK	Orthophosphate-P	ND	<0.010	MGL			
MS	Orthophosphate-P	0.5	0.520	MGL	104.0	(80-120)	
MSD	Orthophosphate-P	0.5	0.500	MGL	100.0	(80-120)	3.9

Spikes which exceed Limits and Method Blanks with positive results are highlighted by Underlining. Criteria for MS and DUP are advisory only, batch control is based on LCS. Criteria for duplicates are advisory only, unless otherwise specified in the method.

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

QC Ref #217545 Turbidity

QC	Analyte	Spiked	Recovered	Units	Yield (%)	Limits (%)	RPD (%)
DUP	Turbidity	0.45	0.45	NTU		(0-20)	0.0

QC Ref #217710 Total phosphorus-P

QC	Analyte	Spiked	Recovered	Units	Yield (%)	Limits (%)	RPD (%)
MS	Spiked sample	Lab # 23	12170266	MGL		(0-0)	
LCS1	Total phosphorus-P	0.4	0.400	MGL	100.0	(90-110)	
LCS2	Total phosphorus-P	0.4	0.400	MGL	100.0	(90-110)	0.00
MBLK	Total phosphorus-P	ND	<0.010	MGL			
MS	Total phosphorus-P	0.4	0.401	MGL	100.2	(90-110)	
MSD	Total phosphorus-P	0.4	0.410	MGL	102.5	(90-110)	2.2
RPD_LCS	Total phosphorus-P	100.000	100.000	MGL	0.0	(0-10)	
RPD_MS	Total phosphorus-P	100.250	102.500	MGL	2.2	(0-10)	

QC Ref #217711 Total phosphorus-P

QC	Analyte	Spiked	Recovered	Units	Yield (%)	Limits (%)	RPD (%)
MS	Spiked sample	Lab # 23	12170286	MGL		(0-0)	
LCS1	Total phosphorus-P	0.4	0.400	MGL	100.0	(90-110)	
LCS2	Total phosphorus-P	0.4	0.400	MGL	100.0	(90-110)	0.00
MBLK	Total phosphorus-P	ND	<0.010	MGL			
MS	Total phosphorus-P	0.4	0.400	MGL	100.0	(90-110)	
MSD	Total phosphorus-P	0.4	0.400	MGL	100.0	(90-110)	0.00
RPD_LCS	Total phosphorus-P	100.000	100.000	MGL	0.0	(0-10)	
RPD_MS	Total phosphorus-P	100.000	100.000	MGL	0.0	(0-10)	

Spikes which exceed Limits and Method Blanks with positive results are highlighted by Underlining. Criteria for MS and DUP are advisory only, batch control is based on LCS. Criteria for duplicates are advisory only, unless otherwise specified in the method.

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

QC Ref #217714 Kjeldahl Nitrogen

QC	Analyte	Spiked	Recovered	Units	Yield (%)	Limits (%)	RPD (%)
MS	Spiked sample	Lab # 23	12120438	MGL		(0-0)	
LCS1	Kjeldahl Nitrogen	4	3.90	MGL	97.5	(90-110)	
LCS2	Kjeldahl Nitrogen	4	4.30	MGL	107.5	(90-110)	9.8
MBLK	Kjeldahl Nitrogen	ND	<0.20	MGL			
MS	Kjeldahl Nitrogen	4	3.69	MGL	92.2	(90-110)	
MSD	Kjeldahl Nitrogen	4	3.66	MGL	91.5	(90-110)	0.82
RPD_LCS	Kjeldahl Nitrogen	97.500	107.500	MGL	9.8	(0-20)	
RPD_MS	Kjeldahl Nitrogen	92.250	91.500	MGL	0.8	(0-10)	

QC Ref #217715 Kjeldahl Nitrogen

QC	Analyte	Spiked	Recovered	Units	Yield (%)	Limits (%)	RPD (%)
MS	Spiked sample	Lab # 23	12170260	MGL		(0-0)	
LCS1	Kjeldahl Nitrogen	4	4.20	MGL	105.0	(90-110)	
LCS2	Kjeldahl Nitrogen	4	4.20	MGL	105.0	(90-110)	0.00
MBLK	Kjeldahl Nitrogen	ND	<0.20	MGL			
MS	Kjeldahl Nitrogen	4	3.99	MGL	99.8	(90-110)	
MSD	Kjeldahl Nitrogen	4	4.40	MGL	110.0	(90-110)	9.8
RPD_LCS	Kjeldahl Nitrogen	105.000	105.000	MGL	0.0	(0-20)	
RPD_MS	Kjeldahl Nitrogen	99.750	110.000	MGL	9.8	(0-10)	

QC Ref #217964 Ammonia Nitrogen

QC	Analyte	Spiked	Recovered	Units	Yield (%)	Limits (%)	RPD (%)
MS	Spiked sample	Lab # 23	12170063	MGL		(0-0)	
LCS1	Ammonia Nitrogen	1.00	1.03	MGL	103.0	(90-110)	
LCS2	Ammonia Nitrogen	1.00	1.03	MGL	103.0	(90-110)	0.00
MBLK	Ammonia Nitrogen	ND	<0.050	MGL			

Spikes which exceed Limits and Method Blanks with positive results are highlighted by Underlining. Criteria for MS and DUP are advisory only, batch control is based on LCS. Criteria for duplicates are advisory only, unless otherwise specified in the method.

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

MS	Ammonia Nitrogen	1.00	1.06	MGL	106.0	(90-110)	
MSD	Ammonia Nitrogen	1.00	1.07	MGL	107.0	(90-110)	0.94

Spikes which exceed Limits and Method Blanks with positive results are highlighted by Underlining. Criteria for MS and DUP are advisory only, batch control is based on LCS. Criteria for duplicates are advisory only, unless otherwise specified in the method.

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ACKNOWLEDGMENT OF SAMPLES RECEIVED

Applied Research Dept, MWH (Darren Giles)
327 West Maple Avenue
Monrovia, CA 91016
Attn: Darren Giles
Phone: (626) 303-5945

Customer Code: ARD-DG
PO#: 1341410.5620.011801
Group#: 119468
Project#: BIG-TJ
Proj Mgr: James Hein
Phone: (626) 386-1189

The following samples were received from you on **12/17/03**. 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 Date
	Tests Scheduled		
2312170285	SITE 1 INFLOW TO TJ POND 1	Water	17-dec-2003 11:40:00
	FECCOL NH3 NO2-N NO3 OPO4 T-P		
	TKN TOTCOL TURB		
2312170286	SITE 1 INFLOW TO TJ POND 2	Water	17-dec-2003 12:00:00
	FECCOL NH3 NO2-N NO3 OPO4 T-P		
	TKN TOTCOL TURB		
2312170287	SITE 2 OUTFLOW FROM TJ POND 1	Water	17-dec-2003 12:35:00
	FECCOL NH3 NO2-N NO3 OPO4 T-P		
	TKN TOTCOL TURB		
2312170288	SITE 2 OUTFLOW FROM TJ POND 2	Water	17-dec-2003 12:45:00
	FECCOL NH3 NO2-N NO3 OPO4 T-P		
	TKN TOTCOL TURB		
2312170289	SITE 4 HAINES CANYON CREEK 1	Water	17-dec-2003 10:15:00
	FECCOL NH3 NO2-N NO3 OPO4 T-P		
	TKN TOTCOL TURB		
2312170290	SITE 4 HAINES CANYON CREEK 2	Water	17-dec-2003 10:30:00
	FECCOL NH3 NO2-N NO3 OPO4 T-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

MONTGOMERY WATSON LABORATORIES — CHAIN OF CUSTODY RECORD

1140 1200 12-17-3 119468

555 E. Walnut St., Pasadena, CA 91101
(626) 568-6400 (800) 566-5227

MWLABS USE ONLY:

LOGIN COMMENTS: _____

SAMPLES CHECKED/LOGGED IN BY: MLD

SAMPLE TEMP, RECEIPT AT LAB 15°c (Compliance: 4 +/- 2*C)

SAMPLES RECEIVED DAY OF COLLECTION? ☐ (check for yes)

BLUE ICE: FROZEN / PARTIALLY FROZEN ___ THAWED ___

TO BE COMPLETED BY SAMPLER:

TAT requested: STD __XXX__ 1 week _____ 3 day _____ 1 day _____

COMPLIANCE SAMPLES ☐ (check for yes)
- Requires state forms ☐
NON-COMPLIANCE SAMPLES ☐

REGULATION: _____ (SDWA, Phase V, NPDES, FDA, ...)

PROJECT CODE	PROJECT JOB # / P.O.#	CLIENT CODE
Big TJ Sampling	1341597.5620.011801	ARD-DG/JF

REFER TO ATTACHED BOTTLE ORDER FOR ANALYSES ☐ (check for yes)

SAMPLER(S): PRINTED NAME AND SIGNATURE

Darren Giles

ANALYSES REQUIRED (mark an 'X' in all tests required for each sample line)

TIME	DATE	SITE NAME or LOCATION	IDENTIFIER, STATE ID #	* MATRIX	GRAB	COMP	TKN, T-P, NH3-N	NO2,NO3,O-PO4, Turbidity	T & F Coliforms	SAMPLER COMMENTS
1140	12/17	SITE 1	Inflow to TJ Pond #1		X		X	X	X	
1200	12/17	SITE 1	Inflow to TJ Pond #2		X		X	X	X	
1235	12/17	SITE 2	Outflow from TJ Pond #1		X		X	X	X	
1245	12/17	SITE 2	Outflow from TJ Pond #2		X		X	X	X	
		~~SITE 3~~	~~Big TJ Wash #1~~		~~X~~		~~X~~	~~X~~	~~X~~	
		~~SITE 3~~	~~Big TJ Wash #2~~		~~X~~		~~X~~	~~X~~	~~X~~	
1315	12/17	SITE 4	Haines Canyon Creek #1		X		X	X	X	
1330	12/17	SITE 4	Haines Canyon Creek #2		X		X	X	X	

* MATRIX TYPES:

Reported by Volume:

RSW = Raw Surface Water
RGW = Raw Ground Water
FW = Other Finished Water
CFW = Chlor(am)inated Finished Water
SW = Storm Water
WW = Other Waste Water
CWW = Chlorinated Waste Water

Reported by Weight:

SO = Soil
SL = Sludge

	SIGNATURE	PRINT NAME	COMPANY/TITLE	DATE	TIME
RELINQUISHED BY:		DARREN GILES	MWH ARD	12/17	1408
RECEIVED BY:		M. DE MESA	M.W.H	12-17-3	1408

SPECIAL INSTRUCTIONS