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Wastewater Stabilization Ponds On The Mexico-USA Border Performance And Upgrading Potential

WASTEWATER STABILIZATION PONDS ON THE MEXICO-USA BORDER

PERFORMANCE AND UPGRADING POTENTIAL

PREPARED FOR:

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INTRODUCTION

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INTRODUCTION

Stabilization ponds are one of the most widely used wastewater treatment technologies. Facultative ponds have been used worldwide for over 3,000 years under the full wide range of climatic conditions. Stabilization ponds have been in use in the USA since the early 1900s. Today there are approximately 7,000 pond systems in use in the USA. Variations of the basic stabilization form of biological treatment also have been developed to attempt to increase the loading rates, reduce detention times, decrease water loss through evaporation and to limit discharges to surface waters. For the most part, these variations are fully proven and widely used in many parts of the USA and Mexico. In addition to the proven modifications, several innovative technologies (e.g. Advanced Integrated Pond Systems, Lemna duckweed systems and rock filters) have great potential for retrofitting basic stabilization ponds and enhancing their performance along the US/Mexican border.

At the present time there are significant needs along the border for effective, low cost, low maintenance, wastewater treatment concepts. Pond systems, either new facilities or upgrading existing ponds, offer the potential for resolution of these needs in many locations.

Under Contract No. 68-C2-0102, Work Assignment 2-16, Parsons Engineering Science, Inc. (Parsons ES) in conjunction with E. Joe Middlebrooks and Sherwood C. Reed of Environmental Engineering Consultants of Norwich, Vermont has been requested to provide an evaluation of the use of pond systems for treating wastewater along the US/Mexican border. The objective of this work assignment is to provide useful information and guidance for planners and engineers for use in considering the potential application of pond systems and in preparing preliminary project designs for application along the US/Mexican border area.

SUMMARY AND CONCLUSIONS

1. The wastewater stabilization ponds evaluated along the Mexican-USA border were not constructed as designed (i.e., aeration omitted). Consequently the systems are not performing at a satisfactory level; however, all of the systems visited appear to be upgradable to efficient and reliable facilities.

2. By converting the systems to combinations of complete and partial mix aerated lagoons, the systems can be expected to produce effluent BOD concentrations of less than 10 mg/l and process two to three times the current flow rate.

3. Installing multiple outlets and multiple drawoff depths in the final cells of all three systems would materially improve the effluent TSS quality.

4. Improvements in the hydraulic characteristics of the lagoon systems would have a significant impact on performance.

5. Regardless of the modifications made to the systems, to achieve the maximum efficiency from the lagoon systems it is essential that proper operation be provided. For example, it will do little good if multiple depth drawoff outlets are installed but not used.

6. Existing wastewater stabilization lagoons can be economically upgraded to produce an effluent of practically any quality desired by the utilization of many processes, many of which are briefly discussed in Chapter 2. Design of Pond Systems (intermittent sand filtration, rock filters, microstrainers, dissolved air flotation, centrifugation, etc.).

7. In addition to the upgrade methods referred to above, wetlands, duckweed, and land treatment appear to be viable upgrade alternatives for lagoon effluents, but additional study is needed to confirm their viability.

8. Two of three systems (Mexicali, Baja California Norte (BCN), and Reynosa) visited are grossly overloaded, but in view of the operational effort and inadequate design, the systems perform remarkably well.

9. The Nogales system is relatively new, well operated, and produces an excellent quality effluent. Relatively simple modifications in the lagoon system would double or triple the flow rate that could be processed by the lagoon system. Modifications in the solids removal activities would be necessary if higher flow rates are to be processed by the facility.

10. Less than optimal solids removal processes have been employed at the Nogales facility, and modifications are needed to maximize the efficiency of the units.

11. At the Nogales facility, reductions in the hydraulic residence time in the final settling cells probably would reduce the algae load going to the automatic backwash filters. Normal granular media filtration has been shown to be capable of removing only one-third of the solids in lagoon effluents without chemical addition. Consideration should be given to some type addition to improve the filter efficiency.

CHAPTER 2

DESIGN OF POND SYSTEMS

CHAPTER 2

DESIGN OF POND SYSTEMS

Stabilization ponds have been employed for treatment of wastewater for over 3000 years. The first recorded construction of a pond system in the United States was at San Antonio, TX, in 1901. Today, over 7000 pond systems are used in the U.S. for the treatment of municipal and industrial wastewaters (USEPA, 1980), under a wide range of weather conditions ranging from tropical to Arctic. Large numbers of pond systems are used throughout the world (WHO, 1987). Many types of pond systems are utilized on both sides along the border between Mexico and the USA. Three pond systems located along the Mexico-USA border were visited and evaluated. The results of these evaluations are presented in Part II. Pond systems in Mexicali BCN and Reynosa, Mexico, and Nogales, Arizona, USA were visited. These pond systems are used alone or in combination with other wastewater treatment processes.

Wastewater pond systems can be classified by dominant type of biological reaction, duration and frequency of discharge, extent of treatment ahead of the pond, or arrangement among cells (if more than one cell is used). The most basic classification depends on the dominant biological reactions occurring in the pond, and the four principal types are:

- o Facultative (aerobic-anaerobic) ponds
- o Aerated ponds (Complete and Partial Mix)
- o Aerobic Ponds
- o Anaerobic ponds

All four types depend on the interaction of the in-situ biological components for treatment and can be considered to be "natural treatment systems." General design features and performance expectations for pond systems and a modification of pond systems using water hyacinths are presented in Table 2-1.

The most common type is the facultative pond. Other terms which are commonly applied are oxidation pond, sewage lagoon, and photosynthetic pond. Facultative ponds are usually 1.2 to 2.5 m (4 to 8 ft) in depth, with an aerobic layer overlying an anaerobic layer, often containing sludge deposits. The usual detention time is 5 to 30 days. Anaerobic fermentation occurs in the lower layer and aerobic stabilization occurs in the upper layer. The key to facultative operation is oxygen production by photosynthetic algae and surface reaeration. The oxygen is utilized by the aerobic bacteria in stabilizing the

Table 2-1
Design Features and Expected Performance for Aquatic Treat,ment Units (Bastian and Reed, 1979; Middlebrooks et al., 1981; and USEPA, 1983)

Unit	Treatment Goals	Typical Criteria: Climate Needs	Typical Criteria: Detention Time days	Typical Criteria: Depth meters	Organic Loading kg/ha-day	Effluent Characteristics mg/L
Oxidation Pond	Secondary	Warm	10-40	1-1.5	40-120	BOD 20-40 TSS 80-140
Facultative Pond	Secondary	None	25-180	1.5-2.5	22-67	BOD 30-40 TSS 40-100
Partial-Mix Aerated Pond	Secondary, Polishing	None	7-20	2-6	50-200	BOD 30-40 TSS 30-60
Storage, and Controlled-Discharge Ponds	Secondary, Storage, Polishing	None	100-200	3-5	1st Cell = Facultative or Aerated Pond	BOD 10-30 TSS 10-40
Hyacinth Ponds	Secondary	Warm	30-50	<1.5	<30	BOD <30 TSS <30
Hyacinth Ponds	AWT, with Secondary Input	Warm	>6	<1	<50	BOD <10 TSS <10 TP <5 TN <5

organic material in the upper layer. The algae are necessary for oxygen production, but their presence in the final effluent represents one of the most serious performance problems associated with facultative ponds.

The total containment pond and the controlled discharge pond are forms of facultative ponds. The total containment pond is applicable in climates where the evaporative losses exceed the rainfall. Controlled discharge ponds have long detention times, and the effluent is discharged once or twice per year when the effluent quality and stream conditions are satisfactory. A variation of the controlled discharge pond, used in the southern U.S. is called a hydrograph controlled release lagoon. The pond discharge is matched to periods of high flow in the receiving stream, using the stream hydrograph as the control.

In an aerated pond, oxygen is supplied mainly through mechanical or diffused aeration. Aerated ponds are generally 2 to 6 m (6 to 20 ft) in depth with detention times of 3 to 10 days. The chief advantage of aerated ponds is that they require less land area. Aerated ponds can be designed as complete mix reactors or as partial mix reactors. In the former case sufficient energy must be used to keep the pond contents in suspension at all times. The basic design of a complete mix reactor is similar to that of an activated sludge system without sludge recycle.

Aerobic ponds, also called high rate aerobic ponds, maintain dissolved oxygen (DO) throughout their entire depth. They are usually 30 to 45 cm (12 to 18 in) deep, allowing light to penetrate the full depth. Mixing is often provided to expose all algae to sunlight and to prevent deposition and subsequent anaerobic conditions. Oxygen is provided by photosynthesis and surface reaeration, and aerobic bacteria stabilize the waste. Detention time is short, three to five days being usual. Aerobic ponds are limited to warm sunny climates and are used infrequently in the United States.

Anaerobic ponds receive such a heavy organic loading that there is no aerobic zone. They are usually 2.5 to 5 m (8 to 15 ft) in depth and have detention times of 1 to 50 days depending upon the environment in which they function. The principal biological reactions occurring are acid formation and methane fermentation. Anaerobic ponds are usually used for treatment of strong industrial and agricultural wastes, or as a pretreatment step where an industry is a significant contributor to a municipal system. They do not have wide application to the treatment of municipal wastewater in the USA, but are used successfully in many areas of the world.

PRELIMINARY TREATMENT

In general, the only mechanical or monitoring and control equipment required for wastewater pond systems are flow measurement devices, sampling systems, and pumps. Design criteria and examples for preliminary treatment components can be found in a number of references, as well as in equipment manufacturer's catalogs (Al-Layla et al., 1980; Metcalf and Eddy, 1991; Ten State Standards, 1978; Wallace, 1978; and Water Pollution Control Federation, 1977). Flow measurement can be accomplished with relatively simple devices such as Palmer-Bowlus flumes, V-notch weirs, and Parshall flumes used in conjunction with a recording meter. Frequently, flow measurements and 24-hour compositing samplers are combined in a common manhole, pipe, or other housing arrangement. If pumping facilities are necessary, the wet well is sometimes used as a point to recycle effluent or to add chemicals for odor control. Pretreatment facilities should be kept to a minimum at pond systems.

FACULTATIVE PONDS

Facultative pond design is based upon BOD removal; however, the majority of the suspended solids will be removed in the primary cell of a pond system. Sludge fermentation feedback of organic compounds to the water in a pond system is significant and has an effect on the performance. During the spring and fall, the thermal overturn of the pond contents can result in significant quantities of benthic solids being resuspended. The rate of sludge accumulation is affected by the liquid temperature, and additional volume is added for sludge accumulation in cold climates. Although SS have a profound influence on performance of pond systems, most design equations simplify the incorporation of the influence of SS by using an overall reaction rate constant. Effluent SS generally consist of suspended organism biomass and do not include suspended waste organic matter.

Several empirical and rational models for the design of these ponds have been developed. These include the ideal plug flow and complete mix models, as well as models proposed by Fritz, et al. (1979); Gloyna (1971); Larson (1974), Marais (1970); McGarry and Pescod (1970), Oswald et al. (1970); and Thirumurthi (1974). Several produce satisfactory results, but the use of some may be limited because of the difficulty in evaluating coefficients or by the complexity of the model.

Areal loading rate method

Canter and Englande (1970) reported that most states have design criteria for organic loading and/or hydraulic detention time for facultative ponds.

These criteria are assumed to ensure satisfactory performance; however, repeated violations of effluent standards by pond systems that meet state design criteria indicate the inadequacy of the criteria. A summary of the state design criteria for each location and actual design values for organic loading and hydraulic detention time for four facultative pond systems evaluated by the Environmental Protection Agency (Middlebrooks, 1987 and USEPA, 1981) are shown in Table 2-2. Also included is a list of the months the federal effluent standards for BOD_5 were exceeded. The actual organic loading for the four systems is nearly equal, but the system in Corinne, UT consistently satisfied the federal effluent standard. This may be a function of the larger number of cells in the Corinne system; seven as compared to three for the others. More hydraulic short-circuiting is likely to occur in the three cell systems, resulting in an actual detention time which was shorter than exists in the Corinne system. The detention time may also be affected by the location of the pond cell inlet and outlet structures.

Based on many years of experience, the following loading rates for various climatic conditions are recommended for use in designing facultative pond systems. For average winter air temperatures above 15°C (59°F), a BOD_5 loading rate range of 45 to 90 kg/ha-d (40-80 lb/ac-d) is recommended. When the average winter air temperature ranges between 0° and 15°C (32° to 59°F) the organic loading rate should range between 22 and 45 kg/ha-d (20-40 lb/ac-d). For average winter temperatures below 0°C (32°F) the organic loading should range from 11 to 22 kg/ha-d (10-20 lb/ac-d).

The BOD loading rate in the first cell is usually limited to 40 kg/ha-d (35 lb/ac/d) or less, and the total hydraulic detention time in the system is 120 to 180 days in climates where the average air temperature is below 0°C (32°F). In mild climates where the air temperature is greater than 15°C (59°F), loadings on the primary cell can be 100 kg/ha-d (89 lb/ac-d).

Gloyna equation

Gloyna (1971) has proposed the following empirical equation for the design of facultative wastewater stabilization ponds:

$$V = (3.5 \times 10^{-5})(Q)(La)[\theta^{(35-T)}](f)(f') \qquad (1)$$

where V = pond volume, m^3

Q = influent flow rate, L/d.

La = ultimate influent BOD or COD, mg/l

Table 2-2
Summary of Design and Performance Data from EPA Pond Studies (Middlebrooks et al., 1982; USEPA, 1983)

Location	Organic Loading (kg BOD/ha-day)			Theoretical Detention Time			Months BOD Exceeded 30 mg/L
	State Design Standard	Design	Actual 1974-1975	State Design Standard	Design	Actual	
Peterborough, NH	39.3	19.6	16.2	None	57	107	Oct., Feb., Mar., Apr.
Kilmichael, MS	56.2	43	17.5	None	79	214	Nov., July
Eudora, KS	38.1	38.1	18.8	None	47	231	Mar., Apr., Aug.
Corinne, UT	45	36.2	29.7 (a) 14.6 (b)	180	180	70 88 (c)	None

θ = temperature correction coefficient = 1.085

T = pond temperature, °C.

f = algal toxicity factor.

f′ = sulfide oxygen demand.

The BOD_5 removal efficiency is projected to be 80 to 90 percent based on unfiltered influent samples and filtered effluent samples. A pond depth of 1.5 m (5 ft) is suggested for systems with significant seasonal variations in temperature and major fluctuations in daily flow. The surface area design using Eq. 1 should always be based on a 1 m (3 ft) depth. The algal toxicity factor (f) is assumed to be equal to 1.0 for domestic wastes and many industrial wastes. The sulfide oxygen demand (f′)is also equal to 1.0 for sulfate equivalent ion concentration of less than 500 mg/l. The design temperature is usually selected as the average pond temperature in the coldest month. Sunlight is not considered to be critical in pond design, but can be incorporated into Eq. 1 by multiplying the pond volume by the ratio of sunlight at the design location to the average found in the southwestern United States.

The Gloyna method was evaluated using the data referenced in Table 2-2. The equation giving the best fit of the data is shown below as Eq. 2. There was considerable scatter to the data, but the relationship is statistically significant.

$$V = 0.035Q(BOD)(1.099)^{LIGHT\ (35-T)/250} \qquad (2)$$

where BOD = BOD_5 in the system influent, mg/l.

LIGHT = solar radiation in langleys.

V = pond volume, m^3

Q = influent flow rate, m^3/day

T = pond temperature, °C

Complete-mix model

The Marias & Shaw (1961) equation is based on a complete mix-model and first order kinetics. The basic relationship is shown in Eq. 3.

$$\frac{C_n}{C_0} = \left[\frac{1}{1+k_c t_n}\right]^n \tag{3}$$

where C_n = effluent BOD_5 concentration, mg/l.

C_o = influent BOD_5 concentration, mg/l.

k_c = complete mix first order reaction rate, d-1.

t_n = hydraulic residence time in each cell, d.

n = number of equal sized pond cells in series.

The proposed upper limit for the BOD_5 concentration $(C_e)_{max}$ in the primary cells is 55 mg/l to avoid anaerobic conditions and odors. The permissible depth of the pond, d in meters, was found to be related to $(C_e)_{max}$ as follows:

$$(C_e)_{max} = \frac{700}{1.9d+8} \tag{4}$$

where $(C_e)_{max}$ is the maximum effluent BOD, 55 mg/l, and d is the design depth of the pond in meters.

The influence of water temperature on the reaction rate is estimated using Eq. 5.

$$k_{cT} = k_{c35}(1.085)^{T-35} \tag{5}$$

where k_{cT} = reaction rate at water temperature T, day^{-1}

k_{c35} = reaction rate at 35°C

= 1.2 $days^{-1}$

T = operating water temperature, °C.

Plug flow model

The basic equation for the plug-flow model is:

$$\frac{C_e}{C_o} = \exp\ [-k_p t] \qquad (6)$$

where C_e = effluent BOD_5 concentration, mg/l.

C_o = influent BOD_5 concentration, mg/l.

k_p = plug flow first order reaction rate, $days^{-1}$

t = hydraulic residence time, days

The reaction rate (k_p) varies with the BOD loading rate as shown in Table 2-3.

Table 2-3
Variation of the Plug-Flow Reaction Rate Constant with Organic Loading Rate (Neel et al., 1961)

Organic Loading Rate kg/ha-day[a]	k_p[b], $days^{-1}$
22	0.045
45	0.071
67	0.083
90	0.096
112	0.129

[a] kg/ha-d x 0.8907 = lb/ac-d.
[b] reaction rate constant at 20°C.

The influence of water temperature on the reaction rate constant can be determined with Eq. 6a.

$$k_{pT}=k_{p20}(1.09)^{T-20} \qquad (6a)$$

where k_{pT} = reaction rate at temperature T, $days^{-1}$

k_{p20} = reaction rate at 20°C, $days^{-1}$

T = operating water temperature, °C.

Wehner Wilhelm equation

Thirumurthi (1974) found that the flow pattern in facultative ponds is somewhere between ideal plug-flow and complete-mix, and he recommended the use of the following chemical reactor equation developed by Wehner and Wilhelm (1956) for chemical reactor design.

$$\frac{C_e}{C_0} = \frac{4ae^{1/(2D)}}{(1+a)^2(e^{a/2D}) - (1-a)^2(e^{-a/2D})} \tag{7}$$

where C_0 = influent BOD concentration, mg/l

C_e = effluent BOD concentration, mg/l

e = base of natural logarithms, 2.7183

a = $(1 + 4ktD)^{0.5}$

k = 1st order reaction rate constant, $days^{-1}$

t = hydraulic residence time, days

D = dimensionless dispersion number

= $H/vL = H_t/L^2$

H = axial dispersion coefficient, area per unit time

v = fluid velocity, length per unit time

L = length of travel path of a typical particle

Thirumurthi (1974) prepared the chart shown in Fig.2-1 to facilitate the use of Eq.7. The dimensionless term kt is plotted versus the percentage of BOD remaining for dispersion numbers ranging from zero for an ideal plug flow

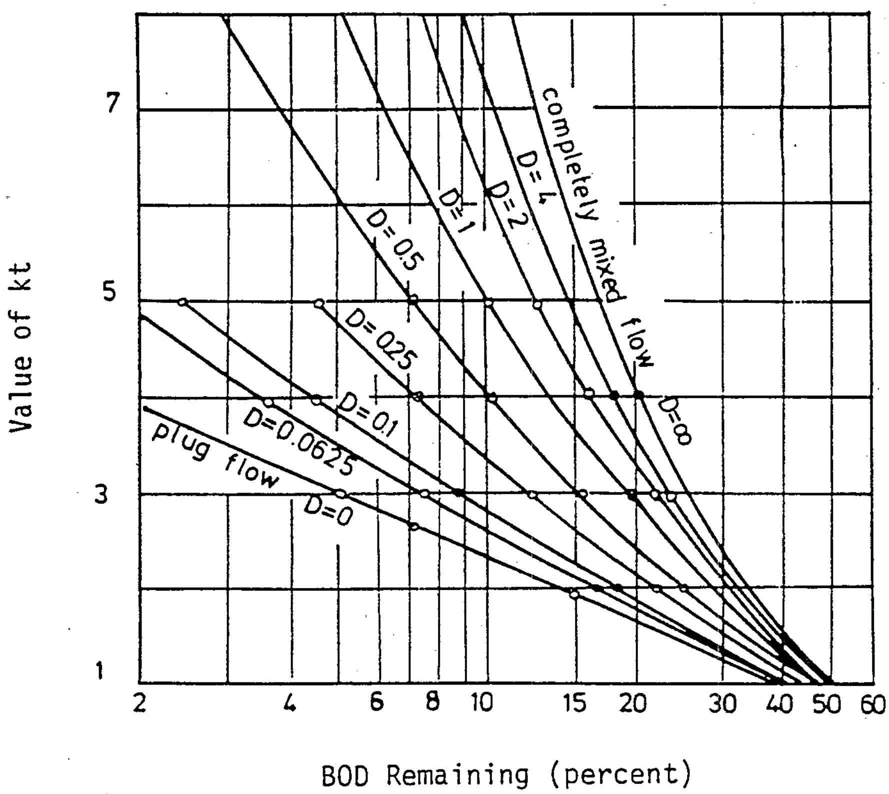


FIGURE 2-1 WEHNER AND WILHELM EQUATION CHART (THIRUMURTHI, 1974).

unit to infinity for a completely mixed unit. Dispersion numbers measured in wastewater ponds range from 0.1 to 2.0 with most values less than 1.0. The selection of a value for D can dramatically affect the detention time required to produce a given quality effluent. The selection of a design value for k can have an equal effect. If the chart in Fig. 2-1 is not used, Eq. 7 can be solved on a trial and error basis.

To improve on the selection of a D value for use in Eq. 7, Polprasert and Bhattarai (1985) developed Eq. 8 based on data from pilot and full scale pond systems.

$$D=\frac{0.184[tv(W+2d]^{0.489}(W)^{1.511}}{(Ld)^{1.489}} \tag{8}$$

where D = dimensionless dispersion number

t = hydraulic residence time, days

v = kinematic viscosity, m^2/day

d = liquid depth of pond, m

W = width of pond, m

L = length of pond, m

The hydraulic residence time used to derive Eq. 8 was determined by tracer studies; therefore, it is still difficult to estimate the value of D to use in Eq. 7. A good approximation is to assume that the actual hydraulic residence time is half that of the theoretical hydraulic residence time.

The variation of the reaction rate constant k in Eq. 7 with the water temperature is determined with Eq. 9.

$$k_T=k_{20}(1.09)^{T-20} \tag{9}$$

where k_T = reaction rate at water temperature T, $days^{-1}$

k_{20} = reaction rate at 20°C = 0.15 $days^{-1}$

T = operating water temperature, °C

Comparison of facultative pond design models

Because of the many approaches to the design of facultative ponds it is not possible to recommend the "best" procedure. An evaluation of the design methods presented above, with operational data referenced in Table 2-2, failed to show that any of the models are superior to the others in terms of predicting the performance of facultative pond systems (Middlebrooks et al., 1978; USEPA, 1981; and Reed et al., 1995).

PARTIAL-MIX AERATED PONDS

In the partial mix aerated pond system the aeration serves only to provide an adequate oxygen supply, and there is no attempt to keep all of the solids in suspension in the pond as is done with complete mix and activated sludge systems. Some mixing obviously occurs and keeps portions of the solids suspended; however, an anaerobic degradation of the organic matter that settles does occur. The system is sometimes referred to as a facultative aerated pond system.

Even though the pond is only partially mixed, it is conventional to estimate the BOD removal using a complete mix model and first order reaction kinetics. Recent studies (Middlebrooks, 1987) have shown that a plug flow model and first order kinetics more closely predict the performance of these ponds when either surface or diffused aeration is used. However, most of the ponds evaluated in this study were lightly loaded and the reaction rates calculated are very conservative because the rate decreases as the organic loading decreases (Neel et al., 1961). Because of the lack of better design reaction rates, it is still necessary to design partial mix ponds using complete mix kinetics.

Partial mix design model

The design model using first order kinetics and operating "n" number of equal sized cells in series is given by Eq. 10.

$$\frac{C_n}{C_0} = \frac{1}{[1+(kt/n)]^n} \qquad (10)$$

where C_n = effluent BOD concentration in cell n, mg/l

C_o = influent BOD concentration, mg/l

k = first order reaction rate constant, days^{-1}

= 0.276 day^{-1} at 20°C (assumed to be constant in all cells).

t = total hydraulic residence time in pond system, days

n = number of cells in the series.

If other than a series of equal volume ponds are to be employed, it is necessary to use the following general equation:

$$\frac{C_n}{C_0} = \left[\frac{1}{1+k_1 t_1}\right]\left[\frac{1}{1+k_2 t_2}\right] \bullet\bullet\bullet \left[\frac{1}{1+k_n t_n}\right] \qquad (11)$$

where k_1, k_2,...k_n are the reaction rates in cells 1 through n (all usually assumed equal for lack of better information) and t_1, t_2,...t_n are the hydraulic residence times in the respective cells.

It has been shown (Mara, 1975) that a number of equal volume reactors in series is more efficient than unequal volumes; however, due to site topography or other factors there may be cases where it is necessary to construct cells of unequal volume.

Selection of reaction rate constants. The selection of the k value is the critical decision in the design of any pond system. A design value of 0.276 day^{-1} is recommended by the *Ten States Standards (1978)* at 20°C and 0.138 day^{-1} at 1°C. Using these values to calculate the temperature coefficient yields a value of 1.036. Boulier and Atchinson (1975) recommended values of k of 0.2 to 0.3 at 20°C and 0.1 to 0.15 at 0.5°C. A temperature coefficient of 1.036 results when the two lower or higher values of k are used in the calculation. Reid (1970) suggested a k value of 0.28 at 20°C and 0.14 at 0.5°C based on research with partial mix ponds aerated with perforated tubing in central Alaska. These values are essentially identical to the *Ten States Standards* recommendations.

Temperature effects. The influence of temperature on the reaction rate is defined by Eq. 13.

$$k_T = k_{20}\theta^{T_w-20} \qquad (13)$$

where k_T = reaction rate at temperature T, $days^{-1}$

k_{20} = reaction rate at 20°C, $days^{-1}$

Θ = temperature coefficient
= 1.036

T_w = temperature of pond water, °C.

The pond water temperature (T_w) can be estimated using the following equation developed by Mancini and Barnhart (1976).

$$T_w=\frac{AfT_a+QT_i}{Af+Q} \tag{14}$$

where T_w = pond water temperature, °C

T_a = ambient air temperature, °C

A = surface area of pond, m^2

f = proportionality factor = 0.5.

Q = wastewater flow rate, m^3/day

An estimate of the surface area is made based on Eq.12, corrected for temperature, and then the temperature is calculated using Eq. 14. After several iterations, when the water temperature used to correct the reaction rate coefficient agrees with the value calculated with Eq. 14, the selection of the detention time in the system is completed.

Pond configuration

The ideal configuration of a pond designed on the basis of complete mix hydraulics is a circular or a square pond; however, even though partial mix ponds are designed using the complete mix model, it is recommended that the cells be configured with a length to width ratio of 3:1 or 4:1. This is done because it is recognized that the hydraulic flow pattern in partial-mix systems more closely resembles the plug-flow condition. The dimensions of the cells can be calculated by Eq.15.

$$V=[LW+(L-2sd)(W-2sd)+4(L-sd)(W-sd)]\frac{d}{6} \qquad (15)$$

where V = volume of pond or cell, m^3 (ft^3).

L = length of pond or cell at water surface, m (ft).

W = width of pond or cell at water surface, m (ft).

s = slope factor (i.e.; 3:1 slope, s = 3)

d = depth of pond, m (ft).

Mixing and aeration

In most municipal systems, the oxygen requirements control the power input required for partial mix pond systems. A complete-mix system can require approximately ten times the power as a system designed to satisfy the oxygen requirements only. There are several rational equations available to estimate the oxygen requirements for pond systems (Al-Layla et al., 1980; Benefield and Randall, 1980; Gloyna, 1976; and Metcalf and Eddy, 1991). In most cases partial mix system design is based on the BOD entering the system to estimate the biological oxygen requirements. After calculating the required rate of oxygen transfer, equipment manufacturers' catalogs should be used to determine the zone of complete oxygen dispersion by surface, helical, or air gun aerators or the proper spacing of perforated tubing. Equation 16 is used to estimate oxygen transfer rates.

$$N=\frac{N_a}{\alpha\left[\frac{C_{SW}-C_L}{C_S}\right]1.025^{T_w-20}} \qquad (16)$$

where N = equivalent oxygen transfer to tap water at standard conditions, kg/hr

N_a = oxygen required to treat the wastewater, kg/hr (usually taken as 1.5 x the organic loading entering the cell)

α = (oxygen transfer in wastewater)/(oxygen transfer in tap water) = 0.9

C_L = minimum DO concentration to be maintained in the wastewater, assume 2 mg/l

C_s = oxygen saturation value of tap water at 20°C and one atmosphere pressure

= 9.17 mg/l.

T_w = wastewater temperature, °C.

$C_{sw} = \beta (C_{ss})P$ = oxygen saturation value of the waste, mg/l.

β = (wastewater saturation value)/tap water oxygen saturation value) = 0.9

Css = tap water oxygen saturation value at temperature T_w, (see oxygen saturation tables in Standard Methods or many textbooks).

P = ratio of barometric pressure at the pond site to barometric pressure at sea level. (assume 1.0 for an elevation of 100 m)

Eq. 14 can be used to estimate the water temperature in the pond during the summer months which will be the critical period for design. The use of the partial-mix design procedure is illustrated by the following example.

Example. Design a four cell partial-mix aerated pond for the following environmental conditions and wastewater characteristics. Q = 151,400 m^3/day, C_o = 300 mg/l, C_e from fourth cell = 30 mg/l, k_{20} = 0.276 day^{-1}, winter air temperature = 10°C, summer air temperature = 40°C, influent water temperature = 15 °C, elevation = 100 m, maintain a minimum DO concentration of 2 mg/l in all cells, use a pond depth of 4 m.

Solution

1. Assume a winter pond water temperature of 10°C and calculate the volume of a cell in the pond system.

$$k = (0.276)(1.036)^{(10-20)} = 0.194\ day^{-1}$$

$$t=\frac{4}{0.194}\left[\left[\frac{300}{30}\right]^{1/4} -1\right] = 16.0\ days$$

$$t_1 = t_2 = t_3 = t_4 = \frac{16.0}{4} = 4.0\ days$$

V_1 = (4.0)(151,400 m^3/day) = 605,600 m^3, use three trains, V_{11} = 202,867 m^3

2. Assuming that the pond cells have a length to width ratio of 4:1, calculate the dimensions of the cell using Eq. 15.

$$V\left[\frac{6}{4}\right] = 4W \times W+(4W-2\times3\times4)(W-2\times3\times4)+4(4W-3\times4)(W-3\times4)$$

$$1.5V = 24W^2 - 360W + 1152$$

$$\text{or: } W^2 - 15W = (1.5/24)(V) - 48 = 0.0625(202{,}867) - 48 = 12{,}631$$

Solve the quadratic equation by completing the square:

$$W^2 - 15W + 56.25 = 12{,}631 + 56.25$$

$$(W - 7.5)^2 = 12{,}687.25$$

$$W - 7.5 = 112.6$$

$$W = 120.1 \text{ m}$$

$$L = (120.1)(4) = 480.4 \text{ m}$$

$$\text{Surface Area } A = (120.1)(480.4) = 57{,}696 \text{ m}^2$$

3. Check the pond temperature using the calculated cell area of 57,696 m^2 and the other known characteristics in Eq. 14.

$$T_w=\frac{AfT_a+QT_i}{Af+Q}=\frac{(57{,}696)(0.5)(10)+(50{,}467)(15)}{(57{,}696)(0.5)+50{,}467}=13.2^oC$$

A temperature of 10°C was assumed, so another iteration is necessary.

4. For the second iteration assume 14°C.

$$k = (0.276)(1.036)^{(14-20)} = 0.223 \text{ days}^{-1}$$

Using Eq. 12, the total detention time for the four cell system is 14.0 days, or 3.5 days/cell.

$$V_1 = (3.5)(151{,}400) = 529{,}900 \text{ m}^3, V_{11} = 176{,}633 \text{ m}^3$$

$$W^2 - 15W = 0.0625V - 48$$

$(W - 7.5)^2 = 10{,}992$

$W = 112.3$ m

$L = (112.3)(4) = 449.2$ m

$A = (112.3)(449.2) = 50{,}445\ m^2$

$$T_w = \frac{(50{,}445)(0.5)(14) + (50{,}467)(15)}{(50{,}445)(0.5) + 50{,}467} = 14.7°C$$

This is close enough to the assumed value of 14°C; therefore, adopt the detention time and cell dimensions calculated in this iteration. Add a freeboard allowance of 0.6 m. This will increase the cell dimensions at the top of the inside of the dike to 115.9 m by 449.2 m. Using only 2 cells instead of 4 will increase the detention time by about 50 percent and increase the surface area and volume by a factor of about 3. This would be undesirable in cold climates because of the enhanced potential for ice formation and in all locations because of the additional costs for construction.

5. Determine the oxygen requirements for this pond system based on the organic loading in each cell and by using Eq. 16. The maximum oxygen requirements will occur in the summer months.

Use Eq. 14 to estimate pond temperatures

$$T_w = \frac{(50{,}445)(0.5)(40) + (50{,}467)(15)}{(50{,}445)(0.5) + 50{,}467} = 23.3°C$$

At 23°C the tap water oxygen saturation value (C_{ss}) is 8.68 mg/l (see tables in Standard Methods or standard text books for other values).

The organic load in the influent wastewater is:

$(C_o)(Q) = (300\ g/m^3)(50{,}467\ m^3/day)(day/24\ hr)(kg/1000g) = 631$ kg/h

$k_p = 0.276\ (1.036)^{23-20} = 0.307$

The effluent BOD from the first cell can be calculated with Eq. 10.

$$\frac{C_1}{C_0}=\frac{1}{\left[\frac{k_c t}{1}+1\right]^1}=\frac{1}{(0.307)(3.5)+1}=0.482$$

C1 = 300(0.482) = 145 mg/l

Therefore the organic loading on the second cell is:

145 mg/l(50,467 m^3/d)(1000 L/m^3)(1d/24 h)(1 kg/1000g)(1 g/1000mg) = 305 kg/h

Similarly,

BOD in cell 2 effluent = 70 mg/l

Organic loading on cell 3 = 147 kg/hr

BOD in cell 3 effluent = 34 mg/l

Organic loading on cell 4 = 71 kg/hr

The oxygen demand is assumed to be 1.5 times the organic loading, hence

N_{a1} = (1.5)(631 kg/hr) = 947 kg/h

Similarly, N_{a2} = 458 kg/hr, N_{a3} = 221 kg/hr, N_{a4} = 107 kg/hr. Use Eq. 16 to calculate equivalent oxygen transfer.

$$N=\frac{N_a}{\alpha\left[\frac{C_{SW}-C_L}{C_S}\right]1.025^{T_w-20}}$$

C_{sw} = (β)(C_{ss})(P) = (0.9)(8.68 mg/l)(1.0) = 7.81 mg/l

$$N_1=\frac{947}{0.9\left(\frac{7.81-2.0}{9.17}\right)(1.025)^{23-20}}=1542\,kg/h\ of\ O_2$$

Similarly,

$$N_2 = 746 \text{ kg/h of } O_2$$

$$N_3 = 360 \text{ kg /h of } O_2$$

$$N_4 = 174 \text{ kg/h of } O_2$$

6. Evaluate both surface and diffused air aeration equipment. A value of 1.9 kg O_2/kWh (1.4kg/hp/h) is recommended for estimating power requirements for surface aerators. A value of 2.7 kg O_2/kWh (2 kg/hp/h) is recommended by the manufacturers of this equipment. The gas transfer rate must be verified for the equipment selected.

The total power for surface aeration is:

Cell 1: (1542 kg/h of O_2)/(1.9 kg/kWh of O_2) = 812 kW (1,089 hp)

Similarly,

Cell 2: 393 kW (527 hp)

Cell 3: 189 kW (253 hp)

Cell 4: 92 kW (123 hp)

The total power for diffused aeration is:

Cell 1: (1542 kg/h of O_2)/(2.7 kg/kWh of O_2) = 571 kW (766 hp)

Similarly

Cell 2 = 276 kW (370 hp)

Cell 3 = 133 kW (178 hp)

Cell 4 = 64 kW (86 hp)

These surface or diffused aerator power requirements must be corrected for gearing and blower efficiency. Assuming 90 percent efficiency for both gearing and blowers, the total power for surface aerators in cell 1 would be 812 kW/ 0.9 = 902 kW (1210 hp). The total power needs are about 1,651 kW for the surface aerators and 1,160 kW for the diffused aerators. These are approximate values and are used for the preliminary selection of aeration equipment. The actual power requirement using surface aeration will be determined by using the zone of complete oxygen dispersion reported by the equipment manufacturers along with the calculated power estimates. The distribution of the two types of aeration equipment are illustrated in Figs. 2-2 and 2-3. Surface aeration equipment is subjected to potential icing problems in cold climates, and use of the fine bubble perforated tubing requires that a diligent maintenance program be established. A number of communities have experienced clogging of the perforations, particularly in hard water areas. Corrective action requires purging with HCl gas.

The final element recommended in this partial-mix aerated pond system is a settling cell with a 2-day detention time.

COMPLETE MIX AERATED PONDS

Complete mix aerated ponds are designed and operated as flow-through ponds with or without solids recycle. Most systems are operated without solids recycle; however, many systems are built with the option to recycle effluent and solids. Even though the recycle option may not be exercised, it is desirable to include it in the design to provide flexibility in the operation of the system. If the solids are returned to the pond, the process becomes a modified activated sludge process.

Solids in the complete mix aerated pond are kept suspended at all times. The effluent from the aeration tank will contain from one-third to one-half the concentration of the influent BOD in the form of solids These solids must be removed by settling before discharging the effluent. Settling is an integral part of the aerated pond system. Either a settling basin or a quiescent portion of one of the cells separated by baffles may be used for solids removal.

Six factors are considered in the design of an aerated pond: 1) BOD removal, 2) effluent characteristics, 3) oxygen requirements 4) mixing requirements, 5) temperature effects, and 6) solids separation (Metcalf and Eddy, 1991). BOD removal and the effluent characteristics are generally estimated using a complete mix hydraulic model and first order reaction kinetics. A combination of Monod-type kinetics, first order kinetics, and a complete mix model has been proposed, but there is limited experience with the method (Metcalf and Eddy, 1991; and Benefield and Randall, 1980). Oxygen requirements will be estimated using equations based upon mass balances; however, in a complete mix system the power input necessary to keep the solids suspended is much greater than that required to transfer adequate oxygen (Malina et al., 1972). Temperature effects are incorporated into the BOD removal equations. Solids removal will be accomplished by installing a

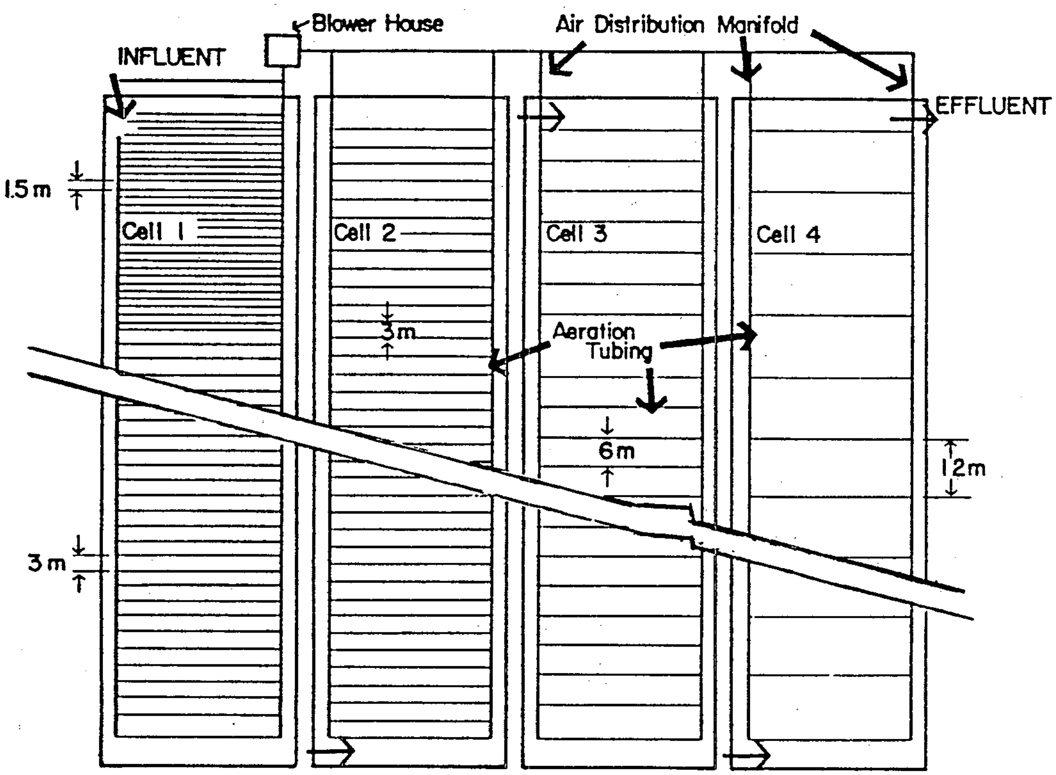


FIGURE 2-2 LAYOUT OF AERATION SYSTEM FOR PARTIAL MIX DIFFUSED AIR AERATED POND SYSTEM.

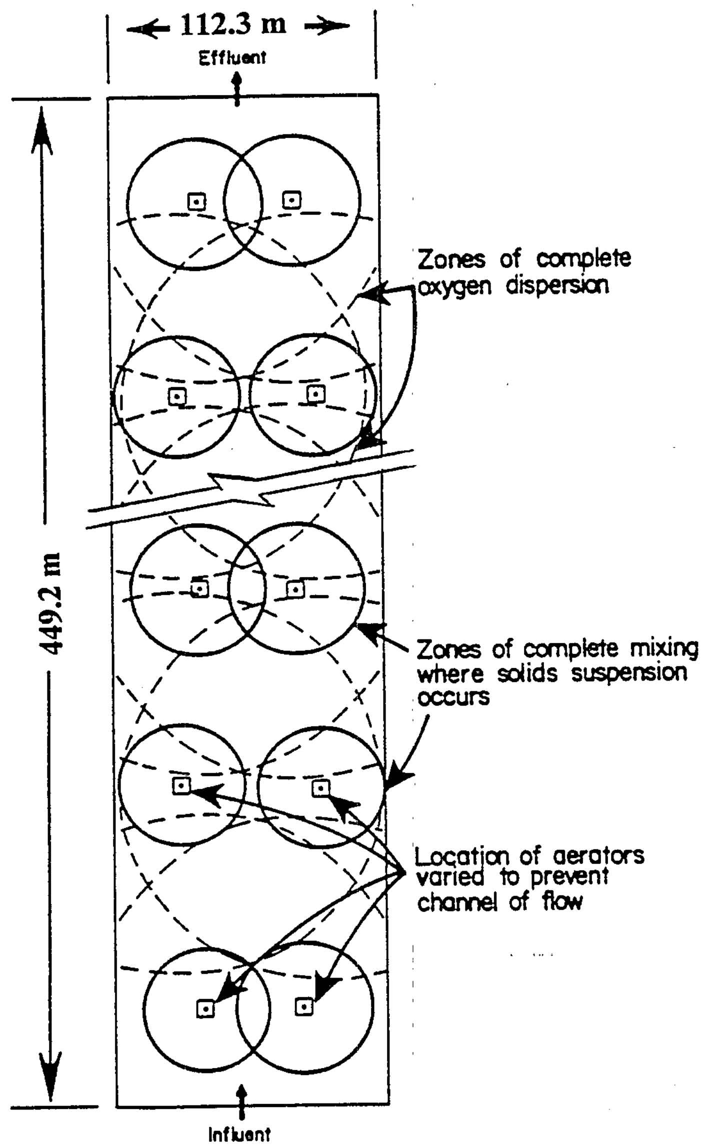


FIGURE 2-3 LAYOUT OF SURFACE AERATORS IN FIRST CELL OF PARTIAL MIX SYSTEM.

settling pond with a two day detention time. If a higher quality effluent is required, the solids removal devices described herein should be evaluated and one selected to produce an acceptable effluent quality.

Complete Mix Model

The complete mix model using first order kinetics and operating in a series with n equal volume ponds is the same as Equation 10 used for the partial mix pond system. The differences in using Equation 10 with complete mix systems is the change in k_c (becomes 2.0 per day) and θ in Equation 13 (becomes 1.085) .

$$\frac{C_n}{C_o} = \frac{1}{[1+(kt/n)]^n} \qquad (10)$$

where C_n = effluent BOD concentration in cell n, mg/l

C_o = influent BOD concentration, mg/l

k = first order reaction rate constant, $days^{-1}$

= 2.0 day^{-1} at 20°C (assumed to be constant in all cells).

t = total hydraulic residence time in pond system, days

n = number of cells in the series.

The design example shown for a partial mix aerated lagoon can be followed to design a complete mix system by substituting the values of k_c and θ mentioned above.

CONTROLLED DISCHARGE PONDS

No rational or empirical design model exists specifically for the design of controlled discharge wastewater ponds as utilized in the northern U.S. and Canada. However, the facultative pond design models may also be applied to the design of controlled discharge ponds provided allowance is made for the required larger storage volumes. The plug-flow model for facultative ponds can be applied to the controlled discharge type if the hydraulic residence time is less than 120 days. A study of 49 controlled discharge ponds in Michigan indicated that residence times were 120 days or greater and discharge periods ranged from 5 days to 30 days for each occurrence. Ponds of this type have been successfully operated in the north central United States using the following criteria:

- Overall organic loading: 22-28 kg BOD/ha-day (20-25 lb BOD/ac-day).

- Liquid depth: not more than 2 m (6 ft) in first cell, not more than 2.5 m (8 ft)in subsequent cells.

- Hydraulic detention: at least 6 months storage above the 0.6 m (2 ft) liquid level (including precipitation), but not less than the period of ice cover.

- Number of cells: at least 3 for reliability, with interconnected piping for parallel or series operation.

The design of the controlled discharge pond must include an analysis showing that receiving stream water quality standards will be maintained during the discharge period, and that the receiving watercourses can accommodate the discharge rate from the pond. The design must also develop a recommended discharge schedule.

Selecting the optimum day and hour for release of the pond contents is critical to the success of this method. The operation and maintenance manual must include instructions on how to correlate pond discharge with effluent and stream quality. The pond contents and stream must be carefully examined, before and during the discharge period.

- The following steps are usually taken for discharge from all systems:

- Isolate the cell to be discharged, usually the final one in series, by valving off the inlet line from the preceding cell.

- Analyze cell contents for parameters of concern in the discharge permit.

- Plan activities to spend full time on control of discharge during the entire discharge period.

- Monitor conditions in receiving stream and request approval from regulatory agency for discharge.

- Commence discharge when approval is received and continue as long as weather is favorable, and dissolved oxygen levels and turbidity are below limits. Typically the last two cells in the series are sequentially isolated and drawn down. Then discharge is interrupted for a week or more while raw wastewater is diverted to one of the cells which has been drawn down. The purpose here is to isolate the first cell prior to its discharge. When the first cell is drawn down to about 60 cm (24 in) depth, the usual internal series flow pattern, without discharge is resumed.

- During the discharge periods, samples are taken at least three times daily near the discharge pipe for immediate dissolved oxygen analysis. Additional testing may be required for SS and other parameters.

Experience with the operational concept listed above is limited to northern states with seasonal and climatic constraints on performance. A continuous ice cover on a facultative pond will lower performance and little better than primary effluent will result if discharge is permitted during such periods. Stringent limits on SS may also limit discharge during the seasonal algal bloom periods. The concept will be quite effective for BOD removal in any location. The process will also work with a more frequent than semi-annual discharge cycle, depending on receiving water conditions and requirements.

The hydrograph-controlled release (HCR) pond is a variation of this concept, which was developed for use in the southern United States, but can be effectively used in most areas of the country. In this case the discharge periods are controlled by a gauging station in the receiving stream and are allowed to occur during high flow periods. During low flow periods the effluent is stored in the HCR pond. The process design uses conventional facultative or aerated ponds for the basic treatment, followed by the HCR cell for storage/discharge. No treatment allowances are made during design for the residence time in the HCR cell; its sole function is storage. Depending on stream flow conditions, the storage needs may range from 30 to 120 days. The design maximum water level in the HCR cell is typically about 2.4 m (8 ft) with the minimum water level at 0.6 m (2 ft). Other physical elements are similar to conventional pond systems. The major advantage for HCR systems is the possibility of utilizing lower discharge standards during high flow conditions as compared to a system designed for very stringent low flow requirements and then operated in that mode on a continuous basis.

COMPLETE RETENTION PONDS

In areas of the world where the moisture deficit, evaporation minus rainfall, exceeds 75 cm (30 in) annually, a complete retention wastewater pond may prove to be the most economical method of disposal if low cost land is available. The pond must be sized to provide the necessary surface area to evaporate the total annual wastewater volume plus the precipitation that would fall on the pond. The system should be designed for the maximum wet year and minimum evaporation year of record if overflow is not permissible under any circumstances. Less stringent design standards may be appropriate in situations where occasional overflow is acceptable or an alternative disposal area is available under emergency conditions.

Monthly evaporation and precipitation rates must be known to properly size the system. Complete retention ponds usually require large land areas, and these areas are not productive once they have been committed to this type of system. Land for this system must be naturally flat or be shaped to provide ponds that are uniform in depth, and have large surface areas. The design procedure for a complete retention wastewater pond system is available elsewhere (USEPA, 1983).

COMBINED SYSTEMS

In certain situations it is desirable to design pond systems in combinations, i.e., an aerated pond followed by a facultative or a tertiary pond. Combinations of this type are designed essentially the same as the individual ponds. For example, the aerated pond would be designed as described above, and the predicted effluent quality from this unit would be the influent quality for the facultative polishing pond. Further details on combined pond systems can be found elsewhere (Boulier and Atchinson, 1980; Gloyna, 1976; and Rich, 1982). Oswald (1970) has developed the Advanced Integrated Pond system (AIP) which consists of four basic types of ponds in series (USDOE, 1993). A facultative pond with a "digester pit" is followed by a high-rate pond, a settling pond, and a maturation pond(s). Systems have been built in several locations in California and several countries throughout the world. The best know facility of this type is located in St. Helena, California.

ANAEROBIC PONDS

There is no agreement on the best approach to the design of anaerobic stabilization ponds. Systems are designed on the basis of surface loading rate, volumetric loading rate and hydraulic detention time. Although done frequently, design on the basis of surface loading rate probably is inaccurate. Proper design should be based on the volumetric loading rate, temperature of the liquid, and the hydraulic detention time.

In climates where the temperature exceeds 22°C, the following design criteria should yield a BOD_5 removal of 50 % or better (WHO, 1987).

- Volumetric loading up to 300 g BOD_5/m^3-day
- Hydraulic detention time of approximately 5 days
- Depth between 2.5 and 5 meters

In cold climates, detention times as great as 50 days and volumetric loading rate as low as 40 g BOD_5/m^3-day may be required to achieve 50% reduction in BOD_5. The relationship between temperature, detention time, and BOD reduction is shown in Tables 2-4 and 2-5.

Table 2-4
Five-day BOD Reduction as a Function of Detention Time for Temperatures Greater Than Twenty Degrees Celcius (WHO, 1987)

Detention Time (days)	BOD_5 Reduction (%)
1	50
2.5	60
5	70

Table 2-5
Five-day BOD Reduction as a Function of Detention Time, and Temperature (WHO, 1987)

Temperature (°C)	Detention Time (days)	BOD Reduction (%)
10	5	0-10
10-15	4-5	30-40
15-20	2-3	40-50
20-25	1-2	40-60
25-30	1-2	60-80

PATHOGEN REMOVAL

Bacteria, parasite, and virus removal is very effective in multiple-cell wastewater stabilization ponds with suitable detention times (Reed, 1985). A minimum of three cells is recommended. It is expected that the normal detention time provided for BOD removal in most pond systems may be sufficient to satisfy most regulatory requirements for bacteria and virus removal without additional disinfection; however, a 20-day minimum detention time is suggested.

SUSPENDED SOLIDS REMOVAL

The occasional high concentration of SS, which can exceed 100 mg/l, in the effluent is the major disadvantage of pond systems. The solids are primarily composed of algae and other pond detritus, not wastewater solids. These high concentrations are usually limited to 2 to 4 months during the year. Several options, discussed in the sections to follow, are available for improving system performance. Further details can be found in Middlebrooks et al. (1982); USEPA (1973); USEPA (1974); USEPA (1981); USEPA (1974).

Intermittent sand filtration

Intermittent sand filtration is capable of polishing pond effluents at relatively low cost. It is similar to the practice of slow sand filtration in potable water treatment or the slow sand filtration of raw sewage which was practiced during the early 1900s. Intermittent sand filtration of pond effluents is the application of pond effluent on a periodic or intermittent basis to a sand filter bed. As the wastewater passes through the bed, suspended solids and other organic matter are removed through a combination of physical straining and biological degradation processes. The particulate matter collects in the top 5 to 8 cm (2 to 3 in) of the filter bed, and this accumulation eventually clogs the surface and prevents effective infiltration of additional effluent. When this happens, the bed is taken out of service, the top layer of clogged sand removed, and the unit is put back into service. The removed sand can be washed and reused or discarded.

The effluent quality is almost totally a function of the sand gradation used. When BOD and SS below 30 mg/l will satisfy requirements, a single-stage filter with medium sand will produce a reasonable filter run. If better effluent quality is necessary, a two-stage filtration system should be used, with finer sand in the second stage.

Typical hydraulic loading rates on a single stage filter range from 0.37 to 0.56 m^3/m^2-day (0.4 to 0.6 million gallons/ac-day). If the SS in the influent to the filter will routinely exceed 50 mg/l, the hydraulic loading rate should be reduced to 0.19 to 0.37 m^3/m^2-day (0.2 to 0.4 million gallons/ac-day) to increase the filter run. In cold weather locations, the lower end of the range is recommended during winter operations to avoid the possible need for bed cleaning during the winter months. The total filter area required for a single-stage operation is obtained by dividing the anticipated influent flow rate by the hydraulic loading rate selected for the system. One spare filter unit should be included to permit continuous operation since the cleaning operation may require several days. An alternate approach is to provide temporary storage in the pond units. Three filter beds are the preferred arrangement to permit maximum flexibility. In small systems that depend on manual cleaning, the individual bed should not be bigger than about 90 m^2 (1000 ft^2). Larger systems with mechanical cleaning equipment might have individual filter beds up to 5000 m^2 (55,000 ft^2) in area.

Selected sand is usually used as the filter media. These are generally described by their *effective size* (e.s.) and *uniformity coefficient* (u). The e.s. is the 10 percentile size, i.e., only 10 percent of the filter sand, by weight, is smaller than that size. The uniformity coefficient is the ratio of the 60 percentile size to the 10 percentile size. The sand for single-stage filters should have an e.s. ranging from 0.20 to 0.30 mm and a u of less than 7.0, with less than 1 percent of the sand smaller than 0.1 mm. The u value has little effect on performance, and values ranging from 1.5 to 7.0 are acceptable. In the general case clean, pit-run concrete sand is suitable for use in intermittent sand filters providing the e.s., u, and minimum sand size are suitable.

The design depth of sand in the bed should be at least 45 cm (18 in) plus a sufficient depth for at least 1 year of cleaning cycles. A single cleaning operation may remove 2.5 to 5 cm (1 to 2 in) of sand. A 30-day filter run would then require an additional 30 cm (12 in) of sand. In the typical case an initial bed depth of about 90 cm (36 in) of sand is usually provided. A graded gravel layer 30 to 45 cm (12 to 18 in) separates the sand layer from the underdrains. The bottom layer is graded so that its e.s. is four times as great as the openings in the underdrain piping. The successive layers of gravel are progressively finer to prevent intrusion of sand. An alternative is to use gravel around the underdrain piping and then a permeable geotextile membrane to separate the sand from the gravel. Further details on design and performance of these systems can be found in Middlebrooks et al. (1982), Russell (1980), and USEPA (1983).

Microstrainers

Early experiments with microstrainers to remove algae from pond effluents were largely unsuccessful. This was generally attributed to the algae being smaller than the mesh size of the microstrainers tested. A polyester fabric with a 1-μm mesh size has since been developed, and it appears that microstrainers equipped with this fabric are capable of producing an effluent with BOD and SS concentrations less than 30 mg/l.

Microscreen manufacturers are promoting the use of the 1-μm screen with the return of the filtered algae to the pond. Short-term experience indicates that the return of filtered algae does not cause problems; however, the potential exists for the filtered material to accumulate and eventually cause overloading of the screen. The effects of solids recycle through the pond system should be monitored in newly constructed microscreen systems. The first full-scale microstrainer application to pond effluent, a 7,200 m^3/day (1.9 million gallon/day) unit was placed in operation in Camden, South Carolina in December 1981 (Harrelson and Cravens, 1982). Typical design criteria include surface loading rates of 90 to 120 m^3/m^2-day (1.5 to 2.0 gpm/ft^2) and head losses up to 60 cm (2 ft). Other process variables include drum speed, backwash rate and pressure; these are normally determined on the basis of influent quality and effluent expectations. The service life of the screen is reported to be about 1 1/2 years, which is considerably less than the manufacturer's prediction of 5 years. Difficulty with screen binding and short run times was experienced with the Camden system. Before designing a microscreen for pond polishing, careful study is recommended.

Rock filters

A rock filter operates by allowing pond effluent to travel through a submerged porous rock bed, causing algae to settle out on the rock surfaces as the liquid flows through the void spaces. The accumulated algae are then biologically degraded. Algae removal with rock filters has been studied extensively at Eudora, Kansas; California, Missouri; and Veneta, Oregon (Swanson and Williamson, 1980; and USEPA, 1983). Many rock filters have been installed throughout the United States and the world, and performance has varied (Middlebrooks, 1988).

The principal advantages of the rock filter are its relatively low construction cost and simple operation. Odor problems can occur, and the design life for the filters and the cleaning procedures have not yet been firmly established. However, several units have operated successfully for 10 to 15 years.

Other solids removal techniques

A detailed discussion of normal granular media filtration, dissolved air flotation, autoflocculation, phase isolation, centrifugation, and coagulation-flocculation is presented in Middlebrooks et al. (1982) and USEPA (1983). These techniques are used infrequently, but the designer should be aware of their potential.

NITROGEN REMOVAL

The BOD and SS removal capability of pond systems has been reasonably well-documented, and reliable designs are possible; however, the nitrogen removal capability of wastewater ponds is given little consideration in most system designs. Nitrogen removal can be critical in many situations, since ammonia nitrogen in low concentrations can adversely affect some young fish in receiving waters. In addition, nitrogen is often the controlling parameter for design of land treatment systems. Any nitrogen removal in the preliminary pond units can result in a very significant savings in the land area required and therefore the costs for land treatment (Reed et al., 1995).

Nitrogen loss from streams, lakes, impoundments, and wastewater ponds has been observed for many years. Data on nitrogen losses have been insufficient for a comprehensive analysis, and there has been no agreement on the removal mechanisms. Various investigators have suggested: algal uptake, sludge deposition, adsorption by bottom soils, nitrification/denitrification and loss of ammonia as a gas to the atmosphere (volatilization). Several evaluations suggest that a combination of factors may be responsible, with the dominant mechanism under favorable conditions being losses to the atmosphere (Pano and Middlebrooks, 1982; Reed, 1984; USEPA, 1983).

The EPA sponsored comprehensive studies of wastewater pond systems in the late 1970s. These results provided absolute verification that significant nitrogen removal does occur in pond systems. Table 2-6 summarizes the key findings from these studies, which confirm that nitrogen removal is in some way related to pH, detention time, and temperature in the pond system. The pH fluctuates as a result of the algae-carbonate interactions in the pond, so wastewater alkalinity is important. Under ideal conditions, up to 95 percent nitrogen removal can be achieved in wastewater stabilization ponds.

Table 2-6
Data Summary From EPA Pond Studies (USEPA, 1983)

Location	Detention Time (days)	Water Temperature (°C)	pH (median)	Alkalinity (mg/l)	Influent Nitrogen (mg/l)	Removal (%)
Peterborough, NH 3 cells	107	11	7.1	85	17.8	43
Kilmichael, MS 3 cells	214	18.4	8.2	116	35.9	80
Eudora, KS 3 cells	231	14.7	8.4	284	50.8	823
Corinne, UT 1st 3 cells	42	10	9.4	555	14.0	46

Design models

Data were collected on a frequent schedule from every cell at all of the pond systems listed in Table 2-6 for at least a full annual cycle. This large body of data allowed quantitative analysis with all major variables included, and two design models were independently developed. These have been validated using the same data from sources not used in the model development. The two models are summarized in Tables 2-7 and 2-8; details on development of Model 1 can be found in Reed (1984) and details of Model 2 can be found in Pano and Middlebrooks (1982).

Table 2-7
Design Model Number 1 (Reed, 1984)

$$N_e = N_0 \exp \{-k_t\ [t + 60.6(pH - 6.6)] \qquad (17)$$

where N_e = effluent total nitrogen, mg/l

N_o = influent total nitrogen, mg/l

k_T = temperature dependent, rate constant, days^{-1}, pH^{-1}
$= k_{20}(\theta)^{T-20}$

$\theta = 1.039$

T = water temperature, (use Eq. 13)

$k_{20} = 0.0064\ day^{-1}$

See Reed (1984) or USEPA (1983) for typical pH values or estimate with:

$pH = 7.3\ exp[0.0005(ALK)]$

ALK = expected influent alkalinity, mg/l, (derived from data in Reed, 1984 and USEPA, 1983)

Table 2-8
Design Model Number 2 (Pano and Middlebrooks, 1982 and USEPA, 1983)

$$N_e = N_0 \left[\frac{1}{1 + t(0.000576T - 0.00028)\exp[(1.080 - 0.042T)(pH - 6.6)]} \right] \quad (18)$$

All terms defined in Table 2-7.

Both are first order models, and both depend on pH, temperature, and detention time in the system. Although they both predict the removal of total nitrogen, it is implied in the development of each that volatilization of ammonia is the major pathway for nitrogen removal from wastewater stabilization ponds. Figure 2-4 demonstrates the application of the two models and compares the predicted total nitrogen in the effluent to the actual monthly average values measured at Peterborough, New Hampshire.

Both of these models are written in terms of total nitrogen, and they should not be confused with the still valid equations in Pano and Middlebrooks (1982) and USEPA (1983), which are limited to only the ammonia fraction. Calculations and predictions based on total nitrogen should be even more conservative than those earlier models.

The high-rate ammonia removal by air stripping in advanced wastewater treatment depends on high (>10) chemically adjusted pH. The algal-carbonate interactions in wastewater ponds can elevate the pH to similar levels for brief periods. At other times, at moderate pH levels the rate of nitrogen removal may be low, but the long detention time in the pond compensates.

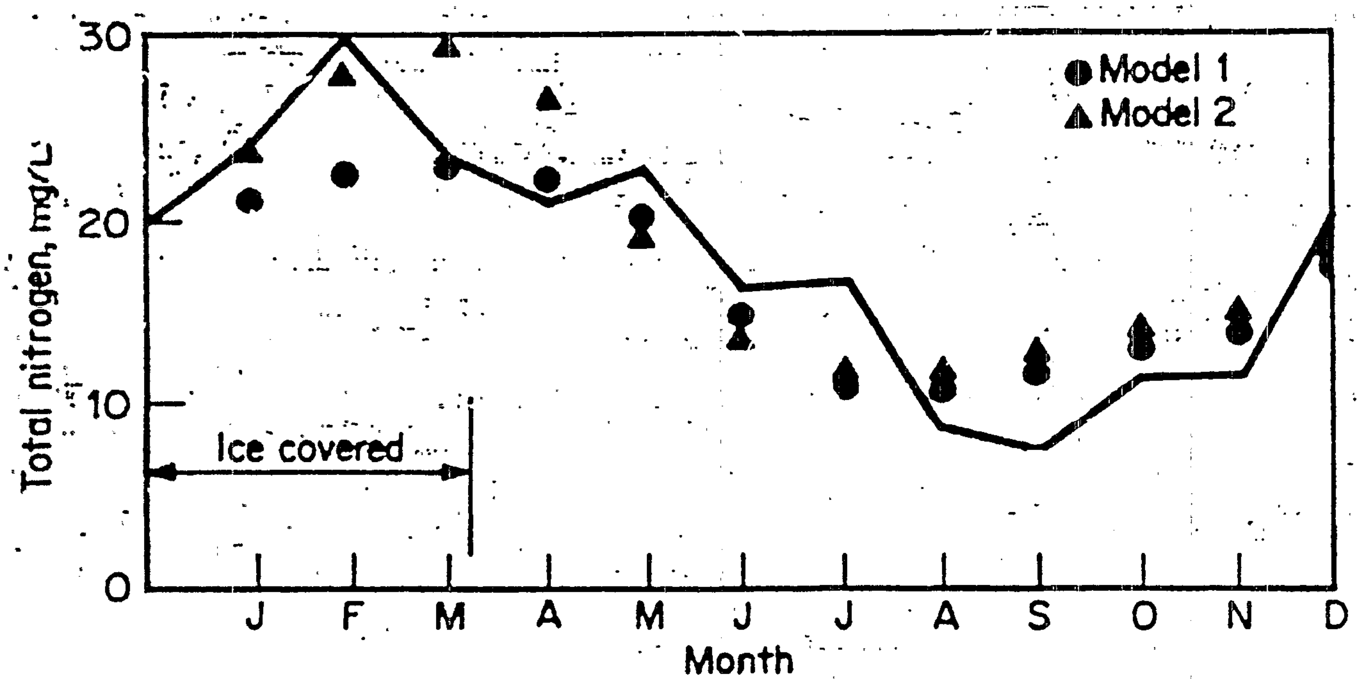


FIGURE 2-4 PREDICTED VERSUS ACTUAL EFFLUENT NITROGEN, PETERBOROUGH, N.H.

Application

These models should be useful for new or existing wastewater ponds when nitrogen removal and/or ammonia conversion is required. The design of new systems would typically base detention time on the BOD removal requirements. The nitrogen removal that will occur during that time can then be calculated with either model. It is prudent to assume that the remaining nitrogen in the effluent will be ammonia, and to then design any further removal /conversion for that amount. If additional land area is available, a final step can be a comparison of the costs of providing additional detention time in the pond for nitrogen removal with the costs for other removal alternatives.

PHOSPHORUS REMOVAL

The need for phosphorus removal can occur when eutrophication is an issue. In general, phosphorus removal is not often required for wastewaters receiving stabilization pond treatment, but there are a number of exceptions for systems in the north central United States and Canada (Reed et al., 1995).

Batch chemical treatment

In order to meet a phosphorus requirement of 1 mg/l for discharge to the Great Lakes an approach using in-pond chemical treatment in controlled discharge ponds was developed in Canada. Alum, ferric chloride and lime were all tested by using a motor boat for distribution and mixing of the chemical. A typical alum dosage might be 150 mg/l, and this should produce an effluent from the controlled discharge pond that contains less than 1 mg/l of phosphorus and less than 20 mg/l BOD and SS. The sludge build-up from the additional chemicals is insignificant and would allow years of operation before requiring cleaning. The costs for this method were very reasonable and much less than conventional phosphorus removal methods (Graham and Hunsinger, undated).

Continuous overflow chemical treatment

Studies of in-pond precipitation of phosphorus, BOD, and SS were conducted over a 2 year period in Ontario, Canada (Graham and Hunsinger, 1977). The primary objective of the chemical dosing process was to test removal of phosphorus with ferric chloride, alum and lime. Ferric chloride doses of 20 mg/l and alum doses of 225 mg/l, when continuously added to the pond influent, effectively maintained pond effluent phosphorus levels below 1 mg/l over a 2-year period. Hydrated lime, at dosages up to 400 mg/l, was not effective in consistently reducing phosphorus below 1 mg/l (1 to 3 mg/l was achieved) and produced no BOD reduction while slightly increasing the SS concentration. Ferric chloride reduced effluent BOD from 17 to 11 mg/l and SS from 28 to 21 mg/l; alum produced no BOD reduction and a slight SS reduction (from 43 to 28-34 mg/l). Consequently, direct chemical addition appears to be effective only for phosphorus removal.

A six cell pond system located in Waldorf, Maryland, was modified to operate as two three-cell units in parallel (Engel and Schwing, 1980). One system was used as a control and alum added to the other for phosphorus removal. Each system contained an aerated first cell. Alum addition to the third cell of the system proved to be more efficient in removing total phosphorus, BOD, and SS than alum addition to the first cell. Total phosphorus reduction averaged 81 percent when alum was added to the inlet to the third cell and 60 percent when alum was added to the inlet of the first cell. Total phosphorus removal in the control ponds averaged 37 percent. When alum was added to the third cell, the effluent total phosphorus concentration averaged 2.5 mg/l, with the control units averaging 8.3 mg/l. Improvements in BOD and SS removal by alum addition were more difficult to detect, and at times increases in effluent concentrations were observed.

PHYSICAL DESIGN AND CONSTRUCTION

Regardless of the care taken to evaluate coefficients and apply biological or kinetic models, if sufficient consideration is not given to optimization of the pond layout and construction, the actual efficiency may be far less than the calculated efficiency. The physical design of a wastewater pond is as important as the biological and kinetic design. The biological factors affecting wastewater pond performance are primarily employed to estimate the required hydraulic residence time to achieve a specified efficiency. Physical factors, such as length to width ratio, will determine the actual efficiency achieved (Middlebrooks et al., 1982; USEPA, 1983).

Length to width ratios are determined according to the design model used. Complete-mix ponds should have a length to width ratio of approximately 1:1; whereas, plug-flow ponds require a ratio of 3:1 or greater.

The danger of groundwater contamination may impose seepage restrictions, necessitating lining or sealing the pond. Reuse of pond effluents in dry areas where all water losses are to be avoided may also dictate the use of linings. Layout and construction criteria should be established to reduce dike erosion from wave action, weather, rodent attacks, etc. Transfer structure placement and size affect flow patterns within the pond and determine operational capabilities in controlling the water level and discharge rate.

Dike construction

Dike stability is most often affected by erosion caused by wind driven wave action or rain and rain-induced weathering. Dikes may also be destroyed by burrowing rodents. A good design will anticipate these problems and provide a system which can, through cost-effective operation and maintenance, keep all three under control.

Erosion protection is necessary on all slopes; however, if winds are predominantly from one direction, protection should be emphasized for those areas that receive the full force of the wind driven waves. Protection should extend from at least 0.3 m (1 ft) below the minimum water level to at least 0.3 m (1 ft) above the maximum water surface. Asphalt, concrete, fabric, low grasses, and riprap have all been used to provide protection form wave action. The use of rip rap, however, can make weed and rodent control more difficult. In some cases when fabric liners are used, a covering of rip rap is also used to protect the plastic materials from damaging ultraviolet radiation from the sun. Rodent control can be achieved with earthen dikes by periodically changing the water levels to flood the burrows. The selection of proper soils and compaction during construction can render an earthen dike essentially impermeable. Seepage collars should be provided around any pipe penetrating the dike; these collars should extend a minimum of 0.6 m (2 ft) from the pipe.

Pond sealing

The primary motive for sealing ponds is to prevent seepage, which can pollute groundwaters and affect treatment performance by causing fluctuations in the water depth. Sealing methods can be grouped in three categories:

- Synthetic and rubber liners
- Compacted earth or soil cement liners
- Natural and chemical treatment liners

Within each category also exists a wide variety of application characteristics. Choosing the appropriate lining for a specific site is a critical factor in pond design and seepage control. Seepage rates range from 0.003 cm/day (0.001 in/day) for synthetic membranes to about 10 cm/day (4 in/day) for soil cement liners (USEPA, 1983). Detailed information is available from manufacturers and in other publications (Kays, 1986; and Middlebrooks, et al., 1978).

Pond hydraulics

In the past, the majority of ponds were designed to receive influent wastewater through a single pipe, usually located toward the center of the first cell in the system. Hydraulic and performance studies [7,9,19,20] have shown that the center discharge point is not the most efficient method of introducing wastewater to a pond (Finney and Middlebrooks, 1980; George, 1973; Mangelson, 1971, 1972). Multiple inlet arrangements are preferred even in small ponds [<0.5 ha (<1.2 ac)]. The inlet points should be as far apart as possible and the water should preferably be introduced by means of a long diffuser or multiple inlet structure. The inlets and outlets should be placed so that flow through the pond is uniform between successive inlets and outlets.

Single inlets can be used successfully if the inlet is located the greatest distance possible from the outlet structure and is baffled, or the flow is otherwise directed to avoid currents and short circuiting. Outlet structures should be designed for multiple-depth withdrawal, and all withdrawals should be a minimum of 0.3 m (1 ft) below the water surface to reduce the potential impact of algae and other surface detritus on effluent quality.

Analysis of performance data from selected aerated and facultative ponds indicates that four cells in series are desirable to give the best BOD and fecal coliform removals for ponds designed as plug-flow systems. Good performance can also be obtained with a smaller number of cells if baffles or dikes are used to optimize the hydraulic characteristics of the system.

Better treatment is obtained when the flow is guided more carefully through the pond. In addition to treatment efficiency, economics and aesthetics play an important role in deciding whether or not baffling is desirable. In general, the more baffling that is used, the better the flow control and treatment efficiency. The lateral spacing and length of the baffle should be specified so that the cross-sectional area of flow is as close to a constant as possible.

Wind generates a circulatory flow in bodies of water. To minimize short circuiting due to wind, the pond inlet-outlet axis should be aligned perpendicular to the prevailing wind direction if possible. If this is not possible, baffling can be used to control to some extent the wind-induced circulation. In a constant-depth pond the surface current will be in the direction of the wind, and the return flow will be in the upwind direction along the bottom.

Ponds that are stratified because of temperature differences between the inflow and the pond contents tend to behave differently in winter and summer. In summer the inflow is generally colder than the pond, so it sinks to the pond bottom and flows toward the outlet. In the winter the reverse is generally true, and the inflow rises to the surface and flows toward the outlet. A likely consequence is that the effective treatment volume of the pond is reduced to that of the stratified inflow layer (density current). The result can be a drastic decrease in detention time and an unacceptable level of treatment.

STORAGE PONDS FOR LAND TREATMENT SYSTEMS

Seasonal effluent storage ponds are sometimes required for land treatment systems. Storage is necessary for all nonoperational periods at the land treatment system and is desirable for flow equalization and emergency system back-up. Nonoperating periods may be due to climate, planting or harvesting and other maintenance operations. The design storage volume is determined from a calculated water balance during design (Reed et al., 1995).

The storage pond may follow other conventional treatment units or may be the final cell in a stabilization pond system. The storage cell is usually deeper than typical treatment pond cells and can range from 3 to 6 m (9 to 18 ft) in depth. Credit should be taken during design for the additional treatment which will occur in this storage pond, using the methods presented herein. Calculation of nitrogen removal using either Eq. 17 or 18 is particularly important. Nitrogen is often the limiting design factor for land treatment systems, directly affecting the land area required for treatment. Any nitrogen removal in the storage pond will reduce the final treatment area and the costs. Similarly, the pathogen removal in the pond can often satisfy requirements without further disinfection.

The operation of the storage pond will depend on the type of land treatment system in use. Storage is usually only provided for emergencies in rapid infiltration systems so the pond is drained as soon as it is possible to do so. Since overland flow systems are not very effective for algae removal, storage ponds for these systems are bypassed during algal bloom periods, and the ponds drawn down when algae concentrations are low. Algae are not a concern for slow rate land treatment, so the storage pond may stay on line continuously. This is necessary if nitrogen or pathogen removal is expected in the storage cell. In this case, treated wastewater flow into the cell should continue on a year-round basis, and the withdrawals should be scheduled for attainment of the specified water depth at the end of the operating season for the land treatment component.

CHAPTER 3

MEXICALI, BAJA CALIFORNIA NORTE (BCN) MEXICO WASTEWATER TREATMENT SYSTEM

CHAPTER 3

MEXICALI, BAJA CALIFORNIA NORTE (BCN), MEXICO WASTEWATER TREATMENT SYSTEM

Mexicali, Mexico is located in the Northwest part of the state of Baja, California, and the New River flows through the city. Effluent from the two wastewater stabilization pond systems in Mexicali discharge into the New River as well as the effluent from industrial operations and agricultural drains.

The sewer system is divided into two sections, Mexicali I, the older more established section of the city, and Mexicali II which is still developing in conjunction with industrial operations. The current population of the city is 539,000 inhabitants, and the population is expected to grow to 941,000 by the year 2015. Wastewater flow rates are expected to be 1,645 liters per second (37.6 MGD) in 2015. Parts of Mexicali II currently are not sewered, and when the current flow rate into the Mexicali I pond system is considered, the 2015 design flow rate is currently being approached and likely will increase beyond the projections.

Wastewater from Mexicali II is partially treated in the Gonzalez Ortega pond system which is heavily overloaded. The Mexicali BCN Lagoon System I (MLSI) receives wastewater from the Zaragoza neighborhood, and the system is less stressed but still overloaded.

SYSTEM DESCRIPTION

A plan view of the Mexicali BCN I lagoon system is shown in Figure 2-1, and a simplified flow diagram of the system is shown in Figure 2-2. The system consists of three anaerobic ponds (designed as aerated ponds) followed by two trains of facultative ponds. Train A consists of six facultative ponds receiving one-half of the combined flow from the three primary (anaerobic) ponds, and train B has four facultative ponds receiving the remaining half of the flow from the three anaerobic ponds. All three primary ponds have equal volumes and surface areas. Although shaped differently, all ten of the facultative ponds have the same volume and surface area. The sizes of the primary and facultative ponds are presented in Figure 2-2. The volume of the cells, hydraulic detention time in each cell, and the total detention time for the system are shown in Table 2-1. These data were used to develop the relationships presented in the following sections.

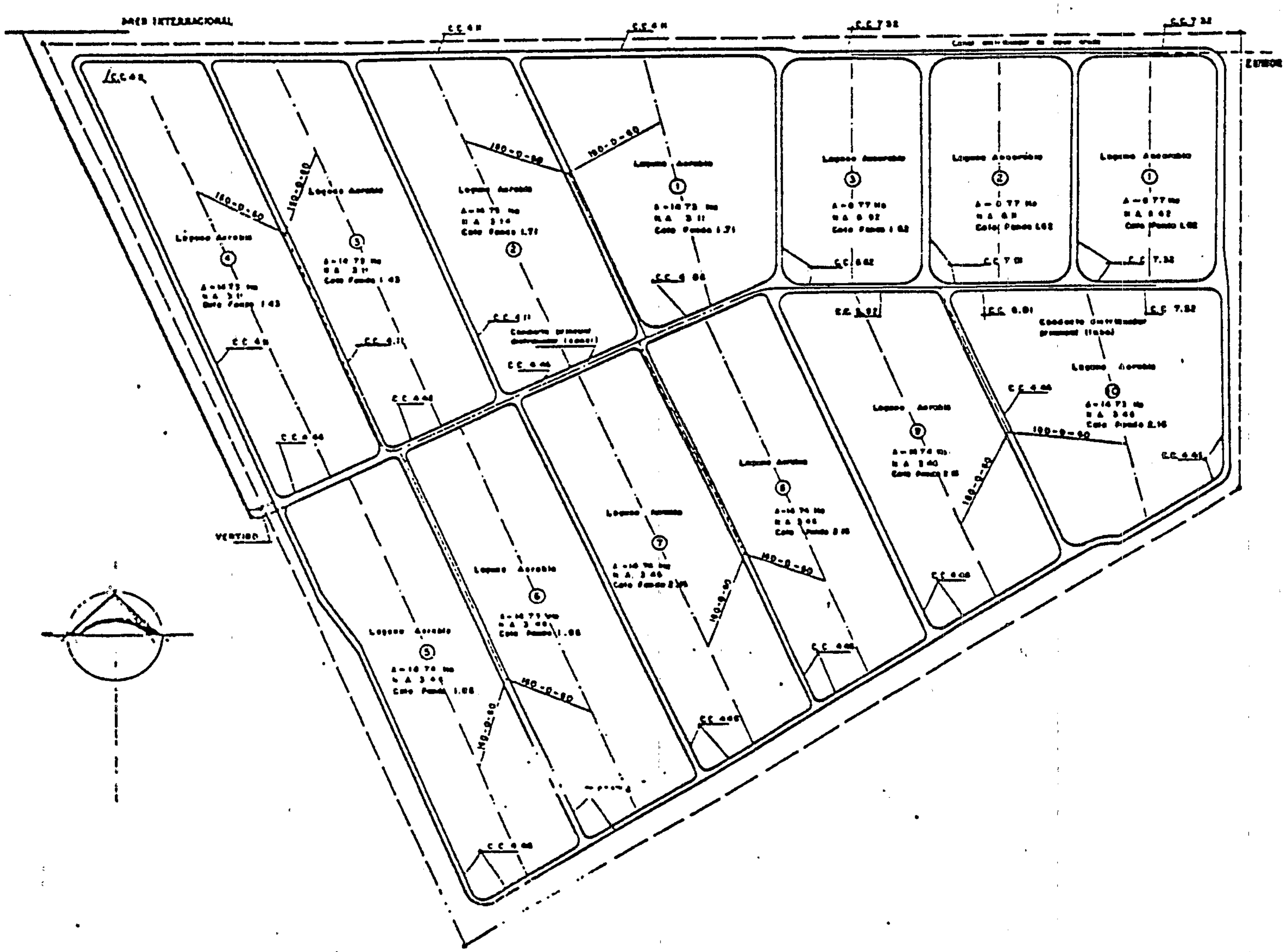
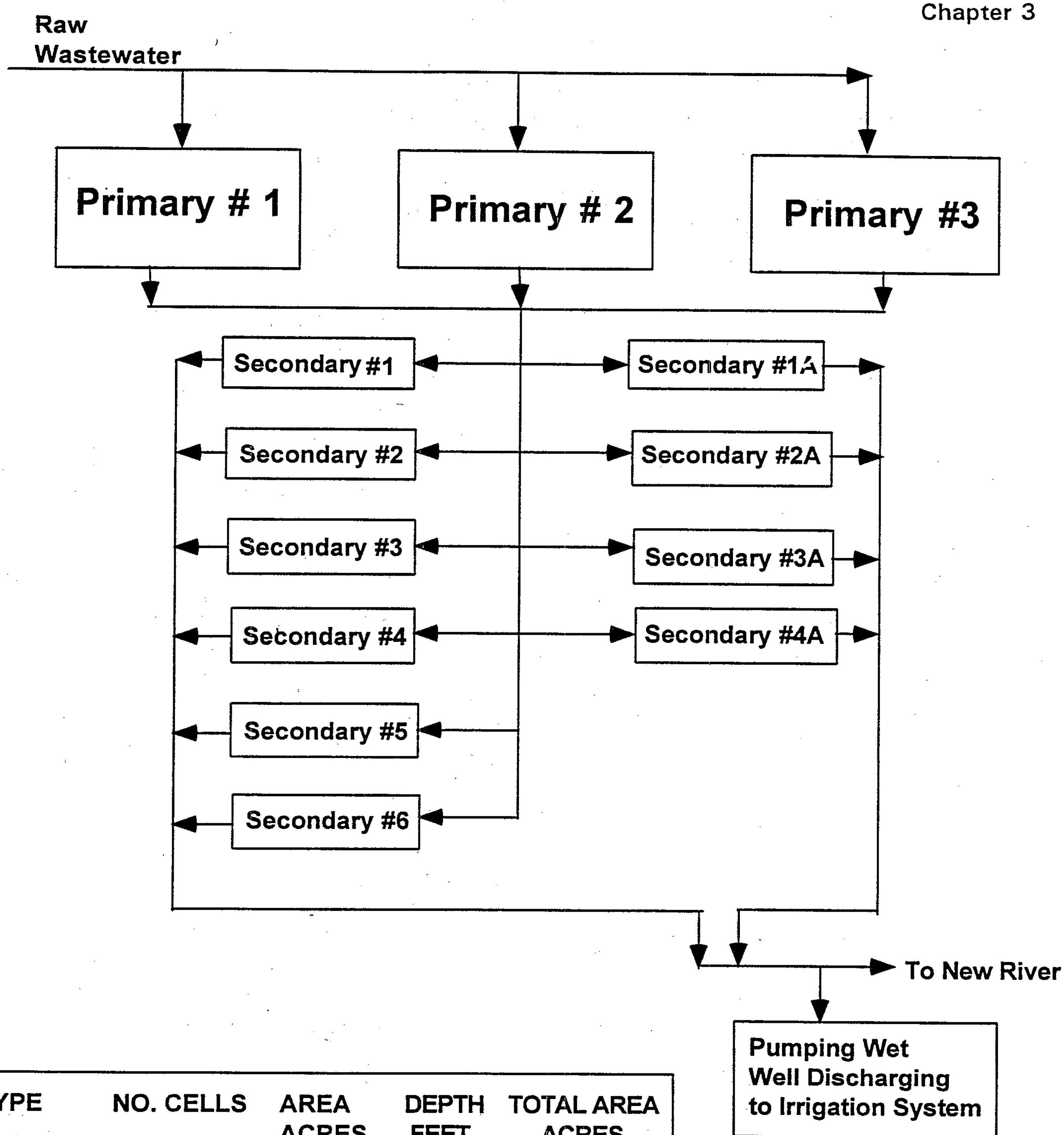


FIGURE 3-1 PLAN VIEW OF MEXICALI, MEXICO WASTEWATER STABILIZATION POND SYSTEM (MEXICALI I)



TYPE	NO. CELLS	AREA ACRES	DEPTH FEET	TOTAL AREA ACRES
PRIMARY	3	21.67	15.1	65.0
SECONDARY	10	36.45	4.3	364.5

FIGURE 3-2 SCHEMATIC OF MEXICALI BCN, MEXICO WASTEWATER STABILIZATION LAGOON SYSTEM

TABLE 3-1
Mexicali BCN, Mexico Lagoon System

Date	Time of day	Flow CFS	Air Temperature degrees celsius	Water Temperature degrees celsius	Volume in One Secondary Cell cubic feet	Volume in One Primary Cell cubic feet	Hydraulic Detention Time , days Primary Cell	Hydraulic Detention Time in, days Secondary Cell Train A (6 cells)	Hydraulic Detention Time in, days Secondary Cell Train B (4 cells)	Effluent BOD mg/L	Total Hyd. Detention Time, days
12/03/92	09:20	30	10	12	6,827,377	14,253,573	16.5	31.6	21.1	20	48.1
01/14/93	11:30	35	15	13	6,827,377	14,253,573	14.1	27.1	18.1	22	41.2
02/03/93	10:45	35	20	15	6,827,377	14,253,573	14.1	27.1	18.1	70	41.2
03/11/93	10:05	30	25	19	6,827,377	14,253,573	16.5	31.6	21.1	12	48.1
04/06/93	11:10	30	29	18	6,827,377	14,253,573	16.5	31.6	21.1	21	48.1
05/10/93	09:35	30	32	24	6,827,377	14,253,573	16.5	31.6	21.1	12	48.1
06/09/93	09:55	35	34	23	6,827,377	14,253,573	14.1	27.1	18.1	11	41.2
07/07/93	10:20	35	38	29	6,827,377	14,253,573	14.1	27.1	18.1	17	41.2
08/05/93	10:30	25	40	31	6,827,377	14,253,573	19.8	37.9	25.3	14	57.7
09/02/93	09:50	30	38	29	6,827,377	14,253,573	16.5	31.6	21.1	5	48.1
10/06/93	09:30	35	33	25	6,827,377	14,253,573	14.1	27.1	18.1	13	41.2
11/03/93	09:40	30	25	18	6,827,377	14,253,573	16.5	31.6	21.1	13	48.1
12/01/93	09:50	35	25	15	6,827,377	14,253,573	14.1	27.1	18.1	19	41.2
01/05/94	10:10	35	15	13	6,827,377	14,253,573	14.1	27.1	18.1	32	41.2
02/02/94	09:15	40	14	12	6,827,377	14,253,573	12.4	23.7	15.8	45	36.1
03/02/94	08:20	35	21	16	6,827,377	14,253,573	14.1	27.1	18.1	32	41.2
04/04/94	10:35	30	26	20	6,827,377	14,253,573	16.5	31.6	21.1	28	48.1
05/04/94	10:20	30	38	21	6,827,377	14,253,573	16.5	31.6	21.1	10	48.1
06/02/94	09:45	30	38	26	6,827,377	14,253,573	16.5	31.6	21.1	15	48.1
07/06/94	10:10	35	38	27	6,827,377	14,253,573	14.1	27.1	18.1	10	41.2
08/04/94	09:25	35	39	30	6,827,377	14,253,573	14.1	27.1	18.1	13	41.2
09/06/94	09:45	35	44	30	6,827,377	14,253,573	14.1	27.1	18.1	13	41.2
10/04/94	10:05	40	27	25	6,827,377	14,253,573	12.4	23.7	15.8	16	36.1
11/01/94	09:30	40	26	21	6,827,377	14,253,573	12.4	23.7	15.8	15	36.1
12/07/94	09:30	35	23	13	6,827,377	14,253,573	14.1	27.1	18.1	25	41.2
01/11/95	09:55	40	18	15	6,827,377	14,253,573	12.4	23.7	15.8	37	36.1
01/31/95	09:50	35	25	15	6,827,377	14,253,573	14.1	27.1	18.1	43	41.2
03/07/95	09:30	30	28	19	6,827,377	14,253,573	16.5	31.6	21.1	35	48.1
03/28/95	09:45	35	23	18	6,827,377	14,253,573	14.1	27.1	18.1	39	41.2
04/27/95	09:05	40	30	22	6,827,377	14,253,573	12.4	23.7	15.8	26	36.1

PERFORMANCE OF SYSTEM

Design Limitations

The MLSI was designed as an aerated pond system, but power was not supplied to the aerators; therefore, the system operates as an anaerobic pond system followed by facultative ponds. Had the ponds been operated as designed, the system would produce an excellent quality effluent in terms of BOD removal. Proper design, location and control of a settling basin would have resulted in a far superior quality effluent overall.

Performance of Anaerobic Ponds

The performance of anaerobic ponds has not been documented as well as it has for aerated or facultative ponds; however, there are enough data available to make a reasonable estimate of the expected performance at various water temperatures. The variation in BOD removal with temperature shown in Figure 3-3 was taken from a World Health Organization document (1987), and the line of best fit was determined to be the following exponential curve.

$$Temperature = e^{0.0165(BOD\ Removal)+2.146}$$

or

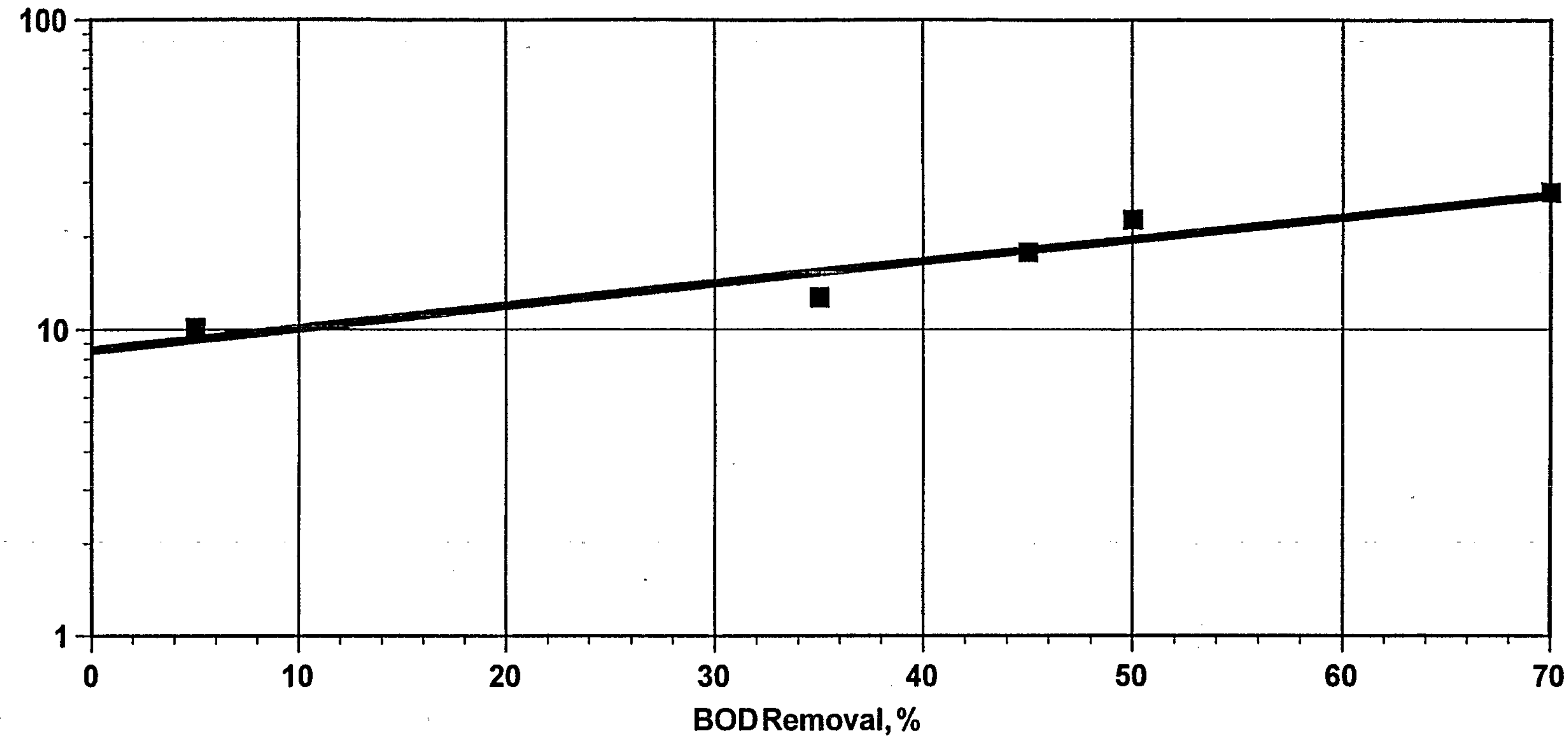
$$\%\ BOD\ Removal = 60.61(\ln\ Temperature) - 130.06$$

Using the above equations and the observed water temperatures in the Mexicali BCN I pond system, the performance of the anaerobic ponds was estimated and the results are shown in Table 3-2.

Effluent Characteristics

A summary of the performance data and the effluent characteristics for the Mexicali BCN I lagoon system is shown in Table 3-3. Until January 1994 the pond system appeared to be consistently producing an effluent BOD of less than 30 mg/l. Since then the BOD effluent quality has varied considerably, and the BOD concentration has frequently approached or exceeded 40 mg/l. The variations in BOD, COD, and water temperature are shown in Figure 3-4. Fecal coliform numbers also have tended to increase during this period while the dissolved oxygen in the effluent has declined (Figure 3-5 and Figure 3-6). These changes are probably attributable to the increase in influent flow rate caused by population growth and additional sewer connections.

FIGURE 3-3 PERFORMANCE OF ANAEROBIC LAGOONS (1)



Temp. = exp[0.0165(BOD Removal) + 2.146]
R Squared = 0.904

(1) Taken from: World Health Organization Wastewater Stabilization Ponds, Principles of Planning and Practice, WHO Technical Publication 10, Regional Office for the Eastern Mediterranean, Alexandria, 1987.

TABLE 3-2
Mexicali BCN, Mexico Lagoon System

Date	BOD corr. for Temp.	BOD loading lbs/day	BOD loading rate, lbs/ac/day Primary Cell	% BOD Removed in Primary	BOD loading on Secondary Cells lbs/day Train A (6 Cells)	BOD loading rate, lbs/ac/day Secondary Cells Train A (6 Cells)	Effluent BOD mg/L	BOD loading on Secondary Cells lbs/day Train B (4 Cells)	BOD loading rate lbs/ac/day Secondary Cells Train B (4 Cells)
12/03/92	34	48,541	747	21	2,143	59	20	3,214	88
01/14/93	31	56,632	871	25	2,347	64	22	3,521	97
02/03/93	28	56,632	871	34	2,074	57	70	3,111	85
03/11/93	21	48,541	747	48	1,391	38	12	2,087	57
04/06/93	23	48,541	747	45	1,480	41	21	2,220	61
05/10/93	15	48,541	747	63	1,010	28	12	1,514	42
06/09/93	16	56,632	871	60	1,259	35	11	1,889	52
07/07/93	11	56,632	871	74	817	22	17	1,226	34
08/05/93	10	40,451	622	78	493	14	14	739	20
09/02/93	11	48,541	747	74	700	19	5	1,050	29
10/06/93	14	56,632	871	65	1,100	30	13	1,650	45
11/03/93	23	48,541	747	45	1,480	41	13	2,220	61
12/01/93	28	56,632	871	34	2,074	57	19	3,111	85
01/05/94	31	56,632	871	25	2,347	64	32	3,521	97
02/02/94	34	64,722	996	21	2,857	78	45	4,285	118
03/02/94	26	56,632	871	38	1,951	54	32	2,927	80
04/04/94	20	48,541	747	52	1,308	36	28	1,961	54
05/04/94	19	48,541	747	54	1,228	34	10	1,842	51
06/02/94	14	48,541	747	67	879	24	15	1,318	36
07/06/94	13	56,632	871	70	953	26	10	1,430	39
08/04/94	10	56,632	871	76	752	21	13	1,129	31
09/06/94	10	56,632	871	76	752	21	13	1,129	31
10/04/94	14	64,722	996	65	1,257	34	16	1,886	52
11/01/94	19	64,722	996	54	1,637	45	15	2,456	67
12/07/94	31	56,632	871	25	2,347	64	25	3,521	97
01/11/95	28	64,722	996	34	2,370	65	37	3,556	98
01/31/95	28	56,632	871	34	2,074	57	43	3,111	85
03/07/95	21	48,541	747	48	1,391	38	35	2,087	57
03/28/95	23	56,632	871	45	1,726	47	39	2,590	71
04/27/95	18	64,722	996	57	1,536	42	26	2,304	63

Table 3-3
New River Water Quality - Mexicalli, Mexico Oxidation Pond Effluent

Date	Time of day	Flow CFS	Air Temperature	Water Temperature	DO mg/L	pH	Conductance micromhos	Fecal Coliform no./100 mL	BOD mg/L	COD mg/L
12/03/92	09:20	30	10	12	2.4	8.1	2500	140000	20	68
01/14/93	11:30	35	15	13	3.6	8	2050	24000	22	90
02/03/93	10:45	35	20	15	6.7	8	2040	80000	70	71
03/11/93	10:05	30	25	19	2.3	8.1	1750	102000	12	64
04/06/93	11:10	30	29	18	3.9	8.1	1700	80000	21	86
05/10/93	09:35	30	32	24	5.7	8.3	1850	57000	12	76
06/09/93	09:55	35	34	23	4.9	8.4	1700	58000	11	68
07/07/93	10:20	35	38	29	1.9	8.3	1600	100000	17	75
08/05/93	10:30	25	40	31	4.9	8.3	1900	15000	14	63
09/02/93	09:50	30	38	29	2.9	8.3	1100	110000	5	46
10/06/93	09:30	35	33	25	1.4	8.1	2050	56000	13	21
11/03/93	09:40	30	25	18	5.4	8.1	2120	122000	13	69
12/01/93	09:50	35	25	15	4.3	8.1	2200	230000	19	66
01/05/94	10:10	35	15	13	0.3	8.3	2450	290000	32	65
02/02/94	09:15	40	14	12	0.9	8.3	2500	220000	45	112
03/02/94	08:20	35	21	16	3.5	8	2210	200000	32	92
04/04/94	10:35	30	26	20	1.9	8.2	2050	125000	28	178
05/04/94	10:20	30	38	21	4.3	8.1	2000	165000	10	79
06/02/94	09:45	30	38	26	2.3	8.1	1970	95000	15	75
07/06/94	10:10	35	38	27	4.4	8	2000	63000	10	72
08/04/94	09:25	35	39	30	0.3	8.2	1950	120000	13	39
09/06/94	09:45	35	44	30	2.1	8.1	1550	64000	13	57
10/04/94	10:05	40	27	25	0.4	8	1870	130000	16	168
11/01/94	09:30	40	26	21	1.5	8.1	2120	215000	15	58
12/07/94	09:30	35	23	13	0.7	8.1	2300	470000	25	74
01/11/95	09:55	40	18	15	0.02	8.1	2150	800000	37	95
01/31/95	09:50	35	25	15	0.8	8.1	2250	360000	43	122
03/07/95	09:30	30	28	19	1.2	8.1	2050	260000	35	84
03/28/95	09:45	35	23	18	3.2	7.8	2050	170000	39	105
04/27/95	09:05	40	30	22	2	7.8	2050	300000	26	66

Figure 3-4. Mexicali, Mexico Lagoon System Effluent BOD, COD, and Temperature

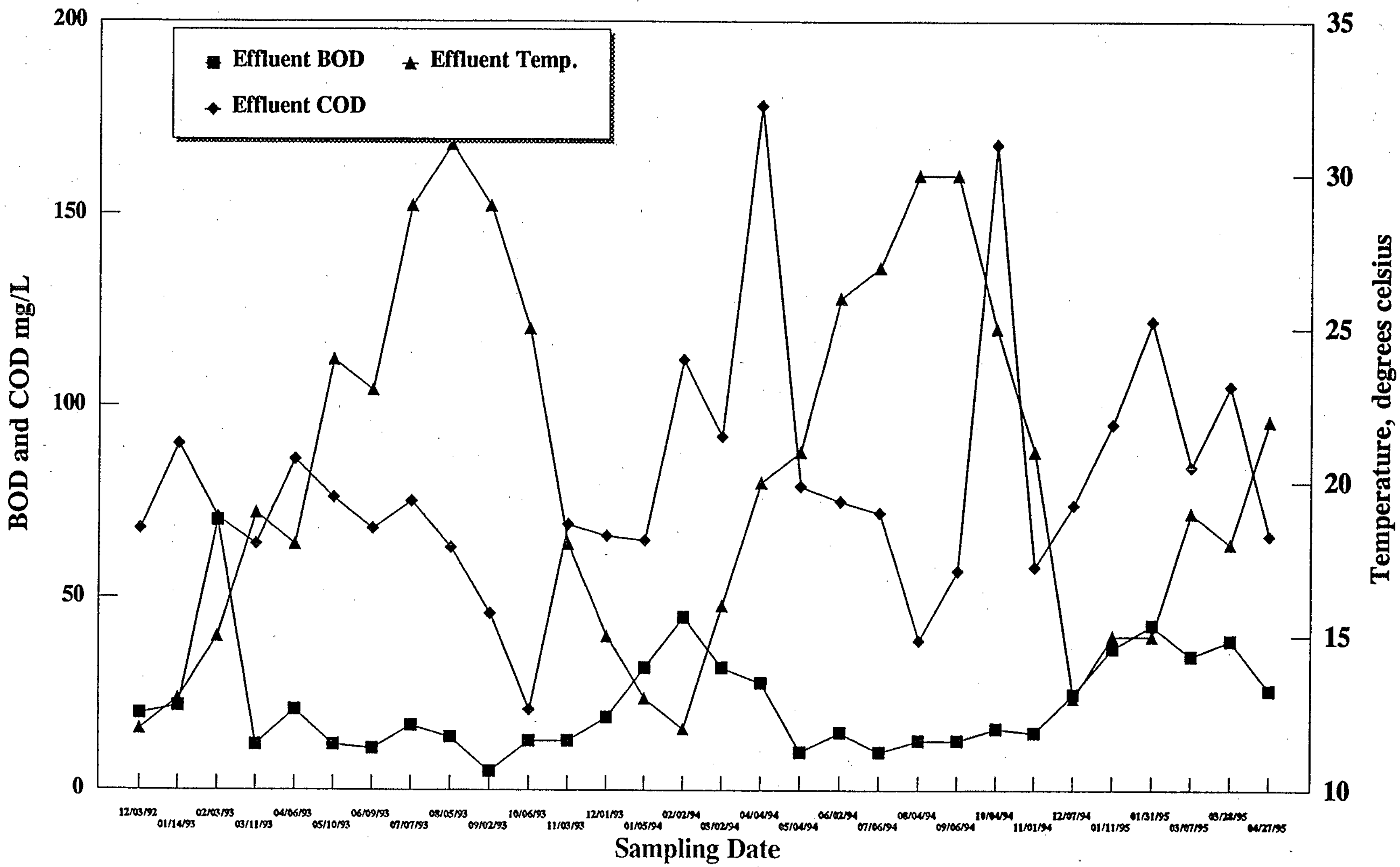


Figure 3-5. Mexicali, Mexico Lagoon System Effluent Fecal Coliform

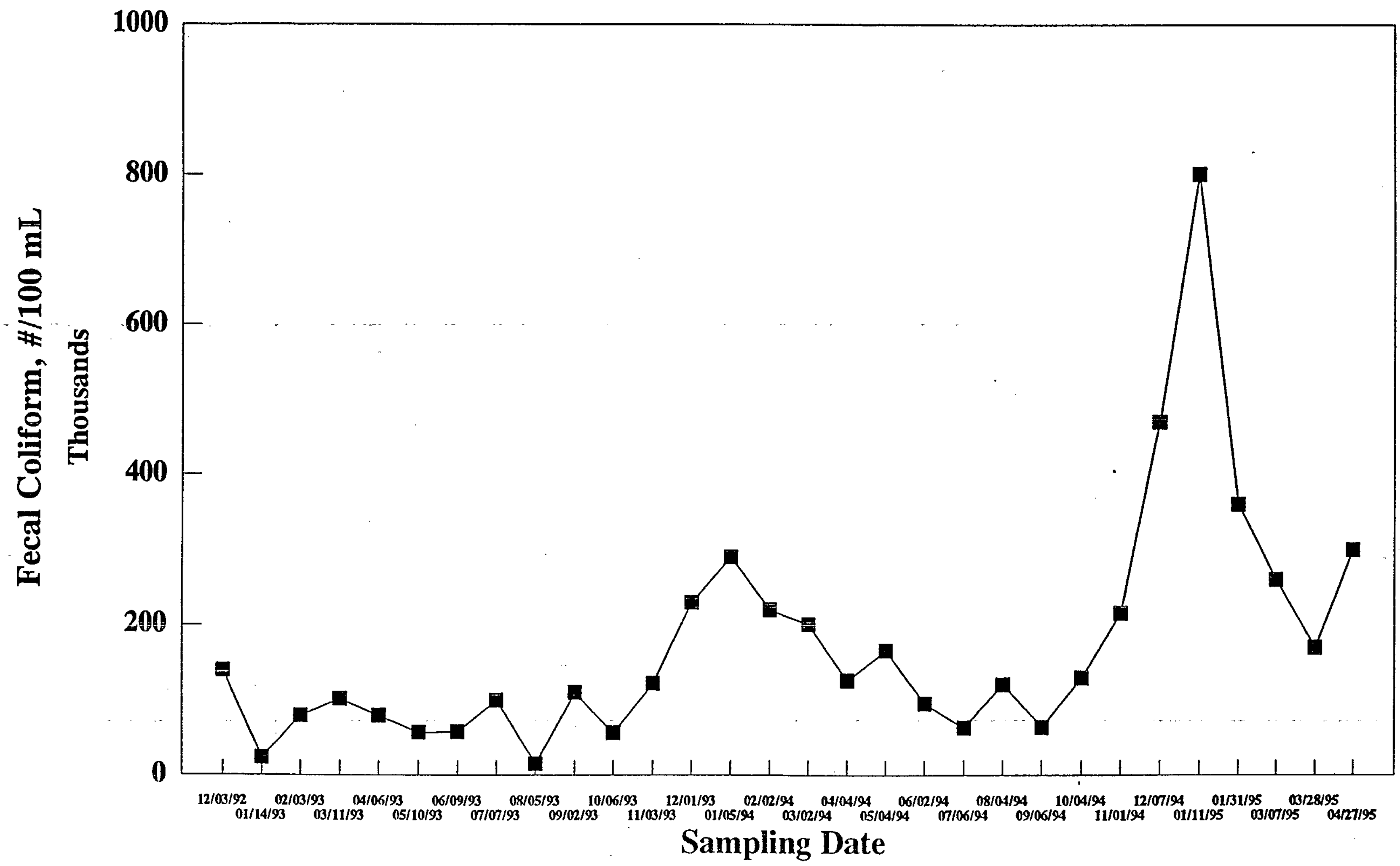
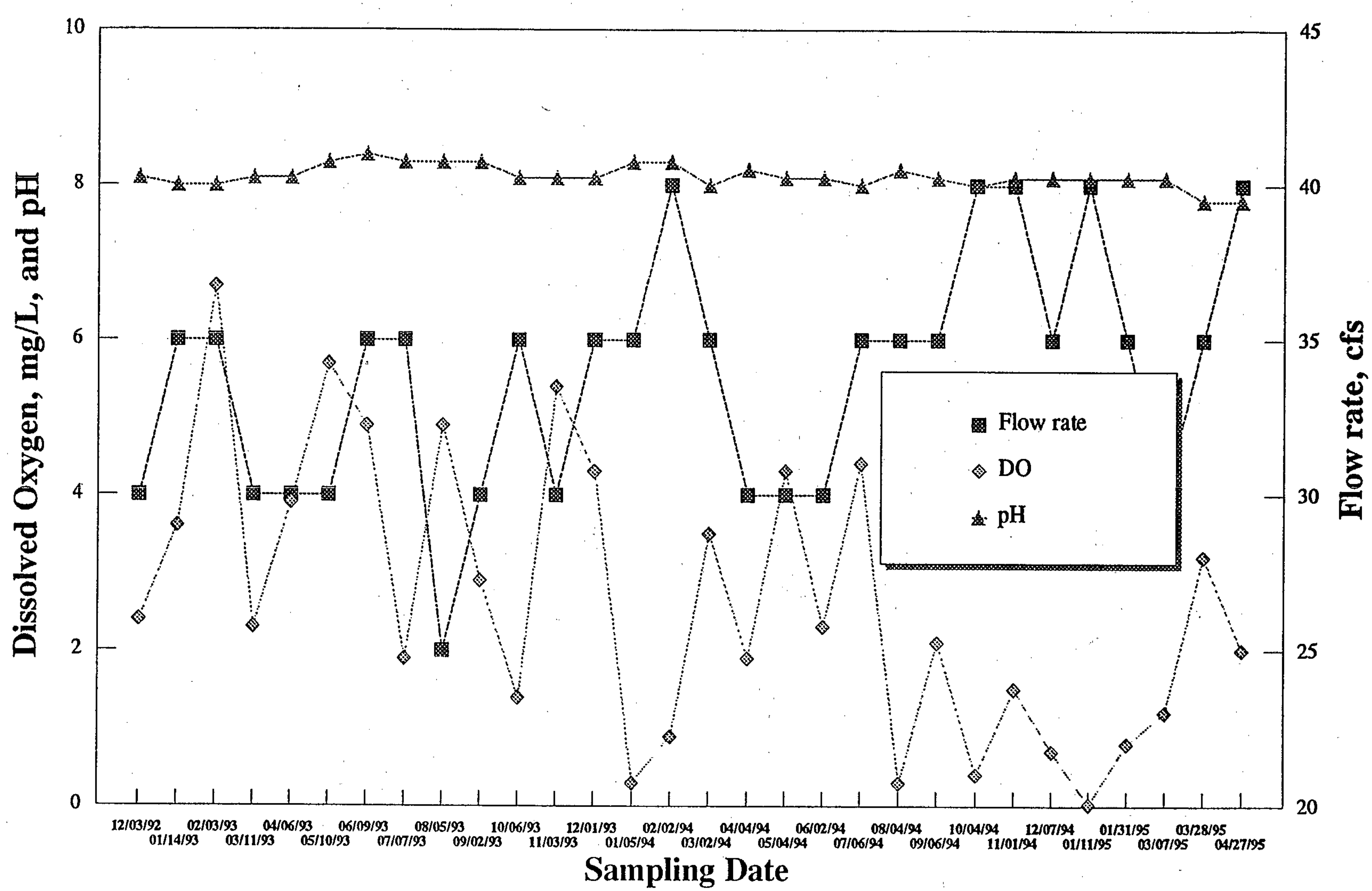


Figure 3-6. Mexicali, Mexico Lagoon System
Effluent Flow Rate, Dissolved Oxygen, and pH



The variations in flow rate, dissolved oxygen and Ph value are shown in Figure 3-6. The Ph value varied very little over the 30 months, but dissolved oxygen tended to decrease as the pond system matured. This drop in dissolved oxygen was caused by the increasing load being applied to the system.

BOD Loadings and Loading Rates

BOD loadings and loading rates for the primary cells and Train A and B are shown in Table 3-2. BOD loading rates on all components of the system are high and the system is performing as well as can be expected. The loading rate on each of the six facultative ponds is approximately two-thirds of that applied to the four facultative ponds; however, observers of the system report that at most times the effluent from Train B is clearer than that coming from Train A. Based upon the characteristic of the two trains, there does not appear to be any reason to expect the quality to differ unless the detention time in Train B ponds is such that the algae production is less. This does not appear to be the case, because both detention times are adequate to produce considerable algae concentrations.

BOD vs Hydraulic Detention Time

Variations in the effluent BOD concentration, system hydraulic detention time, and the water temperature for the 30 months that performance data were available are shown in Figure 3-7. In general, the effluent BOD improved with an increase in water temperature; however, there was no significant change in BOD with changes in hydraulic detention time.

The relationship between effluent BOD and the system hydraulic detention time is shown in Figure 3-8. There is a downward trend in the effluent BOD as the hydraulic detention time increases; however, the coefficient of determination (R^2) is only 0.103 which is not statistically significant. This result is not surprising because the influent flow rate is only a rough estimate of the actual flow rate.BOD versus BOD Loading Rate

The variations in the effluent BOD concentration with the BOD loading rate on the secondary (facultative) ponds, Train A and B, are shown in Figures 3-9 and 3-10. The relationships show an increase in the effluent BOD concentration as the BOD loading rate increases, and the relationships are statistically significant at the 95 % confidence level.

Figure 3-7. Mexicali BCN, Mexico Lagoon System
Effluent BOD, Hydr. Det. Time in System, and Water Temperature

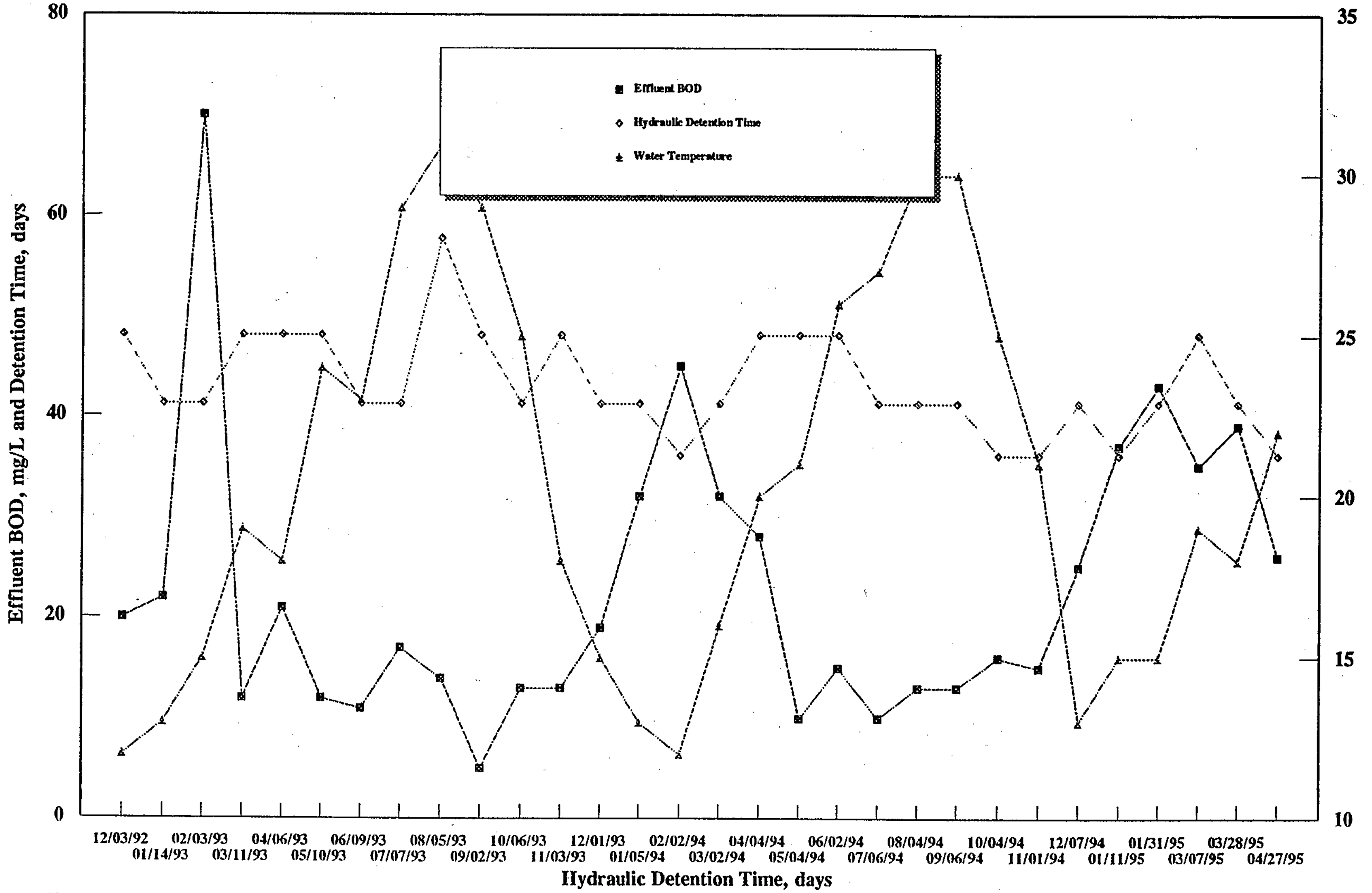


Figure 3-8. Mexicali BCN, Mexico Lagoon System

Effluent BOD vs Total Hydraulic Detention Time

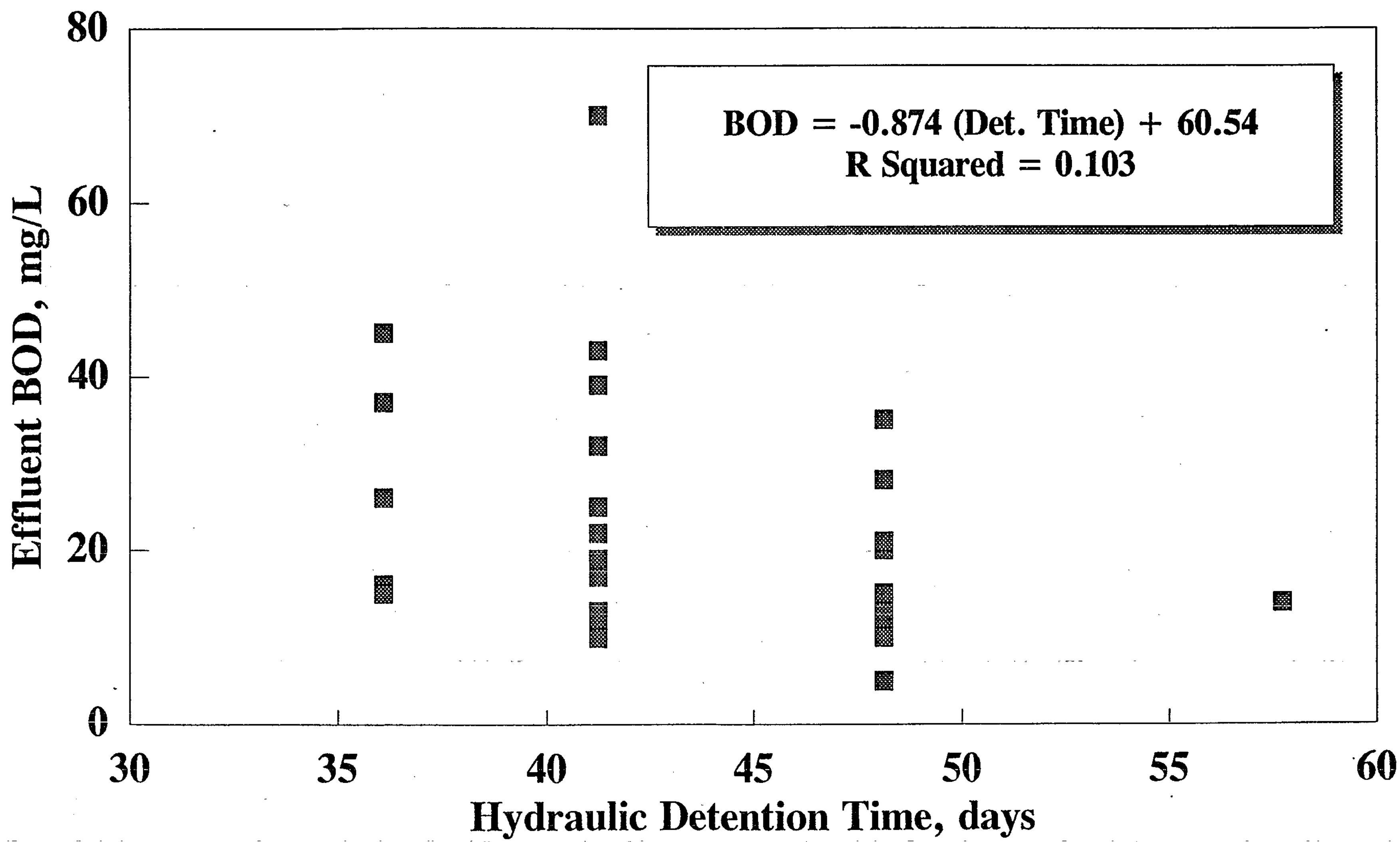


Figure 3-9. Mexicali BCN, Mexico Lagoon System
Effluent BOD vs BOD Loading Rate on Secondary Ponds (Train A)

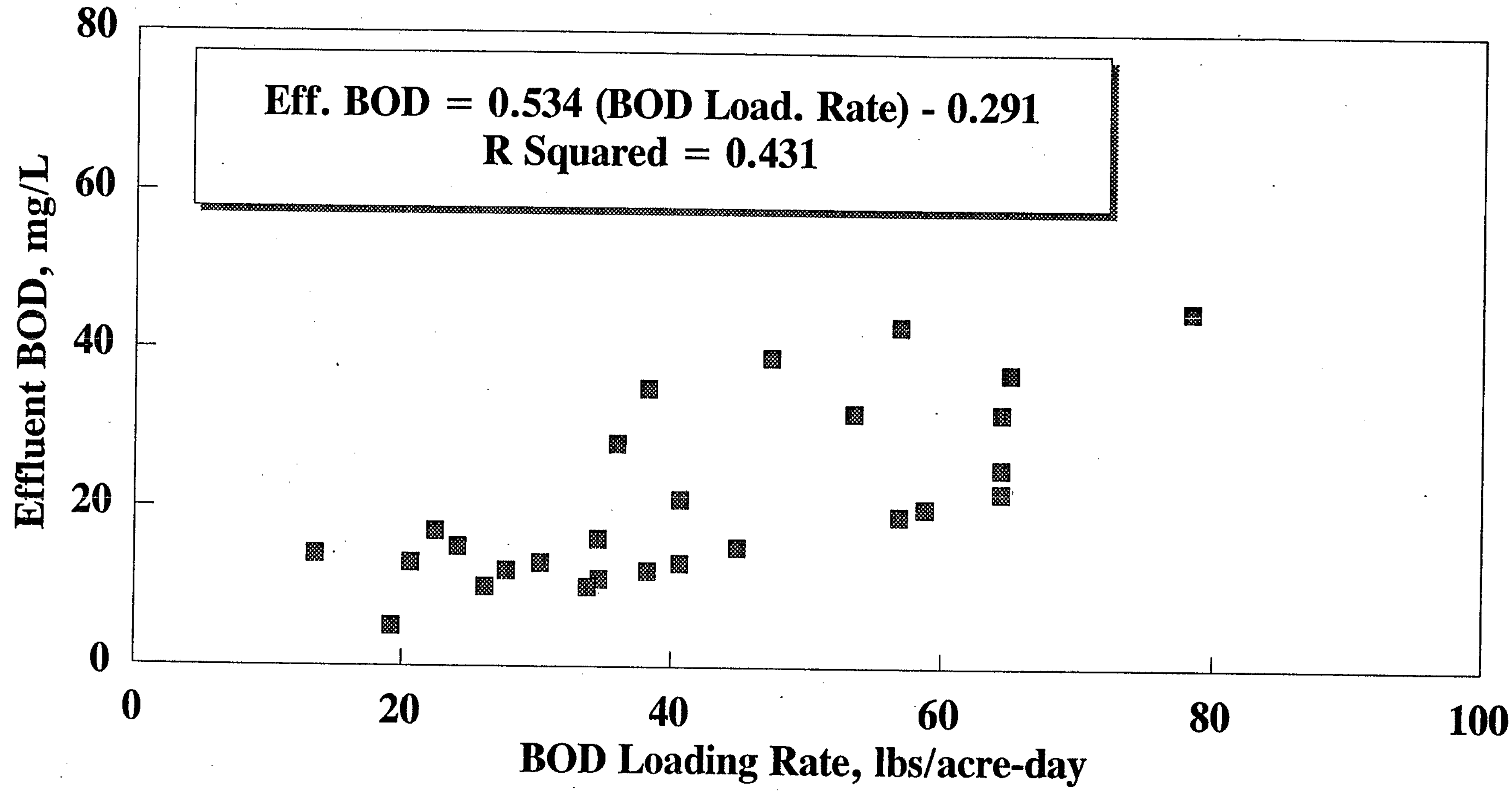
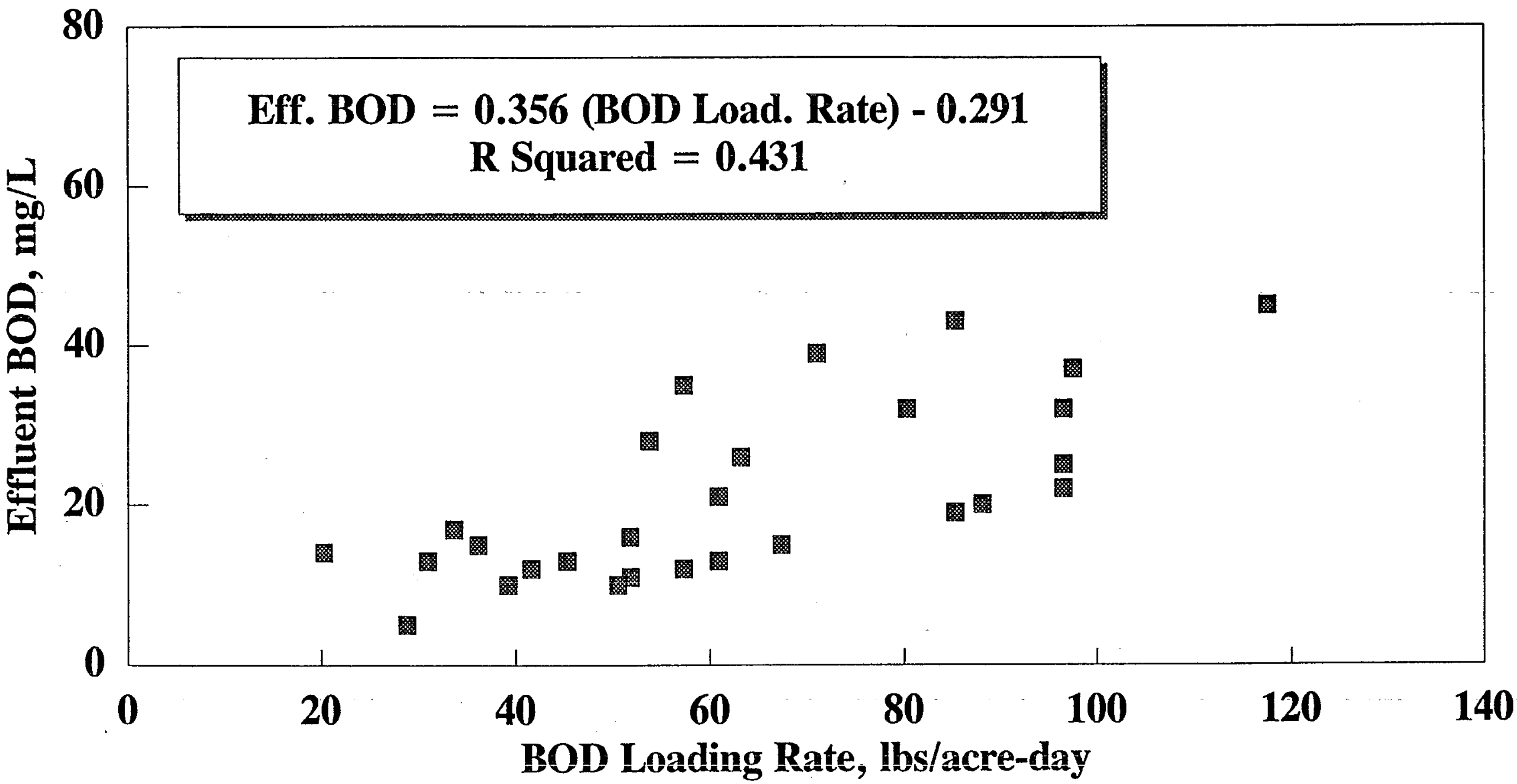


Figure 3-10. Mexicali BCN, Mexico Lagoon System
Effluent BOD vs BOD Loading Rate on Secondary Ponds (Train B)



BOD-Temperature

When influent and effluent BOD values and water temperature are available, it is possible to develop an equation showing a rate relationship between the BOD and temperature. Unfortunately, influent BOD values were unavailable, but if it is assumed that the influent BOD is relatively constant and that the effluent BOD is related to the water temperature, predictive relationships can be developed that are similar to those developed from the Arrhenius equation. A relationship can be developed from either a simple plot of the natural logarithm of the effluent BOD versus water temperature (Figure 3-11) or a quasi-Arrhenius plot of effluent BOD divided by the BOD at 20 degrees celsius versus the water temperature minus 20 degrees celsius (Figure 3-12). Both relationships yield a statistically significant (R^2 = 0.460, 95% confidence level) relationship and yield the same answer when using either equation because the numbers are divided by a constant to yield the quasi-Arrhenius plot.

Although these relationships lack precision, the results are as good or superior to those developed from numerous other sets of pond performance data. There are too many variables affecting the performance of pond systems for one to expect the relationship between effluent BOD and temperature to be perfectly correlated (Middlebrooks et al., 1982, USEPA, 1983).

Temperature Corrected BOD and Detention Time

Using the relationships developed between effluent BOD and water temperature, a corrected effluent BOD was calculated and plotted versus the hydraulic detention time (Figure 3-13). As shown in Figure 3-13, the relationship between the two variables was poorer than that observed in Figure 3-8 when the effluent BOD was uncorrected. Again, this is not surprising because similar results have been observed when analyzing pond performance data (Middlebrooks et al., 1982, USEPA, 1983).

PREDICTED PERFORMANCE

In an effort to predict the performance of the Mexicali BCN I pond system, a linear correlation was conducted with the effluent BOD as the independent variable and the BOD loading rate on the facultative ponds, the water temperature, and the BOD loading rate on the anaerobic ponds as the dependent variables. The following relationship was obtained when the outlier value of 71 mg/l was excluded.

$$Eff.BOD = 1.732(BOD\ Load.Rate\ on\ Sec.) + 3.149(Temp.) - 0.054(BOD\ Load.\ Rate\ on\ Pri.)$$

Figure 3-11. Mexacili, Mexico Lagoon System
In BOD vs Temperature

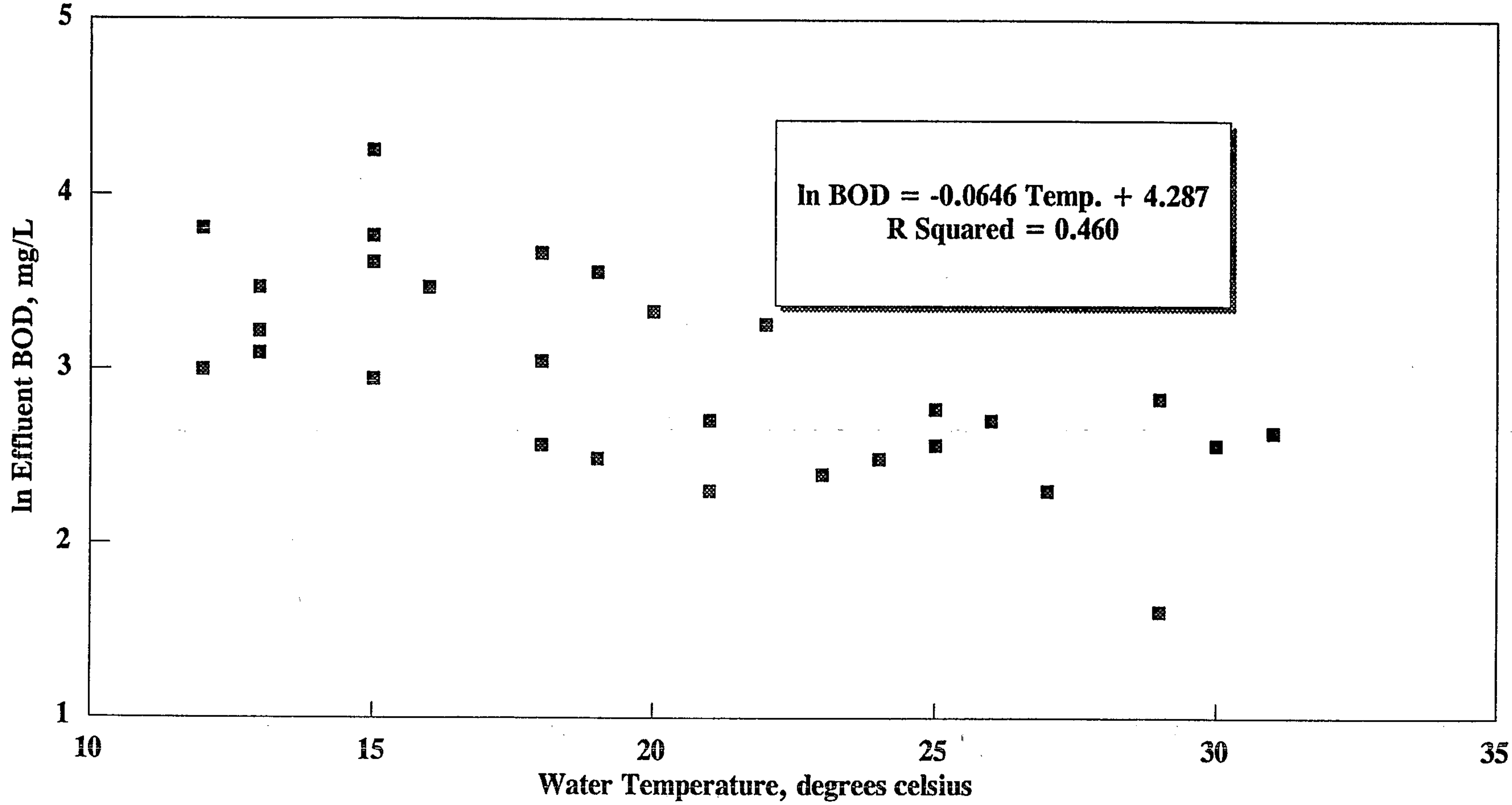


Figure 3-12. Mexicali, Mexico Lagoon System
Quasi-Arrhenius Plot of BOD and Temperature Data

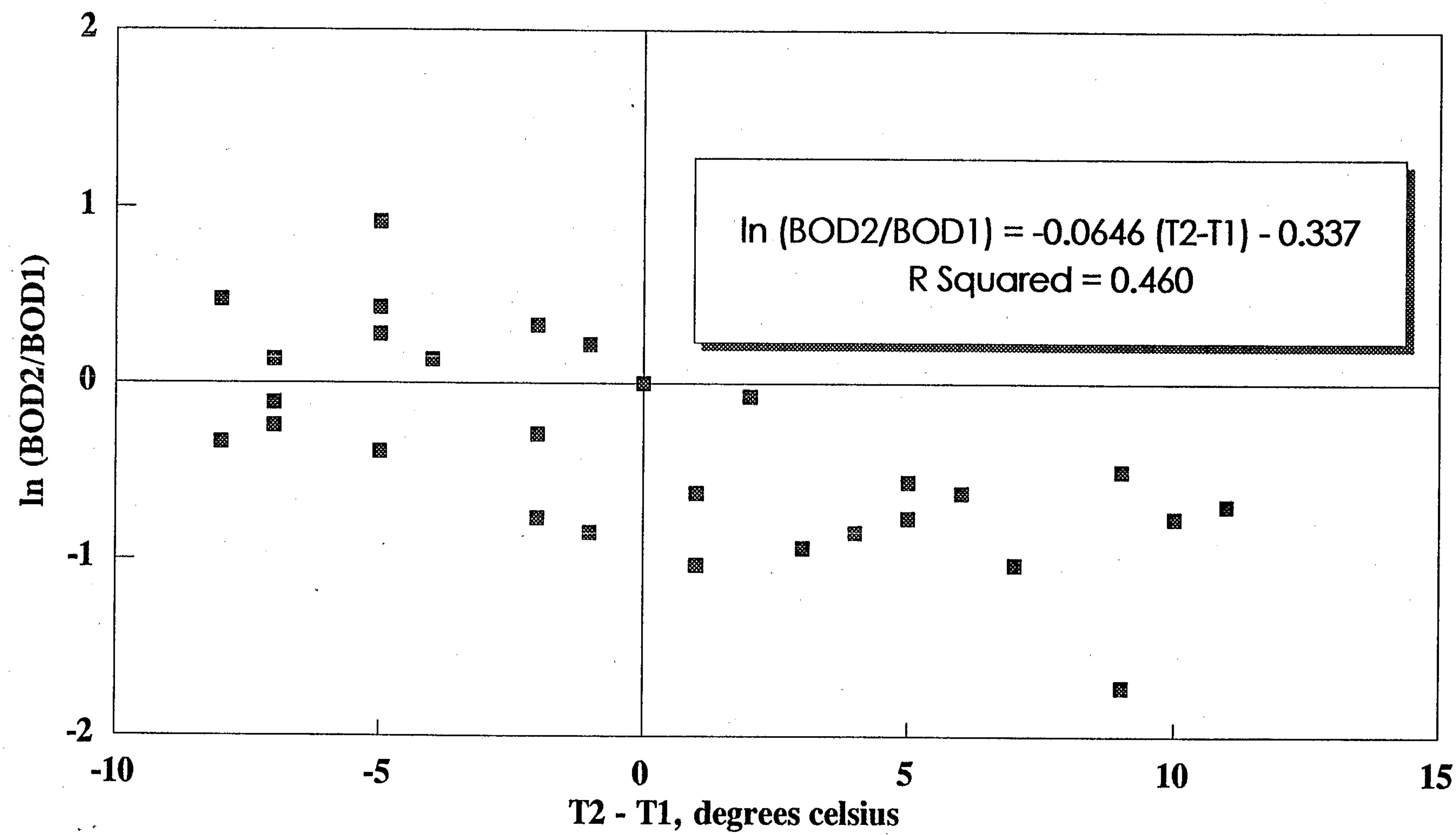
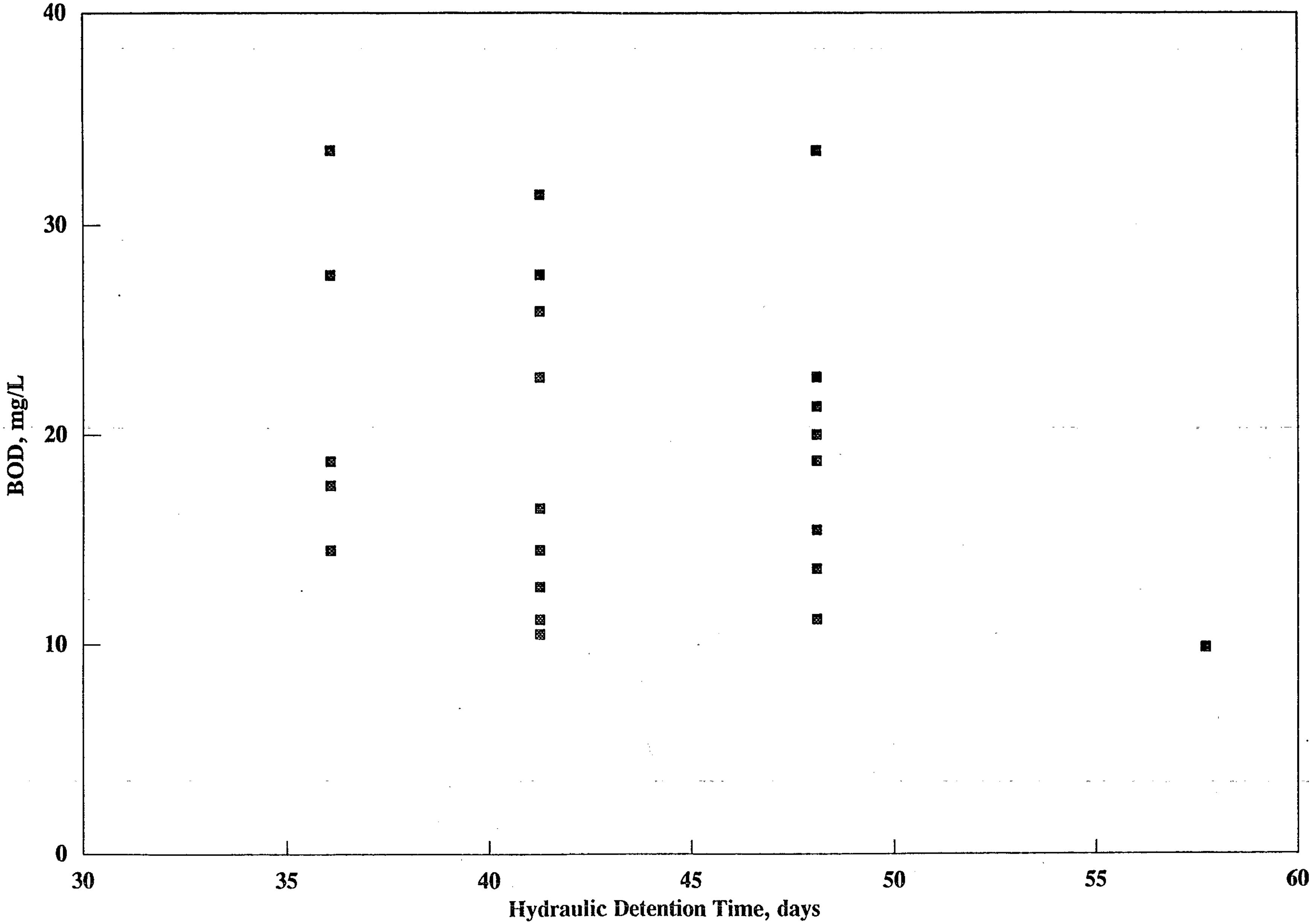


Figure 3-13. Mexicali BCN, Mexico Lagoon System
BOD Temp. Corr. vs Hydr. Res. Time



A plot of the predicted values versus the measured values is shown in Figure 3-14. Although less precise than desired, the points lie around the 45 degree line, and the equation would be expected to yield a reasonable estimate of the performance of the Mexicali BCN I system in view of the limitations of the flow measurements.

REDESIGN OF MEXICALI BAJA CALIFORNIA NORTE (BCN) I SYSTEM

Calculations were made using Equations 10 and 11 taken from the body of the report to determine the performance of the Mexicali BCN I pond system when converting the primary and secondary ponds to complete mix or partial mix or a combination of the two types.

$$\frac{C_n}{C_0} = \frac{1}{\left[1 + (kt/n)\right]^n} \tag{10}$$

where C_n = effluent BOD concentration in cell n, mg/l

C_o = influent BOD concentration, mg/l

k_p and k_c = first order reaction rate constant, days^{-1}

k_p = 0.276 day^{-1} at 20° C (assumed to be constant in all cells)
k_c = 2.0 day^{-1} at 20° C (assumed to be constant in all cells.)

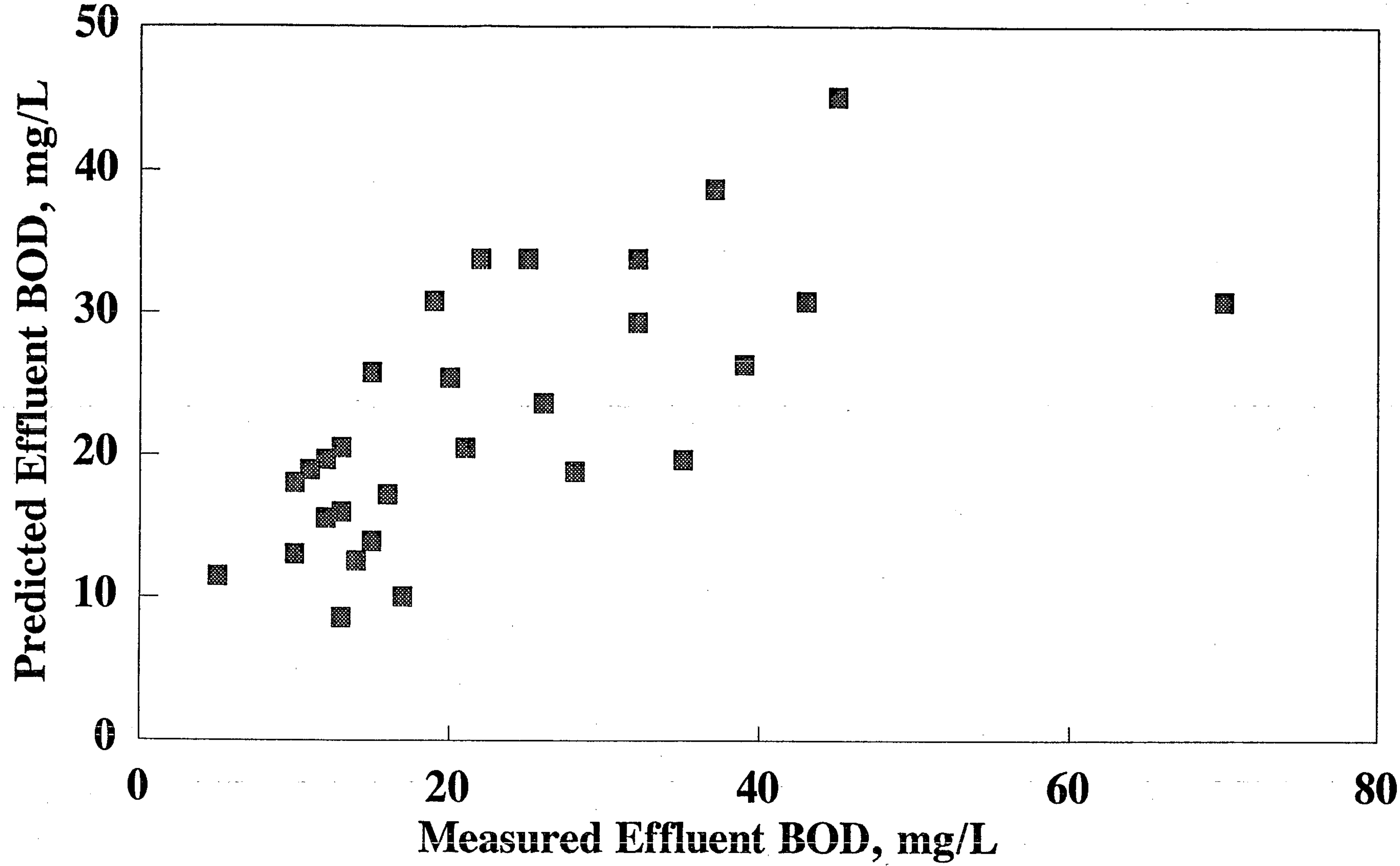
t = total hydraulic residence time in pond system, days

n = number of cells in the series.

If other than a series of equal volume ponds are to be employed, it is necessary to use the following general equation:

$$\frac{C_n}{C_0} = \left[\frac{l}{l+k_1 t_1}\right]\left[\frac{l}{l+k_2 t_2}\right] \bullet\bullet\bullet \left[\frac{l}{l+k_n t_n}\right] \tag{11}$$

Figure 3-14. Mexicali, Mexico Lagoon System
Predicted Eff. BOD vs Measured Eff. BOD



Pred. Eq.: Eff. BOD = 1.732 (BOD load rate on Sec.) + 3.149 (Temp.) - 0.054 (BOD load. rate on Primary) - 71.4

The predicted performances based on the design temperature of 12° C, an influent BOD of 300 mg/l, and the current estimated flow rates for several combinations of complete mix and partial mix pond systems are presented in Table 234. Converting the primary cells (anaerobic) to complete mix ponds would produce an effluent BOD of less than 25 mg/l throughout the 30 months of record. When converting the primary cells to partial mix ponds, an effluent BOD ranging from 59 to 84 mg/l would be produced. Converting the ponds to two partial mix cells of equal volume in series would yield an effluent BOD concentration of 11 to 23 mg/l. The remaining volume would provide an excess of settling time, and it would be necessary to account for this excess volume. The effluent BOD would range between 7 and 20 mg/l when operating the primary cells and the two (Trains A and B) secondary trains as partial mix pond systems. Converting the primary cells to complete mix and the Train A (six cells) cells to partial mix would result in an effluent BOD concentration of two to five mg/l.

Table 3-5 contains the results for the same combinations presented in Table 3-4, but the flow rate has been increased to twice that of the current flow rates. If the objective is to produce an effluent with a BOD concentration of 30 mg/l or less at twice the current flow rate, the only combination that will yield the desired quality is to convert the primary cells to complete mix and the secondary cells to partial mix pond systems.

Increasing the flow rate to 1.5 times the current flow rates for the same conditions described for Table 3-4 and 3-5, the system would be able to produce an effluent satisfying a 30 mg/l BOD standard with the conversion of the primary and secondary cells to partial mix pond systems and the use of a complete mix pond in the primary followed by partial mix cells in the secondary ponds (Table 3-6).

To control the solids concentrations in the effluent, it will be necessary to redesign the effluent structures to provide multiple draw-off structures with multiple draw-off depths. It may be necessary to improve the hydraulics of the system with floating baffles or dikes. It was impossible to determine if the flow was evenly distributed to the three primary cells; therefore, it probably will be necessary to construct new inlet structures as well.

Based upon the standard design equations shown above, it is possible to make relatively simple conversions to the Mexicali BCN I pond system that would result in a good quality effluent at a relatively small cost.

Table 3-4

Predicted Performance of Mexicali, Mexico Lagoon System If Converted to Combinations of Partial Mix and Complete Mix Aerated Lagoon Systems

Predictions Based on Design Temperature = 12 degrees Celsius and Current Flow Rate

Date	Flow CFS	Hydraulic Detention Time, days One Primary Cell	Hydraulic Detention Time, days One Secondary Cell in Train A (6 cells)	Hydraulic Detention Time, days One Secondary Cell in Train B (4 cells)	Effluent BOD when Primary Cell converted to Complete Mix, kc20 = 2.0 per day T = 12 deg. celsius kc12 = kc20*(1.085)^T-20 kc12 = 1.04 per day	Effluent BOD when Primary Cell converted to Partial Mix, kp20 = 0.276 per day T = 12 deg. celsius kp12 = kp20*(1.036)^T-20 kp12 = 0.208 per day	Effluent BOD when Converting One 2nd Cell to Partial Mix Cell Equal to Volume of Primary Cell Resulting in Two Cells in Series. Excess settling in (6 or 4 Cell) system.	Effluent BOD when Converting One 2nd Cell and One Primary Cell to Partial Mix System (6 Cell)	Effluent BOD when Converting One 2nd Cell and One Primary Cell to Partial Mix System(4 Cell)	Effluent BOD when Primary Cell converted to Complete Mix. kc20 = 2.0 per day T = 12 deg. celsius kc12 = kc20*(1.085)^T-20 kc12 = 1.04 per day	Effluent BOD when Primary Cell converted to Complete Mix followed by Partial Mix in Secondary Cell (6 Cell) kc12 = 1.04 per day kp12 = 0.208 per day	Effluent BOD when Primary Cell converted to Complete Mix followed by Partial Mix in Secondary Cell (4 Cell) kc12 = 1.04 per day kp12 = 0.208 per day
12/03/92	30	16.5	31.6	21.1	17	68	15	9	13	17	2	3
01/14/93	35	14.1	27.1	18.1	19	76	19	11	16	19	3	4
02/03/93	35	14.1	27.1	18.1	19	76	19	11	16	19	3	4
03/11/93	30	16.5	31.6	21.1	17	68	15	9	13	17	2	3
04/06/93	30	16.5	31.6	21.1	17	68	15	9	13	17	2	3
05/10/93	30	16.5	31.6	21.1	17	68	15	9	13	17	2	3
06/09/93	35	14.1	27.1	18.1	19	76	19	11	16	19	3	4
07/07/93	35	14.1	27.1	18.1	19	76	19	11	16	19	3	4
08/05/93	25	19.8	37.9	25.3	14	59	11	7	9	14	2	2
09/02/93	30	16.5	31.6	21.1	17	68	15	9	13	17	2	3
10/06/93	35	14.1	27.1	18.1	19	76	19	11	16	19	3	4
11/03/93	30	16.5	31.6	21.1	17	68	15	9	13	17	2	3
12/01/93	35	14.1	27.1	18.1	19	76	19	11	16	19	3	4
01/05/94	35	14.1	27.1	18.1	19	76	19	11	16	19	3	4
02/02/94	40	12.4	23.7	15.8	22	84	23	14	20	22	4	5
03/02/94	35	14.1	27.1	18.1	19	76	19	11	16	19	3	4
04/04/94	30	16.5	31.6	21.1	17	68	15	9	13	17	2	3
05/04/94	30	16.5	31.6	21.1	17	68	15	9	13	17	2	3
06/02/94	30	16.5	31.6	21.1	17	68	15	9	13	17	2	3
07/06/94	35	14.1	27.1	18.1	19	76	19	11	16	19	3	4
08/04/94	35	14.1	27.1	18.1	19	76	19	11	16	19	3	4
09/06/94	35	14.1	27.1	18.1	19	76	19	11	16	19	3	4
10/04/94	40	12.4	23.7	15.8	22	84	23	14	20	22	4	5
11/01/94	40	12.4	23.7	15.8	22	84	23	14	20	22	4	5
12/07/94	35	14.1	27.1	18.1	19	76	19	11	16	19	3	4
01/11/95	40	12.4	23.7	15.8	22	84	23	14	20	22	4	5
01/31/95	35	14.1	27.1	18.1	19	76	19	11	16	19	3	4
03/07/95	30	16.5	31.6	21.1	17	68	15	9	13	17	2	3
03/28/95	35	14.1	27.1	18.1	19	76	19	11	16	19	3	4
04/27/95	40	12.4	23.7	15.8	22	84	23	14	20	22	4	5

Table 3-5
Predicted Performance of Mexicali, Mexico Lagoon System If Converted to Combinations of Partial Mix and Complete Mix Aerated Lagoon Systems

Predictions Based on Design Temperature = 12 degreesCelsius and Flow Rate = 2 x Current Flow Rate

Date	Flow CFS	Hydraulic Detection Time, days One Primary Cell	Hydraulic Detention Time, days One Secondary Cell inTrain A (6 cells)	Hydraulic Detection Time, days One Secondary Cell inTrain B (4 cells)	Effluent BOD when Primary Cell converted to Complete Mix. kc20 = 2.0 per day T = 12 deg. celsius kc12 = kc20*(1.085)^T-20 kc12 = 1.04 per day Flow Rate = 2 x Present	Effluent BOD when Primary Cell converted to Partial Mix. kp20 = 0.276 per day T = 12 deg. celsius kp12 = kp20*(1.036)^T-20 kp12 = 0.208 per day Flow Rate = 2 x Present	Effluent BOD when Converting One 2nd Cell to Partial Mix Cell Equal to Volume of Primary Cell Resulting in Two Cells in Series. Excess settling in (6 or 4 Cell) system. Flow Rate = 2 x Present	Effluent BOD when Converting One 2nd Cell and One Primary Cell to Partial Mix System (6 Cell) Flow Rate = 2 x Present	Effluent BOD when Converting One 2nd Cell and One Primary Cell to Partial Mix System(4 Cell) Flow Rate = 2 x Present	Effluent BOD when Primary Cell converted to Complete Mix. kc20 = 2.0 per day T = 12 deg. celsius kc12 = kc20*(1.085)^T-20 kc12 = 1.04 per day Flow Rate = 2 x Present	Effluent BOD when Primary Cell converted to Complete Mix followed by Partial Mix in Secondary Cell (6 Cell) kc12 = 1.04 per day kp12 = 0.208 per day Flow Rate = 2 x Present	Effluent BOD when Primary Cell converted to Complete Mix followed by Partial Mix in Secondary Cell (4 Cell) kc12 = 1.04 per day kp12 = 0.208 per day Flow Rate = 2 x Present
12/03/92	30	16.5	31.6	21.1	31	110	41	26	35	31	7	10
01/14/93	35	14.1	27.1	18.1	36	121	49	32	42	36	9	12
02/03/93	35	14.1	27.1	18.1	36	121	49	32	42	36	9	12
03/11/93	30	16.5	31.6	21.1	31	110	41	26	35	31	7	10
04/06/93	30	16.5	31.6	21.1	31	110	41	26	35	31	7	10
05/10/93	30	16.5	31.6	21.1	31	110	41	26	35	31	7	10
06/09/93	35	14.1	27.1	18.1	36	121	49	32	42	36	9	12
07/07/93	35	14.1	27.1	18.1	36	121	49	32	42	36	9	12
08/05/93	25	19.8	37.9	25.3	27	98	32	20	27	27	5	7
09/02/93	30	16.5	31.6	21.1	31	110	41	26	35	31	7	10
10/06/93	35	14.1	27.1	18.1	36	121	49	32	42	36	9	12
11/03/93	30	16.5	31.6	21.1	31	110	41	26	35	31	7	10
12/01/93	35	14.1	27.1	18.1	36	121	49	32	42	36	9	12
01/05/94	35	14.1	27.1	18.1	36	121	49	32	42	36	9	12
02/02/94	40	12.4	23.7	15.8	40	131	57	38	50	40	12	15
03/02/94	35	14.1	27.1	18.1	36	121	49	32	42	36	9	12
04/04/94	30	16.5	31.6	21.1	31	110	41	26	35	31	7	10
05/04/94	30	16.5	31.6	21.1	31	110	41	26	35	31	7	10
06/02/94	30	16.5	31.6	21.1	31	110	41	26	35	31	7	10
07/06/94	35	14.1	27.1	18.1	36	121	49	32	42	36	9	12
08/04/94	35	14.1	27.1	18.1	36	121	49	32	42	36	9	12
09/06/94	35	14.1	27.1	18.1	36	121	49	32	42	36	9	12
10/04/94	40	12.4	23.7	15.8	40	131	57	38	50	40	12	15
11/01/94	40	12.4	23.7	15.8	40	131	57	38	50	40	12	15
12/07/94	35	14.1	27.1	18.1	36	121	49	32	42	36	9	12
01/11/95	40	12.4	23.7	15.8	40	131	57	38	50	40	12	15
01/31/95	35	14.1	27.1	18.1	36	121	49	32	42	36	9	12
03/07/95	30	16.5	31.6	21.1	31	110	41	26	35	31	7	10
03/28/95	35	14.1	27.1	18.1	36	121	49	32	42	36	9	12
04/27/95	40	12.4	23.7	15.8	40	131	57	38	50	40	12	15

Table 3-6

Predicted Performance of Mexicali, Mexico Lagoon System If Converted to Combinations of Partial Mix and Complete Mix Aerated Lagoon Systems

Predictions Based on Design Temperature = 12 degrees Celsius and Flow Rate = 1.5 x Current Flow Rate

Date	Flow CFS	Hydraulic Detention Time, days One Primary Cell	Hydraulic Detention Time, days One Secondary Cell in Train A (6 cells)	Hydraulic Detention Time, days One Secondary Cell in Train B (4 cells)	Effluent BOD when Primary Cell converted to Complete Mix. kc20 = 2.0 per day T = 12 deg. celsius kc12 = kc20*(1.085)^T-20 kc12 = 1.04 per day Flow Rate = 1.5 x Present	Effluent BOD when Primary Cell converted to Partial Mix. kp20 = 0.276 per day T = 12 deg. celsius kp12 = kp20*(1.036)^T-20 kp12 = 0.208 per day Flow Rate = 1.5 x Present	Effluent BOD when Converting One 2nd Cell to Partial Mix Cell Equal to Volume of Primary Cell Resulting in Two Cells in Series. Excess settling in (6 or 4 Cell) system. Flow Rate = 1.5 x Present	Effluent BOD when Converting One 2nd Cell and One Primary Cell to Partial Mix System (6 Cell) Flow Rate = 1.5 x Present	Effluent BOD when Converting One 2nd Cell and One Primary Cell to Partial Mix System (4 Cell) Flow Rate = 1.5 x Present	Effluent BOD when Primary Cell converted to Complete Mix. kc20 = 2.0 per day T = 12 deg. celsius kc12 = kc20*(1.085)^T-20 kc12 = 1.04 per day Flow Rate = 1.5 x Present	Effluent BOD when Primary Cell converted to Complete Mix followed by Partial Mix in Secondary Cell (6 Cell) kc12 = 1.04 per day kp12 = 0.208 per day Flow Rate = 1.5 x Present	Effluent BOD when Primary Cell converted to Complete Mix followed by Partial Mix in Secondary Cell (4 Cell) kc12 = 1.04 per day kp12 = 0.208 per day Flow Rate = 1.5 x Present
12/03/92	30	16.5	31.6	21.1	24	91	28	17	23	24	4	6
01/14/93	35	14.1	27.1	18.1	28	101	34	21	29	28	6	8
02/03/93	35	14.1	27.1	18.1	28	101	34	21	29	28	6	8
03/11/93	30	16.5	31.6	21.1	24	91	28	17	23	24	4	6
04/06/93	30	16.5	31.6	21.1	24	91	28	17	23	24	4	6
05/10/93	30	16.5	31.6	21.1	24	91	28	17	23	24	4	6
06/09/93	35	14.1	27.1	18.1	28	101	34	21	29	28	6	8
07/07/93	35	14.1	27.1	18.1	28	101	34	21	29	28	6	8
08/05/93	25	19.8	37.9	25.3	20	80	21	13	18	20	3	5
09/02/93	30	16.5	31.6	21.1	24	91	28	17	23	24	4	6
10/06/93	35	14.1	27.1	18.1	28	101	34	21	29	28	6	8
11/03/93	30	16.5	31.6	21.1	24	91	28	17	23	24	4	6
12/01/93	35	14.1	27.1	18.1	28	101	34	21	29	28	6	8
01/05/94	35	14.1	27.1	18.1	28	101	34	21	29	28	6	8
02/02/94	40	12.4	23.7	15.8	31	110	41	26	35	31	7	10
03/02/94	35	14.1	27.1	18.1	28	101	34	21	29	28	6	8
04/04/94	30	16.5	31.6	21.1	24	91	28	17	23	24	4	6
05/04/94	30	16.5	31.6	21.1	24	91	28	17	23	24	4	6
06/02/94	30	16.5	31.6	21.1	24	91	28	17	23	24	4	6
07/06/94	35	14.1	27.1	18.1	28	101	34	21	29	28	6	8
08/04/94	35	14.1	27.1	18.1	28	101	34	21	29	28	6	8
09/06/94	35	14.1	27.1	18.1	28	101	34	21	29	28	6	8
10/04/94	40	12.4	23.7	15.8	31	110	41	26	35	31	7	10
11/01/94	40	12.4	23.7	15.8	31	110	41	26	35	31	7	10
12/07/94	35	14.1	27.1	18.1	28	101	34	21	29	28	6	8
01/11/95	40	12.4	23.7	15.8	31	110	41	26	35	31	7	10
01/31/95	35	14.1	27.1	18.1	28	101	34	21	29	28	6	8
03/07/95	30	16.5	31.6	21.1	24	91	28	17	23	24	4	6
03/28/95	35	14.1	27.1	18.1	28	101	34	21	29	28	6	8
04/27/95	40	12.4	23.7	15.8	31	110	41	26	35	31	7	10

Tables 3-7 through 3-9 were developed for the same flow patterns used in Tables 3-4 through 3-6, but the predictions are based on the measured water temperature and the current flow rates, two times the current flow rate, and 1.5 times the current flow rate. Because the design temperature was the lowest temperature reported for the 30 months of sampling, the results from the various combinations of partial and complete mix ponds for the observed operating temperatures were equal to or superior to those reported in Tables 3-4 through 3-6.

Table 3-7

Predicted Performance of Mexicali, Mexico Lagoon System If Converted to Combinations of Partial Mix and Complete Mix Aerated Lagoon Systems

Predictions Based on Measured Water Temperature and Current Flow Rate

Date	Flow CFS	Water Temperature deg. celsius	Hydraulic Detention Time, days One Primary Cell	Hydraulic Detention Time, days One Secondary Cell in Train A (6 cells)	Hydraulic Detention Time, days One Secondary Cell in Train B (4 cells)	Effluent BOD when Primary Cell converted to Complete Mix. kc20 = 2.0 per day kcT = kc20*(1.085)^T-20	Effluent BOD when Primary Cell converted to Partial Mix. kp20 = 0.276 per day kpT = kp20*(1.036)^T-20	Effluent BOD when Converting One 2nd Cell to Partial Mix Cell Equal to Volume of Primary Cell Resulting in Two Cells in Series. Excess settling in (6 or 4 Cell) system.	Effluent BOD when Converting One 2nd Cell and One Primary Cell to Partial Mix System (6 Cell)	Effluent BOD when Converting One 2nd Cell and One Primary Cell to Partial Mix System(4 Cell)	Effluent BOD when Primary Cell converted to Complete Mix. kc20 = 2.0 per day kcT = kc20*(1.085)^T-20	Effluent BOD when Primary Cell converted to Complete Mix followed by Partial Mix in Secondary Cell (6 Cell) kcT = kc20*(1.085)^T-20 kpT = kp20*(1.036)^T-20	Effluent BOD when Primary Cell converted to Complete Mix followed by Partial Mix in Secondary Cell (4 Cell)
12/03/92	30	12	16.5	31.6	21.1	17	68	15	9	13	17	2	3
01/14/93	35	13	14.1	27.1	18.1	18	74	18	11	15	18	3	4
02/03/93	35	15	14.1	27.1	18.1	15	70	16	10	14	15	2	3
03/11/93	30	19	16.5	31.6	21.1	10	56	10	6	8	10	1	1
04/06/93	30	18	16.5	31.6	21.1	10	57	11	6	9	10	1	2
05/10/93	30	24	16.5	31.6	21.1	6	48	8	4	6	6	1	1
06/09/93	35	23	14.1	27.1	18.1	8	56	11	6	9	8	1	1
07/07/93	35	29	14.1	27.1	18.1	5	47	7	4	6	5	0	1
08/05/93	25	31	19.8	37.9	25.3	3	33	4	2	3	3	0	0
09/02/93	30	29	16.5	31.6	21.1	4	41	6	3	5	4	0	0
10/06/93	35	25	14.1	27.1	18.1	7	53	9	5	8	7	1	1
11/03/93	30	18	16.5	31.6	21.1	10	57	11	6	9	10	1	2
12/01/93	35	15	14.1	27.1	18.1	15	70	16	10	14	15	2	3
01/05/94	35	13	14.1	27.1	18.1	18	74	18	11	15	18	3	4
02/02/94	40	12	12.4	23.7	15.8	22	84	23	14	20	22	4	5
03/02/94	35	16	14.1	27.1	18.1	14	68	16	9	13	14	2	3
04/04/94	30	20	16.5	31.6	21.1	9	54	10	6	8	9	1	1
05/04/94	30	21	16.5	31.6	21.1	8	52	9	5	7	8	1	1
06/02/94	30	26	16.5	31.6	21.1	5	45	7	4	6	5	0	1
07/06/94	35	27	14.1	27.1	18.1	6	50	8	5	7	6	1	1
08/04/94	35	30	14.1	27.1	18.1	5	46	7	4	6	5	0	1
09/06/94	35	30	14.1	27.1	18.1	5	46	7	4	6	5	0	1
10/04/94	40	25	12.4	23.7	15.8	8	59	12	7	10	8	1	1
11/01/94	40	21	12.4	23.7	15.8	11	66	15	8	12	11	1	2
12/07/94	35	13	14.1	27.1	18.1	18	74	18	11	15	18	3	4
01/11/95	40	15	12.4	23.7	15.8	17	78	20	12	17	17	3	4
01/31/95	35	15	14.1	27.1	18.1	15	70	16	10	14	15	2	3
03/07/95	30	19	16.5	31.6	21.1	10	56	10	6	8	10	1	1
03/28/95	35	18	14.1	27.1	18.1	12	65	14	8	11	12	2	2
04/27/95	40	22	12.4	23.7	15.8	10	64	14	8	11	10	1	2

Table 3-8

Predicted Performance of Mexicali, Mexico Lagoon System If Converted to Combinations of Partial Mix and Complete Mix Aerated Lagoon Systems

Predictions Based on Measured Water Temperature and Flow Rate = 2 x Current Flow Rate

Date	Flow CFS	Water Temperature deg. celsius	Hydraulic Detention Time, days One Primary Cell	Hydraulic Detention Time, days One Secondary Cell in Train A (6 cells)	Hydraulic Detention Time, days One Secondary Cell in Train B (4 cells)	Effluent BOD when Primary Cell converted to Complete Mix. kc20 = 2.0 per day; kcT = kc20*(1.085)^T-20	Effluent BOD when Primary Cell converted to Partial Mix. kp20 = 0.276 per day; kpT = kp20*(1.036)^T-20	Effluent BOD when Converting One 2nd Cell to Partial Mix Cell Equal to Volume of Primary Cell Resulting in Two Cells in Series. Excess settling in (6 or 4 Cell) system.	Effluent BOD when Converting One 2nd Cell and One Primary Cell to Partial Mix System (6 Cell)	Effluent BOD when Converting One 2nd Cell and One Primary Cell to Partial Mix System(4 Cell)	Effluent BOD when Primary Cell converted to Complete Mix. kc20 = 2.0 per day; kcT = kc20*(1.085)^T-20	Effluent BOD when Primary Cell converted to Complete Mix followed by Partial Mix in Secondary Cell (6 Cell); kcT = kc20*(1.085)^T-20; kpT = kp20*(1.036)^T-20	Effluent BOD when Primary Cell converted to Complete Mix followed by Partial Mix in Secondary Cell (4 Cell)
12/03/92	30	12	16.5	31.6	21.1	31	110	41	26	35	31	7	10
01/14/93	35	13	14.1	27.1	18.1	33	119	47	30	24	33	9	11
02/03/93	35	15	14.1	27.1	18.1	29	114	43	28	22	29	7	9
03/11/93	30	19	16.5	31.6	21.1	19	94	29	18	14	19	4	5
04/06/93	30	18	16.5	31.6	21.1	20	96	31	19	15	20	4	5
05/10/93	30	24	16.5	31.6	21.1	13	83	23	14	11	13	2	3
06/09/93	35	23	14.1	27.1	18.1	16	95	30	18	14	16	3	4
07/07/93	35	29	14.1	27.1	18.1	10	81	22	13	10	10	2	2
08/05/93	25	31	19.8	37.9	25.3	6	60	12	7	5	6	1	1
09/02/93	30	29	16.5	31.6	21.1	8	73	18	10	8	8	1	2
10/06/93	35	25	14.1	27.1	18.1	13	90	27	16	13	13	2	3
11/03/93	30	18	16.5	31.6	21.1	20	96	31	19	15	20	4	5
12/01/93	35	15	14.1	27.1	18.1	29	114	43	28	22	29	7	9
01/05/94	35	13	14.1	27.1	18.1	33	119	47	30	24	33	9	11
02/02/94	40	12	12.4	23.7	15.8	40	131	57	38	31	40	12	15
03/02/94	35	16	14.1	27.1	18.1	27	111	41	26	21	27	6	8
04/04/94	30	20	16.5	31.6	21.1	17	92	28	17	13	17	3	4
05/04/94	30	21	16.5	31.6	21.1	16	89	27	16	13	16	3	4
06/02/94	30	26	16.5	31.6	21.1	11	79	21	12	10	11	2	2
07/06/94	35	27	14.1	27.1	18.1	12	86	24	15	12	12	2	3
08/04/94	35	30	14.1	27.1	18.1	9	79	21	13	10	9	1	2
09/06/94	35	30	14.1	27.1	18.1	9	79	21	13	10	9	1	2
10/04/94	40	25	12.4	23.7	15.8	15	99	33	20	16	15	3	4
11/01/94	40	21	12.4	23.7	15.8	21	108	39	25	20	21	5	6
12/07/94	35	13	14.1	27.1	18.1	33	119	47	30	24	33	9	11
01/11/95	40	15	12.4	23.7	15.8	33	123	51	33	27	33	9	11
01/31/95	35	15	14.1	27.1	18.1	29	114	43	28	22	29	7	9
03/07/95	30	19	16.5	31.6	21.1	19	94	29	18	14	19	4	5
03/28/95	35	18	14.1	27.1	18.1	23	106	38	24	19	23	5	7
04/27/95	40	22	12.4	23.7	15.8	19	106	37	23	19	19	4	6

Table 3-9

Predicted Performance of Mexicali, Mexico Lagoon System If Converted to Combinations of Partial Mix and Complete Mix Aerated Lagoon Systems

Predictions Based on Measured Water Temperature and Flow Rate = 1.5 x Current Flow Rate

Date	Flow CFS	Water Temperature deg. celsius	Hydraulic Detention Time, days One Primary Cell	Hydraulic Detention Time, days One Secondary Cell in Train A (6 cells)	Hydraulic Detention Time, days One Secondary Cell in Train B (4 cells)	Effluent BOD when Primary Cell converted to Complete Mix. kc20 = 2.0 per day; kcT = kc20*(1.085)^T-20	Effluent BOD when Primary Cell converted to Partial Mix. kp20 = 0.276 per day; kpT = kp20*(1.036)^T-20	Effluent BOD when Converting One 2nd Cell to Partial Mix Cell Equal to Volume of Primary Cell Resulting in Two Cells in Series. Excess settling in (6 or 4 Cell) system.	Effluent BOD when Converting One 2nd Cell and One Primary Cell to Partial Mix System (6 Cell)	Effluent BOD when Converting One 2nd Cell and One Primary Cell to Partial Mix System (4 Cell)	Effluent BOD when Primary Cell converted to Complete Mix. kc20 = 2.0 per day; kcT = kc20*(1.085)^T-20	Effluent BOD when Primary Cell converted to Complete Mix followed by Partial Mix in Secondary Cell (6 Cell); kcT = kc20*(1.085)^T-20; kpT = kp20*(1.036)^T-20	Effluent BOD when Primary Cell converted to Complete Mix followed by Partial Mix in Secondary Cell (4 Cell)
12/03/92	30	12	16.5	31.6	21.1	24	91	28	17	23	24	4	6
01/14/93	35	13	14.1	27.1	18.1	26	99	33	20	28	26	5	7
02/03/93	35	15	14.1	27.1	18.1	22	94	30	18	25	22	4	6
03/11/93	30	19	16.5	31.6	21.1	14	76	19	12	16	14	2	3
04/06/93	30	18	16.5	31.6	21.1	15	78	20	12	17	15	2	3
05/10/93	30	24	16.5	31.6	21.1	10	67	15	9	12	10	1	2
06/09/93	35	23	14.1	27.1	18.1	12	77	20	12	16	12	2	3
07/07/93	35	29	14.1	27.1	18.1	7	66	14	8	12	7	1	1
08/05/93	25	31	19.8	37.9	25.3	5	47	7	4	6	5	0	1
09/02/93	30	29	16.5	31.6	21.1	6	58	11	6	9	6	1	1
10/06/93	35	25	14.1	27.1	18.1	10	73	18	11	15	10	1	2
11/03/93	30	18	16.5	31.6	21.1	15	78	20	12	17	15	2	3
12/01/93	35	15	14.1	27.1	18.1	22	94	30	18	25	22	4	6
01/05/94	35	13	14.1	27.1	18.1	26	99	33	20	28	26	5	7
02/02/94	40	12	12.4	23.7	15.8	31	110	41	26	35	31	7	10
03/02/94	35	16	14.1	27.1	18.1	21	92	28	17	24	21	4	5
04/04/94	30	20	16.5	31.6	21.1	13	74	18	11	15	13	2	3
05/04/94	30	21	16.5	31.6	21.1	12	72	17	10	14	12	2	2
06/02/94	30	26	16.5	31.6	21.1	8	63	13	8	11	8	1	1
07/06/94	35	27	14.1	27.1	18.1	9	69	16	9	13	9	1	2
08/04/94	35	30	14.1	27.1	18.1	7	64	14	8	11	7	1	1
09/06/94	35	30	14.1	27.1	18.1	7	64	14	8	11	7	1	1
10/04/94	40	25	12.4	23.7	15.8	12	81	22	13	18	12	2	3
11/01/94	40	21	12.4	23.7	15.8	16	89	27	16	22	16	3	4
12/07/94	35	13	14.1	27.1	18.1	26	99	33	20	28	26	5	7
01/11/95	40	15	12.4	23.7	15.8	25	103	35	22	30	25	5	7
01/31/95	35	15	14.1	27.1	18.1	22	94	30	18	25	22	4	6
03/07/95	30	19	16.5	31.6	21.1	14	76	19	12	16	14	2	3
03/28/95	35	18	14.1	27.1	18.1	18	88	26	16	21	18	3	4
04/27/95	40	22	12.4	23.7	15.8	15	87	25	15	21	15	3	4

CHAPTER 4

NOGALES INTERNATIONAL WASTEWATER TREATMENT PLANT

CHAPTER 4

NOGALES INTERNATIONAL WASTEWATER TREATMENT PLANT

The Nogales International Wastewater Treatment Plant (NIWTP) is located on the USA side of the border, and receives approximately two-thirds of the plant influent flow from the Mexican side of the border. The wastewater from the Mexican side of the border is a combination of storm runoff and domestic and industrial wastewater. The wastewater being treated by the NIWTP is a relatively weak sewage because of the dilution from the stormwater events and groundwater infiltration.

The Nogales plant was designed to treat an annual mean flow rate of 15.75 MGD and a peak flow of 28 MGD. The ultimate mean design flow is 17.2 MGD with the addition of aerators. The system currently is treating an annual mean flow rate of 14.9 MGD. Flow from Nogales, Sonora is estimated to increase to 32.3 MGD by the year 2020 with relatively small increases projected for Nogales, Arizona.

SYSTEM DESCRIPTION

A plan view of the NIWTP is shown is Figure 4-1. The NIWTP has extensive preliminary treatment consisting of screening and degritting. Preliminary treatment is followed by two parallel trains of secondary treatment with each train having a complete mix lagoon followed by four partial mix lagoons. Only three of the partial mix lagoons are in service with the fourth used to dry settled solids for removal. The lagoon system is followed by five dual media automatic backwash filters for solids removal prior to disinfection with an ultraviolet facility.

The preliminary treatment was added after the plant was constructed because of very large concentrations of grit in the wastewater. Based on the average daily flow rate of 15.75 MGD, the plant produces about 2 cubic yards of grit each day, and the total volume of grit and screenings is approximately 4 cubic yards per day.

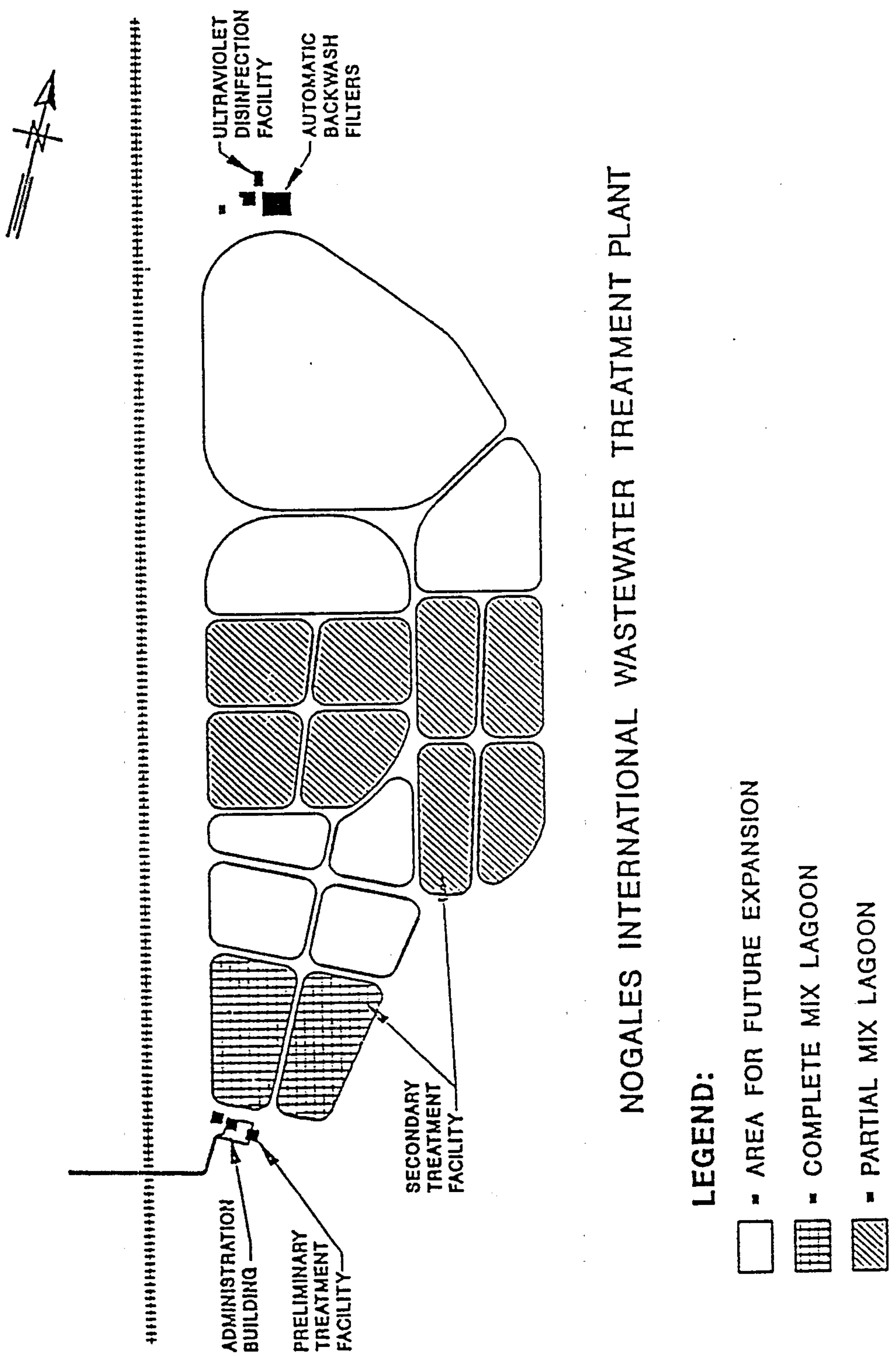


FIGURE 4-1 SITE PLAN

DESIGN ANALYSIS
Design Assumptions

When using any of the conventional formulas and removal rate constants for the design of the Nogales plant, it is not possible to obtain the effluent BOD concentration predicted in the operations manual. It appears that the designer made an incorrect assumption that having two trains of equal volume would double the detention time or it was assumed that a removal rate constant of 6.0 per day for the complete mix lagoon was acceptable. In either case, the quality of the effluent was over estimated.

Based on conventional formulas and rate constants between 2.0 and 3.0 and using Equation 10, the effluent BOD concentration will range between 53 and 72 mg/l. Calculations are shown below for rate constants ranging from 2.0 to 6.0 per day.

$$\frac{C_n}{C_0}=\frac{1}{\left[1+(kt/n)\right]^n} \qquad (10)$$

where C_n = effluent BOD concentration in cell n, mg/l

C_o = influent BOD concentration, mg/l

k = first order reaction rate constant, $days^{-1}$

= 2.0 day^{-1} at 20°C (assumed to be constant in all cells).

t = total hydraulic residence time in pond system, days

n = number of cells in the series.

When k_c = 2.0 per day:

$$C_e=\frac{260}{(1+k_ct)}=\frac{260}{\left(1+2(1.3)\right)}=72\ mg/l$$

When k_c = 2.5 per day:

$$C_e = \frac{260}{(1 + k_c t)} = \frac{260}{(1 + 2.5(1.3))} = 61\, mg/l$$

When k_c = 3.0 per day:

$$C_e = \frac{260}{(1 + k_c t)} = \frac{260}{(1 + 3.0(1.3))} = 53\, mg/l$$

When k_c = 4.0 per day:

$$C_e = \frac{260}{(1 + k_c t)} = \frac{260}{(1 + 4.0(1.3))} = 42\, mg/l$$

When k_c = 5.0 per day:

$$C_e = \frac{260}{(1 + k_c t)} = \frac{260}{(1 + 5.0(1.3))} = 35\, mg/l$$

When k_c = 6.0 per day:

$$C_e = \frac{260}{(1 + k_c t)} = \frac{260}{(1 + 6.0(1.3))} = 30\, mg/l$$

Design Predictions

The NIWTP was designed for an annual mean flow rate of 15.75 MGD and an ultimate mean flow of 17.2 MGD and an influent and effluent BOD of 260 and 30 mg/l, respectively. The following calculations were made to predict the performance for various combinations of complete and partial mix aerated pond systems at 20 °C and 11 °C.

20 °C. At the design BOD concentration of 260 mg/l and a flow rate of 15.75 MGD, the following results were obtained.

$$C_{ec1}=\frac{C_o}{\left[1+\frac{k_c t}{n}\right]^n}=\frac{260}{\left[1+2(1.3/1)\right]^1}=72\,mg/l$$

$$C_{ec2}=\frac{72}{\left[1+2\left(\frac{1}{1}\right)\right]^1}=24\,mg/l$$

The two complete mix cells are followed by two partial mix cells.

$$C_{ep2}=\frac{24}{\left[1+0.276\left(\frac{2}{2}\right)\right]^2}=15\,mg/l$$

With three complete mix cells in series (the original CM cell and the conversion of two of the partial mix cells to CM) at the above conditions, the following was obtained.

$$C_{ec3}=\frac{72}{\left[1+2\left(\frac{2}{2}\right)\right]^2}=8\,mg/l$$

At 20 °C the design will produce an effluent that will satisfy the effluent standard of 30 mg/l of BOD. Better solids control can be exercised by better design of overflow structures and a reduced hydraulic residence time in the settling basins.

11 °C. The following effluent BOD concentrations were calculated for a design flow rate of 15.75 MGD and a design BOD concentration of 260 mg/l.

$$C_{ec1}=\frac{C_o}{\left[1+\frac{k_c t}{n}\right]^n}=\frac{260}{\left[1+0.96(1.3/1)\right]^1}=116\ mg/l$$

$$C_{ec2}=\frac{116}{\left[1+0.96\left(\frac{1}{1}\right)\right]^1}=59\ mg/l$$

The two complete mix cells are followed by two partial mix cells.

$$C_{ep2}=\frac{59}{\left[1+0.201\left(\frac{2}{2}\right)\right]^2}=41\ mg/l$$

If three partial mix cells are converted to three complete mix cells in series, the effluent quality will improve to 15 mg/l, and one "partial mix" cell will remain for settling. If the remaining "partial mix" were converted to a true partial mix cell rather than a settling cell, the effluent BOD concentration would be 21 mg/l.

Similar calculations are shown for actual operating conditions and increased flow rates in Tables 4-1 through 4-4. The physical characteristics of the NIWTP lagoons are shown in Table 4-1 along with the influent and effluent characteristics for the system. Table 4-2 shows the predicted performance for various combinations of partial and complete mix cells at 11 degrees celsius and the measured temperature and flow rate. The predicted effluent from the existing complete mix aerated lagoon shows that the system cannot meet the predicted effluent quality as specified in the operations manual. By modifying the system to various combinations of complete and partial mix aerated lagoons, the system will be able to produce an excellent quality effluent in terms of BOD.

Table 4-1
Nogales International Wastewater Treatment Plant
Summary of Mean Monthly Performance Data

Date	Influent Flow Rate L/sec	Effluent Flow Rate L/sec	Influent BOD mg/L	Effluent BOD mg/L	Influent TSS mg/L	Effluent TSS mg/L	Fecal Coliform no./100 mL	Influent pH	Effluent pH	Dissolved Oxygen CM1 mg/L	Dissolved Oxygen CM2 mg/L	Dissolved Oxygen Effluent mg/L	Temperature Influent degrees F	Temperature Effluent degrees F	Volume in One CM Cell cubic meters	Volume in One PM Cell cubic meters	Hydraulic Detention Time in One CM Cell days	Hydraulic Detention Time in One PM Cell days	Total HDT in System days
Jan 91	600	643	112	4	205	67	236	7.5	8.0	5.5		10.9	17	14	37471.5	31037	1.45	1.20	5.04
Feb 91	690	671	128	7	417	16		7.4	7.9	6.2		10.5	17	15	37471.5	31037	1.26	1.04	4.38
March 91	709	642	155	8	339	17	35	7.2	7.4	4.7		5.9	18	16	37471.5	31037	1.22	1.01	4.26
April 91	546	495	48	9	265	18		7.1	7.5	4.2		6.6	19	18	37471.5	31037	1.59	1.32	5.53
May 91	506	458	128	11	376	29		7.1	7.6	5.1		6.8	24	22	37471.5	31037	1.72	1.42	5.98
June 91	450	475	62	10	157	23		7.1	7.2	5.4		7.2	25	24	37471.5	31037	1.93	1.60	6.72
July 91	452	444	38	10	62	19		7.0	7.2	4.7		5.9	26	28	37471.5	31037	1.92	1.59	6.68
Aug 91	434	441	57	7	248	25		7.0	7.1	5.1		6.3	26	28	37471.5	31037	2.00	1.66	6.97
Sept 91	483	491	26	9	98	8		7.0	7.1	4.6		6.1	25	26	37471.5	31037	1.79	1.49	6.25
Oct 91	454	461	170	27	424	31		7.0	7.0	4.9		7.6	23	22	37471.5	31037	1.91	1.58	6.65
Nov 91	464	460	127	11	728	17		6.9	7.1	5.6		6.6	20	15	37471.5	31037	1.87	1.55	6.51
Dec 91	529	537	144	8	169	17		7.2	7.4	8.9	7.1	6.7	18	13	37471.5	31037	1.64	1.36	5.72
Jan 92	566	657	109	10	420	15	59	7.0	7.3	7.9	7.3	7.4	16	11	37471.5	31037	1.53	1.27	5.34
Feb 92			86	13	372	15		7.2	7.3	7.6	7.7	6.5	17	13	37471.5	31037			0.00
March 92	655	761	46	9	134	14	6	7.2	7.3	6.6	7.0	5.9	18	15	37471.5	31037	1.32	1.10	4.62
April 92	651	636	33	11	176	21	49	7.3	7.5	5.8	6.2	6.7	20	19	37471.5	31037	1.33	1.10	4.64
May 92	573	559	69	22	167	19	4	7.2	7.3	4.1	5.6	7.0	22	21	37471.5	31037	1.51	1.25	5.27
June 92	520	477	91	26	121	11	24	7.0	7.2	3.5	5.2	6.8	22	21	37471.5	31037	1.67	1.38	5.81
July 92	531	481	63	23	308	20	39	7.0	7.2	4.2	3.8	5.6	24	23	37471.5	31037	1.63	1.35	5.69
Aug 92	582	525	24	90	243	15	16	7.1	7.3	4.9	4.4	4.7	25	24	37471.5	31037	1.49	1.23	5.19
Sept 92	563	545	110	13	159	15	169	7.3	5.0	5.5	5.0	5.0	24	24	37471.5	31037	1.54	1.28	5.37
Oct 92	530	548	90	12	159	6	4	7.2	7.4	5.5	5.2	4.8	22	20	37471.5	31037	1.64	1.36	5.70
Nov 92	569	505	108	12	133	22	2	7.1	7.2	5.3	6.0	6.3	20	15	37471.5	31037	1.53	1.26	5.32
Dec 92		572	122	11	336	18	44	6.9	7.2	6.8	6.9	6.3	17	13	37471.5	31037			0.00
Jan 93	723	675	94	10	502	17	12	6.8	7.2	6.8	6.9	6.1	17	14	37471.5	31037	1.20	0.99	4.18
Feb 93	659	605	103	15	263	12	16	6.9	7.2	6.4	6.6	6.3	17	14	37471.5	31037	1.32	1.09	4.59
March 93	643	574	157	14	480	10	44	6.9	7.1	5.4	5.6	5.8	18	16	37471.5	31037	1.35	1.12	4.70
April 93	603	552	190	25	376	17	162	6.8	7.0	5.6	5.6	5.6	19	19	37471.5	31037	1.44	1.19	5.01
May 93	571	532	179	21	542	13	5	7.0	7.0	5.1	4.9	5.4	23	22	37471.5	31037	1.52	1.26	5.29
June 93	514	473	154	16	301	16	2	6.9	7.0	4.5	4.0	4.8	24	23	37471.5	31037	1.69	1.40	5.88
July 93	532	524	83	12	253	12		6.9	7.0	4.8	4.7	5.1	26	25	37471.5	31037	1.63	1.35	5.68
Sept 93	635	578	86	10	404	14	8	6.9	7.1	5.9	5.9	6.4	24	24	37471.5	31037	1.37	1.13	4.76
Oct 93	605	543	83	16	207	13	24	7.0	7.1	5.2	5.1	5.6	23	20	37471.5	31037	1.43	1.19	4.99
Nov 93	612	541	78	10	256	12	9	7.3	7.4	5.0	5.2	5.5	20	15	37471.5	31037	1.42	1.17	4.94
Dec 93	593	539	72	15	203	6	16			5.8	5.8	6.5	17	14	37471.5	31037	1.46	1.21	5.09
Jan 94	586	538	69	19	202	12	8	7.2	7.3	5.9	5.5	6.1	16	13	37471.5	31037	1.48	1.23	5.16
Feb 94	614	554	72	22	234	19	64	7.2	7.4	5.6	5.9	6.2	18	13	37471.5	31037	1.41	1.17	4.92
Mar 94	600	545	87	21	284	13	17	7.3	7.5	3.8	3.9	5.2	19	17	37471.5	31037	1.45	1.20	5.04
Apr 94	583	509	104	23	255	14	24	7.3	7.4	4.6	4.1	6.0	21	18	37471.5	31037	1.49	1.23	5.19
May 94	559	520	76	14	394	18	32	7.3	7.3	3.6	3.6	5.3	24	22	37471.5	31037	1.55	1.28	5.40
Jun 94	536	488	143	80	98	17	427	7.4	7.4	2.5	2.3	4.6	27	25	37471.5	31037	1.62	1.34	5.64
Jul 94	518	460	157	25	209	16	3	7.0	7.2	4.1	3.9	4.7	27	26	37471.5	31037	1.68	1.39	5.84
Aug 94	533	470	148	26	200	17	8	6.8	7.0	7.0	7.0	7.0	27	26	37471.5	31037	1.63	1.35	5.68
Sep 94	566	488	143	14	105	6	9	6.8	7.0	4.6	4.5	5.2	26	24	37471.5	31037	1.53	1.27	5.34
Oct 94	599	499	142	43	139	11	4	6.9	6.9	4.8	4.9	6.1	22	19	37471.5	31037	1.45	1.20	5.04
Nov 94	669	572	133	12	162	12	5	6.9	6.9	7.7	5.2	6.6	20	15	37471.5	31037	1.30	1.07	4.52
Dec 94	707	617	121	12	155	8	118	7.0	7.1	6.8	5.8	7.1	19	13	37471.5	31037	1.23	1.02	4.27
Jan 95	821	719	114	10	185	11	12	6.9	7.2	6.7	6.0	7.8	19	13	37471.5	31037	1.06	0.87	3.68
Feb 95	791	698	116	16	190	19	1	7.1	7.2	6.3	5.5	8.2	21	16	37471.5	31037	1.10	0.91	3.82
Mar 95	750	660	108	19	129	17	13	6.9	7.2	5.8	5.5	7.8	21	18	37471.5	31037	1.16	0.96	4.03
Apr 95	702	578	142	18	138	10	144	7.0	7.2	5.0	4.8	7.9	21	18	37471.5	31037	1.23	1.02	4.30
May 95	639	505	142	21	157	15	73	7.2	7.3	4.6	4.7	7.0	22	21	37471.5	31037	1.36	1.13	4.73

Table 4-2

Nogales International Wastewater Treatment Plant
Predicted Performance If Converted to Combinations of Partial Mix and Complete Mix Aerated Lagoon Systems
Predictions Based on Design Temperature = 11 degrees Celsius and Measured Temperature and Flow Rate

Date	Influent Flow Rate L/sec	Influent BOD mg/L	Temperature Influent degrees C	Temperature Effluent degrees C	Hydraulic Detention Time in One CM Cell days	Hydraulic Detention Time in One PM Cell days	Total HDT in System days	Effluent BOD from Complete Mix Cell kc20 = 2.0 per day T = 11 deg. celsius kc11 = kc20(1.085)^T-20 kc11 = 0.960 per day	Effluent BOD from Complete Mix Cell and Conversion of "Partial Mix" Cells to True Partial Mix kp11 = kp20(1.036)^T-20 kp11 = 0.276(1.036)^-9 kp11 = 0.201 per day	Effluent BOD from Complete Mix Cell and Conversion of "Partial Mix" Cells to True Partial Mix Based on Measured Temp. and Flow Rate (FR) kp = kp20(1.036)^T-20	Effluent BOD from Complete Mix Cell and Conversion of One "Partial Mix" Cell to a Complete Mix Cell (t1=1.2 d, t2=1.0 d) followed by existing PM Cells at meas. FR & Temp.	Effluent BOD from CM Cell and Conversion of Two "Partial Mix" Cells to CM (t1=1.2 d, t2=1.0 d, t3=1.0 d) followed by existing PM Cell (Settling Cell, t = 1d) at measured FR & Temp.	Effluent BOD from CM Cell and Conversion of Three "Partial Mix" Cells to CM (t1=1.2 d, t2=t3=t4=1.0d) followed by fourth exist. PM Cell (Settling Cell, t = 1 d) at measured FR & Temp.
Jan 91	600	112	17	14	1.45	1.20	5.04	47	25	17	14	6	2
Feb 91	690	128	17	15	1.26	1.04	4.38	58	33	22	18	8	3
March 91	709	155	18	16	1.22	1.01	4.26	71	41	27	21	8	3
April 91	546	48	19	18	1.59	1.32	5.53	19	9	5	4	1	0.38
May 91	506	128	24	22	1.72	1.42	5.98	49	23	8	5	1	0.26
June 91	450	62	25	24	1.93	1.60	6.72	22	9	3	2	0.3	0.05
July 91	452	38	26	28	1.92	1.59	6.68	14	6	1	1	0.1	0.01
Aug 91	434	57	26	28	2.00	1.66	6.97	19	8	2	1	0.1	0.02
Sept 91	483	26	25	26	1.79	1.49	6.25	10	4	1	1	0.1	0.02
Oct 91	454	170	23	22	1.91	1.58	6.65	60	26	9	6	1	0.24
Nov 91	464	127	20	15	1.87	1.55	6.51	45	20	11	9	3	1
Dec 91	529	144	18	13	1.64	1.36	5.72	56	27	18	16	6	3
Jan 92	566	109	16	11	1.53	1.27	5.34	44	22	17	15	7	3
Feb 92		86	17	13									
March 92	655	46	18	15	1.32	1.10	4.62	20	11	7	6	2	1
April 92	651	33	20	19	1.33	1.10	4.64	14	8	4	3	1	0.33
May 92	573	69	22	21	1.51	1.25	5.27	28	14	6	4	1	0.28
June 92	520	91	22	21	1.67	1.38	5.81	35	17	7	5	1	0.31
July 92	531	63	24	23	1.63	1.35	5.69	25	12	4	3	1	0.14
Aug 92	582	24	25	24	1.49	1.23	5.19	10	5	2	1	0.2	0.05
Sept 92	563	110	24	24	1.54	1.28	5.37	45	22	8	5	1	0.22
Oct 92	530	90	22	20	1.64	1.36	5.70	35	17	7	5	1	0.38
Nov 92	569	108	20	15	1.53	1.26	5.32	44	22	13	10	4	1
Dec 92		122	17	13									
Jan 93	723	94	17	14	1.20	0.99	4.18	44	25	18	15	7	3
Feb 93	659	103	17	14	1.32	1.09	4.59	45	25	18	14	6	3
March 93	643	157	18	16	1.35	1.12	4.70	68	37	23	18	7	3
April 93	603	190	19	19	1.44	1.19	5.01	80	42	22	16	5	2
May 93	571	179	23	22	1.52	1.26	5.29	73	37	14	9	2	1
June 93	514	154	24	23	1.69	1.40	5.88	59	28	9	6	1	0.28
July 93	532	83	26	25	1.63	1.35	5.68	32	16	4	3	1	0.10
Sept 93	635	86	24	24	1.37	1.13	4.76	37	20	7	4	1	0.27
Oct 93	605	83	23	20	1.43	1.19	4.99	35	18	8	5	2	0.46
Nov 93	612	78	20	15	1.42	1.17	4.94	33	17	10	8	3	1
Dec 93	593	72	17	14	1.46	1.21	5.09	30	16	11	9	4	2
Jan 94	586	69	16	13	1.48	1.23	5.16	28	15	11	9	4	2
Feb 94	614	72	18	13	1.41	1.17	4.92	31	16	11	9	4	2
Mar 94	600	87	19	17	1.45	1.20	5.04	36	19	11	8	3	1
Apr 94	583	104	21	18	1.49	1.23	5.19	43	22	11	8	2	1
May 94	559	76	24	22	1.55	1.28	5.40	31	15	5	4	1	0.21
Jun 94	536	143	27	25	1.62	1.34	5.64	56	27	7	4	1	0.18
Jul 94	518	157	27	26	1.68	1.39	5.84	60	29	7	4	1	0.13
Aug 94	533	148	27	26	1.63	1.35	5.68	58	28	7	4	1	0.15
Sep 94	566	143	26	24	1.53	1.27	5.34	58	29	9	5	1	0.24
Oct 94	599	142	22	19	1.45	1.20	5.04	59	31	14	10	3	1
Nov 94	669	133	20	15	1.30	1.07	4.52	59	33	19	15	6	3
Dec 94	707	121	19	13	1.23	1.02	4.27	56	32	20	17	8	4
Jan 95	821	114	19	13	1.06	0.87	3.68	56	35	23	19	10	5
Feb 95	791	116	21	16	1.10	0.91	3.82	56	34	19	15	7	3
Mar 95	750	108	21	18	1.16	0.96	4.03	51	30	16	12	5	2
Apr 95	702	142	21	18	1.23	1.02	4.30	65	37	19	14	5	2
May 95	639	142	22	21	1.36	1.13	4.73	62	33	15	10	3	1

Table 4-3

Nogales International Wastewater Treatment Plant
Predicted Performance If Converted to Combinations of Partial Mix and Complete Mix Aerated Lagoon Systems
Predictions Based on Design Temperature = 11 degrees Celsius and Measured Temperature and 2 x Measured Flow Rate

Date	Influent Flow Rate L/sec	Influent BOD mg/L	Temperature Influent degrees C	Temperature Effluent degrees C	Hydraulic Detention Time in One CM Cell days	Hydraulic Detention Time in One PM Cell days	Total HDT in System days	Effluent BOD from Complete Mix Cell kc20 = 2.0 per day T = 11 deg. celsius kc11 = kc20(1.085)^T-20 kc11 = 0.960 per day 2 x Measured Flow Rate	Effluent BOD from Complete Mix Cell and Conversion of "Partial Mix" Cells to True Partial Mix kp11 = kp20(1.036)^T-20 kp11 = 0.276(1.036)^-9 kp11 = 0.201 per day 2 x Measured Flow Rate	Effluent BOD from Complete Mix Cell and Conversion of "Partial Mix" Cells to True Partial Mix Based on Measured Temp. and Flow Rate (FR) kp = kp20(1.036)^T-20 2 x Measured Flow Rate	Effluent BOD from Complete Mix Cell and Conversion of One "Partial Mix" Cell to a Complete Mix Cell (t1=1.2 d, t2=1.0 d) followed by existing PM Cells at meas. FR & Temp. 2 x Measured Flow Rate	Effluent BOD from CM Cell and Conversion of Two "Partial Mix" Cells to CM (t1=1.2 d, t2=1.0 d, t3=1.0 d) followed by existing PM Cell (Settling Cell, t = 1d) at measured FR & Temp. 2 x Measured Flow Rate	Effluent BOD from CM Cell and Conversion of Three "Partial Mix" Cells to CM (t1=1.2 d, t2=t3=t4=1.0d) followed by fourth exist. PM Cell (Settling Cell, t = 1 d) at measured FR & Temp. 2 x Measured Flow Rate
Jan 91	600	112	17	14	1.45	1.20	5.04	66	47	36	30	18	10
Feb 91	690	128	17	15	1.26	1.04	4.38	80	59	45	38	23	13
March 91	709	155	18	16	1.22	1.01	4.26	,97	73	54	44	25	15
April 91	546	48	19	18	1.59	1.32	5.53	27	19	12	9	4	2
May 91	506	128	24	22	1.72	1.42	5.98	70	47	22	14	5	2
June 91	450	62	25	24	1.93	1.60	6.72	32	21	8	5	1	0.5
July 91	452	38	26	28	1.92	1.59	6.68	20	13	4	2	1	0.1
Aug 91	434	57	26	28	2.00	1.66	6.97	29	18	6	3	1	0.2
Sept 91	483	26	25	26	1.79	1.49	6.25	14	9	4	2	1	0.2
Oct 91	454	170	23	22	1.91	1.58	6.65	89	57	25	16	6	2
Nov 91	464	127	20	15	1.87	1.55	6.51	67	43	27	22	11	5
Dec 91	529	144	18	13	1.64	1.36	5.72	80	55	41	35	20	12
Jan 92	566	109	16	11	1.53	1.27	5.34	63	44	36	32	20	12
Feb 92		86	17	13									
March 92	655	46	18	15	1.32	1.10	4.62	28	21	15	13	7	4
April 92	651	33	20	19	1.33	1.10	4.64	20	15	9	7	4	2
May 92	573	69	22	21	1.51	1.25	5.27	40	28	15	10	4	2
June 92	520	91	22	21	1.67	1.38	5.81	50	34	18	13	5	2
July 92	531	63	24	23	1.63	1.35	5.69	35	24	11	7	3	1
Aug 92	582	24	25	24	1.49	1.23	5.19	14	10	4	3	1	0.4
Sept 92	563	110	24	24	1.54	1.28	5.37	63	44	20	13	5	2
Oct 92	530	90	22	20	1.64	1.36	5.70	51	34	19	13	6	2
Nov 92	569	108	20	15	1.53	1.26	5.32	62	44	29	24	13	7
Dec 92		122	17	13									
Jan 93	723	94	17	14	1.20	0.99	4.18	60	45	36	30	19	12
Feb 93	659	103	17	14	1.32	1.09	4.59	63	46	36	30	18	11
March 93	643	157	18	16	1.35	1.12	4.70	95	69	50	40	22	12
April 93	603	190	19	19	1.44	1.19	5.01	113	80	52	39	19	9
May 93	571	179	23	22	1.52	1.26	5.29	103	72	36	24	9	4
June 93	514	154	24	23	1.69	1.40	5.88	85	57	26	16	6	2
July 93	532	83	26	25	1.63	1.35	5.68	47	32	12	7	2	1
Sept 93	635	86	24	24	1.37	1.13	4.76	52	38	18	12	5	2
Oct 93	605	83	23	20	1.43	1.19	4.99	49	35	19	13	6	3
Nov 93	612	78	20	15	1.42	1.17	4.94	46	33	22	18	10	6
Dec 93	593	72	17	14	1.46	1.21	5.09	42	30	23	20	12	7
Jan 94	586	69	16	13	1.48	1.23	5.16	40	28	23	19	12	7
Feb 94	614	72	18	13	1.41	1.17	4.92	43	31	23	20	12	7
Mar 94	600	87	19	17	1.45	1.20	5.04	51	36	25	20	10	5
Apr 94	583	104	21	18	1.49	1.23	5.19	61	43	25	19	9	4
May 94	559	76	24	22	1.55	1.28	5.40	44	30	14	10	4	1
Jun 94	536	143	27	25	1.62	1.34	5.64	81	55	21	13	4	1
Jul 94	518	157	27	26	1.68	1.39	5.84	87	59	21	12	4	1
Aug 94	533	148	27	26	1.63	1.35	5.68	83	57	21	12	4	1
Sep 94	566	143	26	24	1.53	1.27	5.34	82	57	24	15	5	2
Oct 94	599	142	22	19	1.45	1.20	5.04	84	59	33	25	12	6
Nov 94	669	133	20	15	1.30	1.07	4.52	82	60	41	34	20	11
Dec 94	707	121	19	13	1.23	1.02	4.27	76	57	41	36	22	14
Jan 95	821	114	19	13	1.06	0.87	3.68	75	59	44	38	26	17
Feb 95	791	116	21	16	1.10	0.91	3.82	76	58	38	32	19	12
Mar 95	750	108	21	18	1.16	0.96	4.03	70	53	35	27	15	9
Apr 95	702	142	21	18	1.23	1.02	4.30	89	66	42	33	17	9
May 95	639	142	22	21	1.36	1.13	4.73	86	62	36	25	12	5

Table 4-4

Nogales International Wastewater Treatment Plant
Predicted Performance If Converted to Combinations of Partial Mix and Complete Mix Aerated Lagoon Systems
Predictions Based on Design Temperature = 11 degrees Celsius and Measured Temperature and 3 x Measured Flow Rate

Date	Influent Flow Rate L/sec	Influent BOD mg/L	Temperature Influent degrees C	Temperature Effluent degrees C	Hydraulic Detention Time in One CM Cell days	Hydraulic Detention Time in One PM Cell days	Total HDT in System days	Effluent BOD from Complete Mix Cell kc20 = 2.0 per day T = 11 deg. celsius kc11 = kc20(1.085)^T-20 kc11 = 0.960 per day 3 x Measured Flow Rate	Effluent BOD from Complete Mix Cell and Conversion of "Partial Mix" Cells to True Partial Mix kp11 = kp20(1.036)^T-20 kp11 = 0.276(1.036)^-9 kp11 = 0.201 per day 3 x Measured Flow Rate	Effluent BOD from Complete Mix Cell and Conversion of "Partial Mix" Cells to True Partial Mix Based on Measured Temp. and Flow Rate (FR) kp = kp20(1.036)^T-20 3 x Measured Flow Rate	Effluent BOD from Complete Mix Cell and Conversion of One "Partial Mix" Cell to a Complete Mix Cell (t1 = 1.2 d, t2 = 1.0 d) followed by existing PM Cells at meas. FR & Temp. 3 x Measured Flow Rate	Effluent BOD from CM Cell and Conversion of Two "Partial Mix" Cells to CM (t1 = 1.2 d, t2 = 1.0 d, t3 = 1.0 d) followed by existing PM Cell (Settling Cell, t = 1d) at measured FR & Temp. 3 x Measured Flow Rate	Effluent BOD from CM Cell and Conversion of Three "Partial Mix" Cells to CM (t1 = 1.2 d, t2 = t3 = t4 = 1.0d) followed by fourth exist. PM Cell (Settling Cell, t = 1 d) at measured FR & Temp. 3 x Measured Flow Rate
Jan 91	600	112	17	14	1.45	1.20	5.04	76	61	49	43	29	20
Feb 91	690	128	17	15	1.26	1.04	4.38	91	74	60	52	36	25
March 91	709	155	18	16	1.22	1.01	4.26	111	91	73	62	41	28
April 91	546	48	19	18	1.59	1.32	5.53	32	25	18	14	8	5
May 91	506	128	24	22	1.72	1.42	5.98	83	63	34	24	11	5
June 91	450	62	25	24	1.93	1.60	6.72	38	28	13	8	3	1
July 91	452	38	26	28	1.92	1.59	6.68	24	18	7	4	1	0.4
Aug 91	434	57	26	28	2.00	1.66	6.97	35	25	10	6	2	1
Sept 91	483	26	25	26	1.79	1.49	6.25	17	12	6	4	1	1
Oct 91	454	170	23	22	1.91	1.58	6.65	106	78	41	28	12	5
Nov 91	464	127	20	15	1.87	1.55	6.51	79	59	41	34	20	12
Dec 91	529	144	18	13	1.64	1.36	5.72	94	72	57	51	34	23
Jan 92	566	109	16	11	1.53	1.27	5.34	73	57	49	44	32	22
Feb 92		86	17	13									
March 92	655	46	18	15	1.32	1.10	4.62	33	26	21	18	12	8
April 92	651	33	20	19	1.33	1.10	4.64	23	18	13	10	6	4
May 92	573	69	22	21	1.51	1.25	5.27	47	37	22	16	9	4
June 92	520	91	22	21	1.67	1.38	5.81	59	45	27	20	10	5
July 92	531	63	24	23	1.63	1.35	5.69	42	32	17	12	6	3
Aug 92	582	24	25	24	1.49	1.23	5.19	16	13	7	5	2	1
Sept 92	563	110	24	24	1.54	1.28	5.37	74	58	31	21	10	4
Oct 92	530	90	22	20	1.64	1.36	5.70	59	46	28	21	11	6
Nov 92	569	108	20	15	1.53	1.26	5.32	73	57	41	35	23	15
Dec 92		122	17	13									
Jan 93	723	94	17	14	1.20	0.99	4.18	68	56	47	41	30	21
Feb 93	659	103	17	14	1.32	1.09	4.59	72	59	49	42	29	20
March 93	643	157	18	16	1.35	1.12	4.70	110	88	68	57	38	24
April 93	603	190	19	19	1.44	1.19	5.01	130	103	74	58	34	20
May 93	571	179	23	22	1.52	1.26	5.29	120	94	54	38	19	9
June 93	514	154	24	23	1.69	1.40	5.88	100	76	40	27	12	6
July 93	532	83	26	25	1.63	1.35	5.68	54	42	20	13	5	2
Sept 93	635	86	24	24	1.37	1.13	4.76	60	48	27	19	9	5
Oct 93	605	83	23	20	1.43	1.19	4.99	57	45	27	21	12	6
Nov 93	612	78	20	15	1.42	1.17	4.94	53	42	31	26	17	11
Dec 93	593	72	17	14	1.46	1.21	5.09	49	39	32	28	19	13
Jan 94	586	69	16	13	1.48	1.23	5.16	47	37	31	27	19	13
Feb 94	614	72	18	13	1.41	1.17	4.92	50	40	32	28	19	13
Mar 94	600	87	19	17	1.45	1.20	5.04	59	47	35	29	18	11
Apr 94	583	104	21	18	1.49	1.23	5.19	71	56	37	29	17	10
May 94	559	76	24	22	1.55	1.28	5.40	51	40	22	15	8	4
Jun 94	536	143	27	25	1.62	1.34	5.64	94	73	33	22	9	4
Jul 94	518	157	27	26	1.68	1.39	5.84	102	78	34	21	8	3
Aug 94	533	148	27	26	1.63	1.35	5.68	97	75	34	21	9	4
Sep 94	566	143	26	24	1.53	1.27	5.34	96	75	37	25	11	5
Oct 94	599	142	22	19	1.45	1.20	5.04	97	77	49	38	22	13
Nov 94	669	133	20	15	1.30	1.07	4.52	94	76	57	49	33	22
Dec 94	707	121	19	13	1.23	1.02	4.27	87	71	55	49	35	25
Jan 95	821	114	19	13	1.06	0.87	3.68	85	72	58	52	39	29
Feb 95	791	116	21	16	1.10	0.91	3.82	85	72	52	45	31	22
Mar 95	750	108	21	18	1.16	0.96	4.03	79	66	47	39	26	17
Apr 95	702	142	21	18	1.23	1.02	4.30	102	83	58	48	30	19
May 95	639	142	22	21	1.36	1.13	4.73	99	79	52	39	22	12

Using the same flow configurations as mentioned above but doubling the flow rate, it can be seen from the results in Table 4-3 that with the proper modifications the lagoon system is capable of producing an excellent effluent. By tripling the design flow rate and with the correct combinations of complete and partial mix cells, the system can be modified to produce an effluent BOD concentration of 30 mg/l or less.

With relatively simple modifications in the existing lagoon system, it is possible to significantly increase the flow rate to the system and produce an acceptable effluent BOD concentration. Modifications of the settling ponds to incorporate multiple drawoff structures and multiple drawoff levels and the utilization of the proper hydraulic residence time should improve the TSS effluent quality.

Oxygen Requirements

Complete Mix Cell. Determination of the oxygen requirements for the complete mix pond system were verified using Equation 16 shown below.

$$N = \frac{N_a}{\alpha \left[\frac{C_{SW} - C_L}{C_S} \right] 1.025^{T_w - 20}} \tag{16}$$

where N = equivalent oxygen transfer to tap water at standard conditions, kg/hr

N_a = oxygen required to treat the wastewater, kg/hr (usually taken as 1.5 x the organic loading entering the cell)

α = (oxygen transfer in wastewater)/(oxygen transfer in tap water) = 0.9

C_L = minimum DO concentration to be maintained in the wastewater, assume 2 mg/l

C_s = oxygen saturation value of tap water at 20°C and one atmosphere pressure = 9.17 mg/l.

T_w = wastewater temperature, °C. Assume 23 °C for checking.

$C_{sw} = \beta(C_{ss})P$ = oxygen saturation value of the waste, mg/l.

β = (wastewater saturation value)/tap water oxygen saturation value) = 0.9

Css = tap water oxygen saturation value at temperature T_w, (see Standard Methods or standard textbooks).

P = ratio of barometric pressure at the pond site to barometric pressure at sea level. (assume 1.0 for an elevation of 100 m)

The design organic load in the influent wastewater is:

$(C_o)(Q)$ = (260 g/m³)(65,102 m³ /day)(day/24 hr)(kg/1000g) = 705 kg/h

The oxygen demand is assumed to be 1.5 times the organic loading, hence

N_{a1} = (1.5)(705 kg/hr) = 1,058 kg/h

Use Eq. 16 to calculate equivalent oxygen transfer.

$$N = \frac{N_a}{\alpha\left[\dfrac{C_{SW}-C_L}{C_S}\right]1.025^{T_w-20}}$$

C_{sw} = $(\beta)(C_{ss})(P)$ = (0.9)(8.68 mg/l)(1.0) = 7.81 mg/l

$$N_1 = \frac{1058}{0.9\left[\dfrac{7.81-2.0}{9.17}\right](1.025)^{23-20}} = 1723\ \mathit{kg/h\ of\ oxygen}$$

A value of 1.9 kg O_2/kWh (1.4kg/hp/h) is recommended for estimating power requirements for surface aerators.

The total power for surface aeration in the complete mix cells:

(1723 kg/h of O_2)/(1.9 kg/kWh of O_2) = 907 kW (1,216 hp)

These surface aerator power requirements must be corrected for gearing and blower efficiency. Assuming 90 percent efficiency for both gearing and blowers, the total power for surface aerators in the complete mix cells would be 907 kW/ 0.9 = 1,008 kW (1,351 hp) or 504 kW (676 hp) per complete mix cell. Eleven 60 hp aerators were installed in each complete mix cell. This is excellent agreement considering that only minor changes in assumptions could result in differences greater than 16 hp.

Partial Mix Cells. An estimate of the oxygen transferred by the two 20 hp aerators in each "partial mix" cell can be made as follows.

Aerators transfer approximately 1.9 kg O_2/kWh

Total of 40 hp x 0.7457 = 30 kW

Oxygen transfer = 30 kW x 1.9 kg O_2/kWh = 57 kg Oxygen per hour

BOD loading to "PM" cells:

74 mg/l x (15.75 MGD/2) x 8.34 = 4,860 pounds per day = 2,209 kg/day = 92 kg/h x 1.5 = 151 kg/h

Therefore, the aerators in the "PM" cells are designed to provide approximately 38 % of the design load applied to the first "PM" cell. BOD removal in the "PM" cells was not considered in the design calculations to predict the effluent quality, but aeration was provided to maintain aerobic conditions in the settling ponds. In brief, the PM cells are not true partial mix lagoons.

PERFORMANCE OF SYSTEM

Influent and effluent data are available for the NIWTP although there are several components to the system. Because of the lack of intermediate performance data, it is impossible to determine the influence of the performance of the lagoon system on the final effluent quality. It is unfortunate that intermediate data were not collected making it is impossible to determine the efficiency of the various operations and processes. For example, it would be beneficial to know how well the automatic backwash filters are removing the algae from the pond effluent. All laboratory and full-scale performance studies have shown that regular granular media filtration without chemical addition can remove about one-third of the algae in pond effluents. The designers expected to achieve far better results. It would be interesting to know the basis for the design of the automatic backwash filters.

Extensive operating data were compiled by the staff and were made available on computer disk for 1991 through May 1995, and this information is shown in monthly summary reports in Appendix A. Influent and effluent flow rates for 1991-1995 are shown in Figure 4-2. As would be expected in a system receiving significant quantities of storm runoff, the flow rate is higher during the rainy season (winter and spring). The influent and effluent BOD concentrations tend to be higher during the low flow periods, and the mean concentration has increased gradually over the past five years (Figure 4-3). Although the mean BOD has increased with time, the mean influent TSS concentration has tended to decrease and has become less sporadic during the past year (Figure 4-4).

In general, the effluent fecal coliform numbers have remained essentially constant but with occasional excursions above 200 organisms per 100 mL (Figure 4-5). The occasional excursions probably are attributable to relatively high TSS concentrations which interfere with the UV disinfection process.

There appeared to be no relationship between the effluent BOD concentration and the effluent water temperature (Figures 4-6 and 4-7). This is not surprising because of the filtration and disinfection (chlorination and ultraviolet light) steps in the process train. Had intermediate performance data been available, it is likely that BOD reduction would be related to temperature.

Figure 4-2. Nogales International Wastewater Treatment Plant Influent and Effluent Flow Rates

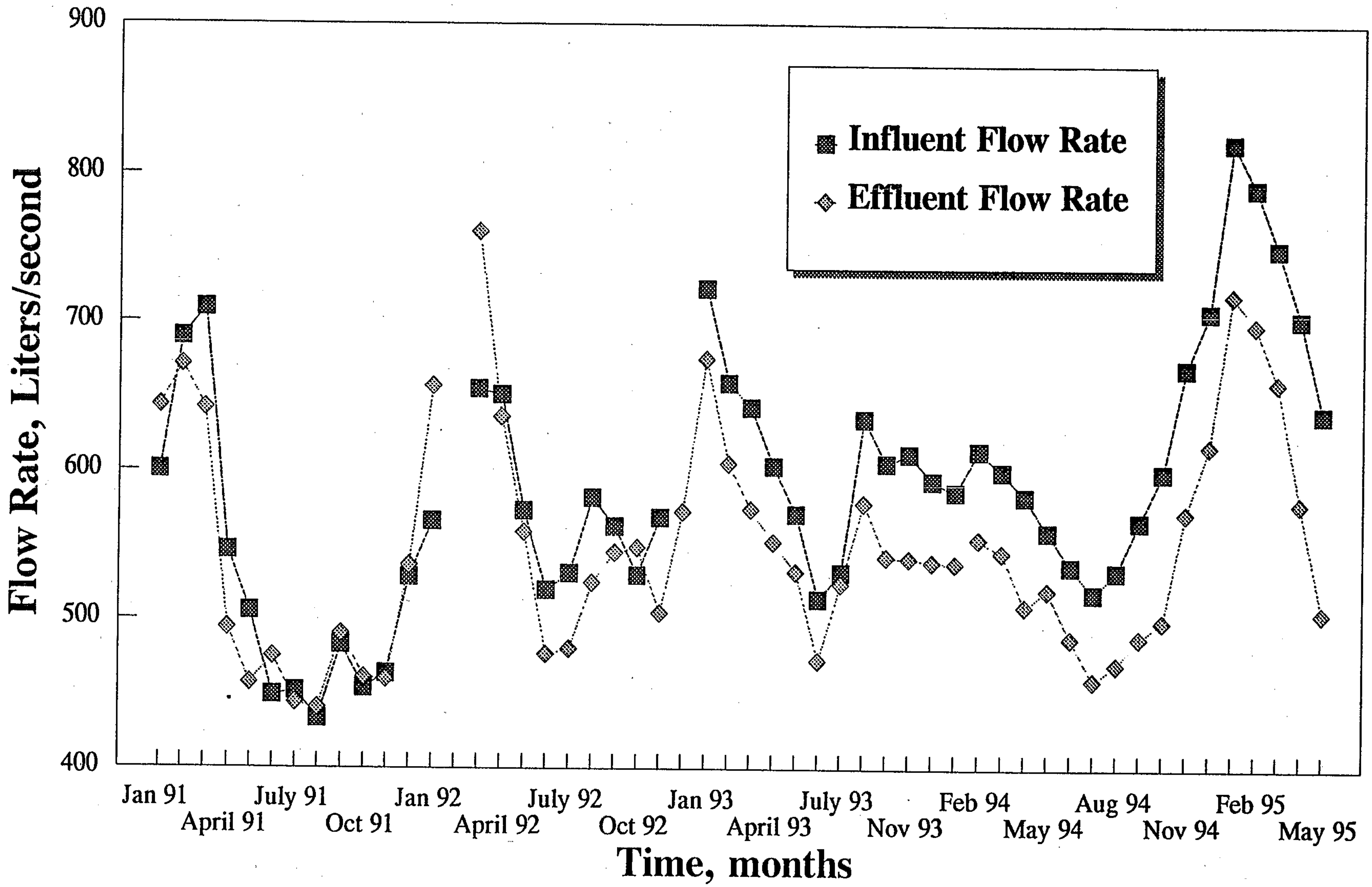


Figure 4-3. Nogales International Wastewater Treatment Plant Influent and Effluent BOD

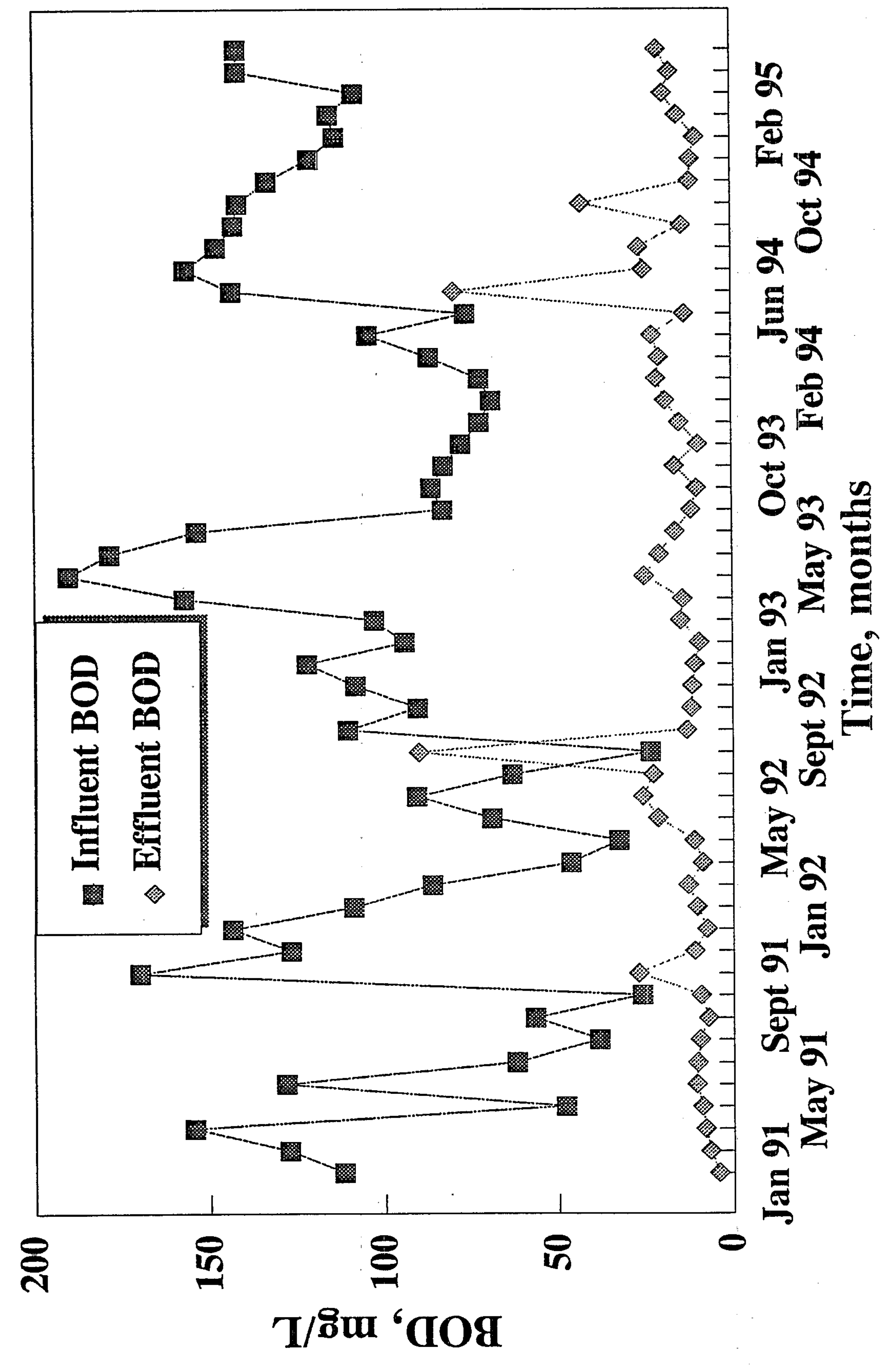


Figure 4-4. Nogales International Wastewater Treatment Plant Influent and Effluent TSS

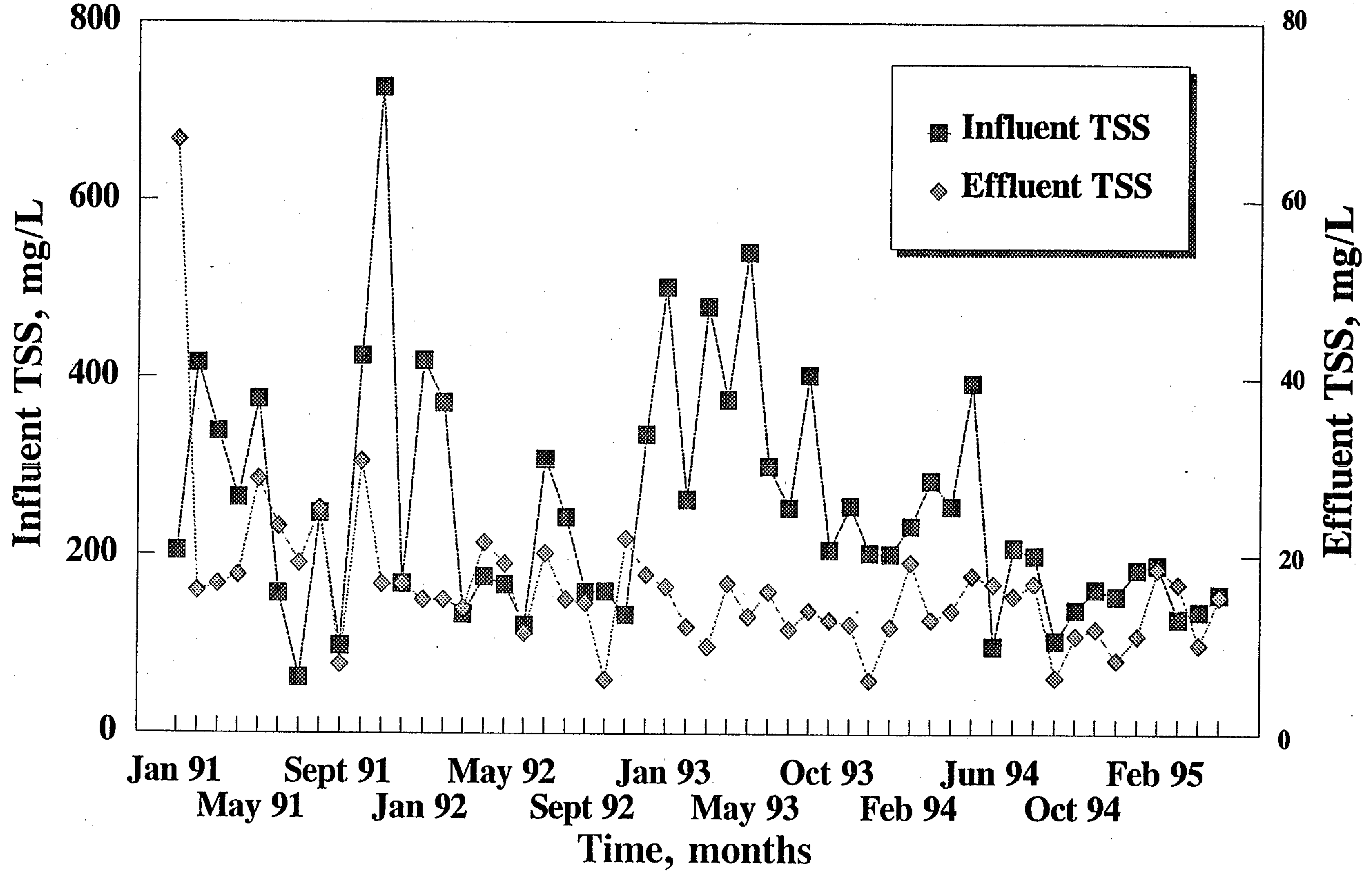


Figure 4-5. Nogales International Wastewater Treatment Plant Effluent Fecal Coliforms

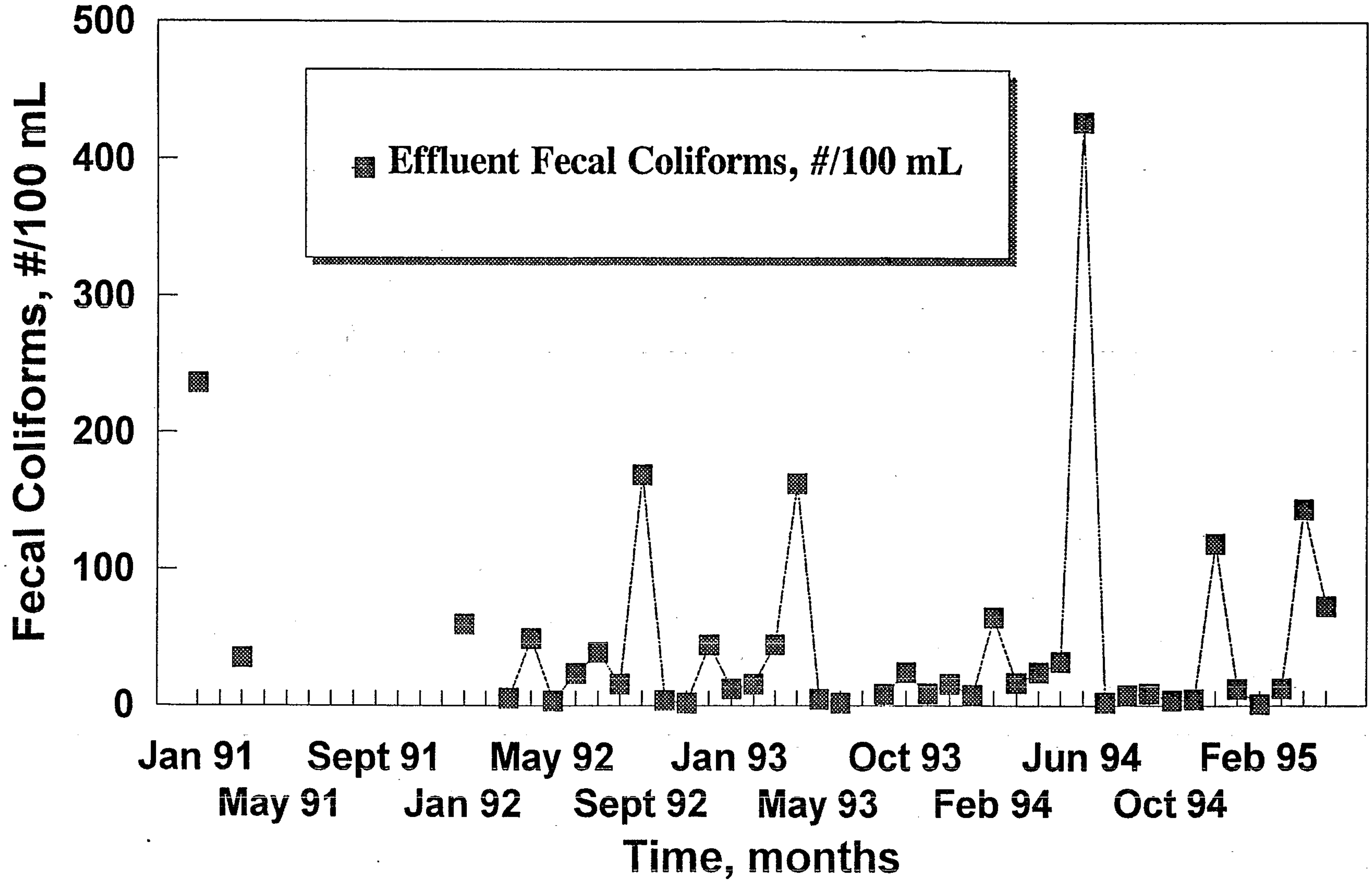


Figure 4-6. Nogales International Wastewater Treatment Plant
Effluent BOD and Temperature

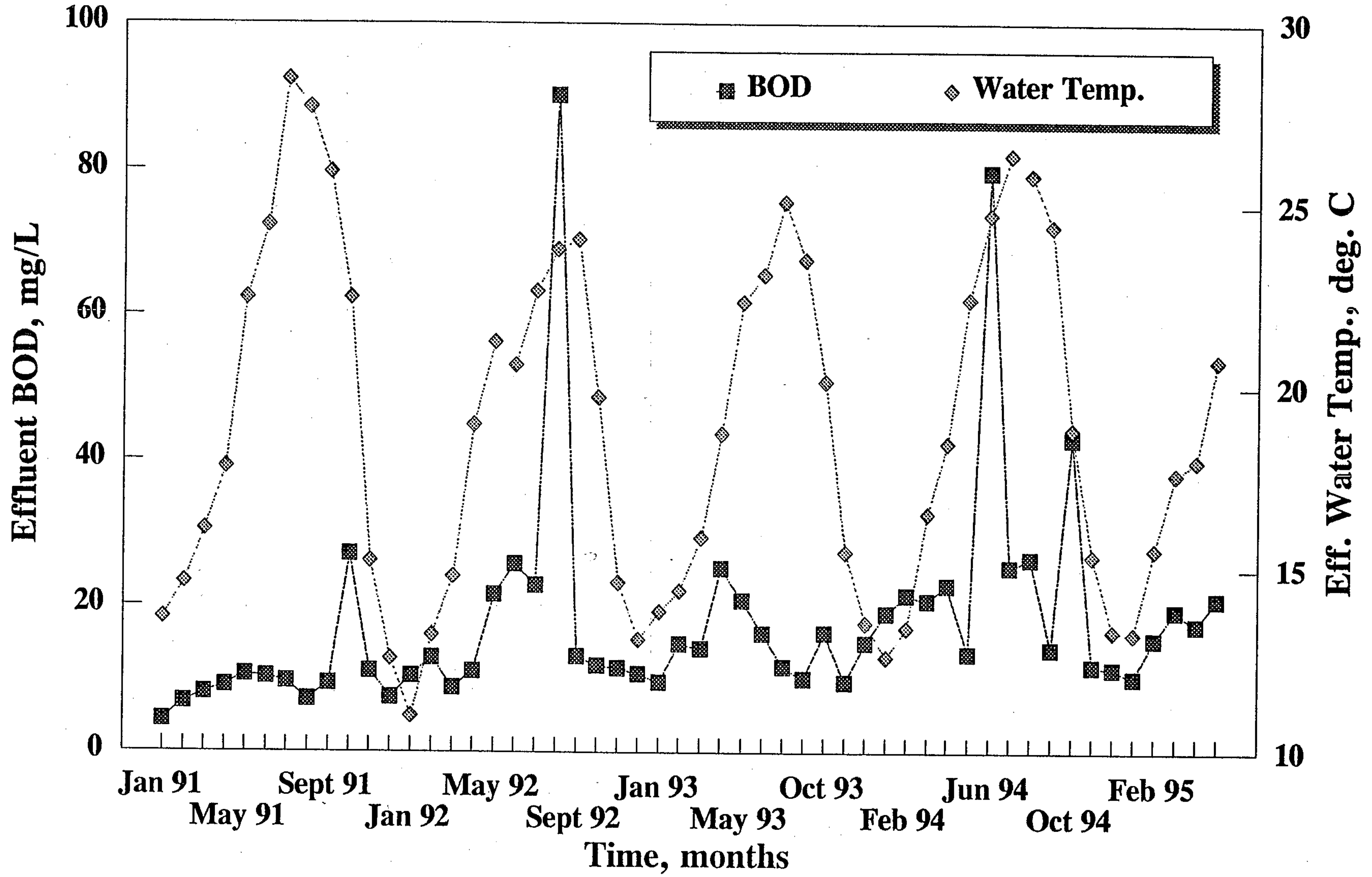
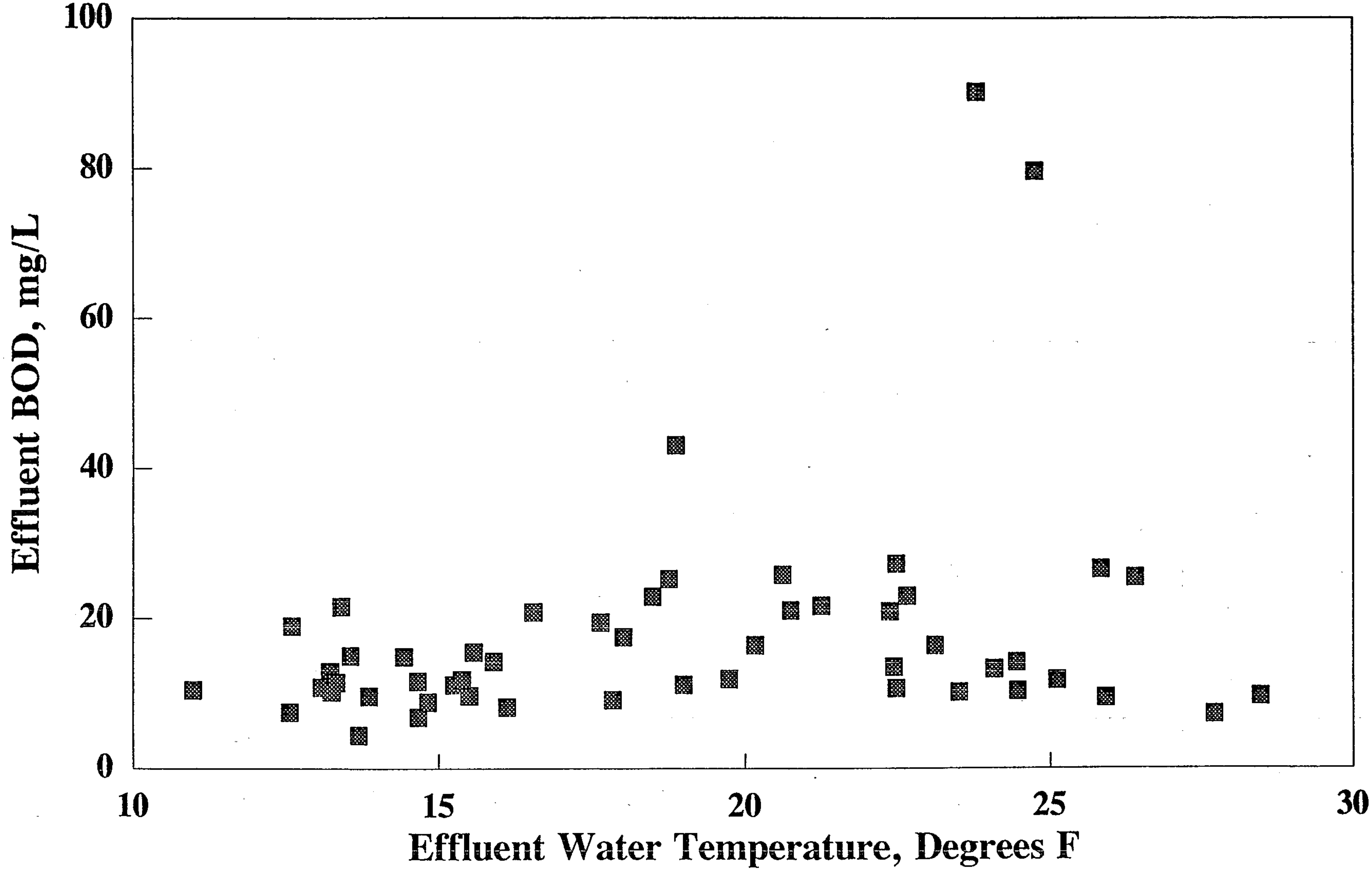


Figure 4-7. Nogales International Wastewater Treatment Plant
Effluent BOD vs Effluent Water Temperature



CHAPTER 5

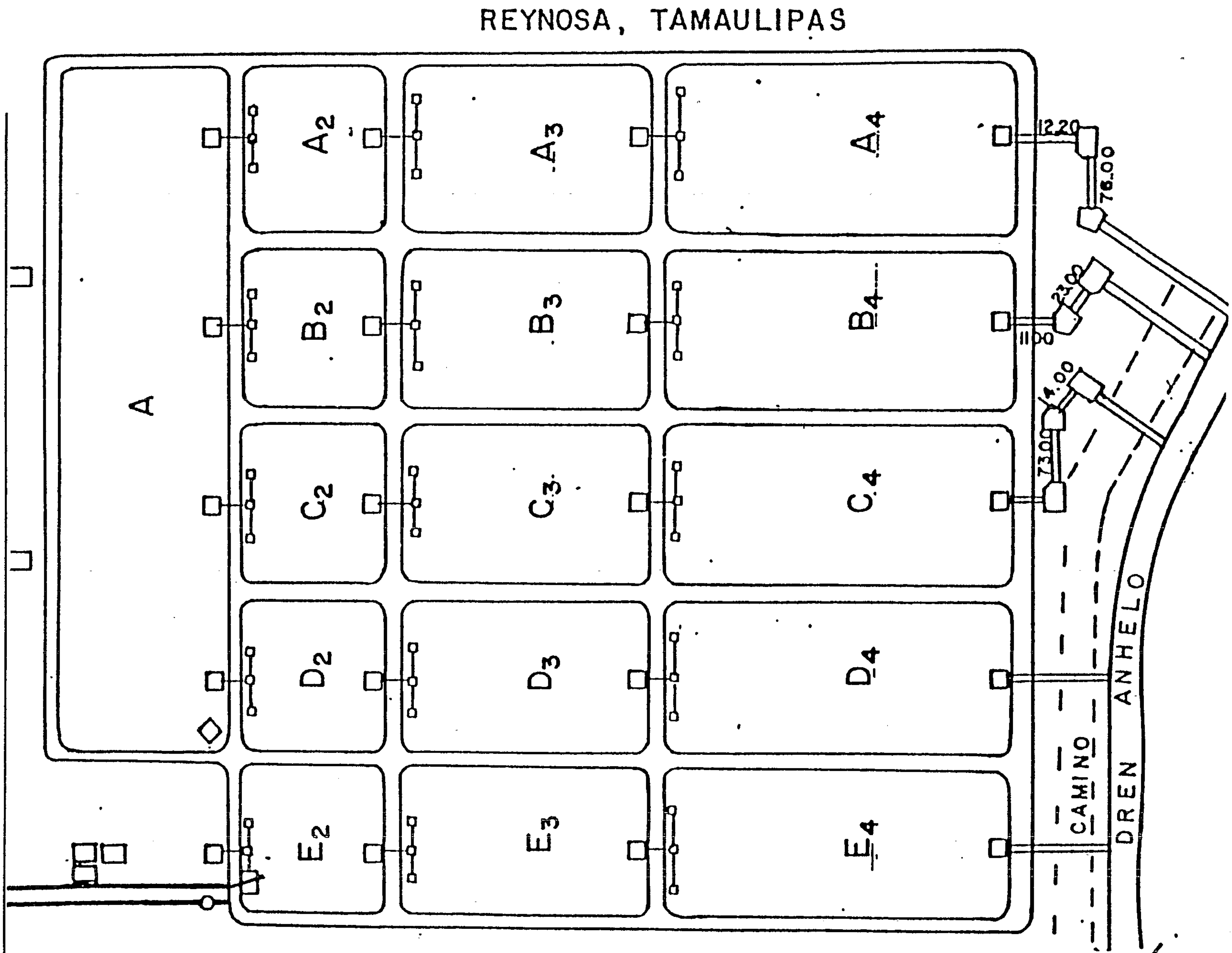
REYNOSA, TAMAULIPAS, MEXICO WASTEWATER TREATMENT SYSTEM

CHAPTER 5

REYNOSA, TAMAULIPAS, MEXICO WASTEWATER TREATMENT SYSTEM

The Reynosa wastewater treatment plant consists of one primary lagoon (anaerobic) followed by five parallel facultative lagoons with three lagoons in series. A flow diagram for the facility is shown in Figure 5-1. It was originally planned to convert the primary lagoon into an aerated lagoon in 1992; however, there was no aeration at the time of the site visit. Information about the depths and volumes of the facility were not available.

The average flow rate into the system is estimated to be approximately 27 MGD which overloads the facility. The hydraulic detention time is estimated to be less than four days with all lagoons in operation. Primary treatment is the best that the system can deliver. The discharge requirements for the Rio Grande/Rio Bravo of 20 mg/l of BOD and TSS cannot be met by the system.



Population of Reynosa, Mexico = Approximately 350,000
Approximately 60% of Population Discharge to Lagoon System
Others on Septic Tanks and Priveys

FIGURE 5-1 REYNOSA, MEXICO WASTEWATER STABILIZATION LAGOONS.

CHAPTER 6

OTHER UPGRADING TECHNOLOGIES

CHAPTER 6

OTHER UPGRADING TECHNOLOGIES

In addition to the in-pond approaches discussed in other sections there are several innovative and alternative technologies that appear to have potential for upgrading the effluent quality from these lagoon systems on the US-Mexico border. These include, but are not limited to, constructed wetlands, land application of lagoon effluent, and the use of a floating mat of duckweed plants on some of the lagoon cells. A brief description of each of these technologies is included below. A detailed evaluation of these and other possible technologies is beyond the scope of this effort.

CONSTRUCTED WETLANDS

Constructed wetlands are finding increasing use for treatment and polishing of domestic, municipal and industrial wastewaters. A recently prepared database indicates over 1000 such systems in operation around the world, with the majority in the United States.

There are two basic types of constructed wetlands in general use. One type is similar to a natural marsh with emergent vegetation and with the water surface exposed to the atmosphere; this type of wetland is called a *Free Water Surface* (FWS) wetland. The other type typically uses a gravel bed up to two feet deep with the water surface maintained below the top of the gravel. This type is called a *Subsurface Flow* (SF) wetland. The same species of emergent vegetation are used on both types of wetlands. The advantages of the SF gravel bed type include no mosquitoes or other insect vectors, no public exposure to the wastewater, and a higher reaction rate for pollutant removal so a smaller sized system than FWS for the same flow rate. The disadvantage of the SF type is the high cost of procurement and placement of the gravel media. As a result, the SF type is generally used on smaller systems where the advantages are critical, such as on-site home systems, parks and public buildings, etc. The FWS concept tend to be the more economical system at flow rates greater than 100,000 gpd, and would therefore be the likely choice if wetlands were selected to upgrade the ponds along the border.

A FWS wetland system for any of the border sites would typically have multiple cells in at least two parallel trains. The system could be designed for just BOD and TSS or could also include nitrogen, phosphorus and fecal coliform removal. For example, a wetland system designed to produce an effluent of 30 mg/l BOD (wetland influent at 50 mg/l) would require about 100 acres of treatment area for the 37.6 MGD design flow for Mexicali BCN in the year

2015. A wetland system designed for lower levels of BOD and/or significant nitrogen or phosphorus removal would have to be correspondingly larger. A wetland system at any of these border sites can be designed for optimization of treatment or with significant habitat values for birds and other wildlife included.

LAND APPLICATION OF LAGOON EFFLUENT

There are three basic land application technologies in use today: *Slow Rate* (SR), *Rapid Infiltration* (RI) and *Overland Flow* (OF). All three offer the potential of very effective wastewater treatment and two of the three (SR and OF) have the potential for beneficial crop production.

The slow rate (SR) concept is similar to normal agricultural irrigation except in this case lagoon effluent would be used as the water source. Lagoon effluent would be applied at a controlled rate and in amounts related to the type of crop grown and the season of the year. A continuous year-round application may be possible in the border region and a variety of crops would be possible. The SR system is capable of producing very high quality water with respect to BOD, TSS, N, P, metals, and fecal coliforms. Since crop production is an integral part of the process the wastewater application rates are relatively low so several thousand acres of land might be required for the 37.6 MGD flow from Mexicali BCN in the year 2015.

The overland flow (OF) concept appears to be similar to SR, but in this case the applied water flows over the surface of relatively impermeable soils rather than infiltrating into the soils. The higher application rates and steeper slopes on OF systems limit the feasible crops to forage grasses. Excellent removal of BOD,TSS, N, metals and fecal coliforms is possible. The treated water is collected in ditches at the toe of the slope and can be discharged or reused. An OF system for the 2015 design flow for Mexicali BCN might require up to 1000 acres of treatment area.

The rapid infiltration (RI) concept depends on very high hydraulic loadings on very permeable soils. Hydraulic loadings can range up to 2000 gallons per square foot per year. The system usually consists of several sets of infiltration basins which are flooded and then allowed to drain on a regular schedule. Excellent removal of BOD, TSS, N, P, metals, and fecal coliforms are possible. About 200 acres of RI basins might be required for the 2015 design flow at Mexicali BCN; however, algae which is normally present in lagoon effluents can inhibit the infiltration rate in RI systems and would have to be considered prior to consideration of this concept. The presence of algae would not be a constraint on the other land application or wetland concepts.

DUCKWEED COVER

Duckweed (*Lemna sp.)* is a small floating plant which can be observed on many natural ponds, lakes, and also on wastewater treatment lagoons. The individual plants are very small but under favorable growth conditions the plants can form a thick mat which may then cover the entire pond surface. This mat is very susceptible to wind forces and is typically blown to the windward side of the pond or lagoon. If the mat of duckweed plants could be permanently retained on the water surface then algae growth would be suppressed and lagoon effluent quality for both BOD and TSS would be improved.

A technique for holding the duckweed plants in place is offered commercially by the Lemna Corporation. They manufacture a set of shallow floating baffles which are anchored to the sides of the lagoon. The baffle grid forms cells which retain the duckweed in place on the pond. It is then necessary to periodically harvest some of the duckweed plants, and the same company offers a floating harvester. Both the harvester and the floating grid are patented but the use of duckweed for this purpose is not. Application to the lagoons on the border would probably require a duckweed mat covering most of the existing cells to achieve desired water quality at the present flow rates. It may also be necessary to add lagoon cells to accommodate future design flows with this duckweed concept. The use of duckweed can improve performance for BOD and TSS but will not provide comparable results for N and P without extraordinary harvesting activity and/or supplemental treatment. Because of the duckweed cover the effluent from these lagoons will be devoid of oxygen and supplemental aeration may be required if effluent DO is a requirement.

SYNOPSIS OF PERFORMANCE EXPECTATIONS

Tables 6-1 through 6-3 contain a synopsis of the performance expectations for the lagoons and upgrading systems discussed in this section of the report. A summary of the performances expected from the more standard lagoon upgrading techniques such as intermittent sand filters, rock filters, etc. are shown in Chapter 2 of the report.

With the selection of the proper treatment method or combination of treatment methods, it is possible to produce a very high quality effluent that would be acceptable for discharge to streams; groundwater recharge; agricultural reuse; or recreational reuse in parks, golf courses, etc.

Table 6-1
Design Features and Expected Performance for Aquatic Treatment Units (Bastian and Reed, 1979; Middlebrooks et al., 1981; and USEPA, 1983)

		Typical Criteria				
Unit	Treatment Goals	Climate Needs	Detention Time days	Depth meters	Organic Loading kg/ha-day	Effluent Characteristics mg/L
Oxidation Pond	Secondary	Warm	10-40	1-1.5	40-120	BOD 20-40 TSS 80-140 TN 2-5 (Summer) TP 2-5 Significant heavy metal and toxic organic removal Helminth removal adequate with 3 cells in series and t > 20 days. Little risk of parasitic infection using effluent in agriculture. Some risk when sludge removed. Fecal Coliform and virus removal adequate when t > 20 days.
Facultative Pond	Secondary	None	25-180	1.5-2.5	22-67	BOD 30-40 TSS 20-100 TN 2-5 (Summer) TP 2-5 Significant heavy metal and toxic organic removal. Helminth removal adequate with 3 cells in series and t > 20 days. Little risk of parasitic infection using effluent in agriculture. Some risk when sludge removed. Fecal Coliform and virus removal adequate when t > 20 days.

Table 6-1 (Continued)
Design Features and Expected Performance for Aquatic Treatment Units (Bastian and Reed, 1979; Middlebrooks et al., 1981; and USEPA, 1983)

		Typical Criteria				
Unit	Treatment Goals	Climate Needs	Detention Time days	Depth meters	Organic Loading kg/ha-day	Effluent Characteristics mg/L
Partial-Mix Aerated Pond	Secondary, Polishing	None	7-20	2-6	50-200	BOD 20-40 TSS 20-60 TN 10-15 (Summer) TN no removal in winter Significant heavy metal and toxic organic removal. Helminth removal adequate with separate settling cell. Some risk when sludge removed. Fecal Coliform and virus removal adequate when t > 20 days.
Storage, and Controlled-Discharge Ponds	Secondary, Storage, Polishing	None	100-200	3-5	1st Cell = Facultative or Aerated Pond	BOD 10-30 TSS 10-40 Other factors same as above for facultative or aerated pond.
Hyacinth Ponds	Secondary	Warm	30-50	<1.5	<30	BOD <30 TSS <30 Other factors same as above for facultative or aerated pond.
Hyacinth Ponds	AWT, with Secondary Input	Warm	>6	<1	<50	BOD <10 TSS <10 TP <5 TN <5 Other factors same as above for facultative or aerated pond.

Table 6-2
Design Features and Expected Performance for Aquatic Treatment Units (Bastian and Reed, 1979; Middlebrooks et al., 1981; Reed et al., 1984; and Reed et al., 1995)

Unit	Treatment Goals	Typical Criteria: Climate Needs	Typical Criteria: Detention Time days	Typical Criteria: Depth meters	Organic Loading kg/ha-day	Effluent Characteristics mg/L
Natural Marshes	Polishing, AWT with secondary input	Warm	10	0.2 - 1	100	BOD 5-10 TSS 5-15 TN 5-10 Significant heavy metal and toxic organic removal. Helminth removal excellent. Essentially no risk of parasitic infection using effluent in agriculture. Fecal coliform and virus removal excellent.
Constructed Wetlands Free Water Surface	Secondary to AWT	None	7-15	0.1-0.6	200	BOD 5-10 TSS 5-15 TN 5-10 Significant heavy metal and toxic organic removal. Helminth removal excellent. Essentially no risk of parasitic infection using effluent in agriculture. Fecal coliform and virus removal excellent.
Subsurface Flow	Secondary to AWT	None	3-14	0.3-0.6	600	BOD 5-40 TSS 5-20 TN 5-10 Significant heavy metal and toxic organic removal. Helminth removal excellent. Essentially no risk of parasitic infection using effluent in agriculture. Fecal coliform and virus removal excellent.

Table 6-3
Terrestrial Treatment Units, Design Features, and Performance (USEPA, 1981; USEPA, 1984; Reed et al., 1995)

		Typical Criteria				
Concepts	Treatment Goals	Climate Needs	Vegetation	Area, ha required for 3,785 cu. m/day	Hydraulic Loading m/yr	Effluent Characteristics mg/L
Slow Rate	Secondary or AWT	Warm Seasons	Yes	23-280	0.5-6	BOD < 2 TSS < 2 TN < 3 (Varies with type of crop and management) TP < 0.1 Significant heavy metal and toxic organic removal. Helminth removal excellent. Essentially no risk of parasitic infection. Fecal coliform and virus removal excellent.
Rapid Infiltration	Secondary, or AWT, or Groundwater recharge	None	No	3-23	6-125	BOD 5 TSS 2 TN 10 TP < 1 (In immediate vicinity of basin; increased removal with longer travel distance.) Fecal Coliform 10 Significant heavy metal and toxic organic removal. Helminth removal excellent. Essentially no risk of parasitic infection using effluent in agriculture. Virus removal excellent.
Overland Flow	Secondary, nitrogen removal	Warm Seasons	Yes	6-40	3-20	BOD 10 TSS 10 (Varies with type of waste-water applied) TN < 10 Significant heavy metal and toxic organic removal. Helminth removal excellent. Essentially no risk of parasitic infection using effluent in agriculture. Fecal coliform and virus removal excellent.

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APPENDIX A

NOGALES INTERNATIONAL WASTEWATER TREATMENT PLANT MONTHLY REPORTS

NOGALES INTERNATIONAL WASTEWATER TREATMENT PLANT

MONTHLY REPORT

PREPAR BY:JOSE MANUE ANEZ
APROVED AS TO FORM BY WASTEWATER SUPT. LINO VEGA

CML:COMLETE MIX LAGOON
PML:PARTIAL MIX LAGOON
P.P:PUMPING PLANT

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MONTH: JANUAR 1991

	WEATHE		TEMP	RATURE	FLOW	IN	M.G.D.			CML-2 OUT OF SER ICE	CML-1			PML-1		PML-2		ML-3		PML-4		ML-5	
DATE	RAIN FALL INCHES	WIND DIREC-TION	INFLOW	EFFLUEN	MEXICO	UNITED STATES	PLANT INFLOW	PLANT OUTFLO	NOG. WASH P.P.		DEPT FEET	TEMPE-ATUR	AERAT HOURS	DEPT FEET	AERAT HOURS	DEPT FEET	AERAT FEET	DEPT FEET	AERAT HOURS	DEPT FEET	AERAT HOURS	DEPT FEET	AERAT HOURS
1	0.00		65	59	6.606	3.995	12.201	13.443	1.6		9.5	62	168	8.8	24	8.8	24	8.8	24				
2	0.00		66	60	6.670	4.349	12.619	12.862	1.6		9.5	61	168	8.8	24	8.8	24	8.8	24				
3	0.00		65	60	6.735	4.225	12.560	12.668	1.6		9.5	62	168	8.8	24	8.8	24	8.8	24				
4	0.02		64	59	7.058	4.316	11.374	14.284	0.0		9.5	61	168	8.8	24	8.8	24	8.8	24				
5	0.53		64	61	10.548	4.213	14.761	14.413	0.0		9.5	62	168	8.8	24	8.8	24	8.8	24				
6	0.58	N	65	61	7.898	4.652	12.550	15.059	0.0		9.5	63	168	8.8	24	8.8	24	8.8	24				
7	T		64	61	7.187	6.005	13.192	14.284	0.0		9.5	62	168	8.8	24	8.8	24	8.8	24				
8	0.00		64	59	7.123	5.080	13.003	15.447	0.8		9.5	60	168	8.8	24	8.8	24	8.8	24				
9	0.00		64	59	7.769	5.225	14.594	15.512	1.6		9.5	61	168	8.8	24	8.8	24	8.8	24				
10	0.00		64	58	7.640	5.034	14.274	15.770	1.6		9.5	62	168	8.8	24	8.8	24	8.8	24				
11	0.00		64	56	7.510	5.103	14.213	15.318	1.6		9.5	61	168	8.8	24	8.8	24	8.8	24				
12	0.00		62	54	7.381	4.314	12.495	14.413	0.8		9.5	59	168	8.8	24	8.8	24	8.8	24				
13	0.00		61	54	7.122	4.515	13.237	14.284	1.6		9.5	59	168	8.8	24	8.8	24	8.8	24				
14	0.00		61	54	7.446	4.465	13.511	14.413	1.6		9.5	60	168	8.8	24	8.8	24	8.8	24				
15	0.00		63	54	7.511	4.822	13.933	14.542	1.6		9.5	61	168	8.8	24	8.8	24	8.8	24				
16	0.00		64	52	8.997	4.475	14.872	14.671	1.4		9.5	59	168	8.8	24	8.8	24	8.8	24				
17	0.85	NW	63	57	10.484	5.515	15.999	16.287	0.0		9.5	59	168	8.8	24	8.8	24	8.8	24				
18	0.00		63	56	8.415	4.287	12.702	15.899	0.0		9.5	59	168	8.8	24	8.8	24	8.8	24				
19	0.00		61	50	8.027	4.580	14.007	14.865	1.4		9.5	57	168	8.8	24	8.8	24	8.8	24				
20	0.00		62	51	7.769	4.666	14.535	14.801	2.1		9.5	60	168	8.8	24	8.8	24	8.8	24				
21	0.00		63	54	7.704	4.592	14.196	14.801	1.9		9.5	60	168	8.8	24	8.8	24	8.8	24				
22	0.00		62	56	8.092	4.650	14.442	14.736	1.7		9.5	60	168	8.8	24	8.8	24	8.8	24				
23	0.04	NW	62	60	7.963	4.763	14.026	14.994	1.3		9.5	61	168	8.8	24	8.8	24	8.8	24				
24	0.00		63	59	7.834	4.580	14.014	14.865	1.6		9.5	60	168	8.8	24	8.8	24	8.8	24				
25	0.00		62	56	7.834	4.571	14.005	14.930	1.6		9.5	60	168	8.8	24	8.8	24	8.8	24				
26	0.00		60	58	7.640	4.480	13.720	15.059	1.6		9.5	58	168	8.8	24	8.8	24	8.8	24				
27	0.00		60	54	7.381	4.432	13.413	14.607	1.6		9.5	57	168	8.8	24	8.8	24	8.8	24				
28	0.00		63	56	7.640	4.902	14.142	14.477	1.6		9.5	60	168	8.8	24	8.8	24	8.8	24				
29	0.00				7.446	4.688	13.734	14.865	1.6		9.5		168	8.8	24	8.8	12	8.8	24				
30	0.00		63	55	7.510	4.814	13.924	14.413	1.6		9.5	59	168	8.8	24	8.8	12	8.8	24				
31	0.00		63	56	7.769	5.019	14.388	14.284	1.6		9.5	60	168	8.8	24	8.8	12	8.8	24				

	MEXICO	UNITED STATES	PLANT INFLOW	PLANT OUTFLO	NOG. WASH P.P.
TOTAL	240.709	145.327	424.636	455.266	38.6
AVERAG	7.765	4.688	13.698	14.686	1.2
MAXIMU	10.548	6.005	15.999	16.287	2.1
MINIMUM	6.606	3.995	11.374	12.668	0.0

MEXIC 57% OF TOTAL FLOW

U.S. = 34% OF TOTAL FLOW

NOG. WASH P.P.= 9% OF TOTAL FLOW

FULL TIME SERVICES				UTILITES AND CHLORINE				PERSONNEL SERVICES AND EQUIPMENT UTILIZED OTHER THEN FULL TIME		BOUNDARY
PERSONNAL		EQUIPMENT		CONTORL BUILDING:				CLASSI ICA TION	HRS.THIS MONTH	
CHIEF OPERATOR	1	90 D DGE AR S K C R	1	POWER CON MPTIO	158000	K.W.H.				DATE:01/03/91 BOD5:178.5 MG/L TSS:338 MG/L pH:7.0
ASST.OPERATOR	1	PICKU 1/2 TON	2	$	16,524.42 2			ELECTRICIAN	0	
OPERATOR	2	GRIT TRUCK	1	CHLORINE BUILDING:				LABORERS	0	DATE:01/10/91 BOD5:160 MG/L TSS:14 MG/L pH:7.9
LABORER	2	WATER TRUCK	1		8308	K.W.H.		OVER TIME (OPERATORS)		
				$	863.46			MOTOR GRADER & OPERATO	0	DATE:01/17/91 BOD5:130 MG/L TSS:213 MG/L pH 7.0
				CHLORINE CONSU	: 8445	LBS				
				SULFUR DI IDE:	0	LBS.				
Page 2				BILLING D E:	ROM 12/21/90 TO 01/22/91					DATE:01/24/91 BOD5:228 MG/L TSS:310 MG/L pH:7.1
January 1991										DATE:01/31/91 BOD5:195 MG/L TSS:116 MG/L pH 6.7

PML-6 DEPT FEET	PML-6 AERAT HOURS	PML-7 DEPT FEET	PML-7 AERAT HOURS	PML-8 DEPT FEET	PML-8 AERAT HOURS	D.O CML-	D.O CML-	D.O EFFLUEN	P. H. RA	P. H. CML-	P. H. CML-	P. H. EFFLUEN	SUSPENDED SOLIDS MG/L RAW	SUSPENDED SOLIDS MG/L EFFLUEN	SETTLEABLE SOLIDS MG/L EFFLUENT	B.O.D. RA	B.O.D. EFFLUEN	CL2 RESIDUAL IN 15 MINUTES	GRIT REMOVE	FECAL COL-FORM	UV-1 HOUR	UV 2 HOUR
						5.7		12.9	7.4	7.6		8.4						1.2				
						5.8		13.2	7.5	7.7		8.3						1.4	4.5 C/Y			
						5.5		15.1	7.5	7.8		8.3	127	20	<0.10	86	1	1.5	5.0 C/Y	170		
						5.8		13.1	7.5	7.7		8.3						1.5	4.0 C/Y			
						5.5		13.9	7.6	7.7		8.2						1.4				
						5.4		13.7	7.4	7.6		8.3						1.3				
						5.3		10.2	7.4	7.6		8.1						1.4	2.5 C/Y			
						5.2		10.2	7.4	7.6		8.2						1.4	2.0 C/Y			
						5.3		9.6	7.4	7.6		8.2						1.3	3.0 C/Y			
						3.3		9.0	7.4	7.6		8.0	260	186	<0.10	133	6.2	1.2	3.0 C/Y	300		
						4.7		9.5	7.5	7.7		8.0						0.6	1.25 C/Y			
						3.7		9.1	7.2	7.6		8.3						0.6	3.0 C/Y			
						3.8		9.1	7.2	7.5		8.0						1.0				
						4.0		11.0	7.4	7.6		8.0						1.1				
						4.0		11.0	7.4	7.6		7.8						1.1	3.0 C/Y			
						5.9		10.6	7.4	7.6		7.9						1.6		220		
						5.2		11.5	7.5	7.6		8.0	262	16	<0.10	80	8	1.3	1.0 C/Y			
						4.9		11.2	7.5	7.6		8.0						1.0	2.0 C/Y			
						4.5		7.4	7.5	7.6		8.0						1.5	3.0 C/Y			
						7.2		8.2	7.6	7.8		7.7						1.2	4.5 C/Y			
						6.4		9.5	7.6	7.8		7.8						1.3	3.0 C/Y			
						5.8		10.2	7.5	7.7		7.7						1.3	5.0 C/Y			
						6.3		8.0	7.5	7.6		7.6						1.3	8.0 C/Y	230		
						5.2		12.0	7.5	7.7		7.9	155	88	<0.10	115	5.3	1.3	2.0 C/Y			
						6.4		12.6	7.5	7.7		7.6						1.3	3.0 C/Y			
						8.4		10.5	7.6	8.9		8.1						1.5	5.5 C/Y			
						8.7		6.9	7.5	7.9		7.7						1.5				
						5.4		13.0	7.4	7.7		8.0						1.4	5.5 C/Y			
						6.0		12.0	7.5	7.7		8.0						1.3	2.5 C/Y	260		
						5.3		12.3	7.5	7.6		8.0	220	24	<0.10	145	1.5	1.3				

01/03/91	7.8	01/03/91	1.3	C/Y:CUBIC YAR DS	<20	01/03/91
01/10/91	8.0	01/10/91	1.2	C/F:CUBIC FEE T	170	01/10/91
01/17/91	7.6	01/17/91	1.3		20	01/16/91
01/24/91	7.9	01/24/91	1.3		80	01/23/91
01/31/91	7.7	01/31/91	1.2		20	01/30/91

COPPER STATE ANALYTIAL

NOGALES INTERNATIONAL WASTEWATER TREATMENT PLANT

MONTHLY REPORT

PREPAR BY: JOSE MANUEL YANEZ
APROVED AS TO FORM BY WASTEWATER SUPT. LINO VEGA

CML:COMLETE MIX LAGOON
PML:PARTIAL MIX LAGOON
P.P.:PUMPING PLANT

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MONTH:FEBRUARY 91

	WEA	HER	TEMP	RATURE		FLOW IN M.G.D.				CML-1			CML-2			PML-1		PM L-2		ML-3		ML-4	
DATE	RAIN FALL INCHES	WIND DIREC-TION	INFLOW	EFFLUEN	MEXICO	UNITED STATES	PLANT INFLOW	PLANT OUTFLO	NOG WASH P.P.	DEPT FEET	AERTA HOURS	TEMPE ATURE	DEPT FEET	AERTA HOURS	TEMPE ATURE	DEPT FEET	AERATO FEET	DEPT FEET	AERAT HOURS	DEPT FEET	AERATO HOURS	DEPT FEET	AERATO HOURS
1	0.00		63	52	7.704	4.940	14.144	14.413	1.5	9.5	147	60	//////////	//////////	//////////	8.8	36	8.8	45	8.8	37	8.8	7
2	0.00		62	53	7.252	4.920	13.572	14.284	1.4	9.5	147	60	//////////	//////////	//////////	8.8	36	8.8	45	8.8	37	8.8	7
3	0.00		61	52	7.252	4.719	13.371	13.896	1.4	9.5	147	58	//////////	//////////	//////////	8.8	36	8.8	45	8.8	37	8.8	7
4	0.00		64	54	7.446	5.061	13.907	13.702	1.4	9.5	147	61	//////////	//////////	//////////	8.8	36	8.8	45	8.8	37	8.8	7
5	0.00		64	55	7.123	4.983	13.506	13.766	1.4	9.5	147	62	//////////	//////////	//////////	8.8	36	8.8	45	8.8	37	8.8	7
6	0.00		66	55	7.316	5.190	13.906	13.702	1.4	9.5	147	64	//////////	//////////	//////////	8.8	36	8.8	45	8.8	37	8.8	7
7	0.00		63	54	7.381	4.709	13.490	13.896	1.4	9.5	147	63	//////////	//////////	//////////	8.8	36	8.8	45	8.8	37	8.8	7
8	0.00		66	55	7.511	4.875	13.786	13.702	1.4	9.5	147	63	//////////	//////////	//////////	8.8	36	8.8	45	8.8	37	8.8	7
9	0.00		63	58	7.445	5.079	13.924	13.896	1.4	9.5	147	60	//////////	//////////	//////////	8.8	36	8.8	45	8.8	37	8.8	7
10	0.00		63	55	7.122	4.893	13.415	13.896	1.4	9.5	147	61	//////////	//////////	//////////	8.8	36	8.8	45	8.8	37	8.8	7
11	0.00		66	58	9.384	4.963	15.747	13.896	1.4	9.5	147	61	//////////	//////////	//////////	8.8	36	8.8	45	8.8	37	8.8	7
12	0.85	N	61	61	14.490	5.730	20.920	16.675	0.7	9.5	147	61	//////////	//////////	//////////	8.8	36	8.8	45	8.8	37	8.8	7
13	0.54	N	61	60	9.385	6.699	16.084	18.355	0.0	9.5	147	62	//////////	//////////	//////////	8.8	36	8.8	45	8.8	37	8.8	7
14	0.00		62	61	8.802	6.171	15.173	17.644	0.2	9.5	147	62	//////////	//////////	//////////	8.8	36	8.8	45	8.8	37	8.8	7
15	0.00		63	61	8.997	6.228	16.625	16.869	1.4	9.5	147	61	//////////	//////////	//////////	8.8	36	8.8	45	8.8	37	8.8	7
16	0.00		62	60	9.191	6.136	17.627	17.321	2.3	9.5	147	60	//////////	//////////	//////////	8.8	36	8.8	45	8.8	37	8.8	7
17	0.00		62	60	8.932	5.936	17.068	17.709	2.2	9.5	147	61	//////////	//////////	//////////	8.8	36	8.8	45	8.8	37	8.8	7
18	0.20	N	69	59	9.579	6.130	17.909	17.968	2.2	9.5	147	58	//////////	//////////	//////////	8.8	36	8.8	45	8.8	37	8.8	7
19	0.00		64	60	8.997	6.483	17.680	18.291	2.2	9.5	147	62	//////////	//////////	//////////	8.8	36	8.8	45	8.8	37	8.8	7
20	0.00		64	60	8.868	5.558	15.926	14.416	1.5	9.5	147	62	//////////	//////////	//////////	8.8	36	8.8	45	8.8	37	8.8	7
21	0.00		65	60	8.868	4.757	14.525	13.148	0.9	9.5	147	64	//////////	//////////	//////////	8.8	36	8.8	45	8.8	37	8.8	7
22	0.00		64	62	8.803	7.202	17.305	15.664	1.3	9.5	147	64	//////////	//////////	//////////	8.8	36	8.8	45	8.8	37	8.8	7
23	0.00		62	63	8.997	6.253	16.950	15.343	1.7	9.5	147	60	//////////	//////////	//////////	8.8	36	8.8	45	8.8	37	8.8	7
24	0.00		60	61	9.190	5.859	16.749	15.161	1.7	9.5	147	58	//////////	//////////	//////////	8.8	36	8.8	45	8.8	37	8.8	7
25	0.00		65	62	9.643	5.395	16.438	14.880	1.4	9.5	147	64	//////////	//////////	//////////	8.8	36	8.8	45	8.8	37	8.8	7
26	0.00		66	61	9.385	5.141	15.826	14.325	1.3	9.5	147	63	//////////	//////////	//////////	8.8	36	8.8	45	8.8	37	8.8	7
27	0.00		66	62	9.449	5.435	16.584	15.012	1.7	9.5	147	64	//////////	//////////	//////////	8.8	36	8.8	45	8.8	37	8.8	7
28			65	61	12.487	5.631	18.818	17.034	0.7	9.5	147	64	//////////	//////////	//////////	8.8	36	8.8	45	8.8	37	8.8	7
29													//////////	//////////	//////////								
30													//////////	//////////	//////////								
31													//////////	//////////	//////////								

	MEXICO	UNITED STATES	PLANT INFLOW	PLANT OUTFLO	NOG WASH P.P.
TOTAL	246.999	155.076	440.975	428.864	38.9
AVERAG	8.821	5.538	15.749	15.317	1.4
MAXIMU	14.490	7.202	20.920	18.355	2.3
MINIMUM	7.122	4.709	13.371	13.148	0.0

MEXI 56% OF TOTAL FLOW

U.S. = 35% OF TOTAL FLOW

NOG WASH P.P.: 9% OF TOTAL

Page 2

February 1991

FILL TI	SERVICES			UTILITES AND CHLORINE			PERSONNEL SERVICES AND EQOIPMENT UTILIZED OT ER THEN FULL TIME	
PERSONNAL		EQUIPMENT		CONTORL BUILDING:			CLASSI ICA TION	HRS.THIS MONTH
CHIFF OPERATOR	1	90' DOD E ARI S K CAR	1	POWER CONSUMP N	29520	K.W.H.	ELECTRICIAN	6
ASST.OPERATOR	1	PICKUPS 1/2 TON	2	$	28,80 .96		LABORERS	0
OPERATOR	2	GRIT TRUCK	1	CHLORINE BUILDING:			OVER TIME (OPERATORS)	40
LABORER	2	WATER TRUCK	1		7298	K.W.H.	MOTOR GRADER & OPERATOR	0
				$	753.26		DUMP TRUCK	16
				CHLORINE CONSUMPTIO	5780	LBS		
				SULFUR DIOXIDE	450	LBS.		
				BILLING DATE:	FRO 01/22/91 TO 02/21/91			

BOUNDARY

DATE:02/07/91
BOD5:218 MG/L
TSS:287 MG/L
pH:6.4

DATE:02/14/91
BOD5:110 MG/L
TSS:372 MG/L
pH:7.1

DATE:02/22/91
BOD5:358.6 MG/L
TSS:184 MG/L
pH:6.6

DATE:02/28/91
BOD5:132 MG/L
TSS:887 MG/L
pH:6.8

ML-5		ML-6		ML-7		ML-8		D.O.			P. P.H.			SUSPENDED SOLIDS MG/L		SETTLEABLE SOLIDS MG/L	B.O.D.		CL2 RESIDUA IN 15				
DEPT FEET	AERAT HOURS	DEPT FEET	AERAT HOURS	DEPT FEET	AERAT HOURS	DEPT FEET	AERAT HOURS	CML-	CML-	EFFLUENT	RA	CML-	EFFL UENT	RAW	EFFLUEN	EFFLUENT	RAW	EFFLUEN	MINUTES	GRIT REMOVE	FECAL COL-FORM	UV-1 HOUR	UV-2 HOU
								7.5		9.5	7.5	7.6	7.8						1.2				
								6.8		9.3	7.5	7.5	7.9						1.1				
								7.7		9.5	7.6	7.5	7.9						1.2				
								7.1		9.2	7.4	7.4	7.7						1.0				
								7.0		9.3	7.1	7.3	7.9						1.1				
								5.1		8.7	7.3	7.5	7.6						0.9		<2		
								5.0		9.0	7.4	7.5	7.8	131	15	<0.10	50.2	15	1.3				
								5.1		9.5	7.4	7.5	7.8						1.0				
								6.5		8.2	7.5	7.7	7.9						1.3				
								6.3		8.3	7.6	7.6	7.9						1.3				
								6.5		13.5	7.4	7.7	8.2						0.6				
								7.5		10.5	7.3	7.7	8.1						0.6				
								7.7		9.8	7.4	7.6	8.1						0.6				
								8.0		12.9	7.3	7.5	8.4	213	27	<0.10	57	7.6	0.2		11000		
								6.9		12.5	7.4	7.6	8.2						1.3				
								5.4		16.0	7.3	7.7	8.3						1.2				
								7.4		15.6	7.5	7.8	8.2						1.1				
								8.0		9.0	7.7	7.6	8.1						0.0				
								6.5		15.8	7.4	7.7	8.5						1.1				
								6.2		16.5	7.4	7.6	8.6						0.9			115	114
								5.0		10.0	7.2	7.5	7.6						0.8			115	114
								4.5		12.0	7.4	7.6	7.6	1084	12	<0.10	281	1	1.0		<2	115	114
								7.8		11.3	7.4	7.5	7.5						0.9			115	114
								5.3		8.1	7.3	7.3	7.6						0.7			115	114
								4.2		7.5	7.3	7.5	7.6						0.7			115	114
								4.0		7.0	7.3	7.5	7.6						0.0			115	114
								4.7		7.7	7.4	7.6	7.7						0.0		17	115	114
								4.3		8.3	7.2	7.4	7.5	238	10	<0.10	122	3.7	0.0				

02/	07/91	7.6
02/	14/91	7.5
02/	22/91	7.6
02/	28/91	7.5

02/07/91	1.3
02/14/91	0.8
02/22/91	0.8

02/06/91 <20
02/22/91 <20
02/27/91 <20
COPPER STATE

NOGALES INTERNATIONAL WASTEWATER TREATMENT PLANT

MONTHLY REPORT

PREPAR BY: JOSE MANUEL YANEZ
APROVED AS TO FORM B: WASTEWATER SUPT. LINO VEGA

CML:COMLETE MIX LAGOON
PML:PARTIAL MIX LAGOON
P.P.:PUMPING PLANT

March 1991

	WEATHE		TEMP	RATURE	FLOW		IN	M.G.D.		CML-1			CML-2			PML-1		PM L-2		ML-3		ML-4	
DATE	RAIN FALL INCHES	WIND DIREC-TION	INFLOW	EFFLUEN	MEXICO	UNITED STATES	PLANT INFLOW	PLANT OUTFLO	NOG WASH P.P.	DEPT FEET	AERTA HOURS	TEMPE ATURE	DEPT FEET	AERTA HOURS	TEMPE ATURE	DEPT FEET	AERATO FEET	DEPT FEET	AERAT HOURS	DEPT FEET	AERATO HOURS	DEPT FEET	AERATO HOURS
1.0	0.60	SW	65.0	61.0	13.0	4.765	17.769	16.084	0.0	9.5	208	62	////////	////////	////////	8.8	48	////////	////////	8.8	48	8.8	28
2.0	0.38	SW	64.0	60.0	12.5	6.041	18.527	16.770	0.0	9.5	208	62	////////	////////	////////	8.8	48	////////	////////	8.8	48	8.8	28
3.0			64.0	62.0	12.2	4.132	16.296	14.751	0.0	9.5	208	64	////////	////////	////////	8.8	48	////////	////////	8.8	48	8.8	28
4.0			65.0	62.0	11.9	4.164	16.069	14.545	0.0	9.5	208	65	////////	////////	////////	8.8	48	////////	////////	8.8	48	8.8	28
5.0			65.0	64.0	11.5	4.105	15.558	14.083	0.0	9.5	208	65	////////	////////	////////	8.8	48	////////	////////	8.8	48	8.8	28
6.0			66.0	64.0	10.4	4.633	15.852	14.349	0.8	9.5	208	66	////////	////////	////////	8.8	48	////////	////////	8.8	48	8.8	28
7.0			66.0	63.0	9.8	6.105	18.178	16.454	2.3	9.5	208	64	////////	////////	////////	8.8	48	////////	////////	8.8	48	8.8	28
8.0			65.0	62.0	9.7	6.005	18.013	16.305	2.3	9.5	208	66	////////	////////	////////	8.8	48	////////	////////	8.8	48	8.8	28
9.0			65.0	61.0	9.4	5.998	17.682	16.005	2.3	9.5	208	64	////////	////////	////////	8.8	48	////////	////////	8.8	48	8.8	28
10.0			64.0	61.0	8.8	5.902	17.005	15.393	2.3	9.5	208	64	////////	////////	////////	8.8	48	////////	////////	8.8	48	8.8	28
11.0			66.0	63.0	8.5	6.581	17.425	15.773	2.3	9.5	208	65	////////	////////	////////	8.8	48	////////	////////	8.8	48	8.8	28
12.0			65.0	64.0	8.2	7.163	17.620	15.949	2.3	9.5	208	64	////////	////////	////////	8.8	48	////////	////////	8.8	48	8.8	28
13.0			65.0	61.0	7.4	7.508	17.189	15.559	2.3	9.5	208	63	////////	////////	////////	8.8	48	////////	////////	8.8	48	8.8	28
14.0			65.0	61.0	7.4	7.412	17.158	15.531	2.3	9.5	208	63	////////	////////	////////	8.8	48	////////	////////	8.8	48	8.8	28
15.0			63.0	59.0	7.8	7.459	17.528	15.866	2.3	9.5	208	61	////////	////////	////////	8.8	48	////////	////////	8.8	48	8.8	28
16.0	0.41	SW	62.0	60.0	8.2	7.116	17.637	15.965	2.3	9.5	208	62	////////	////////	////////	8.8	48	////////	////////	8.8	48	8.8	28
17.0			62.0	59.0	7.0	7.472	16.765	15.175	2.3	9.5	208	62	////////	////////	////////	8.8	48	////////	////////	8.8	48	8.8	28
18.0			63.0	60.0	7.9	6.940	15.838	14.336	1.0	9.5	208	63	////////	////////	////////	8.8	48	////////	////////	8.8	48	8.8	28
19.0			63.0	61.0	8.7	5.624	15.398	13.938	1.1	9.5	208	63	////////	////////	////////	8.8	48	////////	////////	8.8	48	8.8	28
20.0	0.02	SW	64.0	60.0	9.1	5.456	16.682	15.100	2.1	9.5	208	64	////////	////////	////////	8.8	48	////////	////////	8.8	48	8.8	28
21.0	0.78	SW	62.0	58.0	8.8	9.713	18.616	16.851	0.1	9.5	208	62	////////	////////	////////	8.8	48	////////	////////	8.8	48	8.8	28
22.0	0.15	SW	64.0	60.0	8.0	7.641	15.604	14.124	0.0	9.5	208	64	////////	////////	////////	8.8	48	////////	////////	8.8	48	8.8	28
23.0			64.0	60.0	9.320	5.802	15.122	13.688	0.0	9.5	208	64	////////	////////	////////	8.8	48	////////	////////	8.8	48	8.8	28
24.0			64.0	61.0	8.802	5.504	14.306	12.950	0.0	9.5	208	64	////////	////////	////////	8.8	48	////////	////////	8.8	48	8.8	28
25.0			63.0	62.0	8.738	5.419	14.157	12.815	0.0	9.5	208	63	////////	////////	////////	8.8	48	////////	////////	8.8	48	8.8	28
26.0			63.0	60.0	9.837	4.674	14.511	13.135	0.0	9.5	208	63	////////	////////	////////	8.8	48	////////	////////	8.8	48	8.8	28
27.0	0.26	SW	64.0	61.0	9.514	5.379	14.893	13.481	0.0	9.5	208	64	////////	////////	////////	8.8	48	////////	////////	8.8	48	8.8	28
28.0	0.35	SW	63.0	60.0	8.997	5.316	14.313	12.956	0.0	9.5	208	63	////////	////////	////////	8.8	48	////////	////////	8.8	48	8.8	28
29.0			63.0	60.0	8.674	5.302	13.976	12.651	0.0	9.5	208	63	////////	////////	////////	8.8	48	////////	////////	8.8	48	8.8	28
30.0			63.0	61.0	8.286	5.414	13.700	12.401	0.0	9.5	208	63	////////	////////	////////	8.8	48	////////	////////	8.8	48	8.8	28
31.0			61.0	59.0	7.833	4.793	12.626	11.429	0.0	9.5	208	61	////////	////////	////////	8.8	48	////////	////////	8.8	48	8.8	28

TOTAL	286.1	185.5	502.0	454.4	30.4
AVERAG	9.2	6.0	16.2	14.7	1.0
MAXIMU	13.0	9.7	18.6	16.9	2.3
MINIMUM	7.0	4.1	12.6	11.4	0.0

MEXI 57% OF TOTAL FLOW

U.S. = 37% OF TOTAL FLOW

NOG WASH P.P.: 6% OF TOTAL FLOW

FILL TI SERVICES				UTILITES AND CHLORINE			PERSONNEL SERVICES AND EQOIPMENT UTILIZED OT ER THEN FULL TIME		BOUNDARY
PERSONNAL		EQUIPMENT		CONTORL BUILDING:			CLASSI ICA TION	HRS.THIS MONTH	
CHIEF OPERATOR	1	90' DOD E ARI S K CAR	1	POWER CONSUMP N :	3636 0	K W.H.			DATE:03/07/91 BOD5:169 MG/L TSS:158 MG/G pH:7.0
ASST.OPERATOR	1	PICKUPS 1/2 TON	2	$	3550 .96		ELECTRICIAN	0	
OPERATOR	2	GRIT TRUCK	1	CHLORINE BUILDING:			LABORERS	0	DATE:03/14/91 BOD5:13 MG/L TSS:206 MG/L pH:7.0
LABORER	2	WATER TRUCK	1		10	K.W.H.	OVER TIME (OPERATORS)	0	
				$	53.03		MOTOR GRADER & OPERATO	0	DATE:03/21/91 BOD5:287 MG/L TSS:246 MG/L pH:7.0
				CHLORINE CONSUMPTIO :	2950	LBS			
				SULFUR DIOXIDE :	0	LBS.			
Page 2.0 March 1991				BILLING DATE:	FROM 02/21/91 TO 03/21/91				DATE:03/28/91 BOD5:605 MG/L TSS:1148 MG/L pH:6.8

UV HOURS ARE EST. CLOCKS ARE NOT WORKING

ML-5 DEPT FEET	ML-5 AERAT HOURS	ML-6 DEPT FEET	ML-6 AERAT HOURS	ML-7 DEPT FEET	ML-7 AERAT HOURS	ML-8 DEPT FEET	ML-8 AERAT HOURS	D.O. CML-	D.O. CML-	D.O. EFFLUENT	P. P.H. RA	P.H. CML-	P.H. EFFLUENT	SUSPENDED SOLIDS MG/L RA	SUSPENDED SOLIDS MG/L EFFLUEN	SETTLEABLE SOLIDS MG/L EFFLUENT	B.O.D. RA	B.O.D. EFFLUEN	CL2 RESIDUA IN 15 MINUTES	GRIT REMOVE	FECAL COL-FORM	UV-1 HOUR	UV-2 HOU
//////	//////	//////	//////	//////	//////	//////	//////	4.7	//////	6.0	7.0	7.1	7.7						0			177	177
//////	//////	//////	//////	//////	//////	//////	//////	4.8	//////	6.9	7.2	7.4	7.5						0	2 1/2 C/Y		177	177
//////	//////	//////	//////	//////	//////	//////	//////	4.0	//////	5.7	7.2	7.3	7.4						0			177	177
//////	//////	//////	//////	//////	//////	//////	//////	4.3	//////	7.3	7.3	7.3	7.3						0			177	177
//////	//////	//////	//////	//////	//////	//////	//////	4.5	//////	5.7	7.2	7.4	7.3						0			177	177
//////	//////	//////	//////	//////	//////	//////	//////	4.6	//////	6.3	7.3	7.3	7.3						0		23	177	177
//////	//////	//////	//////	//////	//////	//////	//////	4.2	//////	4.7	7.3	7.2	7.3	526	30	<0.10	242	6	0	4 1/2 C/Y		177	177
//////	//////	//////	//////	//////	//////	//////	//////	4.7	//////	4.5	7.2	7.1	7.5						0	4 1/2 C/Y		177	177
//////	//////	//////	//////	//////	//////	//////	//////	4.4	//////	4.8	7.2	7.0	7.3						0			177	177
//////	//////	//////	//////	//////	//////	//////	//////	4.3	//////	4.7	7.1	7.2	7.3						0			177	177
//////	//////	//////	//////	//////	//////	//////	//////	4.7	//////	5.0	7.4	7.3	7.6						0	4 1/2 C/Y		177	177
//////	//////	//////	//////	//////	//////	//////	//////	4.7	//////	7.0	7.0	7.1	7.3						0			177	177
//////	//////	//////	//////	//////	//////	//////	//////	4.7	//////	6.7	7.3	7.6	7.5						0		8	177	177
//////	//////	//////	//////	//////	//////	//////	//////	3.5	//////	8.0	7.4	7.4	7.5	638	19	<0.10	144	7	0			177	177
//////	//////	//////	//////	//////	//////	//////	//////	3.5	//////	7.5	7.3	7.4	7.5						0			177	177
//////	//////	//////	//////	//////	//////	//////	//////	5.3	//////	4.2	7.2	7.3	7.6						0			177	177
//////	//////	//////	//////	//////	//////	//////	//////	4.8	//////	5.1	7.0	7.1	7.7						0			177	177
//////	//////	//////	//////	//////	//////	//////	//////	4.5	//////	4.7	7.2	7.3	7.7						0			177	177
//////	//////	//////	//////	//////	//////	//////	//////	4.7	//////	4.5	7.1	7.0	7.5						0			177	177
//////	//////	//////	//////	//////	//////	//////	//////	4.0	//////	4.0	7.3	7.3	7.2						0	4 1/2 C/Y	60	177	177
//////	//////	//////	//////	//////	//////	//////	//////	4.6	//////	4.4	7.4	7.3	7.3	234	14	<0.10	271	14.5	0	4 C/Y		177	177
//////	//////	//////	//////	//////	//////	//////	//////	4.7	//////	6.3	7.2	7.3	7.3						0			177	177
//////	//////	//////	//////	//////	//////	//////	//////	6.8	//////	8.5	7.3	7.4	7.2						0	4 C/Y		177	177
//////	//////	//////	//////	//////	//////	//////	//////	5.6	//////	8.7	7.2	7.3	7.3						0			177	177
//////	//////	//////	//////	//////	//////	//////	//////	5.6	//////	5.7	7.3	7.4	7.4						0			177	177
//////	//////	//////	//////	//////	//////	//////	//////	4.5	//////	5.5	7.1	7.4	7.4						0	5 C/Y		177	177
//////	//////	//////	//////	//////	//////	//////	//////	5.7	//////	5.9	7.2	7.4	7.4						0		50	177	177
//////	//////	//////	//////	//////	//////	//////	//////	5.2	//////	5.7	7.1	7.4	7.4	635	4	<0.10	116	5	0			177	177
//////	//////	//////	//////	//////	//////	//////	//////	4.4	//////	6.0	7.4	7.3	7.3						0.8	4 1/2 C/Y		177	177
//////	//////	//////	//////	//////	//////	//////	//////	4.2	//////	5.6	7.2	7.2	7.4						0.4			177	177
//////	//////	//////	//////	//////	//////	//////	//////	5.1	//////	5.8	7.3	7.1	7.6						0.3			177	177

03/07/91	7.4
03/14/91	7.4
03/21/91	7.3
03/28/91	7.6

03/05/91	20
03/13/91	230
03/27/91	140

COPPER STATE LAB

NOGALES INTERNATIONAL WASTEWATER TREATMENT PLANT

MONTHLY REPORT

PREPAR BY:JOSE MANUEL ANEZ
APROVED AS TO FORM BY WASTEWATER SUPT. LINO VEGA

CML:COMLETE MIX LAGOON
PML:PARTIAL MIX LAGOON
P.P:PUMPING PLANT (PUMPING STATION AT NOGALES WASH IS CLOSED DOWN AT THIS TIME)

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MONTH: April 1991

	WEA	THER	TEMP	RATURE	FLOW	IN	M.G.D.					CML-1			PML-1		PML-2		ML-3		PML-4		ML-5	
DAT	RAIN FALL INCHES	WIND DIREC-TION	INFLUEN	EFFLUEN	MEXICO	UNITED STATES	PLANT INFLOW	PLANT OUTFLO	P.P	TEMPE-ATURE	AERATO HOURS	DEPT FEET	TEMPE-ATURE	AERAT HOURS	DEPT FEET	AERAT HOURS	DEPT FEET	AERAT FEET	DEPT FEET	AERAT HOURS	DEPT FEET	AERAT HOURS	DEPT FEET	AERAT HOURS
1	0		67	65	7.769	5.446	13.215	11.962	0.0			9.5	66	150	8.8	14	0.0	0	8.8	13	8.8	15	//////	//////
2	0		66	65	7.640	5.955	14.295	12.940	0.7			9.5	66	150	8.8	14	0.0	0	8.8	13	8.8	15	//////	//////
3	0		66	64	7.704	6.903	16.207	14.670	1.6			9.5	66	150	8.8	14	0.0	0	8.8	13	8.8	15	//////	//////
4	0		65	64	7.963	6.982	16.545	14.976	1.6			9.5	65	150	8.8	14	0.0	0	8.8	13	8.8	15	//////	//////
5	0		64	61	8.027	5.706	14.233	12.883	0.5			9.5	63	150	8.8	14	0.0	0	8.8	13	8.8	15	//////	//////
6	0		65	62	7.639	5.083	12.722	11.516	0.0			9.5	63	150	8.8	14	0.0	0	8.8	13	8.8	15	//////	//////
7	0		68	65	7.510	4.617	12.127	10.977	0.0			9.5	67	150	8.8	14	0.0	0	8.8	13	8.8	15	//////	//////
8	0		68	69	7.640	4.769	12.409	11.232	0.0			9.5	68	150	8.8	14	0.0	0	8.8	13	8.8	15	//////	//////
9	0		69	69	6.735	4.780	11.515	10.423	0.0			9.5	69	150	8.8	14	0.0	0	8.8	13	8.8	15	//////	//////
10	0		68	65	6.088	4.746	10.834	9.807	0.0			9.5	67	150	8.8	14	0.0	0	8.8	13	8.8	15	//////	//////
11	0		67	66	5.442	4.652	10.094	9.137	0.0			9.5	66	150	8.8	14	0.0	0	8.8	13	8.8	15	//////	//////
12	0		66	64	6.606	[illegible].665	11.271	10.202	0.0			9.5	66	150	8.8	14	0.0	0	8.8	13	8.8	15	//////	//////
13	0		67	65	7.446	4.756	12.202	11.045	0.0			9.5	65	150	8.8	14	0.0	0	8.8	13	8.8	15	//////	//////
14	0		67	65	7.381	4.605	11.986	10.849	0.0			9.5	66	150	8.8	14	0.0	0	8.8	13	8.8	15	//////	//////
15	0		67	63	7.834	4.874	12.708	11.503	0.0			9.5	66	150	8.8	14	0.0	0	8.8	13	8.8	15	//////	//////
16	0		67	65	7.575	4.946	12.521	11.334	0.0			9.5	66	150	8.8	14	0.0	0	8.8	13	8.8	15	//////	//////
17	0		66	63	7.510	4.893	12.403	11.227	0.0			9.5	66	150	8.8	14	0.0	0	8.8	13	8.8	15	//////	//////
18	0		64	63	7.963	4.997	12.960	11.731	0.0			9.5	64	150	8.8	14	0.0	0	8.8	13	8.8	15	//////	//////
19	0		66	63	8.221	4.931	13.152	11.905	0.0			9.5	66	150	8.8	14	0.0	0	8.8	13	8.8	15	//////	//////
20	0		65	64	7.381	5.594	12.975	11.745	0.0			9.5	65	150	8.8	14	0.0	0	8.8	13	8.8	15	//////	//////
21	0		66	65	6.929	5.379	12.308	11.141	0.0			9.5	66	150	8.8	14	0.0	0	8.8	13	8.8	15	//////	//////
22	0		65	64	7.123	5.414	12.537	11.348	0.0			9.5	65	150	8.8	14	0.0	0	8.8	13	8.8	15	//////	//////
23	0		65	65	6.929	5.301	12.230	11.070	0.0			9.5	65	150	8.8	14	0.0	0	8.8	13	8.8	15	//////	//////
24	0		66	64	6.864	5.230	12.094	10.947	0.0			9.5	66	150	8.8	14	0.0	0	8.8	13	8.8	15	//////	//////
25	0		65	63	5.701	5.623	11.324	10.250	0.0			9.5	65	150	8.8	14	0.0	0	8.8	13	8.8	15	//////	//////
26	0		64	63	6.024	5.518	11.542	10.448	0.0			9.5	64	150	8.8	14	0.0	0	8.8	13	8.8	15	//////	//////
27	0		65	62	6.153	5.519	11.672	10.565	0.0			9.5	65	150	8.8	14	0.0	0	8.8	13	8.8	15	//////	//////
28	0		64	61	5.765	5.343	11.108	10.055	0.0			9.5	64	150	8.8	14	0.0	0	8.8	13	8.8	15	//////	//////
29	0		65	62	6.153	5.415	11.568	10.471	0.0			9.5	65	150	8.8	14	0.0	0	8.8	13	8.8	15	//////	//////
30	0		65	63	6.541	4.817	11.358	10.281	0.0			9.5	65	150	8.8	14	0.0	0	8.8	13	8.8	15	//////	//////
31																							//////	//////

	MEXICO	UNITED STATES	PLANT INFLOW	PLANT OUTFLO	P.P
TOTAL	212.256	157.459	374.115	338.640	4.4
AVERAG	7.075	5.249	12.471	11.288	0.1
MAXIMU	8.221	6.982	16.545	14.976	1.4
MINIMUM	5.442	4.605	10.094	9.137	0.0

MEXIC 57% OF TOTAL FLOW

U.S. = 42% OF TOTAL FLOW

NOG. WASH P.P.= 1% OF TOTAL FLOW

FILL TIME SERVICES				UTILITES AND CHLORINE			PERSONNEL SERVICES AND EQOIPMENT UTILIZED OT ER THEN FULL TIME		BOUNDARY
PERSONNAL		EQUIPMENT		CONTORL BUILDING:			CLASSI ICA TION	HRS.THIS MONTH	
CHIEF OPERATOR	1	90 D DGE AR S K C R	1	POWER CON MPTIO	363600	K W.H.			DATE:04/04/91 BOD5:95 MG/L TSS:191 MG/L pH:7.1
ASST.OPERATOR	1	PICKU 1/2 TON	2	$	35,484.4 8		ELECTRICIAN	0	
OPERATOR	2	GRIT TRUCK	1	CHLORINE BUILDING:			LABORERS	0	DATE:04/11/91 BOD5:180 MG/L TSS:20 MG/L pH:7.1
LABORER	2	WATER TRUCK	1		59400	K.W.H.	OVER TIME (OPERATORS)	53	
				$	5,536.87		MOTOR GRADER & OPERATO	0	DATE:04/18/91 BOD5:193 MG/L TSS:369 MG/L pH.6.9
				CHLORINE CONSU	6437	LBS			
				SULFUR DI IDE:	0	LBS.			
Page 2				BILL I NG D E:					DATE:04/25/91 BOD5:77 MG/L TSS:252 MG/L pH:7.0
April 1991									

PML-6		PML-7		PML-8		D.O			P. H.				SUSPENDED SOLIDS MG/L		SETTLEABLE SOLIDS MG/L	B.O.D.		CL2 RESIDUAL IN 15				
DEPT FEET	AERAT HOURS	DEPT FEET	AERAT HOURS	DEPT FEET	AERAT HOURS	CML-	CML-	EFFLUEN	RAW	CML-	CML-	EFFLUEN	RAW	EFFLUEN	EFFLUENT	RA	EFFLUEN	MINUTES	GRIT REMOVE	FECAL COL-FORM	UV-1 HOUR	UV-2 HOUR
						4.5		6.9	7.2	7.4		7.1						0.3	5 1/2 C/Y		171	159
						4.2		6.8	7.1	7.4		7.2						0.3	6 C/Y		171	159
						4.4		6.5	7.2	7.3		7.2						0.3	6 C/Y	<2	171	159
						4.6		6.3	7.1	7.3		7.1	125	21	0.10	64	16	0.2			171	159
						4.3		6.7	7.2	7.3		7.2						0.3			171	159
						4.7		6.9	7.0	7.2		7.4						0.2			171	159
						4.2		6.1	7.1	7.2		7.3						0.2			171	159
						4.5		6.2	7.1	7.3		7.2						0.7			171	159
						4.8		6.5	7.2	7.2		7.4						0.8			171	159
						4.7		7.1	7.0	7.1		7.6						0.3	11 C/Y	<2	171	159
						4.3		6.7	7.0	7.2		7.5	246	23	0.10	175	25	0.2			171	159
						4.4		6.3	7.2	7.1		7.6						0.3			171	159
						4.1		6.5	7.1	7.2		7.6						0.2	4 C/Y		171	159
						4.0		6.7	7.0	7.0		7.5						0.3			171	159
						3.1		6.2	7.1	7.0		7.7						0.2	6 C/Y		171	159
						4.3		6.5	7.2	7.1		7.5						0.0			171	159
						4.2		6.5	7.0	7.3		7.6						0.0		4	171	159
						4.4		6.7	7.2	7.4		7.7	387	13	0.10	139	26	0.0			171	159
						4.0		6.3	7.1	7.2		7.7						0.0			171	159
						4.2		6.1	7.1	7.1		7.5						0.0			171	159
						4.0		6.5	7.0	7.2		7.8						0.0			171	159
						3.8		6.6	7.2	7.1		7.5						0.0	5 1/2 C/Y		171	159
						4.2		6.5	7.2	7.1		7.7						0.0			171	159
						3.9		6.7	7.4	7.0		7.7						0.0		<2	171	159
						4.2		6.5	7.4	7.2		7.9	300	14	0.10	54	15	0.0	6 C/Y		171	159
						4.1		6.8	7.2	7.2		7.6						0.0			171	159
						4.2		6.5	7.3	7.4		7.8						0.0			171	159
						4.6		7.1	7.2	7.4		7.6						0.0			171	159
						4.3		6.7	7.1	7.3		7.7						0.0	5 C/Y		171	159
						4.0		6.1	7.2	7.4		7.6						0.0	8 1/2 C/Y		171	159

4/04/ 1 7.4
4/11/ 1 7.6
4/18/ 1 7.6
4/25/ 1 7.4

04/03/91 170
04/10/91 2
04/17/91 <2

COPPER STATE ANALYTICAL LAB INC.

NOGALES INTERNATIONAL WASTEWATER TREATMENT PLANT

MONTHLY REPORT

PREPA :BY JO E MAN L YANEZ
APROVED AS TO FORM BY WASTEWATER SUPT. LINO VEGA

CML:COMLETE MIX LAGOON
PML:PARTIAL MIX LAGOON
P.P:PUMPING PLANT

Page 1

MONTH: May 1991

	WEA	HER	TEM	RATURE	FLOW	IN	M.G.D.		CML-1			CML-2			PML-1		PML-2		ML-3		PML-4		ML-5	
DAT	RAIN FALL INCHE	WIND DIREC-TION	INFLO	EFFLUEN	MEXICO	UNITED STATES	PLANT INFLOW	PLANT OUTFLO	DEPTH FEET	TEMPE-ATURE	AERAT HOURS	DEPT FEET	TEMPE-ATUR	AERAT HOURS	DEPT FEET	AERATO HOURS	DEPT FEET	AERATO HOUR	DEPT FEET	AERATO HOURS	DEPT FEET	AERATO HOURS	DEPT FEET	AERATO HOURS
1	0.0		74	71	6.734	4 380	11.114	10.060	9.5	73	157	//////////	//////////	//////////	8.8	34	8.8	46	8.8	31	8.8	25	//////////	//////////
2	0.0		74	71	6.606	4 428	11.034	9.988	9.5	72	157	//////////	//////////	//////////	8.8	34	8.8	46	8.8	31	8.8	25	//////////	//////////
3	0.0		75	72	6.670	4 448	11.118	10.064	9.5	73	157	//////////	//////////	//////////	8.8	34	8.8	46	8.8	31	8.8	25	//////////	//////////
4	0.0		74	72	6 799	4 670	11.469	10.382	9.5	73	157	//////////	//////////	//////////	8.8	34	8.8	46	8.8	31	8.8	25	//////////	//////////
5	0.0		75	73	6.476	4 489	10.965	9.925	9.5	74	157	//////////	//////////	//////////	8.8	34	8.8	46	8.8	31	8.8	25	//////////	//////////
6	0.0		75	72	6.799	4 479	11.278	10.209	9.5	73	157	//////////	//////////	//////////	8.8	34	8.8	46	8.8	31	8.8	25	//////////	//////////
7	0.0		76	72	7.123	4 453	11.576	10.478	9.5	74	157	//////////	//////////	//////////	8.8	34	8.8	46	8.8	31	8.8	25	//////////	//////////
8	0.0		74	72	6.864	4 476	11.340	10.265	9.5	71	157	//////////	//////////	//////////	8.8	34	8.8	46	8.8	31	8.8	25	//////////	//////////
9	0.0		73	72	6 993	4 301	11.294	10 223	9.5	71	157	//////////	//////////	//////////	8.8	34	8.8	46	8.8	31	8.8	25	//////////	//////////
10	0.0		73	71	6.928	4 300	11.228	10.163	9.5	70	157	//////////	//////////	//////////	8.8	34	8.8	46	8.8	31	8.8	25	//////////	//////////
11	0.0		73	70	7.058	4.385	11.443	10.358	9.5	71	157	//////////	//////////	//////////	8.8	34	8.8	46	8.8	31	8.8	25	//////////	//////////
12	0.0		74	71	7 058	4 274	11.332	10.258	9.5	71	157	//////////	//////////	//////////	8.8	34	8.8	46	8.8	31	8.8	25	//////////	//////////
13	0.0		73	71	7.316	4 379	11.695	10.586	9.5	70	157	//////////	//////////	//////////	8.8	34	8.8	46	8.8	31	8.8	25	//////////	//////////
14	0.0		72	70	7 510	4 234	11.744	10.630	9.5	70	157	//////////	//////////	//////////	8.8	34	8.8	46	8.8	31	8.8	25	//////////	//////////
15	0.0		70	71	7.510	4 358	11.868	10.743	9.5	70	157	//////////	//////////	//////////	8.8	34	8.8	46	8.8	31	8.8	25	//////////	//////////
16	0.0		74	71	7 769	4 384	12.153	11.001	9.5	73	157	//////////	//////////	//////////	8.8	34	8.8	46	8.8	31	8.8	25	//////////	//////////
17	0.0		73	71	7.769	4 404	12.173	11.019	9.5	73	157	//////////	//////////	//////////	8.8	34	8.8	46	8.8	31	8.8	25	//////////	//////////
18	0.0		75	74	7.704	4 202	11.906	10.777	9.5	72	157	//////////	//////////	//////////	8.8	34	8.8	46	8.8	31	8.8	25	//////////	//////////
19	0.0		75	75	7.446	4 117	11.563	10.467	9.5	73	157	//////////	//////////	//////////	8.8	34	8.8	46	8.8	31	8.8	25	//////////	//////////
20	0.0		77	73	7.575	4 525	12.100	10.953	9.5	73	157	//////////	//////////	//////////	8.8	34	8.8	46	8.8	31	8.8	25	//////////	//////////
21	0.0		76	73	7.834	4.161	11.995	10.858	9.5	73	157	//////////	//////////	//////////	8.8	34	8.8	46	8.8	31	8.8	25	//////////	//////////
22	0.0		74	72	7.704	4 221	11.925	10.794	9.5	73	157	//////////	//////////	//////////	8.8	34	8.8	46	8.8	31	8.8	25	//////////	//////////
23	0.0		75	73	7.704	4 353	12 057	10.914	9.5	74	157	//////////	//////////	//////////	8.8	34	8.8	46	8.8	31	8.8	25	//////////	//////////
24	0.0		75	73	7.640	4.294	11.934	10.802	9.5	74	157	//////////	//////////	//////////	8.8	34	8.8	46	8.8	31	8.8	25	//////////	//////////
25	0.0		75	74	7.510	4 353	11.863	10.738	9.5	75	157	//////////	//////////	//////////	8.8	34	8.8	46	8.8	31	8.8	25	//////////	//////////
26	0.0		75	74	7.058	4 152	11.210	10.147	9.5	74	157	//////////	//////////	//////////	8.8	34	8.8	46	8.8	31	8.8	25	//////////	//////////
27	0.0		79	78	7.251	3 808	11.059	10.010	9.5	72	157	//////////	//////////	//////////	8.8	34	8.8	46	8.8	31	8.8	25	//////////	//////////
28	0.0		74	74	7.640	4 176	11.816	10.696	9.5	73	157	//////////	//////////	//////////	8.8	34	8.8	46	8.8	31	8.8	25	//////////	//////////
29	0.0		74	74	7.316	4 583	11.899	10.771	9.5	74	157	//////////	//////////	//////////	8.8	34	8.8	46	8.8	31	8.8	25	//////////	//////////
30	0.0		74	73	7.252	4 479	11.731	10 619	9.5	73	157	//////////	//////////	//////////	8.8	34	8.8	46	8.8	31	8.8	25	//////////	//////////
31	0.0		74	73	5.765	4.143	9.908	8.969	9.5	73	157	//////////	//////////	//////////	8.8	34	8.8	46	8.8	31	8.8	25	//////////	//////////

	MEXICO	UNITED STATES	PLANT INFLOW	PLANT OUTFLO
TOTAL	223 381	134.409	357.790	323.867
AVERAG	7.206	4.336	11.542	10.447
MAXIMU	7.834	4.670	12.173	11.019
MINIMUM	5.765	3.808	9.908	8.969

MEXIC 62% OF TOTAL FLOW

U.S. = 38% OF TOTAL FLOW

NOG. WASH P.P.= 0%

ULL TIM SERVICES			UTILITES AND CHLORINE				PERSONNEL SERVICES AND IPMENT UTILIZED OT ER THEN FULL TIME		BOUNDARY
PERSO L		EQUIPMENT	CONTORL BUILDING:				CLASSI ICA I ON	HRS.THIS MONTH	
CHIEF OPERATOR	1	90'D DGE AR S K C R	1 POWER CON MPTIO	349200	K.W.H.				DATE:05/02/91 BOD5:180 MG/L TSS:275 MG/L pH:6.7
ASST.OPERATOR	1	PICKU 1/2 TON	2 $	34,162.33			ELECTRICIAN	0	
OPERATOR	2	GRIT TRUCK	1 CHLORINE BUILDING:				LABORERS	0	DATE:05/09/91 BOD5:214 MG/L TSS:110 MG/L pH:6.9
LABORER	2	WATER TRUCK	1	0	K.W.H.		OVER TIME (OPERATORS)	0	
			$	69.25					
			CHLORINE CONSU	6000	LBS		MOTOR GRADER & OPERATO	0	DATE:05/16/91 BOD5:71 MG/L TSS 62 MG/L pH:7.0
			SULFUR DI IDE:	0	LBS.				
Page 2			BILL I NG D E:						DATE:05/23/91 BOD5:145 MG/L TSS:147 MG/L pH:6.9
May 1991									

PML-6 / PML 7 / PML-8 (DEPT FEET :: AERAT HOURS)	D.O. CML-	D.O. CML-	D.O. EFFLUEN	P. H. RA	P. H. CML-	P. H. CML-	P. H. EFFLUEN	SUSPENDED SOLIDS MG/L RAW	SUSPENDED SOLIDS MG/L EFFLUEN	SETTLEABLE SOLIDS MG/L EFFLUENT	B.O.D. RA	B.O.D. EFFLUEN	CL2 RESIDUAL IN 15 MINUTES	GRIT REMOVE	FECAL COLFORM	UV-1 HOUR	UV-2 HOUR
														DATE:05/30/91 BOD5:90 MG/L TSS:160 MG/L pH:7.1			
//////	4.8	//////	7.7	7.2	7.2	//////	7.8						0.2			146	164
//////	4.8	//////	7.9	7.3	7.4	//////	8.0	275	26	<0.10	163	37	0.3			146	164
//////	4.7	//////	7.7	7.2	7.4	//////	8.1						0.2		800	146	164
//////	4.6	//////	7.8	7.4	7.3	//////	7.9						0.3	6 C/Y		146	164
//////	4.5	//////	7.6	7.3	7.4	//////	7.7						0.2			146	164
//////	4.7	//////	8.0	7.5	7.6	//////	7.8						0.3			146	164
//////	4.5	//////	6.8	7.6	7.6	//////	7.2						0.3			146	164
//////	4.3	//////	6.2	6.7	7.5	//////	7.7						0.2			146	164
//////	4.7	//////	6.5	6.9	7.6	//////	7.8	890	30	<0.10	480	27.5	0.0		16,000	146	164
//////	4.9	//////	6.9	6.7	7.5	//////	7.7						0.0		5,000	146	164
//////	4.7	//////	7.3	7.0	7.5	//////	7.9						0.1			146	164
//////	4.8	//////	7.5	7.2	7.4	//////	7.7						0.2			146	164
//////	4.7	//////	7.7	7.0	7.3	//////	7.7						0.1			146	164
//////	4.6	//////	7.8	7.3	7.6	//////	8.2						0.2			146	164
//////	7.7	//////	8.0	7.0	7.6	//////	7.2						0.3		23	146	164
//////	7.8	//////	6.5	7.0	7.6	//////	7.7	249	39	<0.10	368	5	0.3			146	164
//////	6.5	//////	6.5	7.1	7.7	//////	7.6						0.2		22	146	164
//////	6.7	//////	7.0	7.1	7.2	//////	7.3						0.0			146	164
//////	6.9	//////	7.7	7.0	7.4	//////	7.3						0.0			146	164
//////	4.0	//////	5.8	7.0	7.4	//////	7.3						0.0	8 C/Y		146	164
//////	5.4	//////	5.5	7.1	7.3	//////	7.3						0.0			146	164
//////	4.7	//////	4.7	7.1	7.5	//////	7.3						0.0	3 C/Y	>16,000	146	164
//////	4.4	//////	5.2	7.0	7.4	//////	7.3	268	33	<0.10	148	18.6	0.0		>16,000	146	164
//////	4.7	//////	5.3	7.0	7.6	//////	7.4						0.0			146	164
//////	4.8	//////	5.5	7.2	7.5	//////	7.6						0.0	4 C/Y		146	164
//////	5.1	//////	6.9	7.1	7.3	//////	7.7						0.2			146	164
//////	2.2	//////	6.4	7.8	7.2	//////	7.6						1.8			146	164
//////	5.2	//////	7.4	6.7	7.0	//////	7.0						1.0			146	164
//////	5.5	//////	7.4	7.1	7.2	//////	7.4						0.0		<2	146	164
//////	5.8	//////	6.0	7.0	7.1	//////	7.4	198	15	<0.10	125	18	0.0	4 C/Y	<2	146	164
//////	6.3	//////	6.4	7.2	7.3	//////	7.3						0.1			146	164

05/02 / 91	6.9
05/09 / 91	7.2
05/16 / 91	7.1
05/23 / 91	7.1
05/30 / 91	7.4

NOGALES INTERNATIONAL WASTEWATER TREATMENT PLANT

MONTHLY REPORT

PREPAR BY:JOSE MANUE ANEZ
APROVED AS TO FORM BY WASTEWATER SUPT. LINO VEGA

CML:COMLETE MIX LAGOON
PML:PARTIAL MIX LAGOON
P.P:PUMPING PLANT PUMPING STATION IS NO LONGER IN SERVICE

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Month June 1991

DATE	WEATHER		TEMPERATURE		FLOW IN M.G.D.				CML-1			CML-2			PML-1		PML-2		ML-3		PML-4		ML-5	
	RAIN FALL INCHES	WIND DIRECTION	INFLOW	EFFLUEN	MEXICO	UNITED STATES	PLANT INFLOW	PLANT OUTFLO	DEPTH FEET	TEMPERATURE	AERAT HOURS	DEPT FEET	TEMPE ATUR	AERAT HOURS	DEPT FEET	AERAT HOURS	DEPT FEET	AERAT HOUR	DEPT FEET	AERAT HOURS	DEPT FEET	AERAT HOURS	DEPT FEET	AERAT HOURS
1	0.00		77	76	6.153	4.025	10.178	10.595	9.5	74	181	////	////	////	8.8	48	8.8	48	8.8	40	8.8	19	////	////
2	0.00		78	77	5.636	3.791	9.427	10.523	9.5	75	181	////	////	////	8.8	48	8.8	48	8.8	40	8.8	19	////	////
3	0.00		77	76	5.895	4.152	10.047	10.362	9.5	76	181	////	////	////	8.8	48	8.8	48	8.8	40	8.8	19	////	////
4	0.00		78	76	5.959	3.693	9.652	10.133	9.5	75	181	////	////	////	8.8	48	8.8	48	8.8	40	8.8	19	////	////
5	0.00		76	76	6.347	3.766	10.113	10.581	9.5	76	181	////	////	////	8.8	48	8.8	48	8.8	40	8.8	19	////	////
6	0.00		76	75	6.476	3.801	10.277	10.911	9.5	78	181	////	////	////	8.8	48	8.8	48	8.8	40	8.8	19	////	////
7	0.00		76	74	5.894	3.820	9.714	10.202	9.5	78	181	////	////	////	8.8	48	8.8	48	8.8	40	8.8	19	////	////
8	0.00		76	74	5.700	3.804	9.504	9.529	9.5	77	181	////	////	////	8.8	48	8.8	48	8.8	40	8.8	19	////	////
9	0.00		74	72	5.571	3.530	9.101	9.594	9.5	78	181	////	////	////	8.8	48	8.8	48	////	////	8.8	19	////	////
10	0.00		75	73	6.735	3.901	10.636	10.745	9.5	76	181	////	////	////	8.8	48	8.8	48	////	////	8.8	19	////	////
11	0.00		75	74	6.864	3.840	10.704	11.480	9.5	75	181	////	////	////	8.8	48	8.8	48	////	////	8.8	19	////	////
12	0.18	S	76	75	7.252	4.076	11.328	11.892	9.5	74	181	////	////	////	8.8	48	8.8	48	////	////	8.8	19	////	////
13	0.02	S	77	75	6.735	3.922	10.657	11.780	9.5	76	181	////	////	////	8.8	48	8.8	48	////	////	8.8	19	////	////
14	0.03	S	76	76	6.800	3.740	10.540	11.844	9.5	82	181	////	////	////	8.8	48	8.8	48	////	////	8.8	19	////	////
15	0.00		73	72	6.735	3.958	10.693	11.772	9.5	75	181	////	////	////	8.8	48	8.8	48	////	////	8.8	19	////	////
16	0.00		74	73	5.959	3.567	9.526	10.399	9.5	76	181	////	////	////	8.8	48	8.8	48	////	////	8.8	19	////	////
17	0.00		76	74	6.347	3.687	10.034	11.312	9.5	76	181	////	////	////	8.8	48	8.8	48	////	////	8.8	19	////	////
18	0.00		77	77	5.895	3.619	9.514	11.452	9.5	77	181	////	////	////	8.8	48	8.8	48	////	////	8.8	19	////	////
19	0.00		77	77	6.411	3.701	10.112	10.465	9.5	75	181	////	////	////	8.8	48	8.8	48	////	////	8.8	19	////	////
20	0.00		76	76	6.864	3.649	10.513	11.392	9.5	75	181	////	////	////	8.8	48	8.8	48	////	////	8.8	19	////	////
21	0.00		77	77	7.187	3.710	10.897	10.783	9.5	74	181	////	////	////	8.8	48	8.8	48	////	////	8.8	19	////	////
22	0.00		77	78	7.058	3.595	10.653	10.963	9.5	73	181	////	////	////	8.8	48	8.8	48	////	////	8.8	19	////	////
23	0.00		78	78	6.929	3.369	10.298	10.775	9.5	73	181	////	////	////	8.8	48	8.8	48	////	////	8.8	19	////	////
24	0.00		78	79	7.187	3.626	10.813	11.951	9.5	74	181	////	////	////	8.8	48	8.8	48	////	////	8.8	19	////	////
25	0.00		79	78	7.123	3.709	10.832	12.083	9.5	73	181	////	////	////	8.8	48	8.8	48	////	////	8.8	19	////	////
26	0.00		77	76	6.993	3.256	10.249	10.840	9.5	74	181	////	////	////	8.8	48	8.8	48	////	////	8.8	19	////	////
27	0.00		76	77	6.929	3.450	10.379	10.694	9.5	75	181	////	////	////	8.8	48	8.8	48	////	////	8.8	19	////	////
28	0.00		76	77	6.929	3.646	10.575	10.309	9.5	75	181	////	////	////	8.8	48	8.8	48	////	////	8.8	19	////	////
29	0.00		77	77	6.993	3.839	10.832	10.261	9.5	72	181	////	////	////	8.8	48	8.8	48	////	////	8.8	19	////	////
30	0.00		78	86	6.605	3.508	10.113	9.979	9.5	72	181	////	////	////	8.8	48	8.8	48	////	////	8.8	19	////	////
31	0.00											////	////	////	8.8	48	8.8	48	////	////	8.8	19	////	////

	MEXICO	UNITED STATES	PLANT INFLOW	PLANT OUTFLO
TOTAL	196.161	111.750	307.911	325.601
AVERAG	6.539	3.725	10.264	10.853
MAXIMU	7.252	4.152	11.328	12.083
MINIMUM	5.571	3.256	9.101	9.529

MEXIC 64% OF TOTAL FLOW

U.S. = 36% OF TOTAL FLOW

ULL TIM	SERVICES			UTILITIES AND CHORINE				PERSONNEL SERVICES AND EQUIPMENT UTILIZED OT ER THAN FULL TIME		BOUNDARY
PERSONNEL		EQUIPMENT		CONTROL BUILDING:						
CHIEF OPERATOR	1	90' D DGE AR S K C R	1	POWER CON MPTIO	489600	K.W.H.		CLASSI ICA I ON	HRS.THIS MONTH	DATE :06/06/91 BOD5 :153 MG/L TSS :245 MG/L pH :6.9
ASST.OPERATOR	1	PICKU 1/2 TON	2	$	47,002.8 4			ELECTRICIAN	0	
OPERATOR	2	GRIT TRUCK	1	CHLORINE BUILDING:				LABORERS	0	DATE :06/13/91 BOD5 :148 MG/L TSS :267 MG/L pH :7.0
LABORER	2	WATER TRUCK	1		0	K.W.H.		OVER TIME (OPERATORS)	39	
				$	17.48			MOTOR GRADER & OPERATO	0	DATE :06/20/91 BOD5 :125 MG/L TSS :108 MG/L pH :7.1
				CHLORINE CONSU	5380	LBS				
				SULPHUR D XIDE:	0	LBS.				
Page 2 June 1991				BILL I NG D E:	05/22/91 TO 6/24/91					DATE:06/27/91 BOD5:140 MG /L TSS:368 MG/L pH.7.0

PML-6 DEPT FEET	PML-6 AERAT HOURS	PML-7 DEPT FEET	PML-7 AERAT HOURS	PML-8 DEPT FEET	PML-8 AERAT HOURS	D O MG/L CML-	D O MG/L CML-	D O MG/L EFFLUEN	p H. RA	p H. CML-	p H. CML-	p H. EFFLUEN	SUSPENDED SOLIDS MG/L RAW	SUSPENDED SOLIDS MG/L EFFLUEN	SETTLEABLE SOLIDS MG/L EFFLUENT	B.O.D. MG/L RA	B.O.D. MG/L EFFLUEN	CL2 RESIDUAL IN 15 MINUTES MG/L	GRIT REMOVE	FECAL COLFORM	UV-1 HOUR	UV-2 HOUR
//////	//////	//////	//////	//////	//////	5.3	//////	7.1	7.2	7.4	//////	7.3						0.5			191	191
//////	//////	//////	//////	//////	//////	5.5	//////	7.0	7.2	7.3	//////	7.4						0.6			191	191
//////	//////	//////	//////	//////	//////	5.4	//////	6.8	7.1	7.4	//////	7.5						0.6	4 C/Y		191	191
//////	//////	//////	//////	//////	//////	5.7	//////	6.7	7.2	7.3	//////	7.4						0.8			191	191
//////	//////	//////	//////	//////	//////	5.6	//////	6.9	7.3	7.3	//////	7.5						0.7	3 1/2 C/Y	<2	191	191
//////	//////	//////	//////	//////	//////	6.4	//////	6.9	7.2	7.1	//////	7.5	267	17	<0.10	198	8.2	0.6		<2	191	191
//////	//////	//////	//////	//////	//////	5.5	//////	8.5	7.1	7.2	//////	7.3						0.7			191	191
//////	//////	//////	//////	//////	//////	5.2	//////	8.5	7.3	7.2	//////	7.2						0.9			191	191
//////	//////	//////	//////	//////	//////	5.6	//////	8.7	7.3	7.1	//////	6.8						0.9			191	191
//////	//////	//////	//////	//////	//////	5.4	//////	8.6	7.1	7.1	//////	6.9						0.8			191	191
//////	//////	//////	//////	//////	//////	5.5	//////	7.7	7.3	7.2	//////	7.0						0.8			191	191
//////	//////	//////	//////	//////	//////	5.5	//////	7.4	7.3	7.0	//////	7.2						0.9		<2	191	191
//////	//////	//////	//////	//////	//////	5.7	//////	8.4	7.1	7.2	//////	7.0	164	27	<0.10	117	28.0	0.7		2	191	191
//////	//////	//////	//////	//////	//////	5.5	//////	8.4	7.2	7.3	//////	7.1						0.5	2 1/2 C/Y		191	191
//////	//////	//////	//////	//////	//////	6.2	//////	8.1	7.0	7.2	//////	7.4						0.7			191	191
//////	//////	//////	//////	//////	//////	6.1	//////	7.5	7.2	7.1	//////	7.3						0.2			191	191
//////	//////	//////	//////	//////	//////	5.2	//////	8.2	7.3	7.2	//////	7.2						1.0			191	191
//////	//////	//////	//////	//////	//////	5.3	//////	8.4	7.0	7.1	//////	7.0						0.9	2 C/Y		191	191
//////	//////	//////	//////	//////	//////	5.5	//////	8.5	6.9	7.2	//////	7.1						1.0		<2	191	191
//////	//////	//////	//////	//////	//////	5.7	//////	8.0	7.0	7.1	//////	7.2	118	31	<0.10	148	28.0	1.0		<2	191	191
//////	//////	//////	//////	//////	//////	5.7	//////	6.2	6.7	7.2	//////	7.0						1.0	2 C/Y		191	191
//////	//////	//////	//////	//////	//////	4.9	//////	6.4	7.0	7.3	//////	7.2						1.8			191	191
//////	//////	//////	//////	//////	//////	5.1	//////	6.1	7.0	7.1	//////	7.1						0.0			191	191
//////	//////	//////	//////	//////	//////	5.0	//////	6.0	7.2	7.0	//////	7.2						0.0			191	191
//////	//////	//////	//////	//////	//////	5.2	//////	6.3	7.1	7.1	//////	7.4						0.0			191	191
//////	//////	//////	//////	//////	//////	5.0	//////	6.1	7.0	7.1	//////	7.7						0.0	4 C/Y		191	191
//////	//////	//////	//////	//////	//////	4.2	//////	5.7	6.5	7.0	//////	7.0	79	18	<0.10	95	29.0	0.0		240	191	191
//////	//////	//////	//////	//////	//////	4.0	//////	5.2	6.7	7.0	//////	7.1						0.7			191	191
//////	//////	//////	//////	//////	//////	5.0	//////	5.4	6.8	6.9	//////	7.0						0.9			191	191
//////	//////	//////	//////	//////	//////	5.2	//////	5.2	7.0	6.9	//////	7.0						0.5			191	191
//////	//////	//////	//////	//////	//////		//////				//////										191	191

06/06 / 91	7.3
06/13 / 91	7.3
06/20 / 91	7.3
06/27 / 91	7.5

MPL/100L *

NOGALES INTERNATIONAL WASTEWATER TREATMENT PLANT

MONTHLY REPORT

PREPAR BY:JOSE MANUE ANEZ
APPROVED AS TO FORM BY WASTEWATER SUPT LINO VEGA

CML:COMPLETE MIX LAGOON
PML:PARTIAL MIX LAGOON
P.P:PUMPING PLANT PUMPING STATION IS NO LONGER IN SERVICE

Page 1

Month July 1991

DATE	WEA: RAIN FALL INCHES	HER: WIND DIREC-TION	TEMP: INFLOW	RATURE: EFFLUEN	FLOW IN M.G.D.: MEXICO	UNITED STATES	PLANT INFLOW	PLANT OUTFLO	CML-1: DEPTH FEET	TEMPE-ATURE	AERAT HOURS	CML-2: DEPT FEET	TEMPE-ATUR	AERAT HOURS	PML-1: DEPT FEET	AERAT HOURS	PML-2: DEPT FEET	AERAT HOUR	ML-3: DEPT FEET	AERAT HOURS	PML-4: DEPT FEET	AERAT HOURS	ML-5: DEPT FEET	AERAT HOURS
1	0.00		78	86	6.864	4.003	10.867	9.547	9.5	80	181	//////	//////	//////	8.8	48	8.8	48	8.8	40	8.8	19	//////	//////
2	0.00		79	86	6.670	4.040	10.710	10.959	9.5	81	181	//////	//////	//////	8.8	48	8.8	48	8.8	40	8.8	19	//////	//////
3	0.00		79	84	6.735	4.088	10.823	11.004	9.5	79	181	//////	//////	//////	8.8	48	8.8	48	8.8	40	8.8	19	//////	//////
4	0.15	NE	80	83	6.993	3.794	10.787	11.037	9.5	80	181	//////	//////	//////	8.8	48	8.8	48	8.8	40	8.8	19	//////	//////
5	0.08	NE	89	82	7.381	3.723	11.104	10.815	9.5	77	181	//////	//////	//////	8.8	48	8.8	48	8.8	40	8.8	19	//////	//////
6	0.10	NE	78	79	9.191	3.816	13.009	11.795	9.5	78	181	//////	//////	//////	8.8	48	8.8	48	8.8	40	8.8	19	//////	//////
7	0.21	NE	77	77	6.605	3.886	10.491	11.107	9.5	78	181	//////	//////	//////	8.8	48	8.8	48	8.8	40	8.8	19	//////	//////
8	0.04	NE	77	82	6.412	3.966	10.378	9.823	9.5	78	181	//////	//////	//////	8.8	48	8.8	48	8.8	40	8.8	19	//////	//////
9	0.00		77	84	6.541	3.612	10.153	9.197	9.5	80	181	//////	//////	//////	8.8	48	8.8	48	8.8	40	8.8	19	//////	//////
10	0.00		77	86	6.541	3.782	10.323	8.495	9.5	80	181	//////	//////	//////	8.8	48	8.8	48	8.8	40	8.8	19	//////	//////
11	0.00		77	87	6.283	3.908	10.191	7.516	9.5	82	181	//////	//////	//////	8.8	48	8.8	48	8.8	40	8.8	19	//////	//////
12	0.00		76	85	6.412	4.015	10.427	7.572	9.5	79	181	//////	//////	//////	8.8	48	8.8	48	8.8	40	8.8	19	//////	//////
13	0.00		76	85	6.283	3.866	10.149	8.301	9.5	78	181	//////	//////	//////	8.8	48	8.8	48	8.8	40	8.8	19	//////	//////
14	0.00		78	86	6.153	3.644	9.797	8.859	9.5	79	181	//////	//////	//////	8.8	48	8.8	48	8.8	40	8.8	19	//////	//////
15	0.00		77	86	6.411	3.908	10.319	9.779	9.5	78	181	//////	//////	//////	8.8	48	8.8	48	8.8	40	8.8	19	//////	//////
16	0.00		79	87	6.283	3.849	10.132	10.020	9.5	80	181	//////	//////	//////	8.8	48	8.8	48	8.8	40	8.8	19	//////	//////
17	0.00		79	86	6.218	3.931	10.149	11.851	9.5	82	181	//////	//////	//////	8.8	48	8.8	48	8.8	40	8.8	19	//////	//////
18	0.00		79	86	5.766	3.889	9.655	10.118	9.5	83	181	//////	//////	//////	8.8	48	8.8	48	8.8	40	8.8	19	//////	//////
19	0.00		79	87	4.990	3.704	8.694	8.024	9.5	84	181	//////	//////	//////	8.8	48	8.8	48	8.8	40	8.8	19	//////	//////
20	0.00		77	85	5.572	3.798	9.370	8.895	9.5	81	181	//////	//////	//////	8.8	48	8.8	48	8.8	40	8.8	19	//////	//////
21	0.00		77	83	5.571	3.715	9.286	9.200	9.5	77	181	//////	//////	//////	8.8	48	8.8	48	8.8	40	8.8	19	//////	//////
22	0.00		78	79	6.218	3.987	7.766	11.440	9.5	78	181	//////	//////	//////	8.8	48	8.8	48	8.8	40	8.8	19	//////	//////
23	0.00		77	79	6.606	3.802	10.408	11.177	9.5	77	181	//////	//////	//////	8.8	48	8.8	48	8.8	40	8.8	19	//////	//////
24	0.00		78	84	6.864	3.701	10.565	11.211	9.5	79	181	//////	//////	//////	8.8	48	8.8	48	8.8	40	8.8	19	//////	//////
25	0.00		78	84	7.058	3.556	10.614	10.301	9.5	78	181	//////	//////	//////	8.8	48	8.8	48	8.8	40	8.8	19	//////	//////
26	0.00		79	86	6.412	3.554	9.966	10.414	9.5	80	181	//////	//////	//////	8.8	48	8.8	48	8.8	40	8.8	19	//////	//////
27	0.12	NE	77	80	6.670	3.784	10.454	9.949	9.5	78	181	//////	//////	//////	8.8	48	8.8	48	8.8	40	8.8	19	//////	//////
28	0.15	NE	78	81	6.929	3.801	10.730	11.203	9.5	78	181	//////	//////	//////	8.8	48	8.8	48	8.8	40	8.8	19	//////	//////
29	0.00		77	79	7.123	3.959	11.082	11.701	9.5	77	181	//////	//////	//////	8.8	48	8.8	48	8.8	40	8.8	19	//////	//////
30	0.12	NE	78	78	7.252	4.003	11.255	11.849	9.5	78	181	//////	//////	//////	8.8	48	8.8	48	8.8	40	8.8	19	//////	//////
31	0.00		78	78	6.541	3.896	10.437	11.139	9.5	77		//////	//////	//////	8.8	48	8.8	48	8.8	40	8.8	19	//////	//////

	MEXICO	UNITED STATES	PLANT INFLOW	PLANT OUTFLO
TOTAL	203.548	118.982	320.091	314.298
AVERAG	6.566	3.838	10.404	10.139
MAXIMU	9.191	4.088	13.009	11.851
MINIMUM	4.990	3.554	8.694	7.516

MEXIC 63% OF TOTAL FLOW

U.S. = 37% OF TOTAL FLOW

NOG. WASH P.P.=

UI TIM SERVICES			
PERSONNEL		EQUIPMENT	
CHIEF OPERATOR	1	90 D DGE AR S K C R	1
ASST.OPERATOR	1	PICKU 1/2 TON	2
OPERATOR	2	GRIT TRUCK	1
LABORER	2	WATER TRUCK	1

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July 1991

UTILITIES AND CHORINE

CONTROL BUILDING

POWER CON MPTIO	376200	K.W.H.
$	36,388.45	

CHLORINE BUILDING:

	0	K W.H.
$	17 48	
CHLORINE CONSU	10,645	LBS
SULPHUR D XIDE:	0	LBS.
BILL I NG D E:	07/25/91 TO 06/24/91	

PERSONNEL SERVICES AND EQUIPMENT UTILIZED OT ER THAN FULL TIME

CLASSI ICA I ON	HRS.THIS MONTH
ELECTRICIAN	0
LABORERS	0
OVER TIME (OPERATORS)	
MOTOR GRADER & OPERATO	0

BOUNDARY

DATE:07/03/91
BOD5:45 MG/L
TSS:102 MG/L
pH:7.1

DATE:07/11/91
BOD5:105 MG/L
TSS:184 MG/L
pH:7.0

DATE:07/18/91
BOD5:176 MG/L
TSS:234 MG/L
pH:6.8

DATE:07/25/91
BOD5:169 MG/L
TSS:245 MG/L
pH:7.1

DATE:07/31/91
BOD5:165 MG/L
TSS:258 MG/L
pH:7.1

PML-6		PML-7		PML-8		D O MG/L			p H				SUSPENDED SOLIDS MG/L		SETTLEABLE SOLIDS MG/L	B.O.D. MG/L		CL2 RESIDUAL IN 15 MINUTES				
DEPT FEET	AERAT HOURS	DEPT FEET	AERAT HOURS	DEPT FEET	AERAT HOURS	CML-	CML-	EFFLUEN	RA	CML-	CML-	EFFLUEN	RAW	EFFLUEN	EFFLUENT	RA	EFFLUEN	MG/L	GRIT REMOVE	FECAL COLFORM	UV-1 HOUR	UV-2 HOUR
//////	//////	//////	//////	//////	//////	4.4	//////	4.7	6.8	6.9	//////	7.0						0.0	4 C/Y		191	191
//////	//////	//////	//////	//////	//////	5.0	//////	4.5	6.9	7.0	//////	7.0						0.9		<2	191	191
//////	//////	//////	//////	//////	//////	5.2	//////	4.6	7.0	7.1	//////	7.1	80	16	<0.10	103	39	0.9		<2	191	191
//////	//////	//////	//////	//////	//////	5.0	//////	4.7	7.1	7.1	//////	7.4						1.0			191	191
//////	//////	//////	//////	//////	//////	5.4	//////	5.6	6.8	6.9	//////	7.0						0.9	3 1/2 C/Y		191	191
//////	//////	//////	//////	//////	//////	5.1	//////	5.5	7.0	7.1	//////	7.0						0.8			191	191
//////	//////	//////	//////	//////	//////	4.7	//////	5.2	7.2	7.1	//////	7.2						0.7	5 C/Y		191	191
//////	//////	//////	//////	//////	//////	4.0	//////	4.7	7.0	7.0	//////	7.1						0.9	3 C/Y		191	191
//////	//////	//////	//////	//////	//////	5.4	//////	6.3	6.9	7.1	//////	6.9						1.1	4 C/Y		191	191
//////	//////	//////	//////	//////	//////	4.2	//////	5.7	6.9	7.1	//////	6.9						1.0		<2	191	191
//////	//////	//////	//////	//////	//////	4.7	//////	5.5	6.9	7.0	//////	6.9	129	21	<0.10	121	28	0.0		5000	191	191
//////	//////	//////	//////	//////	//////	4.3	//////	5.3	7.0	7.1	//////	7.1						0.8			191	191
//////	//////	//////	//////	//////	//////	5.2	//////	5.1	7.1	7.0	//////	7.3						0.8			191	191
//////	//////	//////	//////	//////	//////	5.1	//////	6.0	7.2	7.0	//////	7.2						0.9	3 C/Y		191	191
//////	//////	//////	//////	//////	//////	5.2	//////	5.8	7.2	7.1	//////	7.2						0.9			191	191
//////	//////	//////	//////	//////	//////	5.0	//////	5.4	7.0	7.0	//////	7.1						0.9			191	191
//////	//////	//////	//////	//////	//////	5.1	//////	7.1	7.1	7.4	//////	7.0						0.8		<2	191	191
//////	//////	//////	//////	//////	//////	5.0	//////	6.6	6.9	7.0	//////	7.0	169	25	<0.10	155	22	1.1	3 C/Y	<2	191	191
//////	//////	//////	//////	//////	//////	5.2	//////	6.8	6.9	7.1	//////	7.1						1.0			191	191
//////	//////	//////	//////	//////	//////	4.6	//////	6.7	6.9	7.0	//////	7.2						1.0			191	191
//////	//////	//////	//////	//////	//////	4.2	//////	6.9	7.0	7.4	//////	7.3						1.2			191	191
//////	//////	//////	//////	//////	//////	4.6	//////	6.5	6.9	7.3	//////	7.4						0.7	3 C/Y		191	191
//////	//////	//////	//////	//////	//////	4.4	//////	6.2	6.9	7.3	//////	7.3						0.5			191	191
//////	//////	//////	//////	//////	//////	4.3	//////	6.4	7.0	7.2	//////	7.3						1.0		<2	191	191
//////	//////	//////	//////	//////	//////	4.1	//////	6.2	7.1	7.1	//////	7.3	68	66	<0.10	52	18.3	1.0		<2	191	191
//////	//////	//////	//////	//////	//////	3.7	//////	5.8	7.2	7.2	//////	7.3						0.9			191	191
//////	//////	//////	//////	//////	//////	4.1	//////	6.2	7.1	7.1	//////	7.5						0.8	3 C/Y		191	191
//////	//////	//////	//////	//////	//////	3.9	//////	5.7	7.2	7.0	//////	7.3						0.6			191	191
//////	//////	//////	//////	//////	//////	5.4	//////	7.4	7.0	7.4	//////	7.4						0.0	7 C/Y		191	191
//////	//////	//////	//////	//////	//////	5.3	//////	7.3	7.2	7.3	//////	7.5						0.3	4 C/Y	1700	191	191
//////	//////	//////	//////	//////	//////	5.1	//////	7.1	7.0	7.1	//////	7.5	115	44	<0.10	68	18.5	0.2	7 C/Y	50	191	191

MPL/100L *

07/03 / 91	7.5
07/11 / 91	7.4
07/18 / 91	7.4
07/25 / 91	7.4
07/31 / 91	7.5

NOGALES INTERNATIONAL WASTEWATER TREATMENT PLANT

MONTHLY REPORT

PREPAR BY:JOSE MANUE ANEZ
APPROVED AS TO FORM BY WASTEWATER SUPT. LINO VEGA

CML:COMPLETE MIX LAGOON
PML:PARTIAL MIX LAGOON
P.P.PUMPING PLANT PUMPING STATION IS NO LONGER IN SERVICE

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Month: August 1991

	WEA	HER	TEMP	RATURE	FLOW	IN	M.G.D.		CML-1			CML-2			PML-1		PML-2		ML-3		PML-4		ML-5	
DATE	RAIN FALL INCHES	WIND DIREC-TION	INFLOW	EFFLUEN	MEXICO	UNITED STATES	PLANT INFLOW	PLANT OUTFLO	DEPTH FEET	TEMPE-ATURE	AERAT HOURS	DEPT FEET	TEMPE-ATUR	AERAT HOURS	DEPT FEET	AERAT HOURS	DEPT FEET	AERAT HOUR	DEPT FEET	AERAT HOURS	DEPT FEET	AERAT HOURS	DEPT FEET	AERAT HOURS
1	0.06	NE	77	79	6.993	3.875	10.868	10.930	9.5	77	181	//////	//////	//////	8.8	48	8.8	48	8.8	48	8.8	48	//////	//////
2	0.05	NE	79	78	7.510	3.972	11.482	11.494	9.5	77	181	//////	//////	//////	8.8	48	8.8	48	8.8	48	8.8	48	//////	//////
3	0.03	NE	79	79	7.252	3.901	11.153	11.640	9.5	77	181	//////	//////	//////	8.8	48	8.8	48	8.8	48	8.8	48	//////	//////
4	0.00		80	84	7.123	3.778	10.901	11.017	9.5	79	181	//////	//////	//////	8.8	48	8.8	48	8.8	48	8.8	48	//////	//////
5	0.06	NE	79	81	6.799	3.896	10.695	11.295	9.5	81	181	//////	//////	//////	8.8	48	8.8	48	8.8	48	8.8	48	//////	//////
6	0.00		78	85	7.058	3.489	10.547	10.898	9.5	79	181	//////	//////	//////	8.8	48	8.8	48	8.8	48	8.8	48	//////	//////
7	0.00		80	85	6.670	3.518	10.188	10.774	9.5	80	181	//////	//////	//////	8.8	48	8.8	48	8.8	48	8.8	48	//////	//////
8	0.00		80	85	6.023	3.540	9.563	9.899	9.5	81	181	//////	//////	//////	8.8	48	8.8	48	8.8	48	8.8	48	//////	//////
9	0.06	NE	79	83	6.993	3.195	10.188	10.769	9.5	79	181	//////	//////	//////	8.8	48	8.8	48	8.8	48	8.8	48	//////	//////
10	0.35	NE	77	84	7.704	4.798	12.502	12.691	9.5	80	181	//////	//////	//////	8.8	48	8.8	48	8.8	48	8.8	48	//////	//////
11	0.10	NE	77	86	5.183	4.537	9.720	11.491	9.5	80	181	//////	//////	//////	8.8	48	8.8	48	8.8	48	8.8	48	//////	//////
12	0.00		80	84	5.636	4.796	10.432	10.544	9.5	81	181	//////	//////	//////	8.8	48	8.8	48	8.8	48	8.8	48	//////	//////
13	0.00		79	84	6.153	4.107	10.260	10.335	9.5	80	181	//////	//////	//////	8.8	48	8.8	48	8.8	48	8.8	48	//////	//////
14	0.00		79	83	7.769	4.150	11.919	10.665	9.5	81	181	//////	//////	//////	8.8	48	8.8	48	8.8	48	8.8	48	//////	//////
15	1.32	NE	80	85	4.408	4.012	8.420	10.485	9.5	82	181	//////	//////	//////	8.8	48	8.8	48	8.8	48	8.8	48	//////	//////
16	0.04	NE	80	85	5.184	3.953	9.137	8.994	9.5	82	181	//////	//////	//////	8.8	48	8.8	48	8.8	48	8.8	48	//////	//////
17	0.00		79	81	4.860	3.668	8.528	8.494	9.5	79	181	//////	//////	//////	8.8	48	8.8	48	8.8	48	8.8	48	//////	//////
18	0.00		77	80	4.860	3.722	8.582	7.866	9.5	77	181	//////	//////	//////	8.8	48	8.8	48	8.8	48	8.8	48	//////	//////
19	0.00		79	86	5.183	3.707	8.890	8.464	9.5	84	181	//////	//////	//////	8.8	48	8.8	48	8.8	48	8.8	48	//////	//////
20	0.00		77	87	5.054	3.690	8.744	8.181	9.5	81	181	//////	//////	//////	8.8	48	8.8	48	8.8	48	8.8	48	//////	//////
21	0.00		78	85	5.119	3.816	8.935	8.349	9.5	80	181	//////	//////	//////	8.8	48	8.8	48	8.8	48	8.8	48	//////	//////
22	0.42	NE	79	83	4.731	3.859	8.590	8.723	9.5	79	181	//////	//////	//////	8.8	48	8.8	48	8.8	48	8.8	48	//////	//////
23	0.81	NE	79	81	4.860	3.872	8.732	8.867	9.5	80	181	//////	//////	//////	8.8	48	8.8	48	8.8	48	8.8	48	//////	//////
24	0.00		78	78	5.248	3.844	9.092	9.233	9.5	77	181	//////	//////	//////	8.8	48	8.8	48	8.8	48	8.8	48	//////	//////
25	0.35	NE	78	77	5.377	3.898	9.275	9.419	9.5	77	181	//////	//////	//////	8.8	48	8.8	48	8.8	48	8.8	48	//////	//////
26	0.17	NE	78	77	6.476	3.770	10.246	10.405	9.5	77	181	//////	//////	//////	8.8	48	8.8	48	8.8	48	8.8	48	//////	//////
27	0.67	NE	78	77	5.765	4.252	10.017	10.172	9.5	77	181	//////	//////	//////	8.8	48	8.8	48	8.8	48	8.8	48	//////	//////
28	0.00		78	81	6.024	3.572	9.596	9.745	9.5	78	181	//////	//////	//////	8.8	48	8.8	48	8.8	48	8.8	48	//////	//////
29	0.00		77	79	6.218	4.053	10.271	10.430	9.5	77	181	//////	//////	//////	8.8	48	8.8	48	8.8	48	8.8	48	//////	//////
30	0.64	NE	78	78	5.765	3.864	9.629	9.778	9.5	78	181	//////	//////	//////	8.8	48	8.8	48	8.8	48	8.8	48	//////	//////
31	0.02	NE	78	78	6.023	3.939	9.962	10.116	9.5	77	181	//////	//////	//////	8.8	48	8.8	48	8.8	48	8.8	48	//////	//////

	MEXICO	UNITED STATES	PLANT INFLOW	PLANT OUTFLO
TOTAL	182.021	121.043	307.064	312.163
AVERAG	6.001	3.905	9.905	10.070
MAXIMU	7.769	4.798	12.502	12.691
MINIMUM	4.408	3.195	8.420	7.866

MEXIC 61% OF TOTAL FLOW

U.S. = 39% OF TOTAL FLOW

NOG. WASH P.P.=

UL L TIM SERVICES				UTILITIES AND CHORINE			PERSONNEL SERVICES AND EQUIPMENT UTILIZED OT ER THAN FULL TIME		BOUNDARY
PERSONNEL		EQUIPMENT		CONTROL BUILDING			CLASSI ICA I ON	HRS.THIS MONTH	
CHIEF OPERATOR	1	90' D DGE AR S K C R	1	POWER CON MPTIO	376200	K.W.H.			DATE:08/08/91 BOD5:147 MG/L TSS:200 MG/L pH:6.9
ASST.OPERATOR	1	PICKU 1/2 TON	2	$	36,389.4 6		ELECTRICIAN	0	
OPERATOR	2	GRIT TRUCK	1	CHLORINE BUILDING:			LABORERS	0	DATE:08/15/91 BOD:191 MG/L TSS:452 MG/L pH:7.3
LABORER	2	WATER TRUCK	1		0	K.W.H.	OVER TIME (OPERATORS)		
				$	17.48		MOTOR GRADER & OPERATO	0	DATE:08/22/91 BOD5:108 MG/L TSS:112 MG/L pH:7.0
				CHLORINE CONSU	7805	LBS			
				SULPHUR D XIDE:	0	LBS.			
Page 2				BILL I NG D E:	07/25/91 to 08/22/91				DATE:0829/91 BOD5:73.2 MG/L TSS:68 MG/L pH:7.1
August 1991									

PML-6		PML-7		PML-8		D.O. MG/L			pH				SUSPENDED SOLIDS MG/L		SETTLEABLE SOLIDS MG/L	B.O.D. MG/L		CL2 RESIDUAL IN 15 MINUTES MG/L				
DEPT FEET	AERAT HOURS	DEPT FEET	AERAT HOURS	DEPT FEET	AERAT HOURS	CML-	CML-	EFFLUEN	RA	CML-	CML-	EFFLUEN	RAW	EFFLUEN	EFFLUENT	RA	EFFLUEN		GRIT REMOVE	FECAL COLFORM	UV-1 HOUR	UV-2 HOUR
						5.6		5.5	7.0	7.1		7.2						0.2	8 C/Y		191	191
						5.7		5.7	6.8	7.2		7.4						0.2			191	191
						5.4		6.0	7.0	7.2		7.4						0.2			191	191
						5.6		6.2	7.0	7.2		7.3						0.2			191	191
						4.2		5.2	7.0	7.4		7.5						0.1			191	191
						5.2		6.0	7.0	7.3		7.3						0.1			191	191
						5.2		7.2	7.1	7.2		7.1						0.2	4 C/Y	7	191	191
						4.6		5.2	6.8	7.1		7.1	78	<4	<0.10	76	20.1	0.2		2	191	191
						4.9		7.8	7.0	7.2		7.1						0.0			191	191
						5.4		6.3	6.9	7.1		6.9						1.1			191	191
						4.2		5.7	6.9	7.1		6.9						1.0			191	191
						5.0		7.6	7.0	7.1		7.1						0.0	7 C/Y		191	191
						4.7		7.9	6.9	7.1		7.1						0.6			191	191
						5.1		5.7	7.1	7.1		6.9						0.8	5 C/Y	<2	191	191
						5.4		5.2	6.9	7.0		7.0	408	56	<0.10	156	11.5	0.8		<2	191	191
						5.2		5.0	7.0	7.0		7.1						0.7			191	191
						5.6		6.2	7.1	7.2		6.9						1.7			191	191
						4.8		5.5	7.0	7.2		6.9						1.7			191	191
						5.2		6.8	6.9	7.1		7.1						1.0			191	191
						4.6		6.7	6.9	7.0		7.2						1.0			191	191
						4.8		6.0	7.0	7.0		7.1						1.3		<2	191	191
						4.9		5.7	7.0	7.1		6.9	278	17	<0.10	159	13.1	1.7	8 C/Y	<2	191	191
						5.2		6.0	7.1	7.1		7.1						0.3			191	191
						5.4		6.8	7.0	7.1		7.0						0.6			191	191
						5.5		6.8	7.0	7.1		7.1						0.4			191	191
						5.6		6.9	7.0	7.1		7.1						0.3			191	191
						5.7		6.8	7.1	7.1		7.1						0.4			191	191
						3.9		5.7	7.0	7.0		7.3						0.6		17	191	191
						5.4		7.4	7.0	7.4		7.4	226	28	<0.10	119	20.2	0.0		<2	191	191
						5.3		7.3	7.2	7.3		7.5						0.3			191	191
						5.1		7.1	7.0	7.1		7.5						0.7			191	191

*MPN/100ml

08/08 / 91	7.4
08/15 / 91	7.3
08/22 / 91	7.3
08/29 / 91	7.5

NOGALES INTERNATIONAL WASTEWATER TREATMENT PLANT

MONTHLY REPORT

PREPAR BY:JOSE MANUE ANEZ
APPROVED AS TO FORM BY WASTEWATER SUPT. LINO VEGA

CML:COMPLETE MIX LAGOON
PML:PARTIAL MIX LAGOON
P.P:PUMPING PLANT PUMPING STATION IS NO LONGER IN SERVICE

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MONTH: Septembe 1991

	WEATHER		TEMPERATURE		FLOW IN M.G.D.				CML-1			CML-2			PML-1		PML-2		ML-3		PML-4		ML-5	
DATE	RAIN FALL INCHES	WIND DIREC-TION	INFLOW	EFFLUEN	MEXICO	UNITED STATES	PLANT INFLOW	PLANT OUTFLO	DEPTH FEET	TEMPE-ATURE	AERAT HOURS	DEPT FEET	TEMPE-ATUR	AERAT HOURS	DEPT FEET	AERAT HOURS	DEPT FEET	AERAT HOUR	DEPT FEET	AERAT HOURS	DEPT FEET	AERAT HOURS	DEPT FEET	AERAT HOURS
1	0.00		79	83	8.027	3.635	11.662	11.843	9.5	80	181	/////	/////	/////	8.8	48	8.8	48	8.8	40	8.8	19	/////	/////
2	0.12	NE	79	81	6.864	3.104	9.968	10.123	9.5	80	181	/////	/////	/////	8.8	48	8.8	48	8.8	40	8.8	19	/////	/////
3	0.00		77	83	6.864	3.130	9.994	10.090	9.5	80	181	/////	/////	/////	8.8	48	8.8	48	8.8	40	8.8	19	/////	/////
4	0.00		77	83	7.316	3.245	10.561	10.725	9.5	78	181	/////	/////	/////	8.8	48	8.8	48	8.8	40	8.8	19	/////	/////
5	0.04	NE	77	81	7.510	3.380	10.890	11.059	9.5	77	181	/////	/////	/////	8.8	48	8.8	48	8.8	40	8.8	19	/////	/////
6	0.00		79	83	7.898	3.571	11.469	11.647	9.5	78	181	/////	/////	/////	8.8	48	8.8	48	8.8	40	8.8	19	/////	/////
7	0.00		78	81	8.286	3.552	11.838	12.021	9.5	77	181	/////	/////	/////	8.8	48	8.8	48	8.8	40	8.8	19	/////	/////
8	0.00		79	82	7.704	3.574	11.278	11.453	9.5	78	181	/////	/////	/////	8.8	48	8.8	48	8.8	40	8.8	19	/////	/////
9	0.00		79	83	8.092	3.236	11.328	11.504	9.5	78	181	/////	/////	/////	8.8	48	8.8	48	8.8	40	8.8	19	/////	/////
10	0.20	NE	79	83	8.286	3.384	11.670	11.851	9.5	77	181	/////	/////	/////	8.8	48	8.8	48	8.8	40	8.8	19	/////	/////
11	0.00		77	82	8.350	3.523	11.873	12.057	9.5	77	181	/////	/////	/////	8.8	48	8.8	48	8.8	40	8.8	19	/////	/////
12	0.00		76	79	8.544	3.516	12.060	12.247	9.5	74	181	/////	/////	/////	8.8	48	8.8	48	8.8	40	8.8	19	/////	/////
13	0.00		77	78	8.156	3.422	11.578	11.757	9.5	76	181	/////	/////	/////	8.8	48	8.8	48	8.8	40	8.8	19	/////	/////
14	0.00		76	73	8.415	3.529	11.944	12.129	9.5	73	181	/////	/////	/////	8.8	48	8.8	48	8.8	40	8.8	19	/////	/////
15	1.70	NE	76	76	7.575	3.257	10.832	11.000	9.5	75	181	/////	/////	/////	8.8	48	8.8	48	8.8	40	8.8	19	/////	/////
16	0.00		77	77	7.316	3.832	11.148	11.321	9.5	76	181	/////	/////	/////	8.8	48	8.8	48	8.8	40	8.8	19	/////	/////
17	0.00		77	77	7.316	3.457	10.773	10.940	9.5	78	181	/////	/////	/////	8.8	48	8.8	48	8.8	40	8.8	19	/////	/////
18	0.23	NE	77	77	7.769	3.457	11.236	11.410	9.5	77	181	/////	/////	/////	8.8	48	8.8	48	8.8	40	8.8	19	/////	/////
19	0.00		76	75	7.833	3.596	11.429	11.606	9.5	77	181	/////	/////	/////	8.8	48	8.8	48	8.8	40	8.8	19	/////	/////
20	0.00		76	74	7.445	3.431	10.876	11.045	9.5	76	181	/////	/////	/////	8.8	48	8.8	48	8.8	40	8.8	19	/////	/////
21	0.00		76	74	7.445	3.517	10.962	11.132	9.5	76	181	/////	/////	/////	8.8	48	8.8	48	8.8	40	8.8	19	/////	/////
22	0.00		76	75	7.575	3.524	11.099	11.271	9.5	76	181	/////	/////	/////	8.8	48	8.8	48	8.8	40	8.8	19	/////	/////
23	0.15	NE	77	77	7.769	3.636	11.405	11.582	9.5	77	181	/////	/////	/////	8.8	48	8.8	48	8.8	40	8.8	19	/////	/////
24	0.00		77	77	6.605	4.314	10.919	11.088	9.5	76	181	/////	/////	/////	8.8	48	8.8	48	8.8	40	8.8	19	/////	/////
25	0.00		77	77	6.088	4.204	10.292	10.452	9.5	76	181	/////	/////	/////	8.8	48	8.8	48	8.8	40	8.8	19	/////	/////
26	0.00		78	77	6.153	4.006	10.159	10.316	9.5	76	181	/////	/////	/////	8.8	48	8.8	48	8.8	40	8.8	19	/////	/////
27	0.00		78	79	7.962	4.141	12.103	12.291	9.5	76	181	/////	/////	/////	8.8	48	8.8	48	8.8	40	8.8	19	/////	/////
28	0.25	NE	78	79	5.830	4.066	9.896	10.049	9.5	76	181	/////	/////	/////	8.8	48	8.8	48	8.8	40	8.8	19	/////	/////
29	0.00		78	77	5.571	4.089	9.660	9.810	9.5	77	181	/////	/////	/////	8.8	48	8.8	48	8.8	40	8.8	19	/////	/////
30	0.00		77	77	5.830	4.251	10.081	10.237	9.5	77	181	/////	/////	/////	8.8	48	8.8	48	8.8	40	8.8	19	/////	/////
31																								

	MEXICO	UNITED STATES	PLANT INFLOW	PLANT OUTFLO
TOTAL	222.394	108.579	330.983	336.056
AVERAG	7.413	3.620	11.033	11.202
MAXIMU	8.544	4.314	12.103	12.291
MINIMUM	5.571	3.104	9.660	9.810

MEXIC 67% OF TOTAL FLOW

U.S. = 33% OF TOTAL FLOW

NOG. WASH P.P.=

UTILITIES SERVICES

PERSONNEL		EQUIPMENT		
CHIEF OPERATOR	1	90'D DGEAR SKC R	1	
ASST.OPERATOR	1	PICKU 1/2 TON	2	
OPERATOR	2	GRIT TRUCK	1	
LABORER	2	WATER TRUCK	1	

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Sept. 1991

UTILITIES AND CHORINE

CONTROL BUILDING		
POWER CON MPTIO	482400	K.W.H.
$	46,241.0 . 01	
CHLORINE BUILDING:		
	0	K.W.H.
$	17.48	
CHLORINE CONSU	11,570	LBS
SULPHUR D XIDE:	0	LBS.
BILL I NG D E:	08/21/91 to 09/25/91	

PERSONNEL SERVICES AND EQUIPMENT UTILIZED OT ER THAN FULL TIME

CLASSI ICA I ON	HRS THIS MONTH
ELECTRICIAN	0
LABORERS	0
OVER TIME (OPERATORS)	
MOTOR GRADER & OPERATO	0

BOUNDARY

DATE:09/05/91
BOD5:92 MG/L
TSS:122 MG/L
pH:7.0

DATE:09/12/91
BOD5:78 MG/L
TSS:106 MG/L
pH:7.0

DATE:09/19/91
BOD5:74.3 MG/L
TSS:140 MG/L
pH:7.1

DATE:09/26/91
BOD5:174 MG/L
TSS 202 MG/L
pH:6 8

NOTE: IN THE MONTH OF SEPTEMBER THE TWO NEW METE WERE ADDED TO THE MONTHLY POWER BILL F THE NEW WATER SYSTEM AT THE COST OF $22 80 EACH

PML-6 DEPT FEET	PML-6 AERAT HOURS	PML-7 DEPT FEET	PML-7 AERAT HOURS	PML 8 DEPT FEET	PML 8 AERAT HOURS	D O MG/L CML-	D O MG/L CML-	D O MG/L EFFLUEN	p H RA	p H CML-	p H CML-	p H EFFLUEN	SUSPENDED SOLIDS MG/L RAW	SUSPENDED SOLIDS MG/L EFFLUEN	SETTLEABLE SOLIDS MG/L EFFLUENT	B.O.D. MG/L RA	B.O.D. MG/L EFFLUEN	CL2 RESIDUAL IN 15 MINUTES MG/L	GRIT REMOVE	FECAL COLIFORM	UV-1 HOUR	UV-2 HOUR
////	////	////	////	////	////	4.7	////	4.0	7.0	7.0	////	7.1						0.3			191	191
////	////	////	////	////	////	4.2	////	4.0	6.9	7.0	////	7.0						0.3	5 C/Y		191	191
////	////	////	////	////	////	4.7	////	4.7	7.0	7.0	////	7.1						0.3	3 C/Y		191	191
////	////	////	////	////	////	4.2	////	4.2	6.8	7.1	////	7.1						0.5		23	191	191
////	////	////	////	////	////	4.0	////	4.6	7.0	7.0	////	7.1	88	2	<0.10	30	20	0.8		220	191	191
////	////	////	////	////	////	4.2	////	4.4	6.8	7.1	////	7.1						0.8	3 C/Y		191	191
////	////	////	////	////	////	3.8	////	4.2	7.2	7.1	////	7.3						0.9			191	191
////	////	////	////	////	////	3.6	////	4.6	7.1	7.2	////	7.4						0.8			191	191
////	////	////	////	////	////	4.2	////	4.2	6.9	7.1	////	7.1						0.9			191	191
////	////	////	////	////	////	4.2	////	4.1	6.9	7.1	////	7.1						0.8	3 C/Y		191	191
////	////	////	////	////	////	4.2	////	4.4	7.0	7.2	////	7.1						0.8		<2	191	191
////	////	////	////	////	////	3.8	////	4.0	6.8	7.1	////	7.1	106	4	<0.10	48	21	0.8		<2	191	191
////	////	////	////	////	////	5.7	////	8.0	6.8	7.0	////	7.1						0.8			191	191
////	////	////	////	////	////	5.0	////	7.8	7.0	7.1	////	7.1						0.7	3 C/Y		191	191
////	////	////	////	////	////	5.1	////	6.0	6.9	7.1	////	7.1						0.3			191	191
////	////	////	////	////	////	5.3	////	6.4	7.1	7.0	////	7.0						0.2			191	191
////	////	////	////	////	////	5.4	////	7.8	7.0	7.0	////	7.1						0.7			191	191
////	////	////	////	////	////	5.7	////	8.0	7.1	7.0	////	7.0						0.7		<2	191	191
////	////	////	////	////	////	5.2	////	7.6	7.0	7.2	////	7.1	131	18	<0.10	89	21	0.7	3 C/Y	<2	191	191
////	////	////	////	////	////	4.1	////	7.0	7.1	7.1	////	7.0						0.4			191	191
////	////	////	////	////	////	5.4	////	7.8	7.1	7.0	////	7.0						0.4			191	191
////	////	////	////	////	////	5.4	////	7.8	7.1	7.0	////	7.0						0.4			191	191
////	////	////	////	////	////	4.1	////	7.8	7.0	7.0	////	7.1						0.3			191	191
////	////	////	////	////	////	4.4	////	7.2	7.1	7.0	////	7.0						0.3			191	191
////	////	////	////	////	////	4.3	////	7.2	7.1	7.0	////	7.0						0.3		<2	191	191
////	////	////	////	////	////	4.4	////	7.0	7.0	7.1	////	7.1						0.3		2	191	191
////	////	////	////	////	////	4.2	////	8.0	7.0	7.1	////	7.1	68	7	<0.10	67	23	0.3			191	191
////	////	////	////	////	////	5.0	////	7.0	7.0	7.1	////	7.0						0.7			191	191
////	////	////	////	////	////	5.1	////	6.9	7.1	7.0	////	7.0						0.4			191	191
////	////	////	////	////	////	4.0	////	7.0	7.1	7.0	////	7.0						0.4	4 C/Y		191	191
							////				////										191	191

09/05 / 91	7.5
09/12 / 91	7.5
09/19 / 91	7.6
09/27 / 91	7.4

MPL/100L *

NOGALES INTERNATIONAL WASTEWATER TREATMENT PLANT

MONTHLY REPORT

PREPAR BY: RIC ARD I ALDWELL
APPROVED AS TO FORM BY WASTEWATER SUPT. LINO VEGA

CML:COMPLETE MIX LAGOON
PML:PARTIAL MIX LAGOON
P.P.:PUMP ING PLA T PUMPI G STATIO IS NO LONGER IN SERVICE

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MONTH: October 1991

	WEA	HER	TEMP	RATURE		FLOW	IN	M.G.D.		CML-1			CML-2			PML-1		PML-2		ML-3		PML-4		ML-5
DATE	RAIN FALL INCHES	WIND DIREC-TION	INFLOW	EFFLUEN	MEXICO	UNITED STATES	PLANT INFLOW	PLANT OUTFLO	DEPTH FEET	TEMPE-ATURE	AERAT HOURS	DEPT FEET	TEMPE-ATUR	AERAT HOURS	DEPT FEET	AERAT HOURS	DEPT FEET	AERAT HOUR	DEPT FEET	AERAT HOURS	DEPT FEET	AERAT HOURS	DEPT FEET	AERAT HOURS
1	0.00	NE	76	78	5.765	4.295	10.060	10.216	9.5	77	128	//////////	//////////	//////////	//////////	//////////	8.8	55	8.8	55	8.8	55	//////////	//////////
2	0.00		77	77	6.153	4.168	10.321	10.481	9.5	77	128	//////////	//////////	//////////	//////////	//////////	8.8	55	8.8	55	8.8	55	//////////	//////////
3	0.00		77	77	6.217	4.124	10.341	10.501	9.5	76	128	//////////	//////////	//////////	//////////	//////////	8.8	55	8.8	55	8.8	55	//////////	//////////
4	0.00	NE	77	76	6.088	4.337	10.425	10.587	9.5	77	128	//////////	//////////	//////////	//////////	//////////	8.8	55	8.8	55	8.8	55	//////////	//////////
5	0.00		75	74	6.153	4.508	10.661	10.826	9.5	76	128	//////////	//////////	//////////	//////////	//////////	8.8	55	8.8	55	8.8	55	//////////	//////////
6	0.00		77	79	6.153	4.401	10.554	10.718	9.5	77	128	//////////	//////////	//////////	//////////	//////////	8.8	55	8.8	55	8.8	55	//////////	//////////
7	0.00		77	79	6.411	4.275	10.686	10.852	9.5	79	128	//////////	//////////	//////////	//////////	//////////	8.8	55	8.8	55	8.8	55	//////////	//////////
8	0.00		77	78	6.153	4.329	10.482	10.644	9.5	78	128	//////////	//////////	//////////	//////////	//////////	8.8	55	8.8	55	8.8	55	//////////	//////////
9	0.00	NE	78	78	5.765	4.230	9.995	10.150	9.5	79	128	//////////	//////////	//////////	//////////	//////////	8.8	55	8.8	55	8.8	55	//////////	//////////
10	0.00		79	78	6.217	4.281	10.498	10.661	9.5	77	128	//////////	//////////	//////////	//////////	//////////	8.8	55	8.8	55	8.8	55	//////////	//////////
11	0.00		79	79	5.506	4.249	9.755	9.906	9.5	77	128	//////////	//////////	//////////	//////////	//////////	8.8	55	8.8	55	8.8	55	//////////	//////////
12	0.00	NE	76	77	6.153	4.246	10.399	10.560	9.5	76	128	//////////	//////////	//////////	//////////	//////////	8.8	55	8.8	55	8.8	55	//////////	//////////
13	0.00		76	77	5.959	3.994	9.953	10.107	9.5	77	128	//////////	//////////	//////////	//////////	//////////	8.8	55	8.8	55	8.8	55	//////////	//////////
14	0.00		75	76	5.830	4.251	10.081	10.237	9.5	76	128	//////////	//////////	//////////	//////////	//////////	8.8	55	8.8	55	8.8	55	//////////	//////////
15	0.00		76	77	5.894	4.179	10.073	10.229	9.5	77	128	//////////	//////////	//////////	//////////	//////////	8.8	55	8.8	55	8.8	55	//////////	//////////
16	0.00	NE	76	77	6.347	4.217	10.564	10.728	9.5	77	128	//////////	//////////	//////////	//////////	//////////	8.8	55	8.8	55	8.8	55	//////////	//////////
17	0.00		76	77	6.153	4.033	10.186	10.344	9.5	77	128	//////////	//////////	//////////	//////////	//////////	8.8	55	8.8	55	8.8	55	//////////	//////////
18	0.00		75	68	6.347	4.123	10.470	10.632	9.5	76	128	//////////	//////////	//////////	//////////	//////////	8.8	55	8.8	55	8.8	55	//////////	//////////
19	0.00		73	69	6.282	4.123	10.405	10.566	9.5	75	128	//////////	//////////	//////////	//////////	//////////	8.8	55	8.8	55	8.8	55	//////////	//////////
20	0.00	NE	73	68	6.088	4.021	10.109	10.266	9.5	74	128	//////////	//////////	//////////	//////////	//////////	8.8	55	8.8	55	8.8	55	//////////	//////////
21	0.03		72	73	5.183	4.540	9.723	9.874	9.5	74	128	//////////	//////////	//////////	//////////	//////////	8.8	55	8.8	55	8.8	55	//////////	//////////
22	0.02		73	68	5.765	3.910	9.675	9.825	9.5	70	128	//////////	//////////	//////////	//////////	//////////	8.8	55	8.8	55	8.8	55	//////////	//////////
23	TRACE		73	68	6.217	3.996	10.213	10.371	9.5	70	128	//////////	//////////	//////////	//////////	//////////	8.8	55	8.8	55	8.8	55	//////////	//////////
24	0.00		74	66	6.412	3.719	10.131	10.288	9.5	68	128	//////////	//////////	//////////	//////////	//////////	8.8	55	8.8	55	8.8	55	//////////	//////////
25	0.00		72	73	6.735	4.088	10.823	10.991	9.5	73	128	//////////	//////////	//////////	//////////	//////////	8.8	55	8.8	55	8.8	55	//////////	//////////
26	0.00	NE	72	66	7.188	4.148	11.336	11.512	9.5	68	128	//////////	//////////	//////////	//////////	//////////	8.8	55	8.8	55	8.8	55	//////////	//////////
27	0.00		72	66	7.252	3.923	11.175	11.348	9.5	68	128	//////////	//////////	//////////	//////////	//////////	8.8	55	8.8	55	8.8	55	//////////	//////////
28	0.24		68	64	5.959	4.550	10.509	10.672	9.5	66	128	//////////	//////////	//////////	//////////	//////////	8.8	55	8.8	55	8.8	55	//////////	//////////
29	0.00		68	63	6.541	4.388	10.929	11.098	9.5	66	128	//////////	//////////	//////////	//////////	//////////	8.8	55	8.8	55	8.8	55	//////////	//////////
30	0.00		66	61	6.217	4.350	10.567	10.731	9.5	64	128	//////////	//////////	//////////	//////////	//////////	8.8	55	8.8	55	8.8	55	//////////	//////////
31	0.04	NE	66	59	6.088	4.387	10.475	10.637	9.5	64	128	//////////	//////////	//////////	//////////	//////////	8.8	55	8.8	55	8.8	55	//////////	//////////
				TOTAL	191.191	130.383	321.574	326.558																
				AVERAG	6.167	4.206	10.373	10.534																
				MAXIMU	7.252	4.550	11.336	11.512																
				MINIMUM	5.183	3.719	9.675	9.825																

MEXIC 59% OF TOTAL FLOW

U.S. = 41% OF TOTAL FLOW

NOG. WASH P.P.= 0%

PERSONNEL		EQUIPMENT	
CHIEF OPERATOR	1	90 D DGF AR S K C R	1
COMPLIANCE SPEC.	1	PI...U 1/2 TON	2
ASST. OPERATOR	1	GRIT TRUCK	1
OPERATORS	2	WATER TRUCK	1
LABORERS	4	BACK HOE	1
MECHANIC	1		
ELEC I CIAN	1		

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Oct. 1991

UTILITIES AND CHHLORINE

CONTROL BUILDING

POWER CON MPTIO	390600	K.W.H.
$	37,963.4 9	
CHLO INE & ULTRV OLET DIS I NFECTION AREA	0	K.W.H.
$	17.48	
CHLORINE CONSU	7,300. 0	LBS
SULPHUR D XIDE:	0	LBS.
UTILI TY CO TS -WATER SERVICE	$ 39.08	
BILLING DAT E: 9/25/91 TO	10/22/91	

PERSONNEL SERVICES AND EQUIPMENT UTILIZED OT ER THAN FULL TIME

CLASSI ICA I ON	HRS. THIS MONTH
ELECTRICIAN	0
LABORERS	0
OVER TIME (OPERATORS)	21
MOTOR GRADER & OPERATO	0

BOUNDARY

DATE	BOD5	TSS	pH
10/03/91	90 mg/l	50 mg/l	6.9
10/11/91	215 mg/l	238 mg/l	6.9
10/17/91	240 mg/l	213 mg/l	6.8
10/24/91	248 mg/l	210 mg/l	6.7
10/31/91	225 mg/l	198 mg/l	6.8

PML-6		PML-7		PML-8		D.O. MG/L			pH				SUSPENDED SOLIDS MG/L		SETTLEABLE SOLIDS MG/L	B.O.D. MG/L		CL2				
DEPT FEET	AERAT HOURS	DEPT FEET	AERAT HOURS	DEPT FEET	AERAT HOURS	CML-	CML-	EFFLUEN	RA	CML-	CML-	EFFLUEN	RAW	EFFLUEN	EFFLUENT	RA	EFFLUEN	RESIDUAL MG/L	GRIT REMOVE	FECAL COLIFORM	UV-1 HOUR	UV-2 HOUR
//////	//////	//////	//////	//////	//////	4.2	//////	8.0	7.1	7.2	//////	7.1						0.3	4 C/Y		191	191
//////	//////	//////	//////	//////	//////	4.4	//////	8.2	7.0	7.1	//////	7.0						0.3		<2	191	191
//////	//////	//////	//////	//////	//////	4.2	//////	8.2	7.0	7.1	//////	7.1	90	15	<0.10	70	26	0.3	4 C/Y	<2	191	191
//////	//////	//////	//////	//////	//////	4.6	//////	8.6	7.1	7.1	//////	7.1						0.3			191	191
//////	//////	//////	//////	//////	//////	4.7	//////	8.4	7.0	7.0	//////	6.9						0.2			191	191
//////	//////	//////	//////	//////	//////	4.4	//////	8.0	7.0	7.1	//////	6.9						0.2			191	191
//////	//////	//////	//////	//////	//////	4.2	//////	7.6	7.1	7.0	//////	7.0						0.2	4 C/Y		191	191
//////	//////	//////	//////	//////	//////	4.0	//////	7.6	7.2	7.1	//////	7.0						0.2			191	191
//////	//////	//////	//////	//////	//////	3.9	//////	7.4	7.2	7.2	//////	7.1						0.1	5 C/Y	2	191	191
//////	//////	//////	//////	//////	//////	4.6	//////	6.8	7.1	7.0	//////	7.0						0.1			191	191
//////	//////	//////	//////	//////	//////	4.7	//////	7.0	7.1	7.0	//////	6.9	426	30	<0.10	279	38	0.2	4 C/Y	<2	191	191
//////	//////	//////	//////	//////	//////	4.5	//////	8.2	7.0	7.1	//////	7.0						0.4			191	191
//////	//////	//////	//////	//////	//////	4.6	//////	8.1	7.0	7.0	//////	7.1						0.3			191	191
//////	//////	//////	//////	//////	//////	4.8	//////	6.7	7.2	7.1	//////	7.3						0.3			191	191
//////	//////	//////	//////	//////	//////	4.4	//////	8.6	6.7	7.0	//////	6.9						0.2			191	191
//////	//////	//////	//////	//////	//////	4.2	//////	7.9	7.1	7.0	//////	7.2						0.3		<2	191	191
//////	//////	//////	//////	//////	//////	4.4	//////	8.6	7.0	7.0	//////	6.8	600	43	<0.10	315	60	0.3		<2	191	191
//////	//////	//////	//////	//////	//////	5.0	//////	8.0	7.1	7.1	//////	6.9						0.1	1 1/2 C/Y		191	191
//////	//////	//////	//////	//////	//////	5.2	//////	8.1	7.1	7.0	//////	7.0						0.3			191	191
//////	//////	//////	//////	//////	//////	5.1	//////	7.9	7.0	7.0	//////	7.1						0.3			191	191
//////	//////	//////	//////	//////	//////	1.3	//////	7.8	7.0	7.1	//////	7.0						0.2	4 C/Y		191	191
//////	//////	//////	//////	//////	//////	5.8	//////	7.0	7.0	7.0	//////	6.8						0.2			191	191
//////	//////	//////	//////	//////	//////	5.0	//////	6.6	6.7	7.0	//////	6.9						0.2			191	191
//////	//////	//////	//////	//////	//////	5.6	//////	6.6	6.9	7.0	//////	6.8	420	38	<0.10	239	36	0.2	5 C/Y	30	191	191
//////	//////	//////	//////	//////	//////	4.0	//////	7.6	7.2	7.1	//////	7.1						0.3			191	191
//////	//////	//////	//////	//////	//////	10.8	//////	10.6	6.7	6.9	//////	6.9						0.2			191	191
//////	//////	//////	//////	//////	//////	6.2	//////	6.6	6.8	6.9	//////	6.9						0.1			191	191
//////	//////	//////	//////	//////	//////	4.7	//////	6.4	6.9	7.0	//////	6.8						0.2			191	191
//////	//////	//////	//////	//////	//////	6.0	//////	6.5	7.0	6.9	//////	6.9						0.2	4 C/Y		191	191
//////	//////	//////	//////	//////	//////	5.2	//////	6.2	6.9	6.8	//////	6.9						0.5		<2	191	191
//////	//////	//////	//////	//////	//////	5.4	//////	7.0	6.9	7.0	//////	6.9	586	27	<0.10	288	30	0.4		<2	191	191

MPN/100 Ml.

NOGALES INTERNATIONAL WASTEWATER TREATMENT PLANT

MONTHLY REPORT

PREPAR BY RIC ARD L ALDWELL, COMLIANC SPEC.
APPROVED AS TO FORM BY WASTEWATER SUPT. LINO VEGA

CML:COMPLETE MIX LAGOON
PML:PARTIAL MIX LAGOON
P.P:PUMPING PLANT PUMPING STATION IS NO LONGER IN SERVICE

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MONTH: Nov. 1991

	WEA	HER	TEMP	RATURE	FLOW		IN	M.G.D.	CML-1			CML-2			PML-1		PML-2		ML-3		PML-4		ML-5	
DATE	RAIN FALL INCHES	WIND DIREC-TION	INFLOW	EFFLUEN	MEXICO	UNITED STATES	PLANT INFLOW	PLANT OUTFLO	DEPTH FEET	TEMPE-ATURE	AERAT HOURS	DEPT FEET	TEMPE-ATUR	AERAT HOURS	DEPT FEET	AERAT HOURS	DEPT FEET	AERAT HOUR	DEPT FEET	AERAT HOURS	DEPT FEET	AERAT HOURS	DEPT FEET	AERAT HOURS
1	0.00	NE	66	59	6.670	4.380	11.050	11.221	9.5	64	130	//////	//////	//////	//////	//////	8.8	48	8.8	48	8.8	48	//////	//////
2	0.00		65	59	6.541	3.642	10.183	10.341	9.5	64	130	//////	//////	//////	//////	//////	8.8	48	8.8	48	8.8	48	//////	//////
3	0.00	NE	65	59	5.765	4.310	10.075	10.231	9.5	64	130	//////	//////	//////	//////	//////	8.8	48	8.8	48	8.8	48	//////	//////
4	0.00		64	59	6.153	4.078	10.231	10.390	9.5	64	130	//////	//////	//////	//////	//////	8.8	48	8.8	48	8.8	48	//////	//////
5	0.00		68	61	6.476	4.094	10.570	10.734	9.5	66	130	//////	//////	//////	//////	//////	8.8	48	8.8	48	8.8	48	//////	//////
6	0.00		68	61	6.024	4.060	10.084	10.240	9.5	64	130	//////	//////	//////	//////	//////	8.8	48	8.8	48	8.8	48	//////	//////
7	0.00	N	68	61	6.218	4.148	10.366	10.527	9.5	64	130	//////	//////	//////	//////	//////	8.8	48	8.8	48	8.8	48	//////	//////
8	0.00		68	63	6.347	3.962	10.309	10.469	9.5	64	130	//////	//////	//////	//////	//////	8.8	48	8.8	48	8.8	48	//////	//////
9	0.00		69	65	5.895	3.969	9.864	10.017	9.5	65	103	//////	//////	//////	//////	//////	8.8	48	8.8	48	8.8	48	//////	//////
10	0.00		68	64	6.412	3.755	10.167	10.325	9.5	63	130	//////	//////	//////	//////	//////	8.8	48	8.8	48	8.8	48	//////	//////
11	0.12		68	61	6.347	3.485	9.832	9.984	9.5	64	130	3.5	//////	//////	//////	//////	8.8	48	8.8	48	8.8	48	//////	//////
12	0.00	N	68	61	6.412	3.884	10.296	10.456	9.5	64	130	9.5	//////	//////	//////	//////	8.8	48	8.8	48	8.8	48	//////	//////
13	0.00		68	61	6.670	4.231	10.901	11.070	9.5	64	130	9.5	//////	120	//////	//////	8.8	48	8.8	48	8.8	48	//////	//////
14	0.05		68	63	7.188	3.668	10.856	11.024	9.5	62	130	9.5	//////	120	//////	//////	8.8	48	8.8	48	8.8	48	//////	//////
15	0.25		69	68	8.286	3.998	12.284	12.474	9.5	60	130	9.5	//////	120	//////	//////	8.8	48	8.8	48	8.8	48	//////	//////
16	0.22		69	59	6.088	4.006	10.094	10.250	9.5	61	130	9.5	59	120	//////	//////	8.8	48	8.8	48	8.8	48	//////	//////
17	0.00	NE	69	57	6.024	3.725	9.749	9.900	9.5	61	130	3.5	59	120	//////	//////	8.8	48	8.8	48	8.8	48	//////	//////
18	0.00		69	57	6.735	4.015	10.750	10.917	9.5	57	130	9.5	59	216	//////	//////	8.8	48	8.8	48	8.8	48	//////	//////
19	0.00		68	57	6.541	3.801	10.342	10.502	9.0	//////	//////	9.5	61	216	//////	//////	8.0	48	8.8	48	8.8	48	4.5	24
20	0.00		69	55	6.735	3.936	10.671	3.160	8.5	//////	//////	9.5	61	216	//////	//////	8.8	48	8.8	48	8.8	48	6.5	24
21	0.00	NE	68	54	6.864	4.083	10.947	11.117	8.0	//////	//////	9.5	60	216	//////	//////	8.8	48	8.8	48	8.8	48	7.0	24
22	0.00		64	61	6.799	4.070	10.869	11.037	7.5	//////	//////	9.5	57	216	//////	//////	8.8	48	8.8	48	8.8	48	8.8	24
23	0.00		68	55	6.929	4.003	10.932	11.101	6.5	//////	//////	9.5	61	216	//////	//////	8.8	24	8.8	24	8.8	24	8.8	24
24	0.00		69	56	6.670	3.845	10.515	10.678	5.0	//////	//////	9.5	62	216	//////	//////	8.8	24	8.8	24	8.8	24	8.8	24
25	0.00	NE	68	55	6.864	3.752	10.616	10.781	4.0	//////	//////	9.5	60	216	//////	//////	8.8	24	8.8	24	8.8	24	8.8	24
26	0.00		68	55	7.058	4.061	11.119	11.291	3.5	//////	//////	9.5	60	216	//////	//////	8.8	24	8.8	24	8.8	24	8.8	24
27	0.00		68	55	6.670	3.891	10.561	10.725	3.0	//////	//////	9.5	59	216	//////	//////	8.8	24	8.8	24	8.8	24	8.8	24
28	0.00		67	62	7.188	4.440	11.628	11.808	2.7	//////	//////	9.5	59	216	//////	//////	8.8	24	8.8	24	8.8	24	8.8	24
29	0.00		68	60	6.864	4.181	11.045	11.216	2.0	//////	//////	9.5	58	216	//////	//////	8.8	24	8.8	24	8.8	24	8.8	24
30	0.10	NE	68	60	7.058	4.025	11.083	11.255	1.8	//////	//////	9.5	57	216	//////	//////	8.8	24	8.8	24	8.8	24	8.8	24
31																								

	MEXICO	UNITED STATES	PLANT INFLOW	PLANT OUTFLO
TOTAL	198.491	119.498	317.989	315.241
AVERAG	6.616	3.983	10.600	10.508
MAXIMU	8.286	4.440	12.284	12.474
MINIMUM	5.765	3.485	9.749	3.160

MEXIC 62% OF TOTAL FLOW

U.S. = 38% OF TOTAL FLOW

NOG. WASH P.P.= 0%

PERSONNEL		ULL TIM SERVICES EQUIPMENT	
CHIEF OPERATOR	1	90' D DGE AR S K C R	1
COMPLIANCE SPEC.	1	PICKU 1/2 TON	2
ASST. OPERATOR	1	GRIT TRUCK	1
OPERATORS	1	WATER TRUCK	1
LABORERS	4	BACK HOE	1
MECHANIC	1		
ELECTRICIAN	1		

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Nov. 1991

UTILITIES AND CHORINE

CONTROL BUILDING

POWER CON MPTIO	558000 0	K.W.H.
$	53,702. 0 2.61	
CHLO INE & ULTR IOLET DIS INFECTION AREA		
	0	K.W.H.
$	17.48	
CHLORINE CONSU	7820	LBS
SULPHUR D XIDE:	0	LBS.
UTILI TY CO TS - W ATER SERVICE	$ 18.62	
BILLI NG DA E:	12/26/91	

PERSONNEL SERVICES AND EQUIPMENT UTILIZED OT ER THAN FULL TIME

CLASSI ICATI ON	HRS.THIS MONTH
ELECTRICIAN	0
LABORERS	0
OVER TIME (OPERATORS)	80
MOTOR GRADER & OPERATO	0

BOUNDARY

DATE: 11/07/91
BOD5: 184 mg/l
TSS: 180 mg/l
ph: 7.0

DATE: 11/14/91
BOD5: 283 mg/L
TSS: 328 mg/l
ph: 6.6

DATE: 11/22/91
BOD5: 183 mg/l
TSS: 716 mg/l
ph: 7.0

DATE: 11/27/91
BOD5: 326 mg/l
TSS: 170 mg/l
ph: 7.2

PML-6		PML-7		PML-8		D.O. MG/L			p H				SUSPENDED SOLIDS MG/L		SETTLEABLE SOLIDS MG/L	B.O.D. MG/L		CL2					
DEPT FEET	AERAT HOURS	DEPT FEET	AERATO HOURS	DEPT FEET	AERATO HOURS	CML-	CML-	EFFLUEN	RA	CML-	CML-	EFFLUEN	RAW	EFFLUEN	EFFLUENT	RA	EFFLUEN	RESIDUAL	GRIT REMOVE	FECAL COLIFORM	UV-1 HOURS	UV-2 HOURS	DATE
//////	//////	//////	//////	//////	//////	5.5	//////	6.7	6.9	7.0	//////	6.8						0.4	3 C/Y		192	192	1
//////	//////	//////	//////	//////	//////	5.7	//////	7.0	6.8	7.0	//////	6.8						0.4			192	192	2
//////	//////	//////	//////	//////	//////	5.7	//////	7.5	6.8	7.0	//////	6.9						0.5			192	192	3
//////	//////	//////	//////	//////	//////	6.0	//////	8.5	6.7	7.0	//////	6.9						0.5	4 C/Y		192	192	4
//////	//////	//////	//////	//////	//////	5.5	//////	6.8	6.8	7.0	//////	6.8						0.7			192	192	5
//////	//////	//////	//////	//////	//////	5.1	//////	6.6	6.9	7.0	//////	6.9						0.8	3 C/Y	<2	192	192	6
//////	//////	//////	//////	//////	//////	6.0	//////	8.3	7.0	7.0	//////	6.8	708	20	<0.10	219	26	0.7		<2	192	192	7
//////	//////	//////	//////	//////	//////	6.6	//////	7.7	6.9	7.0	//////	6.8						0.7	3 C/Y		192	192	8
//////	//////	//////	//////	//////	//////	5.6	//////	7.9	7.0	7.2	//////	6.9						1.1			192	192	9
//////	//////	//////	//////	//////	//////	5.5	//////	8.3	6.9	7.2	//////	6.9						0.2			192	192	10
//////	//////	//////	//////	//////	//////	6.8	//////	7.6	7.0	7.0	//////	7.0						1.2			192	192	11
//////	//////	//////	//////	//////	//////	5.7	//////	7.2	7.0	7.0	//////	7.0						1.1	3 C/Y		192	192	12
//////	//////	//////	//////	//////	//////	5.3	//////	7.1	7.0	7.0	//////	7.0						0.8		<2	192	192	13
//////	//////	//////	//////	//////	//////	5.2	//////	7.0	7.1	7.0	//////	7.0		12	<0.10		23	0.8	3 C/Y	<2	192	192	14
//////	//////	//////	//////	//////	//////	5.2	//////	6.2	7.2	7.0	7.0	8.0	278			278		1.0			192	192	15
//////	//////	//////	//////	//////	//////	5.2	4.9	5.8	6.9	7.0	7.2	6.9						0.7			192	192	16
//////	//////	//////	//////	//////	//////	4.8	4.8	5.5	6.9	7.1	7.2	6.9						0.7			192	192	17
//////	//////	//////	//////	//////	//////	4.9	5.0	5.9	7.0	7.2	7.2	7.0						0.5	2 C/Y		192	192	18
//////	//////	//////	//////	//////	//////	//////	4.2	5.6	6.8	//////	7.0	6.9						0.1	4 C/Y		176	176	19
//////	//////	4.5	24	2.5	24	//////	4.9	4.7	6.8	//////	7.1	6.9						1.6			24	24	20
//////	//////	6.5	24	5.0	24	//////	4.9	6.0	7.0	//////	7.1	6.9						0.9		<2	192	192	21
//////	//////	8.8	24	8.8	24	//////	4.8	6.1	7.0	//////	7.1	8.0	1094	21	<0.10	351	39	1.0	4 C/Y	<2	192	192	22
//////	//////	8.8	24	8.8	24	//////	4.9	6.2	6.8	//////	7.0	6.9						0.8			192	192	23
//////	//////	8.8	24	8.8	24	//////	5.1	5.0	6.9	//////	7.0	6.9						0.9			192	192	24
//////	//////	8.8	24	8.8	24	//////	6.0	6.4	6.8	//////	7.0	6.9						0.0			192	192	25
//////	//////	8.8	24	8.8	24	//////	4.9	5.8	6.9	//////	7.0	6.9						0.8	4 C/Y	<2	192	192	26
//////	//////	8.8	24	8.8	24	//////	4.9	6.0	7.1	//////	7.3	7.1	830	14	<0.10	294	12	0.7	3 C/Y	<2	192	192	27
//////	//////	8.8	24	8.8	24	//////	5.1	6.3	7.1	//////	7.4	7.5						0.0			192	192	28
//////	//////	8.8	24	8.8	24	//////	5.0	5.7	7.3	//////	7.4	7.4						0.0			192	192	29
//////	//////	8.8	24	8.8	24	//////	5.0	6.1	7.0	//////	7.4	8.0						0.0			192	192	30
																							31

11/0 7 /91 7.3 ADDITIONAL ANAL SIS BY AMERICAN NALYTICAL LAB. MPN/100 ML *
11/14/91 7.3
11/22/91 7.3
11/27/91 7.5

NOGALES INTERNATIONAL WASTEWATER TREATMENT PLANT

MONTHLY REPORT

PREPAR BY RIC ARD L ALDWELL, COMPLIANE SPEC.
APPROVED AS TO FORM BY WASTEWATER SUPT. LINO VEGA

CML:COMPLETE MIX LAGOON
PML:PARTIAL MIX LAGOON
P.P:PUMPING PLANT PUMPING STATION IS NO LONGER IN SERVICE

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MONTH Dec 1991

DATE	WEA RAIN FALL INCHES	HER WIND DIREC-TION	TEMP INFLOW	RATURE EFFLUEN	FLOW IN M.G.D. MEXICO	UNITED STATES	PLANT INFLOW	PLANT OUTFLO	CML-1 DEPTH FEET	CML-1 TEMPE-ATURE	CML-1 AERAT HOURS	CML-2 DEPT FEET	CML-2 TEMPE-ATUR	CML-2 AERAT HOURS	PML-1 DEPT FEET	PML-1 AERAT HOURS	PML-2 DEPT FEET	PML-2 AERAT HOUR	ML-3 DEPT FEET	ML-3 AERAT HOURS	PML-4 DEPT FEET	PML-4 AERAT HOURS	ML-5 DEPT FEET	ML-5 AERAT HOURS
1	0.40	N	65	52	5.960	3.663	9.623	9.772	//////////	//////////	//////////	9.5	58	216	//////////	//////////	8.8	24	8.8	24	8.8	24	8.8	24
2	0.00		65	52	6.735	4.139	10.874	11.043	//////////	//////////	//////////	9.5	59	216	//////////	//////////	8.8	24	8.8	24	8.8	24	8.8	24
3	0.02		66	52	7.122	4.099	11.221	11.395	//////////	//////////	//////////	9.5	59	216	//////////	//////////	8.8	24	8.8	24	8.8	24	8.8	24
4	0.00		64	50	7.187	4.154	11.341	11.517	//////////	//////////	//////////	9.5	59	216	//////////	//////////	8.8	24	8.8	24	8.8	24	8.8	24
5	0.00	NE	63	54	6.735	4.106	10.841	11.009	//////////	//////////	//////////	9.5	59	216	//////////	//////////	8.8	24	8.8	24	8.8	24	8.8	24
6	0.00		64	55	6.800	3.997	10.797	10.964	//////////	//////////	//////////	9.5	60	216	//////////	//////////	8.8	24	8.8	24	8.8	24	8.8	24
7	0.05		61	52	6.864	4.093	10.957	11.127	//////////	//////////	//////////	9.5	59	216	//////////	//////////	8.8	24	8.8	24	8.8	24	8.8	24
8	0.00		63	55	6.734	3.873	10.607	10.771	//////////	//////////	//////////	9.5	59	216	//////////	//////////	8.8	24	8.8	24	8.8	24	8.8	24
9	TRACE	N	63	57	7.316	3.742	11.058	11.229	//////////	//////////	//////////	9.5	61	216	//////////	//////////	8.8	24	8.8	24	8.8	24	8.8	24
10	TRACE		63	59	6.734	4.930	11.664	11.845	//////////	//////////	//////////	9.5	63	216	//////////	//////////	8.8	24	8.8	24	8.8	24	8.8	24
11	0.42		66	57	7.768	5.832	13.600	13.811	//////////	//////////	//////////	9.5	61	216	//////////	//////////	8.8	24	8.8	24	8.8	24	8.8	24
12	0.03		66	59	5.959	5.345	11.304	11.479	//////////	//////////	//////////	9.5	63	216	//////////	//////////	8.8	24	8.8	24	8.8	24	8.8	24
13	0.00	NE	65	57	6.799	4.845	11.644	11.824	//////////	//////////	//////////	9.5	59	216	//////////	//////////	8.8	24	8.8	24	8.8	24	8.8	24
14	0.00		66	55	7.188	4.133	11.321	11.496	//////////	//////////	//////////	9.5	59	216	//////////	//////////	8.8	24	8.8	24	8.8	24	8.8	24
15	0.00		64	55	6.994	3.874	10.868	11.036	//////////	//////////	//////////	9.5	59	216	//////////	//////////	8.8	24	8.8	24	8.8	24	8.8	24
16	0.00	SW	66	55	7.058	4.267	11.325	11.501	//////////	//////////	//////////	9.5	61	216	//////////	//////////	8.8	24	8.8	24	8.8	24	8.8	24
17	0.00		67	55	7.252	4.630	11.882	12.066	//////////	//////////	//////////	9.5	61	216	//////////	//////////	8.8	24	8.8	24	8.8	24	8.8	24
18	1.05	S	62	57	9.644	6.624	16.268	16.520	//////////	//////////	//////////	9.5	61	216	//////////	//////////	8.8	24	8.8	24	8.8	24	8.8	24
19	0.09		63	57	8.609	5.884	14.493	14.718	0.5	//////////	//////////	9.5	59	216	//////////	//////////	8.8	24	8.8	24	8.8	24	8.8	24
20	0.40		62	57	8.544	5.906	14.450	14.674	2.5	//////////	//////////	9.5	58	216	//////////	//////////	8.8	24	8.8	24	8.8	24	8.8	24
21	0.01	SW	63	54	7.705	5.272	12.977	13.178	4.0	//////////	//////////	9.5	57	216	//////////	//////////	8.8	24	8.8	24	8.8	24	8.8	24
22	0.06		63	54	7.445	4.869	12.314	12.505	5.3	//////////	//////////	9.5	57	216	//////////	//////////	8.8	24	8.8	24	8.8	24	8.8	24
23	0.00		64	54	7.575	5.063	12.638	12.834	6.5	//////////	//////////	9.5	57	216	//////////	//////////	8.8	24	8.8	24	8.8	24	8.8	24
24	0.00		63	54	7.833	4.296	12.129	12.317	7.8	//////////	//////////	9.5	57	216	//////////	//////////	8.8	24	8.8	24	8.8	24	8.8	24
25	0.31	SW	61	54	9.837	4.512	14.349	14.571	9.5	//////////	//////////	9.5	57	216	//////////	//////////	8.8	24	8.8	24	8.8	24	8.8	24
26	0.12		61	54	9.062	3.814	12.876	13.076	9.5	56	96	9.5	56	216	//////////	//////////	8.8	24	8.8	24	8.8	24	8.8	24
27	0.00		64	54	8.545	3.850	12.395	12.587	9.5	57	96	9.5	57	216	//////////	//////////	8.8	24	8.8	24	8.8	24	8.8	24
28	0.00	S	62	54	7.446	4.795	12.241	12.431	9.5	55	96	9.5	55	216	//////////	//////////	8.8	24	8.8	24	8.8	24	8.8	24
29	0.00		63	52	6.606	5.070	11.676	11.857	9.5	55	96	9.5	55	216	//////////	//////////	8.8	24	8.8	24	8.8	24	8.8	24
30	0.00		64	54	6.670	5.412	12.082	12.269	9.5	56	96	9.5	56	216	//////////	//////////	8.8	24	8.8	24	8.8	24	8.8	24
31	0.00	N	62	53	6.929	5.409	12.338	12.529	9.5	55	96	9.5	55	216	//////////	//////////	8.8	24	8.8	24	8.8	24	8.8	24

	MEXICO	UNITED STATES	PLANT INFLOW	PLANT OUTFLO
TOTAL	229.655	144.498	374.153	379.951
AVERAG	7.408	4.661	12.069	12.256
MAXIMU	9.837	6.624	16.268	16.520
MINIMUM	5.959	3.663	9.623	10.771

MEXIC 61% OF TOTAL FLOW

U.S. = 39% OF TOTAL FLOW

NOG. WASH P.P.=

ULL TIM SERVICES				UTILITIES AND CH HLORINE				PERSONNEL SERVICES AND EQUIPMENT UTILIZED OT ER THAN FULL TIME		BOUNDARY
PERSONNEL		EQUIPMENT		CONTROL BUILDING				CLASSI ICATI ON	HRS.THIS MONTH	
CHIEF OPERATOR	1	99'D DGE AR S K C R	1	POWER CON MPTIO	558,000 00	K.W.H.		ELECTRICIAN	0	DATE: 12/05/91 BOD-5: 82 TSS: 230 ph: 7.0
COMPLIANCE SPEC.	1	PICKU 1/2 TON	2	$	53,704.6 . 69			LABORERS	0	DATE: 12/13/91 BOD-5: 82.7 TSS: 181 ph: 7.0
ASST. OPERATOR	1	GRIT TRUCK	1	CHLO INE & ULTROV IOLET DISINFECTION APEA				OVER TIME (OPERATORS)	82.5	
OPERATORS	2	WATER TRUCK	1		0	K.W.H.		MOTOR GRADER & OPERATO	0	DATE: 12/20/91 BOD-5: 117 TSS: 208 ph: 7.5
LABORERS	4	BACK HOE	1	$	$17.48					
MECHANIC	1			CHLORINE CONSU	5890 0	LBS				
ELECTRICIAN	1			SULPHUR D XIDE:	189	LBS.				DATE: 12/24/91 BOD-5: 85.4 TSS: 120 ph: 6.9
				UTILITY COSTS - WATER SERVICE	$16.54					
Page 2										
Dec. 1991				BILLING DATE:	12/26/91					

PML-6 DEPT FEET	PML-6 AERAT HOURS	PML-7 DEPT FEET	PML-7 AERATO HOURS	PML-8 DEPT FEET	PML-8 AERATO HOURS	D O MG/L CML-	D O MG/L CML-	D O MG/L EFFLUEN	pH RA	pH CML-	pH CML-	pH EFFLUEN	SUSPENDED SOLIDS MG/L RAW	SUSPENDED SOLIDS MG/L EFFLUEN	SETTLEABLE SOLIDS MG/L EFFLUENT	B.O.D. MG/L RA	B.O.D. MG/L EFFLUEN	CL2 RESIDUAL MG/L	GRIT REMOVE	FECAL COLIFORM	UV-1 HOURS	UV-2 HOURS	DATE
////////	//////////	8.8	24	8.8	24	////////	7.3	6.8	7.3	////////	7.4	7.5						0.3			192	192	1
////////	//////////	8.8	24	8.8	24	////////	6.3	6.1	7.3	////////	7.3	7.3						0.4			192	192	2
////////	//////////	8.8	24	8.8	24	////////	5.6	5.4	7.2	////////	7.3	7.3						0.5	5 C/Y		192	192	3
////////	//////////	8.8	24	8.8	24	////////	5.3	5.2	7.2	////////	7.3	7.2						0.5		<2	192	192	4
////////	//////////	8.8	24	8.8	24	////////	5.0	4.6	7.2	////////	7.2	7.1		19	<0.10		7.7	0.3		<2	192	192	5
////////	//////////	8.8	24	8.8	24	////////	4.3	4.3	7.2	////////	7.3	7.2	232			144		0.3			192	192	6
////////	//////////	8.8	24	8.8	24	////////	4.3	5.1	7.2	////////	7.3	7.3						0.3			192	192	7
////////	//////////	8.8	24	8.8	24	////////	6.9	4.7	7.0	////////	7.3	7.3						0.1			192	192	8
////////	//////////	8.8	24	8.8	24	////////	3.9	3.7	7.1	////////	7.3	7.2						0.7			192	192	9
////////	//////////	8.8	24	8.8	24	////////	7.2	6.6	6.8	////////	7.2	7.3						0.5			192	192	10
////////	//////////	8.8	24	8.8	24	////////	4.2	7.3	7.1	////////	7.3	7.2						0.5	4 C/Y	<2	192	192	11
////////	//////////	8.8	24	8.8	24	////////	7.8	7.5	7.1	////////	7.4	7.1	442	9	<0.10	55.3	7.1	0.6		<2	192	192	12
////////	//////////	8.8	24	8.8	24	////////	7.2	8.6	7.2	////////	7.4	7.1						0.5			192	192	13
////////	//////////	8.8	24	8.8	24	////////	8.7	7.5	7.1	////////	7.4	7.3						0.6			192	192	14
////////	//////////	8.8	24	8.8	24	////////	8.9	7.3	7.2	////////	7.4	7.3						0.9			192	192	15
////////	//////////	8.8	24	8.8	24	////////	7.5	7.6	6.9	////////	7.3	7.3						0.7			192	192	16
////////	//////////	8.8	24	8.8	24	////////	6.7	6.7	6.8	////////	7.4	7.4						0.6	4.5 C/Y		192	192	17
////////	//////////	8.8	24	8.8	24	////////	7.4	7.5	7.2	////////	7.3	7.4						0.4		2	192	192	18
////////	//////////	8.8	24	8.8	24	////////	7.3	7.5	7.2	////////	7.5	7.3	800	23	<0.10	197	10.6	0.6		<2	96	192	19
////////	//////////	8.8	24	8.8	24	////////	6.5	7.1	7.1	////////	7.3	7.6						+1.6			192	96	20
////////	//////////	8.8	24	8.8	24	////////	9.2	8.3	7.1	////////	7.5	7.5						0.7			192	192	21
////////	//////////	8.8	24	8.8	24	////////	8.1	6.5	7.1	////////	7.6	7.5						0.7			192	192	22
////////	//////////	8.8	24	8.8	24	////////	7.9	6.6	7.1	////////	7.6	7.4						1.5		<2	192	192	23
////////	//////////	8.8	24	8.8	24	////////	8.7	6.7	7.2	////////	7.6	7.5	166	16	<0.10	178	4.7	1.1	4 C/Y	<2	192	192	24
////////	//////////	8.8	24	8.8	24	////////	8.2	6.5	7.2	////////	7.5	7.5						0.6			192	192	25
////////	//////////	8.8	24	8.8	24	////////	8.0	7.2	7.3	////////	7.6	7.4						0.9			192	192	26
////////	//////////	8.8	24	8.8	24	////////	7.7	6.3	7.2	////////	7.1	6.9						0.4			192	192	27
////////	//////////	8.8	24	8.8	24	9.8	8.4	8.8	7.3	////////	7.5	7.1						0.7			192	192	28
////////	//////////	8.8	24	8.8	24	8.3	7.9	8.0	7.7	////////	7.7	7.2						ND		<2	192	192	29
////////	//////////	8.8	24	8.8	24	8.9	8.5	8.0	7.1	////////	7.5	7.3						ND		<2	192	192	30
////////	//////////	8.8	24	8.8	24	8.5	7.7	8.1	7.5	////////	7.3	7.2						ND	5 C/Y	80	192	192	31

ANALYSIS DONE BY AMERICA ANALYICAL LABS.

12/05 / 91 7.4
12/12 / 91 7.5
12/19 / 91 7.5
12/24/9 91 7.3

MPN/100 ML *
+ NEW CL2 RE IDUAL METHOD STA ED

NOGALES INTERNATIONAL WASTEWATER TREATMENT PLANT

MONTHLY REPORT

PREPAR BY: RIC ARD L. ALDWELL, COMPLIANE SPEC.
APPROVED AS TO FORM BY WASTEWATER SUPT. LINO VEGA

CML:COMPLETE MIX LAGOON
PML:PARTIAL MIX LAGOON
P.P:PUMPING PLANT PUMPING STATION IS NO LONGER IN SERVICE

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Month January 1992

	WEA	HER	TEMP	RATURE		FLOW	IN	M.G.D.	CML-1			CML-2			PML-1		PML-2		ML-3		PML-4		ML-5	
DATE	RAIN FALL INCHES	WIND DIREC-TION	INFLOW	EFFLUEN	MEXICO	UNITED STATES	PLANT INFLOW	PLANT OUTFLO	DEPTH FEET	TEMPE-ATURE	AERAT HOURS	DEPT FEET	TEMPE-ATUR	AERAT HOURS	DEPT FEET	AERAT HOURS	DEPT FEET	AERAT HOUR	DEPT FEET	AERAT HOURS	DEPT FEET	AERAT HOURS	DEPT FEET	AERAT HOURS
1	0.00	N	62	52	7.640	3.852	11.492	14.112	9.5	54	192	9.5	54	192	//////////	//////////	8.8	24	8.8	24	8.8	24	8.8	24
2	0.00		60	52	7.704	4.219	11.923	13.371	9.5	56	192	9.5	54	192	//////////	//////////	8.8	24	8.8	24	8.8	24	8.8	24
3	0.00		61	52	7.769	4.309	12.078	13.477	9.5	57	192	9.5	55	192	//////////	//////////	8.8	24	8.8	24	8.8	24	8.8	24
4	0.02	SW	61	52	7.640	4.023	11.663	13.304	9.5	57	192	9.5	55	192	//////////	//////////	8.8	24	8.8	24	8.8	24	8.8	24
5	0.06		61	54	7.188	5.918	13.106	14.078	9.5	59	192	9.5	57	192	//////////	//////////	8.8	24	8.8	24	8.8	24	8.8	24
6	0.30		57	54	7.899	6.810	14.709	15.639	9.5	57	192	9.5	57	192	//////////	//////////	8.8	24	8.8	24	8.8	24	8.8	24
7	0.32	SW	59	52	8.609	5.007	13.616	15.574	9.5	55	192	9.5	55	192	//////////	//////////	8.8	24	8.8	24	8.8	24	8.8	24
8	0.12		61	55	8.092	4.847	12.939	14.649	9.5	55	192	9.5	55	192	//////////	//////////	8.8	24	8.8	24	8.8	24	8.8	24
9	0.00		59	54	7.834	4.866	12.700	14.554	9.5	55	192	9.5	55	192	//////////	//////////	8.8	24	8.8	24	8.8	24	8.8	24
10	0.00	SE	60	52	7.704	4.846	12.550	14.729	9.5	55	192	9.5	55	192	//////////	//////////	8.8	24	8.8	24	8.8	24	8.8	24
11	0.14		59	54	8.222	4.934	13.156	15.095	9.5	54	192	9.5	54	192	//////////	//////////	8.8	24	8.8	24	8.8	24	8.8	24
12	0.41	W	58	53	9.320	5.255	14.575	16.132	9.5	53	192	9.5	54	192	//////////	//////////	8.8	24	8.8	24	8.8	24	8.8	24
13	0.00		61	50	8.545	4.845	13.390	15.661	9.5	54	192	9.5	54	192	//////////	//////////	8.8	24	8.8	24	8.8	24	8.8	24
14	0.00		60	50	8.350	4.642	12.992	15.381	9.5	53	192	9.5	53	192	//////////	//////////	8.8	24	8.8	24	8.8	24	8.8	24
15	0.00	SW	61	48	8.027	4.839	12.866	15.071	9.5	54	192	9.5	53	192	//////////	//////////	8.8	24	8.8	24	8.8	24	8.8	24
16	0.00		61	50	8.351	4.673	13.024	15.389	9.5	54	192	9.5	52	192	//////////	//////////	8.8	24	8.8	24	8.8	24	8.8	24
17	0.00		61	50	8.415	4.472	12.887	15.469	9.5	53	192	9.5	52	192	//////////	//////////	8.8	24	8.8	24	8.8	24	8.8	24
18	0.00		62	50	8.674	4.619	13.293	15.334	9.5	53	192	9.5	53	192	//////////	//////////	8.8	24	8.8	24	8.8	24	8.8	24
19	0.00		61	48	8.286	4.398	12.684	14.870	9.5	54	192	9.5	53	192	//////////	//////////	8.8	24	8.8	24	8.8	24	8.8	24
20	0.11	S	63	50	9.320	4.238	13.558	15.843	9.5	55	192	9.5	53	192	//////////	//////////	8.8	24	8.8	24	8.8	24	8.8	24
21	0.00		62	52	8.544	4.081	12.625	15.831	9.5	55	192	9.5	52	192	//////////	//////////	8.8	24	8.8	24	8.8	24	8.8	24
22	0.00		61	52	8.609	4.340	12.949	15.483	9.5	54	192	9.5	54	192	//////////	//////////	8.8	24	8.8	24	8.8	24	8.8	24
23	0.00	SE	61	52	8.803	4.270	13.073	15.747	9.5	54	192	9.5	54	192	//////////	//////////	8.8	24	8.8	24	8.8	24	8.8	24
24	0.00		62	53	8.803	4.282	13.085	15.676	9.5	55	192	9.5	54	192	//////////	//////////	8.8	24	8.8	24	8.8	24	8.8	24
25	0.00		62	52	8.351	4.627	12.978	14.962	9.5	55	192	9.5	54	192	//////////	//////////	8.8	24	8.8	24	8.8	24	8.8	24
26	0.00		62	52	7.834	4.709	12.543	14.509	9.5	55	192	9.5	55	192	//////////	//////////	8.8	24	8.8	24	8.8	24	8.8	24
27	0.00	N	62	50	8.674	4.377	13.051	14.771	9.5	55	192	9.5	55	192	//////////	//////////	8.8	24	8.8	24	8.8	24	8.8	24
28	0.00		63	52	6.800	6.552	13.352	15.128	9.5	55	192	9.5	55	192	//////////	//////////	8.8	24	8.8	24	8.8	24	8.8	24
29	0.00		63	54	6.282	7.030	13.312	15.083	9.5	55	192	9.5	55	192	//////////	//////////	8.8	24	8.8	24	8.8	24	8.8	24
30	0.00		63	51	7.123	5.224	12.347	14.744	9.5	55	192	9.5	55	192	//////////	//////////	8.8	24	8.8	24	8.8	24	8.8	24
31	0.00	SW	61	53	7.316	4.798	12.114	15.133	9.5	55	192	9.5	55	192	//////////	//////////	8.8	24	8.8	24	8.8	24	8.8	24

	MEXICO	UNITED STATES	PLANT INFLOW	PLANT OUTFLO
TOTAL	250.728	149.902	400.630	464.799
AVERAG	8.088	4.836	12.924	14.994
MAXIMU	9.320	7.030	14.709	16.132
MINIMUM	6.282	3.852	11.492	13.304

MEXIC 63% OF TOTAL FLOW

U.S. = 37% OF TOTAL FLOW

NOG. WASH P.P.= 0

UL.L TIM SERVICES				UTILITIES AND CH HLORINE				PERSONNEL SERVICES AND EQUIPMENT UTILIZED OT ER THAN FULL TIME		BOUNDARY
PERSONNEL		EQUIPMENT		CONTROL BUILDING				CLASSI ICATI ON	HRS.THIS MONTH	
CHIEF OPERATOR	1	90' D DGE AR S K C R	1	POWER CON MPTIO	748,800	K.W.H.				DATE: 01/03/92 BOD-5: 51.6 TSS: 180
COMPLIANCE SPEC.	1	PICKU 1/2 TON	3	$	72,430 . 12			ELECTRICIAN (OVERTIME)	1	
ASST. OPERATOR	1	GRIT TRUCK	1	CHLO INE & ULTRAVIOLET DISINFECTION AREA				LABORERS	0	DATE: 01/16/92 BOD-5: 83.4 TSS: 190
OPERATORS	2	WATER TRUCK	1		0	K.W.H.		OVER TIME (OPERATORS)	17	
LABORERS	3	BACK HOE	1	$	17.48			MOTOR GRADER & OPERATO	0	DATE: 01/24/92 BOD-5: 79 TSS: 88
MECHANIC	1			CHLORINE CONSU	5260	LBS		MECHANIC (OVERTIME)	1	
ELECTRICIAN	1			SULPHUR D XIDE:	2211 5	LBS.				
Page 2				UTILITY COSTS - WATER SERVICE	$18.62					DATE: 01/30/92 BOD-5: 124.2 TSS: 142
Jan. 1992				BILLING DATE:	01-23-92					

PML-6		PML-7		PML-8		D.O MG/L			pH				SUSPENDED SOLIDS MG/L		SETTLEABLE SOLIDS MG/L	B.O.D. MG/L		CL2					
DEPT FEET	AERAT HOURS	DEPT FEET	AERATO HOURS	DEPT FEET	AERATO HOURS	CML-	CML-	EFFLUEN	RA	CML-	CML-	EFFLUEN	RAW	EFFLUEN	EFFLUENT	EFF	INFLUEN	RESIDUAL MG/L	GRIT REMOVE	FECAL COLIFORM	UV-1 HOURS	UV-2 HOURS	DATE
/////////	////////////	8.8	24	8.8	24	8.1	7.9	7.9	7.4	7.6	7.5	7.1						ND		<2	192	192	1
/////////	////////////	8.8	24	8.8	24	5.7	7.5	6.2	7.0	7.2	7.3	7.2						ND		<2	192	192	2
/////////	////////////	8.8	24	8.8	24	7.6	8.5	7.3	7.0	7.3	7.5	7.3	440	21	<0.10	7.4	126.3	ND		50	192	192	3
/////////	////////////	8.8	24	8.8	24	7.9	8.8	7.2	7.0	7.3	7.5	7.2						ND		50	192	192	4
/////////	////////////	8.8	24	8.8	24	7.5	8.3	7.5	6.9	7.4	7.5	7.2						ND		1600	192	192	5
/////////	////////////	8.8	24	8.8	24	6.2	8.0	6.3	6.8	7.2	7.5	7.3						ND	4 C/Y	110	192	192	6
/////////	////////////	8.8	24	8.8	24	8.1	8.6	8.9	6.9	7.4	7.4	7.2						ND	3.5 C/Y	<2	192	192	7
/////////	////////////	8.8	24	8.8	24	8.4	8.3	7.7	6.9	7.4	7.4	7.3						ND		<2	192	192	8
/////////	////////////	8.8	24	8.8	24	9.1	9.1	7.4	6.9	7.4	7.4	7.2	480	19	<0.10	12	165	ND		17	192	192	9
/////////	////////////	8.8	24	8.8	24	8.3	8.3	7.1	7.3	7.9	7.8	7.5						ND		17	192	192	10
/////////	////////////	8.8	24	8.8	24	7.9	7.8	8.7	7.1	7.3	7.1	7.3						ND	5 C/Y	<2	192	192	11
/////////	////////////	8.8	24	8.8	24	8.1	7.9	8.6	7.4	7.5	7.3	7.2						ND		<2	192	192	12
/////////	////////////	8.8	24	8.8	24	9.6	9.6	8.4	7.2	7.7	7.7	7.5						ND		<2	192	192	13
/////////	////////////	8.8	24	8.8	24	8.7	9.0	8.0	7.0	7.6	7.6	7.3						ND	10.5 C/Y	<2	192	192	14
/////////	////////////	8.8	24	8.8	24	8.4	8.0	6.3	6.9	7.5	7.5	7.2						ND	10.5 C/Y	<2	192	192	15
/////////	////////////	8.8	24	8.8	24	8.4	8.8	8.0	7.0	7.6	7.6	7.2	230	10	<0.10	7.7	72.2	ND	4 C/Y	<2	192	192	16
/////////	////////////	8.8	24	8.8	24	8.7	8.3	7.7	6.9	7.4	7.3	7.3						ND	5.5 C/Y	<2	192	192	17
/////////	////////////	8.8	24	8.8	24	8.2	8.1	7.5	6.8	7.3	7.4	7.1						ND		<2	192	192	18
/////////	////////////	8.8	24	8.8	24	8.4	8.0	7.1	7.0	7.5	7.6	7.3						ND	5 C/Y	<2	192	192	19
/////////	////////////	8.8	24	8.8	24	8.5	8.4	7.6	7.1	7.6	7.6	7.5						ND		<2	192	192	20
/////////	////////////	8.8	24	8.8	24	7.6	7.3	7.2	7.0	7.6	7.5	7.3						ND	9 C/Y	<2	192	192	21
/////////	////////////	8.8	24	8.8	24	8.6	8.6	7.1	7.0	7.4	7.4	7.1						ND		<2	192	192	22
/////////	////////////	8.8	24	8.8	24	8.5	8.3	7.1	7.0	7.5	7.5	7.1		8	<0.10	9.3		ND	4 C/Y	<2	192	192	23
/////////	////////////	8.8	24	8.8	24	8.7	8.5	7.0	7.1	7.4	7.5	7.2	212				85.3	ND		<2	192	192	24
/////////	////////////	8.8	24	8.8	24	9.1	9.2	7.4	7.0	7.5	7.5	7.1						ND	4 C/Y	<2	192	192	25
/////////	////////////	8.8	24	8.8	24	8.1	8.2	7.3	6.9	7.5	7.5	7.2						ND		<2	192	192	26
/////////	////////////	8.8	24	8.8	24	8.0	8.4	7.5	7.0	7.5	7.5	7.2						ND		<2	192	192	27
/////////	////////////	8.8	24	8.8	24	8.8	8.7	7.2	6.9	7.4	7.3	7.1						ND	5 C/Y	<2	192	192	28
/////////	////////////	8.8	24	8.8	24	7.6	7.7	7.5	6.9	7.3	7.3	7.1						ND		<2	192	192	29
/////////	////////////	8.8	24	8.8	24	8.6	8.6	7.0	7.3	7.6	7.7	7.6	736	17	<0.10	16.0	95.0	ND	6 C/Y	<2	192	192	30
/////////	////////////	8.8	24	8.8	24	7.6	7.6	6.8	7.3	7.6	7.6	7.4						ND		<2	192	192	31

MPN/100 ML *

NOGALES INTFRNATIONAL WASTEWATER TREATMFNT PLANT

MONTHLY REPORT

PREPAR BY: RIC ARD L. ALDWELL, COMPLIANF SPEC.
APPROVED AS TO FORM BY WASTEWATER SUPT. LINO VEGA

CML:COMPLETF MIX LAGOON
PML:PARTIAL MIX LAGOON
P.P:PUMPING PLANT PUMPING STATION IS NO LONGER IN SERVICE

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MONTH: February 1992

	WEA	HER	TEMP	RATURE	FLOW	IN	M.G.D.		CML-1			CML-2			PML-1		PML-2		ML-3		PML-4		ML-5	
DATE	RAIN FALL INCHES	WIND DIREC-TION	INFLOW	EFFLUEN	MEXICO	UNITED STATES	PLANT INFLOW	PLANT OUTFLO	DEPTH FEET	TEMPE-ATURE	AERAT HOURS	DEPT FEET	TEMPE-ATUR	AERAT HOURS	DEPT FEET	AERAT HOURS	DEPT FEET	AERAT HOURS	DEPT FEET	AERAT HOURS	DEPT FEET	AERAT HOURS	DEPT FEET	AERAT HOURS
1	0.00	S	58	58					9.5	54	192	9.5	59	192	//////////	//////////	8.8	24	8.8	24	8.8	24	8.8	24
2	0.00		59	60					9.5	58	192	9.5	59	192	//////////	//////////	8.8	24	8.8	24	8.8	24	8.8	24
3	0.06	SW	62	54					9.5	57	192	9.5	56	192	//////////	//////////	8.8	24	8.8	24	8.8	24	8.8	24
4	0.09		63	54					9.5	57	192	9.5	56	192	//////////	//////////	8.8	24	8.8	24	8.8	24	8.8	24
5	0.00		63	53					9.5	57	192	9.5	56	192	//////////	//////////	8.8	24	8.8	24	8.8	24	8.8	24
6	0.00	W	63	55					9.5	59	192	9.5	58	192	//////////	//////////	8.8	24	8.8	24	8.8	24	8.8	24
7	0.54		63	55					9.5	59	192	9.5	58	192	//////////	//////////	8.8	24	8.8	24	8.8	24	8.8	24
8	0.08		62	55					9.5	59	192	9.5	58	192	//////////	//////////	8.8	24	8.8	24	8.8	24	8.8	24
9	0.00		63	55					9.5	55	192	9.5	58	192	//////////	//////////	8.8	24	8.8	24	8.8	24	8.8	24
10	0.01		63	55					9.5	57	192	9.5	57	192	//////////	//////////	8.8	24	8.8	24	8.8	24	8.8	24
11	0.07	S	63	55					9.5	58	192	9.5	58	192	//////////	//////////	8.8	24	8.8	24	8.8	24	8.8	24
12	0.00		63	55					9.5	58	192	9.5	57	192	//////////	//////////	8.8	24	8.8	24	8.8	24	8.8	24
13	0.35	SW	63	55					9.5	57	192	9.5	58	192	//////////	//////////	8.8	24	8.8	24	8.8	24	8.8	24
14	0.05		63	55					9.5	59	192	9.5	58	192	//////////	//////////	8.8	24	8.8	24	8.8	24	8.8	24
15	0.00		63	57					9.5	57	192	9.5	57	192	//////////	//////////	8.8	24	8.8	24	8.8	24	8.8	24
16	0.04		63	55					9.5	57	192	9.5	57	192	//////////	//////////	8.8	24	8.8	24	8.8	24	8.8	24
17	0.00		63	54					9.5	56	192	9.5	56	192	//////////	//////////	8.8	24	8.8	24	8.8	24	8.8	24
18	0.00		63	54					9.5	55	192	9.5	55	192	//////////	//////////	8.8	24	8.8	24	8.8	24	8.8	24
19	0.00	SE	63	55					9.5	57	192	9.5	55	192	//////////	//////////	8.8	24	8.8	24	8.8	24	8.8	24
20	0.00		64	55					9.5	59	192	9.5	57	192	//////////	//////////	8.8	24	8.8	24	8.8	24	8.8	24
21	0.00	W	64	55					9.5	59	192	9.5	57	192	//////////	//////////	8.8	24	8.8	24	8.8	24	8.8	24
22	0.00		65	61					9.5	60	192	9.5	60	192	//////////	//////////	8.8	24	8.8	24	8.8	24	8.8	24
23	0.00		63	58					9.5	59	192	9.5	59	192	//////////	//////////	8.8	24	8.8	24	8.8	24	8.8	24
24	0.00		64	55					9.5	57	192	9.5	57	192	//////////	//////////	8.8	24	8.8	24	8.8	24	8.8	24
25	0.00		64	57					9.5	59	192	9.5	57	192	//////////	//////////	8.8	24	8.8	24	8.8	24	8.8	24
26	0.00	SE	64	57					9.5	57	192	9.5	57	192	//////////	//////////	8.8	24	8.8	24	8.8	24	8.8	24
27	0.00		64	55					9.5	57	192	9.5	56	192	//////////	//////////	8.8	24	8.8	24	8.8	24	8.8	24
28	0.00		64	59					9.5	57	192	9.5	56	192	//////////	//////////	8.8	24	8.8	24	8.8	24	8.8	24
29	0.00	S	63	57					9.5	59	192	9.5	59	192	//////////	//////////	8.8	24	8.8	24	8.8	24	8.8	24
30																								
31																								

	MEXICO	UNITED STATES	PLANT INFLOW	PLANT OUTFLO
TOTAL	0.000	0.000	0.000	0.000
AVERAG				
MAXIMU				
MINIMUM				

MEXIC ______ OF TOTAL FLOW

U.S. = ______ OF TOTAL FLOW

NOG. WASH P.P.=

NOGALES INTERNATIONAL WASTEWATER TREATMENT PLANT

MONTHLY REPORT

PREPAR BY: RIC ARD L. ALDWELL, COMPLIANE SPEC.
APPROVED AS TO FORM BY WASTEWATER SUPT. LINO VEGA

CML: COMPLETE MIX LAGOON
PML PARTIAL MIX LAGOON
P.S.: NOGALES WAS H PUMPING STATION

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MONTH: February 1993

	WEA	HER	TEMP	RATURE	FLOW I	IN LITER	S PER SE	OND	CML-1			CML-2			PML-1		PML-2		ML-3		PML-4		ML-5	
DATE	RAIN FALL INCHES	WIND DIREC-TION	INFLOW	EFFLUEN	MEXICO	UNITED STATES	PLANT INFLOW	PLANT OUTFLO	DEPTH FEET	TEMPE ATURE	AERAT HOURS	DEPT FEET	TEMPE ATUR	AERAT HOURS	DEPT FEET	AERAT HOURS	DEPT FEET	AERAT HOURS	DEPT FEET	AERAT HOURS	DEPT FEET	AERAT HOURS	DEPT FEET	AERAT HOURS
1	0.00	W	62	59	358	268	626	464	9.5	57	96	9.5	59	96	//////////	//////////	8.8	24	8.8	24	8.8	24	8.8	24
2	0.00	SW	61	60	364	270	634	557	9.5	58	96	9.5	59	96	//////////	//////////	8.8	24	8.8	24	8.8	24	8.8	24
3	0.00		61	61	392	296	688	617	9.5	59	96	9.5	58	96	//////////	//////////	8.8	24	8.8	24	8.8	24	8.8	24
4	0.00		60	58	412	308	720	663	9.5	59	96	9.5	59	96	//////////	//////////	8.8	24	8.8	24	8.8	24	8.8	24
5	0.00		63	60	446	306	785	687	9.5	63	96	9.5	61	96	//////////	//////////	8.8	24	8.8	24	8.8	24	8.8	24
6	0.00	SE	61	58	488	272	861	784	9.5	60	96	9.5	59	96	//////////	//////////	8.8	24	8.8	24	8.8	24	8.8	24
7	0.00		63	59	474	262	837	767	9.5	61	96	9.5	61	96	//////////	//////////	8.8	24	8.8	24	8.8	24	8.8	24
8	0.00	SW	62	61	474	292	834	771	9.5	63	96	9.5	62	96	//////////	//////////	8.8	24	8.8	24	8.8	24	8.8	24
9	0.19		63	59	386	290	676	656	9.5	61	96	9.5	61	96	//////////	//////////	8.8	24	8.8	24	8.8	24	8.8	24
10	0.18		63	58	358	267	625	596	9.5	59	96	9.5	59	96	//////////	//////////	8.8	24	8.8	24	8.8	24	8.8	24
11	0.13		62	55	349	259	608	562	9.5	57	96	9.5	57	96	//////////	//////////	8.8	24	8.8	24	8.8	24	8.8	24
12	0.00	W	62	55	346	250	596	551	9.5	58	96	9.5	57	96	//////////	//////////	8.8	24	8.8	24	8.8	24	8.8	24
13	0.00		63	59	343	250	593	543	9.5	62	96	9.5	61	96	//////////	//////////	8.8	24	8.8	24	8.8	24	8.8	24
14	0.10	SW	62	57	371	277	648	569	9.5	58	96	9.5	58	96	//////////	//////////	8.8	24	8.8	24	8.8	24	8.8	24
15	0.30		62	59	383	280	663	611	9.5	58	96	9.5	57	96	//////////	//////////	8.8	24	8.8	24	8.8	24	8.8	24
16	0.80		61	55	352	261	613	585	9.5	57	96	9.5	56	96	//////////	//////////	8.8	24	8.8	24	8.8	24	8.8	24
17	0.00	W	63	57	343	256	599	558	9.5	59	96	9.5	57	96	//////////	//////////	8.8	24	8.8	24	8.8	24	8.8	24
18	0.00		62	57	358	258	616	566	9.5	58	96	9.5	57	96	//////////	//////////	8.8	24	8.8	24	8.8	24	8.8	24
19	0.11		61	57	360	250	610	563	9.5	58	96	9.5	58	96	//////////	//////////	8.8	24	8.8	24	8.8	24	8.8	24
20	0.20	SE	61	58	398	250	648	606	9.5	58	96	9.5	57	96	//////////	//////////	8.8	24	8.8	24	8.8	24	8.8	24
21	0.05		62	58	358	239	597	567	9.5	58	96	9.5	57	96	//////////	//////////	8.8	24	8.8	24	8.8	24	8.8	24
22	0.00		62	58	347	258	605	578	9.5	58	96	9.5	57	96	//////////	//////////	8.8	24	8.8	24	8.8	24	8.8	24
23	0.00	S	62	58	341	254	595	558	9.5	58	96	9.5	58	96	//////////	//////////	8.8	24	8.8	24	8.8	24	8.8	24
24	0.00		62	57	347	264	611	564	9.5	57	96	9.5	57	96	//////////	//////////	8.8	24	8.8	24	8.8	24	8.8	24
25	0.02		61	56	363	269	632	591	9.5	57	96	9.5	57	96	//////////	//////////	8.8	24	8.8	24	8.8	24	8.8	24
26	0.00		63	59	349	285	634	595	9.5	58	96	9.5	59	96	//////////	//////////	8.8	24	8.8	24	8.8	24	8.8	24
27	0.00	W	61	58	338	300	638	591	9.5	59	96	9.5	59	96	//////////	//////////	8.8	24	8.8	24	8.8	24	8.8	24
28	0.02	SW	59	57	383	277	660	617	9.5	58	96	9.5	58	96	//////////	//////////	8.8	24	8.8	24	8.8	24	8.8	24
29																								
30																								
31																								

	MEXICO	UNITED STATES	PLANT INFLOW	PLANT OUTFLO
TOTAL	10,581	7,568	18,452	16,937
AVERAG	378	270	659	605
MAXIMU	488	308	861	784
MINIMUM	338	239	593	543

MEXIC 57 % OF TOTAL FLOW

U.S. = 41 % OF TOTAL FLOW

P.S. = 2 % OF TOTAL FLOW

[illegible] [illegible]

PERSONNEL	FULL TIME SERVICES		EQUIPMENT
CHIEF OPERATOR	1	1	90' D DGE AR S K C R
COMPLIANCE SPEC.	1	1	PICKU 1/2 TON
OPERATORS		2	GRIT TRUCK
ASST. OPERATOR		1	WATER TRUCK
LABORERS		4	BACK HOE
MECHANIC		1	
ELECTRICIAN	VACANT		

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Jan 1993

UTILITIES AND CHLORINE

CONTROL BUILDING

1	POWER CON MPTIO	736,20 00	K W H.
3	$	71,357.4 . 48	
1	CHLO INE & ULTRAVIOLET DISINFECTION AREA		
1		-0-	K W H.
1	$	381.34	
	CHLORINE CONSU	8,544	LBS
	SULPHUR D XIDE:	3,537 7	LBS.

UTILITY COSTS - WATER SERVICE $1,925.50

BILLING DATE: 2/23/92 TO 01/22/93

PERSONNEL SERVICES AND EQUIPMENT UTILIZED OT ER THAN FULL TIME

CLASSI ICATI ON	HRS THIS MONTH
ELECTRICIAN	0
LABORERS	46
OVER TIME (OPERATORS)	130
MOTOR GRADER & OPERATO	0
MECHANIC	2 5

BOUNDARY

DATE 01/21/93
BOD 5 83 mg/l
TSS 276 mg/l

PML-6 DEPT FEET	PML-6 AERAT HOURS	PML-7 DEPT FEET	PML-7 AERATO HOURS	PML-8 DEPT FEET	PML-8 AERATO HOURS	D O MG/l CML-	D O MG/l CML-	D O MG/l EFFLUEN	pH RA	pH CML-	pH CML-	pH EFFLUEN	SUSPENDED SOLIDS MG/L RAW	SUSPENDED SOLIDS MG/L EFFLUEN	SETTLEABLE SOLIDS ML/L EFFLUENT	B O D. MG/L EFF	B O D. MG/L INFLUEN	TOTAL CHLORINE USED (POUNDS)	GRIT REMOVE	FECAL COLIFORM	UV-1 HOURS	UV-2 HOURS	DATE
[illegible]	[illegible]	8 8	24	8.8	24	6.1	6 6	6 2	7.1	7.2	7 3	7.1						360 0		8	192	192	1
[illegible]	[illegible]	8 8	24	8.8	24	6.4	6 2	6 1	7.3	7.3	7 4	7.4						360 0		<2	192	192	2
[illegible]	[illegible]	8 8	24	8.8	24	6.8	6 7	6 3	7.1	7.2	7 5	7.3						340 0		<2	192	192	3
[illegible]	[illegible]	8 8	24	8.8	24	7.3	7.5	6 4	6.9	7.4	7 4	7.2						390 0	5 C/Y	<2	192	192	4
[illegible]	[illegible]	8 8	24	8.8	24	7.0	6 7	6 1	7.0	7.3	7 3	7 2		20		12		310 0	6 C/Y	<2	192	192	5
[illegible]	[illegible]	8 8	24	8.8	24	6.9	7 3	5 6	7.1	7.2	7 3	7.1						160 0		2	192	192	6
[illegible]	[illegible]	8 8	24	8.8	24	7.1	7.0	5 8	6.7	7 3	7 4	7 0	362	21	<0.10	8.5	70 8	340 0	5 C/Y	23	192	192	7
[illegible]	[illegible]	8 8	24	8.8	24	7.0	6 8	5 9	6.8	7.2	7 3	7.1	540				56 7	380 0		17	192	192	8
[illegible]	[illegible]	8 8	24	8.8	24	7.2	6.6	6 0	6.9	7.1	7 4	7.0						260 0		4	192	192	9
[illegible]	[illegible]	8 8	24	8.8	24	7.3	6 4	6 4	6.6	7.1	7 3	7 2						[illegible]		2	192	192	10
[illegible]	[illegible]	8 8	24	8.8	24	7.4	7.6	5 6	6.6	7.3	7 4	6.9						380 0		22	192	192	11
[illegible]	[illegible]	8 8	24	8.8	24	7.7	7 8	5 5	6.7	7.2	7 2	6 8						314 0	5 C/Y	4	192	192	12
[illegible]	[illegible]	8 8	24	8.8	24	6.8	7 2	5 2	6.8	7.3	7 3	7.1		20		14 7		400 0		2	192	192	13
[illegible]	[illegible]	8 8	24	8.8	24	7.3	7 3	5 5	6 7	7.2	7 2	7.0	555	12	<0.10	6 0	164	320 0		21	192	192	14
[illegible]	[illegible]	8 8	24	8.8	24	5.8	6 6	6 0	6.8	7.6	7.6	7.6					52 3	280 0		<2	192	192	15
[illegible]	[illegible]	8 8	24	8.8	24	6.7	6 8	6 2	6.7	7 3	7.3	7.1						310 0		4	192	192	16
[illegible]	[illegible]	8 8	24	8.8	24	6.9	7.3	5 7	6.6	7.3	7 3	7.0						320 0		23	192	192	17
[illegible]	[illegible]	8 8	24	8.8	24	7.2	7 4	5 8	6.7	7.2	7.3	7 0						340 0		23	192	192	18
[illegible]	[illegible]	8 8	24	8.8	24	6.7	6.9	5.9	6.9	7.5	7 6	7.3						320 0		8	192	192	19
[illegible]	[illegible]	8 8	24	8.8	24	6.6	7 3	5 8	6.8	7.5	7 6	7 4				1 4		320 0	6 C/Y	2	192	192	20
[illegible]	[illegible]	8 8	24	8.8	24	6.5	7 1	5 7	6.7	7 6	7 7	7.7	448	22	<0 10	18 5	26	310 0		13	192	192	21
[illegible]	[illegible]	8 8	24	8.8	24	6.4	6.4	6 0	6.9	7.5	7 5	7.0						260 0	5 C/Y	<2	192	192	22
[illegible]	[illegible]	8 8	24	8.8	24	6.3	7 0	7 6	6.9	7.6	7 7	7.3						M		<2	192	192	23
[illegible]	[illegible]	8 8	24	8.8	24	8.0	8 5	7 7	7.0	7.8	7 8	7.4						M		<2	192	192	24
[illegible]	[illegible]	8 8	24	8.8	24	6.7	7.0	6 1	6.9	7 8	7 8	7 4						810 0		<2	192	192	25
[illegible]	[illegible]	8 8	24	8.8	24	6.4	6 5	7 0	6.8	7.6	7 6	7 3						70 0		50	192	192	26
[illegible]	[illegible]	8 8	24	8.8	24	7.1	7 4	6 1	6 8	7.6	7 5	7 3						0	36 C/Y	27	192	192	27
[illegible]	[illegible]	8 8	24	8.8	24	5.8	6 3	6 4	6 7	7.4	7 4	7 3	607	<4	<0.10	6 0	194	0		110	192	192	28
[illegible]	[illegible]	8 8	24	8.8	24	6.5	6 2	6 3	6 8	7 5	7 6	7 2						170 0	6 C/Y &	8	192	192	29
[illegible]	[illegible]	8 8	24	8.8	24	6.2	6 6	6 4	6 7	7 4	7 4	7 2						160 0	62 C/Y	9	192	192	30
[illegible]	[illegible]	8 8	24	8.8	24	6.1	6 2	6 4	6 8	7.4	7 5	7 3						180 0		4	192	192	31

MPN/100ml
ND = None DETECTED
CY = CUBIC YARD GRIT IS COMBINED TOTAL FROM GRIT BASIN INS & GRIT CHAMBERS
M - DATA MISSING

NOGALES INTERNATIONAL WASTEWATER TREATMENT PLANT

MONTHLY REPORT

PREPAR EY: RIC ARD L. ALDWELL, COMPLIANE SPEC.
APPROVED AS TO FORM BY WASTEWATER SUPT. LINO VEGA

CML:COMPLETE MIX LAGOON
PML PARTIAL MIX LAGOON

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MONTH: January 1993

DATE	WEATHER: RAIN FALL INCHES	WEATHER: WIND DIRECTION	TEMPERATURE: INFLOW	TEMPERATURE: EFFLUENT	FLOW IN LITERS PER SECOND: MEXICO	FLOW IN LITERS PER SECOND: UNITED STATES	FLOW IN LITERS PER SECOND: PLANT INFLOW	FLOW IN LITERS PER SECOND: PLANT OUTFLOW	CML-1 DEPTH FEET	CML-1 TEMPERATURE	CML-1 AERAT HOURS	CML-2 DEPT FEET	CML-2 TEMPERATUR	CML-2 AERAT HOURS	PML-1 DEPT FEET	PML-1 AERAT HOURS	PML-2 DEPT FEET	PML-2 AERAT HOURS	ML-3 DEPT FEET	ML-3 AERAT HOURS	PML-4 DEPT FEET	PML-4 AERAT HOURS	ML-5 DEPT FEET	ML-5 AERAT HOURS
1	-0-	SW	58	56	418	171	589	591	9.5	56	96	9.5	57	96	//////////	//////////	8.8	24	8.8	24	8.8	24	8.8	24
2	-0-		61	57	426	144	570	568	9.5	58	96	9.5	58	96	//////////	//////////	8.8	24	8.8	24	8.8	24	8.8	24
3	-0-		62	55	437	133	570	571	9.5	57	96	9.5	56	96	//////////	//////////	8.8	24	8.8	24	8.8	24	8.8	24
4	0.10		63	55	426	208	634	584	9.5	57	96	9.5	57	96	//////////	//////////	8.8	24	8.8	24	8.8	24	8.8	24
5	-0-		63	56	415	175	590	577	9.5	59	96	9.5	58	96	//////////	//////////	8.8	24	8.8	24	8.8	24	8.8	24
6	0.06		64	57	565	223	788	698	9.5	58	96	9.5	58	96	//////////	//////////	8.8	24	8.8	24	8.8	24	8.8	24
7	0.89	W	63	59	593	239	832	713	9.5	59	96	9.5	59	96	//////////	//////////	8.8	24	8.8	24	8.8	24	8.8	24
8	0.36		63	59	672	265	937	811	9.5	58	96	9.5	58	96	//////////	//////////	8.8	24	8.8	24	8.8	24	8.8	24
9	0.08	SE	62	58	517	204	721	698	9.5	57	96	9.5	57	96	//////////	//////////	8.8	24	8.8	24	8.8	24	8.8	24
10	0.03		61	57	556	222	778	679	9.5	58	96	9.5	57	96	//////////	//////////	8.8	24	8.8	24	8.8	24	8.8	24
11	0.78	SW	60	57	610	248	858	803	9.5	58	96	9.5	58	96	//////////	//////////	8.8	24	8.8	24	8.8	24	8.8	24
12	0.05		61	57	528	222	750	694	9.5	58	96	9.5	57	96	//////////	//////////	8.8	24	8.8	24	8.8	24	8.8	24
13	0.21		62	57	590	234	824	763	9.5	58	96	9.5	59	96	//////////	//////////	8.8	24	8.8	24	8.8	24	8.8	24
14	0.03		61	57	553	226	779	743	9.5	58	96	9.5	58	96	//////////	//////////	8.8	24	8.8	24	8.8	24	8.8	24
15	0.02		62	57	519	227	746	707	9.5	59	96	9.5	59	96	//////////	//////////	8.8	24	8.8	24	8.8	24	8.8	24
16	0.20		63	59	514	248	762	689	9.5	60	96	9.5	59	96	//////////	//////////	8.8	24	8.8	24	8.8	24	8.8	24
17	1.15	W	63	59	616	244	860	758	9.5	61	96	9.5	61	96	//////////	//////////	8.8	24	8.8	24	8.8	24	8.8	24
18	1.45		60	59	774	302	1076	938	9.5	59	96	9.5	58	96	//////////	//////////	8.8	24	8.8	24	8.8	24	8.8	24
19	0.14		59	55	641	247	888	872	9.5	58	96	9.5	57	96	//////////	//////////	8.8	24	8.8	24	8.8	24	8.8	24
20	-0-	SW	63	55	547	214	761	727	9.5	64	96	9.5	64	96	//////////	//////////	8.8	24	8.8	24	8.8	24	8.8	24
21	-0-		63	55	508	200	708	678	9.5	64	96	9.5	64	96	//////////	//////////	8.8	24	8.8	24	8.8	24	8.8	24
22	-0-		63	54	477	189	666	634	9.5	59	96	9.5	59	96	//////////	//////////	8.8	24	8.8	24	8.8	24	8.8	24
23	0-		64	57	474	186	660	623	9.5	59	96	9.5	59	96	//////////	//////////	8.8	24	8.8	24	8.8	24	8.8	24
24	-0-		66	58	440	179	619	595	9.5	59	96	9.5	58	96	//////////	//////////	8.8	24	8.8	24	8.8	24	8.8	24
25	-0-		63	59	443	179	622	471	9.5	62	96	9.5	61	96	//////////	//////////	8.8	24	8.8	24	8.8	24	8.8	24
26	-0-		63	56	466	189	655	498	9.5	60	96	9.5	58	96	//////////	//////////	8.8	24	8.8	24	8.8	24	8.8	24
27	0-		63	55	480	193	673	608	9.5	59	96	9.5	59	96	//////////	//////////	8.8	24	8.8	24	8.8	24	8.8	24
28	0.39	W	63	55	468	190	658	804	9.5	61	96	9.5	60	96	//////////	//////////	8.8	24	8.8	24	8.8	24	8.8	24
29	-0-		63	57	449	179	628	663	9.5	60	96	9.5	59	96	//////////	//////////	8.8	24	8.8	24	8.8	24	8.8	24
30	-0-	SW	63	60	443	178	621	604	9.5	60	96	9.5	60	96	//////////	//////////	8.8	24	8.8	24	8.8	24	8.8	24
31	-0-		63	60	418	163	581	574	9.5	61	96	9.5	60	96	//////////	//////////	8.8	24	8.8	24	8.8	24	8.8	24

	MEXICO	UNITED STATES	PLANT INFLOW	PLANT OUTFLOW
TOTAL	15,983	6,416	22,399	20,936
AVERAG	516	207	723	675
MAXIMU	774	302	1,076	938
MINIMUM	415	133	570	471

MEXIC 71 % OF TOTAL FLOW

U.S. = 29 % OF TOTAL FLOW

FULL TIME SERVICES				UTILITIES AND CHLORINE			PERSONNEL SERVICES AND EQUIPMENT UTILIZED OTHER THAN FULL TIME		BOUNDARY
PERSONNEL		EQUIPMENT		CONTROL BUILDING			CLASSIFICATION	HRS THIS MONTH	
CHIEF OPERATOR	1	90' DREDGE AR SKC R	1	POWER CONSUMPTION	685,800 0	K.W.H.			DATE. 12/03/92 BOD 5 125 mg/l TSS 189 mg/l
COMPLIANCE SPEC	1	PICKUP 1/2 TON	3	$	66,629.2 2		ELECTRICIAN (CITY)	25	
OPERATORS	2	GRIT TRUCK	1	CHLORINE & ULTRAVIOLET DISINFECTION AREA			LABORERS (CITY)	30	DATE. 12/10/92 BOD 5 126 mg/l TSS 160 mg/l
ASST. OPERATOR	1	WATER TRUCK	1		35	K.W.H.	OVER TIME (OPERATORS)	33	
LABORERS	4	BACK HOE	1	$	381.34		MOTOR GRADER & OPERATOR	0	DATE. 12/17/92 BOD-5 89 mg/l TSS 266 mg/l
MECHANIC	1			CHLORINE CONSUMED	7,040 0	LBS			
ELECTRICIAN	VACANT			SULPHUR DIOXIDE	3,974 4	LBS.			
				UTILITY COSTS - WATER SERVICE	$1933 47				DATE 12/24/92 BOD 5 74 7 mg/l TSS 163 mg/l
Page 2									
Dec 1992				BILLING DATE:	1/23/92 to 12/23/92				DATE. 12/31/92 BOD 5 86 mg/l TSS 115 mg/l

PML-6		PML-7		PML-8		D.O. MG/L			pH				SUSPENDED SOLIDS MG/L		SETTLEABLE SOLIDS ML/L	B O D MG/L		TOTAL CHLORINE					
DEPT FEET	AERAT HOURS	DEPT FEET	AERATO HOURS	DEPT FEET	AERATO HOURS	CML-	CML-	EFFLUEN	RA	CML-	CML-	EFFLUEN	RAW	EFFLUEN	EFFLUENT	EFF	INFLUEN	USED (POUNDS)	GRIT REMOVE	FECAL COLIFORM	UV-1 HOURS	UV-2 HOURS	DATE
[illegible]	[illegible]	8.8	24	8.8	24	7.3	6.9	7.6	7.6	7.7	7.5	7.5						200.0	6 C/Y	80	192	192	1
[illegible]	[illegible]	8.8	24	8.8	24	7.2	6.8	7.7	7.6	7.7	7.5	7.4		21		9.0		200.0	6 C/Y	23	192	192	2
[illegible]	[illegible]	8.8	24	8.8	24	6.7	6.0	5.4	7.2	7.4	7.3	7.3	610	26	<0.10	12.8	209	180.0	4.5 C/Y	21	192	192	3
[illegible]	[illegible]	8.8	24	8.8	24	6.4	5.6	7.5	7.6	7.5	7.4	7.3	376				105	250.0	5.5 C/Y	240	192	192	4
[illegible]	[illegible]	8.8	24	8.8	24	6.6	6.0	5.1	7.7	7.8	7.7	7.7						210.0		80	192	192	5
[illegible]	[illegible]	8.8	24	8.8	24	5.8	8.0	5.6	7.4	8.2	7.6	7.7						200.0		4	192	192	6
[illegible]	[illegible]	8.8	24	8.8	24	6.2	6.9	5.0	6.9	7.3	7.4	7.2						280.0	5.5 C/Y	8	192	192	7
[illegible]	[illegible]	8.8	24	8.8	24	6.6	7.5	5.8	6.8	7.2	7.3	7.2						120.0		8	192	192	8
[illegible]	[illegible]	8.8	24	8.8	24	7.2	7.8	6.2	6.7	7.2	7.3	7.1		18.6		11.5		240.0		300	192	192	9
[illegible]	[illegible]	8.8	24	8.8	24	7.1	7.5	6.1	6.7	7.2	7.3	7.1	91	12	<0.10	8.2	57	190.0	6.5 C/Y	22	192	192	10
[illegible]	[illegible]	8.8	24	8.8	24	3.3	7.2	6.6	6.8	7.3	7.2	7.1	230				139	220.0		80	192	192	11
[illegible]	[illegible]	8.8	24	8.8	24	6.3	7.7	5.3	6.6	7.2	7.2	7.0						230.0		2	192	192	12
[illegible]	[illegible]	8.8	24	8.8	24	8.0	8.2	6.6	6.8	7.1	7.2	7.1						230.0		23	192	192	13
[illegible]	[illegible]	8.8	24	8.8	24	7.1	7.6	7.6	6.9	M	7.5	7.2						220.0	4.5 C/Y	23	192	192	14
[illegible]	[illegible]	8.8	24	8.8	24	7.1	7.2	7.2	6.7	7.2	7.3	7.1						190.0	6 C/Y	70	192	192	15
[illegible]	[illegible]	8.8	24	8.8	24	7.0	5.8	7.7	6.5	7.1	7.1	7.1		16.6				170.0		110	192	192	16
[illegible]	[illegible]	8.8	24	8.8	24	7.1	6.6	5.8	6.8	7.2	7.2	7.2		14	<0.10			230.0	5.5 C/Y	240	192	192	17
[illegible]	[illegible]	8.8	24	8.8	24	5.9	6.1	6.0	6.7	7.4	7.4	7.1				10.4		140.0		17	192	192	18
[illegible]	[illegible]	8.8	24	8.8	24	6.2	6.1	6.1	6.6	7.3	7.2	7.2						230.0		4	192	192	19
[illegible]	[illegible]	8.8	24	8.8	24	6.1	5.9	6.2	6.7	7.3	7.3	7.3						260.0	6.5 C/Y	<2	192	192	20
[illegible]	[illegible]	8.8	24	8.8	24	7.8	7.6	6.6	6.8	7.3	7.4	7.4						240.0	6.5 C/Y	<2	192	192	21
[illegible]	[illegible]	8.8	24	8.8	24	6.9	7.1	6.0	6.6	7.2	7.5	7.3		4 & 10				210.0	6.5 C/Y	<2	192	192	22
[illegible]	[illegible]	8.8	24	8.8	24	7.1	7.2	6.6	6.7	7.4	7.4	7.3						240.0	6 C/Y	17	192	192	23
[illegible]	[illegible]	8.8	24	8.8	24	6.6	6.0	5.4	7.1	7.3	7.2	7.1	238	29	<0.10		99	220.0		<2	192	192	24
[illegible]	[illegible]	8.8	24	8.8	24	7.0	6.4	6.7	6.8	7.4	7.4	7.2				10.6		210.0		<2	192	192	25
[illegible]	[illegible]	8.8	24	8.8	24	7.5	7.6	6.2	6.9	7.3	7.3	7.1						210.0	5 C/Y	<2	192	192	26
[illegible]	[illegible]	8.8	24	8.8	24	7.0	6.6	7.6	6.8	7.4	7.4	7.2						230.0		<2	192	192	27
[illegible]	[illegible]	8.8	24	8.8	24	7.4	7.2	6.2	6.7	7.4	7.3	7.2						210.0	5 C/Y	<2	192	192	28
[illegible]	[illegible]	8.8	24	8.8	24	7.6	7.8	6.4	6.8	7.4	7.4	7.2						260.0	5 C/Y	<2	192	192	29
[illegible]	[illegible]	8.8	24	8.8	24	7.2	6.5	4.9	6.9	7.3	7.3	7.1						380.0		<2	192	192	30
[illegible]	[illegible]	8.8	24	8.8	24	7.0	6.3	6.5	6.8	7.3	7.3	7.5	471	23	<0.10	13.1	124	140.0		<2	192	192	31

M = DATA MISSING DUE TO WX CONDITIONS

MPN/100ML
CY = CUBIC YARD
GRIT BEING REMOVED FROM
NEW GRIT BASINS NOT FROM
GRIT CHAMBER REMOVED 45 C/Y
ADDITIONAL GRIT FROM GRIT CHAMBERS

NOGALES INTERNATIONAL WASTEWATER TREATMENT PLANT

MONTHLY REPORT

PREPAR BY: RIC ARD L. ALDWELL, COMPLIAN E SPEC.
APPROVED AS TO FORM BY WASTEWATER SUPT. LINO VEGA

CML COMPLETE MIX LAGOON
PML PARTIAL MIX LAGOON

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MONTH Dec. 1992

	WEATHER		TEMPERATURE		FLOW IN M.G.D.				CML-1			CML-2			PML-1		PML 2		ML 3		PML 4		ML 5	
DATE	RAIN FALL INCHES	WIND DIRECTION	INFLOW	EFFLUENT	MEXICO	UNITED STATES	PLANT INFLOW	PLANT OUTFLOW	DEPTH FEET	TEMPERATURE	AERAT HOURS	DEPT FEET	TEMPE ATUR	AERAT HOURS	DEPT FEET	AERAT HOURS	DEPT FEET	AERAT HOURS	DEPT FEET	AERAT HOURS	DEPT FEET	AERAT HOURS	DEPT FEET	AERAT HOURS
1	0-	SE	66	54	7.834	3.551	11.385	11.559	9.5	57	96	9.5	56	96	//////////	//////////	8.8	24	8.8	24	8.8	24	8.8	24
2	0-		66	55	7.898	3.585	11.483	11.034	9.5	57	96	9.5	56	96	//////////	//////////	8.8	24	8.8	24	8.8	24	8.8	24
3	0.03	SW	65	57	9.837	3.619	13.456	12.213	9.5	60	96	9.5	59	96	//////////	//////////	8.8	24	8.8	24	8.8	24	8.8	24
4	0.50	W	64	56	12.487	5.300	17.787	16.135	9.5	59	96	9.5	57	96	//////////	//////////	8.8	24	8.8	24	8.8	24	8.8	24
5	1.50		62	57	11.368	4.673	16.061	17.477	9.5	58	96	9.5	58	96	//////////	//////////	8.8	24	8.8	24	8.8	24	8.8	24
6	0-	S	64	56	8.739	3.591	12.330	12.600	9.5	58	96	9.5	58	96	//////////	//////////	8.8	24	8.8	24	8.8	24	8.8	24
7	0-		64	57	8.803	3.613	12.416	11.876	9.5	59	96	9.5	59	96	//////////	//////////	8.8	24	8.8	24	8.8	24	8.8	24
8	0.39	SW	61	56	12.100	3.638	15.738	13.767	9.5	58	96	9.5	58	96	//////////	//////////	8.8	24	8.8	24	8.8	24	8.8	24
9	0.12		63	56	9.579	3.900	13.479	13.364	9.5	58	96	9.5	57	96	//////////	//////////	8.8	24	8.8	24	8.8	24	8.8	24
10	-0-	SE	63	56	9.449	3.797	13.246	12.319	9.5	58	96	9.5	57	96	//////////	//////////	8.8	24	8.8	24	8.8	24	8.8	24
11	-0-		64	57	9.708	4.060	13.768	12.693	9.5	57	96	9.5	58	96	//////////	//////////	8.8	24	8.8	24	8.8	24	8.8	24
12	TRACE		63	57	10.290	3.800	14.090	13.154	9.5	59	96	9.5	58	96	//////////	//////////	8.8	24	8.8	24	8.8	24	8.8	24
13	0.05		64	55	9.320	3.770	13.090	13.461	9.5	57	96	9.5	56	96	//////////	//////////	8.8	24	8.8	24	8.8	24	8.8	24
14	-0-		63	54	9.320	3.968	13.288	13.122	9.5	56	96	9.5	55	96	//////////	//////////	8.8	24	8.8	24	8.8	24	8.8	24
15	-0-		63	53	9.126	4.087	13.213	13.381	9.5	56	96	9.5	55	96	//////////	//////////	8.8	24	8.8	24	8.8	24	8.8	24
16	0-		63	54	9.579	3.894	13.473	13.414	9.5	57	96	9.5	57	96	//////////	//////////	8.8	24	8.8	24	8.8	24	8.8	24
17	0-		61	52	9.126	3.785	12.911	12.718	9.5	55	96	9.5	55	96	//////////	//////////	8.8	24	8.8	24	8.8	24	8.8	24
18	0-		63	55	9.126	3.555	12.681	12.168	9.5	57	96	9.5	57	96	//////////	//////////	8.8	24	8.8	24	8.8	24	8.8	24
19	0.10	W	62	54	9.578	3.669	13.247	12.542	9.5	56	96	9.5	56	96	//////////	//////////	8.8	24	8.8	24	8.8	24	8.8	24
20	0.02		62	55	8.673	3.744	12.417	12.016	9.5	56	96	9.5	57	96	//////////	//////////	8.8	24	8.8	24	8.8	24	8.8	24
21	0-	SE	61	53	9.255	3.523	12.778	12.200	9.5	55	96	9.5	55	96	//////////	//////////	8.8	24	8.8	24	8.8	24	8.8	24
22	0-		62	50	9.514	3.393	12.907	12.436	9.5	56	96	9.5	56	96	//////////	//////////	8.8	24	8.8	24	8.8	24	8.8	24
23	0-		61	54	9.126	3.752	12.878	12.268	9.5	55	96	9.5	56	96	//////////	//////////	8.8	24	8.8	24	8.8	24	8.8	24
24	0-		63	55	9.190	3.832	13.022	12.566	9.5	58	96	9.5	57	96	//////////	//////////	8.8	24	8.8	24	8.8	24	8.8	24
25	0-		63	55	8.609	3.560	12.169	12.164	9.5	59	96	9.5	59	96	//////////	//////////	8.8	24	8.8	24	8.8	24	8.8	24
26	0		63	59	8.867	3.705	12.572	11.966	9.5	59	96	9.5	58	96	//////////	//////////	8.8	24	8.8	24	8.8	24	8.8	24
27	0-		63	57	8.803	3.578	12.381	12.109	9.5	59	96	9.5	58	96	//////////	//////////	8.8	24	8.8	24	8.8	24	8.8	24
28	0.16	W	63	59	11.970	4.750	16.720	14.887	9.5	59	96	9.5	59	96	//////////	//////////	8.8	24	8.8	24	8.8	24	8.8	24
29	0.73		63	60	11.711	4.636	16.347	15.875	9.5	61	96	9.5	61	96	//////////	//////////	8.8	24	8.8	24	8.8	24	8.8	24
30	0.05		63	59	11.194	3.955	15.149	13.664	9.5	61	96	9.5	60	96	//////////	//////////	8.8	24	8.8	24	8.8	24	8.8	24
31	0.01	SW	63	55	10.612	3.889	14.501	13.869	9.5	59	96	9.5	59	96	//////////	//////////	8.8	24	8.8	24	8.8	24	8.8	24

	MEXICO	UNITED STATES	PLANT INFLOW	PLANT OUTFLO
TOTAL	300.811	120.172	420.983	405.017
AVERAG	9.704	3.877	13.580	13.065
MAXIMU	12.487	5.300	17.787	17.477
MINIMUM	7.834	3.393	11.385	11.034

MEXIC 60 % OF TOTAL FLOW

U.S. = 40 % OF TOTAL FLOW

FULL TIME SERVICES			
PERSONNEL		EQUIPMENT	
CHIEF OPERATOR	1	90'D DGE AR SKC R	
COMPLIANCE SPEC.	1	PICKU 1/2 TON	
OPERATORS	2	GRIT TRUCK	
ASST OPERATOR	1	WATER TRUCK	
LABORERS	4	BACK HOE	
MECHANIC	1		
ELECTRICIAN			

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Nov. 1992

UTILITIES AND CHLORINE

CONTROL BUILDING

1	POWER CONSUMPTION	669,60 00	K.W.H.
3	$	65,141.8 . 81	
1	CHLORINE & ULTRAVIOLET DISINFECTION AREA		
1		-0-	K.W.H.
1	$	608.08	
	CHLORINE CONSU	6210	LBS
	SULPHUR D XIDE:	3946 6	LBS.

UTILITY COSTS - WATER SERVICE $ 1210.57

BILLING DAT E: 10/2/22/92 TO 11/23/92

PERSONNEL SERVICES AND EQUIPMENT UTILIZED OTHER THAN FULL TIME

CLASSIFICATION	HRS THIS MONTH
ELECTRICIAN	0
LABORERS	79
OVER TIME (OPERATORS)	98
MOTOR GRADER & OPERATO	16
MECHANIC	4
TOTAL HOURS OVERTIME	197

BOUNDARY

DATE: 11/05/92
BOD 5 117 mg/l
TSS 54 mg/l

DATE 11/1.5/92
BOD 5 105 mg/l
TSS 179 mg/l

DATE 11/19/92
BOD 5 138 mg/l
TSS 198 mg/l

DATE 11/25/92
BOD 5 99 3 mg/l
TSS 200 mg/l

PML-6		PML-7		PML-8		D.O. MG/L			pH				SUSPENDED SOLIDS MG/L		SETTLEABLE SOLIDS ML/L	B.O.D MG/L		TOTAL CHLORINE					
DEPT FEET	AERAT HOURS	DEPT FEET	AERATO HOURS	DEPT FEET	AERATO HOURS	CML-	CML-	EFFLUEN	RA	CML-	CML-	EFFLUEN	RAW	EFFLUEN	EFFLUENT	EFF	INFLUEN	USED (POUNDS)	GRIT REMOVE	FECAL COLIFORM	UV 1 HOURS	UV-2 HOURS	DATE
//////	//////	8 8	24	8.8	24	5.4	5.7	4.4	6.9	7.3	7.3	7.1						310 0	-0-	<2	192	192	1
//////	//////	8 8	24	8.8	24	5.3	7 2	6 2	7.0	7.3	7.4	7.2						340 0	"	<2	192	192	2
//////	//////	8 8	24	8.8	24	6.2	6.1	6 8	7.1	7.3	7.3	7.1						330 0	"	<2	192	192	3
//////	//////	8 8	24	8.8	24	5.3	6.2	7.7	7.0	7.2	7.3	7.2		14.0		7.5		230 0	"	<2	192	192	4
//////	//////	8 8	24	8.8	24	5.0	5.9	6 5	7.0	7.2	7 3	7.2	143	8.0	<0.10	14 8	49 5	190 0	"	2	192	192	5
//////	//////	8 8	24	8.8	24	5.2	5.8	6 3	7.0	7.3	7.3	7.2	124				158	190 0	"	<2	192	192	6
//////	//////	8 8	24	8.8	24	5.2	5.6	6 2	7.1	7.5	7.2	7.2						190 0	"	<2	192	192	7
//////	//////	8 8	24	8.8	24	5.6	5 7	6 5	7.1	7.3	7 2	7.2						170 0	"	<2	192	192	8
//////	//////	8 8	24	8.8	24	5.5	4 5	5 2	7.1	7.5	7 2	7.3						180 0	"	<2	192	192	9
//////	//////	8 8	24	8.8	24	5.6	4.7	5 6	7.1	7.5	7 2	7.2						200 0	"	<2	192	192	10
//////	//////	8 8	24	8.8	24	5.6	7.1	7.1	6.9	7.2	7.3	7.1						240 0	"	<2	192	192	11
//////	//////	8 8	24	8.8	24	0.5	6.0	7 6	6.9	7.3	7.2	7.3	24	6 0		15.6	94.1	180 0	"	<2	192	192	12
//////	//////	8.8	24	8.8	24	3.4	6 2	5.4	7.0	7.0	7.1	6.9	126	9.0	<0.10	8 2	110	160 0	"	<2	192	192	13
//////	//////	8 8	24	8.8	24	1.9	4 5	5 0	7.0	7.1	7 1	7.0						80 0	"	<2	192	192	14
//////	//////	8 8	24	8.8	24	1.8	4 0	5 2	7.1	7.0	7 0	7.1						280 0	"	<2	192	192	15
//////	//////	8 8	24	8.8	24	6.7	4 4	5 3	7.0	7.0	7 1	7.1						160 0	"	<2	192	192	16
//////	//////	8 8	24	8.8	24	7.4	8 8	7 9	7.0	7.3	7 3	7.1						220 0	"	<2	192	192	17
//////	//////	8 8	24	8.8	24	4.8	5 2	6 6	7.1	7.1	7 2	7.1		20		14.5		190 0	"	2	192	192	18
//////	//////	8 8	24	8.8	24	4.4	5.8	7 7	7.1	7.2	7 2	7.2	71			12 0	53 2	170 0	"	13	192	192	19
//////	//////	8 8	24	8.8	24	4.4	5 3	5 4	7.0	7.2	7.2	7 3	120				80 7	180 0	"	13	192	192	20
//////	//////	8 8	24	8.8	24	6.2	6 0	5 7	7.3	7 3	7 3	7.2						220 0	"	2	192	192	21
//////	//////	8 8	24	8.8	24	5.4	6.1	6 3	7.2	7.3	7 3	7.2						240 0	"	<2	192	192	22
//////	//////	8 8	24	8.8	24	5.6	5.7	6 2	7.1	7.2	7 2	7.3						220 0	"	2	192	192	23
//////	//////	8 8	24	8 8	24	6.1	6 9	6 1	7.2	7.1	7.1	7.2						210 0	"	2	192	192	24
//////	//////	8 8	24	8.8	24	5.3	6 1	7 0	7.2	7.6	7 6	7.5	230	68	<0 10	8 5	182	190 0	7 C/Y	2	192	192	25
//////	//////	8 8	24	8.8	24	5.4	6 0	6 9	7 2	7 6	7 5	7 4		28				170 0		[illegible]	192	192	26
//////	//////	8 8	24	8.8	24	7.5	6 9	7 0	7 2	7.6	7 5	7 4	227				138	190 0		13	192	192	27
//////	//////	8 8	24	8.8	24	7.6	6 8	6 9	7.3	7 6	7 5	7.4						180 0		4	192	192	28
//////	//////	8 8	24	8.8	24	7.5	6 6	6 9	7.3	7.6	7 3	7.5						200 0	11 5 C/Y	2	192	192	29
//////	//////	8 8	24	8.8	24	7.2	6.9	6 2	7 5	7.7	7 7	7 6						200 0	6 C/Y	7	192	192	30
																					192	192	31

MPN/100Ml
ND – NONE DETECTED
CY = CUBIC YARD
NOTE: GRIT BASIS OFF LINE PRIOR TO 11/25/92 NO GRIT REMOVED UNTIL AFTER THIS DATE

NOGALES INTERNATIONAL WASTEWATER TREATMENT PLANT

MONTHLY REPORT

PREPAR BY: RIC ARD L. ALDWELL, COMPLIANE SPEC.
APPROVED AS TO FORM BY WASTEWATER SUPT. LINO VEGA

CML COMPLETE MIX LAGOON
PML PARTIAL MIX LAGOON

Page 1

MONTH Nov. 1992

	WEA	HER	TEMP	RATURE		FLOW	IN	M.G.D	CML-1			CML-2			PML-1		PML-2		ML-3		PML-4		ML-5	
DATE	RAIN FALL INCHES	WIND DIREC-TION	INFLOW	EFFLUEN	MEXICO	UNITED STATES	PLANT INFLOW	PLANT OUTFLO	DEPTH FEET	TEMPE ATURE	AERAT HOURS	DEPT FEET	TEMPE ATUR	AERAT HOURS	DEPT FEET	AERAT HOURS	DEPT FEET	AERAT HOURS	DEPT FEET	AERAT HOURS	DEPT FEET	AERAT HOURS	DEPT FEET	AERAT HOURS
1	0.00	SE	72	66	7.510	3.671	11.181	11.061	9.5	68	96	9.5	67	96	//////////	//////////	8.8	12	8.8	12	8.8	12	8.8	24
2	0.00		71	63	7.704	3.800	11.504	11.085	9.5	65	96	9.5	64	96	//////////	//////////	8.8	12	8.8	12	8.8	12	8.8	24
3	0.00		71	63	8.480	3.542	12.022	11.612	9.5	64	96	9.5	64	96	//////////	//////////	8.8	12	8.8	12	8.8	12	8.8	24
4	0.00		69	61	8.092	3.671	11.763	11.595	9.5	63	96	9.5	63	96	//////////	//////////	8.8	12	8.8	12	8.8	12	8.8	24
5	0.00		69	61	8.351	3.864	12.215	11.756	9.5	64	96	9.5	64	96	//////////	//////////	8.8	12	8.8	12	8.8	12	8.8	24
6	0.00		69	61	8.609	3.865	12.474	12.632	9.5	64	96	9.5	64	96	//////////	//////////	8.8	12	8.8	12	8.8	12	8.8	24
7	0.00	W	69	61	8.351	3.735	12.086	12.704	9.5	64	96	9.5	64	96	//////////	//////////	8.8	12	8.8	12	8.8	12	8.8	24
8	0.00		68	60	7.834	3.477	11.311	11.926	9.5	64	96	9.5	64	96	//////////	//////////	8.8	12	8.8	12	8.8	12	8.8	24
9	0.00		68	61	8.609	3.865	12.474	12.207	9.5	62	96	9.5	62	96	//////////	//////////	8.8	12	8.8	12	8.8	12	8.8	24
10	0.00	S	68	60	8.802	3.877	12.679	12.315	9.5	62	96	9.5	62	96	//////////	//////////	8.8	12	8.8	12	8.8	12	8.8	24
11	0.00		69	55	8.738	4.241	12.979	12.086	9.5	59	96	9.5	60	96	//////////	//////////	8.8	12	8.8	12	8.8	12	8.8	24
12	0.00	SE	68	59	9.126	3.986	13.112	11.605	9.5	64	96	9.5	64	96	//////////	//////////	8.8	12	8.8	12	8.8	12	8.8	24
13	0.00		66	60	8.673	5.182	13.855	11.778	9.5	64	96	9.5	62	96	//////////	//////////	8.8	12	8.8	12	8.8	12	8.8	24
14	0.00		69	61	8.738	5.355	14.093	11.284	9.5	65	96	9.5	64	96	//////////	//////////	8.8	12	8.8	12	8.8	12	8.8	24
15	0.00		68	61	8.286	5.613	13.899	12.368	9.5	64	96	9.5	64	96	//////////	//////////	8.8	12	8.8	12	8.8	12	8.8	24
16	0.00		68	59	8.350	5.774	14.124	11.494	9.5	64	96	9.5	64	96	//////////	//////////	8.8	12	8.8	12	8.8	12	8.8	24
17	0.00		68	59	8.221	5.589	13.810	11.390	9.5	63	96	9.5	61	96	//////////	//////////	8.8	12	8.8	12	8.8	12	8.8	24
18	0.00		68	60	8.157	5.842	13.999	11.015	9.5	62	96	9.5	61	96	//////////	//////////	8.8	12	8.8	12	8.8	12	8.8	24
19	0.01		68	59	8.156	6.432	14.588	11.208	9.5	63	96	9.5	62	96	//////////	//////////	8.8	12	8.8	12	8.8	12	8.8	24
20	0.00	W	67	55	8.028	6.426	14.454	10.578	9.5	61	96	9.5	61	96	//////////	//////////	8.8	12	8.8	12	8.8	12	8.8	24
21	0.00		66	57	8.156	5.911	14.067	11.069	9.5	59	96	9.5	59	96	//////////	//////////	8.8	12	8.8	12	8.8	12	8.8	24
22	0.00		66	55	7.704	4.765	12.469	10.743	9.5	59	96	9.5	59	96	//////////	//////////	8.8	12	8.8	12	8.8	12	8.8	24
23	0.00		66	52	8.157	5.121	13.278	11.324	9.5	59	96	9.5	59	96	//////////	//////////	8.8	12	8.8	12	8.8	12	8.8	24
24	0.00	SW	66	55	8.480	5.463	13.943	11.675	9.5	59	96	9.5	59	96	//////////	//////////	8.8	12	8.8	12	8.8	12	8.8	24
25	0.00		65	55	8.286	5.324	13.610	11.611	9.5	59	96	9.5	59	96	//////////	//////////	8.8	12	8.8	12	8.8	12	8.8	24
26	0.00		68	55	8.092	5.296	13.388	11.429	9.5	59	96	9.5	58	96	//////////	//////////	8.8	12	8.8	12	8.8	12	8.8	24
27	0.00		68	55	7.834	5.112	12.946	11.359	9.5	56	96	9.5	55	96	//////////	//////////	8.8	12	8.8	12	8.8	12	8.8	24
28	0.00		62	55	8.157	5.342	13.499	9.996	9.5	56	96	9.5	55	96	//////////	//////////	8.8	12	8.8	12	8.8	12	8.8	24
29	0.00		62	55	8.222	3.446	11.668	11.122	9.5	56	96	9.5	53	96	//////////	//////////	8.8	12	8.8	12	8.8	12	8.8	24
30	0.00		64	52	8.480	3.459	11.939	11.567	9.5	57	96	9.5	56	96	//////////	//////////	8.8	12	8.8	12	8.8	12	8.8	24
31																								

TOTAL	248.383	141 046	389 429	345.594
AVERAG	8.279	4 702	12 981	11 520
MAXIMU	7.510	6 432	14 588	12.704
MINIMUM:)	9.126	3 446	11 181	9 996

MEXIC 64 % OF TOTAL FLOW

US = 36 % OF TOTAL FLOW

ULL TIM SERVICES				UTILITIES AND CH HLORINE				PERSONNEL SERVICES AND EQUIPMENT UTILIZED OT ER THAN FULL TIME		BOUNDARY
PERSONNEL		EQUIPMENT		CONTROL BUILDING				CLASSI ICATI ON	HRS.THIS MONTH	
CHIEF OPERATOR	1	90' D DGE AR S K C R	1	POWER CON MPTIO	658,80 00	K.W.H.				DATE 10/02/92 BOD-5 : 98 0 mg/l TSS : 118 mg/l
COMPLIANCE SPEC.	1	PICKU 1/2 TON	3	$	64,150.1 . 19			ELECTRICIAN	0	
OPERATORS	2	GRIT TRUCK	1	CHLO INE & ULTRAVIOLET DISINFECTION AREA				LABORERS	0	DATE 10/08/92 BOD-5 : 102 mg/l TSS . 202 mg/l
ASST. OPERATOR	1	WATER TRUCK	1		-0-	K.W.H.		OVER TIME (OPERATORS)	31	
LABORERS	3	BACK HOE	1	$	17.48			MOTOR GRADER & OPERATO	0	DATE : 10/15/92 BOD-5 ; 112.1 mg/l TSS : 136 mg/l
MECHANIC	1			CHLORINE CONSU	10,130 0	LBS				
ELECTRICIAN				SULPHUR D XIDE:	3,742 2	LBS.				DATE 10/22/92 BOD-5 : 108 mg/l TSS : 156 mg/l
Page 2				UTILITY COSTS - WATER SERVICE	$1,848.02					
Oct 1992				BILLING DATE:	9/24/92 TO O 10/22/92					DATE : 10/29/92 BOD 5 : 123 mg/l TSS : 179 mg/l

PML-6		PML-7		PML-8		D.O. MG/L			p H				SUSPENDED SOLIDS MG/L		SETTLEABLE SOLIDS ML/L	B O D. MG/L		TOTAL CHLORINE USED					
DEPT FEET	AERAT HOURS	DEPT FEET	AERATO HOURS	DEPT FEET	AERATO HOURS	CML-	CML-	EFFLUEN	RA	CML-	CML-	EFFLUEN	RAW	EFFLUEN	EFFLUENT	EFF	INFLUEN	(POUNDS)	GRIT REMOVE	FECAL COLIFORM	UV-1 HOURS	UV-2 HOURS	DATE
////////	///////////	8.8	24	8.8	24	4.2	4.1	4.5	7.0	7.5	7.7	7.6						340	-0-	<2	192	192	1
////////	///////////	8.8	24	8.8	24	3.6	3.5	3.5	7.2	7.6	7.5	7.5	140				92.6	360	-0-	8	192	192	2
////////	///////////	8.8	24	8.8	24	4.3	4.0	4.6	7.1	7.5	7.6	7.6		8.2	<0.10	8.2		300	-0-	8	192	192	3
////////	///////////	8.8	24	8.8	24	4.3	3.8	3.9	7.2	7.4	7.5	7.4						400	-0-	<2	192	192	4
////////	///////////	8.8	24	8.8	24	4.4	4.0	4.9	7.1	7.4	7.5	7.5						340	-0-	<2	192	192	5
////////	///////////	8.8	24	8.8	24	4.6	4.4	4.5	7.2	7.4	7.5	7.4						380	-0	<2	192	192	6
////////	///////////	8.8	24	8.8	24	5.2	4.7	4.8	7.2	7.6	7.6	7.4				9.2		360	-0	8	192	192	7
////////	///////////	8.8	24	8.8	24	4.0	3.8	3.7	7.2	7.6	7.5	7.5	188	<4.0	<0.10	3.0	79.4	240	-0-	30	192	192	8
////////	///////////	8.8	24	8.8	24	6.0	5.6	5.3	7.2	7.6	7.5	7.5					57.9	360	-0-	<2	192	192	9
////////	///////////	8.8	24	8.8	24	6.0	5.8	5.1	7.3	7.6	7.6	7.4						340	-0-	<2	192	192	10
////////	///////////	8.8	24	8.8	24	6.5	6.1	5.2	7.3	7.6	7.6	7.5						320	-0-	2	192	192	11
////////	///////////	8.8	24	8.8	24	6.4	5.4	5.4	7.3	7.6	7.6	7.4						300	-0	<2	192	192	12
////////	///////////	8.8	24	8.8	24	6.8	5.7	5.2	7.2	7.6	7.5	7.4						320	0-	<2	192	192	13
////////	///////////	8.8	24	8.8	24	6.6	6.2	5.5	7.0	7.5	7.5	7.4				19.7		370	-0-	<2	192	192	14
////////	///////////	8.8	24	8.8	24	5.5	5.0	4.8	7.2	7.5	7.5	7.4	136	<4.0	<0.10	2.4	112	370	-0-	<2	192	192	15
////////	///////////	8.8	24	8.8	24	6.0	5.4	4.7	7.3	7.6	7.6	7.5					67.1	370	-0-	2	192	192	16
////////	///////////	8.8	24	8.8	24	5.9	5.3	4.9	7.3	7.5	7.6	7.4						330	-0	<2	192	192	17
////////	///////////	8.8	24	8.8	24	5.8	5.6	4.8	7.4	7.6	7.5	7.4						320	0-	<2	192	192	18
////////	///////////	8.8	24	8.8	24	5.7	5.2	4.9	7.3	7.6	7.5	7.5						320	-0-	<2	192	192	19
////////	///////////	8.8	24	8.8	24	5.9	5.1	4.8	7.2	7.5	7.5	7.4						220	-0-	<2	192	192	20
////////	///////////	8.8	24	8.8	24	5.6	5.7	5.2	7.3	7.6	7.6	7.3				35.0		320	-0-	<2	192	192	21
////////	///////////	8.8	24	8.8	24	7.3	6.6	4.4	7.3	7.6	7.6	7.4	154	4.0	<0.10	10.0	98.4	300	-0-	<2	192	192	22
////////	///////////	8.8	24	8.8	24	6.3	6.2	5.7	7.3	7.6	7.5	7.3					101	320	-0-	<2	192	192	23
////////	///////////	8.8	24	8.8	24	5.8	5.8	4.8	7.3	7.5	7.6	7.4						360	-0-	<2	192	192	24
////////	///////////	8.8	24	8.8	24	6.3	5.9	5.2	7.2	7.6	7.5	7.3						310	-0-	<2	192	192	25
////////	///////////	8.8	24	8.8	24	5.9	5.0	4.2	7.3	7.5	7.5	7.3						290	-0-	<2	192	192	26
////////	///////////	8.8	24	8.8	24	5.8	5.8	4.6	7.3	7.5	7.5	7.4						300	0-	<2	192	192	27
////////	///////////	8.8	24	8.8	24	5.6	5.3	4.9	7.0	7.2	7.2	7.1						260	0-	<2	192	192	28
////////	///////////	8.8	24	8.8	24	4.3	5.0	4.5	6.7	7.2	7.3	7.2	179	10.0	<0.10	7.75	123	320	-0-	<2	192	192	29
////////	///////////	8.8	24	8.8	24	5.1	5.6	5.7	7.0	7.3	7.3	7.1					81.1	320	-0-	<2	192	192	30
////////	///////////	8.8	24	8.8	24	6.3	5.0	6.1	7.0	7.3	7.4	7.2						370	0	<2	192	192	31

ADDIT I ONAL AMPLES I WC 10/02/92 ...... 90 2
10/14/92 25 2 ....

MPN/100Ml
ND = NONE DETECTED
CY = CUBIC YARD
NOTE: GRIT SYSTEM OFF LINE DUE TO CONSTRUCTION, NO GRIT REMO OVED

NOGALES INTERNATIONAL WASTEWATER TREATMENT PLANT

MONTHLY REPORT

PREPAR BY: RIC ARD L. . ALDWELL, COMPLIAN E SPEC.
APPROVED AS TO FORM BY WASTEWATER SUPT. LINO VEGA

CML COMPLETE MIX LAGOON
PML PARTIAL MIX LAGOON

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MONTH: October 1992

	WEA	HER	TEMP	RATURE		FLOW	IN	M.G.D.	CML-1			CML-2			PML-1		PML-2		ML-3		PML 4		ML-5	
DATE	RAIN FALL INCHES	WIND DIREC-TION	INFLOW	EFFLUEN	MEXICO	UNITED STATES	PLANT INFLOW	PLANT OUTFLO	DEPTH FEET	TEMPE-ATURE	AERAT HOURS	DEPT FEET	TEMPE-ATUR	AERAT HOURS	DEPT FEET	AERAT HOURS	DEPT FEET	AERAT HOURS	DEPT FEET	AERAT HOURS	DEPT FEET	AERAT HOURS	DEPT FEET	AERAT HOURS
1	0.00	SW	73	72	8.997	4.317	13.314	12.973	9.5	72	163	9.5	72	96	//////////	//////////	8.8	24	8.8	24	8.8	24	8.8	24
2	0.00		73	69	9.255	3.930	13.185	13.480	9.5	70	163	9.5	70	96	//////////	//////////	8.8	24	8.8	24	8.8	24	8.8	24
3	0.00	S	74	73	9.126	4.253	13.379	12.967	9.5	73	163	9.5	68	96	//////////	//////////	8.8	24	8.8	24	8.8	24	8.8	24
4	0.00	E	75	72	8.351	4.123	12.474	13.425	9.5	73	163	9.5	70	96	//////////	//////////	8.8	24	8.8	24	8.8	24	8.8	24
5	0.00		73	73	8.803	3.865	12.668	12.960	9.5	73	163	9.5	70	96	//////////	//////////	8.8	24	8.8	24	8.8	24	8.8	24
6	0.00	SE	73	73	8.803	3.930	12.733	13.826	9.5	73	163	9.5	70	96	//////////	//////////	8.8	24	8.8	24	8.8	24	8.8	24
7	0.00		72	70	8.997	3.606	12.603	12.078	9.5	70	163	9.5	70	96	//////////	//////////	8.8	24	8.8	24	8.8	24	8.8	24
8	0.00		72	64	8.222	4.058	12.280	12.446	9.5	66	163	9.5	66	96	//////////	//////////	8.8	24	8.8	24	8.8	24	8.8	24
9	0.00		72	68	7.899	3.929	11.828	12.018	9.5	66	163	9.5	66	96	//////////	//////////	8.8	24	8.8	24	8.8	24	8.8	24
10	0.00		72	66	8.544	4.124	12.668	12.688	9.5	68	163	9.5	67	96	//////////	//////////	8.8	24	8.8	24	8.8	24	8.8	24
11	0.00		71	66	8.350	4.059	12.409	13.161	9.5	68	163	9.5	68	96	//////////	//////////	8.8	24	8.8	24	8.8	24	8.8	24
12	0.00		73	69	8.544	3.413	11.957	13.088	9.5	68	163	9.5	68	96	//////////	//////////	8.8	24	8.8	24	8.8	24	8.8	24
13	0.00	S	73	68	8.803	3.089	11.892	12.912	9.5	69	163	9.5	66	96	//////////	//////////	8.8	24	8.8	24	8.8	24	8.8	24
14	0.00		73	70	8.932	3.542	12.474	13.565	9.5	70	163	9.5	66	96	//////////	//////////	8.8	24	8.8	24	8.8	24	8.8	24
15	0.00		73	66	8.803	3.671	12.474	13.628	9.5	68	163	9.5	67	96	//////////	//////////	8.8	24	8.8	24	8.8	24	8.8	24
16	0.00	SE	70	64	7.381	3.736	11.117	12.695	9.5	66	163	9.5	66	96	//////////	//////////	8.8	24	8.8	24	8.8	24	8.8	24
17	0.00		70	66	7.316	3.606	10.922	11.335	9.5	66	163	9.5	66	96	//////////	//////////	8.8	24	8.8	24	8.8	24	8.8	24
18	0.00		70	65	7.769	3.283	11.052	11.920	9.5	66	163	9.5	67	96	//////////	//////////	8.8	24	8.8	24	8.8	24	8.8	24
19	0.00		70	66	8.222	3.864	12.086	12.623	9.5	67	163	9.5	67	96	//////////	//////////	8.8	24	8.8	24	8.8	24	8.8	24
20	0.00	SW	68	64	8.803	3.736	12.539	12.187	9.5	68	163	9.5	68	96	//////////	//////////	8.8	24	8.8	24	8.8	24	8.8	24
21	0.00		72	66	8.480	3.994	12.474	11.967	9.5	68	163	9.5	68	96	//////////	//////////	8.8	24	8.8	24	8.8	24	8.8	24
22	0.00		73	65	8.415	3.800	12.215	12.411	9.5	68	163	9.5	68	96	//////////	//////////	8.8	24	8.8	24	8.8	24	8.8	24
23	0.00	SE	72	64	8.415	3.800	12.215	12.051	9.5	67	163	9.5	68	96	//////////	//////////	8.8	24	8.8	24	8.8	24	8.8	24
24	0.10		69	68	8.932	3.801	12.733	11.691	9.5	68	163	9.5	68	96	//////////	//////////	8.8	24	8.8	24	8.8	24	8.8	24
25	0.00		69	67	8.739	3.476	12.215	11.831	9.5	68	163	9.5	67	96	//////////	//////////	8.8	24	8.8	24	8.8	24	8.8	24
26	0.00		68	67	8.544	1.991	10.535	11.744	9.5	67	163	9.5	67	96	//////////	//////////	8.8	24	8.8	24	8.8	24	8.8	24
27	0.00		67	67	8.738	1.926	10.664	11.606	9.5	67	163	9.5	67	96	//////////	//////////	8.8	24	8.8	24	8.8	24	8.8	24
28	0.14		71	67	8.997	2.314	11.311	12.282	9.5	68	163	9.5	68	96	//////////	//////////	8.8	24	8.8	24	8.8	24	8.8	24
29	0.00		72	67	8.156	3.025	11.181	12.794	9.5	70	163	9.5	70	96	//////////	//////////	8.8	24	8.8	24	8.8	24	8.8	24
30	0.00	ESE	72	64	6.089	5.609	11.698	12.054	9.5	67	163	9.5	66	96	//////////	//////////	8.8	24	8.8	24	8.8	24	8.8	24
31	0.00	SW	72	67	7.510	4.188	11.698	11.682	9.5	68	163	9.5	67	96	//////////	//////////	8.8	24	8.8	24	8.8	24	8.8	24

	MEXICO	UNITED STATES	PLANT INFLOW	PLANT OUTFLO
TOTAL	260.935	114.058	374.993	388.088
AVERAG	8.417	3.679	12.097	12.519
MAXIMU	9.255	5.609	13.379	13.826
MINIMUM	6.089	1.926	10.535	11.335

MEXIC 70 % OF TOTAL FLOW

U.S. = 30 % OF TOTAL FLOW

PERSONNEL	FULL TIME	SERVICES EQUIPMENT		UTILITIES AND CHLORINE			PERSONNEL SERVICES AND EQUIPMENT UTILIZED OTHER THAN FULL TIME	HRS THIS MONTH	BOUNDARY
				CONTROL BUILDING			CLASSIFICATION		DATE 09/10/92 BOD5 73.3 mg/l TSS 136 mg/l
CHIEF OPERATOR	1	90' DODGE AR. SKC R	1	POWER CONSUMPTION	603,000.000	K.W.H			
COMPLIANCE SPEC.	1	PICKUP 1/2 TON	3	$	58,471		ELECTRICIAN	0	
OPERATORS	2	GRIT TRUCK	1	CHLORINE & ULTRAVIOLET DISINFECTION AREA			LABORERS	0	DATE 09/17/92 BOD5 95.5 mg/l TSS 78 mg/l
ASST OPERATOR	1	WATER TRUCK	1		-0-	K.W.H.	OVER TIME (OPERATORS)	75	
LABORERS	3	BACK HOE	1	$	17.48		MOTOR GRADER & OPERATOR	0	DATE 09/24/92 BOD5 94.8 mg/l TSS 144 mg/l
MECHANIC	1			CHLORINE CONSUMPTION	10,500	LBS			
ELECTRICIAN	0			SULPHUR DIOXIDE	3,495	LBS.			
Page 2				UTILITY COSTS - WATER SERVICE	$1,709.85				
Sept 1992				BILLING DATE:	8/25/92 TO 9/24/92				

PML-6 DEPT FEET	PML-6 AERAT HOURS	PML-7 DEPT FEET	PML-7 AERATO HOURS	PML-8 DEPT FEET	PML-8 AERATO HOURS	D.O. MG/L CML-	D.O. MG/L CML-	D.O. MG/L EFFLUEN	pH RA	pH CML-	pH CML-	pH EFFLUEN	SUSPENDED SOLIDS MG/L RAW	SUSPENDED SOLIDS MG/L EFFLUEN	SETTLEABLE SOLIDS ML/L EFFLUENT	BOD MG/L EFF	BOD MG/L INFLUEN	TOTAL CHLORINE USED (POUNDS)	GRIT REMOVE	FECAL COLIFORM	UV 1 HOURS	UV 2 HOURS	DATE
[illegible]	[illegible]	8.8	24	8.8	24	5.7	3.7	5.2	7.2	7.6	7.5	5.2		12		12		[illegible]	0	2	192	192	1
[illegible]	[illegible]	8.8	24	8.8	24	6.4	5.8	4.8	7.3	7.7	7.6	4.8						[illegible]	-0	300	192	192	2
[illegible]	[illegible]	8.8	24	8.8	24	6.2	5.7	4.7	7.3	7.6	7.6	4.7	188	7	<0.10	8.2	105	[illegible]	-0	900	192	192	3
[illegible]	[illegible]	8.8	24	8.8	24	6.1	5.8	4.2	7.4	7.6	7.6	4.2	190				183	[illegible]	0	170	192	192	4
[illegible]	[illegible]	8.8	24	8.8	24	6.2	6.0	4.1	7.4	7.6	7.6	4.1						[illegible]	0	<2	192	192	5
[illegible]	[illegible]	8.8	24	8.8	24	5.9	5.8	4.6	7.5	7.6	7.6	4.6						[illegible]	0	<2	192	192	6
[illegible]	[illegible]	8.8	24	8.8	24	5.7	5.6	4.7	7.6	7.6	7.6	4.7						[illegible]	0	<2	192	192	7
[illegible]	[illegible]	8.8	24	8.8	24	5.3	5.2	5.1	7.3	7.6	7.6	5.1						[illegible]	0	22	192	192	8
[illegible]	[illegible]	8.8	24	8.8	24	5.2	5.1	5.2	7.3	7.6	7.6	5.2		17		14.2		[illegible]	0	2	192	192	9
[illegible]	[illegible]	8.8	24	8.8	24	5.4	4.9	5.2	7.7	7.6	7.6	5.2	130	11	<0.10	11	69.9	[illegible]	0	<2	192	192	10
[illegible]	[illegible]	8.8	24	8.8	24	4.6	4.7	5.1	7.4	7.6	7.6	5.1	100				108	[illegible]	-0	<2	192	192	11
[illegible]	[illegible]	8.8	24	8.8	24	4.4	4.5	4.7	7.6	7.5	7.5	4.7						[illegible]	-0	<2	192	192	12
[illegible]	[illegible]	8.8	24	8.8	24	5.3	5.1	5.0	7.5	7.6	7.6	5.0						[illegible]	-0	<2	192	192	13
[illegible]	[illegible]	8.8	24	8.8	24	5.7	4.9	4.9	7.3	7.6	7.5	4.9						[illegible]	0	13	192	192	14
[illegible]	[illegible]	8.8	24	8.8	24	5.5	4.6	4.3	7.3	7.3	7.6	4.3						[illegible]	0	4	192	192	15
[illegible]	[illegible]	8.8	24	8.8	24	5.6	4.7	4.6	7.3	7.6	7.6	4.6		24		6.6		[illegible]	0	4	192	192	16
[illegible]	[illegible]	8.8	24	8.8	24	4.8	4.2	4.7	7.3	7.6	7.6	4.7	176				135	[illegible]	0	11	192	192	17
[illegible]	[illegible]	8.8	24	8.8	24	4.6	4.3	4.6	7.3	7.6	7.6	4.6	200	15	<0.10	14.5	102	[illegible]	-0	2	192	192	18
[illegible]	[illegible]	8.8	24	8.8	24	6.1	5.2	4.7	7.2	7.6	7.6	4.7						[illegible]	-0	300	192	192	19
[illegible]	[illegible]	8.8	24	8.8	24	6.5	5.6	6.0	7.3	7.6	7.6	6.0						[illegible]	0	300	192	192	20
[illegible]	[illegible]	8.8	24	8.8	24	4.5	5.3	5.9	7.1	7.5	7.5	5.9						[illegible]	-0	500	192	192	21
[illegible]	[illegible]	8.8	24	8.8	24	5.8	5.9	5.7	7.2	7.4	7.6	5.7						[illegible]	-0	900	192	8	22
[illegible]	[illegible]	8.8	24	8.8	24	5.6	5.5	5.6	7.1	7.5	7.5	5.6		17		25.7		[illegible]	-0	>1600	192	0	23
[illegible]	[illegible]	8.8	24	8.8	24	5.5	5.9	5.6	7.2	7.5	7.5	5.6	96	14	<0.10	13.5	77.7	[illegible]	0	240	192	0	24
[illegible]	[illegible]	8.8	24	8.8	24	4.9	4.7	5.0	7.0	7.5	7.5	5.0	192				103	[illegible]	0	11	192	17	25
[illegible]	[illegible]	8.8	24	8.8	24	5.0	5.2	5.2	7.0	7.5	7.5	5.2						[illegible]	0	30	192	192	26
[illegible]	[illegible]	8.8	24	8.8	24	5.6	5.3	5.1	7.0	7.3	7.5	5.1						[illegible]	0	<2	192	192	27
[illegible]	[illegible]	8.8	24	8.8	24	5.8	5.4	5.3	7.1	7.5	7.5	5.3						[illegible]	-0	8	192	192	28
[illegible]	[illegible]	8.8	24	8.8	24	6.1	5.4	5.5	7.1	7.6	7.6	5.5						[illegible]	0	2	192	192	29
[illegible]	[illegible]	8.8	24	8.8	24	5.2	6.5	5.9	7.2	7.6	7.7	5.9						[illegible]	0	2	192	192	30
																							31

NO GRIT REMOVED DUE TO PRELIMINARY TREATMENT AREA OFF LINE FOR CONSTRUCTION

EXTRA FECAL COLIFORM SAMPLES AS [illegible]

9 1 92	2	
9 16 92	>1600	EST [illegible] WEST BANK
9 16 92	>1600	EST [illegible] EAST BANK
9 16 92	300	EST [illegible] EAST BANK
9 16 92	30	EST [illegible] WEST BANK
9 25 92	2	EST [illegible] HEADWEIGHTS
9 25 92	66	EST [illegible] HEADWEIGHTS

[illegible]/100ML
[illegible] NONE [illegible]TECTED
[illegible] CUBIC [illegible]ARD

NOGALES INTERNATIONAL WASTEWATER TREATMENT PLANT

MONTHLY REPORT

PREPAR BY: RIC ARD L. ALDWELL, COMPLIANE SPEC.
APPROVED AS TO FORM BY WASTEWATER SUPT. LINO VEGA

CML COMPLETE MIX LAGOON
PML PARTIAL MIX LAGOON

Page 1

MONTH Sept. 1992

	WEATHER		TEMPERATURE		FLOW IN MGD				CML-1			CML-2			PML-1		PML 2		PML 3		PML 4		ML-5	
DATE	RAIN FALL INCHES	WIND DIRECTION	INFLOW	EFFLUENT	MEXICO	UNITED STATES	PLANT INFLOW	PLANT OUTFLO	DEPTH FEET	TEMPERATURE	AERAT HOURS	DEPT FEET	TEMPERATUR	AERAT HOURS	DEPT FEET	AERAT HOURS	DEPT FEET	AERAT HOURS	DEPT FEET	AERAT HOURS	DEPT FEET	AERAT HOURS	DEPT FEET	AERAT HOURS
1	0.00	NE	75	77	9.320	4.382	13.702	13.902	9.5	75	149	9.5	75	132	//////	//////	8.8	24	8.8	24	8.8	24	8.8	24
2	0.00	SW	76	73	9.191	4.317	13.508	13.867	9.5	74	149	9.5	74	132	//////	//////	8.8	24	8.8	24	8.8	24	8.8	24
3	0.00		75	73	8.932	4.511	13.443	14.269	9.5	75	149	9.5	75	132	//////	//////	8.8	24	8.8	24	8.8	24	8.8	24
4	0.00		75	75	8.674	4.576	13.250	13.978	9.5	75	149	9.5	75	132	//////	//////	8.8	24	8.8	24	8.8	24	8.8	24
5	0.00		75	75	8.221	4.382	12.603	12.844	9.5	75	149	9.5	75	132	//////	//////	8.8	24	8.8	24	8.8	24	8.8	24
6	0.00		75	75	8.545	4.188	12.733	12.578	9.5	75	149	9.5	75	132	//////	//////	8.8	24	8.8	24	8.8	24	8.8	24
7	0.00		75	76	8.609	4.188	12.797	12.768	9.5	76	149	9.5	76	132	//////	//////	8.8	24	8.8	24	8.8	24	8.8	24
8	0.00		76	75	8.803	3.994	12.797	12.975	9.5	75	149	9.5	75	132	//////	//////	8.8	24	8.8	24	8.8	24	8.8	24
9	0.00	S	76	75	9.127	4.252	13.379	12.354	9.5	75	149	9.5	75	132	//////	//////	8.8	24	8.8	24	8.8	24	8.8	24
10	0.00		75	75	9.191	4.188	13.379	12.984	9.5	75	149	9.5	75	132	//////	//////	8.8	24	8.8	24	8.8	24	8.8	24
11	0.00	SW	75	75	8.932	4.253	13.185	12.066	9.5	74	149	9.5	74	132	//////	//////	8.8	24	8.8	24	8.8	24	8.8	24
12	0.00		76	73	9.126	4.317	13.443	12.079	9.5	72	149	9.5	72	132	//////	//////	8.8	24	8.8	24	8.8	24	8.8	24
13	0.00		76	74	9.514	4.447	13.961	12.574	9.5	75	149	9.5	75	132	//////	//////	8.8	24	8.8	24	8.8	24	8.8	24
14	0.05	W	75	74	8.480	4.511	12.991	12.295	9.5	75	149	9.5	75	132	//////	//////	8.8	24	8.8	24	8.8	24	8.8	24
15	0.02		76	76	8.803	4.447	13.250	12.103	9.5	75	149	9.5	75	132	//////	//////	8.8	24	8.8	24	8.8	24	8.8	24
16	0.00	SW	77	77	8.544	4.253	12.797	11.877	9.5	75	149	9.5	74	132	//////	//////	8.8	24	8.8	24	8.8	24	8.8	24
17	0.00		76	77	8.674	4.188	12.862	11.946	9.5	76	149	9.5	76	132	//////	//////	8.8	24	8.8	24	8.8	24	8.8	24
18	0.00		75	77	8.480	4.511	12.991	11.840	9.5	77	149	9.5	77	132	//////	//////	8.8	24	8.8	24	8.8	24	8.8	24
19	0.00		75	77	8.739	4.252	12.991	12.307	9.5	75	149	9.5	75	132	//////	//////	8.8	24	8.8	24	8.8	24	8.8	24
20	0.00		75	77	8.609	4.188	12.797	12.095	9.5	75	149	9.5	75	132	//////	//////	8.8	24	8.8	24	8.8	24	8.8	24
21	0.00	S	77	77	8.932	4.253	13.185	12.090	9.5	77	149	9.5	77	132	//////	//////	8.8	24	8.8	24	8.8	24	8.8	24
22	0.00		73	77	8.673	4.124	12.797	12.286	9.5	75	149	9.5	74	132	//////	//////	8.8	24	8.8	24	8.8	24	8.8	24
23	0.00	SW	73	75	9.126	4.124	13.250	12.686	9.5	73	149	9.5	73	132	//////	//////	8.8	24	8.8	24	8.8	24	8.8	24
24	0.00		73	75	8.933	4.252	13.185	13.205	9.5	74	149	9.5	74	132	//////	//////	8.8	24	8.8	24	8.8	24	8.8	24
25	0.00		73	75	8.674	4.123	12.797	12.729	9.5	74	149	9.5	73	132	//////	//////	8.8	24	8.8	24	8.8	24	8.8	24
26	0.00		73	75	8.739	4.058	12.797	12.146	9.5	74	149	9.5	74	132	//////	//////	8.8	24	8.8	24	8.8	24	8.8	24
27	0.00		73	75	7.446	3.994	11.410	11.950	9.5	74	149	9.5	74	132	//////	//////	8.8	24	8.8	24	8.8	24	8.8	24
28	0.00		73	75	6.477	3.929	10.406	10.585	9.5	74	149	9.5	74	132	//////	//////	8.8	24	8.8	24	8.8	24	8.8	24
29	0.00	W	73	77	6.864	3.736	10.600	10.561	9.5	73	149	9.5	73	132	//////	//////	8.8	24	8.8	24	8.8	24	8.8	24
30	0.00	SW	75	73	8.221	3.801	12.022	11.356	9.5	73	149	9.5	73	132	//////	//////	8.8	24	8.8	24	8.8	24	8.8	24
31																								

	MEXICO	UNITED STATES	PLANT INFLOW	PLANT OUTFLO
TOTAL	258.599	126.739	385.338	373.295
AVERAG	8.620	4.225	12.845	12.443
MAXIMU	9.514	4.576	13.961	14.269
MINIMUM	6.477	3.736	10.406	10.561

MEXIC 67 % OF TOTAL FLOW

U.S. = 33 % OF TOTAL FLOW

ULL TIM SERVICES				UTILITIES AND CHLORINE			PERSONNEL SERVICES AND EQUIPMENT UTILIZED OTHER THAN FULL TIME		BOUNDARY
PERSONNEL		EQUIPMENT		CONTROL BUILDING			CLASSIFICATION	HRS THIS MONTH	DATE 08/27/92 BOD-5 84.9 mg/l TSS 138 mg/l
CHIEF OPERATOR	1	90'D DGE AR SKC R	1	POWER CON MPTIO	505,80 00	K.W.H.	ELECTRICIAN	0	
COMPLIANCE SPEC.	1	PICKU 1/2 TON	3	$	49,296.3 . 35		LABORERS	0	
OPERAOR II	2	GRIT TRUCK	1	CHLO INE & ULTRAVIOLET DISINFECTION AREA			OVER TIME (OPERATORS)	197	
OPERAOR I	1	WATER TRUCK	1		-0-	K.W.H.	MOTOR GRADER & OPERATO	0	
LABORERS	3	BACK HOE	1	$	17.48				
MECHANIC	1			TOT ELEC RIC C STS $49, , 313 8					
ELECTRICIAN	0			CHLORINE CONSUM	10,560	BS.			
				SULP UR DI XIDE:	2,795	BS.			
Page 2				WAT SER I CE: 2 , 423 GALS. FOR $1,974 21					
Aug 1992				SER I CE P IOD /28/92 TO 8/25/ / 92					
				BILLI NG DA E: /26/92					

PML-6		PML-7		PML-8		D.O. MG/L			pH				SUSPENDED SOLIDS MG/L		SETTLEABLE SOLIDS ML/L	BOD MG/L		TOTAL					
DEPT FEET	AERAT HOURS	DEPT FEET	AERATO HOURS	DEPT FEET	AERATO HOURS	CML-	CML-	EFFLUEN	RA	CML-	CML-	EFFLUEN	RAW	EFFLUEN	EFFLUENT	EFF	INFLUEN	CL2 USED	GRIT REMOVE	FECAL COLIFORM	UV-1 HOURS	UV-2 HOURS	DATE
[illegible]	[illegible]	8.8	24	8.8	24	4.5	2.4	4.2	7.3	7.4	7.3	7.3						370.0		7	192	192	1
[illegible]	[illegible]	8.8	24	8.8	24	4.4	2.7	4.1	7.3	7.4	7.3	7.3						370.0		2	192	192	2
[illegible]	[illegible]	8.8	24	8.8	24	4.0	2.9	4.1	7.2	7.2	7.3	7.4						360.0		50	192	192	3
[illegible]	[illegible]	8.8	24	8.8	24	5.1	4.0	4.2	7.2	7.7	7.6	7.4						310.0		30	192	192	4
[illegible]	[illegible]	8.8	24	8.8	24	5.0	4.9	4.6	7.2	7.4	7.4	7.3						330.0		8	192	192	5
[illegible]	[illegible]	8.8	24	8.8	24	4.9	5.1	4.5	7.2	7.5	7.4	7.3	196	12	<0.10	37.4	27.9	360.0		2	192	192	6
[illegible]	[illegible]	8.8	24	8.8	24	5.1	5.3	4.3	7.2	7.4	7.4	7.3						360.0		4	192	192	7
[illegible]	[illegible]	8.8	24	8.8	24	5.4	5.1	4.4	7.2	73.5	7.5	7.3						360.0		<2	192	192	8
[illegible]	[illegible]	8.8	24	8.8	24	5.5	4.7	5.3	7.2	7.5	7.4	7.4						350.0		2	192	192	9
[illegible]	[illegible]	8.8	24	8.8	24	6.3	5.3	5.4	7.2	7.5	7.5	7.3						340.0		<2	192	192	10
[illegible]	[illegible]	8.8	24	8.8	24	5.1	4.1	5.4	7.1	7.5	7.4	7.3						310.0		17	192	192	11
[illegible]	[illegible]	8.8	24	8.8	24	4.7	4.5	4.4	7.2	7.4	7.4	7.4						360.0		<2	192	192	12
[illegible]	[illegible]	8.8	24	8.8	24	4.9	4.6	4.5	7.2	7.5	7.4	7.5	372	30	<0.10	84.0	23.6	320.0		<2	192	192	13
[illegible]	[illegible]	8.8	24	8.8	24	3.3	4.4	4.5	7.2	7.4	7.3	7.4						360.0		<2	192	192	14
[illegible]	[illegible]	8.8	24	8.8	24	3.6	4.6	4.3	7.2	7.4	7.4	7.3						310.0	5 CY	2	192	192	15
[illegible]	[illegible]	8.8	24	8.8	24	4.3	4.2	4.4	7.2	7.4	7.4	7.4						360.0		2	192	192	16
[illegible]	[illegible]	8.8	24	8.8	24	4.2	4.6	4.3	7.2	7.4	7.4	7.3						350.0		2	192	192	17
[illegible]	[illegible]	8.8	24	8.8	24	4.6	4.2	4.4	7.3	7.4	7.4	7.4						320.0		13	192	192	18
[illegible]	[illegible]	8.8	24	8.8	24	4.7	4.2	4.3	4.2	7.4	7.3	7.3						360.0		13	192	192	19
[illegible]	[illegible]	8.8	24	8.8	24	4.1	4.8	4.1	7.3	7.3	7.3	7.3	236	8	<0.10	114	26.2	260.0		<2	192	192	20
[illegible]	[illegible]	8.8	24	8.8	24	4.9	5.1	4.5	7.3	7.3	7.4	7.3						350.0		<2	192	192	21
[illegible]	[illegible]	8.8	24	8.8	24	6.3	5.2	4.4	7.4	7.3	7.3	7.4						360.0		7	192	192	22
[illegible]	[illegible]	8.8	24	8.8	24	5.0	4.8	3.2	7.3	7.3	7.4	7.3						400.0		11	192	192	23
[illegible]	[illegible]	8.8	24	8.8	24	M	M	5.1	7.3	M	M	7.2						310.0		<2	192	192	24
[illegible]	[illegible]	8.8	24	8.8	24	4.9	4.6	5.1	7.3	7.4	7.4	7.3						360.0		11	192	192	25
[illegible]	[illegible]	8.8	24	8.8	24	4.8	4.8	4.6	7.3	7.4	7.4	7.3						360.0		300	192	192	26
[illegible]	[illegible]	9.8	24	8.8	24	4.9	5.1	5.4	7.3	7.4	7.3	7.3	166	10	<0.10	125	16.5	350.0		<2	192	192	27
[illegible]	[illegible]	8.8	24	8.8	24	6.0	6.5	5.7	7.3	7.3	7.2	7.4						300.0		<2	192	192	28
[illegible]	[illegible]	8.8	24	8.8	24	6.6	6.6	6.1	7.0	7.3	7.3	7.2						300.0		8	192	192	29
[illegible]	[illegible]	8.8	24	8.8	24	7.5	6.8	6.8	7.1	7.3	7.3	7.4						310.0	6 CY	[illegible]	192	192	30
[illegible]	[illegible]	8.8	24	8.8	24	6.2	4.9	5.5	7.1	7.6	7.5	7.5						310.0	6 CY	[illegible]	192	192	31

NOTE: PRELIMINARY TREATMENT OFF-LINE FOR CONSTRUCTION

MPN/100ML
M MISSING DATA
CY - CUBIC YARD

NOGALES INTERNATIONAL WASTEWATER TREATMENT PLANT

MONTHLY REPORT

PREPARED BY RICHARD L. CALDWELL, COMPLIANCE SPEC.
APPROVED AS TO FORM BY WASTEWATER SUPT LINO VEGA

CML COMPLETE MIX LAGOON
PML PARTIAL MIX LAGOON

Page 1

MONTH August 1992

DATE	WEATHER: RAIN FALL INCHES	WEATHER: WIND DIRECTION	TEMPERATURE: INFLOW	TEMPERATURE: EFFLUENT	FLOW IN MGD: MEXICO	FLOW IN MGD: UNITED STATES	FLOW IN MGD: PLANT INFLOW	FLOW IN MGD: PLANT OUTFLO	CML-1: DEPTH FEET	CML-1: TEMPERATURE	CML-1: AERAT HOURS	CML-2: DEPT FEET	CML-2: TEMPEATUR	CML-2: AERAT HOURS	PML-1: DEPT FEET	PML-1: AERAT HOURS	PML-2: DEPT FEET	PML-2: AERAT HOURS	ML-3: DEPT FEET	ML-3: AERAT HOURS	PML-4: DEPT FEET	PML-4: AERAT HOURS	ML-5: DEPT FEET	ML-5: AERAT HOURS
1	0.37	SW	77	77	9.256	4.769	14.025	11.754	9.5	77	147	9.5	77	154	////////	////////	8.8	24	8.8	21	8.8	24	8.8	24
2	0.06		77	77	8.609	4.317	12.926	11.578	9.5	77	147	9.5	77	154	////////	////////	8.8	24	8.8	21	8.8	24	8.8	24
3	0.10		77	78	8.674	4.446	13.120	12.005	9.5	78	147	9.5	77	154	////////	////////	8.8	24	8.8	24	8.8	24	8.8	24
4	0.00	SE	77	77	10.096	5.093	15.189	12.005	9.5	76	147	9.5	77	154	////////	////////	8.8	24	8.8	24	8.8	24	8.8	1
5	0.50	W	77	77	8.932	4.770	13.702	12.834	9.5	77	147	9.5	77	154	////////	////////	8.8	24	8.8	24	8.8	24	8.8	24
6	0.01		77	77	9.901	3.930	13.831	13.184	9.5	77	147	9.5	77	154	////////	////////	8.8	24	8.8	24	8.8	24	8.8	24
7	0.00	SE	77	77	9.967	4.317	14.284	12.718	9.5	77	147	9.5	77	154	////////	////////	8.8	24	8.8	24	8.8	24	8.8	24
8	0.00		76	78	9.320	4.059	13.379	12.603	9.5	77	147	9.5	76	154	////////	////////	8.8	24	8.8	24	8.8	24	8.8	24
9	0.00		76	77	8.867	4.447	13.314	12.676	9.5	76	147	9.5	75	154	////////	////////	8.8	24	8.8	24	8.8	24	8.8	24
10	0.00		77	80	8.997	3.800	12.797	12.434	9.5	76	147	9.5	76	154	////////	////////	8.8	24	8.8	24	8.8	24	8.8	24
11	0.00		76	79	8.609	4.705	13.314	12.132	9.5	77	147	9.5	77	154	////////	////////	8.8	24	8.8	21	8.8	24	8.8	24
12	0.06	SW	77	77	8.157	4.834	12.991	10.939	9.5	77	147	9.5	77	154	////////	////////	8.8	24	8.8	24	8.8	24	8.8	24
13	0.00		77	78	8.027	5.029	13.056	11.038	9.5	77	147	9.5	77	154	////////	////////	8.8	24	8.8	24	8.8	24	8.8	24
14	0.00		78	78	8.416	4.704	13.120	11.071	9.5	77	147	9.5	77	154	////////	////////	8.8	21	8.8	21	8.8	24	8.8	24
15	0.00		78	78	8.222	4.640	12.862	11.221	9.5	77	147	9.5	77	154	////////	////////	8.8	24	8.8	24	8.8	24	8.8	24
16	0.02		78	78	7.769	4.382	12.151	11.067	9.5	77	147	9.5	77	154	////////	////////	8.8	24	8.8	21	8.8	24	8.8	24
17	0.00	SE	77	78	8.674	4.188	12.862	11.321	9.5	77	147	9.5	77	154	////////	////////	8.8	24	8.8	24	8.8	24	8.8	24
18	0.80	SW	77	77	8.544	4.318	12.862	11.871	9.5	77	147	9.5	77	154	////////	////////	8.8	24	8.8	24	8.8	24	8.8	24
19	0.00		78	77	8.609	4.317	12.926	11.527	9.5	77	147	9.5	77	154	////////	////////	8.8	24	8.8	21	8.8	24	8.8	24
20	0.00	SE	78	78	8.545	4.575	13.120	11.583	9.5	77	147	9.5	77	154	////////	////////	8.8	24	8.8	24	8.8	24	8.8	24
21	0.00		77	75	8.674	4.640	13.314	11.489	9.5	76	147	9.5	76	154	////////	////////	8.8	21	8.8	21	8.8	24	8.8	24
22	0.00		76	76	8.157	4.188	12.345	11.401	9.5	76	147	9.5	76	154	////////	////////	8.8	24	8.8	21	8.8	24	8.8	24
23	0.00		76	73	11.259	5.804	17.063	13.086	9.5	77	147	9.5	77	154	////////	////////	8.8	24	8.8	24	8.8	24	8.8	24
24	2.80	SW	76	69	9.966	5.158	15.124	14.579	9.5	M	147	9.5	M	154	////////	////////	8.8	24	8.8	24	8.8	24	8.8	24
25	0.00		76	72	7.899	4.575	12.474	10.875	9.5	77	147	9.5	77	154	////////	////////	8.8	21	8.8	21	8.8	24	8.8	24
26	0.00	W	75	66	7.188	4.446	11.631	10.431	9.5	77	147	9.5	77	154	////////	////////	8.8	21	8.8	21	8.8	24	8.8	24
27	0.00		72	68	7.316	4.382	11.698	11.251	9.5	75	147	9.5	72	154	////////	////////	8.8	21	8.8	21	8.8	24	8.8	24
28	0.00	SE	66	65	7.899	4.316	12.215	11.868	9.5	68	147	9.5	68	154	////////	////////	8.8	21	8.8	21	8.8	24	8.8	24
29	0.21		75	64	8.933	4.575	13.508	12.550	9.5	63	147	9.5	63	154	////////	////////	8.8	21	8.8	21	8.8	24	8.8	24
30	TRACE		75	63	8.544	4.576	13.120	13.031	9.5	61	147	9.5	61	154	////////	////////	8.8	21	8.8	21	8.8	24	8.8	24
31	0.00		75	76	8.868	4.640	13.508	13.498	9.5	76	147	9.5	76	154	////////	////////	8.8	21	8.8	21	8.8	21	8.8	24

	MEXICO	UNITED STATES	PLANT INFLOW	PLANT OUTFLO
TOTAL	270.894	140.940	411.834	371.620
AVERAG	8.739	4.546	13.285	11.988
MAXIMU	11.259	5.804	17.063	14.579
MINIMUM	7.188	3.800	11.634	10.431

MEXIC 66 % OF TOTAL FLOW

US = 34 % OF TOTAL FLOW

ULL TIM SERVICES				UTILITIES AND CHLORINE			PERSONNEL SERVICES AND EQUIPMENT UTILIZED OT ER THAN FULL TIME		BOUNDARY
PERSONNEL		EQUIPMENT		CONTROL BUILDING			CLASSI ICATI ON	HRS THIS MONTH	DATE 07/07/92 BOD 5 82 1 mg/l TSS 82 mg/l
CHIEF OPERATOR	1	90' D DGE AR S K C R	1	POWER CON MPTIO	617,400 0	K W.H.	ELECTRICIAN	0	
COMPLIANCE SPEC	1	PICKU 1/2 TON	3	$	59,442.1 19		LABORERS	0	DATE 07/16/92 BOD 5 74 7 mg/l TSS 80 mg/l
OPERATORS	2	GRIT TRUCK	1	CHLO INE & ULTRAVIOLET DISINFECTION AREA			OVER TIME (OPERATORS)	23	
ASST OPERATOR	1	WATER TRUCK	1		-0-	K W.H.	MOTOR GRADER & OPERATO	0	
LABORERS	3	BACK HOE	1	$	17.48				
MECHANIC	1			CHLORINE CONSU	10,960	LBS			
ELECTRICIAN	1			SULPHUR D XIDE:	4,026 6	LBS.			
Page 2				UTILITY COSTS - WATER SERVICE	$2048 80				
July 1992				BILLING DATE:	07/29/92				

PML-6		PML-7		PML-8		D.O. MG/L			p H				SUSPENDED SOLIDS MG/L		SETTLEABLE SOLIDS ML/L	B O D MG/L		Cl 2					
DEPT FEET	AERAT HOURS	DEPT FEET	AERATO HOURS	DEPT FEET	AERATO HOURS	CML-	CML-	EFFLUEN	RA	CML-	CML-	EFFLUEN	RAW	EFFLUEN	EFFLUENT	EFF	INFLUEN	RESIDUAL MG/L	GRIT REMOVE	FECAL COLIFORM	UV 1 HOURS	UV 2 HOURS	DATE
[illegible]	[illegible]	8.8	24	8.8	24	3.7	4.9	6.5	7.0	7.1	7.1	7.1						ND		<2	192	192	1
[illegible]	[illegible]	8.8	24	8.8	24	1.0	4.7	6.9	6.9	7.1	7.3	7.1	126	11	<0.10	22	42.7	ND		900	192	192	2
[illegible]	[illegible]	8.8	24	8.8	24	3.2	4.8	6.7	6.8	7.1	7.2	7.1						ND		<2	192	192	3
[illegible]	[illegible]	8.8	24	8.8	24	3.3	4.6	6.8	6.9	7.1	7.2	7.2						ND		<2	192	192	4
[illegible]	[illegible]	8.8	24	8.8	24	2.9	4.7	6.9	6.9	7.1	7.2	7.4						ND		<2	192	192	5
[illegible]	[illegible]	8.8	24	8.8	24	4.2	5.2	5.7	7.0	7.3	7.3	7.2						ND	6 C/Y	<2	192	192	6
[illegible]	[illegible]	8.8	24	8.8	24	3.8	4.4	7.0	7.0	7.2	7.2	7.1						ND		50	192	192	7
[illegible]	[illegible]	8.8	24	8.8	24	4.5	4.4	6.4	7.0	7.2	7.2	7.1						ND		8	192	192	8
[illegible]	[illegible]	8.8	24	8.8	24	4.3	4.0	6.9	7.0	7.2	7.3	7.2	378	13	<0.10	23.7	75.3	ND	12 C/Y	4	192	192	9
[illegible]	[illegible]	8.8	24	8.8	24	4.0	4.4	6.6	7.0	7.3	7.3	7.2						ND	6 C/Y	13	192	192	10
[illegible]	[illegible]	8.8	24	8.8	24	4.5	5.2	4.4	7.1	7.4	7.5	7.3						ND		<2	192	192	11
[illegible]	[illegible]	8.8	24	8.8	24	4.3	4.9	4.7	7.0	7.4	7.5	7.4						ND		<2	192	192	12
[illegible]	[illegible]	8.8	24	8.8	24	4.1	4.0	6.0	7.0	7.3	7.3	7.1						ND	6 C/Y	<2	192	192	13
[illegible]	[illegible]	8.8	24	8.8	24	4.3	4.4	6.0	7.0	7.3	7.4	7.1						ND	6 C/Y	2	192	192	14
[illegible]	[illegible]	8.8	24	8.8	24	4.0	4.8	6.2	7.1	7.3	7.4	7.2						ND		<2	192	192	15
[illegible]	[illegible]	8.8	24	8.8	24	2.4	4.0	6.4	6.9	6.9	7.3	7.1	234	11	<0.10	20.8	64.6	ND		2	192	192	16
[illegible]	[illegible]	8.8	24	8.8	24	5.0	5.3	6.0	7.0	7.1	M	7.1						ND	5 C/Y	<2	192	192	17
[illegible]	[illegible]	8.8	24	8.8	24	3.3	2.2	4.7	7.0	7.2	7.4	7.1						ND	6 C/Y	<2	192	192	18
[illegible]	[illegible]	8.8	24	8.8	24	5.3	2.1	6.3	7.0	7.1	7.4	7.2						ND		<2	192	192	19
[illegible]	[illegible]	9.8	24	8.8	24	5.4	2.0	4.8	7.1	7.1	7.4	7.1						ND		13	192	192	20
[illegible]	[illegible]	8.8	24	8.8	24	4.5	2.8	4.3	7.2	7.4	7.3	7.2						ND		<2	192	192	21
[illegible]	[illegible]	8.8	24	8.8	24	4.0	2.6	4.4	7.2	7.5	7.3	7.4						ND	12 C/Y	<2	192	192	22
[illegible]	[illegible]	8.8	24	8.8	24	5.0	2.3	4.9	7.2	7.4	7.3	7.3	234	51	<0.10	28.3	78.8	ND		13	192	192	23
[illegible]	[illegible]	8.8	24	8.8	24	4.4	2.5	4.7	7.3	7.4	7.3	7.2						ND	6 C Y	34	192	192	24
[illegible]	[illegible]	8.8	24	8.8	24	4.8	4.3	4.6	7.1	7.5	7.6	7.4						ND		17	192	192	25
[illegible]	[illegible]	8.8	24	8.8	24	4.6	3.9	4.7	7.1	7.5	7.5	7.5						ND		4	192	192	26
[illegible]	[illegible]	8.8	24	8.8	24	5.1	5.2	4.9	7.3	7.5	7.5	7.4						ND		<2	192	192	27
[illegible]	[illegible]	8.8	24	8.8	24	6.1	6.2	5.3	7.0	7.6	7.6	7.3						ND	4 C/Y	<2	192	192	28
[illegible]	[illegible]	8.6	24	8.8	24	4.3	5.2	4.7	7.0	7.5	7.5	7.3						ND		<2	192	192	29
[illegible]	[illegible]	8.8	24	8.8	24	4.6	5.2	4.6	7.1	7.4	7.4	7.2	568	15	<0.10	20.1	54.6	ND		13	192	192	30
[illegible]	[illegible]	8.8	24	8.8	24	5.8	5.1	4.3	7.2	7.6	7.6	7.4						ND		130	192	192	31

METHOD
ND = NONE DETECTED
CY = CUBIC YARD
M - ANALYSIS MISSING

NOGALES INTERNATIONAL WASTEWATER TREATMENT PLANT

MONTHLY REPORT

PREPAR BY RIC ARD L. ALDWELL, COMPLIANE SPEC
APPROVED AS TO FORM BY WASTEWATER SUPT. LINO VEGA

CML COMPLETE MIX LAGOON
PML PARTIAL MIX LAGOON

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MONTH July 1992

	WEA	HER	TEMP	RATURE	FLOW	IN	M.G.D.		CML-1			CML-2			PML-1		PML-2		ML-3		PML-4		ML-5	
DATE	RAIN FALL INCHES	WIND DIRECTION	INFLOW	EFFLUEN	MEXICO	UNITED STATES	PLANT INFLOW	PLANT OUTFLO	DEPTH FEET	TEMPE ATURE	AERAT HOURS	DEPT FEET	TEMPE ATUR	AERAT HOURS	DEPT FEET	AERAT HOURS	DEPT FEET	AERAT HOURS	DEPT FEET	AERAT HOURS	DEPT FEET	AERAT HOURS	DEPT FEET	AERAT HOURS
1	0.00	SW	77	62	8.028	3.754	11.782	10.893	9.5	62	96	9.5	60	96	////////	////////	8.8	24	8.8	24	8.8	24	8.8	24
2	0.00		75	63	7.898	3.901	11.799	11.227	9.5	62	96	9.5	61	96	////////	////////	8.8	24	8.8	24	8.8	24	8.8	24
3	0.00		74	63	7.704	3.785	11.489	11.193	9.5	62	96	9.5	61	96	////////	////////	8.8	24	8.8	24	8.8	24	8.8	24
4	0.00		75	63	7.769	3.918	11.687	9.938	9.5	62	96	9.5	61	96	////////	////////	8.8	24	8.8	24	8.8	24	8.8	24
5	0.00		76	63	7.316	3.778	11.094	9.599	9.5	62	96	9.5	63	96	////////	////////	8.8	24	8.8	24	8.8	24	8.8	24
6	0.00		77	64	7.704	3.664	11.368	9.677	9.5	64	96	9.5	63	96	////////	////////	8.8	24	8.8	24	8.8	24	8.8	24
7	0.00	W	78	66	8.221	3.860	12.081	10.407	9.5	65	96	9.5	63	96	////////	////////	8.8	24	8.8	24	8.8	24	8.8	24
8	0.01		77	65	7.510	3.985	11.495	10.034	9.5	63	96	9.5	62	96	////////	////////	8.8	24	8.8	24	8.8	24	8.8	24
9	1.30	SW	76	63	9.708	5.660	15.368	14.047	9.5	62	96	9.5	77	96	////////	////////	8.8	24	8.8	24	8.8	24	8.8	24
10	0.04		77	63	8.545	3.913	12.458	11.009	9.5	77	96	9.5	75	96	////////	////////	8.8	24	8.8	24	8.8	24	8.8	24
11	0.00		77	76	8.545	3.763	12.308	10.862	9.5	77	96	9.5	75	96	////////	////////	8.8	24	8.8	24	8.8	24	8.8	24
12	0.34		75	77	7.963	3.541	11.504	10.753	9.5	75	96	9.5	73	96	////////	////////	8.8	24	8.8	24	8.8	24	8.8	24
13	0.00	S	77	77	8.286	3.403	11.689	10.662	9.5	73	96	9.5	72	96	////////	////////	8.8	24	8.8	24	8.8	24	8.8	24
14	0.00		76	75	8.221	3.524	11.745	10.899	9.5	74	96	9.5	75	72	////////	////////	8.8	24	8.8	24	8.8	24	8.8	24
15	0.00		77	75	7.963	3.619	11.582	10.484	9.5	75	96	9.5	75	72	////////	////////	8.8	24	8.8	24	8.8	24	8.8	24
16	0.00	SW	77	75	7.834	3.553	11.387	10.894	9.5	75	96	9.5	75	72	////////	////////	8.8	24	8.8	24	8.8	24	8.8	24
17	0.00		77	75	7.510	3.740	11.250	10.847	9.5	75	96	9.5	77	72	////////	////////	8.8	24	8.8	24	8.8	24	8.8	24
18	0.00		77	79	7.575	3.927	11.502	10.244	9.5	77	96	9.5	77	72	////////	////////	8.8	24	8.8	24	8.8	24	8.8	24
19	0.00		77	78	7.187	3.574	10.761	10.330	9.5	72	96	9.5	77	72	////////	////////	8.8	24	8.8	24	8.8	24	8.8	24
20	0.00		77	79	7.510	3.793	11.303	10.739	9.5	77	96	9.5	77	72	////////	////////	8.8	24	8.8	24	8.8	24	8.8	24
21	0.00		75	79	8.286	4.516	12.802	11.481	9.5	77	96	9.5	77	72	////////	////////	8.8	24	8.8	24	8.8	24	8.8	24
22	0.29	W	73	77	7.446	3.983	11.429	11.439	9.5	77	96	9.5	77	72	////////	////////	8.8	24	8.8	24	8.8	24	8.8	24
23	0.05		74	78	9.384	4.780	14.164	12.448	9.5	77	96	9.5	77	72	////////	////////	8.8	24	8.8	24	8.8	24	8.8	24
24	0.58		73	75	8.415	4.331	12.746	11.990	9.5	77	96	9.5	77	72	////////	////////	8.8	24	8.8	24	8.8	24	8.8	24
25	0.30		73	79	8.674	4.072	12.746	10.715	9.5	77	96	9.5	77	72	////////	////////	8.8	24	8.8	24	8.8	24	8.8	24
26	0.00	SW	73	78	8.092	3.717	11.809	10.454	9.5	77	96	9.5	77	72	////////	////////	8.8	24	8.8	24	8.8	24	8.8	24
27	0.00		72	79	9.190	4.090	13.280	10.830	9.5	77	96	9.5	77	72	////////	////////	8.8	24	8.8	24	8.8	24	8.8	24
28	0.13		72	77	7.833	3.870	11.703	10.801	9.5	76	96	9.5	76	72	////////	////////	8.8	24	8.8	24	8.8	24	8.8	24
29	0.00		72	79	9.449	4.575	14.024	11.519	9.5	76	96	9.5	76	72	////////	////////	8.8	24	8.8	24	8.8	24	8.8	24
30	0.07		70	77	8.673	4.342	13.015	12.283	9.5	75	96	9.5	75	72	////////	////////	8.8	24	8.8	24	8.8	24	8.8	24
31	0.02		75	77	8.350	4.160	12.510	11.544	9.5	76	96	9.5	76	72	////////	////////	8.8	24	8.8	24	8.8	24	8.8	24

	MEXICO	UNITED STATES	PLANT INFLOW	PLANT OUTFLO
TOTAL	252.789	123.091	375.880	340.242
AVERAG	8.154	3.971	12.125	10.976
MAXIMU	9.708	5.660	15.368	14.047
MINIMUM	7.187	3.403	10.761	9.509

MEXIC 67% OF TOTAL FLOW

US = 33% OF TOTAL FLOW

ULL TIM SERVICES				UTILITIES AND CHH ORINE			PERSONNEL SERVICES AND EQUIPMENT UTILIZED OT ER THAN FULL TIME		BOUNDARY
PERSONNEL		EQUIPMENT		CONTROL BUILDING			CLASSI ICATI ON	HRS THIS MONTH	DATE 06/04/92 BOD 5 86 6 0 MG/l TSS 0 MG/l
CHIEF OPERATOR	1	90'D DGE AR SKC R	1	POWER CON MPTIO	610,200 0	K.W.H.			
COMPLIANCE SPEC	1	PICKU 1/2 TON	3	$	58,781.1 . 12		ELECTRICIAN	0	
OPERATORS	2	GRIT TRUCK	1	CHLO INE & ULTRAVIOLET DISINFECTION AREA			LABORERS	0	DATE 06/11/92 BOD 5 90 2 MG/l TSS 70 MG/L
ASST. OPERATOR	1	WATER TRUCK	1		-0-	K.W.H.	OVER TIME (OPERATORS)	12	
LABORERS	3	BACK HOE	1	$	17.48		MOTOR GRADER & OPERATO	0	DATE 06/18/92 BOD 5 84. 2 MG/l. TSS 88 MG/L
MECHANIC	1			CHLORINE CONSU	9,870	LBS			
ELECTRICIAN	1			SULPHUR D XIDE:	3,496 6	LBS.			
				UTILITY COSTS - WATER SERVICE	$3,310 35				DATE 06/25/92 BOD 5 70 0 MG/l TSS 130 0 MG/L
Page 2									
June 1992				BILLING DATE:	06/25/92				

PML-6		PML-7		PML-8		D O. MG/L			p H				SUSPENDED SOLIDS MG/L		SETTLEABLE SOLIDS ML/L	B O D MG/L		Cl 2					
DEPT FEET	AERAT HOURS	DEPT FEET	AERATO HOURS	DEPT FEET	AERATO HOURS	CML-	CML-	EFFLUEN	RA	CML-	CML-	EFFLUEN	RAW	EFFLUEN	EFFLUENT	EFF	INFLUEN	RESIDUAL MG I	GRIT REMOVE	FECAL COLIFORM	UV-1 HOURS	UV-2 HOURS	DATE
[illegible]	[illegible]	8 8	24	8.8	24	4.5	6 0	6 9	7.0	7.1	7.3	7.0						ND	5 C/Y	300	192	192	1
[illegible]	[illegible]	8 8	24	8.8	24	3.6	5 9	6.7	6.9	7.3	7 3	7.1						ND		220	192	192	2
[illegible]	[illegible]	8.8	24	8.8	24	3.6	5.6	6 6	6.9	7.1	7.3	7.1						ND		4	192	192	3
[illegible]	[illegible]	8.8	24	8.8	24	3.3	5 4	6.9	6.8	7.0	7.2	7.1	186	13	<0.10	14.8	152	ND	6 C/Y	2	192	192	4
[illegible]	[illegible]	8 8	24	8.8	24	3.8	5 3	7.1	6.9	7.1	7 2	7.2						ND		2	192	192	5
[illegible]	[illegible]	8.8	24	8.8	24	3.8	4.5	6 8	7.0	7.0	7 3	7.0						ND		<2	192	192	6
[illegible]	[illegible]	8.8	24	8.8	24	4.1	5 5	7 0	6.9	7.2	7.2	7.2						ND		<2	192	192	7
[illegible]	[illegible]	8 8	24	8.8	24	4.1	6.0	6 8	7.0	7.1	7 2	7.2						ND	5 C/Y	<2	192	192	8
[illegible]	[illegible]	8 8	24	8.8	24	3.3	5 2	6 2	7.2	7.1	7 2	7.4						ND		30	192	192	9
[illegible]	[illegible]	8 8	24	8.8	24	3.4	5 4	6 4	7.3	7.2	7 4	7.4						ND		<2	192	192	10
[illegible]	[illegible]	8 8	24	8.8	24	3.9	5 0	6 5	7.2	7.2	7 4	7.3	64	10	<0 10	18 9	42 7	ND		<2	192	192	11
[illegible]	[illegible]	8 8	24	8.8	24	3.2	5.3	6 9	7.1	7.1	7 4	7.3						ND	6 C/Y	30	192	192	12
[illegible]	[illegible]	8 8	24	8.8	24	3.1	5.3	6 8	7.2	7.1	7.4	7.3						ND		<2	192	192	13
[illegible]	[illegible]	8 8	24	8.8	24	3.5	5.5	6 7	7.2	7.1	7 4	7.3						ND		<2	192	192	14
[illegible]	[illegible]	9 8	24	8.8	24	4.1	5.6	6 9	6.9	7.2	7 4	7.3						ND		7	192	192	15
[illegible]	[illegible]	8 8	24	8.8	24	3.2	5 3	7.0	7.0	7.2	7.3	7.3						ND		30	192	192	16
[illegible]	[illegible]	8 8	24	8.8	24	3.0	5 2	6 7	7.0	7.2	7 3	7.1						ND	5 C/Y	<2	192	192	17
[illegible]	[illegible]	8.8	24	8.8	24	3.0	5.7	6 9	6.9	7.0	7 3	7.1	150	8	<0.10	28 4	83 4	ND		33	192	192	18
[illegible]	[illegible]	8 8	24	8.8	24	3.3	5.3	6 7	7.0	7.1	7 2	7.1						ND	6 C/Y	50	192	192	19
[illegible]	[illegible]	8 8	24	8.8	24	3.2	5.4	5 7	6.8	7.1	7 3	7.1						ND		<2	192	192	20
[illegible]	[illegible]	8 8	24	8.8	24	4.3	5.5	6 3	6 9	7.2	7 3	7.2						ND		<2	192	192	21
[illegible]	[illegible]	8 8	24	8.8	24	4.1	5.6	5 7	6 9	7.2	7 3	7.2						ND	6 C/Y	<2	192	192	22
[illegible]	[illegible]	8 8	24	8.8	24	3.2	4.5	7.7	7.1	7.2	7 3	7.1						ND		2	192	192	23
[illegible]	[illegible]	8 8	24	8.8	24	3.2	4 7	7 8	7.1	7.1	7 3	7.1						ND	5 5 C/Y	<2	192	192	24
[illegible]	[illegible]	8 8	24	8.8	24	3.3	4.4	7 4	6.9	7 2	7 3	7 2	84	14	<0 10	40 9	84 1	ND		<2	192	192	25
[illegible]	[illegible]	8 8	24	8.8	24	3.2	5.0	7 6	6.9	7.2	7 3	7.2						ND		<2	192	192	26
[illegible]	[illegible]	8 8	24	8.8	24	3.9	5 1	7 8	7.0	7 2	7.4	7.1						ND		<2	192	192	27
[illegible]	[illegible]	8 8	24	8.8	24	3.4	5 4	7 0	7.1	7 1	7.2	7.2						ND		<2	192	192	28
[illegible]	[illegible]	8 8	24	8 8	24	3.1	3 7	6 9	6 9	7 1	7 2	7.1						ND		<2	192	192	29
[illegible]	[illegible]	8 8	24	8.8	24	3.4	4 2	6 6	7 0	7 1	7 1	7.1						ND	6 C/Y	<2	192	192	30
																							31

MPN/100l
ND = None Detected
C/Y = CUBIC YARD

NOGALES INTERNATIONAL WASTEWATER TREATMENT PLANT

MONTHLY REPORT

PREPARED BY RICHARD L. CALDWELL, COMPLIANCE SPEC
APPROVED AS TO FORM BY WASTEWATER SUPT. LINO VEGA

CML COMPLETE MIX LAGOON
PML PARTIAL MIX LAGOON

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MONTH June 1992

	WEATHER		TEMPERATURE		FLOW IN M.G.D.				CML-1			CML-2			PML-1		PML-2		ML 3		PML 4		ML-5	
DATE	RAIN FALL INCHES	WIND DIRECTION	INFLOW	EFFLUENT	MEXICO	UNITED STATES	PLANT INFLOW	PLANT OUTFLOW	DEPTH FEET	TEMPERATURE	AERAT HOURS	DEPT FEET	TEMPERATUR	AERAT HOURS	DEPT FEET	AERAT HOURS	DEPT FEET	AERAT HOURS	DEPT FEET	AERAT HOURS	DEPT FEET	AERAT HOURS	DEPT FEET	AERAT HOURS
1	0.00	SW	72	61	8.286	3.972	12.258	10.698	9.5	61	96	9.5	61	96	//////////	//////////	8.8	24	8.8	24	8.8	24	8.8	24
2	0.00		71	60	8.157	4.714	12.871	11.436	9.5	60	96	9.5	60	96	//////////	//////////	8.8	24	8.8	24	8.8	24	8.8	24
3	0.00		70	60	7.963	4.594	12.557	11.081	9.5	59	96	9.5	60	96	//////////	//////////	8.8	24	8.8	24	8.8	24	8.8	24
4	0.00		72	60	7.575	4.354	11.929	10.785	9.5	73	96	9.5	72	96	//////////	//////////	8.8	24	8.8	24	8.8	24	8.8	24
5	0.00	SE	72	73	8.092	4.674	12.766	11.140	9.5	73	96	9.5	71	96	//////////	//////////	8.8	24	8.8	24	8.8	24	8.8	24
6	0.00		70	71	7.640	4.222	11.862	11.205	9.5	70	96	9.5	70	96	//////////	//////////	8.8	24	8.8	24	8.8	24	8.8	24
7	0.00		71	73	7.252	4.443	11.695	10.080	9.5	72	96	9.5	72	96	//////////	//////////	8.8	24	8.8	24	8.8	24	8.8	24
8	0.00		72	79	7.252	4.865	12.117	11.185	9.5	69	96	9.5	69	96	//////////	//////////	8.8	24	8.8	24	8.8	24	8.8	24
9	0.00		71	71	7.510	4.949	12.459	11.702	9.5	69	96	9.5	70	96	//////////	//////////	8.8	24	8.8	24	8.8	24	8.8	24
10	0.00	SW	71	72	7.187	4.941	12.128	11.100	9.5	71	96	9.5	69	96	//////////	//////////	8.8	24	8.8	24	8.8	24	8.8	24
11	0.00		73	73	7.381	4.803	12.184	11.809	9.5	71	96	9.5	72	96	//////////	//////////	8.8	24	8.8	24	8.8	24	8.8	24
12	0.00	S	73	73	7.251	4.959	12.210	11.378	9.5	71	96	9.5	72	96	//////////	//////////	8.8	24	8.8	24	8.8	24	8.8	24
13	0.00		73	73	7.252	4.966	12.218	10.421	9.5	71	96	9.5	72	96	//////////	//////////	8.8	24	8.8	24	8.8	24	8.8	24
14	0.00		73	73	6.799	4.832	11.631	10.357	9.5	71	96	9.5	72	96	//////////	//////////	8.8	24	8.8	24	8.8	24	8.8	24
15	0.00		71	73	7.316	4.729	12.045	10.519	9.5	71	96	9.5	72	96	//////////	//////////	8.8	24	8.8	24	8.8	24	8.8	24
16	0.00		71	71	6.993	4.838	11.831	10.731	9.5	69	96	9.5	68	96	//////////	//////////	8.8	24	8.8	24	8.8	24	8.8	24
17	0.00		71	71	6.864	4.808	11.672	10.375	9.5	69	96	9.5	68	96	//////////	//////////	8.8	24	8.8	24	8.8	24	8.8	24
18	0.00	SW	71	72	6.670	4.873	11.543	11.062	9.5	69	96	9.5	69	96	//////////	//////////	8.8	24	8.8	24	8.8	24	8.8	24
19	0.00		71	72	6.800	4.936	11.736	11.054	9.5	71	96	9.5	72	96	//////////	//////////	8.8	24	8.8	24	8.8	24	8.8	24
20	0.00		72	77	7.381	4.325	11.706	10.359	9.5	73	96	9.5	72	96	//////////	//////////	8.8	24	8.8	24	8.8	24	8.8	24
21	0.00		72	73	7.058	3.999	11.057	10.706	9.5	73	96	9.5	72	96	//////////	//////////	8.8	24	8.8	24	8.8	24	8.8	24
22	0.00		73	73	7.769	3.845	11.614	10.798	9.5	73	96	9.5	74	96	//////////	//////////	8.8	24	8.8	24	8.8	24	8.8	24
23	0.00	SE	70	61	7.963	3.877	11.840	11.136	9.5	61	96	9.5	61	96	//////////	//////////	8.8	24	8.8	24	8.8	24	8.8	24
24	0.00		67	61	7.511	3.919	11.430	10.640	9.5	62	96	9.5	61	96	//////////	//////////	8.8	24	8.8	24	8.8	24	8.8	24
25	0.00		69	63	7.511	3.945	11.456	11.051	9.5	61	96	9.5	63	96	//////////	//////////	8.8	24	8.8	24	8.8	24	8.8	24
26	0.00		67	62	7.511	4.049	11.560	11.085	9.5	63	96	9.5	61	96	//////////	//////////	8.8	24	8.8	24	8.8	24	8.8	24
27	0.00	SW	71	62	7.445	3.912	11.357	10.083	9.5	64	96	9.5	62	96	//////////	//////////	8.8	24	8.8	24	8.8	24	8.8	24
28	0.00		72	73	7.445	3.852	11.297	10.571	9.5	73	96	9.5	72	96	//////////	//////////	8.8	24	8.8	24	8.8	24	8.8	24
29	0.00		75	74	7.510	3.866	11.376	10.991	9.5	62	96	9.5	61	96	//////////	//////////	8.8	24	8.8	24	8.8	24	8.8	24
30	0.00	W	77	63	7.898	3.828	11.726	11.218	9.5	62	96	9.5	61	96	//////////	//////////	8.8	24	8.8	24	8.8	24	8.8	24
31																								

TOTAL	223.242	132.889	356.131	326.756
AVERAGE	7.441	4.430	11.871	10.886
MAXIMUM	8.286	4.966	12.871	11.809
MINIMUM	6.670	3.828	11.057	10.080

MEXIC 63 % OF TOTAL FLOW

U.S. = 37 % OF TOTAL FLOW

ULL TIM SERVICES				UTILITIES AND CHLORINE			PERSONNEL SERVICES AND EQUIPMENT UTILIZED OT ER THAN FULL TIME		BOUNDARY
PERSONNEL		EQUIPMENT		CONTROL BUILDING			CLASSI ICATI ON	HRS THIS MONTH	
CHIEF OPERATOR	1	90' D DGE AR S K C R	1	POWER CON MPTIO	597,600 0	K.W.H.			DATE 05/07/92 BOD 5 110 mg/l TSS 222 mg/l
COMPLIANCE SPEC.	1	PICKU 1/2 TON	3	$	57,976.9 91		ELECTRICIAN	0	
OPERATORS	2	GRIT TRUCK	1	CHLO INE & ULTRAVIOLET DISINFECTION AREA			LABORERS	0	DATE 05/14/92 BOD-5 41 4 mg/l TSS 54 mg/l
ASST OPERATOR	1	WATER TRUCK	1		-0-	K.W.H.	OVER TIME (OPERATORS)	22	
LABORERS	3	BACK HOE	1	$	17.48		MOTOR GRADER & OPERATO	0	DATE 05/21/92 BOD 5 122 mg/l TSS 230 mg/l
MECHANIC	1			CHLORINE CONSU	9130	LBS			
ELECTRICIAN	1			SULPHUR D XIDE:	3091 1	LBS.			
Page 2				UTILITY COSTS - WATER SERVICE	2,344.78				DATE 05/28/92 BOD 5 112 mg/l TSS 106 mg/l
May 1992				BILLING DATE:	05/26/92				

PML-6		PML-7		PML-8		D.O. MG/L		p H					SUSPENDED SOLIDS MG/L		SETTLEABLE SOLIDS MG/L	B O D. MG/L		CL2					
DEPT FEET	AERAT HOURS	DEPT FEET	AERATO HOURS	DEPT FEET	AERATO HOURS	CML-	CML-	EFFLUEN	RA	CML-	CML-	EFFLUEN	RAW	EFFLUEN	EFFLUENT	EFF	INFLUEN	RESIDUAL MG/l	GRIT REMOVE	FECAL COLIFORM	UV 1 HOURS	UV 2 HOURS	DATE
[illegible]	[illegible]	8 8	24	8.8	24	4.2	5 5	7 7	7.3	7.6	7.7	7.4						ND		2	192	192	1
[illegible]	[illegible]	8 8	24	8.8	24	4.4	5 6	7 5	7.4	7.6	7 7	7.4						ND		<2	192	192	2
[illegible]	[illegible]	8 8	24	8.8	24	4.2	5.4	7.5	7.3	7.6	7.8	7.4						ND		<2	192	192	3
[illegible]	[illegible]	8 8	24	8.8	24	5.0	6 0	7 7	7.2	7.6	7 8	7.4						ND	6 C/Y	<2	192	192	4
[illegible]	[illegible]	8 8	24	8.8	24	6.2	5.8	7 5	7.2	7.5	7 6	7.3						ND	6 C/Y	<2	192	192	5
[illegible]	[illegible]	8 8	24	8.8	24	3.0	6.0	7 7	7.2	7.3	7 6	7.3						ND		<2	192	192	6
[illegible]	[illegible]	8 8	24	8.8	24	5.0	6 0	6 9	7.2	7.5	7 7	7.3	176	22	<0.10	15.9	68 0	ND		<2	192	192	7
[illegible]	[illegible]	8 8	24	8.8	24	4.6	6.2	7 2	7.2	7.5	7 7	7.4						ND	6 C/Y	<2	192	192	8
[illegible]	[illegible]	8 8	24	8.8	24	5.3	5.5	5 7	7.3	7.6	7 7	7 6						ND		<2	192	192	9
[illegible]	[illegible]	8 8	24	8.8	24	4.9	6.0	5 5	7.5	7.6	7 7	7.7						ND		<2	192	192	10
[illegible]	[illegible]	8 8	24	8.8	24	4.4	5.8	7 6	7.1	7.3	7.5	7.4						ND	6 C/Y	<2	192	192	11
[illegible]	[illegible]	8 8	24	8.8	24	5.2	5 8	7 0	7.2	7.3	7.5	7.2						ND		<2	192	192	12
[illegible]	[illegible]	8 8	24	8.8	24	3.9	5 2	7.4	7.2	7.3	7 5	7.2						ND		<2	192	192	13
[illegible]	[illegible]	8 8	24	8.8	24	2.7	5 2	7 0	7.1	7.3	7 5	7.2	186	25	<0.10	21 9	59 4	ND	6 C/Y	14	192	192	14
[illegible]	[illegible]	8 8	24	8.8	24	2.7	5.7	7 4	7.2	7.3	7 5	7.3						ND		50	192	192	15
[illegible]	[illegible]	8 8	24	8.8	24	5.7	5.8	7 5	7.3	7.6	7 6	7.2						ND		<2	192	192	16
[illegible]	[illegible]	8 8	24	8.8	24	5.4	6 0	5 2	7.2	7.4	7 7	7.2						ND		<2	192	192	17
[illegible]	[illegible]	8 8	24	8.8	24	5.0	5.6	7 3	7.2	7.3	7 5	7.2						ND	6 C/Y	2	192	192	18
[illegible]	[illegible]	8 8	24	8.8	24	3.3	5 8	7 0	7.2	7.3	7 5	7.2						ND		<2	192	192	19
[illegible]	[illegible]	8 8	24	8 8	24	4.0	5.0	7 4	7.2	7.3	7 5	7.3						ND	5 C/Y	<2	192	192	20
[illegible]	[illegible]	8 8	24	8.8	24	4.0	5 3	7 6	7.2	7 3	7 5	7.3	132	17	<0.10	5 5	53 7	ND		4	192	192	21
[illegible]	[illegible]	8 8	24	8.8	24	3.7	5 4	7 8	7.3	7.4	7 6	7 3						ND	6 C/Y	<2	192	192	22
[illegible]	[illegible]	8 8	24	8.8	24	4.0	5 6	7 5	7.2	7.3	7 6	7.3						ND		23	192	192	23
[illegible]	[illegible]	8 8	24	8.8	24	4.2	5 9	7 6	7.2	7.3	7 6	7.3						ND		2	192	192	24
[illegible]	[illegible]	8 8	24	8 8	24	4.2	5 9	7 5	7.3	7 3	7 6	7.3						ND		2	192	192	25
[illegible]	[illegible]	8 8	24	8.8	24	3.5	5.0	6 4	7.0	7.1	7 3	7 3						ND	6 C/Y	1	192	192	26
[illegible]	[illegible]	8 8	24	8 8	24	3.7	5.3	6 7	7.2	7.3	7 5	7.2						ND		<2	192	192	27
[illegible]	[illegible]	8 8	24	8.8	24	3.7	5 4	6 5	7.1	7.1	7 4	7.3	174	12	<0.10	42 9	95 1	ND	6 C/Y	2	192	192	28
[illegible]	[illegible]	8 8	24	8.8	24	0.5	5 3	6 7	7.0	7.1	7 4	7 3						ND	6 C/Y	4	192	192	29
[illegible]	[illegible]	8 8	24	8.8	24	4.2	6 0	5 2	7.0	7.1	7 3	7 3						ND		<2	192	192	30
[illegible]	[illegible]	8 8	24	8.8	24	4.4	6 0	6 4	7 0	7.2	7 4	7 3						ND		2	192	192	31

MPL/100l *
ND = NONE DETECTED

NOGALES INTERNATIONAL WASTEWATER TREATMENT PLANT

MONTHLY REPORT

PREPAR BY: RIC ARD L. ALDWELL, COMPLIANE SPEC.
APPROVED AS TO FORM BY WASTEWATER SUPT. LINO VEGA

CML COMPLETE MIX LAGOON
PML PARTIAL MIX LAGOON

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MONTH. May 1992

	WEATHER		TEMPERATURE		FLOW IN M.G.D.				CML-1			CML-2			PML 1		PML 2		ML 3		PML 4		ML-5	
DATE	RAIN FALL INCHES	WIND DIREC-TION	INFLOW	EFFLUENT	MEXICO	UNITED STATES	PLANT INFLOW	PLANT OUTFLO	DEPTH FEET	TEMPERATURE	AERAT HOURS	DEPT FEET	TEMPERATUR	AERAT HOURS	DEPT FEET	AERAT HOURS	DEPT FEET	AERAT HOURS	DEPT FEET	AERAT HOURS	DEPT FEET	AERAT HOURS	DEPT FEET	AERAT HOURS
1	0.00	NE	71	72	7.510	5.299	12.809	13.081	9.5	71	192	9.5	71	192	//////////	//////////	8.8	24	8.8	24	8.8	24	8.8	24
2	0.00		71	73	7.704	5.446	13.150	12.970	9.5	71	192	9.5	71	192	//////////	//////////	8.8	24	8.8	24	8.8	24	8.8	24
3	0.00		70	72	8.092	5.624	13.716	13.018	9.5	71	192	9.5	71	192	//////////	//////////	8.8	24	8.8	24	8.8	24	8.8	24
4	0.00	SW	71	71	8.028	4.448	12.476	12.876	9.5	69	192	9.5	69	192	//////////	//////////	8.8	24	8.8	24	8.8	24	8.8	24
5	0.00		72	70	8.351	5.529	13.880	13.507	9.5	71	192	9.5	70	192	//////////	//////////	8.8	24	8.8	24	8.8	24	8.8	24
6	0.00		71	70	7.898	5.315	13.213	13.043	9.5	69	192	9.5	68	192	//////////	//////////	8.8	24	8.8	24	8.8	24	8.8	24
7	0.00		69	69	7.640	5.130	12.770	12.793	9.5	67	192	9.5	66	192	//////////	//////////	8.8	24	8.8	24	8.8	24	8.8	24
8	0.00		69	69	7.640	5.130	12.770	13.003	9.5	67	192	9.5	66	192	//////////	//////////	8.8	24	8.8	24	8.8	24	8.8	24
9	0.00		72	70	7.963	5.250	13.213	12.734	9.5	68	192	9.5	66	192	//////////	//////////	8.8	24	8.8	24	8.8	24	8.8	24
10	0.00	SW	68	70	7.963	5.250	13.213	12.373	9.5	70	192	9.5	68	192	//////////	//////////	8.8	24	8.8	24	8.8	24	8.8	24
11	0.00		71	71	7.511	4.926	12.437	12.594	9.5	73	192	9.5	71	192	//////////	//////////	8.8	24	8.8	24	8.8	24	8.8	24
12	0.00		72	72	7.510	4.815	12.325	11.875	9.5	71	192	9.5	71	192	//////////	//////////	8.8	24	8.8	24	8.8	24	8.8	24
13	0.00		71	71	6.864	4.351	11.215	12.578	9.5	71	192	9.5	69	192	//////////	//////////	8.8	24	8.8	24	8.8	24	8.8	24
14	0.00		73	69	7.252	4.630	11.882	12.450	9.5	71	96	9.5	70	176	//////////	//////////	8.8	24	8.8	24	8.8	24	8.8	24
15	0.00		72	70	7.381	4.722	12.103	12.618	9.5	71	96	9.5	72	176	//////////	//////////	8.8	24	8.8	24	8.8	24	8.8	24
16	0.00		73	73	7.704	4.954	12.658	11.830	9.5	69	96	9.5	70	176	//////////	//////////	8.8	24	8.8	24	8.8	24	8.8	24
17	0.00		73	72	7.445	4.770	12.215	11.591	9.5	70	96	9.5	72	176	//////////	//////////	8.8	24	8.8	24	8.8	24	8.8	24
18	0.00	SW	73	72	7.381	4.834	12.215	12.665	9.5	72	96	9.5	73	176	//////////	//////////	8.8	24	8.8	24	8.8	24	8.8	24
19	0.02	W	73	72	7.704	5.176	12.880	12.858	9.5	72	96	9.5	73	176	//////////	//////////	8.8	24	8.8	24	8.8	24	8.8	24
20	0.00		73	71	8.092	6.631	14.723	13.013	9.5	71	96	9.5	72	176	//////////	//////////	8.8	24	8.8	24	8.8	24	8.8	24
21	0.11		72	70	8.027	5.698	13.725	13.322	9.5	69	96	9.5	70	176	//////////	//////////	8.8	24	8.8	24	8.8	24	8.8	24
22	0.39	SW	71	70	8.092	5.454	13.546	13.822	9.5	68	96	9.5	69	176	//////////	//////////	8.8	24	8.8	24	8.8	24	8.8	24
23	0.00		71	70	7.898	5.315	13.213	13.312	9.5	69	96	9.5	69	176	//////////	//////////	8.8	24	8.8	24	8.8	24	8.8	24
24	0.00		71	70	7.704	5.176	12.880	12.882	9.5	69	96	9.5	70	176	//////////	//////////	8.8	24	8.8	24	8.8	24	8.8	24
25	0.00		71	70	8.222	5.436	13.658	12.558	9.5	69	96	9.5	70	176	//////////	//////////	8.8	24	8.8	24	8.8	24	8.8	24
26	0.00	SE	71	69	8.222	5.436	13.658	13.947	9.5	70	96	9.5	70	176	//////////	//////////	8.8	24	8.8	24	8.8	24	8.8	24
27	0.00		72	69	8.157	5.501	13.658	13.393	9.5	68	96	9.5	69	176	//////////	//////////	8.8	24	8.8	24	8.8	24	8.8	24
28	0.00		74	69	8.415	5.686	14.101	12.915	9.5	68	96	9.5	69	176	//////////	//////////	8.8	24	8.8	24	8.8	24	8.8	24
29	0.15	W	72	69	8.609	5.716	14.325	12.272	9.5	70	96	9.5	70	176	//////////	//////////	8.8	24	8.8	24	8.8	24	8.8	24
30	0.00		72	72	8.415	5.686	14.101	12.012	9.5	72	96	9.5	70	176	//////////	//////////	8.8	24	8.8	24	8.8	24	8.8	24
31	0.15		72	61	7.769	5.223	12.992	11.548	9.5	61	96	9.5	60	176	//////////	//////////	8.8	24	8.8	24	8.8	24	8.8	24

	MEXICO	UNITED STATES	PLANT INFLOW	PLANT OUTFLO
TOTAL	243.163	162.557	405.720	395.453
AVERAG	7.844	5.244	13.088	12.757
MAXIMU	8.609	6.631	14.723	13.947
MINIMUM	6.864	4.351	11.215	11.548

MEXIC 60 % OF TOTAL FLOW

U.S. = 40 % OF TOTAL FLOW

NOG. WASH P P = 0 %

ULL TIM SERVICES				
PERSONNEL		EQUIPMENT		
CHIEF OPERATOR		1	90' D DGE AR S K C R	1
COMPLIANCE SPEC		1	PICKU 1/2 TON	3
OPERATORS		2	GRIT TRUCK	1
ASST OPERATOR		1	WATER TRUCK	1
LABORERS		3	BACK HOE	1
MECHANIC		1		
ELECTRICIAN		1		

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April 1992

UTILITIES AND CHORINE		
CONTROL BUILDING		
POWER CON MPTIO	639,00 00	K W.H.
$	61,778 0 . 06	
CHLO INE & ULTRAVIOLET DISINFECTION AREA		
	-0-	K W.H.
$	17.48	
CHLORINE CONSU	7,450	LBS
SULPHUR D XIDE:	2,318	LBS.
UTILITY COSTS - WATER SERVICE	$1,887.96	
BILLING DATE:	4/24/92	

PERSONNEL SERVICES AND EQUIPMENT UTILIZED OT ER THAN FULL TIME	
CLASSI ICATI ON	HRS THIS MONTH
ELECTRICIAN	0
LABORERS	0
OVER TIME (OPERATORS)	123
MOTOR GRADER & OPERATO	0
OTHER CITY ERSONNEL	0

BOUNDARY

DATE 04/09/92
BOD 5 78.7 mg/l
TSS 210 mg/l

DATE 04/16/92
BOD 5 61.2 mg/l
TSS 128 mg/l

DATE 04/23/92
BOD 5 31.2 mg/l
TSS 158 mg/l

DATE 04/30/92
BOD 5 110 mg/l
TSS 340 mg/l

PML-6		PML-7		PML-8		D.O. MG/l			pH				SUSPENDED SOLIDS MG/L		SETTLEABLE SOLIDS MG/L	B O D MG/l		CL2					
DEPT FEET	AERAT HOURS	DEPT FEET	AERATO HOURS	DEPT FEET	AERATO HOURS	CML-	CML-	EFFLUENT	RAW	CML-	CML-	EFFLUENT	RAW	EFFLUENT	EFFLUENT	EFF	INFLUENT	RESIDUAL MG/L	GRIT REMOVE	FECAL COLIFORM	UV 1 HOURS	UV 2 HOURS	DATE
[illegible]	[illegible]	8.8	24	8.8	24	5.7	5.9	5.3	7.3	7.6	7.7	7.3						ND		<2	192	192	1
[illegible]	[illegible]	8.8	24	8.8	24	5.5	6.2	6.5	7.5	7.4	7.7	7.6	262	7	<0.10	6.6	26.9	ND		7	192	192	2
[illegible]	[illegible]	8.8	24	8.8	24	6.2	6.2	4.8	7.3	7.8	7.9	7.5						ND	5.5 C/Y	[illegible]	192	192	3
[illegible]	[illegible]	8.8	24	8.8	24	6.1	6.4	5.8	7.2	7.8	7.9	7.4						ND		<2	192	192	4
[illegible]	[illegible]	8.8	12	8.8	12	6.4	6.4	4.8	7.3	7.8	7.9	7.8						ND	5 C/Y	<2	192	192	5
[illegible]	[illegible]	8.8	12	8.8	12	7.0	7.3	7.1	7.2	7.7	7.8	7.6						ND		<2	192	192	6
[illegible]	[illegible]	8.8	12	8.8	12	7.9	7.6	6.6	7.2	7.6	7.7	7.5						ND		<2	192	192	7
[illegible]	[illegible]	8.8	12	8.8	12	6.5	7.5	6.8	7.3	7.5	7.4	7.4						ND	5 C/Y	<2	192	192	8
[illegible]	[illegible]	8.8	12	8.8	12	5.2	6.3	7.7	7.2	7.6	7.8	7.5	152	28	<0.10	9.9	29.3	ND		50	192	192	9
[illegible]	[illegible]	8.8	12	8.8	12	7.5	8.4	7.1	7.2	7.7	7.8	7.5						ND		<2	192	192	10
[illegible]	[illegible]	8.8	12	8.8	12	7.0	7.2	7.4	7.2	7.6	7.8	7.5						ND		8	192	192	11
[illegible]	[illegible]	8.8	12	8.8	12	7.7	7.8	7.2	7.3	7.6	7.8	7.5						ND		4	192	192	12
[illegible]	[illegible]	8.8	12	8.8	12	6.9	8.2	7.3	7.2	7.6	7.7	7.6						ND	5.5 C/Y	<2	192	192	13
[illegible]	[illegible]	8.8	12	8.8	12	5.8	6.3	8.2	7.2	7.5	7.7	7.4						ND	5.5 C/Y	<2	192	192	14
[illegible]	[illegible]	8.8	12	8.8	12	5.3	6.1	7.6	7.3	7.6	7.8	7.5						ND	5.5 C/Y	<2	192	192	15
[illegible]	[illegible]	8.8	12	8.8	12	5.4	5.5	6.4	7.2	7.5	7.8	7.3	158	23	<0.10	18.0	29.4	ND		30	192	192	16
[illegible]	[illegible]	8.8	12	8.8	12	4.1	4.3	7.2	7.3	7.6	7.7	7.4						ND		30	192	192	17
[illegible]	[illegible]	8.8	12	8.8	12	8.1	8.5	5.6	7.3	7.6	7.8	7.6						ND		23	192	192	18
[illegible]	[illegible]	8.8	12	8.8	12	5.6	5.7	5.0	7.3	7.5	7.8	7.4						ND		50	192	192	19
[illegible]	[illegible]	8.8	12	8.8	12	4.6	4.0	4.7	7.3	7.5	7.8	7.5						ND		300	192	192	20
[illegible]	[illegible]	8.8	12	8.8	12	4.1	6.1	8.0	7.3	7.6	7.6	7.6						ND	9 C/Y	<2	192	192	21
[illegible]	[illegible]	8.8	12	8.8	12	5.0	5.2	7.9	7.3	7.5	7.8	7.6						ND	4 C/Y	<2	192	192	22
[illegible]	[illegible]	8.8	12	8.8	12	5.5	6.3	7.7	7.3	7.8	7.8	7.6	142	22	0.2	6.4	33.0	ND	5.5 C/Y	<2	192	192	23
[illegible]	[illegible]	8.8	12	8.8	12	4.5	5.7	7.4	7.4	7.5	7.8	7.3						ND		<2	192	192	24
[illegible]	[illegible]	8.8	12	8.8	12	5.4	6.1	6.4	7.4	7.6	7.9	7.4						ND		<2	192	192	25
[illegible]	[illegible]	8.8	12	8.8	12	4.5	6.0	6.2	7.5	7.5	7.8	7.5						ND		<2	192	192	26
[illegible]	[illegible]	8.8	12	8.8	12	5.0	5.7	7.2	7.2	7.6	7.7	7.6						ND		22	192	192	27
[illegible]	[illegible]	8.8	12	8.8	12	5.0	4.8	7.4	7.3	7.6	7.6	7.4						ND	5 C/Y	900	192	192	28
[illegible]	[illegible]	8.8	12	8.8	12	4.6	4.3	7.6	7.3	7.6	7.7	7.3						ND	10.5 C/Y	<2	192	192	29
[illegible]	[illegible]	8.8	12	8.8	12	4.4	5.0	6.7	7.4	7.5	7.7	7.3	164	27	<0.10	14.6	44.4	ND		50	192	192	30
																							31

[illegible]
ND - NONE DETECTED

NOGALES INTERNATIONAL WASTEWATER TREATMENT PLANT

MONTHLY REPORT

PREPAR BY: RIC ARD L. ALDWELL, COMPLIANE SPEC
APPROVED AS TO FORM BY WASTEWATER SUPT LINO VEGA

CML COMPLETE MIX LAGOON
PML PARTIAL MIX LAGOON
P P PUMPING PLANT PUMPING STATION IS NO LONGER IN SERVICE

Page 1

MONTH: April 1992

DATE	WEATHER RAIN FALL INCHES	WEATHER WIND DIRECTION	TEMPERATURE INFLOW	TEMPERATURE EFFLUENT	FLOW IN M.G.D. MEXICO	FLOW IN M.G.D. UNITED STATES	FLOW IN M.G.D. PLANT INFLOW	FLOW IN M.G.D. PLANT OUTFLO	CML-1 DEPTH FEET	CML-1 TEMPERATURE	CML-1 AERAT HOURS	CML-2 DEPT FEET	CML-2 TEMPERATUR	CML-2 AERAT HOURS	PML-1 DEPT FEET	PML-1 AERAT HOURS	PML-2 DEPT FEET	PML-2 AERAT HOURS	ML-3 DEPT FEET	ML-3 AERAT HOURS	PML-4 DEPT FEET	PML-4 AERAT HOURS	ML-5 DEPT FEET	ML-5 AERAT HOURS
1	0.00	NE	64	61	10.354	6.074	16.428	16.629	9.5	61	192	9.5	61	192	//////	//////	8.8	24	8.8	24	8.8	24	8.8	24
2	0.54	SW	63	61	10.871	7.416	18.287	18.511	9.5	61	192	9.5	60	192	//////	//////	8.8	24	8.8	24	8.8	24	8.8	24
3	0.22		63	58	11.582	6.441	18.023	18.244	9.5	60	192	9.5	58	192	//////	//////	8.8	24	8.8	24	8.8	24	8.8	24
4	0.20		64	59	11.388	5.505	16.893	17.101	9.5	59	192	9.5	59	192	//////	//////	8.8	24	8.8	24	8.8	24	8.8	24
5	0.15		63	58	10.872	5.479	16.351	16.271	9.5	58	192	9.5	58	192	//////	//////	8.8	12	8.8	12	8.8	12	8.8	12
6	0.00	S	65	64	11.065	6.060	17.125	16.241	9.5	63	192	9.5	63	192	//////	//////	8.8	12	8.8	12	8.8	12	8.8	12
7	0.00		66	64	10.742	5.867	16.609	15.628	9.5	63	192	9.5	61	192	//////	//////	8.8	12	8.8	12	8.8	12	8.8	12
8	0.00		66	63	10.418	5.676	16.094	11.543	9.5	63	192	9.5	63	192	//////	//////	8.8	12	8.8	12	8.8	12	8.8	12
9	0.00		67	66	9.837	5.328	15.165	12.922	9.5	64	192	9.5	63	192	//////	//////	8.8	12	8.8	12	8.8	12	8.8	12
10	0.00	SE	66	66	9.578	5.173	14.751	16.050	9.5	64	192	9.5	63	192	//////	//////	8.8	12	8.8	12	8.8	12	8.8	12
11	0.00		66	66	9.644	5.315	14.959	14.354	9.5	64	192	9.5	63	192	//////	//////	8.8	12	8.8	12	8.8	12	8.8	12
12	0.00		66	66	9.320	5.122	14.442	14.116	9.5	64	192	9.5	63	192	//////	//////	8.8	12	8.8	12	8.8	12	8.8	12
13	0.00		66	64	9.837	5.678	15.515	14.162	9.5	64	192	9.5	64	192	//////	//////	8.8	12	8.8	12	8.8	12	8.8	12
14	0.00		66	66	10.031	5.797	15.828	14.084	9.5	64	192	9.5	63	192	//////	//////	8.8	12	8.8	12	8.8	12	8.8	12
15	0.00		68	68	10.419	6.039	16.458	13.329	9.5	64	192	9.5	64	192	//////	//////	8.8	12	8.8	12	8.8	12	8.8	12
16	0.00		68	64	10.161	5.877	16.038	13.708	9.5	64	192	9.5	64	192	//////	//////	8.8	12	8.8	12	8.8	12	8.8	12
17	0.40	SW	68	64	9.514	5.475	14.989	17.038	9.5	68	192	9.5	68	192	//////	//////	8.8	12	8.8	12	8.8	12	8.8	12
18	0.00		68	66	9.256	5.315	14.571	15.043	9.5	66	192	9.5	64	192	//////	//////	8.8	12	8.8	12	8.8	12	8.8	12
19	0.00		68	65	8.803	5.033	13.836	14.572	9.5	64	192	9.5	63	192	//////	//////	8.8	12	8.8	12	8.8	12	8.8	12
20	0.00		68	64	9.385	5.395	14.780	14.647	9.5	63	192	9.5	63	192	//////	//////	8.8	12	8.8	12	8.8	12	8.8	12
21	0.00	S	70	68	8.157	4.631	12.788	13.874	9.5	68	192	9.5	68	192	//////	//////	8.8	12	8.8	12	8.8	12	8.8	12
22	0.00		68	68	8.545	4.872	13.417	13.196	9.5	68	192	9.5	68	192	//////	//////	8.8	12	8.8	12	8.8	12	8.8	12
23	0.00		68	68	8.286	4.817	13.103	13.225	9.5	66	192	9.5	66	192	//////	//////	8.8	12	8.8	12	8.8	12	8.8	12
24	0.00		68	67	8.286	4.712	12.998	13.358	9.5	67	192	9.5	67	192	//////	//////	8.8	12	8.8	12	8.8	12	8.8	12
25	0.00		70	74	8.092	4.591	12.683	13.177	9.5	70	192	9.5	70	192	//////	//////	8.8	12	8.8	12	8.8	12	8.8	12
26	0.00		72	73	7.640	5.283	12.923	12.916	9.5	71	192	9.5	71	192	//////	//////	8.8	12	8.8	12	8.8	12	8.8	12
27	0.00	SE	69	73	7.963	5.527	13.490	13.711	9.5	71	192	9.5	71	192	//////	//////	8.8	12	8.8	12	8.8	12	8.8	12
28	0.00		72	75	7.446	5.137	12.583	13.079	9.5	69	192	9.5	69	192	//////	//////	8.8	12	8.8	12	8.8	12	8.8	12
29	0.00		71	75	6.864	4.698	11.562	12.376	9.5	70	192	9.5	70	192	//////	//////	8.8	12	8.8	12	8.8	12	8.8	12
30	0.00		70	71	7.834	5.430	13.264	12.455	9.5	68	192	9.5	68	192	//////	//////	8.8	12	8.8	12	8.8	12	8.8	12
31																								

	MEXICO	UNITED STATES	PLANT INFLOW	PLANT OUTFLO
TOTAL	282.190	163.763	445.953	435.560
AVERAG	9.406	5.459	11.865	14.519
MAXIMU	11.582	7.416	18.267	18.511
MINIMUM	6.864	4.591	11.562	11.543

MEXIC 63 % OF TOTAL FLOW

U S = 37 % OF TOTAL FLOW

NOG WASH P P = 0 %

ULL TIM SERVICES				UTILITIES AND CHORINE			PERSONNEL SERVICES AND EQUIPMENT UTILIZED OT ER THAN FULL TIME		BOUNDARY
PERSONNEL		EQUIPMENT		CONTROL BUILDING			CLASSI ICATI ON	HRS THIS MONTH	
CHIEF OPERATOR	1	90'D DGE AR SKC R	1	POWER CON MPTIO	757800 0 00	K W.H.			DATE : 03/05/92 BOD 5 40 0 TSS 90
COMPLIANCE SPEC.	1	PICKU 1/2 TON	2	$	73,139.1 . 17		ELECTRICIAN	0	
ASST. OPERATOR	1	GRIT TRUCK	1	CHLO INE & ULTRAVIOLET DISINFECTION AREA			LABORERS	0	DATE : 03/12/92 BOD 5 65 5 TSS 124
OPERATORS	2	WATER TRUCK	1		-0-	K.W.H.	OVER TIME (OPERATORS)	21	
LABORERS	3	BACK HOE	1	$	17 48		MOTOR GRADER & OPERATO	0	DATE . 03/19/92 BOD-5. 43 2 TSS 63
MECHANIC	1			CHLORINE CONSU	2,4 0	LBS			
ELECTRICIAN	1			SULPHUR D XIDE:	1,7 0	LBS.			
				UTILITY COSTS - WATER SERVICE	114.16				DATE : 03/26/92 BOD 5 32 6 TSS 49
Page 2									
March 1992				BILLING DATE:	03/26/92				

PML-6		PML-7		PML-8		D.O. MG/L			p H				SUSPENDED SOLIDS MG/L		SETTLEABLE SOLIDS MG/L	B O D. MG/L		Cl 2					
DEPT FEET	AERAT HOURS	DEPT FEET	AERATO HOURS	DEPT FEET	AERATO HOURS	CML-	CML-	EFFLUEN	RA	CML-	CML-	EFFLUEN	RAW	EFFLUEN	EFFLUENT	EFF	INFLUEN	RESIDUAL MG/l	GRIT REMOVE	FECAL COLIFORM	UV 1 HOURS	UV-2 HOURS	DATE
//////////	//////////	8 8	24	8.8	24	7.4	7.6	5 6	7.3	7.6	7.6	7.3						ND		<2	192	192	1
//////////	//////////	8 8	24	8.8	24	7.1	7.3	6 1	7 0	7.5	7 6	7 3						ND		<2	192	192	2
//////////	//////////	8 8	24	8.8	24	6.4	6.3	6 1	7.3	7.6	7.7	7.3						ND	5 C/Y	<2	192	192	3
//////////	//////////	8 8	24	8.8	24	7.6	8.4	6 0	7.1	7.5	7.6	7.3						ND	5 C/Y	2	192	192	4
//////////	//////////	8 8	24	8.8	24	7.4	8.0	6 0	7.0	7.5	7 5	7.2	188	12	<0.10	10.5	66 0	ND		4	192	192	5
//////////	//////////	8 8	24	8.8	24	7.2	8.2	6 2	7.1	7.5	7.6	7.3						ND		8	192	192	6
//////////	//////////	8 8	24	8.8	24	7.6	8.1	5 8	7.1	7.5	7.6	7.3						ND		<2	192	192	7
//////////	//////////	8 8	24	8.8	24	7.3	7.7	6.1	7 2	7.7	7.7	7.3						ND		<2	192	192	8
//////////	//////////	8 8	24	8.8	24	7.2	7.7	6.1	7.2	7.6	7.7	7.3						ND	5 C/Y	<2	192	192	9
//////////	//////////	8 8	24	8 8	24	8.0	8.4	5 7	7.3	7.6	7.6	7 3						ND		<2	192	192	10
//////////	//////////	8 8	24	8.8	24	7.7	7.9	6 3	7.1	7.5	7.5	7.2						ND	5 C/Y	<2	192	192	11
//////////	//////////	8 8	24	8 8	24	7.3	7.3	6 1	7.3	7.5	7.6	7.3	70	12	<0.10	8.7	52 7	ND	5 5 C/Y	17	192	192	12
//////////	//////////	8 8	24	8.8	24	7.9	8.0	5 6	7.2	7.5	7.5	7.2						ND		17	192	192	13
//////////	//////////	8 8	24	8.8	24	4.1	4.7	6.0	7 3	7.5	7.6	7.3						ND	5 C/Y	<2	192	192	14
//////////	//////////	8 8	24	8.8	24	4.5	4 8	5 9	7.3	7.6	7.6	7 2						ND		<2	192	192	15
//////////	//////////	8 8	24	8 8	24	7.6	6.9	6 8	7.1	7.5	7.6	7.3						ND		<2	192	192	16
//////////	//////////	8 8	24	8 8	24	7.0	7.6	6 0	7.1	7.4	7.5	7.3						ND		2	192	192	17
//////////	//////////	8 8	22	8.8	22	7.1	7.8	5 4	7 2	7.5	7 6	7.4						ND		8	192	192	18
//////////	//////////	8 8	22	8 8	22	7.2	7.6	5 6	7.2	7.5	7.6	7.3	134	14	<0.10	8 8	29 6	ND		<2	192	192	19
//////////	//////////	8 8	22	8 8	22	6.6	7.3	5 3	7.2	7.7	7.6	7 4						ND	5 C/Y	2	192	192	20
//////////	//////////	8 8	22	8 8	22	6.9	7.1	5 5	7.2	7.6	7 6	7.4						ND		2	192	192	21
//////////	//////////	8 8	22	8 8	22	6.5	7.2	5 6	7.2	7.6	7.6	7 4						ND	5 C/Y	<2	192	192	22
//////////	//////////	8 8	22	8 8	22	5.3	7.1	5 6	7.2	7.4	7 6	7.5						ND		<2	192	192	23
//////////	//////////	8 8	22	8.8	22	6.8	7.2	6 2	7.2	7.5	7 6	7.4						0 05#		<2	192	192	24
//////////	//////////	8 8	22	8 8	22	6.7	7 2	5 7	7 2	7.5	7 6	7.5						ND		<2	192	192	25
//////////	//////////	8 8	22	8 8	22	6.5	7 1	6 0	7.2	7.4	7 6	7.5	144	18	<0.10	7 2	37 5	ND	6 C/Y	27	192	192	26
//////////	//////////	8 8	22	8 8	22	6.1	7.0	6 1	7.3	7 4	7.6	7.4						ND	5 C/Y	80	192	192	27
//////////	//////////	8 8	22	8.8	22	M	M	5 6	7.3	M	M	7.1						ND		2	192	192	28
//////////	//////////	8 8	22	8 8	22	6.9	8 0	5 9	6 9	7.3	7.4	7.4						ND		<2	192	192	29
//////////	//////////	8 8	22	8 8	22	5.7	6.6	6 7	6 9	7.4	7 5	7.3						ND		<2	192	192	30
//////////	//////////	8 8	22	8 8	22	5.6	6 0	5 5	6 5	7.3	7 5	7 3						ND	5 5 C/Y	<2	192	192	31

MPL/100l *
ND = NONE DETECTED
# - SO2 OFF FOR TEST WITH EPA APPROVAL

NOGALES INTERNATIONAL WASTEWATER TREATMENT PLANT

MONTHLY REPORT

PREPAR BY. RIC ARD L. ALDWELL, COMPLIAN E SPEC
APPROVED AS TO FORM BY WASTEWATER SUPT. LINO VEGA

CML COMPLETE MIX LAGOON
PML PARTIAL MIX LAGOON
P.P.PUMPING PLANT PUMPING STATION IS NO LONGER IN SERVICE

MONTH: March 1992

DATE	WEA RAIN FALL INCHES	HER WIND DIREC-TION	TEMP INFLOW	RATURE EFFLUEN	MEXICO	FLOW UNITED STATES	IN PLANT INFLOW	M.G.D. PLANT OUTFLO	CML-1 DEPTH FEET	CML-1 TEMPE ATURE	CML-1 AERAT HOURS	CML-2 DEPT FEET	CML-2 TEMPE ATUR	CML-2 AERAT HOURS	PML-1 DEPT FEET	PML-1 AERAT HOURS	PML-2 DEPT FEET	PML-2 AERAT HOURS	ML-3 DEPT FEET	ML-3 AERAT HOURS	PML 4 DEPT FEET	PML 4 AERAT HOURS	ML-5 DEPT FEET	ML-5 AERAT HOURS
1	0.00	SE	64	57	7.575	4.591	12.166	14.461	9.5	58	192	9.5	57	192	//////////	//////////	8.8	24	8.8	24	8.8	24	8.8	24
2	0.00		64	58	8.674	6.095	14.769	16.868	9.5	59	192	9.5	59	192	//////////	//////////	8.8	24	8.8	24	8.8	24	8.8	24
3	0.86		61	55	11.001	6.015	17.016	19.434	9.5	56	168	9.5	55	192	//////////	//////////	8.8	24	8.8	24	8.8	24	8.8	24
4	0.32		63	55	9.256	5.933	15.189	17.347	9.5	57	168	9.5	56	192	//////////	//////////	8.8	24	8.8	24	8.8	24	8.8	24
5	0.00		63	55	9.385	5.100	14.485	16.543	9.5	58	168	9.5	56	192	//////////	//////////	8.8	24	8.8	24	8.8	24	8.8	24
6	0.00		63	55	9.385	5.490	14.875	16.989	9.5	58	168	9.5	56	192	//////////	//////////	8.8	24	8.8	24	8.8	24	8.8	24
7	0.00		64	57	9.191	5.585	14.776	16.875	9.5	59	168	9.5	57	192	//////////	//////////	8.8	24	8.8	24	8.8	24	8.8	24
8	0.35	W	62	55	9.320	5.482	14.802	16.905	9.5	58	168	9.5	57	192	//////////	//////////	8.8	24	8.8	24	8.8	24	8.8	24
9	0.23		62	55	9.837	5.878	15.715	17.948	9.5	57	168	9.5	57	192	//////////	//////////	8.8	24	8.8	24	8.8	24	8.8	24
10	0.03	SW	63	55	10.161	5.352	15.513	17.718	9.5	57	168	9.5	56	192	//////////	//////////	8.8	24	8.8	24	8.8	24	8.8	24
11	0.00	SE	63	56	10.225	5.175	15.400	17.589	9.5	57	168	9.5	57	192	//////////	//////////	8.8	24	8.8	24	8.8	24	8.8	24
12	0.00		63	55	9.191	5.505	14.696	16.784	9.5	57	168	9.5	57	192	//////////	//////////	8.8	24	8.8	24	8.8	24	8.8	24
13	0.00		64	58	9.126	5.934	15.060	17.200	9.5	59	168	9.5	58	192	//////////	//////////	8.8	24	8.8	24	8.8	24	8.8	24
14	0.00		64	59	8.803	6.144	14.947	17.071	9.5	59	168	9.5	59	192	//////////	//////////	8.8	24	8.8	24	8.8	24	8.8	24
15	0.00		64	59	8.480	5.425	13.905	16.679	9.5	58	168	9.5	58	192	//////////	//////////	8.8	24	8.8	24	8.8	24	8.8	24
16	0.00		65	59	8.609	5.105	13.714	16.418	9.5	59	168	9.5	60	192	//////////	//////////	8.8	24	8.8	24	8.8	24	8.8	24
17	0.00	SW	65	59	8.674	5.828	14.502	17.363	9.5	61	168	9.5	59	192	//////////	//////////	8.8	24	8.8	24	8.8	24	8.8	24
18	0.00		65	59	9.255	5.290	14.545	17.413	9.5	61	168	9.5	60	192	//////////	//////////	8.8	22	8.8	22	8.8	22	8.8	22
19	0.00		65	58	9.514	4.699	14.213	17.016	9.5	60	168	9.5	59	184	//////////	//////////	8.8	22	8.8	22	8.8	22	8.8	22
20	0.00	SE	65	61	9.385	4.868	14.253	17.064	9.5	61	168	9.5	60	184	//////////	//////////	8.8	22	8.8	22	8.8	22	8.8	22
21	0.00		65	60	9.062	5.048	14.110	16.892	9.5	60	168	9.5	61	184	//////////	//////////	8.8	22	8.8	22	8.8	22	8.8	22
22	0.00		65	60	8.544	5.866	14.410	16.766	9.5	61	168	9.5	60	184	//////////	//////////	8.8	22	8.8	22	8.8	22	8.8	22
23	0.00		66	63	8.674	5.669	14.343	16.689	9.5	61	168	9.5	61	184	//////////	//////////	8.8	22	8.8	22	8.8	22	8.8	22
24	0.00	N	65	64	8.933	5.555	14.488	16.858	9.5	61	168	9.5	61	184	//////////	//////////	8.8	22	8.8	22	8.8	22	8.8	22
25	0.00		65	61	9.062	5.666	14.728	17.136	9.5	61	168	9.5	61	184	//////////	//////////	8.8	22	8.8	22	8.8	22	8.8	22
26	0.00	SE	66	62	8.674	5.570	14.244	16.574	9.5	61	168	9.5	61	184	//////////	//////////	8.8	22	8.8	22	8.8	22	8.8	22
27	0.03	S	66	63	11.001	3.821	14.822	17.245	9.5	61	168	9.5	61	184	//////////	//////////	8.8	22	8.8	22	8.8	[illegible]	8.8	22
28	1.08	SW	65	61	12.034	7.386	19.420	22.596	9.5	M	168	9.5	M	184	//////////	//////////	8.8	22	8.8	22	8.8	22	8.8	22
29	0.22		65	61	9.902	6.728	16.630	19.350	9.5	61	168	9.5	60	184	//////////	//////////	8.8	22	8.8	22	8.8	22	8.8	22
30	TRACE		65	63	10.354	5.250	15.644	18.202	9.5	63	168	9.5	61	184	//////////	//////////	8.8	22	8.8	22	8.8	22	8.8	22
31	0.00	S	65	61	11.259	4.688	15.947	18.555	9.5	62	168	9.5	61	184	//////////	//////////	8.8	22	8.8	22	8.8	22	8.8	22

	MEXICO	UNITED STATES	PLANT INFLOW	PLANT OUTFLO
TOTAL	292.546	170.781	463.327	538.548
AVERAG	7.575	5.509	14.946	17.373
MAXIMU	12.034	7.386	19.420	22.596
MINIMUM	7.575	3.821	12.166	16.418

= MISSING DUE TO HEAVY RAIN

MEXIC 63 % OF TOTAL FLOW

U S = 37 % OF TOTAL FLOW

NOG WASH P P = 0 %

ULL TIM SERVICES			
PERSONNEL		EQUIPMENT	
CHIEF OPERATOR	1	90' D DGE AR S K C R	
COMPLIANCE SPEC.	1	PICKU 1/2 TON	
ASST. OPERATOR	1	GRIT TRUCK	
OPERATORS	2	WATER TRUCK	
LABORERS	4	BACK HOE	
MECHANIC	1		
ELECTRICIAN	1		

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Feb. 1992

UTILITIES AND CH HLORINE

CONTROL BUILDING

1	POWER CON MPTIO		K.W.H.
3	$		

CHLO INE & ULTRAVIOLET DISINFECTION AREA

1			K.W.H.
1	$		
	CHLORINE CONSU	3830	LBS
	SULPHUR D XIDE:	3144 4	LBS.

UTILITY COSTS - WATER SERVICE

BILLING DATE:

PERSONNEL SERVICES AND EQUIPMENT UTILIZED OT ER THAN FULL TIME

CLASSI ICATI ON	HRS.THIS MONTH
ELECTRICIAN	0
LABORERS	0
OVER TIME (OPERATORS)	
MOTOR GRADER & OPERATO	0

BOUNDARY

DATE: 02/06/92
BOD-5: 48
TSS: 266

DATE: 02/14/92
BOD-5: 82 6
TSS: 220

DATE: 02/20/92
BOD-5: 58 0
TSS: 104

DATE: 02/27/92
BOD-5: 63 6
TSS: 130

PML-6		PML-7		PML-8		D.O MG/L			p H				SUSPENDED SOLIDS MG/L		SETTLEABLE SOLIDS MG/L	B O.D. MG/L		Cl 2					
DEPT FEET	AERAT HOURS	DEPT FEET	AERATO HOURS	DEPT FEET	AERATO HOURS	CML-	CML-	EFFLUEN	RA	CML-	CML-	EFFLUEN	RAW	EFFLUEN	EFFLUENT	EFF	INFLUEN	RESIDUAL MG/L	GRIT REMOVE	FECAL COLIFORM	UV-1 HOURS	UV-2 HOURS	DATE
////////	////////	8 8	24	8.8	24	7.9	8 0	7 6	6.8	7.7	7.5	7.3						ND		<2	192	192	1
////////	////////	8 8	24	8.8	24	7.6	7.6	7.5	7.0	7.7	7.4	7.4						ND		<2	192	192	2
////////	////////	8.8	24	8.8	24	7.9	7.5	7.2	7.1	7.7	7.6	7.3						ND	5 C/Y	<2	192	192	3
////////	////////	8.8	24	8.8	24	7.7	7.6	5 9	7.2	7.6	7.6	7.4						ND		<2	192	192	4
////////	////////	8.8	24	8.8	24	7.6	7.7	6 8	7.1	7.6	7.7	7 3						ND	4 5 C/Y	<2	192	192	5
////////	////////	8 8	24	8 8	24	7.4	7.7	6 4	7.0	7.5	7.6	7.4	262	11	<0.10	8.6	60 0	ND		<2	192	192	6
////////	////////	8.8	24	8.8	24	7.2	7.3	6 8	7.1	7.4	7.5	7.4						ND	5 C/Y	<2	192	192	7
////////	////////	8 8	24	8.8	24	7.0	7.1	6.5	7.0	7.5	7.5	7.4						ND		<2	192	192	8
////////	////////	8 8	24	8.8	24	7.4	7.5	6.7	7.0	7.5	7.6	7.3						ND		<2	192	192	9
////////	////////	8 8	24	8.8	24	7.3	7.7	6 2	7.2	7.6	7.6	7.4						ND		<2	192	192	10
////////	////////	8.8	24	8.8	24	7.3	7.6	6 9	7.1	7.6	7.6	7.3						ND		<2	192	192	11
////////	////////	8 8	24	8.8	24	7.6	7.6	6.4	7.1	7.6	7.6	7.4						ND	5 C/Y	<2	192	192	12
////////	////////	8 8	24	8.8	24	7.7	7.4	6.5	7.2	7.5	7.5	7.5	752	14	<0.10	9.4	151.5	ND		2	192	192	13
////////	////////	8 8	24	8.8	24	6.8	7.1	6 2	7.3	7.6	7.6	7.3						ND	5 C/Y	<2	192	192	14
////////	////////	8 8	24	8.8	24	8.0	8.3	6.4	7.2	7.6	7.7	7.3						ND		<2	192	192	15
////////	////////	8.8	24	8.8	24	7.6	8.0	6 4	7.1	7.5	7.6	7.3						ND		2	192	192	16
////////	////////	8 8	24	8.8	24	7.5	8.2	6.0	7.2	7.4	7.5	7.2						ND		<2	192	192	17
////////	////////	8 8	24	8.8	24	8.2	8.1	6 6	7.2	7.4	7.4	7.2						ND	5 C/Y	<2	192	192	18
////////	////////	8.8	24	8.8	24	7.9	8.0	6.4	6 8	7.4	7.4	7.1						ND		<2	192	192	19
////////	////////	8 8	24	8.8	24	7.1	7.2	6.0	7.1	7.4	7.5	7.2	252	19	<0.10	10.0	70.0	ND	6 C/Y	<2	192	192	20
////////	////////	8 8	24	8.8	24	7.8	7.6	6.4	7.1	7.4	7.4	7.1						ND	6 C/Y	4	192	192	21
////////	////////	8 8	24	8.8	24	7.9	7.7	6 8	7.6	7.3	7 4	7.2						ND		4	192	192	22
////////	////////	8 8	24	8.8	24	8.7	8.7	6 7	7.2	7.4	7.6	7.0						ND		<2	192	192	23
////////	////////	8 8	24	8.8	24	7.9	8.0	6.7	7.4	7.7	7 6	7.2						ND	11 C/Y	<2	192	192	24
////////	////////	8 8	24	8.8	24	7.4	7 8	6 0	7.3	7.6	7.7	7.3						ND		<2	192	192	25
////////	////////	8 8	24	8.8	24	7.4	7.1	5 7	7.1	7.4	7.6	7 2						ND	4 5 C/Y	<2	192	192	26
////////	////////	8 8	24	8 8	24	7.7	6 8	6 7	7.4	7.6	7 6	7.3	220	16	<0.10	23.7	63 2	ND		<2	192	192	27
////////	////////	8 8	24	8.8	24	7.8	8 0	6 4	7.4	7.6	7 6	7.3						ND		<2	192	192	28
////////	////////	8 8	24	8 8	24	7.2	7 4	5 5	7.4	7.8	7.8	7.4						ND	5 C/Y	<2	192	192	29
																							30
																							31

MPN/100 ML*

NOGALES INTERNATIONAL WASTEWATER TREATMENT PLANT

MONTHLY REPORT

PREPAR BY: RIC ARD L. ALDWELL, COMPLIAN E SPECIALIST
APPROVED AS TO F RM BY: LINO VEGA, PLANT SUPERINTENDENT

CML COMPLETE MIX LAGOON
PML PARTIAL MIX LAGOON

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MONTH. January 1994

	WEA	HER	TEMP	RATURE	FLOW	IN LITER	S PER SE	OND	CML-1			CML-2			PML-1		PML-2		ML-3		PML 4		ML-5	
DATE	RAIN FALL INCHES	WIND DIREC-TION	INFLOW	EFFLUEN	MEXICO	UNITED STATES	PLANT INFLOW	PLANT OUTFLO	DEPTH FEET	TEMPE-ATURE	AERAT HOURS	DEPT FEET	TEMPE-ATUR	AERAT HOURS	DEPT FEET	AERAT HOURS	DEPT FEET	AERAT HOURS	DEPT FEET	AERAT HOURS	DEPT FEET	AERAT HOURS	DEPT FEET	AERAT HOURS
1	-0-	SE	64	61	347	175	522	502	9.5	61	143.5	9.5	61	143.5	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
2	-0-		66	61	369	169	538	493	9.5	61	143.5	9.5	61	143.5	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
3	-0-		65	57	398	179	577	515	9.5	61	143.5	9.5	61	143.5	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
4	-0-		66	58	386	195	581	531	9.5	61	143.5	9.5	61	143.5	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
5	-0-		65	56	381	201	582	538	9.5	61	143.5	9.5	60	143.5	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
6	-0-		65	57	398	196	594	547	9.5	61	143.5	9.5	60	143.5	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
7	-0-		62	54	392	190	582	539	9.5	59	143.5	9.5	57	143.5	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
8	-0-		62	53	389	202	591	545	9.5	54	143.5	9.5	55	143.5	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
9	-0-		62	53	401	188	589	538	9.5	55	143.5	9.5	54	143.5	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
10	-0-		59	52	398	196	594	541	9.5	51	143.5	9.5	51	143.5	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
11	-0-	SW	62	53	397	186	583	533	9.5	57	143.5	9.5	56	143.5	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
12	-0-		62	52	403	189	592	532	9.5	57	143.5	9.5	56	143.5	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
13	-0-		62	51	411	193	604	535	9.5	59	143.5	9.5	57	143.5	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
14	-0-		59	53	380	180	560	524	9.5	57	143.5	9.5	57	143.5	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
15	-0-		59	51	403	187	590	551	9.5	58	143.5	9.5	58	143.5	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
16	-0-	W	59	52	374	179	553	531	9.5	58	143.5	9.5	57	143.5	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
17	-0-		59	53	400	193	593	548	9.5	58	143.5	9.5	57	143.5	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
18	-0-	SW	59	52	409	191	600	558	9.5	57	143.5	9.5	58	143.5	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
19	-0-		59	52	406	189	595	555	9.5	58	143.5	9.5	58	143.5	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
20	-0-		59	52	395	192	587	550	9.5	57	143.5	9.5	59	143.5	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
21	-0-		61	53	398	192	590	547	9.5	59	143.5	9.5	59	143.5	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
22	-0-	S	64	58	384	201	585	529	9.5	60	143.5	9.5	60	143.5	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
23	-0-		63	59	384	196	580	528	9.5	60	143.5	9.5	61	143.5	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
24	-0-		63	57	384	213	597	535	9.5	61	143.5	9.5	60	143.5	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
25	-0-	SE	63	59	392	200	592	531	9.5	61	143.5	9.5	60	143.5	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
26	-0-	SW	63	58	406	198	604	581	9.5	61	143.5	9.5	60	143.5	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
27	-0-		63	59	403	195	598	540	9.5	62	143.5	9.5	60	143.5	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
28	0.10	W	60	58	446	180	626	564	9.5	59	143.5	9.5	58	143.5	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
29	0.25		58	50	386	208	594	549	9.5	55	143.5	9.5	55	143.5	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
30	-0-	S	58	50	375	211	586	537	9.5	53	143.5	9.5	53	143.5	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
31	-0-		61	51	395	213	608	529	9.5	56	143.5	9.5	56	143.5	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
TOTAL	0.35			TOTAL	12190	5977	18167	16676																
				AVERAG	393	193	586	538																
				MAXIMU	446	213	626	581																
				MINIMUM	347	169	522	493																

MEXIC 67 % OF TOTAL FLOW

US = 33 % OF TOTAL FLOW

ULL TIM SERVICES				UTILITIES AND CHLORINE		PERSONNEL SERVICES AND EQUIPMENT UTILIZED OTHER THAN FULL TIME		BOUNDARY
PERSONNEL		EQUIPMENT		CONTROL BUILDING		CLASSIFICATION	HRS THIS MONTH	
CHIEF OPERATOR	1	90'D DGE AR SKC R	1	POWER CONSUMPTION 635, 00 K W.H.				
COMPLIANCE SPEC	1	PICKU 1/2 TON	3	$ 48,619 . 80		ELECTRICIAN	0	
OPERAORS GRADE II	2	GRIT TRUCK	1	CHLOINE & ULTRAVIOLET DISINFECTION AREA		LABORERS	0	
OPERATORS, GRADE I	1	WATER TRUCK	1	-0 - K W.H.		OVER TIME (OPERATORS)	13	
LABORERS	4	BACK HOE	1	$ 60 . 74		MOTOR GRADER & OPERATO	0	
MECHANIC	1			CHLORINE CONSU EST. 5 , 326 LBS				
ELECTRICIAN	1			SULPHUR D XIDE: EST. 3 , 934 LBS.		I NT'L & ROBINS 156 KWH $ 31 09 1 09		
Page 2				UTILITY COSTS - WATER SERVICE BILLING DELAYED				
Dec 1993				BILLING DATE. 1/22/93 TO 12/23/93				

PML-6 DEPT FEET	PML-6 AERAT HOURS	PML-7 DEPT FEET	PML-7 AERATO HOURS	PML-8 DEPT FEET	PML-8 AERATO HOURS	D.O. MG/L CML-	D.O. MG/L CML-	D.O. MG/L EFFLUEN	pH RA	pH CML-	pH CML-	pH EFFLUEN	SUSPENDED SOLIDS MG/L RAW	SUSPENDED SOLIDS MG/L EFFLUEN	SETTLEABLE SOLIDS ML/L EFFLUENT	B O.D MG/L EFF	B O.D MG/L INFLUEN	TOTAL CHLORINE USED (POUNDS)	GRIT REMOVE	FECAL COLIFORM	UV 1 HOURS	UV 2 HOURS	DATE
8.8	0	8.8	0	8.8	0	6.8	6.9	6.5	7.1	7.8	7.8	7.5	140	7	<0.10	56	11	130		30	192	192	1
8.8	0	8.8	0	8.8	0	5.7	5.7	5.5	7.2	7.7	7.8	7.4						240		8	192	192	2
8.8	0	8.8	0	8.8	0	5.2	5.6	6.1	7.2	7.8	7.7	7.6						160	5 C/Y	80	192	192	3
8.8	0	8.8	0	8.8	0	5.3	5.7	6.0	7.1	7.8	7.7	7.5						166		2	192	192	4
8.8	0	8.8	0	8.8	0	5.4	5.4	6.1	7.2	7.8	7.7	7.4						165		17	192	192	5
8.8	0	8.8	0	8.8	0	5.1	5.7	6.5	7.2	7.7	7.6	7.5						165		23	192	192	6
8.8	0	8.8	0	8.8	0	5.7	6.1	5.9	7.3	7.8	7.7	7.5						320		2	192	192	7
8.8	0	8.8	0	8.8	0	5.1	4.8	5.3	7.3	7.7	7.8	7.4						120	29 C/Y	<2	192	192	8
8.8	0	8.8	0	8.8	0	5.5	4.7	5.4	7.5	7.8	7.8	7.7	144	6	<0.10	45	15	80		<2	192	192	9
8.8	0	8.8	0	8.8	0	4.8	5.1	5.9	7.4	7.8	7.7	7.4						140	5 C/Y	2	192	192	10
8.8	0	8.8	0	8.8	0	4.8	8.2	5.7	7.3	7.8	7.8	7.5						180		<2	192	192	11
8.8	0	8.8	0	8.8	0	4.5	4.6	5.5	7.1	7.5	7.4	7.6						200		<2	192	192	12
8.8	0	8.8	0	8.8	0	5.6	6.2	6.2	7.1	7.7	7.7	7.2						220		4	192	192	13
8.8	0	8.8	0	8.8	0	4.9	5.3	5.2	7.2	7.5	7.5	7.2						280		4	192	192	14
8.8	0	8.8	0	8.8	0	5.1	5.1	7.3	7.4	7.6	7.5	7.3						160		23	192	192	15
8.8	0	8.8	0	8.8	0	5.1	4.8	6.0	7.1	7.7	7.6	7.4	154	<4	<0.10	72	16	200	10 C/Y	14	192	192	16
8.8	0	8.8	0	8.8	0	5.0	5.0	6.1	7.3	7.7	7.7	7.4						160		80	192	192	17
8.8	0	8.8	0	8.8	0	5.1	5.1	6.3	7.3	7.7	7.6	7.6						140		50	192	192	18
8.8	0	8.8	0	8.8	0	5.6	5.6	6.7	7.3	7.7	7.6	7.4						180		4	192	192	19
8.8	0	8.8	0	8.8	0	5.9	5.8	6.6	7.4	7.7	7.6	7.4						200		2	192	192	20
8.8	0	8.8	0	8.8	0	5.7	5.9	6.3	7.3	7.7	7.6	7.3						180		<2	192	192	21
8.8	0	8.8	0	8.8	0	5.9	5.7	6.1	7.3	7.7	7.6	7.3						180		2	192	192	22
8.8	0	8.8	0	8.8	0	6.3	5.9	6.5	7.3	7.7	7.6	7.3	276	10	<0.10	78	15	200	5 C/Y	<2	192	192	23
8.8	0	8.8	0	8.8	0	6.6	6.7	7.1	7.2	7.7	7.7	7.4						[illegible]		<2	192	192	24
8.8	0	8.8	0	8.8	0	8.4	7.6	7.6	7.2	7.7	7.7	7.2						180		2	192	192	25
8.8	0	8.8	0	8.8	0	7.0	6.4	7.2	7.3	7.6	7.7	7.4						200		<2	192	192	26
8.8	0	8.8	0	8.8	0	5.6	5.3	6.7	7.3	7.7	7.6	7.5						120		4	192	192	27
8.8	0	8.8	0	8.8	0	7.4	6.7	8.9	7.2	7.5	7.5	7.5						[illegible]		2	192	192	28
8.8	0	8.8	0	8.8	0	6.9	5.6	6.6	7.4	7.7	7.5	7.5						[illegible]	10 C/Y	130	192	192	29
8.8	0	8.8	0	8.8	0	7.1	7.6	8.6	7.2	7.3	7.5	7.4	302	7	<0.10	110	18	[illegible]		4	192	192	30
8.8	0	8.8	0	8.8	0	6.9	6.4	8.6	7.3	7.5	7.5	7.2						[illegible]		4	192	192	31

TOTAL CL [illegible] EST 5614 GEOMETRIC MEAN

CY = CUBIC YARD GRIT COMBINATION OF BASINS AND GRIT CHAMBER
ND = NONE DETECTED
MPN/100ML

NOGALES INTERNATIONAL WASTEWATER TREATMENT PLANT

MONTHLY REPORT

PREPAR BY: RIC ARD L. ALDWELL, COMPLIANE SPECIALIST
APPROVED AS TO F RM BY: LINO VEGA, PLANT SUPERINTENDENT

CML COMPLETE MIX LAGOON
PML PARTIAL MIX LAGOON

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MONTH Dec. 1993

	WEA	HER	TEMP	RATURE	FLOW	IN LITER	S PER SE	OND	CML-1			CML-2			PML-1		PML-2		ML-3		PML 4		ML-5	
DATE	RAIN FALL INCHES	WIND DIREC-TION	INFLOW	EFFLUEN	MEXICO	UNITED STATES	PLANT INFLOW	PLANT OUTFLO	DEPTH FEET	TEMPE-ATURE	AERAT HOURS	DEPT FEET	TEMPE-ATUR	AERAT HOURS	DEPT FEET	AERAT HOURS	DEPT FEET	AERAT HOURS	DEPT FEET	AERAT HOURS	DEPT FEET	AERAT HOURS	DEPT FEET	AERAT HOURS
1	0.00	SE	63	59	398	220	618	557	9.5	60	96	9.5	61	96	9.2	0	8.8	24	8.8	24	8.8	24	8.8	0
2	0.00		63	60	395	217	612	564	9.5	60	96	9.5	57	96	9.2	0	8.8	24	8.8	24	8.8	24	8.8	0
3	0.00		60	57	392	212	604	553	9.5	58	96	9.5	58	96	9.2	0	8.8	24	8.8	24	8.8	24	8.8	0
4	0.00		60	57	398	214	612	555	9.5	58	96	9.5	58	96	9.2	0	8.8	24	8.8	24	8.8	24	8.8	0
5	0.00		60	57	384	213	597	553	9.5	58	96	9.5	58	96	9.2	0	8.8	24	8.8	24	8.8	24	8.8	0
6	0.00		60	57	401	209	610	557	9.5	58	96	9.5	58	96	9.2	0	8.8	24	8.8	24	8.8	24	8.8	0
7	0.00		64	57	395	203	598	540	9.5	60	96	9.5	60	96	9.2	0	8.8	24	8.8	24	8.8	24	8.8	0
8	0.00		60	59	401	202	603	545	9.5	60	96	9.5	60	96	9.2	0	8.8	24	8.8	24	8.8	24	8.8	0
9	0.00	W	66	59	392	217	609	543	9.5	60	96	9.5	60	96	9.2	0	8.8	24	8.8	24	8.8	24	8.8	0
10	0.00		66	60	392	208	600	546	9.5	64	96	9.5	61	96	9.2	0	8.8	24	8.8	24	8.8	24	8.8	0
11	0.00		68	61	386	206	592	532	9.5	61	96	9.5	60	96	9.2	0	8.8	24	8.8	24	8.8	24	8.8	0
12	0.06		66	61	409	199	608	542	9.5	61	96	9.5	60	96	9.2	0	8.8	24	8.8	24	8.8	24	8.8	0
13	0.00	SW	64	59	395	213	608	547	9.5	60	96	9.5	59	96	9.2	0	8.8	24	8.8	24	8.8	24	8.8	0
14	0.00		60	56	412	201	613	547	9.5	56	96	9.5	56	96	9.2	0	8.8	24	8.8	24	8.8	24	8.8	0
15	0.00		64	56	395	206	601	547	9.5	58	96	9.5	57	96	9.2	0	8.8	24	8.8	24	8.8	24	8.8	0
16	0.00	SE	62	55	392	202	594	533	9.5	59	96	9.5	60	96	9.2	0	8.8	24	8.8	24	8.8	24	8.8	0
17	0.00		62	55	386	202	588	533	9.5	58	96	9.5	57	96	9.2	0	8.8	24	8.8	24	8.8	24	8.8	0
18	0.00		62	55	403	208	611	540	9.5	58	96	9.5	58	96	9.2	0	8.8	24	8.8	24	8.8	24	8.8	0
19	0.00		62	55	398	188	586	527	9.5	58	96	9.5	58	96	9.2	0	8.8	24	8.8	24	8.8	24	8.8	0
20	0.00		62	55	386	206	592	533	9.5	58	96	9.5	58	96	9.2	0	8.8	24	8.8	24	8.8	24	8.8	0
21	0.00		62	55	435	200	635	546	9.5	58	96	9.5	58	96	9.2	0	8.8	24	8.8	24	8.8	24	8.8	0
22	0.00		62	55	406	214	620	564	9.5	58	96	9.5	58	96	9.2	0	8.8	24	8.8	24	8.8	24	8.8	0
23	0.00		62	54	364	213	577	538	9.5	57	96	9.5	58	96	9.2	0	8.8	24	8.8	24	8.8	24	8.8	0
24	0.00	S	60	53	367	209	576	523	9.5	56	96	9.5	55	96	9.2	0	8.8	24	8.8	24	8.8	24	8.8	0
25	0.00		59	52	350	190	540	519	9.5	55	96	9.5	55	96	9.2	0	8.8	24	8.8	24	8.8	24	8.8	0
26	0.00		58	52	353	194	547	509	9.5	56	96	9.5	55	96	9.2	0	8.8	24	8.8	24	8.8	24	8.8	0
27	0.00		58	53	346	210	556	510	9.5	57	96	9.5	59	96	9.2	0	8.8	24	8.8	24	8.8	24	8.8	0
28	0.02	SW	62	55	384	206	590	530	9.5	58	96	9.5	58	96	9.2	0	8.8	24	8.8	24	8.8	24	8.8	0
29	0.00		64	56	386	198	584	543	9.5	58	96	9.5	58	96	9.2	0	8.8	24	8.8	24	8.8	24	8.8	0
30	0.00		61	55	364	198	562	525	9.5	57	96	9.5	57	96	9.2	0	8.8	24	8.8	24	8.8	24	8.8	0
31	0.00		63	58	344	206	550	510	9.5	61	96	9.5	60	96	9.2	0	8.8	24	8.8	24	8.8	24	8.8	0
TOTAL	0.08			TOTAL	12009	6384	18393	16711																
				AVERAG	387	206	593	521																
				MAXIMU	435	220	635	564																
				MINIMUM	344	188	540	509																

MEXIC 65 % OF TOTAL FLOW

U.S. = 35 % OF TOTAL FLOW

FULL TIME SERVICES				UTILITIES AND CHLORINE			PERSONNEL SERVICES AND EQUIPMENT UTILIZED OTHER THAN FULL TIME		BOUNDARY
PERSONNEL		EQUIPMENT		CONTROL BUILDING			CLASSIFICATION	HRS THIS MONTH	
CHIEF OPERATOR	1	90' D DGE AR SKC R	1	POWER CONSUMPTION		K.W.H.			
COMPLIANCE SPEC	1	PICKUP 1/2 TON	3	$			ELECTRICIAN	0	
OPERATORS GRADE II	2	GRIT TRUCK	1	CHLORINE & ULTRAVIOLET DISINFECTION AREA			LABORERS	0	
OPERATORS GRADE I	1	WATER TRUCK	1			K.W.H.	OVER TIME (OPERATORS)	48	
LABORERS	4	BACK HOE	1	$			MOTOR GRADER & OPERATOR	0	
MECHANIC	1			CHLORINE CONSU	E - 5, 10	LBS			
ELECTRICIAN	1			SULPHUR DIOXIDE:	E - 4,287 87	LBS			
				UTILITY COSTS - WATER SERVICE					
Page 2									
Nov 1993				BILLING DATE					

PML-6		PML-7		PML-8		D.O. MG/L			pH				SUSPENDED SOLIDS MG/L		SETTLEABLE SOLIDS ML/L	B.O.D. MG/L		TOTAL CHLORINE					
DEPT FEET	AERAT HOURS	DEPT FEET	AERATO HOURS	DEPT FEET	AERATO HOURS	CML-	CML-	EFFLUEN	RA	CML-	CML-	EFFLUEN	RAW	EFFLUEN	EFFLUENT	EFF	INFLUEN	USED (POUNDS)	GRIT REMOVE	FECAL COLIFORM	UV 1 HOURS	UV-2 HOURS	DATE
8 8	-0-	8 8	-0-	8.8	-0-	5 6	5.9	6.1	7.2	7.2	7.4	7.3						160		<2	192	192	1
8 8	-0	8 8	-0-	8.8	-0-	4.9	3 9	5 2	7.1	7.5	7 5	7.2						[illegible]		50	192	192	2
8 8	-0-	8 8	-0-	8.8	-0-	5.7	5 5	3.9	7.3	7.7	7 6	7.4						180		<2	192	192	3
8 8	-0-	8.8	-0-	8.8	-0-	5.1	5 7	4.1	7.3	7.7	7 5	7.3	514	10	<0.10	10	145 6	180	32 C/Y	<2	192	192	4
8 8	-0-	8 8	-0-	8.8	-0-	5.8	5.8	4.6	7.2	7.7	7.5	7 3						180	23 C/Y	<2	192	192	5
8 8	-0-	8 8	-0-	8.8	-0-	4.9	3 8	4.5	7.1	7.6	7 5	7 4						240	5 C/Y	<2	192	192	6
8 8	-0	8 8	-0-	8.8	-0-	3.1	2.6	4.8	7.1	7.7	7.7	7.3						220	4 C/Y	<2	192	192	7
8 8	-0-	8 8	-0-	8.8	-0-	5.2	6 0	6.3	7.3	7.3	7 6	7.4						160		<2	192	192	8
8 8	-0-	8 8	-0-	8.8	-0-	3.7	4.5	5.1	7.3	7.5	7 6	7.3						220		<2	192	192	9
8 8	-0-	8 8	-0-	8.8	-0-	5.0	5.0	5.2	7.1	7.5	7.5	7.2	54	<4	<0.10	7.3	33 3	200		<2	192	192	10
8 8	-0-	8 8	-0-	8.8	-0-	5.9	6.5	5.1	7.1	7.5	7.5	7 2						200		<2	192	192	11
8 8	-0	8 8	-0-	8.8	-0-	5.4	5 4	6.0	7.1	7.7	7.7	7.4						200	10 C/Y	<2	192	192	12
8 8	-0-	8 8	-0-	8.8	-0-	5.9	6.5	7 0	7.2	7.7	7 8	7.4						E 180		4	192	192	13
8 8	-0-	8 8	-0-	8.8	-0-	8 0	8 0	7.0	7.3	7.7	8 0	7 5						E 180		8	192	192	14
8 8	-0-	8 8	-0-	8.8	-0-	5.9	5 6	7.2	7.2	7.8	7 8	7.5						120		11	192	192	15
8 8	-0-	8 8	-0-	8.8	-0-	4.2	4.4	4 9	7.3	7.7	7 8	7.5						E 200		<2	192	192	16
8 8	-0-	8 8	-0-	8.8	-0-	3.3	3 4	3 5	7 2	7.7	7 7	7 4						E 210	5 C/Y	<2	192	192	17
8 8	-0-	8 8	-0-	8.8	-0-	3.1	3.1	3.5	7.4	7.7	7 7	7.5	286	29.2	<0.10	11 2	68 1	E 180		<2	192	192	18
8 8	-0-	8 8	-0-	8.8	-0-	2.2	2.8	3.5	7.3	7.7	7.8	7.4						E 200		<2	192	192	19
8 8	-0-	8 8	-0-	8.8	-0-	5.9	5.6	5 8	7.3	7.8	7 8	7.4						230		<2	192	192	20
8 8	-0-	8 8	-0-	8.8	-0-	6.2	6 6	7 6	7.4	7.7	7 7	7.4						240		<2	192	192	21
8 8	-0-	8 8	-0-	8.8	-0-	4.4	4.9	6.1	7.2	7.6	7 6	7 4						E 210	18 C/Y	<2	192	192	22
8 8	-0-	8 8	-0-	8.8	-0-	6.5	6.3	7 4	7.4	7.6	7.7	7.5						170		2	192	192	23
8 8	-0-	8 8	-0-	8.8	-0-	4.9	6 5	6 4	7.4	7.5	7 6	7.4	170	10	<0.10	10	63	E 170		8	192	192	24
8 8	-0	8 8	-0-	8.8	-0-	4.8	6 3	6 3	7.4	7.5	7 7	7 4						E 210		80	192	192	25
8 8	-0	8 8	-0-	8 8	-0-	4.7	6 3	6 1	7 4	7.5	7 7	7 4						E [illegible]		8	192	192	26
8 8	-0	8 8	-0-	8.8	-0-	4.6	4.8	5 0	7 2	7.4	7 1	7 3						200		30	192	192	27
8 8	-0	8 8	-0-	8.8	-0-	4.9	5 4	5 8	7.4	7.3	7 4	7.4						200	5 C/Y	70	192	192	28
8 8	-0-	8 8	-0-	8 8	-0-	4.4	5.1	5 2	7 3	7.7	7 7	7.3						150		2	192	192	29
8 8	-0	8 8	-0-	8.8	-0-	5.6	4 9	5 9	7.4	7.7	7 5	7 4						180		<2	192	192	30
																					192	192	31

TOTAL CL E-5,710 3 86 GEOMETRIC MEAN

C/Y = CUBIC YARD GRIT COMBINATION OF BASINS AND GRIT CHAMBER
ND - NONE DETECTED
MPN/100ML
E - VALUE PARTIALLY ESTIMATED

NOGALES INTERNATIONAL WASTEWATER TREATMENT PLANT

MONTHLY REPORT

PREPAR BY RIC ARD L. ALDWELL, COMPLIANE SPECIALIST
APPROVED AS TO F RM BY: LINO VEGA, PLANT SUPERINTENDENT

CML COMPLETE MIX LAGOON
PML PARTIAL MIX LAGOON

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MONTH: Nov. 1993

	WEA	HER	TEMP	RATURE	FLOW	IN LITER	S PER SE	OND	CML-1			CML-2			PML-1		PML 2		ML 3		PML 4		ML-5	
DATE	RAIN FALL INCHES	WIND DIREC-TION	INFLOW	EFFLUEN	MEXICO	UNITED STATES	PLANT INFLOW	PLANT OUTFLO	DEPTH FEET	TEMPE ATURE	AERAT HOURS	DEPT FEET	TEMPE ATUR	AERAT HOURS	DEPT FEET	AERAT HOURS	DEPT FEET	AERAT HOURS	DEPT FEET	AERAT HOURS	DEPT FEET	AERAT HOURS	DEPT FEET	AERAT HOURS
1	-0-	SE	70	66	375	214	589	513	9.5	64	144.5	9.5	64	144.5	9.3	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
2	-0-		70	63	392	206	598	526	9.5	64	144.5	9.5	63	144.5	9.3	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
3	-0-		70	61	395	208	603	528	9.5	61	144.5	9.5	61	144.5	9.3	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
4	0-		70	62	378	217	595	529	9.5	61	144.5	9.5	61	144.5	9.3	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
5	0-		70	62	381	208	589	516	9.5	61	144.5	9.5	61	144.5	9.3	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
6	0-	S	70	63	401	214	615	531	9.5	67	144.5	9.5	68	144.5	9.3	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
7	-0-		69	64	409	193	602	533	9.5	64	144.5	9.5	65	144.5	9.3	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
8	-0-		70	63	418	203	621	536	9.5	64	144.5	9.5	64	144.5	9.3	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
9	-0-	SW	69	65	429	195	624	539	9.5	68	144.5	9.5	67	144.5	9.3	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
10	-0-		69	60	406	215	621	546	9.5	62	144.5	9.5	62	144.5	9.3	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
11	-0-		69	60	406	216	622	544	9.5	62	144.5	9.5	61	144.5	9.3	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
12	T	W	68	62	398	210	608	543	9.5	64	144.5	9.5	64	144.5	9.3	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
13	0 26	N	67	61	432	229	661	599	9.5	63	144.5	9.5	62	144.5	9.3	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
14	T		68	59	398	210	608	493	9.5	59	144.5	9.5	60	144.5	9.3	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
15	0 30		64	55	485	256	741	603	9.5	59	144.5	9.5	59	144.5	9.3	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
16	0 15		62	57	403	217	620	538	9.5	60	144.5	9.5	59	144.5	9.3	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
17	0-	SW	64	55	381	204	585	506	9.5	57	144.5	9.5	57	144.5	9.3	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
18	-0-		66	55	398	207	605	522	9.5	60	144.5	9.5	59	144.5	9.3	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
19	-0-		68	56	395	215	610	533	9.5	64	144.5	9.5	64	144.5	9.3	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
20	-0-	S	65	59	383	208	591	544	9.5	62	144.5	9.5	61	144.5	9.3	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
21	-0-		65	59	371	199	570	533	9.5	62	144.5	9.5	60	144.5	9.3	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
22	-0-		64	57	394	216	610	544	9.5	59	144.5	9.5	59	144.5	9.3	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
23	0-	SW	65	60	394	220	614	550	9.5	62	144.5	9.5	62	144.5	9.3	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
24	-0-		66	60	394	214	608	572	9.5	62	144.5	9.5	62	144.5	9.3	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
25	0-		68	60	405	213	618	578	9.5	62	144.5	9.5	62	144.5	9.3	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
26	-0-		66	60	394	202	596	526	9.5	62	144.5	9.5	62	144.5	9.3	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
27	-0-		64	52	405	210	615	579	9.5	54	144.5	9.5	54	144.5	9.3	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
28	-0-		66	60	405	193	598	548	9.5	60	144.5	9.5	60	144.5	9.3	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
29	-0-		68	60	400	198	598	537	9.5	59	144.5	9.5	59	144.5	9.3	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
30	0		69	60	400	212	612	552	9.5	60	144.5	9.5	59	144.5	9.3	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
31																								
TOTAL -	0 71			TOTAL	12025	6322	18347	16241																
				AVERAG	401	211	612	523																
				MAXIMU	485	256	741	603																
				MINIMUM	371	193	570	493																

MEXIC 65 % OF TOTAL FLOW

U.S. = 35 % OF TOTAL FLOW

ULL TIM SERVICES				UTILITIES AND CHLORINE				PERSONNEL SERVICES AND EQUIPMENT UTILIZED OT ER THAN FULL TIME		BOUNDARY
PERSONNEL		EQUIPMENT		CONTROL BUILDING				CLASSI ICATI ON	HRS THIS MONTH	
CHIEF OPERATOR	1	90' D DGE AR S K C R	1	POWER CON MPTIO	644,40', 400	K W.H.				
COMPLIANCE SPEC.	1	PICKU 1/2 TON	3	$	49,498 14			ELECTRICIAN	9	
OPERAORS, GRADE II	2	GRIT TRUCK	1	CHLO INE & ULTRAVIOLET DISINFECTION AREA				LABORERS	47	
OPERATORS, GRADE I	1	WATER TRUCK	1		-0-	K W.H.		OVER TIME (OPERATORS)	47	
LABORERS	4	BACK HOE	1	$	60.74			MOTOR GRADER & OPERATO	0	
MECHANIC	1			CHLORINE CONSU	7,558 8	LBS		MECHANIC	15	
ELECTRICIAN	1			SULPHUR D XIDE:	4,786 6	LBS.				

Page 2

Oct 1993

UTILITY COSTS - WATER SERVICE 1,779.35

BILLING DATE: 9/23/93 TO 10/22/93

PML-6		PML-7		PML-8		D.O MG/L			pH				SUSPENDED SOLIDS MG/L		SETTLEABLE SOLIDS ML/L	B O D MG/L		TOTAL CHLORINE					
DEPT FEET	AERAT HOURS	DEPT FEET	AERATO HOURS	DEPT FEET	AERATO HOURS	CML-	CML-	EFFLUEN	RA	CML-	CML-	EFFLUEN	RAW	EFFLUEN	EFFLUENT	EFF	INFLUEN	USED (POUNDS)	GRIT REMOVE	FECAL COLIFORM	UV-1 HOURS	UV-2 HOURS	DATE
88	-0-	88	-0-	8.8	-0-	4.6	42	43	6.8	7.2	7.2	70						240		<2	192	192	1
88	-0	88	-0-	8.8	-0-	6.8	72	8.3	7.0	7.3	73	69						330		<2	192	192	2
88	-0-	88	-0-	8.8	-0-	5.2	56	5.4	7.0	7.5	7.3	6.9						310		2	192	192	3
88	-0-	88	-0-	8.8	-0-	5.9	51	5.2	6.9	7.3	73	7.0						320	5 C/Y	<2	192	192	4
88	-0	88	-0-	8.8	-0-	6.5	6.2	6.1	7.0	7.3	72	7.1						310	35 C/Y	<2	192	192	5
88	-0-	88	-0-	8.8	-0-	5.8	63	60	68	7.3	7.3	69						260		240	192	192	6
88	-0-	8.8	-0-	8.8	-0-	5.4	51	58	6.9	7.3	7.3	7.0	256	22	<0.10	8	49	270		<2	192	192	7
88	-0	88	-0-	8.8	-0-	6.6	56	5.7	7.0	7.3	72	7.1						330		<2	192	192	8
88	-0-	88	-0-	8.8	-0-	64	5.6	56	7.0	7.2	72	7.1						300		<2	192	192	9
88	-0-	88	-0-	8.8	-0-	6.7	5.8	5.8	7.0	7.3	7.3	72						300		<2	192	192	10
88	-0-	88	-0-	8.8	-0-	6.5	5.6	58	7.1	7.2	7.2	7.1						320		<2	192	192	11
88	0-	88	-0-	8.8	-0-	7.5	76	55	7.0	7.0	7.0	7.1						300		<2	192	192	12
88	-0-	88	-0-	8.8	-0-	M	M	M	7.2	7.2	73	73						160	5 C/Y	500	192	192	13
88	-0	88	-0-	8.8	-0-	6.2	5.7	58	7.0	7.4	7.4	7.3	208	10	<0.10	17 5	77	270		4	192	192	14
88	-0	88	-0-	8.8	-0-	5.1	5.3	56	7.3	7.7	77	7.3						310		<2	192	192	15
88	-0	88	-0-	8.8	-0-	45	52	54	7.2	7.5	76	74						280		<2	192	192	16
88	-0-	88	-0-	8.8	-0-	4.3	4.3	5.2	7.1	7.5	7.7	73						240		<2	192	192	17
88	-0	88	-0-	8.8	-0-	4.3	45	4.0	7.0	7.2	7.4	69						280		<2	192	192	18
88	-0-	88	-0-	8.8	-0-	3.7	38	39	6.8	7.3	7.2	69						240		<2	192	192	19
88	-0	88	-0-	8.8	-0-	3.9	38	42	6.7	7.2	7.2	69						280	5 C/Y	<2	192	192	20
88	0	88	-0-	8.8	-0-	M	M	7.0	6.8	7.2	7.3	6.9	183	10	<0.10	28 7	86 7	160		<2	192	192	21
88	-0-	88	-0-	8.8	-0-	5.2	66	73	6.6	7.1	72	68						160	5 C/Y	<2	192	192	22
88	-0	88	-0-	8.8	-0-	5.1	53	59	7.1	7.5	74	7.3						160		<2	192	192	23
88	-0-	88	-0-	8.8	-0-	4.6	50	5.2	7.0	7.4	75	7.1						160		2	192	192	24
88	-0	88	-0-	8.8	-0-	53	52	55	68	7.6	75	7.1						150		<2	192	192	25
88	-0	88	-0-	8.8	-0-	6.4	59	70	7.0	74	73	72						110	5 C/Y	<2	192	192	26
88	-0	88	-0-	8.8	-0-	6.1	64	59	7.2	7.5	76	7.3						170		<2	192	192	27
88	-0-	88	-0-	8.8	-0-	7.7	63	70	7.3	7.6	75	7.3	180	9	<0.10	11.1	118	160	5 C/Y	<2	192	192	28
88	-0	88	-0-	8.8	-0-	5.1	52	69	7.3	76	76	72						171		<2	192	192	29
88	-0	88	-0-	8.8	-0-	56	50	65	7.3	72	74	71						167		4	192	192	30
88	-0-	88	-0-	8.8	-0-	56	55	62	7.3	7.2	75	72						[illegible]		<2	192	192	31

TOTAL CL [illegible] 2 97 GEOMETRIC MEAN

CY = CUBIC YARD GRIT COMBIN ION OF BASINS AND GRIT CHAMBE
ND - NONE DETECTED
MPN/100ML
M - INFORMATION MISSING

NOGALES INTERNATIONAL WASTEWATER TREATMENT PLANT

MONTHLY REPORT

PREPAR BY: RIC ARD L. ALDWELL, COMPLIANE SPECIALIST
APPROVED AS TO F RM BY. LINO VEGA, PLANT SUPERINTENDENT

CML COMPLETE MIX LAGOON
PML PARTIAL MIX LAGOON

MONTH: October 1993

	WEATHER		TEMPERATURE		FLOW IN LITERS PER SECOND				CML-1			CML-2			PML-1		PML 2		ML 3		PML-4		ML-5	
DATE	RAIN FALL INCHES	WIND DIREC-TION	INFLOW	EFFLUEN	MEXICO	UNITED STATES	PLANT INFLOW	PLANT OUTFLO	DEPTH FEET	TEMPE-ATURE	AERAT HOURS	DEPT FEET	TEMPE-ATUR	AERAT HOURS	DEPT FEET	AERAT HOURS	DEPT FEET	AERAT HOURS	DEPT FEET	AERAT HOURS	DEPT FEET	AERAT HOURS	DEPT FEET	AERAT HOURS
1	0.12	W	77	73	388	206	594	610	9.5	72	179	9.5	73	180	9.3	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
2	0.00	SW	79	72	384	206	590	590	9.5	71	179	9.5	72	180	9.3	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
3	0.00		79	72	369	197	566	574	9.5	72	179	9.5	72	180	9.3	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
4	0.00		75	71	383	201	584	568	9.5	70	179	9.5	70	180	9.3	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
5	0.00	S	75	72	391	208	599	573	9.5	73	179	9.5	72	180	9.3	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
6	0.03		74	72	411	220	631	600	9.5	73	179	9.5	73	180	9.3	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
7	0.13	SW	75	72	417	224	641	583	9.5	72	179	9.5	72	180	9.3	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
8	0.00		73	70	411	218	629	598	9.5	70	179	9.5	70	180	9.3	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
9	0.00		72	70	408	219	627	582	9.5	70	179	9.5	70	180	9.3	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
10	0.00		73	70	400	213	613	550	9.5	70	179	9.5	70	180	9.3	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
11	0.00		73	70	411	217	628	556	9.5	70	179	9.5	70	180	9.3	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
12	0.00		73	69	431	210	641	577	9.5	71	179	9.5	71	180	9.3	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
13	0.00		73	71	420	208	628	565	9.5	71	179	9.5	71	180	9.3	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
14	0.00		75	70	417	216	633	561	9.5	70	179	9.5	70	180	9.3	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
15	0.00		75	70	411	222	633	465	9.5	70	179	9.5	70	180	9.3	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
16	0.00		74	68	403	203	606	557	9.5	70	179	9.5	70	180	9.3	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
17	0.03	W	70	69	383	203	586	530	9.5	70	179	9.5	70	180	9.3	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
18	0.00		73	66	400	217	617	540	9.5	68	179	9.5	68	180	9.3	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
19	0.00	SE	73	70	420	208	628	554	9.5	70	179	9.5	70	180	9.3	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
20	0.00		72	68	405	207	612	546	9.5	69	179	9.5	68	180	9.3	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
21	0.00		73	66	397	201	598	550	9.5	68	179	9.5	73	180	9.3	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
22	0.00		72	66	380	215	595	471	9.5	66	179	9.5	68	180	9.3	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
23	0.00	ESE	72	66	371	221	592	453	9.5	68	179	9.5	68	180	9.3	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
24	0.00		72	66	357	217	574	439	9.5	68	179	9.5	68	180	9.3	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
25	0.00		72	66	400	176	576	466	9.5	68	179	9.5	68	180	9.3	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
26	0.00	S	69	63	391	202	593	524	9.5	66	179	9.5	65	180	9.3	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
27	0.00		70	64	394	204	598	527	9.5	66	179	9.5	66	180	9.3	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
28	0.00		71	63	377	199	576	529	9.5	65	179	9.5	64	180	9.3	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
29	0.06	W	70	64	400	199	599	529	9.5	64	179	9.5	64	180	9.3	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
30	0.00	S	70	64	400	210	610	537	9.5	64	179	9.5	64	180	9.3	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
31	0.00		70	64	369	202	571	516	9.5	64	179	9.5	64	180	9.3	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
TOTAL	0.37			TOTAL	12299	6469	18768	16820																
				AVERAG	397	209	605	509																
				MAXIMU	431	224	641	610																
				MINIMUM	357	176	566	439																

MEXIC 66 % OF TOTAL FLOW

U.S. = 34 % OF TOTAL FLOW

ULL TIM SERVICES				UTILITIES AND CHLORINE				PERSONNEL SERVICES AND EQUIPMENT UTILIZED OT ER THAN FULL TIME		BOUNDARY
PERSONNEL		EQUIPMENT		CONTROL BUILDING						
CHIEF OPERATOR	1	90' D DGE AR S K C R	1	POWER CON MPTIO	648.00 00	K W.H		CLASSI ICATI ON	HRS THIS MONTH	
COMPLIANCE SPEC	1	PICKU 1/2 TON	3	$	48,801.9 . 94					
OPERAORS, GRADE II	2	GRIT TRUCK	1	CHLO INE & AREA	ULTRAVIOLET DISINFECTION			ELECTRICIAN	14	
OPERATORS, GRADE I	1	WATER TRUCK	1		-0-	K W.H.		LABORERS	49	
LABORERS	4	BACK HOE	1	$	60.74			OVER TIME (OPERATORS)	68	
MECHANIC	1			CHLORINE CONSU	6720	LBS		MOTOR GRADER & OPERATO	0	
ELECTRICIAN	1			SULPHUR D XIDE:	4475 5	LBS.				
Page 2				UTILITY COSTS - WATER SERVICE	1741 80					
Sept 1993				BILLING DATE:	08/23/93 TO 09/23/93					

PML-6		PML-7		PML-8		D.O MG/L			pH				SUSPENDED SOLIDS MG/L		SETTLEABLE SOLIDS ML/L	B O D MG/L		TOTAL CHLORINE					
DEPT FEET	AERAT HOURS	DEPT FEET	AERATO HOURS	DEPT FEET	AERATO HOURS	CML-	CML-	EFFLUEN	RA	CML-	CML-	EFFLUEN	RAW	EFFLUEN	EFFLUENT	EFF	INFLUEN	USED (POUNDS)	GRIT REMOVE	FECAL COLIFORM	UV 1 HOURS	UV-2 HOURS	DATE
88	-0-	88	-0-	8.8	-0-	6.2	6.6	7.3	6.7	7.2	7.3	7.0						260	5 C/Y	2	192	192	1
88	-0-	88	-0-	8.8	-0-	6.1	6.5	7.1	6.8	7.1	7.3	7.0	412	10	<0.10	7.6	60	260	40 C/Y	2	192	192	2
88	-0-	88	-0-	8.8	-0-	6.2	6.2	7.0	6.8	7.1	7.3	7.0						200	10 C/Y	<2	192	192	3
88	-0-	88	-0-	8.8	-0-	5.3	5.8	6.2	6.8	7.0	7.2	7.0						220		<2	192	192	4
88	-0-	88	-0-	8.8	-0-	7.8	7.6	6.3	6.8	7.1	7.2	6.9						250		<2	192	192	5
88	-0-	88	-0-	8.8	-0-	7.8	7.2	6.1	6.5	7.1	7.2	7.0						60		<2	192	192	6
88	-0	88	-0-	8.8	-0-	5.8	5.9	5.7	6.9	7.1	7.1	6.9						230		2	192	192	7
88	-0	88	-0-	8.8	-0-	5.8	6.0	5.1	6.9	7.2	7.0	7.2						230	45 C/Y	33	192	192	8
88	-0-	88	-0-	8.8	-0-	6.0	5.9	6.2	7.0	7.1	7.0	7.0	598	17	<0.10	17	80	230	8 C/Y	6	192	192	9
88	-0-	88	-0-	8.8	-0-	5.7	5.8	6.1	7.1	7.1	7.1	7.0						200		50	192	192	10
88	-0-	88	-0-	8.8	-0-	6.3	5.8	6.2	7.0	7.0	7.0	7.1						220		<2	192	192	11
88	-0	88	-0-	8.8	-0-	6.0	6.2	6.3	7.1	7.1	6.9	7.1						220	5 C/Y	2	192	192	12
88	-0	88	-0-	8.8	-0-	6.1	6.0	6.2	7.0	7.1	6.9	7.1						220		4	192	192	13
88	-0	88	-0-	8.8	-0-	7.0	6.9	6.6	6.6	7.0	7.1	6.7						220		13	192	192	14
88	-0-	88	-0-	8.8	-0-	6.3	6.0	6.3	6.8	7.1	6.9	6.9						220	5 C/Y	7	192	192	15
88	-0	88	-0-	8.8	-0-	7.8	6.5	6.6	6.9	7.3	8.0	7.0	388	20	<0.10	<1	86.7	210	25 C/Y	<2	192	192	16
88	-0	88	-0-	8.8	-0-	6.5	6.6	6.8	7.0	7.5	7.5	6.8						280		<2	192	192	17
88	-0-	88	-0-	8.8	-0-	6.0	6.9	17.0	7.0	7.7	7.6	7.4						170		<2	192	192	18
88	-0-	88	-0-	8.8	-0-	5.8	6.7	6.5	7.0	7.5	7.5	7.5						160		<2	192	192	19
88	-0-	88	-0-	8.8	-0-	7.0	7.0	6.5	7.1	7.5	7.5	7.5						230		80	192	192	20
88	-0-	88	-0-	8.8	-0-	4.0	4.7	6.7	7.2	7.5	7.4	7.4						120		50	192	192	21
88	-0	88	-0-	8.8	-0-	6.2	5.3	5.9	6.8	7.3	7.2	7.1						280	5 C/Y	<2	192	192	22
88	-0	88	-0-	8.8	-0-	5.3	4.7	4.5	6.9	7.2	7.2	7.0	306	11	<0.10	11	52.2	280		<2	192	192	23
88	-0	88	-0-	8.8	-0-	4.8	5.1	5.3	6.9	7.3	7.1	7.0						280		<2	192	192	24
88	-0	88	-0-	8.8	-0-	5.3	5.6	5.0	6.9	7.3	7.2	6.9						170		<2	192	192	25
88	-0-	88	-0-	8.8	-0-	5.9	5.9	5.7	6.8	7.3	7.2	7.0						260		<2	192	192	26
88	-0-	88	-0-	8.8	-0-	5.1	4.3	4.8	6.9	7.4	7.4	7.0						280		<2	192	192	27
88	-0	88	-0-	8.8	-0-	3.5	3.9	5.4	6.9	7.3	7.4	7.1						280	5 C/Y	<2	192	192	28
88	-0	88	-0-	8.8	-0-	5.3	4.3	5.5	6.9	7.3	7.3	7.0						180		<2	192	192	29
88	-0	88	-0-	8.8	-0-	5.5	4.6	5.2	7.0	7.4	7.2	7.1	314	11	<0.10	15	151.5	240		<2	192	192	30

TOTAL CL 6720 3.66 GEOMETRIC MEAN

CY = CUBIC YARD GRIT COMBINATION OF BASINS AND GRIT CHAMBER
ND = NONE DETECTED
MPN/100ML

NOGALES INTERNATIONAL WASTEWATER TREATMENT PLANT

MONTHLY REPORT

PREPAR BY: RIC ARD L. ALDWELL, COMPLIANE SPECIALIST
APPROVED AS TO F RM BY: LINO VEGA, PLANT SUPERINTENDENT

CML:COMPLETE MIX LAGOON
PML.PARTIAL MIX LAGOON

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MONTH: Sept. 1993

	WEA	HER	TEMP	RATURE	FLOW	IN LITER	S PER SE	OND	CML-1			CML-2			PML-1		PML-2		MI 3		PML 4		ML-5	
DATE	RAIN FALL INCHES	WIND DIREC-TION	INFLOW	EFFLUEN	MEXICO	UNITED STATES	PLANT INFLOW	PLANT OUTFLO	DEPTH FEET	TEMPE ATURE	AERAT HOURS	DEPT FEET	TEMPE ATUR	AERAT HOURS	DEPT FEET	AERAT HOURS	DEPT FEET	AERAT HOURS	DEPT FEET	AERAT HOURS	DEPT FEET	AERAT HOURS	DEPT FEET	AERAT HOURS
1	0.00	SE	77	77	426	252	678	615	9.5	75	179	9.5	76	187	8.8	6	8.8	24	8.8	24	8.8	24	8.8	-0-
2	0.00		77	76	415	242	657	597	9.5	75	179	9.5	77	187	8.8	6	8.8	24	8.8	24	8.8	24	8.8	-0-
3	0.00	SW	77	77	408	236	644	584	9.5	76	179	9.5	77	187	8.8	6	8.8	24	8.8	24	8.8	24	8.8	-0-
4	0.00		77	77	405	232	637	578	9.5	75	179	9.5	76	187	8.8	6	8.8	24	8.8	24	8.8	24	8.8	-0-
5	0.00		78	78	388	225	613	556	9.5	77	179	9.5	77	187	8.8	6	8.8	24	8.8	24	8.8	24	8.8	-0-
6	0.00		77	77	380	218	598	542	9.5	77	179	9.5	77	187	8.8	6	8.8	24	8.8	24	8.8	24	8.8	-0-
7	0.00		77	76	400	233	633	574	9.5	74	179	9.5	75	187	8.8	6	8.8	24	8.8	24	8.8	24	8.8	-0-
8	0.00		77	76	406	229	635	576	9.5	75	179	9.5	75	187	8.8	6	8.8	24	8.8	24	8.8	24	8.8	-0-
9	0.00		77	76	403	230	633	574	9.5	75	179	9.5	75	187	8.8	6	8.8	24	8.8	24	8.8	24	8.8	-0-
10	0.00		77	76	391	227	618	561	9.5	76	179	9.5	75	187	8.8	6	8.8	24	8.8	24	8.8	24	8.8	-0-
11	0.00		77	76	448	260	708	642	9.5	75	179	9.5	75	187	8.8	6	8.8	24	8.8	24	8.8	24	8.8	-0-
12	0.28	W	77	75	445	254	699	634	9.5	73	179	9.5	73	187	8.8	6	8.8	24	8.8	24	8.8	24	8.8	-0-
13	1.16		77	75	400	226	626	568	9.5	73	179	9.5	73	187	8.8	6	8.8	24	8.8	24	8.8	24	8.8	-0-
14	0.00		73	75	403	225	628	566	9.5	76	179	9.5	75	187	8.8	6	8.8	24	8.8	24	8.8	24	8.8	-0-
15	0.00	SW	77	74	405	236	641	573	9.5	74	179	9.5	73	187	8.8	6	8.8	24	8.8	24	8.8	24	8.8	-0-
16	0.00		77	75	397	230	627	573	9.5	75	179	9.5	75	187	8.8	6	8.8	24	8.8	24	8.8	24	8.8	-0-
17	0.00	S	77	72	394	224	618	564	9.5	71	179	9.5	71	187	8.8	6	8.8	24	8.8	24	8.8	24	8.8	-0-
18	0.00		72	77	397	224	621	562	9.5	71	179	9.5	71	187	8.8	6	8.8	24	8.8	24	8.8	24	8.8	-0-
19	0.00		75	72	394	221	615	562	9.5	72	179	9.5	72	187	8.8	6	8.8	24	8.8	24	8.8	24	8.8	-0-
20	0.00		73	69	397	226	623	575	9.5	69	179	9.5	69	187	8.8	6	8.8	24	8.8	24	8.8	24	8.8	-0-
21	0.00		73	71	395	228	623	569	9.5	71	179	9.5	71	187	8.8	6	8.8	24	8.8	24	8.8	24	8.8	-0-
22	0.00		75	72	400	227	627	571	9.5	72	179	9.5	72	187	8.8	6	8.8	24	8.8	24	8.8	24	8.8	-0-
23	0.00		75	72	397	230	627	570	9.5	72	179	9.5	73	187	8.8	6	8.8	24	8.8	24	8.8	24	8.8	-0-
24	0.00		77	75	403	233	636	578	9.5	73	179	9.5	75	187	8.8	6	8.8	24	8.8	24	8.8	24	8.8	-0-
25	T	SW	77	75	403	232	635	577	9.5	74	179	9.5	75	187	8.8	6	8.8	24	8.8	24	8.8	24	8.8	-0-
26	0.00		77	75	389	224	613	558	9.5	73	179	9.5	73	187	8.8	6	8.8	24	8.8	24	8.8	24	8.8	-0-
27	0.00	SE	75	72	386	226	612	557	9.5	70	179	9.5	72	187	8.8	6	8.8	24	8.8	24	8.8	24	8.8	-0-
28	0.00		73	68	400	232	632	575	9.5	70	179	9.5	71	187	8.8	6	8.8	24	8.8	24	8.8	24	8.8	-0-
29	0.00		73	72	417	241	658	599	9.5	70	179	9.5	72	187	8.8	6	8.8	24	8.8	24	8.8	24	8.8	-0-
30	0.01		73	72	400	231	631	622	9.5	72	179	9.5	72	187	8.8	6	8.8	24	8.8	24	8.8	24	8.8	-0-
31																								
TOTA	1.45			TOTAL	12092	6954	19046	17352																
				AVERAG	403	232	635	577																
				MAXIMU	448	260	708	642																
				MINIMUM	380	218	598	542																

MEXIC 63 % OF TOTAL FLOW

U.S. = 37 % OF TOTAL FLOW

ULL TIM SERVICES :: UTILITIES AND CHLORINE :: PERSONNEL SERVICES AND EQUIPMENT UTILIZED OT ER THAN FULL TIME :: BOUNDARY

PERSONNEL		EQUIPMENT		CONTROL BUILDING			
CHIEF OPERATOR	1	90' D DGE AR SKC R	1	POWER CON MPTIO	635, 00 K W.H.	CLASSI ICATI ON	HRS THIS MONTH
COMPLIANCE SPEC.	1	PICKU 1/2 TON	3	$	48,619 . 80		
OPERAORS, GRADE II	2	GRIT TRUCK	1	CHLO INE & ULTRAVIOLET DISINFECTION AREA		ELECTRICIAN	0
OPERATORS, GRADE I	1	WATER TRUCK	1		-0 K W.H.	LABORERS	0
LABORERS	4	BACK HOE	1	$	60 . 74	OVER TIME (OPERATORS)	13
MECHANIC	1			CHLORINE CONSU	EST. 5 , 326 LBS	MOTOR GRADER & OPERATO	0
ELECTRICIAN	1			SULPHUR D XIDE:	EST. 3 , 934 LBS.	I NT'L & ROBINS ST 156 KWH $ 31.09	
				UTILITY COSTS - WATER SERVICE	$4,094.41 DEC SVC.	ERVICE FRO 12/08/93 TO 1 1/10/94	
Page 2							
Aug 1993				BILLING DATE:	1/22/93 T O 12/2 2/93 ELE C. SERVICE ONLY		

PML-6		PML-7		PML-8		D.O MG/L			p H				SUSPENDED SOLIDS MG/L		SETTLEABLE SOLIDS ML/L	B.O.D MG/L		TOTAL CHLORINE					
DEPT FEET	AERA1 HOURS	DEPT FEET	AERATO HOURS	DEPT FEET	AERATO HOURS	CML-	CML-	EFFLUEN	RA	CML-	CML-	EFFLUEN	RAW	EFFLUEN	EFFLUENT	EFF	INFLUEN	USED (POUNDS)	GRIT REMOVE	FECAL COLIFORM	UV-1 HOURS	UV-2 HOURS	DATE
8.8	0	8.8	0	8.8	0	6.8	6.9	6.5	7.1	7.8	7.8	7.5	140	7	<0.10	11	56	130		30	192	192	1
8.8	0	8.8	0	8.8	0	5.7	5.7	5.5	7.2	7.7	7.8	7.4						240		8	192	192	2
8.8	0	8.8	0	8.8	0	5.2	5.6	6.1	7.2	7.8	7.7	7.6						160	5 C/Y	80	192	192	3
8.8	0	8.8	0	8.8	0	5.3	5.7	6.0	7.1	7.8	7.7	7.5						166		2	192	192	4
8.8	0	8.8	0	8.8	0	5.4	5.4	6.1	7.2	7.8	7.7	7.4						165		17	192	192	5
8.8	0	8.8	0	8.8	0	5.1	5.7	6.5	7.2	7.7	7.6	7.5						165		23	192	192	6
8.8	0	8.8	0	8.8	0	5.7	6.1	5.9	7.3	7.8	7.7	7.5						320		2	192	192	7
8.8	0	8.8	0	8.8	0	5.1	4.8	5.3	7.3	7.7	7.8	7.4						120	29 C/Y	<2	192	192	8
8.8	0	8.8	0	8.8	0	5.5	4.7	5.4	7.5	7.8	7.8	7.7	144	6	<0.10	15	45	80		<2	192	192	9
8.8	0	8.8	0	8.8	0	4.8	5.1	5.9	7.4	7.8	7.7	7.4						140	5 C/Y	2	192	192	10
8.8	0	8.8	0	8.8	0	4.8	8.2	5.7	7.3	7.8	7.8	7.5						180		<2	192	192	11
8.8	0	8.8	0	8.8	0	4.5	4.6	5.5	7.1	7.5	7.4	7.6						200		<2	192	192	12
8.8	0	8.8	0	8.8	0	5.6	6.2	6.2	7.1	7.7	7.7	7.2						220		4	192	192	13
8.8	0	8.8	0	8.8	0	4.9	5.3	5.2	7.2	7.5	7.5	7.2						280		4	192	192	14
8.8	0	8.8	0	8.8	0	5.1	5.1	7.3	7.4	7.6	7.5	7.3						160		23	192	192	15
8.8	0	8.8	0	8.8	0	5.1	4.8	6.0	7.1	7.7	7.6	7.4	154	<4	<0.10	16	72	200	10 C/Y	14	192	192	16
8.8	0	8.8	0	8.8	0	5.0	5.0	6.1	7.3	7.7	7.7	7.4						160		80	192	192	17
8.8	0	8.8	0	8.8	0	5.1	5.1	6.3	7.3	7.7	7.6	7.6						140		50	192	192	18
8.8	0	8.8	0	8.8	0	5.6	5.6	6.7	7.3	7.7	7.6	7.4						180		4	192	192	19
8.8	0	8.8	0	8.8	0	5.9	5.8	6.6	7.4	7.7	7.6	7.4						200		2	192	192	20
8.8	0	8.8	0	8.8	0	5.7	5.9	6.3	7.3	7.7	7.6	7.3						180		<2	192	192	21
8.8	0	8.8	0	8.8	0	5.9	5.7	6.1	7.3	7.7	7.6	7.3						180		2	192	192	22
8.8	0	8.8	0	8.8	0	6.3	5.9	6.5	7.3	7.7	7.6	7.3	276	10	<0.10	15	78	200	5 C/Y	<2	192	192	23
8.8	0	8.8	0	8.8	0	6.6	6.7	7.1	7.2	7.7	7.7	7.4						200		<2	192	192	24
8.8	0	8.8	0	8.8	0	8.4	7.6	7.6	7.2	7.7	7.7	7.2						180		2	192	192	25
8.8	0	8.8	0	8.8	0	7.0	6.4	7.2	7.3	7.6	7.7	7.4						200		<2	192	192	26
8.8	0	8.8	0	8.8	0	5.6	5.3	6.7	7.3	7.7	7.6	7.5						120		4	192	192	27
8.8	0	8.8	0	8.8	0	7.4	6.7	8.9	7.2	7.5	7.5	7.5						140		2	192	192	28
8.8	0	8.8	0	8.8	0	6.9	5.6	6.6	7.4	7.7	7.5	7.5						100	10 C/Y	110	192	192	29
8.8	0	8.8	0	8.8	0	7.1	7.6	8.6	7.2	7.3	7.5	7.4	302	7	<0.10	18	110	120		1	192	192	30
8.8	0	8.8	0	8.8	0	6.9	6.4	8.6	7.3	7.5	7.5	7.2						150		4	192	192	31

TOTAL CL [illegible] EST 5 614 EOMETRIC MEAN

CY = CUBIC YARD GRIT COMBIN ION OF BASINS AND GRIT CHAMBE
ND = NONE DETECTED
MPN/100ML

NOGALES INTERNATIONAL WASTEWATER TREATMENT PLANT

MONTHLY REPORT

PREPAR BY: RIC ARD L. ALDWELL, COMPLIANE SPECIALIST
APPROVED AS TO F RM BY: LINO VEGA, PLANT SUPERINTENDENT

CML COMPLETE MIX LAGOON
PML PARTIAL MIX LAGOON

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MONTH August 1993

	WEATHER		TEMPERATURE		FLOW IN LITERS PER SECOND				CML-1			CML-2			PML-1		PML-2		PML-3		PML-4		PML-5	
DATE	RAIN FALL INCHES	WIND DIRECTION	INFLOW	EFFLUENT	MEXICO	UNITED STATES	PLANT INFLOW	PLANT OUTFLOW	DEPTH FEET	TEMPERATURE	AERAT HOURS	DEPT FEET	TEMPERATURE	AERAT HOURS	DEPT FEET	AERAT HOURS	DEPT FEET	AERAT HOURS	DEPT FEET	AERAT HOURS	DEPT FEET	AERAT HOURS	DEPT FEET	AERAT HOURS
1	0.00	SE	63	59	398	220	618	557	9.5	60	143.5	9.5	61	143.5	9.2	0	8.8	24	8.8	24	8.8	24	8.8	0
2	0.00		63	60	395	217	612	564	9.5	60	143.5	9.5	57	143.5	9.2	0	8.8	24	8.8	24	8.8	24	8.8	0
3	0.00		60	57	392	212	604	553	9.5	58	143.5	9.5	58	143.5	9.2	0	8.8	24	8.8	24	8.8	24	8.8	0
4	0.00		60	57	398	214	612	555	9.5	58	143.5	9.5	58	143.5	9.2	0	8.8	24	8.8	24	8.8	24	8.8	0
5	0.00		60	57	384	213	597	553	9.5	58	143.5	9.5	58	143.5	9.2	0	8.8	24	8.8	24	8.8	24	8.8	0
6	0.00		60	57	401	209	610	557	9.5	58	143.5	9.5	58	143.5	9.2	0	8.8	24	8.8	24	8.8	24	8.8	0
7	0.00		64	57	395	203	598	540	9.5	60	143.5	9.5	60	143.5	9.2	0	8.8	24	8.8	24	8.8	24	8.8	0
8	0.00		60	59	401	202	603	545	9.5	60	143.5	9.5	60	143.5	9.2	0	8.8	24	8.8	24	8.8	24	8.8	0
9	0.00	W	66	59	392	217	609	543	9.5	60	143.5	9.5	60	143.5	9.2	0	8.8	24	8.8	24	8.8	24	8.8	0
10	0.00		66	60	392	208	600	546	9.5	64	143.5	9.5	61	143.5	9.2	0	8.8	24	8.8	24	8.8	24	8.8	0
11	0.00		66	61	386	206	592	532	9.5	61	143.5	9.5	60	143.5	9.2	0	8.8	24	8.8	24	8.8	24	8.8	0
12	0.06		66	61	409	199	608	542	9.5	61	143.5	9.5	60	143.5	9.2	0	8.8	24	8.8	24	8.8	24	8.8	0
13	0.00	SW	64	59	395	213	608	547	9.5	60	143.5	9.5	59	143.5	9.2	0	8.8	24	8.8	24	8.8	24	8.8	0
14	0.00		60	56	412	201	613	547	9.5	56	143.5	9.5	56	143.5	9.2	0	8.8	24	8.8	24	8.8	24	8.8	0
15	0.00		64	56	395	206	601	547	9.5	58	143.5	9.5	57	143.5	9.2	0	8.8	24	8.8	24	8.8	24	8.8	0
16	0.00	SE	62	55	392	202	594	533	9.5	59	143.5	9.5	60	143.5	9.2	0	8.8	24	8.8	24	8.8	24	8.8	0
17	0.00		62	55	386	202	588	533	9.5	58	143.5	9.5	57	143.5	9.2	0	8.8	24	8.8	24	8.8	24	8.8	0
18	0.00		62	55	403	208	611	540	9.5	58	143.5	9.5	58	143.5	9.2	0	8.8	24	8.8	24	8.8	24	8.8	0
19	0.00		62	55	398	188	586	527	9.5	58	143.5	9.5	58	143.5	9.2	0	8.8	24	8.8	24	8.8	24	8.8	0
20	0.00		62	55	386	206	592	533	9.5	58	143.5	9.5	58	143.5	9.2	0	8.8	24	8.8	24	8.8	24	8.8	0
21	0.00		62	55	435	200	635	546	9.5	58	143.5	9.5	58	143.5	9.2	0	8.8	24	8.8	24	8.8	24	8.8	0
22	0.00		62	55	406	214	620	564	9.5	58	143.5	9.5	58	143.5	9.2	0	8.8	24	8.8	24	8.8	24	8.8	0
23	0.00		62	54	364	213	577	538	9.5	57	143.5	9.5	58	143.5	9.2	0	8.8	24	8.8	24	8.8	24	8.8	0
24	0.00	S	60	53	367	209	576	523	9.5	56	143.5	9.5	55	143.5	9.2	0	8.8	24	8.8	24	8.8	24	8.8	0
25	0.00		59	52	350	190	540	519	9.5	55	143.5	9.5	55	143.5	9.2	0	8.8	24	8.8	24	8.8	24	8.8	0
26	0.00		58	52	353	194	547	509	9.5	56	143.5	9.5	55	143.5	9.2	0	8.8	24	8.8	24	8.8	24	8.8	0
27	0.00		58	53	346	210	556	510	9.5	57	143.5	9.5	59	143.5	9.2	0	8.8	24	8.8	24	8.8	24	8.8	0
28	0.02	SW	62	55	384	206	590	530	9.5	58	143.5	9.5	58	143.5	9.2	0	8.8	24	8.8	24	8.8	24	8.8	0
29	0.00		64	56	386	198	584	543	9.5	58	143.5	9.5	58	143.5	9.2	0	8.8	24	8.8	24	8.8	24	8.8	0
30	0.00		61	55	364	198	562	525	9.5	57	143.5	9.5	57	143.5	9.2	0	8.8	24	8.8	24	8.8	24	8.8	0
31	0.00		63	58	344	206	550	510	9.5	61	143.5	9.5	60	143.5	9.2	0	8.8	24	8.8	24	8.8	24	8.8	0
TOTAL	0.08			TOTAL	12009	6384	18393	16711																
				AVERAG	387	206	593	521																
				MAXIMU	435	220	635	564																
				MINIMUM	344	188	540	509																

MEXIC 65 % OF TOTAL FLOW

US = 35 % OF TOTAL FLOW

ULL TIM SERVICES

PERSONNEL		EQUIPMENT	
CHIEF OPERATOR	1	90' D DGE AR . S K C R	1
COMPLIANCE SPEC.	1	PICKU 1/2 TON	3
OPERAORS GRADE II	2	GRIT TRUCK	1
OPERATORS GRADE I	1	WATER TRUCK	1
LABORERS	4	BACK HOE	1
MECHANIC	1		
ELECTRICIAN	1		

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July 1993

UTILITIES AND CHLORINE

CONTROL BUILDING

POWER CON MPTIO	730,800	0	K W.H.
$	70,609.44	4	

CHLOINE & ULTRAVIOLET DISINFECTION AREA

	-0-	K W.H.
$	381.34	

CHLORINE CONSU	10,220	0	LBS
SULPHUR D XIDE:	4,426	6	LBS.

UTILITY COSTS - WATER SERVICE
2,205.01

BILLING DATE: 06/23/93 TO 07/27/93

PERSONNEL SERVICES AND EQUIPMENT UTILIZED OT ER THAN FULL TIME

CLASSI ICATI ON	HRS THIS MONTH
ELECTRICIAN	0
LABORERS	0
OVER TIME (OPERATORS)	34
MOTOR GRADER & OPERATO	0
MECHANIC	2

BOUNDARY

DATE 07/08/93
BOD 5 93.4 mg/l
TSS 222 mg/l

PML-6		PML-7		PML-8		D O. MG/L			p H				SUSPENDED SOLIDS MG/L		SETTLEABLE SOLIDS ML/l	B O D MG/l		TOTAL CHLORINE					
DEPT FEET	AERAT HOURS	DEPT FEET	AERATO HOURS	DEPT FEET	AERATO HOURS	CML-	CML-	EFFLUEN	RA	CML-	CML-	EFFLUEN	RAW	EFFLUEN	EFFLUENT	EFF	INFLUEN	USED (POUNDS)	GRIT REMOVE	FECAL COLIFORM	UV 1 HOURS	UV-2 HOURS	DATE
8 8	-0	8 8	-0-	8.8	-0-	4.2	2 9	4 6	6.9	7.1	6 9	7.0						340		<2	192	192	1
8 8	-0	8 8	-0-	8.8	-0-	3.8	2 0	4 1	6 9	7.2	7 1	7 0	200				133	260	5 C/Y	<2	192	192	2
8 8	-0-	8 8	-0-	8.8	-0-	6.2	5 6	6 2	6.9	7.2	7.1	7 0	168				158	360		2	192	192	3
8 8	-0-	8 8	-0-	8.8	-0-	4.6	3.9	4.6	7.0	7.3	7 2	7.0						320		2	192	192	4
8 8	-0-	8 8	-0-	8.8	-0-	4.4	3.2	4 3	7.1	7.2	7.1	7.0						340		<2	192	192	5
8 8	-0	8 8	-0-	8.8	-0-	4.3	4.0	4 1	6.8	7.2	7.2	7.1		5.5		13		310		<2	192	192	6
8 8	-0	8 8	-0-	8.8	-0-	4.6	4.4	4 1	6 8	7.2	7.2	7.0						310	4 C/Y	<2	192	192	7
8 8	-0-	8 8	-0-	8.8	-0-	4.0	3.8	4.4	7.0	7.4	7 3	7.0	166	11	<0.10	10	67	260		<2	192	192	8
8 8	-0	8 8	-0-	8.8	-0-	4.7	4.7	4 3	7.0	7.3	7 3	7.1						350		<2	192	192	9
8 8	-0-	8 8	-0-	8.8	-0-	4.3	4.9	5.4	6.8	7.4	7.1	7 0						370		<2	192	192	10
8 8	-0	8.8	-0-	8.8	-0-	5.2	5.0	6 0	7.0	7.2	7 1	7.1						360		<2	192	192	11
8 8	-0	8 8	-0-	8.8	-0-	5.1	5.2	5 6	7.1	7.1	7 1	6 9						260		2	192	192	12
8 8	-0-	8 8	-0-	8.8	-0-	5.0	4.6	5.2	7.1	7.1	7.1	7.0						320	5 C/Y	<2	192	192	13
8 8	-0-	8 8	-0-	8.8	-0-	4.9	4.3	4 7	7.1	7.1	7 0	7.0						320		<2	192	192	14
8 8	-0-	8 8	-0-	8.8	-0-	4.7	5 1	5 2	6.9	7.2	7 2	6.9	396	18	<0.10	11	49.5	360	5 C/Y	<2	192	192	15
8 8	-0	8 8	-0-	8.8	-0-	5.0	5.9	5.1	6.9	7.0	7.2	6 8						360	5 C/Y	<2	192	192	16
8 8	-0	8.8	-0-	8.8	-0-	4.9	5 6	5.0	6.9	7.1	7.1	7 0						310		<2	192	192	17
8 8	-0-	8 8	-0-	8.8	-0-	4.8	5 3	4 9	6 9	7.1	7.1	7.0						300		<2	192	192	18
8 8	-0	8 8	-0-	8.8	-0-	4.9	5.1	5 2	6.9	7.0	7 2	7.0						320		<2	192	192	19
8 8	-0	8 8	-0-	8.8	-0-	5.0	5.3	5 3	6.9	7.1	7.1	6.9						300		<2	192	192	20
8 8	-0-	8 8	-0-	8.8	-0-	4.6	4.8	4 9	6.9	7.3	7.3	7 0						320		<2	192	192	21
8 8	-0	8 8	-0-	8.8	-0-	3.8	4 4	5 2	6.8	7.1	7.2	6 9	330	15	<0 10	15 7	39 9	360		<2	192	192	22
8 8	-0	8 8	-0-	8.8	-0-	4.2	3 9	4 8	6.7	7.2	7 2	7 0						310	5 C/Y	<2	192	192	23
8 8	-0	8 8	-0-	8.8	-0-	5.1	5 8	5 3	6.9	7.3	7 3	7 0						300		<2	192	192	24
8 8	-0	8 8	-0-	8.8	-0-	5.5	6 2	5 2	6.9	7.3	7.3	7 0						310		<2	192	192	25
8 8	-0	8 8	-0-	8.8	-0-	5.9	5 3	5 3	6 9	7.1	7 1	7.0						330		<2	192	192	26
8 8	-0	8 8	-0-	8.8	-0-	5.1	5 4	5 1	6.9	7.2	7 2	7 0						320	5 C/Y	<2	192	192	27
8 8	-0-	8 8	-0-	8.8	-0-	5.4	5 2	5 5	6 8	7.3	7 3	7.0						380	5 C/Y	<2	192	192	28
8 8	-0-	8 8	-0-	8.8	-0-	5 2	5 3	5.1	6.8	7.3	7 3	7 0	260	9	<0.10	9 2	50	340		<2	192	192	29
8.8	-0	8 8	-0-	8.8	-0-	5.8	5.9	6 2	6.7	7.3	7 2	6 9						360	5 C/Y	<2	192	192	30
8 8	-0	8 8	-0-	8.8	-0-	3.4	4 0	5 7	6 8	7.1	7 1	7.2						[illegible]		<2	192	192	31
																	TOTAL CL	10,220		2 00	GEOMETRIC MEAN		

C/Y = CUBIC ARD GRIT COMBIN ION OF BASINS AND GRIT CHAMBE
ND = NONE DETECTED
MPN/100ML

NOGALES INTERNATIONAL WASTEWATER TREATMENT PLANT

MONTHLY REPORT

PREPAR BY: RIC ARD L. ALDWELL, COMPLIANE SPECIALIST
APPROVED AS TO F RM BY: LINO VEGA, PLANT SUPERINTENDENT

CML COMPLETE MIX LAGOON
PML PARTIAL MIX LAGOON

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MONTH JULY 1993

	WEA	HER	TEMP	RATURE	FLOW	IN LITER	S PER SE	OND	CML-1			CML-2			PML-1		PML-2		ML-3		PML-4		ML-5	
DATE	RAIN FALL INCHES	WIND DIREC-TION	INFLOW	EFFLUEN	MEXICO	UNITED STATES	PLANT INFLOW	PLANT OUTFLO	DEPTH FEET	TEMPE ATURE	AERAT HOURS	DEPT FEET	TEMPE ATUR	AERAT HOURS	DEPT FEET	AERAT HOURS	DEPT FEET	AERAT HOURS	DEPT FEET	AERAT HOURS	DEPT FEET	AERAT HOURS	DEPT FEET	AERAT HOURS
1	0.06	SW	77	79	377	158	535	559	9.5	77	96	9.5	77	96	8.8	6	8.8	24	8.8	24	8.8	24	8.8	-0-
2	-0-		78	78	340	217	557	576	9.5	77	96	9.5	77	96	8.8	6	8.8	24	8.8	24	8.8	24	8.8	-0-
3	0.33		79	78	324	180	504	534	9.5	79	96	9.5	79	96	8.8	6	8.8	24	8.8	24	8.8	24	8.8	-0-
4	-0-	S	78	77	346	135	481	502	9.5	79	96	9.5	79	96	8.8	6	8.8	24	8.8	24	8.8	24	8.8	-0-
5	-0-		78	78	363	149	512	494	9.5	79	96	9.5	79	96	8.8	6	8.8	24	8.8	24	8.8	24	8.8	-0-
6	-0-	SE	82	78	349	160	509	528	9.5	81	96	9.5	81	96	8.8	6	8.8	24	8.8	24	8.8	24	8.8	-0-
7	-0-		79	79	341	166	507	512	9.5	79	96	9.5	79	96	8.8	6	8.8	24	8.8	24	8.8	24	8.8	-0-
8	-0-		79	77	344	165	509	504	9.5	79	96	9.5	78	96	8.8	6	8.8	24	8.8	24	8.8	24	8.8	-0-
9	-0-	S	80	79	340	206	546	523	9.5	79	96	9.5	79	96	8.8	6	8.8	24	8.8	24	8.8	24	8.8	-0-
10	0.17	SW	79	79	369	133	502	541	9.5	77	96	9.5	73	96	8.8	6	8.8	24	8.8	24	8.8	24	8.8	-0-
11	-0-		77	77	369	182	551	524	9.5	76	96	9.5	73	96	8.8	6	8.8	24	8.8	24	8.8	24	8.8	-0-
12	0.70	W	77	77	366	204	570	582	9.5	77	96	9.5	77	96	8.8	6	8.8	24	8.8	24	8.8	24	8.8	-0-
13	0.29		77	77	391	152	543	590	9.5	77	96	9.5	77	96	8.8	6	8.8	24	8.8	24	8.8	24	8.8	-0-
14	-0-	SW	79	77	377	208	585	581	9.5	77	96	9.5	77	96	8.8	6	8.8	24	8.8	24	8.8	24	8.8	-0-
15	0.47		78	77	377	156	533	576	9.5	76	96	9.5	77	96	8.8	6	8.8	24	8.8	21	8.8	24	8.8	-0-
16	-0-		79	75	346	187	533	546	9.5	78	96	9.5	77	96	8.8	6	8.8	24	8.8	24	8.8	24	8.8	-0-
17	-0-	S	78	76	329	187	516	523	9.5	77	96	9.5	77	96	8.8	6	8.8	24	8.8	24	8.8	24	8.8	-0-
18	0-		79	76	321	176	497	511	9.5	77	96	9.5	77	96	8.8	6	8.8	24	8.8	24	8.8	24	8.8	-0-
19	-0-		78	75	343	183	526	516	9.5	77	96	9.5	77	96	8.8	6	8.8	24	[illegible]	24	8.8	24	8.8	-0-
20	-0-	SW	79	75	357	193	550	533	9.5	77	96	9.5	77	96	8.8	6	8.8	24	8.8	24	8.8	24	8.8	-0-
21	-0-		77	75	350	200	550	527	9.5	76	96	9.5	75	96	8.8	6	8.8	24	8.8	24	8.8	24	8.8	-0-
22	-0-		81	77	338	199	537	515	9.5	78	96	9.5	79	96	8.8	6	8.8	24	8.8	24	8.8	24	8.8	-0-
23	-0-		79	79	330	209	539	513	9.5	77	96	9.5	77	96	8.8	6	8.8	24	8.8	24	8.8	24	8.8	-0-
24	0-		79	77	319	203	522	496	9.5	79	96	9.5	78	96	8.8	6	8.8	24	8.8	24	8.8	24	8.8	-0-
25	-0-		79	76	313	199	512	477	9.5	78	96	9.5	77	96	8.8	6	8.8	24	8.8	24	8.8	24	8.8	-0-
26	-0-		79	77	321	207	528	490	9.5	77	96	9.5	77	96	8.8	6	8.8	24	8.8	24	8.8	24	8.8	-0-
27	-0-		78	77	336	205	541	490	9.5	77	96	9.5	77	96	8.8	6	8.8	24	8.8	24	8.8	24	8.8	-0-
28	-0-		79	75	336	202	538	489	9.5	77	96	9.5	77	96	8.8	6	8.8	24	8.8	24	8.8	24	8.8	-0-
29	0-		78	76	347	201	548	498	9.5	77	96	9.5	77	96	8.8	6	8.8	24	8.8	24	8.8	24	8.8	-0-
30	-0-		81	79	350	203	553	501	9.5	77	96	9.5	78	96	8.8	6	8.8	24	8.8	24	8.8	24	8.8	-0-
31	-0-		79	81	353	202	555	496	9.5	79	96	9.5	79	96	8.8	6	8.8	24	8.8	24	8.8	24	8.8	-0-
TOTAL	2.02			TOTAL	10762	5727	16489	16247																
				AVERAG	347	185	532	507																
				MAXIMU	391	217	585	590																
				MINIMUM	313	133	481	477																

MEXIC 65 % OF TOTAL FLOW

US = 35 % OF TOTAL FLOW

ULL TIM SERVICES				UTILITIES AND CHLORINE				PERSONNEL SERVICES AND EQUIPMENT UTILIZED OT ER THAN FULL TIME			BOUNDARY	
PERSONNEL		EQUIPMENT		CONTROL BUILDING				CLASSI ICATI ON		HRS THIS MONTH		
CHIEF OPERATOR	1	90' D DGE AR SKC R	1	POWER CON MPTIO	678, 00	K.W.H.					DATE: 06/03/93 BOD 5 40 9 mg/l TSS 142 mg/l	DATE 06/30/93 BOD 5 135 mg/l TSS 180 mg/l
COMPLIANCE SPEC	1	PICKU 1/2 TON	3	$	65,817.0 01			ELECTRICIAN		0		
OPERAORS. GRADE II	2	GRIT TRUCK	1	CHLO INE & ULTRAVIOLET DISINFEC TION AREA				LABORERS		18	DATE 06/10/93 BOD 5 111 2 mg/l TSS 74 mg/l	
OPERATORS GRADE I	1	WATER TRUCK	1		-0-	K.W.H.		OVER TIME (OPERATORS)		17		
LABORERS	4	BACK HOE	1	$	381 34			MOTOR GRADER & OPERATO		0	DATE 06/18/93 BOD 5 99 9 mg/l TSS 128 mg/l	
MECHANIC	1			CHLORINE CONSU	7,820 20	LBS						
ELECTRICIAN	VACANT			SULPHUR D XIDE.	3, 18	LBS.						
Page 2				UTILITY COSTS - WATER SERVICE	2,056 48						DATE: 06/24/93 BOD 5 192 mg/l TSS 252 mg/l	
June 1993				BILLING DATE.	05/24/93 TO 06/23/93							

PML-6		PML-7		PML-8		D.O. MG/L			p H				SUSPENDED SOLIDS MG/L		SETTLEABLE SOLIDS ML/L	B O D. MG/L		TOTAL CHLORINE					
DEPT FEET	AERAT HOURS	DEPT FEET	AERATO HOURS	DEPT FEET	AERATO HOURS	CML-	CML-	EFFLUEN	RA	CML-	CML-	EFFLUEN	RAW	EFFLUEN	EFFLUENT	EFF	INFLUEN	USED (POUNDS)	GRIT REMOVE	FECAL COLIFORM	UV 1 HOURS	UV-2 HOURS	DATE
8.8	-0	8.8	-0-	8.8	-0-	4.9	5.3	4.6	6.8	7.1	7.1	7.0		8.5		<10		210		<2	192	192	1
8.8	-0	8.8	-0-	8.8	-0-	4.8	2.5	4.7	6.9	7.3	7.3	7.1						200		<2	192	192	2
8.8	-0-	8.8	-0-	8.8	-0-	5.0	3.8	5.1	7.0	7.2	7.2	7.2	324	8	<0.10	7.9	30.6	260		2	192	192	3
8.8	-0-	8.8	-0-	8.8	-0-	4.5	4.0	4.5	6.8	6.6	7.2	7.1	304				153	160	6 C/Y	<2	192	192	4
8.8	-0	8.8	-0-	8.8	-0-	4.0	4.1	4.6	6.9	6.8	7.2	7.2	204					240	4 C/Y	<2	192	192	5
8.8	-0	8.8	-0-	8.8	-0-	4.4	4.0	4.7	6.8	6.9	7.1	7.1						260		<2	192	192	6
8.8	-0-	8.8	-0-	8.8	-0-	4.2	4.6	4.3	6.8	7.0	7.1	7.2						260		<2	192	192	7
8.8	-0-	8.8	-0-	8.8	-0-	4.0	4.2	4.6	6.9	6.7	7.1	7.1						260		<2	192	192	8
8.8	-0-	8.8	-0-	8.8	-0-	4.1	3.7	4.2	7.0	7.2	7.2	7.2						160		<2	192	192	9
8.8	-0-	8.8	-0-	8.8	-0-	4.3	3.6	4.9	7.1	7.2	7.1	7.2	558	10	<0.10	31.3	128	300	5 C/Y	<2	192	192	10
8.8	-0-	8.8	-0-	8.8	-0-	3.8	3.9	4.7	7.1	7.1	7.2	7.2	444				226	200		<2	192	192	11
8.8	-0-	8.8	-0-	8.8	-0-	4.0	4.5	4.4	7.0	7.5	7.4	7.2						280	10 C/Y	<2	192	192	12
8.8	-0-	8.8	-0-	8.8	-0-	5.7	4.8	6.4	7.1	7.4	7.4	7.1						291		<2	192	192	13
8.8	-0-	8.8	-0-	8.8	-0-	4.1	4.5	5.8	6.1	7.0	7.0	7.2		23		23		240		<2	192	192	14
8.8	-0-	8.8	-0-	8.8	-0-	4.6	4.7	5.6	6.3	7.1	7.1	7.1						260	5 C/Y	<2	192	192	15
8.8	-0-	8.8	-0-	8.8	-0-	4.9	4.9	5.3	6.8	7.0	7.1	7.1						240		<2	192	192	16
8.8	-0	8.8	-0-	8.8	-0-	4.8	4.6	5.3	6.9	7.1	7.1	7.1						280	5 C/Y	<2	192	192	17
8.8	-0-	8.8	-0-	8.8	-0-	4.3	4.9	5.3	7.0	7.1	7.2	7.1	300	22	<0.10	16.9	300	280	5 C/Y	<2	192	192	18
8.8	-0-	8.8	-0-	8.8	-0-	5.6	5.2	5.4	6.9	7.2	7.2	7.2						220		<2	192	192	19
8.8	-0	8.8	-0-	8.8	-0-	5.9	5.5	5.6	6.9	7.5	7.1	7.2						280		<2	192	192	20
8.8	-0	8.8	-0-	8.8	-0-	4.3	3.5	4.6	6.6	6.9	6.6	6.6	150	14			100	300	13 C/Y	<2	192	192	21
8.8	-0	8.8	-0-	8.8	-0-	4.2	3.6	4.7	7.0	6.9	6.7	6.9						120		2	192	192	22
8.8	-0	8.8	-0-	8.8	-0-	4.3	3.7	4.4	7.1	6.9	6.9	7.0						260		<2	192	192	23
8.8	-0-	8.8	-0-	8.8	-0-	4.7	3.2	5.4	7.2	7.3	7.1	7.0	206			17.8	172	210		<2	192	192	24
8.8	-0-	8.8	-0-	8.8	-0-	4.6	1.6	4.4	6.8	7.2	6.9	6.8		25		<10		260		<2	192	192	25
8.8	-0-	8.8	-0-	8.8	-0-	4.4	3.6	4.1	6.9	7.1	6.8	6.9						320		<2	192	192	26
8.8	-0	8.8	-0-	8.8	-0-	4.6	3.9	4.2	6.9	7.1	6.8	6.9						320		<2	192	192	27
8.8	-0-	8.8	-0-	8.8	-0-	4.2	4.2	4.4	6.9	7.2	6.9	6.8						320		2	192	192	28
8.8	-0-	8.8	-0-	8.8	-0-	3.7	3.3	4.2	6.9	7.1	6.9	6.7						320		<2	192	192	29
8.8	-0-	8.8	-0-	8.8	-0-	4.4	2.5	4.8	6.9	7.1	6.9	7.0	216	17	<0.10	13.6	120	300		<2	192	192	30
																							31
																	TOTAL CL	78.0		2.09	GEOMETRIC MEAN		

C/Y = CUBIC YARD GRIT COMBIN ION OF BASINS AND GRIT CHAMBE
ND = NONE DETECTED
MPN/100ML

NOGALES INTERNATIONAL WASTEWATER TREATMENT PLANT

MONTHLY REPORT

PREPAR BY: RIC ARD L. ALDWELL, COMPLIANE SPECIALIST
APPROVED AS TO F RM BY: LINO VEGA, PLANT SUPERINTENDENT

CML COMPLETE MIX LAGOON
PML PARTIAL MIX LAGOON

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MONTH: June 1993

	WEA	HER	TEMP	RATURE	FLOW	IN LITER	S PER SE	OND	CML-1			CML-2			PML-1		PML-2		ML-3		PML-4		ML-5	
DATE	RAIN FALL INCHES	WIND DIREC-TION	INFLOW	EFFLUEN	MEXICO	UNITED STATES	PLANT INFLOW	PLANT OUTFLO	DEPTH FEET	TEMPE ATURE	AERAT HOURS	DEPT FEET	TEMPE ATUR	AERAT HOURS	DEPT FEET	AERAT HOURS	DEPT FEET	AERAT HOURS	DEPT FEET	AERAT HOURS	DEPT FEET	AERAT HOURS	DEPT FEET	AERAT HOURS
1	-0-	SE	72	72	383	162	545	327	9.5	73	96	9.5	73	96	8.8	6	8.8	24	8.8	24	8.8	24	8.8	-0-
2	-0-		73	70	374	165	539	392	9.5	74	96	9.5	73	96	8.8	6	8.8	24	8.8	24	8.8	24	8.8	-0-
3	-0-		73	73	369	187	556	500	9.5	74	96	9.5	74	96	8.8	6	8.8	24	8.8	24	8.8	24	8.8	-0-
4	0-		73	71	383	157	540	503	9.5	73	96	9.5	73	96	8.8	6	8.8	24	8.8	24	8.8	24	8.8	-0-
5	-0-		73	71	366	168	534	505	9.5	73	96	9.5	73	96	8.8	6	8.8	24	8.8	24	8.8	24	8.8	-0-
6	-0-		73	72	366	183	549	517	9.5	73	96	9.5	73	96	8.8	6	8.8	24	8.8	24	8.8	24	8.8	-0-
7	-0-		73	73	372	189	561	541	9.5	73	96	9.5	73	96	8.8	6	8.8	24	8.8	24	8.8	24	8.8	-0-
8	-0-		73	73	391	171	562	531	9.5	73	96	9.5	73	96	8.8	6	8.8	24	8.8	24	8.8	24	8.8	-0-
9	-0-		72	73	394	156	550	514	9.5	73	96	9.5	73	96	8.8	6	8.8	24	8.8	24	8.8	24	8.8	-0-
10	-0-	S	73	73	388	156	544	496	9.5	73	96	9.5	73	96	8.8	6	8.8	24	8.8	24	8.8	24	8.8	-0-
11	0-		74	73	386	165	551	495	9.5	74	96	9.5	73	96	8.8	6	8.8	24	8.8	24	8.8	24	8.8	-0-
12	-0-	SE	76	74	388	112	500	471	9.5	76	96	9.5	74	96	8.8	6	8.8	24	8.8	24	8.8	24	8.8	-0-
13	-0-		78	73	349	173	522	455	9.5	74	96	9.5	74	96	8.8	6	8.8	24	8.8	24	8.8	24	8.8	-0-
14	-0-		76	73	360	172	532	483	9.5	74	96	9.5	74	96	8.8	6	8.8	24	8.8	24	8.8	24	8.8	-0-
15	-0-		75	73	380	143	523	467	9.5	73	96	9.5	73	96	8.8	6	8.8	24	8.8	24	8.8	24	8.8	-0-
16	0 25	W	75	73	369	166	535	467	9.5	74	96	9.5	74	96	8.8	6	8.8	24	8.8	24	8.8	24	8.8	-0-
17	-0-		75	73	380	143	523	475	9.5	74	96	9.5	74	96	8.8	6	8.8	24	8.8	24	8.8	24	8.8	-0-
18	-0-	SE	75	73	366	127	493	459	9.5	74	96	9.5	74	96	8.8	6	8.8	24	8.8	24	8.8	24	8.8	-0-
19	-0-		79	74	330	93	423	398	9.5	74	96	9.5	74	96	8.8	6	8.8	24	8.8	24	8.8	24	8.8	-0-
20	-0-		75	74	273	169	442	393	9.5	75	96	9.5	74	96	8.8	6	8.8	24	8.8	24	8.8	24	8.8	-0-
21	-0-		77	74	279	181	460	418	9.5	75	96	9.5	75	96	8.8	6	8.8	24	8.8	24	8.8	24	8.8	-0-
22	0-		77	74	287	130	417	407	9.5	75	96	9.5	74	96	8.8	6	8.8	24	8.8	24	8.8	24	8.8	-0-
23	-0-		77	74	250	196	446	408	9.5	75	96	9.5	74	96	8.8	6	8.8	24	8.8	24	8.8	24	8.8	-0-
24	-0-		77	75	279	207	486	461	9.5	75	96	9.5	74	96	8.8	6	8.8	24	8.8	24	8.8	24	8.8	-0-
25	-0-	S	77	75	318	181	499	489	9.5	75	96	9.5	74	96	8.8	6	8.8	24	8.8	24	8.8	24	8.8	-0-
26	-0-		76	75	312	181	493	504	9.5	75	96	9.5	74	96	8.8	6	8.8	24	8.8	24	8.8	24	8.8	-0-
27	0-	SE	76	78	318	205	523	513	9.5	75	96	9.5	75	96	8.8	6	8.8	24	8.8	24	8.8	24	8.8	-0-
28	-0-		78	75	349	168	515	523	9.5	75	96	9.5	75	96	8.8	6	8.8	24	8.8	24	8.8	24	8.8	-0-
29	-0-		80	79	338	185	523	533	9.5	76	96	9.5	77	96	8.8	6	8.8	24	8.8	24	8.8	24	8.8	-0-
30	-0-		77	77	355	187	542	535	9.5	77	96	9.5	77	96	8.8	6	8.8	24	8.8	24	8.8	24	8.8	-0-
31																								

	MEXICO	UNITED STATES	PLANT INFLOW	PLANT OUTFLO
TOTAL	10452	4976	15428	14180
AVERAG	348	166	514	456
MAXIMU	394	207	562	541
MINIMUM	250	93	417	392

MEXIC 68 % OF TOTAL FLOW

U.S. = 32 % OF TOTAL FLOW

ULL TIM SERVICES

PERSONNEL		EQUIPMENT	
CHIEF OPERATOR	1	90' D DGE AR SKC R	
COMPLIANCE SPEC.	1	PICKU 1/2 TON	
OPERATORS	2	GRIT TRUCK	
ASST. OPERATOR	1	WATER TRUCK	
LABORERS	4	BACK HOE	
MECHANIC	1		
ELECTRICIAN	VACANT		

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May 1993

UTILITIES AND CH HLORINE

CONTROL BUILDING

1	POWER CON MPTIO	639,00 00	K W H.
3	$	62,332.2 . 26	
1	CHLO INE & ULTRAVIOLET DISINFECTION AREA		
1		-0-	K W.H.
1	$	381.34	
	CHLORINE CONSU	7, 20	LBS
	SULPHUR D XIDE:	4, 97	LBS.

UTILITY COSTS - WATER SERVICE 1,866 40

BILLING DATE. 04/27/93 TO 05/24/93

PERSONNEL SERVICES AND EQUIPMENT UTILIZED OT ER THAN FULL TIME

CLASSI ICATI ON	HRS THIS MONTH
ELECTRICIAN	0
LABORERS	24
OVER TIME (OPERATORS)	16
MOTOR GRADER & OPERATO	0

ELECTRIC SERVICE @ PUMPIN PLANT
USAGE 72

COST $ 10 83

BOUNDARY

DATE 05/06/93
BOD 5 0 mg/l
TSS 7 2 mg/l

DATE 05/20/93
BOD 5 145 mg/l
TSS. 162 mg/l

DATE 05/27/93
BOD 5 97 mg/l
TSS 120 mg/l

PML-6 DEPT FEET	PML-6 AERAT HOURS	PML-7 DEPT FEET	PML-7 AERATO HOURS	PML-8 DEPT FEET	PML-8 AERATO HOURS	D O MG/L CML-	D O MG/L CML-	D O MG/L EFFLUEN	pH RA	pH CML-	pH CML-	pH EFFLUEN	SUSPENDED SOLIDS MG/L RAW	SUSPENDED SOLIDS MG/L EFFLUEN	SETTLEABLE SOLIDS ML/L EFFLUENT	B O D MG/L EFF	B O D MG/L INFLUEN	TOTAL CHLORINE USED (POUNDS)	GRIT REMOVE	FECAL COLIFORM	UV-1 HOURS	UV-2 HOURS	DATE
88	-0-	9	-0-	9	-0-	4.7	5.2	5.4	6.8	7.1	7.1	6.7						260		<2	192	192	1
88	-0-	9	-0-	9	-0-	5.9	5.2	5.6	6.6	7.1	7.2	6.9						280		<2	192	192	2
88	-0-	9	-0-	9	-0-	4.9	5.7	5.0	7.0	7.1	7.3	6.8						260		2	192	192	3
88	-0-	9	-0-	9	-0-	4.9	5.3	5.1	7.0	7.1	7.2	6.7						280		<2	192	192	4
88	-0-	9	-0-	9	-0-	5.2	5.2	5.1	7.1	7.2	7.2	7.1						280		<2	192	192	5
88	-0-	9	-0-	9	-0-	4.5	3.0	4.4	6.8	7.3	7.0	6.9	1204	12	<0 10	17.1	316	260		<2	192	192	6
88	-0-	9	-0-	9	-0-	3.1	2.6	4.4	6.9	7.1	7.5	6.9	132				101	260		<2	192	192	7
88	-0-	9	-0-	9	-0-	5.0	4.9	5.2	7.0	7.2	7.3	7.0						300		<2	192	192	8
88	-0-	9	-0-	9	-0-	5.4	5.0	5.3	7.0	7.2	7.2	7.0						240		<2	192	192	9
88	-0-	9	-0-	9	-0-	5.6	5.3	5.0	6.9	7.1	7.1	7.1						250	6 C/Y	2	192	192	10
88	-0-	9	-0-	9	-0-	5.6	4.5	5.1	6.8	7.4	6.5	7.1		24		18		160		<2	192	192	11
88	-0-	9	-0-	9	-0-	5.9	5.2	4.5	7.0	7.3	7.1	7.1	188					250		<2	192	192	12
88	-0-	9	-0-	9	-0-	5.6	5.5	5.6	7.0	7.2	7.0	7.0	964	7	<0 10	14 8	174	300	11 C/Y	<2	192	192	13
88	-0-	9	-0-	9	-0-	4.6	4.6	4.8	7.0	7.2	7.1	6.8					129	260		<2	192	192	14
88	-0-	9	-0-	9	-0-	4.5	4.9	4.9	7.0	7.3	7.0	7.0						260	4 C/Y	<2	192	192	15
88	-0-	9	-0-	9	-0-	4.4	5.0	5.2	7.1	7.2	7.1	7.1						260		7	192	192	16
88	-0-	9	-0-	9	-0-	4.2	5.1	5.1	7.0	7.1	7.0	7.0		7		18		260		<2	192	192	17
88	-0-	9	-0-	9	-0-	4.9	5.0	5.4	7.0	7.0	7.1	7.1						260		<2	192	192	18
88	-0-	9	-0-	9	-0-	4.9	4.5	4.7	7.0	7.0	7.1	7.0	184					240		<2	192	192	19
88	-0-	9	-0-	9	-0-	4.7	4.2	4.6	6.6	7.3	7.3	7.1	196	12	<0.10	23	159	280		<2	192	192	20
88	-0-	9	-0-	9	-0-	5.1	4.4	5.1	6.9	7.1	7.1	7.1					85	260	4 C/Y	2	192	192	21
88	-0-	9	-0-	9	-0-	4.8	5.6	5.7	6.9	7.2	7.3	7.1						240		90	192	192	22
88	-0-	9	-0-	9	-0-	4.7	5.3	4.7	6.9	7.3	7.3	7.0						240		2	192	192	23
88	-0-	9	-0-	9	-0-	4.2	4.8	5.2	6.8	7.3	7.4	7.0		7		32		270		<2	192	192	24
88	-0-	9	-0-	9	-0-	4.8	5.1	4.9	7.0	7.3	7.4	7.3						250		2	192	192	25
88	-0-	9	-0-	9	-0-	4.6	4.8	5.8	7.1	7.3	7.4	7.1						230	5 C/Y	8	192	192	26
88	-0-	9	-0-	9	-0-	5.5	5.1	7.1	6.9	7.2	7.2	7.1	1316	24	<0 10	23	331	280		2	192	192	27
88	-0-	9	-0-	9	-0-	6.2	5.9	7.2	7.2	7.4	7.3	7.2	148				133	260	5 C/Y	2	192	192	28
88	-0-	9	-0-	9	-0-	6.8	6.0	7.2	7.3	7.3	7.3	7.2						280	5 C/Y	<2	192	192	29
88	-0-	9	-0-	9	-0-	6.9	6.3	7.4	7.2	7.2	7.2	7.2						60	5 C/Y	30	192	192	30
88	-0-	9	-0-	9	-0-	5.4	4.0	7.3	7.2	7.4	7.4	7.2						260		<2	192	192	31

OTAL CL 7,920

2 69 EOMETRIC MEAN

C/Y = CUBIC YARD GRIT COMBIN ION OF BASIN AND GRIT CHAMBE
ND = NONE DETECTED
MPN/100ML
M = MISSING INFORMATION

NOGALES INTERNATIONAL WASTEWATER TREATMENT PLANT

MONTHLY REPORT

PREPAR BY: RIC ARD L. ALDWELL, COMPLIANE SPEC.
APPROVED AS TO FORM BY WASTEWATER SUPT. LINO VEGA

CML:COMPLETE MIX LAGOON
PML PARTIAL MIX LAGOON

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MONTH: May 1993

	WEATHER		TEMPERATURE		FLOW IN LITERS PER SECOND				CML-1			CML-2			PML-1		PML-2		ML-3		PML-4		ML-5	
DATE	RAIN FALL INCHES	WIND DIRECTION	INFLOW	EFFLUEN	MEXICO	UNITED STATES	PLANT INFLOW	PLANT OUTFLO	DEPTH FEET	TEMPERATURE	AERAT HOURS	DEPT FEET	TEMPERATUR	AERAT HOURS	DEPT FEET	AERAT HOURS	DEPT FEET	AERAT HOURS	DEPT FEET	AERAT HOURS	DEPT FEET	AERAT HOURS	DEPT FEET	AERAT HOURS
1	-0-	SE	73	70	400	175	575	532	9.5	71	96	9.5	70	96	8.8	12	8.8	24	8.8	24	9	24	9	-0-
2	-0-		73	70	383	201	584	532	9.5	70	96	9.5	70	96	8.8	12	8.8	24	8.8	24	9	24	9	-0-
3	-0-		73	71	388	202	590	542	9.5	72	96	9.5	70	96	8.8	12	8.8	24	8.8	24	9	24	9	-0-
4	-0-		72	71	391	192	583	546	9.5	71	96	9.5	70	96	8.8	12	8.8	24	8.8	24	9	24	9	-0-
5	-0-		73	71	383	203	586	550	9.5	68	96	9.5	68	96	8.8	12	8.8	24	8.8	24	9	24	9	-0-
6	-0-		72	66	386	178	564	519	9.5	68	96	9.5	68	96	8.8	12	8.8	24	8.8	24	9	24	9	-0-
7	-0-		71	68	367	204	571	529	9.5	69	96	9.5	66	96	8.8	12	8.8	24	8.8	24	9	24	9	-0-
8	-0-		74	73	367	197	564	529	9.5	71	96	9.5	72	96	8.8	12	8.8	24	8.8	24	9	24	9	-0-
9	-0-		74	73	363	207	570	534	9.5	72	96	9.5	73	96	8.8	12	8.8	24	8.8	24	9	24	9	-0-
10	-0-		73	72	388	195	583	542	9.5	74	96	9.5	72	96	8.8	12	8.8	24	8.8	24	9	24	9	-0-
11	-0-		73	72	403	194	597	554	9.5	69	96	9.5	69	96	8.8	12	8.8	24	8.8	24	9	24	9	-0-
12	0.05	W	74	73	417	162	579	545	9.5	73	96	9.5	73	96	8.8	12	8.8	24	8.8	24	9	24	9	-0-
13	0.01		73	71	392	182	574	510	9.5	70	96	9.5	70	96	8.8	12	8.8	24	8.8	24	9	24	9	-0-
14	-0-	SW	74	71	391	201	592	537	9.5	70	96	9.5	70	96	8.8	12	8.8	24	8.8	24	9	24	9	-0-
15	T		73	71	414	159	573	556	9.5	70	96	9.5	70	96	8.8	12	8.8	24	8.8	24	9	24	9	-0-
16	0.23	W	73	71	388	179	567	533	9.5	70	96	9.5	70	96	8.8	12	8.8	24	8.8	24	9	24	9	-0-
17	-0-	SE	73	71	380	197	577	542	9.5	70	96	9.5	70	96	8.8	12	8.8	24	8.8	24	9	24	9	-0-
18	-0-		74	73	397	173	570	538	9.5	72	96	9.5	72	96	8.8	12	8.8	24	8.8	24	9	24	9	-0-
19	-0-		74	73	377	205	582	543	9.5	73	96	9.5	73	96	8.8	12	8.8	24	8.8	24	9	24	9	-0-
20	-0-		75	75	400	166	566	536	9.5	73	96	9.5	73	96	8.8	12	8.8	24	8.8	24	9	24	9	-0-
21	-0-		72	73	388	182	570	526	9.5	72	96	9.5	72	96	8.8	12	8.8	24	8.8	24	9	24	9	-0-
22	0-		75	73	394	163	557	524	9.5	72	96	9.5	72	96	8.8	12	8.8	24	8.8	24	9	24	9	-0-
23	-0-		75	73	380	179	559	512	9.5	73	96	9.5	73	96	8.8	12	8.8	24	8.8	24	9	24	9	-0-
24	-0-		77	73	388	183	571	542	9.5	75	96	9.5	75	96	8.8	12	8.8	24	8.8	24	9	24	9	-0-
25	-0-		76	74	394	180	574	550	9.5	75	96	9.5	74	96	8.8	12	8.8	24	8.8	24	9	24	9	-0-
26	-0-		76	74	403	183	586	545	9.5	73	96	9.5	73	96	8.8	12	8.8	24	8.8	24	9	24	9	-0-
27	0.83	E	75	73	411	156	567	545	9.5	73	96	9.5	73	96	8.8	12	8.8	24	8.8	24	9	24	9	-0-
28	-0-		75	73	397	147	544	534	9.5	73	96	9.5	73	96	8.8	12	8.8	24	8.8	24	9	24	9	-0-
29	0-	SE	75	74	377	149	526	499	9.5	74	96	9.5	74	96	8.8	12	8.8	24	8.8	24	9	24	9	-0-
30	-0-		75	75	367	186	553	505	9.5	75	96	9.5	75	96	8.8	12	8.8	24	8.8	24	9	24	9	-0-
31	-0-		75	79	383	170	553	475	9.5	74	96	9.5	74	96	8.8	12	8.8	24	8.8	24	9	24	9	-0-

	MEXICO	UNITED STATES	PLANT INFLOW	PLANT OUTFLO
TOTAL	12057	5650	17707	16506
AVERAG	389	182	571	515
MAXIMU	417	207	597	556
MINIMUM	363	147	526	475

MEXIC 68% OF TOTAL FLOW

U.S. = 32% OF TOTAL FLOW

FULL TIME SERVICES			
PERSONNEL		EQUIPMENT	
CHIEF OPERATOR	1	90' DREDGE AR SKC R	1
COMPLIANCE SPEC	1	PICKUP 1/2 TON	3
OPERATORS	2	GRIT TRUCK	1
ASST. OPERATOR	1	WATER TRUCK	1
LABORERS	4	BACK HOE	1
MECHANIC	1		
ELECTRICIAN	VACANT		

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April 1993

UTILITIES AND CHLORINE

CONTROL BUILDING

POWER CONSUMPTION 810,000 KWH.

$ 77,881.57

CHLORINE & ULTRAVIOLET DISINFECTION AREA

-0- KWH.

$ 381.34

CHLORINE CONSU 7,780 LBS

SULPHUR DIOXIDE 4,273 73 LBS.

UTILITY COSTS - WATER SERVICE $ 2,417.46

BILLING DATE: 03/22/93 to 04/27/93

PERSONNEL SERVICES AND EQUIPMENT UTILIZED OTHER THAN FULL TIME

CLASSIFICATION	HRS THIS MONTH
ELECTRICIAN	0
LABORERS	5
OVER TIME (OPERATORS)	10
MOTOR GRADER & OPERATOR	0

BOUNDARY

DATE: 04/02/93 BOD 5 82 mg/l TSS 50 mg/l

DATE: 04/08/93 BOD 5 69.3 mg/l TSS 39 mg/l

DATE: 04/15/93 BOD 5 85.4 mg/l TSS 85 mg/l

DATE: 04/22/93 BOD 5 200 mg/l TSS 137 mg/l

DATE: 04/29/93 BOD 5 190 mg/l TSS 266 mg/l

PML-6 DEPT FEET	PML-6 AERAT HOURS	PML-7 DEPT FEET	PML-7 AERATO HOURS	PML-8 DEPT FEET	PML-8 AERATO HOURS	D.O. MG/L CML-	D.O. MG/L CML-	D.O. MG/L EFFLUEN	pH RA	pH CML-	pH CML-	pH EFFLUEN	SUSPENDED SOLIDS MG/L RAW	SUSPENDED SOLIDS MG/L EFFLUEN	SETTLEABLE SOLIDS ML/L EFFLUENT	B.O.D. MG/L EFF	B.O.D. MG/L INFLUEN	TOTAL CHLORINE USED (POUNDS)	GRIT REMOVE	FECAL COLIFORM	UV 1 HOURS	UV-2 HOURS	DATE
[illegible]	[illegible]	8.6	24	8.8	24	5.6	6.0	5.7	7.0	7.4	7.4	7.0						150	15 C/Y	>1600	192	192	1
[illegible]	[illegible]	8.8	24	8.8	24	4.7	5.0	5.5	6.8	7.3	7.4	6.9	566	11	<0.10	17.5	275	170		500	192	192	2
[illegible]	[illegible]	8.8	24	8.8	24	5.3	6.0	6.4	7.0	7.3	7.4	7.1						260		240	192	192	3
[illegible]	[illegible]	8.8	24	8.8	24	5.2	5.7	5.8	-M-	7.2	7.4	7.0						195		80	192	192	4
[illegible]	[illegible]	8.8	24	8.8	24	5.6	5.9	5.9	7.1	7.3	7.4	7.1						105		50	192	192	5
[illegible]	[illegible]	8.8	24	8.8	24	5.1	5.9	5.7	7.1	7.3	7.3	7.0						350		4	192	192	6
[illegible]	[illegible]	8.8	24	8.8	24	5.3	5.6	7.1	7.2	7.3	7.2	7.1						300		<2	192	192	7
[illegible]	[illegible]	8.8	24	8.8	24	6.2	5.9	6.2	7.1	7.2	7.0	7.0	210				80	270		<2	192	192	8
[illegible]	[illegible]	8.8	24	8.8	24	5.7	6.1	5.8	7.2	7.3	7.0	7.0	86	19	<0.10	19.8	78	390		<2	192	192	9
[illegible]	[illegible]	8.8	24	8.8	24	5.6	5.6	6.4	7.0	7.3	7.0	6.9						280		<2	192	192	10
[illegible]	[illegible]	8.8	24	8.8	24	5.5	5.7	5.5	7.1	7.2	7.3	7.0						260		<2	192	192	11
[illegible]	[illegible]	8.8	24	8.8	24	5.6	5.5	5.5	7.1	7.2	7.2	7.0						280		2	192	192	12
[illegible]	[illegible]	8.8	24	8.8	24	5.7	7.4	5.8	7.1	7.2	7.3	7.1		8		10		260		<2	192	192	13
[illegible]	[illegible]	8.8	24	8.8	24	7.0	5.9	6.3	7.2	7.3	7.2	7.1						270		<2	192	192	14
[illegible]	[illegible]	8.8	24	8.8	24	5.9	4.9	5.5	7.2	7.1	7.2	7.0	732	13	<0.10	19.4	325	250		<2	192	192	15
[illegible]	[illegible]	8.8	24	8.8	24	5.4	8.2	5.5	7.1	7.0	6.9	6.9						260		30	192	192	16
[illegible]	[illegible]	8.8	24	8.8	24	8.4	8.4	6.1	7.5	7.5	6.8	6.9						300		50	192	192	17
[illegible]	[illegible]	8.8	24	8.8	24	8.8	5.6	6.5	7.2	7.4	6.8	7.0						200		80	192	192	18
[illegible]	[illegible]	8.8	24	8.8	24	6.1	5.6	5.2	7.1	7.2	7.0	7.0	153				19	280		50	192	192	19
[illegible]	[illegible]	8.8	24	8.8	24	5.6	5.8	5.9	7.2	7.2	7.1	6.8						300		9	192	192	20
[illegible]	[illegible]	8.8	24	8.8	24	5.7	5.8	6.0	7.1	7.2	7.3	6.7						220		500	192	192	21
[illegible]	[illegible]	8.8	24	8.8	24	7.5	4.7	4.5	7.0	7.5	7.0	6.9	366	19	<0.10	46	296	260	14 C/Y	4	192	192	22
[illegible]	[illegible]	8.8	24	8.8	24	3.9	4.6	4.5	6.9	7.5	7.6	6.8		23		23		280		4	192	192	23
[illegible]	[illegible]	8.8	24	8.8	24	4.5	4.5	4.6	6.9	7.5	7.5	6.9						260		<2	192	192	24
[illegible]	[illegible]	8.8	24	8.8	24	4.9	5.4	4.9	6.9	7.5	7.3	6.9	140				89	280		4	192	192	25
[illegible]	[illegible]	8.8	24	8.8	24	4.6	4.5	4.6	6.8	7.1	7.0	6.8						300		50	192	192	26
[illegible]	[illegible]	8.8	24	8.8	24	4.9	3.8	5.4	6.8	7.1	6.7	7.4						260		4	192	192	27
[illegible]	[illegible]	8.8	24	8.8	24	3.8	4.2	4.9	6.5	6.8	6.9	7.0						260		<2	192	192	28
[illegible]	[illegible]	8.8	24	8.8	24	5.2	4.5	5.3	6.6	7.0	6.9	6.9	752	5	<0.10	20.7	360	300		>1600	192	192	29
[illegible]	[illegible]	8.8	24	8.8	24	5.0	4.3	5.2	6.7	7.2	7.2	7.0		37		45		200		<2	192	192	30
																							31
																TOTAL CL		7780		1343	GEOMETRIC MEAN		

CY = CUBIC YARD GRIT COMBINATION OF BASINS AND GRIT CHAMBER
ND = NONE DETECTED
MPN/100ML

NOGALES INTERNATIONAL WASTEWATER TREATMENT PLANT

MONTHLY REPORT

PREPAR BY: RIC ARD L. ALDWELL, COMPLIANE SPEC.
APPROVED AS TO FORM BY WASTEWATER SUPT. LINO VEGA

CML COMPLETE MIX LAGOON
PML PARTIAL MIX LAGOON

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MONTH April 1993

DATE	WEATHER RAIN FALL INCHES	WEATHER WIND DIREC-TION	TEMPRATURE INFLOW	TEMPRATURE EFFLUEN	FLOW IN LITERS PER SECOND MEXICO	FLOW IN LITERS PER SECOND UNITED STATES	FLOW IN LITERS PER SECOND PLANT INFLOW	FLOW IN LITERS PER SECOND PLANT OUTFLO	CML-1 DEPTH FEET	CML-1 TEMPE ATURE	CML-1 AERAT HOURS	CML-2 DEPT FEET	CML-2 TEMPE ATUR	CML-2 AERAT HOURS	PML-1 DEPT FEET	PML-1 AERAT HOURS	PML-2 DEPT FEET	PML-2 AERAT HOURS	ML 3 DEPT FEET	ML 3 AERAT HOURS	PML 4 DEPT FEET	PML 4 AERAT HOURS	ML-5 DEPT FEET	ML-5 AERAT HOURS
1	-0-	SE	68	64	377	285	662	600	9.5	64	96	9.5	63	96	//////////	//////////	8.8	24	8.8	24	8.8	24	8.8	24
2	-0-		69	68	403	242	645	589	9.5	68	96	9.5	66	96	//////////	//////////	8.8	24	8.8	24	8.8	24	8.8	24
3	-0-		70	62	411	232	643	586	9.5	65	96	9.5	63	96	//////////	//////////	8.8	24	8.8	24	8.8	24	8.8	24
4	-0-		-M-	62	386	233	619	571	9.5	66	96	9.5	66	96	//////////	//////////	8.8	24	8.8	24	8.8	24	8.8	24
5	-0-		68	62	403	233	636	583	9.5	64	96	9.5	64	96	//////////	//////////	8.8	24	8.8	24	8.8	24	8.8	24
6	-0-	W	68	62	397	221	618	555	9.5	66	96	9.5	66	96	//////////	//////////	8.8	24	8.8	24	8.8	24	8.8	24
7	-0-		69	61	391	231	622	580	9.5	67	96	9.5	67	96	//////////	//////////	8.8	24	8.8	24	8.8	24	8.8	24
8	-0-	SW	68	63	374	227	601	544	9.5	61	96	9.5	61	96	//////////	//////////	8.8	24	8.8	24	8.8	24	8.8	24
9	-0-	SE	69	64	358	225	583	531	9.5	63	96	9.5	63	96	//////////	//////////	8.8	24	8.8	24	8.8	24	8.8	24
10	-0-		68	64	357	214	571	509	9.5	65	96	9.5	64	96	//////////	//////////	8.8	24	8.8	24	8.8	24	8.8	24
11	-0-		66	66	355	196	551	502	9.5	65	96	9.5	64	96	//////////	//////////	8.8	24	8.8	24	8.8	24	8.8	24
12	-0-		68	61	383	217	600	525	9.5	64	96	9.5	64	96	//////////	//////////	8.8	24	8.8	24	8.8	24	8.8	24
13	-0-		66	62	383	204	587	531	9.5	64	96	9.5	63	96	//////////	//////////	8.8	24	8.8	24	8.8	24	8.8	24
14	-0-		66	59	394	225	619	541	9.5	62	96	9.5	63	96	//////////	//////////	8.8	24	8.8	24	8.8	24	8.8	24
15	-0-	W	68	64	391	227	618	571	9.5	62	96	9.5	62	96	8.8	12	8.8	24	8.8	24	8.8	24	8.8	24
16	-0-		69	66	380	239	619	580	9.5	64	96	9.5	63	96	8.8	12	8.8	24	8.8	24	8.8	24	8.8	24
17	-0-		66	66	383	240	623	566	9.5	66	96	9.5	67	96	8.8	12	8.8	24	8.8	24	8.8	24	8.8	24
18	-0-	SW	69	66	366	252	618	560	9.5	66	96	9.5	69	96	8.8	12	8.8	24	8.8	24	8.8	24	8.8	24
19	-0-		68	64	377	226	603	552	9.5	66	96	9.5	68	96	8.8	12	8.8	24	8.8	24	8.8	24	8.8	24
20	-0-	W	68	70	383	234	617	565	9.5	66	96	9.5	64	96	8.8	12	8.8	24	8.8	24	8.8	24	8.8	24
21	-0-		73	70	366	236	602	558	9.5	70	96	9.5	68	96	8.8	6	8.8	24	8.8	24	8.8	24	8.8	24
22	-0-		74	70	366	227	593	555	9.5	69	96	9.5	69	96	8.8	6	8.8	24	8.8	24	8.8	24	8.8	24
23	-0-	SE	72	70	374	207	581	558	9.5	70	96	9.5	70	96	8.8	6	8.8	24	8.8	24	8.8	24	8.8	24
24	-0-		72	70	391	194	585	552	9.5	70	96	9.5	70	96	8.8	6	8.8	24	8.8	24	8.8	24	8.8	24
25	-0-		72	70	378	190	568	539	9.5	69	96	9.5	71	96	8.8	6	8.8	24	8.8	24	8.8	24	8.8	24
26	-0-		74	70	378	210	588	545	9.5	68	96	9.5	68	96	8.8	6	8.8	24	8.8	24	8.8	24	8.8	24
27	-0-		69	68	400	187	587	540	9.5	69	96	9.5	68	96	8.8	6	8.8	24	8.8	24	8.8	24	8.8	24
28	-0-		72	74	403	165	568	526	9.5	72	96	9.5	72	96	8.8	6	8.8	24	8.8	24	8.8	24	8.8	24
29	0-		69	68	383	194	577	524	9.5	66	96	9.5	64	96	8.8	6	8.8	24	8.8	24	8.8	24	8.8	24
30	0-		73	68	394	200	594	533	9.5	69	96	9.5	69	96	8.8	6	8.8	24	8.8	24	8.8	24	8.8	24
31																								
				TOTAL	11485	6613	18098	16571																
				AVERAG	383	220	603	534																
				MAXIMU	411	285	662	600																
				MINIMUM	355	165	551	502																

MEXIC 63 % OF TOTAL FLOW

U.S. = 37 % OF TOTAL FLOW

ULL TIM SERVICES				UTILITIES AND CH HLORINE				PERSONNEL SERVICES AND EQUIPMENT UTILIZED OT ER THAN FULL TIML		BOUNDARY
PERSONNEL		EQUIPMENT		CONTROL BUILDING						
CHIEF OPERATOR	1	90' D DGE AR S K C R	1	POWER CON MPTIO	723.60 00	K W.H.		CLASSI ICATI ON	HRS THIS MONTH	DATE 03/04/93 BOD 5 70 9 mg/l TSS 111 mg/l
COMPLIANCE SPEC	1	PICKU 1/2 TON	3	$	69,999.0 . 08			ELECTRICIAN	0	
OPERATORS	2	GRIT TRUCK	1	CHLO INE & ULTRAVIOLET DISINFECTION AREA				LABORERS	13	DATE 03/11/93 BOD 5 102 mg/l TSS 132 mg/l
ASST. OPERATOR	1	WATER TRUCK	1		-0-	K W.H.		OVER TIME (OPERATORS)	27 5	
LABORERS	4	BACK HOE	1	$	381.34			MOTOR GRADER & OPERATO	0	DATE. 03/18/93 BOD 5. 101 mg/l TSS. 134 mg/l
MECHANIC	1			CHLORINE CONSU	5,660 0	LBS		MECHANIC	2	
ELECTRICIAN	VACANT			SULPHUR D XIDE:	4,260 0	LBS.				
				UTILITY COSTS - WATER SERVICE	$ 2,058 87					
Page 2										
March 1993				BILLING DATE:	/19/93 TO 3/22/93					

PML-6		PML-7		PML-8		D O. MG/L			p H				SUSPENDED SOLIDS MG/L		SETTLEABLE SOLIDS ML/L	B O D. MG/L		TOTAL CHLORINE					
DEPT FEET	AERAT HOURS	DEPT FEET	AERATO HOURS	DEPT FEET	AERATO HOURS	CML-	CML-	EFFLUEN	RA	CML-	CML-	EFFLUEN	RAW	EFFLUEN	EFFLUENT	EFF	INFLUEN	USED (POUNDS)	GRIT REMOVE	FECAL COLIFORM	UV-1 HOURS	UV-2 HOURS	DATE
[illegible]	[illegible]	8 8	24	8.8	24	7.3	7.2	6 8	6 9	7.5	7 4	7.2						200		<2	192	192	1
[illegible]	[illegible]	8 8	24	8.8	24	6.3	6.5	6.4	7.0	7.5	7 5	7.1		10		16		180	5 C/Y	2	192	192	2
[illegible]	[illegible]	8 8	24	8.8	24	6.6	6.8	6 2	6.8	7.4	7 4	7.2						200		7	192	192	3
[illegible]	[illegible]	8 8	24	8.8	24	5.3	5 5	6 5	6.9	7 4	7.3	7.1	778	9	<0.10	10 8	80.6	180		<2	192	192	4
[illegible]	[illegible]	8 8	24	8.8	24	5.4	5 8	6 1	6.8	7.5	7.5	7 1	224				147	190		2	192	192	5
[illegible]	[illegible]	8 8	24	8.8	24	5.3	5.6	5 2	7.0	7.4	7.3	7.1						170		4	192	192	6
[illegible]	[illegible]	8 8	24	8.8	24	5.8	6.0	5 5	7.0	7.5	7.4	7.0						200		8	192	192	7
[illegible]	[illegible]	8.8	24	8.8	24	5.5	5.9	6 1	6.9	7.4	7.4	7.1						140		7	192	192	8
[illegible]	[illegible]	8 8	24	8.8	24	6.2	6 4	5.8	7.0	7.3	7.3	7.1						170	5 C/Y	4	192	192	9
[illegible]	[illegible]	8 8	24	8.8	24	5.7	5.9	5 5	6.8	7.3	7.4	7.0						250		<2	192	192	10
[illegible]	[illegible]	8 8	24	8.8	24	5.6	6.0	5.6	6.9	7.3	7.3	7.0	411	8	<0.10	12	175	180		4	192	192	11
[illegible]	[illegible]	8 8	24	8.8	24	5.1	5.7	5 6	6.7	7.2	7 2	7.1						160		<2	192	192	12
[illegible]	[illegible]	8 8	24	8.8	24	5.3	5 8	5.7	6.8	7.2	7 3	7 1						220		4	192	192	13
[illegible]	[illegible]	8 8	24	8.8	24	5.6	5.6	5 7	6.7	7.2	7.3	7.1	160				47	160		<2	192	192	14
[illegible]	[illegible]	8 8	24	8.8	24	5.0	5.3	5 1	7.0	7.4	7.4	7.1						200	5 C/Y	4	192	192	15
[illegible]	[illegible]	8.8	24	8.8	24	5.4	5.4	5 3	6.8	7.3	7.3	7.1						180		2	192	192	16
[illegible]	[illegible]	8 8	24	8.8	24	4.8	5.2	5.4	6.6	7.3	7.4	6 9						200		4	192	192	17
[illegible]	[illegible]	8 8	24	8.8	24	5.1	5 3	5.3	6.8	7.3	7 3	6.9						160		4	192	192	18
[illegible]	[illegible]	8 8	24	8.8	24	4.3	5 1	5 4	7.0	7.2	7 2	7.0		14		17		180		<2	192	192	19
[illegible]	[illegible]	8 8	24	8.8	24	6.1	5 6	6.1	6.9	7.2	7 2	6.9						200	4 C/Y	2	192	192	20
[illegible]	[illegible]	8 8	24	8.8	24	4.6	5.2	5 0	6.9	7.2	7 3	7.0						180		<2	192	192	21
[illegible]	[illegible]	8 8	24	8.8	24	5.1	5 5	5 4	6 9	7.2	7 3	7.0						180		2	192	192	22
[illegible]	[illegible]	8 8	24	8.8	24	5.0	5.6	4 8	7.0	7.3	7.4	7.0						180	9 C/Y	4	192	192	23
[illegible]	[illegible]	8 8	24	8.8	24	4.8	5 0	5.1	7.0	7.3	7 2	7 0						200		30	192	192	24
[illegible]	[illegible]	8 8	24	8.8	24	4.5	5 2	8 5	7.1	7.3	7 3	7.1	828	8	<0.10	15 2	336	170	4 C/Y	50	192	192	25
[illegible]	[illegible]	8 8	24	8.8	24	4.8	4 9	4 6	7.0	7.3	7 4	7.1						190	6 C/Y	23	192	192	26
[illegible]	[illegible]	8 8	24	8.8	24	5.0	5 1	6 8	7.0	7.2	7 3	7.1						200		80	192	192	27
[illegible]	[illegible]	8 8	24	8.8	24	5.1	5 1	6 0	7.1	7 2	7 3	7 0						180		30	192	192	28
[illegible]	[illegible]	8 8	24	8.8	24	5.4	5 3	5 4	7.3	7.3	7 3	7 0						160		300	192	192	29
[illegible]	[illegible]	8 8	24	8.8	24	5.0	5 6	5 7	7.1	7.3	7 4	7.0						180	5 C/Y	500	192	192	30
[illegible]	[illegible]	8 8	-0-	8.8	-0-	5.3	5 0	5 9	7.0	7 3	7 3	7.1						150		300	192	192	31
																	TOTAL	5660		7 21	GEOMETRIC MEAN		

CY = CUBIC YARD GRIT COMBIN ION OF BASINS AND GRIT CHAMBE
ND = NONE DETECTED
MPN/100ML

NOGALES INTERNATIONAL WASTEWATER TREATMENT PLANT

MONTHLY REPORT

PREPAR BY: RIC ARD L. ALDWELL, COMPLIANE SPEC.
APPROVED AS TO FORM BY WASTEWATER SUPT. LINO VEGA

CML:COMPLETE MIX LAGOON
PML:PARTIAL MIX LAGOON

Page 1

MONTH: March 1993

	WEA	HER	TEMP-	RATURE	FLOW	IN LITER	S PER SE	OND	CML-1			CML-2			PML-1		PML-2		ML-3		PML-4		ML-5	
DATE	RAIN FALL INCHES	WIND DIREC-TION	INFLOW	EFFLUEN	MEXICO	UNITED STATES	PLANT INFLOW	PLANT OUTFLO	DEPTH FEET	TEMPE-ATURE	AERAT HOURS	DEPT FEET	TEMPE-ATUR	AERAT HOURS	DEPT FEET	AERAT HOURS	DEPT FEET	AERAT HOURS	DEPT FEET	AERAT HOURS	DEPT FEET	AERAT HOURS	DEPT FEET	AERAT HOURS
1	0.20	W	60	55	360	275	635	597	9.5	58	96	9.5	58	96	//////////	//////////	8.8	24	8.8	24	8.8	24	8.8	24
2	-0-		62	57	352	280	632	591	9.5	59	96	9.5	59	96	//////////	//////////	8.8	24	8.8	24	8.8	24	8.8	24
3	-0-	SE	62	57	366	264	630	596	9.5	59	96	9.5	58	96	//////////	//////////	8.8	24	8.8	24	8.8	24	8.8	24
4	-0-		63	55	360	259	619	599	9.5	59	96	9.5	59	96	//////////	//////////	8.8	24	8.8	24	8.8	24	8.8	24
5	-0-		64	64	360	244	604	574	9.5	63	96	9.5	62	96	//////////	//////////	8.8	24	8.8	24	8.8	24	8.8	24
6	0-		65	49	363	265	628	586	9.5	59	96	9.5	58	96	//////////	//////////	8.8	24	8.8	24	8.8	24	8.8	24
7	-0-		67	60	360	244	604	572	9.5	60	96	9.5	60	96	//////////	//////////	8.8	24	8.8	24	8.8	24	8.8	24
8	-0-		64	61	360	253	613	576	9.5	63	96	9.5	62	96	//////////	//////////	8.8	24	8.8	24	8.8	24	8.8	24
9	-0-	S	65	61	360	249	609	573	9.5	63	96	9.5	61	96	//////////	//////////	8.8	24	8.8	24	8.8	24	8.8	24
10	-0-		66	59	371	249	620	571	9.5	61	96	9.5	59	96	//////////	//////////	8.8	24	8.8	24	8.8	24	8.8	24
11	-0-		60	59	349	262	611	564	9.5	61	96	9.5	59	96	//////////	//////////	8.8	24	8.8	24	8.8	24	8.8	24
12	-0-		66	60	346	257	603	564	9.5	61	96	9.5	61	96	//////////	//////////	8.8	24	8.8	24	8.8	24	8.8	24
13	-0-		66	61	340	260	600	564	9.5	61	96	9.5	61	96	//////////	//////////	8.8	24	8.8	24	8.8	24	8.8	24
14	-0-		66	60	338	250	588	559	9.5	61	96	9.5	61	96	//////////	//////////	8.8	24	8.8	24	8.8	24	8.8	24
15	0-		64	60	349	239	588	550	9.5	62	96	9.5	61	96	//////////	//////////	8.8	24	8.8	24	8.8	24	8.8	24
16	-0-	SE	64	60	363	235	598	548	9.5	62	96	9.5	61	96	//////////	//////////	8.8	24	8.8	24	8.8	24	8.8	24
17	-0-		66	66	349	235	584	551	9.5	68	96	9.5	64	96	//////////	//////////	8.8	24	8.8	24	8.8	24	8.8	24
18	-0-		66	62	346	228	574	541	9.5	68	96	9.5	62	96	//////////	//////////	8.8	24	8.8	24	8.8	24	8.8	24
19	-0-		68	62	352	231	583	541	9.5	64	96	9.5	63	96	//////////	//////////	8.8	24	8.8	24	8.8	24	8.8	24
20	-0-		66	64	360	235	595	548	9.5	64	96	9.5	64	96	//////////	//////////	8.8	24	8.8	24	8.8	24	8.8	24
21	-0-		67	65	371	225	596	557	9.5	66	96	9.5	66	96	//////////	//////////	8.8	24	8.8	24	8.8	24	8.8	24
22	-0-	SW	66	64	400	227	627	577	9.5	64	96	9.5	64	96	//////////	//////////	8.8	24	8.8	24	8.8	24	8.8	24
23	-0-	SE	66	64	454	173	627	577	9.5	64	96	9.5	64	96	//////////	//////////	8.8	24	8.8	24	8.8	24	8.8	24
24	0.59		66	64	380	223	603	574	9.5	63	96	9.5	63	96	//////////	//////////	8.8	24	8.8	24	8.8	24	8.8	24
25	-0-		66	63	391	225	616	554	9.5	64	96	9.5	63	96	//////////	//////////	8.8	24	8.8	24	8.8	24	8.8	24
26	0-	SW	66	63	411	271	682	604	9.5	64	96	9.5	63	96	//////////	//////////	8.8	24	8.8	24	8.8	24	8.8	24
27	0.30	W	65	60	541	364	905	605	9.5	60	96	9.5	60	96	//////////	//////////	8.8	24	8.8	24	8.8	24	8.8	24
28	-0-		66	62	584	408	992	585	9.5	62	96	9.5	62	96	//////////	//////////	8.8	24	8.8	24	8.8	24	8.8	24
29	0.18	NW	64	59	499	327	826	599	9.5	61	96	9.5	61	96	//////////	//////////	8.8	24	8.8	24	8.8	24	8.8	24
30	-0-		68	61	414	249	663	606	9.5	66	96	9.5	63	96	//////////	//////////	8.8	24	8.8	24	8.8	24	8.8	24
31	0-	SE	65	61	424	242	668	601	9.5	63	96	9.5	61	96	//////////	//////////	8.8	24	8.8	24	8.8	24	8.8	-0-
TOTAL					11973	7948	19921	17804																
AVERAG					386	256	643	555																
MAXIMU					584	408	992	606																
MINIMUM					338	173	574	541																

MEXIC 60 % OF TOTAL FLOW

U.S.= 40 % OF TOTAL FLOW

ULL TIM SERVICES				UTILITIES AND CHHLORINE				PERSONNEL SERVICES AND EQUIPMENT UTILIZED OT ER THAN FULL TIME		BOUNDARY
PERSONNEL		EQUIPMENT		CONTROL BUILDING				CLASSI ICA I ON	HRS THIS MONTH	DATE 02/18/93 BOD-5 79.7 mg/l TSS: 97 mg/l
CHIEF OPERATOR	1	90' D DGE AR SKC R	1	POWER CON MPTIO	684000 0	K W H.				
COMPLIANCE SPEC.	1	PICKU 1/2 TON	3	$	66,463.9 5					
OPERATORS	2	GRIT TRUCK	1	CHLO INE & ULTRAVIOLET DISINFECTION AREA				ELECTRICIAN	0	
ASST. OPERATOR	1	WATER TRUCK	1		-0-	K W.H.		LABORERS	13	
LABORERS	4	BACK HOE	1	$	381.34			OVER TIME (OPERATORS)	25 5	
MECHANIC	1			CHLORINE CONSU	4,940 0	LBS		MOTOR GRADER & OPERATO	0	
ELECTRICIAN	VACAN			SULPHUR D XIDE:	3,418 8	LBS.				
Page 2				UTILITY COSTS - WATER SERVICE	$1,791.31					
Feb. 1993				BILLING DATE:	1/22/93 TO 02/19/93					

PML-6 DEPT. FEET	PML-6 AERAT HOURS	PML-7 DEPT FEET	PML-7 AERAT HOURS	PML-8 DEPT FEET	PML-8 AERAT HOURS	D.O. MG/L CML-	D.O. MG/L CML-	D.O. MG/L EFFLUEN	pH RAW	pH CML-	pH CML-	pH EFFLUEN	SUSPENDED SOLIDS MG/L RAW	SUSPENDED SOLIDS MG/L EFFLUEN	SETTLEABLE SOLIDS ML/L EFFLUENT	B.O.D. MG/l EFF	B.O.D. MG/l INFLUEN	TOTAL CHLORINE USED (POUNDS)	GRIT REMOVE	FECAL COLIFORM	UV 1 HOURS	UV-2 HOURS	DATE
////////	////////	8.8	24	8.8	24	5.6	6.4	6.3	6.8	7.5	7.6	7.2						200.0		2	192	192	1
////////	////////	8.8	24	8.8	24	5.9	6.3	6.1	6.9	7.3	7.4	7.3						200.0		2	192	192	2
////////	////////	8.8	24	8.8	24	5.8	6.1	6.2	6.8	7.3	7.2	7.2						180.0	4.5 C/Y	240	192	192	3
////////	////////	8.8	24	8.8	24	6.8	7.3	6.5	6.9	7.4	7.5	7.3	244	12	<0.10	12	90	180.0	5 C/Y	80	192	192	4
////////	////////	8.8	24	8.8	24	5.6	6.6	6.6	6.9	7.5	7.6	7.5						100.0		80	192	192	5
////////	////////	8.8	24	8.8	24	6.3	7.5	7.6	7.5	7.6	7.6	7.2						130.0		<2	192	192	6
////////	////////	8.8	24	8.8	24	6.6	6.4	6.6	6.9	7.5	7.5	7.2						190.0		<2	192	192	7
////////	////////	8.8	24	8.8	24	7.3	7.6	7.9	7.0	7.4	7.4	7.2						160.0		<2	192	192	8
////////	////////	8.8	24	8.8	24	6.3	6.9	6.9	6.9	7.6	7.5	7.2						200.0		<2	192	192	9
////////	////////	8.8	24	8.8	24	6.1	6.9	7.1	6.8	7.4	7.4	7.2						190.0		9	192	192	10
////////	////////	8.8	24	8.8	24	6.9	6.4	5.7	6.8	7.3	7.4	7.2	430	7	<0.10	7.4	135	190.0		<2	192	192	11
////////	////////	8.8	24	8.8	24	6.7	6.3	5.9	6.8	7.4	7.4	7.2						130.0		2	192	192	12
////////	////////	8.8	24	8.8	24	6.3	6.3	6.1	6.9	7.5	7.5	7.3						170.0		<2	192	192	13
////////	////////	8.8	24	8.8	24	6.1	6.2	5.9	6.9	7.4	7.4	7.2						140.0		2	192	192	14
////////	////////	8.8	24	8.8	24	5.5	6.6	5.9	6.9	7.5	7.5	7.1						200.0		<2	192	192	15
////////	////////	8.8	24	8.8	24	6.7	6.5	6.1	6.9	7.4	7.4	7.1						200.0		2	192	192	16
////////	////////	8.8	24	8.8	24	6.0	6.7	6.5	6.8	7.5	7.5	7.1						200.0	4 C/Y	<2	192	192	17
////////	////////	8.8	24	8.8	24	6.1	6.5	6.3	6.8	7.4	7.5	7.2	141	13	<0.10	6.5	77	160.0	5 C/Y	4	192	192	18
////////	////////	8.8	24	8.8	24	6.5	6.1	6.2	6.8	7.3	7.4	7.0		14		39		180.0		8	192	192	19
////////	////////	8.8	24	8.8	24	6.0	6.5	6.1	6.8	7.5	7.4	7.1						180.0	4 C/Y	2	192	192	20
////////	////////	8.8	24	8.8	24	6.1	6.3	6.3	6.8	7.4	7.4	7.2						210.0		<2	192	192	21
////////	////////	8.8	24	8.8	24	6.3	6.7	6.1	6.8	7.3	7.4	7.1						190.0		<2	192	192	22
////////	////////	8.8	24	8.8	24	6.8	6.5	6.2	6.7	7.2	7.3	7.1						160.0		<2	192	192	23
////////	////////	8.8	24	8.8	24	6.9	6.2	6.0	6.8	7.4	7.4	7.1						180.0		2	192	192	24
////////	////////	8.8	24	8.8	24	6.7	6.1	6.1	6.8	7.4	7.4	7.1	237	14	<0.10	9.4	109	200.0		7	192	192	25
////////	////////	8.8	24	8.8	24	6.3	6.5	6.2	6.9	7.3	7.3	7.1						200.0	5 C/Y	2	192	192	26
////////	////////	8.8	24	8.8	24	6.6	5.9	5.4	6.9	7.5	7.4	7.1						160.0	22.5 C/Y	2	192	192	27
////////	////////	8.8	24	8.8	24	7.7	8.0	6.8	6.9	7.5	7.5	7.1						160.0		<2	192	192	28
																							29
																							30
																							31
																		4940		3.67 GEOMETRIC MEAN			

CY = CUBIC YA ARD GRIT COMBIN ION OF BASINS AND GRI IT CHAMBERS

MPN/100Ml
ND = NONE DETECTED

FEB SEN

ULL TIM SERVICES				UTILITIES AND CH LORINE				PERSONNEL SERVICES AND EQUIPM NT UTILIZED OT ER THAN FULL TIMI		BOUNDARY
PERSONNEL		EQUIPMENT		CONTROL BUILDING				CLASSI ICATI ON	HRS THIS MONTH	
CHIEF OPERATOR	1	90' D DGE AR SKC R	1	POWER CON MPTIO	655, 00	K W.H.				
COMPLIANCE SPEC.	1	PICKU 1/2 TON	3	$	49,215 6 62			ELECTRICIAN	15 5	
OPERA ORS GRADE II	2	GRIT TRUCK	1	CHLO INE & ULTRAVIOLET DISINFECTION AREA				LABORERS	30	
OPERATORS. GRADE I	1	WATER TRUCK	1		-0-	K W H.		OVER TIME (OPERATORS)	37 5	
LABORERS	4	BACK HOE	1	$	60.74			MOTOR GRADER & OPERATO	0	
MECHANIC	1			CHLORINE CONSU	3,900	LBS		INT'L & ROBINS 61 KWH $ 18 77		
ELECTRICIAN	1			SULPHUR D XIDE:	2,885 5	LBS.		SERVICE FRO 1/10/94 TO 2/7/94		
Page 2				UTILITY COSTS - WATER SERVICE	$ 2,581.5 5 FOR JAN. SV					
Jan 1994				BILLING DATE.	12/23/93 TO 1/25/9 5/94 FOR ELEC. SVC.					

PML 6 DEPT FEET	PML 6 AERAT HOURS	PML-7 DEPT FEET	PML-7 AERATO HOURS	PML-8 DEPT FEET	PML-8 AERATO HOURS	D O MG/L CML-	D O MG/L CML-	D O MG/L EFFLUEN	p H RA	p H CML-	p H CML-	p H EFFLUEN	SUSPENDED SOLIDS MG/L RAW	SUSPENDED SOLIDS MG/L EFFLUEN	SETTLEABLE SOLIDS ML/L EFFLUENT	B O D MG/L EFF	B O D MG/L INFLUEN	TOTAL CHLORINE USED (POUNDS)	GRIT REMOVE	FECAL COLIFORM	UV 1 HOURS	UV-2 HOURS	DATE
8.8	-0	8.8	-0-	8.8	-0-	7.0	5.9	8.7	7.2	7.3	7.6	7.4						140		8	192	192	1
8.8	-0-	8.8	-0-	8.8	-0-	6.5	7.1	8.2	7.1	7.3	7.5	7.3						140		<2	192	192	2
8.8	-0-	8.8	-0-	8.8	-0-	6.6	6.9	8.1	7.2	7.3	7.4	7.3						120		2	192	192	3
8.8	-0-	8.8	-0-	8.8	-0-	6.5	6.9	7.8	7.1	7.3	7.3	7.3						140		4	192	192	4
8.8	-0-	8.8	-0-	8.8	-0-	6.9	7.1	7.6	7.1	7.3	7.3	7.3						120		11	192	192	5
8.8	-0-	8.8	0-	8.8	-0-	6.7	7.0	7.2	7.1	7.3	7.3	7.3	186	11	<0.10	18	64	140	5 C/Y	<2	192	192	6
8.8	-0-	8.8	-0-	8.8	-0-	5.4	5.9	7.4	7.2	7.6	7.6	7.3						160		13	192	192	7
8.8	-0-	8.8	-0-	8.8	-0-	6.0	6.1	7.0	7.2	7.4	7.5	7.3						140		13	192	192	8
8.8	-0-	8.8	-0-	8.8	-0-	6.2	6.0	5.6	7.2	7.4	7.5	7.4						160	5 C/Y	13	192	192	9
8.8	-0-	8.8	-0-	8.8	-0-	6.1	5.5	6.1	7.5	7.2	7.6	7.3						100		13	192	192	10
8.8	-0	8.8	-0-	8.8	-0-	5.6	5.9	5.9	7.2	7.6	7.7	7.4						140		7	192	192	11
8.8	-0-	8.8	-0-	8.8	-0-	5.5	5.7	5.8	7.2	7.3	7.1	7.3						120		8	192	192	12
8.8	-0-	8.8	-0-	8.8	-0-	6.8	6.3	5.9	7.1	7.2	7.3	7.3	190	8	<0.10	17	56	140		<2	192	192	13
8.8	-0-	8.8	-0-	8.8	-0-	4.6	5.8	5.2	7.3	7.6	7.4	7.4						0	5 C/Y	50	192	192	14
8.8	-0-	8.8	-0-	8.8	-0-	4.9	5.9	5.4	7.2	7.6	7.4	7.4						120		2	192	192	15
8.8	-0-	8.8	-0-	8.8	-0-	5.6	5.8	5.3	7.3	7.6	7.4	7.4						120		8	192	192	16
8.8	-0-	8.8	-0-	8.8	-0-	5.5	6.6	5.6	7.2	7.5	7.4	7.3						160		2	192	192	17
8.8	-0-	8.8	-0-	8.8	-0-	5.9	6.7	5.7	7.2	7.5	7.4	7.4						100		13	192	192	18
8.8	-0	8.8	-0-	8.8	-0-	5.8	6.8	5.6	7.2	7.5	7.4	7.3						140		13	192	192	19
8.8	-0	8.8	-0-	8.8	-0-	5.9	6.7	5.7	7.2	7.4	7.3	7.3	296	17	<0.10	22	64	100		11	192	192	20
8.8	-0	8.8	-0-	8.8	-0-	5.3	4.9	5.6	7.3	7.7	7.5	7.2						160		8	192	192	21
8.8	-0-	8.8	-0-	8.8	-0-	5.0	4.6	5.2	7.5	7.7	7.7	7.4						[illegible]		4	192	192	22
8.8	-0-	8.8	-0-	8.8	-0-	4.9	4.6	5.4	7.3	7.9	7.5	7.3						130		4	192	192	23
8.8	-0-	8.8	-0-	8.8	-0-	5.7	5.6	5.3	7.3	7.6	7.5	7.2						120		4	192	192	24
8.8	-0-	8.8	-0-	8.8	-0-	6.1	6.3	5.2	7.3	7.5	7.5	7.3						140		<2	192	192	25
8.8	-0	8.8	-0-	8.8	-0-	6.1	6.4	5.4	7.3	7.5	7.3	7.2						[illegible]		4	192	192	26
8.8	-0	8.8	-0-	8.8	-0-	6.6	6.9	5.6	7.3	7.4	7.2	7.2	136	12	<0 10	19	91	140		4	192	192	27
8.8	-0-	8.8	-0-	8.8	-0-	5.4	5.6	5.2	7.1	7.7	7.7	7.1						120		4	192	192	28
8.8	-0	8.8	-0-	8.8	-0-	5.5	5.4	5.7	7.1	7.6	7.6	7.1						100		<2	192	192	29
8.8	-0-	8.8	-0-	8.8	-0-	5.7	5.7	5.6	7.1	7.5	7.3	7.2						100		11	192	192	30
8.8	-0-	8.8	-0-	8.8	-0-	5.9	6.0	5.4	7.3	7.7	7.7	7.2						140		4	192	192	31
																	TOTAL CL	3900		5 598	GEOMETRIC MEAN		

CY = CUBIC YA ARD GRIT COMBIN ION OF BASINS AND GRIT CHAMBE
ND = NONE DETECTED
MPN/100ML

NOGALES INTERNATIONAL WASTEWATER TREATMENT PLANT

MONTHLY REPORT

PREPAR BY: RIC ARD L. ALDWELL, COMPLIANE SPECIALIST
APPROVED AS TO F RM BY: LINO VEGA, PLANT SUPERINTENDENT

CML:COMPLETE MIX LAGOON
PML:PARTIAL MIX LAGOON

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MONTH: February 1994

	WEA	HER	TEMP	RATURE	FLOW	IN LITER	S PER SE	OND	CML-1			CML-2			PML-1		PML-2		ML-3		PML 4		ML-5	
DATE	RAIN FALL INCHES	WIND DIREC-TION	INFLOW	EFFLUEN	MEXICO	UNITED STATES	PLANT INFLOW	PLANT OUTFLO	DEPTH FEET	TEMPE-ATURE	AERAT HOURS	DEPT FEET	TEMPE-ATUR	AERAT HOURS	DEPT FEET	AERAT HOURS	DEPT FEET	AERAT HOURS	DEPT FEET	AERAT HOURS	DEPT FEET	AERAT HOURS	DEPT FEET	AERAT HOURS
1	0.00	SE	61	50	378	204	582	541	9.5	55	144.5	9.5	58	144.5	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
2	0.00		60	51	392	193	585	530	9.5	55	144.5	9.5	57	144.5	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
3	0.00		60	51	415	194	609	572	9.5	53	144.5	9.5	57	144.5	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
4	0.00		60	50	392	211	603	582	9.5	53	144.5	9.5	53	144.5	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
5	0.00		60	50	401	216	617	570	9.5	53	144.5	9.5	53	144.5	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
6	0.00	W	60	50	350	230	580	546	9.5	53	144.5	9.5	53	144.5	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
7	0.00		60	51	372	223	595	538	9.5	52	144.5	9.5	52	144.5	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
8	0.70	NW	60	55	473	253	726	636	9.5	57	144.5	9.5	57	144.5	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
9	0.69		59	57	468	249	717	661	9.5	57	144.5	9.5	57	144.5	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
10	0.00	S	64	57	426	210	636	595	9.5	58	144.5	9.5	59	144.5	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
11	0.00		64	57	415	209	624	567	9.5	59	144.5	9.5	59	144.5	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
12	0.00	SE	63	51	420	204	624	565	9.5	57	144.5	9.5	57	144.5	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
13	0.00		64	58	395	194	589	539	9.5	59	144.5	9.5	58	144.5	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
14	0.00		64	59	403	198	601	457	9.5	63	144.5	9.5	59	144.5	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
15	0.00		66	59	398	204	602	537	9.5	60	144.5	9.5	60	144.5	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
16	0.00	W	66	59	406	194	600	540	9.5	61	144.5	9.5	60	144.5	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
17	0.00		67	59	426	196	622	516	9.5	M	144.5	9.5	M	144.5	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
18	0.01		67	59	420	196	616	558	9.5	61	144.5	9.5	61	144.5	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
19	0.00		66	59	406	201	607	555	9.5	60	144.5	9.5	60	144.5	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
20	0.00	SW	66	59	398	194	592	545	9.5	59	144.5	9.5	59	144.5	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
21	0.00		66	57	411	205	616	544	9.5	59	144.5	9.5	59	144.5	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
22	0.00		67	59	418	198	616	556	9.5	60	144.5	9.5	59	144.5	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
23	0.00		66	57	412	199	611	553	9.5	57	144.5	9.5	57	144.5	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
24	0.00		67	59	415	201	616	548	9.5	60	144.5	9.5	62	144.5	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
25	0.00	N	67	59	409	198	607	550	9.5	61	144.5	9.5	61	144.5	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
26	0.00		67	59	398	205	603	544	9.5	61	144.5	9.5	61	144.5	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
27	0.00	NW	68	60	384	201	585	533	9.5	65	144.5	9.5	65	144.5	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
28	0.00	SW	64	60	406	203	609	537	9.5	62	144.5	9.5	61	144.5	9.2	-0-	8.8	24	8.8	21	8.8	24	8.8	-0-
29																								
30																								
31																								
TOTAL	1 40			TOTAL	11407	5783	17190	15515																
				AVERAG	407	207	614	554																
				MAXIMU	473	253	726	661																
				MINIMUM	350	193	580	457																

MEXIC 66 % OF TOTAL FLOW

U.S. = 34 % OF TOTAL FLOW

ULL TIM	SERVICES		UTILITIES AND CH HLORINE				PERSONNEL SERVICES AND EQUIPMENT UTILIZED OT ER THAN FULL TIME		BOUNDARY
PERSONNEL		EQUIPMENT	CONTROL BUILDING				CLASSI ICATI ON	HRS THIS MONTH	
CHIEF OPERATOR	1	1 90 D DGE AR SKC R	1	POWER CON MPTIO	576, 00	K W.H.	ELECTRICIAN	0	
COMPLIANCE SPEC.	1	1 PICKU 1/2 TON	3	$	45,990 0 . 02		LABORERS	3	
OPERAORS. GRADE II	2	GRIT TRUCK	1	CHLO INE & ULTRAVIOLET DISINFECTION AREA			OVER TIME (OPERATORS)	33	
OPERATORS. GRADE I	1	WATER TRUCK	1		-0-	K W.H.	MOTOR GRADER & OPERATO	0	
LABORERS	4	BACK HOE	1	$	60 47		INT'L & ROBBINS METER USAGE -0- AMOUNT $18 77		
MECHANIC	1			CHLORINE CONSU	5,047 7	LBS			
ELECTRICIAN	1			SULPHUR D XIDE:	3,523 3	LBS.			
				UTILITY COSTS - WATER SERVICE	$ 2,054 86				
Page 2									
Feb. 1994				BILLING DATE:	01/25/94 TO 02/22/94				

PML 6		PML-7		PML-8		D.O. MG/L			pH				SUSPENDED SOLIDS MG/L		SETTLEABLE SOLIDS ML/L	B O.D. MG/L		TOTAL CHLORINE					
DEPT FEET	AERAT HOURS	DEPT FEET	AERATO HOURS	DEPT FEET	AERATO HOURS	CML-	CML-	EFFLUEN	RA	CML-	CML-	EFFLUEN	RAW	EFFLUEN	EFFLUENT	EFF	INFLUEN	USED (POUNDS)	GRIT REMOVE	FECAL COLIFORM #	UV 1 HOURS	UV-2 HOURS	DATE
8 8	-0-	8 8	-0-	8.8	-0-	6.2	6.5	5.8	7.1	7.6	7.6	7.3						120		4	192	192	1
8 8	-0-	8 8	-0-	8.8	-0-	6.1	6.4	5.7	7.0	7.5	7.3	7.7						120		<2	192	192	2
8 8	-0-	8 8	-0-	8.8	-0-	6.9	7.8	5.9	7.0	7.5	7.3	7.3	164	17	<0.10	26	64	140		30	192	192	3
8 8	-0-	8.8	-0-	8.8	-0-	6.8	5 2	5.6	7.1	7.6	7 5	7.2						87		110	192	192	4
8 8	-0	8 8	-0-	8.8	-0-	6.4	6 3	5.9	7.1	7.5	7 5	7 2						140	5 C/Y	80	192	192	5
8 8	-0	8 8	-0-	8.8	-0-	6.9	6.8	5.7	7.3	7.5	7.5	7.2						140		240	192	192	6
8 8	-0-	8 8	-0-	8.8	-0-	5 8	5 8	5.5	7.2	7.4	7.3	7.2						110		30	192	192	7
8 8	-0-	8.8	-0-	8.8	-0-	6.5	7.5	7.0	7.2	7.4	7.5	7 2						120	5 C/Y	17	192	192	8
8 8	-0-	8 8	-0-	8.8	-0-	6.8	7.4	8 0	7.3	7.5	7.4	7 2						170	5 C/Y	4	192	192	9
8 8	-0-	8 8	-0-	8.8	-0-	6.2	7.4	7.6	7.2	7.5	7.7	7 4	276	16	0.4	15	39	130	5 C/Y	4	192	192	10
3 8	-0-	8 8	-0-	8.8	-0-	6.3	6.7	7.1	7.1	7.8	7.4	7.4						140		23	192	192	11
8 8	-0	8 8	-0-	8.8	-0-	5.2	5.2	6 3	7.3	7.8	7 7	7.5						140		8	192	192	12
8 8	-0-	8 8	-0-	8.8	-0-	6.1	5.9	6.6	7.2	7.8	7 8	7.4						120		11	192	192	13
8 8	-0-	8 8	-0-	8.8	-0-	5.8	7.6	7.1	7.4	7.7	7.8	7.5						150		4	192	192	14
8 8	-0-	8 8	-0-	8.8	-0-	5.5	7.4	7.8	7.3	7.6	7.9	7.5						99		*900	192	192	15
8 8	-0	8 8	-0-	8.8	-0-	4.8	6.7	7.6	7.3	7.6	7.8	7.6						180		110	192	192	16
8 8	-0-	8 8	-0-	8.8	-0-	M	M	7.2	7.4	M	M	7.5	204	30	2.0	19	126	100		130	192	192	17
8 8	-0-	8 8	-0-	8.8	-0-	4.9	5.7	7.1	7.4	7.5	7.7	7.5						280		23	192	192	18
8.8	-0-	8.8	-0-	8.8	-0-	4.7	4.8	7.1	7.3	7.4	7.5	7.4						175		2	192	192	19
8 8	-0-	8.8	-0-	8.8	-0-	4.8	5 1	6.3	7.3	7.3	7.3	7.5						175		<2	192	192	20
8 8	-0-	8.8	-0-	8.8	-0-	5.3	4.5	5.0	7.4	7.7	7 6	7.3						280		<2	192	192	21
8 8	-0-	8 8	-0-	8.8	-0-	4.4	4.4	5.1	7.3	7.7	7.6	7.4						290		<2	192	192	22
8 8	-0-	8 8	-0-	8.8	-0-	5.1	4.5	5.3	7.2	7.6	7.6	7.4						220		2	192	192	23
8 8	-0-	8 8	-0-	8.8	-0-	4.5	4.4	5.0	7.3	7.5	7.5	7.4	290	14	0.4	26	60	230		70	192	192	24
8 8	-0	8 8	-0-	8.8	-0-	5.0	5 7	5.1	7.2	7.5	7 5	7.4						300		<2	192	192	25
8 8	-0	8.8	-0-	8.8	-0-	4.5	5 2	5.7	7.3	7.5	7.4	7.8						380		<2	192	192	26
8 8	-0-	8 8	-0-	8.8	-0-	5.3	5.3	5.3	7.2	7.4	7.4	7.6						300		2	192	192	27
8 8	-0-	8 8	-0-	8.8	-0-	3.7	4.1	5.3	7.2	7.7	7 6	7.4						210	5 C/Y	<2	192	192	28
																							29
																							30
																							31
																	TOTAL CL	5047		11 36 -	EOMETRIC MEAN		

CY = CUBIC YA ARD GRIT COMBIN ION OF BASINS AND GRIT CHAMBE

ND = NONE DETECTED

- MPN/100ML

M - DATA MISSING

* - EXCEEDANCE REPORTED TO EP /ADEQ .

NOGALES INTERNATIONAL WASTEWATER TREATMENT PLANT

MONTHLY REPORT

PREPAR BY: RIC ARD L. ALDWELL, COMPLIANE SPECIALIST
APPROVED AS TO F RM BY: LINO VEGA, PLANT SUPERINTENDENT

CML:COMPLETE MIX LAGOON
PML:PARTIAL MIX LAGOON

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MONTH: March 1994

	WEA	HER	TEMP	RATURE	FLOW	IN LITER	S PER SE	OND	CML-1			CML-2			PML-1		PML-2		ML-3		PML 4		ML-5	
DATE	RAIN FALL INCHES	WIND DIREC-TION	INFLOW	EFFLUEN	MEXICO	UNITED STATES	PLANT INFLOW	PLANT OUTFLO	DEPTH FEET	TEMPE-ATURE	AERAT HOURS	DEPT FEET	TEMPE-ATUR	AERAT HOURS	DEPT FEET	AERAT HOURS	DEPT FEET	AERAT HOURS	DEPT FEET	AERAT HOURS	DEPT FEET	AERAT HOURS	DEPT FEET	AERAT HOURS
1	0.00	SE	63	60	395	209	604	552	9.5	62	144.5	9.5	61	144.5	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
2	0.00		64	60	406	203	609	557	9.5	59	144.5	9.5	60	144.5	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
3	0.00		65	59	392	203	595	544	9.5	62	144.5	9.5	62	144.5	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	0-
4	0.00		65	60	386	253	639	542	9.5	62	144.5	9.5	62	144.5	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
5	0.00		66	63	401	199	600	544	9.5	64	144.5	9.5	63	144.5	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
6	0.00	SW	64	62	389	189	578	533	9.5	62	144.5	9.5	62	144.5	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
7	0.00		63	60	420	219	639	536	9.5	62	144.5	9.5	62	144.5	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
8	0.13	W	66	60	395	208	603	588	9.5	62	144.5	9.5	61	144.5	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
9	0.00		66	61	401	198	599	554	9.5	62	144.5	9.5	62	144.5	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
10	0.00	SW	65	60	409	196	605	550	9.5	60	144.5	9.5	60	144.5	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
11	0.00		66	60	395	192	587	537	9.5	59	144.5	9.5	59	144.5	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
12	0.00		64	59	378	189	567	517	9.5	62	144.5	9.5	59	144.5	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
13	0.00		63	59	358	185	543	502	9.5	58	144.5	9.5	58	144.5	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
14	0.00		66	60	409	193	602	590	9.5	62	144.5	9.5	62	144.5	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
15	0.02	W	66	62	395	200	595	549	9.5	63	144.5	9.5	62	144.5	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
16	0.00	S	64	64	389	199	588	533	9.5	64	144.5	9.5	64	144.5	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
17	0.00		68	65	381	202	583	516	9.5	65	144.5	9.5	66	144.5	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
18	0.00		67	63	392	143	535	474	9.5	64	144.5	9.5	65	144.5	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
19	0.00	SW	68	63	415	203	618	541	9.5	64	144.5	9.5	63	144.5	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
20	0.60	NW	67	62	440	217	657	625	9.5	63	144.5	9.5	63	144.5	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
21	0.00	SW	68	63	403	199	602	540	9.5	63	144.5	9.5	64	144.5	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
22	0.00		68	64	406	198	604	544	9.5	63	144.5	9.5	63	144.5	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
23	0.00		67	62	409	199	608	546	9.5	63	144.5	9.5	63	144.5	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
24	0.00	S	68	64	406	200	606	544	9.5	63	144.5	9.5	63	144.5	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
25	0.00		68	64	415	189	604	548	9.5	63	144.5	9.5	63	144.5	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
26	0.14	SW	63	61	457	191	648	581	9.5	61	144.5	9.5	60	144.5	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
27	0.02		67	60	403	193	596	549	9.5	63	144.5	9.5	62	144.5	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
28	0.00	S	67	62	406	210	616	554	9.5	63	144.5	9.5	63	144.5	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
29	0.00		67	64	398	195	593	547	9.5	63	144.5	9.5	62	144.5	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
30	0.00		68	64	398	196	594	530	9.5	62	144.5	9.5	62	144.5	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
31	0.00	SE	69	64	384	199	583	539	9.5	66	144.5	9.5	66	144.5	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
TOTAL	0.91			TOTAL	12431	6169	18600	16906																
				AVERAG	401	199	600	545																
				MAXIMU	457	253	657	625																
				MINIMUM	358	143	535	474																

MEXIC 67 % OF TOTAL FLOW

U.S. = 33 % OF TOTAL FLOW

FULL TIME SERVICES					UTILITIES AND CHLORINE				PERSONNEL SERVICES AND EQUIPMENT UTILIZED OTHER THAN FULL TIME	
PERSONNEL		EQUIPMENT			CONTROL BUILDING					
CHIEF OPERATOR	1	90' DODGE AR SKC R		1	POWER CONSUMPTION	561,60 00	K.W.H.		CLASSIFICATION	HRS THIS MONTH
COMPLIANCE SPEC.	1	PICKUP 1/2 TON		3	$	44,921 2 . 29			ELECTRICIAN	0
OPERAORS, GRADE II	2	GRIT TRUCK		1	CHLORINE & ULTRAVIOLET DISINFECTION AREA				LABORERS	0
OPERATORS GRADE I	1	WATER TRUCK		1		-0-	K.W.H.		OVER TIME (OPERATORS)	6
LABORERS	4	BACK HOE		1	$	60.74			MOTOR GRADER & OPERATO	0
MECHANIC	1				CHLORINE CONSU	6,9 8	LBS			
ELECTRICIAN	1				SULPHUR DIOXIDE:	3,341 1	LBS.			
					UTILITY COSTS - WATER SERVICE FOR MARCH	$ 2,417.47				
Page 2										
March 1994					BILLING DATE:	2/22/94 TO 3/22/94				

PML-6		PML-7		PML-8		D.O. MG/L			pH				SUSPENDED SOLIDS MG/L		SETTLEABLE SOLIDS ML/L	B O D. MG/L		TOTAL CHLORINE USED	GRIT	FECAL	UV-1	UV-2	
DEPT FEET	AERAT HOURS	DEPT FEET	AERATO HOURS	DEPT FEET	AERATO HOURS	CML-	CML-	EFFLUEN	RA	CML-	CML-	EFFLUEN	RAW	EFFLUEN	EFFLUENT	EFF	INFLUEN	(POUNDS)	REMOVE	COLIFORM #	HOURS	HOURS	DATE
8.8	-0-	8.8	-0-	8.8	-0-	4.1	4.0	5.4	7.3	7.7	7.6	7.3						250		<2	192	192	1
8.8	-0	8.8	-0-	8.8	-0-	3.7	3.4	5.3	7.3	7.7	7.6	7.4						200		<2	192	192	2
8.8	-0	8.8	-0-	8.8	-0-	4.1	4.1	5.2	7.3	7.6	7.6	7.3	294	13	<0.10	19	68	188		<2	192	192	3
8.8	-0	8.8	-0-	8.8	-0-	3.8	3.3	5.3	7.3	7.7	7.7	7.3						260		<2	192	192	4
8.8	-0-	8.8	-0-	8.8	-0-	3.6	3.6	5.3	7.3	7.7	7.7	7.4						280		<2	192	192	5
8.8	-0-	8.8	-0-	8.8	-0-	3.5	3.6	5.9	7.4	7.6	7.6	7.5						260		<2	192	192	6
8.8	-0-	8.8	-0-	8.8	-0-	4.0	4.2	5.6	7.4	7.6	7.6	7.4						240	5 C/Y	<2	192	192	7
8.8	-0-	8.8	-0-	8.8	-0-	4.3	4.0	5.2	7.5	7.7	7.7	7.5						220		<2	192	192	8
8.8	-0-	8.8	-0-	8.8	-0-	4.5	3.7	5.0	7.4	7.7	7.7	7.4						280		<2	192	192	9
8.8	-0-	8.8	-0-	8.8	-0-	3.9	3.9	5.1	7.2	7.5	7.4	7.5	248	13	<0.10	23	144	280		<2	192	192	10
8.8	-0-	8.8	-0-	8.8	-0-	4.3	3.7	5.2	7.3	7.6	7.5	7.5						130		130	192	192	11
8.8	-0-	8.8	-0-	8.8	-0-	3.7	3.8	5.2	7.2	7.5	7.5	7.3						60	5 C/Y	130	192	192	12
8.8	-0-	8.8	-0-	8.8	-0-	5.0	4.6	5.2	7.5	7.5	7.8	7.5						E 200		80	192	192	13
8.8	-0-	8.8	-0-	8.8	-0-	3.7	4.0	5.2	7.4	7.7	7.8	7.5						E 200		80	192	192	14
8.8	-0-	8.8	-0-	8.8	-0-	3.7	4.5	4.9	7.4	7.7	7.8	7.5						220		7	192	192	15
8.8	-0	8.8	-0-	8.8	-0-	3.7	3.7	4.3	7.4	7.8	7.7	7.5						200		<2	192	192	16
8.8	-0-	8.8	-0-	8.8	-0-	3.0	3.6	4.2	7.3	7.8	7.5	7.5	390	11	<0.10	21	70	220	6 C/Y	<2	192	192	17
8.8	-0-	8.8	-0-	8.8	-0-	3.1	3.4	4.4	7.4	7.7	7.8	7.6						260	16 C/Y	<2	192	192	18
8.8	-0-	8.8	-0-	8.8	-0-	3.4	3.6	5.0	7.4	7.7	7.6	7.7						200		<2	192	192	19
8.8	-0-	8.8	-0-	8.8	-0-	3.3	3.8	4.2	7.4	7.5	7.6	7.3						260		23	192	192	20
8.8	-0-	8.8	-0-	8.8	-0-	3.0	2.8	5.0	7.4	7.6	7.8	7.5						200		2	192	192	21
8.8	-0-	8.8	-0-	8.8	-0-	2.6	2.9	5.1	7.3	7.6	7.7	7.5						150	5 C/Y	2	192	192	22
8.8	-0	8.8	-0-	8.8	-0-	2.6	2.8	4.3	7.3	7.5	7.5	7.4						230		23	192	192	23
8.8	-0-	8.8	-0-	8.8	-0-	3.2	3.2	5.1	7.2	7.7	7.6	7.6	268	12	<0.10	NR	NR	180	12 C/Y	4	192	192	24
8.8	-0	8.8	-0-	8.8	-0-	4.0	3.9	6.0	7.2	7.5	7.6	7.4						240		<2	192	192	25
8.8	-0-	8.8	-0-	8.8	-0-	3.8	3.8	5.8	7.2	7.5	7.5	7.5						210		9	192	192	26
8.8	-0-	8.8	-0-	8.8	-0-	5.0	4.7	5.9	7.4	7.5	7.6	7.6						240		<2	192	192	27
8.8	-0-	8.8	-0-	8.8	-0-	5.2	6.2	5.9	7.4	7.8	7.5	7.7						260		11	192	192	28
8.8	-0	8.8	-0-	8.8	-0-	4.3	5.3	5.3	7.1	7.5	7.7	7.3						210	5 C/Y	2	192	192	29
8.8	-0	8.8	-0-	8.8	-0-	4.2	4.1	5.6	7.2	7.7	7.5	7.5						250		11	192	192	30
8.8	-0-	8.8	-0-	8.8	-0-	4.1	4.1	5.4	7.3	7.6	7.1	7.5	222	15	<0.10	20	65	240		<2	192	192	31
																	TOTAL CL	6,968		4 85	GEOMETRIC MEAN		

NR = NO RESULT DUE TO LAB ERROR

CY = CUBIC YARD GRIT COMBINATION OF BASINS AND GRIT CHAMBER
ND = NONE DETECTED
# = MPN/100ML
M = MISSING DATA

NOGALES INTERNATIONAL WASTEWATER TREATMENT PLANT

MONTHLY REPORT

PREPAR BY: RIC ARD L. ALDWELL, COMPLIANE SPECIALIST
APPROVED AS TO F RM BY: LINO VEGA, PLANT SUPERINTENDENT

CML:COMPLETE MIX LAGOON
PML:PARTIAL MIX LAGOON

Page 1

MONTH: April 1994

	WEA	HER	TEMP	RATURE	FLOW	IN LITER	S PER SE	OND	CML-1			CML-2			PML-1		PML-2		ML 3		PML-4		ML-5	
DATE	RAIN FALL INCHES	WIND DIREC-TION	INFLOW	EFFLUEN	MEXICO	UNITED STATES	PLANT INFLOW	PLANT OUTFLO	DEPTH FEET	TEMPE-ATURE	AERAT HOURS	DEPT FEET	TEMPE-ATUR	AERAT HOURS	DEPT FEET	AERAT HOURS	DEPT FEET	AERAT HOURS	DEPT FEET	AERAT HOURS	DEPT FEET	AERAT HOURS	DEPT FEET	AERAT HOURS
1	0.00	SE	68	64	358	185	543	516	9.5	66	144.5	9.5	63	144.5	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
2	0.00		67	62	361	201	562	510	9.5	64	144.5	9.5	62	144.5	9.2,	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
3	0.00		68	63	344	174	518	483	9.5	64	144.5	9.5	63	144.5	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
4	0.00		69	63	381	188	569	502	9.5	63	144.5	9.5	63	144.5	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
5	0.00		71	64	386	196	582	522	9.5	66	144.5	9.5	64	144.5	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
6	0.00		68	63	398	193	591	523	9.5	63	144.5	9.5	63	144.5	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
7	0.00	SW	68	64	395	193	588	454	9.5	66	144.5	9.5	63	144.5	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
8	0.00		67	63	390	191	581	417	9.5	64	144.5	9.5	64	144.5	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
9	0.00		68	64	398	198	596	504	9.5	66	144.5	9.5	66	144.5	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
10	0.00		68	64	389	188	577	520	9.5	66	144.5	9.5	66	144.5	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
11	0.00		68	64	420	188	608	531	9.5	64	144.5	9.5	64	144.5	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
12	0.00		69	64	415	198	613	541	9.5	66	144.5	9.5	65	144.5	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
13	0.00		69	64	415	199	614	539	9.5	66	144.5	9.5	64	144.5	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
14	0.00		69	64	409	193	602	534	9.5	66	144.5	9.5	65	144.5	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
15	0.00		68	65	398	201	599	531	9.5	68	144.5	9.5	65	144.5	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
16	0.00		69	66	372	210	582	520	9.5	68	144.5	9.5	65	144.5	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
17	0.00	S	72	66	364	201	565	510	9.5	68	144.5	9.5	68	144.5	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
18	0.00		70	65	384	207	591	509	9.5	67	144.5	9.5	67	144.5	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
19	0.00		72	66	378	197	575	507	9.5	69	144.5	9.5	69	144.5	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
20	0.00		72	66	392	193	585	518	9.5	66	144.5	9.5	66	144.5	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
21	0.06		72	71	386	256	642	517	9.5	69	144.5	9.5	69	144.5	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
22	0.60		72	69	386	202	588	515	9.5	66	144.5	9.5	68	144.5	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
23	0.00	E	72	69	378	195	573	500	9.5	69	144.5	9.5	69	144.5	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
24	0.00		72	69	372	190	562	486	9.5	69	144.5	9.5	69	144.5	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
25	0.00		71	66	389	195	584	497	9.5	69	144.5	9.5	66	144.5	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
26	0.00	SE	72	65	384	191	575	511	9.5	63	144.5	9.5	66	144.5	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
27	0.00	SW	72	66	395	189	584	517	9.5	64	144.5	9.5	66	144.5	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
28	0.00		72	66	389	196	585	519	9.5	64	144.5	9.5	66	144.5	9.2	-0-	8.8	24	8.8	[illegible]	8.8	24	8.8	-0-
29	0.00		72	66	389	194	583	515	9.5	64	144.5	9.5	66	144.5	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
30	0.00		72	66	389	181	570	509	9.5	69	144.5	9.5	66	144.5	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
31																								
TOTAL	0.66			TOTAL	11604	5883	17487	15277																
				AVERAG	387	196	583	509																
				MAXIMU	420	256	642	541																
				MINIMUM	420	174	518	417																

MEXIC 66 % OF TOTAL FLOW

U.S. = 34 % OF TOTAL FLOW

PERSONNEL	ULL TIM	SERVICES EQUIPMENT	
CHIEF OPERATOR	1	90' D DGE AR S K C R	1
COMPLIANCE SPEC	1	PICKU 1/2 TON	3
OPERAORS, GRADE II	2	GRIT TRUCK	1
OPERATORS, GRADE I	1	WATER TRUCK	1
LABORERS	4	BACK HOE	1
MECHANIC	1		
ELECTRICIAN	1		

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April 1994

UTILITIES AND CHLORINE

CONTROL BUILDING

POWER CON MPTIO	635,400 0	K W H.
$	48,981.0 2	

CHLO INE & ULTRAVIOLET DISINFECTION AREA

	-0-	K.W.H.
$	64.74	
CHLORINE CONSU	7,855 5	LBS
SULPHUR D XIDE:	3,868 8	LBS.

UTILITY COSTS - WATER SERVICE
$ 2,403 10 0 - APRIL BIL LING

ELEC. SER
BILLING DATE. 3/22/94 TO 4/22/94

PERSONNEL SERVICES AND EQUIPMENT UTILIZED OT ER THAN FULL TIME

CLASSI ICATI ON	HRS THIS MONTH
ELECTRICIAN	14
LABORERS	25
OVER TIME (OPERATORS)	31
MOTOR GRADER & OPERATO	0

ROBBINS & INT'L ST.
USAGE -0- KHW
AMOUNT -0-

PML 6		PML-7		PML-8		D O. MG/L			p H				SUSPENDED SOLIDS MG/L		SETTLEABLE SOLIDS ML/L	B O D. MG/L		TOTAL CHLORINE					
DEPT FEET	AERAT HOURS	DEPT FEET	AERATO HOURS	DEPT FEET	AERATO HOURS	CML-	CML-	EFFLUEN	RA	CML-	CML-	EFFLUEN	RAW	EFFLUEN	EFFLUENT	EFF	INFLUEN	USED (POUNDS)	GRIT REMOVE	FECAL COLIFORM #	UV 1 HOURS	UV-2 HOURS	DATE
8.8	-0-	8.8	-0-	8.8	-0-	4.2	3.9	5.6	7.3	7.5	7.5	7.3						160		4	192	192	1
8.8	-0-	8.8	-0-	8.8	-0-	6.1	6.6	5.9	7.3	7.5	7.5	7.3						260		<2	192	192	2
8.8	-0	8.8	-0-	8.8	-0-	6.3	6.4	5.3	7.3	7.5	7.5	7.3						210	2 5 C/Y	4	192	192	3
8.8	-0	8.8	-0-	8.8	-0-	5.9	5.4	5.9	7.3	7.5	7.5	7.3						240		11	192	192	4
8.8	-0-	8.8	-0-	8.8	-0-	4.9	6.0	5.4	7.4	7.4	7.7	7.3						260		2	192	192	5
8.8	-0-	8.8	-0-	8.8	-0-	4.6	4.9	6.6	6.5	7.5	7.7	7.3						320		<2	192	192	6
8.8	-0	8.8	-0-	8.8	-0-	3.6	4.3	6.8	7.1	7.6	7.5	7.4	268	16	<0.10	20	79	320		2	192	192	7
8.8	-0-	8.8	-0-	8.8	-0-	3.9	4.8	6.6	7.2	7.5	7.8	7.3	164	7		21	152	340		<2	192	192	8
8.8	-0-	8.8	-0-	8.8	-0-	4.8	4.3	6.7	7.3	7.5	7.5	7.3						110		<2	192	192	9
8.8	-0-	8.8	-0-	8.8	-0-	4.9	4.4	6.6	7.3	7.4	7.4	7.4						130		8	192	192	10
8.8	-0-	8.8	-0-	8.8	-0-	4.4	4.3	6.6	7.2	7.6	7.8	7.4						275	5 C/Y	<2	192	192	11
8.8	-0-	8.8	-0-	8.8	-0-	4.5	4.8	6.8	7.3	7.5	7.6	7.5						310		<2	192	192	12
8.8	-0-	8.8	-0-	8.8	-0-	4.2	3.9	6.8	7.3	7.5	7.7	7.6						320		<2	192	192	13
8.8	-0-	8.8	-0-	8.8	-0-	4.9	4.9	6.6	7.4	7.5	7.7	7.6	133	11	<0.10	21	111	90		<2	192	192	14
8.8	-0	8.8	-0-	8.8	-0-	4.6	5.7	6.5	7.3	7.5	7.7	7.6	184	18		27	99	190		<2	192	192	15
8.8	-0	8.8	-0-	8.8	-0-	4.4	4.6	6.4	7.3	7.3	7.6	7.5						300		2	192	192	16
8.8	-0-	8.8	-0-	8.8	-0-	4.0	5.0	6.2	7.5	7.7	7.7	7.4						60		170	192	192	17
8.8	-0-	8.8	-0-	8.8	-0-	5.0	4.7	6.1	7.5	7.4	7.4	7.4						120	6 C/Y	<2	192	192	18
8.8	-0	8.8	-0-	8.8	-0-	5.0	5.1	6.4	7.4	7.4	7.4	7.4						500		<2	192	192	19
8.8	-0-	8.8	-0-	8.8	-0-	3.7	3.6	5.3	7.4	7.4	7.4	7.2						260		2	192	192	20
8.8	-0	8.8	-0-	8.8	-0-	3.6	3.5	5.1	7.4	7.4	7.5	7.3	426	9	<0.10	21	99	240		<2	192	192	21
8.8	-0-	8.8	-0-	8.8	-0-	3.7	3.0	5.6	7.3	7.3	7.3	7.2						340		<2	192	192	22
8.8	-0	8.8	-0-	8.8	-0-	4.2	3.8	5.8	7.4	7.5	7.4	7.3						320		2	192	192	23
8.8	-0-	8.8	-0-	8.8	-0-	3.8	3.9	5.1	7.3	7.4	7.4	7.3						260	6 C/Y	500	192	192	24
8.8	-0	8.8	-0-	8.8	-0-	4.1	3.3	5.4	7.3	7.4	7.4	7.2						150		<2	192	192	25
8.8	-0-	8.8	-0-	8.8	-0-	4.7	4.9	5.4	7.3	7.6	7.5	7.3						330		<2	192	192	26
8.8	-0-	8.8	-0-	8.8	-0-	5.3	4.7	6.3	7.3	7.4	7.4	7.3						480		<2	192	192	27
8.8	-0-	8.8	-0-	8.8	-0-	5.3	4.9	4.0	7.3	7.3	7.4	7.4	356	22	<0.10	27	86	520		<2	192	192	28
8.8	-0	8.8	-0-	8.8	-0-	5.0	4.5	5.6	7.3	7.3	7.4	7.4						120		14	192	192	29
8.8	-0	8.8	-0-	8.8	-0-	3.5	3.2	5.1	7.3	7.6	7.5	7.4						120		4	192	192	30
																							31
																	TOTAL CL	7855		3 53	GEOMETRIC MEAN		

CY = CUBIC YA ARD GRIT COMBIN ION OF BASINS AND GRIT CHAMBE
ND = NONE DETECTED
# = MPN/100ML
M = MISSING DATA

NOGALES INTERNATIONAL WASTEWATER TREATMENT PLANT

MONTHLY REPORT

PREPAR BY: RIC ARD L ALDWELL, COMPLIANE SPECIALIST
APPROVED AS TO F RM BY: LINO VEGA, PLANT SUPERINTENDENT

CML:COMPLETE MIX LAGOON
PML PARTIAL MIX LAGOON

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MONTH: May 1994

	WEA	HER	TEMP	RATURE	FLOW	IN LITER	S PER SE	OND	CML-1			CML-2			PML-1		PML-2		ML 3		PML 4		ML-5	
DATE	RAIN FALL INCHES	WIND DIREC-TION	INFLOW	EFFLUEN	MEXICO	UNITED STATES	PLANT INFLOW	PLANT OUTFLO	DEPTH FEET	TEMPE-ATURE	AERAT HOURS	DEPT FEET	TEMPE-ATUR	AERAT HOURS	DEPT FEET	AERAT HOURS	DEPT FEET	AERAT HOURS	DEPT FEET	AERAT HOURS	DEPT FEET	AERAT HOURS	DEPT FEET	AERAT HOURS
1	-0-	SW	71	73	324	177	501	459	9.5	68	144.5	9.5	66	144.5	9.0	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
2	-0-		72	75	341	188	529	451	9.5	66	144.5	9.5	66	144.5	9.0	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
3	-0-		75	66	367	191	558	477	9.5	67	144.5	9.5	69	144.5	9.0	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
4	-0-		74	69	381	187	568	491	9.5	68	144.5	9.5	69	144.5	9.0	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
5	-0-		73	72	358	190	548	488	9.5	68	144.5	9.5	69	144.5	9.0	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
6	-0-	S	73	71	384	191	575	486	9.5	69	144.5	9.5	69	144.5	9.0	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
7	-0-		73	72	401	182	583	505	9.5	69	144.5	9.5	68	144.5	9.0	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
8	-0-		73	71	386	180	566	500	9.5	69	144.5	9.5	67	144.5	9.0	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
9	-0-		73	68	406	120	526	517	9.5	69	144.5	9.5	69	144.5	9.0	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
10	-0-		73	69	389	178	567	522	9.5	68	144.5	9.5	68	144.5	9.0	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
11	0.11	W	74	66	398	190	588	527	9.5	65	144.5	9.5	68	144.5	9.0	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
12	-0-	SW	74	66	409	179	588	535	9.5	66	144.5	9.5	66	144.5	9.0	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
13	0.10	NW	74	68	418	177	595	556	9.5	69	144.5	9.5	69	144.5	9.0	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
14	-0-		74	73	415	170	585	541	9.5	70	144.5	9.5	70	144.5	9.0	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
15	-0-	SW	74	75	381	171	552	524	9.5	72	144.5	9.5	71	144.5	9.0	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
16	-0-		75	75	389	176	565	512	9.5	76	144.5	9.5	72	144.5	9.0	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
17	-0-	SE	75	75	384	175	559	513	9.5	75	144.5	9.5	72	144.5	9.0	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
18	-0-		75	75	381	182	563	530	9.5	71	144.5	9.5	72	144.5	9.0	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
19	-0-		75	75	372	179	551	523	9.5	72	144.5	9.5	72	144.5	9.0	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
20	-0-		75	75	378	217	595	583	9.5	73	144.5	9.5	73	144.5	9.0	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
21	-0-		75	75	364	179	543	522	9.5	70	144.5	9.5	69	144.5	9.0	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
22	-0-	SW	74	74	353	169	522	505	9.5	72	144.5	9.5	71	144.5	9.0	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
23	-0-		75	75	364	174	538	513	9.5	70	144.5	9.5	70	144.5	9.0	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
24	0.01	W	77	73	369	174	543	533	9.5	75	144.5	9.5	74	144.5	9.0	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
25	T		76	73	375	176	551	540	9.5	72	144.5	9.5	74	144.5	9.0	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
26	-0-		77	74	389	188	577	517	9.5	71	144.5	9.5	72	144.5	9.0	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
27	-0-	SE	78	75	398	169	567	562	9.5	75	144.5	9.5	75	144.5	9.0	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
28	-0-		78	74	398	163	561	563	9.5	75	144.5	9.5	75	144.5	9.0	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
29	-0-		79	74	395	153	548	555	9.5	75	144.5	9.5	75	144.5	9.0	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
30	-0-		79	74	381	172	553	534	9.5	75	144.5	9.5	75	144.5	9.0	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
31	-0-		80	74	406	168	574	535	9.5	74	144.5	9.5	74	144.5	9.0	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
TOTAL	0.22			TOTAL	11854	5485	17339	16119																
				AVERAG	382	177	559	520																
				MAXIMU	418	217	595	583																
				MINIMUM	324	120	501	451																

MEXIC 68 % OF TOTAL FLOW

U.S. = 32 % OF TOTAL FLOW

ULL TIM SERVICES				UTILITIES AND CHLORINE				PERSONNEL SERVICES AND EQUIPMENT UTILIZED OT ER THAN FULL TIME	
PERSONNEL		EQUIPMENT		CONTROL BUILDING				CLASSI ICATI ON	HRS THIS MONTH
CHIEF OPERATOR	1	90' D DGE AR SKC R	1	POWER CON MPTIO	549,00 00	K.W.H.		ELECTRICIAN	18
COMPLIANCE SPEC.	1	PICKU 1/2 TON	3	$	42,933 0 05			LABORERS	27
OPERAORS, GRADE II	2	GRIT TRUCK	1	CHLO INE & ULTRAVIOLET DISINFECTION AREA				OVER TIME (OPERATORS)	42 5
OPERATORS, GRADE I	1	WATER TRUCK	1		-0-	K W.H.		MOTOR GRADER & OPERATO	0
LABORERS	4	BACK HOE	1	$	60 74				
MECHANIC	1			CHLORINE CONSU	6,965 5	LBS			
ELECTRICIAN	1			SULPHUR D XIDE:	3,803 3	LBS.			
				UTILITY COSTS - WATER SERVICE	$ 2,102 24				
Page 2									
May 1994				BILLING DATE:	4/22/94 TO 5/20/94				

PML-6		PML-7		PML-8		D O MG/L			p H				SUSPENDED SOLIDS MG/L		SETTLEABLE SOLIDS ML/L	B O D MG/L		TOTAL CHLORINE					
DEPT FEET	AERAT HOURS	DEPT FEET	AERATO HOURS	DEPT FEET	AERATO HOURS	CML-	CML-	EFFLUEN	RA	CML-	CML-	EFFLUEN	RAW	EFFLUEN	EFFLUENT	EFF	INFLUEN	USED (POUNDS)	GRIT REMOVE	FECAL COLIFORM #	UV 1 HOURS	UV-2 HOURS	DATE
8 8	-0	8 8	-0-	8.8	-0-	3.2	3 3	5.0	7.4	7.4	7.4	7.3						170		2	192	192	1
8 8	0	8 8	-0-	8.8	-0-	3.8	3 9	5 4	7.4	7.6	7.6	7.4						420		<2	192	192	2
8 8	-0	8 8	-0-	8.8	-0-	3.6	2.7	5 6	7.4	7.5	7 4	7.4						M	5 C/Y	500	192	192	3
8 8	-0	8 8	-0-	8.8	-0-	3.7	2.9	5.2	7.4	7.4	7.5	7.3						M		<2	192	192	4
8 8	-0	8 8	-0-	8.8	-0-	3 9	3 5	5.5	7.4	7.4	7 4	7 4	278	23	<0.10	24	133	140		2	192	192	5
8 8	-0	8 8	-0-	8.8	-0-	4 0	3 9	5.1	7.4	7 4	7.1	7.3						200	5 C/Y	<2	192	192	6
8 8	-0	8 8	-0-	8.8	-0-	4.9	4 2	5.2	7.2	7.3	7 2	7.4						220		<2	192	192	7
8 8	-0-	8 8	-0-	8.8	-0-	4.5	4.5	5.4	7.2	7 4	7 3	7 3						310		2	192	192	8
8 8	-0-	8 8	-0-	8.8	-0-	4.2	4.0	5.4	7.2	7.4	7 3	7 3						100		2	192	192	9
8 8	-0-	8 8	-0-	8.8	-0-	5.2	4 7	5.1	7.3	7.3	7 3	7.1						390		14	192	192	10
8 8	-0-	8 8	-0-	8.8	-0-	4.5	3.8	5.4	7.4	7.4	7 5	7.3						350		4	192	192	11
8 8	-0-	8 8	-0-	8.8	-0-	3.8	3 5	5 6	7.5	7.5	7.4	7 4	378	15	<0.10	16	52	170		14	192	192	12
8 8	-0-	8 8	-0-	8.8	-0-	4.8	4.2	5 2	7.2	7.4	7 3	7 3						160		4	192	192	13
8 8	-0-	8 8	-0-	8.8	-0-	4.7	4 6	5 4	7.3	7.3	7 3	7.3						M		80	192	192	14
8 8	-0	8 8	-0-	8.8	-0-	4.2	4 4	5 5	7.3	7.3	7.3	7.3						180		220	192	192	15
8 8	-0	8 8	-0-	8.8	-0-	3.1	3 4	5.7	7.4	7.4	7 4	7 3						100		<2	192	192	16
8 8	0	8 8	-0-	8.8	-0-	3.5	3 9	5.1	7.3	7.4	7.4	7 3						260		<2	192	192	17
8 8	-0-	8 8	-0-	8.8	-0-	3.7	4.3	5.2	7.3	7.3	7.4	7.3						120		<2	192	192	18
8 8	-0-	8 8	-0-	8.8	-0-	3.7	4 2	5.3	7.4	7.3	7 4	7.4	468	13	<0.10	<1	23	400		<2	192	192	19
8 8	-0	8 8	-0-	8.8	-0-	4.1	4.3	5 6	7.4	7.4	7 4	7.4						300	6 C/Y	17	192	192	20
8 8	-0	8 8	-0-	8.8	-0-	3.4	3 6	5.4	7.3	7.5	7 6	7 3						150	5 5 C/Y	80	192	192	21
8 8	0	8 8	-0-	8.8	-0-	3.6	3 8	5.5	7.3	7.5	7 5	7 4						330		2	192	192	22
8 8	-0	8 8	-0-	8.8	-0-	3.2	3 5	5 6	7.3	7.3	7.4	7 4						180		2	192	192	23
8 8	-0-	8 8	-0-	8.8	-0-	3 3	3 4	4 4	7.4	7.4	7.5	7 4						80		<2	192	192	24
8 8	-0	8 8	-0-	8.8	-0-	2.8	3 5	4 2	7.3	7.4	7.4	7.3						450	6 C/Y	<2	192	192	25
8 8	-0	8 8	-0-	8.8	-0-	3.0	3 7	5.1	7.4	7.4	7 4	7 4	452	20	<0.10	14	97	260		2	192	192	26
8 8	-0	8 8	-0-	8.8	-0-	2.8	2 8	5 2	7.4	7.5	7 5	7.3						100		<2	192	192	27
8 8	-0-	8 8	-0-	8.8	-0-	2.7	4 1	5 1	7.4	7.5	7.5	7.3						280		2	192	192	28
8 8	-0-	8 8	-0-	8.8	-0-	2.1	3 1	5 2	7.4	7.4	7.4	7.4						120		<2	192	192	29
8 8	-0-	8 8	-0-	8.8	-0-	1.9	3.9	5.1	7.3	7.3	7.3	7.3						200		17	192	192	30
8 8	-0	8 6	-0-	8.8	-0-	2.0	2.9	5.3	7.4	7.3	7 3	7 4						400		80	192	192	31
																TOTAL CL		6,965		5 24	GEOMETRIC MEAN		

CY = CUBIC YA ARD GRIT COMBIN ION OF BASINS AND GRIT CHAMBE
ND = NONE DETECTED
# = MPN 100ML
M = MISSING DATA
* - EXCEEDANCE REPORTED TO E A/ADEQ

NOGALES INTERNATIONAL WASTEWATER TREATMENT PLANT

MONTHLY REPORT

PREPAR BY: RIC ARD L. ALDWELL, COMPLIAN E SPECIALIST
APPROVED AS TO F RM BY: LINO VEGA, PLANT SUPERINTENDENT

CML:COMPLETE MIX LAGOON
PML:PARTIAL MIX LAGOON

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MONTH: June 1994

	WEA	HER	TEMP	RATURE	FLOW	IN LITER	S PER SE	OND	CML-1			CML-2			PML-1		PML-2		ML-3		PML-4		ML-5	
DATE	RAIN FALL INCHES	WIND DIREC-TION	INFLOW	EFFLUEN	MEXICO	UNITED STATES	PLANT INFLOW	PLANT OUTFLO	DEPTH FEET	TEMPE-ATURE	AERAT HOURS	DEPT FEET	TEMPE-ATUR	AERAT HOURS	DEPT FEET	AERAT HOURS	DEPT FEET	AERAT HOURS	DEPT FEET	AERAT HOURS	DEPT FEET	AERAT HOURS	DEPT FEET	AERAT HOURS
1	-0-	SW	79	74	406	165	571	540	9.5	75	144.5	9.5	75	144.5	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
2	-0-		80	71	412	155	567	557	9.5	79	144.5	9.5	79	144.5	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
3	-0-		78	72	386	163	549	543	9.5	78	144.5	9.5	79	144.5	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
4	-0-		77	75	355	167	522	520	9.5	74	144.5	9.5	73	144.5	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
5	-0-		77	75	366	159	525	510	9.5	74	144.5	9.5	73	144.5	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
6	-0-		77	74	384	165	549	521	9.5	74	144.5	9.5	73	144.5	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
7	-0-	SE	77	73	378	175	553	531	9.5	74	144.5	9.5	74	144.5	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
8	-0-		77	73	375	125	500	541	9.5	74	144.5	9.5	74	144.5	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
9	-0-		78	72	375	159	534	523	9.5	74	144.5	9.5	74	144.5	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
10	-0-		79	73	381	169	550	514	9.5	75	144.5	9.5	75	144.5	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
11	-0-		81	76	381	176	557	420	9.5	79	144.5	9.5	80	144.5	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
12	-0-		80	76	358	166	524	445	9.5	80	144.5	9.5	80	144.5	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
13	-0-	S	80	75	378	178	556	438	9.5	79	144.5	9.5	79	144.5	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
14	-0-		80	77	381	168	549	497	9.5	M	144.5	9.5	M	144.5	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
15	-0-		80	77	372	164	536	477	9.5	78	144.5	9.5	78	144.5	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
16	-0-		80	77	378	163	541	469	9.5	78	144.5	9.5	78	144.5	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
17	-0-		80	76	375	166	541	475	9.5	M	144.5	9.5	M	144.5	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
18	TRACE	W	80	77	381	197	578	490	9.5	79	144.5	9.5	M	144.5	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
19	TRACE		80	77	358	165	523	490	9.5	80	144.5	9.5	M	144.5	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
20	0.40		79	75	483	240	723	548	9.5	78	144.5	9.5	M	144.5	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
21	1.50		81	79	333	160	493	549	9.5	79	144.5	9.5	63	144.5	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
22	0.50		80	79	353	174	527	490	9.5	79	144.5	9.5	79	144.5	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
23	-0-	SW	81	79	324	183	507	420	9.5	79	144.5	9.5	79	144.5	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
24	-0-		81	79	313	174	487	419	9.5	79	144.5	9.5	78	144.5	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
25	-0-		82	80	338	161	499	440	9.5	78	144.5	9.5	78	144.5	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
26	-0-		82	79	304	165	469	447	9.5	80	144.5	9.5	80	144.5	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
27	-0-		86	81	321	167	488	434	9.5	86	144.5	9.5	86	144.5	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
28	TRACE	W	86	80	330	148	478	434	9.5	86	144.5	9.5	86	144.5	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
29	-0-		84	83	395	141	536	457	9.5	84	144.5	9.5	84	144.5	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
30	0.15		84	83	383	165	548	501	9.5	84	144.5	9.5	84	144.5	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
31																								
TOTAL	2.55			TOTAL	11057	5023	16080	14640																
				AVERAG	369	167	536	488																
				MAXIMU	483	240	723	557																
				MINIMUM	304	125	469	419																

MEXIC 69 % OF TOTAL FLOW

U.S. = 31 % OF TOTAL FLOW

ULL TIM SERVICES				UTILITIES AND CH HLORINE		PERSONNEL SERVICES AND EQUIPMENT UTILIZED OT ER THAN FULL TIME	
PERSONNEL		EQUIPMENT		CONTROL BUILDING		CLASSI ICATI ON	HRS THIS MONTH
CHIEF OPERATOR	1	90' D DGE AR SKC R	1	POWER CON MPTIO	610 ,200 K.W.H.	ELECTRICIAN	27
COMPLIANCE SPEC	1	PICKU 1/2 TON	3	$	46,63 .04	LABORERS	74
OPERAORS, GRADE II	2	GRIT TRUCK	1	CHLO INE & ULTRAVIOLET DISINFECTION AREA		OVER TIME (OPERATORS)	69
OPERATORS, GRADE I	1	WATER TRUCK	1		-0- K.W.H.	MOTOR GRADER & OPERATO	0
LABORERS	4	BACK HOE	1	$	60.74	ROBBINS & INT'L ST. USAGE 693 KHW AMOUNT $100.73	
MECHANIC	1			CHLORINE CONSU	E- 9,930 30 LBS		
ELECTRICIAN	1			SULPHUR D XIDE:	3,590 90 LBS.		
				UTILITY COSTS - WATER SERVICE	NOT AVAILABLE		
Page 2							
June 1994				BILLING DATE:	5/20/94 TO 6/22/94		

PML-6		PML-7		PML-8		D.O. MG/L			pH				SUSPENDED SOLIDS MG/L		SETTLEABLE SOLIDS ML/L	B O D. MG/L		TOTAL CHLORINE					
DEPT FEET	AERAT HOURS	DEPT FEET	AERATO HOURS	DEPT FEET	AERATO HOURS	CML-	CML-	EFFLUEN	RA	CML-	CML-	EFFLUEN	RAW	EFFLUEN	EFFLUENT	EFF	INFLUEN	USED (POUNDS)	GRIT REMOVE	FECAL COLIFORM #	CHLORIN RESIDUA	UV1 UV2 HOURS	DATE
8.8	-0-	8.8	0-	8.8	-0-	2.1	3.6	4.1	7.4	7.3	7.4	7.3						E-140	5 C/Y	80	ND	192 192	1
8.8	-0-	8.8	-0-	8.8	-0-	1.8	2.7	4.8	7.4	7.4	7.4	7.2	88	19	<0.5	139	180	E-140		240	ND	192 192	2
8.8	-0-	8.8	-0-	8.8	-0-	2.1	3.1	5.1	7.4	7.5	7.4	7.2						E-80		* 1600	ND	192 192	3
8.8	-0-	8.8	-0-	8.8	-0-	2.4	3.3	5.0	7.0	7.5	7.6	7.5						E-100		* 1600	ND	192 192	4
8.8	-0-	8.8	-0-	8.8	-0-	2.8	3.0	5.2	7.4	7.4	7.5	7.4						E-100		* 900	ND	192 192	5
8.8	-0-	8.8	-0-	8.8	-0-	1.8	2.0	4.2	7.4	7.3	7.5	7.4						E-100		50	* 0.06	192 192	6
8.8	-0-	8.8	-0-	8.8	-0-	2.0	2.3	4.0	7.4	7.4	7.4	7.4						E-300		8	ND	192 192	7
8.8	-0-	8.8	-0-	8.8	-0-	2.7	2.1	4.3	7.4	7.4	7.4	7.4	28	11	<0.5	>23	91	E-300		2	ND	192 192	8
8.8	-0-	8.8	-0-	8.8	-0-	2.0	1.7	5.1	7.4	7.4	7.4	7.4						E-325	5 C/Y	2	ND	192 192	9
8.8	-0-	8.8	-0-	8.8	-0-	2.7	2.2	5.3	7.4	7.4	7.4	7.4						E-325		2	ND	192 192	10
8.8	-0-	8.8	-0-	8.8	-0-	1.8	3.1	5.4	7.4	7.4	7.4	7.4						E-140		11	ND	192 192	11
8.8	-0-	8.8	-0-	8.8	-0-	2.1	2.3	5.3	7.5	7.4	7.4	7.4						E-300		2	ND	192 192	12
8.8	-0-	8.8	-0-	8.8	-0-	3.2	3.4	5.5	7.4	7.4	7.5	7.4						E-300		2	ND	192 192	13
8.8	-0-	8.8	-0-	8.8	-0-	M	M	3.6	M	M	M	7.3						E-300	5 C/Y	2	ND	192 192	14
8.8	-0-	8.8	-0-	8.8	-0-	2.5	3.0	4.9	7.4	7.4	7.4	7.4						E-300		500	ND	192 192	15
8.8	-0-	8.8	-0-	8.8	-0-	2.8	4.0	5.1	7.4	7.4	7.4	7.4	132	20	<0.5	>69	164	E-300		* 1600	* 0.08	192 192	16
8.8	-0-	8.8	-0-	8.8	-0-	M	M	4.3	7.4	M	M	7.4						E-300		* 1600	ND	192 192	17
8.8	-0-	8.8	-0-	8.8	-0-	M	M	4.1	7.4	7.4	M	7.4						E-300		500	ND	192 192	18
8.8	-0-	8.8	-0-	8.8	-0-	M	M	4.6	7.4	7.4	M	7.4						E-300		* 1600	ND	192 192	19
8.8	-0-	8.8	-0-	8.8	-0-	1.9	M	5.2	7.4	7.4	M	7.4						E-300		300	ND	192 192	20
8.8	-0-	8.8	-0-	8.8	-0-	2.1	3.1	5.0	7.5	7.5	7.4	7.8						E-380		* 1600	ND	192 192	21
8.8	-0-	8.8	-0-	8.8	-0-	3.4	3.5	3.8	7.4	7.5	7.4	7.8						E-500		300 / 300	ND	192 192	22
8.8	-0-	8.8	-0-	8.8	-0-	3.7	3.1	3.9	7.3	7.5	7.4	7.6						E-500		2 / 300	ND	192 192	23
8.8	-0-	8.8	-0-	8.8	-0-	2.0	3.5	3.6	7.3	7.4	7.4	7.7	228	<1	0.6	73	140	E-500	5 C/Y	13 / <10	* 0.26	192 192	24
8.8	-0-	8.8	-0-	8.8	-0-	2.2	2.3	4.1	7.4	7.4	7.4	7.5						E-500		<10	* 1.22	192 192	25
8.8	-0-	8.8	-0-	8.8	-0-	2.4	2.8	4.2	7.4	7.4	7.4	7.1						E 500		<10	* 0.12	192 192	26
8.8	-0-	8.8	-0-	8.8	-0-	2.6	2.6	4.6	7.4	7.4	7.4	7.2						[illegible]		<10	* 0.05	192 192	27
8.8	-0-	8.8	-0-	8.8	-0-	2.8	2.7	4.3	7.4	7.4	7.4	7.2						E-500		<1	ND	192 192	28
8.8	-0-	8.8	-0-	8.8	-0-	2.6	2.3	5.1	7.4	7.4	7.4	7.4						E-500		<1	* 0.07	192 192	29
8.8	-0-	8.8	-0-	8.8	-0-	3.3	2.1	5.6	7.4	7.4	7.4	7.4	16	34	3	94	142	E-500		<1	ND	192 192	30
																							31

TOTAL CL E-9,930

40.186 - EOME TRIC MEAN
E = ESTIMATE DUE TO E EQUIP. F ILURE
CY = CUBIC YA ARD GRIT COMBIN ION OF BASINS AND GRIT CHAMBE
ND = NONE DETECTED
# - MPN/100ML
M = MISSING DATA
* = EXCEEDANCE REPORTED TO E A/ADEQ

NOGALES INTERNATIONAL WASTEWATER TREATMENT PLANT

MONTHLY REPORT

PREPAR BY: RIC ARD L. ALDWELL, COMPLIANE SPECIALIST
APPROVED AS TO F RM BY: LINO VEGA, PLANT SUPERINTENDENT

CML COMPLETE MIX LAGOON
PML PARTIAL MIX LAGOON

Page 1

MONTH: July 1994

	WEA	HER	TEMP	RATURE	FLOW	IN LITER	S PER SE	OND	CML-1			CML-2			PML-1		PML-2		ML 3		PML-4		ML-5	
DATE	RAIN FALL INCHES	WIND DIREC-TION	INFLOW	EFFLUEN	MEXICO	UNITED STATES	PLANT INFLOW	PLANT OUTFLO	DEPTH FEET	TEMPE ATURE	AERAT HOURS	DEPT FEET	TEMPE ATUR	AERAT HOURS	DEPT FEET	AERAT HOURS	DEPT FEET	AERAT HOURS	DEPT FEET	AERAT HOURS	DEPT FEET	AERAT HOURS	DEPT FEET	AERAT HOURS
1	0.00	S	81	80	406	164	570	499	9.5	80	144.5	9.5	80	144.5	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
2	0.00		81	80	372	263	635	591	9.5	80	144.5	9.5	80	144.5	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
3	0.10	W	81	80	367	195	562	527	9.5	80	144.5	9.5	80	144.5	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
4	0.15		80	80	392	105	497	421	9.5	80	144.5	9.5	80	144.5	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
5	0.00	SW	79	81	310	197	507	436	9.5	81	144.5	9.5	80	144.5	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
6	0.00		78	78	313	197	510	476	9.5	77	144.5	9.5	75	144.5	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
7	0.00	S	80	77	318	166	484	439	9.5	80	144.5	9.5	78	144.5	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
8	0.00		78	75	347	161	508	453	9.5	73	144.5	9.5	73	144.5	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
9	0.00		80	80	375	156	531	469	9.5	81	144.5	9.5	80	144.5	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
10	0.00		80	81	355	160	515	465	9.5	81	144.5	9.5	81	144.5	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
11	0.00	SE	80	80	367	165	532	458	9.5	80	144.5	9.5	80	144.5	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
12	0.00		81	80	361	182	543	467	9.5	80	144.5	9.5	80	144.5	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
13	0.00		80	80	358	163	521	460	9.5	80	144.5	9.5	80	144.5	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
14	0.00		80	79	361	182	543	450	9.5	75	144.5	9.5	75	144.5	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
15	0.00	S	80	80	358	181	539	461	9.5	78	144.5	9.5	78	144.5	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
16	0.00		80	91	335	172	507	457	9.5	77	144.5	9.5	76	144.5	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
17	TRACE	W	79	73	350	144	494	451	9.5	73	144.5	9.5	73	144.5	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
18	0.40	NW	81	79	355	191	546	476	9.5	81	144.5	9.5	77	144.5	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
19	0.00		78	79	333	166	499	451	9.5	75	144.5	9.5	75	144.5	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
20	0.00	SW	79	79	324	167	491	441	9.5	76	144.5	9.5	75	144.5	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
21	0.00		82	82	335	227	562	455	9.5	78	144.5	9.5	78	144.5	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
22	0.00		81	84	372	174	546	536	9.5	81	144.5	9.5	79	144.5	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
23	0.16	W	82	82	316	201	517	440	9.5	82	144.5	9.5	79	144.5	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
24	0.00		81	81	265	123	388	417	9.5	81	144.5	9.5	80	144.5	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
25	0.00	S	80	79	302	146	448	412	9.5	78	144.5	9.5	77	144.5	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
26	0.00		80	78	316	173	489	423	9.5	78	144.5	9.5	76	144.5	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
27	0.00	SE	79	77	313	182	495	430	9.5	77	144.5	9.5	75	144.5	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
28	0.00		80	78	336	207	543	444	9.5	77	144.5	9.5	77	144.5	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
29	0.00		79	79	338	166	504	426	9.5	79	144.5	9.5	77	144.5	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
30	0.00		80	76	327	160	487	456	9.5	78	144.5	9.5	77	144.5	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
31	0.00		80	77	330	209	539	467	9.5	79	144.5	9.5	78	144.5	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
TOTAL	0.81			TOTAL	10607	5445	16052	14254																
				AVERAG	342	176	518	460																
				MAXIMU	406	263	635	591																
				MINIMUM	265	105	388	412																

MEXIC 66 % OF TOTAL FLOW

U.S. = 34 % OF TOTAL FLOW

ULL TIM SERVICES				UTILITIES AND CHLORINE				PERSONNEL SERVICES AND EQUIPMENT UTILIZED OT ER THAN FULL TIME	
PERSONNEL		EQUIPMENT		CONTROL BUILDING				CLASSI ICATI ON	HRS THIS MONTH
CHIEF OPERATOR	1	90' D DGE AR SKC R	1	POWER CON MPTIO	682,00 , 000	K.W.H.		ELECTRICIAN	1
COMPLIANCE SPEC	1	PICKU 1/2 TON	3	$	51,308. 79			LABORERS	9
OPERAORS GRADE II	2	GRIT TRUCK	1	CHLO INE & ULTRAVIOLET DISINFECTION AREA				OVER TIME (OPERATORS)	72
OPERATORS GRADE I	0	WATER TRUCK	1		-0-	K W H.		MOTOR GRADER & OPERATO	0
LABORERS	4	BACK HOE	1	$	60.74			ROBBINS & INT'L ST. USAGE -0- KHW AMOUNT -0-	
MECHANIC	1			CHLORINE CONSU	E - 9,55 , 550	LBS			
ELECTRICIAN	1			SULPHUR D XIDE:	NOT AVAI ABLE	LBS.			
Page 2				UTILITY COSTS - WATER SERVICE	5014 67	SERVI E FROM / 31/94 TO 8/29/94			
July 1994				BILLING DATE:	6/22/94 TO 7/22/94 /94 ELEC TRIC				

PLANT EXCELLDANCE FOR MERCURY 7/14/94 DISCHARGED 0 08 MG/L - REPORT D TO EPA & A EQ

PML-6 DEPT FEET	PML-6 AERAT HOURS	PML-7 DEPT FEET	PML-7 AERATO HOURS	PML-8 DEPT FEET	PML-8 AERATO HOURS	D.O. MG/L CML-	D.O. MG/L CML-	D.O. MG/L EFFLUEN	pH RA	pH CML-	pH CML-	pH EFFLUEN	SUSPENDED SOLIDS MG/L RAW	SUSPENDED SOLIDS MG/L EFFLUEN	SETTLEABLE SOLIDS ML/L EFFLUENT	B O D. MG/L EFF	B O D. MG/L INFLUEN	TOTAL CHLORINE USED (POUNDS)	GRIT REMOVE	FECAL COLIFORM #	CHLORIN RESIDUA	UV1-UV2 HOURS	DATE
8 8	-0	8 8	-0-	8 8	-0-	3 6	4 3	5.3	7.4	7.4	7 4	7.4	155	20		37	136	500	5 C/Y	2	ND	192 192	1
8 8	-0	8 8	-0-	8.8	-0-	2.7	3 6	5.1	7.4	7.4	7 4	7.4						480		<1	* 0.21	192 192	2
8 8	-0	8 8	-0-	8.8	-0-	2 8	3.2	5 4	4.4	7.4	7.4	7.4						260		<1	ND	192 192	3
8 8	-0	8 8	-0-	8.8	-0-	3.6	3 4	5.0	7.3	7.3	7.4	7.4						300		<1	ND	192 192	4
8 8	-0-	8 8	-0-	8.8	-0-	3.2	4.1	4.3	6.6	6.6	7 0	7.0						280		6	ND	192 192	5
8 8	-0-	8 8	-0-	8.8	-0-	3.4	3.1	4.3	7.0	7.0	7.3	7.1						280		<1	ND	192 192	6
8 8	-0	8 8	-0-	8.8	-0-	4.3	4.2	5.3	6.9	6.9	7.2	7.0	+ 305	+ 18	* 5/950 ML	20	142	260	5 C/Y	<10	ND	192 192	7
8 8	-0-	8 8	-0-	8.8	-0-	4.4	4 0	4 0	6.8	6.8	7 0	6.9	+ 320	+ 12		66	239	260		10	ND	192 192	8
8 8	-0-	8 8	-0-	8.8	-0-	4.2	4 4	4.4	7.0	7.0	7 3	7.0						E-200		<1	ND	192 192	9
8 8	-0-	8 8	-0-	8.8	-0-	4.6	4.8	4.6	7.0	7.0	7.4	7.0						200		10	ND	192 192	10
8 8	-0-	8 8	-0-	8.8	-0-	3 4	3 3	3.5	7.2	7.2	7.3	7.2						300		<10	ND	192 192	11
8 8	-0-	8 8	-0-	8.8	-0-	3.2	4 4	3.9	7.2	7.2	7.3	7.3						280	5 C/Y	<1	ND	192 192	12
8 8	-0-	8 8	-0-	8.8	-0-	3.3	4.6	3.7	7.2	7.2	7.4	7.3						280		<1	ND	192 192	13
8 8	-0-	8 8	-0-	8.8	-0-	4.3	3.8	4.0	7.3	7.3	7.3	7.5	+ 198	+ 20	<0.5	13	83	260		8	ND	192 192	14
8 8	-0-	8 8	-0-	8.8	-0-	4.6	3.7	4.1	7.3	7.3	7.2	7.4	+ 164	+ 13		19	149	280		<10	0 03	192 192	15
8 8	-0-	8 8	-0-	8.8	-0-	4.1	4.5	6.2	7.6	7.6	7.0	7.0						220		10	0 00	192 192	16
8 8	-0-	8 8	-0-	8.8	-0-	4.8	4.6	4 3	7.3	7.3	7.8	7 5						300		70	0 01	192 192	17
8 8	-0-	8 8	-0-	8.8	-0-	3.5	4 4	4.8	7.3	7.3	7.7	7.5						300		30	0 01	192 192	18
8 8	-0-	8 8	-0-	8.8	-0-	5.4	5 2	4.4	7.5	7.5	7.7	7.6						E 220	5 C/Y	90	0 03	192 192	19
8.8	-0-	8 8	-0-	8.8	-0-	5.9	6.4	6.1	7.0	7.0	7.4	7.1						400		<10	0 02	192 192	20
8 8	-0-	8 8	-0-	8.8	-0-	5.2	6.0	4.7	6.7	6.7	7.3	7.1	+ 234	+ 8	<1/850 ML	24	168	360		<10	0 03	192 192	21
8 8	-0-	8 8	-0-	8.8	-0-	3.4	4.8	5.1	6.7	6.7	7.1	7.0	+ 150	+ 17		<1	104	400		<10	0 02	192 192	22
8 8	-0-	8 8	-0-	8.8	-0-	4.7	4.6	5.3	6.9	6.9	7.2	7.1						340		<10	0 04	192 192	23
8 8	-0-	8 8	-0-	8.8	-0-	5.0	5.7	5.2	6.8	6.8	7.1	7.0						360		<10	0 02	192 192	24
8 8	-0-	8 8	-0-	8.8	-0-	4.3	4.2	4 4	6 8	6.8	7 2	7.0						360	5 C/Y	<10	0 04	192 192	25
8 8	-0-	8 8	-0-	8.8	-0-	4.7	4.9	5 3	7.1	7.1	7 3	7 0						380		<10	0 02	192 192	26
8 8	-0	8 8	-0-	8.8	-0-	5 1	5 0	5 2	6.9	6.9	7 3	7.1						320		<10	0 00	192 192	27
8 8	-0	8 8	-0-	8.8	-0-	4.5	4 4	4.0	6.7	6.7	7 3	7.0	+ 144	+ 16	<1	24	132	E-210		<10	0 02	192 192	28
8 8	-0	8.8	-0-	8.8	-0-	3.3	3.7	4.2	6.6	6.6	7.1	6.9	+ 148	+ 11				360		<10	0 02	192 192	29
8 8	-0	8.8	-0-	8.8	-0-	3.7	3 9	4 4	6.9	6.9	7.2	7.0						E-200		<10	0 03	192 192	30
8.8	-0-	8 8	-0-	8.8	-0-	3.4	3 6	4.1	7.0	7.0	7 3	7.2						400		<10	0 02	192 192	31

TOTAL CL E -9,550 7.574 - EOMETRIC MEAN

\+ SPLIT SAMPLES AKEN ON 8/7/94, 8/14/14/94 & 8/21/94
FOR BOD-5 & T..S.S ON INFLUENT & EFFLUENT
RESULTS FOR ONLY T.S.S AVAILABLE 7/28/94 FOR INFLUENT &
EFFLUENT

CY = CUBIC YA ARD GRIT COMBIN ION OF BASINS AND GRIT CHAMBE
ND = NONE DETECTED
\# = MPN/100ML
M = MISSING DATA
* = EXCEEDANCE REPORTED TO E A/ADEQ

NOGALES INTERNATIONAL WASTEWATER TREATMENT PLANT

MONTHLY REPORT

PREPAR BY: RIC ARD L. ALDWELL, COMPLIANE SPECIALIST
APPROVED AS TO F RM BY: LINO VEGA, PLANT SUPERINTENDENT

CML COMPLETE MIX LAGOON
PML PARTIAL MIX LAGOON

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MONTH August 1994

	WEA	HER	TEMP	RATURE	FLOW	IN LITER	S PER SE	OND	CML-1			CML-2			PML-1		PML-2		ML-3		PML-4		ML-5	
DATE	RAIN FALL INCHES	WIND DIREC-TION	INFLOW	EFFLUEN	MEXICO	UNITED STATES	PLANT INFLOW	PLANT OUTFLO	DEPTH FEET	TEMPE-ATURE	AERAT HOURS	DEPT FEET	TEMPE-ATUR	AERAT HOURS	DEPT FEET	AERAT HOURS	DEPT FEET	AERAT HOURS	DEPT FEET	AERAT HOURS	DEPT FEET	AERAT HOURS	DEPT FEET	AERAT HOURS
1	0.00	SE	80	78	353	180	533	471	9.5	80	144.5	9.5	78	144.5	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
2	0.00		81	79	344	90	434	383	9.5	79	144.5	9.5	79	144.5	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
3	0.00		77	80	316	183	499	441	9.5	79	144.5	9.5	77	144.5	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
4	0.00	SW	78	80	259	377	636	562	9.5	80	144.5	9.5	78	144.5	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
5	0.10	W	76	79	231	264	495	438	9.5	77	144.5	9.5	76	144.5	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
6	0.00		81	76	270	219	489	432	9.5	77	144.5	9.5	76	144.5	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
7	0.00	SW	80	76	324	169	493	435	9.5	80	144.5	9.5	77	144.5	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
8	0.76	W	81	79	248	129	377	333	9.5	78	144.5	9.5	77	144.5	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
9	0.06		81	76	364	150	514	454	9.5	81	144.5	9.5	80	144.5	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
10	0.00	S	81	79	378	155	533	471	9.5	80	144.5	9.5	80	144.5	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
11	0.00		81	81	372	211	583	515	9.5	82	144.5	9.5	77	144.5	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
12	0.00		81	80	381	167	548	484	9.5	80	144.5	9.5	79	144.5	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
13	0.15	SW	82	81	386	169	555	490	9.5	80	144.5	9.5	80	144.5	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
14	0.25		81	80	361	190	551	487	9.5	80	144.5	9.5	79	144.5	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
15	0.18	W	81	82	321	165	486	430	9.5	85	144.5	9.5	81	144.5	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
16	T		79	77	372	164	536	471	9.5	77	144.5	9.5	77	144.5	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
17	0.01		80	75	358	168	526	466	9.5	75	144.5	9.5	75	144.5	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
18	0.00		80	82	358	182	540	476	9.5	81	144.5	9.5	82	144.5	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
19	0.00	S	79	76	392	202	594	497	9.5	76	144.5	9.5	76	144.5	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
20	0.00		80	77	372	190	562	509	9.5	77	144.5	9.5	77	144.5	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
21	0.90	SW	80	77	418	213	631	530	9.5	77	144.5	9.5	78	144.5	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
22	0.00		80	77	321	164	485	496	9.5	76	144.5	9.5	76	144.5	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
23	0.00	SE	79	77	321	169	490	435	9.5	77	144.5	9.5	77	144.5	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
24	0.00		81	77	324	168	492	437	9.5	76	144.5	9.5	75	144.5	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
25	0.49	W	79	78	353	180	533	455	9.5	77	144.5	9.5	76	144.5	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
26	0.30		80	79	355	184	539	496	9.5	77	144.5	9.5	77	144.5	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
27	0.00	SW	79	78	375	196	571	507	9.5	77	144.5	9.5	76	144.5	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
28	0.00		79	76	338	176	514	455	9.5	81	144.5	9.5	79	144.5	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
29	0.00		79	81	355	187	542	463	9.5	81	144.5	9.5	79	144.5	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
30	0.01		81	82	420	221	641	502	9.5	80	144.5	9.5	79	144.5	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
31	0.00	S	78	79	386	203	589	564	9.5	78	144.5	9.5	77	144.5	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
TOTAL	3.21			TOTAL	10726	5785	16511	14585																
				AVERAG	346.	187	533	471																
				MAXIMU	420	377	641	564																
				MINIMUM	231	90	377	333																

MEXIC 65 % OF TOTAL FLOW

U.S. = 35 % OF TOTAL FLOW

FULL TIME SERVICES			
PERSONNEL		EQUIPMENT	
CHIEF OPERATOR	1	90' D DGE AR SKC R	
COMPLIANCE SPEC.	1	PICKU 1/2 TON	
OPERAORS GRADE II	2	GRIT TRUCK	
OPERATORS, GRADE I	1	WATER TRUCK	
LABORERS	4	BACK HOE	
MECHANIC	1		
ELECTRICIAN	1		

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Aug 1994

UTILITIES AND CHLORINE

CONTROL BUILDING

1 POWER CON MPTIO 921,60 00 K W H.

1 $ 65,605.9 . 91

1 CHLO INE & ULTRAVIOLET DISINFECTION AREA

1 -0- K W.H.

1 $ 60.74

CHLORINE CONSU 10,000 0 LBS

SULPHUR D XIDE: 3,715 5 LBS.

UTILITY COSTS - WATER SERVICE
$ 5,014 6/ 7 5/31/94 - 8/24/9 / 24/94

BILLING DATE: 7/22/94 TO 8/23/9 23/94 EL EC.

PERSONNEL SERVICES AND EQUIPMENT UTILIZED OT ER THAN FULL TIME

CLASSI ICATI ON	HRS THIS MONTH
ELECTRICIAN	4
LABORERS	25
OVER TIME (OPERATORS)	57
MOTOR GRADER & OPERATO	0
ROBBINS & INT'L ST. USAGE 820 0 KHW AMOUNT 117. 0 ERVICE 8/05/94 TO 9/07/94	

PML-6 DEPT FEET	PML-6 AERAT HOURS	PML-7 DEPT FEET	PML-7 AERATO HOURS	PML-8 DEPT FEET	PML-8 AERATO HOURS	D.O. MG/L CML-	D.O. MG/L CML-	D.O. MG/L EFFLUEN	pH RA	pH CML-	pH CML-	pH EFFLUEN	SUSPENDED SOLIDS MG/L RAW	SUSPENDED SOLIDS MG/L EFFLUEN	SETTLEABLE SOLIDS ML/L EFFLUENT	B O.D MG/L EFF	B O.D MG/L INFLUEN	TOTAL CHLORINE USED (POUNDS)	GRIT REMOVE	FECAL COLIFORM #	UV 1 HOURS	UV-2 HOURS	DATE
8 8	-0-	8 8	-0-	8.8	-0-	3.0	3 5	4.6	7.0	7.4	7 3	7.3						M		<10	192	192	1
8 8	-0-	8 8	-0-	8.8	-0-	3.2	3.2	4.3	6.8	7.4	7.2	7.2						M		<10	192	192	2
8 8	-0-	8 8	-0-	8.8	-0-	4.5	5.0	4.6	6.7	7.3	7.3	6.9						280	5 C/Y	<10	192	192	3
8 8	-0-	8 8	-0-	8.8	-0-	4.6	4.2	4.3	6.9	7.4	7.2	7.1	210	6	0.5	21	170	300		<10	192	192	4
8 8	-0-	8.8	-0-	8.8	-0-	4.6	3.9	4.2	6.9	7.4	7.2	6.9						360		<10	192	192	5
8 8	-0-	8.8	-0-	8.8	-0-	4.7	4.4	4.7	6.8	7 4	7.3	7.1						360		<10	192	192	6
8 8	-0-	8 8	-0-	8.8	-0-	4.4	4.2	4.5	6.8	7.4	7.3	7.1						360		<10	192	192	7
8 8	-0-	8 8	-0-	8.8	-0-	4.8	5.1	4.7	6.6	7.2	7.1	6.9						360		<10	192	192	8
8 8	-0-	8 8	-0-	8,8	-0-	5.0	4 9	4.6	6.6	7.3	7 2	6.9						330		<10	192	192	9
8 8	-0-	8 8	-0-	8.8	-0-	4.6	4 6	4.7	6.6	7.3	7.2	6.8						350		<10	192	192	10
8 8	-0-	8 8	-0-	8.8	-0-	3.9	3 6	5.4	6.6	7.2	7 1	7.0	156	20	<1	23	149	360		<10	192	192	11
8 8	-0-	8 8	-0-	8.8	-0-	4.2	3.9	5.1	6.7	7.1	7 1	7.0						380		<10	192	192	12
8 8	-0-	8 8	-0-	8.8	-0-	3.6	4 6	5.4	6.8	7.2	7 2	7.0						360	5 C/Y	<10	192	192	13
8 8	-0	8 8	-0-	8.8	-0-	4.3	4.1	5.0	6.6	7.1	7.1	7.1						220		<10	192	192	14
8 8	-0-	8 8	-0-	8.8	-0-	4.6	4.9	5.4	6.6	7.3	7 2	7.0						340		<10	192	192	15
8 8	-0-	8 8	-0-	8.8	-0-	5.5	4 3	5 2	6.8	7.2	7 0	7.0						340		<10	192	192	16
8 8	-0-	8.8	-0-	8.8	-0-	5.0	3 8	4.4	6.9	7.3	7.2	7.1						340		<10	192	192	17
8 8	-0-	8.8	-0-	8.8	-0-	4.9	3.8	4.3	6.6	7.4	7.1	7.0	56	12	<1	16.3	119	360		<10	192	192	18
8 8	-0-	8 8	-0-	8.8	-0-	3.4	4.2	4.6	7.2	7.3	7 2	7.1	+ 196	+ 16		+ 24	+ 141	340	5 C/Y	<10	192	192	19
8 8	-0-	8 8	-0-	8.8	-0-	4.1	4.1	4.8	7.1	7 2	7 1	7.1						500		<10	192	192	20
8 8	-0-	8 8	-0-	8.8	-0-	4.2	4.2	4 9	7.1	7.2	7.1	7.1						280		<10	192	192	21
8 8	-0-	8 8	-0-	8.8	-0-	6.4	6 6	4 8	7.0	7.2	7.1	7.1						380		80	192	192	22
8 8	-0-	8 8	-0-	8.8	-0-	6.3	6.4	4.9	7.1	7.2	7.0	7.1						420		50	192	192	23
8 8	-0	8 8	-0-	8.8	-0-	4.2	4 1	3 9	6.8	7.3	7.1	6 8						360		40	192	192	24
8 8	-0-	8 8	-0-	8.8	-0-	4 5	4 3	4 9	6.8	7.4	7 3	6 9	266	18	0 5	53	122	300		40	192	192	25
8 8	-0-	8 8	-0-	8.8	-0-	4.3	4 2	4.2	6.7	7.3	7 3	6.8	+ 264	+ 5	+ <1		+ 166	320	5 C/Y	30	192	192	26
8 8	-0-	8 8	-0-	8.8	-0-	6.7	5 4	5.5	6.8	7.4	7.3	6.9						380		<10	192	192	27
8 8	-0-	8 8	-0-	8.8	-0-	4.2	4.6	4.8	6.8	7.4	7 4	7.1						340		<10	192	192	28
8 8	-0-	8 8	-0-	8.8	-0-	4.3	4.4	5 1	6.7	7.2	7 2	7.1						360		<10	192	192	29
8 8	-0	8 8	-0-	8.8	-0-	4.7	4 6	4.6	6.7	7.2	7 3	7 2	+ 192	+ 34	+ 4	+ 6	+ 190	360		<10	192	192	30
8 8	-0-	8 8	-0-	8.8	-0-	6.2	4 9	5.2	7.0	7.3	7 3	7.1	262	24	0.6	42	126	310		<10	192	192	31

TOTAL CL 10080 12 76 EOMETRIC MEAN

+ DUPLICATE SAMPLES

CY = CUBIC YA ARD GRIT COMBIN ION OF BASINS AND GRIT CHAMBE
ND = NONE DETECTED
# = MPN/100ML
M = MISSING DATA
* - EXCEEDANCE REPORTED TO E A/ADEQ

NOGALES INTERNATIONAL WASTEWATER TREATMENT PLANT

MONTHLY REPORT

PREPAR BY: RIC ARD L. ALDWELL, COMPLIAN E SPECIALIST
APPROVED AS TO F RM BY: LINO VEGA, PLANT SUPERINTENDENT

CML.COMPLETE MIX LAGOON
PML-PARTIAL MIX LAGOON

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MONTH: Sept. 1994

DATE	WEATHER: RAIN FALL INCHES	WEATHER: WIND DIREC-TION	TEMPERATURE: INFLOW	TEMPERATURE: EFFLUEN	FLOW IN LITERS PER SECOND: MEXICO	FLOW IN LITERS PER SECOND: UNITED STATES	FLOW IN LITERS PER SECOND: PLANT INFLOW	FLOW IN LITERS PER SECOND: PLANT OUTFLO
1	0.00	SE	78	79	335	206	541	490
2	0.00		78	79	330	209	539	477
3	1.00	W	80	78	417	239	656	563
4	0.20		81	79	361	205	566	527
5	0.30	SW	80	78	350	199	549	485
6	0.00		81	80	352	200	552	485
7	0.07		78	77	352	190	542	475
8	0.00	S	79	80	347	189	536	470
9	0.00	SE	79	81	364	192	556	475
10	0.00		79	80	358	200	558	482
11	0.00		79	81	381	216	597	487
12	0.00		80	80	364	207	571	513
13	0.00		80	80	355	207	562	486
14	0.00		78	76	361	207	568	480
15	0.00	SW	78	75	352	201	553	475
16	0.00		78	77	344	201	545	475
17	0.00		77	74	350	197	547	472
18	0.00	W	76	73	333	200	533	463
19	0.00		77	74	341	202	543	463
20	0.00	SW	78	75	338	194	532	457
21	0.06		75	72	347	197	544	466
22	0.00	SE	78	72	355	206	561	475
23	0.00		75	72	381	213	594	497
24	0.00		79	73	395	222	617	516
25	0.00		76	72	378	210	588	516
26	0.30	W	80	71	381	215	596	518
27	0.00		81	71	355	231	586	498
28	0.00	SE	76	73	367	225	592	497
29	0.00		76	75	350	231	581	491
30	0.00		75	73	350	225	575	476
31								
TOTAL	1.93			TOTAL	10744	6236	16980	14650
				AVERAG	358	208	566	488
				MAXIMU	417	239	656	563
				MINIMUM	330	189	532	457

DATE	CML-1 DEPTH FEET	CML-1 TEMPE-ATURE	CML-1 AERAT HOURS	CML-2 DEPT FEET	CML-2 TEMPE-ATUR	CML-2 AERAT HOURS	PML-1 DEPT FEET	PML-1 AERAT HOURS	PML-2 DEPT FEET	PML-2 AERAT HOURS	ML-3 DEPT FEET	ML-3 AERAT HOURS	PML 4 DEPT FEET	PML 4 AERAT HOURS	ML-5 DEPT FEET	ML-5 AERAT HOURS
1	9.5	79	144.5	9.5	77	144.5	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
2	9.5	79	144.5	9.5	78	144.5	9.2	-0-	8.8	21	8.5	24	8.8	24	8.8	-0-
3	9.5	78	144.5	9.5	78	144.5	9.2	-0-	8.8	21	[illegible]	24	8.8	24	8.8	-0-
4	9.5	78	144.5	9.5	78	144.5	9.2	-0-	8.8	21	8.8	24	8.8	24	8.8	-0-
5	9.5	77	144.5	9.5	77	144.5	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
6	9.5	81	144.5	9.5	79	144.5	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
7	9.5	75	144.5	9.5	75	144.5	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
8	9.5	78	144.5	9.5	77	144.5	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
9	9.5	81	144.5	9.5	78	144.5	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
10	9.5	81	144.5	9.5	78	144.5	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	0-
11	9.5	80	144.5	9.5	78	144.5	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
12	9.5	78	144.5	9.5	78	144.5	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
13	9.5	79	144.5	9.5	79	144.5	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
14	9.5	77	144.5	9.5	77	144.5	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
15	9.5	75	144.5	9.5	73	144.5	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
16	9.5	77	144.5	9.5	76	144.5	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
17	9.5	72	144.5	9.5	72	144.5	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
18	9.5	73	144.5	9.5	72	144.5	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
19	9.5	77	144.5	9.5	73	144.5	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
20	9.5	75	144.5	9.5	75	144.5	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
21	9.5	72	144.5	9.5	72	144.5	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
22	9.5	72	144.5	9.5	72	144.5	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
23	9.5	72	144.5	9.5	72	144.5	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
24	9.5	72	144.5	9.5	72	144.5	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
25	9.5	73	144.5	9.5	73	144.5	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
26	9.5	73	144.5	9.5	73	144.5	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
27	9.5	73	144.5	9.5	73	144.5	9.2	0-	8.8	24	8.8	24	8.8	24	8.8	-0-
28	9.5	73	144.5	9.5	73	144.5	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
29	9.5	73	144.5	9.5	72	144.5	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
30	9.5	73	144.5	9.5	72	144.5	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
31	9.5	79	144.5	9.5	73	144.5	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-

MEXIC 63 % OF TOTAL FLOW

U.S. = 37 % OF TOTAL FLOW

FULL TIME SERVICES				UTILITIES AND CHLORINE				PERSONNEL SERVICES AND EQUIPMENT UTILIZED OTHER THAN FULL TIME	
PERSONNEL		EQUIPMENT		CONTROL BUILDING				CLASSIFICATION	HRS THIS MONTH
CHIEF OPERATOR	1	90' D DGE AR SKC R	1	POWER CONSUMPTION	889,200 0	K.W.H.			
COMPLIANCE SPEC	1	PICKUP 1/2 TON	3	$	63,563. 8			ELECTRICIAN	25
OPERATORS GRADE II	2	GRIT TRUCK	1	CHLORINE & ULTRAVIOLET DISINFECTION AREA				LABORERS	85
OPERATORS, GRADE I	1	WATER TRUCK	1		-0-	K.W.H.		OVER TIME (OPERATORS)	35
LABORERS	4	BACK HOE	1	$	60.74			MOTOR GRADER & OPERATOR	0
MECHANIC	++ 1	84 FORD CROWN VIC.	1	CHLORINE CONSU	10,410 0	LBS		ROBBINS & INT'L ST. USAGE -0- KHW AMOUNT NONE RECEIVE	
ELECTRICIAN	1			SULPHUR DIOXIDE:	4,910 0	LBS			
++ POSITION VACANT SEPT 10, 1994				UTILITY COSTS WATER SERVICE	1,193.13	8/24/94 TO 9/14/ / 14/94			
Page 2 Sept 1994				BILLING DATE:	/23/94 TO 9/23/94	94 FOR	LEC.		

PML-6 DEPT FEET	PML-6 AERAT HOURS	PML-7 DEPT FEET	PML-7 AERATO HOURS	PML-8 DEPT FEET	PML-8 AERATO HOURS	D.O. MG/L CML-	D.O. CML-	D.O. EFFLUEN	pH RA	pH CML-	pH CML-	pH EFFLUEN	SUSPENDED SOLIDS MG/L RAW	SUSPENDED SOLIDS EFFLUEN	SETTLEABLE SOLIDS ML/L EFFLUENT	B O D MG/L EFF	B O D INFLUEN	TOTAL CHLORINE USED (POUNDS)	GRIT REMOVE	FECAL COLIFORM #	UV 1 HOURS	UV-2 HOURS	DATE
8.8	-0-	8.8	-0-	8.8	-0-	5.0	4.7	5.1	7.0	7.3	7.3	7.1						320		<10	192	192	1
8.8	-0-	8.8	-0-	8.8	-0-	4.0	4.3	4.1	6.6	7.2	7.2	6.8						360		30	192	192	2
8.8	-0-	8.8	-0-	8.8	-0-	4.5	4.1	4.3	6.8	7.3	7.2	6.7						370		80	192	192	3
8.8	-0-	8.8	-0-	8.8	-0-	4.4	4.2	4.2	6.7	7.4	7.3	6.8						310		50	192	192	4
8.8	-0-	8.8	-0-	8.8	-0-	4.5	4.1	4.3	6.8	7.4	7.2	6.9						390		<10	192	192	5
8.8	-0-	8.8	-0-	8.8	-0-	5.0	5.9	4.7	6.8	7.5	7.4	6.9						210		<10	192	192	6
8.8	-0-	8.8	-0-	8.8	-0-	4.9	4.6	4.5	6.7	7.4	7.2	6.8						360		10	192	192	7
8.8	-0-	8.8	-0-	8.8	-0-	3.6	3.9	4.5	6.6	7.1	7.0	6.8	36	1	<1	18	213	280		10	192	192	8
8.8	-0-	8.8	-0-	8.8	-0-	4.6	4.3	4.5	6.6	7.4	7.3	6.8						360		<10	192	192	9
8.8	-0-	8.8	-0-	8.8	-0-	4.5	4.1	4.3	6.8	7.4	7.3	6.8						300		<10	192	192	10
8.8	-0-	8.8	-0-	8.8	-0-	4.4	4.3	4.4	6.8	7.3	7.2	6.9						360	40 C/Y	<10	192	192	11
8.8	-0-	8.8	-0-	8.8	-0-	4.3	4.2	4.5	6.9	7.3	7.1	7.0						330		50	192	192	12
8.8	-0-	8.8	-0-	8.8	-0-	4.6	4.5	4.7	6.9	7.3	7.2	7.0						290		<10	192	192	13
8.8	-0-	8.8	-0-	8.8	-0-	4.9	4.8	5.0	7.0	7.4	7.3	7.2						240		<10	192	192	14
8.8	-0-	8.8	-0-	8.8	-0-	2.8	4.9	5.1	6.8	7.1	7.3	6.9	158	5	<0.5	<10	55	460		<10	192	192	15
8.8	-0	8.8	-0-	8.8	-0-	4.5	5.8	7.0	6.6	7.3	7.2	6.8	84	5	<0.5	27	148	340		20	192	192	16
8.8	-0-	8.8	-0-	8.8	-0-	5.0	5.6	4.6	6.9	7.4	7.4	7.0						360		<10	192	192	17
8.8	-0-	8.8	-0-	8.8	-0-	5.5	5.8	5.7	6.9	7.4	7.4	7.0						320		<10	192	192	18
8.8	-0-	8.8	-0-	8.8	-0-	5.1	4.9	6.4	6.7	7.4	7.3	7.1						340		<10	192	192	19
8.8	-0-	8.8	-0-	8.8	-0-	4.1	4.7	5.6	6.9	7.2	7.4	7.1	144				77	340		<10	192	192	20
8.8	-0-	8.8	-0-	8.8	-0-	4.7	5.0	5.6	7.0	7.3	7.3	6.9						360		<10	192	192	21
8.8	-0-	8.8	-0-	8.8	-0-	5.6	5.8	6.4	6.8	7.3	7.3	7.0	120	12	<0.5	13	127	440		<10	192	192	22
8.8	-0	8.8	-0-	8.8	-0-	5.2	4.9	6.5	7.0	7.2	7.3	7.0	160	11	<0.5	27	175	360		<10	192	192	23
8.8	-0-	8.8	-0-	8.8	-0-	5.3	4.7	6.5	7.0	7.3	7.3	7.1						340		<10	192	192	24
8.8	-0	8.8	-0-	8.8	-0-	5.4	4.9	6.4	7.1	7.2	7.2	7.1						400		<10	192	192	25
8.8	-0-	8.8	-0-	8.8	-0-	3.6	3.7	6.3	6.9	7.2	7.3	7.1						360		<10 & <100	192	192	26
8.8	-0-	8.8	-0-	8.8	-0-	3.2	3.6	5.2	6.9	7.1	7.2	7.2						360		20	192	192	27
8.8	-0-	8.8	-0-	8.8	-0-	5.1	4.4	4.9	6.8	7.4	7.3	7.0						380		<10	192	192	28
8.8	-0-	8.8	-0-	8.8	-0-	4.8	4.1	4.4	6.8	7.2	7.2	6.9	32	4	<0.5	21	205	360		<10	192	192	29
8.8	-0-	8.8	-0-	8.8	-0-	4.7	4.3	5.2	6.7	7.1	7.3	6.8						360		<10	192	192	30
																					192	192	31
																	TOTAL CL	10410		13 85 - GEOMETRIC MEAN			

CY = CUBIC YARD GRIT COMBINATION OF BASINS AND GRIT CHAMBE
ND = NONE DETECTED
# = MPN/100ML
M - MISSING DATA
* = EXCEEDANCE REPORTED TO E A/ADEQ

NOGALES INTERNATIONAL WASTEWATER TREATMENT PLANT

MONTHLY REPORT

PREPAR BY: RIC ARD L. ALDWELL, COMPLIAN E SPECIALIST
APPROVED AS TO F RM BY: LINO VEGA, PLANT SUPERINTENDENT

CML:COMPLETE MIX LAGOON
PML:PARTIAL MIX LAGOON

Page 1

MONTH: October 1994

	WEA	HER	TEMP	RATURE	FLOW	IN LITER	S PER SE	OND	CML-1			CML-2			PML-1		PML-2		ML 3		PML 4		ML-5	
DATE	RAIN FALL INCHES	WIND DIREC-TION	INFLOW	EFFLUEN	MEXICO	UNITED STATES	PLANT INFLOW	PLANT OUTFLO	DEPTH FEET	TEMPE-ATURE	AERAT HOURS	DEPT FEET	TEMPE-ATUR	AERAT HOURS	DEPT FEET	AERAT HOURS	DEPT FEET	AERAT HOURS	DEPT FEET	AERAT HOURS	DEPT FEET	AERAT HOURS	DEPT FEET	AERAT HOURS
1	0.00	SE	75	73	342	198	573	447	9.5	75	145	9.5	73	145	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
2	0.05	SW	75	73	342	213	555	448	9.5	77	145	9.5	75	145	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
3	0.02		76	69	369	208	577	456	9.5	73	145	9.5	73	145	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
4	0.00		74	72	359	201	560	462	9.5	73	145	9.5	72	145	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
5	0.00	S	75	71	336	201	538	435	9.5	76	145	9.5	73	145	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
6	0.00		73	69	319	218	538	438	9.5	72	145	9.5	70	145	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
7	0.00		72	68	317	214	531	448	9.5	69	145	9.5	68	145	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
8	0.00		71	67	317	224	541	459	9.5	67	145	9.5	67	145	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
9	0.00		70	67	302	215	517	443	9.5	68	145	9.5	68	145	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
10	0.00		73	66	320	220	540	448	9.5	68	145	9.5	66	145	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
11	0.00	SW	75	64	381	211	592	472	9.5	65	145	9.5	65	145	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
12	0.00		76	65	418	216	634	518	9.5	68	145	9.5	69	145	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
13	0.00		76	66	358	275	633	518	9.5	69	145	9.5	70	145	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
14	0.00		72	66	371	261	633	526	9.5	69	145	9.5	68	145	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
15	0.00		70	64	376	252	628	539	9.5	66	145	9.5	64	145	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
16	0.05	W	69	63	374	251	625	531	9.5	66	145	9.5	65	145	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
17	0.01	SW	71	66	380	267	647	531	9.5	70	145	9.5	68	145	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
18	0.00		69	63	399	269	668	553	9.5	63	145	9.5	63	145	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
19	0.00	S	70	63	387	260	646	552	9.5	63	145	9.5	63	145	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
20	0.00		70	63	367	254	621	533	9.5	65	145	9.5	64	145	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
21	0.00		70	63	378	244	621	518	9.5	64	145	9.5	64	145	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
22	0.00		70	63	365	246	611	514	9.5	63	145	9.5	64	145	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
23	0.00	SE	70	63	362	243	606	481	9.5	62	145	9.5	64	145	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
24	0.00		68	64	363	250	613	511	9.5	69	145	9.5	68	145	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
25	0.00		73	67	378	248	627	526	9.5	67	145	9.5	69	145	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
26	0.00		72	67	384	256	639	543	9.5	68	145	9.5	66	145	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
27	0.00		72	65	386	238	624	540	9.5	64	145	9.5	64	145	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
28	0.00	SW	70	64	388	241	629	533	9.5	65	145	9.5	64	145	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
29	0.00		69	63	385	238	623	534	9.5	64	145	9.5	64	145	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
30	0.00		70	63	370	216	586	505	9.5	64	145	9.5	64	145	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
31	0.00		70	64	388	215	603	513	9.5	65	145	9.5	65	145	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
TOTAL	0.13			TOTAL	11313	7263	18575	15474																
				AVERAG	365	234	599	499																
				MAXIMU	418	275	668	553																
				MINIMUM	302	198	517	435																

MEXIC 61 % OF TOTAL FLOW

U.S. = 39 % OF TOTAL FLOW

ULL TIM SERVICES					UTILITIES AND CH HLORINE				PERSONNEL SERVICES AND EQUIPMENT UTILIZED OT ER THAN FULL TIME	
PERSONNEL		EQUIPMENT			CONTROL BUILDING				CLASSI ICATI ON	HRS THIS MONTH
CHIEF OPERATOR	1	90' D DGE AR SKC R	1	POWER CON MPTIO	817,200 0	K.W.H.				
COMPLIANCL SPEC	1	PICKU 1/2 TON	3	$	-58,704.3 1				ELECTRICIAN	10
OPFRAORS. GRADE II	2	GRIT TRUCK	1	CHLO INE & ULTRAVIOLET DISINFECTION AREA					LABORERS	37
OPERATORS GRADE I	1	WATER TRUCK	1		-0-	K.W.H.			OVER TIME (OPERATORS)	36
LABORERS	4	BACK HOE	1	$	60.74				MOTOR GRADER & OPERATO	0
MECHANIC	0	84' FORD CROWN VIC.	1	CHLORINE CONSU	10,180 0	LBS			ROBBINS & INT'L ST. USAGE 735 KHW AMOUNT $106 20 SVC. FROM 10/7/94 T TO 1 /7/94	
ELECTRICIAN	1			SULPHUR D XIDE	4,147 7	LBS.				
				UTILITY COSTS - WATER SERVICE	$2,011.76					
Page 2										
Oct 1994				BILLING DATE:	9/26/94 TO 10/21/9 1/94 ELE C.					

PML-6		PML-7		PML-8		D.O MG/L			p H				SUSPENDED SOLIDS MG/L		SETTLEABLE SOLIDS ML/L	B O D. MG/L		TOTAL CHLORINE					
DEPT FEET	AERAT HOURS	DEPT FEET	AERATO HOURS	DEPT FEET	AERATO HOURS	CML-	CML-	EFFLUEN	RA	CML-	CML-	EFFLUEN	RAW	EFFLUEN	EFFLUENT	EFF	INFLUEN	USED (POUNDS)	GRIT REMOVE	FECAL COLIFORM #	UV 1 HOURS	UV 2 HOURS	DATE
8 8	-0	8 8	-0-	8.8	-0-	4.5	4 1	5.6	6.8	7.1	7.3	6 7						380	M	<10	192	192	1
8 8	-0	8 8	-0-	8.8	-0-	4.7	4 3	5.3	6.8	7.1	7 2	6.9						380	"	<10	192	192	2
8 8	-0	8 8	-0-	8.8	-0-	5.0	6.0	6.4	7.1	7.2	7.3	7.1						280	"	<10	192	192	3
8 8	-0	8 8	0-	8.8	-0-	4.3	4.1	5.1	6.6	7.1	7 1	6 8						300	"	<10	192	192	4
8 8	-0	8 8	0-	8 8	-0-	5.2	4 4	4 7	6 6	7 3	7 2	6 8						360	"	40	192	192	5
8 8	-0	8 8	0-	8.8	-0-	4.0	3 7	5.3	6.8	7.2	7 0	6 7	32	11	<0 5	9	123	260	"	<10	192	192	6
8 8	-0-	8 8	-0-	8 8	-0-	4.0	4 6	6.1	6.8	7.1	7 0	7.0	155	6	<0.5	20	155	370	"	<2	192	192	7
8 8	-0	8 8	-0-	8.8	-0-	4.5	4 3	6.5	6.9	7.0	7 0	6 8						370	"	<2	192	192	8
8 8	-0	8 8	-0-	8.8	-0-	4.6	4 5	6.3	6.9	7.1	7 1	6.9						320	"	<2	192	192	9
8 8	-0	8.8	-0-	8.8	-0-	4.5	4.7	4.7	6.7	7.2	7 2	6.8						400	"	7	192	192	10
8 8	-0	8 8	-0-	8.8	-0-	4.7	4 3	5.8	6.9	7.1	7.1	6.5						400	"	<2	192	192	11
8 8	-0	8 8	-0-	8.8	-0-	4.2	4.1	5.7	7.0	7.1	7.2	7.0						310	"	<2	192	192	12
8 8	-0-	8 8	-0-	8.8	-0-	4.1	4.6	5.3	7.0	7.2	7 1	7 1	162	14	<0.5	16	134	350	"	<2	192	192	13
8 8	-0-	8 8	-0-	8.8	-0-	3.7	5.3	5.5	6.9	7.2	7 2	7.0						310	"	2	192	192	14
8 8	-0-	8 8	-0-	8.8	-0-	4.5	5.0	5.6	6.9	7.3	7 3	7.0						340	"	<2	192	192	15
8 8	-0	8 8	-0-	8 8	-0-	4.4	5.5	5.3	7.0	7.2	7.3	7.0						360	"	<2	192	192	16
8 8	-0-	8.8	-0-	8.8	-0-	3.9	5.9	6.6	6.8	7.2	7 2	6.9						360		<2	192	192	17
8 8	-0-	8 8	-0-	8.8	-0-	6.4	6 9	7.2	7.0	7.2	7.2	7.0						440	"	<2	192	192	18
8 8	-0-	8 8	-0-	8.8	-0-	6.1	5 8	6.3	7.0	7.2	7 2	7.0						400	"	4	192	192	19
8 8	-0-	8 8	-0-	8.8	-0-	6.2	6.9	6.2	7.1	7.3	7 3	7.0						370	"	<2	192	192	20
8 8	-0	8 8	-0-	8.8	-0-	6.8	5 9	6.2	7.0	7.3	7 3	7.0	145	8	<0.5	11	90	350	"	<2	192	192	21
8 8	-0-	8 8	-0-	8.8	-0-	5.9	5.8	6.1	7.0	7.3	7 3	7.0						440	"	<2	192	192	22
8 8	-0-	8 8	-0-	8.8	-0-	5.6	5 7	6.0	7.1	7.3	7.2	7.1						190	"	50	192	192	23
8 8	-0-	8 8	-0-	8.8	-0-	2.4	2 5	7.0	7.1	7 2	7 2	7.1						350	"	2	192	192	24
8 8	-0-	8 8	0-	8.8	-0-	4.7	3 8	5 1	6 5	7 1	7 1	7 0						270	"	<2	192	192	25
8 8	-0-	8 8	-0-	8.8	-0-	4.8	4 5	5.3	6 6	7.1	7 1	6.9	202	16	<0.5	*159	206	250	"	15	192	192	26
8 8	-0-	8 8	-0-	8.8	-0-	6.3	5 0	6.2	6.8	7.1	7 2	7.0						280	"	<2	192	192	27
8 8	-0-	8.8	-0-	8.8	-0-	4.6	5 0	7.4	6.8	7.1	7 1	6 9						280	"	<2	192	192	28
8 8	-0-	8 8	-0-	8.8	-0-	4.8	5 1	7.6	6.7	7.0	7 1	6 8						280	"	<2	192	192	29
8 8	-0-	8 8	-0-	8.8	-0-	5.0	4 7	7.8	6.8	7.1	7 1	6 9						260	"	2	192	192	30
8 8	-0	8 8	-0-	8.8	-0-	5.8	5 2	7.4	6 9	7.2	7.2	6.8						260	M	<2	192	192	31

TOTAL CL. 10,180 3 58 EOME TRIC MEAN

CY = CUBIC YA ARD GRIT COMBIN ION OF BASINS AND GRIT CHAMBE
ND = NONE DETECTED
# = MPN/100ML
M = MISSING DATA
* = EXCE DANCE REPORTED TO E VADEQ

NOGALES INTERNATIONAL WASTEWATER TREATMENT PLANT

MONTHLY REPORT

PREPAR BY: RIC ARD L. ALDWELL, COMPLIANE SPECIALIST
APPROVED AS TO F RM BY: LINO VEGA, PLANT SUPERINTENDENT

CML:COMPLETE MIX LAGOON
PML:PARTIAL MIX LAGOON

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MONTH: Nov. 1994

	WEA	HER	TEMP	RATURE	FLOW	IN LITER	S PER SE	OND	CML-1			CML-2			PML-1		PML-2		ML-3		PML-4		ML-5	
DATE	RAIN FALL INCHES	WIND DIREC-TION	INFLOW	EFFLUEN	MEXICO	UNITED STATES	PLANT INFLOW	PLANT OUTFLO	DEPTH FEET	TEMPE ATURE	AERAT HOURS	DEPT FEET	TEMPE ATUR	AERAT HOURS	DEPT FEET	AERAT HOURS	DEPT FEET	AERAT HOURS	DEPT FEET	AERAT HOURS	DEPT FEET	AERAT HOURS	DEPT FEET	AERAT HOURS
1	0.00	SW	69	62	403	211	615	516	9.5	65	144.5	9.5	65	144.5	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
2	0.00		70	64	399	223	622	532	9.5	68	144.5	9.5	67	144.5	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
3	0.00		69	64	415	221	636	537	9.5	64	144.5	9.5	64	144.5	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
4	0.07	W	70	64	421	200	621	545	9.5	64	144.5	9.5	64	144.5	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
5	0.00		68	61	396	222	618	524	9.5	62	144.5	9.5	61	144.5	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
6	0.00	SW.	69	60	384	215	598	514	9.5	62	144.5	9.5	61	144.5	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
7	0.00		68	61	421	213	634	543	9.5	63	144.5	9.5	62	144.5	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
8	0.08		69	61	425	220	645	555	9.5	64	144.5	9.5	63	144.5	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
9	0.00		70	61	401	228	629	546	9.5	64	144.5	9.5	62	144.5	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
10	0.00	SE	70	61	375	219	594	513	9.5	63	144.5	9.5	61	144.5	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
11	0.10		70	61	590	230	819	596	9.5	62	144.5	9.5	61	144.5	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
12	2.75	E	69	61	630	316	946	782	9.5	61	144.5	9.5	62	144.5	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
13	0.35		68	61	493	220	714	628	9.5	60	144.5	9.5	62	144.5	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
14	0.38		69	60	450	226	676	577	9.5	M	144.5	9.5	M	144.5	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
15	0.00	S	67	61	459	208	666	564	9.5	63	144.5	9.5	63	144.5	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
16	0.00		66	59	486	206	692	597	9.5	61	144.5	9.5	61	144.5	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
17	0.00	SW	66	59	455	208	664	579	9.5	61	144.5	9.5	61	144.5	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
18	0.00		66	59	462	214	677	570	9.5	60	144.5	9.5	59	144.5	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
19	0.00		66	57	461	206	667	571	9.5	58	144.5	9.5	57	144.5	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
20	0.00		66	55	436	197	633	560	9.5	56	144.5	9.5	56	144.5	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
21	0.00		68	62	474	199	673	570	9.5	62	144.5	9.5	59	144.5	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
22	0.00		67	57	484	200	685	590	9.5	59	144.5	9.5	58	144.5	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
23	0.12	W	68	61	487	208	695	601	9.5	64	144.5	9.5	63	144.5	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
24	0.00		66	61	479	198	677	582	9.5	62	144.5	9.5	62	144.5	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
25	0.00		67	62	484	203	688	586	9.5	63	144.5	9.5	64	144.5	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
26	0.00	SW	66	60	469	205	674	578	9.5	61	144.5	9.5	61	144.5	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
27	0.00		64	57	452	193	645	569	9.5	57	144.5	9.5	57	144.5	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
28	0.00		63	54	451	203	654	569	9.5	55	144.5	9.5	55	144.5	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
29	0.00		63	53	454	218	672	580	9.5	55	144.5	9.5	55	144.5	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
30	0.00		63	51	418	235	653	583	9.5	53	144.5	9.5	52	144.5	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
31																								
TOTAL	3.85			TOTAL	13615	6465	20080	17157																
				AVERAG	454	216	669	572																
				MAXIMU	630	316	946	782																
				MINIMUM	375	193	594	513																

MEXIC 68 % OF TOTAL FLOW

U.S. = 32 % OF TOTAL FLOW

FULL TIME SERVICES					UTILITIES AND CHLORINE				PERSONNEL SERVICES AND EQUIPMENT UTILIZED OTHER THAN FULL TIME	
PERSONNEL		EQUIPMENT			CONTROL BUILDING				CLASSIFICATION	HRS THIS MONTH
CHIEF OPERATOR	1	90' DODGE AR SKC R	1	POWER CONSUMPTION	763,200	0	K W H.		ELECTRICIAN (OVERTIME)	8
COMPLIANCE SPEC.	1	PICKUP 1/2 TON	3	$	56,685 2	8			LABORERS (OVERTIME)	70
OPERATORS, GRADE II	2	GRIT TRUCK	1	CHLORINE & ULTRAVIOLET DISINFECTION AREA					OVER TIME (OPERATORS)	76
OPERATORS GRADE I	1	WATER TRUCK	1		-0-		K W H.		MOTOR GRADER & OPERATO	0
LABORERS	4	BACK HOE	1	$	60.74				ROBBINS & INT'L ST USAGE 713 KHW AMOUNT 103 33 SVC. 11/7/94 TO 2/7/94	
MECHANIC	1	84' FORD CROWN VIC.	1	CHLORINE CONSU	8,248	8	LBS			
ELECTRICIAN	0			SULPHUR DIOXIDE	3,6	4	LBS.			
				UTILITY COSTS - WATER SERVICE	$ 1,756 85	5 SVC 10/17/94 TO 11/1		4 5/94		
Page 2				SERVICE DATE	10/24/94 TO 11/21/	21/94 EL		EC.		
Nov 1994										

PML-6 DEPT FEET	PML-6 AERAT HOURS	PML-7 DEPT FEET	PML-7 AERATO HOURS	PML-8 DEPT FEET	PML-8 AERATO HOURS	D.O. MG/L CML-	D.O. MG/L CML-	EFFLUEN	pH RA	pH CML-	pH CML-	pH EFFLUEN	SUSPENDED SOLIDS MG/L RAW	SUSPENDED SOLIDS MG/L EFFLUEN	SETTLEABLE SOLIDS ML/L EFFLUENT	B O D MG/L EFF	B O D MG/L INFLUEN	TOTAL CHLORINE USED (POUNDS)	GRIT REMOVE	FECAL COLIFORM #	UV 1 HOURS	UV-2 HOURS	DATE
8 8	-0	8 8	-0-	8.8	-0-	4.3	4 2	6.8	7.2	7.2	7 2	6.9						260	M	2	192	192	1
8 8	-0-	8 8	-0-	8.8	-0-	4.8	5 0	7.1	7.2	7.1	7 2	7.0						240	M	2	192	192	2
8 8	-0-	8 8	-0-	8.8	-0-	6.7	6 8	6.7	7.1	7.3	7.2	7.1	160	10	<0.5	10	118	260	M	2	192	192	3
8 8	-0-	8 8	-0-	8.8	-0-	6.6	5.6	6.8	7.1	7.2	7 2	7.1						280	M	2	192	192	4
8 8	-0-	8 8	-0-	8.8	-0-	6.2	5.3	6.4	6 7	7.2	7 1	6.8						260	M	2	192	192	5
8 8	-0-	8 8	-0-	8.8	-0-	5.8	5 7	7.3	6.7	7.0	7 0	6.7						270	M	2	192	192	6
8 8	-0-	8 8	-0-	8.8	-0-	6.3	5.7	7.1	6.8	7.2	7.1	6.7						250	M	2	192	192	7
8 8	-0-	8 8	-0-	8.8	-0-	6.2	5.3	7.6	6 8	7.0	7 0	6.8						160	M	2	192	192	8
8 8	-0-	8 8	-0-	8.8	-0-	5.5	5.4	7.3	6 8	7.0	7 0	6.8						330	M	2	192	192	9
8 8	-0-	8.8	-0-	8.8	-0-	53.0	5 3	7.1	6 8	7.0	7.0	6.8	160	16	<0 5	17	149	250	M	2	192	192	10
8 8	-0-	8 8	-0-	8.8	-0-	5.2	5.4	7.2	6.8	7.1	7.0	6.7						280	M	2	192	192	11
8 8	-0-	8 8	-0-	8.8	-0-	5.5	5.7	7.1	6.8	7.0	7 0	6.9						320	M	50	192	192	12
8 8	-0-	8 8	-0-	8.8	-0-	5.1	5.3	7.3	6.9	7.1	7 0	6.8						220	M	2	192	192	13
8 8	-0-	8 9	-0-	8.8	-0-	M	M	6.4	6.1	M	M	6.8						300	M	2	192	192	14
8 9	-0-	8.8	-0-	8.8	-0-	4.8	5.1	5.1	6.6	7.1	7.1	6.8						280	M	2	192	192	15
8 8	-0-	8 8	-0-	8.8	-0-	6.4	6.1	5.3	6.8	7.2	7 1	6.8						240	M	2	192	192	16
8 8	-0	8 8	-0-	8.8	-0-	4.7	5.1	6.0	6.9	7.1	7.1	6.9	172	9	<0.5	<10	137	260	M	2	192	192	17
8 8	-0-	8 8	-0-	8.8	-0-	6.3	6.0	5.3	6.7	7 3	7.2	6.9						280	M	2	192	192	18
8 8	-0-	8 8	-0-	8.8	-0-	6.5	6.3	6.1	7.1	7.2	7.2	6.8						300	M	2	192	192	19
8 8	-0-	8 8	-0-	8.8	-0-	5.3	5.4	6.0	7 2	7.0	7.1	6.6						300	M	2	192	192	20
8 8	-0-	8.8	-0-	8.8	-0-	5.8	5.4	5.9	7.2	7.2	7 1	6.8						300	M	23	192	192	21
8 8	-0-	8 8	-0-	8.8	-0-	5.4	5.1	5.8	7.1	7.1	7 1	6.9						288	M	2	192	192	22
8 8	-0-	8 8	-0-	8.8	-0-	5.7	6 4	6 9	6 6	7.1	7 1	6.8	175	8	<0.5	17	132	280	M	2	192	192	23
8 8	-0-	8 8	-0-	8.8	-0-	7.5	7.8	6 2	6 9	7.3	7 3	6.8						260	M	2	192	192	24
8 8	-0-	8 8	-0-	8.8	-0-	7.4	7 0	6.3	6 9	7.2	7 2	6 7						290	M	4	192	192	25
8 8	-0	8 8	0-	8.8	-0-	7.6	7.7	8.3	7 0	7.4	7 3	7.0						290	M	2	192	192	26
8 8	-0-	8 8	-0-	8.8	-0-	6.4	5.8	7.1	7 0	7.4	7 4	7.1						280	M	4	192	192	27
8 8	-0-	8 8	-0-	8.8	-0-	7.0	6 9	6.6	6 6	7.3	7 3	6.8						300	M	2	192	192	28
8 8	-0-	8 8	-0-	8.8	-0-	7.2	6 6	6.3	6 6	7.1	7 2	6.9						300	M	8	192	192	29
8 8	-0-	8 8	-0-	8.8	-0-	6.8	5 3	7.2	6.8	7 0	7 0	7.0	144	16	<0.5	15	130	300	M	4	192	192	30
																							31
																TOTAL CL		8248		2 /1 -	GEOMETRIC MEAN		

CY = CUBIC YARD GRIT COMBINATION OF BASINS AND GRIT CHAMBER
ND = NONE DETECTED
# = MPN/100ML
M = MISSING DATA
* = EXCEEDANCE REPORTED TO EPA/ADEQ

NOGALES INTERNATIONAL WASTEWATER TREATMENT PLANT

MONTHLY REPORT

PREPAR BY: RIC ARD L. ALDWELL, COMPLIANE SPECIALIST
APPROVED AS TO F RM BY: LINO VEGA, PLANT SUPERINTENDENT

CML:COMPLETE MIX LAGOON
PML:PARTIAL MIX LAGOON

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MONTH Dec 1994

	WEA	HER	TEMP	RATURE	FLOW	IN LITER	S PER SE	OND	CML-1			CML-2			PML-1		PML-2		ML 3		PML 4		ML-5	
DATE	RAIN FALL INCHES	WIND DIREC-TION	INFLOW	EFFLUEN	MEXICO	UNITED STATES	PLANT INFLOW	PLANT OUTFLO	DEPTH FEET	TEMPE-ATURE	AERAT HOURS	DEPT FEET	TEMPE-ATUR	AERAT HOURS	DEPT FEET	AERAT HOURS	DEPT FEET	AERAT HOURS	DEPT FEET	AERAT HOURS	DEPT FEET	AERAT HOURS	DEPT FEET	AERAT HOURS
1	0.00	SW	69	55	415	249	664	585	9.5	60	144.5	9.5	59	144.5	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
2	0.00		68	55	413	235	647	577	9.5	59	144.5	9.5	59	144.5	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
3	0.00		M	56	431	223	654	566	9.5	M	144.5	9.5	M	144.5	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
4	0.00	W	M	M	424	235	659	569	9.5	M	144.5	9.5	M	144.5	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
5	0.25	NW	63	58	685	194	879	669	9.5	61	144.5	9.5	61	144.5	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
6	2.55		67	54	577	286	864	778	9.5	62	144.5	9.5	61	144.5	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
7	0.01	SW	66	59	449	244	693	636	9.5	61	144.5	9.5	62	144.5	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
8	0.00	S	62	57	392	247	639	598	9.5	58	144.5	9.5	59	144.5	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
9	0.00		64	58	385	252	637	577	9.5	57	144.5	9.5	58	144.5	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
10	0.00	SW	64	54	370	259	629	563	9.5	56	144.5	9.5	57	144.5	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
11	0.00		66	54	396	257	653	583	9.5	57	144.5	9.5	58	144.5	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
12	0.00		67	55	396	253	650	581	9.5	57	144.5	9.5	57	144.5	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
13	0.01		65	54	409	264	674	579	9.5	57	144.5	9.5	57	144.5	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
14	0.00		62	53	411	265	676	600	9.5	51	144.5	9.5	52	144.5	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
15	0.00		64	54	410	255	666	586	9.5	52	144.5	9.5	52	144.5	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
16	0.00		67	56	409	258	667	576	9.5	57	144.5	9.5	28	144.5	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
17	0.00		64	53	411	255	666	563	9.5	57	144.5	9.5	57	144.5	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
18	0.00		68	55	446	267	713	584	9.5	57	144.5	9.5	59	144.5	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
19	0.00	W	69	58	420	271	691	589	9.5	58	144.5	9.5	60	144.5	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
20	0.00		69	57	394	270	664	562	9.5	59	144.5	9.5	59	144.5	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
21	0.00	S	68	55	387	275	662	549	9.5	59	144.5	9.5	59	144.5	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
22	0.00		69	56	419	280	699	574	9.5	59	144.5	9.5	59	144.5	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
23	0.25	SE	69	55	434	290	724	627	9.5	59	144.5	9.5	57	144.5	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
24	0.17		65	58	408	278	685	609	9.5	57	144.5	9.5	59	144.5	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
25	0.00	S	65	59	430	245	674	590	9.5	59	144.5	9.5	59	144.5	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
26	0.44	SW	67	56	471	302	773	664	9.5	58	144.5	9.5	59	144.5	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
27	0.28		68	59	494	319	814	685	9.5	58	144.5	9.5	60	144.5	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
28	0.00		68	58	499	315	814	736	9.5	60	144.5	9.5	58	144.5	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
29	0.00		69	58	494	316	811	733	9.5	59	144.5	9.5	60	144.5	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
30	0.00		68	56	492	303	795	723	9.5	60	144.5	9.5	57	144.5	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
31	0.00		68	54	482	309	792	714	9.5	57	144.5	9.5	56	144.5	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
TOTAL	3.96			TOTAL	13653	8271	21928	19125																
				AVERAG	440	267	707	617																
				MAXIMU	685	319	879	778																
				MINIMUM	370	194	629	549																

MEXIC 62.3 % OF TOTAL FLOW

U.S = 37.7 % OF TOTAL FLOW

UL TIM SERVICES				UTILITIES AND CHLORINE			PERSONNEL SERVICES AND EQUIPMENT UTILIZED OT ER THAN FULL TIME	
PERSONNEL		EQUIPMENT		CONTROL BUILDING			CLASSI ICATION	HRS THIS MONTH
CHIEF OPERATOR	1	90' D DGE AR SKC R	1	POWER CON MPTIO	948,600 0	K W.H.	ELECTRICIA '& MECHANIC	4
COMPLIANCE SPEC	1	PICKU 1/2 TON	4	$	67,879 6 9		LABORERS	8
OPERA ORS GRADE II	0	GRIT TRUCK	1	CHLO INE & ULTRAVIOLET DISINFECTION AREA			OVER TIME (OPERATORS)	98
OPERATORS, GRADE I	1	WATER TRUCK	1		-0-	K W.H.	MOTOR GRADER & OPERATO	0
LABORERS	4	BACK HOE	1	$	60 74		ROBBINS & INT'L ST USAGE 762 KHW AMOUNT $ 109 68	
MECHANIC	1	84' FORD CROWN VIC.	1	CHLORINE CONSU	7,456 6	LBS		
ELECTRICIAN	1			SULPHUR D XIDE:	3,087 7	LBS.		
Page 2				UTILITY COSTS - WATER SERVICE $ 1,696 93 3 SVC 11/15/94 TO 12/19/94				
Dec. 1994				SERVICE DA E 11/2 21/94 TO 12/23/94				

PML-6		PML-7		PML-8		D.O. MG/L			pH				SUSPENDED SOLIDS MG/L		SETTLEABLE SOLIDS ML/L	B.O.D. MG/L		TOTAL CHLORINE					
DEPT FEET	AERAT HOURS	DEPT FEET	AERATO HOURS	DEPT FEET	AERATO HOURS	CML-	CML-	EFFLUEN	RA	CML-	CML-	EFFLUEN	RAW	EFFLUEN	EFFLUENT	EFF	INFLUEN	USED (POUNDS)	GRIT REMOVE	FECAL COLIFORM #	UV 1 HOURS	UV-2 HOURS	DATE
8 8	-0-	8 8	-0-	8.8	-0-	6.3	6.0	7.1	6.8	7.3	7.2	7.0						340		4	192	192	1
8 8	-0	8 8	-0-	8.8	-0-	5.8	6.1	6 5	6.9	7.4	7 3	7 0						300		<2	192	192	2
8 8	-0	8 8	-0-	8.8	-0-	7.1	M	6.3	6.7	7.3	7 1	6 8						130		<2	192	192	3
8 8	-0-	8.8	-0-	8.8	-0-	M	M	M	6.8	7.1	7.1	6.8						210		8	192	192	4
8 8	-0	8.8	-0-	8.8	-0-	5.6	6.6	5.9	6.9	7.4	7 4	7.0						330		4	192	192	5
8 8	-0	8 8	-0-	8.8	-0-	5.9	6 5	6.0	7.0	7.2	7 0	7.0						260		300	192	192	6
8 8	-0-	8.8	-0-	8.8	-0-	6.4	5 4	6 2	6 8	7.3	7.2	7.2						280		4	192	192	7
8 8	-0-	8 8	-0-	8.8	-0-	7.3	6 3	6.4	7.0	7.6	7.5	7.0	160	--		--	105	110		2	192	192	8
8 8	-0-	8 8	-0-	8.8	-0-	6.7	6.8	7.1	7.0	7.5	7.5	6.8	--	6	<0.5	<10	--	300	22 5 C/Y	130	192	192	9
8 8	-0-	8 8	-0-	8.8	-0-	5.8	5 9	6.4	7.0	7.3	7.2	7.0						340		2	192	192	10
8 8	-0-	8 8	-0-	8.8	-0-	5.7	5.8	7.2	6.9	7.2	7.1	7.0						320		2	192	192	11
8 8	-0-	8.8	-0-	8.8	-0-	6.7	6 4	7.7	6.9	7.3	7.3	7.0						240	27 C/Y	<2	192	192	12
8 8	-0-	8 8	-0-	8.8	-0-	7.7	7.0	7.5	6.8	7.2	7.3	7.0						280		<2	192	192	13
8 8	-0-	8 8	-0-	8.8	-0-	6.6	5.7	6.8	6.7	7.2	7 2	7.1						140		4	192	192	14
8.8	-0-	8.8	-0-	8.8	-0-	6.9	6.1	6.9	6.8	7.3	7 3	7.2	184	8	<0.5	11	124	240		<2	192	192	15
8 8	-0-	8 8	-0-	8.8	-0-	6.8	6.4	6.7	6.9	7.3	7.3	7.1						0		* >1600	192	192	16
8 8	-0-	8 8	-0-	8.8	-0-	7.1	7.1	7.8	6.9	7.2	7.3	7.2						206		<2	192	192	17
8 8	-0-	8 8	-0-	8.8	-0-	7.2	7.2	7.2	7.0	7.3	7.3	7.2						180		2	192	192	18
8 8	-0-	8.8	-0-	8.8	-0-	6.4	7.0	7.1	7.0	7.3	7.3	7.2						240		<2	192	192	19
8 8	-0-	8 8	-0-	8.8	-0-	7.2	6.7	6 9	7.0	7.1	7 1	7.0						260		<2	192	192	20
8 8	-0-	8 8	-0-	8.8	-0-	7.8	6.4	7.0	7.0	7.2	7.3	7.1						289		<2	192	192	21
8 8	-0	8 8	-0-	8.8	-0-	7.9	6 6	7.4	7 0	7.2	7.3	7.1	162	9	<0.5	16	149	240		<2	192	192	22
8 8	-0	8 8	-0-	8.8	-0-	7.7	6.1	7.6	7.0	7.2	7.2	7.1						230		2	192	192	23
8 8	-0	8 8	-0-	8.8	-0-	7.5	6.5	7.8	7.0	7.5	7 2	7.3						240		<2	192	192	24
8 8	-0-	8.8	-0-	8.8	-0-	7.6	6 5	7.6	7.0	7.3	7 3	7.2						270		<2	192	192	25
8 8	-0-	8 8	-0-	8.8	-0-	7.5	7.4	7.8	7.1	7.2	7.1	7 0						280		<2	192	192	26
8 8	-0-	8 8	-0-	8.8	-0-	5.6	5.7	7.5	7.2	7.3	7 3	7.2						270		<2	192	192	27
8 8	-0-	8 8	-0-	8.8	-0-	5.2	5.4	7.1	7.2	7.2	7 2	7.2						100		* *1600	192	192	28
8 8	-0	8.8	-0-	8.8	-0-	5.3	5.8	7.5	7.2	7.2	7 2	7.2	115	10	<0.5	19	106	220		<2	192	192	29
8 8	-0	8 8	-0-	8.8	-0-	5.2	5.2	7.3	7.2	7.2	7 2	7.1						400		<2	192	192	30
8 8	-0-	8 8	0-	8.8	-0-	10.1	10 3	7.8	7.2	7.2	7 3	7.2						130		<2	192	192	31

TOTAL CL 7456 6 016 - EOME TRIC MEAN

+ ADDI IONAL FECAL COLIFORM SAMPLES THIS DAY - 20 <100 22, 5 50.

CY = CUBIC YA ARD GRIT COMBIN ION OF BASINS AND GRIT CHAMBE

ND = NONE DETECTED

= MPN/100ML

M = MISSING DATA

* = EXCEEDANCE REPORTED TO E A/ADEQ

NOGALES INTERNATIONAL WASTEWATER TREATMENT PLANT

MONTHLY REPORT

PREPAR BY: RIC ARD L. ALDWELL, COMPLIANE SPECIALIST
APPROVED AS TO F RM BY: LINO VEGA, PLANT SUPERINTENDENT

CML:COMPLETE MIX LAGOON
PML PARTIAL MIX LAGOON

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MONTH. January 1995

	WEA	HER	TEMP	RATURE	FLOW	IN LITER	S PER SE	OND	CML-1			CML-2			PML-1		PML-2		ML-3		PML-4		ML-5	
DATE	RAIN FALL INCHES	WIND DIREC-TION	INFLOW	EFFLUEN	MEXICO INFLUEN	UNITED STATES INFLUEN	PLANT INFLUEN	PLANT EFFLUEN	DEPTH FEET	TEMPE ATURE	AERAT HOURS	DEPT FEET	TEMPE ATUR	AERAT HOURS	DEPT FEET	AERAT HOURS	DEPT FEET	AERAT HOURS	DEPT FEET	AERAT HOURS	DEPT FEET	AERAT HOURS	DEPT FEET	AERAT HOURS
1	0.00	SE	68	55	472	267	739	684	9.5	56	264	9.5	57	264	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
2	0.00		68	55	475	294	769	656	9.5	56	264	9.5	56	264	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
3	0.00	SW	68	55	471	313	784	674	9.5	56	264	9.5	56	264	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
4	0.02	W	67	54	493	312	806	693	9.5	56	264	9.5	56	264	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
5	0.50		67	54	680	284	965	775	9.5	56	264	9.5	56	264	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
6	0.50		68	55	562	330	892	797	9.5	57	264	9.5	57	264	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
7	0.00	SW	68	55	527	328	855	763	9.5	58	264	9.5	58	264	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
8	0.00		69	56	506	312	817	737	9.5	59	264	9.5	59	264	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
9	0.00	S	69	57	512	324	836	727	9.5	59	264	9.5	59	264	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
10	0.00		M	55	514	321	835	724	9.5	M	264	9.5	M	264	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
11	0.00		70	56	514	315	829	726	9.5	59	264	9.5	59	264	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
12	0.00	SW	69	55	530	305	835	732	9.5	58	264	9.5	58	264	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
13	0.00		69	56	542	302	844	739	9.5	59	264	9.5	59	264	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
14	0.00		68	57	537	303	840	738	9.5	58	264	9.5	59	264	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
15	0.00		69	58	509	292	801	716	9.5	59	264	9.5	59	264	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
16	0.00	W	69	57	516	310	826	708	9.5	58	264	9.5	57	264	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
17	0.15	NW	68	55	546	294	840	726	9.5	56	264	9.5	56	264	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
18	0.25		67	54	521	308	829	723	9.5	53	264	9.5	54	264	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
19	0.00	SW	69	56	524	305	829	729	9.5	57	264	9.5	57	264	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
20	0.00		65	55	510	313	823	720	9.5	59	264	9.5	59	264	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
21	0.00	S	67	57	521	311	832	730	9.5	59	264	9.5	59	264	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
22	0.00		68	59	495	307	803	713	9.5	60	264	9.5	60	264	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
23	0.00		69	60	493	311	804	697	9.5	59	264	9.5	59	264	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
24	0.00		69	60	491	308	799	690	9.5	60	264	9.5	60	264	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
25	0.00	SE	69	58	520	306	825	711	9.5	58	264	9.5	57	264	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
26	0.00		68	55	505	315	821	732	9.5	57	264	9.5	57	264	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
27	0.00		68	54	505	311	816	716	9.5	56	264	9.5	57	264	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
28	0.00		68	53	466	308	775	705	9.5	55	264	9.5	56	264	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
29	0.00		69	54	481	299	780	691	9.5	57	264	9.5	56	264	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
30	0.00		68	55	499	309	808	697	9.5	59	264	9.5	59	264	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
31	0.00		69	56	495	308	802	706	9.5	59	264	9.5	59	264	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
TOTAL	1.42			TOTAL	15932	9525	25459	22275																
				AVERAG	514	307	821	719																
				MAXIMU	680	330	965	797																
				MINIMUM	466	267	739	656																

MEXIC 62.6 % OF TOTAL FLOW

U.S. = 37.4 % OF TOTAL FLOW

ULL TIM SERVICES			
PERSONNEL		EQUIPMENT	
CHIEF OPERATOR	1	90' D DGE AR SKC R	
COMPLIANCE SPEC	1	PICKU 1/2 TON	
OPERAORS GRADE II	0	GRIT TRUCK	
OPERATORS GRADE I	1	WATER TRUCK	
LABORERS	4	BACK HOE	
MECHANIC	1	84' FORD CROWN VIC.	
ELECTRICIAN	1		

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Jan 1995

UTILITIES AND CHLORINE

CONTROL BUILDING

1	POWER CON MPTIO	986,40 00	K W.H.
3	$	70,051.5 . 58	
1	CHLO INE & ULTRAVIOLET DISINFECTION AREA		
1		-0-	K.W.H.
1	$	60.74	
1	CHLORINE CONSU	7,617	LBS
	SULPHUR D XIDE:	3,768	LBS.

UTILITY COSTS - WATER SERVICE
$ 1,827.41 1 12/19/94 TO 1/ 1/13/95

BILLING DATE. 2/23/94 TO 1/24/95 /95 ELEC . SERVC.

PERSONNEL SERVICES AND EQUIPMENT UTILIZED OT ER THAN FULL TIME

CLASSI ICATI ON	HRS THIS MONTH
ELECTRICIAN & MECHANIC	40
LABORERS	20
OVER TIME (OPERATORS)	84
MOTOR GRADER & OPERATO	0
ROBBINS & INT'L ST. USAGE AMOUNT	NOT AVAIL. KHW

PML-6 DEPT FEET	PML-6 AERAT HOURS	PML-7 DEPT FEET	PML-7 AERATO HOURS	PML-8 DEPT FEET	PML-8 AERATO HOURS	D.O MG/L CML-	D.O MG/L CML-	D.O MG/L EFFLUEN	pH RA	pH CML-	pH CML-	pH EFFLUEN	SUSPENDED SOLIDS MG/L RAW	SUSPENDED SOLIDS MG/L EFFLUEN	SETTLEABLE SOLIDS ML/L EFFLUENT	BOD MG/L EFF	BOD MG/L INFLUEN	TOTAL CHLORINE USED (POUNDS)	GRIT REMOVE	FECAL COLIFORM #	TOTAL UV 1 HOURS	TOTAL UV-2 HOURS	DATE
8.8	-0-	8.8	-0-	8.8	-0-	5.8	6.0	9.1	7.2	7.3	7.3	7.2						160		50	15,744	15,744	1
8.8	-0-	8.8	-0-	8.8	-0-	5.5	5.7	8.7	7.2	7.2	7.2	7.2						160		2	15,744	15,744	2
8.8	-0-	8.8	-0-	8.8	-0-	6.3	6.2	8.4	7.3	7.3	7.3	7.2						100		2	15,744	15,744	3
8.8	-0	8.8	-0-	8.8	-0-	6.4	5.5	7.5	7.0	7.3	7.3	7.0						[illegible]		2	15,744	15,744	4
8.8	-0-	8.8	-0-	8.8	-0-	5.6	5.4	9.3	7.0	7.2	7.2	7.2	205	11	<0.5	<10	81	250		<2	15,744	15,744	5
8.8	-0-	8.8	-0-	8.8	-0-	6.7	6.1	9.8	7.2	7.2	7.2	7.2						220		4	15,744	15,744	6
8.8	-0-	6.8	-0-	8.8	-0-	5.8	5.9	8.9	7.2	7.2	7.3	7.2						300		<2	15,744	15,744	7
8.8	-0	8.8	-0-	8.8	-0-	6.1	6.0	7.7	7.3	7.3	7.3	7.3						260		2	15,744	15,744	8
8.8	-0-	8.8	-0-	8.8	-0-	5.6	5.2	7.1	7.2	7.3	7.1	7.2						260		<2	15,744	15,744	9
8.8	-0	8.8	-0-	8.8	-0-	6.7	5.9	8.4	M	7.1	7.5	7.1						270		<2	15,744	15,744	10
8.8	-0	8.8	-0-	8.8	-0-	6.9	7.1	9.3	7.2	7.2	7.1	7.2						250		2	15,744	15,744	11
8.8	-0	8.8	-0-	8.8	-0-	6.1	6.8	8.8	7.1	7.1	7.1	7.2	144	11	<0.5	12	115	280	5 C/Y	4	15,744	15,744	12
8.8	-0	8.8	-0-	8.8	-0-	7.4	6.9	9.1	7.1	7.2	7.2	7.2						260		2	15,744	15,744	13
8.8	-0-	8.8	-0-	8.8	-0-	7.8	6.8	8.9	7.2	7.2	7.2	7.2						340		<2	15,744	15,744	14
8.8	-0	8.8	-0-	8.8	-0-	7.6	6.9	8.9	7.2	7.2	7.2	7.2						260	75 C/Y	<2	15,744	15,744	15
8.8	-0-	8.8	-0-	8.8	-0-	6.3	5.8	8.5	7.2	7.3	7.3	7.2						130		<2	15,744	15,744	16
8.8	-0-	8.8	-0-	8.8	-0-	5.8	5.9	7.6	7.2	7.3	7.3	7.2						210		23	15,744	15,744	17
8.8	-0	8.8	-0-	8.8	-0-	7.1	7.9	6.7	7.2	7.3	7.3	7.2						267		<2	15,744	15,744	18
8.8	-0	8.8	-0-	8.8	-0-	6.8	6.5	7.1	7.3	7.3	7.3	7.3	186	14	<0.5	15	135	260		4	15,744	15,744	19
8.8	-0	8.8	-0-	8.8	-0-	6.1	7.1	5.9	7.1	7.1	7.1	6.9						240		2	15,744	15,744	20
8.8	-0-	8.8	-0-	8.8	-0-	8.1	7.5	6.8	7.2	7.2	7.2	7.2						E 250	10 C/Y	22	15,744	15,744	21
8.8	-0	8.8	-0-	8.8	-0-	8.3	7.1	7.3	7.2	7.2	7.2	7.2						E 250	5 C/Y	8	15,744	15,744	22
8.8	-0	8.8	-0-	8.8	-0-	6.5	6.8	4.6	7.2	7.3	7.3	7.2						E 250		8	15,744	15,744	23
8.8	-0-	8.8	-0-	8.8	-0-	5.6	6.9	5.6	7.2	7.3	7.3	7.2						E 250		13	15,744	15,744	24
8.8	-0	8.8	0-	8.8	-0-	6.3	5.8	6.1	7.2	7.2	7.2	7.1	203	8	<0.5	14	124	E 250		130	15,744	15,744	25
8.8	-0	8.8	-0-	8.8	-0-	8.3	6.9	7.6	7.1	7.2	7.2	7.2						285	75 C/Y	11	15,744	15,744	26
8.8	-0-	8.8	-0-	8.8	-0-	7.4	6.3	7.8	7.2	7.3	7.2	7.0						[illegible]		11	15,744	15,744	27
8.8	-0-	8.8	-0-	8.8	-0-	6.3	6.0	6.5	7.2	7.2	7.1	7.1						280		13	15,744	15,744	28
8.8	-0-	8.8	-0-	8.8	-0-	7.7	6.3	7.3	7.3	7.3	7.2	7.2						240		50	15,744	15,744	29
8.8	-0-	8.8	-0-	8.8	-0-	7.2	6.4	7.9	7.2	7.3	7.3	7.2						320		4	15,744	15,744	30
8.8	-0-	8.8	-0-	8.8	-0-	7.1	5.8	8.2	6.7	7.3	7.3	7.2						260		11	15,744	15,744	31
																	TOTAL CL	7,617		5 239	EOMETRIC MEAN		

= ESTIMATE

CY = CUBIC YA ARD GRIT COMBIN ION OF BASINS AND GRIT CHAMBE
ND = NONE DETECTED
# = MPN/100Ml
M = MISSING DATA
* = EXCELLANCE REPORTED TO E A/ADEQ

NOGALES INTERNATIONAL WASTEWATER TREATMENT PLANT

MONTHLY REPORT

PREPAR BY: RIC ARD L. ALDWELL, COMPLIANE SPECIALIST
APPROVED AS TO F RM BY: LINO VEGA, PLANT SUPERINTENDENT

CML COMPLETE MIX LAGOON
PML PARTIAL MIX LAGOON

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MONTH: February 1995

	WEA	HER	TEMP	RATURE	FLOW	IN LITER	S PER SE	OND	CML-1			CML-2			PML-1		PML-2		ML-3		PML-4		ML-5	
DATE	RAIN FALL INCHES	WIND DIREC-TION	INFLOW	EFFLUEN	MEXICO	UNITED STATES	PLANT INFLOW	PLANT OUTFLO	DEPTH FEET	TEMPE-ATURE	AERAT HOURS	DEPT FEET	TEMPE-ATUR	AERAT HOURS	DEPT FEET	AERAT HOURS	DEPT FEET	AERAT HOURS	DEPT FEET	AERAT HOURS	DEPT FEET	AERAT HOURS	DEPT FEET	AERAT HOURS
1	0.00	SE	69	60	493	306	799	706	9.5	60	246.0	9.5	60	246.0	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
2	0.00		70	60	486	305	791	692	9.5	60	246.0	9.5	60	246.0	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
3	0.00		71	60	491	304	795	692	9.5	60	246.0	9.5	60	246.0	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
4	0.00		71	61	495	302	797	688	9.5	62	246.0	9.5	61	246.0	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
5	0.00		72	62	465	290	755	670	9.5	64	246.0	9.5	63	246.0	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
6	0.00		70	60	497	304	800	672	9.5	64	246.0	9.5	64	246.0	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
7	0.00		70	58	486	304	790	687	9.5	63	246.0	9.5	63	246.0	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
8	0.00		70	59	436	308	744	681	9.5	60	246.0	9.5	60	246.0	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
9	0.00		69	59	424	277	701	623	9.5	62	246.0	9.5	62	246.0	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
10	0.00		69	58	487	299	786	678	9.5	59	246.0	9.5	59	246.0	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
11	0.08	SW	69	57	486	309	795	701	9.5	58	246.0	9.5	57	246.0	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
12	0.00		69	57	473	289	762	691	9.5	57	246.0	9.5	57	246.0	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
13	0.50	NW	69	57	507	349	855	728	9.5	57	246.0	9.5	57	246.0	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
14	0.20		69	56	558	260	818	704	9.5	60	246.0	9.5	60	246.0	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
15	1.00		70	57	612	318	930	754	9.5	60	246.0	9.5	59	246.0	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
16	0.75	SW	69	57	540	320	860	758	9.5	60	246.0	9.5	60	246.0	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
17	0.00		70	59	494	313	807	723	9.5	61	246.0	9.5	60	246.0	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
18	0.00	SE	71	60	486	318	804	711	9.5	61	246.0	9.5	60	246.0	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
19	0.00		72	61	473	295	768	701	9.5	62	246.0	9.5	62	246.0	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
20	0.00	S	72	61	465	300	764	690	9.5	65	246.0	9.5	65	246.0	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
21	0.00		66	63	486	292	778	684	9.5	63	246.0	9.5	64	246.0	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
22	0.00	SW	72	64	492	290	782	696	9.5	62	246.0	9.5	63	246.0	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
23	0.00		72	63	484	293	777	700	9.5	62	246.0	9.5	62	246.0	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
24	0.25		72	61	487	293	780	705	9.5	62	246.0	9.5	62	246.0	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
25	0.00		72	62	496	283	778	704	9.5	63	246.0	9.5	63	246.0	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
26	0.00		73	63	498	272	770	699	9.5	63	246.0	9.5	62	246.0	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
27	0.00		72	63	495	281	776	719	9.5	62	246.0	9.5	62	246.0	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
28	0.00	SW	72	62	513	272	786	692	9.5	62	246.0	9.5	62	246.0	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
29																								
30																								
31																								
TOTAL	2.78			TOTAL	13805	8346	22148	19549																
				AVERAG	493	298	791	698																
				MAXIMU	612	349	930	758																
				MINIMUM	424	260	701	623																

MEXIC 62.3 % OF TOTAL FLOW

U.S. = 37.7 % OF TOTAL FLOW

ULL TIM SERVICES			
PERSONNEL		EQUIPMENT	
CHIEF OPERATOR	1	90' D DGE AR SKC R	1
COMPLIANCE SPEC.	1	PICKU 1/2 TON	3
OPERAORS, GRADE II	0	GRIT TRUCK	1
OPERATORS, GRADE I	1	WATER TRUCK	1
LABORERS	4	BACK HOE	1
MECHANIC	1	84' FORD CROWN VIC.	1
ELECTRICIAN	1		

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Feb 1995

UTILITIES AND CH HLORINE

CONTROL BUILDING

POWER CON MPTIO	892,800	0	K W H.
$	64,673.	8	
CHLO INE & ULTRAVIOLET DISINFECTION AREA			
	-0-		K.W.H.
$	60.74		
CHLORINE CONSU	7,518	8	LBS
SULPHUR D XIDE:	3,4	6	LBS.

UTILITY COSTS - WATER SERVICE
$ 2,024.53 3 SVC 1/13/95 T 2/15/95
BILLING DATE: 1/24/95 TO 2/22/95 /95 ELEC

PERSONNEL SERVICES AND EQUIPMENT UTILIZED OT ER THAN FULL TIME

CLASSI ICATI ON	HRS THIS MONTH
ELECTRICIAN & MECHANIC	7
LABORERS	8
OVER TIME (OPERATORS)	97
MOTOR GRADER & OPERATO	0

ROBBINS & INT'L ST.
USAGE 650 KHW
AMOUNT $ 95.17
SERVICE FROM 2/7/95 TO
TO 3/9/95

PML-6		PML-7		PML-8		D.O. MG/L			pH				SUSPENDED SOLIDS MG/L		SETTLEABLE SOLIDS ML/L	B.O.D. MG/L		TOTAL CHLORINE						
DEPT FEET	AERAT HOURS	DEPT FEET	AERATO HOURS	DEPT FEET	AERATO HOURS	CML-	CML-	EFFLUEN	RA	CML-	CML-	EFFLUEN	RAW	EFFLUEN	EFFLUENT	EFF	INFLUEN	USED (POUNDS)	GRIT REMOVE	FECAL COLIFORM #		UV-1 HOURS	UV-2 HOURS	DATE
8 8	-0	8 8	-0-	8.8	-0-	5.2	5 5	8.5	7.2	7.4	7 3	7.3						260			4	672	672	1
8 8	-0	8 8	-0-	8.8	-0-	6.5	8.1	8 8	7.2	7.4	7.4	7.3	168	15	<0.05	12	91	210			4	672	672	2
8 8	-0	8 8	-0-	8.8	-0-	7.1	5 8	8.7	7.2	7.4	7.4	7.3						210			<2	672	672	3
8 8	-0-	8 8	-0-	8.8	-0-	7.4	6.7	9.0	7.2	7.3	7 4	7.3						320			<2	672	672	4
8 8	-0-	8.8	-0-	8.8	-0-	5.8	6 0	8.9	7.2	7.3	7.3	7.3						280			<2	672	672	5
8 8	-0-	8.8	-0-	8.8	-0-	5.7	5.5	7.1	7.2	7.3	7.3	7.3						260			<2	672	672	6
8 8	-0	8 8	-0-	8.8	-0-	6.1	5.4	6.8	7.2	7.2	7 3	7.2						270			<2	672	672	7
8 8	-0-	8 8	-0-	8.8	-0-	6.3	6.1	7.3	7.3	7.3	7.2	7.2						260			2	672	672	8
8 8	-0	8.8	-0-	8.8	-0-	6.0	6.0	7.4	7.2	7.4	7.2	7.2	147	21	<0.05	16	102	220			<2	672	672	9
8 8	-0-	8.8	-0-	8.8	-0-	6.9	6.3	7.0	7.3	7.3	7 3	7.2						278			<2	672	672	10
8 8	-0-	8 8	0-	8.8	-0-	5.4	5.9	6.8	7.3	7.3	7 3	7.2						300			<2	672	672	11
8 8	-0-	8 8	-0-	8.8	-0-	6.1	6 0	6.9	7.3	7.3	7 3	7.2						260			2	672	672	12
8 8	-0-	8 8	-0-	8.8	-0-	6.5	6.8	7.4	7.2	7.3	7 3	7.2						260			<2	672	672	13
8 8	-0-	8.8	-0-	8.8	-0-	6.0	6 1	8.0	7.3	7.3	7 3	7.3						280			<2	672	672	14
8 8	-0-	8 8	-0-	8.8	-0-	5.8	5.7	8.9	7.3	7.2	7.1	7.3						600			2	672	672	15
8 8	-0-	8 8	-0-	8.8	-0-	6.1	6.3	7.1	7.2	7.1	7.2	7.3	196	15	<0.05	17	129	0			<2	672	672	16
8 8	-0-	8 8	-0-	8.8	-0-	6.3	6.4	8.0	7.1	7.2	7 2	7.3						0	8 C.Y		4	672	672	17
8 8	-0-	8 8	-0-	8.8	-0-	6.5	6.3	9.6	7.1	7.3	7.2	7.3						220			2	672	672	18
8 8	-0-	8 8	-0-	8.8	-0-	6.4	6.6	9.8	7.2	7.3	7 3	7.3						200			<2	672	672	19
8 8	-0-	8 8	-0-	8.8	-0-	6.5	6.3	9.9	7.1	7.3	7 2	7.3						300			2	672	672	20
8 8	-0-	8 8	-0-	8.8	-0-	6.7	5.6	6.5	6.7	7.4	7.2	6.9						230			<2	672	672	21
8 8	-0-	8 8	-0-	8.8	-0-	7.0	6.1	7.8	7.0	7.3	7.2	7.1						270			<2	672	672	22
8 8	-0-	8.8	-0-	8.8	-0-	7.3	6 6	9.3	7.2	7.2	7 1	7.2	248	23	<0.05	17	140	350			4	672	672	23
8 8	-0-	8.8	-0-	8.8	-0-	6.2	6.1	10.1	7.2	7.1	6.9	7.2						330	12 C/Y		<2	672	672	24
8 8	-0-	8 8	-0-	8.8	-0-	6.3	6 2	9.6	7.1	7.1	6 8	6.8						100	20 C/Y		7	672	672	25
8 8	-0-	8 8	-0-	8.8	-0-	6.2	6.1	7.1	6.8	8 0	7.2	7.0						414			<2	672	672	26
8 8	-0-	8 8	-0-	8.8	-0-	5.7	5.8	8.7	6.8	7.3	7 0	7.1						466			<2	672	672	27
8 8	-0-	8 8	-0-	8.8	-0-	5.4	5.5	9.4	6.9	7.3	7 2	7.2						390			<2	672	672	28
																								29
																								30
																								31
																	TOTAL CL.	7518		2 31 -		EOMETRIC MEAN		

CY = CUBIC YA ARD GRIT COMBIN ION OF BASINS AND GRIT CHAMBE
ND = NONE DETECTED
# - MPN/100ML
M = MISSING DATA
* - EXCEEDANCE REPORTED TO E , A/ADEQ

NOGALES INTERNATIONAL WASTEWATER TREATMENT PLANT

MONTHLY REPORT

PREPAR BY: RIC ARD L. ALDWELL, COMPLIANE SPECIALIST
APPROVED AS TO F RM BY: LINO VEGA, PLANT SUPERINTENDENT

CML COMPLETE MIX LAGOON
PML PARTIAL MIX LAGOON

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MONTH: MARCH, 1995

	WEA	HER	TEMP	RATURE	FLOW	IN LITER	S PER SE	OND	CML-1			CML-2			PML-1		PML 2		ML-3		PML-4		ML-5	
DATE	RAIN FALL INCHES	WIND DIRECTION	INFLOW	EFFLUEN	MEXICO	UNITED STATES	PLANT INFLOW	PLANT OUTFLO	DEPTH FEET	TEMP	AERAT HOURS	DEPT FEET	TEMP	AERAT HOURS	DEPT FEET	AERAT HOURS	DEPT FEET	AERAT HOURS	DEPT FEET	AERAT HOURS	DEPT FEET	AERAT HOURS	DEPT FEET	AERAT HOURS
1	0.00	SE	72	64	498	272	770	696	9.5	64	144.5	9.5	72	144.5	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
2	0.00		72	65	505	278	783	693	9.5	65	144.5	9.5	73	144.5	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
3	0.00		66	65	498	265	763	690	9.5	64	144.5	9.5	63	144.5	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
4	0.00		68	65	490	282	772	685	9.5	65	144.5	9.5	65	144.5	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
5	0.00	SW	67	64	476	272	748	680	9.5	64	144.5	9.5	64	114.5	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
6	0.15	W	68	62	570	248	818	695	9.5	62	144.5	9.5	62	144.5	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
7	0.16		67	61	515	281	797	712	9.5	62	144.5	9.5	62	144.5	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
8	0.00	SW	67	62	496	284	780	704	9.5	62	144.5	9.5	62	144.5	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
9	0.00		68	63	490	280	770	687	9.5	64	144.5	9.5	63	144.5	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
10	0.00		70	65	486	272	758	678	9.5	66	144.5	9.5	64	144.5	9.2	-0-	8.8	24	8.8	[illegible]	8.8	24	8.8	-0-
11	0.00		70	66	486	264	750	657	9.5	66	144.5	9.5	66	144.5	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
12	0.10	W	68	62	471	258	728	665	9.5	62	144.5	9.5	62	144.5	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
13	0.00		69	63	451	257	707	632	9.5	62	144.5	9.5	62	144.5	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
14	0.00	SW	70	64	473	264	737	645	9.5	64	144.5	9.5	64	144.5	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
15	0.00		71	66	513	233	746	650	9.5	66	144.5	9.5	67	144.5	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
16	0.00		71	67	514	232	747	656	9.5	67	144.5	9.5	67	144.5	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
17	0.00		71	66	508	234	742	655	9.5	66	144.5	9.5	66	144.5	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
18	0.00		71	67	509	232	741	654	9.5	67	144.5	9.5	67	144.5	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
19	0.00		71	67	494	224	718	636	9.5	67	144.5	9.5	67	144.5	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
20	0.00	S	72	68	505	237	742	629	9.5	68	144.5	9.5	68	144.5	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
21	0.00		71	64	485	245	730	630	9.5	64	144.5	9.5	64	144.5	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
22	0.00	SE	70	66	496	253	749	644	9.5	67	144.5	9.5	67	144.5	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
23	0.00		70	63	499	240	739	637	9.5	63	144.5	9.5	63	144.5	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
24	0.00		70	63	496	248	743	645	9.5	63	144.5	9.5	63	144.5	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
25	0.00	SW	69	62	479	249	728	645	9.5	62	144.5	9.5	63	144.5	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
26	0.00		67	59	479	241	721	633	9.5	62	144.5	9.5	62	144.5	9.2	0	8.8	24	8.8	24	8.8	24	8.8	0
27	0.00		67	59	494	251	745	633	9.5	62	144.5	9.5	62	144.5	9.2	0	8.8	24	8.8	24	8.8	24	8.8	-0-
28	0.00		66	60	496	253	749	647	9.5	62	144.5	9.5	62	144.5	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
29	0.00		67	60	495	249	744	647	9.5	60	144.5	9.5	60	144.5	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
30	0.00		65	64	494	242	736	642	9.5	62	144.5	9.5	62	144.5	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
31	0.00		68	63	505	241	746	647	9.5	62	144.5	9.5	63	144.5	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
TOTAL	0.41			TOTAL	15367	7879	23246	20449																
				AVERAG	496	254	750	660																
				MAXIMU	570	284	818	712																
				MINIMUM	451	224	707	629																

MEXIC 66.1 % OF TOTAL FLOW

U.S. = 33.9 % OF TOTAL FLOW

FULL TIME SERVICES				UTILITIES AND CHLORINE			PERSONNEL SERVICES AND EQUIPMENT UTILIZED OTHER THAN FULL TIME	
PERSONNEL		EQUIPMENT		CONTROL BUILDING			CLASSIFICATION	HRS THIS MONTH
CHIEF OPERATOR	1	90' DODGE AR SKC R	1	POWER CONSUMPTIO	838,800	K.W.H.	ELECTRICIAN & MECHANIC	1 & 1
COMPLIANCE SPEC	1	PICKUP 1/2 TON	3	$	61,390 28		LABORERS	
OPERATORS GRADE II	0	GRIT TRUCK	1	CHLORINE & ULTRAVIOLET DISINFECTION AREA			OVER TIME (OPERATORS)	80
OPERATORS, GRADE I	1	WATER TRUCK	1		-0-	K.W.H.	MOTOR GRADER & OPERATOR	0
LABORERS	4	BACK HOE	1	$	60.74		ROBBINS & INT'L ST. USAGE AMOUNT	KHW
MECHANIC	1	84' FORD CROWN VIC.	1	CHLORINE CONSU	10,944 44	LBS		
ELECTRICIAN	1			SULPHUR DIOXIDE	3,8 20	LBS.		

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March 1995

UTILITY COSTS - WATER SERVICE
$ 2,040 51 51 2/15/95 TO 3/ 3/20/95

BILLING DATE ELEC. SVC 2/22/95 TO 3/24/9 24/95

PML-6 DEPT FEET	PML-6 AERAT HOURS	PML-7 DEPT FEET	PML-7 AERATO HOURS	PML-8 DEPT FEET	PML-8 AERATO HOURS	D O MG/L CML-	D O MG/L CML-	D O MG/L EFFLUEN	pH RA	pH CML-	pH CML-	pH EFFLUEN	SUSPENDED SOLIDS MG/L RAW	SUSPENDED SOLIDS MG/L EFFLUEN	SETTLEABLE SOLIDS ML/L EFFLUENT	B O D MG/L EFF	B O D MG/L INFLUEN	TOTAL CHLORINE USED (POUNDS)	GRIT REMOVE	FECAL COLIFORM #	UV 1 HOURS	UV-2 HOURS	DATE
8.8	-0	8.8	-0-	8.8	-0-	6.4	5.6	9.5	7.1	7.2	7.1	7.2						450		<2	192	192	1
8.8	-0	8.8	-0-	8.8	-0-	5.4	5.7	10.0	7.2	7.2	7.2	7.3	140	15	<0.5	21	109	301		<2	192	192	2
8.8	-0-	8.8	-0-	8.8	-0-	5.6	5.7	5.0	7.1	7.4	7.3	7.0						208		<2	192	192	3
8.8	-0-	8.8	-0-	8.8	-0-	5.0	5.0	5.6	7.0	7.1	7.1	7.0						330		<2	192	192	4
8.8	-0-	8.8	-0-	8.8	-0-	5.8	6.1	6.1	7.1	7.8	7.6	7.5						420		<2	192	192	5
8.8	-0-	8.8	-0-	8.8	-0-	6.0	6.3	6.3	7.0	7.4	7.5	7.4						300		<2	192	192	6
8.8	-0-	8.8	-0-	8.8	-0-	4.5	4.2	4.8	7.1	7.3	7.1	7.2						415		2	192	192	7
8.8	-0-	8.8	-0-	8.8	-0-	4.9	4.4	4.7	7.1	7.3	7.1	7.2						154		2	192	192	8
8.8	-0-	8.8	-0-	8.8	-0-	4.8	5.1	5.3	7.0	7.3	7.1	6.8	130	11	<0.5	20	115	302		<2	192	192	9
8.8	-0-	8.8	-0-	8.8	-0-	3.8	5.1	5.5	7.0	7.4	7.2	6.7						390	16 C/Y	<2	192	192	10
8.8	-0	8.8	-0-	8.8	-0-	6.7	6.6	9.5	7.1	7.5	7.1	7.0						400		<2	192	192	11
8.8	-0-	8.8	-0-	8.8	-0-	6.6	6.8	9.0	7.0	7.4	7.1	7.4						400		<2	192	192	12
8.8	-0-	8.8	-0-	8.8	-0-	3.6	2.6	10.0	6.9	7.5	7.3	7.5						420		<2	192	192	13
8.8	-0-	8.8	-0-	8.8	-0-	4.5	3.5	9.7	6.8	7.3	7.2	7.4						340		<2	192	192	14
8.8	-0-	8.8	-0-	8.8	-0-	5.6	4.6	10.5	6.9	7.2	7.3	7.3						440		<2	192	192	15
8.8	-0-	8.8	-0-	8.8	-0-	6.3	5.7	7.8	6.8	7.1	7.1	7.1	135	24	<0.5	17	118	400		<2	192	192	16
8.8	-0-	8.8	-0-	8.8	-0-	5.4	5.6	7.8	6.8	7.1	7.1	7.2						400		<2	192	192	17
8.8	-0	8.8	-0-	8.8	-0-	5.8	5.9	8.8	6.9	7.1	7.2	7.2						260		2	192	192	18
8.8	-0	8.8	-0-	8.8	-0-	5.5	5.8	8.6	7.0	7.1	7.2	7.3						180		80	192	192	19
8.8	-0-	8.8	-0-	8.8	-0-	5.9	6.1	7.9	7.1	7.2	7.2	7.2						403		<2	192	192	20
8.8	-0-	8.8	-0-	8.8	-0-	6.4	6.0	7.5	6.9	7.4	7.3	7.1						400		<2	192	192	21
8.8	-0-	8.8	-0-	8.8	-0-	6.5	5.8	8.0	6.7	7.4	7.2	7.2	115	16	<0.5	26	103	300		<2	192	192	22
8.8	-0-	8.8	-0-	8.8	-0-	7.5	5.8	8.3	6.9	7.5	7.4	7.3						420		<2	192	192	23
8.8	-0-	8.8	-0-	8.8	-0-	6.5	5.9	7.8	6.9	7.5	7.4	7.2						300		<2	192	192	24
8.8	-0	8.8	0-	8.8	-0-	6.9	6.1	7.9	6.8	7.4	7.4	7.2						140		300	192	192	25
8.8	-0-	8.8	-0-	8.8	-0-	6.8	6.2	8.6	6.7	7.3	7.3	7.3						362		4	192	192	26
8.8	-0-	8.8	-0-	8.8	-0-	6.5	6.3	8.8	6.8	7.4	7.4	7.3						400		2	192	192	27
8.8	-0	8.8	-0-	8.8	-0-	7.2	6.4	8.7	6.9	7.6	7.2	7.2						300		<2	192	192	28
8.8	-0	8.8	-0-	8.8	-0-	6.8	5.5	8.8	6.8	7.5	7.6	7.3	126	18	<0.5	13	96	300		2	192	192	29
8.8	-0-	8.8	-0-	8.8	-0-	4.8	4.6	8.3	6.8	6.8	6.9	6.6						390		<2	192	192	30
8.8	-0	8.8	-0-	8.8	-0-	4.9	4.3	6.3	7.1	7.0	7.0	6.7						390		<2	192	192	31
																	TOTAL CL	10944		2 93	GOMETRIC MEAN		

SETTLEABLE SOLIDS SAMPLE FOR 3/16/95 EXCEEDED HOLD TIME FOR ANALYSIS.

CY - CUBIC YAARD GRIT COMBINATION OF BASINS AND GRIT CHAMBE
ND = NONE DETECTED
# MPN/100ML
M MISSING DATA
* = EXCEEDANCE REPORTED TO E A/ADEQ

NOGALES INTERNATIONAL WASTEWATER TREATMENT PLANT

MONTHLY REPORT

PREPAR BY: RIC ARD L. ALDWELL, COMPLIANE SPECIALIST
APPROVED AS TO F RM BY: LINO VEGA, PLANT SUPERINTENDENT

CML:COMPLETE MIX LAGOON
PML PARTIAL MIX LAGOON

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MONTH: April 1995

DATE	WEA RAIN FALL INCHES	HER WIND DIREC-TION	TEMP INFLOW	RATURE EFFLUENT	FLOW MEXICO	IN LITER UNITED STATES	S PER SE PLANT INFLOW	OND PLANT OUTFLO	CML-1 DEPTH FEET	CML-1 TEMP	CML-1 AERAT HOURS	CML-2 DEPT FEET	CML-2 TEMP	CML-2 AERAT HOURS	PML-1 DEPT FEET	PML-1 AERAT HOURS	PML-2 DEPT FEET	PML-2 AERAT HOURS	ML-3 DEPT FEET	ML-3 AERAT HOURS	PML-4 DEPT FEET	PML-4 AERAT HOURS	ML-5 DEPT FEET	ML-5 AERAT HOURS
1	0.00	SW	70	65	497	244	741	639	9.5	63	144.5	9.5	62	144.5	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
2	0.00		68	63	460	234	695	620	9.5	63	144.5	9.5	63	144.5	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
3	0.00		69	63	469	245	713	606	9.5	64	144.5	9.5	64	144.5	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
4	0.00		70	65	469	241	710	617	9.5	65	144.5	9.5	65	144.5	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
5	0.00		70	65	480	243	723	620	9.5	65	144.5	9.5	65	144.5	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
6	0.00		71	65	483	238	722	612	9.5	66	144.5	9.5	66	144.5	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
7	0.00	E	70	65	472	236	708	609	9.5	M	144.5	9.5	M	144.5	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	0-
8	0.00	SE	69	65	480	236	717	606	9.5	68	144.5	9.5	68	144.5	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
9	0.00		69	65	469	221	689	599	9.5	68	144.5	9.5	68	144.5	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
10	0.00		68	62	489	229	718	593	9.5	64	144.5	9.5	64	144.5	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
11	0.00		67	62	508	225	733	621	9.5	62	144.5	9.5	62	144.5	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
12	0.00		69	64	484	224	708	607	9.5	68	144.5	9.5	68	144.5	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
13	0.00		69	62	464	217	681	577	9.5	64	144.5	9.5	64	144.5	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
14	0.00		70	62	448	206	655	554	9.5	64	144.5	9.5	64	144.5	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
15	0.00		69	68	440	206	646	498	9.5	65	144.5	9.5	65	144.5	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
16	0.00		69	62	454	191	645	525	9.5	62	144.5	9.5	62	144.5	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
17	0.00		68	62	492	216	708	564	9.5	60	144.5	9.5	60	144.5	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-C
18	0.00		69	62	489	217	706	582	9.5	60	144.5	9.5	60	144.5	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-C-
19	1.00	W	68	62	576	217	793	657	9.5	59	144.5	9.5	58	144.5	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
20	0.05	SW	67	62	509	228	736	700	9.5	62	144.5	9.5	62	144.5	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
21	0.00		67	63	480	235	715	591	9.5	66	144.5	9.5	65	144.5	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
22	0.00	SE	69	63	476	232	709	562	9.5	67	144.5	9.5	67	144.5	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
23	0.00		70	63	467	216	683	456	9.5	67	144.5	9.5	67	144.5	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
24	0.00		70	64	467	221	688	470	9.5	67	144.5	9.5	67	144.5	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
25	0.00		71	64	471	223	694	517	9.5	64	144.5	9.5	64	144.5	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
26	0.00		70	63	476	218	693	531	9.5	63	144.5	9.5	63	144.5	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
27	0.00		72	66	487	218	705	573	9.5	69	144.5	9.5	69	144.5	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
28	0.00		72	68	474	216	690	557	9.5	70	144.5	9.5	70	144.5	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
29	0.00		73	73	471	217	689	546	9.5	72	144.5	9.5	72	144.5	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
30	0.00		74	73	461	202	663	531	9.5	73	144.5	9.5	73	144.5	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
31																								
TOTAL	1.05			TOTAL	14361	6711	21072	17341																
				AVERAG	479	224	702	578																
				MAXIMU	576	245	793	700																
				MINIMUM	440	191	645	456																

MEXIC 68.2% OF TOTAL FLOW

U.S. = 31.8% OF TOTAL FLOW

PERSONNEL	FULL TIME	SERVICES EQUIPMENT		UTILITIES AND CHLORINE				PERSONNEL SERVICES AND EQUIPMENT UTILIZED OTHER THAN FULL TIME	HRS THIS MONTH
				CONTROL BUILDING				CLASSIFICATION	
CHIEF OPERATOR	1	90' D DGE AR S K C R	1	POWER CONSUMPTION	838,80 00	K.W.H			
COMPLIANCE SPEC	1	PICKU 1/2 TON	4	$	61,390 . 28			ELECTRICIAN & MECHANIC	22
OPERAORS GRADE II	0	GRIT TRUCK	1	CHLO INE & ULTRAVIOLET DISINFECTION AREA				LABORERS	9
OPERATORS, GRADE I	1	WATER TRUCK	1		-0-	K W.H.		OVER TIME (OPERATORS)	74
LABORERS	4	BACK HOE	1	$	60.74			MOTOR GRADER & OPERATO	0
MECHANIC	1	84' FORD CROWN VIC.	1	CHLORINE CONSU	9,174	LBS		ROBBINS & INT'L ST.	
ELECTRICIAN	1			SULPHUR D XIDE:	4,187 7	LBS.		USAGE 655 KHW	
								AMOUNT 95 81	

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April 1995

UTILITY COSTS - WATER SERVICE
$ 1,907.93 3 SVC 3/20/95 T TO 4/18/95

ELEC. BILLING DATE E 3/24/95 TO 4/24/95

PML-6		PML-7		PML-8		D.O MG/L			pH				SUSPENDED SOLIDS MG/L		SETTLEABLE SOLIDS ML/L	B O D. MG/L		TOTAL CHLORINE					
DEPT FEET	AERAT HOURS	DEPT FEET	AERATO HOURS	DEPT FEET	AERATO HOURS	CML-	CML-	EFFLUEN	RA	CML-	CML-	EFFLUEN	RAW	EFFLUEN	EFFLUENT	EFF	INFLUEN	USED (POUNDS)	GRIT REMOVE	FECAL COLIFORM #	UV 1 HOURS	UV-2 HOURS	DATE
8 8	-0-	8 8	-0-	8.8	-0-	4.1	5 2	8.3	6.7	7.0	7.1	7.1						400		4	192	192	1
8 8	-0-	8 8	-0-	8.8	-0-	5.3	4.8	6.1	6.9	7.4	7.3	7.1						380		11	192	192	2
8 8	-0-	8 8	-0-	8.8	-0-	5.2	4.0	6.0	7.2	7.4	7 3	6.9						330		8	192	192	3
8 8	-0-	8.8	-0-	8.8	-0-	4.8	3.3	5.9	7.1	7.3	7.1	7.0						310		4	192	192	4
8 8	-0-	8 8	-0-	8.8	-0-	4.3	3.8	5.6	7.3	7.2	7.1	7.1	245	14	<0.5	18	162	250		17	192	192	5
8 8	-0-	8 8	-0-	8.8	-0-	5.2	4.5	6.6	7.2	7.2	7 2	7.2						E 300		8	192	192	6
8 8	-0-	8 8	-0-	8.8	-0-	M	M	5.5	7.1	M	M	7.1						E 300		<2	192	192	7
8 8	-0-	8 8	-0-	8.8	-0-	5.1	5.0	6.0	7.1	7.2	7.2	7.2						280		4	192	192	8
8 8	-0-	8.8	-0-	8.8	-0-	5.0	5.3	5.2	7.2	7.1	7.2	7.1						400		<2	192	192	9
8 8	-0-	8 8	-0-	8.8	-0-	4.6	4.8	6.8	7.1	7.2	7.1	6.9						320		4	192	192	10
8 8	-0-	8 8	-0-	8.8	-0-	5.8	5.9	7.3	7.2	7.3	7 4	7.1						320	5 C/Y	8	192	192	11
8 8	-0-	8 8	-0-	8.8	-0-	4.7	4.4	6.6	7.3	7.3	7 2	7.2	165 +	10 +	<0.5	13	145	180		* 1600	192	192	12
8 8	-0-	8.8	-0-	8.8	-0-	5.5	5 4	7.1	7.2	7.5	7 4	7.1						320		13	192	192	13
8 8	-0-	8 8	-0-	8.8	-0-	5.6	5.5	6.9	7.0	7.5	7 4	6.9						300		7	192	192	14
8 8	-0-	8 8	-0-	8.8	-0-	5.0	5.1	6.8	7.2	7.5	7.1	7.0						300		2	192	192	15
8 8	-0-	8 8	-0-	8.8	-0-	7.3	7.0	5.5	6.9	7.4	7.2	6 9						310		2	192	192	16
8 8	-0-	8 8	-0-	8.8	-0-	6.0	4 2	7.4	6.9	7.5	7.9	7.3						300		9	192	192	17
8 8	-0-	8 8	-0-	8.8	-0-	5.8	5 5	7.1	6.7	7.5	7 5	7.2						280		2	192	192	18
8 8	-0-	8 8	-0-	8.8	-0-	4.5	5.1	9.0	6 8	7.6	7 6	7.4	150	10	<0.5	17	134	80		* >1600	192	192	19
8 8	-0	8 8	-0-	8.8	-0-	5.6	5.8	10.0	6.7	7.7	7.4	7.5						318	5 C/Y	80	192	192	20
8 8	-0-	8 8	-0-	8.8	-0-	5.5	5.4	11.0	6.9	7.6	7.5	7 6						300		8	192	192	21
8 8	-0-	8 8	-0-	8.8	-0-	5.7	5.1	10.2	7.0	7.5	7.4	7.5						300		4	192	192	22
8 8	-0-	8 8	-0-	8.8	-0-	5.1	5.5	10.6	7.0	7.4	7.3	7.4						450		2	192	192	23
8 8	-0-	8 8	-0-	8.8	-0-	4.5	3 5	7.2	7.1	7.2	7 2	7.2						300		<2	192	192	24
8 8	-0	8 8	-0-	8.8	-0-	5.6	5 5	8.2	7 2	7 6	7 5	7.3						300		* 900	192	192	25
8 8	-0-	8 8	-0-	8.8	-0-	5.0	5 0	9.3	7.1	7.6	7 6	7.2	155	16	<0.5	22	126	90		8	192	192	26
8 8	-0-	8 8	-0-	8.8	-0-	3.8	4.1	10.0	6.9	7.5	7.6	7.3						380		<2	192	192	27
8 8	-0-	8 8	-0-	8.8	-0-	5.3	5.1	11.5	7 0	7.4	7 4	7.4						330		<2	192	192	28
8 8	0-	8 8	-0-	8.8	-0-	4.9	4 9	12.1	7.0	7.4	7 4	7 4						300		<2	192	192	29
8 8	-0	8 8	0-	8.8	-0-	5.0	5.0	12.0	7.0	7.4	7 4	7.4						300		9	192	192	30
																							31

TOTAL CL 9 174

8 538 - GEOMETRIC MEAN

E = ESTIMATED VALUE

CY = CUBIC YA ARD GRIT COMBIN ION OF BASINS AND GRIT CHAMBE
ND = NONE DETECTED
# = MPN/100ML
M - MISSING DATA
* - EXCEEDANCE REPORTED TO E A/ADEQ

NOGALES INTERNATIONAL WASTEWATER TREATMENT PLANT

MONTHLY REPORT

PREPAR BY: RIC ARD L. ALDWELL, COMPLIAN E SPECIALIST
APPROVED AS TO F RM BY: LINO VEGA, PLANT SUPERINTENDENT

CML COMPLETE MIX LAGOON
PML PARTIAL MIX LAGOON

Page 1

MONTH. May 1995

DATE	WEA	HER	TEMP	RATURE	FLOW	IN LITER	S PER SE	OND	CML-1			CML-2			PML-1		PML-2		ML 3		PML 4		ML-5	
	RAIN FALL INCHES	WIND DIREC-TION	INFLOW	EFFLUEN	MEXICO	UNITED STATES	PLANT INFLOW	PLANT OUTFLO	DEPTH FEET	TEMP	AERAT HOURS	DEPT FEET	TEMP	AERAT HOURS	DEPT FEET	AERAT HOURS	DEPT FEET	AERAT HOURS	DEPT FEET	AERAT HOURS	DEPT FEET	AERAT HOURS	DEPT FEET	AERAT HOURS
1	0.00	SE	71	71	466	207	673	533	9.5	71	144.5	9.5	71	144.5	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
2	0.00		70	70	465	210	675	529	9.5	71	144.5	9.5	71	144.5	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
3	0.00		70	71	449	210	658	521	9.5	72	144.5	9.5	73	144.5	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
4	0.00		71	72	461	203	664	517	9.5	72	144.5	9.5	73	144.5	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
5	0.00		69	66	482	194	675	525	9.5	70	144.5	9.5	70	144.5	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
6	0.00		69	64	468	196	664	528	9.5	69	144.5	9.5	69	144.5	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
7	0.20	SW	68	62	457	188	645	529	9.5	62	144.5	9.5	62	144.5	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
8	0.00		69	64	490	198	688	545	9.5	68	144.5	9.5	68	144.5	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
9	0.00	S	70	62	476	201	677	542	9.5	64	144.5	9.5	64	144.5	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
10	0.00		70	62	467	199	665	529	9.5	64	144.5	9.5	64	144.5	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
11	0.00	SW	70	64	473	198	672	522	9.5	66	144.5	9.5	66	144.5	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
12	0.00		71	66	467	202	668	520	9.5	68	144.5	9.5	68	144.5	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
13	0.00		71	67	460	203	662	515	9.5	69	144.5	9.5	69	144.5	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
14	0.00	SE	71	70	434	194	628	500	9.5	70	144.5	9.5	70	144.5	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
15	0.00		70	70	447	201	648	506	9.5	68	144.5	9.5	68	144.5	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
16	0.00		70	68	453	203	656	512	9.5	68	144.5	9.5	68	144.5	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
17	0.00		71	69	445	201	645	516	9.5	69	144.5	9.5	69	144.5	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
18	0.00		71	70	431	202	633	508	9.5	71	144.5	9.5	71	144.5	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
19	0.00		71	70	422	195	617	493	9.5	72	144.5	9.5	72	144.5	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
20	0.00		72	72	408	191	598	480	9.5	73	144.5	9.5	73	144.5	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
21	0.00		72	73	391	179	570	457	9.5	73	144.5	9.5	73	144.5	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
22	0.00		72	74	405	190	595	462	9.5	73	144.5	9.5	73	144.5	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
23	0.00		72	79	406	185	591	472	9.5	79	144.5	9.5	78	144.5	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
24	0.00	E	72	77	424	183	607	486	9.5	75	144.5	9.5	76	144.5	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
25	0.00		72	75	417	186	602	487	9.5	76	144.5	9.5	78	144.5	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
26	0.00	SE	71	69	438	198	636	501	9.5	70	144.5	9.5	69	144.5	9.2	0-	8.8	24	8.8	24	8.8	24	8.8	-0-
27	0.00		70	70	436	195	631	499	9.5	70	144.5	9.5	70	144.5	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
28	0.00		72	70	423	181	604	481	9.5	72	144.5	9.5	78	144.5	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
29	0.00		71	70	411	191	603	468	9.5	70	144.5	9.5	70	144.5	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
30	0.00		71	71	426	203	630	483	9.5	71	144.5	9.5	71	144.5	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
31	0.00		72	72	418	200	618	485	9.5	72	144.5	9.5	72	144.5	9.2	-0-	8.8	24	8.8	24	8.8	24	8.8	-0-
TOTAL	0.2			TOTAL	13713	6084	19797	15647																
				AVERAG	442	196	639	505																
				MAXIMU	490	210	688	545																
				MINIMUM	391	179	570	457																

MEXIC 69.3 % OF TOTAL FLOW

U.S. = 30.7 % OF TOTAL FLOW

ULL TIM SERVICES				UTILITIES AND CHLORINE			PERSONNEL SERVICES AND EQUIPMENT UTILIZED OT ER THAN FULL TIME	
PERSONNEL		EQUIPMENT		CONTROL BUILDING			CLASSI ICATI ON	HRS THIS MONTH
CHIEF OPERATOR	1	90' D DGE AR SKC R	1	POWER CON MPTIO		K.W.H.	ELECTRICIAN & MECHANIC	19
COMPLIANCE SPEC	1	PICKU 1/2 TON	3	$			LABORERS	20
OPERAORS. GRADE II	2	GRIT TRUCK	1	CHLO INE & ULTRAVIOLET DISINFECTION AREA		K.W.H.	OVER TIME (OPERATORS)	76
OPERATORS GRADE I	1	WATER TRUCK	1	$			MOTOR GRADER & OPERATO	0
LABORERS	4	BACK HOE	1	CHLORINE CONSU		LBS	ROBBINS & INT'L ST. USAGE AMOUNT	KHW
MECHANIC	1	84' FORD CROWN VIC.	1	SULPHUR D XIDE:		LBS.		
ELECTRICIAN	0			UTILITY COSTS - WATER SERVICE	$ 2277.69	SVC. 4/18/95 TO 5/16/95		
Page 2				BILLING DATE:				
May 1995								

PML-6		PML-7		PML-8		D.O. MG/L			pH				SUSPENDED SOLIDS MG/L		SETTLEABLE SOLIDS ML/L	B O D MG/L		TOTAL CHLORINE USED (POUNDS)	GRIT REMOVE	FECAL COLIFORM #	UV 1 HOURS	UV-2 HOURS	DATE
DEPT FEET	AERAT HOURS	DEPT FEET	AERATO HOURS	DEPT FEET	AERATO HOURS	CML-	CML-	EFFLUEN	RA	CML-	CML-	EFFLUEN	RAW	EFFLUEN	EFFLUENT	EFF	INFLUEN						
8.8	-0-	8.8	-0-	8.8	-0-	3.8	3.8	6.6	7.1	7.6	7.5	7.3						320		<2	192	192	1
8.8	-0	8.8	-0-	8.8	-0-	4.0	4.1	7.7	6.9	7.5	7.4	7.4						400		23	192	192	2
8.8	-0-	8.8	-0-	8.8	-0-	3.8	3.9	8.1	6.9	7.5	7.4	7.3						80		<2	192	192	3
8.8	-0-	8.8	-0-	8.8	-0-	5.3	4.8	9.0	7.0	7.4	7.5	7.4	170	18	<0.5	18	146	120		<2	192	192	4
8.8	-0-	8.8	-0-	8.8	-0-	4.4	3.7	7.0	6.6	7.4	7.6	7.3						260		[illegible]	192	192	5
8.8	-0-	8.8	-0-	8.8	-0-	4.5	4.4	7.1	6.7	7.4	7.7	7.3						290		4	192	192	6
8.8	-0	8.8	-0-	8.8	-0-	5.5	5.3	7.3	6.6	7.3	7.4	7.3						200		8	192	192	7
8.8	-0-	8.8	-0-	8.8	-0-	4.3	4.5	8.1	6.8	7.5	7.5	7.4						260		<2	192	192	8
8.8	-0-	8.8	-0-	8.8	-0-	4.8	5.1	7.4	7.1	7.6	7.7	7.1						300	4 C/Y	2	192	192	9
8.8	-0-	8.8	-0-	8.8	-0-	4.3	4.7	6.3	7.2	7.7	7.6	7.1	130	12	<0.5	22	140	240		1600	192	192	10
8.8	-0-	8.8	-0-	8.8	-0-	4.5	4.9	6.2	7.1	7.5	7.6	7.1						260		6	192	192	11
8.8	-0-	8.8	-0-	8.8	-0-	4.3	4.5	6.3	7.1	7.6	7.6	7.1						260		<2	192	192	12
8.8	-0	8.8	-0-	8.8	-0-	5.3	5.1	6.4	7.2	7.5	7.5	7.1						280		2	192	192	13
8.8	-0-	8.8	-0-	8.8	-0-	5.5	4.8	6.8	7.3	7.4	7.4	7.2						240		2	192	192	14
8.8	-0	8.8	-0-	8.8	-0-	4.5	4.7	6.2	7.2	7.5	7.5	7.1						260		11	192	192	15
8.8	-0-	8.8	-0-	8.8	-0-	4.6	4.9	6.3	7.3	7.4	7.4	7.2						260		<2	192	192	16
8.8	-0-	8.8	-0-	8.8	-0-	4.8	5.0	6.5	7.2	7.3	7.3	7.3	160	15	<0.5	33	132	280		2	192	192	17
8.8	-0	8.8	-0-	8.8	-0-	5.1	5.2	6.6	7.3	7.3	7.2	7.3						192		8	192	192	18
8.8	-0-	8.8	-0-	8.8	-0-	5.4	5.6	6.9	7.2	7.4	7.2	7.4						260	5 C/Y	300	192	192	19
8.8	-0-	8.8	-0-	8.8	-0-	4.9	5.0	7.1	7.2	7.5	6.5	7.3						200		<2	192	192	20
8.8	-0-	8.8	-0-	8.8	-0-	4.6	4.5	7.3	7.3	7.3	7.2	7.2						300		<2	192	192	21
8.8	-0-	8.8	-0-	8.8	-0-	4.5	4.5	7.1	7.2	7.2	7.3	7.3						300		<2	192	192	22
8.8	-0	8.8	-0-	8.8	-0-	5.0	5.6	5.0	7.6	7.3	7.3	7.5						330		<2	192	192	23
8.8	-0-	8.8	-0-	8.8	-0-	4.7	4.9	6.5	7.4	7.1	7.2	7.3	175	13	<0.5	14	138	260		7	192	192	24
8.8	-0-	8.8	-0-	8.8	-0-	4.3	5.0	6.0	7.8	7.2	7.3	7.2						260		4	192	192	25
8.8	-0-	8.8	-0-	8.8	-0-	3.8	3.8	5.9	7.5	7.7	7.8	7.4						240		240	192	192	26
8.8	-0	8.8	-0-	8.8	-0-	4.1	4.2	7.9	7.3	7.5	7.6	7.3						240		<2	192	192	27
8.8	-0-	8.8	-0-	8.8	-0-	4.5	4.6	7.0	7.3	7.5	7.5	7.4						275		4	192	192	28
8.8	-0-	8.8	-0-	8.8	-0-	6.0	5.9	7.9	7.1	7.5	7.5	7.5						155		17	192	192	29
8.8	-0-	8.8	-0-	8.8	-0-	4.4	4.1	8.2	7.4	7.8	7.8	7.6						260		<2	192	192	30
8.8	-0-	8.8	-0-	8.8	-0-	4.6	4.5	8.4	7.5	7.6	7.7	7.5	150	19	<0.5	18	153	260		11	192	192	31
																	TOTAL CL	7732		5 557	GEOMETRIC MEAN		

CY = CUBIC YA ARD GRIT COMBIN ION OF BASINS AND GRIT CHAMBE
ND = NONE DETECTED
# - MPN/100Ml
M - MISSING DATA
* = EXCEEDANCE REPORTED TO E A/ADEQ