

GRCC 06



**GIANT**

Giant Refining Company  
Route 3, Box 7  
Gallup, NM 87301

March 24, 2006

Ms. Hope Monzeglio  
Project Leader  
Permits Management Program  
New Mexico Environment Department  
Hazardous Waste Bureau  
2905 Rodeo Park Drive East, Bldg 1  
Santa Fe, New Mexico 87505

**SUBJECT: INFORMATION REQUEST FOR AERATION LAGOON AND API  
SEPARATOR FLOW RATE AND CAPACITY  
GIANT REFINING COMPANY, CINIZA REFINERY  
HWB-GRCC-MISC**

Dear Ms. Monzeglio:

In response to your letter on the same subject, Giant Industries, Inc. – Ciniza Refinery hereby provides the capacity and flow rate data that you requested. The information is provided below:

- a. The average flow rate of effluent discharged by the new API separator on a daily, weekly and monthly basis:

The most recent measurements show the total flow of effluent from Pond 2 at the permanent V-notch weir at 123 gpm. On the same day, Giant also measured the flow from the boiler plant where it enters the Pond 2 at the temporary V-notch weir at 22 gpm. Subtracting the boiler plant flow from the overall flow provides the flow from the aeration lagoons to Pond 1 = 123 gpm – 22 gpm = 101 gpm.

Subtracting the Pilot Station sanitary flow (8 gpm) from the flow from the aeration lagoons to Pond 1 then provides the flow of effluent from the new API separator = 101 gpm – 8 gpm = 93 gpm.

Daily flow = 93 gpm x 60 min/hr x 24 hr/day = 133,920 gpd  
Weekly flow = 133,920 gpd x 7 days/week = 937,440 gpw  
Monthly flow = 937,440 gpw x 4 weeks/month = 3.75 Mgm

- b. The maximum capacity (volume) of each of the aeration lagoons 1 and 2:

Depth measurements of the lagoons were recently taken. Based on the recent measurements, the capacity of the ponds are:

Aeration lagoon 1 = 0.36 acre x 43,560 sq ft/acre x 3/4 x 4.5 ft x 7.48 gal/cu ft = 395,900 gallons (approx)  
Aeration lagoon 2 = 0.56 acre x 43,560 sq ft/acre x 3/4 x 4.5 ft x 7.48 gal/cu ft = 615,800 gallons (approx)

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- c. The average daily flow (volume) currently passing through the aeration lagoons to evaporation pond 1:

The gpm value for the aeration lagoon flow rate was calculated in the determination of the flow rate in a. = 101 gpm

$$\text{Daily flow} = 101 \text{ gpm} \times 60 \text{ min/hr} \times 24 \text{ hr/day} = 145,440 \text{ gpd}$$

- d. The maximum flow rate that the aeration lagoons can effectively treat:

Based on aerator size and hp rating, the maximum treatment capacity of both lagoons combined is 1,500 pounds per day of BOD. Based on an average BOD influent of 700 mg/l this correlates to:

$$1500 \text{ lbs/day} \times 2.2 \text{ kg/lb} \times 10^6 \text{ mg/kg} \times 1 \text{ l/700 mg} \times 1 \text{ gal/3.785 l} = 1.24 \text{ MGD}$$

- e. The maximum capacity (volume of waste water that the New API separator can treat:

The new API separator was designed to treat 300 gpm of waste water total. It consists of two bays each of which can treat a maximum of 150 gpm for a total of 300 gpm.

- f. The average volume of waste water that is treated by the new API separator on a daily, weekly and monthly basis:

The average amount of slop oil generated on a daily basis is approximately 5,500 gpd. This is the daily average amount sent to the NAPIS. The total amount of waste water on a daily basis also includes the waste water component. The waste water component was determined in a. at 133,920 gpd. Therefore, the total volume treated by the NAPIS is the sum of the two waste streams = 5,500 gpd + 133,920 gpd = 139,420 gpd.

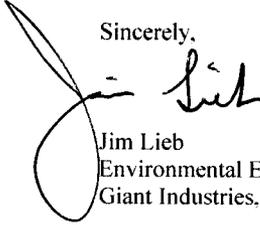
$$\text{Daily flow} = 139,420 \text{ gpd}$$

$$\text{Weekly flow} = 139,420 \text{ gpd} \times 7 \text{ days/week} = 937,440 \text{ gpw}$$

$$\text{Monthly flow} = 937,440 \text{ gpw} \times 4 \text{ weeks/yr} = 3.75 \text{ Mgm}$$

If you have any questions regarding the information provided in this letter, please contact me at (505) 722-0227.

Sincerely,



Jim Lieb  
Environmental Engineer  
Giant Industries, Inc. – Ciniza Refinery

Cc: Ed Riege  
Steve Morris  
Ed Rios