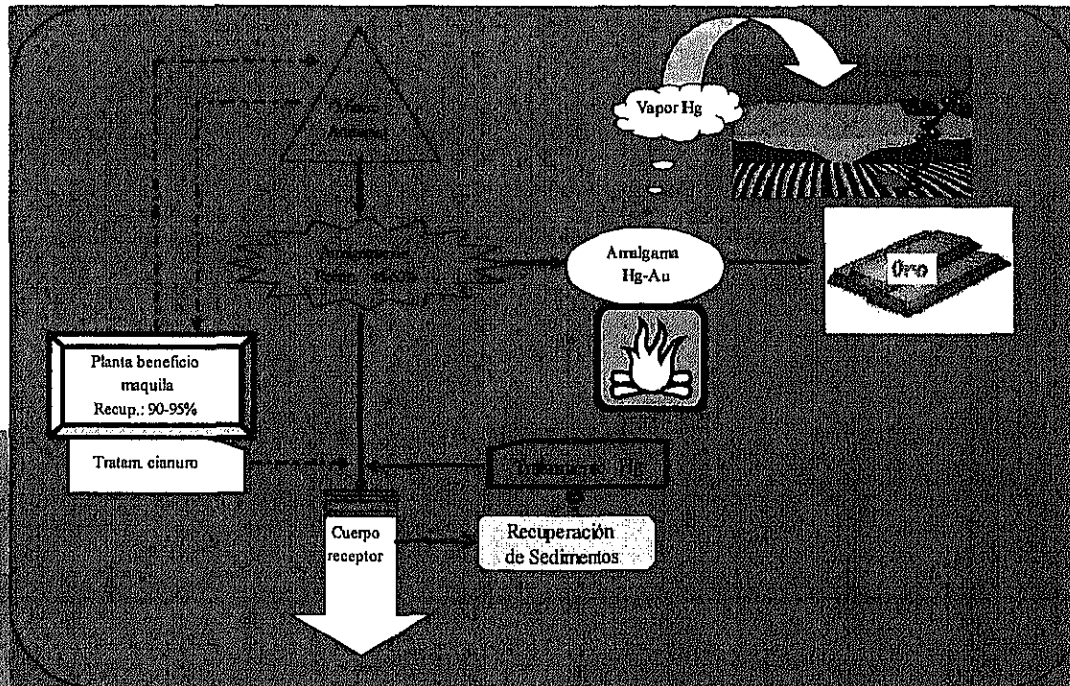


PP 1 La Zona Rinconada



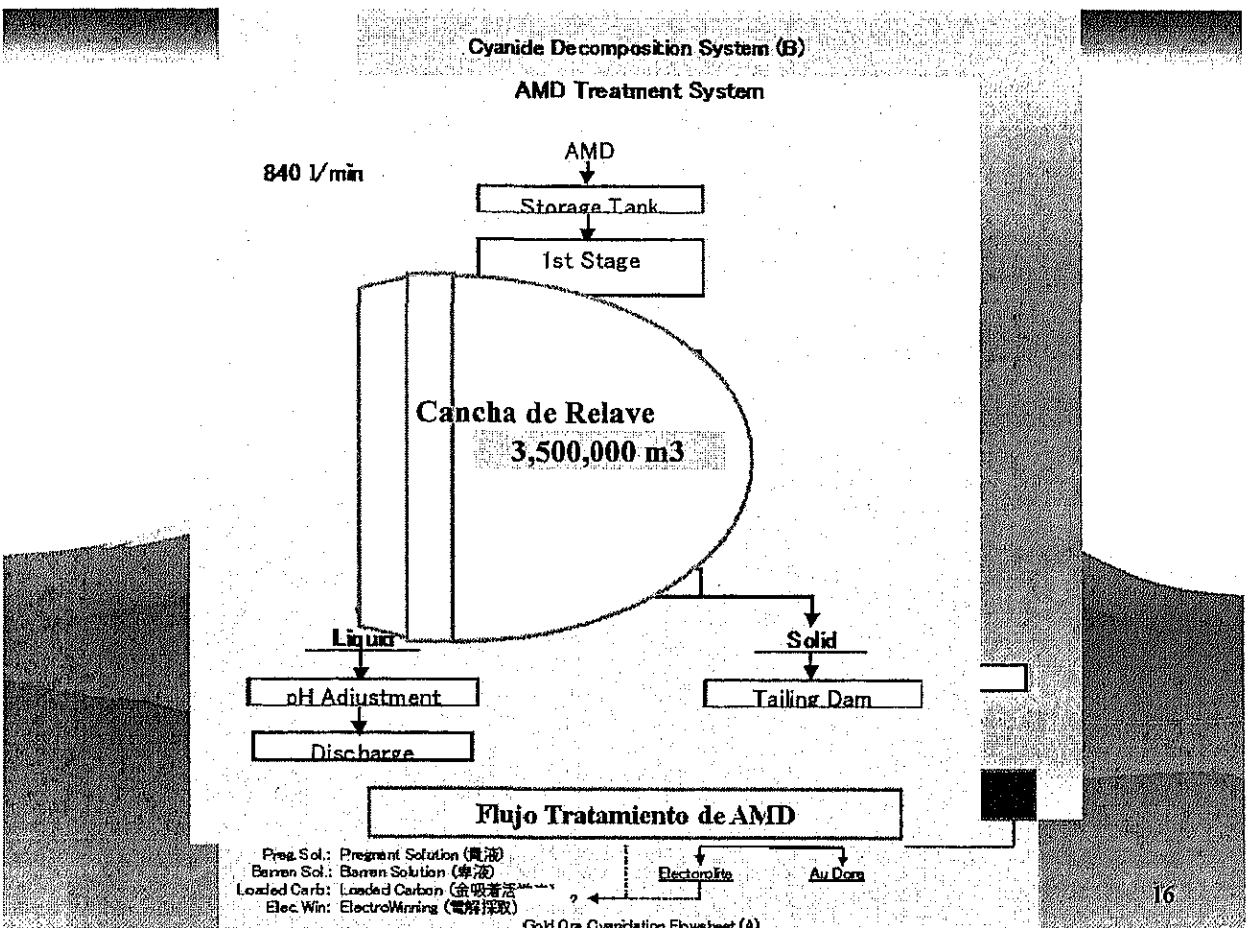
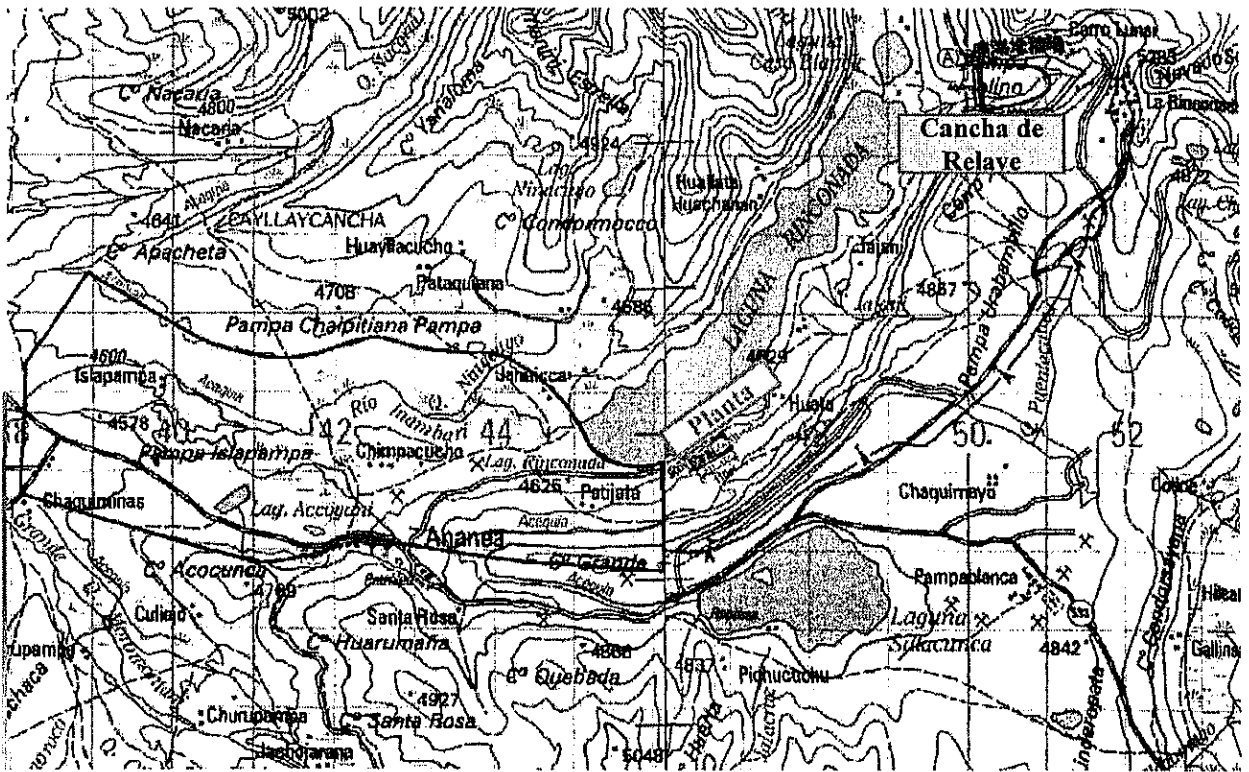
13

Unidades de PP-1

- ◆ Planta Alta Eficiencia de Recuperación de Oro
- ◆ Unidad de Control y Recuperación de Mercurio
- ◆ Unidad de Decomposición de Cianuro
- ◆ Unidad de Tratamiento de AMD (Acid Mine Drainage)
- ◆ Cancha de Relave
- ◆ Laboratorio

14

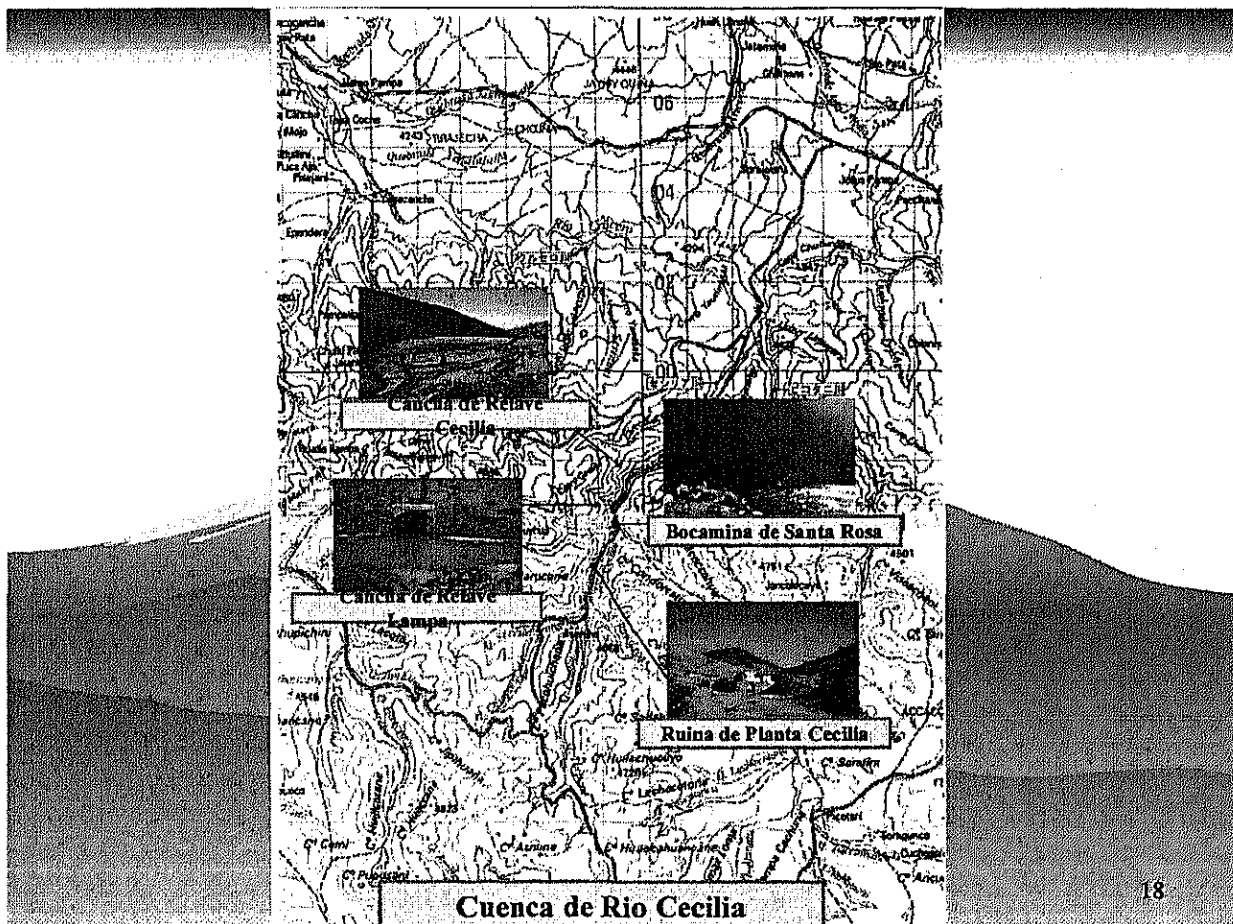
Ubicaciones



Unidades de PP-2

- ◆ Planta de Recuperación de Minerales Preciosos
- ◆ Unidad de Tratamiento de AMD (Acid Mine Drainage)
- ◆ Cancha de Relave
- ◆ Laboratorio

17



18

V Inversión Inicial (US\$)

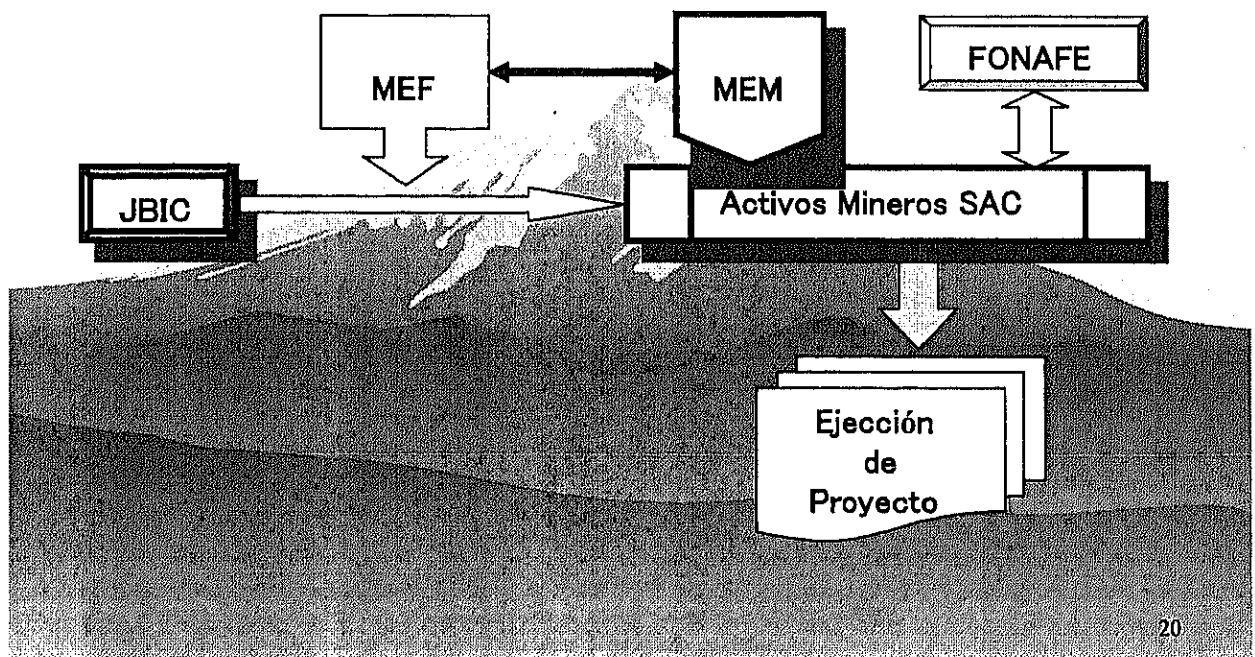
Zona de Rinconada

◆ Gold Recovery System:	4,381,300
◆ Mercury Treatment System:	341,000
◆ Cyanide Decomposition System:	645,000
◆ Installation:	44,000
◆ Tailing Dam:	2,310,000
◆ Accessory Systems:	1,495,130
◆ Construction Cost:	8,024,994
<u>Total</u>	<u>17,241,424</u>

Cuenca de Rio Cecilia

◆ Valuable Mineral Recovery Plant:	9,828,283
◆ AMD Treatment System:	584,000
◆ Installation:	44,000
◆ Tailing Dam:	2,079,000
◆ Accessory Systems:	1,998,943
◆ Construction Cost:	8,026,000
<u>Total</u>	<u>22,560,226</u>

El Sistema para Aplicación PP



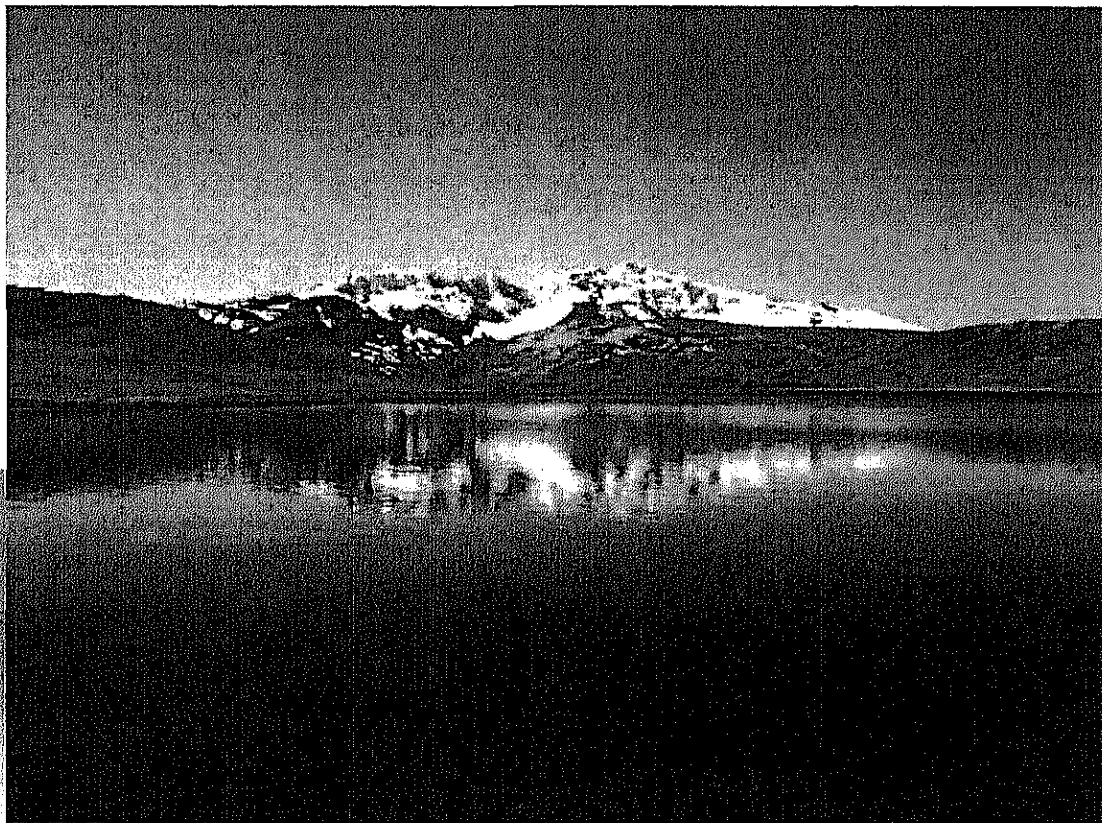
VI Conclusión

[Zona de Rinconada]

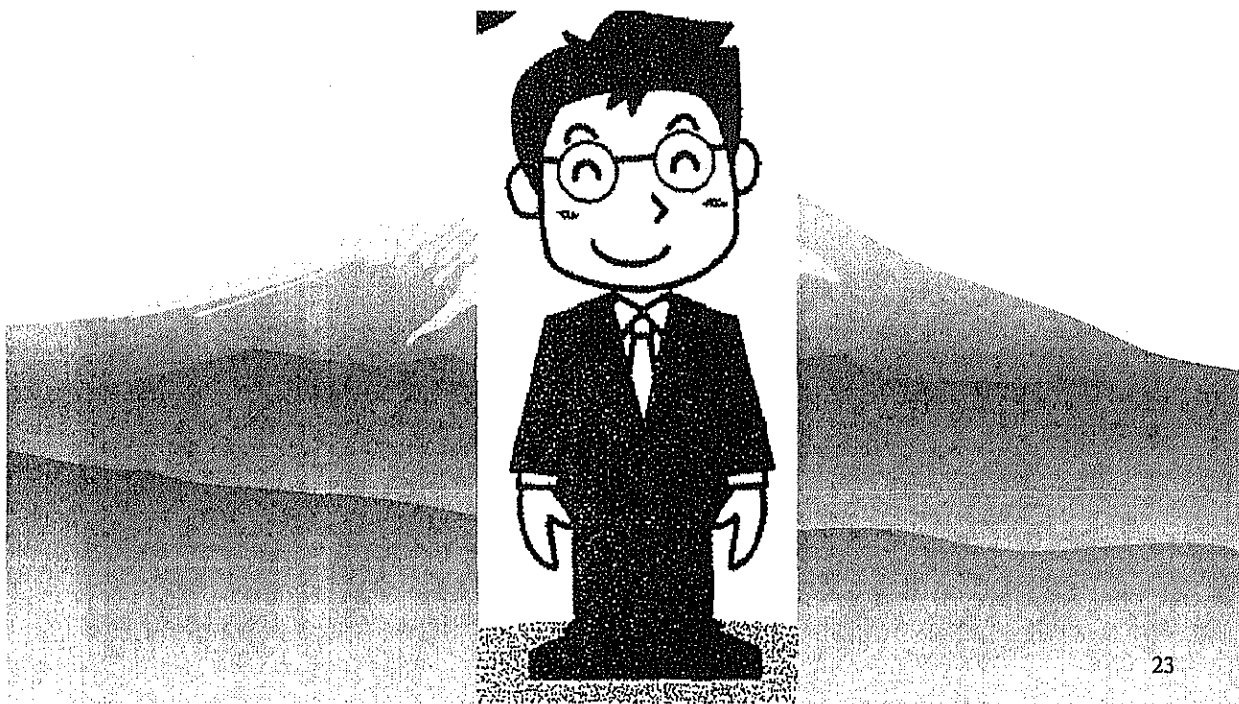
- ◆ Punto de vista financiero, en caso de aplicar financiación con bajo interes (i.e. 0.65%) y la plazo largo (i.e. por 40 años con 10 años de plazo grace), la idea de PP será de alta posibilidad alta.
- ◆ Además, podriamos incrementar beneficio de mejoramiento de ambiente aumentando valor de PP.

[Cuenca de Rio Cecilia]

- ◆ En caso de que el precio de los metales mantuvieran alto, PP será aplicable.
- ◆ Cuando se presuma el beneficio de mejoramiento de ambiente, la posibilidad de PP incrementará.
- ◆ Tenemos que ver la tendencia de ley y regulación relacionada.₂₁



Gracias por Su Atención!



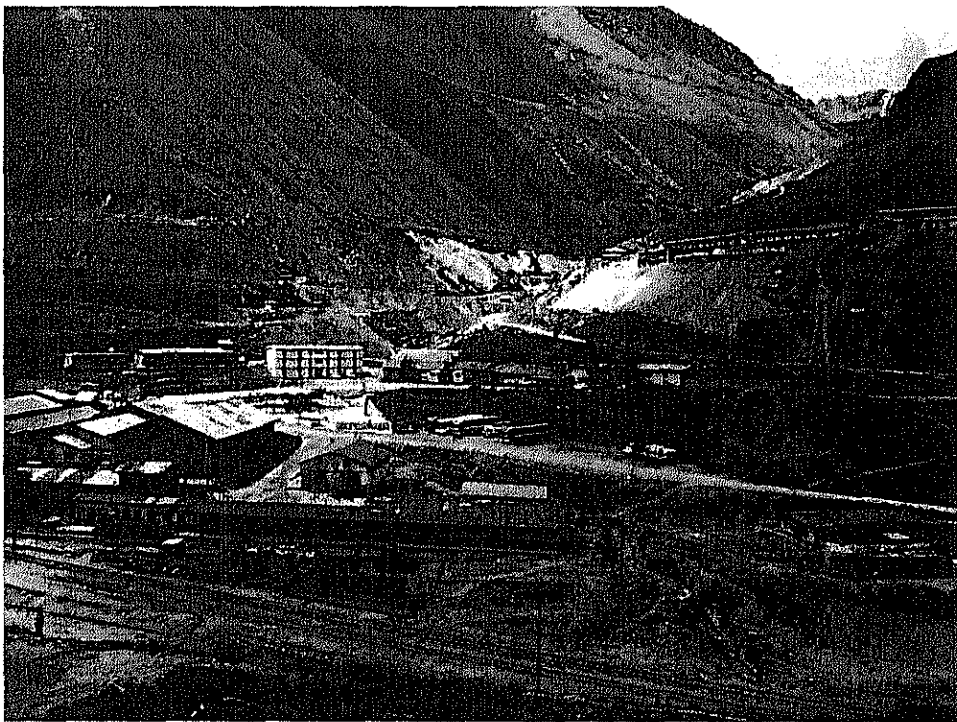
The Mineral Resources and Mining Potential in the Waste and Tailings

August 2008

Tsuyoshi YAMADA

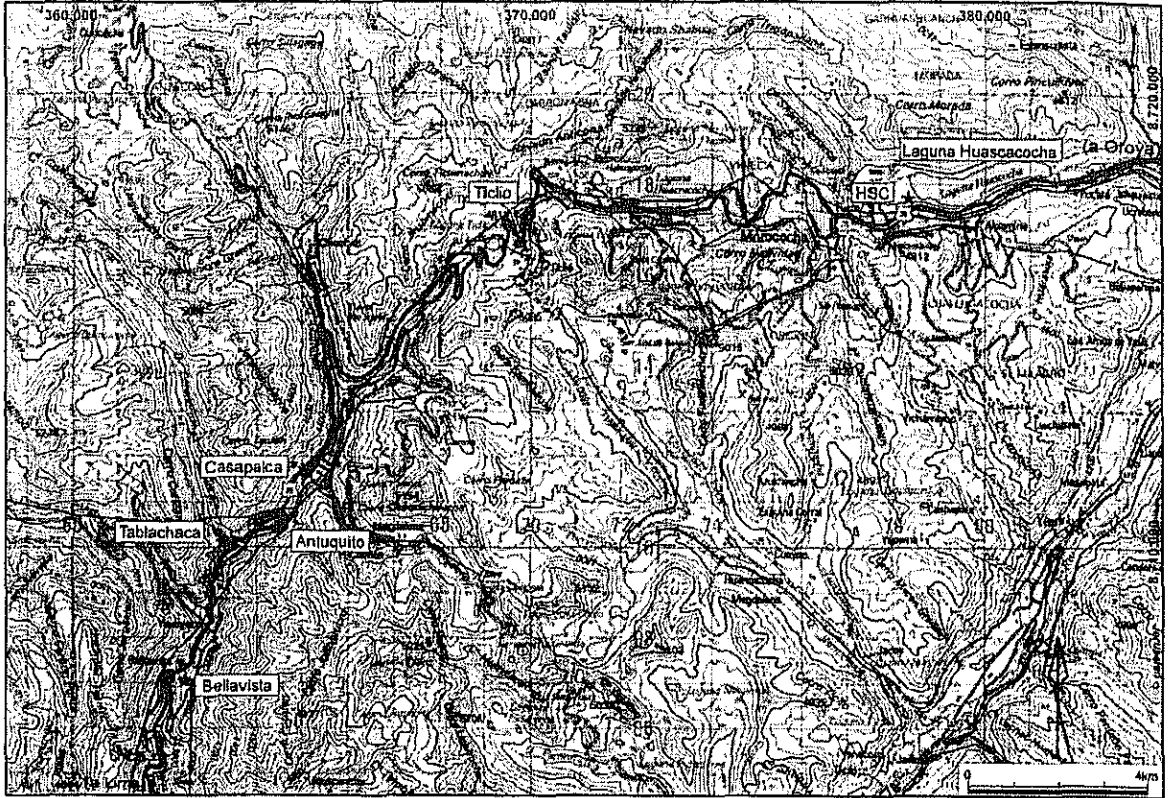
JBIC Study Team

1

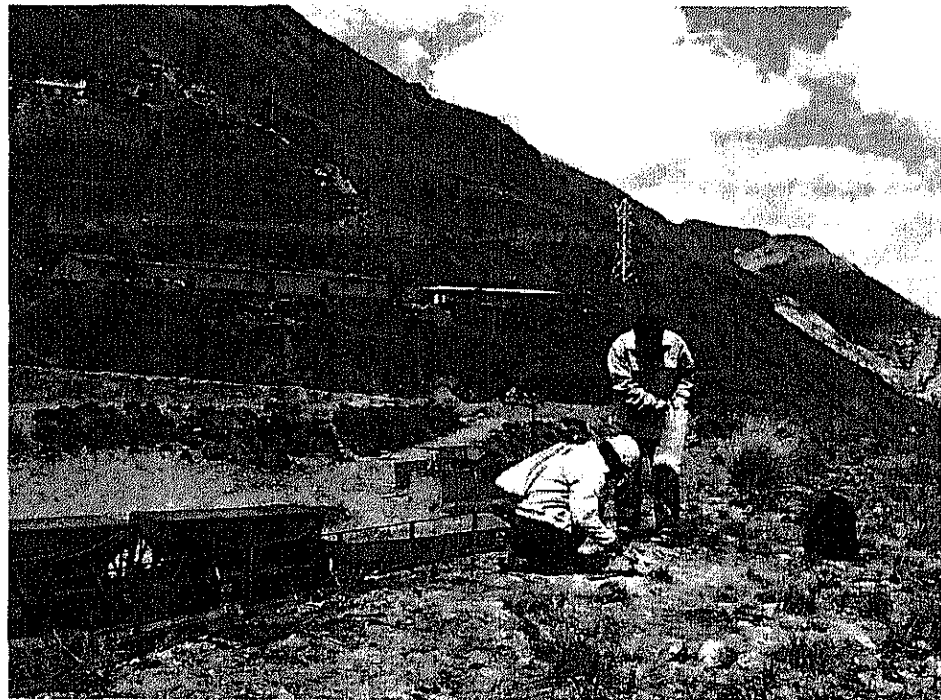


Casapalca Mine

2



Location map of the Tailing Dams



Sampling at Casapalca Tailing Dam

Volumen of Tailings

Casapalca	1,000,000 t
Antuquito	600,000 t
Tablachaca	3,000,000 t
Bellavista	1,220,000 t

Source: Ex-CENTROMIN

5

Volume of Remained Metals

	Casapalca 1,000,000t				Antuquito 600,000t				Tablachaca 3,000,000t				Bellavista 1,220,000t			
	Content		Metal		Content		Metal		Content		Metal		Content		Metal	
Au	0.089	ppm	89	kg	0.054	ppm	32	kg	0.058	ppm	174	kg	0.041	ppm	50	kg
Ag	40.2	ppm	40	t	28.7	ppm	18	t	25.8	ppm	77	t	17.8	ppm	21	t
As	316	ppm	316	t	414	ppm	248	t	411	ppm	1,233	t	219	ppm	267	t
Cd	9.88	ppm	10	t	8.39	ppm	5	t	18.15	ppm	54	t	5.74	ppm	7	t
Ce	22.5	ppm	23	t	38.1	ppm	22	t	41.2	ppm	124	t	38.2	ppm	47	t
Co	9.6	ppm	10	t	12.7	ppm	8	t	31.1	ppm	93	t	9.2	ppm	11	t
Cu	925	ppm	925	t	402	ppm	241	t	687	ppm	2,061	t	372	ppm	454	t
Ga	9.84	ppm	10	t	12.2	ppm	7	t	12.45	ppm	37	t	18.85	ppm	17	t
In	0.054	ppm	54	kg	0.035	ppm	21	kg	0.031	ppm	93	kg	0.043	ppm	52	kg
Li	18.9	ppm	19	t	21.9	ppm	13	t	22.9	ppm	69	t	38.7	ppm	47	t
Mo	18.35	ppm	18	t	15.15	ppm	9	t	12.25	ppm	37	t	10.35	ppm	13	t
Nb	7.1	ppm	7	t	9.4	ppm	6	t	9.8	ppm	29	t	9.1	ppm	11	t
Ni	7.6	ppm	8	t	10.4	ppm	6	t	20.8	ppm	82	t	8.2	ppm	10	t
Pb	3430	ppm	3,430	t	2,380	ppm	1,428	t	1,330	ppm	3,990	t	1,860	ppm	2,025	t
Sn	1.8	ppm	2	t	1.7	ppm	1	t	1.4	ppm	4	t	1.8	ppm	2	t
Ta	0.53	ppm	530	kg	0.68	ppm	398	kg	0.89	ppm	2,070	kg	0.78	ppm	927	kg
Ti	0.254	%	2,540	t	0.321	%	1,928	t	0.308	%	9,240	t	0.328	%	4,002	t
W	14.3	ppm	14	t	12.8	ppm	8	t	11.1	ppm	33	t	10.1	ppm	12	t
Zn	2960	ppm	2,960	t	2240	ppm	1,344	t	5130	ppm	15,390	t	1790	ppm	2,184	t
Zr	33.2	ppm	33	t	47.7	ppm	29	t	40.3	ppm	121	t	72.2	ppm	88	t

Estimation of gold deposits in the Rinconada area (1)

- Manto type

Area (Assumed on map) $500 \text{ m} \times 100 \text{ m} = 50,000 \text{ m}^2$

Average thickness of waste rock

(Visual assumption) 5 m

Specific gravity (general waste rock) 1.6

Estimate total waste rock $400,000 \text{ t}$

Estimation of gold deposits in the Rinconada area (2)

- Estimate Volume of moraine and placer

Area (Ananea-Chaquiminas) 20 km^2 ($8 \text{ km} \times 2.5 \text{ km}$)

Average thickness 10 m (Chaquiminas)

Specific gravity 2.25 (INGEMMET 2003)

Estimate total volume of moraine & placer

$200,000,000 \text{ m}^3$

Content of Gold in the Rinconada Area

Deposit type		Content	Estimated ore grade
Manto	Gangue (155c m)	0 g/t	$(155 \text{ cm} \times 0 \text{ g/t} + 10 \text{ cm} \times 5 \text{ g/t} + 15 \text{ cm} \times 100 \text{ g/t}) \div (155 \text{ cm} + 10 \text{ cm} + 15 \text{ cm}) = 8.6 \text{ g/t}$
	Gangue (10 cm)	0~10 g/t (average 5 g/t)	
	Ore (15 cm)	~4,000 g/t (average 100 g/t)	
Moraine & Placer	part of fine grained deposit	0.55 g/m ³	0.55 g/m ³
	part of coarse grained deposit	0.08 g/m ³	0.08 g/m ³
	average	0.13 g/m ³ ~0.48 g/m ³	0.305 g/m ³ (INGEMMET 2003)
	waste material	0.07 g/m ³ ~0.08 g/m ³	0.075 g/m ³

11

Estimation of gold at Rinconada Area

Manto type	Moraine & Placer type	
	Volume of Gold in remained moraine & placer	Volume of Gold in remained waste rock
Volume of waste rock 400,000 t Gold content of waste rock 8.6 g/t Percentage of remained gold in waste rock 50%	Deposits 200,000,000 m ³ (grain size -3.75 cm 64% 128,000,000 m ³ average content of gold 0.305 g/m ³ / 0.64 = 0.48 g/m ³) Excavated percentage 50%	Volume of Gold in the excavated deposit 30.5 t Gold recovery of the excavated deposit 50%
gold 1.72 t	gold 30.5 t	gold 15.25 t
Total Gold 47.47 t		

12

Mitigación de Contaminación Minera y Protección Ambiental

Choshin Haneji

Medio Ambiente, Prevención de Contaminación Minera

Misión de Estudio JBIC

Agosto, 2008

1

Impacto de la actividad minera de la zona La Rinconada

- Metodología del diagnóstico
 - Análisis de información existente
 - DIGESA, INRENA, INGEMMET, PELT, etc.
 - Entrevistas
 - Oficina Regional de Minería, Puno
 - Universidad del Altiplano
 - Mediciones in-situ y análisis de muestras
 - Mediciones simples (pack tests)
 - Análisis en laboratorio de muestras de agua, sedimentos y rocas

2

DAM: Bocamina Balcón III



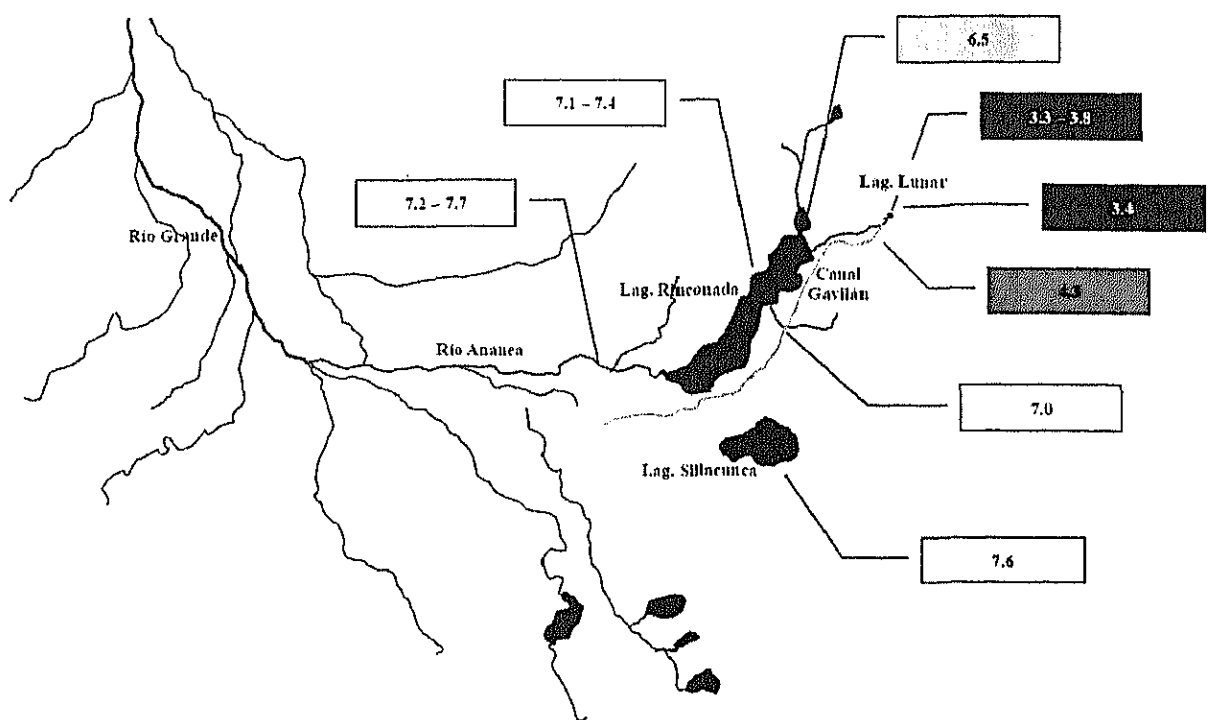
3

pH 3.7, caudal 69 L/s, As 1.13 mg/L



4

Zona La Rinconada: Valores de pH



Quimbaleteo/Amalgamación

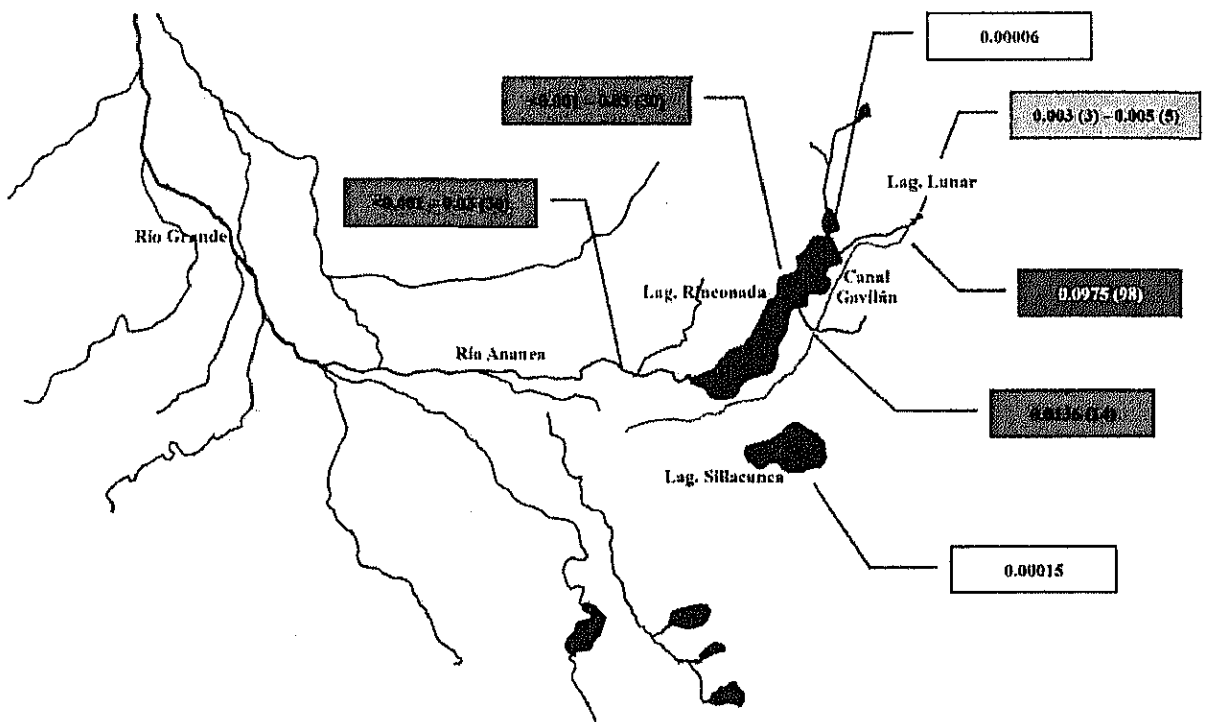


Hg > 100 mg/L



7

Zona La Rinconada: Hg (mg/L)

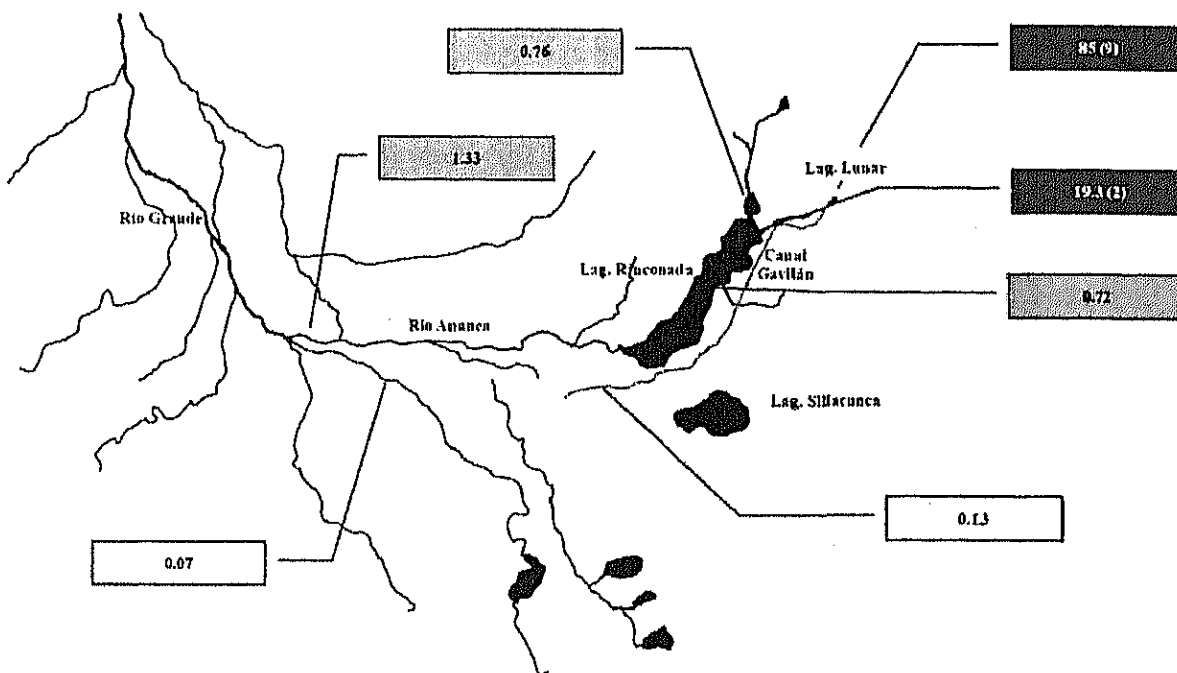


Chuteo de material morrénico

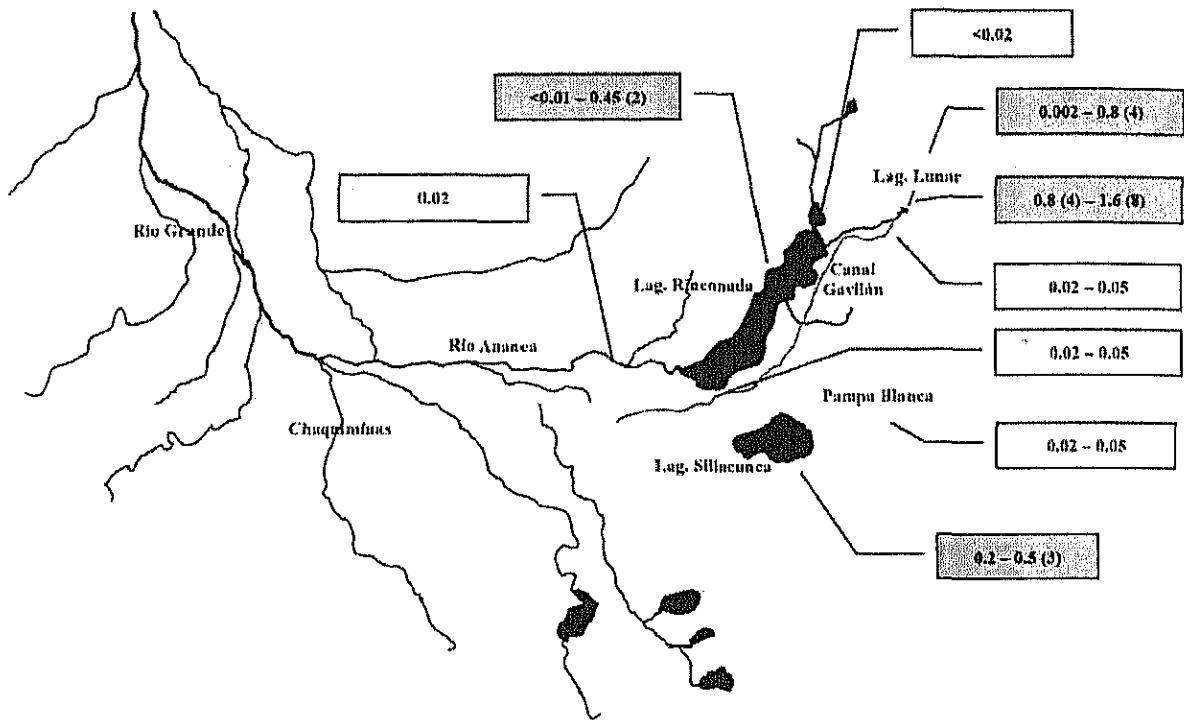


9

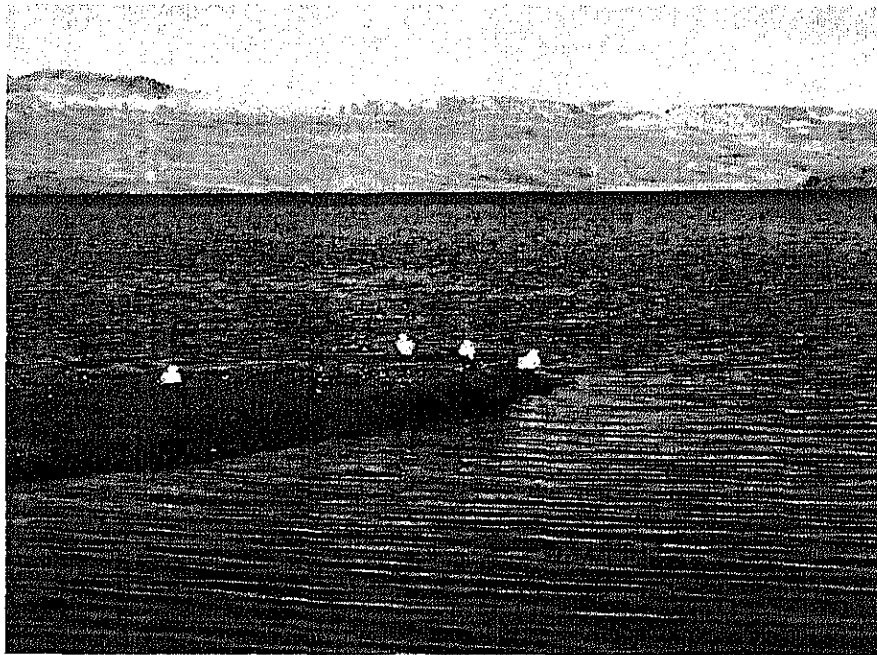
Zona La Rinconada: Hg (mg/Kg)



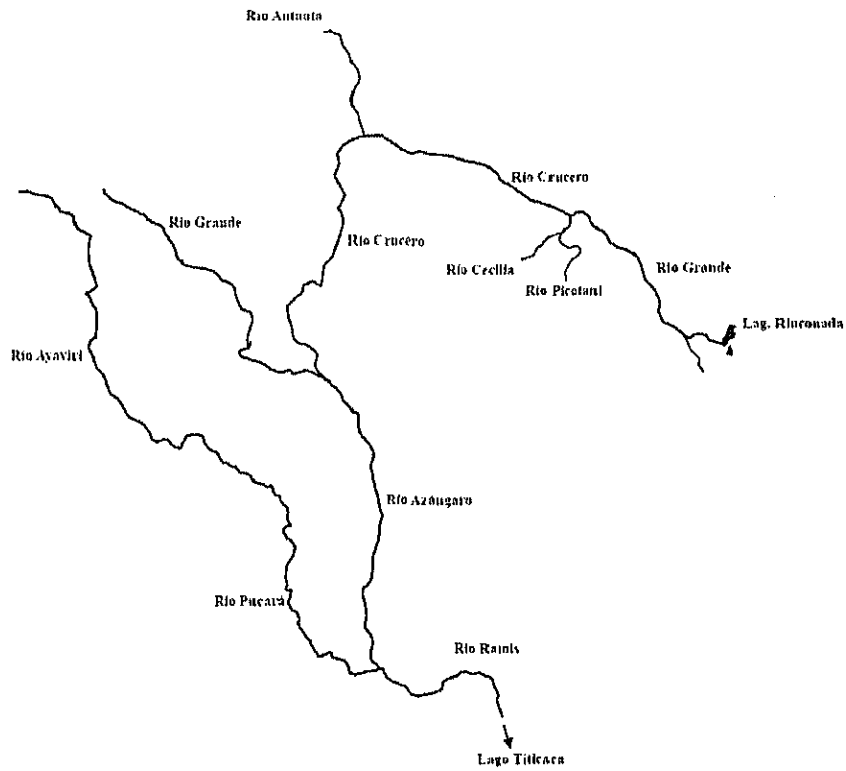
Zona La Rinconada: As (mg/L)



Vista de la laguna Rinconada

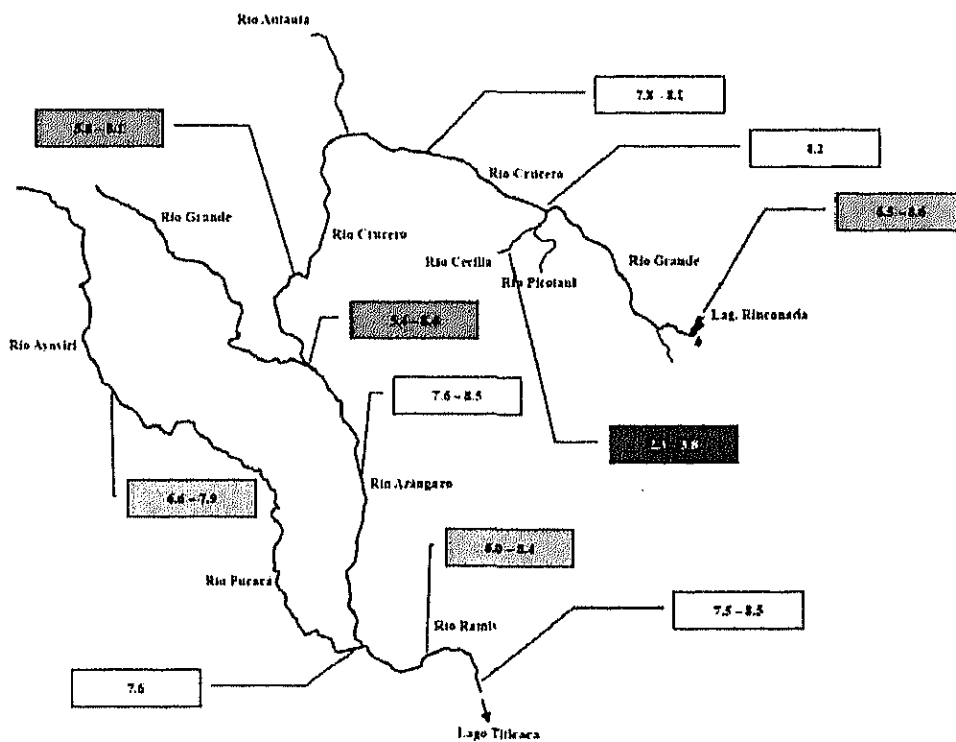


Cuenca Ramis



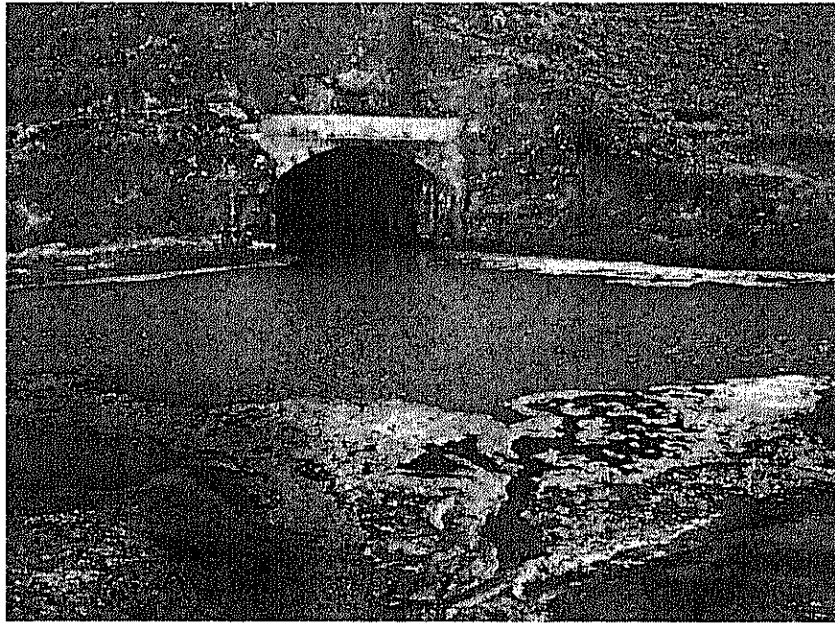
13

Cuenca Ramis: Valor de pH



14

Cuenca río Cecilia: mina abandonada



15

Cuenca río Cecilia: relavera abandonada



16