

PILOT PLANT

	July 18 to August 18	August 19 to August 26
<u>Free Cyanide in Tails</u>		
lbs/ton mean	0.97	0.48
std. deviation	0.15	0.13
no. greater than mean	19	6
no. less than mean	13	2
<u>Cyanide Added</u>		
lbs.	4620	220
lbs/ton	2.33	0.52
<u>% Solids</u>		
mean	30.09	28.38
std. deviation	5.68	2.07
no. greater than mean	11	3
no. less than mean	21	5
<u>Dissolution %</u>		
mean	39.32	37.41
std. deviation	4.23	4.02
no. greater than mean	16	3
no. less than mean	16	5
<u>Adsorption %</u>		
mean	89.60	90.00
std. deviation	4.29	3.46
no. greater than mean	15	5
no. less than mean	17	3
<u>Recovery %</u>		
mean	35.32	33.76
std. deviation	4.78	4.62
no. greater than mean	14	6
no. less than mean	18	2

Don Cooper
Nov 17, 1988

MECHANICAL DATA COMPARISON
PILOT PLANT/TRP (CIL)

ITEM	PILOT PLANT	TRP
Impeller diameter	4 ft.	150 inch
- type	hydrofoil	hydrofoil
- no. blades	3	3
- no. impellers	1	2
Tank diameter	12 ft.	47.5 ft.
Tank height	13 ft.	54.5 ft.
Tank bottom to Impeller		
(lower)	64 in.	166 in.
(upper)	-	386 in.
Tank top to Impeller		
(lower)	92 in.	488 in.
(upper)	-	268 in.
Agitator hp	7 1/2	100
Output rpm	84	25
Baffles - width	12 in.	4 ft.
- wall space	2 in.	8 in.
- number	4	4
- height above tank bottom	24 in.	8 in.
Feed pipe		
- top of tank to discharge	82 in.	32 ft.
- discharge to tank bottom	74 in.	22.5 ft.
Tank elevation differential	18 in.	24 in. (6 ft. between No. 3 and No. 4)
Impeller O/tank O (D/T)	0.33	0.26
Distance from bottom/tank O (C/T)	0.44	0.29
Dist. from bottom/blade dia.		1.10?
Dist from bot to Top Impeller		
Agitator hp watts/m ³	120	28.6

OPERATING AND METALLURGICAL DATA COMPARISON
PILOT PLANT/TRP

ITEM	PILOT PLANT	TRP		
Depth of material in pond	10 to 25 ft. - average about 15 ft	50 - 55 ft. face currently		
Feed size				
- % - 270	90.4	83.47		
- Assay oz Au/ton	0.064	0.076		
Solution head oz Au/ton (Reclaim water)	0.0017	0.0012		
Tail - calculated oz Au/ton	0.039	0.05 year		
OCT. 1988		0.048		
SEPT. 1988		0.052		
Tail Solution oz Au/ton	0.0010	0.0030 year		
OCT. 1988		0.0011		
SEPT. 1988		0.0014		
		YEAR	OCT.	SEPT.
Dissolution	38.9	29.82	26.71	28.66
Adsorption	89.7	72.32	90.70	89.40
Recovery	35.0	23.18	26.60	28.14
Feed density % solids	30			
Dissolved Oxygen mg/l.	No. 1 - 9.1, tail 9.8	No. 1 10.4, tail 12.0 at 8 to 9 degrees C. (saturated)		

OPERATING AND METALLURGICAL DATA COMPARISON
PILOT PLANT/TRP

ITEM		PILOT PLANT		TRP	
Carbon loading and distribution	Tank No.	oz Au/ton	gms/l	oz Au/ton	gms/l
	1	-----none	added-----	58.90	22.20
	2	78.5	1.8	41.20	15.90
	3	37.9	18.9	31.60	22.80
	4	15.8	8.3	18.60	16.40
	5	9.4	31.9	12.80	23.30
	6	---no sixth	tank-----	9.00	10.60
	Avg.	21.16	15.23	57.60	18.53
Carbon Added calc. gms/l.				Oct. 19.63 based on 6 tanks 11.29 - May 1 5 tanks 15.02 - May 31 5 tanks	
CIL Residence time - Hours		% SOLIDS		HOURS	
		24.5%	30%	35%	SEPT. OCT. YEAR
Note: Pilot Plant - 30% solids average std. deviation +/- 5.18 TRP - SEPT., OCT., YTD (OCT)		24.51 hours	31.4 hours	37.8 hours	28.9 26.6 28.1
Recoveries by Tank					
- Stock Tank		16.9		9.60	
- No. 1		14.3		10.84	
2		3.3		3.41	
3		1.7		0.31	
4		1.4		- 1.55	
5		1.3		1.55	
6		-		0.62	
Total		38.9		24.78	

OPERATING AND METALLURGICAL DATA COMPARISON
PILOT PLANT/TRP

ITEM		PILOT PLANT	TRP
Solid feed to each tank	Stock Tank	0.0637 (calculated)	0.0528 (.0646 calc.)
	No. 1	0.053	0.0584
	No. 2	0.044	0.0514
	No. 3	0.042	0.0492
	No. 4	0.041	0.0490
	No. 5	0.040	0.0500
	No. 6	-	0.0490
	Tail	0.039	0.0486
Solution feed to each tank	Stock Tank	-	0.0037
	No. 1	.0063	0.0048
	No. 2	.0106	0.0055
	No. 3	.0073	0.0046
	No. 4	.0036	0.0029
	No. 5	.0028	0.0019
	No. 6	-	0.0011
	Tail	.0010	0.0010