

EQUITY SILVER MINES LIMITED

ASSAY WORKSHEET

860454

Dist. -

Attn. Jim CyrDept. Engineering

A/C _____

DATE: April 27, 1988

	SAMPLE	WT.		Texada Lime		Terrace Marl			
	CONTROL								
1	^{1/8mm} ^{.065"} +10 mesh			35.8 %		0 %			
2	-10 mesh			64.2 %		100 %			
3	Ca (by A.A.)			61.3 %		32.8 %			
4	Fe (by A.A.)			500 ppm		3280 ppm			
5	Acid Neutralization			31.5 meq HCl/gram.		17.8 meq HCl/gram.			
6	Insol.			2.45 %		6.43 %			
7									
8	CaO (based on A.A. Ca)			85.7 %		—			
9	CaO (based on Acid Neut.)			88.3 %		—			
10									
11	CaCO ₃ (based on A.A. Ca)			—		81.9 %			
12	CaCO ₃ (based on Acid Neut.)			—		89.1 %			
13									
14									
15									
16									

ND - NOT DETECTED

TR < .01 %

IN Ag TR < 1.0 gm/TONNE

① +10/-10 Screen Sizing

- both samples were pushed through a 10 mesh screen with a rubber stopper. Any lumps or rocks that could not be pushed through the screen with moderate pressure were classified as +10 mesh.

The +10 mesh fraction was not included in any of the following assays. Since the +10 mesh material appears to be mostly hard caked lime with a few "stones" in it, it seems fair to assume that if it was included in the assays it would reduce apparent purity by only a little. It could, however, increase the iron significantly.

② Ca and Fe by A.A.

- weigh 1.000g of each sample into a 200ml flask.
- moisten samples and add 60ml HCl.
- heat for 5 min, then add 20ml HNO_3
- heat for 5 min, then add 20ml CsCl_2 soln
- cool, bulk + shake.
- Run Fe on this $1\text{g}/200\text{ml}$ portion.
- Dilute $1\text{g}/200\text{ml}$ portion $20\times$ and $20\times$ again, maintaining HCl: HNO_3 : CsCl matrix, to produce an effective dilution of $1\text{g}/80,000\text{ml}$
- Run Ca on this portion.

③ Acid Neutralization

- weigh 1.000g of each sample into a beaker.
- moisten and add 50.00mls of 1.00 N HCl
- warm and swirl the beakers until all CaO and CaCO₃ has dissolved.
- bulk each sample to 100mls with water + cool.
- using a pH meter and 1.00 N NaOH, produce a titration curve for the backtitration of excess HCl in each sample.
- since the equivalence pH is not known due to the effects of the weak base Ca(OH)₂ use the inflection points on the titration curves to determine the equivalence volumes.
- subtract the meq.s HCl (from the back titration) from the total meq.s HCl added to get meq.s of CaO and CaCO₃ in the Texada lime and Marl samples respectively. This method assumes that all neutralization by the samples is due to these species only.

④ Insol.

Method used is the same as mill sample insol.

back titration of 1.000 g Dahl Lake limestone
(in 50.0 mls of 1.000N \pm .005) HCl
(titrate excess HCl \bar{c} 1.000N (\pm .005)N NaOH)

equiv. pt = 30.1 mls

excess acid = .0301 ml \times 1.000N = .0301 eq

acid used = (.0500 eq)

acid consumed by sample = .0199 eq

.0199 equivalents.
= 19.9 meq HCl/g.

