



**Report  
on  
Metallurgical Tests and Analyses on 12 Sleeper Project  
Core Composites  
MLI Job No. 3775  
July 28, 2014  
for  
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**EXECUTIVE SUMMARY**

Solid core from eight drill holes was received for interval preparation and interval assay. Solid core was 3.5" diameter except for hole PGC-12-027 which was 2.5" diameter. Sleeper personnel sawed a thin slice from each core interval from each drill hole as posterity sample. After interval analyses were reviewed by Sleeper personnel, compositing instructions were issued. A total of 10 composites were prepared from seven of the eight core holes (PGC-13-034 not used).

Coarse assay rejects from core holes PGC-12-018, 020, 024, 025 and PGC-13-035 and 038 were used to prepare the two South Sleeper sulfide composites (SSS-13-1 and SSS-13-2).

Composite make-up summary information for the 12 composites are provided in Table 1.

**Table 1. - Composite Make-Up Summary, Sleeper Project Core Composites**

Deposit	Oxidation State	Composite I.D.	Core Drill Hole(s)	Intercept Depth, feet
Facilities	Mixed	FMX-13-1	PGC-12-028, PGC-13-031	162-234, 20.2-200
Facilities	Sulfide	FSU-13-1	PGC-12-028	435-745
Sleeper	Oxide	SOX-13-1	PGC-13-032	76.5-172.5
Sleeper	Sulfide	SSU-13-1	PGC-12-029	1,450-1,575
Sleeper	Sulfide	SSU-13-2	PGC-12-029	1,180-1,355
West Wood	Oxide	WVO-13-1	PGC-13-030	200-265
West Wood	Oxide	WVO-13-2	PGC-13-033	290-420
West Wood	Sulfide	WWS-13-1	PGC-13-033	815-1,060
West Wood	Sulfide	WWS-13-2	PGC-13-033	625-681.5
Wood	Sulfide	WOS-13-1	PGC-12-027	640-690
South Sleeper	Sulfide	SSS-13-1 <sup>1)</sup>	PGC-12-024, 025 and PGC-13-035	480-535, 755-805, 585-635
South Sleeper	Sulfide	SSS-13-2 <sup>1)</sup>	PGC-12-018, 020 and PGC-13-038	920-935, 1,050-1,125, 1,130-1,155

1) Coarse assay rejects

A metallurgical scope of work (SOW) summary for the 12 core composites is provided in Table 2.

**Table 2. - Metallurgical Scope of Work Summary,  
 Sleeper Project Core Composites**

Composite I.D.	Bottle Roll			Head Screen		Column Test & Tail Screen	
	P <sub>80</sub> Feed Size			P <sub>80</sub> Feed Size		P <sub>80</sub> Feed Size	
	37.5mm	19mm	75µm	37.5mm	19mm	37.5mm	19mm
FMX-13-1	X	X		X	X	X	X
FSU-13-1	X	X		X	X		X
SOX-13-1		X					
SSU-13-1			X		X		
SSU-13-2			X		X		
WWO-13-1		X	X		X		X
WWO-13-2		X	X		X		X
WWS-13-1			X				
WWS-13-2			X				
WOS-13-1		X	X		X		
SSS-13-1			X				
SSS-13-2			X				
<b>Total</b>	<b>2</b>	<b>6</b>	<b>9</b>	<b>2</b>	<b>7</b>	<b>1</b>	<b>4</b>

Summary results for bottle roll tests (BT) conducted on the 12 core composites, at varied feed sizes, are provided in Table 3.

**Table 3. - Summary Metallurgical Results, Bottle Roll Tests,  
 Sleeper Project Core Composites, Varied Feed Sizes**

Composite	Feed Size, P <sub>80</sub>	Au Rec., %	gAu/mt ore				Reagent Requirements, kg/mt ore		Final Leach pH	
			Ext'd	Tail	Calc'd Head	Avg. <sup>1)</sup> Head	Ag Ext'd, g/mt ore	NaCN Cons.		Lime Added
FMX-13-1	37.5mm	71.3	0.3024	0.1217	0.4241	0.470	0.70	0.15	3.1	10.5
FMX-13-1	19mm	74.2	0.3257	0.1133	0.4390	0.470	0.74	0.08	4.8	10.9
FSU-13-1	37.5mm	26.3	0.0633	0.2053	0.2686	0.376	0.33	0.38	3.2	10.9
FSU-13-1	19mm	23.7	0.0644	0.2137	0.2801	0.376	0.32	0.44	3.8	11.0
SOX-13-1	19mm	93.9	0.1888	0.0123	0.2011	0.218	0.09	0.24	6.3	11.0
WOS-13-1	19mm	12.9	0.1501	1.0130	1.1631	1.548	6.00	0.90	4.4	10.5
WOS-13-1	75µm	48.5	0.8264	0.8773	1.7037	1.548	8.69	0.63	3.1	10.8
WWO-13-1	19mm	76.4	0.2605	0.0803	0.3408	0.312	0.00	<0.05	5.7	11.0
WWO-13-1	75µm	80.7	0.3047	0.0730	0.3777	0.312	0.07	0.17	6.7	10.7
WWO-13-2	19mm	53.6	0.5839	0.5063	1.0922	1.024	1.78	<0.05	3.2	11.0
WWO-13-2	75µm	82.8	0.8956	0.1860	1.0816	1.024	23.72	0.18	5.0	10.8
WWS-13-1	75µm	28.9	0.9855	2.4233	3.4088	3.272	4.55	1.36	4.5	10.9
WWS-13-2	75µm	28.6	0.3822	0.9550	1.3372	1.285	1.45	0.60	3.8	10.9
SSU-13-1	75µm	44.9	0.5349	0.6563	1.1912	1.057	0.82	1.00	4.9	10.9
SSU-13-2	75µm	36.0	0.1715	0.3053	0.4768	0.485	0.41	0.73	3.8	10.8
SSS-13-1	75µm	0.0	0.0000	0.3693	0.3693	0.352	0.91	0.08	2.5	10.7
SSS-13-2	75µm	22.8	0.0700	0.2370	0.3070	0.295	7.44	0.30	3.6	10.8

1) Average of all head grade determinations.

Results show that Facilities mixed ore (FMX-13-1) was amenable to cyanidation at the two crush sizes evaluated, and was not markedly sensitive to crush size with respect to Au recovery. Facilities sulfide ore (FSU-13-1) was not amenable at the two crush sizes evaluated.

Sleeper oxide ore (SOX-13-1) was readily amenable to cyanidation at the 19mm crush size. No other tests were conducted on this composite as Sleeper oxide ore was nearly “mined out” during previous commercial heap leach operation.

Wood sulfide ore (WOS-13-1) was not amenable to cyanidation at the P<sub>80</sub>19mm crush size. Grinding the ore to P<sub>80</sub>75µm did not increase cyanidation recovery to acceptable levels.

The lower grade West Wood oxide ore (WWO-13-1) was amenable to cyanidation and grinding to P<sub>80</sub>75µm did not markedly improve cyanidation recovery. The higher grade West Wood oxide ore (WWO-13-2) was marginally amenable to cyanidation at the P<sub>80</sub>19mm crush size (53.6% Au recovery). Gold recovery increased to 82.8% for the ground P<sub>80</sub>75µm feed. Column leach test (CT) recovery for the WWO-13-2 P<sub>80</sub>19mm crushed feed was higher (70.8% Au recovery) than for the BT at that crush size.

The six sulfide composites (Wood, West Wood, Sleeper and South Sleeper) were not amenable to cyanidation at the P<sub>80</sub>75µm grind size.

NaCN consumptions were low for mixed and oxide ore composites (<0.05 - 0.18 kg/mt ore), but were generally high for sulfide ore composites (>0.5 kg/mt ore). Lime requirements (lime added) were generally high (>3 kg/mt ore) for all ore composites.

Summary results from CT’s conducted on select ore composites are provided in Table 4. BT results at the same crush sizes are provided for comparison.

**Table 4. - Summary Metallurgical Results, Column Leach Tests, Sleeper Project Core Composites, P<sub>80</sub>37.5 and 19mm Feeds (BT Results Included for Comparison)**

Composite	Test Type	Feed Size, P <sub>80</sub>	Au Rec., %	gAu/mt ore				Ag Ext'd, g/mt ore	Reagent Requirements, kg/mt ore		Final Leach pH
				Ext'd	Tail	Calc'd Head	Avg. <sup>1)</sup> Head		NaCN Cons.	Lime Added	
FMX-13-1	CT	37.5mm	77.1	0.407	0.121	0.528	0.470	0.67	1.03	3.5	10.2
FMX-13-1	BT	37.5mm	71.3	0.3024	0.1217	0.4241	0.470	0.70	0.15	3.1	10.5
FMX-13-1	CT	19mm	71.3	0.357	0.144	0.501	0.470	0.88	1.25	5.0	10.1
FMX-13-1	BT	19mm	74.2	0.3257	0.1133	0.4390	0.470	0.74	0.08	4.8	10.9
FSU-13-1	CT	19mm	12.9	0.058	0.390	0.448	0.376	0.37	1.41	4.0	10.1
FSU-13-1	BT	19mm	23.7	0.0664	0.2137	0.2801	0.376	0.32	0.44	3.8	11.0
WWO-13-1	CT	19mm	82.1	0.266	0.058	0.324	0.312	0.01	0.69	5.0	10.1
WWO-13-1	BT	19mm	76.4	0.2605	0.0803	0.3408	0.312	0.00	<0.05	5.7	11.0
WWO-13-2	CT	19mm	70.8	0.772	0.319	1.091	1.024	4.12	1.47	3.0	10.4
WWO-13-2	BT	19mm	53.6	0.5859	0.5063	1.0922	1.024	1.78	<0.05	3.2	11.0

1) Average of all head grade determinations.

Facilities mixed and West Wood oxide ores were amenable to heap leach cyanidation treatment at the feed sizes evaluated, and Au recoveries of from 70.8 to 82.1 percent were achieved in from 67 to 139 (WWO-13-2) days of leaching and rinsing. Facilities sulfide ore was not amenable and only 12.9 percent of the Au was recovered in 88 days of leaching and rinsing.

NaCN consumptions were high, but should be substantially lower during commercial heap leaching. Lime requirement (lime added) were moderate to high. Lime added before leaching was sufficient to maintain leach pH at above pH 10.

### **CORE INTERVAL PREPARATION AND INTERVAL ANALYSES**

Because full core (not sawn) from the eight core holes was provided, interval assays and analyses were not conducted during the drilling process at site. Consequently, core intervals (typically 5') were prepared for analysis by MLI, and for some drill holes, by AAL.

Core holes were submitted to MLI (in bags by interval) as drilling was completed at site. Core holes/assay standards were received from December 28, 2012 through June 27, 2013. Interval preparation was initiated as core holes were received. Interval preparation was time consuming, and about 1.5 hours per interval was required. Sleeper personnel coordinated with MLI and AAL to have AAL do some of the interval preparation to shorten the preparation schedule. MLI personnel provided preparation instructions to AAL.

The core interval preparation procedure is summarized as follows:

- 1) Sort by drill hole and interval depth, then air dry, inventory and weigh each interval.
- 2) Stage crush each interval to P<sub>80</sub>37.5mm (1.5") and thoroughly blend by coning.
- 3) Riffle split each to obtain a 1/8<sup>th</sup> split for interval analysis and a 7/8<sup>th</sup> split to be saved for compositing and subsequent metallurgical test work. 7/8<sup>th</sup> splits were returned to original bags and stored.
- 4) Crush 1/8<sup>th</sup> splits to minus 19mm (3/4") or finer and submit to ALS Minerals for Au & Ag head assay and ICP metals analyses (ME-ICP61, 4 acid digest - ICP-AES). ALS conducted analyses according to Paramount/Sleeper methods/procedures. Analysis splits were submitted using the 6 digit interval sample number and drill hole intervals were not identified. Control samples (coarse and pulps) were inserted with drill intervals as instructed by Sleeper personnel. Control samples were labeled with the 6 digit number and inserted in numeric order with the drill hole intervals.

The 6 digit sample numbers are cross-referenced with drill holes in Table 5.

**Table 5. - Drill Hole Interval/Sample No. Cross-Reference**

Drill Hole	Interval Sample Numbers
PGC-12-027	800962-801147
PGC-12-028	800772-800961
PGC-12-029	801148-801528
PGC-13-030	801529-801774
PGC-13-031	Each interval had a separate number, none contiguous
PGC-13-032	802358-802556
PGC-13-033	801977-802049
PGC-13-034	802557-802910
SSS-13-1 <sup>1)</sup>	800059-800070, 800376-800387, 803062-803073
SSS-13-2 <sup>2)</sup>	614847-614849, 616703-616718, 804018-804022

1) Drill holes PGC-12-024 & 025, PGC-13-035

2) Drill holes PGC-12-018 & 020, PGC-13-038

Analytical results for intervals from the eight drill holes are provided as links in Section 1 of the Appendix to this report.

## **COMPOSITE PREPARATION PROCEDURES AND HEAD ASSAYS**

After Paramount/Sleeper personnel reviewed drill hole interval analytical results, they issued compositing instructions. Summary composite make-up information is provided in Table 1 in the Executive Summary of this report.

Detailed composite make-up, provided by Paramount/Sleeper personnel is provided in Section 2 of the Appendix to this report.

A total of 12 core composites were prepared as instructed by Paramount/Sleeper personnel. The SOW was different for most composites so only a general composite preparation summary is provided below.

- 1) Weigh each composite to confirm weight available for metallurgical tests requested.
- 2) Blend and split P<sub>80</sub>37.5mm feeds for the FMX-13-1 and FSU-13-1 composites to obtain appropriate split weights for tests and analyses. Stage crush rejects to P<sub>80</sub>19mm and blend and split to obtain appropriate split weights for requested metallurgical tests.
- 3) Stage crush all other composites to P<sub>80</sub>19mm and blend and split to obtain appropriate weights for metallurgical tests.
- 4) Stage crush rejects (all 12 composites) to minus 20 mesh and blend and split to obtain 5 kg for feed analyses.
- 5) Blend and split to obtain appropriate weights for the following composite feed analyses.
  - A) Three 200g splits for triplicate Au & Ag head assays (MLI)
  - B) 100 grams for ICP metals analysis (ALS - ME-MS61m)
  - C) 100 grams for sulfur speciation (ALS - S-IR08, S-IR07, S-GRA06)
  - D) 500 grams for mineralogy (save for Paramount)



As mentioned above, 500g splits from each composite were obtained for mineralogy. Those splits were not submitted as Paramount/Sleeper personnel subsequently selected composites WWS-13-1, WWS-13-2 and WOS-13-1 for a detailed mineralogical study (gold department) by SGS. The SGS report was sent directly to Paramount/Sleeper and is not available for inclusion in this report.

Composite head grades were determined by triplicate Au & Ag fire assay, and by calculation from the various metallurgical tests. Projected head grades were provided by Paramount/Sleeper personnel.

Head assay results and head grade comparisons for the 12 core composites are provided in Tables 6 through 10.

**Table 6. - Head Assay Results and Head Grade Comparison,  
 Sleeper Project, Facility Core Composites**

Head Grade Determination Method	Head Grade, g/mt ore			
	Facility Composites			
	FMX-13-1		FSU-13-1	
	Au	Ag	Au	Ag
Projected <sup>1)</sup>	0.481	4.52 <sup>2)</sup>	0.417	2.54
Fire Assay, 1	0.486	3.3	0.406	2.6
Fire Assay, 2	0.468	3.2	0.367	2.3
Fire Assay, 3	0.466	3.2	0.374	2.2
Calc'd., BT, P <sub>80</sub> 37.5mm	0.424	4.03	0.269 <sup>2)</sup>	2.36
Calc'd., BT, P <sub>80</sub> 19mm	0.439	3.64	0.280	2.12
Head Screen, P <sub>80</sub> 37.5mm	0.508	3.85	0.364	2.02 <sup>2)</sup>
Head Screen, P <sub>80</sub> 19mm	0.397 <sup>2)</sup>	3.68	0.461	2.40
Calc'd., CT, P <sub>80</sub> 37.5mm	0.528	3.73	N/A	N/A
Calc'd., CT, P <sub>80</sub> 19mm	0.501	3.95	0.448	2.31
Average	0.470	3.71	0.376	2.32
Max. Deviation from Avg. <sup>2)</sup>	0.073	0.81	0.108	0.30
Simple Precision, percent	84.5	82.1	71.5	87.1

1) Weighted average of core interval assays. Provided by Paramount.

2) Maximum deviation from average occurred with this head grade.

**Table 7. - Head Assay Results and Head Grade Comparison,  
 Sleeper Project, Sleeper Core Composites**

Head Grade Determination Method	Head Grade, g/mt ore					
	Sleeper Composites					
	SOX-13-1		SSU-13-1		SSU-13-2	
	Au	Ag	Au	Ag	Au	Ag
Projected <sup>1)</sup>	0.248 <sup>2)</sup>	0.51 <sup>2)</sup>	1.123	2.20	0.563 <sup>2)</sup>	1.66
Fire Assay, 1	0.223	0.3	1.090	1.8	0.425	1.3 <sup>2)</sup>
Fire Assay, 2	0.215	0.3	0.975 <sup>2)</sup>	1.9	0.484	1.4
Fire Assay, 3	0.203	0.3	1.060	2.0	0.441	1.5
Calc'd., BT, P <sub>80</sub> 19mm	0.201	0.26	N/A	N/A	N/A	N/A
Calc'd., BT, P <sub>80</sub> 75µm	N/A	N/A	1.191	2.32 <sup>2)</sup>	0.477	1.68
Head Screen, P <sub>80</sub> 19mm	N/A	N/A	0.903	1.72	0.517	1.55
Average	0.218	0.33	1.057	1.99	0.485	1.52
Max. Deviation from Avg. <sup>2)</sup>	0.030	0.18	0.082	0.33	0.078	0.22
Simple Precision, percent	87.9	64.7	92.2	85.8	86.1	85.5

1) Weighted average of core interval assays. Provided by Paramount.

2) Maximum deviation from average occurred with this head grade.

**Table 8. - Head Assay Results and Head Grade Comparison,  
Sleeper Project, South Sleeper Core Composites**

Head Grade Determination Method	Head Grade, g/mt ore			
	South Sleeper Composites			
	SSS-13-1		SSS-13-2	
	Au	Ag	Au	Ag
Projected <sup>1)</sup>	0.429	3.45	0.328 <sup>2)</sup>	14.24 <sup>2)</sup>
Fire Assay, 1	0.382	3.0	0.293	11
Fire Assay, 2	0.351	2.7	0.289	12
Fire Assay, 3	0.307 <sup>2)</sup>	2.4 <sup>2)</sup>	0.292	12
Calc'd., BT, P <sub>80</sub> 75µm	0.369	3.21	0.307	11.37
Average	0.368	2.95	0.302	12.12
Max. Deviation from Avg. <sup>2)</sup>	0.061	0.55	0.026	2.12
Simple Precision, percent	83.4	81.4	92.1	85.1

1) Weighted average of core interval assays. Provided by Paramount.

2) Maximum deviation from average occurred with this head grade.

**Table 9. - Head Assay Results and Head Grade Comparison,  
Sleeper Project, West Wood Core Composites**

Head Grade Determination Method	Head Grade, g/mt ore							
	West Wood Composite							
	WWO-13-1		WWO-13-2		WWS-13-1		WWS-13-2	
	Au	Ag	Au	Ag	Au	Ag	Au	Ag
Projected <sup>1)</sup>	0.351	0.50	1.141 <sup>2)</sup>	38.24	3.571	10.83	1.496 <sup>2)</sup>	3.44 <sup>2)</sup>
Fire Assay, 1	0.310	0.10	0.911	35	3.29	10	1.25	2.9
Fire Assay, 2	0.283	0.10	0.984	37	3.15	11 <sup>2)</sup>	1.18	2.7
Fire Assay, 3	0.295	0.10	0.916	36	2.94 <sup>2)</sup>	10	1.16	2.8
Calc'd., BT, P <sub>80</sub> 19mm	0.341	0.13	1.092	32.58	N/A	N/A	N/A	N/A
Calc'd., BT, P <sub>80</sub> 75µm	0.378	0.20	1.082	34.05	3.408	9.78	1.337	3.22
Head Screen, P <sub>80</sub> 19mm	0.214 <sup>2)</sup>	<0.10 <sup>2)</sup>	0.975	25.05 <sup>2)</sup>	N/A	N/A	N/A	N/A
Calc'd., CT, P <sub>80</sub> 19mm	0.324	0.22	1.091	30.78	N/A	N/A	N/A	N/A
Average	0.312	0.18	1.024	33.59	3.272	10.32	1.285	3.01
Max. Deviation from Avg. <sup>2)</sup>	0.098	>0.08	0.117	8.54	0.332	0.68	0.211	0.43
Simple Precision, percent	68.6	<55.6	89.7	74.6	89.9	93.8	85.9	87.5

1) Weighted average of core interval assays. Provided by Paramount.

2) Maximum deviation from average occurred with this head grade.

**Table 10. - Head Assay Results and Head Grade Comparison,  
Sleeper Project, Wood Sulfide Core Composite**

Head Grade Determination Method	Head Grade, g/mt ore	
	Wood Sulfide Composite	
	WOS-13-1	
	Au	Ag
Projected <sup>1)</sup>	1.653	15.64
Fire Assay, 1	1.53	14
Fire Assay, 2	1.54	15
Fire Assay, 3	1.40	15
Calc'd., BT, P <sub>80</sub> 19mm	1.163 <sup>2)</sup>	16.47
Calc'd., BT, P <sub>80</sub> 75µm	1.704	14.22
Head Screen, P <sub>80</sub> 19mm	1.845	9.12 <sup>2)</sup>
Average	1.548	14.21
Max. Deviation from Avg. <sup>2)</sup>	0.385	5.09
Simple Precision, percent	75.1	64.2

1) Weighted average of core interval assays. Provided by Paramount.

2) Maximum deviation from average occurred with this head grade.

Head grade agreement for the 12 composites was reasonable, but generally not within expected precision of >90 percent.

Sulfur speciation analysis results are provided in Table 11.

**Table 11. - Sulfur Speciation Analyses, Sleeper Project Core Composites**

Core Composite	Sulfur (as S), Weight %		
	Total	Sulfate	Sulfide
FMX-13-1	1.87	1.87	0.06
FSU-13-1	4.85	0.08	4.65
SOX-13-1	0.03	<0.01	0.02
SSU-13-1	5.42	0.12	4.98
SSU-13-2	3.00	0.06	2.67
WVO-13-1	0.26	0.23	0.05
WVO-13-2	0.19	0.10	0.03
WWS-13-1	4.14	0.11	3.56
WWS-13-2	2.78	0.07	2.38
WOS-13-1	4.02	0.08	3.69
SSS-13-1	2.24	0.04	2.09
SSS-13-2	5.46	0.10	5.04

Results show that composites identified as mixed or oxide contained from 0.03 to 0.06 weight percent sulfide sulfur. Composites identified as sulfide contained from 2.09 (SSS-13-1) to 5.04 (SSS-13-2) weight percent sulfide sulfur.

ICP metals analysis results (ALS - 4 acid digest, ME-MS61m) are provided in Tables 12 and 13.

**Table 12. - ICP Metals Analytical Results,  
 Sleeper Project Core Composites**

Analysis, mg/kg	Sleeper Composite					
	FMX-13-1	FSU-13-1	SOX-13-1	SSU-13-1	SSU-13-2	WWO-13-1
Ag	4.78	3.15	0.54	2.07	1.52	0.22
Al	60,000	65,000	70,400	69,400	74,600	65,700
As	479	327	93.4	953	166.5	122.0
Ba	510	490	990	410	1,080	1,060
Be	1.05	2.16	1.65	1.46	1.21	0.98
Bi	0.07	0.08	0.06	0.11	0.09	0.09
Ca	1,900	6,400	27,200	5,300	7,200	3,000
Cd	0.03	0.12	0.10	0.13	0.15	0.13
Ce	61.2	46.7	63.8	47.7	62.7	85.0
Co	1.2	25.4	15.3	22.5	5.9	2.6
Cr	48	61	55	39	6	3
Cs	6.87	15.50	4.82	10.80	8.57	12.20
Cu	29.1	69.0	31.3	83.6	22.0	6.2
Fe	40,400	53,800	35,100	59,000	25,700	23,600
Ga	15.95	15.55	15.80	18.10	17.65	17.25
Ge	0.20	0.19	0.18	0.17	0.23	0.19
Hf	2.6	3.3	5.0	4.7	4.9	3.6
Hg	0.84	0.35	0.40	2.0	2.23	3.54
In	0.031	0.043	0.034	0.055	0.042	0.017
K	20,600	30,100	21,800	23,200	54,100	24,800
La	28.4	22.5	32.1	22.6	31.0	39.2
Li	26.4	46.4	35.1	36.2	72.4	8.8
Mg	1,600	6,300	7,200	4,800	1,900	2,200
Mn	59	518	682	869	74	21
Mo	6.17	1.73	1.02	7.84	7.61	6.26
Na	1,600	1,300	6,200	700	5,800	6,700
Nb	10.7	11.6	13.2	11.2	12.9	11.3
Ni	3.1	41.5	26.2	36.0	5.3	1.2
P	1,600	1,710	2,010	1,360	2,110	340
Pb	7.7	8.4	10.1	11.8	23.8	20.2
Rb	112.0	144.5	97.4	110.5	213	109.5
Re	<0.002	<0.002	<0.002	0.002	<0.002	<0.002
S (Total)	18,600	46,600	200	50,900	28,500	2,400
Sb	189.5	97.2	30.1	144.0	80.8	61.3
Sc	12.3	13.6	10.3	15.5	8.9	6.5
Se	10	11	1	6	6	2
Sn	1.1	1.5	1.3	1.9	3.3	2.5
Sr	116.5	84.3	200	45.9	80.7	167.5
Ta	0.60	0.68	0.73	0.72	0.94	0.83
Te	0.16	0.05	<0.05	0.21	<0.05	<0.05
Th	3.0	3.5	5.5	6.9	15.5	21.3
Ti	6,450	6,150	5,290	6,870	3,380	2,510
Tl	6.09	2.96	0.46	2.81	4.59	0.68
U	2.5	1.6	1.9	3.3	5.8	5.8
V	135	126	96	137	47	42
W	5.4	7.8	2.8	17.4	12.7	13.2
Y	10.7	18.6	16.1	24.1	30.5	20.3
Zn	21	118	98	94	83	10
Zr	95.0	127.5	211	177.5	170.0	121.0

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**Table 13. - ICP Metals Analytical Results,  
 Sleeper Project Core Composites**

Analysis, mg/kg	Sleeper Composite					
	WWO-13-2	WWS-13-1	WWS-13-2	WOS-13-1	SSS-13-1	SSS-13-2
Ag	35.2	9.60	3.09	13.10	3.33	11.20
Al	57,600	60,900	53,900	60,900	62,100	63,700
As	90.4	1,755	419	779	168.0	310
Ba	1,370	600	810	540	1,240	1,160
Be	1.59	2.38	1.84	1.48	1.46	1.29
Bi	0.87	0.11	0.02	0.02	0.07	0.13
Ca	2,700	9,200	2,500	1,200	2,500	5,200
Cd	0.14	0.13	0.12	0.15	0.11	0.17
Ce	53.7	48.0	52.3	55.4	53.8	53.9
Co	2.0	10.9	2.7	5.0	2.8	10.9
Cr	4	10	4	4	7	7
Cs	15.25	10.10	10.35	8.53	7.69	7.90
Cu	12.3	44.3	6.0	14.1	6.1	23.8
Fe	21,600	36,000	24,700	35,200	22,200	46,600
Ga	13.95	16.20	13.65	14.55	13.10	15.20
Ge	0.22	0.20	0.22	0.22	0.21	0.22
Hf	3.8	4.8	2.3	3.1	3.5	5.7
Hg	47.9	2.65	2.85	4.84	0.70	2.28
In	0.031	0.048	0.016	0.036	0.028	0.057
K	54,100	33,500	37,800	34,800	54,500	54,600
La	25.8	22.0	24.7	27.1	26.5	23.0
Li	5.4	19.2	19.1	20.7	21.7	28.7
Mg	400	1,600	1,200	1,400	800	1,700
Mn	36	62	42	49	104	89
Mo	42.0	22.5	10.10	70.9	3.93	75.1
Na	8,400	3,200	5,700	3,400	5,700	2,100
Nb	9.7	10.2	9.3	10.7	10.8	11.8
Ni	1.8	11.6	2.4	3.1	2.0	6.7
P	510	4,010	710	210	520	1,770
Pb	20.6	14.9	16.2	18.0	19.0	15.3
Rb	229	165.5	174.5	162.0	181.0	189.0
Re	0.002	<0.002	<0.002	<0.002	0.002	0.008
S (Total)	2,100	39,500	26,600	38,800	22,300	51,800
Sb	1,305	733	1,085	297	117.5	103.0
Sc	5.9	11.0	5.6	6.1	5.6	13.5
Se	15	14	19	10	13	9
Sn	2.4	2.3	2.2	2.5	1.9	2.7
Sr	177.0	522	144.0	131.5	55.9	51.7
Ta	0.68	0.71	0.67	0.76	0.78	0.75
Te	<0.05	0.08	<0.05	<0.05	<0.05	<0.05
Th	12.9	10.1	10.9	12.3	13.3	8.4
Ti	2,300	4,790	2,000	2,390	2,370	7,050
Tl	3.87	6.04	3.90	24.0	5.37	5.37
U	11.9	4.4	4.7	6.5	5.6	4.9
V	42	82	19	36	21	116
W	4.6	20.1	6.5	9.4	9.7	13.5
Y	23.2	29.8	25.9	25.2	25.6	34.8
Zn	13	177	45	363	56	104
Zr	150.5	172.5	79.4	103.5	119.5	217

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Results show that the various (12) Sleeper core composites generally contain sufficient quantities of Al, As, Cr, Cu, Fe, Hg, Mg, Mn Ni, Pb, Sb, Se, Tl and Zn (all regulated metals) to be potentially dissolved during cyanidation processing and to be potentially mobilized by contact with meteoric water.

## **SULFIDE OXIDATION SOW SUMMARY**

Initially composites WWS-13-1, WWS-13-2 and WOS-13-1 were selected, in addition to cyanidation tests, for bio-oxidation (bioox) and pressure oxidation (POX) tests on P<sub>80</sub>75µm grind sizes. MLI conducted stirred tank reactor bioox tests and Hazen Research conducted POX tests.

Oxidation tests were effective in improving cyanidation recoveries after oxidation of sulfide minerals (bioox & POX). Positive results encouraged project personnel to investigate heap bioox tests on West Wood (WWS-13 master comp), Wood (WOS master comp) and Facilities (FSU-13-1) sulfide ore. This testing program is in progress on P<sub>80</sub>12.5mm crushed feeds.

All oxidation test results (P<sub>80</sub>75µm and P<sub>80</sub>12.5mm) will be discussed in a separate MLI report when all test data is finalized.

## **DIRECT AGITATED CYANIDATION TEST PROCEDURE AND RESULTS**

Direct agitated cyanidation tests (bottle roll - BT) were conducted on composites FMX-13-1 (P<sub>80</sub>37.5 and 19mm), FSU-13-1 (P<sub>80</sub>37.5 and 19mm), SOX-13-1 (P<sub>80</sub>19mm), WOS-13-1 (P<sub>80</sub>19mm), WWO-13-1 (P<sub>80</sub>19mm) and WWO-13-2 (P<sub>80</sub>19mm) to determine preliminary amenability to heap leaching.

Milling/cyanidation BT's (P<sub>80</sub>75µm grind size) were conducted on composites WOS-13-1, WWO-13-1, WWO-13-2, WWS-13-1, WWS-13-2, SSU-13-1, SSU-13-2, SSS-13-1 and SSS-13-2 to determine if fine grinding would liberate Au & Ag values for dissolution by cyanide.

BT procedures were the same for all 17 tests, except that P<sub>80</sub>75µm feeds were stage ground in laboratory steel ball mills before leaching. The BT procedure is summarized below.

- 1) Mix ore charges (4 kg for 37.5mm, 2 kg for 19mm and 75µm) with water to achieve 40% solids and measure natural pulp pH. Some P<sub>80</sub>75µm feeds were leached at 33% solids pulp density because of pulp viscosity problems encountered at the 40% solids pulp density.
- 2) Slowly add high calcium hydrated lime (HCHL) to adjust pulp pH to pH 10.8 to 11.0.
- 3) Add NaCN (1.0 g/L of sol'n) to the alkaline pulps and roll in bottles on the laboratory rolls for 96 hours.
- 4) Sample pregs at 2, 6, 12 (P<sub>80</sub>75µm only), 24, 48, 72 and 96 hours and analyze for Au, Ag, pH, NaCN and DO.
- 5) Maintain NaCN concentration and pH at initial levels during the leach cycle.
- 6) After 96 hours, filter, wash, dry and weigh leached residues and assay in triplicate for Au & Ag.

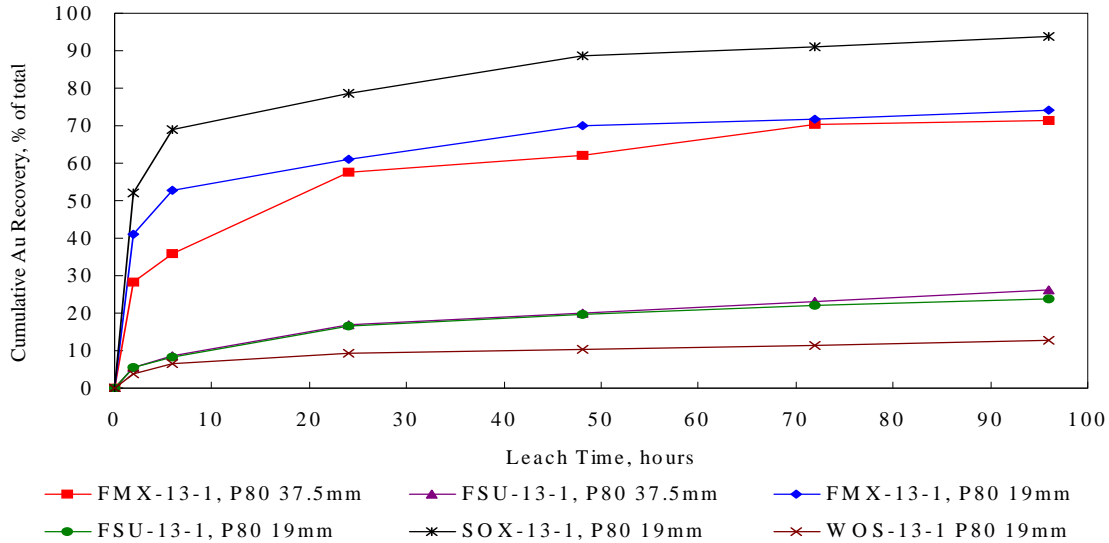
Overall metallurgical results for the 17 tests are provided in even numbered Tables 14 through 22. Gold and silver leach rate profiles are shown in Figures 1 through 5. Triplicate tail assay results are provided in odd numbered Tables 15 through 23.

**Table 14. - Overall Metallurgical Results, Bottle Roll Tests, Sleeper Project Core Composites, P<sub>80</sub>37.5 and 19mm Feeds**

Metallurgical Results	Core Composite					
	FMX-13-1		FSU-13-1		SOX-13-1	WOS-13-1
	P <sub>80</sub> 37.5mm	P <sub>80</sub> 19mm	P <sub>80</sub> 37.5mm	P <sub>80</sub> 19mm	P <sub>80</sub> 19mm	P <sub>80</sub> 19mm
Extraction: pct of total	Au	Au	Au	Au	Au	Au
in 2 hours	28.3	41.0	5.6	5.4	52.2	3.9
in 6 hours	35.8	52.6	8.5	8.2	68.9	6.6
in 24 hours	57.6	61.1	17.0	16.5	78.5	9.4
in 48 hours	62.1	69.9	20.1	19.7	88.5	10.3
in 72 hours	70.2	71.8	23.2	22.0	91.1	11.3
in 96 hours	71.3	74.2	26.3	23.7	93.9	12.9
Extracted, gAu/mt ore	0.3024	0.3257	0.0633	0.0664	0.1888	0.1501
Tail Assay, gAu/mt <sup>1)</sup>	0.1217	0.1133	0.2053	0.2137	0.0123	1.0130
Calculated Head, gAu/mt ore	0.4241	0.4390	0.2686	0.2801	0.2011	1.1631
Avg. Head, gAu/mt ore <sup>2)</sup>	0.470	0.470	0.376	0.376	0.218	1.548
NaCN Consumed, kg/mt ore	0.15	0.08	0.38	0.44	0.24	0.90
Lime Added, kg/mt ore	3.1	4.8	3.2	3.8	6.3	4.4
Final Leach pH	10.5	10.9	10.9	11.0	11.0	10.5
Natural pH (40% Solids)	7.5	7.4	6.4	6.1	7.8	7.1
Final DO, ppm	6.2	5.7	5.6	5.9	6.3	6.9
Ag Extraction, pct of total	17.4	20.3	14.0	15.1	34.6	36.4
Extracted, gAg/mt ore	0.70	0.74	0.33	0.32	0.09	6.00
Tail Assay, gAg/mt <sup>1)</sup>	3.33	2.90	2.03	1.80	0.17	10.47
Calculated Head, gAg/mt ore	4.03	3.64	2.36	2.12	0.26	16.47
Avg. Head, gAg/mt ore <sup>2)</sup>	3.71	3.71	2.32	2.32	0.33	14.21

1) Avg. of triplicate tail assays.  
 2) Avg. of all head grade determinations.

**Figure 1. - Gold Leach Rate Profiles, Bottle Roll Tests, Sleeper Project Core Composites, P<sub>80</sub>37.5 and 19mm Feeds**



**Table 15. - Tail Assay Results, Bottle Leached Residues, Sleeper Project Core Composites, P<sub>80</sub>37.5 and 19mm Feeds**

Tail Assay	Tail Grade, g/mt											
	Core Composite											
	FMX-13-1		FSU-13-1		SOX-13-1		WOS-13-1					
	P <sub>80</sub> 37.5mm	P <sub>80</sub> 19mm	P <sub>80</sub> 37.5mm	P <sub>80</sub> 19mm	P <sub>80</sub> 19mm	P <sub>80</sub> 19mm	P <sub>80</sub> 19mm	P <sub>80</sub> 19mm	P <sub>80</sub> 19mm	P <sub>80</sub> 19mm		
1	0.142	3.4	0.105	3.0	0.225	2.0	0.215	2.0	0.011	0.2	1.06	5.3
2	0.105	3.1	0.118	2.9	0.194	2.3	0.201	1.6	0.010	0.2	1.01	15.7
3	0.118	3.5	0.117	2.8	0.197	1.8	0.225	1.8	0.016	0.1	0.969	10.4
Average	0.1217	3.33	0.1133	2.90	0.2053	2.03	0.2137	1.80	0.0123	0.17	1.0130	10.47

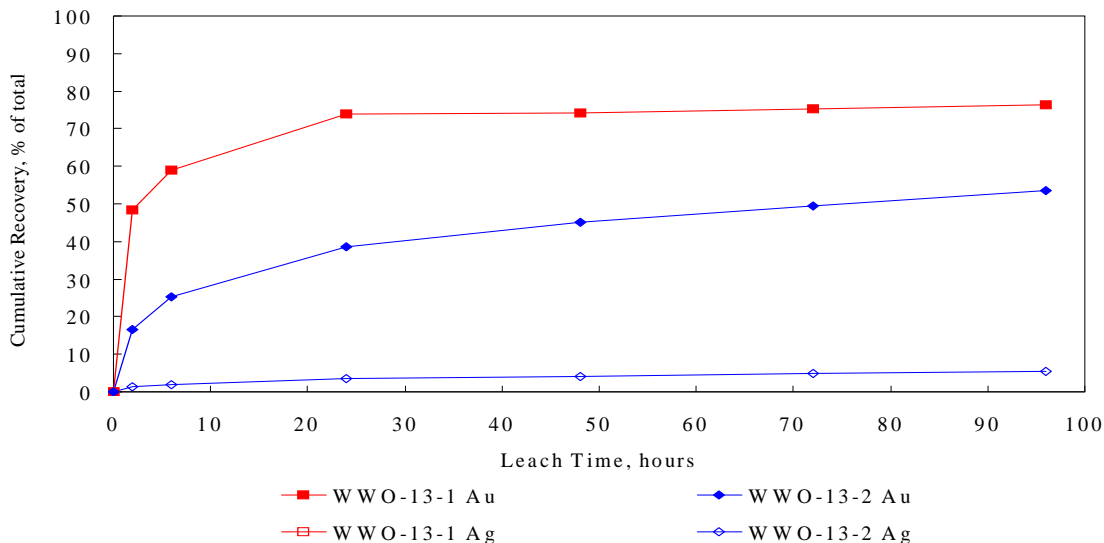
**Table 16. - Overall Metallurgical Results, Bottle Roll Tests,  
 Sleeper Project Core Composites, P<sub>80</sub>19mm Feeds**

Metallurgical Results	Core Composite			
	WWO-13-1		WWO-13-2	
	<u>Au</u>	<u>Ag</u>	<u>Au</u>	<u>Ag</u>
Extraction: pct of total				
in 2 hours	48.4	0.0	16.5	1.3
in 6 hours	58.9	0.0	25.3	2.0
in 24 hours	74.0	0.0	38.5	3.4
in 48 hours	74.2	0.0	45.2	4.2
in 72 hours	75.2	0.0	49.4	4.9
in 96 hours	76.4	0.0	53.6	5.5
Extracted, g/mt ore	0.2605	0.00	0.5859	1.78
Tail Assay, g/mt <sup>1)</sup>	0.0803	0.13	0.5063	30.80
Calculated Head, g/mt ore	0.3408	0.13	1.0922	32.58
Avg. Head, g/mt ore <sup>2)</sup>	0.312	0.18	1.024	33.59
NaCN Consumed, kg/mt ore		<0.05		<0.05
Lime Added, kg/mt ore		5.7		3.2
Final Leach pH		11.0		11.0
Natural pH (33 or 40% Solids)		7.5		7.8
Final DO, ppm		5.2		5.1

1) Average of triplicate tail assays.

2) Avg. of all head grade determinations.

**Figure 2. - Gold and Silver Leach Rate Profiles, Bottle Roll Tests,  
 Sleeper Project Core Composites, P<sub>80</sub>19mm Feeds**



**Table 17. - Tail Assay Results, Bottle Leached Residues,  
 Sleeper Project Core Composites, P<sub>80</sub>19mm Feeds**

Tail Assay	Tail Grade, g/mt			
	Core Composite			
	WWO-13-1		WWO-13-2	
	<u>Au</u>	<u>Ag</u>	<u>Au</u>	<u>Ag</u>
1	0.079	0.1	0.472	33.0
2	0.094	0.2	0.522	30.7
3	0.068	0.1	0.525	28.7
Average	0.0803	0.13	0.5063	30.80



Overall metallurgical results show that mixed and oxide ores (FMX-13-1, SOX-13-1, WWO-13-1 and -2) were amenable to heap leaching at  $P_{80}$ 37.5mm (FMX-13-1) and  $P_{80}$ 19mm crush sizes. Gold recoveries ranged from 53.6 (WWO-13-2) to 93.9 (SOX-13-1) percent with 96 hours of agitated cyanidation treatment. Silver recoveries ranged from 0.0 (WWO-13-1, low grade) to 34.6 (SOX-13-1) percent. Crushing the FMX-13-1 composite to  $P_{80}$ 19mm did not markedly increase Au or Ag recovery.

Sulfide core composites FSU-13-1 and WOS-13-1 were not amenable at the crush sizes evaluated. Gold recoveries ranged from 12.9 (WOS-13-1) to 26.3 (FSU-13-1,  $P_{80}$ 37.5mm) percent with 96 hours of leaching. Silver recoveries ranged from 14.0 to 36.4 (WOS-13-1) percent. Crushing composite FSU-13-1 to  $P_{80}$ 19mm did not improve recoveries.

Gold recovery rates were fairly rapid for mixed and oxide ores, and extraction was substantially complete in 48 hours. Gold values were extracted after 48 hours, but at a slower rate. Gold recovery would increase somewhat with a leach cycle longer than 96 hours. Recovery rate data is inconsequential for the two sulfide composites.

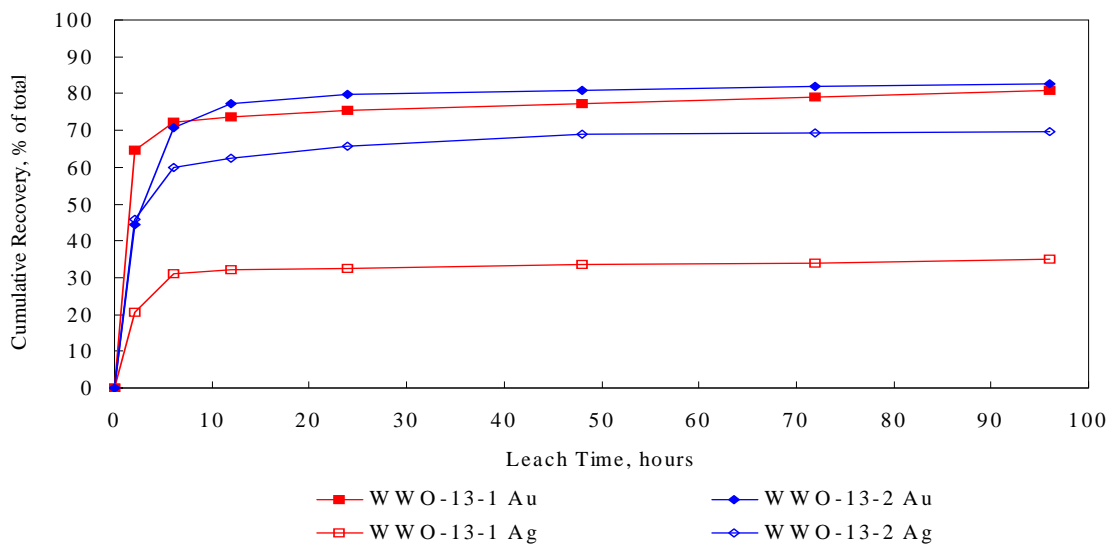
NaCN consumptions were low for mixed and oxide composites, but were moderate (<0.25 kg/mt) to high for sulfide composites. Lime requirements were moderate to high for all six composites.

**Table 18. - Overall Metallurgical Results, Bottle Roll Tests, Sleeper Project Core Composites, P<sub>80</sub>75µm Feeds**

Metallurgical Results	Core Composite			
	WWO-13-1 <sup>3)</sup>		WWO-13-2	
	Au	Ag	Au	Ag
Extraction: pct of total				
in 2 hours	64.5	20.5	44.4	45.8
in 6 hours	72.1	31.0	70.8	60.1
in 12 hours	73.8	32.0	77.3	62.5
in 24 hours	75.5	32.5	79.8	65.8
in 48 hours	77.2	33.5	80.8	69.1
in 72 hours	79.0	34.0	81.8	69.4
in 96 hours	80.7	35.0	82.8	69.7
Extracted, g/mt ore	0.3047	0.07	0.8956	23.72
Tail Assay, g/mt <sup>1)</sup>	0.0730	0.13	0.1860	10.33
Calculated Head, g/mt ore	0.3777	0.20	1.0816	34.05
Avg. Head, g/mt ore <sup>2)</sup>	0.312	0.18	1.024	33.59
NaCN Consumed, kg/mt ore		0.17		0.18
Lime Added, kg/mt ore		6.7		5.0
Final Leach pH		10.7		10.8
Natural pH (33 or 40% Solids)		7.1		7.4
Final DO, ppm		5.2		5.0

- 1) Average of triplicate tail assays.  
 2) Avg. of all head grade determinations.  
 3) 33% solids - viscosity problems occurred at 40% solids pulp density.

**Figure 3. - Gold and Silver Leach Rate Profiles, Bottle Roll Tests, Sleeper Project Core Composites, P<sub>80</sub>75µm Feeds**



**Table 19. - Tail Assay Results, Bottle Leached Residues, Sleeper Project Core Composites, P<sub>80</sub>75µm Feeds**

Tail Assay	Tail Grade, g/mt			
	Core Composite			
	WWO-13-1		WWO-13-2	
	Au	Ag	Au	Ag
1	0.078	0.1	0.187	10.2
2	0.071	0.2	0.185	10.2
3	0.070	0.1	0.186	10.6
Average	0.0730	0.13	0.1860	10.33

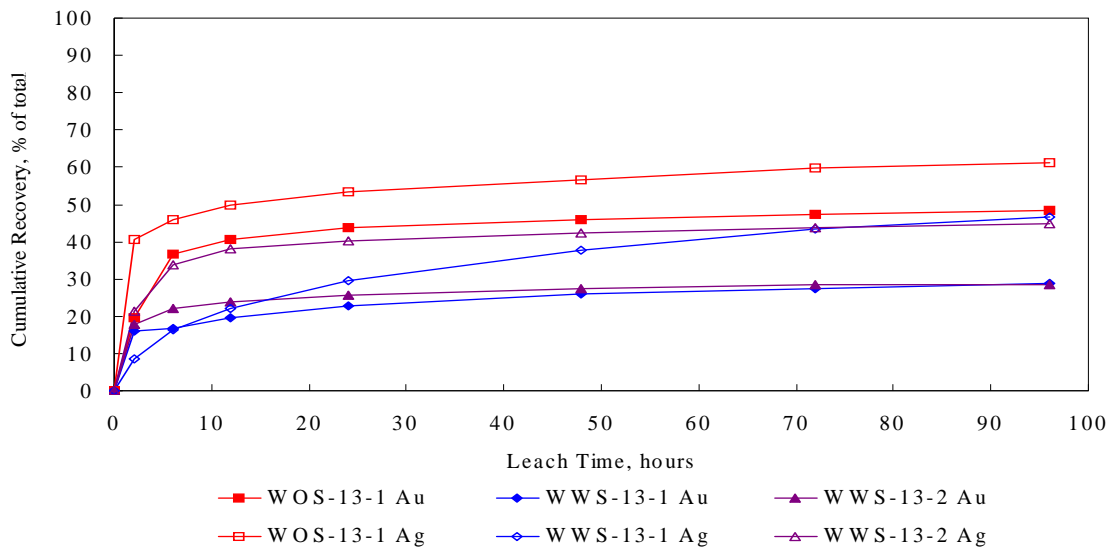
Results show that West Wood oxide composites were amenable to cyanidation at a  $P_{80} 75\mu\text{m}$  grind size. Gold recoveries in the low 80's, however, indicate some possible encapsulation of Au values. Gold recoveries were 80.7 and 82.8 percent for composites WWO-13-1 and -2, respectively. A silver recovery of 69.7 percent was achieved from WWO-13-2, but Ag grade was low for WWO-13-1 and explains, in part, low Ag recovery. Gold and silver recovery rates were rapid, and extraction was substantially complete in from 6 to 24 hours of leaching. NaCN consumptions were low. Lime requirements were high.

**Table 20. - Overall Metallurgical Results, Bottle Roll Tests, Sleeper Project Core Composites, P<sub>80</sub> 75µm Feeds**

Metallurgical Results	Core Composite					
	WOS-13-1		WWS-13-1 <sup>3)</sup>		WWS-13-2	
	Au	Ag	Au	Ag	Au	Ag
Extraction: pct of total						
in 2 hours	19.4	40.6	16.1	8.5	17.9	21.4
in 6 hours	36.7	45.8	16.9	16.5	21.9	33.8
in 12 hours	40.6	49.7	19.5	22.1	23.7	38.1
in 24 hours	43.6	53.4	22.7	29.6	25.6	40.3
in 48 hours	45.8	56.6	25.9	37.9	27.5	42.4
in 72 hours	47.2	59.8	27.4	43.5	28.3	43.7
in 96 hours	48.5	61.1	28.9	46.5	28.6	45
Extracted, g/mt ore	0.8264	8.69	0.9855	4.55	0.3822	1.45
Tail Assay, g/mt <sup>1)</sup>	0.8773	5.53	2.4233	5.23	0.9550	1.77
Calculated Head, g/mt ore	1.7037	14.22	3.4088	9.78	1.3372	3.22
Avg. Head, g/mt ore <sup>2)</sup>	1.548	14.21	3.272	10.32	1.285	3.01
NaCN Consumed, kg/mt ore		0.63		1.36		0.60
Lime Added, kg/mt ore		3.1		4.5		3.8
Final Leach pH		10.8		10.9		10.9
Natural pH (33 or 40% Solids)		5.5		5.8		6.6
Final DO, ppm		4.3		4.0		4.9

1) Average of triplicate tail assays.  
 2) Avg. of all head grade determinations.  
 3) 33% solids - viscosity problems occurred at 40% solids pulp density.

**Figure 4. - Gold and Silver Leach Rate Profiles, Bottle Roll Tests, Sleeper Project Core Composites, P<sub>80</sub> 75µm Feeds**



**Table 21. - Tail Assay Results, Bottle Leached Residues, Sleeper Project Core Composites, P<sub>80</sub> 75µm Feeds**

Tail Assay	Tail Grade, g/mt					
	Core Composite					
	WOS-13-1		WWS-13-1		WWS-13-2	
	Au	Ag	Au	Ag	Au	Ag
1	0.879	5.7	2.39	5.0	0.953	1.7
2	0.870	5.4	2.35	4.9	0.979	1.7
3	0.883	5.5	2.53	5.8	0.933	1.9
Average	0.8773	5.53	2.4233	5.23	0.9550	1.77

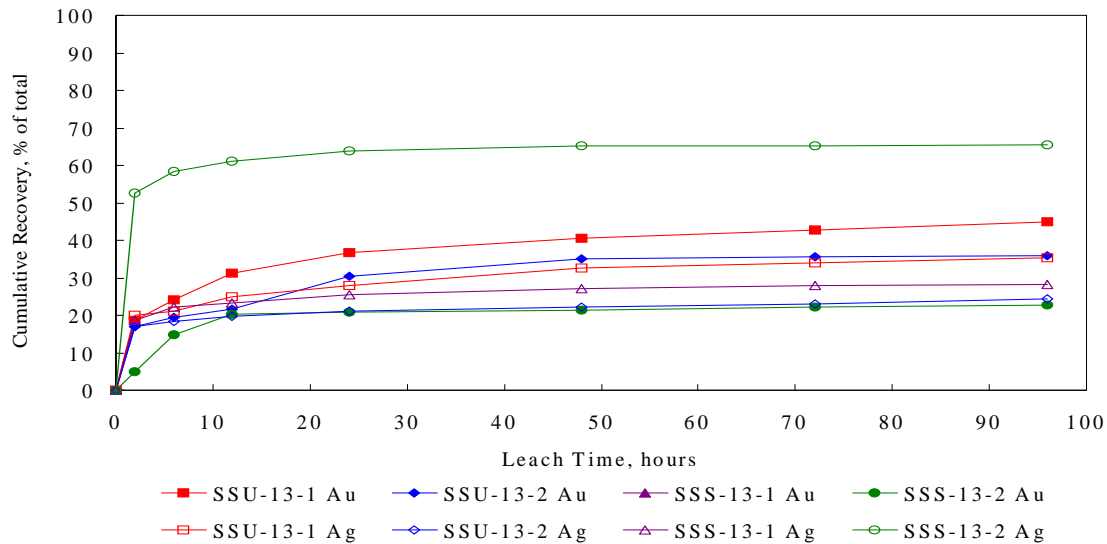
Metallurgical results show that Wood and West Wood sulfide ore composites were not amenable to cyanidation at the  $P_{80}75\mu\text{m}$  grind size. Gold recoveries of only 48.5, 28.9 and 28.6 percent were achieved from WOS-13-1, WWS-13-1 and WWS-13-2 composites, respectively, in 96 hours of agitated cyanidation treatment. Respective Ag recoveries were 61.1, 46.5 and 45.0 percent. Gold and silver recovery rates were generally rapid and extraction was substantially complete in 24 hours. Values were extracted after 24 hours, but at a much slower rate. NaCN consumptions were high and ranged from 0.60 to 1.36 (WWS-13-1) kg/mt of ore. Lime requirements were moderate to high, and ranged from 3.1 to 4.5 (WWS-13-1) kg/mt of ore.

**Table 22. - Overall Metallurgical Results, Bottle Roll Tests, Sleeper Project Core Composites, P<sub>80</sub> 75µm Feeds**

Metallurgical Results	Core Composite							
	SSU-13-1 <sup>3)</sup>		SSU-13-2 <sup>3)</sup>		SSS-13-1		SSS-13-2	
	Au	Ag	Au	Ag	Au	Ag	Au	Ag
Extraction: pct of total								
in 2 hours	18.7	20.1	17.0	16.9	0.0	18.7	4.9	52.6
in 6 hours	24.1	21.2	19.4	18.3	0.0	22.1	14.8	58.4
in 12 hours	31.2	25.0	21.7	19.8	0.0	23.3	20.2	61.2
in 24 hours	36.7	28.0	30.5	21.2	0.0	25.4	20.8	63.9
in 48 hours	40.5	32.6	35.2	22.1	0.0	27.1	21.5	65.1
in 72 hours	42.7	33.9	35.5	22.9	0.0	27.9	22.1	65.3
in 96 hours	44.9	35.3	36.0	24.4	0.0	28.3	22.8	65.4
Extracted, g/mt ore	0.5349	0.82	0.1715	0.41	0.0000	0.91	0.0700	7.44
Tail Assay, g/mt <sup>1)</sup>	0.6563	1.50	0.3053	1.27	0.3693	2.30	0.2370	3.93
Calculated Head, g/mt ore	1.1912	2.32	0.4768	1.68	0.3693	3.21	0.3070	11.37
Avg. Head, g/mt ore <sup>2)</sup>	1.057	1.99	0.485	1.52	0.368	2.95	0.302	12.12
NaCN Consumed, kg/mt ore		1.00		0.73		0.08		0.30
Lime Added, kg/mt ore		4.9		3.8		2.5		3.6
Final Leach pH		10.9		10.8		10.7		10.8
Natural pH (33 or 40% of Solids)		5.8		6.0		6.7		6.0
Final DO, ppm		4.0		3.9		5.2		4.3

- 1) Avg. of triplicate tail assays.  
 2) Avg. of all head grade determinations.  
 3) 33% solids - viscosity problems occurred at 40% solids pulp density.

**Figure 5. - Gold and Silver Leach Rate Profiles, Bottle Roll Tests, Sleeper Project Core Composites, P<sub>80</sub> 75µm Feeds**



**Table 23. - Tail Assay Results, Bottle Leached Residues, Sleeper Project Core Composites, P<sub>80</sub> 75µm Feeds**

Tail Assay	Tail Grade, g/mt							
	Core Composite							
	SSU-13-1		SSU-13-2		SSS-13-1		SSS-13-2	
	Au	Ag	Au	Ag	Au	Ag	Au	Ag
1	0.663	1.5	0.310	1.3	0.368	2.3	0.244	4.0
2	0.658	1.4	0.294	1.3	0.367	2.3	0.247	4.0
3	0.648	1.6	0.312	1.2	0.373	2.3	0.220	3.8
Average	0.6563	1.50	0.3053	1.27	0.3693	2.30	0.2370	3.93

Results show that Sleeper and South Sleeper sulfide composites were not amenable to cyanidation at the P<sub>80</sub>75µm grind size. Gold recoveries ranged from 0.0 (SSS-13-1) to 44.9 (SSU-13-1) percent in 96 hours of leaching. Silver recoveries ranged from 24.4 (SSU-13-2) to 65.4 (SSS-13-2) percent. Precious metal recovery rates were generally rapid and extraction was substantially complete in from 12 to 24 hours. NaCN consumptions were high for Sleeper composites, but were low to moderate for the South Sleeper composites.

Poor recoveries from all sulfide core composites indicate value encapsulation and/or a refractory nature. The SGS mineralogy report may confirm the cause of low precious metals from P<sub>80</sub>75µm ground sulfide ores.

## **HEAD SCREEN ANALYSIS PROCEDURES AND RESULTS**

Head screen analyses were conducted on FMX-13-1 (37.5 and 19mm), FSU-13-1 (37.5 and 19mm), SSU-13-1, SSU-13-2, WOS-13-1, WWO-13-1 and WWO-13-2 (all at P<sub>80</sub>19mm) core composites to determine head grade and Au and Ag distribution throughout the various size fractions. Head screen ore split weights for P<sub>80</sub>37.5mm feeds were 25 kg, and for P<sub>80</sub>19mm feeds, 15 kg.

Ore charges were wet screened to obtain particle sizes (size fractions) ranging from the top size to minus 150µm (9 to 11 size fractions). Each size fraction was dried and weighed. Fractions coarser than 1.7mm were crushed to minus 1.7mm before assaying. Size fractions (all at -1.7mm) were thoroughly blended and split to obtain 200 g for Au and Ag assay.

Column leach tests and tail screen analyses were conducted on composites FMX-13-1 (37.5 and 19mm feeds), FSU-13-1, WWO-13-1 and WWO-13-2 (all at P<sub>80</sub>19mm). Head screen data for those composites were compared to respective tail screen data to calculate recovery by size fraction data. Tail screen and recovery by size fraction data are provided later in this report.

Head screen analysis results are provided in Tables 24 through 32.

**Table 24. - Head Screen Analysis Results,  
 Sleeper Project Core Composite FMX-13-1, P<sub>80</sub> 37.5mm Crush Size**

Size Fraction	Weight, percent	Cum. Wt., percent	Assays,		Distribution			
			g/mt		percent		Cum. percent	
			Au	Ag	Au	Ag	Au	Ag
+50mm	5.4	5.4	0.431	3.1	4.6	4.4	4.6	4.4
-50+25mm	48.3	53.7	0.469	4.1	44.6	51.5	49.2	55.9
-25+19mm	14.7	68.4	0.472	3.8	13.7	14.5	62.9	70.4
-19+12.5mm	8.3	76.7	0.455	3.6	7.4	7.8	70.3	78.2
-12.5+6.3mm	6.4	83.1	0.499	3.5	6.3	5.8	76.6	84.0
-6.3+1.7mm	6.2	89.3	0.406	3.6	4.9	5.8	81.5	89.8
-1.7mm+850µm	2.1	91.4	0.383	3.7	1.6	2.0	83.1	91.8
-850+420µm	1.4	92.8	0.356	3.5	1.0	1.3	84.1	93.4
-420+212µm	1.2	94.0	0.364	3.6	0.9	1.1	85.0	94.2
-212+150µm	0.8	94.8	0.429	3.9	0.7	0.8	85.7	95.0
-150µm	5.2	100.0	1.40	3.7	14.3	5.0	100.0	100.0
Composite	100.0		0.508	3.85	100.0	100.0		

**Table 25. - Head Screen Analysis Results,  
 Sleeper Project Core Composite FMX-13-1, P<sub>80</sub> 19mm Crush Size**

Size Fraction	Weight, percent	Cum. Wt., percent	Assays,		Distribution			
			g/mt		percent		Cum. percent	
			Au	Ag	Au	Ag	Au	Ag
+19mm	19.4	19.4	0.424	3.6	20.7	19.0	20.7	19.0
-19+12.5mm	39.1	58.5	0.359	3.6	35.3	38.3	56.0	57.3
-12.5+6.3mm	16.8	75.3	0.345	4.0	14.6	18.3	70.6	75.6
-6.3+1.7mm	10.8	86.1	0.282	3.6	7.7	10.6	78.3	86.2
-1.7mm+850µm	3.0	89.1	0.280	3.5	2.1	2.8	80.4	89.0
-850+420µm	2.1	91.2	0.281	3.5	1.5	2.0	81.9	91.0
-420+212µm	1.7	92.9	0.239	3.7	1.0	1.7	82.9	92.7
-212+150µm	0.8	93.7	0.206	3.7	0.4	0.8	83.3	93.5
-150µm	6.3	100.0	1.05	3.8	16.7	6.5	100.0	100.0
Composite	100.0		0.397	3.68	100.0	100.0		



**Table 26. - Head Screen Analysis Results,  
 Sleeper Project Core Composite FSU-13-1, P<sub>80</sub> 37.5mm Crush Size**

Size Fraction	Weight, percent	Cum. Wt., percent	Assays, g/mt		Distribution			
					percent		Cum. percent	
			Au	Ag	Au	Ag	Au	Ag
+50mm	3.0	3.0	0.218	1.5	1.8	2.2	1.8	2.2
-50+25mm	48.8	51.8	0.334	1.9	44.8	45.9	46.6	48.1
-25+19mm	9.9	61.7	0.395	2.2	10.7	10.8	57.3	58.9
-19+12.5mm	8.5	70.2	0.393	2.1	9.2	8.8	66.5	67.7
-12.5+6.3mm	8.6	78.8	0.382	2.1	9.0	8.9	75.5	76.6
-6.3+1.7mm	8.7	87.5	0.426	2.5	10.2	10.8	85.7	87.4
-1.7mm+850µm	2.6	90.1	0.497	2.3	3.6	3.0	89.3	90.4
-850+420µm	1.8	91.9	0.623	2.7	3.1	2.4	92.4	92.8
-420+212µm	1.2	93.1	0.474	2.8	1.5	1.7	93.9	94.5
-212+150µm	0.7	93.8	0.463	2.7	0.9	0.9	94.8	95.5
-150µm	6.2	100.0	0.303	1.5	5.2	4.6	100.0	100.0
Composite	100.0		0.364	2.02	100.0	100.0		

**Table 27. - Head Screen Analysis Results,  
 Sleeper Project Core Composite FSU-13-1, P<sub>80</sub> 19mm Crush Size**

Size Fraction	Weight, percent	Cum. Wt., percent	Assays, g/mt		Distribution			
					percent		Cum. percent	
			Au	Ag	Au	Ag	Au	Ag
+19mm	18.3	18.3	0.397	3.0	15.8	22.9	15.8	22.9
-19+12.5mm	38.6	56.9	0.403	2.3	33.7	37.0	49.5	59.9
-12.5+6.3mm	15.7	72.6	0.679	2.4	23.1	15.7	72.6	75.6
-6.3+1.7mm	11.9	84.5	0.488	2.1	12.6	10.4	85.2	86.0
-1.7mm+850µm	3.4	87.9	0.435	2.5	3.2	3.5	88.4	89.5
-850+420µm	2.0	89.9	0.483	3.0	2.1	2.5	90.5	92.0
-420+212µm	1.5	91.4	0.601	2.9	2.0	1.8	92.5	93.8
-212+150µm	0.8	92.2	0.639	2.9	1.1	1.0	93.6	94.8
-150µm	7.8	100.0	0.380	1.6	6.4	5.2	100.0	100.0
Composite	100.0		0.461	2.40	100.0	100.0		

**Table 28. - Head Screen Analysis Results,  
 Sleeper Project Core Composite SSU-13-1, P<sub>80</sub>19mm Crush Size**

Size Fraction	Weight, percent	Cum. Wt., percent	Assays, g/mt		Distribution			
			Au	Ag	percent		Cum. percent	
			Au	Ag	Au	Ag	Au	Ag
+19mm	12.0	12.0	0.412	1.2	5.5	8.4	5.5	8.4
-19+12.5mm	22.1	34.1	0.571	1.5	14.0	19.2	19.5	27.6
-12.5+6.3mm	14.9	49.0	0.589	1.7	9.7	14.7	29.2	42.3
-6.3+1.7mm	17.4	66.4	0.899	1.5	17.3	15.1	46.5	57.4
-1.7mm+850µm	5.5	71.9	1.83	2.0	11.1	6.4	57.6	63.8
-850+420µm	4.1	76.0	1.98	2.3	9.0	5.5	66.6	69.3
-420+212µm	3.3	79.3	2.77	3.5	10.1	6.7	76.7	76.0
-212+150µm	1.4	80.7	2.65	4.8	4.1	3.9	80.8	79.9
-150µm	19.3	100.0	0.897	1.8	19.2	20.1	100.0	100.0
Composite	100.0		0.903	1.72	100.0	100.0		

**Table 29. - Head Screen Analysis Results,  
 Sleeper Project Core Composite SSU-13-2, P<sub>80</sub>19mm Crush Size**

Size Fraction	Weight, percent	Cum. Wt., percent	Assays, g/mt		Distribution			
			Au	Ag	percent		Cum. percent	
			Au	Ag	Au	Ag	Au	Ag
+19mm	17.6	17.6	1.03	2.7	35.0	30.7	35.0	30.7
-19+12.5mm	27.4	45.0	0.407	1.4	21.6	24.7	56.6	55.4
-12.5+6.3mm	21.6	66.6	0.346	1.3	14.4	18.1	71.0	73.5
-6.3+1.7mm	17.1	83.7	0.494	1.3	16.3	14.3	87.3	87.8
-1.7mm+850µm	5.4	89.1	0.341	1.2	3.6	4.2	90.9	92.0
-850+420µm	1.4	90.5	0.645	1.4	1.8	1.3	92.7	93.3
-420+212µm	1.6	92.1	0.429	1.5	1.3	1.5	94.0	94.8
-212+150µm	0.7	92.8	0.429	1.2	0.6	0.6	94.6	95.4
-150µm	7.2	100.0	0.390	1.0	5.4	4.6	100.0	100.0
Composite	100.0		0.517	1.55	100.0	100.0		

**Table 30. - Head Screen Analysis Results,  
 Sleeper Project Core Composite WOS-13-1, P<sub>80</sub>19mm Crush Size**

Size Fraction	Weight, percent	Cum. Wt., percent	Assays, g/mt		Distribution			
			Au	Ag	percent		Cum. percent	
			Au	Ag	Au	Ag	Au	Ag
+19mm	20.1	20.1	0.870	8.2	9.5	18.1	9.5	18.1
-19+12.5mm	28.6	48.7	2.69	6.1	41.7	19.1	51.2	37.2
-12.5+6.3mm	19.2	67.9	3.06	9.2	31.8	19.4	83.0	56.6
-6.3+1.7mm	14.5	82.4	1.07	12.7	8.4	20.2	91.4	76.8
-1.7mm+850µm	3.8	86.2	1.13	13.3	2.3	5.5	93.7	82.3
-850+420µm	2.5	88.7	1.01	13.4	1.4	3.7	95.1	86.0
-420+212µm	2.1	90.8	0.932	13.4	1.1	3.1	96.2	89.1
-212+150µm	0.9	91.7	0.912	12.5	0.4	1.2	96.6	90.3
-150µm	8.3	100.0	0.747	10.7	3.4	9.7	100.0	100.0
Composite	100.0		1.845	9.12	100.0	100.0		

**Table 31. - Head Screen Analysis Results,  
 Sleeper Project Core Composite WWO-13-1, P<sub>80</sub>19mm Crush Size**

Size Fraction	Weight, percent	Cum. Wt., pct.	Assays, g/mt		Au Distribution	
			Au	Ag	percent	Cum. pct.
+19mm	12.0	12.0	0.271	<0.1	15.2	15.2
-19+12.5mm	1.7	13.7	0.372	<0.1	2.9	18.1
-12.5+6.3mm	6.4	20.1	0.353	<0.1	10.6	28.7
-6.3+1.7mm	48.7	68.8	0.104	<0.1	23.7	52.4
-1.7mm+850µm	10.8	79.6	0.105	<0.1	5.3	57.7
-850+420µm	5.4	85.0	0.082	<0.1	2.1	59.8
-420+212µm	3.3	88.3	0.131	<0.1	2.0	61.8
-212+150µm	1.3	89.6	0.234	<0.1	1.4	63.2
-150µm	10.4	100.0	0.756	<0.1	36.8	100.0
Composite	100.0		0.214	<0.1	100.0	

**Table 32. - Head Screen Analysis Results,  
 Sleeper Project Core Composite WWO-13-2, P<sub>80</sub>19mm Crush Size**

Size Fraction	Weight, percent	Cum. Wt., percent	Assays, g/mt		Distribution			
			Au	Ag	percent		Cum. percent	
					Au	Ag	Au	Ag
+19mm	20.5	20.5	1.07	27.2	22.5	22.3	22.5	22.3
-19+12.5mm	29.2	49.7	1.01	30.1	30.2	35.1	52.7	57.4
-12.5+6.3mm	17.9	67.6	0.891	21.2	16.4	15.2	69.1	72.6
-6.3+1.7mm	16.4	84.0	0.819	22.8	13.8	14.9	82.9	87.5
-1.7mm+850µm	6.3	90.3	0.814	21.5	5.3	5.4	88.2	92.9
-850+420µm	2.5	92.8	0.859	21.3	2.2	2.1	90.4	95.0
-420+212µm	2.9	95.7	0.828	20.7	2.4	2.4	92.8	97.4
-212+150µm	0.7	96.4	0.813	19.2	0.6	0.5	93.4	97.9
-150µm	3.6	100.0	1.78	14.7	6.6	2.1	100.0	100.0
Composite	100.0		0.975	25.05	100.0	100.0		

Head screen results show that Au and Ag grades varied between composites. Gold head screen grades varied from 0.214 (WWO-13-1) to 1.845 (WOS-13-1) gAu/mt of ore. Silver head grades ranged from <0.1 (WWO-13-1) to 25.05 (WWO-13-2) gAg/mt of ore. Gold and silver values were fairly evenly distributed throughout the size fractions for composites FMX-13-1, FSU-13-1 and WWO-13-2. Values were not evenly distributed for composites SSU-13-1, SSU-13-2, WOS-13-1 and WWO-13-1.

## **COLUMN PERCOLATION LEACH TEST (CT) PROCEDURES AND RESULTS**

Column percolation leach tests (CT) were conducted on FMX-13-1 (P<sub>80</sub>37.5 and 19mm feeds), FSU-13-1, WWO-13-1 and WWO-13-2 (all at P<sub>80</sub>19mm) core composites to determine Au and Ag recovery, recovery rate, reagent requirements and sensitivity to feed size (FMX-13-1 only). The summary CT procedure is provided below.

- 1) Agglomerate ore charges with lime (determined from BT) as a precaution against solution ponding and cure in leach columns (12" x 10' for 37.5mm feed and 6" x 10' for 19mm feeds) for three days before applying NaCN leach solution.
- 2) Apply leach solution (1.0 gNaCN/L) over the ore charges at a rate of 0.10 Lpm/m<sup>2</sup> (0.005 gpm/ft<sup>2</sup>) of column cross-sectional area.
- 3) Daily measure preg volume and sample (30mL) for Au, Ag, pH and NaCN analyses.
- 4) Pump daily preg solutions through three stage carbon circuits for adsorption of dissolved values.
- 5) Measure daily barren solution volume and sample (30mL) for Au, Ag, pH and NaCN analyses.
- 6) Advance carbons as value breakthrough to barren occurs. Assay all loaded carbons at the end of each test to obtain a metallurgical balance with extracted values determined by daily preg analyses (Au & Ag by AA and ICP).
- 7) Initiate a 1 week rest/1 week leach intermittent leach cycle when preg grades approach analytical detection limits.
- 8) After leaching, rinse with water (carbon circuit used) to meet Washoe County regulatory requirements (no detectable Au, Ag or free CN in rinse effluent).
- 9) After rinsing, allow column charges to drain down, measure drain volume and analyze for Au, Ag, pH and NaCN.
- 10) After drain down, remove leached/rinsed residues from the column, obtain moisture samples from the top, middle and bottom portions of the residue charge.
- 11) Air dry remaining residue and blend and split to obtain sample for tail screen analysis (25 kg for 37.5mm, 15 kg for 19mm).
- 12) Conduct tail screens using the same procedure as for head screens.

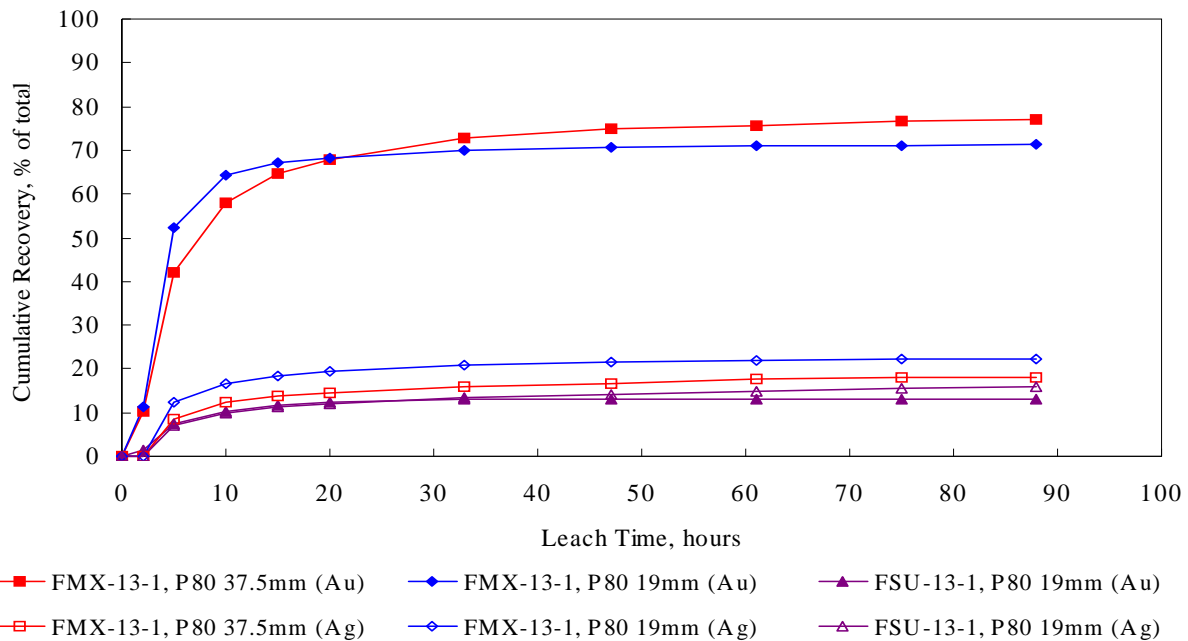
Overall metallurgical results and leach rate profiles for CT's on Facilities core composites are provided in Table 33 and Figure 6, respectively. Metallurgical results and leach rate profiles for CT's on West Wood oxide core composites are provided in Table 34 and Figure 7, respectively. Daily CT spreadsheets are provided in Section 3 of the Appendix.

**Table 33. - Overall Metallurgical Results, Column Leach Tests, Sleeper Project Facilities Core Composites, Varied Feed Sizes**

Metallurgical Results	Sleeper Core Composite					
	FMX-13-1, P <sub>80</sub> 37.5mm (P3)		FMX-13-1, P <sub>80</sub> 19mm (P2)		FSU-13-1, P <sub>80</sub> 19mm (P1)	
	<u>Au</u>	<u>Ag</u>	<u>Au</u>	<u>Ag</u>	<u>Au</u>	<u>Ag</u>
Extraction: pct of total						
1st Preg (day 2)	10.1	0.0	11.4	0.0	1.4	0.0
in 5 days	42.1	8.6	52.3	12.4	7.3	7.2
in 10 days	57.9	12.2	64.2	16.6	10.1	10.0
in 15 days	64.6	13.7	67.0	18.3	11.6	11.3
in 20 days	67.9	14.4	68.3	19.4	12.4	12.1
in 33 days	72.7	15.8	69.9	20.9	12.9	13.4
in 47 days1)	74.8	16.6	70.8	21.6	12.9	14.3
in 61 days1)	75.6	17.5	71.1	22	12.9	15.0
End of Leach (day 75)	76.8	18.0	71.1	22.3	12.9	15.7
End of Rinse (day 88)	77.1	18.0	71.3	22.3	12.9	16.0
Extracted, g/mt of ore	0.407	0.67	0.357	0.88	0.058	0.37
Tail Screen, g/mt	0.121	3.06	0.144	3.07	0.39	1.94
Calculated Head, g/mt of ore	0.528	3.73	0.501	3.95	0.448	2.31
Avg. Head, g/mt of ore2)	0.470	3.71	0.470	3.71	0.376	2.32
NaCN Consumed, kg/mt of ore		1.03		1.25		1.41
Lime Added, kg/mt of ore		3.5		5.0		4.0
Final Leach pH		10.2		10.1		10.1
pH After Rinse		10.1		10.1		9.9

1) After 1 week rest/1 week leach intermittent leach cycles.  
 2) Average of all head grade determinations.

**Figure 6. - Gold and Silver Leach Rate Profiles, Column Leach Tests, Sleeper Project Facilities Core Composites, Varied Feed Sizes**



Overall metallurgical results show that the Facilities mixed core composite (FMX-13-1) was amenable to heap leach cyanidation, with respect to Au recovery, at both crush sizes evaluated. It was determined from a previous MLI test program that Facilities oxide ore is readily amenable to heap leaching at a P<sub>80</sub>19mm crush size (Au recovery ~84%).

Gold recoveries of 77.1 and 71.3 percent were achieved from the FMX-13-1 P<sub>80</sub>37.5 and 19mm feeds, respectively. Recovery differences can likely be attributed to tail screen grade differences. Tail grade for the 19mm feed appears high. Respective Ag recoveries were low at 18.0 and 22.3 percent.

Facilities sulfide ore was not amenable to heap leaching at a P<sub>80</sub>19mm crush size. Gold and silver recoveries of only 12.9 and 16.0 percent were achieved in 88 days of leaching and rinsing.

Precious metal recovery rates were fairly rapid and extraction was substantially complete in 33 days of continuous leaching. Extraction continued after 33 days, but at a much slower rate.

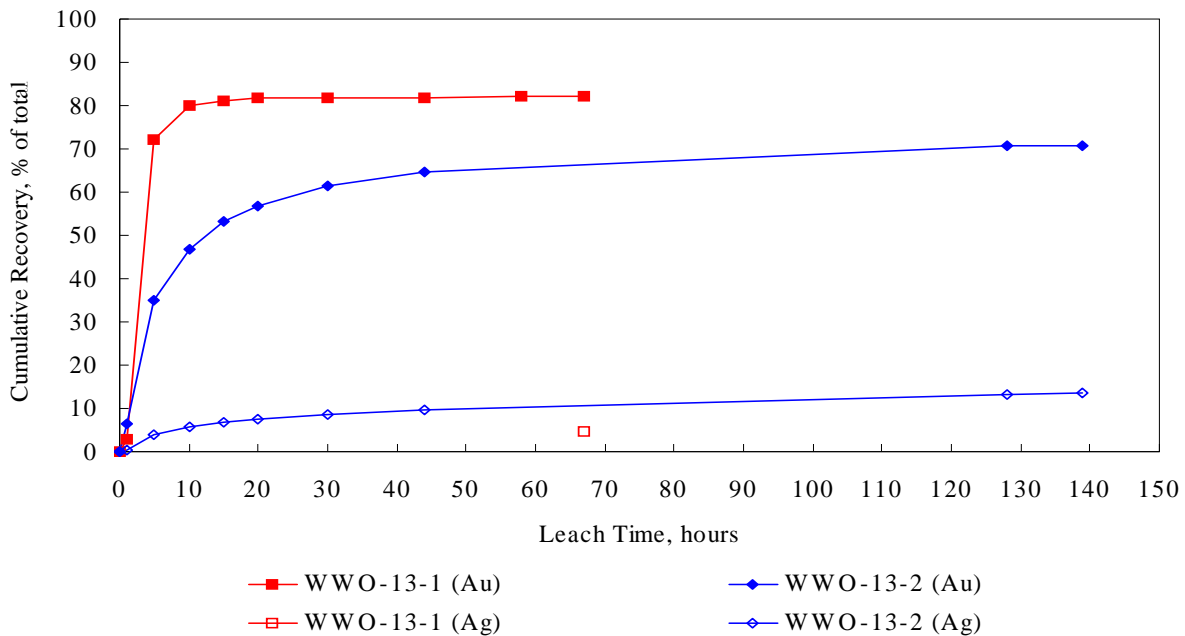
NaCN consumptions were high, but should be markedly lower during commercial heap production. Lime requirements were high, but lime added was sufficient to maintain leach pH at above pH 10.0 during the leach cycles. Perhaps more lime should be added (~ 6 kg/mt) to prevent pH control problems during commercial heap leaching.

**Table 34. - Overall Metallurgical Results, Column Leach Tests,  
 Sleeper Project West Wood Oxide Core Composites, P<sub>80</sub>19mm Feeds**

Metallurgical Results	West Wood Core Composite			
	WWO-13-1 (P4)		WWO-13-2 (P5)	
Extraction: pct of total	<u>Au</u>	<u>Ag</u>	<u>Au</u>	<u>Ag</u>
1st Preg	2.8	N/A	6.3	0.5
in 5 days	72.2		34.9	4.0
in 10 days	79.9		46.8	5.7
in 15 days	81.2		53.1	6.7
in 20 days	81.8		56.9	7.5
in 30 days <sup>1)</sup>	81.8		61.5	8.6
in 44 days	81.8		64.6	9.7
End of Leach	82.1 (58 days)		70.6 (128 days)	13.3
End of Rinse	82.1 (67 days)	4.5	70.8 (139 days)	13.4
Extracted, g/mt ore	0.266	0.01	0.772	4.12
Tail Screen, g/mt	0.058	0.21	0.319	26.66
Calculated Head, g/mt ore	0.324	0.22	1.091	30.78
Average Head, g/mt ore <sup>2)</sup>	0.312	0.17	1.024	33.59
NaCN Consumed, kg/mt ore		0.63		1.41
Lime Added, kg/mt ore		5.0		3.0
Final Solution pH		10.1		10.4
pH after Rinse		9.9		10.4

1) Initiate 1 week rest/1 week leach intermittent leach cycles.  
 2) Average of all head grade determinations.

**Figure 7. - Gold and Silver Leach Rate Profiles, Column Leach Tests,  
 Sleeper Project West Wood Oxide Core Composites, P<sub>80</sub>19mm Feeds**



Results show that West Wood oxide core composites were amenable to heap leaching at a P<sub>80</sub>19mm crush size.

A gold recovery of 82.1 percent was achieved from the lower grade WWO-13-1 composite in 67 days of leaching and rinsing. Silver grade was extremely low and only 4.5 percent of the Ag was recovered. Gold recovery rate was rapid and extraction was essentially complete in 20 days of continuous leaching.

A gold recovery of 70.8 percent was achieved from the higher grade WWO-13-2 composite in 139 days of leaching and rinsing. Silver recovery was low at 13.4 percent. Overall gold recovery rate was fairly slow, and additional values would be extracted with a longer leach cycle.

NaCN consumptions were high, but should be lower in commercial production. Lime requirements were high, but effective in maintaining leach pH at above pH 10. Again, a higher lime addition is recommended for commercial heap leaching.

Tail screen analysis results and recovery by size fraction data for the CT leached residues are provided in Tables 35 through 39.



**Table 35. - Tail Screen Analysis Results, Column Leached Residue (P3),  
Sleeper Project Core Composite FMX-13-1, P<sub>80</sub>37.5mm Crush Size**

Size Fraction	Weight, percent	Cum. Wt., percent	Assays, g/mt		Distribution				Recovery by Size Fraction, pct.	
			Au	Ag	Percent		Cum. pct.		Au	Ag
+50mm	2.1	2.1	0.066	1.8	1.2	1.2	1.2	1.2	84.7	41.9
-50+25mm	41.2	43.3	0.140	3.4	47.8	45.8	49.0	47.0	70.1	17.1
-25+19mm	12.1	55.4	0.090	2.7	9.0	10.7	58.0	57.7	80.9	28.9
-19+12.5mm	10.8	66.2	0.130	3.2	11.6	11.3	69.6	69.0	71.4	11.1
-12.5+6.3mm	8.3	74.5	0.134	3.1	9.2	8.4	78.8	77.4	73.1	11.4
-6.3+1.7mm	7.3	81.8	0.120	3.2	7.3	7.6	86.1	85.0	70.4	11.1
-1.7mm+850µm	2.5	84.3	0.130	3.8	2.7	3.1	88.8	88.1	66.1	-2.7
-850+420µm	1.8	86.1	0.110	3.3	1.6	2.0	90.4	90.1	69.1	5.7
-420+212µm	1.6	87.7	0.100	3.2	1.3	1.7	91.7	91.8	72.5	11.1
-212+150µm	0.6	88.3	0.090	3.2	0.5	0.6	92.2	92.4	79.0	17.9
-150µm	11.7	100.0	0.080	2.0	7.8	7.6	100.0	100.0	94.3	45.9
Composite	100.0		0.121	3.06	100.0	100.0			76.2	20.5
<u>Column Test Recovery</u>									77.1	18.0

**Table 36. - Tail Screen Analysis Results, Column Leached Residue (P2),  
Sleeper Project Core Composite FMX-13-1, P<sub>80</sub>19mm Crush Size**

Size Fraction	Weight, percent	Cum. Wt., percent	Assays, g/mt		Distribution				Recovery by Size Fraction, pct.	
			Au	Ag	Percent		Cum. pct.		Au	Ag
+19mm	19.1	19.1	0.160	3.1	21.2	19.3	21.2	19.3	62.3	13.9
-19+12.5mm	29.9	49.0	0.150	3.4	31.1	33.1	52.3	52.4	58.2	5.6
-12.5+6.3mm	20.1	69.1	0.158	3.2	22.0	21.0	74.3	73.4	54.2	20.0
-6.3+1.7mm	12.1	81.2	0.140	3.0	11.7	11.8	86.0	85.2	50.4	16.7
-1.7mm+850µm	2.8	84.0	0.150	3.5	2.9	3.2	88.9	88.4	46.4	0.0
-850+420µm	2.0	86.0	0.140	3.3	1.9	2.2	90.8	90.6	50.2	5.7
-420+212µm	1.6	87.6	0.120	3.4	1.3	1.8	92.1	92.4	49.8	8.1
-212+150µm	0.9	88.5	0.110	3.1	0.7	0.9	92.8	93.3	46.6	16.2
-150µm	11.5	100.0	0.090	1.8	7.2	6.7	100.0	100.0	91.4	52.6
Composite	100.0		0.144	3.07	100.0	100.0			63.7	16.6
<u>Column Test Recovery</u>									71.3	22.3

Tail screen results show that the FMX-13-1 P<sub>80</sub>37.5mm CT leached residue contained 0.121 gAu and 3.06 gAg/mt. Residual Au & Ag values were fairly evenly distributed throughout the various size fractions. Recovery by size fraction data indicate that crushing finer than P<sub>80</sub>37.5mm would not markedly increase Au recovery with subsequent heap leach cyanidation. Gold and silver values were more readily extracted from the minus 150µm fraction than from coarser fractions. CT recovery compared well with recovery determined from head and tail screen grades. The higher recoveries for plus 50mm and minus 25mm plus 19mm fractions indicate that fraction assays could be low.

Tail screen results show that the FMX-13-1 P<sub>80</sub>19mm leached residue contained 0.144 gAu and 3.07 gAg/mt. Residual values were fairly evenly distributed. Head and tail screen fraction grades appear suspect as seen by recovery by size fraction data. Replicate and re-assay of select head and tail screen fractions did not change results.

**Table 37. - Tail Screen Analysis Results, Column Leached Residue (P1),  
 Sleeper Project Core Composite FSU-13-1, P<sub>80</sub>19mm Crush Size**

Size Fraction	Weight, percent	Cum. Wt., percent	Assays, g/mt		Distribution				Recovery by Size Fraction, pct.	
			Au	Ag	Percent		Cum. pct.		Au	Ag
+19mm	16.0	16.0	0.570	2.3	23.4	19.0	23.4	19.0	-43.6	23.3
-19+12.5mm	36.5	52.5	0.350	1.9	32.7	35.8	56.1	54.8	13.2	17.4
-12.5+6.3mm	20.1	72.6	0.375	1.9	19.3	19.7	75.4	74.5	44.8	20.8
-6.3+1.7mm	10.9	83.5	0.410	2.1	11.5	11.8	86.9	86.3	16.0	0.0
-1.7mm+850µm	2.7	86.2	0.490	2.6	3.4	3.6	90.3	89.9	-12.6	-4.0
-850+420µm	1.5	87.7	0.458	2.6	1.8	2.0	92.1	91.9	5.2	13.3
-420+212µm	1.4	89.1	0.480	2.7	1.7	2.0	93.8	93.9	20.1	6.9
-212+150µm	0.5	89.6	0.480	2.6	0.6	0.7	94.4	94.6	24.9	10.3
-150µm	10.4	100.0	0.212	1.0	5.6	5.4	100.0	100.0	44.2	37.5
Composite	100.0		0.390	1.94	100.0	100.0			15.4	19.2
<u>Column Test Recovery</u>									12.9	16.0

The FSU-13-1 (P<sub>80</sub>19mm) leached residue contained 0.390 gAu and 1.94 gAg/mt. Residual values were fairly evenly distributed. Recovery by size fraction data show that values were more readily extracted from the minus 150µm fraction than from coarser fractions. Negative fraction recoveries were caused by tail fraction grades higher than corresponding head fraction grades. Overall, CT recoveries checked well with recovery determined from head and tail screen grades.

**Table 38. - Tail Screen Analysis Results, Column Leached Residue (P4),  
 Sleeper Project Core Composite WWO-13-1, P<sub>80</sub>19mm Crush Size**

Size Fraction	Weight, percent	Cum. Wt., percent	Assays, g/mt		Distribution				Recovery by Size Fraction, pct.	
			Au	Ag	Percent		Cum. pct.		Au	Ag
+19mm	8.4	8.4	0.078	0.2	11.4	7.9	11.4	7.9	71.2	N/A
-19+12.5mm	2.1	10.5	0.119	0.4	4.3	3.9	15.7	11.8	68.0	N/A
-12.5+6.3mm	6.1	16.6	0.116	0.1	12.3	2.8	28.0	14.6	67.1	N/A
-6.3+1.7mm	47.4	64.0	0.052	0.2	42.8	44.4	70.8	59.0	50.0	N/A
-1.7mm+850µm	12.5	76.5	0.056	0.2	12.1	11.7	82.9	70.7	46.7	N/A
-850+420µm	4.5	81.0	0.047	0.1	3.7	2.1	86.6	72.8	42.7	N/A
-420+212µm	3.0	84.0	0.057	0.3	3.0	4.2	89.6	77.0	56.5	N/A
-212+150µm	1.1	85.1	0.058	0.4	1.1	2.1	90.7	79.1	75.2	N/A
-150µm	14.9	100.0	0.036	0.3	9.3	20.9	100.0	100.0	95.2	N/A
Composite	100.0		0.058	0.21	100.0	100.0			72.9	N/A
<u>Column Test Recovery</u>									82.1	N/A

**Table 39. - Tail Screen Analysis Results, Column Leached Residue (P5),  
 Sleeper Project Core Composite WWO-13-2, P<sub>80</sub>19mm Crush Size**

Size Fraction	Weight, percent	Cum. Wt., percent	Assays, g/mt		Distribution				Recovery by Size Fraction, pct.	
			Au	Ag	Percent		Cum. pct.		Au	Ag
+19mm	18.4	18.4	0.371	35.1	21.4	24.2	21.4	24.2	65.3	-29.0
-19+12.5mm	28.1	46.5	0.354	30.7	31.2	32.4	52.6	56.6	65.0	2.0
-12.5+6.3mm	22.2	68.7	0.294	25.9	20.4	21.6	73.0	78.2	67.0	-22.2
-6.3+1.7mm	18.6	87.3	0.298	22.0	17.4	15.3	90.4	93.5	63.6	3.5
-1.7mm+850µm	4.1	91.4	0.286	19.5	3.7	3.0	94.1	96.5	64.9	9.3
-850+420µm	2.4	93.8	0.293	18.3	2.2	1.6	96.3	98.1	65.9	14.1
-420+212µm	1.5	95.3	0.306	15.9	1.4	0.9	97.7	99.0	63.0	23.2
-212+150µm	0.7	96.0	0.299	13.6	0.6	0.4	98.3	99.4	63.2	29.2
-150µm	4.0	100.0	0.134	3.9	1.7	0.6	100.0	100.0	92.5	73.5
Composite	100.0		0.319	26.66	100.0	100.0			67.2	-6.4
<u>Column Test Recovery</u>									70.8	13.4

Tail screen results show that the WWO-13-1 P<sub>80</sub>19mm leached residue contained 0.058 gAu and 0.21 gAg/mt. Residual Au values were fairly evenly distributed, except for the three coarsest fractions. Head screen fraction grades for the minus 6.3 to plus 212µm fractions were lower grade than coarser and finer fractions and explains lower recoveries for those four fractions. Gold values were more readily extracted from the minus 150µm fraction.

The composite WWO-13-2 CT leached residue contained 0.319 gAu and 26.66 gAg/mt. Residual values were fairly evenly distributed. Gold recovery by size data compare well with the CT gold recovery. Values were more readily extracted from the minus 150µm fraction.

Gold and silver metallurgical balances are provided in Tables 40 and 41, respectively.

**Table 40. - Gold Metallurgical Balances, Column Leach Tests,  
 Sleeper Project Core Composites**

	Metallurgical Balance		
	Sol. vs. Tail	Carbon vs. Tail	Head vs. Tail <sup>2)</sup>
<b>FSU-13-1, P<sub>80</sub>19mm Feed Size (P1)</b>			
Extracted, gAu/mt ore	0.058	0.058	0.071
Tail Screen, gAu/mt	0.390	0.390	0.390
Calc'd Head, gAu/mt ore	0.448	0.448	0.461
Au Recovery, percent	12.9	12.9	15.4
Deviation, gAu/mt ore <sup>1)</sup>	N/A	0.000	0.013
Precision, percent	100.0	100.0	97.2
<b>FMX-13-1, P<sub>80</sub>19mm Feed Size (P2)</b>			
Extracted, gAu/mt ore	0.357	0.338	0.253
Tail Screen, gAu/mt	0.144	0.144	0.144
Calc'd Head, gAu/mt ore	0.501	0.482	0.397
Au Recovery, percent	71.3	70.1	63.7
Deviation, gAu/mt ore <sup>1)</sup>	N/A	0.019	0.104
Precision, percent	100.0	96.2	79.2
<b>FMX-13-1, P<sub>80</sub>37.5mm Feed Size (P3)</b>			
Extracted, gAu/mt ore	0.407	0.396	0.387
Tail Screen, gAu/mt	0.121	0.121	0.121
Calc'd Head, gAu/mt ore	0.528	0.517	0.508
Au Recovery, percent	77.1	76.6	76.2
Deviation, gAu/mt ore <sup>1)</sup>	N/A	0.011	0.020
Precision, percent	100.0	97.9	96.2
<b>WWO-13-1, P<sub>80</sub>19mm Feed Size (P4)</b>			
Extracted, gAu/mt ore	0.266	0.248	0.156
Tail Screen, gAu/mt	0.058	0.058	0.058
Calc'd Head, gAu/mt ore	0.324	0.306	0.214
Au Recovery, percent	82.1	81.1	72.9
Deviation, gAu/mt ore <sup>1)</sup>	N/A	0.018	0.110
Precision, percent	100.0	94.4	66.0
<b>WWO-13-2, P<sub>80</sub>19mm Feed Size (P5)</b>			
Extracted, gAu/mt ore	0.772	0.775	0.656
Tail Screen, gAu/mt	0.319	0.319	0.319
Calc'd Head, gAu/mt ore	1.091	1.094	0.975
Au Recovery, percent	70.8	70.8	67.3
Deviation, gAu/mt ore <sup>1)</sup>	N/A	0.003	0.116
Precision, percent	100.0	99.7	89.4

1) Deviation from solution versus tail screen calculated head.  
 2) Calculated, based on head and tail screen results.

Metallurgical balances are based on cumulative extracted values from daily preg solution analyses (Sol. vs. Tail), loaded carbon assays (Carbon vs. Tail) and head screen grades and tail screen analysis leached residue grades (Head vs. Tail). Solution and carbon versus tail balances are a measure of the precision/accuracy for the CT.

Solution and carbon balances agreed closely for Au extracted values and precision was excellent at greater than 95%. Head vs. tail balances agreed well for three of the five CT's.

**Table 41. - Silver Metallurgical Balances, Column Leach Tests,  
 Sleeper Project Core Composites**

	Metallurgical Balance		
	Sol. vs. Tail	Carbon vs. Tail	Head vs. Tail <sup>2)</sup>
<b>FSU-13-1, P<sub>80</sub>19mm Feed Size (P1)</b>			
Extracted, gAg/mt ore	0.37	0.32	0.46
Tail Screen, gAg/mt	1.94	1.94	1.94
Calc'd Head, gAg/mt ore	2.31	2.26	2.40
Ag Recovery, percent	16.0	14.2	19.2
Deviation, gAg/mt ore <sup>1)</sup>	N/A	0.05	0.09
Precision, percent	100.0	97.8	96.2
<b>FMX-13-1, P<sub>80</sub>19mm Feed Size (P2)</b>			
Extracted, gAg/mt ore	0.88	0.80	0.61
Tail Screen, gAg/mt	3.07	3.07	3.07
Calc'd Head, gAg/mt ore	3.95	3.87	3.68
Ag Recovery, percent	22.3	20.7	16.6
Deviation, gAg/mt ore <sup>1)</sup>	N/A	0.08	0.27
Precision, percent	100.0	98.0	93.2
<b>FMX-13-1, P<sub>80</sub>37.5mm Feed Size (P3)</b>			
Extracted, gAg/mt ore	0.67	0.59	0.79
Tail Screen, gAg/mt	3.06	3.06	3.06
Calc'd Head, gAg/mt ore	3.73	3.65	3.85
Ag Recovery, percent	18.0	16.2	20.5
Deviation, gAg/mt ore <sup>1)</sup>	N/A	0.08	0.12
Precision, percent	100.0	97.9	96.9
<b>WWO-13-2, P<sub>80</sub>19mm Feed Size (P5)</b>			
Extracted, gAg/mt ore	4.12	3.83	-1.61
Tail Screen, gAg/mt	26.66	26.66	26.66
Calc'd Head, gAg/mt ore	30.78	30.49	25.05
Ag Recovery, percent	13.4	12.6	N/A
Deviation, gAg/mt ore <sup>1)</sup>	N/A	0.29	N/A
Precision, percent	100.0	99.1	N/A

1) Deviation from solution versus tail screen calculated head.

2) Calculated, based on head and tail screen results.

Note: Loaded carbons contained <5 ppm Ag for test P4, so a silver balance could not be calculated.

Silver solution and carbon versus tail balances agreed closely for all four CT's (balances could not be provided for WWO-13-1 because of the low Ag grade of the feed). Head vs. tail balances checked well with the other balances for three of the CT's.

Physical ore characteristic data for the five CT's are provided in Table 42.

**Table 42. - Physical Ore Characteristic Data, Column Leach Tests,  
 Sleeper Project Core Composites**

Core Composite	Test No.	Feed Size, P <sub>80</sub>	Ore Wt., kg	Moisture, weight percent			Bulk Density, kg/m <sup>3</sup>		"Slump", %
				To Saturate <sup>1)</sup>	for Agglom.	Retained	Before	After	
FSU-13-1	P1	19mm	66.46	23.6	7.1	8.5	1,244	1,257	1.0
FMX-13-1	P2	19mm	70.98	25.5	8.6	9.8	1,223	1,223	0.0
FMX-13-1	P3	37.5mm	238.61	24.4	6.5	11.7	1,176	1,200	2.0
WWO-13-1	P4	19mm	84.30	23.4	12.2	11.5	1,070	1,078	0.8
WWO-13-2	P5	19mm	85.36	11.5	3.5	10.6	1,298	1,301	0.3

1) Calculated on dry ore basis. Includes moisture for agglomeration.

Saturation moistures were over 23 weight percent for all ore charges except for WWO-13-2 (very low fines content). Saturation moisture is the total volume of solution applied to achieve steady state influent and effluent flow, and is important for planning the volume of leach solution required for saturating fresh, nearly dry heap ore. Agglomeration and retained moistures were fairly typical for crushed ores. Little or no "slumping" of ore charges occurred during leaching and rinsing.

## CONCLUSIONS

- Mixed and oxide ores represented by these core composites are amenable to heap leaching.
- Sulfide ores are not amenable to heap or milling cyanidation processing. Sulfide ores require oxidation (bioox or POX) to improve cyanidation recoveries to acceptable levels.
- Reagent requirements were moderate to high

Gene E. McClelland  
 Metallurgist / President

GEM:cd

## **APPENDIX**

**Section 1 - “Links” to Drill Hole Geochemistry Data  
for Intervals from Eight Drill Holes**

**Section 2 - Core Composite Make-Up Information**

**Section 3 - Daily CT Data Spreadsheets for the Five CT’s**

**APPENDIX**









**Section 1 - “Links” to Drill Hole Geochemistry Data  
for Intervals from Eight Drill Holes**



Click on link below to open separate spreadsheet for each drill hole.

**Table A2-1. - Links to Spreadsheets for 8 Drill Hole Interval/Samples**

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Drill Hole	Interval Sample Numbers
 PGC-12-027	800962-801147
 PGC-12-028	800772-800961
 PGC-12-029	801148-801528
 PGC-13-030	801529-801774
 PGC-13-031	Each interval had a separate number, none contiguous
 PGC-13-032	802358-802556
 PGC-13-033	801977-802049
 PGC-13-034	802557-802910

---

**APPENDIX**

**Section 2 - Core Composite Make-Up Information**

Area	Oxidation Profile	BRT	3/4 Inch Column	1.5 inch Column	Pressure oxidation	Bio Leaching	Mineral Caract.	Met. Sample ID
Facility	Mix	1	1	1			1	FMX-13-1
Facility	Sulfide	1	1	1			1	FSU-13-1
Sleeper	Oxide	1					1	SOX-13-1
Sleeper	Sulfide	2	1				2	SSU-13-1, SSU-13-2
West Wood	Oxide	2	1				2	WWO-13-1, WWO-13-2
West Wood	Sulfide	2			2	2	2	WWS-13-1, WWS-13-2
Wood	Sulfide	1	1		1	1	1	WOS-13-1
South Sleeper	Sulfide	2					2	I NEED TO FIND MATERIAL
<b>Total</b>		<b>12</b>	<b>5</b>	<b>2</b>	<b>3</b>	<b>3</b>	<b>12</b>	

**NOTES;**

1. I Need to find enough 1/2 HQ core to make the South Sleeper samples
2. We need 50 KG of coarse split from the West Wood Sulfide samples (WWS-13-1, WWS-13-2). To be sent to Santiago Via Inspectorate Reno, (contact Chuck Whipple)
3. Both BT at #200 & 3/4
4. Wood Sulfide Column test will be done upon positive BRT results

Met Sample ID	Sample Weight (kg)	Au Wavg (ppm)	Ag Wavg (ppm)	S Wavg (%)
FMX-13-1	558	0.481	4.52	2.16
FSU-13-1	552	0.417	2.54	4.47
SOX-13-1	157	0.248	0.51	0.02
SSU-13-1	123	1.123	2.20	5.21
SSU-13-2	139	0.563	1.66	3.46
WWO-13-1	157	0.351	0.50	0.26
WWO-13-2	364	1.141	38.24	0.20
WWS-13-1	248	3.571	10.83	4.27
WWS-13-2	161	1.496	3.44	2.90
WOS-13-1	120	1.653	15.64	4.42

411500

412000

412500

413000



**PARAMOUNT**  
gold and silver

### Sleeper Project

4577000

4576500

4576000

4575500

4575000

PGCP-12-D4

*03h Sleeper*

PGC-12-029

*55*

PGC-12-028

PGCP-12-F2

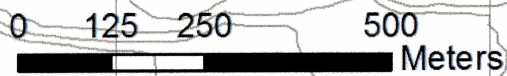
*031*

*FAC*



PGC-12-027

*WW*

PGC-13-030



### Explanation

-  Completed Core Holes
-  2013 Proposed Holes

Met Sample ID	HOLE ID	FROM (FT)	TO (FT)	AREA	SAMPLE ID ALS	Sample Prep Lab	Sample Feed Size (inch)	Sample weight	Au ppm	Au Wavg	Ag Wavg	Ag ppm
<b>FMX-13-1</b>												
FMX-13-1	PGC-12-028	162	167	FACILITIES	800805	McClelland	1.50	15.97	0.160	2.555	19.16	1.20
FMX-13-1	PGC-12-028	167	172	FACILITIES	800806	McClelland	1.50	8.55	0.183	1.565	11.97	1.40
FMX-13-1	PGC-12-028	172	175	FACILITIES	800807	McClelland	1.50	9.17	0.152	1.394	11.92	1.30
FMX-13-1	PGC-12-028	180	183	FACILITIES	800809	McClelland	1.50	8.40	0.237	1.991	30.24	3.60
FMX-13-1	PGC-12-028	183	188	FACILITIES	800810	McClelland	1.50	14.40	0.501	7.214	69.12	4.80
FMX-13-1	PGC-12-028	188	193	FACILITIES	800811	McClelland	1.50	17.13	0.291	4.985	53.10	3.10
FMX-13-1	PGC-12-028	193	197	FACILITIES	800813	McClelland	1.50	12.70	0.669	8.496	121.92	9.60
FMX-13-1	PGC-12-028	197	202	FACILITIES	800814	McClelland	1.50	13.94	0.513	7.151	64.12	4.60
FMX-13-1	PGC-12-028	202	205	FACILITIES	800815	McClelland	1.50	8.19	0.385	3.153	31.12	3.80
FMX-13-1	PGC-12-028	205	209	FACILITIES	800816	McClelland	1.50	0.42	0.385	0.162	1.51	3.60
FMX-13-1	PGC-12-028	209	215	FACILITIES	800817	McClelland	1.50	17.19	0.536	9.214	91.11	5.30
FMX-13-1	PGC-12-028	215	219	FACILITIES	800818	McClelland	1.50	13.50	0.408	5.508	202.50	15.00
FMX-13-1	PGC-12-028	219	224	FACILITIES	800819	McClelland	1.50	13.73	0.203	2.787	145.54	10.60
FMX-13-1	PGC-12-028	224	229	FACILITIES	800820	McClelland	1.50	15.37	0.393	6.040	58.41	3.80
FMX-13-1	PGC-12-028	229	234	FACILITIES	800821	McClelland	1.50	11.64	0.269	3.131	80.32	6.90
FMX-13-1	PGC-13-031	20.2	25	FACILITIES	801778	McClelland	1.50	4.20	1.925	8.085	19.74	4.70
FMX-13-1	PGC-13-031	25	30	FACILITIES	801779	McClelland	1.50	5.22	1.720	8.978	27.14	5.20
FMX-13-1	PGC-13-031	30	35	FACILITIES	801780	McClelland	1.50	2.73	0.933	2.547	10.65	3.90
FMX-13-1	PGC-13-031	35	40	FACILITIES	801781	McClelland	1.50	12.39	0.786	9.739	47.08	3.80
FMX-13-1	PGC-13-031	40	45	FACILITIES	801782	McClelland	1.50	14.11	0.586	8.268	74.78	5.30
FMX-13-1	PGC-13-031	45	50	FACILITIES	801783	McClelland	1.50	11.73	1.210	14.193	116.13	9.90
FMX-13-1	PGC-13-031	50	55	FACILITIES	801784	McClelland	1.50	9.53	1.235	11.770	70.52	7.40
FMX-13-1	PGC-13-031	55	60	FACILITIES	801785	McClelland	1.50	13.90	0.523	7.270	100.08	7.20
FMX-13-1	PGC-13-031	60	65	FACILITIES	801786	McClelland	1.50	13.23	0.998	13.204	97.90	7.40
FMX-13-1	PGC-13-031	65	70	FACILITIES	801787	McClelland	1.50	14.24	0.258	3.674	79.74	5.60
FMX-13-1	PGC-13-031	70	75	FACILITIES	801788	McClelland	1.50	11.93	0.712	8.494	90.67	7.60
FMX-13-1	PGC-13-031	75	80	FACILITIES	801789	McClelland	1.50	13.05	0.331	4.320	71.78	5.50
FMX-13-1	PGC-13-031	80	85	FACILITIES	801790	McClelland	1.50	10.23	1.135	11.611	100.25	9.80
FMX-13-1	PGC-13-031	85	90	FACILITIES	801791	McClelland	1.50	13.61	0.314	4.274	62.61	4.60
FMX-13-1	PGC-13-031	90	95	FACILITIES	801793	McClelland	1.50	11.86	0.894	10.603	65.23	5.50
FMX-13-1	PGC-13-031	95	100	FACILITIES	801794	McClelland	1.50	14.59	0.304	4.435	56.90	3.90
FMX-13-1	PGC-13-031	100	105	FACILITIES	801795	McClelland	1.50	13.35	0.177	2.363	22.70	1.70
FMX-13-1	PGC-13-031	105	108	FACILITIES	801797	McClelland	1.50	6.32	0.186	1.176	9.48	1.50
FMX-13-1	PGC-13-031	108	111	FACILITIES	801798	McClelland	1.50	7.69	0.200	1.538	16.15	2.10
FMX-13-1	PGC-13-031	111	115	FACILITIES	801799	McClelland	1.50	11.58	0.031	0.359	17.37	1.50
FMX-13-1	PGC-13-031	115	120	FACILITIES	801800	McClelland	1.50	13.64	0.120	1.637	40.92	3.00
FMX-13-1	PGC-13-031	120	125	FACILITIES	801801	McClelland	1.50	13.26	0.669	8.871	50.39	3.80
FMX-13-1	PGC-13-031	125	131	FACILITIES	801802	McClelland	1.50	13.91	0.274	3.811	25.04	1.80
FMX-13-1	PGC-13-031	131	135	FACILITIES	801803	McClelland	1.50	11.07	0.177	1.959	24.35	2.20
FMX-13-1	PGC-13-031	135	140	FACILITIES	801804	McClelland	1.50	14.30	0.277	3.961	38.61	2.70
FMX-13-1	PGC-13-031	140	145	FACILITIES	801805	McClelland	1.50	12.48	0.795	9.922	38.69	3.10
FMX-13-1	PGC-13-031	145	150	FACILITIES	801806	McClelland	1.50	13.04	0.408	5.320	23.47	1.80
FMX-13-1	PGC-13-031	170	175	FACILITIES	801811	McClelland	1.50	11.49	0.315	3.619	8.04	0.70
FMX-13-1	PGC-13-031	175	180	FACILITIES	801812	McClelland	1.50	11.98	0.119	1.426	8.39	0.70
FMX-13-1	PGC-13-031	180	185	FACILITIES	801813	McClelland	1.50	11.49	0.404	4.642	14.94	1.30
FMX-13-1	PGC-13-031	185	190	FACILITIES	801814	McClelland	1.50	12.38	0.317	3.924	19.81	1.60
FMX-13-1	PGC-13-031	190	195	FACILITIES	801816	McClelland	1.50	10.56	0.388	4.097	41.18	3.90
FMX-13-1	PGC-13-031	195	200	FACILITIES	801817	McClelland	1.50	12.92	1.000	12.920	40.05	3.10
<b>48</b>	<b>Total</b>							<b>558</b>	<b>0.521</b>	<b>0.481</b>	<b>4.52</b>	<b>4.4</b>

Met Sample ID	HOLE ID	FROM (FT)	TO (FT)	AREA	SAMPLE ID_ALS	Sample Prep Lab	Sample Feed Size (inch)	Sample weight	Au ppm	Au Wavg	Ag Wavg	Ag ppm
<b><u>FSU-13-1</u></b>												
FSU-13-1	PGC-12-028	435	440	FACILITIES	800867	McClelland	1.50	14.63	0.236	3.453	79.00	5.40
FSU-13-1	PGC-12-028	440	445	FACILITIES	800868	McClelland	1.50	15.56	0.262	4.077	76.24	4.90
FSU-13-1	PGC-12-028	445	447	FACILITIES	800869	McClelland	1.50	8.42	0.278	2.341	21.89	2.60
FSU-13-1	PGC-12-028	447	450	FACILITIES	800870	McClelland	1.50	9.05	0.093	0.842	15.39	1.70
FSU-13-1	PGC-12-028	450	455	FACILITIES	800871	McClelland	1.50	15.54	0.827	12.852	21.76	1.40
FSU-13-1	PGC-12-028	455	460	FACILITIES	800872	McClelland	1.50	13.80	0.708	9.770	23.46	1.70
FSU-13-1	PGC-12-028	460	465	FACILITIES	800873	McClelland	1.50	14.71	0.908	13.357	11.77	0.80
FSU-13-1	PGC-12-028	465	470	FACILITIES	800874	McClelland	1.50	16.51	0.386	6.373	21.46	1.30
FSU-13-1	PGC-12-028	470	475	FACILITIES	800875	McClelland	1.50	11.82	0.171	2.021	9.46	0.80
FSU-13-1	PGC-12-028	475	480	FACILITIES	800877	McClelland	1.50	13.95	0.410	5.720	19.53	1.40
FSU-13-1	PGC-12-028	480	485	FACILITIES	800878	McClelland	1.50	15.60	0.113	1.763	7.80	0.50
FSU-13-1	PGC-12-028	520	525	FACILITIES	800886	McClelland	1.50	17.93	0.275	4.931	21.52	1.20
FSU-13-1	PGC-12-028	525	530	FACILITIES	800887	McClelland	1.50	17.38	0.115	1.999	8.69	0.50
FSU-13-1	PGC-12-028	540	545	FACILITIES	800891	McClelland	1.50	18.79	0.113	2.123	16.91	0.90
FSU-13-1	PGC-12-028	545	550	FACILITIES	800892	McClelland	1.50	17.89	0.227	4.061	66.19	3.70
FSU-13-1	PGC-12-028	550	556	FACILITIES	800893	McClelland	1.50	19.80	0.624	12.355	128.70	6.50
FSU-13-1	PGC-12-028	556	562	FACILITIES	800895	McClelland	1.50	22.63	1.070	24.214	244.40	10.80
FSU-13-1	PGC-12-028	562	567	FACILITIES	800896	McClelland	1.50	17.48	0.475	8.303	174.80	10.00
FSU-13-1	PGC-12-028	567	571	FACILITIES	800897	McClelland	1.50	9.85	0.389	3.832	41.37	4.20
FSU-13-1	PGC-12-028	571	575	FACILITIES	800898	McClelland	1.50	9.07	0.189	1.714	19.05	2.10
FSU-13-1	PGC-12-028	575	580	FACILITIES	800899	McClelland	1.50	16.57	0.305	5.054	43.08	2.60
FSU-13-1	PGC-12-028	580	585	FACILITIES	800900	McClelland	1.50	15.08	0.086	1.297	12.06	0.80
FSU-13-1	PGC-12-028	585	590	FACILITIES	800901	McClelland	1.50	14.70	0.269	3.954	29.40	2.00
FSU-13-1	PGC-12-028	590	595	FACILITIES	800902	McClelland	1.50	16.77	0.126	2.113	8.39	0.50
FSU-13-1	PGC-12-028	601	607	FACILITIES	800904	McClelland	1.50	17.05	0.197	3.359	13.64	0.80
FSU-13-1	PGC-12-028	607	610	FACILITIES	800905	McClelland	1.50	8.75	0.138	1.208	10.50	1.20
FSU-13-1	PGC-12-028	610	615	FACILITIES	800906	McClelland	1.50	16.45	0.325	5.346	34.55	2.10
FSU-13-1	PGC-12-028	615	620.5	FACILITIES	800907	McClelland	1.50	17.87	0.586	10.472	41.10	2.30
FSU-13-1	PGC-12-028	620.5	624	FACILITIES	800908	McClelland	1.50	11.24	3.620	40.689	46.08	4.10
FSU-13-1	PGC-12-028	624	630	FACILITIES	800909	McClelland	1.50	16.29	0.415	6.760	21.18	1.30
FSU-13-1	PGC-12-028	630	635	FACILITIES	800910	McClelland	1.50	15.14	0.298	4.512	16.65	1.10
FSU-13-1	PGC-12-028	635	640	FACILITIES	800911	McClelland	1.50	15.61	0.260	4.059	24.98	1.60
FSU-13-1	PGC-12-028	640	645	FACILITIES	800912	McClelland	1.50	11.96	0.242	2.894	14.35	1.20
FSU-13-1	PGC-12-028	725	730	FACILITIES	800930	McClelland	1.50	17.48	0.125	2.185	12.24	0.70
FSU-13-1	PGC-12-028	730	735	FACILITIES	800931	McClelland	1.50	12.79	0.339	4.336	17.91	1.40
FSU-13-1	PGC-12-028	735	740	FACILITIES	800932	McClelland	1.50	14.79	0.119	1.760	7.40	0.50
FSU-13-1	PGC-12-028	740	745	FACILITIES	800933	McClelland	1.50	12.84	0.308	3.955	19.26	1.50
<b>37</b>	<b>Total</b>							<b>552</b>	<b>0.422</b>	<b>0.417</b>	<b>2.54</b>	<b>2.4</b>
<b><u>SOX-13-1</u></b>												
SOX-13-1	PGC-13-032	76.5	80	SLEEPER	802360	McClelland	1.50	9.84	0.394	3.877	4.92	0.50
SOX-13-1	PGC-13-032	80	85	SLEEPER	802361	McClelland	1.50	10.61	0.288	3.056	5.31	0.50
SOX-13-1	PGC-13-032	85	90	SLEEPER	802362	McClelland	1.50	14.92	0.353	5.267	7.46	0.50
SOX-13-1	PGC-13-032	90	95	SLEEPER	802363	McClelland	1.50	13.94	0.643	8.963	6.97	0.50
SOX-13-1	PGC-13-032	95	100	SLEEPER	802364	McClelland	1.50	12.52	0.104	1.302	6.26	0.50
SOX-13-1	PGC-13-032	100	105	SLEEPER	802365	McClelland	1.50	12.20	0.132	1.610	6.10	0.50
SOX-13-1	PGC-13-032	105	110	SLEEPER	802366	McClelland	1.50	12.41	0.146	1.812	6.21	0.50
SOX-13-1	PGC-13-032	110	115	SLEEPER	802367	McClelland	1.50	14.27	0.230	3.282	7.14	0.50
SOX-13-1	PGC-13-032	115	120	SLEEPER	802368	McClelland	1.50	12.76	0.146	1.863	6.38	0.50
SOX-13-1	PGC-13-032	155	160	SLEEPER	802377	McClelland	1.50	11.45	0.242	2.771	5.73	0.50
SOX-13-1	PGC-13-032	160	165	SLEEPER	802378	McClelland	1.50	12.68	0.160	2.029	6.34	0.50
SOX-13-1	PGC-13-032	165	170	SLEEPER	802380	McClelland	1.50	13.33	0.152	2.026	8.00	0.60
SOX-13-1	PGC-13-032	170	172.5	SLEEPER	802381	McClelland	1.50	6.09	0.178	1.084	3.05	0.50
<b>13</b>	<b>Total</b>							<b>157</b>	<b>0.244</b>	<b>0.248</b>	<b>0.51</b>	<b>0.5</b>

Met Sample ID	HOLE ID	FROM (FT)	TO (FT)	AREA	SAMPLE ID_ALS	Sample Prep Lab	Sample Feed Size (inch)	Sample weight	Au ppm	Au Wavg	Ag Wavg	Ag ppm
<b>SSU-13-1</b>												
SSU-13-1	PGC-12-029	1450	1454	SLEEPER	801403	McClelland	1.50	6.17	0.316	1.950	3.09	0.50
SSU-13-1	PGC-12-029	1454	1458	SLEEPER	801404	McClelland	1.50	5.48	0.369	2.022	2.74	0.50
SSU-13-1	PGC-12-029	1458	1461.5	SLEEPER	801405	McClelland	1.50	5.10	0.221	1.127	2.55	0.50
SSU-13-1	PGC-12-029	1461.5	1465	SLEEPER	801406	McClelland	1.50	4.77	0.599	2.857	19.08	4.00
SSU-13-1	PGC-12-029	1465	1470	SLEEPER	801407	McClelland	1.50	7.07	0.319	2.255	12.02	1.70
SSU-13-1	PGC-12-029	1470	1475	SLEEPER	801408	McClelland	1.50	7.07	0.343	2.425	14.14	2.00
SSU-13-1	PGC-12-029	1475	1480	SLEEPER	801410	McClelland	1.50	8.68	0.228	1.979	4.34	0.50
SSU-13-1	PGC-12-029	1480	1486	SLEEPER	801411	McClelland	1.50	8.61	0.120	1.033	4.31	0.50
SSU-13-1	PGC-12-029	1486	1490	SLEEPER	801412	McClelland	1.50	5.13	0.125	0.641	2.57	0.50
SSU-13-1	PGC-12-029	1490	1495	SLEEPER	801413	McClelland	1.50	6.03	0.158	0.953	3.02	0.50
SSU-13-1	PGC-12-029	1495	1500	SLEEPER	801414	McClelland	1.50	6.23	0.310	1.931	3.12	0.50
SSU-13-1	PGC-12-029	1522	1528	SLEEPER	801420	McClelland	1.50	6.87	11.900	81.753	73.51	10.70
SSU-13-1	PGC-12-029	1528	1531.5	SLEEPER	801421	McClelland	1.50	5.11	1.165	5.953	5.62	1.10
SSU-13-1	PGC-12-029	1545	1550	SLEEPER	801425	McClelland	1.50	6.25	0.231	1.444	13.75	2.20
SSU-13-1	PGC-12-029	1550	1554	SLEEPER	801426	McClelland	1.50	5.09	0.911	4.637	15.27	3.00
SSU-13-1	PGC-12-029	1554	1560	SLEEPER	801427	McClelland	1.50	6.92	1.185	8.200	37.37	5.40
SSU-13-1	PGC-12-029	1560	1565	SLEEPER	801428	McClelland	1.50	7.85	1.695	13.306	28.26	3.60
SSU-13-1	PGC-12-029	1565	1567.5	SLEEPER	801429	McClelland	1.50	3.55	0.103	0.366	12.07	3.40
SSU-13-1	PGC-12-029	1567.5	1572	SLEEPER	801430	McClelland	1.50	5.87	0.132	0.775	6.46	1.10
SSU-13-1	PGC-12-029	1572	1575	SLEEPER	801431	McClelland	1.50	5.34	0.506	2.702	7.48	1.40
<b>20</b>	<b>Total</b>							<b>123</b>	<b>1.047</b>	<b>1.123</b>	<b>2.20</b>	<b>2.2</b>
<b>SSU-13-2</b>												
SSU-13-2	PGC-12-029	1180	1185	SLEEPER	801344	McClelland	1.50	7.82	0.633	4.950	25.02	3.20
SSU-13-2	PGC-12-029	1185	1190	SLEEPER	801345	McClelland	1.50	6.01	0.186	1.118	3.61	0.60
SSU-13-2	PGC-12-029	1190	1195	SLEEPER	801346	McClelland	1.50	6.72	0.569	3.824	12.10	1.80
SSU-13-2	PGC-12-029	1195	1200	SLEEPER	801347	McClelland	1.50	7.32	0.592	4.333	13.91	1.90
SSU-13-2	PGC-12-029	1200	1205	SLEEPER	801348	McClelland	1.50	8.11	0.705	5.718	25.14	3.10
SSU-13-2	PGC-12-029	1205	1210	SLEEPER	801349	McClelland	1.50	7.27	1.095	7.961	32.72	4.50
SSU-13-2	PGC-12-029	1260	1265	SLEEPER	801360	McClelland	1.50	5.21	0.243	1.266	2.61	0.50
SSU-13-2	PGC-12-029	1265	1270	SLEEPER	801361	McClelland	1.50	7.82	0.169	1.322	3.91	0.50
SSU-13-2	PGC-12-029	1270	1275	SLEEPER	801362	McClelland	1.50	6.12	0.216	1.322	3.06	0.50
SSU-13-2	PGC-12-029	1275	1280	SLEEPER	801363	McClelland	1.50	7.35	0.215	1.580	3.68	0.50
SSU-13-2	PGC-12-029	1295	1300	SLEEPER	801367	McClelland	1.50	6.90	1.115	7.694	3.45	0.50
SSU-13-2	PGC-12-029	1300	1305	SLEEPER	801368	McClelland	1.50	5.17	0.136	0.703	2.59	0.50
SSU-13-2	PGC-12-029	1315	1320	SLEEPER	801371	McClelland	1.50	7.55	0.125	0.944	5.29	0.70
SSU-13-2	PGC-12-029	1320	1325	SLEEPER	801372	McClelland	1.50	6.92	0.400	2.768	17.99	2.60
SSU-13-2	PGC-12-029	1325	1330	SLEEPER	801374	McClelland	1.50	7.53	2.700	20.331	22.59	3.00
SSU-13-2	PGC-12-029	1330	1335	SLEEPER	801375	McClelland	1.50	7.02	0.493	3.461	17.55	2.50
SSU-13-2	PGC-12-029	1335	1340	SLEEPER	801376	McClelland	1.50	6.69	0.527	3.526	12.04	1.80
SSU-13-2	PGC-12-029	1340	1345	SLEEPER	801378	McClelland	1.50	6.99	0.119	0.832	3.50	0.50
SSU-13-2	PGC-12-029	1345	1350	SLEEPER	801379	McClelland	1.50	6.33	0.122	0.772	3.17	0.50
SSU-13-2	PGC-12-029	1350	1355	SLEEPER	801380	McClelland	1.50	8.37	0.477	3.992	17.58	2.10
<b>20</b>	<b>Total</b>							<b>139</b>	<b>0.542</b>	<b>0.563</b>	<b>1.66</b>	<b>1.6</b>

Met Sample ID	HOLE ID	FROM (FT)	TO (FT)	AREA	SAMPLE ID ALS	Sample Prep Lab	Sample Feed Size (inch)	Sample weight	Au ppm	Au Wavg	Ag Wavg	Ag ppm
<b>WWO-13-1</b>												
WWO-13-1	PGC-13-030	200	205	WEST WOOD	801536	McClelland	1.50	11.53	0.211	2.433	5.77	0.50
WWO-13-1	PGC-13-030	205	210	WEST WOOD	801537	McClelland	1.50	12.82	0.366	4.692	6.41	0.50
WWO-13-1	PGC-13-030	210	215	WEST WOOD	801538	McClelland	1.50	12.22	0.269	3.287	6.11	0.50
WWO-13-1	PGC-13-030	215	220	WEST WOOD	801539	McClelland	1.50	12.53	0.067	0.840	6.27	0.50
WWO-13-1	PGC-13-030	220	225	WEST WOOD	801540	McClelland	1.50	12.36	0.359	4.437	6.18	0.50
WWO-13-1	PGC-13-030	225	230	WEST WOOD	801541	McClelland	1.50	11.83	0.368	4.353	5.92	0.50
WWO-13-1	PGC-13-030	230	235	WEST WOOD	801542	McClelland	1.50	12.21	0.149	1.819	6.11	0.50
WWO-13-1	PGC-13-030	235	240	WEST WOOD	801543	McClelland	1.50	11.94	0.653	7.797	5.97	0.50
WWO-13-1	PGC-13-030	240	245	WEST WOOD	801544	McClelland	1.50	12.04	0.239	2.878	6.02	0.50
WWO-13-1	PGC-13-030	245	250	WEST WOOD	801545	McClelland	1.50	12.00	0.166	1.992	6.00	0.50
WWO-13-1	PGC-13-030	250	255	WEST WOOD	801547	McClelland	1.50	11.56	0.742	8.578	5.78	0.50
WWO-13-1	PGC-13-030	255	260	WEST WOOD	801548	McClelland	1.50	12.96	0.766	9.927	6.48	0.50
WWO-13-1	PGC-13-030	260	265	WEST WOOD	801549	McClelland	1.50	11.39	0.199	2.267	5.70	0.50
<b>13</b>	<b>Total</b>							<b>157</b>	<b>0.350</b>	<b>0.351</b>	<b>0.50</b>	<b>0.5</b>
<b>WWO-13-2</b>												
WWO-13-2	PGC-13-033	290.0	295.0	WEST WOOD	801986	McClelland	1.50	13.68	0.502	6.867	250.34	18.30
WWO-13-2	PGC-13-033	295.0	300.0	WEST WOOD	801987	McClelland	1.50	15.50	0.472	7.316	316.20	20.40
WWO-13-2	PGC-13-033	300.0	305.0	WEST WOOD	801988	McClelland	1.50	13.42	0.343	4.603	118.10	8.80
WWO-13-2	PGC-13-033	305.0	310.0	WEST WOOD	801989	McClelland	1.50	15.49	0.330	5.112	175.04	11.30
WWO-13-2	PGC-13-033	310.0	315.0	WEST WOOD	801990	McClelland	1.50	11.91	0.293	3.490	150.07	12.60
WWO-13-2	PGC-13-033	315.0	317.0	WEST WOOD	801991	McClelland	1.50	7.19	0.245	1.762	125.11	17.40
WWO-13-2	PGC-13-033	317.0	323.0	WEST WOOD	801992	McClelland	1.50	10.92	0.416	4.543	112.48	10.30
WWO-13-2	PGC-13-033	323.0	326.5	WEST WOOD	801993	McClelland	1.50	9.49	0.264	2.505	120.52	12.70
WWO-13-2	PGC-13-033	326.5	330.0	WEST WOOD	801995	McClelland	1.50	9.26	0.436	4.037	197.24	21.30
WWO-13-2	PGC-13-033	330.0	335.0	WEST WOOD	801996	McClelland	1.50	15.06	0.640	9.638	215.36	14.30
WWO-13-2	PGC-13-033	335.0	340.0	WEST WOOD	801997	McClelland	1.50	15.60	0.316	4.930	318.24	20.40
WWO-13-2	PGC-13-033	340.0	345.0	WEST WOOD	801999	McClelland	1.50	14.52	0.381	5.532	586.61	40.40
WWO-13-2	PGC-13-033	345.0	350.0	WEST WOOD	802000	McClelland	1.50	13.12	0.304	3.988	425.09	32.40
WWO-13-2	PGC-13-033	350.0	355.0	WEST WOOD	802001	McClelland	1.50	18.18	0.293	5.327	459.95	25.30
WWO-13-2	PGC-13-033	355.0	360.0	WEST WOOD	802002	McClelland	1.50	13.09	0.292	3.822	253.95	19.40
WWO-13-2	PGC-13-033	360.0	365.0	WEST WOOD	802003	McClelland	1.50	16.51	0.423	6.984	790.83	47.90
WWO-13-2	PGC-13-033	365.0	370.0	WEST WOOD	802004	McClelland	1.50	1.59	0.366	0.582	49.45	31.10
WWO-13-2	PGC-13-033	370.0	375.0	WEST WOOD	802005	McClelland	1.50	15.53	1.070	16.617	307.49	19.80
WWO-13-2	PGC-13-033	375.0	380.0	WEST WOOD	802006	McClelland	1.50	15.14	0.960	14.534	95.38	6.30
WWO-13-2	PGC-13-033	380.0	385.0	WEST WOOD	802007	McClelland	1.50	13.73	1.915	26.293	141.42	10.30
WWO-13-2	PGC-13-033	385.0	390.0	WEST WOOD	802008	McClelland	1.50	15.20	4.550	69.160	145.92	9.60
WWO-13-2	PGC-13-033	390.0	395.0	WEST WOOD	802009	McClelland	1.50	14.69	2.630	38.635	465.67	31.70
WWO-13-2	PGC-13-033	395.0	397.0	WEST WOOD	802010	McClelland	1.50	8.47	1.870	15.839	374.37	44.20
WWO-13-2	PGC-13-033	397.0	400.0	WEST WOOD	802011	McClelland	1.50	9.50	1.735	16.483	1662.50	175.00
WWO-13-2	PGC-13-033	400.0	404.0	WEST WOOD	802012	McClelland	1.50	8.94	1.625	14.528	1224.78	137.00
WWO-13-2	PGC-13-033	404.0	408.0	WEST WOOD	802013	McClelland	1.50	11.92	2.310	27.535	1239.68	104.00
WWO-13-2	PGC-13-033	408.0	411.0	WEST WOOD	802014	McClelland	1.50	8.64	1.610	13.910	315.36	36.50
WWO-13-2	PGC-13-033	411.0	415.0	WEST WOOD	802015	McClelland	1.50	11.99	3.180	38.128	1130.66	94.30
WWO-13-2	PGC-13-033	415.0	420.0	WEST WOOD	802016	McClelland	1.50	15.40	2.750	42.350	2140.60	139.00
<b>29</b>	<b>Total</b>							<b>364</b>	<b>1.121</b>	<b>1.141</b>	<b>38.24</b>	<b>40.4</b>



Met Sample ID	HOLE ID	FROM (FT)	TO (FT)	AREA	SAMPLE ID ALS	Sample Prep Lab	Sample Feed Size (inch)	Sample weight	Au ppm	Au Wavg	Ag Wavg	Ag ppm
<b>WWS-13-1</b>												
WWS-13-1	PGC-13-033	815.0	820.0	WEST WOOD	802125	AAL	0.75	12.50	6.380	79.750	187.50	15.00
WWS-13-1	PGC-13-033	820.0	825.0	WEST WOOD	802126	AAL	0.75	11.90	4.320	51.408	88.06	7.40
WWS-13-1	PGC-13-033	825.0	830.0	WEST WOOD	802128	AAL	0.75	11.74	2.080	24.419	385.07	32.80
WWS-13-1	PGC-13-033	830.0	835.0	WEST WOOD	802129	AAL	0.75	12.05	2.670	32.174	439.83	36.50
WWS-13-1	PGC-13-033	835.0	840.0	WEST WOOD	802130	AAL	0.75	11.18	0.505	5.646	26.83	2.40
WWS-13-1	PGC-13-033	840.0	845.0	WEST WOOD	802131	AAL	0.75	11.60	1.005	11.658	18.56	1.60
WWS-13-1	PGC-13-033	845.0	850.0	WEST WOOD	802132	AAL	0.75	10.88	1.865	20.291	59.84	5.50
WWS-13-1	PGC-13-033	850.0	855.0	WEST WOOD	802133	AAL	0.75	13.67	2.380	32.535	118.93	8.70
WWS-13-1	PGC-13-033	900.0	905.0	WEST WOOD	802145	AAL	0.75	13.47	3.620	48.761	83.51	6.20
WWS-13-1	PGC-13-033	905.0	910.0	WEST WOOD	802146	AAL	0.75	14.69	15.300	224.757	364.31	24.80
WWS-13-1	PGC-13-033	910.0	915.0	WEST WOOD	802147	AAL	0.75	14.17	11.950	169.332	262.15	18.50
WWS-13-1	PGC-13-033	915.0	920.0	WEST WOOD	802148	AAL	0.75	13.51	1.915	25.872	67.55	5.00
WWS-13-1	PGC-13-033	1023.0	1025.0	WEST WOOD	802172	AAL	0.75	6.01	1.860	11.179	40.87	6.80
WWS-13-1	PGC-13-033	1025.0	1030.0	WEST WOOD	802173	AAL	0.75	14.13	1.440	20.347	103.15	7.30
WWS-13-1	PGC-13-033	1030.0	1035.0	WEST WOOD	802174	AAL	0.75	12.09	1.385	16.738	83.39	6.90
WWS-13-1	PGC-13-033	1035.0	1040.0	WEST WOOD	802175	AAL	0.75	13.14	2.920	38.369	85.41	6.50
WWS-13-1	PGC-13-033	1040.0	1045.0	WEST WOOD	802176	AAL	0.75	10.53	1.785	18.796	74.76	7.10
WWS-13-1	PGC-13-033	1045.0	1050.0	WEST WOOD	802177	AAL	0.75	13.76	1.045	14.379	71.55	5.20
WWS-13-1	PGC-13-033	1050.0	1055.0	WEST WOOD	802178	AAL	0.75	13.58	1.230	16.703	59.75	4.40
WWS-13-1	PGC-13-033	1055.0	1060.0	WEST WOOD	802179	AAL	0.75	13.44	1.690	22.714	64.51	4.80
<b>20</b>	<b>Total</b>							<b>248</b>	<b>3.367</b>	<b>3.571</b>	<b>10.83</b>	<b>10.7</b>
<b>WWS-13-2</b>												
WWS-13-2	PGC-13-033	625.0	630.0	WEST WOOD	802074	AAL	0.75	14.83	1.195	17.722	16.31	1.10
WWS-13-2	PGC-13-033	630.0	635.0	WEST WOOD	802075	AAL	0.75	12.66	1.095	13.863	21.52	1.70
WWS-13-2	PGC-13-033	635.0	640.0	WEST WOOD	802076	AAL	0.75	13.32	1.140	15.185	42.62	3.20
WWS-13-2	PGC-13-033	640.0	645.0	WEST WOOD	802077	AAL	0.75	12.96	0.889	11.521	33.70	2.60
WWS-13-2	PGC-13-033	645.0	650.0	WEST WOOD	802078	AAL	0.75	12.77	0.487	6.219	15.32	1.20
WWS-13-2	PGC-13-033	650.0	654.0	WEST WOOD	802079	AAL	0.75	13.24	2.930	38.793	111.22	8.40
WWS-13-2	PGC-13-033	654.0	658.0	WEST WOOD	802080	AAL	0.75	13.83	0.704	9.736	24.89	1.80
WWS-13-2	PGC-13-033	658.0	663.5	WEST WOOD	802082	AAL	0.75	16.15	0.731	11.806	58.14	3.60
WWS-13-2	PGC-13-033	663.5	667.0	WEST WOOD	802083	AAL	0.75	9.74	0.905	8.815	72.08	7.40
WWS-13-2	PGC-13-033	667.0	670.0	WEST WOOD	802084	AAL	0.75	9.28	2.520	23.386	43.62	4.70
WWS-13-2	PGC-13-033	670.0	675.0	WEST WOOD	802085	AAL	0.75	12.53	3.830	47.990	65.16	5.20
WWS-13-2	PGC-13-033	675.0	678.5	WEST WOOD	802086	AAL	0.75	11.72	1.930	22.620	30.47	2.60
WWS-13-2	PGC-13-033	678.5	681.5	WEST WOOD	802087	AAL	0.75	7.96	1.665	13.253	18.31	2.30
<b>13</b>	<b>Total</b>							<b>161</b>	<b>1.540</b>	<b>1.496</b>	<b>3.44</b>	<b>3.5</b>
<b>WOS-13-1</b>												
WOS-13-1	PGC-12-027	640	645	WOOD	801063	McClelland	1.50	15.85	1.140	18.069	60.23	3.80
WOS-13-1	PGC-12-027	645	650	WOOD	801064	McClelland	1.50	14.17	0.935	13.249	59.51	4.20
WOS-13-1	PGC-12-027	650	652.5	WOOD	801065	McClelland	1.50	5.79	1.105	6.398	350.30	60.50
WOS-13-1	PGC-12-027	652.5	657	WOOD	801067	McClelland	1.50	14.30	0.870	12.441	328.90	23.00
WOS-13-1	PGC-12-027	657	665	WOOD	801068	McClelland	1.50	4.68	1.380	6.458	394.06	84.20
WOS-13-1	PGC-12-027	665	670	WOOD	801069	McClelland	1.50	9.35	1.520	14.212	54.23	5.80
WOS-13-1	PGC-12-027	670	675	WOOD	801070	McClelland	1.50	14.70	4.730	69.531	142.59	9.70
WOS-13-1	PGC-12-027	675	680	WOOD	801071	McClelland	1.50	12.72	1.565	19.907	50.88	4.00
WOS-13-1	PGC-12-027	680	686	WOOD	801072	McClelland	1.50	17.98	1.795	32.274	418.93	23.30
WOS-13-1	PGC-12-027	686	690	WOOD	801073	McClelland	1.50	10.78	0.592	6.382	22.64	2.10
<b>10</b>	<b>Total</b>							<b>120</b>	<b>1.563</b>	<b>1.653</b>	<b>15.64</b>	<b>22.1</b>

HOLE-ID	FROM	TO	FROM FT	TO FT	SAMPLE ID	REQ NUM	RCVD WEIGHT	AU PPM	Au Wavg	AU GRA21	Ag Wavg	AG PPM	AG GRA22	Pick	Met Sample	S %	S Wavg	TI %
<b>SSS-13-1</b>																		
PGC-12-024	146.30	147.83	480.00	485.00	800059	WN12243929	5.38	0.397	2.136		43.578	8.10		1	SSS-13-1	1.58	8.50	0.23
PGC-12-024	147.83	149.35	485.00	490.00	800060	WN12243929	5.67	0.236	1.338		13.608	2.40		1	SSS-13-1	2.00	11.34	0.26
PGC-12-024	149.35	150.88	490.00	495.00	800061	WN12243929	5.04	0.320	1.613		19.152	3.80		1	SSS-13-1	2.18	10.99	0.25
PGC-12-024	150.88	152.40	495.00	500.00	800063	WN12243929	5.22	0.360	1.879		27.666	5.30		1	SSS-13-1	2.47	12.89	0.25
PGC-12-024	152.40	153.92	500.00	505.00	800064	WN12243929	5.67	0.394	2.234		10.773	1.90		1	SSS-13-1	1.61	9.13	0.24
PGC-12-024	153.92	155.45	505.00	510.00	800065	WN12243929	5.32	0.731	3.889		28.728	5.40		1	SSS-13-1	2.96	15.75	0.25
PGC-12-024	155.45	156.97	510.00	515.00	800066	WN12243929	5.22	0.880	4.594		25.056	4.80		1	SSS-13-1	2.54	13.26	0.25
PGC-12-024	156.97	158.50	515.00	520.00	800068	WN12243929	5.55	0.428	2.375		7.77	1.40		1	SSS-13-1	1.95	10.82	0.28
PGC-12-024	160.02	161.54	525.00	530.00	800069	WN12243929	5.11	0.302	1.543		7.665	1.50		1	SSS-13-1	1.81	9.25	0.24
PGC-12-024	161.54	163.07	530.00	535.00	800070	WN12243929	4.66	0.324	1.510		7.456	1.60		1	SSS-13-1	2.02	9.41	0.23
PGC-12-025	230.12	231.65	755.00	760.00	800376	WN12248374	5.78	0.199	1.150		17.918	3.10		1	SSS-13-1	2.99	17.28	0.29
PGC-12-025	231.65	233.17	760.00	765.00	800377	WN12248374	5.63	1.245	7.009		31.528	5.60		1	SSS-13-1	2.79	15.71	0.27
PGC-12-025	233.17	234.70	765.00	770.00	800379	WN12248374	5.87	0.105	0.616		7.631	1.30		1	SSS-13-1	2.37	13.91	0.28
PGC-12-025	234.70	236.23	770.00	775.00	800380	WN12248374	5.4	0.485	2.619		24.84	4.60		1	SSS-13-1	2.90	15.66	0.28
PGC-12-025	236.23	237.76	775.00	780.00	800381	WN12248374	5.48	0.443	2.428		26.304	4.80		1	SSS-13-1	1.92	10.52	0.26
PGC-12-025	237.76	239.29	780.00	785.00	800382	WN12248374	5.67	0.367	2.081		23.247	4.10		1	SSS-13-1	2.54	14.40	0.28
PGC-12-025	239.29	240.82	785.00	790.00	800383	WN12248374	5.68	0.237	1.346		18.744	3.30		1	SSS-13-1	2.47	14.03	0.28
PGC-13-035	178.31	179.83	585.00	590.00	803062	WN13072247	6.36	0.208	1.323		5.088	0.80		1	SSS-13-1	2.97	18.89	0.25
PGC-13-035	179.83	181.36	590.00	595.00	803063	WN13072247	5.15	0.332	1.710		2.575	0.50		1	SSS-13-1	2.81	14.47	0.23
PGC-13-035	181.36	182.88	595.00	600.00	803064	WN13072247	5.88	0.225	1.323		2.94	0.50		1	SSS-13-1	2.53	14.88	0.23
PGC-13-035	182.88	184.41	600.00	605.00	803065	WN13072247	6.01	0.372	2.236		8.414	1.40		1	SSS-13-1	2.55	15.33	0.24
PGC-13-035	184.41	185.93	605.00	610.00	803066	WN13072247	6.27	0.682	4.276		39.501	6.30		1	SSS-13-1	2.80	17.56	0.24
PGC-13-035	185.93	187.45	610.00	615.00	803068	WN13072247	5.26	0.723	3.803		51.022	9.70		1	SSS-13-1	2.16	11.36	0.25
PGC-13-035	187.45	188.98	615.00	620.00	803069	WN13072247	5.66	0.272	1.540		10.754	1.90		1	SSS-13-1	2.67	15.11	0.31
PGC-13-035	190.50	192.02	625.00	630.00	803071	WN13072247	5.02	0.730	3.665		22.088	4.40		1	SSS-13-1	2.55	12.80	0.27
PGC-13-035	192.02	193.55	630.00	635.00	803073	WN13072247	5.49	0.225	1.235		11.529	2.10		1	SSS-13-1	2.63	14.44	0.28
								Au WtdAvg ppm	0.429		Ag WtdAvg ppm	3.455			S WtdAvg %	2.42		
<b>SSS-13-2</b>																		
PGC-12-018	280.42	281.94	920.00	925.00	614847	WN12166024	5.94	0.257	1.527		7.128	1.20		2	SSS-13-2	5.11	30.35	0.81
PGC-12-018	281.94	283.46	925.00	930.00	614848	WN12166024	5.8	0.657	3.811		5.8	1.00		2	SSS-13-2	6.91	40.08	0.73
PGC-12-018	283.46	284.99	930.00	935.00	614849	WN12166024	5.89	0.458	2.698		35.34	6.00		2	SSS-13-2	5.19	30.57	0.74
PGC-12-020	320.04	321.56	1050.00	1055.00	616703	WN12183146	8.37	0.341	2.854		364.095	43.50		2	SSS-13-2	6.49	54.32	0.77
PGC-12-020	321.56	323.09	1055.00	1060.00	616705	WN12183146	3.55	0.140	0.497		23.075	6.50		2	SSS-13-2	4.07	14.45	0.78
PGC-12-020	323.09	324.61	1060.00	1065.00	616706	WN12183146	6.09	0.208	1.267		57.855	9.50		2	SSS-13-2	5.62	34.23	0.75
PGC-12-020	324.61	326.14	1065.00	1070.00	616707	WN12183146	6.03	0.127	0.766		33.768	5.60		2	SSS-13-2	5.46	32.92	0.84
PGC-12-020	326.14	327.66	1070.00	1075.00	616708	WN12183146	6.35	0.131	0.832		22.86	3.60		2	SSS-13-2	4.96	31.50	0.79
PGC-12-020	327.66	329.18	1075.00	1080.00	616709	WN12183146	6.31	0.539	3.401		82.03	13.00		2	SSS-13-2	6.55	41.33	0.75
PGC-12-020	329.18	330.70	1080.00	1085.00	616710	WN12183146	5.98	0.223	1.334		17.342	2.90		2	SSS-13-2	4.20	25.12	0.79
PGC-12-020	330.70	332.22	1085.00	1090.00	616711	WN12183146	5.54	0.161	0.892		33.24	6.00		2	SSS-13-2	5.80	32.13	0.78
PGC-12-020	332.22	333.74	1090.00	1095.00	616712	WN12183146	6.27	0.255	1.599		130.416	20.80		2	SSS-13-2	4.29	26.90	0.80
PGC-12-020	333.74	335.26	1095.00	1100.00	616713	WN12183146	5.59	0.824	4.606		400.803	71.70		2	SSS-13-2	6.49	36.28	0.64
PGC-12-020	335.26	336.78	1100.00	1105.00	616714	WN12183146	5.48	0.625	3.425		217.556	39.70		2	SSS-13-2	5.46	29.92	0.69
PGC-13-038	344.43	345.95	1130.00	1135.00	804018	RE13089979	4.34	0.292	1.267		38.192	8.80		2	SSS-13-2	5.19	22.52	0.80
PGC-13-038	345.95	347.47	1135.00	1140.00	804019	RE13089979	6.64	0.277	1.839		44.488	6.70		2	SSS-13-2	5.77	38.31	0.78
PGC-13-038	347.47	349.00	1140.00	1145.00	804020	RE13089979	5.7	0.340	1.938		42.75	7.50		2	SSS-13-2	5.11	29.13	0.74
PGC-13-038	349.00	350.52	1145.00	1150.00	804021	RE13089979	5.62	0.110	0.618		16.298	2.90		2	SSS-13-2	5.95	33.44	0.79
PGC-13-038	350.52	352.05	1150.00	1155.00	804022	RE13089979	7.95	0.254	2.019		42.135	5.30		2	SSS-13-2	6.10	48.50	0.79
								Au WtdAvg ppm	0.328		Ag WtdAvg ppm	14.238			S WtdAvg %	5.57		

**APPENDIX**

**Section 3 - Daily CT Data Spreadsheets for the Five CT's**

**Table S1. - Summary Metallurgical Results, Column Percolation Leach Tests, Sleeper Drill Core Composites**

Sample I.D.	Test No.	Feed Size	Leach/Rinse Time, days	Solution Applied		Au Rec. %	gAu/mt ore				Ag Rec. %	gAg/mt ore				NaCN Consumed, kg/mt ore	Lime Added kg/mt ore
				mt/mt ore			Extracted	Tail Screen	Calc'd. Head	Head Screen		Extracted	Tail Screen	Calc'd. Head	Head Screen		
				Leaching	Rinsing												
WVO-13-2	P-5	19mm	139	4.8	0.3	70.8	0.772	0.319	1.091	0.975	13.4	4.12	26.66	30.78	25.05	1.47	3.0
WVO-13-1	P-4	19mm	67	2.7	0.4	82.1	0.266	0.058	0.324	0.214	4.5	0.01	0.21	0.22	0.10	0.69	5.0
FMX-13-1	P-3	37.5mm	88	4.7	0.8	77.1	0.407	0.121	0.528	0.508	18.0	0.67	3.06	3.73	3.85	1.03	3.5
FMX-13-1	P-2	19mm	88	3.7	0.6	71.3	0.357	0.144	0.501	0.397	22.3	0.88	3.07	3.95	3.68	1.19	5.0
FSU-13-1	P-1	19mm	88	4.1	0.7	12.9	0.058	0.390	0.448	0.461	16.0	0.37	1.94	2.31	2.40	1.41	4.0













3775 P-5

		NaCN added	408.00 g	NaCN	1.00 g/L solution	g/mt ore	
Kilograms	85.36	NaCN Consumption	1.47 kg/mt ore			Au	Ag
Metric Tons	0.085	Lime:	3.00 kg/mt ore			Head Grade	1.001 34.22
						Head Screen	0.975 25.05
						Tail Screen	0.319 26.66

Daily Column Leach Test Data,

Sample I.D. WWO-13-2

Feed Size 19mm

Date	Days Leached	Pregnant Solution Analyses					Barren Solution											
		NaCN					Analyses		Au Extraction		Ag Extraction		NaCN Consumed kg/mt ore	Au		Ag		
		Vol. l.	Conc. g/l	pH	Au ppm	Ag ppm	Au ppm	Ag ppm	Cum. g/mt ore	Cum. %	Cum. g/mt ore	Cum. %		mg	cum. mg	mg	cum. mg	
3/31	109	5.01	0.65	10.5	0.02	0.51	0.00	0.02	0.762	69.8	3.900	12.7	1.24	0.10	65.08	2.45	332.93	
4/1	110	4.76	0.85	10.5	0.02	0.26	0.00	0.02	0.764	70.0	3.914	12.7	1.26	0.10	65.18	1.14	334.06	
4/2	111	4.73	0.85	10.5	0.01	0.25	0.00	0.03	0.764	70.0	3.926	12.8	1.27	0.05	65.23	1.08	335.14	
4/3	112	4.98	0.70	10.5	0.00	0.20	0.00	0.03	0.764	70.0	3.936	12.8	1.29	0.00	65.23	0.84	335.99	
4/4	113	4.98	0.75	10.5	0.00	0.20	0.00	0.03	0.764	70.0	3.946	12.8	1.30	0.00	65.23	0.84	336.83	
4/5	114	4.84	0.75	10.4	0.00	0.20	0.00	0.03	0.764	70.0	3.956	12.9	1.32	0.00	65.23	0.82	337.64	
4/6	115	Rest Cycle																
4/12	121												1.32					
4/13	122	4.81	0.45	10.1	0.04	0.88	0.00	0.05	0.766	70.2	4.005	13.0	1.36	0.19	65.42	4.23	341.88	
4/14	123	4.76	0.80	10.2	0.02	0.48	0.00	0.05	0.767	70.3	4.029	13.1	1.37	0.10	65.51	2.03	343.91	
4/15	124	4.76	0.80	10.2	0.01	0.27	0.00	0.05	0.768	70.4	4.041	13.1	1.39	0.05	65.56	1.03	344.94	
4/16	125	5.00	0.70	10.2	0.01	0.22	0.00	0.05	0.769	70.5	4.051	13.2	1.41	0.05	65.61	0.85	345.78	
4/17	126	5.11	0.80	10.2	0.00	0.21	0.00	0.06	0.769	70.5	4.060	13.2	1.42	0.00	65.61	0.82	346.60	
4/18	127	4.86	0.80	10.3	0.02	0.23	0.00	0.06	0.770	70.6	4.070	13.2	1.43	0.10	65.71	0.81	347.41	
4/19	128	4.77	0.75	10.4	0.00	0.22	0.00	0.07	0.770	70.6	4.079	13.3	1.45	0.00	65.71	0.74	348.16	
4/20	129	Rest Cycle																
		Rinse Cycle																
4/25	134	1.36	0.25	9.9	0.02	0.28	0.00	0.09	0.770	70.6	4.083	13.3	1.51	0.03	65.73	0.38	348.54	
4/26	135	2.67	0.55	10.3	0.04	0.98	0.00	0.12	0.771	70.7	4.108	13.3	1.49	0.11	65.84	2.16	350.69	
4/27	136	4.94	0.25	10.9	0.03	0.40	0.01	0.16	0.772	70.8	4.12	13.4	1.47	0.15	65.99	1.36	352.06	
4/28	137	4.71	0.10	10.5	0.00	0.15	0.00	0.13	0.772	70.8	4.12	13.4	1.47	-0.05	65.94	-0.11	351.95	
4/29	138	4.86	0.00	10.5	0.00	0.09	0.00	0.08	0.772	70.8	4.12	13.4	1.47	0.00	65.94	-0.23	351.72	
4/30	139	5.27	0.00	10.4	0.00	0.06	0.00	0.05	0.772	70.8	4.12	13.4	1.47	0.00	65.94	-0.09	351.63	
		Drain Down																
5/6	145	4.16	0.00	9.4	0.00	0.07												
							<b>Extracted, g/mt ore</b>		<b>0.772</b>	<b>70.8</b>	<b>4.12</b>	<b>13.4</b>						
							<b>Tail, g/mt ore</b>		<b>0.319</b>		<b>26.66</b>							
							<b>Calculated Head, g/mt ore</b>		<b>1.091</b>		<b>30.78</b>							