FLORENCE COPPER, INC.

UIC PERMIT APPLICATION

FLORENCE COPPER PROJECT – PRODUCTION TEST FACILITY

ATTACHMENT C – CORRECTIVE ACTION PLAN & WELL DATA

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C.1 Introduction

This Attachment C has been prepared in support of an application by Florence Copper, Inc. (Florence Copper) to the United States Environmental Protection Agency (USEPA) for issuance of an Underground Injection Control Class III (Area) Permit (UIC Permit) for the planned Production Test Facility (PTF), to be located at the Florence Copper Project (FCP) property in Pinal County, Arizona. This Attachment includes a tabulation of data available from public sources and from previous owners for all wells within the Area of Review (AOR) described in Attachment A of this Application, and identifies all wells and core holes within the AOR that are improperly sealed or abandoned.

C.2 Well Data

This Attachment includes data from public sources and from previous owners of the FCP property that describe all wells and core holes within 500 feet of the PTF well field (Table C-1).

Wells within the AOR include formation testing and monitoring wells, irrigation wells, and exploration core holes constructed by previous owners of the FCP property. In addition to the wells located within the AOR, Florence Copper will plug and abandon one nearby irrigation well identified as BIA 9. Florence Copper plans to relocate this well prior to commencement of PTF operations at the site.

Non-Class III wells within the AOR (Table C-1) have generally been constructed in accordance with Arizona Department of Water Resources (ADWR) well construction standards, but not to Class III standards. These wells will be properly plugged and abandoned prior to commencement of PTF operations.

Forty core holes exist within the PTF well field and the AOR (Table C-1), some of which have been abandoned. The core holes were drilled as exploratory borings and have not been sealed in accordance with ADWR or Class III well construction standards, and are not considered to be properly sealed until USEPA approves the abandonment based on available cementing records. Each of the core holes will be properly plugged and abandoned prior to commencement of PTF operations within 500 feet of a core hole location.

Exhibit B-1 of this Application includes Figure Temp APP RTC(E) 18-1, which was submitted in support of the application for Temporary Aquifer Protection Permit (APP) No. 106360, depicting the locations of wells and core holes within 500 feet of the proposed PTF well field. The content depicted on this map is also provided on Figure A-9 of this Application; however USEPA has requested that this map also be provided in Exhibit B-1 for the reviewers' convenience.

Exhibit C-1 includes original well and core hole drilling and construction records for all wells and core holes located within 500 feet of the PTF well field.

C.3 Corrective Action

Corrective action will be taken to prevent the migration of injected fluids between or into underground sources of drinking water (USDWs) within the AOR. Corrective action includes the plugging and abandonment of all existing non-Class III wells and core holes within the AOR prior to operation of any injection well or recovery well. The wells and core holes will be plugged and abandoned in accordance with the Plugging and Abandonment Plan provided in Attachment Q of this Application.

As explained in Section Q.1 of Attachment Q, the Plugging and Abandonment Plan describes the procedures for plugging and abandonment of existing and proposed Class III wells, as well as non-Class III wells and core holes subject to corrective action at the FCP site.

Table C-1 . Wells and Core Holes within 500 Feet of the PTF Well Field

General Information							Construction Details										Well Abandonment Details						
Location Name	ADWR Number	Type	Status	Easting	Northing	Surface Elevation (Feet)	Total Depth (Feet)	Diameter of Surface Borehole (Inches)	Diameter of Surface Casing (Inches)	Depth of Surface Casing (Feet)	Diameter of Intermediate Borehole (Inches)	Diameter of Intermediate Borehole Casing (Inches)	Depth of Intermediate Borehole (Feet)	Depth of Intermediate Borehole Casing (Feet)	Diameter of Inner Pipe (Inches)	Cement Seal (Feet)	Diameter of Core Hole	Abandonment Material	Bottom Depth (Feet)	Upper Depth (Feet)	Approximate Volume (Gallons)	Drilller's Log Available	Geologic Log Available	Comments
COREHOLES																							
133S	NA	Exploration Core Hole	Existing	847479.9895	746444.8163	1475.50	2217	6.25	5.5	45	5	3	560	560	-	0-560	NX (2.97")					Yes	Yes	
135MF	NA	Exploration Core Hole	Existing	847502.6923	745598.3783	1472.20	2095.5	6.25	5.5	65	5	3	376	376	-	0-376	NR					Yes	Yes	
145MF	NA	Exploration Core Hole	Existing	847981.8852	745570.0709	1473.00	2170	6.25	5	60	5	3	400	400	-	0-400	NX (2.97")					Yes	Yes	
149S	NA	Exploration Core Hole	Existing	847985.9324	746428.5092	1477.30	2142.5	6.25	5	40	5	3	601	601	-	0-601	NX (2.97")					Yes	Yes	
28S	NA	Exploration Core Hole	Existing	848220.5673	746014.3235	1475.20	2227	NR	NR	NR	5.74*	NR	NR	NR	-	NR	NX (2.97")					No	Yes	
356S	NA	Exploration Core Hole	Existing	847860.4898	746648.2579	1478.00	2094	6.5	5.6	45	5	NR	473	NR	-	NR	NX (2.97")					Yes	Yes	
357S	NA	Exploration Core Hole	Existing	847735.4921	746431.7566	1476.85	2280	6.5	5.6	45	5	NR	455	NR	-	NR	NX (2.97")					Yes	Yes	
366S	NA	Exploration Core Hole	Existing	847860.4974	746215.2575	1476.40	425	6.5	5.6	45	5	NR	425	NR	-	NR	NR					Yes	Yes	
414S	NA	Exploration Core Hole	Existing	848235.4974	746431.7618	1477.50	2267	6.5	5.6	50	5	3	380	380	-	0-380	NX (2.97")					Yes	Yes	
415S	NA	Exploration Core Hole	Existing	858110.49	746648.24	1479.46	2042	6.5	NA	40	5	3	280	280	-	0-280	NX (2.97")					Yes	Yes	
447S	NA	Exploration Core Hole	Existing	847572.0492	746646.8176	1476.90	593	6.5	5.6	40	5	NR	593	NR	4*	NR	-					Yes	Yes	
448S	NA	Exploration Core Hole	Existing	847365.1096	746642.8776	1477.08	750	6.75	NR	40	5	3	750	750	4*	0-750	-					Yes	Yes	
453S	NA	Exploration Core Hole	Existing	847240.1122	746426.8763	1475.47	870	6.75	NR	40	5	3	870	870	4*	0-870	-					Yes	Yes	
454S	NA	Exploration Core Hole	Existing	847574.0571	746216.8169	1475.20	403	6.5	5.6	40	5	NR	403	NR	4*	NR	-					Yes	Yes	
455S	NA	Exploration Core Hole	Existing	847365.1175	746210.3773	1473.55	553	7.875	5.6	40	5	3	553	NR	4*	NR	-					Yes	Yes	
456S	NA	Exploration Core Hole	Existing	847115.1148	746210.3747	1473.21	825	6.75	NR	40	5	3	825	825	-	0-825	-					Yes	Yes	
459S	NA	Exploration Core Hole	Existing	847490.1224	745993.8786	1474.03	483	6.5	NR	40	5	NR	483	NR	-	NR	-					Yes	Yes	
460MF	NA	Exploration Core Hole	Existing	847860.5059	745737.9446	1472.44	474	7.875	6	50	5	3	474	474	-	NR	-					Yes	Yes	
461MF	NA	Exploration Core Hole	Existing	847566.1903	745737.9416	1472.07	385	7.875	6	55	5	3	385	385	-	NR	-					Yes	Yes	
462MF	NA	Exploration Core Hole	Existing	847360.4383	745737.9393	1471.52	494	7.875	6	65	5	3*	494	501*	-	NR	-					Yes	Yes	Records indicate depth of 494, field tagged depth of 501
463MF	NA	Exploration Core Hole	Existing	847157.0591	745851.8123	1471.55	720	7.875	6	50	5	3	720	720	-	NR	-					Yes	Yes	
465MF	NA	Exploration Core Hole	Existing	847740.1329	745560.8806	1471.86	350**	NR	NR	NR	NR	NR	NR	NR	-	NR	-					No	No	
94S	NA	Exploration Core Hole	Existing	847736.125	745999.5686	1475.00	2038	NR	-	-	5.5*	NR	560	NR	4*	NR	NR					Yes	Yes	
95S	NA	Exploration Core Hole	Existing	847236.1198	745999.1883	1472.70	1842	NR	-	-	NR	NR	590	NR	-	NR	NX (2.97")					Yes	Yes	
MCC544	55-548200	Exploration Core Hole	Existing	847485.3097	746002.8159	1473.70	1320.5	NR	NR	NR	NR	4*	380	380	-	NR	HX (3.88")					No	Yes	
CMP11-05	55-220509	Exploration Core Hole	Abandoned	847737.9655	746085.3165	1474.30	1200	8	7	20	6.75	5.5	427	427	-	NA	PQ(4.38")	Type V Cement	467/1200	0	1175	Yes	Yes	
CMP11-06	55-220509	Exploration Core Hole	Abandoned	847667.2736	746156.0257	1475.00	1145	8	7	20	6.75	5.5	429	429	-	NA	PQ(4.38")	Type V Cement	335	0	565	Yes	Yes	Rod stuck, blasted and pulled as much as possible prior to grouting
MCC367	55-539336	Exploration Core Hole	Abandoned	848108.0623	746220.8225	1475.73	941	6.5	5.6	45	5	NR	355	355	-	NR	NX (2.97")	Type V Cement	941	0	NR	Yes	Yes	
MCC368	55-539336	Exploration Core Hole	Abandoned	847985.5026	745998.7585	1475.20	1044	6.5	5.6	55	5	NR	390	390	-	NR	NX (2.97")	Type V Cement	1044	0	800	Yes	Yes	
MCC421	55-539336	Exploration Core Hole	Abandoned	848060.5079	745746.5092	1469.55	1039	6.5	5.6	60	5	3	360	353	-	0-353	NX (2.97")	Type V Cement	1039	0	750	Yes	Yes	
MCC522	55-538308	Exploration Core Hole	Abandoned	847507.0673	745604.8156	1466.00	1380	NR	NR	NR	3.5*	-	NR	Pulled	-	NR	NX (2.97")	Type V Cement	1380	0	750	No	Yes	
MCC525	55-538308	Exploration Core Hole	Abandoned	847728.0587	746213.8186	1476.00	1212	NR	NR	NR	NR	-	430	Pulled	-	NR	NX (2.97")	Type V Cement	1210	0	750	No	Yes	
MCC535	55-548247	Exploration Core Hole	Abandoned	847533.19	745743.1913	1471.80	1279	NR	NR	NR	3.5*	NR	360	220-360	-	NR	NX (2.97")	Type V Cement	1279	0	650	No	Yes	
MCC536	55-548247	Exploration Core Hole	Abandoned	847768.8796	745752.1312	1472.20	1162	NR	NR	NR	3.5*	-	380	Pulled	-	NR	NX (2.97")	Type V Cement	1162	0	650	No	Yes	
MCC538	55-548247	Exploration Core Hole	Abandoned	847852.3215	745570.3192	1472.10	1169	NR	NR	NR	3.5*	-	359	Pulled	-	NR	NX (2.97")	Type V Cement	1169	0	650	No	Yes	
MCC545	55-548200	Exploration Core Hole	Abandoned	847464.4934	746204.4409	1474.00	1370	NR	NR	NR	4.5*	-	363	Pulled	-	NR	NX (2.97")	Type V Cement	1370	0	700	No	Yes	
MCC546	55-548200	Exploration Core Hole	Abandoned	847618.2999	746645.6306	1477.00	1152	NR	NR	NR	3.5*	-	397	Pulled	-	NR	NX (2.97")	Type V Cement	620	0	450	No	Yes	Obstruction at 620' during abandonment.
MCC546A	55-548200	Exploration Core Hole	Abandoned	847627.8622	746653.8179	1477.10	1437	NR	NR	NR	3.5*	-	990	Pulled	-	NR	NX (2.97")	Type V Cement	1437	0	1100	No	Yes	
MCC561	55-548247	Exploration Core Hole	Abandoned	847347.25	745776.6893	1471.10	1480	NR	NR	NR	3.5*	NR	450	50-450	-	NR	NX (2.97")	Type V Cement	1480	0	800	No	No	
MCC569	55-548247	Exploration Core Hole	Abandoned	847104.6765	746250.6247	1473.10	1665	NR	NR	NR	3.5*	-	800	Pulled	-	NR	NX (2.97")	Type V Cement	1665	0	1050	No	No	
B-5	NA	Geophysical Boring	Abandoned	848238.0643	746193.8241	1478.00	31.5	6.625	-	-	-	-	-	-	-	-	-	Native Material	31.5	0	NR	No	Yes	
B-6	NA	Geophysical Boring	Abandoned	848206.2792	745908.8835	1476.00	23.5	6.625	-	-	-	-	-	-	-	-	-	Native Material	23.5	0	NR	No	Yes	

Table C-1 . Wells and Core Holes within 500 Feet of the PTF Well Field

General Information							Construction Details												Well Abandonment Details						
Location Name	ADWR Number	Type	Status	Easting	Northing	Surface Elevation (Feet)	Total Depth (Feet)	Diameter of Surface Borehole (Inches)	Diameter of Surface Casing (Inches)	Depth of Surface Casing (Feet)	Diameter of Well Casing (Inches)	Diameter of Well Borehole (Inches)	Depth of Borehole (Feet)	Depth of Well (Feet)	Screened Interval (Feet)	Cement Seal (Feet)	Bentonite Grout Seal (Feet)	Sand Filter Pack (Feet)	Abandonment Material	Bottom Depth (Feet)	Upper Depth (Feet)	Approximate Volume (Gallons)	Driller's Log Available	Geologic Log Available	Comments
WELLS																									
OB3-1	55-542056	Monitoring Well	Existing	847679.2174	746250.8381	1475.78	800	NR	12	20	4	NR	800	800	500-780	0-20	20-500	500-800					No	No	
OB4-1	55-542055	Monitoring Well	Existing	847572.0773	745631.1264	1471.78	800	NR	12	20	4	NR	800	800	440-780	0-20	20-440	440-800					No	No	
PW3-1	55-542056	Test Well	Existing	847662.6065	746297.518	1475.50	800	NR	12	20	6	NR	800	800	500-780	0-20	20-500	500-800					No	No	
PW4-1	55-542055	Test Well	Existing	847558.7182	745577.6161	1471.80	800	NR	12	20	6	NR	800	800	440-780	0-20	20-440	440-800					No	No	
WW3	55-627608	Irrigation Well	Existing	847774.1494	745638.1085	1470.00	938	NR	24	81	18	18, 14	938	496, 933	240-933	NR	-	NR					Yes	No	
DM-B	55-806521	Non-POC Well	Abandoned	848035.958	746428.5319	1477.30	700	NR	NR	NR	None Found	5	700	617	NR	NR	-	NR	Unknown	Unknown	Unknown	Unknown	No	No	

** = Values Observed in the Field*
*** = Value from SRK Geologic Model*
NR = Not Recorded
NA = Not Available

EXHIBIT C-1

Drilling and Construction Records for Wells and Core Holes Located within 500 Feet of the Proposed Production Test Facility

TABLE OF CONTENTS

Location Name	ADWR Number	Type	Status
EXISTING COREHOLES			
133S	NA	Exploration Core Hole	Existing
135MF	NA	Exploration Core Hole	Existing
145MF	NA	Exploration Core Hole	Existing
149S	NA	Exploration Core Hole	Existing
28S	NA	Exploration Core Hole	Existing
356S	NA	Exploration Core Hole	Existing
357S	NA	Exploration Core Hole	Existing
366S	NA	Exploration Core Hole	Existing
414S	NA	Exploration Core Hole	Existing
415S	NA	Exploration Core Hole	Existing
447S	NA	Exploration Core Hole	Existing
448S	NA	Exploration Core Hole	Existing
453S	NA	Exploration Core Hole	Existing
454S	NA	Exploration Core Hole	Existing
455S	NA	Exploration Core Hole	Existing
456S	NA	Exploration Core Hole	Existing
459S	NA	Exploration Core Hole	Existing
460MF	NA	Exploration Core Hole	Existing
461MF	NA	Exploration Core Hole	Existing
462MF	NA	Exploration Core Hole	Existing
463MF	NA	Exploration Core Hole	Existing
465MF	NA	Exploration Core Hole	Existing
94S	NA	Exploration Core Hole	Existing
95S	NA	Exploration Core Hole	Existing
MCC544	55-548200	Exploration Core Hole	Existing
ABANDONED COREHOLES			
CMP11-05	55-220509	Exploration Core Hole	Abandoned
CMP11-06	55-220509	Exploration Core Hole	Abandoned
MCC367	55-539336	Exploration Core Hole	Abandoned
MCC368	55-539336	Exploration Core Hole	Abandoned
MCC421	55-539336	Exploration Core Hole	Abandoned
MCC522	55-538308	Exploration Core Hole	Abandoned
MCC525	55-538308	Exploration Core Hole	Abandoned
MCC535	55-548247	Exploration Core Hole	Abandoned
MCC536	55-548247	Exploration Core Hole	Abandoned
MCC538	55-548247	Exploration Core Hole	Abandoned
MCC545	55-548200	Exploration Core Hole	Abandoned
MCC546	55-548200	Exploration Core Hole	Abandoned
MCC546A	55-548200	Exploration Core Hole	Abandoned
MCC561	55-548247	Exploration Core Hole	Abandoned
MCC569	55-548247	Exploration Core Hole	Abandoned
B-5	NA	Geophysical Boring	Abandoned
B-6	NA	Geophysical Boring	Abandoned
EXISTING WELLS			
OB3-1	55-542056	Monitoring Well	Existing
OB4-1	55-542055	Monitoring Well	Existing
PW3-1	55-542056	Test Well	Existing
PW4-1	55-542055	Test Well	Existing
WW3	55-627608	Irrigation Well	Existing
ABANDONED WELLS			
DM-B	55-806521	Non-POC Well	Abandoned

Existing Core Holes

Interoffice Communication

To PHILIP W. NASON

From RAY THRELKELD

Date JANUARY 28th, 1974

Subject HOLE SUMMARY 133-S

J-2W

Coordinates: 746,398.00N 647,690.95E ~~I-2W~~
Collar Elevation: 1477.0' est.
Depth to Bedrock: 538'
Oxide-Sulfide Interface: 1494'
Total Depth: 2217'
Rotary Starting Date: 10-14-71 Completion: 10-15-71 Footage: 560'
Core Starting Date: 5-10-72 Completion: 6-13-72 Footage: 1657'
Inclination: 6° S45°W @ 2200'.
Assay Data:

Cross Section:
560.5' - 645' = 84.5' @ .39 Oxide
645' - 700' = 55' @ .78 Oxide
700' - 770' = 70' @ .38 Oxide
770' - 815' = 45' @ .08 Oxide
815' - 865' = 50' @ .58 Oxide
865' - 895' = 30' @ .31 Oxide
895' -1380' = 485' @ .46 Oxide
1380'-1495' = 115' @ .24 Oxide
1495'-2218' = 723' @ .10 Sulfide

Waste:Ore Ratio: 0.79:1
Internal Waste:Ore Ratio: 0.09:1

200 Scale:
560' - 765' = 205' @ .50 Oxide
815' -1380' = 565' @ .47 Oxide
1380'-1495' = 115' @ .24 Oxide
Total - 885' @ .45 Oxide

Rock Types:

0' - 538'	Conglomerate
538' - 601'	Quartz Monzonite Porphyry
601' - 607'	Aplite
607' - 669'	Quartz Monzonite Porphyry
669' - 687'	Diabase
687' - 777'	Quartz Monzonite Porphyry
777' - 813'	Dacite Porphyry
813' - 933'	Quartz Monzonite Porphyry
933' - 938'	Granodiorite Porphyry #1
938' - 1077'	Quartz Monzonite Porphyry
1077' - 1111'	Granodiorite Porphyry #1
1111' - 1124'	Quartz Monzonite Porphyry
1124' - 1131'	Granodiorite Porphyry #1
1131' - 1240'	Quartz Monzonite Porphyry
1240' - 1247'	Diabase
1247' - 1261'	Quartz Monzonite Porphyry
1261' - 1313'	Diabase

DRILLER'S LOG

HOLE NO. 133-S
J2W

TOTAL DEPTH 560
SPOT CORE NONE

DATE STARTED 10-14-71
DATE COMPLETED 10-15-71
DRILLER T. Stewart

DEPTH	ROCK TYPE	LITHOLOGY	RATE OF DRILLING	BITS USED
INTERVALS SUCH AS 0-20	ALLUVIUM (LOOSE) CONGLOMERATE (CEMENTED) BEDROCK	BOULDERS, GRAVEL SAND, CLAY	FAST, MEDIUM SLOW	
0-45	allur. Loose	Clay, Boulders, gravel	Slow	6 1/4
45-160	"	Clay & Sand	Med	5"
160-200	Cong cemented	Sand & gravel	Med	
200-260	" Cemented	Sand / Small boulders	Med	
260-340	" "	Sand large Boulders	Slow	
340-410	" "	Sand & Basalt	Med	
410-430	? Cemented	Red clay (BAKED)	Slow	5"
~~430~~	~~Cong Cemented~~	Basalt		
430-538	Cong cemented	L/A Granite Part.		
		Sand, Basalt Boulders	Slow	
538-560	Bed rock	Oxid. Clays Feldspars		
		Granite	Slow	

45 - 5 1/2 Casing
Set 24 joints 3" 560' (Cemented)

Interoffice Communication

To R. E. ANDERSON

From DICK KNAPP

Date MARCH 1, 1972

Subject HOLE SUMMARY 135-MF

Coordinates: H3W (745,519 N, 647,696 E - calculated)
Elevation: ~~1469' (estimated)~~ 1472.2
Depth to Bedrock: 372'
Oxide-Sulfide Interface: 1333'
Rotary Started: 10/25/71 Rotary Completed: 10/27/71
Core Started: 11/03/71 ~~Rotary~~ CORE Completed: 12/20/71

Assay Results:

Cross Section Assays:

380' - 495' = 115' @ .14 Oxide
495' - 545' = 50' @ .46 Oxide
545' - 585' = 40' @ .30 Oxide
585' - 675' = 90' @ .11 Oxide
675' - 780' = 105' @ .31 Oxide
780' -1335' = 555' @ .50 Oxide
780' -1155' = 375' @ .53 Oxide
1155' -1185' = 30' @ .20 Oxide
1185' -1335' = 145' @ .52 Oxide
1335' -1610' = 275' @ .58 Sulfide
1335' -1485' = 150' @ .61 Sulfide
1485' -1520' = 35' @ .49 Sulfide
1520' -1565' = 45' @ .60 Sulfide
1565' -1610' = 45' @ .53 Sulfide
1610' -1715' = 105' @ .35 Sulfide
1610' -1690' = 80' @ .32 Sulfide
1690' -1715' = 25' @ .43 Sulfide
1715' -1800' = 85' @ .27 Sulfide
1800' -1860' = 60' @ .48 Sulfide
1860' -1895' = 35' @ .36 Sulfide + Oxide
1895' -1950' = 55' @ .29 Sulfide
1950' -2095.5' = 145.5 @ .16 Sulfide

200 Scale Map Assays:

→ 495' - 545' = 50' @ .46 Oxide
545' - 595' = 50' @ .26 Oxide
→ 675' - 725' = 50' @ .34 Oxide
725' - 780' = 55' @ .28 Oxide
→ 780' -1335' = 555' @ .50 Oxide
→ 1335' -1610' = 275' @ .58 Sulfide
1610' -1715' = 105' @ .35 Sulfide
→ 1800' -1860' = 60' @ .48 Sulfide
1290' @ .46% Cu 655' Ox @ .48
335' S. @ .56

1860 - 1950 = 90' @ 32 sulfide

"Cross Section Type" Mo Assays:

1335' - 1570' = 235' @ .0089% Mo
1570' - 1755' = 185' @ .0270% Mo
1755' - 2070' = 315' @ .0056% Mo
2070' - 2095.5' = 25.5' @ .0100% Mo

DRILLER'S L

HOLE NO. 135

TOTAL DEPTH 376
SPOT CORE

DATE STARTED 10-25-71
DATE COMPLETED 10-27-71
DRILLER T. Stewart

DEPTH	ROCK TYPE	LITHOLOGY	RATE OF DRILLING	BITS USED
INTERVALS SUCH AS 0-20	ALLUVIUM (LOOSE) CONGLOMERATE (CEMENTED) BEDROCK	BOULDERS, GRAVEL SAND, CLAY	FAST, MEDIUM SLOW	
0-20	allur.	Clay	Slow	6 1/4
20-60	" loose	Nigger Head Gravel		
~~60-80~~	"	Boulders.	Slow	
60-80		Clay	Med	5"
80-240	Cong Cemented	Sand & clay	Med	
240-280	Cong cemented	Sand & Boulders	Med	5"
280-300	" "	Clay	Slow	
300-360	" "	Sand, Field spar		
360-372	" "	Basalt Flow, White clay,		
372-376	Bed Rock	Granite CVO² Present	Slow	

376
280
96

280
65
215

Set 16 joints 3" 376' Cemented
Set 65' 5 1/2 casing
Hole moved approx 35' N.

Interoffice Communication

To R. E. ANDERSON

From RAY THRELKELD

Date OCTOBER 6th, 1972

Subject HOLE SUMMARY 145-MF

Coordinates: 745,575 N 648,200 E estimated H-2-W
Elevation: 1470' estimated
Depth to Bedrock: 378'
Oxide-Sulfide Interface: 1061'
Total Depth: 2170' 1770
Date Started: 4-19-72
Date Completed: 5-18-72
Assays:

Cross Section:

375' - 445' = 70' @ .12 Oxide
445' - 475' = 30' @ .41 Oxide
475' - 530' = 55' @ .09 Oxide
530' - 630' = 100' @ .24 Oxide
630' - 670' = 40' @ .12 Oxide
670' - 715' = 45' @ .34 Oxide
715' - 795' = 80' @ .16 Oxide
795' - 825' = 30' @ .46 Oxide
825' - 870' = 45' @ .15 Oxide
870' - 940' = 70' @ .51 Oxide
940' - 975' = 35' @ .19 Oxide
975' -1010' = 35' @ .52 Oxide
1010' -1060' = 50' @ .75 Oxide
1060' -1215' = 155' @ .51 Sulfide
1215' -1245' = 30' @ .83 Sulfide
1245' -1295' = 50' @ .47 Sulfide
1295' -1395' = 100' @ .32 Sulfide
1395' -1425' = 30' @ .59 Sulfide
1425' -1475' = 50' @ .34 Sulfide
1475' -1550' = 75' @ .25 Sulfide
1550' -1650' = 100' @ .54 Sulfide
1650' -1720' = 70' @ .21 Sulfide
1720' -1765' = 45' @ .46 Sulfide
1765' -1820' = 55' @ .25 Sulfide
1820' -1850' = 30' @ .32 Sulfide
1850' -2020' = 170' @ .45 Sulfide
2020' -2065' = 45' @ .73 Sulfide
2065' -2095' = 30' @ .32 Sulfide
2095' -2170' = 75' @ .26 Sulfide

200 Scale:

445' - 495' = 50' @ .26 Oxide
545' - 630' = 85' @ .24 Oxide
680' - 730' = 50' @ .27 Oxide
→ 730' - 830' = 100' @ .36 Oxide
830' - 880' = 50' @ .20 Oxide
→ 880' -1060' = 180' @ .52 Oxide
→1060' -1295' = 235' @ .54 Sulfide
1295' -1395' = 100' @ .32 Sulfide
→1395' -1445' = 50' @ .48 Sulfide
1445' -1575' = 130' @ .31 Sulfide
→1575' -1650' = 75' @ .59 Sulfide
→1720' -1770' = 50' @ .45 Sulfide
→1850' -2050' = 200' @ .50 Sulfide
1355' @ .43 Total

Mo and Ag in Ore:	% Mo	oz/ton Ag
1060'-1295' = 235' @	.0016	.12
1395'-1495' = 100' @	.0034	.13
1575'-1650' = 75' @	.0072	.13
1720'-1770' = 50' @	.0067	.23

Waste to Ore Ratio: 1.30:1
Internal Waste to Ore Ratio: 0.88:1

DRILLER'S LOG

HOLE NO. 145MF
H2W

TOTAL DEPTH 400
SPOT CORE NONE

DATE STARTED 1-26-72
DATE COMPLETED 1-27-72
DRILLER T. Steward

DEPTH	ROCK TYPE	LITHOLOGY	RATE OF DRILLING	BITS USED
INTERVALS SUCH AS 0-20	ALLUVIUM (LOOSE) CONGLOMERATE (CEMENTED) BEDROCK	BOULDERS, GRAVEL SAND, CLAY	FAST, MEDIUM SLOW	
0-35	allur.	Clay & Gravel	Slow	6¼
35-45	" Loose	Gravel & Boulders	"	
45-80	"	Clay & Gravel	"	
90-190	Cong cemented	Sand/Clay/Small	med	
		Boulders	"	5"
190-340	Cong cemented	Sand & Clay	"	
340-378		Faint Iron Clay, Boulders		
		Granite	Slow	
378-400	Bed rock	Weathered Granite (Junkey)		5"
		Trace CuO_2 Mud Stone Slow		
		Yellow Stained		
Basalt flow 40' - 2' feet thick				
Set 60' 5" casing				
Contact 378				
Set 400' 3" casing		Cemented		

Interoffice Communication

To R. E. ANDERSON

From HAL GARDNER

Date JULY 19th, 1972

Subject HOLE SUMMARY 149-S

Coordinates: 746,390 N, 648,193 E (Estimated) J-1-W
Elevation: ~~1476'~~ Estimated 1477.3 Surv
Depth to Bedrock: 574'
Oxide-Sulfide Interface: 922'
Total Depth: 2142.5' 2142 ~~609~~ 1541
Date Started: 5-15-72
Date Completed: 6-9-72
Assay Results:

Cross Section

570' - 620' = 50' @ .24 Oxide
620' - 705' = 85' @ .57 Oxide
705' - 765' = 60' @ .14 Oxide
765' - 830' = 65' @ .38 Oxide
830' - 920' = 90' @ .29 Oxide
920' - 975' = 55' @ .41 Sulfide
975' -1175' = 200' @ .28 Sulfide
1175' -1330' = 155' @ .40 Sulfide
1330' -1505' = 175' @ .20 Sulfide
1505' -1555' = 50' @ .41 Sulfide
1555' -1620' = 65' @ .35 Sulfide
1620' -1860' = 240' @ .47 Sulfide
1860' -1920' = 60' @ .33 Sulfide
1920' -1970' = 50' @ .44 Sulfide
1970' -2030' = 60' @ .31 Sulfide
2030' -2080' = 50' @ .52 Sulfide
2080' -2142' = 62' @ .10 Sulfide

200' Scale

570' - 620' = 50' @ .24 Oxide
→ 620' - 705' = 85' @ .51 Oxide
→ 765' - 830' = 65' @ .38 Oxide
830' - 920' = 90' @ .29 Oxide
→ 920' - 975' = 55' @ .41 Sulfide
→ 1175' -1330' = 155' @ .40 Sulfide
→ 1505' -1555' = 50' @ .41 Sulfide
1555' -1620' = 65' @ .35 Sulfide
→ 1620' -1860' = 240' @ .47 Sulfide
1860' -1920' = 60' @ .33 Sulfide
→ 1920' -1970' = 50' @ .44 Sulfide
1970' -2030' = 60' @ .31 Sulfide
→ 2030' -2080' = 50' @ .52 Sulfide

Total Oxide: 150' @ .45
Total Sulfide: 600' @ .44
Total Ore + Protore: 1,075'@ .40

Waste to Ore Ratio: 1.77:1
Internal Waste to Ore: 1.01:1

Mo and Ag in Ore and Protore:

Ore: 600' @ .0101 %Mo and .12 oz/tons Ag
Protore: 185' @ .0200 %Mo and .16 oz/tons Ag

Rock Types: The predominate rock type in 149-S was quartz monzonite porphyry with intrusions into it in the following intervals:

640' - 650' ---------- Andesite
702.5' - 792.5' ------- Granodiorite Porphyry #1
1327.5' - 1470' -------- Granodiorite Porphyry #3
1630' - 1637.5' ------- Diorite
1647.5' - 1652.5' ------ Diorite
1970' - 2010' --------- Granodiorite Porphyry #2
2065' - ~~2100~~ 2075' --------- Diorite

Correction by SWM 08-1-74

DRILLER'S LOG

HOLE NO. 149-S
JIW

TOTAL DEPTH 601
SPOT CORE NONE

DATE STARTED 2-7-72
DATE COMPLETED 2-10-72
DRILLER T. Stewart

DEPTH	ROCK TYPE	LITHOLOGY	RATE OF DRILLING	BITS USED
INTERVALS SUCH AS 0-20	ALLUVIUM (LOOSE) CONGLOMERATE (CEMENTED) BEDROCK	BOULDERS, GRAVEL SAND, CLAY	FAST, MEDIUM SLOW	
0 - 28	alluv.	Clay + Boulders	Slow	6 1/4
* 28-30		Black basalt	"	
30 - 40	"	Clay & Boulders	"	
40 - 100	"	Clay & Gravel	Med	5"
100-260	Cong. loose	Sand & Clay	"	
260-290	Coby cemented	Sand & Boulders.	"	
290-310		Brown Clay &	Slow	
310 - 348	Cong cemented	Sand & Clay	Med	
348 - 356		Granitic Material/White	Slow	
~~356 - 358~~		Weathered clay		
~~356~~ 358		Hard black Lytry		
358 - 365		White Weathered clay		
		Bedrock chips -		
365 - 470		Hard clear Quartz, White	Slow	5"
		clay		
470 - 540		Granite Dirte	Slow	5"
~~540~~ -		Weathered Clay		5"
540 - 556		" "		5"
556 - 574		Weathered clay Bedrock	Slow	
		chips		
574 - 601	Bedrock	Granite, CHO2 Stain		
		White Clays.		
Left	601' of 3" Casing	Cemented		
Contact at	572'			
Left 40' of 5" Casing				

170
65
105

CONTINENTAL OIL CO.

MINERAL EXPLORATION · METALLICS DIVN.

GEOLOGIC LOG

HOLE NO. 28S SHEET NO. 1
COORDINATES 745,967.51N 648,431.52E
TYPE DRILL ROT. & CORE BIT SIZE NX
INCLINATION -90° BEARING
LENGTH CORED 1567 CLAIM NO. State
CONTRACTOR Joy

PROJECT Flor
LOCATION Florence

COLLAR ELEVATION 1475.34
TOTAL FOOTAGE 2227
LOGGED BY RWT (OJR) SURVEYOR
2nd DATE STARTED COMPLETED 6-9-72
SCALE

CORE Run	CORE Rec	Depth run bottom	Rock	LITH	Tex.	Frac Int	Frac Dip	Flt. Dip	COLOR	ALTERATION MINERALS OR	BIO	QTZ	SER	CLY	CHL	EPI	CAR	GYP	ANH	MAG	Ø1	Ø2	Ø3	Ø4	Oxidized ZONE LIM	HEM	Cu 0.1	Cu 0.2	MIN	Zone MET	SULFIDE ZONE Py	Cp	Cc	Bn	Mo	Ø1	Ø2	Ø3	Ø4	ASSAYS Total Cu.	CuOx	Mo.	Ag.	Au.	Pb.	Zn.	REMARKS
		0		All																																												
		10																																														
		20																																														
		30																																														
		40																																														
		50		CONG																																												NO ROTARY DRILL LOW ESTIMATED CONTACT
		60																																														
		70																																														
		80																																														
		90																																														
		100																																														
		110																																														
		120																																														
		130																																														
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		210																																														
		220																																														
		230																																														
		240																																														
		250																																														
		260																																														

Interoffice Communication

To PHILIP W. NASON

From ALLEN SHAW

Date FEBRUARY 14, 1975

Subject HOLE SUMMARY 356-S

Coordinates: 746,601.42 648,071.43 J.5-1W
Collar Elevation: 1478'
Depth to Bedrock: 530'
Oxide-Sulfide Interface: 1061, 1223', 1288'
Total Depth: 2094' Logging Completion Date: 10-8-74
Rotary Starting Date: 1-4-74 Completion Date: 1-7-74 Footage: 473'
Core Starting Date: 9-7-74 Completion Date: 10-8-74 Footage: 1621'
Deepening Starting Date: Completion Date: Footage:
Inclination: 2¼° @ 1200'
Core Recovery: 97%
Assay Data: Assay Completion Date:

Cross Section:	Footage Map Data:	%OxCu	% Mo	oz/T Ag
528' - 558' = 30' @ .10 Ox.	558' - 668' = 110' @ .31 Ox.	.17		
558' - 618' = 60' @ .37 Ox.	668' - 718' = 50' @ .47 Ox.	.32		
618' - 668' = 50' @ .24 Ox.	718' - 798' = 80' @ .25 Ox.	.09		
668' - 708' = 40' @ .53 Ox.	798' - 948' = 150' @ .42 Ox.	.18		
708' - 798' = 90' @ .24 Ox.	948' -1058' = 110' @ .23 Ox.	.10		
798' - 888' = 90' @ .43 Ox.	1058'-1218' = 160' @ .45 Sul	.05	.0091	.15
888' - 918' = 30' @ .24 Ox.	1218'-1288' = 70' @ .31 Ox.	.15	.0068	.16
918' - 948' = 30' @ .55 Ox.	1288'-1508' = 220' @ .28 Sul		.0134	.10
948' - 988' = 40' @ .21 Ox.	1508'-1648' = 148' @ .42 Sul		.0150	.08
988' - 1028' = 40' @ .17 Ox.	1090' @ .35		590'@.0118	
1028' - 1058' = 30' @ .34 Ox.			590'@ .12	
1058' - 1088' = 30' @ .36 Sul.				
1088' - 1118' = 30' @ .70 Sul.				
1118' - 1218' = 100' @ .40 Sul.				
1218' - 1288' = 70' @ .31 Ox.				
1288' - 1318' = 30' @ .30 Sul.				
1318' - 1408' = 90' @ .25 Sul.				
1408' - 1438' = 30' @ .44 Sul.				
1438' - 1508' = 70' @ .24 Sul.				
1508' - 1548' = 40' @ .55 Sul.				
1548' - 1578' = 30' @ .36 Sul.				
1578' - 1618' = 30' @ .29 Sul.				
1618' - 1648' = 30' @ .49 Sul.				
1648' - 1788' = 140' @ .16 Sul.				
1788' - 2094' = 306' @ .07 Sul.				

Waste: Ore Ratio = 558/1090=.51
Internal Waste: Ore Ratio = 28/1090= 0.03

DRILLER'S LOG

HOLE NO. #356
U. S-1 W

TOTAL DEPTH 423' ~~550'~~
SPOT CORE

DATE STARTED 1-4-24
DATE COMPLETED 1-7-24
DRILLER

DEPTH	ROCK TYPE	LITHOLOGY	RATE OF DRILLING	BITS USED
INTERVALS SUCH AS 0-20	ALLUVIUM (LOOSE) CONGLOMERATE (CEMENTED) BEDROCK	BOULDERS, GRAVEL SAND, CLAY	FAST, MEDIUM SLOW	
0-45	Alluv - Loose	Gravel Boulders Clay	Slow	6¼
45-180	Cong - Loose	Clay - Sand	Slow	5¼
180-440	Cong - Cement	Clay - Sand Boulders	Med Slow	
440-423	Bed rock		Slow	
Set	45' of 5¾ Surface			

Interoffice Communication

To PHILIP W. NASON

From SYVER W. MORE

Date NOVEMBER 20th, 1974

Subject HOLE SUMMARY 357-S

Coordinates: 746,384.92 N 647,946.43 E J-1.5W
Collar Elevation: 1476.85'
Depth to Bedrock: 522'
Oxide-Sulfide Interface: 1169'
Total Depth: 2280' Logging Completion Date: 9-20-74
Rotary Starting Date: 1-7-74 Completion Date: 1-8-74 Footage: 455'
Core Starting Date: 8-14-74 Completion Date: 9-20-74 Footage: 1825'
Deepening Starting Date: Completion Date: Footage:
Inclination: 4° maximum (surveyed to 2000').
Core Recovery: 1795'/1825' = 98.36%
Assay Data: Assay Completion Date: 11-14-74

Cross Section:

522' - 577' = 53' @ .26 Oxide
577' - 627' = 50' @ .61 Oxide
627' - 757' = 130' @ .37 Oxide
757' - 837' = 80' @ .23 Oxide
837' -1167' = 330' @ .43 Oxide
1167'-1697' = 530' @ .42 Sulfide
1697'-1797' = 100' @ .33 Sulfide
1797'-1897' = 100' @ .20 Sulfide
1897'-2280' = 383' @ .05 Sulfide

Footage Map Data:

	% OxCu	% Mo	oz/T Ag
522' - 577' = 55' @ .26 Ox.	.19		
577' - 627' = 50' @ .61 Ox.	.48		
627' - 757' =130' @ .37 Ox.	.19		
757' - 837' = 80' @ .23 Ox.	.11		
837' -1167' =330' @ .43 Ox.	.25		
1167'-1697' =530' @ .42 Sul.		.0146	.11
1697'-1797' =100' @ .33 Sul.		.0309	.13
1797'-1897' =100' @ .20 Sul.		.0099	.11

Oxide: 645' @ .40
Sulfide: 730' @ .38
Total: 1375' @ .39

Rock Types:

0' - 522' ---------- Overburden (alluvium and conglomerate)
522' - 541' ---------- Quartz Monzonite Porphyry
541' - 544' ---------- Granodiorite Porphyry #1(?) (Highly altered)
544' - 621' ---------- Quartz Monzonite Porphyry
621' - 622' ---------- Aplite
622' - 675' ---------- Quartz Monzonite Porphyry
675' - 680' ---------- Aplite
680' - 690' ---------- Quartz Monzonite Porphyry
690' - 705' ---------- Diorite Porphyry
705' - 718' ---------- Quartz Monzonite Porphyry
718' - 721' ---------- Andesite
721' - 727' ---------- Quartz Monzonite Porphyry

DRILLER'S LOG

HOLE NO. #357
0-1.5 w

TOTAL DEPTH 455'
SPOT CORE

DATE STARTED 1-7-74
DATE COMPLETED 1-8-74
DRILLER

DEPTH	ROCK TYPE	LITHOLOGY	RATE OF DRILLING	BITS USED
INTERVALS SUCH AS 0-20	ALLUVIUM (LOOSE) CONGLOMERATE (CEMENTED) BEDROCK	BOULDERS, GRAVEL SAND, CLAY	FAST, MEDIUM SLOW	
0-45	Allu - Loose	Boulders - Gravel		6½
		Clay	Slow	
45-160'	Cong - Loose	Clay - Sand	Slow	5"
160'-380	Cong - Cemented	Clay - Sand		
		Boulders	Med	
380'-420	Cong - Cemented	Sand - Clay	Med	
420'-455	Bedrock			

Set 45' of 5 9/16 Surface

264
x 2.0
5.
85 month
7

DRILLER'S LOG

HOLE NO. #366
I-5 1.5N

TOTAL DEPTH 425'
SPOT CORE

DATE STARTED 1-17-74
DATE COMPLETED 1-17-74
DRILLER

DEPTH	ROCK TYPE	LITHOLOGY	RATE OF DRILLING	BITS USED
INTERVALS SUCH AS 0-20	ALLUVIUM (LOOSE) CONGLOMERATE (CEMENTED) BEDROCK	BOULDERS, GRAVEL SAND, CLAY	FAST, MEDIUM SLOW	
0-45'	Alluv - Loose	Boulders - Gravel		6½
		Clay	Slow	
45-160'	Cong - Loose	Sand - Clay	Slow	5"
160-280'	Cong - Cemented	Sand - Boulders		
		Clay	Med	
280-300'	Cong	Brown Sticky		
		Clay	Slow	
300-390'	Cong - Cemented	Sand - Clay	Med	
390'-	Possible Bedrock		Slow	

Set 45' of 5⅝ (Surface)

Interoffice Communication

To PHILIP W. NASON

From SYVER W. MORE

Date OCTOBER 11th, 1974

Subject HOLE SUMMARY 414-S

Coordinates: 746,384.92 N 648,446.43 E J-0.5W ✓
Collar Elevation: 1477.50'
Depth to Bedrock: 375'
Oxide-Sulfide Interface: 754'
Total Depth 2267' Logging Completion Date: 8-19-74
Rotary Starting Date: 4-6-74 Completion Date: 4-6-74 Footage: 380'
Core Starting Date: 7-20-74 Completion Date: 8-16-74 Footage: 1897'
Deepening Starting Date: Completion Date: Footage:
Inclination: 7½° maximum, surveyed to 2300'.
Core Recovery: 1971.5'/1992' = 98.97%
Assay Data:

Cross Section:	Footage Map Data:	% OxCu	%Mo	oz/T Ag
375' - 568' = 193' @ .45 Oxide	375' - 568' =193' @ .45 Ox.	.24		
568' - 648' = 80' @ .25 Oxide	568' - 648' = 80' @ .25 Ox.	.12		
648' - 758' = 110' @ .36 Oxide	648' - 758' =110' @ .36 Ox.	.21		
758' - 808' = 50' @ .45 Sulfide	758' - 808' = 50' @ .45 Sul.		.0057	.05
808' - 898' = 90' @ .25 Sulfide	808' - 898' = 90' @ .25 Sul.		.0066	.02
898' -1348' = 450' @ .40 Sulfide	898' -1348' =450' @ .40 Sul.		.0081	.07
1348'-1428' = 80' @ .21 Sulfide	1348'-1428' = 80' @ .21 Sul.		.0146	.05
1428'-1868' = 440' @ .34 Sulfide	1428'-1868' =440' @ .34 Sul.		.0172	.06
1868'-1898' = 30' @ .12 Sulfide	1898'-1978' = 80' @ .20 Sul.		.0123	.03
1898'-1978' = 80' @ .20 Sulfide	2008'-2078' = 70' @ .25 Sul.		.0122	.04
1978'-2008' = 30' @ .12 Sulfide	383' @ .38 Ox.			
2008'-2078' = 70' @ .25 Sulfide	1370' @ .30 Sul.			
2078'-2267' = 189' @ .09 Sulfide	1753' @ .32 Total			

Rock Types:

0' - 375' ---------- Overburden (Alluvium and Conglomerate)
375' - 388' ---------- Granodiorite Porphyry #2
388' - 393.5' ---------- Quartz Monzonite Porphyry
393.5' - 413' ---------- Granodiorite Porphyry #1
413' - 571' ---------- Quartz Monzonite Porphyry
571' - 600' ---------- Granodiorite Porphyry
600' - 607' ---------- Quartz Monzonite Porphyry
607' - 611' ---------- Granodiorite Porphyry #1
611' - 613' ---------- Aplite
613' - 673' ---------- Quartz Monzonite Porphyry
673' - 682' ---------- Aplite
682' - 695' ---------- Quartz Monzonite Porphyry
695' - 700' ---------- Aplite
700' - 778' ---------- Quartz Monzonite Porphyry
778' - 894' ---------- Granodiorite Porphyry #1
894' - 1247.5' ---------- Quartz Monzonite Porphyry

DRILLER'S LOG

HOLE NO. #414-5
J-0,54

TOTAL DEPTH 380'
SPOT CORE

DATE STARTED 4-6-74
DATE COMPLETED 4-6-74
DRILLER T. R. Cissell

DEPTH	ROCK TYPE	LITHOLOGY	RATE OF DRILLING	BITS USED
INTERVALS SUCH AS 0-20	ALLUVIUM (LOOSE) CONGLOMERATE (CEMENTED) BEDROCK	BOULDERS, GRAVEL SAND, CLAY	FAST; MEDIUM SLOW	
0-50'	Alluv. - Loose	Boulders - Sand Clay	Slow	6½ 1
50'-140'	Cong - Loose	Sand - Clay ~~Clay~~	Slow ~~Slow~~	5"
140-290	Congl. - Loose	~~Clay~~	~~Slow~~	
290-295		Clay	Slow	
295-375	Alluvium - Loose		Med.	
375-380	Red Rock			
Set	15 joints 3" Casing	Cemented		
Set	50 of 5⅝ Surface			

DRILLER'S LOG

HOLE NO. 447

TOTAL DEPTH 593
SPOT CORE _____

DATE STARTED 10-14-74
DATE COMPLETED 10-14-74
DRILLER H. Mangold C. Brau

DEPTH	ROCK TYPE	LITHOLOGY	RATE OF DRILLING	BITS USED
INTERVALS SUCH AS 0-20	ALLUVIUM (LOOSE) CONGLOMERATE (CEMENTED) BEDROCK	BOULDERS, GRAVEL SAND, CLAY	FAST, MEDIUM SLOW	
0-40	ALV	Boulders & Gravel	Slow	1 1/2
40-380	Congl. Loose		Med	5 1/2
380-575	alluvium Loose	Cong	Med	11
490-593				1
575-593	Bedrock		Slow	11
	Set 40 Feet Surface		5 7/8"	

DRILLER'S LOG

HOLE NO. 448
J.5-2W

TOTAL DEPTH 750
SPOT CORE NONE

DATE STARTED 10-5-79
DATE COMPLETED 10-7-
DRILLER L. Stewart

DEPTH	ROCK TYPE	LITHOLOGY	RATE OF DRILLING	BITS USED
INTERVALS SUCH AS 0-20	ALLUVIUM (LOOSE) CONGLOMERATE (CEMENTED) BEDROCK	BOULDERS, GRAVEL SAND, CLAY	FAST, MEDIUM SLOW	
0 – 40	allur. loose	Sand & Gravel & Boulders	Slow	6¾
40 – 120	" Cemented	Sand & clay	med	5
120 – 300	Cong Cemented	Sand, clay, gravel	med	5"
300 – 730	" "	Sand & [illegible]	Slow	5"
730 – 750	Bedrock	granite Diorite		
		Broken, Mud		
		Very Rough.	Slow	
	(740-750) Heavy Show	~~[illegible]~~ CuO^2		
		SMOOTH ROCK at T.D.		

Set 750' of 3" Cemented

DRILLER'S LOG

HOLE NO. 453
J-2.5W

TOTAL DEPTH 870
SPOT CORE NONE

DATE STARTED 10-7-74
DATE COMPLETED 10-9-
DRILLER T. Stewart

DEPTH	ROCK TYPE	LITHOLOGY	RATE OF DRILLING	BITS USED
INTERVALS SUCH AS 0-20	ALLUVIUM (LOOSE) CONGLOMERATE (CEMENTED) BEDROCK	BOULDERS, GRAVEL SAND, CLAY	FAST, MEDIUM SLOW	
0 - 40	allur. Loose	Sand, Boulders Gravel,	Slow	6 3/4
40 - 100	" Cemented	Sand & Clay	med	5"
100 - 340	Cong loose	Sand, gravel, Clay	"	
340 - 620	" Cemented	Weathered Basalt		5"
		Clay, Diorite Boulders	Slow	
760-860		andesite	"	
620 - 800	Cong Cemented	andesite, Basalt		5"
~~800 - 870~~	~~Bedrock~~	Flow, Boulders	Slow	5"
800 - 870	Bedrock	granite, CVO²	Slow	
Set	870' of 3" Cemented			

DRILLER'S LOG

HOLE NO. 454

TOTAL DEPTH 403
SPOT CORE _____

DATE STARTED 10-12-74
DATE COMPLETED 10-12-74
DRILLER H. Mongold

DEPTH	ROCK TYPE	LITHOLOGY	RATE OF DRILLING	BITS USED
INTERVALS SUCH AS 0-20	ALLUVIUM (LOOSE) CONGLOMERATE (CEMENTED) BEDROCK	BOULDERS, GRAVEL SAND, CLAY	FAST, MEDIUM SLOW	
0-40		Boulders + Gravel	Slow	6½
40-90		Clay	Med	5"
90-380	Congl.		Med	"
380-403	Bedrock		Slow	"
	Set 40 Feet Surface 5⅝"			

DRILLER'S LOG

HOLE NO. 455

TOTAL DEPTH 553
SPOT CORE

DATE STARTED 10-17-74
DATE COMPLETED 10-18-74
DRILLER C. Dreax
Morgard

DEPTH	ROCK TYPE	LITHOLOGY	RATE OF DRILLING	BITS USED
INTERVALS SUCH AS 0-20	ALLUVIUM (LOOSE) CONGLOMERATE (CEMENTED) BEDROCK	BOULDERS, GRAVEL SAND, CLAY	FAST, MEDIUM SLOW	
0-40		Boulders + Gravel	Slow	7 7/8
40-170		Clay + Boulders &	Med	5"
170-290	Congl. Loose		Med.	"
290-300	~~Alluvium~~	Clay	Slow	
300-330		Clay	Slow	"
330-340		~~Sand~~ Clay-Gravel	Slow	
340-355	Basalt		Slow	
355-390	Congl. Loose		Slow	"
440-540				
390-545	Coug	CLAY/H	Slow	
545-553	Bedrock		Slow	
	Set 40 Feet	Surface	5 7/8"	

(Over)
Tally @ pipe 3"

DRILLER'S LOG

HOLE NO. 456
I-5-3W

TOTAL DEPTH 825
SPOT CORE None

DATE STARTED 10-9-70
DATE COMPLETED 10-10-
DRILLER T. E. Leeward

DEPTH	ROCK TYPE	LITHOLOGY	RATE OF DRILLING	BITS USED
INTERVALS SUCH AS 0-20	ALLUVIUM (LOOSE) CONGLOMERATE (CEMENTED) BEDROCK	BOULDERS, GRAVEL SAND, CLAY	FAST, MEDIUM SLOW	
0 - 40	alluv. loose	Boulders & gravel	Slow	6 3/4
40 - 290	Cong "	Sand, clay, gravel	Med	5"
291 - 370	Mudstone		Slow	|
370 - 620	Cong. Cemented	quartz Sand, clay	med	|
620 -	~~Cong Conglomerate~~	Basalt		5"
620 - 810	Cong Conglomerate	Basalt & lava		5"
720-810		Clay		5"
810 - 825	Bed rock	granite Diorite		|
		Calc	Slow	|

Set 825' of 3" Cemented
Back off Collar appox. 150' off Bottom

DRILLER'S LOG

HOLE NO 459

TOTAL DEPTH 483
SPOT CORE

DATE STARTED 10-11-74
DATE COMPLETED 10-12-74
DRILLER H. Mongold, C. Green

DEPTH	ROCK TYPE	LITHOLOGY	RATE OF DRILLING	BITS USED
INTERVALS SUCH AS 0-20	ALLUVIUM (LOOSE) CONGLOMERATE (CEMENTED) BEDROCK	BOULDERS, GRAVEL SAND, CLAY	FAST, MEDIUM SLOW	
0-40		Boulders	Slow	16½
40-160		Clay & Gravel	Med	5"
380-480				
160-470	Congl. Loose		Med	11
470-483	Bedrock		Slow	11

DRILLER'S LOG

HOLE NO. 460 MF
H.5-24
OFF-SET

TOTAL DEPTH 474
SPOT CORE _____

DATE STARTED 10-22-74
DATE COMPLETED 10-23-74
DRILLER Green & Mongold

DEPTH	ROCK TYPE	LITHOLOGY	RATE OF DRILLING	BITS USED
INTERVALS SUCH AS 0-20	ALLUVIUM (LOOSE) CONGLOMERATE (CEMENTED) BEDROCK	BOULDERS, GRAVEL SAND, CLAY	FAST, MEDIUM SLOW	
0-50		Boulders & Gravel	Slow	7 7/8
50-290	ALLU.	SAND, GRAVEL, CLAY	MED	5"
290-350	"	CLAY	Slow	
350-400	Conglomerate		Slow	"
400-464	"		Slow	"
464-474	Bedrock		Slow	1C

Set 50' 6" Surface Casing

(over)

23 joints 3" casing - Each joint = 21.3'

DRILLER'S LOG

HOLE NO. 461 MF
H.5-2.5W offset

TOTAL DEPTH T.D. 55
SPOT CORE

DATE STARTED 10-23-74
DATE COMPLETED 10-23-74
DRILLER C. Green

DEPTH	ROCK TYPE	LITHOLOGY	RATE OF DRILLING	BITS USED
INTERVALS SUCH AS 0-20	ALLUVIUM (LOOSE) CONGLOMERATE (CEMENTED) BEDROCK	BOULDERS, GRAVEL SAND, CLAY	FAST, MEDIUM SLOW	
0-55		Boulders + Gravel	Slow	7 7/8
	Set 55 Feet Surface		6"	

1974

DRILLER'S LOG

HOLE NO. 461

TOTAL DEPTH 385
SPOT CORE NONE

DATE STARTED 11/27/74
DATE COMPLETED 11/27/74
DRILLER T. Stewart

DEPTH	ROCK TYPE	LITHOLOGY	RATE OF DRILLING	BITS USED
INTERVALS SUCH AS 0-20	ALLUVIUM (LOOSE) CONGLOMERATE (CEMENTED) BEDROCK	BOULDERS, GRAVEL SAND, CLAY	FAST, MEDIUM SLOW	
0 - 55	Drill BY Rig #7			7 7/8
55 - 280	Cong loose	Sand & Clay	med	5"
280 - 310 (310-314)	Mudstone	Clay	Slow	
310 - 360	Cong Cemented	Sand & Boulders	med	
360 - 370	Basalt Flow	Black Basalt	Slow	
370 - 380	Cong Cemented	Vol'c Clay & Boulders	Slow	
380 - 385	Bedrock	red iron stain granite		

Set 385' of 3"

Set 385' of 3" Casing

DRILLER'S LOG

HOLE NO. 462MF

H.S-3W OFFSET

TOTAL DEPTH 494

SPOT CORE

DATE STARTED 10-23-74

DATE COMPLETED

DRILLER C. Olsen - H. Mongold

DEPTH	ROCK TYPE	LITHOLOGY	RATE OF DRILLING	BITS USED
INTERVALS SUCH AS 0-20	ALLUVIUM (LOOSE) CONGLOMERATE (CEMENTED) BEDROCK	BOULDERS, GRAVEL SAND, CLAY	FAST, MEDIUM SLOW	
0-65		Boulders - Gravel	Slow	7 7/8
65-270		Gravel Sand - Clay	Med.	5"
270-330		Clay	Slow	
330-410	Alluvium	Gravel - Clay	Slow	
410-485	Cong.		Slow	"
485-494	Bedrock		Slow	"

Set 65' of 6" Surface Casing

DRILLER'S LOG

HOLE NO. 463-MA
4-5-3.5 W

TOTAL DEPTH 720
SPOT CORE

DATE STARTED 10-31-74
DATE COMPLETED 11-4-74
DRILLER Mangold

DEPTH	ROCK TYPE	LITHOLOGY	RATE OF DRILLING	BITS USED
INTERVALS SUCH AS 0-20	ALLUVIUM (LOOSE) CONGLOMERATE (CEMENTED) BEDROCK	BOULDERS, GRAVEL SAND, CLAY	FAST, MEDIUM SLOW	
0-~~45~~ 50		Boulders-Gravel	Slow	7⅞
~~45~~ 50-300		Clay-Sand-Gravel	Med	5
300-340	Congl (Cemented)	Clay	Slow	
340-700	Congl.		Slow	
700-710	"		Slow	
710-720	BR		Slow	
620-720				

Set 50' 6" Surface Casing.

Hauled & Ran 35 jts 3" Casing.

34 jts 21' 714
1 " 6 6
720'

DATABASE CHANGES FOR DRILL HOLE 465 MF

Date: 10/12/96 **Geologist:** Harold Maneth

The following changes were made to the database. The changes are based on:

Please check all that apply.

- ☐ Overburden units derived from Conoco driller's log (T. Stewart)
- ☒ Geology interpretation from similar continuous units in nearby hole(s).
- ☐ Physical inspection of core.
- ☐ Physical inspection of cuttings/chips.
- ☐ Information derived from hydrophysical tests, pump tests, or other hydrology data.
- ☐ Other _____

LITHOLOGY	FROM	TO	COMMENTS
Qal	0	80	
UI cgl	80	225	
UC cgl	225	275	
clay	275	305	
LC cgl	305	bedrock	

Interoffice Communication

To R. E. ANDERSON

From DICK KNAPP

Date MAY 26th, 1972

Subject HOLE SUMMARY 94-S

Coordinates: 745,951.72 N 647,947.08 E (I-2-W)
Elevation: 1475.01'
Depth to Bedrock: 370'
Oxide-Sulfide Interface: 1236'
Total Depth: 2038'
Rotary Started: 3-9-71 Rotary Completed: 3-12-71
Core Started: 4-13-72 Core Completed: 5-11-72
Assays:

Cross Section:

571'	- 650'	= 80' @ .34	Oxide
650'	- 700'	= 50' @ .53	Oxide
700'	- 775'	= 75' @ .38	Oxide
775'	- 805'	= 30' @1.85	Oxide
805'	- 880'	= 75' @ .41	Oxide
880'	- 920'	= 40' @ .18	Oxide
920'	- 970'	= 50' @ .45	Oxide
970'	-1020'	= 50' @ .58	Oxide
1020'	-1050'	= 30' @1.33	Oxide
1050'	-1100'	= 50' @ .67	Oxide
1100'	-1155'	= 55' @ .49	Oxide
1155'	-1235'	= 80' @ .26	Oxide
1235'	-1410'	= 175' @ .32	Sulfide
1410'	-1565'	= 155' @ .44	Sulfide
1565'	-1625'	= 60' @ .34	Sulfide
1625'	-1690'	= 65' @ .45	Sulfide
1690'	-1775'	= 85' @ .31	Sulfide
1775'	-1835'	= 60' @ .52	Sulfide
1835'	-1895'	= 60' @ .33	Sulfide
1895'	-2038'	= 143' @ .17	Sulfide

200 Scale:

571'	-1155'	= 584' @ .56	Oxide
1155'	-1235'	= 80' @ .26	Oxide
1235'	-1410'	= 175' @ .32	Sulfide
1410'	-1565'	= 155' @ .44	Sulfide
1565'	-1625'	= 60' @ .34	Sulfide
1625'	-1690'	= 65' @ .45	Sulfide
1690'	-1775'	= 85' @ .31	Sulfide
1775'	-1835'	= 60' @ .52	Sulfide
1835'	-1895'	= 60' @ .33	Sulfide
		1,324' @ .45	Total

Oxide Ore: 584' @ .56
Sulfide Ore: 280' @ .46

		Mo	Ag
1410'	-155'	.0045	.10
1625'	- 65'	.0073	.10
1775'	- 60'	.0042	.06
	280'	.0051	.09

Rock Types: (10' minimum)

0'	- 465'?	---------- Overburden
465'	- 777'	---------- Quartz Monzonite Porphyry
777'	- 802'	---------- Granodiorite Porphyry 1
802'	- 882'	---------- Quartz Monzonite Porphyry
882'	- 920'	---------- Granodiorite Porphyry 2
920'	-2038'	---------- Quartz Monzonite Porphyry

Alteration: Supergene argillic in the oxide zone, and hypogene (mainly veinlet with only local pervasive) potassic. Very little downhole trend other than weak development of sericitic veining in the bottom of the hole. There is some pinkish zeolite (?) veining in some parts of the hole. No sudden changes in alteration.

DRILLER'S LOG

HOLE NO. 945

TOTAL DEPTH 366½
SPOT CORE 560-563
563-566½

DATE STARTED 3/9/71
DATE COMPLETED 3/12/71
DRILLER R Hayes

DEPTH	ROCK TYPE	LITHOLOGY	RATE OF DRILLING	BITS USED
INTERVALS SUCH AS 0-20	ALLUVIUM (LOOSE) CONGLOMERATE (CEMENTED) BEDROCK	BOULDERS, GRAVEL SAND, CLAY	FAST, MEDIUM SLOW	
0-10	loose	sand	Fast	
10-55	loose	Boulders + Gravel	slow	
55-140		clay	med	✓
140-350		gravels with shards clay	med	✓
350-560		Boulders + clay	med	
560	Bedrock			
	No Casing - Bedrock @ ~~465~~ 370?			

Interoffice Communication

To R. E. ANDERSON

From JOE LANGLOIS

Date DECEMBER 29th, 1972

Subject HOLE SUMMARY 95-S (REVISION)

Coordinates: 745,952.39 N 647,447.09 E I-3-W
Collar Elevation: 1474' estimated
Depth to Bedrock: 570'
Oxide-Sulfide Interface: 1495' (some sulfides @ 1470')
Total Depth: 1842'
Rotary Started: 3-12-71 Completed: 3-16-71 Footage: 590'
Core Started: 5-21-71 Completed: 6-24-71 Footage: 1252'
Inclination: 1½° @ 1820'; maximum 3° @ 420'
Assay Data:

Cross Section:

596' - 810' = 214' @ .38 Oxide
810' - 880' = 70' @ .60 Oxide
880' - 935' = 55' @ .43 Oxide
935' -1015' = 80' @ .60 Oxide
1015'-1230' = 215' @ .44 Oxide
1230'-1265' = 35' @ .02 Oxide
1265'-1365' = 100' @ .43 Oxide
1365'-1425' = 60' @ .67 Oxide
1425'-1495' = 70' @ .39 Oxide
1495'-1550' = 55' @ .41 Sulfide
1550'-1675' = 125' @ .18 Sulfide
1675'-1842' = 168' @ .08 Oxide

200 Scale:

596' - 660' = 64' @ .30 Oxide
660' -1220' = 560' @ .48 Oxide
1270'-1495' = 225' @ .48 Oxide
1495'-1550' = 55' @ .41 Sulfide
904' @ .46 Total

1495' - 1550' = 55' @ .0057 Mo

Rock Types:

0' - 180' ---------- Alluvium
180' - 570' ---------- Conglomerate
570' - 622' ---------- Quartz Monzonite Porphyry
622' - 670' ---------- Granodiorite Porphyry 1
670' - 770' ---------- Quartz Monzonite Porphyry
770' - 804' ---------- Granodiorite Porphyry 1
804' - 877' ---------- Quartz Monzonite Porphyry
877' - 880' ---------- Granodiorite Porphyry
880' - 1183' --------- Quartz Monzonite Porphyry
1183' - 1189' -------- Quartz Monzonite Porphyry & Alaskite
1189' - 1223' -------- Quartz Monzonite Porphyry
1223' - 1227' -------- Andesite
1227' - 1230' -------- Quartz Monzonite Porphyry
1230' - 1267' -------- Dacite Porphyry
1267' - 1537' -------- Quartz Monzonite Porphyry
1537' (< 1 ft.) ------ Alaskite
1537' - 1549' -------- Quartz Monzonite Porphyry

CONTINENTAL OIL CO.

MINERAL EXPLORATION · METALLICS DIVN.

GEOLOGIC LOG

HOLE NO. 95S SHEET NO 1

COORDINATES _____ _____

TYPE DRILL DIAMOND BIT SIZE NX

INCLINATION _____ BEARING _____

LENGTH CORED _____ CLAIM NO. _____

CONTRACTOR SHELTON-JOY

PROJECT FLOR

LOCATION Florence

I-3-W; MP-7

COLLAR ELEVATION ≈1474

TOTAL FOOTAGE 1842

LOGGED BY RCM+RWT SURVEYOR _____

DATE STARTED _____ COMPLETED _____

SCALE _____

CORE									ALTERATION MINERALS														Oxidized ZONE				SULFIDE ZONE								ASSAYS							REMARKS
Run	Rec	Depth run bottom	Rock	LITH		Tex.	Free Int	Free Dip	Flt. Dip	COLOR	OR	BIO	QTZ	SER	CLY	CHL	EPI	CAR	GYP	ANH	MAG	Q1	Q2	Q3	Q4	LIM	HEM	CUOT	CUO2	MIN	MET Zone	Py	Cp	Cc	Bn	Mo	Q1	Q2	Q3	Q4	Total Cu	CuOx	Mo	Ag	Au	Pb	Zn	
		0																																							
		10																																							
		20																																							
		30																																							
		40																																							
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		170																																							
		180																																							
		190																																							
		200																																							
		210																																							
		220																																							
		230																																							
		240																																							
		250																																							
		260																																							

DRILLER'S LOG

HOLE NO. 955

TOTAL DEPTH 590'
SPOT CORE ——

DATE STARTED 3/12/71
DATE COMPLETED 3/16/71
DRILLER R Hayes

collar elevation estimate - 1470 JDL 6-17-71

DEPTH	ROCK TYPE	LITHOLOGY	RATE OF DRILLING	BITS USED
INTERVALS SUCH AS 0-20	ALLUVIUM (LOOSE) CONGLOMERATE (CEMENTED) BEDROCK	BOULDERS, GRAVEL SAND, CLAY	FAST, MEDIUM SLOW	
0-20	loose	sandy clay	Fast	
20-40	loose	Boulders + Gravel	slow	✓
40-180	loose	clay	med	
180-260	conglom	gravel + clay	med	
260-290	"	boulders	slow	
290-330	loose	clay + gravels	med	
330-570	congl. w/volcanics	boulders	slow to med.	✓
570-590	Bed rock	course sand	med	
		Bedrock 570'.		
		T.D. 590'		
	little limonitic + hematitic clay 560-570 - Qmp			
	abdt. Chrysocolla. Bedrock 570'.			
	No casing			

MAGMA COPPER - FLORENCE
Drill Hole Summary
MCC544, (site F5)
September 10, 1995

Type: Rotary 0' to 30', Hx Diamond 30' to 1320.5'
Started: April 22, 1995; Completed: May 21, 1995
Total depth: 1320.5'
Collar coordinates: 745,956.03N; 647,696.25E
Top of casing elevation: 1473.10 ft
Ground elevation: 1473.70 ft
Azimuth: N/A
Inclination: -90°; downhole surveys at ±100 ft. increments from 400' to 1200' depth, with an off-interval measurement at 1315'.
Drilling contractor: Christensen Boyles Co.
Logged by: J. Downey
Purpose: Ore reserve confirmation and classification on the west side of the deposit during the 1995 pre-feasibility program. Hx holes core Gila Conglomerate for hydrologic data, packer tests, and down-hole geophysical logging. MCC544 is located approximately 5 feet west and 9 feet north of Conoco hole 459s.

Geologic Summary

The Quaternary alluvium from the surface to 318' is largely unconsolidated and consists of fine to very fine grained sands, interbedded with silts and clays, with a few small beds of coarser sands and occasional boulder beds. The fine sand and silt tend to alternate as thick beds (up to 25' thick) of one sediment, with minor beds (generally less than 1 foot thick) of the other. Both types are generally weakly to moderately calcareous, though local exceptions exist and often coincide with the coarser sands. The Tertiary Gila Conglomerate interval from 318' to 369' consists of moderately to poorly consolidated conglomerate/sed. breccia. Sorting is poor, with clast size ranging from a few millimeters to half a meter, supported by a semi calcareous matrix of silt and sand. Clasts are sub-angular to sub-rounded, and are usually basalt, andesite, granodiorite, or granodiorite porphyry. Quartz monzonite clasts are rare, and most occur below 359', where, coincidentally, there is a notable drop in carbonate content. The contact with bedrock at 369' is obscure, but seems to be depositional.

Precambrian Quartz Monzonite in the hole is fairly typical for the area, usually consisting of ~35% microcline, ~25% quartz, ~25% plagioclase, ~15% biotite, which is often partially or totally altered to chlorite. Alteration of the Precambrian Quartz Monzonite is generally potassic, defined here as moderate to abundant secondary biotite/chlorite, with varying amounts of Kspar-quartz-biotite veinlets. The interstitial secondary biotite in this hole is pervasive, though only locally strong, and the kqb veinlets are often absent entirely. Clay-sericite alteration is also present throughout the hole, though it is variable in intensity, and is enhanced in the oxide zone by supergene alteration. This alteration forms clay and sericite in the plagioclase feldspar sites, often stained by copper oxides. Biotite also seems to be affected, being altered to chlorite and locally to vermiculite. Some of the clay alteration is certainly primary, as it exists in and below the transition zone from oxide to sulfide. Mineralization consists of fracture chrysocolla ± tenorite and plagioclase hosted chrysocolla in fairly equal proportions, though the intensities of each are variable and do not seem to have any predictable relation.

There is an aphanitic mafic dike from 498.5' to 517.5', which is logged as Precambrian Diabase. The material is moderately altered to clay ± talc, and is strongly brecciated. The brecciation consists of angular fragments of ~1-4 cm size with a chrysocolla ± tenorite matrix. There are a few small needle-like phenocrysts in the rock that have been altered to iron oxides. Most of the dike is moderately to weakly magnetic, and the rock feels very dense in spite of the alteration.

MAGMA COPPER - FLORENCE
Interpretation of Downhole Geophysics
MCC-544

Memo to: File
From: Liz Greene
Date: November 1995

Subject: Geophysical Log Response Notes for MCC-544: correlation of geologic core logs with borehole geophysical logs.

GENERAL

Logs run: Caliper, Resistivity, SP(spontaneous potential), Gamma, Neutron, Sonic, VDL(variable density log).
Core size: 2.4 in. diameter (HX).
Casing size: 4 in.
Total depth: 1320.5 ft.
Drilled interval: 0-30 ft. rotary, 30-1320.5 ft. core.
Cased interval: 0-380 ft.
Logged depth: caliper 8-1300 ft., gamma and neutron 135-1320 ft., SP and resistivity 380-1320 ft., sonic and VDL 378-1312 ft.

Abbreviations:
Quaternary Alluvium - Qa
Tertiary Gila Conglomerate - Tgc
Precambrian Quartz Monzonite - Yqm
Precambrian Diabase - Ydb
Tertiary Granodiorite Porphyry - Tgdp

SUMMARY

Bedrock boundary:
Gradual increase on gamma log at Tgc/Yqm boundary. Significant increase at bedrock boundary on neutron log.

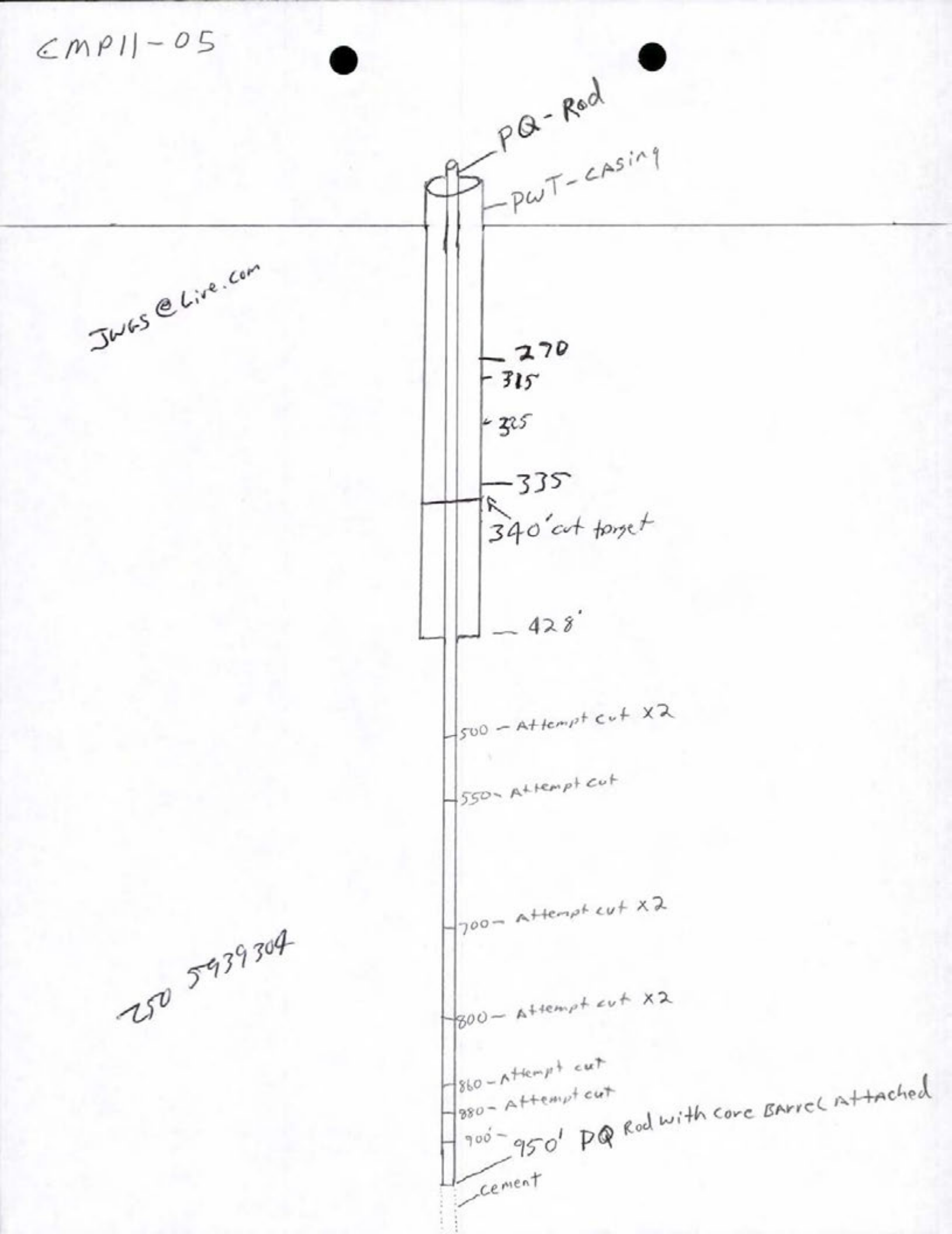
Fracture intensity:
Resistivity, gamma, neutron and sonic logs correlate to fracture intensity. In general as fracture intensity increases, resistivity decreases, gamma increases, neutron decreases and sonic velocity decreases (traveltime increases). There is a good example on the resistivity log in this well. A fault zone located at 1075-1120 ft. has two lows with a high of competent rock in between. This same zone is seen on the neutron, sonic and VDL logs with the expected responses.

Rock type response:
Quaternary Alluvium - low gamma, neutron.
Tertiary Gila Conglomerate - low gamma; neutron higher than Qal and lower than Yqm.
Precambrian Diabase - low resistivity, neutron.
Tertiary Granodiorite Porphyry - low gamma.
Tertiary Andesite - low gamma and neutron.
Biotite alteration - low resistivity and neutron, high gamma.

Oxide/sulfide boundary:
Resistivity - low in transition zone, very slight increase at top of sulfide zone 1300 ft., but below background.
Neutron - spike (high) at top of sulfides/bottom of transition zone - 1300 ft.

Abandoned Core Holes

CMP11-05



JWGS@Live.com

250 5939304

CLIENT: FLORENCE COPPER PROJ | Mon. Tue. (Wed) Thur. Fri. Sat. Sun. | DATE: 9 / 14 /2011

JOB NAME: FLORENCE COPPER | RIG#: 180

JOB LOCATION: FLORENCE, AZ | NATIONAL JOB#: 401-030

National EXPLORATION · WELLS · PUMPS

DAILY ROTARY DRILL REPORT

Shift	Hole No.	Pre-Collar or Exploration	Angle	Bit Size & Type	FOOTAGE SUMMARY Drilling From	Drilling To	Reaming From	Reaming To	Total Footage Drilled	Total Footage Reamed	Total Casing in Hole Size	Total Casing in Hole Footage
Day	CMPH-05	PC Expl.										
		PC Expl.										
Night	CMPH-05	PC Expl.						PULL	50' PWT		FROM	
		PC Expl.							BLAST.			

Hourly Distribution	From	To	Total
NEWP Safety Meeting/INSP	6:00 AM	6:15 AM	1/4
Drilling - Tri-Cone / Hammer			
Move Rig, RIG DOWN	11:30 AM	1:30 PM	(2)
Casing Advance/Symmetrix			
Drill & Install Surface Casing			
Condition Hole, Lost Circulation			
Reaming/Back Reaming			
Casing - Placing/Pulling PWT	10:00 AM	10:30 AM	(1/2)
Hole Abandonment	8:30 AM	10:00 AM	(1 1/2)
Client Delays-Blast, Weather etc.			
Backhoe Work DEMOBILIZE	1:30 PM	3:00 PM	1 1/2
Surveying, Inclination Test			
~~Booster MOBILIZATION~~			
BLAST (STANDBY)	6:15 AM	8:30 AM	(2 1/4)
HOLE ABANDEMENT	10:30 AM	11:30 AM	(1)
WORK AT SHOP	3:00 PM	6:00 PM	3
Maintenance			
Client Safety Meeting			
TOTAL HOURS	12hrs		
Lunch/Dinner			
Travel			
Any Injuries Reported Today	YES	(NO)	
PRE-SHIFT INSPECTION COMPLETED BY:	RG.		

Description	Size	Product Name	Day (circle if chargeable)	Night (circle if chargeable)
Gel	50# Bag	SUPPLIED BY CLIENT		
Polymer	5 Gal			
Foam	Bucket			
Cement	94# Bag		62 BAGS	
Abandonite	50# Bag			
Hole Plug	50# Bag			
Calcium Chloride	50# Bag			
LCM(Explain)				
Wear Sleeve- Bladder Sub				
Bladder for Sub				
Diesel / Cost / Gas	Supplied by:	National / Client / Gal		
		National / Client / Gal		
Water Haul	Miles	Loads		
Rental Equipment				
Casing Lost or Left in Hole	Size	Feet	Hole#	
Lost Tooling				

Bits	Serial Number	Size	Type (circle)	Depth In
			Hammer Carbide Steel Deephole	
			Hammer Carbide Steel Deephole	
			Hammer Carbide Steel Deephole	
Casing Shoes				

Shift	DRILLERS	Hours	PD	DRILLING ASSISTANTS	Hours	PD	DRILLING ASSISTANTS	Hours	PD
	RITO GOMEZ	12	95	BRIAN REDFERN	12	Ø	WILLIAM KIRK	12	95
Hours	From: 6:00 AM To: 6:00 PM	RG		From: 6:00 AM To: 6:00 PM	BR		From: 6:00 AM To: 6:00 PM		
Extra	DAN MACY	12	95	DUSTIN STRINGER	12	95	ANDY RICHMOND	12	95
Hours	From: 6:00 AM To: 6:00 PM	DM		From: 6:00 AM To: 6:00 PM	DS		From: 6:00 AM To: 6:00 PM	AR	

Remarks: (Note any Pre-Shift inspection problems below) | Rig Days Off - From: / /2011 - To: / /2011

BLAST 290' ± 330' (PUREFRATE)

HOLE ABANDEMENT - RUN IN TRIM PIPE CEMENT TO 150' TRIP TRIM PIPE OUT.

BLAST AT 50' POLL 50

PULL PWT AT 50' BREAK 5' SECTIONS.

HOLE ABANDONMENT - RUN IN TRIM PIPE 150' CEMENT TO SURFACE. TRIP OUT.

RIG DOWN, LOAD UP DRILLING MISC. WASH DOWN EQUIPMENT.

DEMOBILIZATION - 1 1/2

WORK AT SHOP Gilbert, AZ YARD.

NEWP Supervisor: | Client Signature:

Office Admin: | E-FAX 800-878-4749 | Invoiced:

CLIENT: Curis Resources

Mon. (Tue.) Wed. Thur. Fri. Sat. Sun.

DATE: 9 / 13 /2011

JOB NAME: Florence Abandonment

RIG#: 180

JOB LOCATION: Florence Az

NATIONAL JOB#: 401.030

National
EXPLORATION • WELLS • PUMPS
DAILY ROTARY DRILL REPORT

Shift	Hole No.	Pre-Collar or Exploration	Angle	Bit Size & Type	FOOTAGE SUMMARY Drilling From	Drilling To	Reaming From	Reaming To	Total Footage Drilled	Total Footage Reamed	Total Casing in Hole Size	Total Casing in Hole Footage
(Day)	Cmp11-05	PC Expl.										
		PC Expl.										
Night		PC Expl.										
		PC Expl.										

Hourly Distribution	From	To	Total
NEWP Safety Meeting			
Drilling - Tri-Cone / Hammer			
Move Rig			
Casing Advance/Symmetrix			
Drill & Install Surface Casing			
Condition Hole, Lost Circulation			
Reaming/Back Reaming			
Casing - Placing/Pulling			
Hole Abandonment			
Client Delays-Blast, Weather etc.			
Backhoe Work			
Surveying, Inclination Test			
Booster		NOT CHARGEABLE	
Stand by (client)			12
(Maintenance)	6:00	12:00	6
Client Safety Meeting			
TOTAL HOURS		12	
Lunch/Dinner			
Travel			
Any Injuries Reported Today	YES	(NO)	
PRE-SHIFT INSPECTION COMPLETED BY:	D. Macy		

Description	Size	Product Name	Day (circle if chargeable)	Night (circle if chargeable)
Gel	50# Bag			
Polymer	5 Gal			
Foam	Bucket			
Cement	94# Bag			
Abandonite	50# Bag			
Hole Plug	50# Bag			
Calcium Chloride	50# Bag			
LCM(Explain)				
Wear Sleeve- Bladder Sub				
Bladder for Sub				
Diesel Cost	Supplied by:	National Client	Gal	
Gas Cost	Supplied by:	National Client	Gal	
Water Haul	Miles		Loads	
Rental Equipment				
Casing Lost or Left in Hole	Size	Feet	Hole#	
Lost Tooling				

Bits	Serial Number	Size	Type (circle)	Depth In
			Hammer Carbide Steel Deephole	
			Hammer Carbide Steel Deephole	
			Hammer Carbide Steel Deephole	
Casing Shoes				

Shift	DRILLERS	Hours	PD	DRILLING ASSISTANTS	Hours	PD	DRILLING ASSISTANTS	Hours	PD
Days	Dan Macy	12	95	Andy Richmond	12	95	Dustin Stringer	12	95
Hours	From: 6:00am To: 6:00pm	DM Initials Verify Hrs & Breaks		From: 6:00am To: 6:00pm	AR Initials Verify Hrs & Breaks		From: 6:00am To: 6:00pm	DS Initials Verify Hrs & Breaks	
Extra									
Hours	From: To:	Initials Verify Hrs & Breaks		From: To:	Initials Verify Hrs & Breaks		From: To:	Initials Verify Hrs & Breaks	

Remarks: (Note any Pre-Shift inspection problems below)

Rig Days Off - From: / /2011 - To: / /2011

6:00 - 12:00 Dan took F-250 to dealer, had slip tanks fuel pump fixed and truck serviced. Returned to sight to help Neil and RTO till 6:00 pm.

Andy Richmond and Dustin Stringer were on site helping Neil and RTO all day.

Stand by for ~~Newmans~~ NORMAN Wireline. 2 crews working together. 12hrs total chargable standby.

CHARGEABLE HOURS ON RIG'S LOG FOR TODAY

NEWP Supervisor: [signature]

Client Signature: [signature]

Office Admin:

E-FAX 800-878-4749

Invoiced:

CLIENT: FLORENCE COPPER PROJECT

JOB NAME: FLORENCE COPPER

JOB LOCATION: FLORENCE, AZ

Mon. Tue. Wed. Thur. Fri. Sat. Sun.

DATE: 9 / 13 /2011

RIG#: 180

NATIONAL JOB#: 401.030

National
EXPLORATION · WELLS · PUMPS

DAILY ROTARY DRILL REPORT

Shift	Hole No.	Pre-Collar or Exploration	Angle	Bit Size & Type	FOOTAGE SUMMARY Drilling From	Drilling To	Reaming From	Reaming To	Total Footage Drilled	Total Footage Reamed	Total Casing in Hole Size	Total Casing in Hole Footage
Day		PC Expl.										
		PC Expl.										
Night		PC Expl.										
		PC Expl.										

Hourly Distribution	From	To	Total
NEWP Safety Meeting			
Drilling - Tri-Cone / Hammer			
Move Rig			
Casing Advance/Symmetrix			
Drill & Install Surface Casing			
Condition Hole, Lost Circulation			
Reaming/Back Reaming			
Casing - Placing/Pulling			
Hole Abandonment			
Client Delays-Blast, Weather etc.			
Backhoe Work			
Surveying, Inclination Test			
Booster			
STAND BY	→	→	12
Maintenance			
Client Safety Meeting			
TOTAL HOURS	12		
Lunch/Dinner			
Travel			
Any Injuries Reported Today	YES	(NO)	
PRE-SHIFT INSPECTION COMPLETED BY:	R6		

Description	Size	Product Name	Day (circle if chargeable)	Night (circle if chargeable)
Gel	50# Bag	SUPPLIED BY CLIENT.		
Polymer	5 Gal			
Foam	Bucket			
Cement	94# Bag	→	2 BAGS	
Abandonite	50# Bag			
Hole Plug	50# Bag			
Calcium Chloride	50# Bag			
LCM(Explain)				
Wear Sleeve- Bladder Sub				
Bladder for Sub				
Diesel / Cost	Supplied by:	National / Client / Gal		
Gas		National / Client / Gal		
Water Haul	Miles	Loads		
Rental Equipment				
Casing Lost or Left in Hole	Size	Feet	Hole#	
Lost Tooling				

Bits	Serial Number	Size	Type (circle)	Depth In
			Hammer Carbide Steel Deephole	
			Hammer Carbide Steel Deephole	
			Hammer Carbide Steel Deephole	
Casing Shoes				

Shift	DRILLERS	Hours	PD	DRILLING ASSISTANTS	Hours	PD	DRILLING ASSISTANTS	Hours	PD
	RITO GOMEZ	12	95	BRIAN REDFERN	12	95	WILLIAM RIALS	12	95
Hours	From: To:	R6 Initials Verify Hrs & Breaks		From: To:	RK Initials Verify Hrs & Breaks		From: To:	LW Initials Verify Hrs & Breaks	
Extra									
Hours	From: To:	Initials Verify Hrs & Breaks		From: To:	Initials Verify Hrs & Breaks		From: To:	Initials Verify Hrs & Breaks	

Remarks: (Note any Pre-Shift inspection problems below)

Rig Days Off - From: / /2011 - To: / /2011

STAND BY WAITING ON BLAST CREW. 12HRS

RUN TRIM PIPE TO 334' TRIP OUT TRIM PIPE & HOLE # CMP 11-05

BREAK HWT IN 10' SECTIONS 400' OF HWT

TOP OFF HOLE WITH CEMENT HOLE # CMP-11-06

DIG OUT 5' AROUND PUT ON HOLE # CMP11-01 CUT CASING AT 5'

BACKFILL BACK IN.

SET UP MIXER ON HOLE CMP11-05

WASH DOWN EQUIPMENT & PICK-UPS.

NEWP Supervisor: [signature]

Client Signature:

Office Admin:

E-FAX 800-878-4749

Invoiced:

CLIENT: Curis Resources	(Mon.) Tue. Wed. Thur. Fri. Sat. Sun.	DATE: 9 / 12 /2011
JOB NAME: Florence Abandonment 9.00	RIG#: 180	
JOB LOCATION: Florence Az	NATIONAL JOB#: 401.030	

National
EXPLORATION · WELLS · PUMPS
DAILY ROTARY DRILL REPORT

Shift	Hole No.	Pre-Collar or Exploration	Angle	Bit Size & Type	FOOTAGE SUMMARY Drilling From	Drilling To	Reaming From	Reaming To	Total Footage Drilled	Total Footage Reamed	Total Casing in Hole Size	Total Casing in Hole Footage
Day	Cmp 11-06	PC Expl.										
	Cmp 11-05	PC Expl.										
Night		PC Expl.										
		PC Expl.										

Hourly Distribution	From	To	Total	Description	Size	Product Name	Day (circle if chargeable)	Night (circle if chargeable)
NEWP Safety Meeting	5:45	6:00	.25	Gel	50# Bag			
Drilling - Tri-Cone / Hammer				Polymer	5 Gal			
Move Rig	10:00 /	11:00 /	2	Foam	Bucket			
Casing Advance/Symmetrix				Cement	94# Bag	Client Supplied		
Drill & Install Surface Casing				Abandonite	50# Bag			
Condition Hole, Lost Circulation				Hole Plug	50# Bag			
Reaming/Back Reaming				Calcium Chloride	50# Bag			
Casing - Placing/Pulling	6:00/11:30	7:00/1:00	2.5					
Hole Abandonment	1:00	2:30	1.5					
Client Delays-Blast, Weather etc.				LCM(Explain)				
Backhoe Work				Wear Sleeve- Bladder Sub				
Surveying, Inclination Test				Bladder for Sub				
Booster				Diesel / Cost	Supplied by:	National / Client / Gal		
Stand by (National)	9:00 /	10:00 /	1	Gas		National / Client / Gal		
Stand by (Client)	7:00/3:30	9:00/6:00	4.5	Water Haul	Miles	Loads		
Set up (grout)	11:00	11:30	.5	Rental Equipment				
Maintenance				Casing Lost or Left in Hole	Size	Feet	Hole#	
Client Safety Meeting				Lost Tooling				
TOTAL HOURS		12.25						
Lunch/Dinner								
Travel								
Any Injuries Reported Today	YES	NO						
PRE-SHIFT INSPECTION COMPLETED BY:	D. Macy			Casing Shoes				

Bits	Serial Number	Size	Type (circle)	Depth In
			Hammer Carbide Steel Deephole	
			Hammer Carbide Steel Deephole	
			Hammer Carbide Steel Deephole	

Shift	DRILLERS	Hours	PD	DRILLING ASSISTANTS	Hours	PD	DRILLING ASSISTANTS	Hours	PD
Day 1	Dan Macy	12.25	95	Andy Richmond	12.25	95	Dustin Stringer	12.25	95
Hours	From: 5:45am To: 6:00pm	Initials Verify Hrs & Breaks		From: 5:45am To: 6:00pm	Initials Verify Hrs & Breaks		From: 5:45am To: 6:00pm	Initials Verify Hrs & Breaks	
Extra									
Hours	From: To:	Initials Verify Hrs & Breaks		From: To:	Initials Verify Hrs & Breaks		From: To:	Initials Verify Hrs & Breaks	

Remarks: (Note any Pre-Shift inspection problems below) Rig Days Off - From: / /2011 - To: / /2011

5:45-6:00 safety meeting / pre-op. 6:00-7:00 Cmp 11-5 pulled on PWT with air on. No progress. 7:00-9:00 Stand by for Clients decision. 9:00-10:00 stand by for decision from Nationals office. 10:00-11:00 move back to Cmp 11-6. 11:00-11:30 Set up to pump grout. 11:30-2:30 pulled PWT out of Cmp 11-6 and Abandoned hole with grout(335'). 2:30-3:30 moved back to Cmp 11-5. 3:30-6:00 Standby for ~~Newmans~~ NORMAN wireline. eta Wednesday. Cmp 11-06 was abandoned with 565 gals of grout cement.

NEWP Supervisor: [signature] Client Signature: [signature]

Office Admin: E-FAX 800-878-4749 Invoiced:

CLIENT: Curis Resources

Mon. Tue. Wed. Thur. Fri. Sat. (Sun.)

DATE: 9 / 11 /2011

JOB NAME: Florence Abandonment

RIG#: 180

JOB LOCATION: Florence Az

NATIONAL JOB#: 401.030

National
EXPLORATION · WELLS · PUMPS

DAILY ROTARY DRILL REPORT

Shift	Hole No.	Pre-Collar or Exploration	Angle	Bit Size & Type	FOOTAGE SUMMARY Drilling From	Drilling To	Reaming From	Reaming To	Total Footage Drilled	Total Footage Reamed	Total Casing in Hole Size	Total Casing in Hole Footage
Day	Cmp 11-01	PC Expl.										
	Cmp 11-06	PC Expl.										
Night	Cmp 11-05	PC Expl.										
		PC Expl.										

Hourly Distribution	From	To	Total
NEWP Safety Meeting	5:45	6:00	.25
Drilling - Tri-Cone / Hammer			
Move Rig	7:30/7:00	9:00/8:00	2
Casing Advance/Symmetrix			
Drill & Install Surface Casing			
Condition Hole, Lost Circulation			
Reaming/Back Reaming			
Casing - Placing/Pulling			
Hole Abandonment	6:00/	7:30/	1.5
Client Delays-Blast, Weather etc.			
Backhoe Work			
Surveying, Inclination Test			
Booster			
Stand by	9:30	5:00	7.5
Stand by (Shot)	5:00/8:00	7:00/10:45	4.75
~~Secure Site/Cleanup~~			
Maintenance			
Client Safety Meeting			
TOTAL HOURS		17	
Lunch/Dinner			
Travel			
Any Injuries Reported Today	YES	(NO)	
PRE-SHIFT INSPECTION COMPLETED BY:	D. Macy		

Description	Size	Product Name	Day (circle if chargeable)	Night (circle if chargeable)
Gel	50# Bag			
Polymer	5 Gal			
Foam	Bucket			
Cement	94# Bag	Client Supplied	4	
Abandonite	50# Bag			
Hole Plug	50# Bag			
Calcium Chloride	50# Bag			
LCM(Explain)				
Wear Sleeve- Bladder Sub				
Bladder for Sub				
Diesel / Gas — Cost	Supplied by:	National / Client / Gal		
		National / Client / Gal		
Water Haul	Miles	Loads		
Rental Equipment				
Casing Lost or Left in Hole	Size	Feet	Hole#	
Lost Tooling				

Bits	Serial Number	Size	Type (circle)	Depth In
			Hammer Carbide Steel Deephole	
			Hammer Carbide Steel Deephole	
			Hammer Carbide Steel Deephole	
Casing Shoes				

Shift	DRILLERS	Hours	PD	DRILLING ASSISTANTS	Hours	PD	DRILLING ASSISTANTS	Hours	PD
Days	Dan Macy	17	95	Andy ~~Steinger~~ Richmond	17	95	Dustin Stringer	17	95
Hours	From: 5:45am To: 10:45pm	DM		From: 5:45am To: 10:45pm AR			From: 5:45am To: 10:45pm		
Extra									
Hours	From: To:			From: To:			From: To:		

Remarks: (Note any Pre-Shift inspection problems below)

Rig Days Off - From: / /2011 - To: / /2011

5:45-6:00 Safety meeting/pre-op. 6:00-7:30 Topped off Cmp 11-01 with 4 bags of portland cement and 24 gals of water. 7:30-9:00 Moved equipement from Cmp 11-01 to Cmp 11-06. 9:00 to 9:30 set up to pull PVC casing out of Cmp 11-06. 9:30-5:00 Standby for blast crew. 5:00-7:00 standby for shot on Cmp 11-06, it was a success. 7:00-8:00 moved to hole # Cmp 11-5. 8:00-10:45 Stand by for shot, no progress. Secured site and cleaned up. Neil Hale was a tremendous Help today. Thanks

NEWP Supervisor: Neil Hale

Client Signature:

Office Admin:

E-FAX 800-878-4749

Invoiced:

CLIENT: Curis Resourse

Mon. Tue. Wed. Thur. (Fri.) Sat. Sun.

DATE: 9 / 9 /2011

JOB NAME: Florence Abandonments

RIG#: 180

JOB LOCATION: Florence Az

NATIONAL JOB#: 401.030

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DAILY ROTARY DRILL REPORT

Shift	Hole No.	Pre-Collar or Exploration	Angle	Bit Size & Type	FOOTAGE SUMMARY Drilling From	Drilling To	Reaming From	Reaming To	Total Footage Drilled	Total Footage Reamed	Total Casing in Hole Size	Total Casing in Hole Footage
(Day)	Emp11-05	PC Expl.									PWT	
		PC Expl.										
Night		PC Expl.										
		PC Expl.										

Hourly Distribution	From	To	Total
NEWP Safety Meeting	11:00	11:15	(.25)
Drilling - Tri-Cone / Hammer			
Move Rig			
Casing Advance/Symmetrix			
Drill & Install Surface Casing			
Condition Hole, Lost Circulation			
Reaming/Back Reaming			
Casing - Placing/Pulling	11:15	6:00	(6.75)
Hole Abandonment			
Client Delays-Blast, Weather etc.			
Backhoe Work			
Surveying, Inclination Test			
Booster			
Gilbert Yard	6:00	11:00	(5)
Maintenance			
Client Safety Meeting			
TOTAL HOURS		12	
Lunch/Dinner			
Travel			
Any Injuries Reported Today	YES	(NO)	
PRE-SHIFT INSPECTION COMPLETED BY:			

Description	Size	Product Name	Day (circle if chargeable)	Night (circle if chargeable)
Gel	50# Bag	Client Supplied	4	
Polymer	5 Gal			
Foam	Bucket			
Cement	94# Bag			
Abandonite	50# Bag			
Hole Plug	50# Bag			
Calcium Chloride	50# Bag			
LCM(Explain)				
Wear Sleeve- Bladder Sub				
Bladder for Sub				
Diesel / Cost	Supplied by:	National / Client / Gal		
Gas		National / Client / Gal		
Water Haul	Miles	Loads		
Rental Equipment				

Casing Lost or Left in Hole	Size	Feet	Hole#
Lost Tooling			

Bits	Serial Number	Size	Type (circle)	Depth In
			Hammer Carbide Steel Deephole	
			Hammer Carbide Steel Deephole	
			Hammer Carbide Steel Deephole	
Casing Shoes				

Shift	DRILLERS	Hours	PD	DRILLING ASSISTANTS	Hours	PD	DRILLING ASSISTANTS	Hours	PD
Days	Dan Macy	12	95	Andy Richmond	12	95	Dustin Stringer	12	95
Hours	From: 6:00am To: 6:00pm	DM		From: 6:00am To: 6:00pm	AR		From: 6:00am To: 6:00pm	DS	
Extra									
Hours	From: To:			From: To:			From: To:		

Remarks: (Note any Pre-Shift inspection problems below)

Rig Days Off - From: / /2011 - To: / /2011

6:00 - 11:00 Met Rossi and Neil at yard. Welded cup for downhole hammer. Traveled out to site. 11:00-11:15 Safety meeting/pre-op. 11:15-6:00 Pulled on PWT casing with no progress. Injected gel and water. Secured site at the end of the day.

NEWP Supervisor: [signature]

Client Signature: [signature]

Office Admin:

E-FAX 800-878-4749

Invoiced:

V

CLIENT: Curis Resource	Mon. Tue. Wed. Thur. Fri. Sat. Sun.	DATE: 9 / 10 /2011	National EXPLORATION • WELLS • PUMPS
JOB NAME: florence Abandonment	RIG#: 180		DAILY ROTARY DRILL REPORT
JOB LOCATION: Florence Az	NATIONAL JOB#: 401.030		

Shift	Hole No.	Pre-Collar or Exploration	Angle	Bit Size & Type	FOOTAGE SUMMARY Drilling From	Drilling To	Reaming From	Reaming To	Total Footage Drilled	Total Footage Reamed	Total Casing in Hole Size	Total Casing in Hole Footage
Day	Cmp-11-05	PC Expl.										
	Cmp-11-06	PC Expl.										
Night	Cmp-11-01	PC Expl.										
		PC Expl.										

Hourly Distribution	From	To	Total	Description	Size	Product Name	Day	Night
NEWP Safety Meeting	5:45	6:00	.25	Gel	50# Bag		circle if chargeable	circle if chargeable
Drilling - Tri-Cone / Hammer				Polymer	5 Gal			
Move Rig	6:00/10:00	7:00/11:00	2	Foam	Bucket			
Casing Advance/Symmetrix				Cement	94# Bag	Client Supplied	56	
Drill & Install Surface Casing				Abandonite	50# Bag			
Condition Hole, Lost Circulation				Hole Plug	50# Bag			
Reaming/Back Reaming				Calcium Chloride	50# Bag			
Casing - Placing/Pulling	7:00	10:00	3					
Hole Abandonment	12:30	3:00	2.5					
Client Delays-Blast, Weather etc.				LCM(Explain)				
Backhoe Work				Wear Sleeve- Bladder Sub				
Surveying, Inclination Test				Bladder for Sub				
Booster				Diesel / Cost	Supplied by:	National / Client / Gal		
Plugged pump	12:00	12:30	.5	Gas		National / Client / Gal		
Trimmy pipe in/out	11:00	11:45	[illegible]	Water Haul	Miles	Loads		
				Rental Equipment				
Maintenance	3:00	6:00	3	Casing Lost or Left in Hole	Size	Feet	Hole#	
Client Safety Meeting				Lost Tooling				
TOTAL HOURS		12.25						

				Bits	Serial Number	Size	Type (circle)	Depth In
Lunch/Dinner							Hammer Carbide Steel Deephole	
Travel							Hammer Carbide Steel Deephole	
Any Injuries Reported Today	YES	NO					Hammer Carbide Steel Deephole	
PRE-SHIFT INSPECTION COMPLETED BY:	D. Macy			Casing Shoes				

Shift	DRILLERS	Hours	PD	DRILLING ASSISTANTS	Hours	PD	DRILLING ASSISTANTS	Hours	PD
Days	Dan Macy	12.25	95	Andy Richmond	12.25	95	Dustin Stringer	12.25	95
Hours	From 5:45am To 6:00pm	Initials Verify Hrs & Breaks DM		From 5:45am To 6:00pm	Initials Verify Hrs & Breaks AR		From 5:45am To 6:00pm	Initials Verify Hrs & Breaks D.S.	
Extra									
Hours	From To	Initials Verify Hrs & Breaks		From To	Initials Verify Hrs & Breaks		From To	Initials Verify Hrs & Breaks	

Remarks: (Note any Pre-Shift inspection problems below) Rig Days Off - From: / /2011 - To: / /2011

5:45-6:00 Safety meeting/pre op. 6:00-7:00 move from Cmp 11-5 to Cmp 11-6. 7:00-10:00 pull on PWT casing with no progress. 10:00-11:00 move to Cmp 11-01. Tripped in trimmy pipe, pump was plugged with paper bag. fixed pump and grouted hole with 385gals of water and 56 bags of portland Cement, Cleaned Trimmy. 3:00-6:00 fixed pressure washer, broken bolt on hydro pump of Drill.

NEWP Supervisor: [signature] Client Signature: [signature]

Office Admin: E-FAX 800-878-4749 Invoiced:

CLIENT: Cucis Resources | Mon. Tue. Wed. (Thur.) Fri. Sat. Sun. | DATE: 9 / 8 /2011

JOB NAME: Florence Abandonment | RIG#: 180

JOB LOCATION: Florence Az | NATIONAL JOB#: 401.030

National
EXPLORATION · WELLS · PUMPS
DAILY ROTARY DRILL REPORT

Shift	Hole No.	Pre-Collar or Exploration	Angle	Bit Size & Type	FOOTAGE SUMMARY Drilling From	Drilling To	Reaming From	Reaming To	Total Footage Drilled	Total Footage Reamed	Total Casing in Hole Size	Total Casing in Hole Footage
(Day)	Cmp 11:06	PC Expl.										
		PC Expl.										
Night	Cmp 11:05	PC Expl.										
		PC Expl.										

Hourly Distribution	From	To	Total
(NEWP Safety Meeting)	5:45	6:00	(.25)
Drilling - Tri-Cone / Hammer			
(Move Rig)	8:00	9:00	(1)
Casing Advance/Symmetrix			
Drill & Install Surface Casing			
Condition Hole, Lost Circulation			
Reaming/Back Reaming			
Casing - Placing/Pulling	6:00	5:45	(9.75)
Hole Abandonment			
Client Delays-Blast, Weather etc.			
Backhoe Work			
Surveying, Inclination Test			
Booster			
Stand by (Shot)	11:00	12:00	(1)
Maintenance			
Client Safety Meeting			
TOTAL HOURS		12	
Lunch/Dinner			
Travel			
Any Injuries Reported Today	YES	(NO)	
PRE-SHIFT INSPECTION COMPLETED BY:	D. Macy		

Description	Size	Product Name	Day (circle if chargeable)	Night (circle if chargeable)
Gel	50# Bag			
Polymer	5 Gal			
Foam	Bucket			
Cement	94# Bag			
Abandonite	50# Bag			
Hole Plug	50# Bag			
Calcium Chloride	50# Bag			
LCM(Explain)				
Wear Sleeve- Bladder Sub				
Bladder for Sub				
Diesel Cost 3.89	Supplied by:	(National) Client	Gal	183
Gas		National Client	Gal	
Water Haul	Miles		Loads	
Rental Equipment				
Casing Lost or Left in Hole	Size	Feet	Hole#	
Lost Tooling				

Bits	Serial Number	Size	Type (circle)	Depth In
			Hammer Carbide Steel Deephole	
			Hammer Carbide Steel Deephole	
			Hammer Carbide Steel Deephole	
Casing Shoes				

Shift	DRILLERS	Hours	PD	DRILLING ASSISTANTS	Hours	PD	DRILLING ASSISTANTS	Hours	PD
D	Dan Macy	12	95	Andy Richmond	12	95	Dustin Stringer	12	95
Hours	From: 5:45am To: 5:45pm	DM Initials Verify Hrs & Breaks		From: 5:45am To: 5:45pm	AR Initials Verify Hrs & Breaks		From: 5:45am To: 5:45pm	DS Initials Verify Hrs & Breaks	
Extra									
Hours	From: To:	Initials Verify Hrs & Breaks		From: To:	Initials Verify Hrs & Breaks		From: To:	Initials Verify Hrs & Breaks	

Remarks: (Note any Pre-Shift inspection problems below)

Rig Days Off - From: / /2011 - To: / /2011

5:45-6:00 Safety meeting / Pre-op. 6:00-8:00 pulled on HWT Casing hole # Cmp 11:06 with no progress. 8:00-9:00 Rigged down and moved to hole # Cmp 11:05 Set up to pull HWT Casing. 9:00-11:00 Pulled HWT with no progress. 11:00-12:00 Helped wire line rig up to shoot HWT. Shot was successful, Pulled 440' HWT out of hole # Cmp 11:5 12:00-2:00. Changed over to pull PWT at 2:00. Pulled on PWT hole # Cmp 11:05 from 2:00-5:30. Secured site left rig at 5:45pm.

NEWP Supervisor: | Client Signature:

Office Admin: | E-FAX 800-878-4749 | Invoiced:

CLIENT: FLORENCE COPPER PROJECT	Mon. Tue. Wed. Thur. Fri. Sat. Sun.	DATE: 6 / 28 /2011	National EXPLORATION · WELLS · PUMPS
JOB NAME:	RIG#: 180		DAILY ROTARY DRILL REPORT
JOB LOCATION: FLORENCE, AZ	NATIONAL JOB#: 401.030		

Shift	Hole No.	Pre-Collar or Exploration	Angle	Bit Size & Type	FOOTAGE SUMMARY Drilling From	Drilling To	Reaming From	Reaming To	Total Footage Drilled	Total Footage Reamed	Total Casing in Hole Size	Total Casing in Hole Footage
Day	ALT-02	PC Expl.	90°	6¾-TRICONE	0'	308'			308'			
	CMP11-05	PC Expl.										
Night		PC Expl.										
		PC Expl.										

Hourly Distribution	From	To	Total	Description	Size	Product Name	Day	Night
NEWP Safety Meeting/INSP	5:00 AM	5:30 AM	½	Gel	50# Bag		25 (circle if changeable)	(circle if changeable)
Drilling - Tri-Cone / Hammer	8:30 AM	10:00 AM	1½	Polymer	5 Gal			
Move Rig				Foam	Bucket			
Casing Advance/Symmetrix				Cement	94# Bag			
Drill & Install Surface Casing				Abandonite	50# Bag			
Condition Hole, Lost Circulation				Hole Plug	50# Bag			
Reaming/Back Reaming				Calcium Chloride	50# Bag			
Casing - Placing/Pulling				SODA ASH			1	
Hole Abandonment				QUICK TROL LV			1	
Client Delays-Blast, Weather etc.				LCM(Explain)				
Backhoe Work				Wear Sleeve- Bladder Sub				
Surveying, Inclination Test				Bladder for Sub				
Booster				Diesel / Cost / Supplied by:	National	Client / Gal		
Fill MUD SYSTEM	5:30 AM	8:30 AM	3	Diesel / Gas / 80 gal	National	Client / Gal		
DRILLING-TRICONE	2:00 PM	8:30 PM	6½	Water Haul	Miles	Loads		
				Rental Equipment				
Maintenance Hydraulic	10:00 AM	2:00 PM	4	Casing Lost or Left in Hole	Size	Feet	Hole#	
Client Safety Meeting				Lost Tooling				
TOTAL HOURS	15½							

				Bits	Serial Number	Size	Type (circle)	Depth In
Lunch/Dinner			NEW	TRICONE	06F171955	6¾	Hammer Carbide Steel Deephole	0'
Travel							Hammer Carbide Steel Deephole	
Any Injuries Reported Today	YES	NO					Hammer Carbide Steel Deephole	
PRE-SHIFT INSPECTION COMPLETED BY:	RG			Casing Shoes				

Shift	DRILLERS	Hours	PD	DRILLING ASSISTANTS	Hours	PD	DRILLING ASSISTANTS	Hours	PD
	RITO GOMEZ	16	95	BRIAN REDFEARN	15½	95	WILLIAM RIALS	15½	95
Hours	From: 5:00 AM To: 8:30 PM	RG (Initials Verify Hrs & Breaks)		From: 5:00 To: 8:30	[illegible] (Initials Verify Hrs & Breaks)		From: 5:00 To: 8:30	WR (Initials Verify Hrs & Breaks)	
Extra									
Hours	From: To:	(Initials Verify Hrs & Breaks)		From: To:	(Initials Verify Hrs & Breaks)		From: To:	(Initials Verify Hrs & Breaks)	

Remarks: (Note any Pre-Shift inspection problems below) Rig Days Off - From: / /2011 - To: / /2011

Log, FAX (½ HR RITO GOMEZ)

FILL MUD SYSTEM WITH WATER TO START MIXING DRILLING ~~FLUIDS~~ FLUIDS

HYDRAULIC HOSE LEAKING, REPLACING HYDRAULIC HOSE

1- BOX OF RAGS, 3 SAFETY METAL COVERS, 1- LIFT PUMP.

2- SET OF STAIR FOR MUD SYSTEM, 4 HAND RAILS. 1- ¼ HOSE X 23'.

3- SET OF QUICK CONNECT MALE & FEMALE. 1- BOX DUST MASK

NEWP Supervisor: BILL EDDY & NEIL HALE Client Signature: [signature]

Office Admin: E-FAX 800-878-4749 Invoiced:

CLIENT: FLORENCE COPPER PROJ | Mon. Tue. Wed. Thur. Fri. Sat. Sun. | DATE: 6 / 27 /2011

JOB NAME: | RIG#: 180

JOB LOCATION: FLORENCE | NATIONAL JOB#: 401.030

National EXPLORATION · WELLS · PUMPS

DAILY ROTARY DRILL REPORT

Shift	Hole No.	Pre-Collar or Exploration	Angle	Bit Size & Type	FOOTAGE SUMMARY Drilling From	Drilling To	Reaming From	Reaming To	Total Footage Drilled	Total Footage Reamed	Total Casing in Hole Size	Total Casing in Hole Footage
Day	ALT-02	PC Expl.	90°									
	CMP11-05	PC Expl.										
Night		PC Expl.										
		PC Expl.										

Hourly Distribution	From	To	Total
NEWP Safety Meeting / INSP	7:00 AM	7:30 AM	1/2
Drilling - Tri-Cone / Hammer			
Move Rig	1:30 PM	8:00 PM	6 1/2
Casing Advance/Symmetrix			
Drill & Install Surface Casing			
Condition Hole, Lost Circulation			
Reaming/Back Reaming			
Casing - Placing/Pulling			
Hole Abandonment			
Client Delays-Blast, Weather etc.			
Backhoe Work			
Surveying, Inclination Test			
Booster			
MOBILIZATION	11:30 AM	1:00 PM	1 1/2
PRE-TRIP	11:00 AM	11:30 AM	1/2
POST TRIP	1:00 PM	1:30 PM	1/2
Maintenance	7:30 AM	11:00	3 1/2
Client Safety Meeting			
TOTAL HOURS	13		
Lunch/Dinner			NEW
Travel			
Any Injuries Reported Today	YES	NO	
PRE-SHIFT INSPECTION COMPLETED BY:	RG		

Description	Size	Product Name	Day	Night
Gel	50# Bag		circle if chargeable	circle if chargeable
Polymer	5 Gal			
Foam	Bucket			
Cement	94# Bag			
Abandonite	50# Bag			
Hole Plug	50# Bag			
Calcium Chloride	50# Bag			
LCM(Explain)				
Wear Sleeve- Bladder Sub				
Bladder for Sub				

Diesel	Cost 101.78	Supplied by:	(National)	Client	Gal	
Gas	Cost 4,766	Supplied by:	(National)	Client	Gal	
Water Haul		Miles			Loads	
Rental Equipment						
Casing Lost or Left in Hole		Size		Feet	Hole#	
Lost Tooling						

Bits	Serial Number	Size	Type (circle)	Depth In
~~6 3/4~~ TRICON	06F171955	6 3/4	Hammer Carbide Steel Deephole	0'
			Hammer Carbide Steel Deephole	
			Hammer Carbide Steel Deephole	
Casing Shoes				

Shift	DRILLERS	Hours	PD	DRILLING ASSISTANTS	Hours	PD	DRILLING ASSISTANTS	Hours	PD
✓	RITO GOMEZ	13 1/2	95	BRIAN REDFEARN	13	95	WILLIAM RIALS	13	95
Hours	From 7:00 AM To 8:00 PM	RG Initials Verify Hrs & Breaks		From 7:00 AM To 8:00 PM	BD Initials Verify Hrs & Breaks		From 7:00 AM To 8:00 PM	WR Initials Verify Hrs & Breaks	
Extra									
Hours	From: To:	Initials Verify Hrs & Breaks		From: To:	Initials Verify Hrs & Breaks		From: To:	Initials Verify Hrs & Breaks	

Remarks: (Note any Pre-Shift inspection problems below) | Rig Days Off - From: / /2011 - To: / /2011

Log, FAX (1/2 HR RITO 6)

MAINTENANCE AT YARD ON EQUIPMENT, NEW SCREENS ON MUD SYSTEM

GET CONNECTIONS READY ON RIG FOR LIFT PUMP.

MOBILIZATION - RIG, RIG TENDER, MUD SYSTEM

RIG UP, SET UP DRILL SITE TO DRILL MUD ROTARY. 600' OF DRILL PIPE 20' EACH.

1-4FT 3 1/2 IF PIN TO 3 1/2 IF PIN TOP HEAD SUB, 1-1FT 3 1/2 IF BOX - 2 7/8 PIN 2 7/8 DRILL PIPE 30 DRILL RODS

1-6" 3 1/2 IF PIN - 2 7/8 BOX, 1-1FT 3 1/2 IF BOX - 3 1/2 REG BOX, 1-6 3/4 TRICONE BIT. 5-FENCING STAKE, 1- ROLL OF ~~ORANGE FENCE~~ ORANGE FENCE

1-4'10" 3 1/2 IF PIN TO 3 1/2 IF PIN ROLLER REAMER, 1-5'6" 3 1/2 IF PIN - 3 1/4 IF PIN ROLLER REAMER, 1- FORK LANDING PLATE

NEWP Supervisor: BILL EDDY & NEIL HALE | Client Signature:

Office Admin: | E-FAX 800-878-4749 | Invoiced:

CLIENT: Florence Copper Project	Mon. Tue. Wed. Thur. Fri. Sat. Sun.	DATE: 4 / 28 /2011	**National** EXPLORATION • WELLS • PUMPS
JOB NAME:	RIG#: 180		DAILY ROTARY DRILL REPORT
JOB LOCATION: Florence	NATIONAL JOB#: 401.030		

Shift	Hole No.	Pre-Collar or Exploration	Angle	Bit Size & Type	FOOTAGE SUMMARY Drilling From	Drilling To	Reaming From	Reaming To	Total Footage Drilled	Total Footage Reamed	Total Casing in Hole Size	Total Casing in Hole Footage
Day	AIT02	PC Expl.			308	428.5			120.5			
	CMP11-05	PC Expl.										
Night		PC Expl.										
		PC Expl.										

Hourly Distribution	From	To	Total	Description	Size	Product Name	Day (circle if chargeable)	Night (circle if chargeable)
NEWP Safety Meeting				Gel	50# Bag	22 bags of gel		
Drilling Tri-Cone / Hammer				Polymer	5 Gal	between 4-28-11 &		
Move Rig				Foam	Bucket	4-29-11		
Casing Advance/Symmetrix				Cement	94# Bag			
Drill & Install Surface Casing			51.039	Abandonite	50# Bag			
Condition Hole, Lost Circulation	12:30	1:30	1	Hole Plug	50# Bag			
Reaming/Back Reaming				Calcium Chloride	50# Bag			
Casing - Placing/Pulling					18.503			
Hole Abandonment								
Client Delays-Blast, Weather etc.				LCM(Explain)		199.00		
Backhoe Work	8:00	11:00	3	Wear Sleeve- Bladder Sub	69.542	72.14		
Surveying, Inclination Test		Moving casing and loading for move		Bladder for Sub		71.14		
Booster				Diesel Cost 178.98	Supplied by:	National Client Gal	45.904	2 fuel runs
				Gas 271.14		National Client Gal	69.542	
				Water Haul	Miles	Chargeable Loads		
				Rental Equipment				
Maintenance				Casing Lost or Left in Hole	Size	Feet	Hole#	
Client Safety Meeting				Lost Tooling				
TOTAL HOURS				Bits	Serial Number	Size	Type (circle)	Depth In
Lunch/Dinner						6 3/4	Hammer Carbide Steel Deephole	308
Travel							Hammer Carbide Steel Deephole	
Any Injuries Reported Today	YES	NO					Hammer Carbide Steel Deephole	
PRE-SHIFT INSPECTION COMPLETED BY:	Rob Wineman			Casing Shoes				

Shift	DRILLERS	Hours	PD	DRILLING ASSISTANTS	Hours	PD	DRILLING ASSISTANTS	Hours	PD
	Robert Wineman	20	95.00	Dustin Stringer	16.0	95.00	Andy Richmond	16.0	95.00
Hours	From: 4:00pm To: 12:00pm		Initials Verify Hrs & Breaks	From: 8:00pm To: 12:00pm		Initials Verify Hrs & Breaks	From: 8:00pm To: 12:00pm		Initials Verify Hrs & Breaks
Extra	4-28-11 - 4-29-11								
Hours	From: To:		Initials Verify Hrs & Breaks	From: To:		Initials Verify Hrs & Breaks	From: To:		Initials Verify Hrs & Breaks

Remarks: (Note any Pre-Shift inspection problems below) Rig Days Off - From: / /2011 - To: / /2011

Came in @ 8:00pm with crew, went over Rig & mud tank til 8:45, checked equipment out started drilling @ 8:45pm T.D. @ 4:24 1230 pump mud for 1 hour to condition hole, finish pumping mud @ 1:30pm, start tripping out Rods, Rods out of hole @ 3:30pm, set up to trip in casing, finish casing @ 7:30pm, Rig down, move to next site set up drill Rig, mix mud dig discharge ditch, load bit, & Reamer into mast.

Casing, bit # 1A10275 (2A0) supplied by client

NEWP Supervisor:	Client Signature:	
Office Admin:	E-FAX 800-878-4749	Invoiced:

ENTERED

SEP -- 2011

NORMAN WIRELINE SERVICES, INC.

1301 JAMES ROAD
BAKERSFIELD, CA 93308-9753
(661) 399-5697

National EWP, Inc

CHARGE TO: NATIONAL EXPLORATION DATE: 9-8-11

ADDRESS: P.O. NO.:

CITY: VENDOR NO.:

LOCATION: FLORENCE ARIZONA WELL NO.:

RIG: SECTION:

OPERATOR: JIM NORMAN FOREMAN:

START TIME: STOP TIME: TOTAL

1200 MI AT 2.50 PER MI	3000.00
SERVICE CHARGE 1 TON 900 PER DAY	900.00
SUBSISTANCE 100.00 PER DAY PER MAN 3 DAYS 2 MEN	600.00
OPERATOR & HELPER 1 DAY	1200.00
CMP 11-05	
SHOOT OFF 4 in at 7440 FT	1750.00
CMP 11-01	
10 FT 2 1/8 PERFORATORS SHOT AT 280-275	1950.00
10 FT 2 1/8 PERFORATORS SHOT AT 275-265	1950.00
PO# 4942	
11/06	
APPROVED BY: SCOTT 11 TOTAL	11,350.00

PLEASE PAY FROM THIS INVOICE. STATEMENT SENT ON REQUEST ONLY.
TERMS: NET 30 DAYS. FINANCE CHARGE 1.5% PER MONTH
THANK YOU FOR YOUR BUSINESS.

INVOICE NUMBER: 35334

rShelton@nationalewp.com (48[illegible]658-3500 Rhonda

ENTERED
JUN -- 2011

NORMAN WIRELINE SERVICES, INC.

1301 JAMES ROAD
BAKERSFIELD, CA 93308-9753
(661) 399-5697

CHARGE TO: NATIONAL EWP
ADDRESS: 1200 W. San Pedro St
CITY: Gilbert AZ 85233
LOCATION: FLORENCE ARIZONA
RIG: NATIONAL 150
OPERATOR: Jim Norman
START TIME: 7 AM STOP TIME: 5 PM TOTAL

DATE: 6-11-2011
P.O. NO.:
VENDOR NO.: 3048
WELL NO.: CMP 1101
SECTION:
FOREMAN:

MILLAGE 1200 MI AT 2.50 Per MI	3000.00
SERVICE CHARGE 1 TON 900.00 Per DAY	900.00
SUBSISTANCE 3 DAYS 100.00 Per DAY	300.00
RUN 4in SHOOT OFF TO 175 FT GUAGE RUN	N/C
RUN 3in [illegible] TO 320 FT GUAGE	600.00
RUN 3in [illegible] TO 320 FT FT SHOOTOFF	1750.00
RUN 4in GUAGE TO 125 FT	N/C
RUN 3in GUAGE TO 125 FT	600.—
RUN 1¼ WTS TO 125 FT ATTEMPT TO DISLODGE BRIDGE	600.—
STAND BY FOR RIG OPERATION	
RUN 4in GUAGE TO 300 FT	N/C
RUN 4in SHOOT OFF TO 300FT	1750.00
RUN 4in GUAGE TO 280 FT	N/C
RUN 4in SHOOT OFF TO 280FT	1750.00
8 [illegible] AT 150.00 Per HR	1200.00

APPROVED BY: _____ TOTAL 12,450.00

PLEASE PAY FROM THIS INVOICE. STATEMENT SENT ON REQUEST ONLY.
TERMS: NET 30 DAYS. FINANCE CHARGE 1.5% PER MONTH
THANK YOU FOR YOUR BUSINESS.

INVOICE NUMBER: 34827

ENTERED

SEP -- 2011

NORMAN WIRELINE SERVICES, INC.

1301 JAMES ROAD
BAKERSFIELD, CA 93308-9753
(661) 399-5697

CHARGE TO: NATIONAL EWP, Inc DATE: 9-14-11

ADDRESS: P.O. NO.:

CITY: VENDOR NO.:

LOCATION: FLORENCE COPPER WELL NO.: CMP 11-05

RIG: SECTION:

OPERATOR: Jim FOREMAN:

START TIME: STOP TIME: TOTAL

1200 mi AT 2.50 Per mi	3000.00
WIRELINE UNIT 900.00 Per DAY	900.00
Sub 100.00 Per DAY PER MAN 2 MEN 3 DAYS	600.00
1 DAY 8 hr 150.00 Per hr	1200.00
PERFORATE 4 holes Per FT 330-320	1950.00
PERFORATE 4 holes Per FT 320-310	1950.00
PERFORATE 4 holes Per FT 310-300	1950.00
PERFORATE 4 holes Per FT 300-290	1950.00
Shoot off 5 in CASING AT 50 FT	1750.00
PO# 4142	

APPROVED BY: TOTAL 15,250.00

PLEASE PAY FROM THIS INVOICE. STATEMENT SENT ON REQUEST ONLY.
TERMS: NET 30 DAYS. FINANCE CHARGE 1.5% PER MONTH
THANK YOU FOR YOUR BUSINESS.

INVOICE NUMBER: 35360

srk consulting

SRK Tucson
3275 West Ina Road, Suite 240
Tucson, AZ 85741

T: 520 544 3688
F: 520 544 9853

tucson@srk.com
www.srk.com

Memo

To:	Mel Lawson	**Date:**	October 5, 2011
Company:	Curis Resources Ltd.	**From:**	Daniel Russin
Copy to:	Bob Cluff	**Project #:**	204400.05
Subject:	Drill Hole Summary – CMP11-05, PQ Diameter Core		

Type: 0-427' 6.25" Rotary, cased to 427'
427-1200' PQ, 5' split barrel
Started: June 29, 2011 (diamond)
Completed: July 7, 2011
Total Depth: 1200 feet
Collar Coordinates: N: 746,095.87; E: 847,729.96 (UTM NAD 83 ft)
Ground Elevation: 1475 ft amsl (approx.)
Drilling Contractor: National (Rotary), Cabo Drilling Corp. (PQ Core)

1 Executive Summary

CMP11-05 was drilled to obtain large samples of core for metallurgical testing. Core was logged at the drill site and placed into plastic tubes for storage and transport to the analytical lab. Rotary drilling at this site was completed by National several weeks before the core drilling began. At the conclusion of PQ drilling, the rods got stuck in the hole and were not removed.

2 Downhole Survey

Downhole surveys were measured by Cabo and digitally recorded at approximately 100-foot increments below the top of bedrock. A subtraction of 11 degrees was made to the recorded azimuth to account for magnetic declination; note the declination calculators and charts range from a deviation of 10.3 to 11 degrees for this area. The measurements were recorded at the rig by Curis and SRK personnel.

Depth (ft)	Dip	Azimuth	Corrected Azimuth
456	-88.7	212.1	201.1
503.5	-88.8	176.8	165.8
600	-88.7	177.9	166.9
700	-88.9	189.3	178.3
800	No survey	No survey	No survey
900	-88.8	192.9	181.9
1000	-88.2	191.1	190.1
1100	-88.3	216.3	205.3
1200	-88.4	216	205

3 Geologic Summary

A summary of footages for rock type contacts is listed below. Contact angles are provided with respect to the core axis (TCA) and an indication if the contact is an intrusive or fault contact where known. It was not possible to assess fault or contact angle in core that was heavily broken or where core loss occurred.

Depth (ft)	Rock Type	Contact
0-427	Rotary – no recovery	
427-440	Yqm	Yqm → Mixed, Indeterminate contact
440-446	Mixed Yqm and Tgdp	Mixed → Tgdp, Indeterminate contact
446-457.5	Tgdp	Tgdp → Yqm, Indeterminate contact
457.5-670	Yqm	Yqm → Mixed, Fault contact?
670-675	Mixed Yqm and Tgdp	Mixed → Yqm, Fault contact?
675-759	Yqm	Yqm → Diabase, Fault contact, 60°
759-774.3	Ydb	Ydb → Yqm, Planar contact (fault?), 35°
774.3-858.5	Yqm	Yqm → Tgdp, Rubblized contact, appears ~50°
858.5-881.5	Tgdp	Tgdp → Yqm, Intrusive contact, 45°
881.5-1007.3	Yqm	Yqm → Mixed, Irregular contact
1007.3-1012	Mixed Yqm and Tgdp	Mixed → Tgdp, Irregular contact
1012-1017	Tgdp	Tgdp → Mixed, Irregular contact
1017-1026	Mixed	Mixed → Yqm, Irregular contact
1026-1057	Yqm	Yqm → Ta, Rubblized contact
1057-1065.2	Ta	Ta → Yqm, Irregular contact, ~25°
1065.2-1074.1	Yqm	Yqm → Mixed, Rubblized contact
1074.1-1078	Mixed Yqm, Tgdp, and Ta	Mixed → Yqm, Rubblized contact
1078-1200	Yqm	

3.1 Rock Types

Chip samples were not collected during mud rotary drilling of the basin-fill formations and bedrock to 427 feet. The depth to the top of bedrock is unknown, since rotary drilling and casing penetrated the contact.

Precambrian Quartz Monzonite (Yqm) constitutes 87.3% of the drill hole. This rock type consists of equigranular to coarsely porphyritic monzonite with an original texture of 25-35% quartz, 30-35% potassium feldspar, 20-25% plagioclase, and 5-8% biotite. The rock is broadly porphyritic in nature with large K-feldspar in a matrix of smaller quartz, plagioclase, and biotite. Most of the original texture has been overprinted by clay alteration and oxidation minerals (iron and manganese oxides), and has been disrupted by abundant fault breccia and gouge. Large, euhedral crystals of potassium feldspar exist at 0.5-3 cm across. Quartz crystals are 0.5-2 cm, plagioclase crystals are 2-10 mm, and biotite crystals are 1-10 mm in size.

Tertiary Granodiorite Porphyry (Tgdp) constitutes 3.1% of the drill hole. The rock contains 1-5 mm feldspar phenocrysts, mostly plagioclase, in an olive gray aphanitic matrix. Biotite phenocrysts compose ~10% of the rock. The geology logging did not attempt to segregate the granodiorite intercepts into Types 1, 2, and 3 as defined by Conoco.

Mixed Precambrian Quartz Monzonite (Yqm) and Tertiary Granodiorite Porphyry (Tgdp) constitutes 5.9% of the hole. SRK attempted to split out as many individual rock types as possible but in many cases the intervals were too small and were logged as a mixed zone. Often, the mineralogical composition was a true mix, meaning there were 2-5 mm plagioclase phenocrysts, indicative of the Tertiary Granodiorite Porphyry, intermixed with 1-2.5 cm salmon-colored K-feldspar crystals, found in Precambrian Quartz Monzonite. The overall mineral assemblages are consistent with those zones of non-mixing described above.

Tertiary Andesite (Ta) constitutes 1.3% of the hole. This rock type is a dark olive grey with an aphanitic texture. It contains some areas of intense copper oxide clay. Chrysocolla and tenorite are also present in some zones.

Precambrian Diabase (Ydb), constitutes 1.3% of the hole. This rock type is dark gray to black with strong alteration and mineralization.

3.2 Structure

Numerous fault structures, breccia zones, and fault planes were noted as described below. The breccia varies from crumbly, broken rock with no discernible breccia fragments or fault contact angles to well-milled breccia fragments in fine-grained gritty iron-stained matrix. Fault gouge consisting of clay and fine rock particles with or without slickensides was noted in many intervals typically less than one foot in thickness.

Depth (ft)	Fault Zones
464-475	Shattered rock, not milled breccia
477.5-479	Fault zone, 60°
485-498.5	Fault zone, gouge in various orientations
530-532	Fault zone, 65°
559.5-660	Fault zone, gouge in various orientations; **Rattlesnake Fault**
787-805	Fault zone, no orientation visible; **Thrasher Fault**
840-843	Fault zone, no orientation visible
855-880	Fault zone, gouge in various orientations
885.5-912	Fault zone, gouge in various orientations
938-950	Fault zone, 25° at top contact
973-995	Fault zone, ~35°
1010-1095	Fault zone, gouge in various orientations; **Sidewinder Fault**

3.3 Alteration

The rock is dominated by potassic alteration of low to moderate intensity. Quartz veins and associated secondary K-feldspar are common; secondary biotite is locally present. Pervasive argillic alteration (mostly supergene) obscures much of the hypogene detail. Sericitic and propylitic alteration are locally observed. Sericitic alteration was likely more abundant than was evident, however it was strongly overprinted by supergene iron oxides and clay and was thus difficult to observe.

3.4 Metzone

Metallurgical zones (Metzone) codes were recorded for each sample interval. The codes for the Oxide Zone designate the interval in terms of whether the interval is dominated by copper oxides/silicates (code 1), mixed copper and iron oxides (code 2) , or shows high concentration of iron oxides with little or no copper oxides (code 3). The Transition Zone (code 4) is designated by the presence of one or more overlapping Oxide and Sulfide minerals including hematite/goethite, pyrite, chrysocolla, cuprite, native copper, chalcocite, and/or chalcopyrite.

Depth (ft)	Metallurgical Zone
427-1174	Intermingled zones of mixed copper and iron oxides and high-iron zones
1174-1200	4 (Transition zone; coexisting oxide and sulfide minerals)

3.5 Mineralization

There are pervasive copper oxides on fractures and in clay sites throughout the oxide zone. Copper oxides are consistently present from 427-1200 feet, with the exception of 860-880 feet. The most common copper oxide is a copper-bearing clay that replaces plagioclase; other copper oxides present are chrysocolla and tenorite/wad. No copper oxides were present in the sulfide zone. Iron oxides (hematite, goethite, and jarosite) occur at mostly low abundances (1-5%) throughout the hole, both in the oxide and sulfide zones; however, abundances are lowest in the sulfide zone. Minor chalcocite (<<1%) is present in the lowest portions of the hole.

4 Geotechnical Summary

Average total core recovery (TCR) was over 95% for the hole. Average rock quality (RQD) was generally well below 50%.

MetZone	Oxide	Transition

Depth	427-1174	1174-1200
Total Feet	747	26
Average TCR (%)	90.2	97.3
Average RQD (%)	38.4	21.9

4.1 Fracture Intensity

Core was collected in a split-tube barrel in order to ensure the highest integrity of intact conditions. Mechanical fractures caused by handling or placing the materials in the core box were discounted during the fracture intensity review.

The fracture intensity is low to moderate for the majority of the hole, with abundances of 0-15 fractures per foot. Areas near fault zones are substantially more fractured.

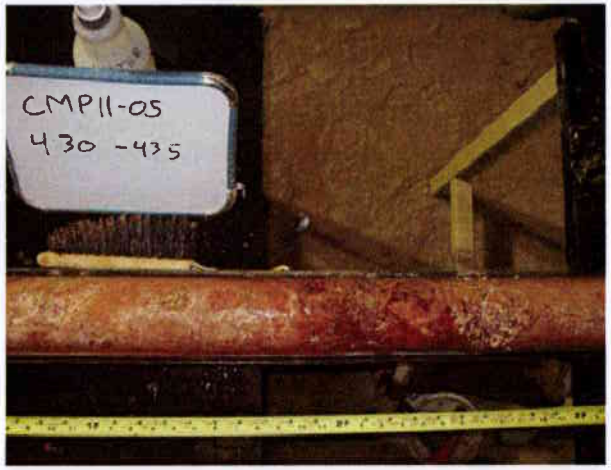
4.2 Core Recovery

Statistics on the core recovery in CMP11-05 are presented below. Recovery averaged 95.2% with the lowest recovery in Yqm (83.6%) and the highest recovery in andesite (100%). RQDs range from 50% to 77.3%; these numbers are almost certainly skewed high. No handling of the core was permitted, so determining RQD is less precise.

Rock Type	Drill Run Interval (ft)	TCR %	RQD %
Yqm	675	90.8	35.8
Tgdp	25	97.2	51
Mixed Yqm & Tgdp	47	97.7	34.4
Ta	10	100	0
Ydb	15	66.7	41
CMP11-01 Totals	375	92.2	52.1

5 Sampling and Analysis

No assay samples were taken from CMP11-05, since the material was to be used in metallurgical tests. As of September 2011, metallurgical testing on this material is ongoing. No HQ companion hole was drilled at this site, since the drillers were unable to remove the PQ rods from the hole.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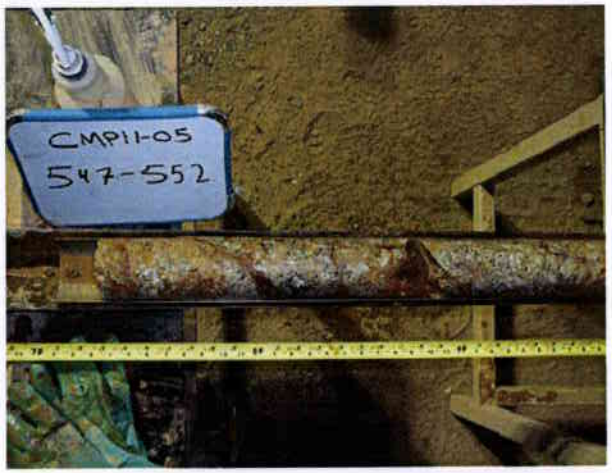
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HDICURIS

Florence Project

GEOTECHNICAL LOG

Intact Rock Strength	
Code	Definition
R0	Extremely weak
R1	Very weak
R2	Weak
R3	Medium Strong
R4	Strong
R5	Very Strong
R6	Extremely Strong

Joint Condition	
Code	Definition
1	Planar-slickensided
2	Planar-smooth
3	Planar-rough
4	Undulating-slickensided
5	Undulating-smooth
6	Undulating-rough
7	Stepped-slickensided
8	Stepped-smooth
9	Stepped-rough

Hole-ID CMP11-05

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Logged by Majalca/York

Signed

Box No.	Drill Run (ft)			Core Recovery		RQD		Intact Rock Strength				Joint
	From	To	Interval	TCR (ft)	TCR %	RQD (ft)	RQD %	Strong	Weak	Weak (ft)	Weak %	Condition
	427	430	3	2.1	70.0	2.1	100.0	R3	R2	1.2	57.1	3
	430	435	5	4.9	98.0	4.9	100.0	R3	R1	4.4	89.8	9
	435	440	5	4.8	96.0	4.8	100.0	R2	-	-	-	6
	440	446	6	5	83.3	5	100.0	R3	R1	3.4	68.0	6
	446	451	5	4.4	88.0	4.4	100.0	R3	R0	0.3	6.8	3
	451	456.5	5.5	0.8	14.5	0.8	100.0	R4	R2	0.4	50.0	-
	456.5	457.5	1	0.4	40.0	0	0.0	R3	-	-	-	-
	457.5	462.5	5	2.7	54.0	2.5	92.6	R3	R0	0.7	25.9	6
	462.5	468	5.5	4.9	89.1	0	0.0	R1	-	-	-	9
	468	470	2	2	100.0	0	0.0	R1	-	-	-	9
	470	473.5	3.5	3.3	94.3	0	0.0	R1	R0	0.8	24.2	9
	473.5	475	1.5	1.2	80.0	0	0.0	R1	-	-	-	9
	475	480	5	4.8	96.0	0	0.0	R3	R0	1.2	25.0	3
	480	485	5	4.1	82.0	0	0.0	R1	-	-	-	9
	485	490	5	5	100.0	0	0.0	R3	R0	2	40.0	9
	490	495	5	5	100.0	0	0.0	R1	R0	2.4	48.0	9
	495	498.5	3.5	3.3	94.3	0	0.0	R1	R0	1.1	33.3	9
	498.5	503.5	5	4.8	96.0	2.1	43.8	R3	R1	2.2	45.8	3
	503.5	506.5	3	3	100.0	0	0.0	R3	R0	0.3	10.0	3
	506.5	510	3.5	3.5	100.0	1.3	37.1	R3	R0	0.8	22.9	6
	510	515	5	5.1	102.0	0.9	17.6	R3	R0	0.3	5.9	6
	515	518	3	2.2	73.3	0	0.0	R3	R0	0.9	40.9	9
	518	522	4	3.5	87.5	0	0.0	R3	-	-	-	6
	522	527	5	4.9	98.0	1.9	38.8	R3	R1	0.7	14.3	3
	527	530	3	3.3	110.0	2.3	69.7	R3	R0	0.6	18.2	3
	530	532	2	1.9	95.0	0	0.0	R1	R0	0.2	10.5	3
	532	537	5	4.5	90.0	4.2	93.3	R4	R0	0.2	4.4	3
	537	542	5	4.6	92.0	4.6	100.0	R4	R2	0.5	10.9	3
	542	547	5	4.8	96.0	4.8	100.0	R3	R2	2	41.7	6
	547	552	5	4.6	92.0	4.4	95.7	R4	R3	2.4	52.2	6
	552	557	5	4.9	98.0	4.9	100.0	R3	-	-	-	6
	557	562	5	3.3	66.0	2.3	69.7	R3	R1	0.5	15.2	6
	562	562.5	0.5	0.5	100.0	0	0.0	R0	-	-	-	-

HDICURIS

Florence Project

GEOTECHNICAL LOG

Intact Rock Strength	
Code	Definition
R0	Extremely weak
R1	Very weak
R2	Weak
R3	Medium Strong
R4	Strong
R5	Very Strong
R6	Extremely Strong

Joint Condition	
Code	Definition
1	Planar-slickensided
2	Planar-smooth
3	Planar-rough
4	Undulating-slickensided
5	Undulating-smooth
6	Undulating-rough
7	Stepped-slickensided
8	Stepped-smooth
9	Stepped-rough

Hole-ID CMP11-05

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Signed

Box	Drill Run (ft)			Core Recovery		RQD		Intact Rock Strength				Joint
No.	From	To	Interval	TCR (ft)	TCR %	RQD (ft)	RQD %	Strong	Weak	Weak (ft)	Weak %	Condition
	562.5	568	5.5	5	90.9	4.6	92.0	R4	R1	0.2	4.0	3
	568	573	5	4.7	94.0	4.4	93.6	R3	R0	0.3	6.4	3
	573	578	5	5	100.0	0	0.0	R1	R0	1.1	22.0	9
	578	580.5	2.5	2	80.0	0	0.0	R3	R0	0.4	20.0	3
	580.5	583	2.5	2.4	96.0	1.6	66.7	R4	R3	0.2	8.3	3
	583	588	5	4.9	98.0	2.8	57.1	R3	R1	1.9	38.8	3
	588	590	2	2	100.0	0	0.0	R3	R1	1	50.0	3
	590	592.5	2.5	1	40.0	0	0.0	R1	-	-	-	9
	592.5	597.5	5	4.8	96.0	1.1	22.9	R3	R0	0.6	12.5	6
	597.5	602.5	5	5	100.0	0	0.0	R1	R0	0.9	18.0	3
	602.5	607.5	5	5	100.0	3	60.0	R3	R2	1.3	26.0	3
	607.5	610	2.5	2.6	104.0	0	0.0	R3	R1	1	38.5	3
	610	615	5	5	100.0	0	0.0	R3	R2	4	80.0	3
	615	620	5	5	100.0	0	0.0	R2	-	-	-	9
	620	625	5	5	100.0	0	0.0	R3	R1	2	40.0	3
	625	630	5	5	100.0	0.8	16.0	R3	R0	0.2	4.0	6
	630	635	5	5	100.0	0.4	8.0	R4	R1	1	20.0	3
	635	640	5	5	100.0	0	0.0	R3	R0	0.4	8.0	6
	640	645	5	4.7	94.0	0.8	17.0	R3	R0	0.5	10.6	3
	645	650	5	4.9	98.0	1.8	36.7	R3	R0	0.9	18.4	3
	650	655	5	4.4	88.0	0	0.0	R2	R0	2.5	56.8	3
	655	660	5	5.1	102.0	1	19.6	R3	R1	0.6	11.8	3
	660	665	5	4.2	84.0	0.8	19.0	R3	-	-	-	3
	665	670	5	5	100.0	3.8	76.0	R4	R0	0.1	2.0	9
	670	675	5	4.8	96.0	4.8	100.0	R3	-	-	-	9
	675	680	5	4.7	94.0	2.7	57.4	R4	R0	0.2	4.3	9
	680	685	5	4.6	92.0	4.4	95.7	R3	-	-	-	9
	685	690	5	4.7	94.0	4.2	89.4	R4	-	-	-	6
	690	695	5	4.4	88.0	3.4	77.3	R3	-	-	-	9
	695	700	5	4.6	92.0	3.9	84.8	R3	R1	0.5	10.9	9
	700	705	5	4.6	92.0	4.4	95.7	R6	R3	2.9	63.0	3
	705	710	5	4.3	86.0	4	93.0	R6	-	-	-	1
	710	715	5	4.9	98.0	4.4	89.8	R5	R3	0.3	6.1	3

HDICURIS

Florence Project

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Hole-ID CMP11-05

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Signed

Box No.	Drill Run (ft)			Core Recovery		RQD		Intact Rock Strength				Joint
	From	To	Interval	TCR (ft)	TCR %	RQD (ft)	RQD %	Strong	Weak	Weak (ft)	Weak %	Condition
	715	720	5	4.7	94.0	0.9	19.1	R4	R2	1.8	38.3	3
	720	725	5	4.7	94.0	3.8	80.9	R4	R3	1.6	34.0	3
	725	730	5	5.3	106.0	4.2	79.2	R4	-	-	-	3
	730	735	5	4.9	98.0	2.1	42.9	R3	R2	1	20.4	3
	735	740	5	4.4	88.0	3.9	88.6	R4	R2	0.4	9.1	3
	740	744	4	3.7	92.5	2.2	59.5	R3	R1	0.4	10.8	6
	744	749	5	4.9	98.0	1.3	26.5	R3	R1	0.9	18.4	3
	749	754	5	5	100.0	2	40.0	R3	R2	0.8	16.0	6
	754	759	5	4.8	96.0	0	0.0	R3	R1	2.7	56.3	6
	759	764	5	4.8	96.0	0.4	8.3	R3	R1	1.2	25.0	6
	764	769	5	0.4	8.0	0	0.0	R0	-	-	-	9
	769	774	5	4.8	96.0	4	83.3	R6	R0	0.5	10.4	3
	774	779	5	4.9	98.0	4.8	98.0	R4	R3	3.2	65.3	6
	779	784	5	4.9	98.0	4.2	85.7	R5	R0	0.1	2.0	9
	784	789	5	4.8	96.0	2.8	58.3	R4	R1	2.5	52.1	6
	789	794.5	5.5	4.9	89.1	2.8	57.1	R3	R2	3.6	73.5	6
	794.5	800	5.5	0	0.0	0	-	-	-	-	-	-
	800	805	5	4.5	90.0	3.3	73.3	R4	R1	0.7	15.6	3
	805	810	5	4.8	96.0	3.5	72.9	R5	R3	0.2	4.2	3
	810	815	5	4.9	98.0	4.7	95.9	R4	-	-	-	9
	815	820	5	4.2	84.0	3.4	81.0	R5	R1	0.2	4.8	3
	820	825	5	4.7	94.0	4.7	100.0	R4	-	-	-	9
	825	830	5	4.7	94.0	3.3	70.2	R4	R0	0.3	6.4	6
	830	835	5	4.6	92.0	2.4	52.2	R3	-	-	-	3
	835	840	5	4	80.0	0.4	10.0	R3	R1	0.9	22.5	3
	840	843	3	2.4	80.0	0	0.0	R0	-	-	-	9
	843	848	5	4.6	92.0	0.4	8.7	R3	R1	0.4	8.7	3
	848	850	2	2	100.0	0	0.0	R3	R1	0.3	15.0	6
	850	855	5	4.6	92.0	0.4	8.7	R3	R0	0.2	4.3	6
	855	860	5	4.8	96.0	0	0.0	R2	R0	0.5	10.4	9
	860	865	5	5.2	104.0	0	0.0	R2	-	-	-	3
	865	870	5	5.1	102.0	0	0.0	R3	R2	3.4	66.7	6
	870	875	5	4.6	92.0	0	0.0	R3	R0	0.4	8.7	6

HDI CURIS

Florence Project

GEOTECHNICAL LOG

Intact Rock Strength	
Code	Definition
R0	Extremely weak
R1	Very weak
R2	Weak
R3	Medium Strong
R4	Strong
R5	Very Strong
R6	Extremely Strong

Joint Condition	
Code	Definition
1	Planar-slickensided
2	Planar-smooth
3	Planar-rough
4	Undulating-slickensided
5	Undulating-smooth
6	Undulating-rough
7	Stepped-slickensided
8	Stepped-smooth
9	Stepped-rough

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Signed

Box No.	Drill Run (ft)			Core Recovery		RQD		Intact Rock Strength				Joint
	From	To	Interval	TCR (ft)	TCR %	RQD (ft)	RQD %	Strong	Weak	Weak (ft)	Weak %	Condition
	875	880	5	4.6	92.0	0	0.0	R3	R1	1.8	39.1	3
	880	885	5	5	100.0	1.9	38.0	R4	R1	0.4	8.0	3
	885	890	5	4.6	92.0	2	43.5	R3	R0	0.1	2.2	6
	890	895	5	5.1	102.0	0	0.0	R1	R0	3.4	66.7	9
	895	900	5	4.4	88.0	0	0.0	R1	R0	0.5	11.4	9
	900	905	5	5	100.0	0	0.0	R3	R0	1.4	28.0	9
	905	910	5	4.2	84.0	2	47.6	R3	R2	1.1	26.2	6
	910	915	5	2.1	42.0	2	95.2	R5	-	-	-	6
	915	916.5	1.5	1	66.7	0	0.0	R2	R0	0.1	10.0	-
	916.5	920	3.5	3.2	91.4	2.1	65.6	R4	R1	0.8	25.0	6
	920	925	5	4.6	92.0	1.8	39.1	R3	R1	0.5	10.9	3
	925	930	5	4.9	98.0	0.9	18.4	R3	R1	0.9	18.4	9
	930	935	5	5.1	102.0	0.4	7.8	R3	R0	0.4	7.8	6
	935	940	5	4.7	94.0	0.8	17.0	R3	R0	1.8	38.3	9
	940	945	5	4.5	90.0	0	0.0	R2	-	-	-	9
	945	950	5	4.7	94.0	0	0.0	R3	-	-	-	9
	950	955	5	5	100.0	1	20.0	R2	R0	0.2	4.0	9
	955	960	5	4.7	94.0	0	0.0	R2	R0	1.4	29.8	9
	960	965	5	4.9	98.0	0	0.0	R2	R0	0.2	4.1	9
	965	970	5	4.8	96.0	2.5	52.1	R4	R0	0.1	2.1	5
	970	975	5	5	100.0	2.2	44.0	R3	R1	0.9	18.0	6
	975	980	5	3.7	74.0	3	81.1	R3	-	-	-	3
	980	985	5	4.7	94.0	1.8	38.3	R3	R1	0.7	14.9	9
	985	990	5	5.1	102.0	2	39.2	R3	R1	0.6	11.8	3
	990	995	5	5.1	102.0	0	0.0	R2	-	-	-	6
	995	1000	5	4.7	94.0	4.5	95.7	R4	-	-	-	6
	1000	1005	5	4.5	90.0	3.6	80.0	R4	R1	0.7	15.6	6
	1005	1010	5	4.5	90.0	4.5	100.0	R4	R2	1.3	28.9	6
	1010	1012	2	0.5	25.0	0.5	100.0	R1	R0	0.2	40.0	-
	1012	1017	5	4.8	96.0	4.4	91.7	R3	R1	3.9	81.3	6
	1017	1020.5	3.5	3.4	97.1	2.7	79.4	R2	R1	3.2	94.1	6
	1020.5	1026	5.5	4.5	81.8	2.9	64.4	R3	-	-	-	6
	1026	1030	4	3.8	95.0	3.6	94.7	R3	R1	1.1	28.9	1

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Florence Project

GEOTECHNICAL LOG

Intact Rock Strength	
Code	Definition
R0	Extremely weak
R1	Very weak
R2	Weak
R3	Medium Strong
R4	Strong
R5	Very Strong
R6	Extremely Strong

Joint Condition	
Code	Definition
1	Planar-slickensided
2	Planar-smooth
3	Planar-rough
4	Undulating-slickensided
5	Undulating-smooth
6	Undulating-rough
7	Stepped-slickensided
8	Stepped-smooth
9	Stepped-rough

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Box	Drill Run (ft)			Core Recovery		RQD		Intact Rock Strength				Joint
No.	From	To	Interval	TCR (ft)	TCR %	RQD (ft)	RQD %	Strong	Weak	Weak (ft)	Weak %	Condition
	1030	1035	5	5.1	102.0	0	0.0	R2	R1	1	19.6	6
	1035	1040	5	5	100.0	1.3	26.0	R3	R0	0.5	10.0	3
	1040	1045	5	5.1	102.0	0	0.0	R2	-	-	-	6
	1045	1050	5	5	100.0	0	0.0	R2	-	-	-	6
	1050	1055	5	5	100.0	0	0.0	R2	-	-	-	9
	1055	1060	5	4.8	96.0	0	0.0	R2	R0	0.2	4.2	8
	1060	1065	5	5.2	104.0	0	0.0	R2	R0	0.2	3.8	8
	1065	1070	5	4.9	98.0	0	0.0	R2	R0	0.5	10.2	5
	1070	1075	5	5.1	102.0	0	0.0	R1	-	-	-	1
	1075	1080	5	4.9	98.0	0	0.0	R2	-	-	-	8
	1080	1085	5	5	100.0	0	0.0	R2	R0	0.4	8.0	6
	1085	1090	5	4.9	98.0	0	0.0	R2	R0	0.7	14.3	8
	1090	1095	5	0.6	12.0	0	0.0	R0	-	-	-	9
	1095	1100	5	5	100.0	0.4	8.0	R3	R0	0.2	4.0	5
	1100	1103.5	3.5	2.9	82.9	2.6	89.7	R4	-	-	-	3
	1103.5	1108.5	5	4.7	94.0	4.1	87.2	R4	-	-	-	6
	1108.5	1113.5	5	4.8	96.0	4.1	85.4	R3	R1	1.5	31.3	6
	1113.5	1119	5.5	4.9	89.1	3.7	75.5	R4	-	-	-	6
	1119	1124	5	3.1	62.0	0.9	29.0	R5	-	-	-	6
	1124	1129	5	4.9	98.0	3.5	71.4	R4	R0	0.3	6.1	3
	1129	1134	5	4.8	96.0	4.3	89.6	R4	-	-	-	2
	1134	1139	5	4.7	94.0	3.8	80.9	R4	R3	0.9	19.1	3
	1139	1144	5	4.6	92.0	4.3	93.5	R4	R1	2	43.5	3
	1144	1149	5	4.9	98.0	4.1	83.7	R4	R0	0.3	6.1	1
	1149	1154	5	4.9	98.0	4.1	83.7	R4	-	-	-	6
	1154	1159	5	0	0.0	0	-	-	-	-	-	-
	1159	1160	1	0	0.0	0	-	-	-	-	-	-
	1160	1164	4	3.4	85.0	0.6	17.6	R3	R0	0.3	8.8	3
	1164	1169	5	5	100.0	2.3	46.0	R3	R3		0.0	3
	1169	1174	5	5	100.0	2.7	54.0	R3	R1	1.3	26.0	3
	1174	1179	5	4.9	98.0	2	40.8	R4	R2	0.2	4.1	3
	1179	1183	4	3.1	77.5	0	0.0	R2	R0	0.2	6.5	3
	1183	1188	5	5.1	102.0	2.7	52.9	R3	-	-	-	3

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Florence Project

GEOTECHNICAL LOG

Intact Rock Strength	
Code	Definition
R0	Extremely weak
R1	Very weak
R2	Weak
R3	Medium Strong
R4	Strong
R5	Very Strong
R6	Extremely Strong

Joint Condition	
Code	Definition
1	Planar-slickensided
2	Planar-smooth
3	Planar-rough
4	Undulating-slickensided
5	Undulating-smooth
6	Undulating-rough
7	Stepped-slickensided
8	Stepped-smooth
9	Stepped-rough

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Box No.	Drill Run (ft)			Core Recovery		RQD		Intact Rock Strength				Joint
	From	To	Interval	TCR (ft)	TCR %	RQD (ft)	RQD %	Strong	Weak	Weak (ft)	Weak %	Condition
	1188	1193	5	4.6	92.0	0	0.0	R3	R0	0.4	8.7	3
	1193	1197.5	4.5	5.1	113.3	0	0.0	R2	R2	-	-	6
	1197.5	1200	2.5	2.5	100.0	1	40.0	R2	-	-	-	4

HDI CURIS **Fl[illegible]ence Project** GEO[illegible]CHNICAL LOG

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Signed

Intact Rock Strength	
Code	Definition
R0	Extremely weak
R1	Very weak
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Joint Condition	
Code	Definition
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3	Planar-rough
4	Undulating-slickensided
5	Undulating-smooth
6	Undulating-rough
7	Stepped-slickensided
8	Stepped-smooth
9	Stepped-rough

Box No.	Drill Run (ft)			Core Recovery		RQD		Intact Rock Strength				Joint
	From	To	Interval	TCR (ft)	TCR %	RQD (ft)	RQD %	Strong	Weak	Weak (ft)	Weak %	Condition
	427	430		2.1		2.1		R3	R2	1.2		3
	430	435		4.9		4.9		R3	R1	4.4		9
	435	440		4.8		4.8		R2	–	–		6
	440	446		5		5		R3	R1	3.4		6
	446	451		4.4		4.4		R3	R0	0.3		3
	451	456.5		0.8		0.8		R4	R2	0.4		N/A
	456.5	457.5		0.4		0		R3	–	–		–
	457.5	462.5		2.7		2.5		R3	R0	0.7		6
	462.5	468		4.9		0		R1	–	–		9
	468	470		2.0		0		R1	–	–		9
	470	473.5		3.3		0		R1	R0	0.8		9
	473.5	475		1.2		0		R1	–	–		9
	475	480		4.8		0		R3	R0	1.2		3
	480	485		4.1		0		R1	–	–		9
	485	490		5.0		0		R3	R0	2.0		9
	490	495		5.0		0		R1	R0	2.4		9
	495	498.5		3.3		0		R1	R0	1.1		9
	498.5	503.5		4.8		2.1		R3	R1	2.2		3
	503.5	506.5		3.0		0		R3	R0	0.3		3
	506.5	510		3.5		1.3		R3	R0	0.8		6
	510	515		5.1		0.9		R3	R0	0.3		6
	515	518		2.2		0		R3	R0	0.9		9
	518	522		3.5		0		R3	–	–		6
	522	527		4.9		1.9		R3	R1	0.7		3
	527	530		3.3		2.3		R3	R0	0.6		3
	530	532		1.9		0		R4	R0	0.2		3
	532	537		4.5		4.2		R4	R0	0.2		3
	537	542		4.6		4.6		R4	R2	0.5		3
	542	547		4.9		4.9		R3	R2	2.0		6
	547	552		4.6		4.4		R4	R3	2.4		6

HDICURIS **Fence Project** GEOTECHNICAL LOG

Intact Rock Strength	
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R0	Extremely weak
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R6	Extremely Strong

Joint Condition	
Code	Definition
1	Planar-slickensided
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6	Undulating-rough
7	Stepped-slickensided
8	Stepped-smooth
9	Stepped-rough

Hole-ID CMP11-05

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Signed

Box No.	Drill Run (ft)			Core Recovery		RQD		Intact Rock Strength				Joint
	From	To	Interval	TCR (ft)	TCR %	RQD (ft)	RQD %	Strong	Weak	Weak (ft)	Weak %	Condition
	552	557		4.9		4.9		R3	—	—		6
	557	562		3.3		2.3		R3	R1	0.5		6
	562	562.5		0.5		0		R0				—
	562.5	568		5		4.6		R4	R1	0.2		3
	568	573		4.7		4.4		R3	R0	0.3		3
	573	578		5.0		0		R1	R0	1.1		9
	578	580.5		2.0		0		R3	R0	0.4		3
	580.5	583		2.4		1.6		R4	R3	0.2		3
	583	588		4.9		2.8		R3	R1	1.9		3
	588	590		2.0		0		R3	R1	1.0		3
	590	592.5		1.0		0		R1	—	—		9
	592.5	597.5		4.8		1.1		R3	R0	0.6		6
	597.5	602.5		5.0		0		R1	R0	0.9		3
	602.5	607.5		5.0		3.0		R3	R2	1.3		3
	607.5	610		2.6		0		R3	R1	1.0		3
	610	615		5.0		0		R3	R2	4.0		3
	615	620		5.0		0		R2	—	—		9
	620	625		5.0		0		R3	R1	2.0		3
	625	630		5.0		0.8		R3	R0	0.2		6
	630	635		5.0		0.4		R4	R1	1.0		3
	635	640		5.0		0		R2	R0	0.4		6
	640	645		4.7		0.8		R3	R0	0.5		3
	645	650		4.9		1.8		R3	R0	0.9		3
	650	655		4.4		0		R2	R0	2.5		3
	655	660		5.1		1.0		R3	R1	0.6		3
	660	665		4.2		0.8		R3	—	—		3
	665	670		5		3.8		R4	R0	0.1		9
	670	675		4.9		4.8		R3	—	—		9
	675	680		4.7		2.7		R4	R0	0.2		9
	680	685		4.6		4.4		R3	—	—		9
	685	690		4.7		4.2		R4	—	—		6
	690	695		4.4		3.4		R3	—	—		9
	695	700		4.6		3.9		R3	R1	0.5		9

HDI CURIS **Fluence Project** **GEOTECHNICAL LOG**

Hole-ID CMP11-05

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Signed

Intact Rock Strength	
Code	Definition
R0	Extremely weak
R1	Very weak
R2	Weak
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R5	Very Strong
R6	Extremely Strong

Joint Condition	
Code	Definition
1	Planar-slickensided
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3	Planar-rough
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6	Undulating-rough
7	Stepped-slickensided
8	Stepped-smooth
9	Stepped-rough

Box No.	Drill Run (ft)			Core Recovery		RQD		Intact Rock Strength				Joint
	From	To	Interval	TCR (ft)	TCR %	RQD (ft)	RQD %	Strong	Weak	Weak (ft)	Weak %	Condition
	700	705		4.6		4.4		R6	R3	2.9		3
	705	710		4.3		4.0		R6	-	-		1
	710	715		4.9		4.4		R5	R3	0.3		3
	715	720		4.7		0.9		R4	R2	1.8		3
	720	725		4.7		3.8		R4	R3	1.6		3
	725	730		5.3		4.2		R4	-	-		3
	730	735		4.9		2.1		R3	R2	1.0		3
	735	740		4.4		3.9		R4	R2	0.4		3
	740	744		3.7		2.2		R3	R1	0.4		6
	744	749		4.9		1.3		R3	R1	0.9		3
	749	754		5.0		2.0		R3	R2	0.8		6
	754	759		4.8		0		R3	R1	2.7		6
	759	764		4.8		0.4		R3	R1	1.2		6
	764	769		0.4		0		R0	-	-		9
	769	774		4.8		4.0		R6	R0	0.5		3
	774	779		4.9		4.4		R4	R3	3.2		6
	779	784		4.9		4.2		R5	R0	0.1		9
	784	789		4.8		2.4		R4	R1	2.5		6
	789	794.5		4.9		2.8		R3	R2	3.6		6
	794.5	800		0		0		—	—	—		—
	800	805		4.5		3.3		R4	R1	0.7		3
	805	810		4.8		3.5		R5	R3	0.2		3
	810	815		4.9		4.7		R4	-	-		9
	815	820		4.2		3.4		R5	R1	0.2		3
	820	825		4.7		4.7		R4	-	-		9
	825	830		4.7		3.3		R4	R0	0.3		6
	830	835		4.6		2.4		R3	-	-		3
	835	840		4.0		0.4		R3	R1	0.9		3
	840	843		2.4		0		R0	-	-		9
	843	848		4.6		0.4		R3	R1	0.4		3
	848	850		2.0		0		R3	R1	0.3		6
	850	855		4.6		0.4		R3	R0	0.2		6
	855	860		4.8		0		R2	R0	0.5		9

HDI CURIS

Fluence Project

GEOTECHNICAL LOG

Hole-ID CMP11-05

Page 4 of ____

Logged by ____

Signed ____

Intact Rock Strength	
Code	Definition
R0	Extremely weak
R1	Very weak
R2	Weak
R3	Medium Strong
R4	Strong
R5	Very Strong
R6	Extremely Strong

Joint Condition	
Code	Definition
1	Planar-slickensided
2	Planar-smooth
3	Planar-rough
4	Undulating-slickensided
5	Undulating-smooth
6	Undulating-rough
7	Stepped-slickensided
8	Stepped-smooth
9	Stepped-rough

Box No.	Drill Run (ft)			Core Recovery		RQD		Intact Rock Strength				Joint
	From	To	Interval	TCR (ft)	TCR %	RQD (ft)	RQD %	Strong	Weak	Weak (ft)	Weak %	Condition
	860	865		5.2		0		R2	-	-		3
	865	870		5.1		0		R3	R2	3.4		6
	870	875		4.6		0		R3	R0	0.4		6
	875	880		4.6		0		R3	R1	1.8		3
	880	885		5.0		1.9		R4	R1	0.4		3
	885	890		4.6		2.0		R3	R0	0.1		6
	890	895		5.1		0		R1	R0	3.4		9
	895	900		4.4		0		R1	R0	0.5		9
	900	905		5.0		0		R3	R0	1.4		9
	905	910		4.2		2		R3	R2	1.1		6
	910	915		2.1		2		R5	-	-		6
	915	916.5		1		0		R2	R0	0.1		—
	916.5	920		3.2		2.1		R4	R1	0.8		6
	920	925		4.6		1.8		R3	R1	0.5		3
	925	930		4.9		0.9		R3	R1	0.9		9
	930	935		5.1		0.4		R3	R0	0.4		6
	935	940		4.7		0.8		R3	R0	1.8		9
	940	945		4.5		0		R2	-	-		9
	945	950		4.7		0		R2	-	-		9
	950	955		5.0		1.0		R3	R0	0.2		9
	955	960		4.7		0		R2	R0	1.4		9
	960	965		4.9		0		R2	R0	0.2		9
	965	970		4.8		2.5		R4	R0	0.1		5
	970	975		5.0		2.2		R3	R1	0.9		6
	975	980		3.7		3.0		R3	-	-		3
	980	985		4.7		1.8		R3	R1	0.7		9
	985	990		5.1		2.0		R3	R1	0.6		3
	990	995		5.1		0		R2	-	-		6
	995	1000		4.7		4.5		R4	-	-		6
	1000	1005		4.5		3.6		R4	R1	0.7		6
	1005	1010		4.5		4.5		R4	R2	1.3		6
	1010	1012		0.5		0.5		R1	R0	0.2		—

HDICURIS **Fence Project** GEOTECHNICAL LOG

Intact Rock Strength	
Code	Definition
R0	Extremely weak
R1	Very weak
R2	Weak
R3	Medium Strong
R4	Strong
R5	Very Strong
R6	Extremely Strong

Joint Condition	
Code	Definition
1	Planar-slickensided
2	Planar-smooth
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4	Undulating-slickensided
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6	Undulating-rough
7	Stepped-slickensided
8	Stepped-smooth
9	Stepped-rough

Hole-ID _____

Page _____ of _____

Logged by _____

Signed _____

Box No.	Drill Run (ft)			Core Recovery		RQD		Intact Rock Strength				Joint
	From	To	Interval	TCR (ft)	TCR %	RQD (ft)	RQD %	Strong	Weak	Weak (ft)	Weak %	Condition
	1012	1017		4.8		4.4		R3	R1	3.9		6
	1017	1020.5		3.4		2.7		R2	R1	3.2		6
	1020.5	1026		4.5		2.9		R3	—	—		6
	1026	1030		3.8		3.6		R3	R1	1.1		1
	1030	1035		5.1		0		R2	R1	1.0		6
	1035	1040		5.0		1.3		R3	R0	0.5		3
	1040	1045		5.1		0		R2	—	—		6
	1045	1050		5.0		0		R2	—	—		6
	1050	1055		5.0		0		R2	—	—		9
	1055	1060		4.8		0		R2	R0	0.2		8
	1060	1065		5.2		0		R2	R0	0.2		8
	1065	1070		4.9		0		R2	R0	0.5		5
	1070	1075		5.1		0		R1	—	—		1
	1075	1080		4.9		0		R2	—	—		8
	1080	1085		5.0		0		R2	R0	0.4		6
	1085	1090		4.9		0		R2	R0	0.7		8
	1090	1095		0.6		0		R0	—	—		9
	1095	1100		5.0		0.4		R3	R0	0.2		5
	1100	1103.5		2.9		2.6		R4	—	—		3
	1103.5	1108.5		4.7		4.1		R4	—	—		6
	1108.5	1113.5		4.8		4.1		R3	R1	1.5		6
	1113.5	1119		4.9		3.7		R4	—	—		6
	1119	1124		3.1		0.9		R5	—	—		6
	1124	1129		4.9		3.5		R4	R0	0.3		3
	1129	1134		4.8		4.3		R4	—	—		2
	1134	1139		4.7		3.8		R4	R3	0.9		3
	1139	1144		4.6		4.3		R4	R1	2.0		3
	1144	1149		4.9		4.1		R4	R0	0.3		1
	1149	1154		4.9		4.1		R4	—	—		6
	1154	1159		0		0		—	—	—		—
	1159	1160		0		0		—	—	—		—
	1160	1164		3.4		0.6		R3	R0	0.3		3
	1164	1169		5		2.3		R3	R3	—		3

HDICURIS **Fl●ence Project** GEO●CHNICAL LOG

Intact Rock Strength	
Code	Definition
R0	Extremely weak
R1	Very weak
R2	Weak
R3	Medium Strong
R4	Strong
R5	Very Strong
R6	Extremely Strong

Joint Condition	
Code	Definition
1	Planar-slickensided
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6	Undulating-rough
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8	Stepped-smooth
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Hole-ID _____

Page _____ of _____

Logged by _____

Signed _____

Box No.	Drill Run (ft)			Core Recovery		RQD		Intact Rock Strength				Joint
	From	To	Interval	TCR (ft)	TCR %	RQD (ft)	RQD %	Strong	Weak	Weak (ft)	Weak %	Condition
	1169	1174	5	5		2.7		R3	R1	1.3		3
	1174	1179	5	4.9		2.0		R4	R2	0.2		3
	1179	1183	4	3.1		0		R2	R0	0.2		3
	1183	1188	5	5.1		2.7		R3	–	–		3
	1188	1193	5	4.6		0		R3	R0	0.4		3
	1193	1197.5	4.5	5.1		0		R2	R2	–		6
	1197.5	1200	2.5	2.5		1.0		R2	–	–		4
		TD										

HDI CURIS

COLLAR COORDINATES: ELEVATION: 1975' Approx. CONTRACTOR: HD
N: 7460095.87* E: 847729.96* BEARING: 201.1° @ 456' CORE SIZE: HQ
STARTED: June 29, 2011 INCLINATION: -88.7° LOGGED BY: M. Siebach/D. Russin
COMPLETED: July 7, 2011 TOTAL DEPTH: 1200' SCALE: 1" = 10'

LOCATION: FLORENCE
HOLE ID: CMPW-05
SHEET 1 OF 12

COMMENTS: Survey @456': az = 212.1° incl. = -88.7°
corrected az = 201.1°

AVG. CORE REC'Y/HOLE: 90.4%

FOOTAGE	ALTERATION: ORTHO	BIO	QTZ	SER	CLAY	CHL	EPID	CARB	GYPS	ANHY	MAG	OXIDE: LIM JAR	HEM	GOE	CU GRAPHIC	CUOX 1	CUOX 2	SULFIDE: MET ZONE	PY	CPY	CC	BN	MO	FRACT INT	FRACT DIP	FAULT DIP	FRACTURING	GEOLOGY
	-1	-1	-1	-1	-1						N		S	A	M	P	L	E					-1	-1	-1	-1	-1	
427																												
430			1		2	2							3	1		3	-	3							2	5	-		
					2	1							2	1		3	-	3							1	5	-		
440			1		3								3	1		3	-	3							5	4	4		
			1		4								3			3	3	3							3	3	-		
450			2		4								2	1		-	3	3							2	-	-		
			2		3								1			-	3	3							2	-	-		
							N	O			R	E	C	O	V	E	R	Y							?	?		?	?
			2		2								1	1		-	-	3							4	-	-		
460			1		3	1							1			-	2	2							2	-	-		
							N	O			R	E	C	O	V	E	R	Y							?	?		?	?
			1		4	1							1	3	2	0	2	2							4	4	2		
470					5	1							2	2	2	0	1	3							4	-	-		
			1		3	1							1	2	2	0	1	3							4	4	-		
			1		4	1							2	0	2	0	2	2							4	3	-		
480	1		1		5								2	2	2	1	2	2							5	6	7		
			1		5	2							1	2	2	1	3	2							4	-	-		
490	1		1		5	2							1	2	2	1	2	2							5	-	-		

DESCRIPTION: GEO., MINERAL., ALT, STRUCT.

0-427' Casing through basin-fill sediments. Top of bedrock is unknown; first run of core is in QMP. Mud rotary drilling.
Collar coordinates are NAD 83, not state plane (NAD 27) as in older holes.
NAD 27 coords: 746039.99 N, 647950.66 E

427-440' QMP

429.2-430' leached cap - hematite w/ considerable clay

433.5-434' yellow stains; jarosite?

435.8 & 436.5' Thin parallel faults, 40° TCA.
Considerable quartz; phenocrysts? silicification?

440-446' Mixed QMP & Tqdp

446-457.5' Tqdp

449.2-450.2' hard, silicified

451-452' hard, silicified

452-456.5'
No recovery

456.5-457.5' sand

457.5-670' QMP

458-458.5' breccia w/ some clay

458.6-460' Cu clays after plagioclase

464' 1/4" gouge zone @ 20° TCA; separates competent from broken rock. CuOx in clays above this seam; none below. Fault breccia below 464'; 95% QMP, 5% Tqdp. Abundant FeOx.

468-470 very broken; FeOx occurs as streaks of different colors. Shattered breccia is not milled. Trace Cu clay, no CuOx!

470-473.5' slightly more competent rock, poorly mineralized as above.

472-473' shattered.

473.5-475' same as above, slight increase in Cu clay, w/ associated jarosite. Very broken

475-477.5' competent rock w/ salmon-colored kspar (strong color). Rock appears fairly fresh, w/ no obvious alteration or mineralization.

477.5-479' fault, w/ layered gouge & breccia. 60° TCA.

479-480' shattered QMP w/ blood-red ksp & abundant Cu clay in feldspars, & on fractures.

480-485' shattered QMP.

481.5-481.7, 489.5-490' milled breccia
Streaky FeOx & CuOx

485-490' milled fault breccia, w/ clasts of QMP embedded in shattered milled QMP.
Gouge zones @ various orientations (30°, 55°, 70°; appears to be random)

DRILLING INTERVAL	% CORE RECOVERED	RECOVERY % BY A.I.		SAMPLE INTERVAL
427 3	40	N/S		N/S
430 5	98			
435 5	96			
440 6	83			
446 5	88			
451 5	14			
456.5 1	40			
457.5 5	54			
462.5 5.5	89			
468 2	100			
470 3.5	94			
473.5	80			
475 5	96			
480 5	82			
485 5	100			
490				

COLLAR COORDINATES: (NAD83) ELEVATION: 1475' APPROX
N: 746095.87 E: 847729.96 BEARING: 165.8° @ 503.5'
STARTED: June 29, 2011 INCLINATION: -88.8°
COMPLETED: July 7, 2011 TOTAL DEPTH: 1200'

CONTRACTOR: CARD
CORE SIZE: PQ
LOGGED BY: D. Russin/M. Sieber
SCALE: 1" = 10'

HDI CURIS
LOCATION: FLORENCE
HOLE ID: CMP11-05
SHEET 5 OF 12

COMMENTS: Survey @ 503.5': az = 176.8° incl = -88.8° corrected az = 165.9°

DESCRIPTION: GEO., MINERAL, ALT, STRUCT.

457.5-670' QUMP

490-498.7' confirmed fault breccia. Gouge seen in multiple orientations. Very abundant clay w/ local jarosite.
495-498.5' same fault bx. ~1/16" clays. vein @ 497.5'; 35° TCA.
497.5' 1/16" clays, vein, 35° TCA.
498.7-501' shattered QUMP w/o rotation (no drilling)
501-503.5' competent QUMP; pale blue-green in plag + hbn on fxs
503.5-506.5' same
506' 3" off shattered breccia; completely disaggregated. No jarosite + very little goethite.
508' 3/4" qtz-bio vein, 55° TCA.
506.5-509' solid QUMP, same as 501-503.5'
509-510.5' shattered, ~3" zone of gouge/clay @ 509-509.3', 75° TCA. Gouge contains faces of Cu clay.
510.5-513.5' solid QUMP as above; low grade w/ minor Cu clay after plag.
513.5-515.8' shattered fault breccia.
515' 2" vein of bsp+bio+qtz, 75° TCA.
515.7-515.7' internally altered fault breccia, all fgdp w/ strong bsp+qtz alt.
515.7-517.5' same fgdp
517.5' minor fracture on fractures.
519.5-522' moderate qtz-bsp-bio alteration w/ tenorite + minor chrys. well-broken
522-527' hard broken QUMP as common above. Very little clay; bio → chl+ep (completely); it is very green.
523-523.5', ~6" silicified zone w/ ghostly biotite patches.
523-527.2' shattered gouge; 65° TCA.
527.2-529.3' QUMP as above; slightly more fractured w/ abundant FeOx on fxs.
530-532' milled breccia w/ clay gouge. 65° TCA.
532.2-532.5' chunk of fine-grained light pink rock; aplite?
533-533.1' clay w/ some breccia, some Cu clay after plag.
537-537.8' abundant hematite.
537-542' abundant chlorite after biotite
539.5-540' sheared zone w/ abundant yellow FeOx
as above
549.2-552' common Cu clay after plag
abundant chl after biotite
559.5-561' fault breccia w/ cuttles + clay

THIS FAULT CORRESPONDS W. RATTLESNAKE FAULT 589.5 to at least 660'

	FOOTAGE	ORTHO	BIO	QTZ	SER	CLAY	CHL	EPID	CARB	GYPS	ANHY	MAG	HM JAR	HEM	GOE	CU GRAPHIC	CUOX 1	CUOX 2	MET ZONE	PY	CPY	CC	BN	MO	FRACT INT	FRACT DIP	FAULT DIP	FRACTURING	GEOLOGY	AVG. CORE RECY/HOLE	DRILLING INTERVAL	% CORE RECOVERED	RECOVERY % BY A.I.	SAMPLE INTERVAL
	490	1	1			6	2	1					1	2	2		1	2	2						5	-	-				5	100		
	495	1	1	0		5	2	1					1	2	2		1	2	2						5	-	-				3.5	94		
	498.5	0	0	1		4	1	0					1	2	1		0	1	2						3	8	-				5	96		
	503.5	1	1	2		3	1						0	1	1		0	2	2						3	4	-				3	100		
	506.5	1	1	1		5	1						1	2	2		0	2	2						4	5	8				3.5	100		
	510	3	1	3		4	0	1					1	3	2		1	2	2						3	4	-				5	102		
	515	4	1	3		3	1	0					1	2	3		0	2	2						5	4	4				3	73		
	519	3	2	3		2	2						0	2	1		2	2	1						3	5	-				4	88		
	522	2	2	4		3	2	2					0	2	2		1	3	3						3	6	-				5	98		
	527	2	2	3		3	1	1					1	2	2		0	1	3						2	6	-				3	110		
	530	1	1	1		4	1						0	1	2		0	0	3						5	-	-				2	95		
	532	2	2	1		1	1						1	2	2		0	3	3						4	5	-				5	90		
	537	2	2	1		1	1						1	2	2		0	3	3						4	5	-				5	92		
	542	2	2	1		1	1						2	3	2		0	3	3						4	6	-				5	96		
	547	2	2	1		1	1						2	3	2		0	3	3						4	6	-				5	92		
	552	2	2	1		1	1						2	3	2		0	3	3						4	6	-				5	98		
	557	2	2	1		1	1						2	3	2		0	3	3						4	6	-				5	66		

HDI CURIS

LOCATION: FLORENCE
HOLE ID: CMP11-05
SHEET 3 OF 12

CONTRACTOR: CABO
CORE SIZE: PQ
LOGGED BY: M. Sieber / K. Noonan
SCALE: 1" = 10'

ELEVATION: 1475' APPROX
BEARING: 166.9° @ 600'
INCLINATION: -88.7°
TOTAL DEPTH: 1200'

COLLAR COORDINATES: NAD83
N: 746095.87 E: 847729.96
STARTED: June 29, 2011
COMPLETED: July 7, 2011

COMMENTS: Survey @ 600'; az = 177.9°, incl. = -88.7°
corrected az = 166.9°

AVG. CORE REC'Y/HOLE

FOOTAGE	ORTHO	BIO	QTZ	SER	CLAY	CHL	EPID	CARB	GYPS	ANHY	MAG	UM JAR	HEM	GOE	CU GRAPHIC	CUOX 1	CUOX 2	MET ZONE	PY	CPY	CC	BN	MO	FRACT INT	FRACT DIP	FAULT DIP	FRACTURING	GEOLOGY	DESCRIPTION: GEO., MINERAL, ALT, STRUCT.	DRILLING INTERVAL	% CORE RECOVERED	RECOVERY % BY A.I.	SAMPLE INTERVAL
560	-1	-1	-1	-1			N	O			R	E	C	O	V	E	R	Y						-1	-1	-1	?	?	457.5-670' QMP continued from above — RATTLESNAKE FAULT ~559.5-660'	5	100	N/S	N/S
																									5	-	-			562-562.5' all ~2cm gravel.				
	1		1		1	2							2			3	-	3						5	8	7			562.5-562.7' fault breccia (total 559.5-562.7') 562.7-568' much larger fragments, + stronger alteration	562.5 5.5	91		
570					4											3	2	3						5	-	-			568-573' fault breccia w/ frags up to ~4-6". 571.1-573' Tgdp; all sheared fault breccia. Common Cu clay.	568 5	94		
					5	1						1	4	2		1	1	3						5	-	4			573-573.3' strong chrys in one fx; ~1-3cm crackled rock w/ chrys cement. 573-578' all fault bx w/ milled frags.	573 5	100		
580					5	1						1	3	1		-	-	3						5	-	5			578-580.5' fault bx, 50° TCA? No visible Cu.	578 2.5	80		
					1	1						1	2	1		-	-	3						1	4	7			580.5-583' very abundant ksp; rock is nearly all pink. No visible Cu; fxs ~35° TCA. 580.5-580.7' bx w/ abundant FeOx; ~70° TCA.	580.5 2.5	96		
					1	1						1	5	3		1	-	3						5	4	4			583-588' very high FeOx; minor Cu visible of fxs. 585.7-586', 583-583.2', 584.8-585.2' fault bx, ~40° TCA. rock is fairly hard between them ↑	583 5	98		
					1	1						1	2	1		1	1	2						4	-				588-590' Cu increases downward; rock is very well broken.	588 2	100		
590	-1	-1	-1	-1			N	O			R	E	C	O	V	E	R	Y						-1	-1	-1	?	?	590-591.5' no recovery	590 2.5	40		
					4	1						1	3	1		1	1	2						5	-	-			591.5-592.5' fault bx w/ gouge 591.5-591.7'.				
		2			3	1						1	4	2		2	2	2						5	-	-			592.5-597.5' high Cu clay + CuOx; minor tenorite. Biotite flooding @ bottom of the interval. 594.3-596.3' fault breccia; w/ gouge (minor) + possible pieces of Tgdp. No ∠ measurable.	592.5 5	96		
600	1	2			5	1						1	3	1		1	2	2						5	-	6			597.5-602.5' breccia w/ gouge; as above. Cu clay is conspicuous throughout the interval. 597.5-598' biotite flooding as seen above. ~40x40mm ksp phenos embedded in bio. Fault ~60° TCA.	597.5 5	100		
					3	1						1	4	1		1	1	2						4	-	-			602.5-607.5' more competent QMP, scattered Fe/CuOx. irregular fractures very common, w/ ↑, minor clay + chrys.	602.5 5	100		
610					2	1						1	1	1		2	2	2						5		-			607.5-610' very broken but not milled bx. 609.6-610' high Cu, some chrys. on fxs w/ slickensides. 609-611' 2mm-wide vein of CuOx; 20° TCA. Full of light green clay, w/ tenorite on the sides. Rock is brecciated below this vein; thin fault?	607.5 2.5	104		
					2	1						1	1	1		2	2	2						5	-	1			613-615' back into fault breccia	610 5	100		
620					1	1						1	1	1		1	1	2						5	-	-			615-620' entirely fault breccia, w/ large fragments surrounded by FeOx-rich matrix.	615 5	100		
					4	1						1	3	2		3	3	2						5	-	6			620-625' very fractured w/ intermittent breccia, little gouge. CuOx on fractures oriented ~50-70° TCA.	620 5	100		
630					4	1						1	4	2		1	1	2						5	-	3			625-630' very fractured as above, could not clean core from 628.5-629.5'. 627.2-627.5', 628.5-629.5' fault breccia w/ gouge in lower zone, ~25° TCA. some Cu clay in fault gouge.	625 5	100		

COLLAR COORDINATES:	ELEVATION: 1475' approx.	CONTRACTOR: CABO	HDI CURIS
N: 746,095.87 E: 847,729.96	BEARING: 166.9° @ 600'	CORE SIZE: PQ	LOCATION: FLORENCE
STARTED: June 29, 2011	INCLINATION: -88.7°	LOGGED BY: K. Noonan/M. Sieber	HOLE ID: CMP11-05
COMPLETED: July 7, 2011	TOTAL DEPTH: 1200'	SCALE: 1" = 10'	SHEET 4 OF 12

FOOTAGE	700	690	680	670	660	650	640	630
ALTERATION: ORTHO	1	1	1	1				
BIO	1	2	2	1	1			
QTZ	1	1	1	1	1			
SER								
CLAY	1	1	1	1	2	1	3	3
CHL	1	1	1	1		1	2	2
EPID								
CARB								
GYPS								
ANHY								
MAG								
OXIDE: ~~HM~~ JAR					1	1	1	1
HEM	1	1	1	2	2	3	3	4
GOE	1	1	1	1		2	3	2
CU GRAPHIC								
CUOX 1	2	2	2	2	1	1	2	2
CUOX 2	2	2	2	2	2	1	3	2
SULFIDE: MET ZONE	2	2	2	3	2	2	2	2
PY								
CPY								
CC								
BN								
MO								
FRACT INT	2	3	2	4	5	4	4	5
FRACT DIP	8	8	7	6	7	-	-	6
FAULT DIP	-	-	-	-	2	-	-	3
FRACTURING								
GEOLOGY								

COMMENTS:

AVG. CORE REC'Y/HOLE

DESCRIPTION: GEO., MINERAL, ALT, STRUCT.

457.5-670' QMP continued from above

630-635' fault bx; very crumbly; can't wash 632.8-633.2'. Minor chrysocolla on fls, very little gouge

635-640' similar to above; fault bx; seems to be ~30° TCA.

638.9-640' high-grade Cu; rich Cu clay (seafoam green)

639' 2x2cm bio patch → chlorite; ~2x2cm of Tgdp (?)

640-646' similar fault bx; discontinuous zones of breccia separated by shattered QMP.

640-640.2' solid Cu clay

644.2-644.5' gouge

645-650' shattered QMP.

646.3-646.5', 646.9-647.1', 648.9-649', 649.2-649.4' thin intervals of milled bx, ~50° TCA.

649-649.4' olive-green patches of clay.

650-655' fault bx, little gouge. Low Cu.

655-660' some shattered rock; low Cu + intermittent thin breccia zones

658.5-660' biotite flooding

660.5-661.4' Cu clay after plag.

661.7-663.5' 1cm vein of CuOx/Cu clay, ~10° TCA.

Rock has strong clay-chlorite overprint

668.3-668.4' ~1.5" qtz vein ~70° TCA.

670-675' Mixed QMP + Tgdp

Mostly Tgdp; well broken w/ abundant goethite

Little Cu.

675-759' QMP

675.9-680' Cu clay after plag

675-675.9 Tgdp; contact w/ QMP @ 675.9' is ~70°.

676.1-676.3' brecciated

680-685' minor Cu clay in plag sites, as above

~3% bio → chl.

Fairly uniform rock, streaks of goethite + minor Cu clay after plag.

685-700' increase in hematite

	630	635	640	645	650	655	660	665	670	675	680	685	690	695
DRILLING INTERVAL	5	5	5	5	5	5	5	5	5	5	5	5	5	5
% CORE RECOVERED	100	100	94	98	88	102	84	100	96	94	92	94	88	92
RECOVERY % BY A.I.	N/S													
SAMPLE INTERVAL	N/S													

COLLAR COORDINATES:
N: 746,095.87 E: 847,729.96
STARTED: June 29, 2011
COMPLETED: July 7, 2011

ELEVATION: 1475' APPROX
BEARING: 178.3° @ 700'
INCLINATION: -88.9°
TOTAL DEPTH: 1200'

CONTRACTOR: CABO
CORE SIZE: PQ
LOGGED BY: M. Siebar / D. Russin
SCALE: 1" = 10'

HDI CURIS
LOCATION: FLORENCE
HOLE ID: CMP11-05
SHEET 5 OF 12

COMMENTS: Survey @ 700': az = 189.3° incl = -88.9°
corrected az = 178.3°

DESCRIPTION: GEO., MINERAL, ALT, STRUCT.

675-759' QMP

continued from above

700-705' very hard competent rock.

702.1-705' Cu in plag sites + on fractures.

708' minor tenorite + hematite pleates Cu

712.4 + 714.2'

715-720' brown oxd ort tube halo/vein w/o plag. Well-fractured but intact QMP. Blood-red hematite common in plag; minor Cu clay present throughout this interval.

715.5-716' stocks of tenorite up to 1/8cm wide. Irregular.

720-725' competent core w/ abund. EOD. Abundant qtz veins w/ hem pseudomorphs after pyr/cpy.

725-730' patches of quartz flooding; several 1/4-1/2" qtz vns (w/ hem after sulfides) with ~1" qtz-bio envelopes, ~45° TCA.

733.5' crackled qtz w/ tiny (<1mm) hem on fvs

730-735' similar to above; slightly less intense qtz-ksp-bio alt. Common hem + Cu clay in plag sites

735-740' same as previous interval.

736.5' 1" qtz-tenorite vein, ~40° TCA. Abundant thin (<2mm) fxs w/ chrys.

740' 1" qtz-ten vn w/ ~1.5" (on each side) qtz-ksp-bio envelope. Abundant jarosite + greenish clay

744.6-745.1' abundant qtz veins cleav. w/ chrys + hem after plag. Jarosite is common in plag sites. A few small thin sericite envelopes (?) visible in ksp grains.

750.1-750.6' sheeted + irregular clots of tenorite. Good grade

751.5' 1" vein of qtz-chrys + tenorite w/ hem + goe. ~30° TCA.

751.5-754' common v/cm veins of chrys + Cu clays.

756-756.4' solid qtz w/ some chrys + ten oxides. Silicified zone, not vein quartz.

756.4-757' milled + brecciated bx. 35° TCA; abundant jarosite + Cu clay.

758-759' chrys Cu clay w/ minor chrys. in fvs.

759 - 774.3' Diabase

contact sheared; ~60° TCA.

Medium grey slightly porphyritic diabase. Abundant quartz veins w/ thin sericite envelopes, largest vein is ~7mm. Most are 50-70° TCA, not much Cu mineralization.

764-769' recovered 0.4' of brecciated diabase + grey-brown gouge.

NO RECOVERY

	FOOTAGE	ORTHO	BIO	QTZ	SER	CLAY	CHL	EPID	CARB	GYPS	ANHY	MAG	LIM JAR	HEM	GOE	CU GRAPHIC	CUOX 1	CUOX 2	MET ZONE	PY	CPY	CC	BN	MO	FRACT INT	FRACT DIP	FAULT DIP	FRACTURING	GEOLOGY	AVG. CORE REC'Y/HOLE	DRILLING INTERVAL	% CORE RECOVERED	RECOVERY % BY A.I.	SAMPLE INTERVAL
700	700	1	1	1	1	1	1							1			2	2	2						1	18	-				5	92		
705	705	1	1	1	1	1	1							2			2	2	2						1	36	-				5	86		
710	710	1	1	1	1	1	1							2			2	2	2						1	36	-				5	98		
715	715	1	1	1	1	1	1							1			2	2	2						1	35	-				5	94		
720	720	2	1	1	3	1	1							1	2	2	2	2	2						1	26	-				5	94		
725	725	3	1	3	3	1	1							1	2	2	1	2	2						1	26	-				5	106		
730	730	4	2	5	3	1	1							1	2	2	1	3	2						1	28	-				5	98		
735	735	2	1	3	3	1	1							1	3	2	1	3	2						1	7	-				5	88		
740	740	2	2	4	3	1	0							1	3	2	2	2	2						1	7	-				4	93		
744	744	2	1	3	3	1	1							1	3	2	2	2	2						1	3	-				5	98		
749	749	3	2	4	3	1	1							1	2	1	2	2	1						1	7	-				5	100		
754	754	3	2	3	2	4	1							1	2	1	4	3	1						1	3	-				5	96		
759	759	3	1	5	1	5	1	1						1	2	2	2	3	1						1	5	4	4			5	96		
764	764	0	0	3	2	1	1	0						0	1	0	1	0	2						1	3	7	-			5	8		
769	769																																	
774	774																																	

COLLAR COORDINATES:	ELEVATION: 1475' APPROX	CONTRACTOR: CABO	HDI CURIS
N: 746,095.87 E: 847,729.96	BEARING: 178.3° @ 800'	CORE SIZE: PQ	LOCATION: FLORENCE
STARTED: June 29, 2011	INCLINATION: -88.9°	LOGGED BY: M. Sieber/D. Russin	HOLE ID: CMP11-05
COMPLETED: July 7, 2011	TOTAL DEPTH: 1200'	SCALE: 1" = 10'	SHEET 6 OF 12

FOOTAGE	770	780	790	800	810	820	830	840
ALTERATION: ORTHO		1	1	1	1	1	2	1
BIO		1	1	1	1		1	0
QTZ	3	1		1	1	1	3	2
SER	3						1	1
CLAY		1	3	2	1	2	3	4
CHL			1	1	1	1	1	1
EPID								
CARB								
GYPS								
ANHY								
MAG								
OXIDE: ~~HM~~ JAR							0	0
HEM	2	1	3	2	2	1	2	1
GOE		1		1	1	1	1	1
CU GRAPHIC								
CUOX 1	2	1	1	3	3	2	2	1
CUOX 2	1	2	2	2	2	2	2	2
SULFIDE: MET ZONE	2	2	2	2	2	2	2	2
PY								
CPY								
CC								
BN								
MO								
FRACT INT	5	3	5	4	3	2	5	2
FRACT DIP	8	6		8	6		7	7
FAULT DIP	8	5	3	1	6		5	1
FRACTURING								
GEOLOGY								

DRILLING INTERVAL	% CORE RECOVERED	RECOVERY % BY A.I.	SAMPLE INTERVAL
769 5	96	N/S	N/S
774 5	98		
779 5	98		
784 5	96		
789 5.5	89		
794.5 5.5	0		
800 5	90		
805 5	96		
810 5	98		
815 5	84		
820 5	94		
825 5	94		
830 5	92		
835 5	80		

DESCRIPTION: GEO., MINERAL, ALT, STRUCT.

COMMENTS: Survey @ 800' = az = 189.3° incl. = -88.9° corrected az = 178.3°

AVG. CORE REC'Y/HOLE

759-774.3' Diabase continued from above; abundant qtz vns w/ sericite envelopes.

759-759.6' mostly clay w/ some diabase fragments

772.7-773' 2cm vein of solid chrys; likely a former solid cpy vn.

774.3-858.5' QMP contact is ~35° TCA; planar intrusive (?) fault?

Similar to QMP seen above; strong FeOx + clay + bio → chlorite.

782.6' several patches of tenorite.

787.2-788.2' fault breccia w/ abundant FeOx + little gouge.

similar to above.

790.5-791' exceptionally strong clay alteration (ksp + plag → completely white clay)

794.5-800' no recovery.

THRASHER FAULT ZONE ~787-805' SHEARED, CLAY ALT, NO REC.

800-805' similar to above; sheared QMP w/ strong clay alt. Minor Cu clay after plag.

805-810' similar to above. Yellow-green (jarosite + Cu clay?) in plag sites. Common qtz vns up to ~10mm.

810.8-811.8' sheared + deformed orthoclase

810-815' decent Cu mineralization of fractures + clays.

817.6-818' numerous clay-filled fractures

823.4-825' mostly light green Cu clay in feldspars, fine hematite.

823.7-825' silicified.

826-826.3' breccia w/ clay

825.3-826.6' good Cu clay; core is light green.

830-835' QMP w/ common qtz-biotite veins; possibly some sericite in the vein envelopes.

Weak-mod Cu clay in plag sites.

835-840' very uniform rock; Cu clay partially repl. plag; streaks of hem + goe. Common Qtz vns up to ~1cm.

837.5' 1" qtz vein w/ weak ksp envelope.

HDI CURIS

LOCATION: FLORENCE
HOLE ID: CMP11-05
SHEET 7 OF 12

CONTRACTOR: CAMBO
CORE SIZE: PQ
LOGGED BY: D. Rossin/M. Sieber
SCALE: 1" = 10'
TOTAL DEPTH: 1200'

ELEVATION: 1475' APPROX
BEARING: 181.9° @ 900'
INCLINATION: -88.8°
STARTED: June 29, 2011
COMPLETED: July 7, 2011

COLLAR COORDINATES:
N: 746,095.87 E: 847,729.96

COMMENTS: Survey @ 900': az = 192.9° incl. = -88.8°
corrected az = 181.9°

AVG. CORE REC'Y/HOLE

DESCRIPTION: GEO., MINERAL, ALT, STRUCT.

FOOTAGE	ALTERATION: ORTHO	BIO	QTZ	SER	CLAY	CHL	EPID	CARB	GYPS	ANHY	MAG	OXIDE: THM. JAR.	HEM	GOE	CU GRAPHIC	CUOX 1	CUOX 2	SULFIDE: MET ZONE	PY	CPY	CC	BN	MO	FRACT INT	FRACT DIP	FAULT DIP	FRACTURING	GEOLOGY
840					6	1						0	1	2		0	2	2						5	-	-		
	4	2	3	1	3	1						1	1	1		1	2	1						2	7	-		
	2	3	2	0	4	0						6	1	1		1	2	2						1	7	-		
950	3	2	3		4	1	1					0	3	2		1	2	2						3	6	6		
	2	1	3		5	1	1					0	2	3		1	3	2						5	5	5		
860	1	1	2	2	6	0	0					0	3	3		0	0	3						5	-	-		
	3	0	2	0	5							0	4	2		0	0	3						5	-	-		
870	3	0	2		4	1						1	2	3		0	0	3						4	-	-		
	3	1	3		4	1						0	2	2		0	1	3						4	-	3		
880	4	2	4		2	1						0	1	1		2	2	1						2	4	-		
	2	2	3		5	1						1	1	2		2	2	1						5	4	4		
890	1	2	1		5	1						0	1	2		3	2	1						5	-	-		
	0	0	0		6	1						1	3	2		0	2	1						5	-	-		
900					5	1						0	3	2		1	2	2						5	7	7		
					5	1							3			1	2	2						5	7	-		
910																												

774.3-858.5' QMP cont. from above

840-843' milled bx & gouge. Weak Cu clay throughout, no measurable orientation.
844-845' slightly finer-grained QMP; largest ksp clem. Similar alt/min to above.
843.8-844.5' abundant biotite veins & irregular patches.
844.3' 1/2" bio-chl vein.
848.6' ~3/8" qtz-ksp(?) vn w/ 1.5" bio-ksp envelopes. EDM vein? 848-850' wk Cu clay after drag.
852' 2" qtz-bio swath; pervasive alteration, not a vein.
854' 3" of gouge/bx; 60° TCA. Shattered bx below.
855-856' fault bx w/ gouge; 40° TCA. Strong Cu clay & minor chrys.
856.6' 3" sheared breccia, strong Cu clay.

858.5-881.5' Tgdp ← contact is broken; appears to be ~50° TCA.

Medium-light gray, locally altered (atz, ser, ksp)
860-865' fault breccia, all Tgdp. Milled fragments up to ~10cm. Some fragments have visible veining (qtz w/ ser(?) envelopes)
865-867' same breccia →
867-873.5' very well broken but not milled. Possible abundant fine qtz veins, but hematite overprint makes it difficult to tell.
873.5-875' much more competent rock. Abundant qtz vns w/ ksp envelopes. Common jarosite on fxs. No Cu.
875-880' similar to above; shattered Tgdp. Heavy clay & FeOx overprint, makes veins difficult to identify.
876' 1/4" biotite vein, 25° TCA.
876, 878, 879' shears @ 30° TCA. QMP frag @ 880.5' (4" or so)

881.5-1007.3 QMP ← intrusive planar contact; 45° TCA.

hard QMP w/ strong qtz-ksp alt. Sheeted chrys & tenorite vlts, <5mm, mostly ~35° TCA.
885-885.5' Tgdp w/ 2 1" EDM vns, both parallel @ ~40° TCA.
884.5-885' much CuOx; irregular mass? Broken up removing from the shoe.
885.5-910' QMP Fault breccia. Abundant blotches of clays, tenorite, & Cu clay. Shears are ~35° TCA. Top contact is ~80° TCA.
890-895' extremely sticky core; stuck badly to splits & was mostly pulled apart.
890.3-890.8' very strong Cu ox; tenorite & chrysocolla are nearly solid in small areas.
895-900' strong clay - FeOx overprint; detail is obscured.
900-905' slightly more competent.
903' ~2" of solid gouge; 65° TCA.
905' mod. Cu clay in plag. sites.
905-907.1
907.1-910' strong clay; core sticking to splits.

DRILLING INTERVAL	% CORE RECOVERED	RECOVERY % BY A.I.	SAMPLE INTERVAL
840 3	80	N/S	N/S
843 5	92		
848 2	100		
850 5	92		
855 5	96		
860 5	104		
865 5	102		
870 5	92		
875 5	92		
880 5	100		
885 5	92		
890 5	102		
895 5	88		
900 5	100		
905 5	84		

HDI CURIS

LOCATION: FLORENCE
HOLE ID: AMP11-05
SHEET 8 OF 12

CONTRACTOR: CAB
CORE SIZE: PQ
LOGGED BY: A. Sieber/D. Russin
SCALE: 1" = 10'

ELEVATION: 1475' approx.
BEARING: 181.9°
INCLINATION: -88.8°
TOTAL DEPTH: 1300'

COLLAR COORDINATES:
N: 746,095.87 E: 847,728.96
STARTED: June 29, 2011
COMPLETED: July 7, 2011

FOOTAGE	ALTERATION: ORTHO	BIO	QTZ	SER	CLAY	CHL	EPID	CARB	GYPS	ANHY	MAG	O	V	OXIDE: HM JAR	HEM	GOE	CU GRAPHIC	CUOX 1	CUOX 2	SULFIDE: MET ZONE	PY	CPY	CC	BN	MO	FRACT INT	FRACT DIP	FAULT DIP	FRACTURING	GEOLOGY
					N	O		R	E	C	O	V		E	R	Y													?	?
910	1	1			1										1	1		1	2	2							3				
					5										1			1	2	2							4	-	-		
	1	1	1		3	1												2	2	2							5	6	5		
920	2	3	3		4	1	1							0	2	1		1	2	2							2	7	-		
	4	1	2		4	1	1							1	3	1		0	2	2							2	7	-		
930	2	2	3		4	1	1							1	3	2		1	2	2							3	4	-		
	1	1	2		5	1	1							1	3	3		1	2	2							5	3	3		
940	3	2	4		6	1	1							0	2	2		0	2	2							5	-	-		
	3	2	4		6	1	1							0	2	2		0	2	2							5	-	-		
950	1	1	1	2	3	1	0							1	2	1		0	2	2							2	4	-		
	1	0	1	4	4	0								0	4	1		0	1	3							4	4	-		
960	1	2	1	2	5	1								2	1	2		0	2	2							5	-	3		
	5	1	4	0	4	1								1	2	1		0	2	2							3	4	7		
970	1	0	2		4	1								2	2	1		0	3	2							3	5	-		
	2	2	3	1	5	1								1	3	3		1	2	2							5	-	-		
980																															

COMMENTS:

AVG. CORE REC'Y/HOLE

DESCRIPTION: GEO., MINERAL, ALT, STRUCT.

881.5-1007.3' QMP

~910-912' no recovery

915-915.3' redrilled pebbles

916.9-917.5' fault zone, ~45° TCA

Minor Cu clay after plagioclase

917 & 918.5' chunks of bio-rich ro ; looks almost like clasts but is probably alteration. Strong Cu clay associated with them.

Abundant qtz veins w/ associated qtz-ksp-bio envelopes (thin)

925-930' similar to above, not very interesting. Fewer qtz vns & bio than previous interval. Lots of ksp; flooding (?) 927-927.8'.

930-932.5' same; most qtz veins are ~70° TCA.

932.5-933' strong qtz(+bio+ksp) alt; w/ Cu clay & minor chrys; epidote common in bio sites.

933.5-934' shattered zone; seams of breccia (milled) are < ½".

935-940' same weakly mineralized QMP.

936.5-937' gouge/bx; no measurable angle.

938-939.5' gouge/bx; 25° TCA. Minor Cu clay & common jarosite.

940-945' fault bx; shattered & locally milled. Some low-grade QMP. numerous qtz-ksp vns w/ bio; various orientations.

945-950' same

950.3' begin competent QMP. Same rock, just not faulted. Abundant <1mm fxs w/ hem.

953-955' sheeted fxs; ~30° TCA. Abundant hem @ bottom of the run; very red color.

955-956.5' same

956.5-959' strong sericite alt (?); looks almost etched. Intense hem; sheeted fxs ~40° TCA. Looks leached.

959-960' beck into weakly altered, low grade QMP.

960-964.1' shattered & milled breccia

963' 4" clot of biotite; altered diabase fragment?

964.1' 25° TCA top of gouge zone. Abundant goethite & jarosite in bx.

965-968' same QMP

968-968.8' v. strong qtz-ksp alt (or aplitic dike?); no orientation visible. Fractured & original texture of QMP is gone.

969' 1" gouge w/ Cu; 65° TCA.

969-970' increase in Cu; more competent rock.

970-972.5' same?; sheeted fx w/ hem coating; 10° TCA.

972.5' ~1" of yellow-stained clay; ~50° TCA.

973-975' shattered; possibly milled but difficult to see. Abundant hematite

975-980' recovered 4'; all fault breccia w/ fairly large fragments. Little milling, or just v. large pieces? Abundant Clay, Cu clay, & FeOx

DRILLING INTERVAL	% CORE RECOVERED	RECOVERY % BY A.I.	SAMPLE INTERVAL
910			
5	42	N/S	N/S
915 1.5	67		
916.5			
3.5	91		
920			
5	92		
925			
5	98		
930			
5	102		
935			
5	94		
940			
5	90		
945			
5	94		
950			
5	100		
955			
5	94		
960			
5	98		
965			
5	96		
970			
5	100		
975			
5	74		

HDI CURIS

COLLAR COORDINATES:
N: 746,095.87 E: 847,729.96
STARTED: June 29, 2011
COMPLETED: July 7, 2011

ELEVATION: 1475' approx
BEARING: 196.1° @ 1,000'
INCLINATION: -88.2°
TOTAL DEPTH: 1200'

CONTRACTOR: CABO
CORE SIZE: PQ
LOGGED BY: D. Russin/M. Sieker
SCALE: 1" = 10'

LOCATION: FLORENCE
HOLE ID: CMP11-05
SHEET 9 OF

COMMENTS: Survey @ 1000': az = 261.1° incl = -88.2°
corrected az = 190.1°

AVG. CORE REC'Y/HOLE

DESCRIPTION: GEO., MINERAL, ALT, STRUCT.

FOOTAGE	ALTERATION: ORTHO	BIO	QTZ	SER	CLAY	CHL	EPID	CARB	GYPS	ANHY	MAG	OXIDE: HM JAR	HEM	GOE	CU GRAPHIC	CUOX 1	CUOX 2	SULFIDE: MET ZONE	PY	CPY	CC	BN	MO	FRACT INT	FRACT DIP	FAULT DIP	FRACTURING	GEOLOGY
980	1	1	2	1	5	1						1	2	3		1	2	2						5	7	3		
	1	1	2	1	4	1						0	2	2		1	2	2						3	-	-		
990	1	1	2	1	6	1						1	2	3		1	2	2						5	-	4		
	1		1		2	1							2	1		1	2	2						5	7	3		
1000	1	1			2	1							1	1		2	2	2						3	5	-		
	1	1			3								2	3		-	-	3						2	-	-		
1010					4								3	3		-	-	3						5	-	-		
					6	2							3	2		2	2	2						5	6	-		
1020					6								3	2		3	2	3						5	8	-		
		1			7	1						1	1	2		1	1	1						5	7	-		
1030	1	1			7	1						1	2	2		1	1	1						5	6	-		
	2	-	2		5	2						1	3	2		2	2	2						5	-	-		
1040	2	-	2		4	1						1	3	2		1	2	2						5	5	3		
	0	0	0		6	1						1	2	4		0	1	3						5	-	3		
1050					6	1						1	3	4		0	1	3						5	-	3		

881.5-1007.3' QMP

980-982.5' fault bx; large fragments & gouge w/ trace Cu clay. 30° TCA bottom contact
982.5-985' QMP as above; Qtz+ksp+bio, w/ minor Cu clay after plag.
985-990' same QMP — alt. mainly present as veins & assoc. envelopes.
987.5' ~2" x 0.5" clot of secondary biotite.
988.5-988.8' stronger clay alt; w/ mod. Cu clay
990-995' shattered fault breccia w/ milled frags & gouge; streaky clay, FeOx, & chl. Minor Cu clay. Shears are ~35° TCA. Difficult to see any alteration, so used codes from the interval immediately above.
995-1000' same QMP
995.1' end of fault zone, bottom contact @ 45° TCA.

1000-1000.5' common Cu on fractures
1000.5-1000.6' bx zone ~2cm wide
1002.5' 1-2cm band of blue-green Cu clay; looks like a thin bx zone. ~40° TCA.

1007.3-1012' Mixed QMP + Tgdp

Rock is faulted & well broken; strong FeOx-clay overprint. Fault ~50° TCA.

1012-1017' Tgdp

Plag is partially replaced by Cu clay
Core is sheared & very soft.

SIDEWINDER FAULT ZONE
1010 — 1095

1017-1026' Mixed QMP & Tgdp

Common Cu clay after plag.
1019.6-1020.5' swirls of irregular Cu clay
1019.9' minor component of clasts of Ta
1020.5-1026' common tenorite & chrysocolla, esp. 1022-1022.5'

1026-1057' QMP

1026-1030' common chrys & tenorite.
1030-1035' fault breccia, all frags are QMP. Patches of Cu clay, w/ minor chrys & ten locally. Slightly more competent at bottom of interval, not milled bx.
1031.5' strong tenorite in sheared zone; streaks are over 2" wide
1035-1038.5' same harder QMP as above, QMP w/ strong clay
1038.5-1057' fault zone w/ much gouge; streaky FeOx

1040-1045' all frags <2", shears ~25° TCA.

DRILLING INTERVAL	% CORE RECOVERED	RECOVERY % BY A.I.	SAMPLE INTERVAL
980 5	94	N/S	N/S
985 5	102		
990 5	102		
995 5	94		
1000 5	90		
1005 5	90		
1010 2	25		
1012 5	96		
1017 3.5	97		
1020.5 5.5	82		
1026 4	95		
1030 5	102		
1035 5	100		
1040 5	102		
1045 5	100		

HBI CURIS

COLLAR COORDINATES: ELEVATION: 1475' approx
N: 746,095.87 E: 847,728.96
STARTED: June 29, 2011
COMPLETED: July 7, 2011

CONTRACTOR: CABO
CORE SIZE: PQ
LOGGED BY: D. Russin / M. Sieber
SCALE: 1" = 10'
TOTAL DEPTH: 1200'

BEARING: 205.3°
INCLINATION: -88.3°

LOCATION: FLORENCE
HOLE ID: CMP11-05
SHEET 10 OF 12

COMMENTS: Survey @ 1100': az = 216.3° incl = -88.3°
corrected az = 205.3°

AVG. CORE REC'Y/HOLE

DESCRIPTION: GEO., MINERAL, ALT, STRUCT.

FOOTAGE	ALTERATION: ORTHO	BIO	QTZ	SER	CLAY	CHL	EPID	CARB	GYPS	ANHY	MAG	OXIDE: LMT JAR	HEM	GOE	CU GRAPHIC	CUOX 1	CUOX 2	SULFIDE: MET ZONE	PY	CPY	CC	BN	MO	FRACT INT	FRACT DIP	FAULT DIP	FRACTURING	GEOLOGY
1050					6	1						1	3	3		0	1	3						5	-	-		
					6	1						1	2	2		0	1	3						5	-	-		
1060					5	0						0	1	0		0	0	3						5	-	-		
					6							1	2	3		0	1	2						5	-	-		
1070					6							1	1	3		0	1	3						5	-	5		
					6							0	4	3		1	1	2						5	-	-		
1080					5							1	2	2		0	1	3						4	6	-		
		1	1		5	1	1					1	4	3		0	1	3						5	-	3		
1090					NO RECOVERY																						?	?
		1	1	1	3	1	1					0	2	2		0	2	2						3	2	-		
1100	1	1	2		1	1							2	2		2	2	2						2	6	-		
	1	1	1		2	1							2	2		2	2	2						3	7	-		
1110	1	1			3	1							1	1		2	2	2						3	-	-		
	2	2			2	1							1	1		2	2	2						4	6	-		
1120																												

1026-1057' QMP — SIDEWINDER FAULT ZONE 1010 – 1095'

cont. from above; milled fault bx.

1057-1065.2' Ta — ↳ contact rubblized

1057-1061.5 cont. fault bx.

Quite porphyritic; white plag up to ~5mm. Rock is rich red-brown, 5YR 3/4 still very broken w/ abundant gray-green clay

1065.2-1074.1' QMP — ↳ contact irregular, but ~25° TCA.

Back into same fault bx

1066.5' 4" clast w/ strong chrys + Cu clay

Shears @ ~40° TCA; much gouge & frags are <1".

1074.1-1078' Mixed QMP & Tgdp — ↳ contact brecciated

Fault bx w/ abundant Ta fragments. Mostly Tgdp, w/ mod Cu mineralization; chrys & ten locally abundant

1078-1200' QMP — ↳ contact brecciated

1080-1085' shattered QMP, not milled bx. Heavy clay overprint w/ v. little Cu.

1085-1085.6' same ↑

1085.6-1086' light blue clay gouge; 25° TCA. Mod. Cu clay.

1086-1089.5' shattered, well oxidized QMP w/ strong clay overprint.

1089.5-1090' milled bx & gouge. Shears ~65° TCA.

1090-1095' recovered 0.6' of milled bx as above. All in shoe, tube was empty.

1095-1100' reasonably competent QMP, sheeted fxs ~45° TCA. Weak Cu clay after plag. Clay seams up to ~1/4" locally. Weakly altered; only small vlts of qtz + ksp + bio.

1101.7' CuOx on fractures

1106.5-1108' moderate development of bio in QMP.

1110.7-1111.5' brecciated zone w/ v. abundant FeOx.

1113.5-1119' competent QMP. Strong clay after plag; very little ksp as well. Rock is quite light in color.

Considerable biotite.

DRILLING INTERVAL	% CORE RECOVERED	RECOVERY % BY A.I.	SAMPLE INTERVAL
1050 5	100	V/S	N/S
1055 5	96		
1060 5	104		
1065 5	98		
1070 5	102		
1075 5	98		
1080 5	100		
1085 5	98		
1090 5	12		
1095 5	100		
1100 3.5	83		
1103.5 5	94		
1108.5 5	96		
1113.5 5.5	89		

COLLAR COORDINATES: NAD83	ELEVATION: 1475' APPROX	CONTRACTOR: CABO	HDI CURIS
N: 746095.87 E: 847729.96	BEARING: 205.3°	CORE SIZE: PQ	LOCATION: FLORENCE
STARTED: June 29, 2011	INCLINATION: -88.3°	LOGGED BY: M. Sieber/D. Russin	HOLE ID: CMP11-05
COMPLETED: July 7, 2011	TOTAL DEPTH: 1200'	SCALE: 1" = 10'	SHEET 11 OF 12

FOOTAGE	ORTHO	BIO	QTZ	SER	CLAY	CHL	EPID	CARB	GYPS	ANHY	MAG	LIM	HEM	GOE	CU GRAPHIC	CUOX 1	CUOX 2	MET ZONE	PY	CPY	CC	BN	MO	FRACT INT	FRACT DIP	FAULT DIP
1120	1	2	1		2	1							2	1		2	2	2	1					4	7	-
1130	1	2	1		2	1							1	1		2	2	2						3	-	-
1140	1	2			4	1							2	2		3	-	3						4	8	-
1150	1	2			5	1							1	2		3	3	3						3	6	5
1160					3	1							1	2		3	3	3						4	7	-
1170	4	1	2		3	1							2	1		1	1	2						2	8	-
1180	2	1	2		4	1							2	1		2	2	2						3	-	-
1190	4	2	4		3	0							0	1		1	1	2						2	4	-

ALTERATION: NO RECOVERY

OXIDE: NO RECOVERY

SULFIDE: NO RECOVERY

FRACTURING: ? ?

GEOLOGY: ? ?

COMMENTS:

AVG. CORE REC'Y/HOLE

DESCRIPTION: GEO., MINERAL, ALT, STRUCT.

1078-1200' QMP

1122.5' ~2"x2" fragment of fine-grained diorite (?)
Cu clay locally on fractures
1127.4-1127.8' bright white zeolite (?) in irregular fractures, ~50° TCA
1126-1129' CuOx on fas + in plag
1129-1134' a couple ~1/2" qtz veins
little to no Cu clay in plag sites
1134-1139' numerous qtz-ksp vns @ ~60° TCA.
1136.5-1138' strong hematite stain
1141.3-1141.7' gouge zone; ~45° TCA.
1142.5-1143' common greenish Cu clay on fas
1144-1149' streaky FeOx + bio alt
1147.9' ~1" vein of solid hematite
1149-1150.7' strong hem stain
1152.5-1153.5' greenish yellow clay; Cu + jcrosite?
1154-1160' no recovery
1160-1164' low-grade, reasonably competent QMP. Top 6" is redrilled fragments.
1162.5' shattered 3" zone of strong ksp alt; pink-tan color w/ relict igneous texture. V. little Cu.
1163.5-1164' several tiny fas w/ spots of chrys.
1164-1169' hard QMP w/ deep red feldspars
1164-1166' 3/8" clay vein, 10° TCA. Mod. Cu, some chrys in w/ clay.
1166-1167' strong silicification; v. hard rock w/ deep red ksp + common chrys veins, tr. tenorite. ↑ various orientations
1169-1170' shattered zone; mod. bio alt strong FeOx overprint
1170-1172.5' same as 1160-1164' above. Large ksp phenos are partially converted to biotite.
1172.5-1174' shattered; slight increase in Cu.
1174-1179' hard QMP; uniform trace Cu in plag.
1174.8' 4" frag of diorite (?), fine bio + plag; salt + pepper appearance.
1175.2-1179' very uniform. Trace pyr/cc @1172.7'
1179-1183' same weakly mineralized QMP. Locally shattered w/ abundant clay.
1181.5' several hairline vlts w/ chrysocolla; various orientations.
1181-1183' 1/8" vein of white clay w/ hem specks + streaks; wanders across core
1183-1188' hard QMP; dead rock. V. little oxides + no visible sulfides.
1186' 2" thick ksp vein (aplite dike??), ~20° TCA, trace chrys in nearby veins, w/ qtz + glassy limonite.
Tr. Cu clay.

DRILLING INTERVAL	% CORE RECOVERED	RECOVERY % BY A.I.	SAMPLE INTERVAL
1119 5	62	N/S	N/S
1124 5	98		
1129 5	96		
1134 5	94		
1139 5	92		
1144 5	98		
1149 5	98		
1154 5	0		
1160 4	85		
1164 5	100		
1169 5	100		
1174 5	98		
1179 4	78		
1183 5	102		
1188			

HDI CURIS

LOCATION: FLORENCE
HOLE ID: CMP11-05
SHEET 12 OF 12

CONTRACTOR: DABO
CORE SIZE: PQ
LOGGED BY: D. Russin
SCALE: 1" = 10'

COLLAR COORDINATES:
N: 746,095.87 E: 847,729.96
STARTED: June 29, 2011
COMPLETED: July 7, 2011

ELEVATION: 1475' approx
BEARING: 205.0°
INCLINATION: -88.4°
TOTAL DEPTH: 1200'

FOOTAGE	ALTERATION: ORTHO	BIO	QTZ	SER	CLAY	CHL	EPID	CARB	GYPS	ANHY	MAG	OXIDE: LIM	HEM	GOE	CU GRAPHIC	CUOX 1	CUOX 2	SULFIDE: MET ZONE	PY	CPY	CC	BN	MO	FRACT INT	FRACT DIP	FAULT DIP	FRACTURING	GEOLOGY
1190	1	3	2		3	1						0	1	1		0	1	2						2	4	-		
	1	1	2		3	1						0	1	1		0	1	4			1			3	2	-		
1200	2	4	2		3	1						0	2	1		1	1	2			0			3	2	-		

COMMENTS: Survey @ 1200': az = 216.0° incl. = -88.4°
corrected az = 205.0°

AVG. CORE REC'Y/HOLE

DESCRIPTION: GEO., MINERAL, ALT, STRUCT.

DRILLING INTERVAL	% CORE RECOVERED	RECOVERY % BY A.I.	SAMPLE INTERVAL
5	92	N/S	N/S
1193 4.5	113		
1197.5 2.5	100		

1078-1200' QMP
same as above; hard, trace Cu, relict sulfides present in some quartz veins
1191.1' 2" bx/gouge, 75° TCA.
1192.5' 4" blob of bio alteration
1193-1197.5' same; very uniform and boring. Numerous fxs ~15° TCA.
1197.5-1200' same. Strong bio alt. last 1.5'. Still showing traces of CuOx. No sulfides.

T.D. @ 1200'; out of drill rods. Sulfide zone was expected to be ~1150'.

Geology logging by SRK Consulting
427-462.5' Mike Sieber
462.5-532' Danny Russin
532-573' Mike Sieber
573-660' Katie Noonan
660-715' Mike Sieber
715-769' Danny Russin
769-830' Mike Sieber
830-905' Danny Russin
905-920' Mike Sieber
920-995' Danny Russin
995-1030' Mike Sieber
1030-1100' Danny Russin
1100-1160' Mike Sieber
1160-1200' Danny Russin

Met Zones
427-1200' Oxide
Trace Sulfides encountered in the last 30'; nearing the sulfide zone but did not reach it.

Core Recovery
All: 90.4%
QMP: 90.8%
Tgdp: 97.2%
Mixed: 84.8%
Ta: 67.7%
Diabase: 100%

Downhole Surveys

456'	201.1°	-88.7°
503.5'	165.8°	-88.8°
600'	166.9°	-88.7°
700'	178.3°	-88.9°
800'	No survey	
900'	181.9°	-88.8°
1000'	190.1°	-88.2°
1100'	205.3°	-88.3°
1200'	205.0°	-88.4°

azimuths are corrected.

Lithology

427-440' QMP	1026-1057' QMP
440-446' Mixed	1057-1065.2 Ta
446-457.5' Tgdp	1065.2-1074.1 QMP
457.5-670' QMP	1074.1-1078' Mixed
670-675' Mixed	1078-1200' QMP
675-759' QMP	
~~759-774~~.3' Diabase	
~~774~~.3-858.5' QMP	
858.5-881.5' Tgdp	
881.5-1007.3' QMP	
1007.3-1012' Mixed	
1012-1017' Tgdp	
1017-1026' Mixed	

HDI CURIS

LOCATION: FLORENCE
HOLE ID: CMP11-05
SHEET 1 OF 12

CONTRACTOR: [redacted]
CORE SIZE:
LOGGED BY: M. Sieber/D. Russin
SCALE: 1" = 10'

ELEVATION: 1975' APPROX.
BEARING: 201.1° @ 456'
INCLINATION: -88.7°
TOTAL DEPTH: 1200'

COLLAR COORDINATES:
N: 746,095.87* E: 847729.96*
STARTED: June 29, 2011
COMPLETED: July 7, 2011

COMMENTS: Survey @456': az = 212.1° incl. = -88.7° corrected az = 201.1°

AVG. CORE REC'Y/HOLE: 90.4%

FOOTAGE	ALTERATION: ORTHO	BIO	QTZ	SER	CLAY	CHL	EPID	CARB	GYPS	ANHY	MAG		OXIDE: UM JAR	HEM	GOE	CU GRAPHIC	CUOX 1	CUOX 2	SULFIDE: MET ZONE	PY	CPY	CC	BN	MO		FRACT INT	FRACT DIP	FAULT DIP	FRACTURING	GEOLOGY	DESCRIPTION: GEO., MINERAL., ALT, STRUCT.	DRILLING INTERVAL	% CORE RECOVERED	RECOVERY % BY A.I.		SAMPLE INTERVAL
	-1	-1	-1	-1	-1						N	O		S	A	M	P	L	E					-1	-1	-1	-1	-1			0-427' Casing through basin-fill sediments. Top of bedrock is unknown; first run of core is in QMP. Mud rotary drilling. Collar coordinates are NAD 83, not state plane (NAD 27) as in older holes. NAD 27 coords: 746039.99 N, 647950.60 E					
427			1		2	2								3	1		3	-	3							2	5	-			427-440' QMP 429.2-430' leached cap - hematite w/ considerable clay	427 3	40	N/S		N/S
430					2	1								2	1		3	-	3							1	5	-			433.5-434' yellow stains; jarosite?	430 5	98			
			1		3									3	1		3	-	3							5	4	4			435.8 + 436.5' Thin parallel faults, 40° TCA. Considerable quartz; phenocrysts? silicification?	435 5	96			
440			1		4									3			3	3	3							3	3	-			440-446' Mixed QMP + Tgdp	440 6	83			
			2		4									2	1		-	3	3							2	-	-			446-457.5' Tgdp 449.2-450.2' hard, silicified	446 5	88			
450			2		3									1			-	3	3							2	-	-			451-452' hard, silicified	451 5	14			
							N	O			R	E	C	O	V	E	R	Y											?	?	452-456.5' No recovery					
			2		2									1	1		-	-	3							4	-	-			456.5-457.5' same	456.5 1	40			
			1		3	1								1			-	2	2							2	-	-			457.5-670' QMP	457.5 5	54			
460							N	O			R	E	C	O	V	E	R	Y											?	?	458-458.5' breccia w/ some clay 458.6-460' Cu clays after plagioclase					
			1		4	1							1	3	2		0	2	2							4	4	2			464' 1/4" gouge zone @ 20° TCA; separates competent from broken rock. CuOx in clays above this seam; none below. Fault breccia below 464'; 95% QMP, 5% Tgdp. Abundant FeOx.	462.5 5.5	89			
					5	1							2	2	2		0	1	3							4	-	-			468-470' very broken; FeOx occurs as streaks of different colors. Shattered breccia is not milled. Trace Cu clay, no CuOx!	468 2	100			
470			1		3	1							1	2	2		0	1	3							4	4	-			470-473.5' slightly more competent rock, poorly mineralized as above. 472-473' shattered.	470 3.5	94			
			1		4	1							2	0	2		0	2	2							4	3	-			473.5-475' same as above, slight increase in Cu clay, w/ associated jarosite. Very broken	473.5	80			
	1		1		5								2	2	2		1	2	2							5	6	7			475-477.5' competent rock w/ salmon-colored kspar (strong color). Rock appears fairly fresh, w/ no obvious alteration or mineralization. 477.5-479' fault, w/ layered gouge + breccia. 60° TCA	475 5	96			
480			1		5	2							1	2	2		1	3	2							4	-	-			479-480' shattered QMP w/ blood-red ksp + abundant Cu clay in feldspars, + on fractures. 480-485' shattered QMP. 481.5-481.7, 489.5-490' milled breccia Streaky FeOx + CuOx	480 5	82			
	1		1		5	2							1	2	2		1	2	2							5	-	-			485-490' milled fault breccia, w/ clasts of QMP embedded in shattered milled QMP. Gouge zones @ various orientations (30°, 55°, 70°; appears to be random)	485 5	100			
490																																	490				

HDI CURIS

LOCATION: FLORENCE
HOLE ID: QMP11-05
SHEET 2 OF 12

CONTRACTOR: CA
CORE SIZE: PQ
LOGGED BY: D. Rossi/M. Sieber
SCALE: 1" = 10'
TOTAL DEPTH: 1200'

COLLAR COORDINATES: (NAD83) ELEVATION: 1475' APPROX
N: 7460795.87 E: 847729.96 BEARING: 165.8° @ 503.5'
STARTED: June 29, 2011 INCLINATION: -88.8°
COMPLETED: July 7, 2011

COMMENTS: Survey @ 503.5': az = 176.8° incl. = -88.8°
corrected az = 165.8°

AVG. CORE REC'Y/HOLE

DESCRIPTION: GEO., MINERAL, ALT, STRUCT.

457.5-670' QMP

490-498.7' continued fault breccia. Gouge seams in multiple orientations. Very abundant clay w/ local jerosite.
495-498.5' same fault bx. ~1/16" chrys. vein @ 497.5'; 35° TCA.

497.5' 1/16" chrys. vein, 35° TCA.
498.7-501' shattered QMP w/o rotation (no milling)
501-503.5' competent QMP; pale blue-green in plag + hem on fxs
503.5-506.5' same
506' 3" of shattered breccia, completely disaggregated. No jerosite + very little goethite.
504' 3/8" qtz-bio vein, 55° TCA.
506.5-509' solid QMP, same as 501-503.5'
509-510.5' shattered, ~3" zone of gouge/bx @ 509-509.3', 75° TCA. Gouge contains traces of Cu clay.
510.5-513.5' solid QMP as above; low-grade w/ minor Cu clay after plag.
513.5-515.8' shattered fault breccia.
514.5' 2" vein of ksp+bio+qtz, 75° TCA.
515-515.7' intensely altered fault breccia, all Tgdp w/ strong ksp→qtz alt.
515.7-518' same QMP
517.5' minor tenorite on fractures.
519.5-522' moderate qtz-ksp-bio alteration w/ tenorite + minor chrys. Well-broken.

522-527' hard barren QMP as common above. Very little clay; bio→chl+ep (completely; it is very green)
523-523.5' ~6" silicified zone w/ w/ ghostly biotite patches.
527-527.2' shattered gouge bx; 65° TCA.
527.2-529.3' QMP as above; slightly more fractured w/ abundant FeOx on fxs.

530-532' milled breccia w/ clay gouge. 65° TCA.
532.2-532.5' chunk of fine-grained light pink rock; aplite?
533-533.1' clay w/ some breccia, some Cu clay after plag.
537-537.8' abundant hematite.
537-542' abundant chlorite after biotite
539.5-540' sheared zone w/ abundant yellow FeOx

as above

549.8-552' common cu clay after plag
abundant chl after biotite

THIS FAULT CORRESPONDS W. RATTLESNAKE FAULT 559.5 to at least 660'

559.5-561' fault breccia w/ cobbles + clay

FOOTAGE	ORTHO	BIO	QTZ	SER	CLAY	CHL	EPID	CARB	GYPS	ANHY	MAG	DM JAR	HEM	GOE	CU GRAPHIC	CUOX 1	CUOX 2	MET ZONE	PY	CPY	CC	BN	MO	FRACT INT	FRACT DIP	FAULT DIP
490	1	1	1		6	2	1					1	2	2		1	2	2						5	-	-
	1	1	0		5	2	1					1	2	2		1	1	2						5	-	-
500	0	0	1		4	1	0					1	2	1		0	1	2						3	8	-
	1	1	2		3	1						0	1	1		0	2	2						3	4	-
	1	1	1		5	1						1	2	2		0	2	2						4	5	8
510	3	1	3		4	0	1					1	3	2		1	2	2						3	4	-
	4	1	3		3	1	0					1	2	3		0	2	2						5	4	4
520	3	2	3		2	2						0	2	1		2	2	1						3	5	-
	3	2	4		3	2	2					0	2	2		0	1	3						3	6	-
	2	2	3		3	1	1					1	2	2		0	1	3						2	6	-
530	1		1		4	1						0	1	2		0	0	3						5	-	1
			1		4	1							1			0	3	3						4	5	-
540	2	2	1		1	3							2	1		3	0	3						2	6	-
		1	1		1	2							1	1		0	0	3						4	6	-
550	1	2	1		1	2							1			3	3	3						3	7	-
		2			1	2							2	1		3	3	3						5	6	8
560		1	1			3							2	1		0	0	3						5	8	8

DRILLING INTERVAL	% CORE RECOVERED
490 5	100
495 3.5	94
498.5 5	96
503.5 3	100
506.5 3.5	100
510 5	102
515 3	73
518 4	88
522 5	98
527 3	110
530 2	95
532 5	90
537 5	92
542 5	96
547 5	92
552 5	98
557 5	66

RECOVERY % BY A.I. N/S

SAMPLE INTERVAL N/S

HDI CURIS

LOCATION: FLORENCE
HOLE ID: CMP11-05
SHEET 3 OF 12

CONTRACTOR: CASE
CORE SIZE: PQ
LOGGED BY: M. Siebert/K. Nunan
SCALE: 1" = 10'
TOTAL DEPTH: 1200'

ELEVATION: 1475' approx
BEARING: 166.9° @ 600'
INCLINATION: -88.7°

COLLAR COORDINATES: NAD83
N: 7460958.87 E: 847729.96
STARTED: June 29, 2011
COMPLETED: July 7, 2011

COMMENTS: Survey @ 600'; az = 177.9°, incl. = -88.7°
corrected az = 166.9°

AVG. CORE REC'Y/HOLE

DESCRIPTION: GEO., MINERAL, ALT, STRUCT.

FOOTAGE	ALTERATION: ORTHO	BIO	QTZ	SER	CLAY	CHL	EPID	CARB	GYPS	ANHY	MAG	OXIDE: LIM STAR	HEM	GOE	CU GRAPHIC	CUOX 1	CUOX 2	SULFIDE: MET ZONE	PY	CPY	CC	BN	MO	FRACT INT	FRACT DIP	FAULT DIP	FRACTURING	GEOLOGY	DESCRIPTION	DRILLING INTERVAL	% CORE RECOVERED	RECOVERY % BY A.I.	SAMPLE INTERVAL
560	-1	-1	-1	-1			N	D			R	E	C	D	V	E	R	V						-1	-1	-1	?	?	457.5-670' QMP continued from above	5			
																								5					562-562.5' all ~2cm gravel.	548.5	100		
	1		1		1	2							2			3	-	3						5	8	7			562.5-562.7' fault breccia (total 559.5-562.7')	5.5	91		
																													562.7-568' much larger fragments, + stronger alteration	548			
570					4											3	2	3						5	-	-			568-573' fault breccia w/ frags up to ~4-6".	5	94		
																													571.1-573' Tgdp; all sheared fault breccia. Common Cu clay.	573			
					5	1						1	4	2		1	1	3						5	-	4			573-573.3' strong chrys in one fx; ~1-3cm crackled rock w/ chrys cement.	5	100		
																													573-578' all fault bx w/ milled frags.	578			
580					5	1						1	3	1		-	-	3						5	-	5			578-580.5' fault bx, 50° TCA? No visible Cu.	2.5	80		
					1	1						1	2	1		-	-	3						1	4	7			580.5-583' very abundant ksp; rock is nearly all pink. No visible Cu; fxs ~35° TCA.	580.5			
																													580.5-580.7' bx w/ abundant FeOx; ~70° TCA.	2.5	96		
					1	1						1	5	3		1	-	3						5	4	4			583-588' very high FeOx; minor Cu visible of fxs.	583			
																													585.7-586', 583-583.2', 584.8-585.2' fault bx, ~40° TCA. rock is fairly hard between them	5	98		
					1	1						1	2	1		-	-	3						4	-				588-590' Cu increases downward; rock is very well broken.	588	100		
590	-1	-1	-1	-1			N	D			R	E	C	D	V	E	R	V						-1	-1	-1	?	?	590-591.5' no recovery	2			
					4	1							3											5	-	-			591.5-592.5' fault bx w/ gouge 591.5-591.7'.	590			
																													592.5-597.5' high Cu clay + CuOx; minor tenorite. Biotite flooding @ bottom of the interval	2.5	40		
		2			3	1						1	4	2		2	2	2						5	-	-			594.3-596.3' fault breccia; w/ gouge(minor) + possible pieces of Tgdp. No ∠ measurable.	592.5	96		
																													597.5-602.5' breccia w/ gouge; as above. Cu clay is conspicuous throughout the interval.	5			
600	1	2			5	1						1	3	1		1	2	2						5	-	6			597.5-598' biotite flooding as seen above. ~40x40mm ksp phenos embedded in bio. Fault ~60° TCA.	597.5	100		
																													602.5-607.5' more competent QMP, scattered Fe/CuOx.	5			
					3	1						1	4	1		1	1	2						4	-	-			irregular fractures very common, w/ ↗, minor clay + chrys.	602.5	100		
																													607.5-610' very broken but not milled bx.	5			
					2	1						1	1	1		2	2	2						5		-			609.6-616' high Cu, some chrys. on fxs w/ slickensides.	607.5	104		
610																													609-611' 2mm-wide vein of CuOx; 20° TCA. Full of light green clay, w/ tenorite on the sides. Rock is brecciated below this vein; thin fault?	2.5			
					2	1						1	1	1		2	2	2						5	-	1			613-615' back into fault breccia	610	100		
																													615-620' entirely fault breccia, w/ large fragments surrounded by FeOx-rich matrix.	5			
					1	1						1	1	1		1	1	2						5	-	-				615	100		
620																													620-628' very fractured w/ intermittent breccia, little gouge. CuOx on fractures oriented ~30-70° TCA.	5			
					4	1						1	3	2		3	3	2						5	-	4				620	100		
																													625-630' very fractured as above, could not clean core from 628.5-629.5'	5			
					4	1						1	4	2		1	1	2						5	-	3			627.2-627.5', 628.5-629.5' fault breccia w/ gouge in lower zone, ~25° TCA. some Cu clay in fault gouge.	625	100		
630																														5			

RATTLESNAKE FAULT ~559.5 – 660'

HDI CURIS

COLLAR COORDINATES: N: 746,095.87 E: 847,729.96
STARTED: June 29, 2011
COMPLETED: July 7, 2011

ELEVATION: 1475' approx.
BEARING: 166.9° @ 60°
INCLINATION: -88.7°
TOTAL DEPTH: 1200'

CONTRACTOR: CALO
CORE SIZE: HQ
LOGGED BY: K. Nonas/M. Sieber
SCALE: 1" = 10'

LOCATION: FLORENCE
HOLE ID: CMD11-05
SHEET 4 OF 12

AVG. CORE REC'Y/HOLE

FOOTAGE	ALTERATION: ORTHO	BIO	QTZ	SER	CLAY	CHL	EPID	CARB	GYPS	ANHY	MAG	OXIDE: UM JAR	HEM	GOE	CU GRAPHIC	CUOX 1	CUOX 2	SULFIDE: MET ZONE	PY	CPY	CC	BN	MO	FRACT INT	FRACT DIP	FAULT DIP	FRACTURING	GEOLOGY
630					3	2						1	4	2		1	1	2						5	-	-		
640					3	1						2	4	2		2	2	2						5	6	3		
					4	2						1	3	3		2	3	2						4	-	-		
650					2	2						1	3	3		2	1	2						4	-	5		
					3	1						1	3	3		1	1	2						5	-	-		
		1			1	1						1	2	2		1	1	2						4	-	-		
660			1		2								2			1	2	2						5	7	2		
	1	1	1		1	1							2			2	3	2						4	7	-		
670					1								3	1		0	0	3						4	5			
			1		1								2	1		2	2	2						5	6	7		
680	1	1	1		1	1							1			2	2	2						4	6	-		
	1	2	1		1	1							1	1		2	2	2						2	7	-		
690	1	2	1		1	1							1	1		2	2	2						3	8	-		
700	1	1	1		1	1							1	1		2	2	2						2	8	-		

COMMENTS:

DESCRIPTION: GEO., MINERAL, ALT, STRUCT.

457.5-670' QMP continued from above

630-635' fault bx; very crumbly; can't wash 632.8-633.2'. Minor chrysocolla on fds, very little gouge.
635-640' similar to above; fault bx; seems to be ~30° TCA.
638.9-640' high-grade Cu; rich Cu clay (seafoam green)
639' 2x2cm bio patch → chlorite; ~2x2cm of Tgdp (?)
640-645' similar fault bx; discontinuous zones of breccia separated by shattered QMP.
640-646.2' solid Cu clay
644.2-644.5' gouge
645-650' shattered QMP.
646.3-646.5', 646.9-647.1', 648.8-649', 649.2-649.4' thin intervals of milled bx. ~50° TCA.
649-649.4' olive-green patches of clay.
650-655' fault bx, little gouge. Low Cu.
655-660' same shattered rock; low Cu & intermittent thin breccia zones.
658.5-660' biotite flooding
660.5-661.4' Cu clay after plag.
661.7-663.5' 1cm vein of CuO_x/Cu clay, ~10° TCA.
Rock has strong clay-chlorite overprint
668.3-668.4' ~1.5" qtz vein, ~70° TCA.

670-675' Mixed QMP & Tgdp

Mostly Tgdp; well broken w/ abundant goethite. Little Cu.

675-759' QMP

675.9-680' Cu clay after plag
675-675.9 Tgdp; contact w/ QMP @ 675.9' is ~70°.
676.1-676.3' brecciated
680-685' minor Cu clay in plag sites, as above
~3% bio → chl.
Fairly uniform rock, streaks of goethite & minor Cu clay after plag.
695-700' increase in hematite

DRILLING INTERVAL	% CORE RECOVERED	RECOVERY % BY A.I.	SAMPLE INTERVAL
630 5	100	N/S	N/S
635 5	100		
640 5	94		
645 5	98		
650 5	88		
655 5	102		
660 5	84		
665 5	100		
670 5	96		
675 5	94		
680 5	92		
685 5	94		
690 5	88		
695 5	92		

HDI CURIS

LOCATION: FLORENCE
HOLE ID: CMPW-05
SHEET 5 OF 12

CONTRACTOR: CASCO
CORE SIZE: PQ
LOGGED BY: M.Sieber/D.Russia
SCALE: 1" = 10'

ELEVATION: 1475' APPROX
BEARING: 178.3° @ 700'
INCLINATION: -88.9°
TOTAL DEPTH: 1200'

COLLAR COORDINATES:
N: 7460095.87 E: 8477729.96
STARTED: June 29, 2011
COMPLETED: July 7, 2011

COMMENTS: Survey @ 700': az = 189.3° incl. = -88.9°
corrected az = 178.3°

AVG. CORE REC'Y/HOLE

DESCRIPTION: GEO., MINERAL, ALT, STRUCT.

675-759' QMP continued from above

700-705' very hard competent rock.
702.1-705' Cu in plag sites & on fractures.

708' minor tenorite + hematite plates Cu

712.4 & 714.2'

715-720' blown out of tube halfway w/o plug. Well-fractured but intact QMP. Blood-red hematite common in plag; minor Cu clay present throughout the interval.

715.5-716' streaks of tenorite up to ~1cm wide. Irregular.

720-725' competent core w/ decent RQD. Abundant qtz veins w/ hem pseudomorphs after py+/cpy.

725-730' patches of quartz flooding; several 1/4-1/2" qtz vns (w/ hem after sulfides) with ~1" qtz-bio envelopes. ~45° TCA.

733.5' crackled qtz w/ tiny (<1mm) hem on fxs

730-735' similar to above; slightly less intense qtz-ksp-bio alt. Common hem & Cu clay in plag sites

734.5-734.7' shattered zone.

735-740' same as previous interval

736.5' 1" qtz-tenorite vein, ~40° TCA. Abundant thin (<2mm) fxs w/ chrys. Common cu clay after plag.

741' 1" qtz-ten vn w/ ~1.5" (on each side) qtz-ksp-bio envelope. Abundant jarosite & greenish clay

744.6-745.1' abundant qtz veins <1cm, w/ chrys & hem after plag. Jarosite is common in plag sites. A few small thin sericite envelopes (?) visible in ksp grains.

750.1-750.6' streaks & irregular clots of tenorite. Good grade

751.5' 1" vein of qtz+chrys+tenorite w/ hem & goe. ~30° TCA.

751.5-754' common ~1cm veins of chrys & Cu clays.

756-756.4' solid qtz w/ some chrys & ten on fxs. Silicified zone, not vein quartz.

756.4-757' milled fault bx. 35° TCA; abundant jarosite & Cu clay.

758-759' strong Cu clay w/ minor chrys. in fxs.

759-774.3' Diabase ↖ contact sheared; ~60° TCA.

Medium gray slightly porphyritic diabase. Abundant quartz veins w/ thin sericite envelopes, largest vein is ~7mm. Most are 50-70° TCA. Not much Cu mineralization.

764-769' recovered 0.4' of brecciated diabase & gray-brown gouge.

DRILLING INTERVAL	% CORE RECOVERED	RECOVERY % BY A.I.	SAMPLE INTERVAL
700-705	92	N/s	N/s
705-710	86		
710-715	98		
715-720	94		
720-725	94		
725-730	106		
730-735	98		
735-740	88		
740-744	93		
744-749	98		
749-754	100		
754-759	96		
759-764	96		
764-769	8		

FOOTAGE	ORTHO	BIO	QTZ	SER	CLAY	CHL	EPID	CARB	GYPS	ANHY	MAG	LIM JAR	HEM	GOE	CU GRAPHIC	CUOX 1	CUOX 2	MET ZONE	PY	CPY	CC	BN	MO	FRACT INT	FRACT DIP	FAULT DIP	FRACTURING	GEOLOGY
700	1		1		1	1							1			1	2	2						1	8			
710	1	1	1		1	1							2	1		2	2	2						3	6	-		
720	2	1	1		3	1						1	1	2		1	2	2						3	5	-		
730	3	1	3		3	1	1					1	2	2		1	2	2						2	6	-		
740	4	2	5		3	1	1					1	2	2		1	3	2						2	8	-		
750	2	1	3		3	1	1					1	3	2		1	3	2						1	7	-		
760	2	2	4		3	1	0					1	3	2		2	2	2						1	7	-		
	2	1	3		3	1						1	3	2		3	2	2						1	3	-		
	3	2	4	1	3	1						1	2	1		2	2	1						1	7	-		
	3	2	3	2	4	1						1	2	1		4	3	1						1	3	-		
	3	1	5	1	5	1	1					1	2	2		2	3	1						5	4	4		
	0	0	3	2	1	1	0					0	1	0		1	0	2						3	7	-		
					NO			RECOVERY																			?	?
770																												

COLLAR COORDINATES:	ELEVATION: 1475' APPROX	CONTRACTOR: CABO	HDI CURIS
N: 746,095.87 E: 847,729.96	BEARING: 178.3° @ 800'	CORE SIZE: PQ	LOCATION: FLORENCE
STARTED: June 29, 2011	INCLINATION: -88.9°	LOGGED BY: M. Sieber/D. Russin	HOLE ID: CMP11-05
COMPLETED: July 7, 2011	TOTAL DEPTH: 1200'	SCALE: 1" = 10'	SHEET 6 OF 12

FOOTAGE	770	780	790	800	810	820	830	840
ALTERATION: ORTHO		1	1	-1		1	1	2
BIO		1	1	-1	1			1
QTZ	3	1		-1	1	1	1	3
SER	3							1
CLAY		1	1	NO	2	1	1	3
CHL			1		1	1	1	1
EPID								
CARB								
GYPS								
ANHY								
MAG								
OXIDE: ~~LIM~~ JAR								0
HEM	2	1	3		2	1	2	2
GOE		1			1	1		1
CU GRAPHIC								
CUOX 1	2	-	-		3	2	2	1
CUOX 2	1	2	2		2	2	2	2
SULFIDE: MET ZONE	2	2	2		2	2	2	2
PY								
CPY								
CC								
BN								
MO								
FRACT INT	5	3	5	4	3	2	5	2
FRACT DIP	-	8	6	8	-	6	7	7
FAULT DIP	8	5	-	-	6	-	5	-
FRACTURING								
GEOLOGY								

COMMENTS: Survey @ 800' = az = 189.3° incl. = -88.9°
connected az = 178.3°

AVG. CORE REC'Y/HOLE

DESCRIPTION: GEO., MINERAL, ALT, STRUCT.

759-774.3' Diabase continued from above; abundant qtz vns w/ sericite envelopes.
759-759.6' mostly clay w/ some diabase fragments
772.7-773' 2cm vein of solid chrys; likely a former solid cpy vn.

774.3-858.5' QMP
Similar to QMP seen above; strong FeOx + clay + bio → chlorite.
contact is ~35° TCA; planar intrusive (?) fault?

782.6' several patches of tenorite.

787.2-788.2' fault breccia w/ abundant FeOx + little gouge.

similar to above.
790.5-791' exceptionally strong clay alteration (ksp + plag → completely white clay)

THRASHER FAULT ZONE ~787-805' SHEARED, CLAY ALT, NO REC.

794.5-800' no recovery.

800-805' similar to above; sheared QMP w/ strong clay alt. Minor Cu clay after plag.

805-810' similar to above. Yellow-green (jarosite + Cu clay?) in plag sites. Common qtz vns up to ~10mm.

810.8-811.8' sheared + deformed orthoclase
810-815' decent Cu mineralization of fractures + clays.

817.6-818' numerous clay-filled fractures

823.4-825' mostly light green Cu clay in feldspars, fine hematite.
823.7-825' silicified.
826-826.3' breccia w/ clay
825.3-826.6' good Cu clay; one is light green.

830-835' QMP w/ common qtz-biotite veins; possibly some sericite in the vein envelopes.
Weak-mod Cu clay in plag sites.
835-840' very uniform mdt; Cu clay partially repl. plag; streaks of hem + goe.
Common Qtz vns up to ~1cm.
837.5' 1" qtz vein w/ weak ksp envelope.

DRILLING INTERVAL	% CORE RECOVERED	RECOVERY % BY A.I.	SAMPLE INTERVAL
769 5	96	N/S	N/S
774 5	98		
779 5	98		
784 5	96		
789 5.5	89		
794.5 5.5	0		
800 5	90		
805 5	96		
810 5	98		
815 5	84		
820 5	94		
825 5	94		
830 5	92		
835 5	80		

COLLAR COORDINATES: N: 746,095.97 E: 847,729.96
STARTED: June 29, 2011
COMPLETED: July 7, 2011

ELEVATION: 1475' APPROX
BEARING: 181.9° @ 900'
INCLINATION: -88.8°
TOTAL DEPTH: 1200'

CONTRACTOR: CABO
CORE SIZE: PQ
LOGGED BY: D. Russin / M. Sieber
SCALE: 1" = 10'

HDI CURIS
LOCATION: FLORENCE
HOLE ID: CMP11-05
SHEET 7 OF 12

COMMENTS: Survey @ 900'; az = 192.9° incl. = -88.8°
corrected az = 181.9°

AVG. CORE REC'Y/HOLE

FOOTAGE	ORTHO	BIO	QTZ	SER	CLAY	CHL	EPID	CARB	GYPS	ANHY	MAG	JAR	HEM	GOE	CUOX 1	CUOX 2	MET ZONE	PY	CPY	CC	BN	MO	FRACT INT	FRACT DIP	FAULT DIP	DRILLING INTERVAL	% CORE RECOVERED
840–843					6	1						0	1	2	0	2	2						5	-	-	3	80
843–848	4	2	3	1	3	1						1	1	1	1	2	1						2	7	-	5	92
848–850	2	3	2	0	4	0						6	1	1	1	2	2						1	7	-	2	100
850–855	3	2	3		4	1	1					0	3	2	1	2	2						3	6	6	5	92
855–860	2	1	3		5	1	1					0	2	3	1	3	2						5	5	5	5	96
860–865	1	1	2	2	6	0	0					0	3	3	0	0	3						5	-	-	5	104
865–870	3	0	2	0	5							0	4	2	0	0	3						5	-	-	5	102
870–875	3	0	2		4	1						1	2	3	0	0	3						4	-	-	5	92
875–880	3	1	3		4	1						0	2	2	0	1	3						4	-	3	5	92
880–885	4	2	4		2	1						0	1	1	2	2	1						2	4	-	5	100
885–890	2	2	3		5	1						1	1	2	2	2	1						5	4	4	5	92
890–895	1	2	1		5	1						0	1	2	3	2	1						5	-	-	5	102
895–900	0	0	0		6	1						1	3	2	0	2	1						5	-	-	5	88
900–905					5	1						0	3	2	1	2	2						5	7	7	5	100
905–910					5	1							3		1	2	2						5	7	-	5	84

RECOVERY % BY A.I.: N/S
SAMPLE INTERVAL: N/S

DESCRIPTION: GEO., MINERAL, ALT, STRUCT.

774.3–858.5' QMP cont. from above
840–843' milled bx + gouge. Weak Cu clay throughout, no measurable orientation.
844–845' slightly finer-grained QMP; largest ksp < 1cm. Similar alt/min to above.
843.8–844.5' abundant biotite veins + irregular patches.
844.3' ½" bio-chl vein.
848.6' ~3/8" qtz-ksp(?) vn w/ 1.5" bio-hem envelope. EDM vein? 848–850' wk Cu clay after plag.
852' 2" qtz-bio swath; pervasive alteration, not a vein.
854' 3" of gouge/bx; 60° TCA. Shattered bx below.
855–856' fault bx w/ gouge; 40° TCA. Strong Cu clay + minor chrys.
856.6' 3" sheared breccia, strong Cu clay.
↑ contact is broken; appears to be ~50° TCA.

858.5–881.5' Tgdp
Medium-light gray, locally altered (qtz, ser, ksp)
860–865' fault breccia, all Tgdp. Milled fragments up to ~10cm. Some fragments have visible veining (qtz w/ ser(?) envelopes)
865–867' same breccia
867–873.5' very well broken but not milled. Possible abundant fine qtz veins, but hematite overprint makes it difficult to tell.
873.5–875' much more competent rock. Abundant qtz vns w/ ksp envelopes. Common sericite on fcs. No Cu.
875–880' similar to above; shattered Tgdp. Heavy clay + FeOx overprint, makes veins difficult to identify.
876' ¼" biotite vein, 25° TCA.
876, 878, 879' shears @ 30° TCA. QMP frag @ 880.5' (4" or so)

881.5–1007.3' QMP ↑ intrusive planar contact; 45° TCA.
hard QMP w/ strong qtz-kspar alt. Sheeted chrys + tenorite vlts, < 5mm, mostly ~35° TCA.
885–885.5' Tgdp w/ 2 1" EDM vns, both parallel @ ~40° TCA.
884.5–885' much CuOx; irregular mass? Broken up removing from the shoe.
885.5–910' QMP Fault breccia. Abundant blotches of clays, tenorite, + Cu clay. Shears are ~35° TCA. Top contact is ~80° TCA.
890–895' extremely sticky core; stuck badly to splits + was mostly pulled apart.
890.3–890.8' very strong CuOx; tenorite + chrysocolla are nearly solid in small areas.
895–900' strong clay–FeOx overprint; detail is obscured.
900–905' slightly more competent.
903' ~2" of solid gouge; 65° TCA.
905' mod. Cu clay in plag. sites.
905–907.1 ↗
907.1–910' strong clay; core sticking to splits.

FIDICURIS LOCATION: FLORENCE
HOLE ID: AMP11-05
SHEET 8 OF 12
CONTRACTOR: CAB0
CORE SIZE: PQ
LOGGED BY: M.Sieber/D.Rossin
SCALE: 1" = 10'
ELEVATION: 1475' approx
BEARING: 181.9°
INCLINATION: -88.8°
TOTAL DEPTH: 1200'
COLLAR COORDINATES:
N: 7460955.87 E: 847779.96
STARTED: June 29, 2011
COMPLETED: July 7, 2011

FOOTAGE	ALTERATION: ORTHO	BIO	QTZ	SER	CLAY	CHL	EPID	CARB	GYPS	ANHY	MAG	OXIDE: THM JAR	HEM	GOE	CU GRAPHIC	CUOX 1	CUOX 2	SULFIDE: MET ZONE	PY	CPY	CC	BN	MO	FRACT INT	FRACT DIP	FAULT DIP	FRACTURING	GEOLOGY
					N	O		R	E	C	O	E	R	Y													?	?
910					1								1	1		1	2	2						3				
					5								1			1	2	2						4	-	-		
	1	1	1		3	1										2	2	2						5	6	5		
920	2	3	3		4	1	1					0	2	1		1	2	2						2	7	-		
	4	1	2		4	1	1					1	3	1		0	2	2						2	7	-		
930	2	2	3		4	1	1					1	3	2		1	2	2						3	4	-		
	1	1	2		5	1	1					1	3	3		1	2	2						5	3	3		
940	3	2	4		6	1	1					0	2	2		0	2	2						5	-	-		
	3	2	4		6	1	1					0	2	2		0	2	2						5	-	-		
950	1	1	1	2	3	1	0					1	2	1		0	2	2						2	4	-		
	1	0	1	4	4	0						0	4	1		0	1	3						4	4	-		
960	1	2	1	2	5	1						2	1	2		0	2	2						5	-	3		
	5	1	4	0	4	1						1	2	1		0	2	2						3	4	7		
970	1	0	2		4	1						2	2	1		0	3	2						3	5	-		
	2	2	3	1	5	1						1	3	3		1	2	2						5	-	-		
980																												

COMMENTS:

AVG. CORE REC'Y/HOLE

DESCRIPTION: GEO., MINERAL, ALT, STRUCT.

881.5-1007.3' QMP

~910-912' no recovery

915-915.3' redrilled pebbles

916.9-917.5' fault zone, ~45° TCA.
Minor Cu clay after plagioclase

917 to 918.5' chunks of bio-rich ro ; looks almost like clasts but is probably alteration. Strong Cu clay associated with them.
Abundant qtz veins w/ associated qtz-ksp-bio envelopes (thin)

925-930' similar to above, not very interesting. Fewer qtz vns & bio than previous interval
Lots of ksp; flooding (?) 927-927.8'.

930-932.8' same; most qtz veins are ~70° TCA.
932.5-933' strong qtz (+bio+ksp) alt; w/ Cu clay & minor chrys; epidote common in bio sites.
933.5-934' shattered zone; seams of breccia (milled) are < ½".

935-940' some weakly mineralized QMP.
936.5-937' gouge/bx; no measurable angle.
938-939.5' gouge/bx; 25° TCA. Minor Cu clay & common jarosite.

940-945' fault bx; shattered & locally milled. Some low-grade QMP.
numerous qtz-ksp vns w/ bio; various orientations.

945-950' same ↗

950.3' begin competent QMP. Same rock, just not faulted. Abundant <1mm fis w/ hem.
953-955' sheeted fis; ~30° TCA. Abundant hem @ bottom of the vn; very red color.

955-956.5' same ↗
956.5-959' strong sericite alt (?); looks almost etched. Intense hem; sheeted fis ~40° TCA.
Looks leached.
959-960' back into weakly altered, low grade QMP.
960-964.1' shattered & milled breccia
963' 4" clot of biotite; altered diabase fragment?
964.1' 25° TCA top of gouge zone. Abundant goethite & jarosite in bx.
965-968' same QMP
968-968.8' v. strong qtz-ksp alt (or aplitic dike?); no orientation visible. Fractured & original texture of QMP is gone.
969' 1" gouge w/ Cu; 65° TCA.
969-970' increase in Cu; more competent rock.
970-973' same?; sheeted fis w/ hem coating; 10° TCA.
972.5' ~1" of yellow-stained clay; ~50° TCA.
973-975' shattered; possibly milled but difficult to see. Abundant hematite.
975-980' recovered 4'; all fault breccia w/ fairly large fragments. Little milling, or just v. large pieces? Abundant Clay, Cu clay, & FeOx

DRILLING INTERVAL	% CORE RECOVERED	RECOVERY % BY A.I.	SAMPLE INTERVAL
910 5	42	N/S	N/S
915 1.5	67		
916.5 3.5	91		
920 5	92		
925 5	98		
930 5	102		
935 5	94		
940 5	90		
945 5	94		
950 5	100		
955 5	94		
960 5	98		
965 5	96		
970 5	100		
975 5	74		

HDI CURIS

LOCATION: FLORENCE
HOLE ID: CMP11-05
SHEET 9 OF

CONTRACTOR: CABO
CORE SIZE: PQ
LOGGED BY: D. Russin/M. Sieber
SCALE: 1" = 10'

ELEVATION: 1475' APPROX
BEARING: 190.1° @ 1,000'
INCLINATION: -88.2°
TOTAL DEPTH: 1000'

COLLAR COORDINATES:
N: 746,095.87 E: 847,729.96
STARTED: June 29, 2011
COMPLETED: July 7, 2011

COMMENTS: Survey @ 1000': az = 201.1° incl = -88.2°
corrected az = 190.1°

AVG. CORE REC'Y/HOLE

FOOTAGE	ORTHO	BIO	QTZ	SER	CLAY	CHL	EPID	CARB	GYPS	ANHY	MAG	~~HM~~ JAR	HEM	GOE	CU GRAPHIC	CUOX 1	CUOX 2	MET ZONE	PY	CPY	CC	BN	MO	FRACT INT	FRACT DIP	FAULT DIP	FRACTURING	GEOLOGY	DESCRIPTION: GEO., MINERAL, ALT, STRUCT.	DRILLING INTERVAL	% CORE RECOVERED	RECOVERY % BY A.I.	SAMPLE INTERVAL
980	1	1	2	1	5	1						1	2	3		1	2	2						5	7	3			881.5-1007.3' QMP 980-982.5' fault bx; large fragments & gouge w/ trace Cu clay. 30° TCA bottom contact 982.5-985' QMP as above; Qtz+ksp+bio, w/ minor Cu clay after plag	980 5	94	N/S	N/S
	1	1	2	1	4	1						0	2	2		1	2	2						3	-	-			985-990' same QMP ↳ alt. mainly present as veins & assoc. envelopes. 987.5' ~2" x 0.5" clot of secondary biotite. 988.5-988.8' stronger clay alt; w/ mod. Cu clay	985 5	102		
990	1	1	2	1	6	1						1	2	3		1	2	2						5	-	4			990-995' shattered fault breccia w/ milled frags & gouge; streaky clay, FeOx, + chl. Minor Cu clay. Shears are ~35° TCA. Difficult to see any alteration, so used codes from the interval immediately above.	990 5	102		
	1		1		2	1							2	1		7	2	2						5	7	3			995-1000' same QMP 995.1' end of fault zone, bottom contact @ 45° TCA.	995 5	94		
1000	1	1			2	1							1	1		2	2	2						3	5	-			1000-1000.5' common Cu on fractures 1000.5-1000.6' bx zone ~2cm wide 1002.5' 1-2cm band of blue-green Cu clay; looks like a thin bx zone. ~40° TCA.	1000 5	90		
	1	1			3								2	3		-	-	3						2	-	-			1007.3-1012' Mixed QMP + Tgdp	1005 5	90		
1010					4								3	3		-	-	3						5	-	-			Rock is faulted + well broken; strong FeOx-clay overprint. Fault ~50° TCA.	1010 2	25		
					6	2							3	2		2	2	2						5	6	-			1012-1017' Tgdp Plag is partially replaced by Cu clay Core is sheared + very soft. SIDEWINDER FAULT ZONE 1010 — 1095	1012 5	96		
					6								3	2		3	2	3						5	8	-			1017-1026' Mixed QMP + Tgdp Common Cu clay after plag.	1017 3.5	97		
1020		1			7	1						1	1	2		1	1	1						5	7	-			1019.6-1020.5' swirls of irregular Cu clay 1019.9' minor component of clasts of Ta 1020.5-1026' common tenorite + chrysocolla, esp. 1022-1022.5'	1020.5 5.5	82		
	1	1			7	1						1	2	2		1	1	1						5	6	-			1026-1057' QMP 1026-1030' common chrys + tenorite.	1026 4	95		
1030	2	1	2		5	2						1	3	2		2	2	2						5	-	-			1030-1035' fault breccia, all frags are QMP. Patches of Cu clay w/ minor chrys + ten locally. Slightly more competent at bottom of interval, not milled bx. 1031.5' strong tenorite in sheared zone; streaks are over 2" wide	1030 5	102		
	2	1	2		4	1						1	3	2		1	2	2						5	5	3			1035-1038.5' same harder QMP as above, QMP w/ strong clay 1038.5-1057' fault zone w/ much gouge; streaky FeOx	1035 5	100		
1040	0	0	0		6	1						1	2	4		0	1	3						5	-	3			1040-1045' all frags <2", shears ~25° TCA.	1040 5	102		
1050					6	1						1	3	4		0	1	3						5	-	3				1045 5	100		

HDI CURIS

LOCATION: FLORENCE
HOLE ID: CMP11-05
SHEET 10 OF 12

CONTRACTOR: CARO
CORE SIZE: PQ
LOGGED BY: D. Russin / M. Sieker
SCALE: 1" = 10'

ELEVATION: 1475' approx.
BEARING: 205.3°
INCLINATION: -88.3°
TOTAL DEPTH: 1200'

COLLAR COORDINATES:
N: 746,095.87 E: 847,728.96
STARTED: June 29, 2011
COMPLETED: July 7, 2011

COMMENTS: Survey @ 1100': az = 216.3° incl = -88.3°
corrected az = 205.3°

AVG. CORE REC'Y/HOLE

DESCRIPTION: GEO., MINERAL, ALT, STRUCT.

FOOTAGE	ALTERATION: ORTHO	BIO	QTZ	SER	CLAY	CHL	EPID	CARB	GYPS	ANHY	MAG	OXIDE: LIM JAR	HEM	GOE	CU GRAPHIC	CUOX 1	CUOX 2	SULFIDE: MET ZONE	PY	CPY	CC	BN	MO	FRACT INT	FRACT DIP	FAULT DIP	FRACTURING	GEOLOGY
1050					6	1						1	3	3		0	1	3						5	-	-		
					6	1						1	2	2		0	1	3						5	-	-		
1060					5	0						0	1	0		0	0	3						5	-	-		
					6							1	2	3		0	1	2						5	-	-		
1070					6							1	1	3		0	1	3						5	-	5		
					6							0	4	3		1	1	2						5	-	-		
1080					5							1	2	2		0	1	3						4	6	-		
		1	1		5	1	1					1	4	3		0	1	3						5	-	3		
1090					N	O		R	E	C	O	V	E	R	Y												?	?
	1	1	1		3	1	1					0	2	2		0	2	2						3	2	-		
1100	1	1	2		1	1							2	2		2	2	2						2	6	-		
	1	1	1		2	1							2	2		2	2	2						3	7	-		
1110	1	1			3	1							1	1		2	2	2						3	-	-		
	2				2	1							1	1		2	2	2						4	6	-		
1120																												

1026-1057' QMP — SIDEWINDER FAULT ZONE 1010 – 1095'

cont. from above; milled fault bx.

1057-1065.2' Ta — ↑ contact rubblized

1057-1061.5 cont. fault bx.

Quite porphyritic; white plag up to ~5mm. Rock is rich red-brown, 5YR 3/4 still very broken w/ abundant gray-green clay

1065.2-1074.1' QMP — ↑ contact irregular, but ~25° TCA.

Back into same fault bx

1066.5' 4" clast w/ strong chrys + Cu clay

Shears @ ~40° TCA; much gouge & frags are <1".

1074.1-1078' Mixed QMP + Tgdp — ↑ contact brecciated

Fault bx w/ abundant Ta fragments. Mostly Tgdp, w/ mod Cu mineralization; chrys & ten locally abundant.

1078-1200' QMP — ↑ contact brecciated

1080-1085' shattered QMP, not milled bx. Heavy clay overprint w/ v. little Cu.

1085-1085.6' same ↑

1085.6-1086' light blue clay gouge; 25° TCA. Mod. Cu clay.

1086-1089.5' shattered, well oxidized QMP w/ strong clay overprint.

1089.5-1090' milled bx & gouge. Shears ~65° TCA.

1090-1095' recovered 0.6' of milled bx as above. All in shoe, tube was empty.

1095-1100' reasonably competent QMP, sheeted fxs ~45° TCA. Weak Cu clay after plag. Clay seams up to ~1/4" locally. Weakly altered; only small vlts of qtz + ksp + bio.

1101.7' CuOx on fractures

1106.5-1108' moderate development of bio in QMP.

1110.7-1111.5' brecciated zone w/ v. abundant FeOx.

1113.5-1119' competent QMP. Strong clay after plag; very little ksp as well. Rock is quite light in color.

Considerable biotite.

DRILLING INTERVAL	% CORE RECOVERED	RECOVERY % BY A.I.	SAMPLE INTERVAL
1050 – 5	100	V/S	V/S
1055 – 5	96		
1060 – 5	104		
1065 – 5	98		
1070 – 5	102		
1075 – 5	98		
1080 – 5	100		
1085 – 5	98		
1090 – 5	12		
1095 – 5	100		
1100 – 3.5	83		
1103.5 – 5	94		
1108.5 – 5	96		
1113.5 – 5.5	89		

HDI CURIS

COLLAR COORDINATES: NAD83 N: 7146095.87 E: 847729.96
STARTED: June 29, 2011
COMPLETED: July 7, 2011

ELEVATION: 1475' Approx
BEARING: 205.3°
INCLINATION: -88.3°
TOTAL DEPTH: 1200'

CONTRACTOR: CABO
CORE SIZE: PQ
LOGGED BY: M. Siebert/D. Bussin
SCALE: 1" = 10'

LOCATION: FLORENCE
HOLE ID: CMP11-05
SHEET 11 OF 12

FOOTAGE	ALTERATION: ORTHO	BIO	QTZ	SER	CLAY	CHL	EPID	CARB	GYPS	ANHY	MAG	O	V	OXIDE: LIM	HEM	GOE	CU GRAPHIC	CUOX 1	CUOX 2	SULFIDE: MET ZONE	PY	CPY	CC	BN	MO	FRACT INT	FRACT DIP	FAULT DIP	FRACTURING	GEOLOGY
1140	-	2			2	1									2	1		2	2	2	1					4	7	-		
	1	2	1		2	-									1	1		2	2	2						3	-	-		
1130	1	2	1		2	1									1	1		2	-	2						2	8	-		
	1	2			4	1									2	2		3	-	3						4	8	-		
1140	-	2			5	1									2	1		2	2	2						3	6	5		
	1	2			3	1								1	2	2		3	3	3						4	7	-		
1150	1				2	1								1	2	2		3	2	3						4	6	-		
					N	0		R	E	C	O	V		E	R	Y													?	?
1160					N	0		R	E	C	O	V		E	R	Y														
	4	1	2		3	1								0	2	1		1	1	2						3	5	-		
	2	1	2		3	1								1	3	2		2	3	2						1	4	-		
1170	2	3	3		4	1	1							1	3	2		1	2	2						3	3	-		
	1	2	1		3	0	0							0	2	1		1	2	4	1		1			1	5	-		
1180	2	1	2		4	1								0	2	1		1	1	2	0		0			3	4	-		
	4	2	4		3	0								0	1	1		1	1	2						2	4	-		
1190																														

COMMENTS:

AVG. CORE REC'Y/HOLE

DESCRIPTION: GEO., MINERAL, ALT, STRUCT.

1078-1200' QMP

1122.5' ~2"x2" fragment of fine-grained diorite(?)
Cu clay locally on fractures
1127.4-1127.8' bright white zeolite(?) in irregular fractures, ~50° TCA.
1126-1129' CuOx on fxs & in plag
1129-1134' a couple ~½" qtz veins
little to no Cu clay in plag sites

1134-1139' numerous qtz-ksp vns @ ~60° TCA.
1136.5-1138' strong hematite stain

1141.3-1141.7' gouge zone; ~45° TCA.

1142.5-1143' common greenish Cu clay on fxs

1144-1149' streaky FeOx & bio alt.

1147.9' ~1" vein of solid hematite

1149-1150.7' strong hem stain

1152.5-1153.5' greenish yellow clay; Cu + jarosite?

1154-1160' no recovery

1160-1164' low-grade, reasonably competent QMP. Top 6" is redrilled fragments.
1162.5' shattered 3" zone of strong ksp alt; pink-tan color w/ relict igneous texture. V. little Cu.
1163.5-1164' several tiny fxs w/ spots of chrys.
1164-1169' hard QMP w/ deep red feldspars
1166-1166' 3/8" clay vein, 10° TCA. Mod. Cu, some chrys in w/ clay. ▷ varians orientations
1166-1167' strong silicification; v. hard rock w/ deep red ksp & common chrys veins, tr. teronite.
1169-1170' shattered zone; mod. bio alt strong FeOx overprint
1170-1172.5' same as 1160-1164' above. Large ksp phenos are partially converted to biotite.
1172.5-1174' shattered; slight increase in Cu.

1174-1179' hard QMP; uniform trace Cu in plag.
1174.8' 4" frag of diorite(?), fine bio & plag; salt & pepper appearance.
1175.2-1179' very uniform. Trace pyr/cc @1172.7'

1179-1183' same weakly mineralized QMP. Locally shattered w/ abundant clay.
1181.5' several hairline vlts w/ chrysocolla; varians orientations.
1191-1193' ⅛" vein of white clay w/ hem specks & streaks; wanders across core

1183-1188' hard QMP; dead rock. V. little oxides & no visible sulfides.
1186' 2" thick ksp vein (aplite dike??), ~20° TCA, trace chrys in nearby veins, w/ qtz & glassy limonite.
Tr. Cu clay.

DRILLING INTERVAL	% CORE RECOVERED	RECOVERY % BY A.I.	SAMPLE INTERVAL
1119 5	62	N/S	N/S
1124 5	98		
1129 5	96		
1134 5	94		
1139 5	92		
1144 5	98		
1149 5	98		
1154 5	0		
1	0		
1160 4	85		
1164 5	100		
1169 5	100		
1174 5	98		
1179 4	78		
1183 5	102		
1188			

HDI CURIS

LOCATION: FLORENCE
HOLE ID: CMP11-05
SHEET 12 OF 12

CONTRACTOR: CA50
CORE SIZE: PQ
LOGGED BY: D. Russin
SCALE: 1" = 10'

ELEVATION: 1475' approx
BEARING: 205.0°
INCLINATION: -88.4°
TOTAL DEPTH: 1200'

COLLAR COORDINATES:
N: 7416 095.87 E: 847 729.96
STARTED: June 29, 2011
COMPLETED: July 7, 2011

COMMENTS: Survey @1200': az = 216.0° incl. = -88.4°
corrected az = 205.0°

AVG. CORE REC'Y/HOLE

DESCRIPTION: GEO., MINERAL, ALT, STRUCT.

FOOTAGE	ALTERATION: ORTHO	BIO	QTZ	SER	CLAY	CHL	EPID	CARB	GYPS	ANHY	MAG	OXIDE: LIM	HEM	GOE	CU GRAPHIC	CUOX 1	CUOX 2	SULFIDE: MET ZONE	PY	CPY	CC	BN	MO	FRACT INT	FRACT DIP	FAULT DIP	FRACTURING	GEOLOGY
1190	1	3	2		3	1						0	1	1		0	1	2						2	4	-		
	1	1	2		3	1						0	1	1		0	1	4			1			3	2	-		
1200	2	4	2		3	1						0	2	1		1	1	2			0			3	2	-		

1078-1200' QMP
same as above; hard, trace Cu, relict sulfides present in some quartz veins
1191.1' 2" bx/gouge, 75° TCA.
1192.5' 4" blob of bio alteration
1193-1197.5' same; very uniform and boring. Numerous fks ~15° TCA.
1197.5-1200' same. Strong bio alt. last 1.5'. Still showing traces of CuOx. No sulfides.

T.D. @1200'; out of drill rods. Sulfide zone was expected to be ~1150'.

Geology logging by SRK Consulting
427-462.5' Mike Sieber
462.5-532' Danny Russin
532-573' Mike Sieber
573-660' Katie Noonan
660-715' Mike Sieber
715-769' Danny Russin
769-830' Mike Sieber
830-905' Danny Russin
905-920' Mike Sieber
920-995' Danny Russin
995-1030' Mike Sieber
1030-1100' Danny Russin
1100-1160' Mike Sieber
1160-1200' Danny Russin

Met Zones
427-1200' Oxide
Trace Sulfides encountered in the last 30'; nearing the sulfide zone but did not reach it.

Core Recovery
All: 90.4%
QMP: 90.8%
Tgdp: 97.2%
Mixed: 84.8%
Ta: 67.7%
Diabase: 100%

Downhole Surveys

456'	201.1°	-88.7°
503.5'	165.8°	-88.8°
600'	166.9°	-88.7°
700'	178.3°	-88.9°
800'	No survey	
900'	181.9°	-88.8°
1000'	190.1°	-88.2°
1100'	205.3°	-88.3°
1200'	205.0°	-88.4°

azimuths are corrected.

Lithology
427-440' QMP
440-446' Mixed
446-457.5' Tgdp
457.5-670' QMP
670-675' Mixed
675-759' QMP
759-774.3' Diabase
774.3-858.5' QMP
858.5-881.5' Tgdp
881.5-1007.3' QMP
1007.3-1012' Mixed
1012-1017' Tgdp
1017-1026' Mixed
1026-1057' QMP
1057-1065.2 Ta
1065.2-1074.1 QMP
1074.1-1078' Mixed
1078-1200' QMP

DRILLING INTERVAL	% CORE RECOVERED	RECOVERY % BY A.I.	SAMPLE INTERVAL
5	92	N/s	N/s
1193			
4.5	113		
1197.5			
2.5	100		

HDI CURIS

LOCATION: FLORENCE
HOLE ID: CMP 11-05
SHEET 1 OF 13

CONTRACTOR: C[illegible]
CORE SIZE: PQ
LOGGED BY: [illegible]
SCALE:

ELEVATION:
BEARING:
INCLINATION:
TOTAL DEPTH:

COLLAR COORDINATES:
N: E:
STARTED: 6-29-11
COMPLETED:

COMMENTS:
456' - 130 m
AZ 212.1° - 88.7° incl
Core 201.1

AVG. CORE REC'Y/HOLE

FOOTAGE	ORTHO	BIO	QTZ	SER	CLAY	CHL	EPID	CARB	GYPS	ANHY	MAG	UM JAR	HEM	GOE	CU GRAPHIC	CUOX 1	CUOX 2	MET ZONE	PY	CPY	CC	BN	MO	FRACT INT	FRACT DIP	FAULT DIP	FRACTURING	GEOLOGY	DESCRIPTION: GEO., MINERAL., ALT, STRUCT.	DRILLING INTERVAL	% CORE RECOVERED	RECOVERY % BY A.I.	SAMPLE INTERVAL
																													BASINFILL CASING TO 426.5				
																													427-440 Ygm				
430			1		2	2						1	3			3	-	3						2	5	-			429.2-430 LEACHED CAP - HEMATITE w/ CONSIDERABLE CLAY	427 3			
					2	1						1	2			3	-	3						1	5	-			433.5-434 YELLOW STAINS - LIMONITE	430 5			
			1		3							1	3			3	-	3						5	4	4	40° 40°		435.8 - 436.5 2 THIN PARALLEL FAULTS 40° CONSIDERABLE QTZ PHENO CRYSTS	435 5			
440			1		4								3			3	3	3						3	3	-			440-446 Ygm - Tgdp - MIXED	440 6			
			2		4							1	2			-	3	3						2	-				446-457.5 Tgdp 449.2-450.2 HARD SILICIFIED SECTION QTZ PHENOCRYSTS	446 5			
450			2		3								1			-	3	3						2					SILICA ALTERED - HARD	1451			
					NO RECOVERY													451-456												457 ft			
			2		3							1	1			-	-	3						4	-	-			AS ABOVE 475.5 - Ygm	1456			
			1		3	1							1			-	2	2						2	-	-			458-458.5 CLAY w/ some BRECCIA 458.6-460 FELDSPAR → Cu	457.5 3.5			
460					NO RECOVERY																									460			
			1		4	1						1	3	2		0	2	2						4	4	2			464' 1/4" gouge zone separates competent from broken rock. CuOx in clays above, none below Fault breccia below 464; 95% QMP, 5% Tgdp abundant FeOx	462.5 5.5'			
					5	1						2	2	2		0	1	3						4	-	-			468-470 v. broken, streaks of different FeOx. Shattered but not milled bx Trace Cu clay, no CuOx1	468			
470			1		3	1						1	2	2		0	1	3						4	4	-			470-473.5' more competent QMP; poorly mineralized, only trace Cu clay in plag. shattered 472-473'	470 3.5			
			1		4	1						2	0	2		0	2	2						4	3	-			473.5-475' same as above. slightly increased cu in clay, w/ jarosite. v. well broken	473.5'			
	1		1		5							2	2	2		1	2	2						5	7	6			475-480' QMP 475-477.5' competent w/ salmon ksp; little Cu or obvious alt. 477.5-479' fault; layered gouge + milled bx; 60° TCA. 479-480' shattered QMP; [illegible] ksp + abundant Cu clay in plag sites & fr surfaces.	475 5			
480																														480			

DRAFT

COLLAR COORDINATES:	ELEVAT[redacted]:	CONTRACTOR: [redacted]	HDICURIS
N: E:	BEARING:	CORE SIZE:	LOCATION: FLORENCE
STARTED:	INCLINATION:	LOGGED BY:	HOLE ID:
COMPLETED:	TOTAL DEPTH:	SCALE:	SHEET 2 OF 13

FOOTAGE	400	440	
ALTERATION	ORTHO	1	
	BIO		
	QTZ	1	1
	SER		
	CLAY	52	52
	CHL	2	
	EPID		
	CARB		
	GYPS		
	ANHY		
	MAG		
OXIDE	~~LIM~~ JAR	1	1
	HEM	22	22
	GOE	22	
	CU GRAPHIC		
	CUOX 1	1	1
	CUOX 2	22	32
SULFIDE	MET ZONE		
	PY		
	CPY		
	CC		
	BN		
	MO		
FRACT INT		5	4
FRACT DIP		-	-
FAULT DIP			
FRACTURING			
GEOLOGY			

DRAFT

COMMENTS:

AVG. CORE REC'Y/HOLE

DESCRIPTION: GEO., MINERAL., ALT, STRUCT.

START SHEETS ON 70' INCREMENTS

480-485' Shattered QVP; only locally milled (481.5-481.7, 489.5-490)
Strong CuOx + FeOx
485-490' milled fault breccia.
Clast of QVP in shattered milled QVP.
Several orientations of gouge (30°, 55°, 70°)

DRILLING INTERVAL	480	490
	5	5
% CORE RECOVERED		
RECOVERY % BY A.I.		
SAMPLE INTERVAL		

HDI CURIS

COLLAR COORDINATES: ELEVATION: CONTRACTOR: LOCATION: FLORENCE
N: E: BEARING: CORE SIZE:
STARTED: INCLINATION: LOGGED BY: HOLE ID:
COMPLETED: TOTAL DEPTH: SCALE: SHEET 3 OF 13

COMMENTS: Survey @ 535' 152M
176.8° ~ 88.8
COR 165.8

AVG. CORE REC'Y/HOLE

DESCRIPTION: GEO., MINERAL., ALT, STRUCT.

FOOTAGE	ORTHO	BIO	QTZ	SER	CLAY	CHL	EPID	CARB	GYPS	ANHY	MAG	LIM JAR	HEM	GOE	CU GRAPHIC	CUOX 1	CUOX 2	MET ZONE	PY	CPY	CC	BN	MO	FRACT INT	FRACT DIP	FAULT DIP	FRACTURING	GEOLOGY
490	1	1	1		6	2	1					1	2	2		1	2	2						8	-	-		
495	1	1	0		5	2	1					1	2	2		1	1	2						5	-	-		
500	0	0	1		4	1	0					1	2	1		0	1	2						3	8	-		
505	1	1	2		3	1						0	1	1		0	2	2						3	4	-		
	1	1	1		5	1						1	2	2		0	2	2						4	5	8		
510	3	1	3		4	0	1					1	3	2		1	2	2						3	4	-		
515	4	1	3		3	1	0					1	2	3		0	2	2						5	4	4		
520	3	2	3		2	2						0	2	1		2	2	1						3	5	-		
525	3	2	4		3	2	2					0	2	2		0	1	3						2	6	-		
	2	2	3		3	1	1					1	2	2		0	1	3						2	6	-		
530	1		1		4	1						0	1	2		0	0	3						5	-	7		
535			1		4	1							1			0	3	3						4	5			
540	2	2	1		1	3						1	2			3	0	3						2	6	-		
545		1	1		1	2						1	1			0	0	2						4	6	-		
550	1	2	1		1	2							1			3	2	3						3	7			
555		2			1	2						1	2			3	3	2						2	6			
560		1	1			3						1	2			0	0	3						4	8	8		

DRAFT

— QMP

completely shattered milled fault bx. Gouge in multiple orientations. very abundant clay, ± jarosite locally.
495-498.5' same; gouge + breccia. ~1/16" chms on @ 497.5', 35° TCA

498.5-498.7' gouge + bx.
498.7-501' shattered QMP, no rotation. Strong clay alteration + abundant hem.
501-503.5' competent QMP pale blue-green plag + hem along <1mm vlts.
503.5-506.5 same as above
506' 3" of shattered breccia; completely disaggregated. very little goethite, no jar.
504' 3/8" qtz-bio vn, 55° TCA.
506.5-509' solid QMP, sericas
509-510' shattered; ~3" gouge/bx 507-509.5', 75° TCA. Trace Cu clay in gouge/bx
510-510.5
510.5'-513.5' solid QMP; low grade w/ minor Cu clay in plag.
512.5-512.8' ~1" thick, near vertical, angular hem-cemented breccia
513.5-518.8' fault breccia
514.5' 2" vn of ksp + bio + qtz. 75° TCA
515-515.7' shattered, intensely altered fault breccia, all Tgdp → strong ksp-qtz alt
Rest of interval same QMP. Minor tenorite @ 517.5'.
519.5-522' moderate ksp-qtz-bio alt w/ tenorite + minor chrys. Well broken.
522-522.1' barren hard QMP; common qtz vns + ksp alt. Bio → chl + ep (very green)
v. little clay in QMP
523-523.5' ~6" silicification w/ ghostly bio specks.
527-527.2' shattered, gouge zone. 60° TCA.
527.2-529.3' hard QMP as above, mod. potassic alt. Micro-fractured w/ abundant FeOx on fms
530-532 fault breccia, milled bx w/ clay gouge zone. 65° TCA.
532.2-532.5 LARGE PIECE OF FINE CHAINES (APPALACHIAN) LT STRONG CHLOR
533-537.1 CLAY W STRONG BRECCIATION, SOME KSPAR → CU
537-537.8 RED MINERAL - HEMATITE
CONSIDERABLE CHLORITE - BIOTITE
539.5 ~ 546 SHEARED MINERALS ZONE OF YELLOW STAINING
AS ABOVE
546.8 OPEN JOINT, CLAY DISCOLORATION ON SURFACES
549.8 - 552 K-SPAR → CU
CLOSED FRACTURES STAINED W/ HEMATITE
CONSIDERABLE BIOTITE → CHLORITE

559.5 - 561 BROKEN BRECCIA & CLAY COBBLES AT BOTTOM

DRILLING INTERVAL	% CORE RECOVERED	RECOVERY % BY A.I.	SAMPLE INTERVAL
490 5			
495 3.5			
498.5 5			
503.5 3			
506.5 3.5			
510 5			
515 3			
518 4			
522 5			
527			
530.2 532 5			
537 5			
542 5			
547 5			
552 5			
557			

HDICURIS

CONTRACTOR: C RQ
CORE SIZE:
LOGGED BY: M. Sisk / K. Moore
SCALE:
TOTAL DEPTH:

ELEVATION:
BEARING:
INCLINATION:

COLLAR COORDINATES:
N: E:
STARTED:
COMPLETED:

LOCATION: FLORENCE
HOLE ID: CMP11-05
SHEET 1 OF 17

COMMENTS: Survey at 600'
uncor az 177.9, incl -88.7
cor az 166.9

AVG. CORE REC'Y/HOLE

DESCRIPTION: GEO., MINERAL., ALT, STRUCT.

FOOTAGE	ALTERATION: ORTHO	BIO	QTZ	SER	CLAY	CHL	EPID	CARB	GYPS	ANHY	MAG	OXIDE: LIM	HEM	GOE	CU GRAPHIC	CUOX 1	CUOX 2	SULFIDE: MET ZONE	PY	CPY	CC	BN	MO	FRACT INT	FRACT DIP	FAULT DIP	FRACTURING	GEOLOGY
560	NO RECOVERY														SOL	-	-	SOL						-	-	-		
565	1		1		1	2							2			2	-	3						5	8	7	70	
570					4											3	2	3						4				
					5	1						1	4	2		1	1	3						5		4	40	
580					5	1						1	3	1		-	-	3						5		5	50	
					1	1						1	2	1		-	-	3						1	4	7	40	
					1	1						1	5	3		1	-	3						5		4	35	
590					1	1						1	2	1		1	1	2						4	-		NR	
	NO RECOVERY														NO RECOVERY									5	-	?		
		2			3	1						1	4	2		2	2	2						5		?		
600	1	2			5	1						1	3	1		1	2	2						5		6		
					3	1						1	4	1		1	1	2						4	?	-		
					2	1						1	1	1		2	2	2						5		?		
610					2	1						1	1	1		2	2	2						5		1	10	
					1	1						1	1	1		1	1	2						5		?		
620					4	1						1	3	2		3	3	2						5		6	60	
					4	1						1	4	2		1	1	2						5		3	35	
630																												

SEE BELOW

571.1 QMP — 562-562.5 BROKEN QMP ROCK ~2cm PIECES CONTINUED FROM 0.5

562.5-562.7 FAULT BRECCIA (559.5-562.7) 70° — 559.5 FAULT?

THE REST IS CORE AT 562.5 W/ FEW FRACTURES

571.1-573 Tgdp — CONTACT 70°

K-FPA, - CLAY - Cu, CLAY ⇒ Cu BLUE

573-578 QMP
Nice Cu at top of hole, bright teal on fractures
Lots of fault breccia w/ gouge and milled fragments, esp 575-577
578-580.5 QMP fault breccia ∠ ~50 (?), no visible Cu ox, not even any lignd grn clasts
580.5-583 QMP, lots of kspar - almost all pink, 580.5-580.7 high Fe ox w/ breccia, ∠70° fractures at 35° deeper in here, still no visible Cu, pretty solid rock low gouge
583-588 QMP very oxidized - mostly Fe ox, some Cu ox visible on fractures
Rock is fairly competent, 585.7-586 zone of breccia w/ little gouge Faults at 30-40°
583-583.2 breccia w/ ~ no gouge, 584.8-585.2 breccia no gouge
588-590 - little Cu in first foot, more in bottom foot, rock pretty broken up
Cu ox are lt grn and teal, all QMP
590-592.5 lost 1.5 ft, 591.5-592.5 QMP breccia w/ gouge in first 2 inches, ∠ (?)

592.5-597.5 QMP, 594.3-596.3 fault breccia w/ low gouge and chunks of Tgdp (?)
595.5-597.5 high Cu ox - clay, chrys, some tenorite, fault ∠ (?), biotite fragging at bottom

597.5-602.5 QMP - lots of breccia w/ gouge (esp 597.5-598.5, 599.3-600.8, 601-602)
597.5-598 BIO fragging, Cu clay visible throughout interval
Fault angle ~60°
597.5-598 huge (40×40mm) Kspar surrounded by BIO

602.5-607.5 QMP, mostly solid, last foot crumbly, evenly scattered Fe/Cu ox
Cu ox present but disperked, irregular fractures x-crossing, entire core is some clay, some chrysocolla

607.5-610 QMP very broken up but does not look brecciated, fracture angle is irregular. Great Cu on bottom 0.1 ft, lots of clay + some chry on fract w/ slickensides, 609-610 2mm wide Cu bx vein at 20°
610-615 QMP - pretty solid rock, 610-611 bottom of 2mm wide vein from previous interval, breccia on one side of vein so it's prob a fault ∠ ~10° here. Very full of lt grn clay w/ tenorite on sides, 613-615 more fault breccia, low gouge
615-620 QMP very fractured, but held up to scrubbing, whole thing looks like breccia, large chunks rimmed w/ Fe ox

620-625 QMP, very fractured and broken up, intermittent breccia, low gouge
Nice Cu ox on fractures 50-70°
620-620.2 solid green, some lt grn Cu clay, also dk grn (malachite?)
625-630 QMP very fractured as before, could not watch 628.5-629.5 b/c so brittle
627.2-627.5, 628.5-629.5 fault breccia, some gouge in lower zone
Fault ∠ 25° Some Cu ox clay on surface

DRILLING INTERVAL	% CORE RECOVERED	RECOVERY % BY A.I.	SAMPLE INTERVAL
562			
562.5 5.5			
568 5			
573 5			
578 2.5			
580.5 2.5			
583 5			
588 2			
590 2.5			
592.5 5			
597.5 5			
602.5 5			
607.5			
610 5			
615 5			
620 5			
625 5			

DRAFT

630

HDI CURIS

CONTRACTOR: CDPQ
CORE SIZE: PQ
LOGGED BY: Sieber/Nadeau/Ruffini
SCALE:

ELEVATION:
BEARING:
INCLINATION:
TOTAL DEPTH:

LOCATION: FLORENCE
HOLE ID: CMP11-05
SHEET 5 OF 13

COLLAR COORDINATES:
N:
E:
STARTED:
COMPLETED:

COMMENTS: 700' - 213m SURVEY
Az 189.3 -88.9 CORE 178.3

AVG. CORE REC'Y/HOLE

DESCRIPTION: GEO., MINERAL., ALT, STRUCT.

FOOTAGE	ALTERATION: ORTHO	BIO	QTZ	SER	CLAY	CHL	EPID	CARB	GYPS	ANHY	MAG	OXIDE: LIM	HEM	GOE	CU GRAPHIC	CUOX 1	CUOX 2	SULFIDE: MET ZONE	PY	CPY	CC	BN	MO	FRACT INT	FRACT DIP	FAULT DIP	FRACTURING	GEOLOGY
630					3	2						1	4	2		1	1	2						5		?		
					3	1						1	4	2		2	2	2						5	6	3		
640					4	2						1	3	3		2	3	2						4	?	?		
					2	2						1	3	3		2	1	2						4	-	5		
650					3	1						1	3	3		1	1	2						5	-	?		
		-			1	1						1	2	2		1	1	2						4	-	?		
660			1		2								2			1	2	2						5	7	2		
	1	1	1		1	1							2			2	3	2						4	1	-		
670					1							1	3			0	0	3						4	5			
			1		1							1	2			2	2	2						5	6	7		
680	1	1	1		1	1							1			2	2	2						4	6	-		
	1	2	1		1	1						1	1			2	2	2						2	7	1		
690	1	2	1		1	1						1	1			2	2	2						3	8	-		
	1	1	1		1	1						1	1			2	2	2						2	8	-		
700																												

630-635 QMP, very fractured and crumbly, couldn't watch 632.8-633.2
Fault breccia 632-632.3, 632.5-632.3, 633.7-633.9, low gouge in all, ∠ (?)
Some chrysocolla on fractures
Difficult to wash 2nd side, but removed most of mud

635-640 QMP, fractured as before
Fault breccia 639.7-638.9 2 in gouge, 638.9-639.2 w/ very little gouge, ∠ 30° (?)
Great Cu from 638.9-640 Hgm clay and bright seafoam grn on fractured at 55°
639 20x20mm chunk of BIO gone to chl2 and 20x20mm chunk salt and pepper rock

640-645 QMP, very fractured
Intermittent fault breccia, gouge from 644.2-644.5, otherwise very little
640-640.2 ~ solid Cu clay

645-650 QMP totally fractured and broken
Fault breccia 646.3-646.5, 646.9-647.1, 648.8-649, 649.2-649.4
very little gouge in any zone, ∠ ~50
649-649.4 olive green clay blobs
650-655 almost entirely fault breccia, ∠ (?), low gouge
Not much Cu ox visible

655-660 broken up QMP as before, intermittent breccia w/ ~no gouge
Low Cu ox, BIO flooding 658.5-660, Fault ∠ (?)
661.7-663.5 LOW ANGLE FAULT/FRACTURE w/ 1 cm Cu CLAY
660.5-661.4 K-SPAR → CLAY → Cu

THROUGHOUT KSPAR-CLAY-Cu
HEMATITE ON FRACTURES - BIOTITE/CHLORITE
670-675 MIXED Ygm - Tgdp
HEMATITE ON FRACTURES NO VISIBLE Cu

675-700 Ygm
675.9-680 KSPAR - Cu
675-675.9 Tgdp 675.9-680 Ygm CONTACT 70°
676.1-676.3 BRECCIA
681.5-685 K-SPAR → Cu, Cu IN FRACTURES

STRONG K-SPAR-CLAY-Cu ~3% BIOTITE/CHLORITE
1-2cm SALMON FELDSPARS
K-SPAR - Cu AS ABOVE

AS ABOVE
695-695.5 BRECCIATED PEBBLE SIZE

DRILLING INTERVAL	% CORE RECOVERED	RECOVERY % BY A.I.	SAMPLE INTERVAL
630 5			
635 5			
640 5			
645 5			
650 5			
655 5			
660 5			
665 5			
670 5			
675 5			
680 5			
685 5			
690 5			
695 5			

DRAFT

HDI CURIS

CONTRACTOR: _____ LOCATION: FLORENCE
CORE SIZE: PQ HOLE ID: GMP11-05
LOGGED BY: _____ SHEET 6 OF 12
SCALE: _____

ELEVATION: _____
BEARING: _____
INCLINATION: _____
TOTAL DEPTH: _____

COLLAR COORDINATES:
N: _____ E: _____
STARTED: _____
COMPLETED: _____

FOOTAGE	ALTERATION: ORTHO	BIO	QTZ	SER	CLAY	CHL	EPID	CARB	GYPS	ANHY	MAG	OXIDE: LIM	HEM	GOE	CU GRAPHIC	CUOX 1	CUOX 2	SULFIDE: MET ZONE	PY	CPY	CC	BN	MO	FRACT INT	FRACT DIP	FAULT DIP	FRACTURING	GEOLOGY
708	1		1		1	1							1			2	2	2						1	80			
710	1		1		1	1							2			2	2	2						3	60	-		
720	1	1	1		1	1						1	2			2	2	2						3	60	-		
	2	1	1		3	1						1	1	2		1	2	2						3	50	-		
	3	1	3		3	1	1					1	2	2		1	2	2						2	60	-		
730	4	2	5		3	1	1					1	2	2		1	3	2						2	90	-		
	2	1	3		3	1	1					1	3	2		1	3	2						1	70	-		
740	2	2	4		3	1	0					1	3	2		2	2	2						1	70	-		
	2	1	3		3	1						1	3	2		3	2	2						1	30	-		
	3	2	4	1	3	1						1	2	1		2	2	1						1	70	-		
750	3	2	3	2	4	1						1	2	1		4	3	1						1	30	-		
	3	1	5	1	5	1	1					1	2	2		2	3	1						5	40	40		
760	0	0	3	2	1	1	0					0	1	0		1	0	2						3	70	-		
770	NO RECOVERY																											

DRAFT

COMMENTS:

AVG. CORE REC'Y/HOLE

DESCRIPTION: GEO., MINERAL., ALT, STRUCT.

700 - 708 qtz

CORE IS V. VERY HARD

702.1 - 705 K-SPAR - CU, CU IN FRACTURES

AS ABOVE 708 TENERITE/ACTINOLITE - PLATED COPPER

AS ABOVE

712.4 & 714.2 TENERITE/ACTINOLITE

715-720' half blown out w/o plug. Well broken but intact QVP. Common dusted-red hem. in plag, common weak Cu clay in plag throughout interval.

715.5-716' streaks of tenorite in masses up to 1cm wide.

720-725' hard QVP, reasonable RQD

abundant qtz vns w/ hem after cpy; qtz-ksp vns up to ~1"

725-730' quartz flooding; several ~1/4-1/2" vns (qtz+hem after cpy) w/ ~1" qtz-ksp envelopes. ~45° TCA.

733.5' cracked qtz -/ hem in the Qs columns

similar to above; slightly less intense qtz-ksp-bio alt. common hem in ksp envelopes

734.5-734.7' shattered zone. Cu clay + FeOx in ↗

735-740' similar, hard QVP w/

736.5 1" qtz-ten vn, 40° TCA. Abundant thin (<2mm) vns w/ clays. common cu clay in plag sides

741' 1" vn of qtz + tenorite; ~1.5" on each side ksp-qtz-bio env. Abundant jarosite + green clay. Otherwise same as previous.

744.6 & 745.1' abundant qtz vns <1cm, v clays after cpy.

Jarosite common in plag sides. A few small sericite (?) envelopes visible in ksp grains, throughout the interval.

750.1-750.6' streaks + irregular clots of tenorite; gtz rich

751.5' 1" vn of qtz + clays + ten; hem + goe as well. 30° TCA

751.5-754' common <1cm vns of clays + Cu clays

756-756.4' solid qtz; -/ some clays + ten. Silicified, not weak

756.4-757' milled fault breccia, 35° TCA. Abundant jarosite + Cu clay in bx.

758-759' strong Cu clay w/ clays in groundmass

759- Diabase

medium gray, porphyritic. Abundant qtz vns w/ v. thin sericite envelopes; largest are ~2mm, most are 50-70° TCA. Very little mineralization

764-789 - recovered 0.4' of diabase fault breccia.

DRILLING INTERVAL	% CORE RECOVERED	RECOVERY % BY A.I.	SAMPLE INTERVAL
708 7			
709 7			
710 5			
715 5			
720 5			
725 5			
730 5			
735 5			
740 4			
744 5			
749 5			
754 5			
759 5			
764			

HDI CURIS

CONTRACTOR: ABD
CORE SIZE: PQ
LOGGED BY: D. Rossi, A. Sikes
SCALE:

ELEVATION:
BEARING:
INCLINATION:
TOTAL DEPTH:

LOCATION: FLORENCE
HOLE ID: CMP11-05
SHEET 7 OF 13

COLLAR COORDINATES:
N: E:
STARTED:
COMPLETED:

FOOTAGE	ALTERATION: ORTHO	BIO	QTZ	SER	CLAY	CHL	EPID	CARB	GYPS	ANHY	MAG	OXIDE: UM JAR	HEM	GOE	CU GRAPHIC	CUOX 1	CUOX 2	SULFIDE: MET ZONE	PY	CPY	CC	BN	MO	FRACT INT	FRACT DIP	FAULT DIP	FRACTURING	GEOLOGY
770			3		3								2			2	1	2						4	1	0		
	1	1	1		1								1			1	2	2						4	8	5		
780	1				1											1	2	2						3	6	-		
	1				3	1							3			1	2	2						5		3		
790	1				3	1							3			3	2	2						4	8	+		
												NO RECOVERY																
800	1				2	1						1	2			3	2	2						5	6	-		
	1	1			1	1						1	2			3	2	2						3	6	-		
810	1		1		1	1										2	2	2						2				
	1	1			2	1						1	1			2	2	2						1	5	-		
820	1	1			1	1							2			2	2	2						1	7	-		
	1				1	1							2			2	2	2						5	7	5		
830	2	1	3		3	1						0	2	1		1	2	2						2	7	-		
840	1	0	2	1	4	1						0	1	1		1	2	2						2	7	-		

COMMENTS:
survey 800'
AZ 189.3° -88.9°
COR 178.3

AVG. CORE REC'Y/HOLE

DESCRIPTION: GEO., MINERAL., ALT, STRUCT.

798.9-774.3 Y db DIABASE
769-769.6 CLAY SOME DIABASE FRAGS ~1cm 772.7-773
796.9-774 DB
ABUNDANT QTZ VEINS + BRECCIA
774.3- MD
SOME K-SPAR + CLAY - CH - BIOTITE

COPPER BAND 2 cm LOOKS LIKE TURQUOISE BRIGHT BLUE

782.6 SEVERAL PATCHES OF TENERITE
SOME OF K-SPARS → CLAY → CH
781-781 K-SPAR - CLAY - CH
786-789 TENERITE 787.2-788.2 FAULT CLAY - HEMATITE
K-SPAR - CLAY - CH, TENERITE

MAIN FRACTURE
800-800.5 RE-DRILL 802.4 & 803.4 PARALLEL FAULT 50-60°
TENERITE
800.7 805 - K-SPAR - CH

K-SPAR → CLAY → CH SOME TENERITE SALMON COLORED ORTHOCLASE

K-SPAR - CH, CU ON FRACTURES, TENERITE
810.8-811.8' SHEARED - DEFORMED ORTHOCLASE
GOOD CUT FRACTURE - K-SPAR → CLAY → CH
TENERITE
813.6-818 CLAY FILLED CLOSED FRACTURES
GOOD K-SPAR - CU & CH ON FRACTURES TENERITE IN THIS AREA
823.4-825 MOSTLY LT GREEN - CH FINE HEMATITE
826-826.3 BRECCIA W/ SOME CLAY
825.3-826.6 CONSIDERABLE CH COAT IS LT GREEN

830-835' COMP w/ common qtz/DS vns. possibly some sericite in envelopes w/ mod Cu clay in plag sites.

very uniform; Cu clay after plag & streaks of hem spec on DS qtz vns are common. 837.5' ~ gtz vn w/ minor chalcopyrite

DRILLING INTERVAL	% CORE RECOVERED	RECOVERY % BY A.I.	SAMPLE INTERVAL
769 5			
774 5			
779 5			
784 5			
789 5.5			
794.5 5.5			
800 5			
805 5			
810 5			
815 5			
820 5			
825 5			
830 5			
835			

COLLAR COORDINATES:	ELEVATION:	CONTRACTOR: [redacted]	HDI CURIS
N: E:	BEARING:	CORE SIZE:	LOCATION: FLORENCE
STARTED:	INCLINATION:	LOGGED BY:	HOLE ID:
COMPLETED:	TOTAL DEPTH:	SCALE:	SHEET 8 OF 13

FOOTAGE	ORTHO	BIO	QTZ	SER	CLAY	CHL	EPID	CARB	GYPS	ANHY	MAG	LIM	HEM	GOE	CU GRAPHIC	CUOX 1	CUOX 2	MET ZONE	PY	CPY	CC	BN	MO	FRACT INT	FRACT DIP	FAULT DIP
880		4	2	3	6							0	1	2		0	2	2						5	-	-
890		2	3	3	1	1						1	1	1		1	1	1						2	7	-
900		3	2	2	4	1						0	1	1		1	2	2						3	6	-
910		2	1	1	5	1						0	2	3		1	3	2						5	5	-
920		1	1	2	2	6	0					0	3	2		1	1	0						5	-	-
930		3	2	5	3	0	0					0	4	2		0	0	3						5	-	-
940		3	2	2	4	1						0	1	2		0	1	3						4	-	3
950		4	2	4	2	1						0	1	2		2	2	2						2	4	-
960		2	2	3	5	1						0	3	2		0	3	3						5	4	-
970		3	2	2	5	1						0	2	3		0	0	3						5	-	-
980		1	1	2	2	6	0					0	3	2		1	3	2						5	-	-
990		2	1	1	5	1						0	2	3		1	2	2						5	5	-
1000		3	2	2	4	1						0	1	2		0	1	3						4	-	3
1010		0	0	0	6	1						0	3	2		1	2	2						5	7	-
1020		1	2	1	5	1						1	2	1		0	2	2						5	7	-
1030		2	2	3	5	1						0	3	2		1	2	2						5	4	-
1040		0	1	2	5	1						0	3	2		1	2	2						5	7	-

DRAFT

GEOLOGY

840-843' milled gouge + breccia, weak Cu clay throughout, no orientation visible.

843-848' slightly fractured QMP, largest ksp < 1cm. looks much the same as previous intervals, little Cu in plag, no Cu oxi.

848.6'-848.9' abundant but little in vns + irregular patches. 849.3' 1/2" bleached vn. 848-850 little Cu clay after plag.

852' 2" qtz-bo stockwork; no unusual.

854' 3" of gouge/bx, 60° TCA, shattered below.

850-855' little Cu as before; only present as faint blue clay in plag.

855-857' fault bx, w/ gouge; 40° TCA. Strong Cu clay + minor chrys.

857.6' 3" sheared breccia, strong Cu clay.

Tgdp is grey, locally altered w/ qtz + sericite + ksp. contact irregular + broken, ~30° TCA. 858.5

860-865' All fault bx, Tgdp. Clasts milled, up to ~10cm. qtz//ksp vns visible in some fragments.

865-867' same.

867-870' very well broken, brecciated but not rotated. looks like abundant fine qtz//ksp vns, but cored in hem so difficult to tell.

870-873.5' same as above, v. well broken.

873.5-875' more competent rock, many qtz//ksp vns + jar on fos. Completely barren.

875-880' similar to above, shattered Tgdp, not milled, but heavy FeOx + clay overprint. Moles veins difficult to identify.

876.1' 1/2" qtz vn. 876, 878, 879' shears @ 30° TCA.

4" Gap of QMP @ 880.5'

881.5-910 QMP contact intrusive, 45° TCA

Hard QMP strong qtz-ksp alt. Shattered. Cuoxi (chrys + ten) vns, 45cm, mostly 35° TCA

885-885.5' mod. CuOxi, irregular mass. Broken in shear

885.5-887.5' Tgdp, 2 huge (1") EDM vns. Parallel, 40° TCA.

887.5-890 shattered fault breccia; all QMP. Abundant patches of chrys, tenorite + Cu clay. Contact 80° TCA @ top

890-895' shattered clay-rich breccia, stuck badly to sp's ts. Core is trashed.

890.3-890.8' very strong CuOxi, abundant tenorite + chrys. Almost solid locally.

895-900 shattered fault bx w/ gouge. Detail obscured, strong clay overprint

900-905' same. Slightly more competent

903' sheared gouge, 65° TCA

905' mod. Cu clay in plag sites.

905-907.1 K-SPAR → CU

907.1-910 HIGH CLAY - COKE PILLED A PART MORE INTENSE

COMMENTS: Survey @ 900': 192.9 COK/18/19 -88.8

DESCRIPTION: GEO., MINERAL., ALT., STRUCT.

AVG. CORE REC'Y/HOLE

DRILLING INTERVAL	% CORE RECOVERED	RECOVERY % BY A.I.	SAMPLE INTERVAL
840 3			
843 5			
848 2			
850 5			
855 5			
860 5			
865 5			
870 5			
875 5			
880 5			
885 5			
890 5			
895 5			
900 5			
905 5			
910			

HDI CURIS

LOCATION: FLORENCE
HOLE ID: MP11-05
SHEET: 5 OF 12

CONTRACTOR:
CORE SIZE:
LOGGED BY:
SCALE:

ELEVATION:
BEARING:
INCLINATION:
TOTAL DEPTH:

COLLAR COORDINATES:
N: E:
STARTED:
COMPLETED:

FOOTAGE	ALTERATION													OXIDE						SULFIDE							FRACTURING	GEOLOGY
	ORTHO	BIO	QTZ	SER	CLAY	CHL	EPID	CARB	GYPS	ANHY	MAG			LIM JAR	HEM	GOE	CU GRAPHIC	CUOX 1	CUOX 2	MET ZONE	PY	CPY	CC	BN	MO		FRACT INT	FRACT DIP	FAULT DIP		
910														N	O						TR										
	1	1			1									1	1			1	2	2							3				
					6										1			1	2	2							4	-	-		
	1	1	1		2	1												2	2	2							5	6	5		
920	2	3	3		4	1	1							0	2	1		1	2	2							2	7	-		
	4	1	2		4	1	1							1	3	1		0	2	2							2	7	-		
930	2	2	3		4	1	1							1	3	2		1	2	2							3	4	-		
935	1	1	2		5	1	1							1	3	3		1	2	2							5	3	3		
940	3	2	4		6	1	1							0	2	2		0	2	2							5	-	-		
945	3	2	1		6	1	1							0	2	2		0	2	2							5	-	-		
950	1	1	1	2	3	1	0							1	2	1		0	2	2							2	4	-		
955	1	0	1	4	4	0								0	4	1		0	1	3							4	4	-		
960	1	2	1	2	5	1								2	1	2		0	2	2							5	-	3		
965	5	1	4	0	4	1								1	2	1		0	2	2							3	4	7		
970	1	0	2		4	1								2	2	1		0	3	2							3	5	-		
975	2	2	3	1	5	1								1	3	3		1	2	2							5	-	-		
980																														

DRAFT

COMMENTS:

AVG. CORE REC'Y/HOLE

DESCRIPTION: GEO., MINERAL., ALT, STRUCT.

910 - Yqm

K-SPAR - CU TENORITE BIG SPECIMEN OXD CLASU

913-913.3 RE-BRECC 913.3-916.5 CLAYEY QMP K-SPAR + CLAY - CU

916.9-917.5 LOW ANGL FAULT W/ CLAY & CU

Some K-SPAR-CLAY → CU BIOTITE

917-919.5' "chunks" of bio-rich, looks like clasts but is all. Strong Cu-clay w/ bio

abundant qtz vns w/ qtz-ksp-bio alt.

925-930' some minor Cu in QMP. Not very interesting. Fewer qtz vns + bio than

above, but lots of ksp. Flooding ??? 927-927.8??

930-932.5' same, most qtz vns ~ 70° TCA

932.5-933' strong qtz-(bio-ksp) alt. w/ Cu clay + minor chrys, epid in bio sites

933.5-934' shattered zone, small breccia seams < 1/2".

935-940' some weakly mineralized QMP.

936.5-937' gouge/bx zone, no ∠ measurable.

938-939.5' gouge/bx, 25° TCA. Minor Cu clay + common jarosite.

940-945' Fault bx, shattered & locally milled. Some low-grade QMP.

numerous qtz-ksp vns w/ bio, fgs + veins various orientations.

945-950' exactly the same as above

950-953' hard QMP, looks the same but not milled. Weak Cu, only in plag sites.

dendritic tiny chlor lm on fgs,

953-955' sheared fractures 30° TCA. Very red (hem) alteration of the rock

955-956.5 same

956.5-959' strongly ser (?) altered, looks etched. Intense hem development, sheared fgs 90° TCA

looks almost leached.

959-960 Weakly altered/mineralized QMP w/ bx fgs. 957' 1" solid hem, 40° TCA.

960-964.1' same ?, shattered + locally milled

963' 4" clot of biotite alteration

964.1' 25° TCA top of gouge/bx zone. Abundant goe + jar in bx.

965-968' same low-grade QMP. Epidote common in bx sites.

968-969.9' v. strong qtz-ksp alteration (? dike of aplite ?), no orientation visible. Fractured,

original QMP texture gone. 969' 1" gouge w/ Cu, 65° TCA

969-970' remnant of Cu, hard rock.

970-973' same ?, sheared fgs w/ hem, ~10° TCA

972.5' ~1" of yellow-stained clay, ~90° TCA

973-975' shattered; possibly milled; hard to tell. Abundant hematite

975-980' lost 1' core somewhere. All fault bx w/ large fings. Little millings or just

v. large fings (?)

Abundant clay + Cu clays, -/ FeOx

DRILLING INTERVAL	% CORE RECOVERED	RECOVERY % BY A.I.	SAMPLE INTERVAL
910 2			
912 3			
915 3.5			
918.5 5			
923.5 5			
928.5 5			
933.5 5			
938.5 5			
943.5 5			
948.5 5			
953.5 5			
958.5 5			
963.5 5			
968.5 5			
973.5 5			
978.5 5			
980			

HDICURIS

LOCATION: FLORENCE
HOLE ID: CMP11-05
SHEET 1 OF 13

CONTRACTOR: _____
CORE SIZE: _____
LOGGED BY: _____
SCALE: _____

ELEVATION: _____
BEARING: _____
INCLINATION: _____
TOTAL DEPTH: _____

COLLAR COORDINATES:
N: _____ E: _____
STARTED: _____
COMPLETED: _____

COMMENTS:
Survey 1000 ft
43 20 31 0
Core 1000-1050 INCL -88.2

AVG. CORE REC'Y/HOLE

DESCRIPTION: GEO., MINERAL., ALT, STRUCT.

980-992.5' fault zone; large frags & gouge w/ ft. Cu clay. 30° TCA @ bottom
992.5-995' QMP; similar to before. Qtz ~ kap 1 bx alt, minor Cu clay in plag + fes (typically on envelopes)
995-990' QMP as before. Mod. alteration + weakly mineralized: Cu clay in plag sites.
997.5' 2"x 0.5" of wispy sericite bx.
988.5' stronger clay alt (~4") w/ mod. Cu clay
990-995' sheared fault zone; breccia, milled frags & gouge, streaky clay, FeOx, chlorite, minor cu clay. Shears are 35° TCA. Difficult to identify alteration; same as above in codes.
995-1000 QMP CLAY ON SOME FRACTURES, CuOx on Fractures
995-995.1 CLAY GOUGE @ 45°
1000-1000.5 Cu on FRACTURES & K-SPAR → Cu
1000.5 BRECCIA ZONE 2 cm WIDE
1002.5 BAND 1-2 cm of BLUE Cu SOME TENORITE
1001.3-1017 Tgdp - Ygm MIXED
PINK PLAG PHENOCRYSTS
CORE IS SPLIT @ FAULT + 50° TGDP CLAY QMP
1012-1017 Tgdp
EFCD SYN - CLAY - Cu
CORE IS V. SOFT
K-SPAR IS SACCHAROID
1017-1020 Tgdp-Ygm mix
K-SPAR - CLAY - Cu 1019.6-1020.0 Cu-CLAY FOLDS/SWIRLS
1019.9 CLASTS of Tq
1020.5-1020 - CORE IS BLUE Cu W/ TENORITE SOFT W/ CLAY
THIS IS SO ALTERED & ALT'E NOT SURE OF ROCK TYPE
1026- Ygm
CORE IS BLUE-GREEN W/ TENORITE
1-2cm SALMON ORTHOCLASE
1030-1035' fault breccia, all QMP. Patches of Cu clay + minor clay + tenorite. Slightly more competent @ bottom, not milled, but abundant clay + stronger Cu in plag.
1031.5' strong tenorite in sheared zone, streaks over ~2"
1035-1038.5' same as above, QMP w/ strong fracturing + clay.
1038.5-1040' fault zone, 25° TCA @ top. Same as other fault zones, streaky FeOx + weak Cu in clay.
1040-1045' much gouge, milled frags all <2", QMP w/ weak Cu clay as before shears 25° TCA
1045-1050 Same.

FOOTAGE	ALTERATION: ORTHO	BIO	QTZ	SER	CLAY	CHL	EPID	CARB	GYPS	ANHY	MAG	OXIDE: LIM JAR	HEM	GOE	CU GRAPHIC	CUOX 1	CUOX 2	SULFIDE: MET ZONE	PY	CPY	CC	BN	MO	FRACT INT	FRACT DIP	FAULT DIP	FRACTURING	GEOLOGY	DRILLING INTERVAL	% CORE RECOVERED	RECOVERY % BY A.I.	SAMPLE INTERVAL
980	1	1	2	1	5	1						1	2	3		1	2	2						5	7	3			5			
985	1	1	2	1	4	1						0	2	2		1	2	2						3	-	-			5			
990	1	1	2	1	6	1						1	2	3		1	2	2						5	-	4			5			
995	1		1		2	1						1	2			2	2	2						5	7	3			5			
1000	1	1			2	1						1	1			2	2	2						3	5				5			
1005	1	1			3								2			-	-	3						2	-				5			
1010					4								3			-	-	3						5	-				5			
1015					6	2						2	3			2	2	2						3	6	-			5			
1020					6							2	3			3	2	3						2	8	-			5			
1025		1			7	1										1	1	1						4	7	-			5			
1030	1	1			7	1										1	1	1						2	4	-			5			
1035	2	1	2		5	2						1	3	2		2	2	2						5	-	-			5			
1040	2	1	2		4	1						1	3	2		1	2	2						5	5	3			5			
1045	0	0	0		6	1						1	2	4		0	1	3						5	-	3			5			
1050					6	1						1	3	4		0	1	3						5	-	3						

COLLAR COORDINATES:	ELEVATION:	CONTRACTOR:	HDI CURIS
N: E:	BEARING:	CORE SIZE:	LOCATION: FLORENCE
STARTED:	INCLINATION:	LOGGED BY:	HOLE ID: CMP 11-05
COMPLETED:	TOTAL DEPTH:	SCALE:	SHEET 11 OF 13

FOOTAGE	ALTERATION	OXIDE	SULFIDE	FRACT INT	FRACT DIP	FAULT DIP	FRACTURING	GEOLOGY
1050	ORTHO, BIO, QTZ, SER, CLAY, CHL, EPID, CARB, GYPS, ANHY, MAG	~~LIM~~ VAR, HEM, GOE, CU GRAPHIC, CUOX 1, CUOX 2	MET ZONE, PY, CPY, CC, BN, MO	5	5	-		
1060	61	1 33	0 13	5	5	-		
1070	61	1 22	0 13	5	5	-		
1080	50	0 10	0 03	5	5	-		
1090	6	1 23	0 12	5	5	-		
1100	6	1 43	0 13	5	5	-		
1110	5	0 43	1 12	5	5	-		
1120	5	1 22	0 13	4	6	-		
1130	1 11	1 43	0 13	5	5	-		
1140	1 11	0 22	0 22	3	2	-		
1150	1 11	2	2 22	2	6	-		
1160	1 11	2	2 22	3	7	-		
1170	1 11	1 11	2 22	3	7	-		
1180	2	2	2 22	4	6	-		

DRAFT

COMMENTS: Survey @ 1100': oz 216.3° incl. -88.3° corrected oz. 205.3°

AVG. CORE REC'Y/HOLE

DESCRIPTION: GEO., MINERAL, ALT, STRUCT.

1050-1055' same, larger frags @ bottom

1055-1057' same

1057-1065.2Ta ← contact rubbled
shattered gouge/bx 1057-1061.5
quite porphyritic; white plag to ~5mm. Rock is rich red brown. 5YR 3/4.
still in broken w/ gray-green clay.

1065.2- QMP ← contact irregular, ~250 TCA
same fault bx as above
1066.5' 4" clast w/ strong CuOx min.
1070-1074.1' same. Shears @ 40° TCA; much gouge + all frag < 1".

1074.1-1075.1 Ta-rich bx
1075.1-1078' mostly Tgdp; mod. Cu mineralization. chrys + tenorite loadly abundant
1078-1080 all QMP bx + gouge
1080-1085' shattered QMP, not milled. Heavy clay overprint w/ a little Cu.
same as previous, just less gouge.

1085-1085.6' same
1085.6-1086' tight blue clay gouge. 25° TCA. Mod. Cu clay.
1086-1089.5' shattered, well oxidized QMP w/ strong clay overprint. Some as above.
1089.5- milled QMP bx w/ gouge. Strongly FeOx. Shears 65° TCA
1090-1095' recovered C.E. of milled bx. All in shoe, tube was empty.

1095-1100' reasonably competent QMP, sheeted frags 15° TCA. Weak Cu clay min. in plag sites; clay seems up to ~1/4" are scattered. Seems only weakly altered; small ulcs of qtz + kp + bio.
1101.7 Cu on FRACTURE K-SPAR-CLAY-CU (SOME)
GOOD Cu on FRACTURES 30 m² K-SPAR - CLAY + Cu

Cu on FRACTURES + K-SPAR + CLAY - Cu
1110.3 - 113.5 JOINTS w CLAY + Cu

Cu on FRACTURES - CLAY CONSIDERABLE BIG T/TK K-SPAR - CLAY - Cu AT green

DRILLING INTERVAL	% CORE RECOVERED	RECOVERY % BY A.I.	SAMPLE INTERVAL
1050 5			
1055 5			
1060 5			
1065 5			
1070 5			
1075 5			
1080 5			
1085 5			
1090 5			
1095 5			
1100 3.5			
1103.5 5			
1108.5 5			
1113.5 5.5			

HDI CURIS

COLLAR COORDINATES: ELEVATION: _____ CONTRACTOR: _____
N: _____ E: _____ BEARING: _____ CORE SIZE: _____
INCLINATION: _____ LOGGED BY: _____
STARTED: _____ SCALE: _____
COMPLETED: _____ TOTAL DEPTH: _____

LOCATION: FLORENCE
HOLE ID: CMD 11-03
SHEET 12 OF 13

FOOTAGE	ALTERATION: ORTHO	BIO	QTZ	SER	CLAY	CHL	EPID	CARB	GYPS	ANHY	MAG		OXIDE: LIM JAR	HEM	GOE	CU GRAPHIC	CUOX 1	CUOX 2	SULFIDE: MET ZONE	PY	CPY	CC	BN	MO	FRACT INT	FRACT DIP	FAULT DIP	FRACTURING	GEOLOGY
1120																													
	1	2	1		2	1								2			2	2	2	1					4	7	2		
	1	2	1		2	1								1			2	2	2						3				
1130	1	2	1		2	1								1			2	2	2						2	8	2		
	1	2			4	1								2			3	3	3						4	8			
1140	1	2			5	1							1	2			2	2	2						5	6	5		
	1	2			2	1								2			3	2	3						4	7	2		
1150	1				2	1											3	2	3						4	6	2		
1160	4	1	2		3	1							0	2	1		1	1	2						3	5	2		
	2	1	2		3	1								1	3	2	2	3	2						1	4	2		
1170	2	3	3		4	1	1							1	3	2	1	2	2						3	3	2		
	1	2	1		3	0	0						0	2	1		1	2	4			1			1	5	2		
1180	2	1	2		4	1							0	2	1		1	1	2			0			3	4	2		
	4	2	4		3	0							0	1	1		1	1	2						2	4	2		
1190												NEXT PAGE																	

DRAFT

NO RECOVERY

COMMENTS:

AVG. CORE REC'Y/HOLE

DESCRIPTION: GEO., MINERAL., ALT, STRUCT.

1121 Yqm 2' NR

LT GREEN CuOx ON FRACTURES & SOME K-SPAR REPLACEMENT
62B.1 FINE PY-CHALCW

1126-1129 CuOx ON K-SPAR & FRACTURES

1133.7-1134 CLAY FRACTURE CuOx NO K-SPAR ALTN
CORE LOOKS DARKER
CLAY FILLED FRACTURES W/ CuOx
QMA W/ SMALLER ORTHOCLASE & OTHER MINERALS
1141-1141.6 FAULT 50° W/ CuOx CLAY FILLED → Cu, Zn, QUARTZ BRECC.
1147.3-1147.6 CLAY BRECCIA ZONE YELLOW 500 0.2% THIN K-SPAR HEMATITE ALSO

SOME-MINOR KSPAR-CLAY-CHLX CuOx ON FRACTURES
1 FRATITE THIN VEIN THROUGHOUT
1152.1-1154 K-SPAR- CULT GRN TENERITE
LOW COPPER

1160-1164' low-grade, reasonably competent QMP. Top 6" is rodrilled fragments.
1162.5' shattered 3" zone of strong ksp alt; pink-tan color w/ relict igneous tex.
v. little cpy; 1163.5-1164 several chl-rich zones w/ chrysocolla spots.
1164-1169 hard QMP. Deep red feldspar
1164-1166' 3/8" clay vn, 10° TCA. Mod Cu, some chrys in clay.
1166-1167' strong qtz alt; v. hard w/ deep red hfs + common chrys vlts, ±, tenorite, various orientations
1169-1170' shattered, not milled, mod bio alt + strong FeOx overprint
1170-1172.5 same as above. Large ksp phenos are partially converted to biotite
1172.5-1174' shattered as ↑. Slight increase in Cu.
1174-1177' hard QMP; uniform trace Cu in plags
1174.8' 4" frag of diorite(?) fine bio+plag.
1175.2-1179 very uniform. Trace py/cc @ 1172.7'
1179-1183' same weakly mineralized QMP. Locally shattered w/ abundant clay.
1181.5' several hairline vlts w/ clinoclase
1181-1183' 1/8" vn of white clay w/ hem specks + streaks, venders across core
1183-1188. Hard QMP; dead rock, v. little oxide & no sulf. Rare.
1186 2" thick ksp vn (all leached of sulf.), 20° TCA, tr chrys in vns nearby. w/ qtz + glassy hem.
1185'-1188' Trace Cu clay

DRILLING INTERVAL	% CORE RECOVERED	RECOVERY % BY A.I.	SAMPLE INTERVAL
1121			
1124 5			
1129 5			
1134 5			
1139 5			
1144 5			
1149 5			
1154 5			
1159 5			
1161 4			
1164 5			
1169 5			
1174 5			
1179 4			
1183 5			
1188 5			

COLLAR COORDINATES:
N: ____ E: ____
STARTED: ____
COMPLETED: ____

ELEV[redacted]ON: ____
BEARING: ____
INCLINATION: ____
TOTAL DEPTH: ____

CONTRACTOR: [redacted]
CORE SIZE: ____
LOGGED BY: ____
SCALE: ____

LOCATION: FLORENCE
HOLE ID: ____

COMMENTS:
1200 ft survey
216.0 corr - 205.0 - 88.4

AVG. CORE REC'Y/HOLE

FOOTAGE	ORTHO	BIO	QTZ	SER	CLAY	CHL	EPID	CARB	GYPS	ANHY	MAG	LIM	HEM	GOE	CU GRAPHIC	CUOX 1	CUOX 2	MET ZONE	PY	CPY	CC	BN	MO	FRACT INT	FRACT DIP	FAULT DIP	FRACTURING	GEOLOGY	DESCRIPTION: GEO., MINERAL., ALT, STRUCT.	DRILLING INTERVAL	% CORE RECOVERED	RECOVERY % BY A.I.		SAMPLE INTERVAL
1190	1	3	2		3	1						0	1	1		0	1	2						2	4	-		+ ⊥ +	- 1200' QMP same as above, hard, trace Cu, relict sulfides in some fractures. 1191.1' 2" gouge/bx, 55° TCA. 1192.5' 4" ... alteration	5				
	1	1	2		3	1						0	1	1		0	1	4			1			3	2	-		+ ⊥ ⊥	1193-1197.5' same very uniform & boring numerous fxs 15° TCA.	1193 4.5				
1200	2	4	2		3	1						0	2	1		1	1	2			0			3	2	-		⊥ ⊥	1197.5-1200' same. Strong fxs last 1.5'. Still showing traces of CuOx 1 + 2. No sulfides	1197.5 2.5				

TD @ 1200', out of rods.

sulfide was supposed to be @ 1150'.

DRAFT

CLIENT: FLORENCE COPPER PROJECT

Mon. Tue. Wed. Thur. Fri. Sat. Sun.

DATE: 9 / 13 /2011

JOB NAME: FLORENCE COPPER

RIG#: 180

JOB LOCATION: FLORENCE, AZ

NATIONAL JOB#: 401.030

National
EXPLORATION · WELLS · PUMPS

DAILY ROTARY DRILL REPORT

Shift	Hole No.	Pre-Collar or Exploration	Angle	Bit Size & Type	FOOTAGE SUMMARY Drilling From	Drilling To	Reaming From	Reaming To	Total Footage Drilled	Total Footage Reamed	Total Casing in Hole Size	Total Casing in Hole Footage
Day		PC Expl.										
		PC Expl.										
Night		PC Expl.										
		PC Expl.										

Hourly Distribution	From	To	Total
NEWP Safety Meeting			
Drilling - Tri-Cone / Hammer			
Move Rig			
Casing Advance/Symmetrix			
Drill & Install Surface Casing			
Condition Hole, Lost Circulation			
Reaming/Back Reaming			
Casing - Placing/Pulling			
Hole Abandonment			
Client Delays-Blast, Weather etc.			
Backhoe Work			
Surveying, Inclination Test			
Booster			
STAND BY	→	→	12
Maintenance			
Client Safety Meeting			
TOTAL HOURS	12		
Lunch/Dinner			
Travel			
Any Injuries Reported Today	YES	(NO)	
PRE-SHIFT INSPECTION COMPLETED BY:	R6		

Description	Size	Product Name	Day (circle if chargeable)	Night (circle if chargeable)
Gel	50# Bag	SUPPLIED BY CLIENT.		
Polymer	5 Gal			
Foam	Bucket			
Cement	94# Bag	→	2 BAGS	
Abandonite	50# Bag			
Hole Plug	50# Bag			
Calcium Chloride	50# Bag			
LCM(Explain)				
Wear Sleeve- Bladder Sub				
Bladder for Sub				
Diesel / Cost	Supplied by:	National Client Gal		
Gas		National Client Gal		
Water Haul	Miles	Loads		
Rental Equipment				
Casing Lost or Left in Hole	Size	Feet	Hole#	
Lost Tooling				

Bits	Serial Number	Size	Type (circle)	Depth In
			Hammer Carbide Steel Deephole	
			Hammer Carbide Steel Deephole	
			Hammer Carbide Steel Deephole	
Casing Shoes				

Shift	DRILLERS	Hours	PD	DRILLING ASSISTANTS	Hours	PD	DRILLING ASSISTANTS	Hours	PD
	RITO GOMEZ	12	95	BRIAN REDFEARN	12	95	WILLIAM RIALS	12	95
Hours	From: To:	R6 (initials Verify Hrs & Breaks)		From: To:	BK (initials Verify Hrs & Breaks)		From: To:	LW (initials Verify Hrs & Breaks)	
Extra									
Hours	From: To:	(initials Verify Hrs & Breaks)		From: To:	(initials Verify Hrs & Breaks)		From: To:	(initials Verify Hrs & Breaks)	

Remarks: (Note any Pre-Shift inspection problems below)

Rig Days Off - From: / /2011 - To: / /2011

STAND BY WAITING ON BLAST CREW. 12HRS

RUN TRIM PIPE TO 334' TRIP OUT TRIM PIPE & HOLE # CMP 11-05

BREAK HWT IN 10' SECTIONS 40' OF HWT

TOP OFF HOLE WITH CEMENT HOLE # CMP-11-06

DIG OUT 5' AROUND PVT ON HOLE # CMP11-01 CUT CASING AT 5'

DRG BACKFILL IN.

SET UP MIXER ON HOLE COMPLETE

WASH DOWN EQUIPMENT & PICK-UPS.

NEWP Supervisor: [signature]

Client Signature: [signature]

Office Admin:

E-FAX 800-878-4749

Invoiced:

CLIENT: Curis Resources | Mon Tue. Wed. Thur. Fri. Sat. Sun. | DATE: 9 / 12 /2011

JOB NAME: Florence 9.00 Abandonment | RIG#: 180

JOB LOCATION: Florence Az | NATIONAL JOB#: 401.030

National
EXPLORATION • WELLS • PUMPS
DAILY ROTARY DRILL REPORT

Shift	Hole No.	Pre-Collar or Exploration	Angle	Bit Size & Type	FOOTAGE SUMMARY Drilling From	Drilling To	Reaming From	Reaming To	Total Footage Drilled	Total Footage Reamed	Total Casing in Hole Size	Total Casing in Hole Footage
Day	Cmp 11-06	PC Expl.										
	Cmp 11-05	PC Expl.										
Night		PC Expl.										
		PC Expl.										

Hourly Distribution	From	To	Total
NEWP Safety Meeting	5:45	6:00	.25
Drilling - Tri-Cone / Hammer			
Move Rig	10:00 /	11:00 /	2
Casing Advance/Symmetrix			
Drill & Install Surface Casing			
Condition Hole, Lost Circulation			
Reaming/Back Reaming			
Casing - Placing/Pulling	6:00/11:30	7:00/1:00	2.5
Hole Abandonment	1:00	2:30	1.5
Client Delays-Blast, Weather etc.			
Backhoe Work			
Surveying, Inclination Test			
Booster			
Stand by (National)	9:00 /	10:00 /	1
Stand by (Client)	7:00/8:30	9:00/6:00	4.5
Set up (grout)	11:00	11:30	.5
Maintenance			
Client Safety Meeting			
TOTAL HOURS		12.25	
Lunch/Dinner			
Travel			
Any Injuries Reported Today	YES	NO	
PRE-SHIFT INSPECTION COMPLETED BY:	D. Macy		

Description	Size	Product Name	Day	Night
Gel	50# Bag			
Polymer	5 Gal			
Foam	Bucket			
Cement	94# Bag	Client Supplied		
Abandonite	50# Bag			
Hole Plug	50# Bag			
Calcium Chloride	50# Bag			
LCM(Explain)				
Wear Sleeve- Bladder Sub				
Bladder for Sub				
Diesel / Gas (Cost)	Supplied by:	National / National	Client / Client	Gal / Gal
Water Haul	Miles			Loads
Rental Equipment				
Casing Lost or Left in Hole	Size	Feet	Hole#	
Lost Tooling				

Bits	Serial Number	Size	Type (circle)	Depth In
			Hammer Carbide Steel Deephole	
			Hammer Carbide Steel Deephole	
			Hammer Carbide Steel Deephole	
Casing Shoes				

Shift	DRILLERS	Hours	PD	DRILLING ASSISTANTS	Hours	PD	DRILLING ASSISTANTS	Hours	PD
Days	Dan Macy	12.25	95	Andy Richmond	12.25	95	Dustin Stringer	12.25	95
Hours	From: 5:45am To: 6:00pm	DM Initials Verify Hrs & Breaks		From: 5:45am To: 6:00pm	Initials Verify Hrs & Breaks		From: 5:45am To: 6:00pm	Initials Verify Hrs & Breaks	
Extra									
Hours	From: To:	Initials Verify Hrs & Breaks		From: To:	Initials Verify Hrs & Breaks		From: To:	Initials Verify Hrs & Breaks	

Remarks: (Note any Pre-Shift inspection problems below) | Rig Days Off - From: / /2011 - To: / /2011

5:45-6:00 Safety meeting / pre-op. 6:00-7:00 Cmp 11-5 pulled on PWT with air on. No progress. 7:00-9:00 Stand by for Clients decision. 9:00-10:00 stand by for decision from Nationals office. 10:00-11:00 move back to Cmp 11-6. 11:00-11:30 Set up to pump grout. 11:30-2:30 pulled PWT out of Cmp 11-6 and Abandoned hole with grout(535'). 2:30-3:30 moved back to Cmp 11-5. 3:30-6:00 Standby for ~~Hartmans~~ NIERMAN wireline. eta Wednesday. Cmp 11-06 was abandoned with 565 gals of grout cement.

NEWP Supervisor: | Client Signature:

Office Admin: | E-FAX 800-878-4749 | Invoiced:

CLIENT: Curis Resources | Mon. Tue. Wed. Thur. Fri. Sat. (Sun.) | DATE: 9 / 11 /2011

JOB NAME: Florence Abandonment | RIG#: 180

JOB LOCATION: Florence Az | NATIONAL JOB#: 401.030

National
EXPLORATION · WELLS · PUMPS
DAILY ROTARY DRILL REPORT

Shift	Hole No.	Pre-Collar or Exploration	Angle	Bit Size & Type	FOOTAGE SUMMARY Drilling From	Drilling To	Reaming From	Reaming To	Total Footage Drilled	Total Footage Reamed	Total Casing in Hole Size	Total Casing in Hole Footage
Day	Cmp 11-01	PC Expl.										
	Cmp 11-06	PC Expl.										
Night	Cmp 11-05	PC Expl.										
		PC Expl.										

Hourly Distribution	From	To	Total
NEWP Safety Meeting	5:45	6:00	.25
Drilling - Tri-Cone / Hammer			
Move Rig	7:30/7:00	9:00/8:00	3
Casing Advance/Symmetrix			
Drill & Install Surface Casing			
Condition Hole, Lost Circulation			
Reaming/Back Reaming			
Casing - Placing/Pulling			
Hole Abandonment	6:00/	7:30/	1.5
Client Delays-Blast, Weather etc.			
Backhoe Work			
Surveying, Inclination Test			
Booster			
Stand by	9:30	5:00	7.5
Stand by (shot)	6:00/8:00	7:00/10:45	4.75
~~Secure Site/clean up~~			
Maintenance			
Client Safety Meeting			
TOTAL HOURS		17	
Lunch/Dinner			
Travel			
Any Injuries Reported Today	YES	(NO)	
PRE-SHIFT INSPECTION COMPLETED BY:	D. Macy		

Description	Size	Product Name	Day	Night
			circle if chargeable	circle if chargeable
Gel	50# Bag			
Polymer	5 Gal			
Foam	Bucket			
Cement	94# Bag	Client Supplied	4	
Abandonite	50# Bag			
Hole Plug	50# Bag			
Calcium Chloride	50# Bag			
LCM(Explain)				
Wear Sleeve- Bladder Sub				
Bladder for Sub				
Diesel / Cost	Supplied by:	National / Client	Gal	
Gas		National / Client	Gal	
Water Haul	Miles		Loads	
Rental Equipment				
Casing Lost or Left in Hole	Size	Feet	Hole#	
Lost Tooling				

Bits	Serial Number	Size	Type (circle)	Depth In
			Hammer Carbide Steel Deephole	
			Hammer Carbide Steel Deephole	
			Hammer Carbide Steel Deephole	
Casing Shoes				

Shift	DRILLERS	Hours	PD	DRILLING ASSISTANTS	Hours	PD	DRILLING ASSISTANTS	Hours	PD
Days	Dan Macy	17	95	Andy Richmond ~~Stringer~~	17	95	Dustin Stringer	17	95
Hours	From: 5:45am To: 10:45pm	Initials Verify Hrs & Breaks		From: 5:45am To: 10:45pm	Initials Verify Hrs & Breaks		From: 5:45am To: 10:45pm	Initials Verify Hrs & Breaks	
Extra									
Hours	From: To:	Initials Verify Hrs & Breaks		From: To:	Initials Verify Hrs & Breaks		From: To:	Initials Verify Hrs & Breaks	

Remarks: (Note any Pre-Shift inspection problems below) | Rig Days Off - From: / /2011 - To: / /2011

5:45-6:00 Safety meeting/pre-op. 6:00-7:30 Topped off Cmp 11-01 with 4 bags of portland cement and 24 gals of water. 7:30-9:00 Moved equipment from Cmp 11-01 to Cmp 11-06. 9:00 to 9:30 set up to pull PVC casing out of Cmp 11-06. 9:30-5:00 Standby for blast crew. 5:00-7:00 Standby for shot on Cmp 11-06, it was a success. 7:00-8:00 moved to hole # Cmp 11-5. 8:00-10:45 Stand by for shot, no progress. Secured site and cleaned up. Neil Hale was a tremendous help today. Thanks

NEWP Supervisor: Neil Hale | Client Signature:

Office Admin: | E-FAX 800-878-4749 | Invoiced:

CLIENT: Curis Resource | Mon. Tue. Wed. Thur. Fri. (Sat.) (Sun.) | DATE: 9 / 10 /2011

JOB NAME: Florence Abandonment | RIG#: 180

JOB LOCATION: Florence Az | NATIONAL JOB#: 401.030

National
EXPLORATION · WELLS · PUMPS

DAILY ROTARY DRILL REPORT

Shift	Hole No.	Pre-Collar or Exploration	Angle	Bit Size & Type	FOOTAGE SUMMARY Drilling From	Drilling To	Reaming From	Reaming To	Total Footage Drilled	Total Footage Reamed	Total Casing in Hole Size	Total Casing in Hole Footage
(Day)	Cmp-11-05	PC Expl.										
	Cmp-11-06	PC Expl.										
Night	Cmp-11-01	PC Expl.										
		PC Expl.										

Hourly Distribution	From	To	Total
(NEWP Safety Meeting)	5:45	6:00	(.25)
Drilling - Tri-Cone / Hammer			
(Move Rig)	6:00/10:00	7:00/11:00	(2)
Casing Advance/Symmetrix			
Drill & Install Surface Casing			
Condition Hole, Lost Circulation			
Reaming/Back Reaming			
(Casing - Placing/Pulling)	7:00	10:00	(3)
(Hole Abandonment)	12:30	3:00	(2.5)
Client Delays-Blast, Weather etc.			
Backhoe Work			
Surveying, Inclination Test			
Booster			
(Plugged pump)	12:00	12:30	(.5)
(Trimmy pipe in/out)	11:00	11:45	
(Maintenance)	3:00	6:00	3
Client Safety Meeting			
TOTAL HOURS		12.25	
Lunch/Dinner			
Travel			
Any Injuries Reported Today	YES	(NO)	
PRE-SHIFT INSPECTION COMPLETED BY:	D. Macy		

Description	Size	Product Name	Day (circle if chargeable)	Night (circle if chargeable)
Gel	50# Bag			
Polymer	5 Gal			
Foam	Bucket			
Cement	94# Bag	Client Supplied	56	
Abandonite	50# Bag			
Hole Plug	50# Bag			
Calcium Chloride	50# Bag			
LCM(Explain)				
Wear Sleeve- Bladder Sub				
Bladder for Sub				
Diesel Cost	Supplied by:	National Client	Gal	
Gas Cost	Supplied by:	National Client	Gal	
Water Haul	Miles		Loads	
Rental Equipment				
Casing Lost or Left in Hole	Size	Feet	Hole#	
Lost Tooling				

Bits	Serial Number	Size	Type (circle)	Depth In
			Hammer Carbide Steel Deephole	
			Hammer Carbide Steel Deephole	
			Hammer Carbide Steel Deephole	
Casing Shoes				

Shift	DRILLERS	Hours	PD	DRILLING ASSISTANTS	Hours	PD	DRILLING ASSISTANTS	Hours	PD
Days	Dan Macy	12.25	95	Andy Richmond	12.25	95	Dustin Stringer	12.25	95
Hours	From: 5:45am To: 6:00pm	DM		From: 5:45am To: 6:00pm	AR		From: 5:45am To: 6:00pm	DS	
Extra									
Hours	From: To:			From: To:			From: To:		

Remarks: (Note any Pre-Shift inspection problems below)

Rig Days Off - From: / /2011 - To: / /2011

5:45-6:00 Safety meeting/pre op. 6:00-7:00 move from Cmp 11-5 to Cmp 11-6. 7:00-10:00 pull on PVST casing with no progress. 10:00-11:00 move to Cmp 11-01. Tripped in trimmy pipe, pump was plugged with paper bag. fixed pump and grouted hole with 385gals of water and 56 bags of portland Cement. Cleaned Trimmy. 3:00-6:00 fixed pressure washer, broken bolt on hydro pump of Drill.

NEWP Supervisor: [signature] | Client Signature: [signature]

Office Admin: | E-FAX 800-878-4749 | Invoiced:

CLIENT: Curis Resources | Mon. Tue. Wed. (Thur.) Fri. Sat. Sun. | DATE: 9 / 8 /2011

JOB NAME: Florence Abandonment | RIG#: 180

JOB LOCATION: Florence Az. | NATIONAL JOB#: 401.030

National EXPLORATION • WELLS • PUMPS

DAILY ROTARY DRILL REPORT

Shift	Hole No.	Pre-Collar or Exploration	Angle	Bit Size & Type	FOOTAGE SUMMARY Drilling From	Drilling To	Reaming From	Reaming To	Total Footage Drilled	Total Footage Reamed	Total Casing in Hole Size	Total Casing in Hole Footage
(Day)	Cmp 11-06	PC Expl.										
		PC Expl.										
Night	Cmp 11-05	PC Expl.										
		PC Expl.										

Hourly Distribution	From	To	Total
(NEWP Safety Meeting)	5:45	6:00	(.25)
Drilling - Tri-Cone / Hammer			
(Move Rig)	8:00	9:00	(1)
Casing Advance/Symmetrix			
Drill & Install Surface Casing			
Condition Hole, Lost Circulation			
Reaming/Back Reaming			
Casing - Placing/Pulling	6:00	5:45	(9.75)
Hole Abandonment			
Client Delays-Blast, Weather etc.			
Backhoe Work			
Surveying, Inclination Test			
Booster			
Stand by (Shot)	11:00	12:00	(1)
Maintenance			
Client Safety Meeting			
TOTAL HOURS		12	
Lunch/Dinner			
Travel			
Any Injuries Reported Today	YES	(NO)	
PRE-SHIFT INSPECTION COMPLETED BY:	D. Macy		

Description	Size	Product Name	Day	Night
Gel	50# Bag		circle if chargeable	circle if chargeable
Polymer	5 Gal			
Foam	Bucket			
Cement	94# Bag			
Abandonite	50# Bag			
Hole Plug	50# Bag			
Calcium Chloride	50# Bag			
LCM(Explain)				
Wear Sleeve- Bladder Sub				
Bladder for Sub				
Diesel Cost 3.89	Supplied by:	(National) Client Gal	183	
Gas		National Client Gal		
Water Haul	Miles	Loads		
Rental Equipment				

Casing Lost or Left in Hole	Size	Feet	Hole#

Lost Tooling

Bits	Serial Number	Size	Type (circle)	Depth In
			Hammer Carbide Steel Deephole	
			Hammer Carbide Steel Deephole	
			Hammer Carbide Steel Deephole	
Casing Shoes				

Shift	DRILLERS	Hours	PD	DRILLING ASSISTANTS	Hours	PD	DRILLING ASSISTANTS	Hours	PD
D	Don Macy	12	95	Andy Richmond	12	95	Dustin Stringer	12	95
Hours	From: 5:45am To: 5:45pm	DM Initials Verify Hrs & Breaks		From: 5:45am To: 5:45pm	AR Initials Verify Hrs & Breaks		From: 5:45am To: 5:45pm	DS Initials Verify Hrs & Breaks	
Extra									
Hours	From: To:	Initials Verify Hrs & Breaks		From: To:	Initials Verify Hrs & Breaks		From: To:	Initials Verify Hrs & Breaks	

Remarks: (Note any Pre-Shift inspection problems below)

Rig Days Off - From: / /2011 - To: / /2011

5:45-6:00 Safety meeting / Pre-op. 6:00-8:00 pulled on PWT Casing hole # Cmp 11-06 with no progress. 8:00-9:00 Rigged down and moved to hole # cmp. 11-05 set up to pull HWT casing. 9:00-11:00 Pulled HWT with no progress. 11:00-12:00 Helped wire line rig up to shoot HWT. Shot was successful, Pulled 440' HWT out of hole # Cmp 11-5 12:00-2:00. Changed over to pull PWT at 2:00. Pulled on PWT hole # Cmp 11-05 from 2:00-5:30. Secured site left rig at 5:45pm.

NEWP Supervisor: | Client Signature:

Office Admin: | E-FAX 800-878-4749 | Invoiced:

CLIENT: Curis Resources | Mon. Tue. (Wed) Thur. Fri. Sat. Sun. | DATE: 9 / 7 /2011

JOB NAME: Florence Abandonment | RIG#: 180

JOB LOCATION: Florence Az | NATIONAL JOB#: 401.030

National EXPLORATION • WELLS • PUMPS

DAILY ROTARY DRILL REPORT

Shift	Hole No.	Pre-Collar or Exploration	Angle	Bit Size & Type	FOOTAGE SUMMARY Drilling From	Drilling To	Reaming From	Reaming To	Total Footage Drilled	Total Footage Reamed	Total Casing in Hole Size	Total Casing in Hole Footage
(Day)	Cmpl1-06	PC Expl.										
		PC Expl.										
Night		PC Expl.										
		PC Expl.										

Hourly Distribution	From	To	Total
(NEWP Safety Meeting)	4:00	4:30	(.5)
Drilling - Tri-Cone / Hammer			
Move Rig			
Casing Advance/Symmetrix			
Drill & Install Surface Casing			
Condition Hole, Lost Circulation			
Reaming/Back Reaming			
Casing - Placing/(Pulling)	4:30	7:00	(2.5)
Hole Abandonment			
Client Delays-Blast, Weather etc.			
Backhoe Work			
Surveying, Inclination Test			
Booster			
Yard	11:00	2:00	3
Site Training	2:00	3:00	(1)
Set Up	3:00	4:00	(1)
Maintenance			
Client Safety Meeting			
TOTAL HOURS		8	
Lunch/Dinner			
Travel			
Any Injuries Reported Today	YES	(NO)	
PRE-SHIFT INSPECTION COMPLETED BY:	D. Macy		

Description	Size	Product Name	Day	Night
Gel	50# Bag		circle if chargeable	circle if chargeable
Polymer	5 Gal			
Foam	Bucket			
Cement	94# Bag			
Abandonite	50# Bag			
Hole Plug	50# Bag			
Calcium Chloride	50# Bag			
LCM(Explain)				
Wear Sleeve- Bladder Sub				
Bladder for Sub				
Diesel Cost	Supplied by:	National Client Gal		
Gas Cost	Supplied by:	National Client Gal		
Water Haul	Miles	Loads		
Rental Equipment: Light Plant				
Casing Lost or Left in Hole	Size	Feet	Hole#	
Lost Tooling				

Bits	Serial Number	Size	Type (circle)	Depth In
			Hammer Carbide Steel Deephole	
			Hammer Carbide Steel Deephole	
			Hammer Carbide Steel Deephole	
Casing Shoes				

Shift	DRILLERS	Hours	PD	DRILLING ASSISTANTS	Hours	PD	DRILLING ASSISTANTS	Hours	PD
D	Dan Macy	8	Ø	Andy Richmond	8	Ø	Dustin Stringer	8	Ø
Hours	From: 11:00am To: 7:00pm	DM Initials Verify Hrs & Breaks		From: 11:00am To: 7:00pm	AR Initials Verify Hrs & Breaks		From: 11:00am To: 7:00pm	DS Initials Verify Hrs & Breaks	
Extra									
Hours	From: To:	Initials Verify Hrs & Breaks		From: To:	Initials Verify Hrs & Breaks		From: To:	Initials Verify Hrs & Breaks	

Remarks: (Note any Pre-Shift inspection problems below)

Rig Days Off - From: / /2011 - To: / /2011

Went to Gilbert yard to meet with James and pick up 3 job sheets, 1 side inlet, 2 Air needles, 2 spring sets for 60° wrench and Company Credit Card. Returned to site for Site trainging. Moved Equipment to pad, set up and tried to move PWT casing.

NEWP Supervisor:

Client Signature:

Office Admin:

E-FAX 800-878-4749

Invoiced:

CLIENT: FLORENCE COPPER PROJ. | Mon. Tue. (Wed.) Thur. Fri. Sat. Sun. | DATE: 6 / 29 /2011

JOB NAME: | RIG#: 180

JOB LOCATION: FLORENCE, AZ | NATIONAL JOB#: 401.030

National EXPLORATION • WELLS • PUMPS

DAILY ROTARY DRILL REPORT

Shift	Hole No.	Pre-Collar or Exploration	Angle	Bit Size & Type	FOOTAGE SUMMARY Drilling From	Drilling To	Reaming From	Reaming To	Total Footage Drilled	Total Footage Reamed	Total Casing in Hole Size	Total Casing in Hole Footage
Day	ALT-04	(PC) Expl.	90°	6¾ TRI-CONE	0'	428½			428½			
	CMP11-06	PC Expl.										
Night		PC Expl.										
		PC Expl.										

Hourly Distribution	From	To	Total
NEWP Safety Meeting / INSP	12:00	12:30	½
Drilling (Tri-Cone) / Hammer	2:00 PM	10:00 PM	8
Move Rig SETTING UP	12:30	2:00	1½
Casing Advance/Symmetrix			
Drill & Install Surface Casing			
Condition Hole, Lost Circulation	10:00 PM	11:00 PM	1
Reaming/Back Reaming			
Casing - Placing/Pulling			
Hole Abandonment			
Client Delays-Blast, Weather etc.			
Backhoe Work			
Surveying, Inclination Test			
Booster			
TRIP OUT	11:00 PM	12:00 AM	1
Maintenance			
Client Safety Meeting			
TOTAL HOURS	12		
Lunch/Dinner			
Travel			
Any Injuries Reported Today	YES	NO	
PRE-SHIFT INSPECTION COMPLETED BY:			

Description	Size	Product Name	Day	Night
Gel	50# Bag		circle if chargeable 1	circle if chargeable
Polymer	5 Gal			
Foam	Bucket			
Cement	94# Bag			
Abandonite	50# Bag			
Hole Plug	50# Bag			
Calcium Chloride	50# Bag			
LCM(Explain)				
Wear Sleeve- Bladder Sub				
Bladder for Sub				
Diesel Cost $399	Supplied by:	(National) Client Gal	102.335 GAL	
Gas		National Client Gal		
Water Haul	Miles	Loads		
Rental Equipment				
Casing Lost or Left in Hole	Size	Feet	Hole#	
Lost Tooling				

Bits	Serial Number	Size	Type (circle)	Depth In
USCO	06F171955	6¾	Hammer Carbide (Steel) Deephole	0'
			Hammer Carbide Steel Deephole	
			Hammer Carbide Steel Deephole	
Casing Shoes				

Shift	DRILLERS	Hours	PD	DRILLING ASSISTANTS	Hours	PD	DRILLING ASSISTANTS	Hours	PD
	RITOC GOMEZ	12	95	BRIAN REDFEARN	12	95	WILLIAM RIALS	12	95
Hours	From: 12:00 PM To: 12:00 AM	R6		From: 12:00 PM To: 12:00 AM	BR		From: 12:00 To: 12:00	WR	
Extra									
Hours	From: To:			From: To:			From: To:		

Remarks: (Note any Pre-Shift inspection problems below) | Rig Days Off - From: / /2011 - To: / /2011

CIRCULATE HOLE FOR AN HR.

DRILL MUD ROTARY 6¾ 0'-428½ FEET.

TRIP OUT - FROM 428-0'

1- BOX GREASE GREASE FITTING, 1- VITRA BIVEGHIER, 1-1" RACLET STRAP, 1-2" RACHET STRAP, 1-FIRE EX WITH MOUNT, 1-SET OF WHEEL CHOCK, 3-5GAL HYDRAULIC 68, 1-6" MALE TO 4" MALE, 1-4" ELBOW, 2-SAFETY CHAINS, 1- GROUNDING ROD, 1- 50' WATER HOSE, 1- WATER HOSE NOZZLE,

NEWP Supervisor: NEIL HALE | Client Signature:

Office Admin: | E-FAX 800-878-4749 | Invoiced:

CLIENT: Florence copper project	Mon. Tue. (Wed.) Thur. Fri. Sat. Sun.	DATE: 4 / 30 /2011	National EXPLORATION • WELLS • PUMPS
JOB NAME:	RIG#: 180		DAILY ROTARY DRILL REPORT
JOB LOCATION: Florence	NATIONAL JOB#: 401.030		

Shift	Hole No.	Pre-Collar or Exploration	Angle	Bit Size & Type	FOOTAGE SUMMARY Drilling From	Drilling To	Reaming From	Reaming To	Total Footage Drilled	Total Footage Reamed	Total Casing in Hole Size	Total Casing in Hole Footage
Day		PC Expl.										
		PC Expl.										
Night	Alt 04	PC Expl.										
	CMP11-06	PC Expl.										

Hourly Distribution	From	To	Total	Description	Size	Product Name	Day	Night
NEWP Safety Meeting	12:00	12:30	1½	Gel	50# Bag		circle if chargeable	circle if chargeable
Drilling - Tri-Cone / Hammer	6:30	12:00 N	5½	Polymer	5 Gal			
Move Rig	~~[illegible]~~	~~[illegible]~~	~~[illegible]~~	Foam	Bucket			
Casing Advance/Symmetrix				Cement	94# Bag			
Drill & Install Surface Casing				Abandonite	50# Bag			
Condition Hole, Lost Circulation	5:45 am	6:30 am	45 min	Hole Plug	50# Bag			
Reaming/Back Reaming		545 AM		Calcium Chloride	50# Bag			
Casing - Placing/Pulling	12:30	~~6:30~~	5¼					
Hole Abandonment								
Client Delays-Blast, Weather etc.				LCM(Explain)				
Backhoe Work	8:30	9:30	1 hr	Wear Sleeve- Bladder Sub				
Surveying, Inclination Test				Bladder for Sub				
Booster				Diesel / Gas — Cost	Supplied by:	National / Client / Gal		
						National / Client / Gal		
				Water Haul	Miles	Loads		
				Rental Equipment				
Maintenance				Casing Lost or Left in Hole	Size	Feet	Hole#	
Client Safety Meeting				Lost Tooling				
TOTAL HOURS		12						
Lunch/Dinner								
Travel								
Any Injuries Reported Today	YES	NO						
PRE-SHIFT INSPECTION COMPLETED BY:								

Bits	Serial Number	Size	Type (circle)	Depth In
			Hammer Carbide Steel Deephole	
			Hammer Carbide Steel Deephole	
			Hammer Carbide Steel Deephole	
Casing Shoes				

Shift	DRILLERS	Hours	PD	DRILLING ASSISTANTS	Hours	PD	DRILLING ASSISTANTS	Hours	PD
M	Robert Wineman	12	95.00	Dustin Stringer	12	95.00	Andy Richmond	12	95.00
Hours	From: 1145 pm To: 12:00 pm	Initials Verify Hrs & Breaks		From: 11 45 To: 12:00	Initials Verify Hrs & Breaks		From: 11:45 To: 12:00	Initials Verify Hrs & Breaks	
Extra									
Hours	From: To:	Initials Verify Hrs & Breaks		From: To:	Initials Verify Hrs & Breaks		From: To:	Initials Verify Hrs & Breaks	

Remarks: (Note any Pre-Shift inspection problems below) Rig Days Off - From: / /2011 - To: / /2011

Get to ~~[illegible]~~ site @ 11:45, check out equip., set up to run casing, start casing @ 12:30, finished casing @ 6:30 am, clean all equipment get packed up to move to next site
used 2⅞ to put pin plug & 2⅞ lifting plug

Casing shoe # 1A10276 (2A0) supplied by client

NEWP Supervisor: Client Signature:

Office Admin: E-FAX 800-878-4749 Invoiced:

HDI CURIS, **Florence**

GEOTECHNICAL LOG

Intact Rock Strength	
Code	Definition
R0	Extremely weak
R1	Very weak
R2	Weak
R3	Medium Strong
R4	Strong
R5	Very Strong
R6	Extremely Strong

Joint Condition	
Code	Definition
1	Planar-slickensided
2	Planar-smooth
3	Planar-rough
4	Undulating-slickensided
5	Undulating-smooth
6	Undulating-rough
7	Stepped-slickensided
8	Stepped-smooth
9	Stepped-rough

Hole-ID CMP11-06

Logged by R. Majalca, D. York

Signed

Box No.	Drill Run (ft)			Core Recovery		RQD		Intact Rock Strength				Joint
	From	To	Interval	TCR (ft)	TCR %	RQD (ft)	RQD %	Strong	Weak	Weak (ft)	Weak %	Condition
	429	431.5	2.5	1.7	68	0	0	R5	-	-	-	3
	431.5	436.5	5	4.7	94	3.6	76.59574	R5	R4	0.3	6.382979	3
	436.5	440	3.5	3.4	97.14286	2.5	73.52941	R4	R0	0.3	8.823529	6
	440	445	5	4.3	86	4	93.02326	R5	R0	0.9	20.93023	6
	445	450	5	4.6	92	4	86.95652	R4	R0	0.9	19.56522	1
	450	455	5	4.6	92	4.5	97.82609	R4	R0	1.5	32.6087	6
	455	460	5	4.9	98	4.7	95.91837	R5	-	-	-	1
	460	465	5	4.8	96	4.2	87.5	R4	R3	1.6	33.33333	6
	465	470	5	4.6	92	4.1	89.13043	R1	R0	0.3	6.521739	6
	470	475	5	5	100	5	100	R3	-	-	-	6
	475	480	5	4.7	94	4.3	91.48936	R4	R3	1.9	40.42553	3
	480	485	5	4.9	98	0.8	16.32653	R3	R0	0.3	6.122449	3
	485	490	5	4.9	98	1.8	36.73469	R3	R0	0.2	4.081633	3
	490	494	4	3.3	82.5	0	0	R#	R1	0.4	12.12121	3
	494	498	4	4.2	105	0.8	19.04762	R3	-	-	-	3
	498	500.5	2.5	2.4	96	1.2	50	R3	-	-	-	3
	500.5	505.5	5	4.9	98	1.3	26.53061	R3	R0	0.7	14.28571	3
	505.5	510	4.5	4.6	102.2222	0	0	R3	R1	1	21.73913	6
	510	515	5	4.6	92	0.4	8.695652	R4	R1	1.3	28.26087	3
	515	520	5	5.2	104	1.8	34.61538	R3	R0	0.4	7.692308	6
	520	525	5	4.9	98	0	0	R2	R0	0.8	16.32653	6
	525	530	5	4.7	94	2.6	55.31915	R3	-	-	-	5
	530	535	5	5	100	0	0	R2	R1	0.5	10	6
	535	540	5	5	100	0.8	16	R3	R1	1	20	6
	540	545	5	4.6	92	3.7	80.43478	R3	R1	0.2	4.347826	6
	545	550	5	4.3	86	3.9	90.69767	R3	R1	0.1	2.325581	6
	550	552	2	1.6	80	0	0	R3	R0	0.2	12.5	5
	552	557	5	4.5	90	1.7	37.77778	R3	R0	0.4	8.888889	6
	557	558	1	NR	NR	NR	NR	NR	NR	NR	NR	NR
	558	560	2	2	100	1	50	R4	R3	0.2	10	6
	560	565	5	4.8	96	4.5	93.75	R3	R1	1.2	25	2
	565	570	5	4.7	94	2	42.55319	R4	R0	0.3	6.382979	8
	570	575	5	5	100	1.4	28	R3	R2	2.6	52	6

HDI CURIS

Florence

GEOTECHNICAL LOG

Intact Rock Strength	
Code	Definition
R0	Extremely weak
R1	Very weak
R2	Weak
R3	Medium Strong
R4	Strong
R5	Very Strong
R6	Extremely Strong

Joint Condition	
Code	Definition
1	Planar-slickensided
2	Planar-smooth
3	Planar-rough
4	Undulating-slickensided
5	Undulating-smooth
6	Undulating-rough
7	Stepped-slickensided
8	Stepped-smooth
9	Stepped-rough

Hole-ID CMP11-06

Page 1-5 of 5

Logged by R. Majalca, D. York

Signed

Box No.	Drill Run (ft)			Core Recovery		RQD		Intact Rock Strength				Joint
	From	To	Interval	TCR (ft)	TCR %	RQD (ft)	RQD %	Strong	Weak	Weak (ft)	Weak %	Condition
	575	580	5	4.9	98	4	81.63265	R4	-	-	-	6
	580	585	5	4.8	96	4.4	91.66667	R3	-	-	-	5
	585	590	5	4.8	96	4	83.33333	R4	R3	0.5	10.41667	9
	590	595	5	4.7	94	4.2	89.3617	R2	R0	0.3	6.382979	3
	595	600	5	4.5	90	4	88.88889	R2	R1	1	22.22222	6
	600	605	5	4.8	96	4.3	89.58333	R3	R2	0.5	10.41667	6
	605	610	5	4.6	92	4	86.95652	R1	-	-	-	6
	610	615	5	5.2	104	1.8	34.61538	R3	R1	0.7	13.46154	6
	615	620	5	4.8	96	1.5	31.25	R3	R0	0.5	10.41667	6
	620	625	5	4.9	98	0	0	R3	R1	0.3	6.122449	3
	625	630	5	4.8	96	1.4	29.16667	R3	R0	0.2	4.166667	3
	630	635	5	4.8	96	0	0	R3	R0	0.3	6.25	9
	635	640	5	4.7	94	0	0	R3	R1	1.5	31.91489	9
	640	644	4	3.6	90	0.4	11.11111	R2	R0	1	27.77778	1
	644	648	4	3.4	85	0	0	R3	R0	0.2	5.882353	9
	648	651	3	2.7	90	0	0	R3	R0	0.6	22.22222	9
	651	656	5	5	100	0	0	R3	R2	2	40	3
	656	660	4	4	100	0	0	R2	R0	0.2	5	9
	660	664	4	3.9	97.5	0	0	R2	-	-	-	9
	664	669	5	4.6	92	3.8	82.6087	R2	R0	1	21.73913	9
	669	674	5	4.8	96	4.3	89.58333	R2	R0	0.2	4.166667	9
	674	679.5	5.5	4.9	89.09091	3.1	63.26531	R2	-	-	-	2
	679.5	684.5	5	4.8	96	4.2	87.5	R3	R0	0.3	6.25	6
	684.5	690	5.5	4.9	89.09091	4	81.63265	R3	R0	1.2	24.4898	2
	690	695	5	4.6	92	3.4	73.91304	R4	R0	0.1	2.173913	1
	695	700	5	4.6	92	3.6	78.26087	R4	-	-	-	8
	700	703.5	3.5	3.5	100	1	28.57143	R4	-	-	-	6
	703.5	708	4.5	3.8	84.44444	0.8	21.05263	R4	-	-	-	6
	708	710	2	2	100	1.5	75	R4	-	-	-	3
	710	715	5	4.8	96	1.5	31.25	R4	-	-	-	3
	715	720	5	4.5	90	1.8	40	R3	-	-	-	3
	720	725	5	4.8	96	0.9	18.75	R3	R1	0.3	6.25	6
	725	730	5	3.7	74	0.4	10.81081	R3	-	-	-	6

HDI CURIS

Florence

GEOTECHNICAL LOG

Intact Rock Strength	
Code	Definition
R0	Extremely weak
R1	Very weak
R2	Weak
R3	Medium Strong
R4	Strong
R5	Very Strong
R6	Extremely Strong

Joint Condition	
Code	Definition
1	Planar-slickensided
2	Planar-smooth
3	Planar-rough
4	Undulating-slickensided
5	Undulating-smooth
6	Undulating-rough
7	Stepped-slickensided
8	Stepped-smooth
9	Stepped-rough

Hole-ID CMP11-06

Page 1-5 of 5

Logged by R. Majalca, D. York

Signed

Box No.	Drill Run (ft)			Core Recovery		RQD		Intact Rock Strength				Joint Condition
	From	To	Interval	TCR (ft)	TCR %	RQD (ft)	RQD %	Strong	Weak	Weak (ft)	Weak %	
	730	735	5	5.1	102	0	0	R3	-	-	-	3
	735	740	5	4.9	98	0	0	R3	-	-	-	3
	740	745	5	5	100	0	0	R3	R0	0.3	6	6
	745	749	4	3.7	92.5	0	0	R3	R0	0.5	13.51351	9
	749	751	2	1.5	75	0	0	R3	-	-	-	6
	751	755	4	3.5	87.5	0	0	R3	-	-	-	3
	755	758	3	1.4	46.66667	0	0	R3	R0	0.1	7.142857	6
	758	761.5	3.5	3.5	100	1.2	34.28571	R3	R0	0.4	11.42857	3
	761.5	766.5	5	4.7	94	2.9	61.70213	R4	-	-	-	6
	766.5	771.5	5	4.8	96	2.4	50	R4	R0	0.2	4.166667	1
	771.5	777	5.5	4.8	87.27273	2.5	52.08333	R3	R1	1	20.83333	6
	777	782	5	4.2	84	3.9	92.85714	R2	R0	0.9	21.42857	6
	782	787	5	4.6	92	3.8	82.6087	R3	R1	0.1	2.173913	3
	787	792	5	4.8	96	4.2	87.5	R4	R1	0.6	12.5	6
	792	797	5	5	100	2.2	44	R3	R1	0.7	14	3
	797	800	3	2.4	80	0	0	R3	R0	0.1	4.166667	3
	800	805	5	4.9	98	0	0	R3	R0	1.2	24.4898	6
	805	810	5	4.8	96	1	20.83333	R3	R0	0.2	4.166667	6
	810	815	5	4	80	0	0	R3	R0	0.3	7.5	9
	815	820	5	5	100	0.4	8	R3	R2	1	20	6
	820	825	5	5.1	102	0	0	R3	-	-	-	3
	825	830	5	5	100	0.6	12	R3	R2	0.2	4	3
	830	835	5	5	100	0	0	R3	R2	1.1	22	9
	835	840	5	4.3	86	3.4	79.06977	R3	R0	0.8	18.60465	3
	840	845	5	4.4	88	2.9	65.90909	R2	R0	2.8	63.63636	6
	845	846	1	1.3	130	1.2	92.30769	R1	R0	0.3	23.07692	-
	846	850	4	3.5	87.5	3.5	100	R2	R0	1.1	31.42857	6
	850	855	5	4.5	90	4.2	93.33333	R2	R1	2	44.44444	6
	855	860	5	4.5	90	3.7	82.22222	R1	-	-	-	6
	860	865	5	4.3	86	4	93.02326	R0	-	-	-	3
	865	870	5	3.9	78	3.5	89.74359	R3	R0	1.3	33.33333	3
	870	875	5	4.4	88	3.8	86.36364	R2	-	-	-	3
	875	880	5	4.4	88	3.2	72.72727	R3	R0	0.1	2.272727	6

HDICURIS **Florence**

GEOTECHNICAL LOG

Intact Rock Strength	
Code	Definition
R0	Extremely weak
R1	Very weak
R2	Weak
R3	Medium Strong
R4	Strong
R5	Very Strong
R6	Extremely Strong

Joint Condition	
Code	Definition
1	Planar-slickensided
2	Planar-smooth
3	Planar-rough
4	Undulating-slickensided
5	Undulating-smooth
6	Undulating-rough
7	Stepped-slickensided
8	Stepped-smooth
9	Stepped-rough

Hole-ID CMP11-06

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Logged by R. Majalca, D. York

Signed

Box No.	Drill Run (ft)			Core Recovery		RQD		Intact Rock Strength				Joint
	From	To	Interval	TCR (ft)	TCR %	RQD (ft)	RQD %	Strong	Weak	Weak (ft)	Weak %	Condition
	880	885	5	4.9	98	3.4	69.38776	R4	R3	1.4	28.57143	2
	885	890	5	4.6	92	1.3	28.26087	R4	-	-	-	3
	890	895	5	3.2	64	0.4	12.5	R2	R0	0.2	6.25	2
	895	900	5	4.7	94	2.8	59.57447	R3	R)	0.3	6.382979	6
	900	905	5	5	100	0	0	R3	R0	0.4	8	3
	905	910	5	5	100	0	0	R3	R1	1.3	26	3
	910	915	5	4.8	96	0	0	R3	R1	0.2	4.166667	3
	915	920	5	4.8	96	1.5	31.25	R3	R0	0.6	12.5	3
	920	925	5	4.7	94	0	0	R2	R1	0.6	12.76596	9
	925	930	5	4.4	88	0.5	11.36364	R4	R3	2	45.45455	6
	930	935	5	5	100	0.7	14	R3	R0	2	40	3
	935	940	5	5	100	1	20	R3	R0	0.3	6	3
	940	945	5	5	100	0	0	R3	R0	0.4	8	3
	945	950	5	4.7	94	2.8	59.57447	R3	R0	0.3	6.382979	3
	950	955	5	5.2	104	1.2	23.07692	R3	R0	0.2	3.846154	3
	955	960	5	5	100	0	0	R3	R0	0.2	4	6
	960	965	5	4.8	96	4.8	100	R3	-	-	-	3
	965	970	5	4.9	98	4.7	95.91837	R3	-	-	-	3
	970	975	5	1.7	34	0.7	41.17647	R3	-	-	-	3
	975	980	5	5.1	102	0.6	11.76471	R3	R0	3.6	70.58824	6
	980	985	5	5.2	104	0	0	R3	R1	0.9	17.30769	3
	985	990	5	3.4	68	2.8	82.35294	R3	R0	0.2	5.882353	2
	990	995	5	4.7	94	3.7	78.7234	R3	R0	0.5	10.6383	3
	995	1000	5	4.7	94	4.4	93.61702	R3	-	-	-	2
	1000	1005	5	4.3	86	2.8	65.11628	R3	R0	0.1	2.325581	2
	1005	1010	5	4.7	94	4.6	97.87234	R3	R0	0.4	8.510638	3
	1010	1014.5	4.5	4.3	95.55556	3.9	90.69767	R3	R2	0.4	9.302326	6
	1014.5	1020	5.5	4.9	89.09091	2.8	57.14286	R3	R0	0.6	12.2449	2
	1020	1025	5	4.4	88	3.9	88.63636	R3	R2	0.1	2.272727	5
	1025	1030	5	4.8	96	2.8	58.33333	R4	-	-	-	3
	1030	1035	5	4.7	94	2.9	61.70213	R4	-	-	-	6
	1035	1040	5	4.9	98	3.9	79.59184	R4	R3	1.5	30.61224	6
	1040	1045	5	4.9	98	0	0	R$	R1	0.9	18.36735	3

HDI CURIS *Florence*

GEOTECHNICAL LOG

Hole-ID CMP11-06

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Logged by R. Majalca, D. York

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Intact Rock Strength	
Code	Definition
R0	Extremely weak
R1	Very weak
R2	Weak
R3	Medium Strong
R4	Strong
R5	Very Strong
R6	Extremely Strong

Joint Condition	
Code	Definition
1	Planar-slickensided
2	Planar-smooth
3	Planar-rough
4	Undulating-slickensided
5	Undulating-smooth
6	Undulating-rough
7	Stepped-slickensided
8	Stepped-smooth
9	Stepped-rough

Box No.	Drill Run (ft)			Core Recovery		RQD		Intact Rock Strength				Joint
	From	To	Interval	TCR (ft)	TCR %	RQD (ft)	RQD %	Strong	Weak	Weak (ft)	Weak %	Condition
	1045	1050	5	4.9	98	0.4	8.163265	R3	R0	0.3	6.122449	3
	1050	1055	5	4.6	92	2	43.47826	R3	R0	0.7	15.21739	2
	1055	1060	5	4	80	0	0	R4	R0	0.6	15	9
	1060	1065	5	5	100	0	0	R4	-	-	-	9
	1065	1070	5	5.1	102	0	0	R0	R0	0.2	3.921569	3
	1070	1075	5	5	100	0	0	R1	-	-	-	9
	1075	1080	5	4.7	94	0	0	R0	R0	0.3	6.382979	9
	1080	1085	5	3	60	0	0	R1	R0	0.4	13.33333	9
	1085	1088	3	5	166.6667	0	0	R2	R0	0.8	16	9
	1088	1090	2	1.7	85	0	0	R3	R0	1.5	88.23529	9
	1090	1095	5	4.5	90	0	0	R3	R)	0.9	20	9
	1095	1100	5	4.4	88	3.6	81.81818	R2	R0	0.2	4.545455	6
	1100	1105	5	4.4	88	3.9	88.63636	R2	-	-	-	6
	1105	1110	5	4.9	98	4.2	85.71429	R3	-	-	-	1
	1110	1115	5	4.8	96	4.8	100	R3	-	-	-	6
	1115	1118	3	2.5	83.33333	2.4	96	R2	-	-	-	6
	1118	1120	2	1.8	90	1.1	61.11111	R1	-	-	-	3
	1120	1125	5	4.7	94	4.4	93.61702	R2	-	-	-	3
	1125	1130	5	4.7	94	4.4	93.61702	R2	R0	1	21.2766	3
	1130	1135	5	4.7	94	0	0	R4	-	-	-	9
	1135	1140	5	4.8	96	2.2	45.83333	R4	-	-	-	3
	1140	1145	5	5.2	104	3	57.69231	R4	-	-	-	3

HDI CURIS

[redacted]orence Project

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Hole-ID CMP1L-06

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Intact Rock Strength	
Code	Definition
R0	Extremely weak
R1	Very weak
R2	Weak
R3	Medium Strong
R4	Strong
R5	Very Strong
R6	Extremely Strong

Joint Condition	
Code	Definition
1	Planar-slickensided
2	Planar-smooth
3	Planar-rough
4	Undulating-slickensided
5	Undulating-smooth
6	Undulating-rough
7	Stepped-slickensided
8	Stepped-smooth
9	Stepped-rough

Box No.	Drill Run (ft)			Core Recovery		RQD		Intact Rock Strength				Joint
	From	To	Interval	TCR (ft)	TCR %	RQD (ft)	RQD %	Strong	Weak	Weak (ft)	Weak %	Condition
	429	431.5		1.7		0		R5	—	—		3
	431.5	436.5		4.7		3.6		R5	R4	0.3		3
	436.5	440		3.4		2.5		R4	R0	0.3		6
	440	445		4.3		4.0		R5	R0	0.9		6
	445	450		4.6		4.0		R4	R0	0.9		1
	450	455		4.6		4.5		R4	R0	1.5		6
	455	460		4.9		4.7		R5	—	—		1
	460	465		4.8		4.2		R4	R3	1.6		6
	465	470		4.6		4.1		R1	R0	0.3		6
	470	475		5.0		5.0		R3	—	—		6
	475	480		4.7		4.3		R4	R3	1.9		3
	480	485		4.9		0.8		R3	R0	0.3		3
	485	490		4.9		1.8		R3	R0	0.2		3
	490	494		3.3		0		R3	R1	0.4		3
	494	498		4.2		0.8		R3	—	—		3
	498	500.5		2.4		1.2		R3	—	—		3
	500.5	505.5		4.9		1.3		R3	R0	0.7		3
	505.5	510		4.6		0		R3	R1	1.0		6
	510	515		4.6		0.4		R4	R1	1.3		3
	515	520		5.2		1.8		R3	R0	0.4		6
	520	525		4.9		0		R2	R0	0.8		6
	525	530		4.7		2.6		R3	—	—		5
	530	535		5.0		0		R2	R1	0.5		6
	535	540		5.0		0.8		R3	R1	1.0		6
	540	545		4.6		3.7		R3	R1	0.2		6
	545	550		4.3		3.9		R3	R1	0.1		6
	550	552		1.6		0		R3	R0	0.2		5
	552	557		4.5		1.7		R3	R0	0.4		6
	557	558		—		—		—	—	—		—
	558	560		2.0		1.0		R4	R3	0.2		6
	560	565		4.8		4.5		R3	R1	1.2		2
	565	570		4.7		2.0		R4	R0	0.3		8

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Intact Rock Strength	
Code	Definition
R0	Extremely weak
R1	Very weak
R2	Weak
R3	Medium Strong
R4	Strong
R5	Very Strong
R6	Extremely Strong

Joint Condition	
Code	Definition
1	Planar-slickensided
2	Planar-smooth
3	Planar-rough
4	Undulating-slickensided
5	Undulating-smooth
6	Undulating-rough
7	Stepped-slickensided
8	Stepped-smooth
9	Stepped-rough

Box No.	Drill Run (ft)			Core Recovery		RQD		Intact Rock Strength				Joint
	From	To	Interval	TCR (ft)	TCR %	RQD (ft)	RQD %	Strong	Weak	Weak (ft)	Weak %	Condition
	570	575		5		1.4		R3	R2	2.6		6
	575	580		4.9		4.0		R4	–	–		3
	580	585		4.8		4.4		R3	–	–		5
	585	590		4.8		4.0		R4	R3	0.5		9
	590	595		4.7		4.2		R2	R0	0.3		3
	595	600		4.5		4.0		R2	R1	1.0		6
	600	605		4.4		4.3		R3	R2	0.5		6
	605	610		4.6		4.0		R2	–	–		6
	610	615		5.2		1.8		R3	R1	0.7		6
	615	620		4.8		1.5		R3	R0	0.5		6
	620	625		4.9		0		R3	R1	0.3		3
	625	630		4.8		1.4		R3	R0	0.2		3
	630	635		4.8		0		R3	R0	0.3		9
	635	640		4.7		0		R2	R1	1.5		9
	640	644		3.6		0.4		R3	R0	1.0		1
	644	648		3.4		0		R3	R0	0.2		9
	648	651		2.7		0		R3	R0	0.6		9
	651	656		5.0		0		R3	R2	2.0		3
	656	660		4.0		0		R2	R0	0.2		9
	660	664		3.9		0		R2	–	–		9
	664	669		4.6		3.8		R2	R0	1		9
	669	674		4.8		4.3		R2	R0	0.2		9
	674	679.5		4.9		3.1		R2	–	–		2
	679.5	684.5		4.8		4.2		R3	R0	0.3		6
	684.5	690		4.9		4.0		R3	R0	1.2		2
	690	695		4.6		3.4		R4	R0	0.1		1
	695	700		4.6		3.6		R4	–	–		8
	700	703.5		3.5		1.0		R4	–	–		6
	703.5	708		3.8		0.8		R4	–	–		6
	708	710		2.0		1.5		R4	–	–		3
	710	715		4.8		1.5		R4	–	–		3
	715	720		4.5		1.8		R3	–	–		3

HDI CURIS **Florence Project** GEOTECHNICAL LOG

Intact Rock Strength	
Code	Definition
R0	Extremely weak
R1	Very weak
R2	Weak
R3	Medium Strong
R4	Strong
R5	Very Strong
R6	Extremely Strong

Joint Condition	
Code	Definition
1	Planar-slickensided
2	Planar-smooth
3	Planar-rough
4	Undulating-slickensided
5	Undulating-smooth
6	Undulating-rough
7	Stepped-slickensided
8	Stepped-smooth
9	Stepped-rough

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Box No.	Drill Run (ft) From	To	Interval	Core Recovery TCR (ft)	TCR %	RQD RQD (ft)	RQD %	Intact Rock Strength Strong	Weak	Weak (ft)	Weak %	Joint Condition
	720	725		4.8		0.9		R3	R1	0.3		6
	725	730		3.7		0.4		R-3	-	-		6
	730	735		5.1		0		R3	-	-		3
	735	740		4.9		0		R3	-	-		3
	740	745		5.0		0		R3	R0	0.3		6
	745	749		3.7		0		R3	R0	0.5		9
	749	751		1.5		0		R3	-	-		6
	751	755		3.5		0		R3	-	-		3
	755	758		1.4		0		R3	R0	0.1		6
	758	761.5		3.5		1.2		R3	R0	0.4		3
	761.5	766.5		4.7		2.9		R4	-	-		6
	766.5	771.5		4.8		2.4		R4	R0	0.2		1
	771.5	777		4.8		2.5		R3	R1	1.0		6
	777	782		4.2		3.9		R2	R0	0.9		6
	782	787		4.6		3.8		R3	R1	0.1		3
	787	792		4.8		4.2		R4	R1	0.6		6
	792	797		5		2.2		R3	R1	0.7		3
	797	800		2.4		0		R3	R0	0.1		3
	800	805		4.9		0		R3	R0	1.2		6
	805	810		4.8		1.0		R3	R0	0.2		6
	810	815		4.0		0		R3	R0	0.3		9
	815	820		5.0		0.4		R3	R2	1.0		6
	820	825		5.1		0		R3	-	-		3
	825	830		5.0		0.6		R3	R2	0.2		3
	830	835		5.0		0		R3	R2	1.1		9
	835	840		4.3		3.4		R3	R0	0.8		3
	840	845		4.4		2.9		R2	R0	2.8		6
	845	846		1.3		1.2		R1	R0	0.3		-
	846	850		3.5		3.5		R2	R0	1.1		6
	850	855		4.5		4.2		R2	R1	2		6
	855	860		4.5		3.7		R1	-	-		6
	860	865		4.3		4.0		R0	-	-		3

Without Splits

HDICURIS **orence Project** GE TECHNICAL LOG

Intact Rock Strength	
Code	Definition
R0	Extremely weak
R1	Very weak
R2	Weak
R3	Medium Strong
R4	Strong
R5	Very Strong
R6	Extremely Strong

Joint Condition	
Code	Definition
1	Planar-slickensided
2	Planar-smooth
3	Planar-rough
4	Undulating-slickensided
5	Undulating-smooth
6	Undulating-rough
7	Stepped-slickensided
8	Stepped-smooth
9	Stepped-rough

Hole-ID CMP11-06

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Box No.	Drill Run (ft)			Core Recovery		RQD		Intact Rock Strength				Joint
	From	To	Interval	TCR (ft)	TCR %	RQD (ft)	RQD %	Strong	Weak	Weak (ft)	Weak %	Condition
	865	870		3.9		3.5		R3	R0	1.3		3
	870	875		4.4		3.8		R2	–	–		3
	875	880		4.4		3.2		R3	R0	0.1		6
	880	885		4.9		3.4		R4	R3	1.4		2
	885	890		4.6		1.3		R4	–	–		3
	890	895		3.2		0.4		R2	R0	0.2		2
	895	900		4.7		2.8		R3	R0	0.3		6
	900	905		5.0		0		R3	R0	0.4		3
	905	910		5.0		0		R3	R1	1.3		3
	910	915		4.8		0		R3	R1	0.2		3
	915	920		4.8		1.5		R3	R0	0.6		3
	920	925		4.7		0		R2	R1	0.6		9
	925	930		4.4		0.5		R4	R3	2.0		6
	930	935		5.0		0.7		R3	R0	2.0		3
	935	940		5.0		1.0		R3	R0	0.3		3
	940	945		5.0		0		R3	R0	0.4		3
	945	950		4.7		2.8		R3	R0	0.3		3
	950	955		5.2		1.2		R3	R0	0.2		3
	955	960		5.0		0		R3	R0	0.2		6
	960	965		4.8		4.8		R3	–	–		3
	965	970		4.9		4.7		R3	–	–		3
	970	975		1.7		0.7		R3	–	–		3
	975	980		5.1		0.6		R3	R0	0.6		6
	980	985		5.2		0		R3	R1	0.9		3
	985	990		3.4		2.8		R3	R0	0.2		2
	990	995		4.7		3.7		R3	R0	0.5		3
	995	1000		4.7		4.4		R3	–	–		2
	1000	1005		4.3		2.8		R3	R0	0.1		2
	1005	1010		4.7		4.6		R3	R0	0.4		3
	1010	1014.5		4.3		3.9		R3	R2	0.4		6
	1014.5	1020		4.9		2.8		R3	R0	0.6		2

HDI CURIS

orence Project

GEOTECHNICAL LOG

Hole-ID _____

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Intact Rock Strength	
Code	Definition
R0	Extremely weak
R1	Very weak
R2	Weak
R3	Medium Strong
R4	Strong
R5	Very Strong
R6	Extremely Strong

Joint Condition	
Code	Definition
1	Planar-slickensided
2	Planar-smooth
3	Planar-rough
4	Undulating-slickensided
5	Undulating-smooth
6	Undulating-rough
7	Stepped-slickensided
8	Stepped-smooth
9	Stepped-rough

Box No.	Drill Run (ft)			Core Recovery		RQD		Intact Rock Strength				Joint
	From	To	Interval	TCR (ft)	TCR %	RQD (ft)	RQD %	Strong	Weak	Weak (ft)	Weak %	Condition
	1020	1025		4.4		3.9		R3	R2	0.4		5
	1025	1030		4.8		2.8		R4	—	—		3
	1030	1035		4.7		2.9		R4	—	—		6
	1035	1040		4.9		3.9		R4	R3	1.5		6
	1040	1045		4.9		0		R3	R1	0.9		3
	1045	1050		4.9		0.4		R3	R0	0.3		3
	1050	1055		4.6		2.0		R4	R0	0.7		2
	1055	1060		4.0		0		R4	R0	0.6		9
	1060	1065		5.0		0		R0	—	—		9
	1065	1070		5.1		0		R1	R0	0.2		3
	1070	1075		5.0		0		R0	—	—		9
	1075	1080		4.7		0		R3	R0	0.3		9
	1080	1085		3.0		0		R1	R0	0.4		9
	1085	1088		5.0		0		R2	R0	0.8		9
	1088	1090		1.7		0		R3	R0	1.5		9
	1090	1095		4.5		0		R3	R0	0.9		9
	1095	1100		4.4		3.6		R2	R0	0.2		6
	1100	1105		4.41		3.9		R2	—	—		6
	1105	1110		4.9		4.2		R3	—	—		1
	1110	1115		4.6		4.8		R3	—	—		6
	1115	1118		2.5		2.41		R2	—	—		6
	1118	1120		1.8		1.1		R1	—	—		3
	1120	1125		4.7		4.4		R2	—	—		3
	1125	1130		4.7		4.4		R2	R0	1.0		3
	1130	1135		1.7		0		R4	—	—		9
	1135	1140		4.8		2.2		R4	—	—		3
	1140	1145		5.2		3.0		R4	—	—		3

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Memo

To:	Mel Lawson	**Date:**	October 6, 2011
Company:	Curis Resources Ltd.	**From:**	Daniel Russin
Copy to:	Bob Cluff	**Project #:**	204400.05
Subject:	Drill Hole Summary – CMP11-06, PQ Diameter Core		

Type: 0-429' 6.25" Rotary, cased to 429'
429-1145' PQ, 5' split barrel
Started: July 15, 2011 (diamond)
Completed: July 23, 2011
Total Depth: 1145 feet
Collar Coordinates: N: 746,166.58; E: 847,659.27 (UTM NAD 83 ft)
Ground Elevation: 1474.8 ft amsl (approx.)
Drilling Contractor: National (Rotary), Cabo Drilling Corp. (PQ Core)

1 Executive Summary

CMP11-06 was drilled to obtain large samples of core for metallurgical testing. Core was logged at the drill site and placed into plastic tubes for storage and transport to the analytical lab. Rotary drilling at this site was completed by National several weeks before the core drilling began.

2 Downhole Survey

Downhole surveys were measured by Cabo and digitally recorded at approximately 100-foot increments below the top of bedrock. A subtraction of 11 degrees was made to the recorded azimuth to account for magnetic declination; note the declination calculators and charts range from a deviation of 10.3 to 11 degrees for this area. The measurements were recorded at the rig by Curis and SRK personnel.

Depth (ft)	Dip	Azimuth	Corrected Azimuth
450	-89	121	110
500	-88.9	104.2	93.2
600	-89.3	3.3	352.3
700	-89.4	97.9	86.9
800	-89.4	97	86
900	-89.5	60.8	49.8
1000	-89.8	143	132
1100	-89.7	165.5	154.5

3 Geologic Summary

A summary of footages for rock type contacts is listed below. Contact angles are provided with respect to the core axis (TCA) and an indication if the contact is an intrusive or fault contact where known. It was not possible to assess fault or contact angle in core that was heavily broken or where core loss occurred.

Depth (ft)	Rock Type	Contact
0-429	Rotary – no recovery	
429-687	Yqm	Yqm → Tgdp, Fault contact, in breccia
687-758	Tgdp	Tgdp → Yqm, Contact rubblized
758-815	Yqm	Yqm → Tgdp, Contact in lost core
815-818.5	Tgdp	Tgdp → Yqm, Intrusive contact, 40°
818.5-1048.7	Yqm	Yqm → Ta, Fault contact, 30°.
1048.7-1060.4	Ta	Ta → Yqm, Intrusive (?) contact, 85°
1060.4-1079.1	Yqm	Yqm → Tgdp, Fault contact, 60°
1079.1-1081.5	Tgdp	Tgdp → Yqm, Rubblized contact
1081.5-1145	Yqm	

3.1 Rock Types

Chip samples were not collected during mud rotary drilling of the basin-fill formations and bedrock to 429 feet. The depth to the top of bedrock is unknown, since rotary drilling and casing penetrated the contact.

Precambrian Quartz Monzonite (Yqm) constitutes 87.6% of the drill hole. This rock type consists of equigranular to coarsely porphyritic monzonite with an original texture of 25-35% quartz, 30-35% potassium feldspar, 20-25% plagioclase, and 5-8% biotite. The rock is broadly porphyritic in nature with large K-feldspar in a matrix of smaller quartz, plagioclase, and biotite. Most of the original texture has been overprinted by clay alteration and oxidation minerals (iron and manganese oxides), and has been disrupted by abundant fault breccia and gouge. Large, euhedral crystals of potassium feldspar exist at 0.5-3 cm across. Quartz crystals are 0.5-2 cm, plagioclase crystals are 2-10 mm, and biotite crystals are 1-10 mm in size.

Tertiary Granodiorite Porphyry (Tgdp) constitutes 11% of the drill hole. The rock contains 1-5 mm feldspar phenocrysts, mostly plagioclase, in an olive gray aphanitic matrix. Biotite phenocrysts compose ~10% of the rock. The geology logging did not attempt to segregate the granodiorite intercepts into Types 1, 2, and 3 as defined by Conoco.

Tertiary Andesite (Ta) constitutes 1.4% of the hole. This rock type is a dark olive grey with an aphanitic texture. It contains some areas of intense copper oxide clay. Chrysocolla and tenorite are also present in some zones.

3.2 Structure

Numerous fault structures, breccia zones, and fault planes were noted as described below. The breccia varies from crumbly, broken rock with no discernible breccia fragments or fault contact angles to well-milled breccia fragments in fine-grained gritty iron-stained matrix. Fault gouge consisting of clay and fine rock particles with or without slickensides was noted in many intervals typically less than one foot in thickness.

Depth (ft)	Fault Zones
429-450	Heavily fractured zone with small faults at various orientations
465-470	Fault zone, 70°
500.5-525	Fault zone, gouge in various orientations
530-585	Heavily shattered material with several fault zones, gouge in various orientations
600-700	Fault zone, gouge in various orientations
800-818.5	Fault zone, bottom contact @ 40°
875-945	Heavily shattered material with several fault zones, gouge in various orientations
1042.5-1088	Fault zone, gouge in various orientations
1110-1128	Fault zone, gouge in various orientations

3.3 Alteration

The rock is dominated by potassic alteration of low to moderate intensity. Quartz veins and associated secondary K-feldspar are common; secondary biotite is locally present. Pervasive argillic

alteration (mostly supergene) obscures much of the hypogene detail. Sericitic and propylitic alteration are locally observed. Sericitic alteration was likely more abundant than was evident, however it was strongly overprinted by supergene iron oxides and clay and was thus difficult to observe.

3.4 Metzone

Metallurgical zones (Metzone) codes were recorded for each sample interval. The codes for the Oxide Zone designate the interval in terms of whether the interval is dominated by copper oxides/silicates (code 1), mixed copper and iron oxides (code 2) , or shows high concentration of iron oxides with little or no copper oxides (code 3). No transition or sulfide material was seen.

Depth (ft)	Metallurgical Zone
429-1145	Intermingled zones of mixed copper and iron oxides and high-iron zones

3.5 Mineralization

There are pervasive copper oxides on fractures and in clay sites throughout the oxide zone. Copper oxides are consistently present from 429-1200 feet, with the exception of the very slightly mineralized Tgdp from 687-758 feet. The most common copper oxide is a copper-bearing clay that replaces plagioclase; other copper oxides present are chrysocolla and tenorite/wad. No copper oxides were present in the sulfide zone. Iron oxides (hematite, goethite, and jarosite) occur at mostly low abundances (1-5%) throughout the hole.

4 Geotechnical Summary

Average total core recovery (TCR) was over 90% for the hole. Average rock quality (RQD) was below 50%.

MetZone	Oxide
Depth	429-1145
Total Feet	716
Average TCR (%)	93.1
Average RQD (%)	44.8

4.1 Fracture Intensity

Core was collected in a split-tube barrel in order to ensure the highest integrity of intact conditions. Mechanical fractures caused by handling or placing the materials in the core box were discounted during the fracture intensity review.

The fracture intensity is low to moderate for the majority of the hole, with abundances of 0-15 fractures per foot. Areas near fault zones are substantially more fractured.

4.2 Core Recovery

Statistics on the core recovery in CMP11-06 are presented below. Recovery averaged 95.2% with the lowest recovery in Ta (23.3) and the highest recovery in Yqm (93.5%). RQDs range from 19.3% to 47.3%; these numbers are almost certainly skewed high. No handling of the core was permitted, so determining RQD is less precise.

Rock Type	Drill Run Interval (ft)	TCR %	RQD %
Yqm	627.5	93.5	47.3
Tgdp	78.5	90.8	19.3
Ta	10	86	23.3
CMP11-06 Totals	716	93.1	44.8

5 Sampling and Analysis

No assay samples were taken from CMP11-06, since the material was to be used in metallurgical tests. As of September 2011, metallurgical testing on this material is ongoing. The companion HQ hole (CMH11-06) was sampled on-site and assayed by Skyline Assayer and Laboratories in Tucson.

CMP11-06
431.5-436.5

CMP11-06
440-445

CMP11-06
445-450

CMP11-06
431.5-436.5

CMP11-06
436.5-440

CMP11-06
445-450

CMP11-06
429-431.5

CMP11-06
436.5-440

CMP11-06
440-445

CMP11-06
455-460

CMP11-06
460-465

CMP11-06
470-475

CMP11-06
450-455

CMP11-06
460-465

CMP11-06
465-470

CMP11-06
450-455

CMP11-06
455-460

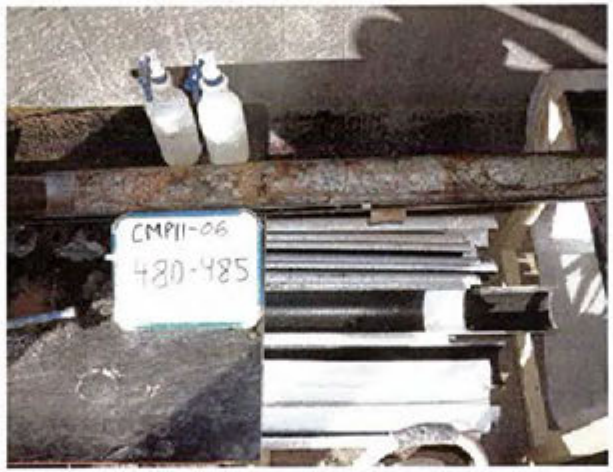
CMP11-06
465-470

CMP11-06
475-480

CMP11-06
485-490

CMP11-06
490-494

CMP11-06
475-480


CMP11-06
480-485

CMP11-06
490-494

CMP11-06
470-475

CMP11-06
480-485

CMP11-06
485-490

CMP11-06
498 - 500.5

CMP11-06
505.5-510

CMP11-06
510 - 515

CMP11-06
494-498

CMP11-06
500.5 - 505.5

CMP11-06
510 - 515

CMP11-06
494-498

CMP11-06
500.5 - 505.5

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505.5-510

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520 - 525

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550 -552

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558 -560

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540 -545

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545 -550

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562 -557

CMP11-06
535 -540

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562 -557

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565-570

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570-575

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625 - 630

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635 - 640

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640 - 644

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651 -656

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660 -664

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664 -669

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664 -669

CMP11-06
648 -651

CMP11-06
656 -660

CMP11-06
660 -664

CMP11-05
679-679.5

CMP11-05
679.5-684.5

CMP11-05
690-695

CMP11-05
669-674

CMP11-05
679.5-684.5

CMP11-05
684.5-690

CMP11-05
669-674

CMP11-05
679-679.5

CMP11-05
684.5-690

CMP11-06
695-700

CMP11-06
703.5-708

CMP11-06
7.0-7.5

CMP11-06
695-700

CMP11-06
700-703.5

CMP11-06
690-695

CMP11-06
700-703.5

CMP11-06
703.5-708

CMPII-06
715-720

CMPII-06
725-730

CMPII-06
730-735

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715-720

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720-725

CMPII-06
730-735

CMPII-06
710-715

CMPII-06
720-725

CMPII-06
725-730

CMP11-06
740-745

CMP11-06
745-749

CMP11-06
735-740

CMP11-06
745-749

CMP11-06
735-740

CMP11-06
740-745

CMP11-06
749-751

HDI CURIS

CONTRACTOR: CABO
CORE SIZE: PQ
LOGGED BY: M. Siebzy/K. Norman
SCALE: 1" = 10'

ELEVATION: 1434.8
BEARING: 110.2° @ 450'
INCLINATION: -89° @ 450'
TOTAL DEPTH: 1145'

LOCATION: FLORENCE
HOLE ID: CMP11-046
SHEET 1 OF 11

COLLAR COORDINATES:
N: 246,166.58 E: 847,659.27
STARTED: 7-15-11
COMPLETED: 7-23-11

COMMENTS: Survey 450'
AZ 121.0 -89.0
COR 110.0

AVG. CORE RECY/HOLE: 93.1%

FOOTAGE	ALTERATION: ORTHO	BIO	QTZ	SER	CLAY	CHL	EPID	CARB	GYPS	ANHY	MAG	OXIDE: LIM	HEM	GOE	CU GRAPHIC	CUOX 1	CUOX 2	SULFIDE: MET ZONE	PY	CPY	CC	BN	MO	FRACT INT	FRACT DIP	FAULT DIP	FRACTURING	GEOLOGY
420																												
430	1	1			2	1							1			-	2	2						5	-	8		
440	1	2			3	1							1			2	2	2						4	-	-		
450	1	2	1		4	1							1	1		2	2	2						5	1	6		
460	1	2			5	1								1		2	2	2						5	-	5		
470	1	1			4	1							1	1		2	2	2						5	8	8		
480	0	0			6	1							1	1		-	2	2						3	-	-		
490	1	2	1		3	1							2	1		2	2	2						3	8	-		
	1	2	1		4	1							3	1		3	3	2						3	7	-		
	1	1			4								4	1		3	3	3						5	-	7		
	1	2	1		2								1			-	2	3						2	-	-		
	1	2	1		1								3	1		-	3	3						2	8	-		
	1	2	1		3	3						1	3	2		3	3	2						2	-	-		
	1	2			3	2						2	2	2		1	1	2						4	3	7		

0-429' Rotary drilling; no samples taken

Top of bedrock unknown; first core is QMP. All angles measured relative to core axis (TCA) (0-90)

Collar Coordinates are NAD 83, not state plane (NAD 27) as in older holes.
NAD 27 Coords: 246,110.70 N, 647,879.91 E

429-687' QMP

429-429.4' fine-grained gray-brown rock; contact 80° TCA w/ QMP below. Aplite?

very fractured, w/ variable orientations.

431.5-432.2' fractures filled w/ clay; decent Cu on fxs & in plag sites

439.6-440' fault zone; abundant clay & bx w/ considerable biotite. plag → Cu clay.
Some CuOx on fxs.

444-445' fault zone w/ abundant clay; 45° TCA.
Good Cu clay on fxs.

445.4-446.4' fault w/ clay gouge; 80° TCA. Sheared orthoclase.

450-450.8' Fine breccia + clay.

452.7-453' bleached white area, vuggy qtz

Good Cu on fxs & in plag sites, some tenorite on fxs.
considerable biotite.

465.8-464' large orthoclase
decrease in Cu from above. Abundant hematite

469.5-470' fault zone w/ gouge + breccia - 70° TCA.

Salmon-colored orthoclase; 1-2cm streaks of hematite throughout, w/ tenorite.
Some Cu in plag sites.

475-476.1' some shearing w/ hematite in matrix
Cu after plag.
Very hard zone; silicified?

480-485' well fractured but competent enough to clean
Qtz-bio-clay vein runs the entire length of the core (vertical)

485-485.2' Fault breccia, ~70° TCA.
485.6-485.7, 499.2-499.5' #

487' 1" wide "vein" of hematite, 30° TCA.

DRILLING INTERVAL	% CORE RECOVERED	RECOVERY % BY A.I.	SAMPLE INTERVAL
429 2.5	68		
431.5 5	94		
436.5 3.5	97		
440 5	86		
445 5	92		
450 5	92		
455 5	98		
460 5	96		
465 5	92		
470 5	100		
475 5	94		
480 5	98		
485 5	98		
490			

COLLAR COORDINATES: N: 746,166.59 E: 847,659.27
STARTED: 7-15-11
COMPLETED: 7-23-11
ELEVATION: 1474.8'
BEARING: 93.2° @ 500'
INCLINATION: -88.9° @500'
TOTAL DEPTH: 1145'
CONTRACTOR: CABO
CORE SIZE: PQ
LOGGED BY: Noonan
SCALE: 1" = 10'
HDI CURIS
LOCATION: FLORENCE
HOLE ID: CMP11-06
SHEET 2 OF 11

COMMENTS: Survey @500': az = 104.2° incl = -88.9°
corrected az = 93.2°

AVG. CORE REC'Y/HOLE

FOOTAGE	ORTHO	BIO	QTZ	SER	CLAY	CHL	EPID	CARB	GYPS	ANHY	MAG	LIM	HEM	GOE	CU GRAPHIC	CUOX 1	CUOX 2	MET ZONE	PY	CPY	CC	BN	MO	FRACT INT	FRACT DIP	FAULT DIP	DRILLING INTERVAL	% CORE RECOVERED
490-494	-	2	-		1	2						1	2	2		1	1	2						3	-	-	4	83
494-498					1	1						1	2	2		1	2	2						3	3	-	4	105
498-500.8					1	1						1	1	2		1	1	2						2	-	-	2.5	96
500.8-505.8					5	1						1	3	3		1	4	2						5	-	4	5	98
505.8-510	1	4			2	3						1	3	4		1	1	3						5	7	7	4.5	102
510-515	1	-			2	2						1	3	3		1	1	3						5	-	-	5	92
515-520	1	1	1		2	1						1	3	3		1	2	2						5	-	5	5	104
520-525	-	1	-		4	1						1	4	3		1	2	3						5	-	7	5	98
525-530	-	2	1		1	2						1	1	3		1	1	2						1	7	-	5	94
530-535	-	1	1		5	1	1					1	4	3		3	5	2						5	-	4	5	100
535-540		1	1									1	3	3		1	1	2						5	-	4	5	100
540-545	1	1			3								3	1		3	2	3						4	-	-	5	92
545-550	1		1		2								3	1		-	2	2						3	8	-	5	86
550-552	1	1			1								3			-	2	2						4	-	-	2	80
552-557	1		1		5	1							3			-	-	2						5	-	-	5	90
557-558					N	O		R	E	C	O	V	E	R	Y	N	O		R	E	C	O	V	E	R	Y	NR	0
558-560	1				1	1							2			-	-	2						5	-	-	2	100

FRACTURING | GEOLOGY

DESCRIPTION: GEO., MINERAL, ALT, STRUCT.

429-687' QMP cont. from above
490-494' well fractured but not crumbly
490.4-490.9' patches of biotite flooding
491' chrys. on fxs
494-494.9' surfaces covered w/ light green clay
451.1, 451.6' thin zones of breccia; ~25° TCA. v. little gouge
kspar ~ 30x30 mm.

500.5-506.5' abundant hem/goe on fxs
502.3-502.7' fault bx; little gouge, ~40° TCA.
504-504.2'
504.9-505.5' all Cu clay after plag; very soft.
505.5-510' very fractured w/ lots of breccia; little gouge.
509.5' fx/fault, 70° TCA. Zones of chl replacing bio.
Low Cu; most fractures filled w/ FeOx.
510-515' similar to above; abundant breccia w/ little gouge. Angle varies.
Fine-grained matrix w/ abundant milled fragments, large kspar is conspicuous.
514.5-515' all black + white; probably a small fragment/dike of Tgdp
515-520' same; abundant fault bx w/ little to no gouge. Slips @ ~50° TCA.
Large (~20x20mm) milled fragments embedded in goethite.

520-525' similar to above; fault bx w/ slips ~70° TCA.
520-520.6' hematite-clay zone
523.7-524.2' goe in fractures.

525-530' QMP w/ v. little fracturing + little clay. Fractures ~70° TCA.
526-527' patches of biotite; partially altered to chl.
527-529' intense goethite development;
528.5' 5-10 mm qtz vein, 60° TCA.
529.2' fracture w/ Cu clay + bio @80° TCA.
530-535' >50% fault bx; ~35° TCA. Very strong Cu mineralization.
531.6-532' bands of goe
532-533.5' strong CuOx; veins of bright blue @ 50° TCA 532.3-532.5'
533.3-534.2' band of hem @ 50° TCA.
535-536.5' fault breccia w/ little gouge, ~40° TCA
Abundant FeOx w/ low Cu.

Fault breccia; strongly sheared + core is a sticky mess.
common CuOx in fxs + plag sites.
↳ chrys. + tenorite.
545-550' similar to above.
chrys. + tenorite in fxs, some Cu clay after plag.

well-fractured + sheared, not much Cu.

552.7-553.7' fault breccia w/ milled frags + minor clay gouge.
553.7-557' well fractured; lighter colored + finer grained. Not porphyritic.
No Cu + only minor hematite. Aplite? Sericite alteration more likely.
557-558' no recovery
well fractured; 1-3 cm fragments.

RECOVERY % BY A.I.: N/S
SAMPLE INTERVAL: N/S

COLLAR COORDINATES:	ELEVATION: 1474.8	CONTRACTOR: CABO	HDI CURIS
N: 746,166.58 E: 847,659.27	BEARING: 352.3° @ 600'	CORE SIZE: PQ	LOCATION: FLORENCE
STARTED: 7-15-11	INCLINATION: -89.3° @ 600'	LOGGED BY: Noonan / Sieber	HOLE ID: CMP11-06
COMPLETED: 7-23-11	TOTAL DEPTH: 1145'	SCALE: 1" = 10'	SHEET 3 OF 11

FOOTAGE	ORTHO	BIO	QTZ	SER	CLAY	CHL	EPID	CARB	GYPS	ANHY	MAG	LIM	HEM	GOE	CU GRAPHIC	CUOX 1	CUOX 2	MET ZONE	PY	CPY	CC	BN	MO	FRACT INT	FRACT DIP	FAULT DIP
560	1	1			3	1							4	1		1	2	2						4	-	-
570		1			2	1							1	1		1	2	2						5	-	-
580	1	1	1		5								4	1		1	2	2						4	-	-
590	1	1	1		3								2	1		1	2	2						3	-	-
600	1	2	1		3								3	1		1	2	2						2	-	-
610	1	1	1		6	1							8	1		1	3	3						5	-	-
620	1	1	1		4	1						1	4	4		1	2	3						4	-	3
630		1	1		5	1						1	3	3		1	2	2						5	-	4
640	1	1			3	1						1	4	2		1	1	3						5	-	4
650		1			1	1						1	3	3		1	1	2						5	-	4
660		1			1	1						1	4	2		1	1	3						5	-	4
670		1			1	1						1	3	3		1	1	2						5	-	4
680		1			1	1						1	3	3		1	1	2						4	-	8

ALTERATION

OXIDE

SULFIDE

FRACTURING

GEOLOGY

COMMENTS: 600' Az 3.3° -89.3° COR 352.3°

DESCRIPTION: GEO., MINERAL, ALT, STRUCT.

429-687' QMP cont. from above.

560-562.5' fault bx w/ 2-3 cm clasts; abundant hematite in matrix.

562.5-565' Cu clay after plag

565.5-567.4' pale fine-grained unit; aplite? Clasts of QMP.

567.4-568.1' QMP as above

568.1-569' aplite(?) as above

569-573.3' QMP

573.3-575' mixed QMP + Tgdp. Tgdp has strong Cu clay after plag. QMP has strong hematite alteration.

575.4-576.2 & 577.2-579' aplite? Decent CuOx + Cu clay in QMP

583.6' narrow fault zone, 60° TCA. Cu clay after plag; some tenorite.

589.5-590' Tgdp; plag → cu clay

590.4-594.4' breccia/sheared zone w/ hematite matrix. some tenorite + Cu after plag

593.5-594.5 Tgdp w/ Cu clay after plag

595.4-597.7' Good Cu clay; abundant biotite

600-604.4' sheared w/ abundant hem

604.4-605' Tgdp

605-609' sheared/brecciated QMP w/ milled frags up to ~4 cm

609-610' Tgdp

610-610.6' fault bx w/ gouge; 30° TCA. Fractures @ ~50° TCA.

611.6' & 612.8' qtz + ksper veins

615-616.2' competent QMP w/ ~2mm qtz veins

616.2-618' fault breccia w/ ~50% gouge, 40° TCA.

620-621.6' fault bx w/ sandy matrix; no gouge, ~40° TCA.

621.7' & 621.9' bands of biotite, 90° TCA.

625-630' very fractured, fxs ~55° TCA

627.2-627.6' fault breccia, no gouge, ~70° TCA.

628.7-628.9 ↗, ~85° TCA.

AVG. CORE REC'Y/HOLE

DRILLING INTERVAL	% CORE RECOVERED	RECOVERY % BY A.I.	SAMPLE INTERVAL
560 5	96	N/S	N/S
565 5	94		
570 5	100		
575 5	98		
580 5	96		
585 5	96		
590 5	94		
595 5	90		
600 5	96		
605 5	92		
610 5	104		
615 5	96		
620 5	98		
625 5	96		

HDICURIS

COLLAR COORDINATES: N: 746,166.58 E: 847,659.27	ELEVATION: 1474.8'	CONTRACTOR: CABO	LOCATION: FLORENCE
STARTED: 7-15-11	BEARING: 86.9° @ 700'	CORE SIZE: PQ	HOLE ID: CMP11-010
COMPLETED: 7-23-11	INCLINATION: -89.4 @ 700'	LOGGED BY: Noonan / Sieber	SHEET 4 OF 11
	TOTAL DEPTH: 1145'	SCALE: 1" = 10'	

COMMENTS: 700' Survey
AZ 97.9° Incl -89.4
Cor 86.9°

AVG. CORE REC'Y/HOLE

FOOTAGE	ORTHO	BIO	QTZ	SER	CLAY	CHL	EPID	CARB	GYPS	ANHY	MAG	LIM	HEM	GOE	CU GRAPHIC	CUOX 1	CUOX 2	MET ZONE	PY	CPY	CC	BN	MO	FRACT INT	FRACT DIP	FAULT DIP	DESCRIPTION: GEO., MINERAL, ALT, STRUCT.	DRILLING INTERVAL	% CORE RECOVERED	RECOVERY % BY A.I.	SAMPLE INTERVAL
630		1			4	1						1	3	3		1	1	3						5	-	5	**429-687' QMP** cont. from above 630-635' mostly fault breccia w/ little gouge, ~50° TCA. Core is difficult to clean 634-634.4' high clay content	5	96	N/S	N/S
635		1			2	1						1	2	3		2	2	2						5	-	-	635-640' fault breccia, no gouge, very friable. Angle not visible. nothing else noteworthy	5	94		
640		-			4	1						1	3	2		2	2	2						5	-	8	640-644' fault breccia, sandy zones 642-644, w/ some clay. ~75° TCA. 640.3' slickensided Cu/FeOx	4	90		
644					3	1						1	3	3		1	1	3						5	-	-	644-648' fault breccia as above, v. little clay. No measurable angle. 646.8-647.2' some clay	4	85		
648					5	1						1	3	3		1	3	2						5	-	-	648-651' fault breccia w/ milled fragments + abundant gouge. No measurable angle high Cu in clay-rich zones.	3	90		
651					2	1						1	5	5		1	2	3						5	-	6	651-656' fault breccia, ~60° TCA. Subrounded large milled fragments, w/ goe/hem matrix; no gouge, matrix is sandy.	5	100		
656					4	1						1	5	5		1	1	3						5	-	6	656-660' fault breccia, ~60° TCA. Milled fragments as above, sandy matrix. 658.7-660' some gouge.	4	100		
660					3	1						1	5	5		1	3	3						5	-	-	660-664' fault breccia, no measurable angle. 660-661.6' almost solid FeOx w/ some milled fragments of QMP. 661.6-661.9 + 662.4-662.9' almost solid white + pale green clay. ~20° TCA.	4	98		
664	1				4	1							5			-	2	3						5	-	4	664-664.4' fault breccia 664.4-665.2' fault, ~40° TCA. some Cu clay after plag	5	92		
669	1				5								5			3	2	3						5	-	-	669-670.8' brecciated zone w/ considerable hematite. 670.8-671.8' Cu in fractures + clays. 671.9-679' no visible Cu 673.3' fault zone, ~45° TCA.	5	96		
674	1	1			5								5	2		3	2	3						5	-	-	674-679.5 fault bx. 676.7-677' ~3" qtz vn w/ strong chrys, hem, + tenorite.	5.5	89		
679.5	1	1			3								2	1		2	2	2						3	8	-	679.5-684.5' solid core w/ little clay or hematite, green CuOx on frs Coarse orthoclase + biotite 684.8-685.2' Tgdp, w/ abundant hematite, fracturing, and qtz veins	5	96		
684.5	1				4											3	2	2						5	-	7	685.2-685.7' QMP 685.7-686.2 Tgdp; 686.2-687' QMP. **687-758' Tgdp** contact irregular, in fault breccia.	5.5	89		
690			1		1								2			2	·	2						4	-	-	690-695' Tgdp w/ crossing qtz veins hematite + CuOx on fractures Abundant quartz veins.	5	92		
695													2				-							4	-	-	Similar to above 697-697.8' clay-hematite zone	5	92		
700																															

COLLAR COORDINATES:
N: 746,166.58 E: 847,659.27
STARTED: 7-15-11
COMPLETED: 7-23-11

ELEVATION: 1474.8'
BEARING: 86.9° @ 700'
INCLINATION: -89.4° @ 700'
TOTAL DEPTH: 1145'

CONTRACTOR: CABO
CORE SIZE: PQ
LOGGED BY: Keenan/Sidder
SCALE: 1" = 10'

HDI CURIS,
LOCATION: FLORENCE
HOLE ID: CMP11-06
SHEET 5 OF 11

FOOTAGE: 700 710 720 730 740 750 760

ALTERATION: ORTHO, BIO, QTZ, SER, CLAY, CHL, EPID, CARB, GYPS, ANHY, MAG

OXIDE: LIM, HEM, GOE, CU GRAPHIC, CUOX 1, CUOX 2

SULFIDE: MET ZONE, PY, CPY, CC, BN, MO

FRACT INT
FRACT DIP
FAULT DIP
FRACTURING
GEOLOGY

COMMENTS:

AVG. CORE RECY/HOLE

DESCRIPTION: GEO., MINERAL, ALT, STRUCT.

687-758' Tqdp

700-703.5' nearly barren Tqdp: dark gray w/ trace CuOx (chrys.) on frx. Abundant secondary biotite(recrystallized bio phenos). Seen in clean frx. w/ minor white clay.

703.5-708' same as above, w/ several ½-inch qtz-ksp veins.

708-710' same as above. Numerous small qtz veins w/ various orientations.

708-714' nearly unbroken ½"-1" qtz vein

712-712.5' swarm of thin qtz veins w/ sericitic envelopes up to ~1" wide.

714-715' fault zone w/ abundant gouge. ~50° TCA.

715-720' same rock. Common qtz veins w/ thin sericitic envelopes; secondary bio common as well.

719-719.5' stockwork of strong sericitic alt, ~250 TCA.

719' Tqdp changes to lighter gray w/ much longer (up to ~1cm) plag phenos

717' 1.5° Qtz+ chrys + tenorite vein, no visible envelopes, ~30° TCA.

719' 1" Qtz+ chrys + tenorite vein, no visible envelopes, ~30° TCA.

720-725' same lighter-colored Tqdp. Increased FeOx, stillcontinued trace CuOx. Abundant qtz veins ~75° TCA. Shreds off FeOx. Sericite envelopes are common on qtz veins. Biotite is locally recrystallized. Patches of sericite-chlorite alteration. Some Tqdp; nearly universal moderate sericite alteration. Some Rusty biotite, and a few qtz veins w/ sericite envelopes, w/ some kspar. Quartz-eye > hornblende. ◇ 5mm phenos (?)

725-730' same Tqdp; nearly universal moderate sericite alteration. Some Rusty biotite, and a few qtz veins w/ sericite envelopes, w/ some kspar. quartz-eye > hornblende. ◇ 5mm phenos (?)

730-735' same Tqdp; fourteen.

732.3' 3mm EBM vein, 50° TCA.
↳ slightly irregular envelope

735-740' same as above

very common qtz(+kspar+chl) veins w/ sericitic envelopes (±kspar?)

738.5-740' patches of strong sericitic alt. Trace Cu clay.

740-740.2' ¼" Cu clay vein, ~70° TCA.

741-741.8' Cu clay in plagioclase.

742.2-742.3' ½" qtz-kspar vein, ~70° TCA.

742.7-743' shattered zone w/ abundant hematite

746-749' shattered, not milled breccia.

some rocks & alteration as previous interval. No visible Cu.

749-751' increased hem. staining in gm & plagioclase sites. Similar to above.

751-755' same; less staining & no visible Cu.

758-815 CMP

Contact subvertical/lost.

758-758.5' good Cu, pieces upto ~2.3cm. Less Cu further down.

Hand core w/ Cu clay after plag. Some hem. Hem/goe stain on frx & around feldspars

Considerable qtz; as above w/ Cu clay after plag.

FOOTAGE	ORTHO	BIO	QTZ	SER	CLAY	CHL	EPID	CARB	GYPS	ANHY	MAG	LIM	HEM	GOE	CU GRAPHIC	CUOX 1	CUOX 2	MET ZONE	FRACT INT	FRACT DIP	FAULT DIP
700	1	3	2	1	1							0	1	1		1	0	23	3	33	1
703.5	3	3	3	1	20							6	1	1		1	1	23	3	38	1
708	2	3	3	0	1							0	2	1		1	0	23	1	9	-
710	1	3	5	4	1							0	2	2		1	0	23	5	-	5
714	2	3	3	4	1	1	1					0	3	2		1	0	23	2	4	-
720	3	1	3	5	1	1	0					0	2	2		1	0	23	3	7	-
725	2	0	2	5	2	1	1					0	1	2		0	0	23	2	5	-
730	2	1	2	5	2	1	0					0	2	2		0	0	23	2	4	-
735	2	1	4	4	2	1						0	2	2		0	1	23	2	4	-
740	2	1	2	3	3	1						1	4	2		0	2	23	3	6	-
745	2	1	3	3	4	1						0	4	3		0	0	23	4	-	-
749.2	1	0	1	2	1	1						0	2	1		1	1	23	2	6	-
751	1	1	1	2	1							0	2	1		1	1	23	4	-	-
755	1	1	1	2	1							0	2	1		1	1	23	4	-	-
758	1		2	1								0	3	1		0	0	23	4	-	-
760	1	1	1	2	23							0	2	2		1	1	23	4	-	-
765	2	1	1	1	1							0	2	1		1	1	23	2	4	-
768.5	2	1	1	1	1							0	2	1		1	1	23	2	4	-
770	2	1	1	1	1							0	2	1		1	1	23	2	4	-
775	2	1	1	1	1							0	2	1		1	1	23	2	4	-
780	2	1	1	1	1							0	2	1		1	1	23	2	4	-
785	2	1	1	1	1							0	2	1		1	1	23	2	4	-
790	2	1	1	1	1							0	2	1		1	1	23	2	4	-
795	2	1	1	1	1							0	2	1		1	1	23	2	4	-
800	2	1	1	1	1							0	2	1		1	1	23	2	4	-
805	2	1	1	1	1							0	2	1		1	1	23	2	4	-
810	2	1	1	1	1							0	2	1		1	1	23	2	4	-
815	2	1	1	1	1							0	2	1		1	1	23	2	4	-

	700	703.5	708	710	714	715	720	725	730	735	740	745	749.2	751	755	758	760	765	768.5	770	775	780	785	790	795	800	805	810	815
DRILLING INTERVAL	3.5	4.5	2	5	5	5	5	5	5	5	5	4	2	4	3.5	3	5	5	3.5	5	5	5	5	5	5	5	5	5	5	5
% CORE RECOVERED	100	84	100	96	90	96	74	102	98	100	93	75	88	94	100	47	96	98	94	96										
RECOVERY % BY A.I.	N/S																													
SAMPLE INTERVAL	N/S																													

COLLAR COORDINATES:
N: 746,166.58 E: 847,659.27
STARTED: 7-15-11
COMPLETED: 7-23-11

ELEVATION: 1474.8'
BEARING: 86.0° @ 850'
INCLINATION: -89.4 @ 850'
TOTAL DEPTH: 1145'

CONTRACTOR: CARD
CORE SIZE: PQ
LOGGED BY: Sieber/Noonan
SCALE: 1" = 10'

HDI CURIS

LOCATION: FLORENCE
HOLE ID: CMP11-016
SHEET 6 OF

COMMENTS: Survey @ 800'
AZ 97.0 Incl. - 89.4
Cor 86.0°

DESCRIPTION: GEO., MINERAL, ALT, STRUCT.

AVG. CORE RECY/HOLE

FOOTAGE

ALTERATION: ORTHO, BIO, QTZ, SER, CLAY, CHL, EPID, CARB, GYPS, ANHY, MAG

OXIDE: LIM, HEM, GOE, CU GRAPHIC, CUOX 1, CUOX 2

SULFIDE: MET ZONE, PY, CPY, CC, BN, MO

FRACT INT
FRACT DIP
FAULT DIP
FRACTURING
GEOLOGY

DRILLING INTERVAL
% CORE RECOVERED
RECOVERY % BY A.I.
SAMPLE INTERVAL

Large antiaxial + quartz
Good Cu on fractures + replacing plag.
772.3-772.9' brecciated/sheared phenocrysts w/ abundant hem+clay.
773.8' moderate Cu clay + less hematite.
778.5-784.4' considerable hematite + clay (w/ Cu)
784.4-787' typical QMP: Cu clay after plag + some hematite.
787-788.2' some Cu after plag
788.2-790' sheared w/ abundant clay + hematite.
790-792' harder, no shearing same as 787-788.2'.
792-797' most of the run was blown out of the splits.
Flooded w/ silica, some Cu clay after plag
797-800' well fractured, typical QMP.
797.2-797.8' gouge/breccia zone, 60° TCA.
800-805' abundant fault bx, no measurable angle(s)
800.6-801.3' solid beam w/ good CuOx; bright blue clays followed by breccia to 802.'
mostly sandy material w/ little gouge
802.6-804.4' granulitic breccia.
804.4-805.2' fault bx w/ ~2 inches gouge. Good Cu in clay (plag sites) + on fractures; mostly light green clay w/ some clays. Flecks.
810-814' alternating fault breccia w/ solid intervals (still well fractured), ∠ ~45° TCA.
A few areas of secondary biotite, esp. 808-809'.
~5 cm pieces of Tqdp @ ~810 & 814'.

815-818.5' Tqdp
Tqdp w/ extensive sericitic alteration + bxpervasive qtz veins. Bounded @ contact @ 40° TCA

818.5-1048.7' QMP
818.5-820' QMP as before; crumbly + different in color.
820-825' least Cu mineralization thus far in this drillhole. Extensive replacement of plag w/ CuOx; veins of CuOx @ 820.9°, 30° TCA. Fractures ~45° TCA; rock appears competent but crumbles easily (2 handled.
825-830' similar to previous interval, good mineralization. Fractures @ ~20° TCA.
830-835' same; slightly less Cu & more friable.
835-840' same as previous

DRILLING INTERVAL	% CORE RECOVERED	RECOVERY % BY A.I.	SAMPLE INTERVAL
5	87		
5	84		
5	92		
5	96		
5	105		
3	80		
5	98		
5	96		
5	80		
5	100		
5	102		
5	100		
5	86		

COLLAR COORDINATES:	ELEVATION: 1474.8'	CONTRACTOR: CABO	HDI CURIS
N: 746,166.58 E: 847,659.27	BEARING: 49.8° @ 900'	CORE SIZE: PQ	LOCATION: FLORENCE
STARTED: 7-15-11	INCLINATION: -89.5° @ 900'	LOGGED BY: Sieber/Noonan	HOLE ID: CMP11-06
COMPLETED: 7-23-11	TOTAL DEPTH: 1145'	SCALE: 1" = 10'	SHEET 7 OF 11

FOOTAGE	840	850	860	870	880	890	900	910
ALTERATION: ORTHO	1	1	1	1	1	2	2	1
BIO		1	3	1	1	1		1
QTZ	1				1	1	1	1
SER								
CLAY	3	4	5	6	5	2	3	4
CHL	1		1	1	1	1	1	1
EPID								
CARB								
GYPS								
ANHY								
MAG								
OXIDE: LIM								1
HEM	1	4	4	4	3	4	2	2
GOE	1	4	4	3	2	1	1	4
CU GRAPHIC								
CUOX 1	2	1	2	1	2	3	2	1
CUOX 2	2	2	2	2	2	2	2	1
SULFIDE: MET ZONE	2	2	2	2	2	2	2	3
PY								
CPY								
CC								
BN								
MO								
FRACT INT	5	2	3	2	4	4	5	4
FRACT DIP	-	6	-	3	6	8	-	-
FAULT DIP	-	-	-	-	-	-	6	-
FRACTURING								
GEOLOGY								

COMMENTS: Survey @ 900' Az 60.8° Incl. -89.5° Cor 49.8°

AVG. CORE REC'Y/HOLE

DESCRIPTION: GEO., MINERAL, ALT, STRUCT.

818.5 - 1048.7' QMP

842.8-843.3' ~0.5' of fault gouge + breccia, w/ clay

843.3-845' good Cu clay + tenorite

840.5-841' cu clay + tenorite

846-850' strongly sheared minerals w/ abundant goethite. Cu clay after plag.

850-855' sheared + brecciated w/ hem + goe; Considerable biotite + good Cu.

Abundant clay; core is difficult to clean.

Some as above, CuOx on thin fractures

Same as above

Some as above, weak rock.

875-876' less Cu clay, clearly visible qtz + kspar.

876-880' strongly sheared w/ little clay

880-885' core pumped out w/o splits - a big mess. hematite abundant on fractures fairly fresh QMP; some Cu clay after plag.

885-890' core is coming out of splits when pumping the tube... very broken up again. abundant kspar (flooding) + very little Cu

891.3-891.7' fault zone w/ greenish Cu clay. 60° TCA. Cu clay after plag.

895-897.5' good CuOx, w/ tenorite. Large kspar phenocrysts.

903.1-903.5' fault bx, no measurable angle; mostly sand w/ some clay.

904.5-905' fault bx w/ ~50:50 clay/sand, no measurable angle. Low CuOx; crumbly and difficult to clean.

905-910' very fractured + crumbly w/ zones of sandy breccia. Very little Clay or CuOx. Fault zones ~50° TCA, very difficult to clean the core.

DRILLING INTERVAL	% CORE RECOVERED	RECOVERY % BY A.I.	SAMPLE INTERVAL
840 5	88	M/S	M/S
846 1	88		
846 130			
850 5	90		
855 5	90		
860 5	86		
865 5	78		
870 5	88		
875 5	88		
880 5	98		
885 5	92		
890 5	64		
895 5	94		
900 5	100		
905 5	100		
910			

COLLAR COORDINATES:
N: 746,166.58 E: 847,669.27
STARTED: 7-15-11
COMPLETED: 7-23-11

ELEVATION: 1474.8'
BEARING: 49.8° @ 900'
INCLINATION: -89.5° @ 900'
TOTAL DEPTH: 1145'

CONTRACTOR: CABO
CORE SIZE: PQ
LOGGED BY: Noonan / Russin
SCALE: 1" = 10'

HDICURIS
LOCATION: FflorENCE
HOLE ID: CMP11-006
SHEET 2 OF 11

FOOTAGE

ALTERATION: ORTHO, BIO, QTZ, SER, CLAY, CHL, EPID, CARB, GYPS, ANHY, MAG

OXIDE: LIM, HEM, GOE, CU GRAPHIC, CUOX 1, CUOX 2

SULFIDE: MET ZONE, PY, CPY, CC, BN, MO

FRACT INT
FRACT DIP
FAULT DIP
FRACTURING
GEOLOGY

COMMENTS:

DESCRIPTION: GEO., MINERAL, ALT, STRUCT.

AVG. CORE RECY/HOLE

DRILLING INTERVAL
% CORE RECOVERED
RECOVERY % BY A.I.
SAMPLE INTERVAL

COLLAR COORDINATES:
N: 746,166.58 E: 847,659.27
STARTED: 7-15-11
COMPLETED: 7-23-11

ELEVATION: 1471.8'
BEARING: 132.0° @1000'
INCLINATION: -89.8° @1000'
TOTAL DEPTH: 1145'

CONTRACTOR: CABO
CORE SIZE: PQ
LOGGED BY: Noonan / Russin
SCALE: 1" = 10'

HDI CURIS
LOCATION: FLORENCE
HOLE ID: CMP11-016
SHEET 9 OF 11

COMMENTS: Survey @ 1000'
az 143°
incl. -89.8°
Cor 13g

DESCRIPTION: GEO., MINERAL, ALT, STRUCT.

980.5-1048.7' QMP

980-988' well broken, gypsic Cu mineralization 0980-981', w/ lots of Cu clay, chrys, & flecks of tenorite. Contact between well-mineralized + barren QMP is 60° TCA, same as other fractures.
Cu clay & chrys zone 981-995':
995-990', top 1' of core (995-996') is sand from the hole.
993', ~½" vein of chrys, tenorite erratically across core
988-990', regularly fractured, ~35-40° TCA. 1 fx every ½". Streaks of bio alt w/ qtz veins, 30° TCA.
990-995', locally strong kspar alt. Bio → chl is nearly complete.
991-991.3', solid kspar.
983-984', slickensided zone, no milling of fractures. Strong hem replacement in a few spots.
984-995', a couple of ½" chrys veins, ~30° TCA.
995-1000', same, pretty competent rock w/ minor Cu clay after plag.
996.5', 2 ½" bio-bearing qtz veins, parallel, 50° TCA.
998-999' well-broken.

1001-1002' well-broken
1003.5-1005', slightly elevated Cu, stronger green in clay & a few specks of chrys.
1006.5-1007', silicified
1006.5-1009' biotite appears recrystallized, then replaced by chlorite.
1007-1008.5' strong ksp alteration.
1009', ~½" seam of clay/bx, 65° TCA. Some Cu in clay.
1010-1014', same; low-grade competent QMP w/ qtz-bio veins w/ alt-ksp envelopes. bio → chl.
1014-1014.5' intense hem development, rock is silicified
1015.5-1016.1' fault zone; gouge breccia ~60-65° TCA.
1018-1018.5', no recovery, very broken below.
1017-1018' sericite flooding, tan after kspar.
1020-1025 same comp. Fbg → Cu clay & + rare chrys.
1024.2' ½" gouge/bx zone. 35° TCA.
1025-1030' same as above. Sheeted qtz veins ~45° TCA, visible as gray streaks through kspar.
1029-1030', increase in Cu clay + a couple of mm chrys veinlets.
1030-1031', numerous <3mm chrys veinlets, various orientations
1031.5-1035', bio completely altered to epidote.
1035-1036.2', v. strong kspar flooding. Salmon-pink rock w/ qtz & chrys.
1036.2-1037.2', silicified & mineralized, w/ FeOx pseudomorphs of sulfides in qtz veins w/ chrys.
1038' 2" fault bx w/ gouge, ~30° TCA. bio → chl + ep, complete replacement.
1040-1045' highly oxidized QMP, very fractured
Patches of chrys, low CuOx overall.
1042.5-1044' breccia, ~25° TCA.
1045-1048.7' QMP.
1046.5-1047.2' chrys veins, FeOx abundant throughout the interval.
1048.7 - 1060.4' Tp
* sheared pluton contact w/ fine gouge, 30° TCA.

FOOTAGE	980	990	1000	1010	1020	1030	1040	1050
ALTERATION ORTHO	-	-	3 2 3	4 1 2	3 1 2	2 1 - 3	0 2 1	2 1 4
ALTERATION BIO	-	-	2 3	1 2	1 2 - 3	0 3 2	1 3 3	2 3 2
ALTERATION QTZ	-	-				1 3 2	1 3 3	2 3 2
ALTERATION SER								
ALTERATION CLAY	3 1 2	2 - 3 1 0	3 2 1	3 2 1	3 1 1	3 2 1	3 2 1	3 2 1
ALTERATION CHL	2	1	1	1	0	1	0	1
ALTERATION EPID								
ALTERATION CARB								
ALTERATION GYPS								
ALTERATION ANHY								
ALTERATION MAG								
OXIDE LIM	1	0	1	0	0	1	1	0
OXIDE HEM	3 3	1 2	2 3	3 3	2 2	1 2	1 1	2 2
OXIDE GOE								
OXIDE CU GRAPHIC								
OXIDE CUOX 1	3 3	1	1	1	1	1	2	1
OXIDE CUOX 2	3 3	2 2	2 2	2 2	2 2	2 2	2 2	2 2
SULFIDE MET ZONE	3 3	2 2	2 2	2 2	2 2	2 2	2 2	2 2
SULFIDE PY								
SULFIDE CPY								
SULFIDE CC								
SULFIDE BN								
SULFIDE MO								
FRACT INT	4 6 -	2 5 -	2 5 -	3 5 -	2 - -	2 5 -	1 5 -	2 7 3
FRACT DIP								
FAULT DIP								
FRACTURING								
GEOLOGY								

AVG. CORE RECY/HOLE	990	995	1000	1005	1010	1015	1020	1025	1030	1035	1040	1045	1050
DRILLING INTERVAL	5	5	5	5	5	4.5	5.5	5	5	5	5	5	5
% CORE RECOVERED	104	68	94	86	94	96	87	88	96	94	98	98	98
RECOVERY % BY A.I.	N/S												
SAMPLE INTERVAL	N/S												

HDI CURIS

COLLAR COORDINATES: N: 746,166.58 E: 847,659.27
STARTED: 7-15-11
COMPLETED: 7-23-11

ELEVATION: 1474.8'
BEARING: 154.5° @ 1100'
INCLINATION: -89.7° @ 1100'
TOTAL DEPTH: 1145'

CONTRACTOR: CABO
CORE SIZE: PQ
LOGGED BY: Vosman | Russin
SCALE: 1" = 10'

LOCATION: FLORENCE
HOLE ID: CMPII-06
SHEET 10 OF 11

COMMENTS: Survey @ 1100' az 165.5° incl. -89.7° cor 154.5°

AVG. CORE REC'Y/HOLE

DESCRIPTION: GEO., MINERAL, ALT, STRUCT.

FOOTAGE	ALTERATION: ORTHO	BIO	QTZ	SER	CLAY	CHL	EPID	CARB	GYPS	ANHY	MAG	OXIDE: LIM	HEM	GOE	CU GRAPHIC	CUOX 1	CUOX 2	SULFIDE: MET ZONE	PY	CPY	CC	BN	MO	FRACT INT	FRACT DIP	FAULT DIP	FRACTURING	GEOLOGY
1050	-	-	-	-	5	1						-	3	1		2	2	2						5	-	7		
		1			6	1						-	4	2		1	1	3						5	-	6		
			N	O		R	E	C	O	V	E	R	Y			N	O		R	E	C	O	V	E	R	Y		?	?
1060		1			5	1						1	5	3		1	1	3						5	-	-		
		2		1	3	2						1	3	2		1	3	2						5	8	8		
1070		1		1	5	2						-	4	4		1	1	3						5	6	6		
		1		-	3	1						1	3	3		2	4	2						5	6	6		
1080		1	2		2	1						1	3	2		1	1	3						4	-	-		
	2	2	2		4	2						1	4	3		1	2	2						5	-	5		
	2	1	1	1	3	1						1	3	3		1	1	3						4	-	-		
1090	1	3	1	1	4	1						1	3	3		1	1	3						4	6	-		
	3	1	2	3	4	2	1					1	2	2		1	2	2						4	-	6		
1100	2	1	3	4	4	2	2					1	2	2		1	1	2						4	5	-		
	1	0	4	2	4	2	1					0	1	2		1	2	2						3	5	-		
1110	2	1	3	2	5	2	1					1	1	3		1	3	3						5	-	3		
	2	0	1	0	5	1	1					0	1	3		1	2	2						5	-	-		
1120					6	1	1					0	1	3		0	1	2						5	-	-		

1048.7-1060.4' Ta
1050-1055' Ta, competent rock w/ chrys in frs
1050-1053' fault breccia w/ ~50% gouge, ~70° TCA.
1053-1053.2' QMP, well-mineralized, w/ Cu clay & chrys.
1055-1056.4' solid, competent, w/ flecks of tenorite
1056.4-1059' fault bx, ~60° TCA, ~20" of clay. Very little blue Cu clay, trace tenorite.
1058-1059' solid black clay; sheared Ta?
1059-1060' no recovery

1060.4-1079.1' QMP ← contact planar, intrusive(?) ~85° TCA.
1060-1065' weakly mineralized QMP
All brecciated; only trace visible Cu
1065-1070' alternating intervals of fault bx & heavily fractured but intact rock. chl→bio.
1065-1065.2' gouge, v. little clay elsewhere. ↳ ~80° TCA.
1069.5-1070' minor tenorite & chrys, FeOx pseudomorphs of sulfides visible.
1070-1075' mostly fault breccia, very crumbly w/ no gouge. ~60° TCA.
all bio→chl. Little visible Cu, as Cu clay.
1075-1079.1' well-mineralized w/ Cu clay, chrys., & tenorite.
1076, 1077.8' small brecciated areas, ~60° TCA.
1078.3-1078.6' highest Cu grade

1079.1-1081.5' Tqdp ← contact sheared, 1cm gouge. 60° TCA.
Phenocrysts → white clay, little Cu. Abundant thin vlts of hem.

1081.5-1145' QMP ← contact rubblized
1083-1085.2' bands of qtz + ksp + bio alt; most bio→chl.
1085.2-1086' fault breccia, ~50° TCA.
1086-1088' completely shattered, detail obscured.
1088-1090' QMP as above, very fractured.
1088.7' ~25mm band of kspar, ~60° TCA, smaller bands of bio. Vein envelopes?
1090-1096' very broken w/ zones of fault breccia. bio→chl mostly complete. Weakly mineralized.
1092.8' biotite vein fxs @ ~60° TCA.
1094.5-1095' clay gouge.
1095-1100' shattered QMP. Strong sericitic alteration; kspar phenos are entirely tan.
1097' 3" gouge w/ abundant goethite, 55° TCA. contains ~2" fragment of ~solid biotite.
1098.5' 3" fault bx, no gouge.
1100-1105' same ser-altered QMP, shattered, abundant clay & FeOx & very little Cu.
most of the rock is tan altered feldspar.
1105.8-1107' partially silicified.
1105', 1106.5' patches up to a couple inches of sericite alteration.
Little biotite in QMP; only a couple %
1110-1115' fault breccia & gouge, slips ~25° TCA. Stronger Cu than previous intervals, chrys vns up to ~2mm.
1111', 1113-1114' clots of Cu-rich clay. Competent rock, core in 4 pcs.
1112.5-1115' streaks of chrys + tenorite.
1115-1118' same fault bx; less Cu, limited to clays. Trace chrys.
large fragments w/ little matrix; fragments are clearly milled.
1118-1120' same fault bx.

DRILLING INTERVAL	% CORE RECOVERED	RECOVERY % BY A.I.	SAMPLE INTERVAL
1050 5	92	N/S	N/S
1056 5	80		
1060 5	100		
1065 5	102		
1070 5	100		
1075 5	94		
1080 5	60		
1085 3	167		
1088 2	85		
1090 5	90		
1095 5	88		
1100 5	88		
1105 5	98		
1110 5	96		
1115 3	83		
1118 2	90		
1120			

HDI CURIS

LOCATION: FLORENCE
HOLE ID: CMP11-06
SHEET 11 OF 11

CONTRACTOR: CABO
CORE SIZE: PQ
LOGGED BY: Noonan/Russin
SCALE: 1" = 10'

ELEVATION: 1474.8'
BEARING: 154.5° @ 1100'
INCLINATION: -89.7° @ 1100'
TOTAL DEPTH: 1145'

COLLAR COORDINATES:
N: 746,166.58 E: 847,659.27
STARTED: 7-15-11
COMPLETED: 7-23-11

FOOTAGE	ALTERATION: ORTHO	BIO	QTZ	SER	CLAY	CHL	EPID	CARB	GYPS	ANHY	MAG	OXIDE: LIM	HEM	GOE	CU GRAPHIC	CUOX 1	CUOX 2	SULFIDE: MET ZONE	PY	CPY	CC	BN	MO	FRACT INT	FRACT DIP	FAULT DIP	FRACTURING	GEOLOGY
1120					6	1	1					1	2	4		0	2	2						5	-	-		
					6	1	1					0	3	4		0	1	3						5	-	5		
1130		1			1	1	-					0	2	1		1	0	2						2	8	-		
		1			1	1						0	2	2		1	1	2						2	-	-		
1140		2			1	1						1	2	2		1	2	2						2	-	-		

COMMENTS:

AVG. CORE REC'Y/HOLE

DESCRIPTION: GEO., MINERAL, ALT, STRUCT.

1081.5-1145' QMP

1120-1125' same fault bx; low Cu grade w/ minor clay in plag sites. most hypogene detail is obscured.

1125-1128' Same.

1128-1129.6' Ta; top 6" is gouge. Top & bottom contacts sheared, ~45° TCA.

1129.6' QMP is much grayer, less Fe ox/clay overprint. Fresh bio + plag; hematite is common but confined to fracture surfaces.

1133-1133.8' lacy network of thin vlts of secondary biotite.

1135-1140' same; small cloudy areas of secondary biotite. Fractures @ variable angles.

1140-1145' same.

T.D. @ 1145'. Drill rig nearing rated depth for PQ; nearing sulfide zone but not reached.

Geology Logging by SRK Consulting (Tucson)

429-480' Mike Sieber
480-540' Katie Noonan
540-610' Mike Sieber
610-664' Katie Noonan
664-700' Mike Sieber
700-751' Danny Russin
751-797' Mike Sieber
797-835' Katie Noonan
835-900' Mike Sieber
900-965' Katie Noonan
965-975' Danny Russin
975-985' Katie Noonan
985-1040' Danny Russin
1040-1095' Katie Noonan
1095-1135' Danny Russin
1135-1145 Katie Noonan

Downhole Surveys

450'	110°	-89°
500'	93.2°	-88.9°
600'	352.3°	-89.3°
700'	86.9°	-89.4°
800'	86.0°	-89.4°
900'	49.8°	-89.5°
1000'	132°	-89.8°
1100'	154.5°	-89.7°

Core Recovery
All: 93.1%
QMP: 93.8%
Tgdp: 90.8%
Ta: 86.0%

Met Zones
0-1145' Oxide
TD is near the transition to sulfides probably <1200'.

Lithology Contacts
429-687' QMP
687-758' Tgdp
758-815' QMP
815-818.5' Tgdp
818.5-1048.7' QMP
1048.7-1060.4' Ta
1060.4-1079.1' QMP
1079.1-1081.5' Tgdp
1081.5-1145' QMP

DRILLING INTERVAL	% CORE RECOVERED	RECOVERY % BY A.I.	SAMPLE INTERVAL
1120 5	94	N/S	N/S
1125 5	94		
1130 5	94		
1135 5	96		
1140 5	104		
1145			

COLLAR COORDINATES:	ELEVATION:	CONTRACTOR: CABO	HDICURIS
N: E:	BEARING:	CORE SIZE: PQ	LOCATION: FLORENCE
STARTED: 7-15-11	INCLINATION:	LOGGED BY: M. SIEBEL/K. NOONAN	HOLE ID: CMP 11-06
COMPLETED:	TOTAL DEPTH:	SCALE:	SHEET 1 OF

FOOTAGE	ORTHO	BIO	QTZ	SER	CLAY	CHL	EPID	CARB	GYPS	ANHY	MAG	LIM	HEM	GOE	CU GRAPHIC	CUOX 1	CUOX 2	MET ZONE	PY	CPY	CC	BN	MO	FRACT INT	FRACT DIP	FAULT DIP
420																										
430	1	1			2	1										2	2	2						5	8	
440	1	2	1		3	1							1			2	2	2						4	-	
450	1	2			4	1						1		1		2	2	2						5	8	
460	1	2	1		4	1						1		1		2	2	2						5	7	
470	1	2	1		4	1						4		1		2	2	2						3	8	
480	1	2	1		2							2	3	1		1	3	2						2	-	
490	1	2	-		3	3						2	2	2		3	3	2						2	-	

FRACTURING

GEOLOGY

DESCRIPTION: GEO., MINERAL, ALT, STRUCT.

COMMENTS: SURVEY 450' AZ 121.0 COR 110.0 -89.0

AVG. CORE REC'Y/HOLE

DRILLING INTERVAL	% CORE RECOVERED	RECOVERY % BY A.I.	SAMPLE INTERVAL
429			
2.5			
431.5 5			
436.5 3.5			
440 5			
445 5			
450 5			
455 5			
460 5			
465 5			
470 5			
475 5			
480 5			
485 5			
490			

492-494.4 FANG GR LT ARG RECR 80° CONTACT - QMP
494.4 - 496 YGN K-SPAR - CLAY → CU
VERY FRACTURED MANY ORIENTATIONS
GOOD 2-3 CM FRACTURES FILLED W/ CLAY
FAULT VUGS → K-SPAR - CU
440
439.6 - 440 FAULT - CLAY & ARGILLIC CONTAINS BIOTITE K-SPAR - CU
CU ON FRACTURES
K-SPAR - CLAY - CU, CU ON FRACTURES CLAY
444 - 445 FAULT - CLAY 45°
GOOD CU - CLAY - FRACTURES K-SPAR - CU
445.9 - 446.4 CLAY GOUGE - FAULT 80° SHEAR ORTHOGRAPHS
450 - 450.5 CLAY W/ FINE BRECCIA
452.7 - 453 BLEACHED WHITE ARGILLIC HARD - VUG - QTZ
453 - 455 K-SPAR → CLAY + CU
GOOD CU ON K-SPAR + FRACTURES SOME TENERITE
CONTAINS BIOTITE

SOME K-SPAR - CU TENERITE
463.8 - 464 VUGS W/ ORTHO CLASTS - HARD
LESS CU THAN ABOVE CONTAINS IDEALIZED HEMATITE
468.5 - 470 FAULT - GOUGE/BRECCIA ~70°
SALMON ORTHOCLASE 1-2 CM STREAKED THROUGHOUT W/ HEMATITE
TENERITE - K-SPAR > CU

TENERITE
475.6 - 476.1 SHEARED CRYSTALLINE HEMATITE IN MATRIX
K-SPAR + CU COAT IS HARD - SILICIFIED
480-485 ROCK IS FRACTURED BUT WASHED RESULTING WOOD FRAGS, YGN
NEARLY VERTICAL (TCA) VEIN MAKES ALMOST FULL LENGTH OF CORE FILLED W/ BIO, CHL, CLAY
485-490 YGN, FAULT BRECCIA HRS-485.2, 485.6-485.7, 488.2-487.5 < ~70°
487.1 IN WIDE VEIN HEM, GOE AT 30°

COLLAR COORDINATES:
N:_____ E:_____
STARTED: 7/15/11
COMPLETED:_____

ELEVATION:_____
BEARING:_____
INCLINATION:_____
TOTAL DEPTH:_____

CONTRACTOR: Cabo
CORE SIZE: PQ
LOGGED BY: Nassah
SCALE:_____

HDI CURIS
LOCATION: FLORENCE
HOLE ID: CNP11-06
SHEET 2 OF

FOOTAGE

ALTERATION: ORTHO, BIO, QTZ, SER, CLAY, CHL, EPID, CARB, GYPS, ANHY, MAG

OXIDE: LIM, HEM, GOE, CU GRAPHIC, CUOX 1, CUOX 2, MET ZONE

SULFIDE: PY, CPY, CC, BN, MO

FRACT INT

FRACT DIP

FAULT DIP

FRACTURING

GEOLOGY

DESCRIPTION: GEO., MINERAL, ALT, STRUCT.

COMMENTS:

AVG. CORE RECY/HOLE

DRILLING INTERVAL

% CORE RECOVERED

RECOVERY % BY A.I.

SAMPLE INTERVAL

COLLAR COORDINATES: N:_____ E:_____
STARTED: 7/15/11
COMPLETED:_____

ELEVATION:_____
BEARING:_____
INCLINATION:_____
TOTAL DEPTH:_____

CONTRACTOR: Cabo
CORE SIZE: PQ
LOGGED BY: Noonan | Sieber
SCALE:_____

HDI CURIS
LOCATION: FLORENCE
HOLE ID: CMP11-06
SHEET 2 OF

FOOTAGE

ALTERATION: ORTHO, BIO, QTZ, SER, CLAY, CHL, EPID, CARB, GYPS, ANHY, MAG

OXIDE: LIM, HEM, GOE, CU GRAPHIC, CUOX 1, CUOX 2

SULFIDE: MET ZONE, PY, CPY, CC, BN, MO

FRACT INT

FRACT DIP

FAULT DIP

FRACTURING

GEOLOGY

COMMENTS: 600-

DESCRIPTION: GEO., MINERAL, ALT, STRUCT.

AVG. CORE RECY/HOLE

DRILLING INTERVAL

% CORE RECOVERED

RECOVERY % BY A.I.

SAMPLE INTERVAL

COLLAR COORDINATES:	ELEVATION:	CONTRACTOR: Cabo	HDI CURIS
N: E:	BEARING:	CORE SIZE: PQ	LOCATION: FLORENCE
STARTED: 7/15/11	INCLINATION:	LOGGED BY: Noonan/Sieber	HOLE ID: CMP11-06
COMPLETED:	TOTAL DEPTH:	SCALE:	SHEET 4 OF

FOOTAGE: 630, 640, 650, 660, 670, 680, 690, 700

ALTERATION	ORTHO							1	1	1	1	1				
	BIO	1	1	1									1	1		
	QTZ														1	
	SER															
	CLAY	4	2	4	3	5	2	4	3	4	5	5	3	4	1	
	CHL	1	1	1	1	1	1	1	1	1						
	EPID															
	CARB															
	GYPS															
	ANHY															
	MAG															
OXIDE	LIM	1	1	1	1	1	1	1	1							
	HEM	3	2	3	3	3	5	5	5	5	5	5	2		2	2
	GOE	3	3	2	3	3	5	5	5			2	1			
	CU GRAPHIC															
	CUOX 1	1	2	2	1	1	1	1	1	1	3	3	2	3	2	
	CUOX 2	1	2	2	1	3	2	3	3	2	2	2	2	2	2	1
SULFIDE	MET ZONE	3	2	2	3	2	3	3	3	3	3	3	2	2	2	
	PY															
	CPY															
	CC															
	BN															
	MO															
FRACT INT		5	5	5	5	5	5	5	5	5	5	4	3	5	4	4
FRACT DIP		-		-					-			-	8			
FAULT DIP		5	2	8	2	6	6	2	6	6	1	1	1	7		
FRACTURING																
GEOLOGY																

COMMENTS: 700' SURVEY AZ 97.9° CON 86.9° INCL -89.4

AVG. CORE REC'Y/HOLE

DESCRIPTION: GEO., MINERAL, ALT, STRUCT.

630-635 Ygm, mostly fault breccia w/ little gouge, ∠50°
634-634.4 high clay contact
2nd side difficult to wash, very friable, still some mud
635-640 Ygm fault breccia, no gouge, ∠(?), very friable
Not much else noteworthy

640-644 Ygm fault breccia, no gouge from 640-642, zones of sand
plus some clay 642-644, fault ∠75°
slickensided cu/Fe ox at 640.3
644-648 Ygm fault breccia w/ very little clay except from 646.8-647.2, ∠(?)

648-651 Ygm fault breccia w/ lots of milled fragments and lots of gouge
Fault ∠(?), high Cu ox in clay zones

651-656 Ygm fault breccia, ∠~60°, large milled fragments surrounded
by 652/Hem, no gouge, matrix is sandy
656-660 Ygm fault breccia, ∠60°, as before w/ milled fragments,
sandy matrix, some gouge 658.7-660

660-664 Ygm fault breccia, ∠(?)
660-661.6 almost solid Fe ox w/ milled frag Ygm
661.6-661.9, 662.4-662.8 almost solid white and light gm clay at 20°
669-669.4 FAULT BRECCIA
669.4-665.2 FAULT ~60°
Some K-SPAR-CU
669-670.8 BRECCIASED TOUGH w/ CONSIDERABLE PYRITE
670.8-671.8 CU IN FRACTURES & K-SPAR
673.3 FAULT -45° NOTE 671.8-679
677.7-679.5 SHEARED MINERALS W/ HEMATITE
SOME K-SPAR → CU

SAND TAKE LITTLE CLAY OR HEMATITE GREEN CU ON FRACTURES
CARB ORTHO SLAB & LOADS OF BIOTITE

684.8-685.2 DACITE DACITE IS DARK GREY W/ HEMATITE
685.2-688.7 Ygm CU ON FRACTURES - VERY FRACTURED
688.7-689.2 DACITE 689.2-690 Ygm QTZ VEINS

690-695 DACITE
691-691.7 QTZ VEINS CROSS-CU
CU ON FRACTURES
HEMATITE OF FRACTURES
QTZ VEINLETS
697-697.8 VEINLET OF CLAY HEMATITE

DRILLING INTERVAL	630 5	635 5	640 4	644 4	648 3	651 5	656 4	660 4	664 5	669 5	674 5.5	679.5 5	684.5 5.5	690 5	695 5	700
% CORE RECOVERED																
RECOVERY % BY A.I.																
SAMPLE INTERVAL																

COLLAR COORDINATES:
N: ____ E: ____
STARTED: 7/15/11
COMPLETED: ____

ELEVATION: ____
BEARING: ____
INCLINATION: ____
TOTAL DEPTH: ____

CONTRACTOR: Cabo
CORE SIZE: PQ
LOGGED BY: ____
SCALE: ____

HDICURIS
LOCATION: FLORENCE
HOLE ID: CMP 11-06
SHEET 5 OF

DRILLING INTERVAL	ORTHO	BIO	QTZ	SER	CLAY	CHL	EPID	CARB	GYPS	ANHY	MAG	LIM/JAR	HEM	GOE	CU GRAPHIC	CUOX 1	CUOX 2	MET ZONE	PY	CPY	CC	BN	MO	FRACT INT	FRACT DIP	FAULT DIP
700–703.5 (3.5)	1	3	2	1	2	1						0	1	1		1	0	2						3	3	-
703.5–708 (4.5)	3	3	3	1	2	0						0	1	1		1	1	2						3	8	-
708–710	2	3	3	0	1							0	2	1		1	0	2						1	9	-
710–715 (5)	1	3	5	4	1							0	2	2		1	0	2						5	1	5
715–720 (5)	2	3	3	4	1	1	1					0	2	2		1	0	2						2	4	-
720–725 (5)	3	1	3	5	1	1	0					0	2	2		0	1	3						3	7	-
725–730 (5)	2	0	2	5	2	1	1					0	1	2		0	0	3						2	5	-
730–735 (5)	2	1	2	5	2	1	0					0	2	2		0	0	3						2	4	-
735–740 (5)	2	1	7	4	2	1						0	2	2		0	1	3						2	4	-
740–745 (5)	2	1	2	3	3	1						1	4	2		0	1	2						3	6	-
745–749 (4)	2	1	3	3	4	1						0	4	3		0	0	3						4	-	-
749–751 (2)	1	0	1	2	1	1						0	2	1		1	1	2						2	6	-
751–755 (4)	1	1		1									2	1		0	0	2						4	-	-
755–758 (3)		2		1									3	1		0	0	3						4		
758–761.5 (3.5)	1		1		2								2	4		2	2	2						3		
761.5–766.5 (5)	2	1	1		2	1							4	2		2	2	2						3	-	
766.5–770	2	1	2		2	1							3	2		3	2	2						3		

COMMENTS:

AVG. CORE REC'Y/HOLE

DESCRIPTION: GEO., MINERAL, ALT, STRUCT.

700–703.5' nearly barren Tgdp. Dark gray, tr. CuOx on fxs. Minor secondary biotite (recrystallized phases). hem in <1mm fxs. w/ minor white clay

703.5–708' same. Several ~1/4–1/2" qtz vns./ksp-rich alt. selv.

708–710' ~1/2" vertical qtz-ksp vn. Numerous other smaller vns; various orientations; continues to 714', up to ~1" wide.

712–712.5' swarm of qtz vns w/ sericitic envelopes up to ~1" wide.

714' Fault begins, gouge. 50° TCA. and 715.

715–720' same rock. Common qtz/ser vns + secondary bio. 719' – different Tgdp; lighter gray w/ much larger plag phenos

718–719.5' swath of strong ser-ksp alt + epid. alt. ~25° TCA.

717' 1.5" qtz-ksp vn. no envelope (60°?) 30° TCA

+ 719.1' 1"

720–725' same lighter Tgdp. More FeOx; still only trace Cu. Few veins ~75° TCA. Stacks of FeOx. Common on envelopes or ore vns (± hem). Biotite is only locally recrystallized. Local patches of ser. flooding (@721.5, 724–725')

725–730' same Tgdp; nearly universal weak ser. flooding. Fresh bio, few qtz vns/ ser envelopes w/ some ksp(?). Biotite is fresh. goe > hem. Cu oxide in 2mm seam.

730–735' same Tgdp; barren.

732.3' 3mm EDM vn, 80° TCA.

735–740' same. Very common qtz(± ksp ± ser) vns w/ ksp/ser envelopes. 737.5–740' strong pulses of sericitic alt. Trace Cu ox.

740.2' 1/4" Cu clay vn, 70° TCA. Cu clay in plag @ 741–741.8'

742.2' 1/2" qtz vn w/ ksp

742.7–743' shattered ... w/ abund. hem.

746–749' shattered, not milled. Same rock + alteration as above. No visible Cu.

749–751' ... hem ... gouge + ... Same rock.

751–755 FRACTURED HEMATITE ABUNDANT

NO VISIBLE CU

758. Ygm HEMATITE/GOETHITE STAINING

758–758.1 GOOD CU PIECE ~2–1 CM LESS CU DOWN THE CORE

HARD CORE K SPAR → CU TENORITE HEM/GOE/GOETHITE STAIN, ON FRACTURES + AROUND FELDSPAR

AS ABOVE

TENORITE K-SPAR → CU LARGE ORTHOCLASE – CONSIDERABLE QTZ

770 see other sheet

COLLAR COORDINATES:
N:_____ E:_____
STARTED: 7/15/11
COMPLETED: _____

ELEVATION: _____
BEARING: _____
INCLINATION: _____
TOTAL DEPTH: _____

CONTRACTOR: Cabo
CORE SIZE: PQ
LOGGED BY: _____
SCALE: _____

HDI CURIS
LOCATION: FLORENCE
HOLE ID: CMP11-016
SHEET 9 OF

FOOTAGE

ALTERATION: ORTHO, BIO, QTZ, SER, CLAY, CHL, EPID, CARB, GYPS, ANHY, MAG

OXIDE: LIM, HEM, GOE, CU GRAPHIC, CUOX 1, CUOX 2

SULFIDE: MET ZONE, PY, CPY, CC, BN, MO

FRACT INT
FRACT DIP
FAULT DIP
FRACTURING
GEOLOGY

COMMENTS: Started at 800' under at 97.0, incln - 89.4

DESCRIPTION: GEO., MINERAL, ALT, STRUCT.

AVG. CORE RECY/HOLE

DRILLING INTERVAL
% CORE RECOVERED
RECOVERY % BY A.I.
SAMPLE INTERVAL

COLLAR COORDINATES:	ELEVATION:	CONTRACTOR: SRK	HDI CURIS
N: E:	BEARING:	CORE SIZE: PQ	LOCATION: FLORENCE
STARTED: 7/15/11	INCLINATION:	LOGGED BY: Sieber/Noman	HOLE ID: CMN 11-06
COMPLETED:	TOTAL DEPTH:	SCALE:	SHEET 7 OF

FOOTAGE	ORTHO	BIO	QTZ	SER	CLAY	CHL	EPID	CARB	GYPS	ANHY	MAG	LIM	HEM	GOE	CU GRAPHIC	CUOX 1	CUOX 2	MET ZONE	PY	CPY	CC	BN	MO	FRACT INT	FRACT DIP	FAULT DIP
840	1		1		3	1							1	1		2	2	2						5	-	
850	1	1	1	4	4								4	4		2	2	2						2	-	
860	1	3			5	1							4	3		2	2	2						3	-	
870	1	1			5	1							3	3		2	2	2						2	-	
880	1				4	1							4	2		2	2	2						4	-	
890	2	1	1	1	2	1							4	1		3	2	2						4	-	
900	2	1	2	1	2	1							4	1		2	2	2						5	-	
910	2		1		3	2							3	3		1	1	3						4	-	
910	1	1	-		4	1							2	4		1	1	3						5	-	
910	2				3	2							3	3		1	1	3						4	-	5

ALTERATION

OXIDE

SULFIDE

FRACTURING

GEOLOGY

COMMENTS: AZ 60.00° CURVE 49.8 900° SURVEY INCL 89.50°

AVG. CORE REC'Y/HOLE

DESCRIPTION: GEO., MINERAL, ALT., STRUCT.

840- Ygm

841.4-843 FAULT GOUGED 0.5' OF BRECCIATED CLAY

840-845 1" CLAY FAULT CU GOOD CU 843.3-845 W/ TENERITE

846-850 CLAY & BRECCIA 845-841 CU TENERITE SOME ORTHOCLASE

845-850 K-SPAR & CLAY & SHEARED & MINERALIZED GEOTITE BIOTITE BOOKS

845-850 LT GREEN LOTION CU

850-855 FRAGMENT W/ BRECCIA & ORTHOCLASE & K-SPAR-CU W/ HEMATITE & GEOTITE

CONSIDERABLE BIOTITE - GOOD CU

Ygm W/ CONSIDERABLE CLAY

THE CORE HAD A LOT OF CLAY & WAS HARD TO CLEAR

THE CORE IS CLAY ALTERED W/ SHEARED PHENOCRYSTS

AS ABOVE CU ON CLOSED FRACTURES

AS ABOVE GOOD CU - CLAY ALTERED Ygm

AS ABOVE WEAK ROCK UNFRACTURED

875-886 ON CU OX, & 876-880 QTZ ORTHOCLASE SHEARED NOT CLAY ALTERED LESS ALTERED K-SPAR-CU

K-SPAR-CLAY & CU

FRESH Ygm QTZ-ORTHOCLASE - K-SPAR, CU

HEMATITE OF ALL FRACTURES

STILL PUMPING CORE W/ OUT SPLITS COMING OUT OF TUBE

QUTZ FLOODED - ORTHOCLASE - VERY LITTLE CU

PUMP ROCK OUT W/ OUT SPLITS A MESS

891.3-891.7 FAULT 60 CLAY LT GREEN - CU

K-SPAR-CU

895-897.5 GOOD CU OX, & OXL TENERITE

LARGE ORTHOCLASE

900-905 Ygm, I and bracket 903.1-903.5, L(?) mostly sand, some clay

Fault breccia 904.5-905 w/ 50% clay and 50% sand, L(?)

Low Cu ox, 2nd side diff. [illegible] to wash/very fractured so still has some mud

905-910 Ygm, very fractured and crumbly w/ some [illegible] sandy breccia

100 clay, [illegible] Cu ox, fault L 50, [illegible] diff. [illegible] to wash, some mud

DRILLING INTERVAL	% CORE RECOVERED	RECOVERY % BY A.I.	SAMPLE INTERVAL
840 5			
845 846 4			
850 5			
855 5			
860 5			
865 5			
870 5			
875 5			
880 5			
885 5			
890 5			
895 5			
900 5			
905 5			

COLLAR COORDINATES:
N:_____ E:_____
STARTED: 7/15/11
COMPLETED:_____

ELEVATION:_____
BEARING:_____
INCLINATION:_____
TOTAL DEPTH:_____

CONTRACTOR: Cabo
CORE SIZE: PQ
LOGGED BY: Donnan
SCALE:_____

HDI CURIS
LOCATION: FLORENCE
HOLE ID: CMP11-016
SHEET 8 OF

FOOTAGE

ALTERATION: ORTHO, BIO, QTZ, SER, CLAY, CHL, EPID, CARB, GYPS, ANHY, MAG

OXIDE: LIM, HEM, GOE, CU GRAPHIC, CUOX 1, CUOX 2

SULFIDE: MET ZONE, PY, CPY, CC, BN, MO

FRACT INT

FRACT DIP

FAULT DIP

FRACTURING

GEOLOGY

DESCRIPTION: GEO., MINERAL, ALT, STRUCT.

910-915 Ydm, flaken and fractured tonn 910 - 912, more solid 912-915
910-912 Ld moderate, 912-915 typical dmp proposed Cu ox
912 m at 910 1 cm wide, 70° TCA, Fracture L 50°
915-920 Ydm, highly oxidized, moderate to weak Fe oxide Cu oxides
some chlys 915.4-919, 919 and 920 9175-918, L 40° brecciated
920-925 Ydm numerous oxidized silvery slickensides Cu
Fault breccia 920-921.9 L 75°, trend of mk veining, more mk all breccia
925-930 Ydm 925-927.2 broken up L 45° 927.2-928.2 m solid
928.2-930 lots of solid bright flakes Fracture Cu ox lots of disseminated
some chlys on fractures, bright gm in chlys, red Fe ox 928.2-928.5 m mineralized
930-938 Ydm 930-930.7 very solid Good Cu ox, some chlys, sand dendritic text
930.7-935 broken up breccia, L 50°
935-940 Ydm veins of BIO fragments, poor mineralization
937-937.6 m Fault breccia with some oxidized Cu veinlets to fractures
940-945 Ydm, veins and zones of Cu ox in chlys, moderately
940.9-941.4 Fault breccia, lots of Cu ox
945-950 Ydm, mostly competent with slickensided surfaces
in some, chlys on fractures (only small amt veins)
941.1-941.3 Fault breccia, mostly sand like clay, 55°
950-955 Ydm Fractured 40° pretty friable chlys on fractures
Breccia 952.5-952.7, and intermittent from 954-955, L 40
955-960 Bad core, mostly Ydm
Core sample, broken
960-965 Ydm Many variable fracture angles, fairly competent
Some chlys on fractures

new page

COMMENTS:

AVG. CORE RECV/HOLE

DRILLING INTERVAL

% CORE RECOVERED

RECOVERY % BY A.I.

SAMPLE INTERVAL

COLLAR COORDINATES:
N:_____ E:_____
STARTED: 7/15/11
COMPLETED: _____

ELEVATION: _____
BEARING: _____
INCLINATION: _____
TOTAL DEPTH: _____

CONTRACTOR: Cabo
CORE SIZE: PQ
LOGGED BY: Russin/Nomas
SCALE: _____

HDI CURIS
LOCATION: FLORENCE
HOLE ID: CUPIT-90
SHEET 9 OF

FOOTAGE

ALTERATION: ORTHO, BIO, QTZ, SER, CLAY, CHL, EPID, CARB, GYPS, ANHY, MAG

OXIDE: LIM JAR, HEM, GOE, CU GRAPHIC, CUOX 1, CUOX 2

SULFIDE: MET ZONE, PY, CPY, CC, BN, MO

FRACT INT
FRACT DIP
FAULT DIP

FRACTURING

GEOLOGY

DESCRIPTION: GEO., MINERAL, ALT, STRUCT.

COMMENTS:

AVG. CORE REC'Y/HOLE

DRILLING INTERVAL

% CORE RECOVERED

RECOVERY % BY A.I.

SAMPLE INTERVAL

HDI CURIS

COLLAR COORDINATES:
N: ______ E: ______
STARTED: 7/15/11
COMPLETED: ______

ELEVATION: ______
BEARING: ______
INCLINATION: ______
TOTAL DEPTH: ______

CONTRACTOR: Cabo
CORE SIZE: PQ
LOGGED BY: Noonan/Russin
SCALE: ______

LOCATION: FLORENCE
HOLE ID: CMP11-06
SHEET 10 OF ___

FOOTAGE	ORTHO	BIO	QTZ	SER	CLAY	CHL	EPID	CARB	GYPS	ANHY	MAG	LIM/JAR	HEM	GOE	CU GRAPHIC	CUOX 1	CUOX 2	MET ZONE	PY	CPY	CC	BN	MO	FRACT INT	FRACT DIP	FAULT DIP	DRILLING INTERVAL
980–985	-	-	-		3	1	2					1	3	3		3	3	2						4	6	-	5
985–990	1	1	2	-	3	1	0					0	1	2		1	2	2						2	5	-	5
990–995	4	1	2		3	2	1					0	3	3		1	2	2						3	5	-	5
995–1000	3	2	3	.	3	2	1					1	2	3		1	2	2						2	-	-	5
1000–1005	3	1	2	1	3	1	1					0	2	2		1	2	2						2	5	-	5
1005–1010	4	2	4	0	3	2	1					1	1	2		1	2	2						1	7	-	5
1010–1014.5	3	2	5	1	3	2	1					0	3	2		1	2	2						2	3	-	4.5
1014.5–1020	3	2	3	2	4	2	1					1	3	3		1	1	2						5	7	7	5.5
1020–1025	2	1	3	0	3	2	1					1	1	2		1	2	2						2	5	-	5
1025–1030	2	2	4		3	2	1					1	2	2		1	2	2						1	6	-	5
1030–1035	2	1	4		2	2	2					0	2	1		1	1	2						1	5	-	5
1035–1040	5	2	4		2	2	2					1	2	2		2	2	2						2	7	3	5
1040–1045		2	-		3	2	1					1	3	3		1	1	3						3	-	3	5
1045–1050		2			3	1	-					1	3	3		1	3	2						4	5	-	5

FRACTURING | GEOLOGY

% CORE RECOVERED | RECOVERY % BY A.I. | SAMPLE INTERVAL

COMMENTS: Survey @ 1000': az = 143° incl = -89.8° corrected az = 132.0°

AVG. CORE REC'Y/HOLE

DESCRIPTION: GEO., MINERAL, ALT, STRUCT.

980–985 Ygm, pretty broken up, great mineralization from 980–981 w/ lots of Cu clay, chrys, and flecks of TEN, contact b/w min. zone and boring Ygm is 60°, same angle for other fractures, Cu clay and CHRYS throughout interval but v. [illegible] from 981–985

985–990' [illegible] flow the hole.

987' ~½" [illegible] core

988–990' [illegible] @ 35–40° TCA [illegible] ½" [illegible] w/ qtz [illegible] 30° TCA

990–995' strong ksp alt locally, 991–991.3 [illegible] ksp. [illegible] → chl almost complete.

993–994' silicified bx, no milling. [illegible] replacement in a few spots

994–995' a couple ~⅛" chrys veins, 30° TCA.

995–1000' same, pretty competent rock w/ minor Cu clay & fltr-plng [illegible]

997.5 2 ½" [illegible]-bearing qtz vns, parallel, 50° TCA

999–1000' well broken

1001–1002' [illegible]

1003.5–1005' slightly elevated Cu, stronger green in clay & a few specks of chrys

1006.5–1007' zone of [illegible] recrystallized, then [illegible] (1006.5–1009')

1007–1007' strong [illegible]

1009' ~½" seam of clay/bx, 65° TCA, some Cu clay.

1010–1014' [illegible] low grade [illegible] / qtz+biot/ksp [illegible]

1014–1015' [illegible] development, rock is [illegible]

1015.5–1016.1' fault zone; gougey breccia, 60–65° TCA.

1018–1019.5' NR, very broken below. Common [illegible] 1017–1020'

1017–1019' [illegible] (fan of [illegible])

1020–1025' same old [illegible]; low grade, mod. alt. [illegible] ↳ [illegible] clay + tr. chrys.

1024.2' ½" [illegible] zone 35° TCA

1025–1030' same. [illegible] (qtz//qtz) @ ~45° TCA. visible as gray streaks in kspar

1029–1030' [illegible] clay + a couple [illegible]

1030–1035' same.

1030–1031' numerous <3 [illegible] chrys vlts [illegible]

1033.5–1035' bio completely altered to epidote

1035–1036.2 [illegible] w/ qtz & chrys.

1036.2–1037.2 [illegible] w/ [illegible] qtz vns w/ chrys

1038' 2" [illegible] w/ gouge, 30° TCA bio completely [illegible]

1040–1045 Ygm heavily oxidized, very fractured, patches of CHRY, [illegible] 1040 [illegible]

1042.5–1044 breccia at 25°

1045–1048.7 Ygm, 1046.5–1047.2 chrys veins, Fe ox throughout, planar contact at 30° w/ 1cm of gouge, fractures and vns at 050°

1048.7–1050 Yds/Precambrian [illegible] w/ Cu clay/chrys veins, HEM [illegible]

COLLAR COORDINATES:
N:_____ E:_____
STARTED: 7/15/11
COMPLETED: _____

ELEVATION: _____
BEARING: _____
INCLINATION: _____
TOTAL DEPTH: _____

CONTRACTOR: _____
CORE SIZE: PQ
LOGGED BY: [illegible]
SCALE: _____

HDI CURIS
LOCATION: FLORENCE
HOLE ID: CMP11-016
SHEET 11 OF

FOOTAGE

ALTERATION: ORTHO, BIO, QTZ, SER, CLAY, CHL, EPID, CARB, GYPS, ANHY, MAG

OXIDE: LIM JAR, HEM, GOE, CU GRAPHIC, CUOX 1, CUOX 2

SULFIDE: MET ZONE, PY, CPY, CC, BN, MO

FRACT INT

FRACT DIP

FAULT DIP

FRACTURING

GEOLOGY

DESCRIPTION: GEO., MINERAL, ALT, STRUCT.

COMMENTS:

AVG. CORE RECY/HOLE

DRILLING INTERVAL

% CORE RECOVERED

RECOVERY % BY A.I.

SAMPLE INTERVAL

COLLAR COORDINATES:
N:_____ E:_____
STARTED:_____
COMPLETED:_____

ELEVATION:_____
BEARING:_____
INCLINATION:_____
TOTAL DEPTH:_____

CONTRACTOR:_____
CORE SIZE:_____
LOGGED BY:_____
SCALE:_____

HDI CURIS
LOCATION: FLORENCE
HOLE ID:_____
SHEET OF

FOOTAGE

ALTERATION
ORTHO
BIO
QTZ
SER
CLAY
CHL
EPID
CARB
GYPS
ANHY
MAG

OXIDE
LIM
HEM
GOE
CU GRAPHIC
CUOX 1
CUOX 2

SULFIDE
MET ZONE
PY
CPY
CC
BN
MO

FRACT INT
FRACT DIP
FAULT DIP
FRACTURING
GEOLOGY

DESCRIPTION: GEO, MINERAL, ALT, STRUCT.

COMMENTS:

AVG. CORE RECY/HOLE

DRILLING INTERVAL
% CORE RECOVERED
RECOVERY % BY A.I.
SAMPLE INTERVAL

DRILLER'S LOG

HOLE NO. #367
I.5-1N

TOTAL DEPTH 350'
SPOT CORE

DATE STARTED 1-18-74
DATE COMPLETED 1-18-74
DRILLER

DEPTH	ROCK TYPE	LITHOLOGY	RATE OF DRILLING	BITS USED
INTERVALS SUCH AS 0-20	ALLUVIUM (LOOSE) CONGLOMERATE (CEMENTED) BEDROCK	BOULDERS, GRAVEL SAND, CLAY	FAST, MEDIUM SLOW	
0-45'	Alluv - Loose	Boulders Gravel		Ok
		Clay	Slow	
45'-160'	Cong - Loose	Sand - Clay	Slow	" "
160-280'	Cong - Cemented	Sand - Boulders		
		Clay	Med	
280-300'	Cong	Brown Sticky		
		Clay	Slow	
300'-350'	Cong Cemented	Sand Clay	Med	

Set 45' of 5 9/10 Surface

HOLE No. 367-S
DEPTH 941'
COORDINATES N 746173, E 648315
COLLAR ELEVATION 1475.40
INCLINATION 90°
BEARING

MAGMA COPPER COMPANY
FLORENCE PROJECT
GEOLOGIC LOG

PHASE II Hole-
Re-entered rotary
Casing done by Conoco-

DATE STARTED 6/21 - ~~6/13-93~~
COMPLETED 6/13
CONTRACTOR Tonto
LOGGED BY REX
CASING DEPTH 355'
CORE SIZE NX TO 941,
SIZE TO

CORE RUN	CORE REC.	DEPTH RUN BOTTOM	ROCK	LITH.	TEXT.	FRAC. INT.	FRAC. DIP	FIT. DIP	RQD	ALTERATION MINERALS OR BIO QTZ SER CLY CHL EPI CAR GYP ANH MAG 01 02 03 04	OXIDE ZONE LIM HEM Cu 01 Cu 02	MET ZONE	SULFIDE ZONE Py Cp Cc Bn Mo 01 02 03 04	ASSAYS TOTAL Cu	Cu Ox	Mo	FE	S	CA	Zn	SAMPLE NUMBERS	GRAPHIC LOG
			GC																			
10	100	520	GC			4			4					017	009	001	050	001	040		367-1	
10	100	530							4					010	004		171		040		2	
	100	540							0					010	005		173		455		3	
	100	550							0					013	009		179		040		4	
	95	560							0					010	008		167		040		5	
	95	570							4		11			012	007		166		040		6	
	100	580							0		11			010	008		177		040		7	
	100	590							4		11			082	061		156		040		8	
	100	600	BX						0		11			079	037		217		040		9	
	100	610	BX						0		11			063	042		176		040		10	
	100	620	BX					8	0		11			144	080		226		040		11	

REMARKS

355'-600'- Gila Conglomerate-

poorly sorted- subangular clasts-
SP, Qm, An - well cemented

Brownish red - matrix-
(calcarious-)

mainly Qm-ap frags-

contact very sheared- minor Fe st.
hard to distinguish-
600'-670'- Breccia- Sidewinder
fault zone-
strong yellow clay- souse-

Broken zone- strong Bx-
FG- (fault souse)

921'-80° FLT

MCC 367

ARIZONA DEPARTMENT OF WATER RESOURCES

500 NORTH THIRD STREET
PHOENIX, ARIZONA 85004

PROJECT COMPLETION REPORT FOR MINERAL EXPLORATION DRILLING

This report must be prepared by the owner in all detail for each hole drilled and filed with the Department within 30 days following completion of the well drilling project.

1. Owner Name: BHP Copper

   Address: 14605 E. Hunt Hwy, Florence AZ 85232
   Street City State Zip

2. Lessee or Operator Name: Same as above

   Address: _____
   Street City State Zip

3. Driller Name: Boyles Drilling

   Address: 12030 E. Riggs Rd., Chandler AZ 85249
   Street City State Zip

4. Location: 4S N/S 9E E/W 28 SW 1/4 NE 1/4 SW 1/4
   Township Range Section 10-Acre 40-Acre 160-Acre

   WELL REGISTRATION NO. 55-539336 (REQUIRED)

DESCRIPTION OF WELL

5. Type of Casing (if installed): Steel casing

6. Abandonment method and material used if abandoned: 941' to 0' type 5 cement

   Was well abandoned in the course of drilling pursuant to R12-15-816, F.? Yes ✓ No _____

7. Date of period drilled: From: 6/7/93 To: 6/13/93

LOG OF WELL

☑ Unconsolidated Formation
0 - 600'

☑ Consolidated Formation
Depth to water in feet below land surface: _____
(if encountered or detected)
600' - 941'

I state that this report is filed in compliance with A.R.S. §45-600 and is complete and correct to the best of my knowledge and belief.

Owner/Lessee's Signature Date 9/11/97

DO NOT WRITE IN THIS SPACE
OFFICE RECORD

Registration No. _____

Received _____ By _____

Entered _____ By _____

File No. _____

DWR-55-57-7/91(Rev)

Magma Copper Company
Well Closure Certification Form

This form is to be filled out upon abandonment of any well or coreholes. A copy shall be filed in the well log file.

I certify that the well/core hole number MCC-367 has been abandoned in compliance with the attached "Magma Copper Company Well and Corehole Abandonment Work Plan" dated January 10, 1996. A copy of the following documents are t be attached to this certification:

1. ADWR Notice of Intent to Abandon a Well (Unit wells only)
2. Well abandonment completion report per R12-15-816.K
3. U.S.EPA Plugging and abandonment plan form 7520-14
4. A diagram for each well or core hole depicting "as abandoned conditions"
5. A description of placement methods and volumes
6. Notation of any deviation from typical procedures

Name: James M. Lewis
Company: Layne-Christensen
Date: 5-21-96

#5. Cemented bottom of core hole to bottom of casing. Cut casing. Circulated cement around casing. Total volume approx. 700 gallons. Type V cement.

DRILLER'S LOG

HOLE NO. #368
I @ 1.5 mi

TOTAL DEPTH 385'
SPOT CORE ____

DATE STARTED 1-21-74
DATE COMPLETED 1-21-74
DRILLER ____

DEPTH	ROCK TYPE	LITHOLOGY	RATE OF DRILLING	BITS USED
INTERVALS SUCH AS 0-20	ALLUVIUM (LOOSE) CONGLOMERATE (CEMENTED) BEDROCK	BOULDERS, GRAVEL SAND, CLAY	FAST, MEDIUM SLOW	
0-55'	Alluvium - Loose	Boulders - Gravel		[illegible]
		Clay	Slow	
55'-150	Cong - Loose	Sand Clay	Slow	[illegible]
150-280	Cong - Cem Tite	Sand Boulders		
		Clay	Med	
280-300'	Cong	Boulders Sand		
		Clay	Slow	
300-370'	Cong - Cem Tite	Sand Clay	Med	
370-385	possible bedrock		Slow	

Set 55' of 5" Surface

HOLE No. 368 PHASE II
DEPTH 1044'
COORDINATES N 745957, E 648192
COLLAR ELEVATION 1473.29
INCLINATION -90
BEARING —

MAGMA COPPER COMPANY
FLORENCE PROJECT
GEOLOGIC LOG

DATE STARTED 6-20-93
COMPLETED 6-24-93
CONTRACTOR Tonto
LOGGED BY REX, FLG
CASING DEPTH 390'
CORE SIZE NX TO 1044,
SIZE ____ TO ____

CORE RUN	CORE REC.	DEPTH RUN BOTTOM	ROCK	LITH.	TEXT.	FRAC. INT.	FRAC. DIP	FIT. DIP	RQD	ALTERATION MINERALS: OR BIO QTZ SER CLY CHL EPI CAR GYP ANH MAG 01 02 03 04	OXIDE ZONE: LIM HEM Cu 01 Cu 02	MET ZONE	SULFIDE ZONE: Py Cp Cc Bn Mo 01 02 03 04	ASSAYS: TOTAL Cu	Cu Ox	Mo	FE Ag	S As	CA Pb	Zn	SAMPLE NUMBERS	GRAPHIC LOG
10		390	WT						12													0
		400							8													
		410							24													0
		420							18													
		430							16													
		440							12													0
		450							20													
		460							8													0
		470	WT						12													
5	95	475	GP			3			8		1	3		068017	001	181	002	040			368-1	
	100	480				4			4		1	3		193061		177002					2	
	100	485				4			0	1 1	1	3		118025		216001					3	
	100	490				4			0	1 1	1	3		120013		229001					4	
	95	495				4			0	1 1	1	3		108041		193001					5	
	95	500				4			4	1 1	1	3		168050		200001					6	
	100	505				4			0	1	1	3		134010		186001					7	

REMARKS

390'-470' - White tail consl - poorly sorted - angular - sub angular frags of qm, sp, volcanics - set in a red clay matrix - well cemented -
420' - red clay fault zone? broken, fractured -

456' - Fault zone - clay

Qm boulder (?)

470'-620' - Granodiorite porphyry - contact extremely vague - broken, brecciated, high clay - yellow Fe staining (?)
470-480: cgl (?) fragments of qm, and sp in a finely-~~grus~~ ground up matrix. Tr. FeOx on fracts. Weathered.
480-490 Poss. bedrock. GP; fine-grnd. wkly. argillic. equigranular rock. Gypsum in fracts. + "vugs"; barren
490-505: GP as above, but minor lim. after py in fracts. Locally, ox. diss. py (<0.5%); black, neotocite (?) on fract planes.

mcc 368

ARIZONA DEPARTMENT OF WATER RESOURCES

500 NORTH THIRD STREET
PHOENIX, ARIZONA 85004

PROJECT COMPLETION REPORT FOR MINERAL EXPLORATION DRILLING

This report must be prepared by the owner in all detail for each hole drilled and filed with the Department within 30 days following completion of the well drilling project.

1. Owner Name: BHP Copper

   Address: 14605 E. Hunt Hwy, Florence AZ 85232
   Street City State Zip

2. Lessee or Operator Name: Same as above

   Address: _____
   Street City State Zip

3. Driller Name: Boyles Drilling

   Address: 12030 E. Riggs Rd., Chandler AZ 85249
   Street City State Zip

4. Location: 4S N/S 9E E/W 28 SW 1/4 NE 1/4 SW 1/4
   Township Range Section 10-Acre 40-Acre 160-Acre

   WELL REGISTRATION NO. 55-539336 (REQUIRED)

DESCRIPTION OF WELL

5. Type of Casing (if installed): Steel casing

6. Abandonment method and material used if abandoned: 1044' to 0' type V cement

   Was well abandoned in the course of drilling pursuant to R12-15-816, F.? Yes ✓ No _____

7. Date of period drilled: From: 6/20/93 To: 6/24/93

LOG OF WELL

☑ Unconsolidated Formation
0-470'

☑ Consolidated Formation
Depth to water in feet below land surface: _____
(if encountered or detected)
470' - 1044'

I state that this report is filed in compliance with A.R.S. §45-600 and is complete and correct to the best of my knowledge and belief.

Carolla Hoag 9/11/97
Owner/Lessee's Signature Date

DO NOT WRITE IN THIS SPACE OFFICE RECORD

Registration No. _____

Received _____ By _____

Entered _____ By _____

File No. _____

DWR-55-57-7/91(Rev)

Magma Copper Company
Well Closure Certification Form

This form is to be filled out upon abandonment of any well or coreholes. A copy shall be filed in the well log file.

I certify that the well/core hole number 368 has been abandoned in compliance with the attached "Magma Copper Company Well and Corehole Abandonment Work Plan" dated January 10, 1996. A copy of the following documents are t be attached to this certification:

1. ADWR Notice of Intent to Abandon a Well (Unit wells only)
2. Well abandonment completion report per R12-15-816.K
3. U.S.EPA Plugging and abandonment plan form 7520-14
4. A diagram for each well or core hole depicting "as abandoned conditions"
5. A description of placement methods and volumes
6. Notation of any deviation from typical procedures

Name: James M. Meeks

Company: Boyles Bros.

Date: 5-17-96

5. Filled core portion of hole with cement. Cut casing and circulated cement around casing. Total Volume approx. 800 gallons of Type V cement

DRILLER'S LOG

HOLE NO. #420
H. 5-1.5W

TOTAL DEPTH 360
SPOT CORE

DATE STARTED 4-23-74
DATE COMPLETED 4-23-74
DRILLER

DEPTH	ROCK TYPE	LITHOLOGY	RATE OF DRILLING	BITS USED
INTERVALS SUCH AS 0-20	ALLUVIUM (LOOSE) CONGLOMERATE (CEMENTED) BEDROCK	BOULDERS, GRAVEL SAND, CLAY	FAST, MEDIUM SLOW	
0-60	Alluv - Loose	Boulder Gravel Clay	Slow	6½
60'-150	Cong - Loose	Sand - Clay	Slow	5"
150'-280'	Cong - Cemented	Sand - Boulders Clay	Med	
280'-300'	Cong	Brown Sticky Clay	Slow	
300'-355'	Cong - Cemented	Sand - Clay	Med	
355'-360'	Bedrock		Slow	

Set 15 joints 3" Casing Cemented

Set 60' of 5⅝ Surface

HOLE No. 421
DEPTH 1039'
COORDINATES N 745696, E 648273
COLLAR ELEVATION 1472.77
INCLINATION -90
BEARING

MAGMA COPPER COMPANY
FLORENCE PROJECT
GEOLOGIC LOG

Phase II Drillings

0-353' - Rotary
(0-495' - Conglomerate)

DATE STARTED 6-12-93
COMPLETED 6-23-93
CONTRACTOR Tonto
LOGGED BY REX
CASING DEPTH 353'
CORE SIZE NX TO 1039',
SIZE _____ TO _____

CORE RUN	CORE REC.	DEPTH RUN BOTTOM	ROCK	LITH.	TEXT.	FRAC. INT.	FRAC. DIP	FIT. DIP	RQD	ALTERATION MINERALS OR	BIO	QTZ	SER	CLY	CHL	EPI	CAR	GYP	ANH	MAG	01	02	03	04	OXIDE ZONE LIM	HEM	Cu 01	Cu 02	MET ZONE	SULFIDE ZONE Py	Cp	Cc	Bn	Mo	01	02	03	04	ASSAYS TOTAL Cu	Cu Ox	Mo	Fe	S Asc	CA Pb	Zn	SAMPLE NUMBERS	GRAPHIC LOG
		353	GC																																										
5	100	495	GP							2	2														2	1		3																	
	100	500	GP			4		0		2	2														2	1		3											163	058	001	214	002	040		421-1	
	100	505	GP			4		0		2	2														2	1		3											174	064		188	002			2	
	100	510	GP			4		0		2	2														2	2		3											116	032		258	002			3	
	100	515	GP			4		0		2	2														2	1		3											059	015		153				4	
	95	520	GP			4		0		2	2														2	1		3											072	028		140				5	
	100	525	GP			4		0		2	2														2			3											120	047		197				6	
	95	530	GP			4		0		2	2														2			3											111	035		164				7	
	95	535	GP			3		8		2	2														2	2		3											099	041		202				8	
	100	540	Qm			4		6		12	2														2	2		3											186	090		253				9	
	100	545	Qm			4		6		12	2														2	1	2	2											437	304		218				10	
	100	550	Qm			3		4		1	2														2	1	2	2											473	[illegible]		160				11	
	100	555	Qm			4		8		12	2														2	1	2	2											481	352		139				12	

REMARKS

353'-495' Gila Conglomerate
Sub angular frags Qm, gp, volcanics
andesites etc. set in Brownish red matrix -

Contact vague - Strong Bx

495'-540' - GP

540'-878' - Quartz monzonite
Strong Potassic Qm - texture extremely
weathered

High limonite -

Strong Bx - Broken, shear zone
High yellow Fe staining
CLAYS - gravels

Broken zone -

Bx - Hematite -
yellow Fe -

550' - Hybrid Qm - Qm/Gp mix
Strong Bx -
CCA - Broken -

MCC 421

ARIZONA DEPARTMENT OF WATER RESOURCES

500 NORTH THIRD STREET
PHOENIX, ARIZONA 85004

PROJECT COMPLETION REPORT FOR MINERAL EXPLORATION DRILLING

This report must be prepared by the owner in all detail for each hole drilled and filed with the Department within 30 days following completion of the well drilling project.

1. Owner Name: BHP Copper

   Address: 14605 E. Hunt Hwy, Florence AZ 85232
   Street / City / State / Zip

2. Lessee or Operator Name: Same as above

   Address: _____
   Street / City / State / Zip

3. Driller Name: Boyles Drilling

   Address: 12030 E. Riggs Rd., Chandler AZ 85249
   Street / City / State / Zip

4. Location: 4S N/S 9E E/W 28 NW 1/4 SE 1/4 SW 1/4
   Township / Range / Section / 10-Acre / 40-Acre / 160-Acre

   WELL REGISTRATION NO. 55-539336 (REQUIRED)

DESCRIPTION OF WELL

5. Type of Casing (if installed): Steel casing

6. Abandonment method and material used if abandoned: 1039' to 0' type 5 cement

   Was well abandoned in the course of drilling pursuant to R12-15-816, F.? Yes ✓ No _____

7. Date of period drilled: From: 6/17/93 To: 6/23/93

LOG OF WELL

[✓] Unconsolidated Formation
0 - 495'

[✓] Consolidated Formation
Depth to water in feet below land surface: _____
(if encountered or detected)
495' - 1039'

I state that this report is filed in compliance with A.R.S. §45-600 and is complete and correct to the best of my knowledge and belief.

Owner/Lessee's Signature _____ Date 7/11/97

DO NOT WRITE IN THIS SPACE OFFICE RECORD
Registration No. _____
Received _____ By _____
Entered _____ By _____
File No. _____

DWR-55-57-7/91(Rev)

Magma Copper Company
Well Closure Certification Form

This form is to be filled out upon abandonment of any well or coreholes. A copy shall be filed in the well log file.

I certify that the well/core hole number ~~449~~ 421 has been abandoned in compliance with the attached "Magma Copper Company Well and Corehole Abandonment Work Plan" dated January 10, 1996. A copy of the following documents are t be attached to this certification:

1. ADWR Notice of Intent to Abandon a Well (Unit wells only)
2. Well abandonment completion report per R12-15-816.K
3. U.S.EPA Plugging and abandonment plan form 7520-14
4. A diagram for each well or core hole depicting "as abandoned conditions"
5. A description of placement methods and volumes
6. Notation of any deviation from typical procedures

Name: Garner M. Nevels

Company: Boyles Bros.

Date: 5-15-96

5 Filled core portion of hole with cement. Cut casing and circulated cement around casing. Total volume approx. 750 gallons of Type V cement.

FLORENCE FEASIBILITY PROJECT
Prefeasibility Holes
Original Conoco Names and Final Magma Names

7/17/96
Michael Kline
Corename.xls
Jackie's PC

Present Hole ID	Original Conoco Hole ID	Relationship between the Hole ID's	Comments
MCC-367	367S	Magma REENTERED AND DEEPENED	NX diameter
MCC-368	368S	Magma REENTERED AND DEEPENED	NX diameter
MCC-369	369MF	Magma REENTERED AND DEEPENED	NX diameter
MCC-397A	397MF	Magma DRILLED BESIDE ORIGINAL	Hole Drilled Entirely by Magma,NX diameter
MCC-406	406MF	Magma REENTERED AND DEEPENED	NX diameter
MCC-407A	407MF	Magma DRILLED BESIDE ORIGINAL	Hole Drilled Entirely by Magma,NX diameter
MCC-418A	418MF	Magma DRILLED BESIDE ORIGINAL	Hole Drilled Entirely by Magma,NX diameter
MCC-419	419MF	Magma REENTERED AND DEEPENED	NX diameter
MCC-421	421MF	Magma REENTERED AND DEEPENED	NX diameter
MCC-423	423MF	Magma REENTERED AND DEEPENED	NX diameter
MCC-425	425MF	Magma REENTERED AND DEEPENED	NX diameter
MCC-426	426MF	Magma REENTERED AND DEEPENED	NX diameter
MCC-427	427MF	Magma REENTERED AND DEEPENED	NX diameter
MCC-434	434MF	Magma REENTERED AND DEEPENED	NX diameter
MCC-519	N/A	Hole Drilled Entirely By Magma	NX diameter,used for met tests
MCC-521	N/A	Hole Drilled Entirely By Magma	NX diameter
MCC-522	N/A	Hole Drilled Entirely By Magma	NX diameter
MCC-523	N/A	Hole Drilled Entirely By Magma	6 inch diameter
MCC-524	N/A	Hole Drilled Entirely By Magma	NX diameter,used for met tests
MCC-525	N/A	Hole Drilled Entirely By Magma	NX diameter
MCC-526	N/A	Hole Drilled Entirely By Magma	NX diameter
MCC-527	N/A	Hole Drilled Entirely By Magma	6 inch diameter
MCC-530	N/A	Hole Drilled Entirely By Magma	NX diameter
MCC-531	N/A	Hole Drilled Entirely By Magma	NX diameter
MCC-532	N/A	Hole Drilled Entirely By Magma	NX diameter
22-1	N/A	Hole Drilled Entirely By Magma	HX diameter, Section 22 expl. holes
22-2	N/A	Hole Drilled Entirely By Magma	HX diameter, Section 22 expl. holes
22-3	N/A	Hole Drilled Entirely By Magma	HX diameter, Section 22 expl. holes
22-4	N/A	Hole Drilled Entirely By Magma	HX diameter, Section 22 expl. holes
22-5	N/A	Hole Drilled Entirely By Magma	HX diameter, Section 22 expl. holes

# of Core Holes Re-entered & deepened by Magma	11
# of Core Holes Magma Drilled Next to Conoco Holes	3
# of New Core Holes Drilled Entirely By Magma	16
Total Number of Core Holes Drilled During Prefeasibility Study	30

HOLE No. 522 mcc
DEPTH 1380'
COORDINATES N745,558, E 647,718
COLLAR ELEVATION
INCLINATION -90
BEARING —

MAGMA COPPER COMPANY
FLORENCE PROJECT
GEOLOGIC LOG

Copy Hole 135 MF

DATE STARTED 5-19-93
COMPLETED 5-27-93
CONTRACTOR Tonto
LOGGED BY M. REX
CASING DEPTH
CORE SIZE _____ TO _____,
SIZE _____ TO _____

CORE RUN	CORE REC.	DEPTH RUN BOTTOM	ROCK	LITH.	TEXT.	FRAC. INT.	FRAC. DIP	FIT. DIP	RQD	ALTERATION MINERALS OR	BIO	QTZ	SER	CLY	CHL	EPI	CAR	GYP	ANH	MAG	01	02	03	04	OXIDE ZONE LIM	HEM	Cu 01	Cu 02	MET ZONE	SULFIDE ZONE Py	Cp	Cc	Bn	Mo	01	02	03	04	ASSAYS TOTAL Cu	Cu Ox	Mo	FE ~~Ag~~	S ~~Au~~	CA ~~Pb~~	Zn	SAMPLE NUMBERS	GRAPHIC LOG
		350	GC																																														
5	100	360	GC			2			4																2	2	1	1	3										071	021	.01	3.25	.1	.40		522-1	
14	100	374	GC			2			8																														072	024	.01	2.89	.1	.40		2	
5	100	380	QM			3			4	1			2	1																									233	123	.01	1.78	.1	.40		3	
5	100	385	QM			3			4	1			2	1																									172	114	.01	1.39	.1	.40		4	
6	95	391	QM			4			0	1			2	1																									200	100	.01	1.43	.2	.40		5	
4	85	395	GP			4			0	1			2																										224	079	.01	2.31	.1	.40		6	
5	60	400				3			0	1			2																										256	125	ND	2.59	.1	.40		7	
5	95	405				3			4	1			2																										119	019	.01	1.95		2.00		8	
5	95	410				4			0	1			2																										112	027	N/D	1.83		.40		9	
5	95	415				4			0	1			2																										087	024	N/D	2.08				10	
4	100	419				3			0	1			2																										176	079	.01	1.16				11	
6	95	425	QM			4			0	1	1		2	1											2	2	2	1											124	068		1.47				12	
5	95	430				3			4	1	1		2	1											2	2	2	1											173	094		1.78				13	
5	95	435				4			0	1	1		2	2											2	2	1	1											155	036		1.81				14	
5	100	440				4			4	1	2		2	1											2	2	1	1											096	012		1.71				15	

REMARKS

0-40' Alluvium

40'-374' - Gila Conglomerate
Moderate → poorly sorted;
Sub angular frags. Qm, GP,
Andesite,

374'-391' - Quartz Monzonite -
Highly weathered, fractured,
Low → mod. chrysocolla mainly
in clays and along fractures -
High limonite, hematite.

391'-419' - Granodiorite porphyry
Brownish - grey silicified groundmass -
Low recovery near contact -
Plag. phenos 5-10 mm - ≈50%
of g.m. - fairly fresh -
(biotite fresh) - Strong limonite -

419'-567' - Quartz Monzonite -
Broken - sheared @ contact -
fairly fresh K-spars -
quartz "eyes"
Strong Fe staining -
chrysocolla
Minor Sericite - clays -

Broken - Sheared -

522 mcc

ARIZONA DEPARTMENT OF WATER RESOURCES

500 NORTH THIRD STREET
PHOENIX, ARIZONA 85004

PROJECT COMPLETION REPORT FOR MINERAL EXPLORATION DRILLING

This report must be prepared by the owner in all detail for each hole drilled and filed with the Department within 30 days following completion of the well drilling project.

1. Owner Name: BHP Copper

   Address: 14605 E. Hunt Hwy, Florence AZ 85232
   Street City State Zip

2. Lessee or Operator Name: Same as above

   Address: _____
   Street City State Zip

3. Driller Name: Boyles Drilling

   Address: 12030 E. Riggs Rd., Chandler AZ 85249
   Street City State Zip

4. Location: 4S N/S 9E E/W 28 NE 1/4 SW 1/4 SW 1/4
   Township Range Section 10-Acre 40-Acre 160-Acre

   WELL REGISTRATION NO. 55- 538308 (REQUIRED)

DESCRIPTION OF WELL

5. Type of Casing (if installed): Casing pulled

6. Abandonment method and material used if abandoned: 1380' - 0' type V cement

   Was well abandoned in the course of drilling pursuant to R12-15-816, F.? Yes ✓ No _____

7. Date of period drilled: From: 5/19/93 To: 5/27/93

LOG OF WELL

☑ Unconsolidated Formation
0'-374'

☑ Consolidated Formation
Depth to water in feet below land surface: _____
(if encountered or detected)
374' - 1380'

I state that this report is filed in compliance with A.R.S. §45-600 and is complete and correct to the best of my knowledge and belief.

Corella Hoag 9/11/97
Owner/Lessee's Signature Date

DO NOT WRITE IN THIS SPACE OFFICE RECORD

Registration No. _____

Received _____ By _____

Entered _____ By _____

File No. _____

DWR-55-57-7/91(Rev)

Magma Copper Company
Well Closure Certification Form

This form is to be filled out upon abandonment of any well or coreholes. A copy shall be filed in the well log file.

I certify that the well/core hole number 522 has been abandoned in compliance with the attached "Magma Copper Company Well and Corehole Abandonment Work Plan" dated January 10, 1996. A copy of the following documents are t be attached to this certification:

1. ADWR Notice of Intent to Abandon a Well (Unit wells only)
2. Well abandonment completion report per R12-15-816.K
3. U.S.EPA Plugging and abandonment plan form 7520-14
4. A diagram for each well or core hole depicting "as abandoned conditions"
5. A description of placement methods and volumes
   Bottom to top w/ approx. 750 gallons of Type V cement
6. Notation of any deviation from typical procedures

Name: James M. Daniels

Company: Layne-Christensen

Date: 6-17-96

FLORENCE FEASIBILITY PROJECT
Prefeasibility Holes
Original Conoco Names and Final Magma Names

7/17/96
Michael Kline
Corename.xls
Jackie's PC

Present Hole ID	Original Conoco Hole ID	Relationship between the Hole ID's	Comments
MCC-367	367S	Magma REENTERED AND DEEPENED	NX diameter
MCC-368	368S	Magma REENTERED AND DEEPENED	NX diameter
MCC-369	369MF	Magma REENTERED AND DEEPENED	NX diameter
MCC-397A	397MF	Magma DRILLED BESIDE ORIGINAL	Hole Drilled Entirely by Magma,NX diameter
MCC-406	406MF	Magma REENTERED AND DEEPENED	NX diameter
MCC-407A	407MF	Magma DRILLED BESIDE ORIGINAL	Hole Drilled Entirely by Magma,NX diameter
MCC-418A	418MF	Magma DRILLED BESIDE ORIGINAL	Hole Drilled Entirely by Magma,NX diameter
MCC-419	419MF	Magma REENTERED AND DEEPENED	NX diameter
MCC-421	421MF	Magma REENTERED AND DEEPENED	NX diameter
MCC-423	423MF	Magma REENTERED AND DEEPENED	NX diameter
MCC-425	425MF	Magma REENTERED AND DEEPENED	NX diameter
MCC-426	426MF	Magma REENTERED AND DEEPENED	NX diameter
MCC-427	427MF	Magma REENTERED AND DEEPENED	NX diameter
MCC-434	434MF	Magma REENTERED AND DEEPENED	NX diameter
MCC-519	N/A	Hole Drilled Entirely By Magma	NX diameter,used for met tests
MCC-521	N/A	Hole Drilled Entirely By Magma	NX diameter
MCC-522	N/A	Hole Drilled Entirely By Magma	NX diameter
MCC-523	N/A	Hole Drilled Entirely By Magma	6 inch diameter
MCC-524	N/A	Hole Drilled Entirely By Magma	NX diameter,used for met tests
MCC-525	N/A	Hole Drilled Entirely By Magma	NX diameter
MCC-526	N/A	Hole Drilled Entirely By Magma	NX diameter
MCC-527	N/A	Hole Drilled Entirely By Magma	6 inch diameter
MCC-530	N/A	Hole Drilled Entirely By Magma	NX diameter
MCC-531	N/A	Hole Drilled Entirely By Magma	NX diameter
MCC-532	N/A	Hole Drilled Entirely By Magma	NX diameter
22-1	N/A	Hole Drilled Entirely By Magma	HX diameter, Section 22 expl. holes
22-2	N/A	Hole Drilled Entirely By Magma	HX diameter, Section 22 expl. holes
22-3	N/A	Hole Drilled Entirely By Magma	HX diameter, Section 22 expl. holes
22-4	N/A	Hole Drilled Entirely By Magma	HX diameter, Section 22 expl. holes
22-5	N/A	Hole Drilled Entirely By Magma	HX diameter, Section 22 expl. holes

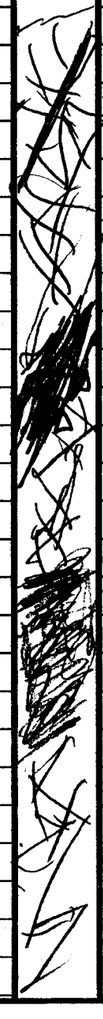
# of Core Holes Re-entered & deepened by Magma	11
# of Core Holes Magma Drilled Next to Conoco Holes	3
# of New Core Holes Drilled Entirely By Magma	16
Total Number of Core Holes Drilled During Prefeasibility Study	30

HOLE No. 525 MCC
DEPTH 1210'
COORDINATES N 746,167, E 647,939
COLLAR ELEVATION 1476
INCLINATION -90
BEARING —

MAGMA COPPER COMPANY
FLORENCE PROJECT
GEOLOGIC LOG

DATE STARTED 4-22-93
COMPLETED 4-29-93
CONTRACTOR Tonto
LOGGED BY M. REX
CASING DEPTH 430'
CORE SIZE NX-430' TO 1210',
SIZE _____ TO _____

CORE RUN	CORE REC.	DEPTH RUN BOTTOM	ROCK	LITH.	TEXT.	FRAC. INT.	FRAC. DIP	FIT. DIP	RQD	ALTERATION MINERALS OR	BIO	QTZ	SER	CLY	CHL	EPI	CAR	GYP	ANH	MAG	01	02	03	04	OXIDE ZONE LIM	HEM	Cu 01	Cu 02	MET ZONE	SULFIDE ZONE Py	Cp	Cc	Bn	Mo	01	02	03	04	ASSAYS TOTAL Cu	Cu Ox	Mo	Fe	S	Ca	Zn	SAMPLE NUMBERS	GRAPHIC LOG	REMARKS
		000	Al																																														0-50'- Alluvium.
		50	Al																																														
		↓																																														50'-300'-(?) Conglomerate (WTC?)
		300	WT																																													Contact very vague- started
																																																coring in GP. (430'-432')
5		430	GP					7																																								
																																																70° fault @ 430'.
	60	435	QM			3		7	0	1	2		2	2											2	2	1	1	3										283	143	001	229	401	100		525-1		432'-628.5'- Quartz monzonite-
																																																High clay- fracture zone-
	95	440				3			0																2	2	1	1	3										114	082		136		100		2		QM extremely weathered- High Fe
																																																staining; Plagioclase ext. altered
	95	445				4			0																2	2	1	1	3										199	145		107		040		3		mainly to sericites-
	100	450				4			0																2	2	1	1	3										266	177		330		200		4		FG-BX- 450-455
	095	455				5			0																2	2	1	1	3										607	497		248		040		5		High Oxide Chrys - along clay
																																																fractures & in felds.
	100	460				4			0																2	2	2	2	2										927	764		197		040		6		Broken zone-
																																																Fault zone
	100	465				4			0																2	2	2	1	2										(1) 296	964		186		100		7		mainly sand, gravels-
	95	470				4			0																2	2	1	1	3										283	172		159		100		8		468'-475' High clay zone-
	100	475				4			0																2	2	2	2	2										217	129		149		040		9		
	100	480				3			16																2	2	1	1	2										718	635		106		040		10		
																																																Strong chrysocolla-
	100	485				3			18	2	2		2	2											2	2	2	2	2										578	473		184		100		11		Chrys. in feldspars-
																																																" " fractures
	100	490				3			8	2	2		2	2											2	2	2	2	2										736	628		146		040		12		



525 mcc

ARIZONA DEPARTMENT OF WATER RESOURCES

500 NORTH THIRD STREET
PHOENIX, ARIZONA 85004

PROJECT COMPLETION REPORT FOR MINERAL EXPLORATION DRILLING

This report must be prepared by the owner in all detail for each hole drilled and filed with the Department within 30 days following completion of the well drilling project.

1. Owner Name: BHP Copper

   Address: 14605 E. Hunt Hwy, Florence AZ 85232
   Street City State Zip

2. Lessee or Operator Name: Same as above

   Address: _____
   Street City State Zip

3. Driller Name: Boyles Drilling

   Address: 12030 E. Riggs Rd., Chandler AZ 85249
   Street City State Zip

4. Location: 4S N/S 9E E/W 28 SE 1/4 NW 1/4 SW 1/4
   Township Range Section 10-Acre 40-Acre 160-Acre

   WELL REGISTRATION NO. 55- 538308 (REQUIRED)

DESCRIPTION OF WELL

5. Type of Casing (if installed): Casing pulled

6. Abandonment method and material used if abandoned: 1210' to 0' type 5 cement

   Was well abandoned in the course of drilling pursuant to R12-15-816, F.? Yes ✓ No _____

7. Date of period drilled: From: 4/22/93 To: 4/29/93

LOG OF WELL

☑ Unconsolidated Formation
0'-430'

☑ Consolidated Formation
Depth to water in feet below land surface: _____
(if encountered or detected)
430' - 1210'

I state that this report is filed in compliance with A.R.S. §45-600 and is complete and correct to the best of my knowledge and belief.

Carolla Hoag 9/11/97
Owner/Lessee's Signature Date

DO NOT WRITE IN THIS SPACE OFFICE RECORD

Registration No. _____

Received _____ By _____

Entered _____ By _____

File No. _____

DWR-55-57-7/91(Rev)

Magma Copper Company
Well Closure Certification Form

This form is to be filled out upon abandonment of any well or coreholes. A copy shall be filed in the well log file.

I certify that the well/core hole number MCC-525 has been abandoned in compliance with the attached "Magma Copper Company Well and Corehole Abandonment Work Plan" dated January 10, 1996. A copy of the following documents are t be attached to this certification:

1. ADWR Notice of Intent to Abandon a Well (Unit wells only)
2. Well abandonment completion report per R12-15-816.K
3. U.S.EPA Plugging and abandonment plan form 7520-14
4. A diagram for each well or core hole depicting "as abandoned conditions"
5. A description of placement methods and volumes
   Bottom to top with approx. 750 gallons of Type V cement.
6. Notation of any deviation from typical procedures

Name: James M. [illegible]

Company: Layne Christensen

Date: 5-30-96

Memo to: File **MAGMA COPPER - FLORENCE**
From: R. Williamson
Date: August 29, 1995

Subject: Drilling Summary MCC-535 (site F-6) NX-diameter core.

Date Started:	3/7/1995
Date Completed:	3/31/1995
Collar Coordinates:	745,696.36 N, 647,744.11 E
Surface Elevation:	1471.8 ft.
Azimuth:	0°
Inclination:	-90°

Downhole surveys completed at 100-foot increments from 379 to 1,279 feet in depth. Rotary: 0 to 360 feet Core: 360 to 1,279 feet. Drilling contractor: Boyles. Purpose: Ore reserve confirmation and classification on the west side of the deposit during the 1995 feasibility program. MCC-535 is located approximately 35 feet west of Conoco hole 461-MF.

Geologic Summary:

Core is badly broken, >15 fractures per foot to depth of 550 ft. Below 550 ft, becomes relatively competent, 2-3 fractures per foot except in areas of major faults (listed below)

Lithology:		
	0-392 ft.	Gila Conglomerate (Tgc)
	392-520.2 ft.	Tertiary Granodiorite Porphyry (Tgdp)
	520.2-646.7 ft.	Precambrian Quartz Monzonite (Yqm)
	646.8-651 ft.	Tertiary Andesite (Ta)
	651-654.5 ft.	Precambrian Quartz Monzonite (Yqm)
	654.5-656.8 ft.	Tertiary Andesite (Ta)
	656.8-771.6 ft.	Precambrian Quartz Monzonite (Yqm)
	771.6-791 ft.	Tertiary Andesite (Ta)
	791-795 ft.	Precambrian Quartz Monzonite (Yqm)
	795-807.5 ft.	Tertiary Andesite (Ta)
	807.5-845.5 ft.	Precambrian Quartz Monzonite (Yqm)
	845.5-856.5 ft.	Tertiary Andesite (Ta)
	856.5-865.5 ft.	Precambrian Quartz Monzonite (Yqm)
	865.5-895 ft.	Tertiary Granodiorite Porphyry (Tgdp)
	895-980 ft.	Precambrian Quartz Monzonite (Yqm)
	980-985 ft.	Tertiary Andesite (Ta)
	985-1110 ft.	Precambrian Quartz Monzonite (Yqm)
	1110-1154 ft.	Tertiary Granodiorite Porphyry (Tgdp)
	1154-1169 ft.	Precambrian Quartz Monzonite (Yqm)
	1169-1198 ft.	Tertiary Granodiorite Porphyry (Tgdp)
	1198-1250.5 ft.	Precambrian Quartz Monzonite (Yqm)
	1250.5-1258 ft.	Tertiary Granodiorite Porphyry (Tgdp)
	1258-1279 ft.	Precambrian Quartz Monzonite (Yqm)

ARIZONA DEPARTMENT OF WATER RESOURCES

500 NORTH THIRD STREET
PHOENIX, ARIZONA 85004

PROJECT COMPLETION REPORT FOR MINERAL EXPLORATION DRILLING

This report must be prepared by the owner in all detail for each hole drilled and filed with the Department within 30 days following completion of the well drilling project.

1. Owner Name: BHP Copper

   Address: 14605 E. Hunt Hwy, Florence AZ 85232
   Street City State Zip

2. Lessee or Operator Name: Same as above

   Address: _____
   Street City State Zip

3. Driller Name: Boyles Drilling

   Address: 12030 E. Riggs Rd., Chandler AZ 85249
   Street City State Zip

4. Location: 4S N/S 9E E/W 28 NE 1/4 SW 1/4 SW 1/4
   Township Range Section 10-Acre 40-Acre 160-Acre

   WELL REGISTRATION NO. 55- 548247 (REQUIRED)

DESCRIPTION OF WELL

5. Type of Casing (if installed): 220 - 360' left in hole

6. Abandonment method and material used if abandoned: 1279' to 0' type 5 cement

   Was well abandoned in the course of drilling pursuant to R12-15-816, F.? Yes ✓ No _____

7. Date of period drilled: From: 3/7/95 To: 3/31/95

LOG OF WELL

☑ Unconsolidated Formation
0 - 392'

☑ Consolidated Formation
Depth to water in feet below land surface: _____
(if encountered or detected)
392' - 1279'

I state that this report is filed in compliance with A.R.S. §45-600 and is complete and correct to the best of my knowledge and belief.

Corella Hoag Aug 7 1997
Owner/Lessee's Signature Date

DO NOT WRITE IN THIS SPACE OFFICE RECORD

Registration No. _____

Received _____ By _____

Entered _____ By _____

File No. _____

DWR-55-57-7/91(Rev)

Magma Copper Company
Well Closure Certification Form

This form is to be filled out upon abandonment of any well or coreholes. A copy shall be filed in the well log file.

I certify that the well/core hole number 535 has been abandoned in compliance with the attached "Magma Copper Company Well and Corehole Abandonment Work Plan" dated January 10, 1996. A copy of the following documents are t be attached to this certification:

1. ADWR Notice of Intent to Abandon a Well (Unit wells only)
2. Well abandonment completion report per R12-15-816.K
3. U.S.EPA Plugging and abandonment plan form 7520-14
4. A diagram for each well or core hole depicting "as abandoned conditions"
5. A description of placement methods and volumes
6. Notation of any deviation from typical procedures Bottom to top with approx. 650 gal. of Type V cement.

Name: James M. Davis

Company: Boyles Bros.

Date: 3/25/96

Memo to: File **MAGMA COPPER - FLORENCE**
From: C. Hoag C. Hoag
Date: November 1, 1995

Subject: Drilling Summary MCC-536, (site F-7) NX-diameter core.

Diamond drill hole started March 28, 1995 and completed on April 10, 1995. *End of hole*: 1,162 feet. *Collar coordinates*: 745,705.31N 647,979.80E . *Ground elevation*: 1,472.23 feet *Top of casing elevation*: 1,473.93. Azimuth: 0° Inclination -90°. Downhole surveys completed at approximately 100-foot increments from 200 to 1,130 feet in depth. *Rotary*: 0 to 380 feet *Core*: 380 to 1,162 feet. Drilling contractor: Boyles. *Purpose*: Ore reserve confirmation and classification on the west-central side of the deposit during the 1995 feasibility program. MCC-536 is located 100 feet west of Conoco hole 460-MF.

GEOLOGIC SUMMARY
Lithology Summary

0 -380.0	Rotary, no core
380.0-392.0	Precambrian quartz monzonite (Yqm)
392.0-399.0	Tertiary granodiorite porphyry (Tgdp)
399.0-525.0	Precambrian quartz monzonite
525.0-531.0	Tertiary granodiorite porphyry
531.0-544.0	Precambrian quartz monzonite
544.0-568.0	Tertiary granodiorite porphyry
568.0-596.0	Tertiary andesite (Ta)
596.0-640.0	Tertiary granodiorite porphyry
640.0-657.0	Tertiary andesite (Ta)
657.0-696.0	Precambrian quartz monzonite
696.0-699.0	Tertiary andesite (Ta)
699.0-1043.5	Precambrian quartz monzonite
1043.5-1055.8	Tertiary granodiorite porphyry
1055.8-1162.0	Precambrian quartz monzonite

Oxide:	380.0-1,078.0
Transition:	1,078.0-1,146.0
Sulfide:	1,146.0-1,162.0

Rock Types: The predominant rock type is the Precambrian quartz monzonite (Conoco's quartz monzonite porphyry). The rock consists of coarse-grained orthoclase and quartz and lesser amounts of plagioclase and biotite. Although there are some competent intervals, the bulk of the rock is moderately broken with many intense rubble zones. Aplitic dikes and stringers of fine-grained orthoclase and quartz cut the quartz monzonite and may be pre-Laramide in age.

Thin dikes of Tertiary granodiorite porphyry appear to intrude the quartz monzonite along pre-existing fault or brecciated zones. Several of the no recovery zones in the Yqm are adjacent to or very near to Tgdp dikes. The granodiorite porphyry has a grayish black to olive gray aphanitic matrix with 1-2mm subhedral plagioclase phenocrysts. These dikes may correlate to Conoco's Type III Tgdp. The iron oxide staining and copper oxide development on fractures is minimal.

mcc 536

ARIZONA DEPARTMENT OF WATER RESOURCES

500 NORTH THIRD STREET
PHOENIX, ARIZONA 85004

PROJECT COMPLETION REPORT FOR MINERAL EXPLORATION DRILLING

This report must be prepared by the owner in all detail for each hole drilled and filed with the Department within 30 days following completion of the well drilling project.

1. Owner Name: BHP Copper

   Address: 14605 E. Hunt Hwy, Florence AZ 85232
   Street City State Zip

2. Lessee or Operator Name: Same as above

   Address: _____
   Street City State Zip

3. Driller Name: Boyles Drilling

   Address: 12030 E. Riggs Rd., Chandler AZ 85249
   Street City State Zip

4. Location: 4S N/S 9E E/W 28 NW 1/4 SE 1/4 SW 1/4
   Township Range Section 10-Acre 40-Acre 160-Acre

   WELL REGISTRATION NO. 55- 548247 (REQUIRED)

DESCRIPTION OF WELL

5. Type of Casing (if installed): Casing pulled

6. Abandonment method and material used if abandoned: 1162' to 0' type 5 cement

   Was well abandoned in the course of drilling pursuant to R12-15-816, F.? Yes ✓ No _____

7. Date of period drilled: From: 3/28/95 To: 4/10/95

LOG OF WELL

☑ Unconsolidated Formation
0 - 380'

☑ Consolidated Formation
Depth to water in feet below land surface: _____
(if encountered or detected)
380' - 1162'

I state that this report is filed in compliance with A.R.S. §45-600 and is complete and correct to the best of my knowledge and belief.

Corella Hoag — Owner/Lessee's Signature
August 7 1997 — Date

DO NOT WRITE IN THIS SPACE OFFICE RECORD

Registration No. _____

Received _____ By _____

Entered _____ By _____

File No. _____

DWR-55-57-7/91(Rev)

Magma Copper Company
Well Closure Certification Form

This form is to be filled out upon abandonment of any well or coreholes. A copy shall be filed in the well log file.

I certify that the well/core hole number 536 has been abandoned in compliance with the attached "Magma Copper Company Well and Corehole Abandonment Work Plan" dated January 10, 1996. A copy of the following documents are t be attached to this certification:

1. ADWR Notice of Intent to Abandon a Well (Unit wells only)
2. Well abandonment completion report per R12-15-816.K
3. U.S.EPA Plugging and abandonment plan form 7520-14
4. A diagram for each well or core hole depicting "as abandoned conditions"
5. A description of placement methods and volumes
   Bottom to top with approx. 650 gallons of type V cement.
6. Notation of any deviation from typical procedures

Name: James M. Daniels

Company: Boyles Bros.

Date: 4-2-96

Memo to: File **MAGMA COPPER - FLORENCE**
From: J. LeAnderson, C. Hoag
Date: August 21, 1995

Subject: Drilling summary MCC-538, (site F-9), NX-diameter core.

Diamond drill hole started March 29, 1995 and completed on April 10, 1995. End of hole: 1,169 feet. Collar coordinates: 745,523.510 N 648063.217 E . Ground elevation: 1,472.1 feet Top of casing elevation: 1,472.77. Azimuth: 0° Inclination -90°. Downhole surveys were completed at 100-foot increments beginning at 450 feet. Rotary: 0 to 359.3 feet Core: 359.3 to 1,169 feet. Drilling contractor: Boyles. Purpose: Resource confirmation during 1995 feasibility program. MCC-538 deepened/twinned a nearby Conoco hole 465MF.

SUMMARY OF GEOLOGY

Drill Log Summary

0 - 359.3'	Tertiary Gila Conglomerate
359.3 - 406.8	Precambrian Quartz Monzonite
406.8 - 419.9'	Tertiary Aplite
419.9 - 587.0'	Precambrian Quartz Monzonite
474.2 - 483.0'	Fault gouge
587.0 - 594.9'	Tertiary Andesite
594.9 - 597.4'	Tertiary Aplite
597.4 - 618.5'	Tertiary Granodiorite Porphyry
618.5 - 780.1'	Precambrian Quartz Monzonite Porphyry
780.1 - 788.85'	Tertiary Andesite
788.85 - 813.0	Precambrian Quartz Monzonite Porphyry
813.0 - 814.7'	Tertiary Andesite
814.7 - 834.0'	Precambrian Quartz Monzonite
815.8 - 818.0'	Fault gouge and breccia
834.0 - 839.0'	Tertiary Granodiorite Porphyry
839.0 - 870.6'	Precambrian Quartz Monzonite Porphyry
870.6 - 998.3'	Tertiary Granodiorite Porphyry
998.3 - 1006.8'	Precambrian Quartz Monzonite Porphyry
1006.8 - 1007.6'	Fault gouge and breccia **(Sidewinder Fault)**
1007.6 - 1013.2'	Tertiary Granodiorite Porphyry
1013.2 - 1044.0'	Precambrian Quartz Monzonite Porphyry
1044.0 - 1051.7'	Tertiary Granodiorite Porphyry
1051.7 - 1169.0	Precambrian Quartz Monzonite

Structure - A 0.8' fault beginning at 1006.8' is interpreted to be the Sidewinder Fault, a major structure of probable Basin and Range age. The hanging wall is intensely 'rubbleized', has intense iron oxide alteration, has weak Kfeldspar alteration, and has intense supergene clay alteration. The footwall is competent, has weak iron-oxide alteration, no clay alteration, and has intense potassium feldspar alteration. It is thought that the hanging wall block represents a block from higher up in elevation that was more intensely oxidized. There doesn't appear to be a major change in copper mineralization across the fault. However, 'tenorite' is rare in the hanging wall.

mcc 538

ARIZONA DEPARTMENT OF WATER RESOURCES

500 NORTH THIRD STREET
PHOENIX, ARIZONA 85004

PROJECT COMPLETION REPORT FOR MINERAL EXPLORATION DRILLING

This report must be prepared by the owner in all detail for each hole drilled and filed with the Department within 30 days following completion of the well drilling project.

1. Owner Name: BHP Copper

   Address: 14605 E. Hunt Hwy, Florence AZ 85232
   Street City State Zip

2. Lessee or Operator Name: Same as above

   Address: _____
   Street City State Zip

3. Driller Name: Boyles Drilling

   Address: 12030 E. Riggs Rd., Chandler AZ 85249
   Street City State Zip

4. Location: 4S N/S 9E E/W 28 NW 1/4 SE 1/4 SW 1/4
   Township Range Section 10-Acre 40-Acre 160-Acre

   WELL REGISTRATION NO. 55-548247 (REQUIRED)

DESCRIPTION OF WELL

5. Type of Casing (if installed): Casing pulled

6. Abandonment method and material used if abandoned: 1169' to 0' type 5 cement

   Was well abandoned in the course of drilling pursuant to R12-15-816, F.? Yes ✓ No _____

7. Date of period drilled: From: 3/29/95 To: 4/10/95

LOG OF WELL

[✓] Unconsolidated Formation
0 - 363.2'

[✓] Consolidated Formation
Depth to water in feet below land surface: _____
(if encountered or detected)
363.2' - 1169'

I state that this report is filed in compliance with A.R.S. §45-600 and is complete and correct to the best of my knowledge and belief.

Lovella Hoag August 7 1997
Owner/Lessee's Signature Date

DO NOT WRITE IN THIS SPACE OFFICE RECORD

Registration No. _____

Received _____ By _____

Entered _____ By _____

File No. _____

DWR-55-57-7/91(Rev)

Magma Copper Company
Well Closure Certification Form

This form is to be filled out upon abandonment of any well or coreholes. A copy shall be filed in the well log file.

I certify that the well/core hole number 538 has been abandoned in compliance with the attached "Magma Copper Company Well and Corehole Abandonment Work Plan" dated January 10, 1996. A copy of the following documents are t be attached to this certification:

1. ADWR Notice of Intent to Abandon a Well (Unit wells only)
2. Well abandonment completion report per R12-15-816.K
3. U.S.EPA Plugging and abandonment plan form 7520-14
4. A diagram for each well or core hole depicting "as abandoned conditions"
5. A description of placement methods and volumes
6. Notation of any deviation from typical procedures

Bottom to top with approx. 650 gallons of Type V cement.

Name: James R. Daniels
Company: Layne Christensen
Date: 6-10-96

Memo to: File C. Hoag **MAGMA COPPER - FLORENCE**
From: C. Hoag
Date: October 9, 1995

Subject: Drilling Summary MCC-545, (site F-4) NX-diameter core.

Diamond drill hole started April 26, 1995 and completed on May 8, 1995. End of hole: 1,370 feet. *Collar coordinates*: 746,157.623N 647,675.460E . *Ground elevation*: 1,474.0 feet *Top of casing elevation*: 1,474.70. Azimuth: 0° Inclination -90°. Downhole surveys completed at approximately 100-foot increments from 400 to 1,350 feet in depth. *Rotary*: 0 to 363 feet *Core*: 363 to 1,370 feet; drilled with single tube. *Drilling contractor*: Boyles. *Purpose*: Ore reserve confirmation and classification on the west side of the deposit during the 1995 feasibility program. MCC-545 is located approximately 100 feet east of Conoco hole 455-S.

GEOLOGIC SUMMARY

Lithologic Summary

0-363.0	Rotary, no sample
363.0-415.0	Tertiary Gila Conglomerate
415.0-561.4	Precambrian quartz monzonite
561.4-589.0	Tertiary granodiorite porphyry
589.0-628.2	Precambrian quartz monzonite
628.2-676.5	Tertiary granodiorite porphyry
676.5-928.2	Precambrian quartz monzonite
928.2-937.0	Tertiary granodiorite porphyry
937.0-963.2	Tertiary trachy andesite
963.2-966.3	Tertiary granodiorite porphyry
966.3-1074.0	Precambrian quartz monzonite
1074.0-1106.2	Tertiary granodiorite porphyry
1106.2-1361.2	Precambrian quartz monzonite
1361.2-1370	Tertiary granodiorite porphyry

Oxide: 415.0-1316.5 feet
Sulfide: 1316.5-1370.0 feet

Rock types: The predominant rock (~800 feet) is competent, moderately broken, and rubbleized Precambrian quartz monzonite (Yqm). The rock consists of subequal amounts of orthoclase and quartz, lesser white plagioclase, 2-10 percent biotite, and trace magnetite. Large 1-2 cm perthitic k-feldspar phenocrysts are present throughout the hole. Tertiary granodiorite porphyry (Tgdp) dikes account for 120 feet. The dikes consist of medium-dark gray to olive gray fine-grained intrusive rock with abundant, 1-3mm long white plagioclase phenocrysts plus biotite. The contacts between Tgdp and Yqm are both gradational, intrusive contacts as well as fault contacts in some instances. One lone 25-foot dike of weakly magnetic, Tertiary trachy andesite (Tta) at 937-963 feet cross cuts a dike of granodiorite porphyry. The upper contact with Tgdp appears gradational; the lower contact is broken and no contact angle was determined. The upper and lower Tta contacts did exhibit "chilled margins" and overprint the Tgdp host rock.. Phenocrysts within the Tgdp looked indistinct near the contact with the trachy andesite.

mcc 345

ARIZONA DEPARTMENT OF WATER RESOURCES

500 NORTH THIRD STREET
PHOENIX, ARIZONA 85004

PROJECT COMPLETION REPORT FOR MINERAL EXPLORATION DRILLING

This report must be prepared by the owner in all detail for each hole drilled and filed with the Department within 30 days following completion of the well drilling project.

1. Owner Name: BHP Copper

   Address: 14605 E. Hunt Hwy, Florence AZ 85232
   Street City State Zip

2. Lessee or Operator Name: Same as above

   Address: _____
   Street City State Zip

3. Driller Name: Boyles Drilling

   Address: 12030 E. Riggs Rd., Chandler AZ 85249
   Street City State Zip

4. Location: 4S N/S 9E E/W 28 SE 1/4 NW 1/4 SW 1/4
   Township Range Section 10-Acre 40-Acre 160-Acre

   WELL REGISTRATION NO. 55- 548200 (REQUIRED)

DESCRIPTION OF WELL

5. Type of Casing (if installed): Casing pulled

6. Abandonment method and material used if abandoned: 1370' to 0 type II cement

   Was well abandoned in the course of drilling pursuant to R12-15-816, F.? Yes ✓ No _____

7. Date of period drilled: From: 4/26/95 To: 5/5/95

LOG OF WELL

☑ Unconsolidated Formation
0 - 415'

☑ Consolidated Formation
Depth to water in feet below land surface: _____
(if encountered or detected)
415' - 1370'

I state that this report is filed in compliance with A.R.S. §45-600 and is complete and correct to the best of my knowledge and belief.

Carolla Hoag — August 6, 1997
Owner/Lessee's Signature — Date

DO NOT WRITE IN THIS SPACE
OFFICE RECORD

Registration No. _____

Received _____ By _____

Entered _____ By _____

File No. _____

DWR-55-57-7/91(Rev)

DRILLING SERVICES-BOYLES BROS.

a division of Layne Christensen Company

CLIENT: BHP Copper DATE: 10-31-96 Thur.

JOB#: 34-7025 JOB NAME: LOCATION: Florence, AZ

DRILL#: 4670 ANGLE: MSHA: ✓ PRE-SHIFT INSPECTION: ✓

DRILLING AND CORING RECORD

SHIFT	HOLE SIZE	FROM	TO	TOTAL	RECOVERY	#RUNS	ROCK TYPE	HOLE #	HOLE CONDITIONS
DAY							MCC	545	
REAM									
SWING									
REAM									
NIGHT									
REAM									

HOURLY ACTIVITIES

SHIFT	CORE	ROTARY	REV.CIRC	REAM	REDRILL	MOB/ DEMOB	WASH CLEAN HOLE	REGAIN LOST CIRC	SURVEY	CEMENT	CASING INSTALL	CASING REMOVE
DAY							(5)			(5)		(2)
SWING												
NIGHT												

SHIFT	MOVE SETUP	STANDBY	MAINT. REPAIR	HOLE DELAY	WEATHER DELAY	WATER DELAY	WATER HAUL TRUCK #	WATER HAUL MILES	WATER HAUL HOURS	WATER HAUL LOADS	OTHER SERVICES	
DAY							2178			1		
SWING												
NIGHT								BACK-HOE			(2)	

SHIFT		NAME	HOURS	EXPLAIN DELAYS, DIRECTIONS, ETC.
DAY	DRILLER	Daniels J.	12	Washed out NX portion of hole to 1370'. Flushed hole w/ water. Cemented hole up to casing. Pulled casing after filling w/ cement. Cemented hole to top. Total Type V cement used: Approx. 700 gallons.
	HELPER	Booth G.	12	
	OTHER			
SWING	DRILLER			
	HELPER			
	OTHER			
NIGHT	DRILLER			
	HELPER			
	OTHER			

CASING

SIZE	QUANTITY	LENGTH		CASING SHOES DAMAGED/LOST	CASING SET IN HOLE
			TYPE	DEPTH	SIZE
			NO.	SIZE	
BIT#	SIZE/TYPE	OFF	ON	TOTAL	
BIT#	SIZE/TYPE	OFF	ON	TOTAL	

MATERIALS

	QUANTITY DAY	QUANTITY SWING	QUANTITY NIGHT		QUANTITY DAY	QUANTITY SWING	QUANTITY NIGHT		QUANTITY DAY	QUANTITY SWING	QUANTITY NIGHT
MUD2	4			PORTLAND CEMENT	70			N BOXES			
CLEARMUD				CALSEAL				H BOXES			

FOREMAN: GEOLOGIST:

White : Customer Yellow : Office Pink : Foreman

Memo to: File **MAGMA COPPER - FLORENCE**
From: R. Williamson
Date: September 28, 1995

Subject: Drilling Summary MCC-546 (site F-3) NX-diameter core.

Date Started:	4/23/1995
Date Completed:	5/31/1995
Collar Coordinates:	746,598.80 N, 647,829.28 E
Surface Elevation:	1477.00 ft.
Casing Elevation:	1477.05 ft.
Azimuth:	0°
Inclination:	-90°

Downhole surveys were not taken on this hole due to poor hole conditions. Rotary: 0 to 397 feet. Core: 397 to 1,152 feet. Drilling contractor: Boyles. Purpose: Ore reserve confirmation and classification on the northwest side of the deposit during the 1995 feasibility program. MCC-546 is located approximately 46 feet east of Conoco hole 447-S.

Geologic Summary:

Lithology:

0-534 ft.	Gila Conglomerate (Tgc)
534-633 ft.	Precambrian Quartz Monzonite (Yqm)
633-716 ft.	Tertiary Granodiorite Porphyry (Tgdp)
716-720 ft.	Tertiary Andesite (Ta)
720-733 ft.	Precambrian Quartz Monzonite (Yqm)
733-788 ft.	Tertiary Granodiorite Porphyry (Tgdp)
788-1032 ft.	Precambrian Quartz Monzonite (Yqm)
1032-1036 ft.	Tertiary Andesite (Ta)
1036-1133 ft.	Precambrian Quartz Monzonite (Yqm)
1133-1144 ft.	Precambrian Diabase (Ydb)
1144-1145 ft.	Precambrian Quartz Monzonite (Yqm)
1145-1146 ft.	Precambrian Diabase (Ydb)
1146-1152 ft.	Precambrian Quartz Monzonite (Yqm)

Oxide: 534-1152 ft.

Rock type descriptions: The137 feet of Tertiary Gila Conglomerate consists of moderately to weakly consolidated, generally competent core. The material is conglomeratic, matrix supported, with subangular to subrounded clasts dominated by quartz monzonite. The lower contact is rubbleized but appears to be conformable. The 460 feet of Precambrian quartz monzonite is the coarse-grained variety with 1-2 cm. K-spar phenocrysts intergrown with smaller phenocrysts of quartz, plagioclase, and biotite. The 4 feet Andesite dike is weakly porphyritic, with 2-3% secondary biotite in the groundmass. The andesite contains copper oxides and calcite. The 138 feet of Tertiary granodiorite porphyry is strongly porphyritic, with approximately 30% phenocrysts of predominantly plagioclase in a fine-grained quartz-K-spar matrix. The phenocrysts are pervasively altered to clay and sericite ± copper oxides. The Precambrian diabase occurs

mcc 546

ARIZONA DEPARTMENT OF WATER RESOURCES

500 NORTH THIRD STREET
PHOENIX, ARIZONA 85004

PROJECT COMPLETION REPORT FOR MINERAL EXPLORATION DRILLING

This report must be prepared by the owner in all detail for each hole drilled and filed with the Department within 30 days following completion of the well drilling project.

1. Owner Name: BHP Copper

   Address: 14605 E. Hunt Hwy, Florence AZ 85232
   Street City State Zip

2. Lessee or Operator Name: Same as above

   Address: _____
   Street City State Zip

3. Driller Name: Boyles Drilling

   Address: 12030 E. Riggs Rd., Chandler AZ 85249
   Street City State Zip

4. Location: 4S N/S 9E E/W 28 NE 1/4 NW 1/4 SW 1/4
   Township Range Section 10-Acre 40-Acre 160-Acre

   WELL REGISTRATION NO. 55-548200 (REQUIRED)

DESCRIPTION OF WELL

5. Type of Casing (if installed): Casing pulled

6. Abandonment method and material used if abandoned: 620' to 0 type V cement

   Was well abandoned in the course of drilling pursuant to R12-15-816, F.? Yes ✓ No _____

7. Date of period drilled: From: 4/23/95 To: 5/31/93

LOG OF WELL

☑ Unconsolidated Formation
0-534'

☑ Consolidated Formation
Depth to water in feet below land surface: _____
(if encountered or detected)
534'-1152'

I state that this report is filed in compliance with A.R.S. §45-600 and is complete and correct to the best of my knowledge and belief.

Corolla Hoag August 6 1997
Owner/Lessee's Signature Date

DO NOT WRITE IN THIS SPACE OFFICE RECORD

Registration No. _____

Received _____ By _____

Entered _____ By _____

File No. _____

DWR-55-57-7/91(Rev)

Magma Copper Company
Well Closure Certification Form

This form is to be filled out upon abandonment of any well or coreholes. A copy shall be filed in the well log file.

I certify that the well/core hole number 546 has been abandoned in compliance with the attached "Magma Copper Company Well and Corehole Abandonment Work Plan" dated January 10, 1996. A copy of the following documents are t be attached to this certification:

1. ADWR Notice of Intent to Abandon a Well (Unit wells only)
2. Well abandonment completion report per R12-15-816.K
3. U.S.EPA Plugging and abandonment plan form 7520-14
4. A diagram for each well or core hole depicting "as abandoned conditions"
5. A description of placement methods and volumes
   Cemented from 620' to top w/ approx. 450 gallons of Type V.
6. Notation of any deviation from typical procedures
   Hit twisted off rods @ 620'. Cemented from 620' to top.

Name: James A. Daniels

Company: Boyles Bros Drilling

Date: 4-8-96

Memo to: File
From: P. Stubbe
Date: October 13, 1995

Subject:Drilling Summary MCC-546A (Site F-3) NX diameter core

Date Started: 6/4/95
Date Completed: 6/18/95
Collar Coordinates: 746,606.99N, 647,838.83E
Surface Elevation: 1477.00 ft.
Casing Elevation: 1477.59 ft.
Azimuth: 0°
Inclination: -90°

Downhole surveys were made on this hole in 100 foot increments starting at 1000 feet. Rotary: 0 to 990 feet. Core: 990 to 1437 feet. Drilling contractor: Boyles. Purpose: Ore reserve confirmation and classification on the northwest side of the deposit during the 1995 feasibility study. MCC-546A is located 13 feet east of MCC-546 which was lost at 1152 feet; shy of the target depth by 250 feet.

Geologic Summary:

Lithology:	0-534	Gila Conglomerate
	534-633	Precambrian Quartz Monzonite
	633-716	Tertiary Granodiorite Porphyry
	716-720	Tertiary Andesite
	720-733	Precambrian Quartz Monzonite
	733-788	Tertiary Granodiorite Porphyry
	788-1097	Precambrian Quartz Monzonite
	1097-1185	Fault Gouge and Breccia
	1185-1253	Precambrian Quartz Monzonite
	1253-1269	Fault Gouge
	1269-1437	Precambrian Quartz Monzonite

Oxide: 990-1286
Sulfide: 1286-1437

Note: Lithology from 0-990 feet is based on the log of hole MCC-546.

Rock Types: The 447 feet of core from this hole is dominantely Precambrian Quartz Monzonite. The rock is coarse grained with K-spar phenocrysts up to 4 cm. across. Plagioclase and quartz are intergrown in the matrix and flecked with small clots of biotite that rarely exceed 1 cm. in width. Over 100 feet of core was logged as fault gouge and breccia in this hole. The gouge consists mainly of sheared and shattered fragments of quartz monzonite in a very oxidized silty-sandy matrix. Within an 88 foot gouge zone, a 3 foot sample of Precambrian diabase was recorded. The diabase is interpreted as a xenolith in the gouge zone. It is a strongly sheared, green, fine grained, mafic rock with a few small biotite clots.

Structure: Major faults and/or shears occur at the following depths: 1031-1033 ft., 1097-1108 ft., 1253-1269 ft. The fault at 1031-1033 ft. appeared to have a true dip of 10°-30°. The large structural zone between 1097-1108 ft. had an undetermined orientation but appeared to be very steep (true dip 70°-90°) at the bottom where slickensides were subparallel to the core axis. At 1253-1269 ft. the fault had a true dip measured at 50°.

mee. 546 A

ARIZONA DEPARTMENT OF WATER RESOURCES

500 NORTH THIRD STREET
PHOENIX, ARIZONA 85004

PROJECT COMPLETION REPORT FOR MINERAL EXPLORATION DRILLING

This report must be prepared by the owner in all detail for each hole drilled and filed with the Department within 30 days following completion of the well drilling project.

1. Owner Name: BHP Copper

   Address: 14605 E. Hunt Hwy, (Street) Florence (City) AZ (State) 85232 (Zip)

2. Lessee or Operator Name: Same as above

   Address: (Street) (City) (State) (Zip)

3. Driller Name: Boyles Drilling

   Address: 12030 E. Riggs Rd., (Street) Chandler (City) AZ (State) 85249 (Zip)

4. Location: 4S (Township) N/S 9E (Range) E/W 28 (Section) NE (10-Acre) 1/4 NW (40-Acre) 1/4 SW (160-Acre) 1/4

   WELL REGISTRATION NO. 55- 548200 (REQUIRED)

DESCRIPTION OF WELL

5. Type of Casing (if installed): Casing pulled

6. Abandonment method and material used if abandoned: 1437' to 0 type V cement

   Was well abandoned in the course of drilling pursuant to R12-15-816, F.? Yes ✓ No ____

7. Date of period drilled: From: 6/4/95 To: 6/18/95

LOG OF WELL

☑ Unconsolidated Formation
0-534'

☑ Consolidated Formation
Depth to water in feet below land surface: ____
(if encountered or detected)
534'-1437'

I state that this report is filed in compliance with A.R.S. §45-600 and is complete and correct to the best of my knowledge and belief.

Corolla Hoag — August 6 1997
Owner/Lessee's Signature — Date

DO NOT WRITE IN THIS SPACE OFFICE RECORD

Registration No. ____

Received ____ By ____

Entered ____ By ____

File No. ____

DWR-55-57-7/91(Rev)

Magma Copper Company
Well Closure Certification Form

This form is to be filled out upon abandonment of any well or coreholes. A copy shall be filed in the well log file.

I certify that the well/core hole number 546-A has been abandoned in compliance with the attached "Magma Copper Company Well and Corehole Abandonment Work Plan" dated January 10, 1996. A copy of the following documents are t be attached to this certification:

1. ADWR Notice of Intent to Abandon a Well (Unit wells only)
2. Well abandonment completion report per R12-15-816.K
3. U.S.EPA Plugging and abandonment plan form 7520-14
4. A diagram for each well or core hole depicting "as abandoned conditions"
5. A description of placement methods and volumes Bottom to top with approx. 1100 gallons of type V cement.
6. Notation of any deviation from typical procedures

Name: James M. Daniels

Company: Boyles Bros.

Date: 4-10-96

MAGMA COPPER - FLORENCE

Memo to: File
From: J. Hudson
Date: December 11, 1995

Subject: Drilling Summary MCC-561 (site F-27) NX-diameter core.

Date Started:	7/12/1995
Date Completed:	7/22/1995
Collar Coordinates:	745,729.85 N
	647,558.19 E
Surface Elevation:	1471.70'
Casing Elevation:	1472.43'
Azimuth:	0°
Inclination:	-90°
Rotary:	0-450'
Core:	450-1480'
Contractor:	Boyles Bros.

Downhole Surveys:	azimuth	dip
@480'	112	-89.25°
@580'	283	-89°
@680'	101	-89°
@780'	Cannot Read	
@880'	107	-89°
@980'	103	-88.75°
@1080'	111	-88.75°
@1180'	93.	-89°
@1280'	...98	-89°
@1380'	...91	-89°
@1480	102...	-89.5°

Purpose: Ore reserve confirmation and classification on the west side of the deposit during the 1995 feasibility program. MCC-561 twins Conoco hole 426-MF.

Geologic Summary:

Lithology:		
	0-450'	Rotary drilled; no data
	450-495'	Tertiary Gila Conglomerate (Tgc)
	495-523'	Precambrian Diabase (Ydb)
	523-713'	Precambrian Quartz Monzonite (Yqm)
	713-760'	Tertiary Granodiorite Porphyry (Tgdp)
	760-864'	Precambrian Quartz Monzonite (Yqm)
	864-877'	Tertiary Granodiorite Porphyry (Tgdp)
	877-938'	Precambrian Quartz Monzonite (Yqm)
	938-983'	Tertiary Granodiorite Porphyry (Tgdp)
	983-1199'	Precambrian Quartz Monzonite (Yqm)
	1199-1258'	Fault zone with Yqm & Tgdp
	1258-1451'	Precambrian Quartz Monzonite(Yqm)
	1451-1457'	Precambrian Diabase (Ydb)
	1457-1480'	Precambrian Quartz Monzonite (Yqm)

Overburden:	0-495'
Leach Cap:	495-555'
Oxide:	555-1419'
Sulfide:	1419-1480'

MCC 561

ARIZONA DEPARTMENT OF WATER RESOURCES

500 NORTH THIRD STREET
PHOENIX, ARIZONA 85004

PROJECT COMPLETION REPORT FOR MINERAL EXPLORATION DRILLING

This report must be prepared by the owner in all detail for each hole drilled and filed with the Department within 30 days following completion of the well drilling project.

1. Owner Name: BHP Copper

   Address: 14605 E. Hunt Hwy, Florence AZ 85232
   Street City State Zip

2. Lessee or Operator Name: Same as above

   Address: _____
   Street City State Zip

3. Driller Name: Boyles Drilling

   Address: 12030 E. Riggs Rd., Chandler AZ 85249
   Street City State Zip

4. Location: 4S N/S 9E E/W 28 NE 1/4 SW 1/4 SW 1/4
   Township Range Section 10-Acre 40-Acre 160-Acre

   WELL REGISTRATION NO. 55- 548247 (REQUIRED)

DESCRIPTION OF WELL

5. Type of Casing (if installed): 50'-450' left in hole

6. Abandonment method and material used if abandoned: 1480' to 0 type V cement

   Was well abandoned in the course of drilling pursuant to R12-15-816, F.? Yes ✓ No _____

7. Date of period drilled: From: 7/12/95 To: 7/22/95

LOG OF WELL

☑ Unconsolidated Formation
0-495'

☑ Consolidated Formation
Depth to water in feet below land surface: _____
(if encountered or detected)
495' - 1480'

I state that this report is filed in compliance with A.R.S. §45-600 and is complete and correct to the best of my knowledge and belief.

Carolla Haag August 6 1997
Owner/Lessee's Signature Date

DO NOT WRITE IN THIS SPACE OFFICE RECORD
Registration No. _____
Received _____ By _____
Entered _____ By _____
File No. _____

DWR-55-57-7/91(Rev)

Magma Copper Company
Well Closure Certification Form

This form is to be filled out upon abandonment of any well or coreholes. A copy shall be filed in the well log file.

I certify that the well/core hole number 561 has been abandoned in compliance with the attached "Magma Copper Company Well and Corehole Abandonment Work Plan" dated January 10, 1996. A copy of the following documents are t be attached to this certification:

1. ADWR Notice of Intent to Abandon a Well (Unit wells only)
2. Well abandonment completion report per R12-15-816.K
3. U.S.EPA Plugging and abandonment plan form 7520-14
4. A diagram for each well or core hole depicting "as abandoned conditions"
5. A description of placement methods and volumes
6. Notation of any deviation from typical procedures Bottom to top with approx. 800 gal of Type V cement.

Name: JM Davis

Company: Boyles Bros.

Date: 3/27/96

MAGMA COPPER - FLORENCE
Drill Hole Summary
MCC-569 (site F-35)
February 16, 1996

Type: Rotary 0' to 800', Nx Diamond, 10' split barrel 800' to 999', 5' split barrel 999' to 1663'
Started: September 20, 1995; **Completed:** October 16, 1995
Total depth: 1665 ft. (according to driller's log), 1663' measured on core.
Collar coordinates: 746,203.81N 647,315.61E
Top of casing elevation: No casing in place when surveyed.
Ground elevation: 1473.1 ft
Azimuth: N/A
Inclination: -90°; downhole surveys at ±100 ft. increments from 810' to 1650' depth.
Drilling contractor: Christensen Boyles Corp.
Logged by: J. Downey
Purpose: Ore reserve confirmation and classification on the west side of the deposit during the 1995 pre-feasibility program. MCC-569 is located approximately 50 feet north of Conoco hole 456-S.

Geologic Summary

Precambrian Quartz Monzonite is the most common lithology in MCC-569, and excepting the last interval, from 1613' to 1663', it is typical of the granitic rock seen in most of the recent drill holes. The unusual phase of Precambrian Quartz Monzonite in the last interval is equigranular, with little or no primary pink microcline. This interval is separated from the overlying typical Yqm by a major fault from 1607.5 to 1611.5. Mineral grains typically range from ~3mm to 10 mm, and the largest crystals tend to be euhedral to sub-hedral β-quartz. Quartz and plagioclase each average around 20% of the rock, and biotite (including secondary) also averages ~20%. The remainder is a whitish semi-opaque feldspar that commonly is altered to a light brown Ksp, usually surrounding host fractures or healed fractures. This mineral is assumed to be either white orthoclase or some other alkali feldspar. Petrographic sample of a similar rock (MFL5 & MFL7) from MCC-548 were described by Sid Williams. This interval is hosts significantly more Ksp flooding and argillization than the typical quartz monzonite, but it is not clear if this is the result of environment or chemistry. Going on the texture and composition of this rock it could be a phase of the Tertiary intrusion, but as no age date has been done it tends to get lumped with the Precambrian rock.

This hole contains two intervals of Granodiorite porphyry, one 15' thick and the other 50' thick. Both appear to be Conoco's type II porphyry, as they are a dark grey color and contain little or no quartz. Both tend to be highly fractured with mild K-spar veining and a moderate clay overprint. Mineralization tends to be weak in both intervals.

Tertiary Trachy-Andesite occurs as two dikes, the first being a thin brown-green drab dike with mildly developed flow alignment of needle-like phenos, and fairly strong exotic copper mineralization. Trachy-Andesite also occurs as a med to light brown dike with large sub-hedral plagioclase and anhedral quartz phenos. This dike is very competent, shows traces of trachitic flow alignment, and has traces of tenorite on some fractures. Neither contains significant alteration aside from clay, etc. on the fractures and some argillization of plagioclase phenos.

The entire hole seems to have a mild to moderate potassic alteration, as either biotite or Ksp ± qz depending upon host lithology. Chlorite and clinochlore (pennine, according to pet. reports) occur locally as areas of mod. to str. clots and zones of replacement in the Yqm. These minerals are assumed to be the results of further alteration of secondary and primary biotite. Clay alteration is mod. to str. throughout the hole and there is considerable clay alteration in the sulfide rock which is assumed to be hypogene, consisting of white and drab green clays, both on the fractures and in the matrix. Clay is also very common in the oxide rock, and much of it is assumed to be either hypogene or the result of structural movement. Some of the oxide clays are certain to have been formed from supergene processes, but these clays are realistically impossible to differentiate in hand sample. A similar such assumption deals with sericite. Recent petrographic studies and numerous Conoco pet. reports

MCC 5164

ARIZONA DEPARTMENT OF WATER RESOURCES

500 NORTH THIRD STREET
PHOENIX, ARIZONA 85004

PROJECT COMPLETION REPORT FOR MINERAL EXPLORATION DRILLING

This report must be prepared by the owner in all detail for each hole drilled and filed with the Department within 30 days following completion of the well drilling project.

1. Owner Name: BHP Copper

   Address: 14605 E. Hunt Hwy, Florence AZ 85232
   Street City State Zip

2. Lessee or Operator Name: Same as above

   Address: _____
   Street City State Zip

3. Driller Name: Boyles Drilling

   Address: 12030 E. Riggs Rd., Chandler AZ 85249
   Street City State Zip

4. Location: 4S N/S 9E E/W 28 SE 1/4 NW 1/4 SW 1/4
   Township Range Section 10-Acre 40-Acre 160-Acre

   WELL REGISTRATION NO. 55- 548247 (REQUIRED)

DESCRIPTION OF WELL

5. Type of Casing (if installed): Casing pulled

6. Abandonment method and material used if abandoned: 1665' to 0 type V cement

   Was well abandoned in the course of drilling pursuant to R12-15-816, F.? Yes ✓ No _____

7. Date of period drilled: From: 9/20/95 To: 10/16/95

LOG OF WELL

☑ Unconsolidated Formation
0 - 810.7'

☑ Consolidated Formation
Depth to water in feet below land surface: _____
(if encountered or detected)
810.7' - 1665'

I state that this report is filed in compliance with A.R.S. §45-600 and is complete and correct to the best of my knowledge and belief.

Corella Haas August 6, 1997
Owner/Lessee's Signature Date

DO NOT WRITE IN THIS SPACE OFFICE RECORD
Registration No. _____
Received _____ By _____
Entered _____ By _____
File No. _____

DWR-55-57-7/91(Rev)

Magma Copper Company
Well Closure Certification Form

This form is to be filled out upon abandonment of any well or coreholes. A copy shall be filed in the well log file.

I certify that the well/core hole number 569 has been abandoned in compliance with the attached "Magma Copper Company Well and Corehole Abandonment Work Plan" dated January 10, 1996. A copy of the following documents are t be attached to this certification:

1. ADWR Notice of Intent to Abandon a Well (Unit wells only)
2. Well abandonment completion report per R12-15-816.K
3. U.S.EPA Plugging and abandonment plan form 7520-14
4. A diagram for each well or core hole depicting "as abandoned conditions"
5. A description of placement methods and volumes
   Bottom to top with approx. 1050 gallons of Type V cement.
6. Notation of any deviation from typical procedures

Name: James M. Daniels

Company: Layne-Christensen

Date: 6-18-96

LOG OF BORING NO. B-5

CLIENT: Magma Copper Company

ARCHITECT/ENGINEER:

SITE: Florence, Arizona

PROJECT: Proposed New Mine

GRAPHIC LOG	DESCRIPTION	DEPTH (FT.)	USCS SYMBOL	SAMPLES: BULL-NOSE	SAMPLES: TYPE	SAMPLES: RECOVERY	SAMPLES: BLOWS (6 in.)	TESTS: MOISTURE, %	TESTS: DRY DENSITY PCF
	SILTY SAND; very fine sand, light brown, poorly graded, medium dense, non-plastic, dry, nil cementation		SM		BAG				
	moist				RS	12"	10 16	4.1	106
		5			SS	15"	5 7 6		
	very dense	10			SS	15"	27 50/5.5"		
	hard drilling from 16' to 20'	15			SS	15"	19 25 32		
	Continued Next Page	20							

THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY LINES BETWEEN SOIL AND ROCK TYPES: IN-SITU, THE TRANSITION MAY BE GRADUAL.

WATER LEVEL OBSERVATIONS		
WL	▽	▼
WL		
WL		

Terracon

BORING STARTED	9-20-95
BORING COMPLETED	9-20-95
RIG CME-75	FOREMAN R.S.
APPROVED H.M.J.	JOB # 63955116

LOG OF BORING NO. B-5

CLIENT: Magma Copper Company

ARCHITECT/ENGINEER:

SITE: Florence, Arizona

PROJECT: Proposed New Mine

GRAPHIC LOG	DESCRIPTION	DEPTH (FT.)	USCS SYMBOL	SAMPLES: BULL-NOSE	SAMPLES: TYPE	SAMPLES: RECOVERY	SAMPLES: BLOWS (6 in.)	TESTS: MOISTURE, %	TESTS: DRY DENSITY PCF
	SILTY SAND; with gravel, medium brown, poorly graded, very dense, non-plastic, moist, nil cementation		SM		SS	3"	24 26 25		
	dense hard slow drilling large amount of gravel from 26' to 30'	25			SS	12"	16 21 27		
	SILTY GRAVEL; light brown, medium graded, very dense, non-plastic, moist, nil cementation	30	GM		SS	2"	50/2"		
	Bottom of Boring	35							
		40							

THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY LINES BETWEEN SOIL AND ROCK TYPES: IN-SITU, THE TRANSITION MAY BE GRADUAL.

WATER LEVEL OBSERVATIONS		
WL	▽	▼
WL		
WL		

Terracon

BORING STARTED	9-20-95		
BORING COMPLETED	9-20-95		
RIG	CME-75	FOREMAN	R.S.
APPROVED	H.M.J.	JOB #	63955116

LOG OF BORING NO. B-6

CLIENT: Magma Copper Company

ARCHITECT/ENGINEER:

SITE: Florence, Arizona

PROJECT: Proposed New Mine

GRAPHIC LOG	DESCRIPTION	DEPTH (FT.)	USCS SYMBOL	SAMPLES: BULL-NOSE	SAMPLES: TYPE	SAMPLES: RECOVERY	SAMPLES: BLOWS (6 in.)	TESTS: MOISTURE, %	TESTS: DRY DENSITY PCF
	SILTY SAND; medium brown, poorly graded, medium dense, non- plastic, moist, nil cementation		SM	15	BAG				
	light brown, dense				RS	12"	41 50/4"	4.0	84
	SANDY CLAY; very fine, poorly graded, hard, low plasticity, moist, nil cementation	5	CL		SS	18"	12 17 22		
	hard drilling from 7' to 9'								
	CLAYEY SAND; with trace gravel, light brown, poorly graded, very dense, low plasticity, moist, nil cementation hard drilling between 12' and 13'	10	SC		SS	12"	22 50/3"		
	SANDY CLAY; with trace gravel, very fine, poorly graded, dense, low plasticity, moist, nil cementation	15	CL		SS	10"	13 19 11		
	Continued Next Page	20							

THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY LINES BETWEEN SOIL AND ROCK TYPES: IN-SITU, THE TRANSITION MAY BE GRADUAL.

WATER LEVEL OBSERVATIONS		
WL	▽	▽
WL		
WL		

Terracon

BORING STARTED	9-20-95		
BORING COMPLETED	9-20-95		
RIG	CME-75	FOREMAN	R.S.
APPROVED	H.M.J.	JOB #	63955116

LOG OF BORING NO. B-6

CLIENT: Magma Copper Company

ARCHITECT/ENGINEER:

SITE: Florence, Arizona

PROJECT: Proposed New Mine

GRAPHIC LOG	DESCRIPTION	DEPTH (FT.)	USCS SYMBOL	SAMPLES: BULL-NOSE	SAMPLES: TYPE	SAMPLES: RECOVERY	SAMPLES: BLOWS (6 in.)	TESTS: MOISTURE, %	TESTS: DRY DENSITY PCF	TESTS	TESTS
	SILTY SAND; with gravel, medium brown, poorly graded, medium dense, non-plastic, moist, nil cementation		SM		SS	2"	8 9 11				
	hard drilling from 21' to 25'										
					SS		50/3"				
	Auger Refusal	25									
		30									
		35									
		40									

THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY LINES BETWEEN SOIL AND ROCK TYPES: IN-SITU, THE TRANSITION MAY BE GRADUAL.

WATER LEVEL OBSERVATIONS		
WL	▽	▼
WL		
WL		

Terracon

BORING STARTED	9-20-95		
BORING COMPLETED	9-20-95		
RIG	CME-75	FOREMAN	R.S.
APPROVED	H.M.J.	JOB #	63955116

Existing Wells

OB3-1

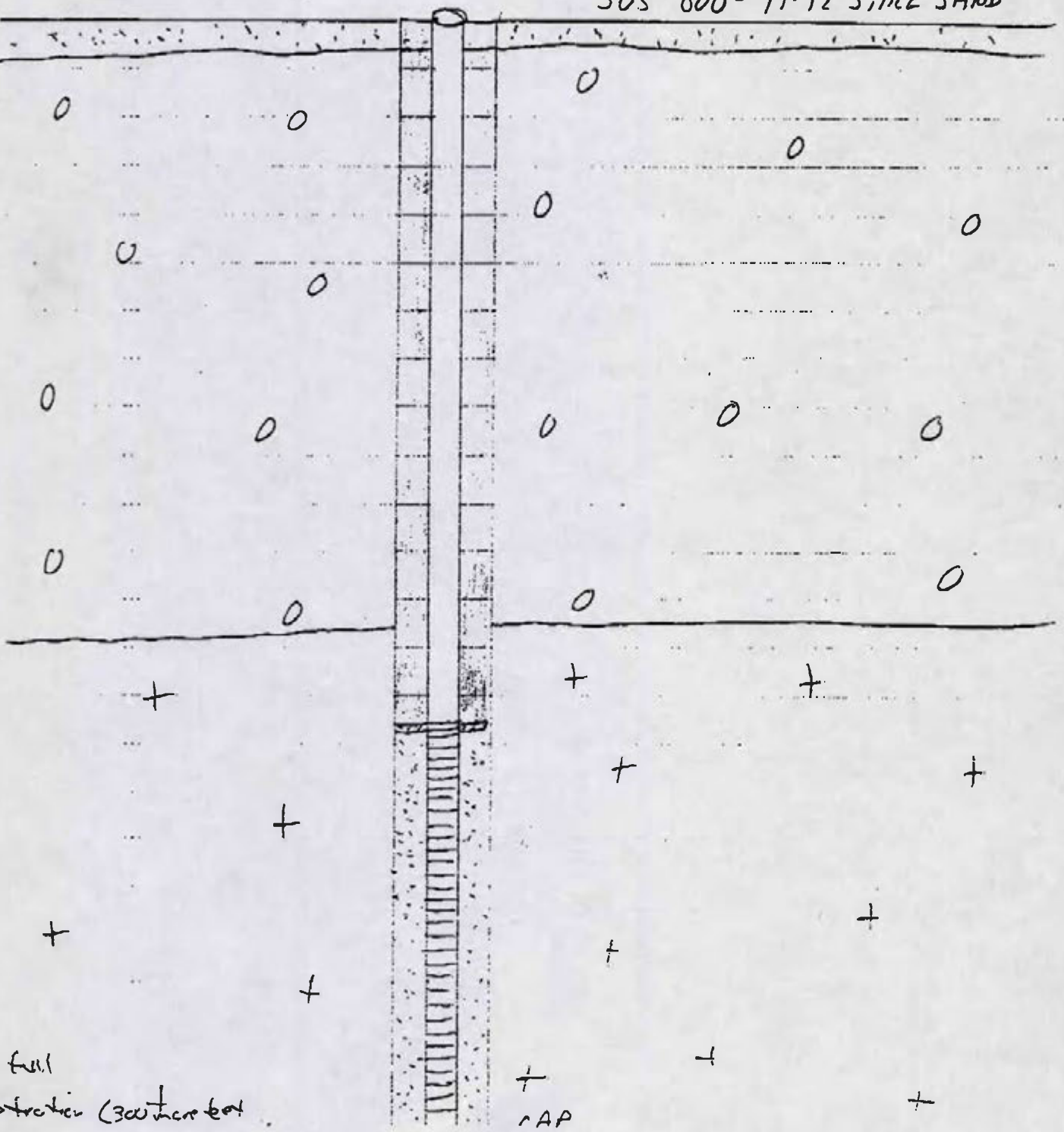
PW3-1 - 6"
OB3-1 - 4"

0-430' Conglomerate

1" = 100'

PVC - SCH. 80
0-500' - Solid
500'-780' - Perf.
780'-800' - Solid

0-20' - cement
20'-500' - Bentonite grout seal
500'-505' - nº 30 SAND
505'-800' - nº 12 Silica SAND



no full
penetration (300 more feet

CAP

Az.: 28-54-40

	Northing	Easting	Elev.
PW3-1	746,250.7029	647,873.5467	1475.49
OB3-1	746,204.0188	647,890.1575	1475.78
PW2-2	745,543.1537	649,854.3396	1464.26 ✓
OB2-2	745,500.7046	649,879.1265	1464.02 ✓

4-25-94

MONITOR/PIEZOMETER WELL

FILING FEE $10.00

ARIZONA DEPARTMENT OF WATER RESOURCES
Operations Division
15 SOUTH 15TH AVENUE
PHOENIX, ARIZONA 85007

MONITOR/PIEZOMETER WELL

FILING FEE $10.00

NOTICE OF INTENTION TO DRILL MONITOR/PIEZOMETER WELL

Section § 45-596, Arizona Revised Statutes provide: Prior to drilling a monitor or piezometer well, a Notice of Intention to Drill shall be filed with the Department.

MR

1. **WELL LOCATION:** OB3-1

   4 N/S | 9 E/W | 28
   Township | Range | Section

   NW 1/4 NW 1/4 SW 1/4
   10 ACRE 40 ACRE 160 ACRE

2. Position location of the well on the land:

   Latitude 111 ° 27 ' 0 "

   Longitude 33 ° 02 ' 30 "

3. County: Pinal

4. **Owner of the land of wellsite:**

   Magma Copper Company
   Name

   14605 E. Hunt Highway
   Address

   Florence AZ 85232
   City State Zip

5. **Lessee of the land of wellsite:**

   Name

   Address

   City State Zip

6. **Owner of well:**

   Magma Copper Company
   Name

   14605 E. Hunt Highway
   Address

   Florence AZ 85232
   City State Zip

7. Consulting Firm: _____

   Contact Person: _____

   Phone: _____

8. Purpose of well drilled pursuant to this notice

   Monitor X

   Piezometer _____

9. If for deepening or modifying, Well Registration Number

   55- _____

DO NOT WRITE IN THIS SPACE
OFFICE RECORD

File No. D(4-9)28 c BB

Filed 1-10-94 By ek

Input _____ By _____

ENTERED JAN 11 1994

DUPLICATE

Mailed 1-12-94 By ah

Registration 55- 542056

AMA/INA Pinal

W/S 28 S/B 11

10. Construction will start:

    1 4 94
    Month Day Year

11. Period well will remain in use 4 Months/Years

12. For monitoring wells, is pump equipment to be installed?

    Yes _____ No X

    (a) If yes, design pump capacity _____

    (b) What use will be made of the water _____

13. **Drilling firm:**

    Bayless Bros. Drilling
    Name

    6527 W. Northview
    Address

    Glendale AZ 85301
    City State Zip

    DWR License No. 28 A4

    _____
    ROC License classification

14. Is the proposed wellsite within 100 feet of a septic tank system, sewage disposal area, landfill, hazardous waste facility, storage area of hazardous material or petroleum storage areas and tanks?

    Yes _____ No X

16. Proposed method of abandonment of well after project is completed: (All) wells will be capped upon completion of testing.

17. Is this well to monitor existing contamination? NO Potential contamination NO . Please explain: _____

GENERAL INSTRUCTIONS

1. Fill out this form in DUPLICATE and send WITH $10.00 FEE to 15 South 15th Avenue, Phoenix, AZ 85007.
2. For specific instructions, limitations and conditions, see the reverse side of this form.
3. **Must be signed by land owner or lessee.**
4. Section §45-596(D), provides that the Director shall determine that all information required on form has been submitted. If not, the person filing will be notified and the drilling, deepening, or modification of the well may not proceed.

JAN 10 1994

I state that Notice is filed in compliance with Section § 45-596 and is complete and correct to the best of my knowledge and belief and that I understand the conditions set forth on the reverse side of this form.

_____ Typed or Printed Name

_____ Signature [ ] Land Owner [ ] Lessee of wellsite

12/20/93 Date

18. If construction plans have been coordinated with Arizona Department of Environmental Quality, who is the agency contact? _____

If construction plans have been coordinated with Arizona Department of Water Resources, who is the agency contact? _____

19. WELL CONSTRUCTION PLAN

a) Drilling method (mud rotary, hollow-stem auger, etc.) mud rotary

b) Borehole diameters: 6 inches from 0 feet to 1200 feet.
_____ inches from _____ feet to _____ feet.

Proposed only. Not as built.

c) Casing materials (PVC, steel, hollow-stem auger, etc.)

material Sch. 80 PVC diameter 4 inches from 21 feet to 1200 feet

material Steel diameter 6 inches from 0 feet to 20 feet

d) Method of sealing at reductions _____

e) Annular seal materials (cement, grout, etc.); method of placement (tremied, circulated)

material Grout (Bentonite) method tremied from 20 feet to 800 feet

material Cement Grout seal method tremied from 0 feet to 20 feet

f) Filter packs (state material):

material No. 12 Silica Sand - Gravel Pack from 800 feet to 1200 feet

material No. 30 river sand from 795 feet to 800 feet

g) Perforations or screen specifications:

type 0.020" Slot PVC from 800 feet to 1180 feet

type 2" PVC - Blank from 1180 feet to 1200 feet

h) Method of well development (bail, air lift, surge) air lift

i) Will surface or conductor casing extend above grade: Yes X No _____

20. Include detailed construction diagram showing expected water depth in feet below land surface, and details of vault, if specified.

CONDITIONS

I. Construction and abandonment standards for all wells shall be in accordance with A.A.C. R12-15-811 and R12-15-816.

II. Drilling of the well shall be completed within one (1) year after the date of Notice.

III. A Well Driller Report, is required within 30 days of completion of drilling. A Completion Report, is required to be filed with the Department within 30 days after installation of pump equipment for monitor wells.

IV. Pump equipment may not be installed on a well drilled for piezometer purposes. If a monitor well is pumped, pumping is limited to the maximum amount required for monitor purposes, but in no case may exceed 35 gallons per minute and an annual volume of 10 acre feet total.

V. A.A.C. Rule R12-15-811.H.2, requires that: "A monitor well shall be identified as such on the vault cover or at the top of the steel casing. Identification information will include well registration number."

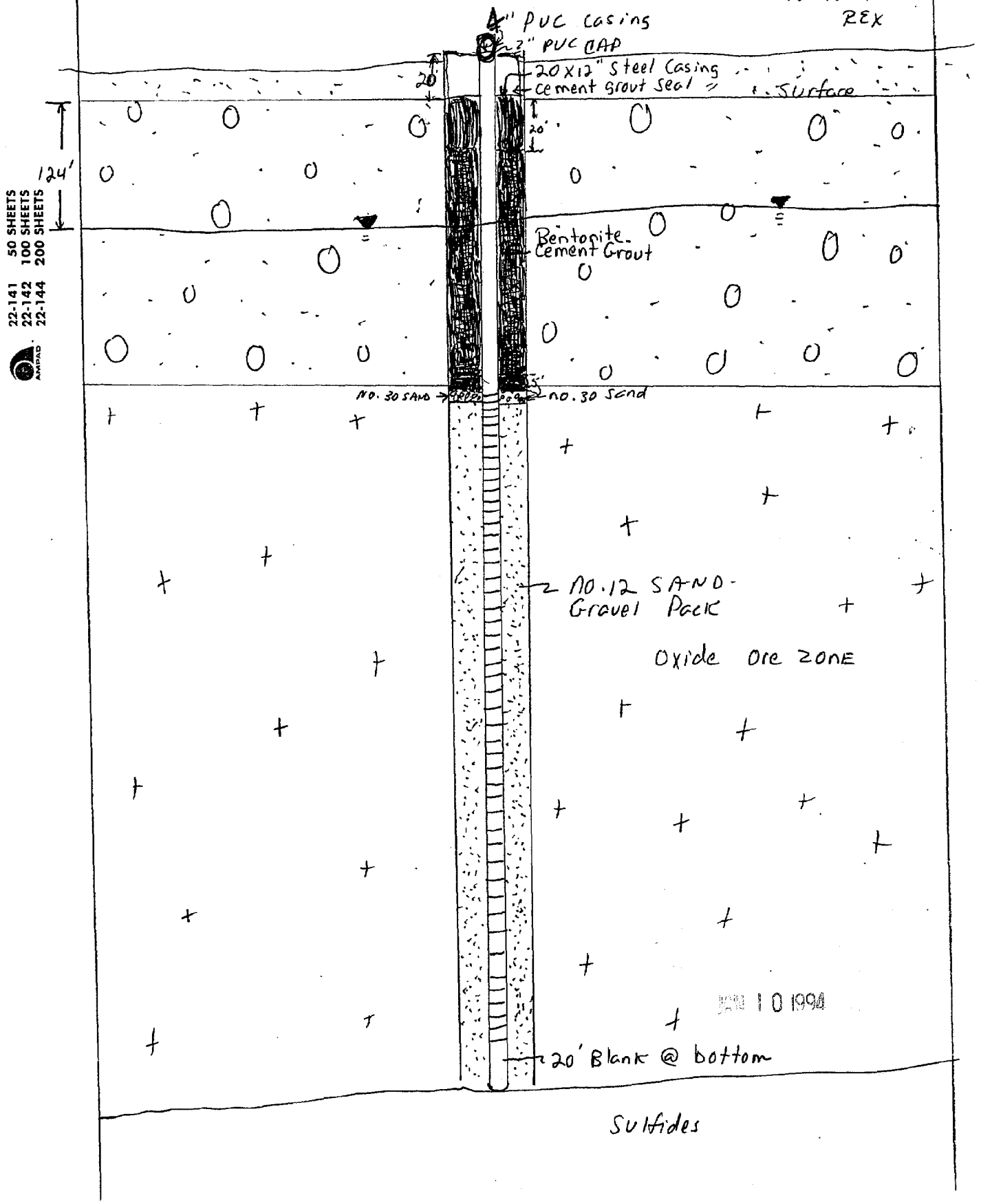
VI. Special construction standards required pursuant to A.A.C. Rule R12-15-821: _____

_____

OCT 10 1994

WEll Construction Diagram - 6" diameter monitor well - IN-situ Testing -

12-12-93
REX



50 SHEETS
100 SHEETS
200 SHEETS
22-141
22-142
22-144
AMPAD

JUN 10 1994

OB4-1

: FLORENCE PROJECT
HOLLENBACH SURVEYING CO

Point	Quad	Direction	Distance	Northing	Easting	Elevation
1	PW3-1			746250.7029	647873.5467	1475.490
List						
600	OB-6			746481.6985	648550.6927	1470.518
601	PW-2			747039.0825	647895.5184	1483.167
602	BIA-9			745732.2083	647304.9315	1472.524
603	MF-2			745462.5711	647816.4190	1474.239
604	PW-4			745530.8294	647769.7365	1471.849
605	OB-4			745584.5350	647783.0629	1471.709
606	1 6			745696.1364	647744.1832	1472.014
607	BIA 10			745638.4200	649114.6634	1468.603
608	PW7-1			745435.5384	648861.5612	1468.552
609	OB-7			745454.7947	648871.8236	1468.272

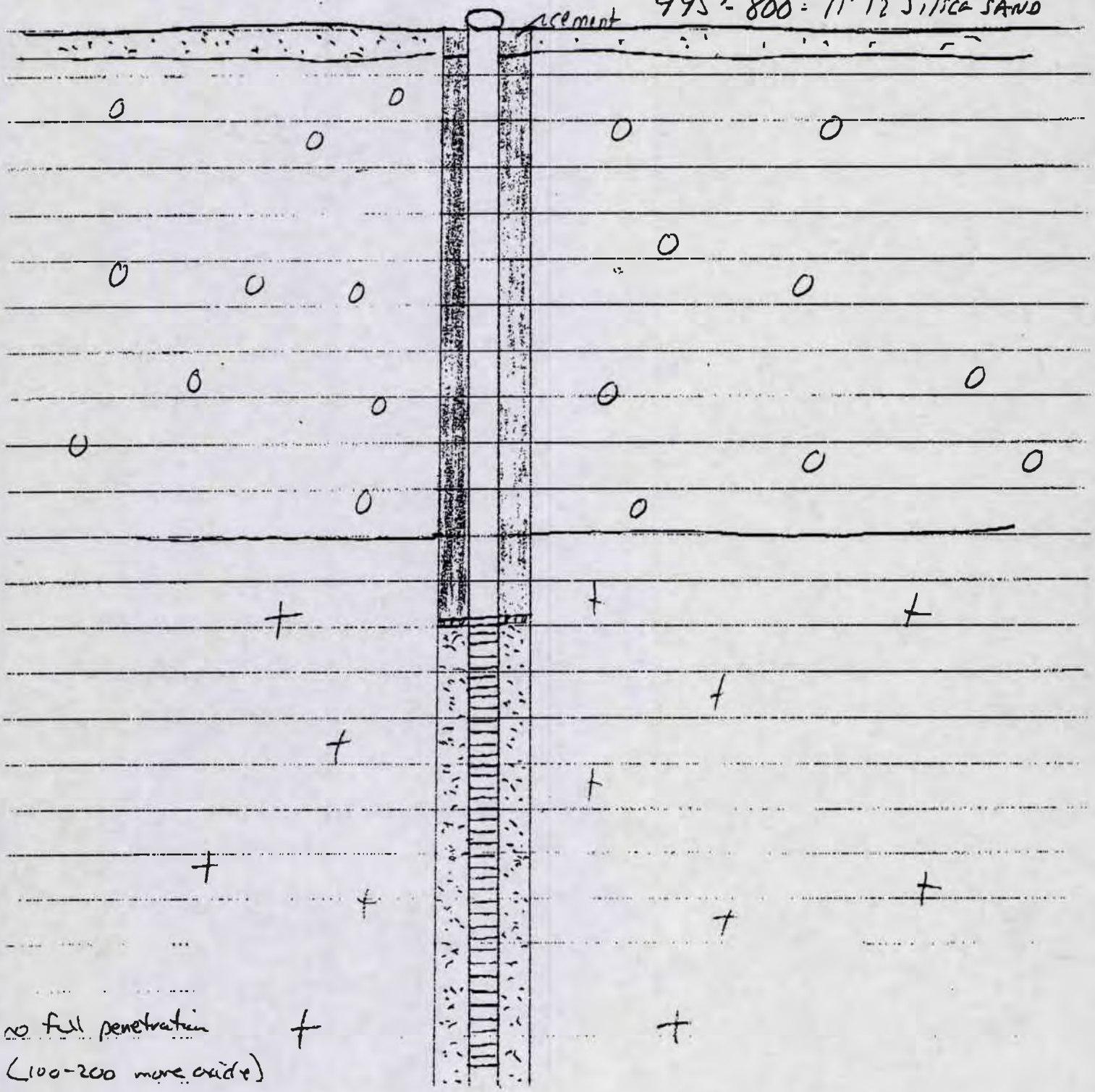
Florence Prefeasibility
Pump Test

PW4-1 - 6"
OB4-1 - 4"

0-375' - Conglomerate
800' - TD
1" = 100'

PVC - SCH 80
0 - 440' - Solid
440' - 780' - Perf.
780' - 800' - Solid

0 - 20' - Cement
20' - 440' - Bentonite grout seal
440' - 445' - n° 30 SAND
445' - 800' - n° 12 Silica SAND



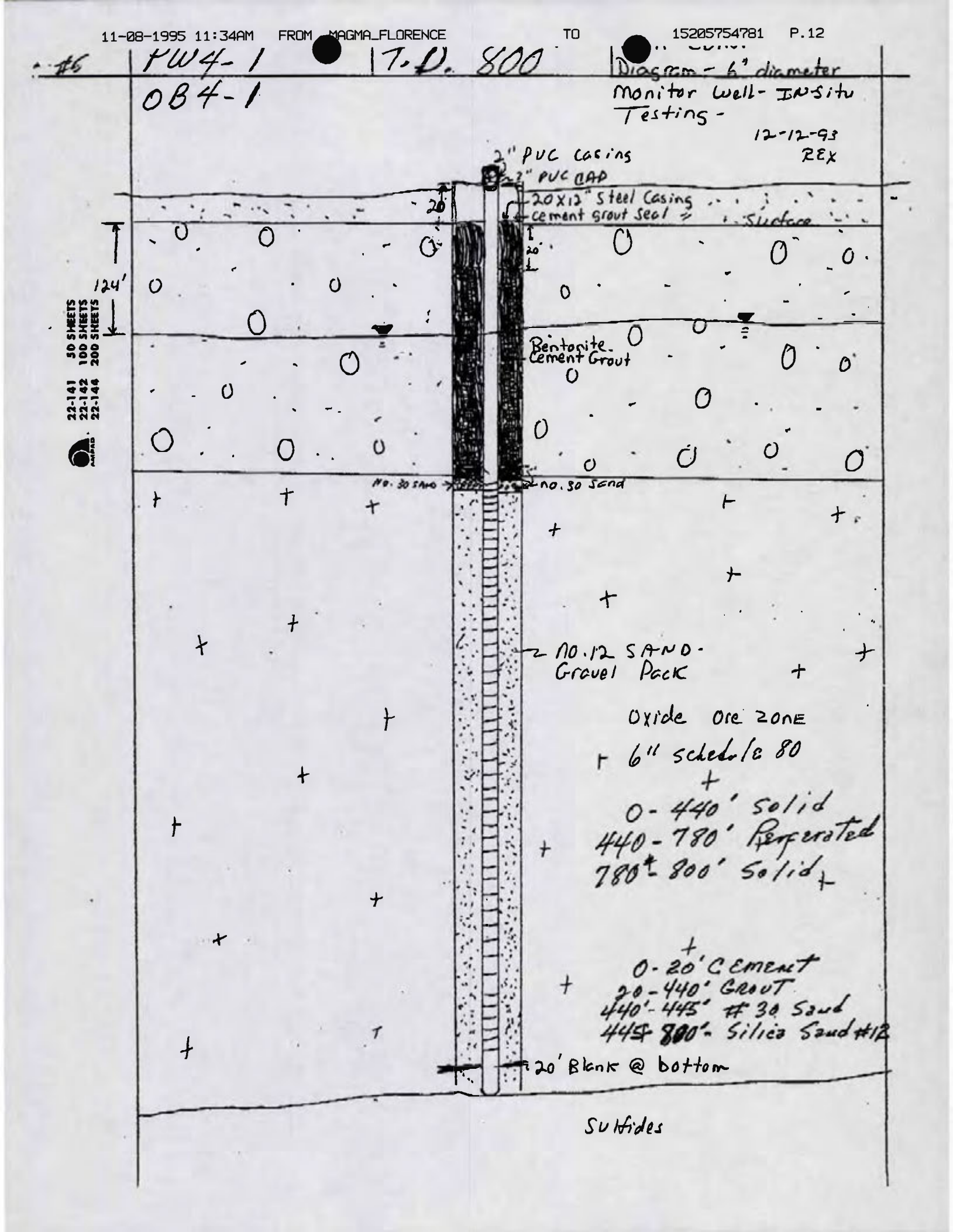
no full penetration
(100-200 more oxide)

#6 PW4-1 T.D. 800

OB4-1

Diagram - 6" diameter Monitor Well - In-Situ Testing -

12-12-93 REX



50 SHEETS 100 SHEETS 200 SHEETS 22-141 22-142 22-144 AMPAD

MONITOR/PIEZOMETER WELL

FILING FEE $10.00

ARIZONA DEPARTMENT OF WATER RESOURCES
Operations Division
15 SOUTH 15TH AVENUE
PHOENIX, ARIZONA 85007

MONITOR/PIEZOMETER WELL

FILING FEE $10.00

NOTICE OF INTENTION TO DRILL MONITOR/PIEZOMETER WELL

Section § 45-596, Arizona Revised Statutes provide: Prior to drilling a monitor or piezometer well, a Notice of Intention to Drill shall be filed with the Department. MR

OB4-1

1. **WELL LOCATION:**

   4 N/S | 9 E/W | 28
   Township | Range | Section

   NE 1/4 SW 1/4 SW 1/4
   10 ACRE 40 ACRE 160 ACRE

2. Position location of the well on the land:

   Latitude 111 0 27 : 0 "

   Longitude 33 0 02 : 30 "

3. County: Pinal

4. **Owner of the land of wellsite:**

   Magma Copper Company
   Name

   14605 E. Hunt Highway
   Address

   Florence AZ 85232
   City State Zip

5. **Lessee of the land of wellsite:**

   Name

   Address

   City State Zip

6. **Owner of well:**

   Magma Copper Company
   Name

   14605 E. Hunt Highway
   Address

   Florence AZ 85232
   City State Zip

7. Consulting Firm: _____

   Contact Person: _____

   Phone: _____

8. Purpose of well drilled pursuant to this notice

   Monitor X

   Piezometer _____

9. If for deepening or modifying, Well Registration Number

   55- _____

DO NOT WRITE IN THIS SPACE
OFFICE RECORD

File No. D(4-9)28CCA

Filed 1-10-94 By ek

Input _____ By _____

ENTERED JAN 11 1994
DUPLICATE

Mailed 1-12-94 By ek

Registration 55- 542055

AMA/INA Pinal

W/S 28 S/B 11

10. Construction will start:

    1 4 94
    Month Day Year

11. Period well will remain in use 4 Months/Years

12. For monitoring wells, is pump equipment to be installed?

    Yes _____ No X

    (a) If yes, design pump capacity _____

    (b) What use will be made of the water _____

13. **Drilling firm:**

    Boyles Bros. Drilling
    Name

    6527 W. Northview
    Address

    Glendale AZ 85301
    City State Zip

    DWR License No. 28 A4

    _____
    ROC License classification

14. Is the proposed wellsite within 100 feet of a septic tank system, sewage disposal area, landfill, hazardous waste facility, storage area of hazardous material or petroleum storage areas and tanks?

    Yes _____ No X

16. Proposed method of abandonment of well after project is completed: (All) wells will be capped upon completion of testing.

17. Is this well to monitor existing contamination? NO Potential contamination NO. Please explain: _____

GENERAL INSTRUCTIONS

1. Fill out this form in DUPLICATE and send WITH $10.00 FEE to 15 South 15th Avenue, Phoenix, AZ 85007.
2. For specific instructions, limitations and conditions, see the reverse side of this form.
3. Must be signed by land owner or lessee.
4. Section §45-596(D), provides that the Director shall determine that all information required on form has been submitted. If not, the person filing will be notified and the drilling, deepening, or modification of the well may not proceed.

JAN 10 1994

I state that Notice is filed in compliance with Section § 45-596 and is complete and correct to the best of my knowledge and belief and that I understand the conditions set forth on the reverse side of this form.

_____
Typed or Printed Name

_____
Signature [ ] Land Owner [ ] Lessee of wellsite

12/20/93
Date

EC 9-

18. If construction plans have been coordinated with Arizona Department of Environmental Quality, who is the agency contact? _____

If construction plans have been coordinated with Arizona Department of Water Resources, who is the agency contact? _____

19. WELL CONSTRUCTION PLAN

a) Drilling method (mud rotary, hollow-stem auger, etc.) mud rotary

b) Borehole diameters: 6 inches from 0 feet to 1200 feet. Proposed only. Not as built.

_____ inches from _____ feet to _____ feet.

c) Casing materials (PVC, steel, hollow-stem auger, etc.)

material Sch. 80 PVC diameter 4 inches from 24 feet to 1200 feet

material Steel diameter 6 inches from 0 feet to 20 feet

d) Method of sealing at reductions _____

e) Annular seal materials (cement, grout, etc.); method of placement (tremied, circulated)

material Grout (Bentonite) method tremied from 20 feet to 380 feet

material Cement Grout seal method tremied from 0 feet to 20 feet

f) Filter packs (state material):

material No. 12/20 Silica Sand - Gravel Pack from 380 feet to 1200 feet

material No. 30 river sand from 375 feet to 380 feet

g) Perforations or screen specifications:

type 0.020" Slot PVC from 380 feet to 1180 feet

type 2" PVC - Blank from 1180 feet to 1200 feet

h) Method of well development (bail, air lift, surge) air lift

i) Will surface or conductor casing extend above grade: Yes X No _____

20. Include detailed construction diagram showing expected water depth in feet below land surface, and details of vault, if specified.

CONDITIONS

I. Construction and abandonment standards for all wells shall be in accordance with A.A.C. R12-15-811 and R12-15-816.

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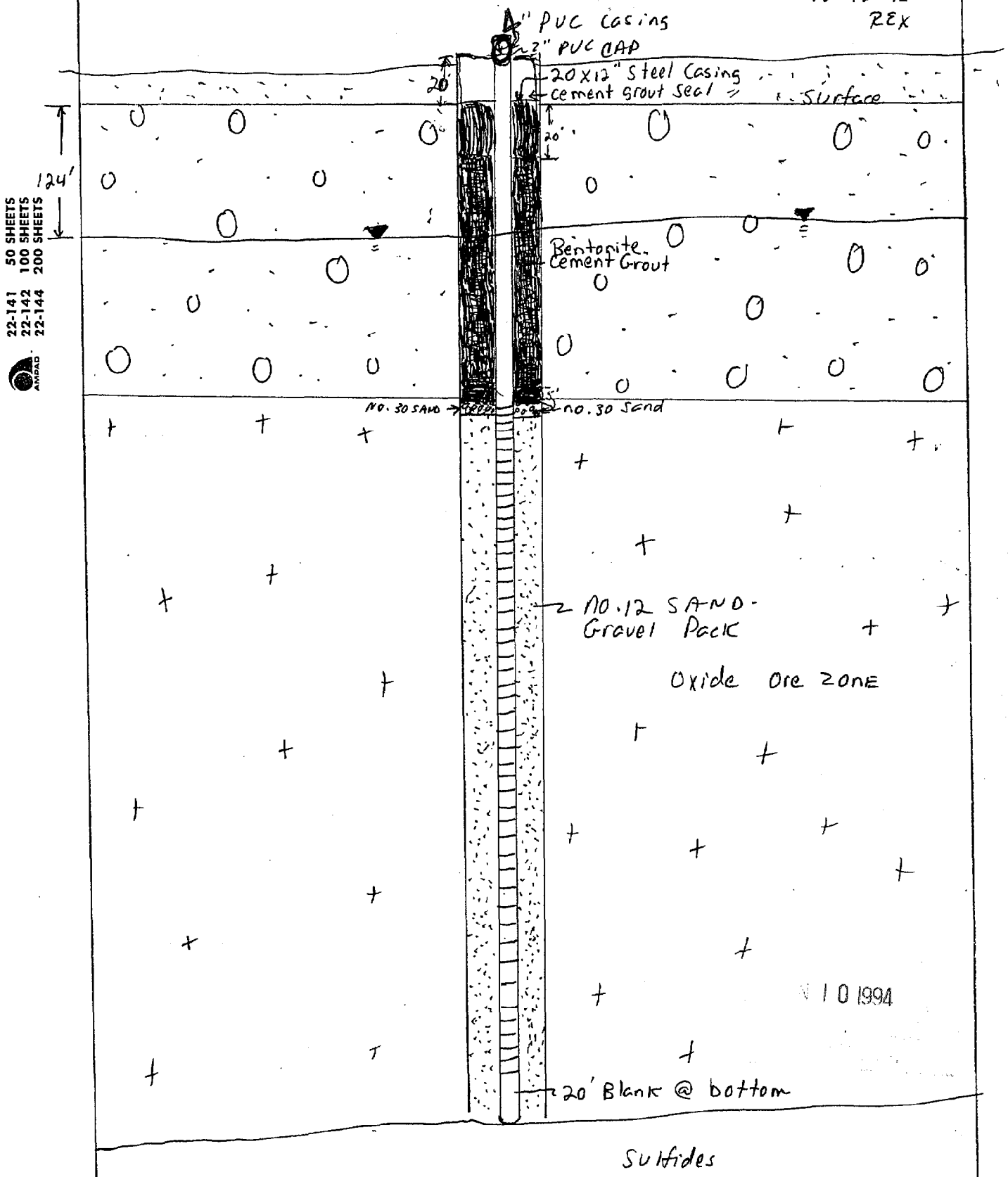
V. A.A.C. Rule R12-15-811.H.2, requires that: "A monitor well shall be identified as such on the vault cover or at the top of the steel casing. Identification information will include well registration number."

VI. Special construction standards required pursuant to A.A.C. Rule R12-15-821: _____

JAN 10 1994

WEll Construction Diagram - 6" diameter Monitor Well - IN-Situ Testing -

12-12-93
REX



22-141 50 SHEETS
22-142 100 SHEETS
22-144 200 SHEETS
AMPAD

V 1 0 1994

PW3-1

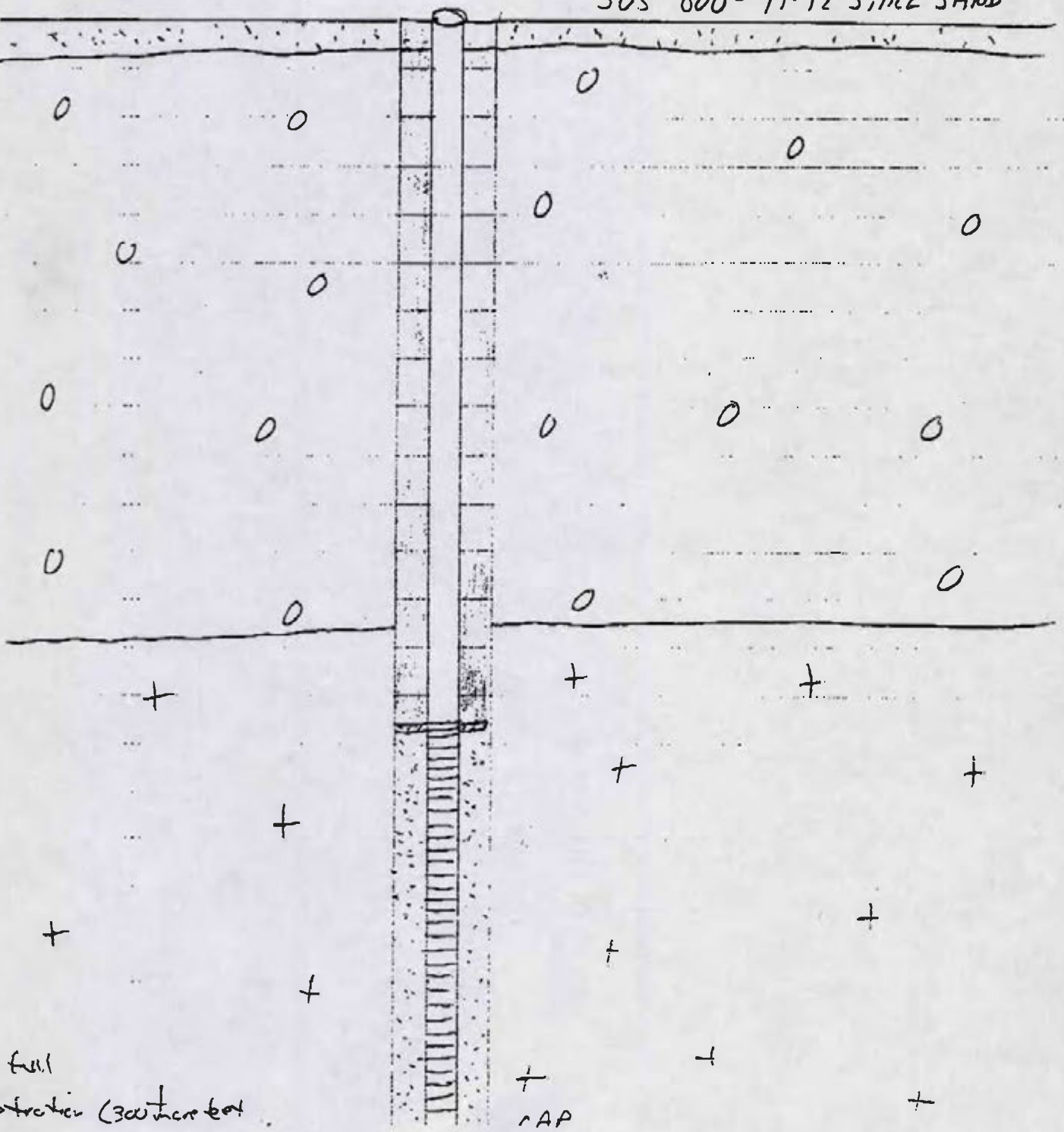
PW3-1 - 6"
OB3-1 - 4"

0-430' Conglomerate

1" = 100'

PVC - SCH. 80
0-500' - Solid
500'-780' - Perf.
780'-800' - Solid

0-20' - cement
20'-500' - Bentonite grout seal
500'-505' - nº 30 SAND
505'-800' - nº 12 Silica SAND



no full
penetration (300 more feet

CAP

Az.: 28-54-40

	Northing	Easting	Elev.
PW3-1	746,250.7029	647,873.5467	1475.49
OB3-1	746,204.0188	647,890.1575	1475.78
PW2-2	745,543.1537	649,854.3396	1464.26 ✓
OB2-2	745,500.7046	649,879.1265	1464.02 ✓

4-25-94

PW3-1

ARIZONA DEPARTMENT OF WATER RESOURCES
GROUNDWATER MANAGEMENT SUPPORT SECTION
P O BOX 458, PHOENIX, ARIZONA 85001-0458
PHONE: (602) 417-2470

RECEIVED
MAR 31 1999
RECORDS MGT

Arizona Revised Statute §45-594 and A.A.C. R12-822: The owner of an open well shall file a notice of well capping with the Department in writing no later than five days after the well is capped.

NOTICE OF WELL CAPPING

1. **LEGAL DESCRIPTION OF THE LOCATION OF WELL:**
   a. **Township** 4S
   b. **Range** 9E
   c. **Section** 28
   ____ ¼ ____ ¼ ____ ¼
   10 Acre 40 Acre 160 Acre

2. **WELL REGISTRATION NUMBER:**
   55- 542056
   File No: D(4-9)28cbb

3. **OWNER OF THE WELL:**
   BHP Copper
   Name
   14605 East Hunt Hwy
   Address
   Florence, AZ 85232
   City **State** **Zip**
   (520) 868 5090
   Telephone Number

4. **PERSON INSTALLING THE CAP:**
   Jim McBroom
   Name
   14605 East Hunt Hwy.
   Address
   Florence, AZ 85232
   City **State** **Zip**
   (520) 868-5090
   Telephone Number

5. **DATE WELL WAS CAPPED:**
   March - 94

6. **METHOD OF CAPPING:**
   ① Watertight well cap ② Vault with locking cap.

7. **TYPE AND DIAMETER OF CASING:**
   Type of Well Casing: Sch 80 PVC
   Diameter of Well Casing: 6"

8. **COMMENTS**

I state that this Notice is filed in compliance with A.R.S. §45-594 and A.A.C. R12-15-822, and is complete and correct to the best of my knowledge and belief.

9. **Signature** Carolla Hoag **Date** 3/30/99

DWR 55-39 (Rev 3/98)

ARIZ... 5 1999

PW4-1

: FLORENCE PROJECT
HOLLENBACH SURVEYING CO

Point	Quad	Direction	Distance	Northing	Easting	Elevation
1	PW3-1			746250.7029	647873.5467	1475.490
List						
600	OB-6			746481.6985	648550.6927	1470.518
601	PW-2			747039.0825	647895.5184	1483.167
602	BIA-9			745732.2083	647304.9315	1472.524
603	MF-2			745462.5711	647816.4190	1474.239
604	PW-4			745530.8294	647769.7365	1471.849
605	OB-4			745584.5350	647783.0629	1471.709
606	1 6			745696.1364	647744.1832	1472.014
607	BIA 10			745638.4200	649114.6634	1468.603
608	PW7-1			745435.5384	648861.5612	1468.552
609	OB-7			745454.7947	648871.8236	1468.272

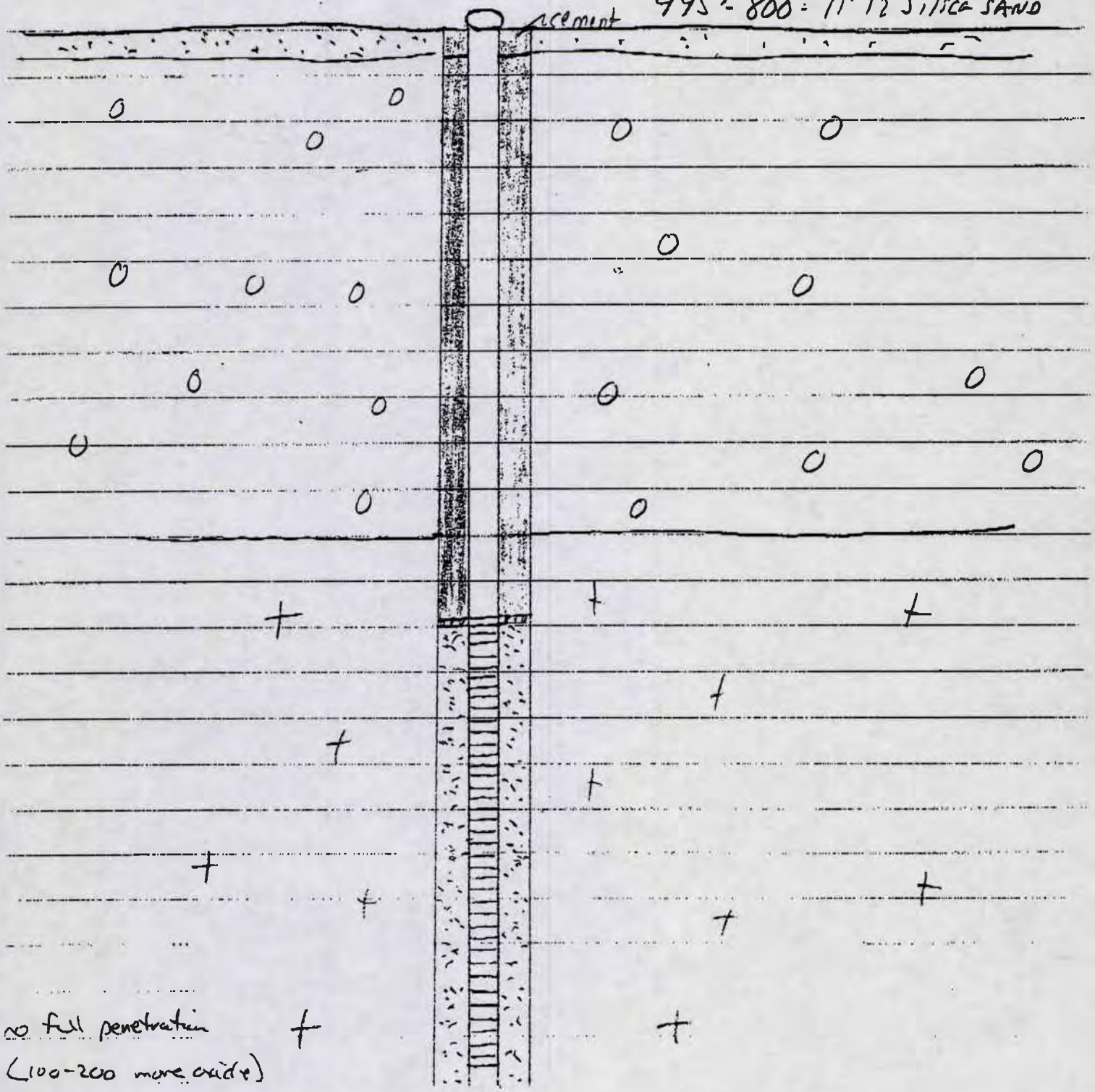
Florence Prefeasibility
Pump Test

PW4-1 - 6"
OB4-1 - 4"

0-375' - Conglomerate
800' - TD
1" = 100'

PVC - SCH 80
0 - 440' - Solid
440' - 780' - Perf.
780' - 800' - Solid

0 - 20' - Cement
20' - 440' - Bentonite grout seal
440' - 445' - n° 30 SAND
445' - 800' - n° 12 Silica SAND



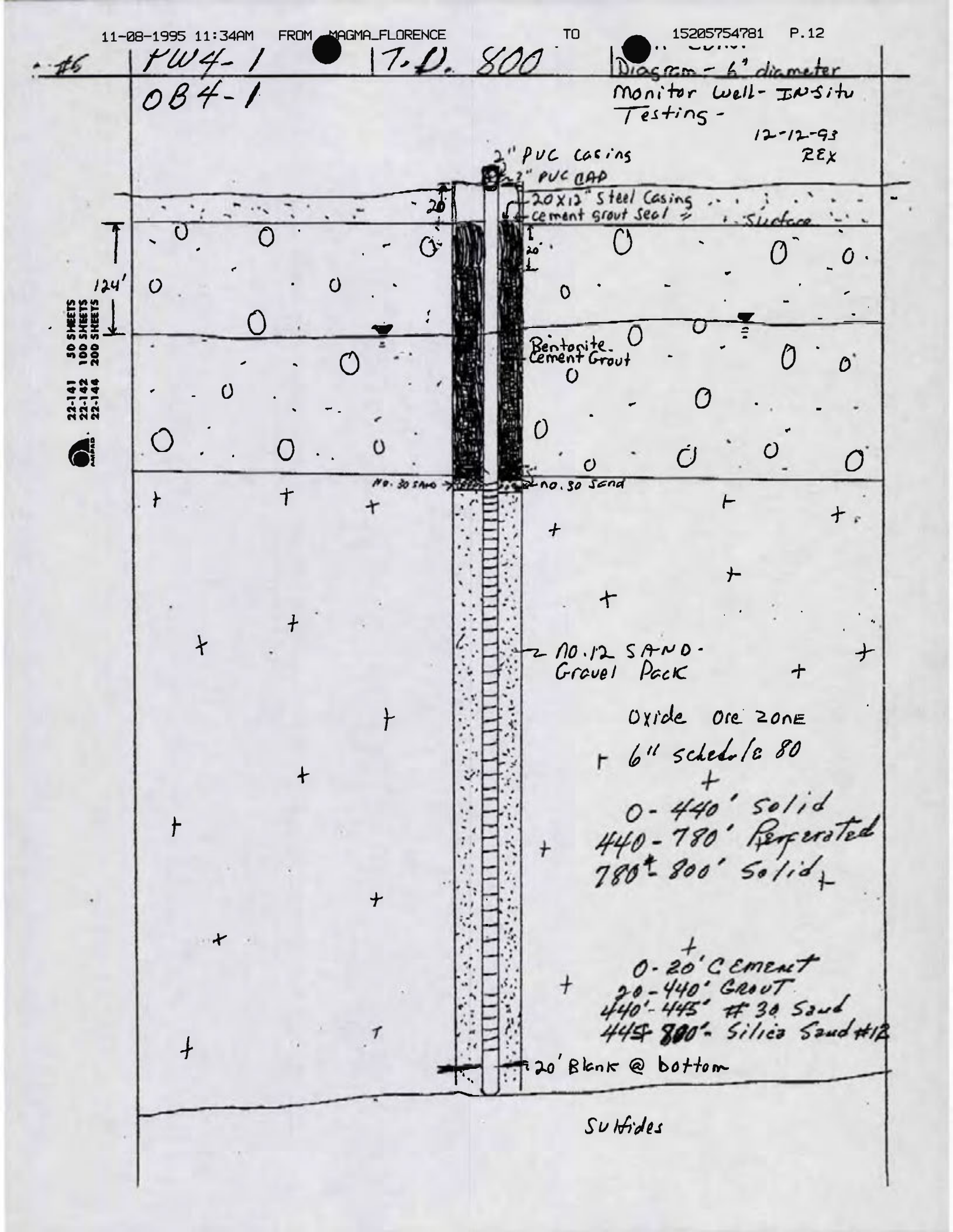
no full penetration
(100-200 more oxide)

#6 PW4-1 T.D. 800

OB4-1

Diagram - 6" diameter Monitor Well - In-Situ Testing -

12-12-93 REX



50 SHEETS 100 SHEETS 200 SHEETS 22-141 22-142 22-144 AMPAD

Water Well 3 (WW3)

Water Development Corporation

CONSULTANTS IN WATER RESOURCES

3938 SANTA BARBARA AVENUE
TUCSON, ARIZONA 85711

WELL RECORD

PHONE: 602-326-1133
CABLE: WADEVCO, TUCSON

PROJECT FLOR-CONOCO WELL NO. 3

Date 6/23 1975 Record by P.W. NASON Source of data _____

1. LOCATION: County, area PINAL Map FLORENCE QUAD
   SE 1/4 SW 1/4, sec. 28, T 4S N, (S) R 9 (E) W

2. OWNER or tenant: CONOCO Address P.O. BOX 627, FLORENCE, AZ
   Driller L.C. JONES DRILLING CO Date drilled 11/5/74 19 ___

3. TOPOGRAPHY: FLAT - farmland

4. ALTITUDE of MP, LS: ~1470 (ft) m

5. TYPE: (Drilled), dug ___ Depth: Meas., rept. 933 (ft) m

6. CASING: Diam 81' of 24" 496' of 18" 440' of 14" (in) cm Type Steel
   Depth of casing 936 (ft) m Perf. 96' louvered 80' 3/16 x 3" slot cut 18" 80' 1/8 x 3" slot cut 5 440' 3/16 x 3" slot cut 14"

7. AQUIFER (S): _____ Depth or thickness _____ ft, m

8. USE: Dom, Stock, P.S., Ind., Irr., Obs. Dewater

9. WATER LEVEL: 230 ft, m meas. rept. 6/23 1975 above, below _____
   _____ which is _____ ft, m above, below land surface

10. PUMP: Type VERTICAL TURBINE Make WORTHINGTON Capacity 2000 + (gpm) lps
    Setting 450 (ft) m Diam. of column 10 x 3 x 1 11/16 (in) cm No. of stages 4
    Power: Kind ELECTRIC Make WESTINGHOUSE Rated HP 250
    CONTROL: GE, ROMAC SUPPLY, L.A. rewound by Vincent Carter

11. YIELD: Flow, pump _____ gpm, lps meas., rept., est. _____
    Drawdown _____ ft, m after _____ hours pumping at _____ gpm, lps (Date) ___

12. QUALITY: Date sample coll. _____ 19 ___ Temp. _____ °F, °C
    Taste, odor, color _____

13. OTHER DATA (Location): Logs or cuttings _____
    Checmial analyses _____
    Bacteriological analysis _____
    Pumping test data DUNCAN PUMP CO
    Other PUMP: STRETCH 0.30, Lateral 7/8"; bowl # 15M154; Hole size 22" (18" casing) 17.5" (14" casing)

(See reverse side for Log, Sketch, Notes, etc.)

LOG OF WELL

Indicate depth at which water was first encountered, and the depth and thickness of water bearing beds. If water is artesian, indicate depth at which encountered, and depth to which it rose in well.

FROM (FEET)	TO (FEET)	DESCRIPTION OF FORMATION MATERIAL
0	60!	alluvium
60	80'	clay
80	372'	conglomerates
372	938'	bedrock

I hereby certify that this well was drilled by me (or under my supervision), and that each and all of the statements herein contained are true to the best of my knowledge and belief.

Driller C. L. Sutton Co. Drilling Consultant
Name

Florence, Arizona
Address

Date Feb - 1 - 1975

2-73

Hole Inventory check list

HOLE ID MDH FILE NAME
WW3 MDH.41

COORDINATES
NORTHING EASTING
745490.00 647950.00

ELEVATION 1470.00 FEET ABOVE SEA LEVEL

DEPTH 938.0 FEET

CHECKED IF PRESENT

___ COPY OF SURVEYOR COORDINATES

✓ WELL CONFIGURATION DIAGRAM

✓ GEOLOGIC LOGS

___ GEOPHYSICAL LOGS_____

_____

_____

_____

DEPARTMENT OF WATER RESOURCES
99 EAST VIRGINIA AVENUE
PHOENIX, ARIZONA 85004

RECEIVED JUN 7 1982 DEPT. OF WATER RESOURCES

REGISTRATION OF EXISTING WELLS

READ INSTRUCTIONS ON BACK OF THIS FORM BEFORE COMPLETING
PRINT OR TYPE – FILE IN DUPLICATE

U8

FOR OFFICE USE ONLY
REGISTRATION NO. 55- 627608
FILE NO. D(4-9)28cdb
FILED 6-7-82 (DATE) AT 3 (TIME)
INA
AMA PINAL

REGISTRATION FEE (CHECK ONE)
EXEMPT WELL (NO CHARGE) ☐
NON-EXEMPT WELL – $10.00 ☒

1. Name of Registrant:
CONOCO INC.
555 17th Street (Address) Denver (City) Colo. (State) 80202 (Zip)

2. File and/or Control Number under previous groundwater law:
D(4-9)28 cdbb (File Number) 35- 30101 (Control Number)

3. a. The well is located within the NW ¼ SE ¼ SW ¼, Section 28, of Township 4 N/S, Range 9 E/W, G & SRB & M, in the County of Pinal.

b. If in a subdivision: Name of subdivision _____, Lot No. _____, Address _____.

4. The principal use(s) of water (Examples: irrigation - stockwater - domestic - municipal - industrial)
irrigation.

5. If for irrigation use, number of acres irrigated from well 598.5 In conjunction with 1 other irrigation well and surface water from the San Carlos Irrigation and Drainage District.

6. Owner of land on which well is located. If same as Item 1, check this box ☒
_____
_____
(Address) (City) (State) (Zip)

7. Well data (If data not available, write N/A)
a. Depth of Well 933 feet
b. Diameter of casing 18"to496', 14"to933' inches
c. Depth of casing 933 feet
d. Type of casing perforated steel .
e. Maximum pump capacity 1500 gallons per minute.
f. Depth to water 227 feet below land surface.
g. Date well completed November (Month) 21 (Day) 1974 (Year).

8. The place(s) of use of water. If same as Item 3, check this box ☐. see attached legal description
____¼ ____¼ ____¼, Section ____ Township ____ Range ____
____¼ ____¼ ____¼, Section ____ Township ____ Range ____
Attach additional sheet if necessary.

9. DATE June 4, 1982 SIGNATURE OF REGISTRANT [signature]

MICROFILMED

Abandoned Wells

DM-B

Memo to: File **BHP Florence**
From: C. Hoag
Date: October 11, 1996

Subject: Hydrology test wells DMA, DMB, DMC, DMD, DME, DMF, and DMG.

Conoco retained the consulting firm Dames & Moore to conduct a pre-mine study of the hydrology and provide an estimate of the amount of water that would be produced in the pilot mine workings. Seven shallow holes were drilled - DMA through DMG around the perimeter of the underground workings. Dames & Moore created plots of water inflow versus depth based on the analysis of radioactive tracers in the wells. Their prediction was that the mine would produce 2,000 to 8,000 gallons per minute for the entire pilot mine. Contrary to predictions, the mine produced a maximum of slightly over 650 gallons per minute. Most of the water occurred as general weeping from the back and ribs of the drifts, a significant percentage occurred in a few high production fault zones. A discussion of the pilot mine and hydrologic tests is located in the Conoco Feasibility Study, Vol. IV, Chapter 3. Dames & Moore's preliminary report, based on their geophysical and hydrological work on DMA through DME, is located in the file system in the library.

Although we have not found the geology logs for DMA through DMG, we do have records of the collar coordinates and downhole geophysical logs including: caliper, spinner, fluid density, temperature, and radioactive tracer. These holes are in the economic area of interest for BHP and are voids that should be identified prior to production. Therefore, the following drill data will be used in the Florence Model A database.

Hole	Northing	Easting	Elevation	Depth
DMA	**746381.80**	**649148.51**	**1478.70**	**700 ft.**
DMB	**746381.71**	**648246.90**	**1478.11**	**700 ft.**
DMC	**746384.92**	**650185.43**	**1471.49**	**610 ft.**
DMD	**746842.25**	**649740.28**	**1480.10**	**635 ft.**
DME	**745516.10**	**650741.49**	**1464.94**	**700 ft.**
DMF[1]	**745518.90**	**649496.43**	**1466.10**	**392 ft.**
DMG[2]	**746600**	**651571**	**1475**	**345 ft.**

1 No log has been found for DMF, plotted on drill collar map as 50 feet east of 398MF. Hole probably drilled to get slope stability data for Dames & Moore.

2 DMG was drilled to get slope stability information about the overburden. Geology log exists for DMG, collar coordinates referenced to Conoco grid system, E-W line J.5, 6E. The hole is plotted on map at approximately 746600N, 651571E or 250 east of core hole 337S.

FIELD PRINT

Birdwell

Caliper Log

FILING NO.

COMPANY CONOCO

WELL DM-B

FIELD CONOCO FLORENCE PROJECT

COUNTY PINAL STATE ARIZONA

LOCATION:

SEC. TWP. RGE.

OTHER SERVICES:
TL
RTP

ELEVATIONS:
KB.
DF.
GL.

PERMANENT DATUM GROUND LEVEL ELEV.
LOG MEASURED FROM TOP 5" COLLAR
DRILLING MEASURED FROM

DATE	SEPT 10-74		
RUN NO.	ONE		
TYPE LOG	CAL		
DEPTH—DRILLER	700'		
DEPTH—LOGGER	674'		
BOTTOM LOGGED INTERVAL	674'		
TOP LOGGED INTERVAL	500'		
TYPE FLUID IN HOLE	WATER		
SALINITY PPM CL.			
DENSITY LB./GAL.			
LEVEL			
MAX. REC. TEMP.—DEG. F.	79		
OPR. RIG TIME	1/2 HR		
RECORDED BY	WILSON		
WITNESSED BY			
LOCATION	LAS VEGAS		

RUN NO.	BORE HOLE RECORD BIT	FROM	TO	CASING RECORD SIZE	WGT.	FROM	TO
1	4 1/2"	617'	700'	5"		0	617'
				2"		0	532'

SSC—807-D

WELL DATA

ORIGINAL TOTAL DEPTH | P.B.T.D.
TYPE WELL
OPEN HOLE SHOT WITH
AMOUNT FM. TO
AMOUNT FM. TO
AMOUNT FM. TO
SPECIAL WELL CONDITIONS:
PURPOSE OF SURVEY

EQUIPMENT DATA

TYPE LOG	CALIPER
TOOL MODEL	LEC8
TOOL SERIAL NO.	
TOOL DIAMETER	1 5/8"
SPEED FT./MIN.	40
SCALE	1/2" / DIV
MIN. ARM DIAM.	15/8"
MAX. ARM DIAM.	16"
TRUCK NO.	2079

REMARKS: (N.A. MEANS NOT AVAILABLE)

DM-B

ARIZONA DEPARTMENT OF WATER RESOURCES

15 South 15th Avenue
Phoenix, Arizona 85007

MICROFILMED

REGISTRATION OF EXISTING WELLS

READ INSTRUCTIONS ON BACK OF THIS FORM BEFORE COMPLETING
PRINT OR TYPE - **FILE IN DUPLICATE**

REGISTRATION FEE (check one)
EXEMPT WELL (No registration fee)
LATE FEE - $10.00 [XX]

NON-EXEMPT WELL - $10.00
LATE FEE - $10.00 [ ]
$20.00

For Office Use Only
REGISTRATION NO. 55- 806521 L
FILE NO. D (4-9) 28 CAC
FILED 4/20/93 at _____
(Date) (Time)
INA /
AMA PINAL
SB 11 WS U8

1. Name of Well Owner: MAGMA COPPER COMPANY
7400 North Oracle Road, Suite 200, Tucson, Arizona 85704
Address City State Zip

2. File and/or Control Number under previous groundwater law: none 35-
File No. Control No.

3. a. The well is located within the SW 1/4 NE 1/4 SW 1/4, Section 28
of Township 4 N/S, Range 9 E/W, G&SRB&M, in the County of Pinal

b. If in a subdivision: Name of subdivision N/A
Lot No. _____ Address _____

4. The principal use(s) of water: Monitor
(Examples: irrigation, stockwater, domestic, municipal, industrial)

5. If for irrigation use, number of acres irrigated from well N/A

6. Owner of land on which well is located. If same as Item 1, check this box [XX]

Name Address City State Zip

RECEIVED OPERATIONS DIV.

7. Well data:
a. Depth of Well 700 feet
b. Diameter of casing 5 inches
c. Depth of casing 611 feet
d. Type of casing Steel
e. Maximum pump capacity Less than 35 gallons per minute.
f. Depth to water 244 feet below land surface.
g. Date well completed August 1974 (Required)
(Month) (Day) (Year)

8. The place(s) of use of water. If same as Item 3, check this box [XX]

ENTERED APR 21 1993

_____ 1/4 _____ 1/4 _____ 1/4, Section _____ Township _____ Range _____

Date: April 13, 1993 Signature of Well Owner: [signature]

DWR-55-65-7/91 (Rev.)