

APPENDIX 1. Survey and construction data for GHN test pits and trenches. Survey details for the individual benches (test bench) and walls (test walls) of some of the trenches are included as tables. UTM's are in NAD27 and in meters. Other headings are described in the database and SOP 9.

Pit number LFG-0002 **Site Name** Goathill North
SOP number 9 **Deviation from SOP** none
UTM easting 453309 **UTM northing** 4062040 **UTM zone** 13
Location assurance HHGPSoff **Point of location** field location
Location Notes side of drainage close to North Goathill scar **Water observed** no
Ground Elevation (ft) 9044 **Weather** cloudy
Method of obtaining DCGPS
Test pit depth (ft) 32
Date Started 4/28/2004 **Completion Date** 4/28/2004
Excavator hand dug **Owner** Molycorp
Excavation equipment pick
Comments Goathill potential shear zone

Pit number LFG-0003 **Site Name** Goathill North (stable portion)
SOP number 9 **Deviation from SOP** none
UTM easting 453740.1 **UTM northing** 4062154.7 **UTM zone** 13
Location assurance survey **Point of location** field location
Location Notes location is SW corner of first bench **Water observed**
Ground Elevation 9747 **Weather** (6/22); cloudy, rain in PM, sunny in AM
Method of obtaining surveyed
Test pit depth (ft) 17.15 **Length (ft)** 15.3 **Width (ft)**
Date Started 6/22/2004 **Completion Date** 6/24/2004
Company Romero's Excavation **Excavator** Russell Martinez
Owner Molycorp **Excavation equipment** backhoe excavator 2700
Construction Notes see fig 1. SOP 9
General appearance 4 benches
Comments Bench 1 and 2 were left open overnight, extended bench 2 to east for a total length of 65.5 ft on 6/24/04

test bench LFG-0003

Bench	Wall	UTM easting	UTM northing	Top Elevation (ft)	Bottom Elevation (ft)	Depth (ft)
0	SE1	453747.3	4062147.8	9747	9743	0
0	SW1	453741.2	4062149.6	9747	9743	0
0	NE	453751.1	4062151.2	9745		
0	SW	453740.1	4062147.7	9747		
0	SE	453748.6	4062144.9	9747.6		
0	NW1	453742	4062152.3	9747.6	9743	0
0	NW	453740.1	4062154.7	9747		
0	NE1	453748.6	4062151	9745.7	9743	0
1	SE	453748.6	4062146.4	9743.2		3.2
1	SW	453742.6	4062148.5	9743.2	9738	3.2
1	NE	453750.9	4062150.3	9743.2		3.2

Bench	Wall	UTM easting	UTM northing	Top Elevation (ft)	Bottom Elevation (ft)	Depth (ft)
1	NW	453744.9	4062152.4	9743.2		3.2
2	NW	453744.6	4062151.7	9738.6		7.4
2	SE	453748.6	4062147.2	9738.6		7.4
2	NE	453751.1	4062149.4	9738.6		7.4
2	SW	453744.1	4062148.7	9738.6	9734	7.4
3	SE	453760.9	4062143.5	9734		
3	SW	453745.1	4062149.2	9734	9729.8	11
3	NW	453746.1	4062150.2	9734		
3	NE	453761.9	4062145.2	9734		
4		453761.9	4062145.2	9729.8		15

test wall

Bench	Wall	Bearing (degrees)	Distance (ft)
1	N	290	
1	W	20	8
2	W	30	19.6
2	N	120	21
3	S	291	56
3	N	292	56
4	S	110	19
4	W	35	4
4	N	110	19

Pit number LFG-0004 **Site Name** Goathill North (stable portion)
SOP number 9 **Deviation from SOP** none
UTM easting 453707.4 **UTM northing** 4062101.6 **UTM zone** 13
Location assurance survey **Point of location** field location
Location Notes Top of GHN, south if SI-12- close to the edge of the pile
Water observed: none
Ground Elevation 9742.7 **Weather** sunny
Method of obtaining surveyed
Test pit depth (ft) 8.19 **Length (ft)** 19.5
Date Started 6/23/2004 **Completion Date** 6/23/2004
Company Romero's Excavation **Excavator** Russell Martinez
Owner Molycorp **Excavation equipment** backhoe excavator 2700
Construction Notes see fig1. SOP 9 **General appearance** benches

test bench

Bench	Wall	UTM easting	UTM northing	Top Elevation (ft)	Bottom Elevation (ft)	Depth (ft)
0	NE	453713.2	4062100.6	9742.7		4
0	NW	453707.4	4062101.6	9742.7	9738.4	4
0	SE	453713.2	4062094.4	9742.7		4
0	SW	453707.4	4062095.4	9742.7	9738.4	4
1	SW	453709	4062097.4	9738.4	9734.4	4
1	NE	453713	4062098.8	9738.4		4
1	SE	453713.3	4062097	9738.4		4
1	NW	453709	4062099.1	9738.4	9734.4	4
2	NW	453710.1	4062098.5	9734.4		8

Bench	Wall	UTM easting	UTM northing	Top Elevation (ft)	Bottom Elevation (ft)	Depth (ft)
2	NE	453712.5	4062098.3	9734.4		4
2	SW	453710.1	4062097.5	9734.4		8
2	SE	453712.5	4062097.3	9734.4		4

test wall

Bench	Wall	Bearing (degrees)	Distance (ft)
0	W	0	18
0	N	100	19.5
1	W	0	5.5
1	S	95	14
1	N	90	13

Pit number LFG-005 **Site Name** Goathill North (stable portion)
SOP number 9 **Deviation from SOP** bottom bench 5 approx 5 ft deep
UTM easting 453708.5 **UTM northing** 4062149.8 **UTM zone** 13
Location assurance survey **Point of location** field location
Location Notes **Water observed** none
Ground Elevation 9765.4 **Weather** sunny
Method of obtaining surveyed
Test pit depth (ft) 23.63 **Length (ft)** 174 **Width (ft)**
Date Started 8/8/2004 **Completion Date** 8/10/2004
Company Nielson **Excavator** Nieslon
Owner Molycorp **Excavation equipment** D9, 235 excavator
Construction Notes
Comments surveyed by VTM and Victor (Molycorp), bench not backfilled but pushed over the edge as part of deconstruction of GHN

test bench

Bench	Wall	UTM easting	UTM northing	Top Elevation (ft)	Depth(ft)
0	NW	453708.5	4062149.8	9765.4	0
0	NE	453755.8	4062142.7	9761	0
0	SW	453713.2	4062128.2	9766.6	0
0	SE	453755.8	4062122.7	9764.2	0
1	NE	453755.6	4062141.2	9758.6	2.4
1	SSE	453731.4	4062126.7	9761.1	8
1	SE	453752	4062124.3	9761.1	1
1	SW	453703.1	4062130.7	9764	3
1	NW	453712.1	4062148.2	9763	2.4
1	SSW	453727.3	4062127.4	9761.7	8
2	NW	453714.4	4062146.3	9762.4	3
2	SE	453755.8	4062126	9760.5	2
2	SW	453714.9	4062132.2	9763.2	2
2	NE	453755.6	4062139.8	9755	6
3	SE	453754.9	4062128.5	9755.5	6.5
3	NW	453716.9	4062143.6	9760.4	4
3	SW	453717	4062134.8	9759	6.4
3	NE	453757.1	4062136.5	9752.7	8

Bench	Wall	UTM easting	UTM northing	Top Elevation (ft)	Depth(ft)
4	NW	453720.5	4062141	9755.5	10
4	NE	453757	4062133.9	9748.6	12
4	SE	453756.7	4062131.3	9749.6	12
4	SW	453720.7	4062136.3	9754.9	12
5	SE	453755.5	4062132.1	9745.1	17
5	NE	453755.5	4062133.6	9745	16
5	SW	453746.5	4062134	9741.8	25
5	NW	453746.6	4062135.3	9742	23

test wall

Bench	Wall	Bearing (degrees)	Distance (ft)
1	N	100	174
1	E	15	72
1	W	355	60
1	S	100	137
2	N	100	142
2	S	100	145
3	N	100	130
3	S	100	130
4	N	100	151
4	N	100	151
5	N	100	38
5	E	15	5
5	S	100	38
5	W	15	5

Pit number LFG-006 **Site Name** Goathill North (stable portion)
SOP number 9 **Deviation from SOP** rain on 9/18/04, much of this log from bench maps and field sample forms
UTM easting 453704.8 **UTM northing** 4062148.1 **UTM zone** 13
Location assurance survey **Point of location** field location
Location Notes NW corner bench 6 (surface) **Water observed** none
Ground Elevation 9739.6 **Weather** sunny to rain
Method of obtaining surveyed
Test pit depth (ft) 14.94 **Length (ft)** 150
Date Started 9/17/2004 **Completion Date** 9/17/2004
Company Nielson **Excavator** Nielson
Owner Molycorp **Excavation equipment** D10, excavator
Construction Notes see SOP 9 for sketch
Comments leveled on 9/23/04
test bench LFG-006

Bench	Wall	UTM easting	UTM northing	Top Elevation (ft)	Depth(ft)
6	NW	453704.8	4062148.1	9739.6	0
6	SW	453704.8	4062126.2	9744	0
6	SE	453727.1	4062124.7	9747	0
6	NE	453737	4062147.1	9746.1	0
7	SE	453731.3	4062127.1	9743.4	

Bench	Wall	UTM easting	UTM northing	Top Elevation (ft)	Depth(ft)
7	NE	453732.9	4062144	9740.9	6
7	NW	453704.7	4062145.4	9736	2
7	SW	453705.5	4062129	9738	5
8	SE	453727.1	4062129.7	9738	9
8	NE	453727.9	4062141.1	9737	9
8	NW	453706.8	4062142.5	9733.2	6
8	SW	453706.8	4062131.7	9735	6
9	NW	453695.2	4062142.2	9729.9	10
9	NE	453727.3	4062140.2	9734.4	12
9	SE	453726.8	4062133.4	9734.5	2
9	SW	453706.9	4062134.3	9731	14
10	SW	453705.8	4062137.5	9724.9	20
10	SE	453726.8	4062136.2	9730.2	9
10	NE	453726.8	4062137.7	9730	21
10	NW	453705.9	4062138.7	9724.6	15

test wall

Bench	Wall	Bearing (degrees)	Distance (ft)
7	N	100	100
8	N	100	85
9	N	100	113
10	N	100	65

Pit number LFG-007 **Site Name** Goathill North (stable portion)
SOP number 9 **Deviation from SOP** none
UTM easting 453679.9 **UTM northing** 4062146.4 **UTM zone** 13
Location assurance survey **Point of location** field location
Ground Elevation 9697.3 **Weather** sunny to rain
Method of obtaining surveyed **Water observed** none
Test pit depth (ft) 15.33
Date Started 9/24/2004 **Completion Date** 9/24/2004
Company Nielson **Excavator** Nielson
Owner Molycorp **Excavation equipment** D10, excavator
Construction Notes see SOP 9 for sketch **Comments** leveled on 9/26/04

test bench

Bench	Wall	UTM easting	UTM northing	Elevation (ft)
11	NE	453716.5	4062145.6	9711.6
11	SE	453715.9	4062114.5	9711.7
11	NW	453679.9	4062146.4	9697.3
11	SW	453662.3	4062114.6	9691
12	NW	453678.5	4062143.5	9692.2
12	NE	453713.2	4062142.2	9706.6
12	SW	453661.8	4062119.4	9687.2
12	SE	453710	4062118.3	9704.8
13	SE	453703.4	4062121.3	9698.5
13	SW	453661.8	4062122.7	9683.4
13	NW	453670.4	4062141	9686.5

Bench	Wall	UTM easting	UTM northing	Elevation (ft)
13	NE	453706.2	4062138.5	9700.5
14	NE	453703.9	4062131.5	9694.7
14	NW	453675.1	4062132.7	9685.6
14	SW	453675	4062129.7	9685.1
14	SE	453703.6	4062128.1	9694.4
15	NE	453702.5	4062130.9	9690.8
15	SE	453702.5	4062128.7	9690.8
15	SW	453676.3	4062130.4	9681.2
15	NW	453677.5	4062131.9	9681.9

test wall LFG-007

Bench	Wall	Bearing (degrees)	Distance (ft)
12	N	100	126
13	N	100	135
14	N	100	130
15	N	95	88

Pit number LFG-008 **Site Name** Goathill North (stable portion)
SOP number 9 **Deviation from SOP** none
UTM easting 453648.9 **UTM northing** 4062140.7 **UTM zone** 13
Location assurance survey **Point of location** field location
Location Notes **Water observed** none
Ground Elevation 9643.9 **Weather** sunny
Method of obtaining surveyed
Test pit depth (ft) 16.68
Date Started 10/1/2004 **Completion Date** 10/1/2004
Company Nielson **Excavator** Nielson
Owner Molycorp **Excavation equipment** D10, excavator
Construction Notes see SOP 9 for sketch **General appearance**
Comments tension crack formed and work curtailed

test bench

Bench	Wall	UTM easting	UTM northing	Elevation (ft)	Depth (ft)
16	NE	453684.4	4062142.3	9659.7	0
16	NW	453648.9	4062140.7	9643.9	0
16	SE	453685.5	4062118	9661	0
16	SW	453651.7	4062115.9	9644.2	0
17	NW	453646.8	4062137.1	9639.2	5
17	NE	453684.8	4062138.2	9656.2	3
17	SW	453651.5	4062118.2	9639.9	5
17	SE	453685.3	4062121.4	9656.4	5
18	NE	453680.8	4062133.8	9650.1	
18	NW	453649.2	4062133.4	9636.6	
18	SE	453681.8	4062124.5	9650.4	
18	SW	453648.6	4062121.3	9634.9	
19	SW	453648.3	4062123.6	9631.8	

Bench	Wall	UTM easting	UTM northing	Elevation (ft)	Depth (ft)
19	NW	453648.6	4062131.6	9632	
19	SE	453680.5	4062125.6	9647.2	
19	NE	453679.3	4062132.6	9645.8	
20	NW	453646.3	4062127.6	9627.2	
20	NE	453673.2	4062129.3	9640.1	
20	SE	453673.5	4062128	9640.1	
20	SW	453646.5	4062126.5	9627.2	

test wall

Bench	Wall	Bearing (degrees)	Distance (ft)
17	N	95	106
18	S	95	105
18	N	95	116
19	N	95	110
19	S	95	100
20	N	95	110
20	S	95	112

Pit number LFG-009 **Site Name** Goathill North (stable portion)
SOP number 9 **Deviation from SOP** samples not collected on day trench was dug because of safety concerns (stability of the rock pile)
UTM easting 453619.9 **UTM northing** 4062134.9 **UTM zone** 13
Location assurance survey **Point of location** field location
Location Notes **Water observed** none
Ground Elevation 9592.7 **Weather** sunny
Method of obtaining surveyed
Test pit depth (ft) 16.47
Date Started 10/8/2004 **Completion Date** 10/8/2004
Company Nielson **Excavator** Nielson
Owner Molycorp **Excavation equipment** D10, excavator
Construction Notes see SOP 9 for sketch
Comments
test bench LFG-009

Bench	Wall	UTM easting	UTM northing	Elevation (ft)
21	NE	453655.2	4062138.7	9611.4
21	SW	453620.9	4062110.5	9594.2
21	NW	453619.9	4062134.9	9592.7
21	SE	453650.5	4062112.7	9609.3
22	NW	453623.9	4062132.4	9589
22	SE	453649.5	4062115.2	9604.7
22	NE	453649.3	4062134.6	9604.6
22	SW	453620.7	4062112.2	9590.4
23	SE	453644.2	4062118.5	9597.3
23	NE	453640.4	4062128.2	9594.6
23	SW	453620.1	4062115.5	9586.5
23	NW	453620.1	4062127.5	9584.7
24	SW	453619.7	4062119.3	9580.6

Bench	Wall	UTM easting	UTM northing	Elevation (ft)
24	NW	453618.3	4062122.3	9580.1
24	SE	453638.7	4062121.9	9589.7
24	NE	453638	4062124.3	9588.8
25	SW	453619.7	4062120.4	9576.1
25	NE	453635	4062123	9584.2
25	NW	453619.6	4062121.4	9576.2
25	SE	453635	4062121.8	9584.2

test wall

Bench	Wall	Bearing (degrees)	Distance
22	N	90	103
23	N	90	95
23	S	90	91
24	S	90	82
24	N	90	85
25	N	90	80

Pit number LFG-010 **Site Name** Goathill North (unstable portion)
SOP number 9 **Deviation from SOP** only one bench
UTM easting 453702.8 **UTM northing** 4062402.4 **UTM zone** 13
Location assurance survey **Point of location** field location
Location Notes **Water observed** none
Ground Elevation 9757.8 **Weather** snow
Method of obtaining surveyed
Test pit depth (ft) 5
Date Started 1/12/2005 **Completion Date** 1/12/2005
Company Nielson **Excavator** Nielson
Owner Molycorp **Excavation equipment** excavator
Orientation **General appearance** one bench
Comments measurements were made east to west for safety purposes in removing the

test bench

Bench	Wall	UTM easting	UTM northing	Elevation (ft)
26	E	453702.8	4062402.4	9757.8
26	W	453683.7	4062399.4	9718.4

test wall

Bench	Wall	Bearing (degrees)	Distance (ft)
26	N	80	70

Pit number LFG-011 **Site Name** Goathill North (unstable portion)
SOP number 9 **Deviation from SOP** only benches on N wall, no S wall
UTM easting 453656.1 **UTM northing** 4062327.1 **UTM zone** 13
Location assurance survey **Point of location** field location
Location Notes north end of GHN **Water observed** none
Ground Elevation 9668.9 **Weather** sunny

Method of obtaining surveyed
Test pit depth (ft) 10
Date Started 1/21/2005 **Completion Date**
Company Nielson **Excavator** Nielson
Owner Molycorp **Excavation equipment** excavator, D9
Comments 4 benches were constructed as well as one shallow pit on 1/21; 4 additional benches and 5 pits on 1/27

test bench LFG-011

Bench	Wall	UTM easting	UTM northing	Elevation (ft)	Depth (ft)
27	NW	453656.1	4062327.1	9668.9	3
27	NE	453675.9	4062348.4	9687.2	
28	NW	453658.5	4062324.8	9666.5	3
28	NE	453678.5	4062347.1	9686.1	
29	NE	453678.5	4062343.8	9680.9	
29	NW	453661	4062322.3	9663.1	4
30	NE	453679.4	4062340.2	9675	
30	NW	453661.1	4062319.2	9659	3
36	NW	453659.6	4062313.8	9650.8	
36	NE	453677.2	4062334.5	9667.8	
37	NE	453676.7	4062330.5	9661.9	
37	NW	453658.7	4062308.3	9643.7	
38	NW	453658.8	4062304.5	9636.7	
38	NE	453676.2	4062326.2	9655.1	
39	NW	453659.2	4062300	9630.5	
39	NE	453674.8	4062319.4	9646.2	
42	NE	453673.5	4062313.6	9639.3	
42	NW	453655.8	4062290	9619.6	
43	NW	453651.8	4062281.9	9609.6	
43	NE	453670.6	4062305	9627.1	
44	NW	453648.8	4062274.2	9599.4	
44	NE	453668.2	4062297.2	9617	
45	NW	453646.3	4062267.1	9590.9	
45	NE	453665.6	4062289.8	9607.4	
46	NE	453657	4062275.1	9593.1	
46	NW	453636.1	4062253.6	9575.2	
47	NE	453655.9	4062268.3	9585.8	
47	NW	453639.6	4062251.9	9571.8	
48	NW	453636.5	4062245.8	9563.6	
48	NE	453650.4	4062258.2	9575.5	

test wall LFG-001

Bench	Wall	Bearing (degrees)	Distance (ft)
29	N	40	92

Pit number LFG-012 **Site Name** Goathill North (unstable portion)
SOP number 9 **Deviation from SOP** 1 bench
UTM easting 453691.3 **UTM northing** 4062352.9 **UTM zone** 13
Location assurance survey **Point of location** field location
Location Notes **Water observed** none

Ground Elevation 9692.7 **Weather** sunny
Method of obtaining surveyed
Test pit depth (ft) 5
Date Started 1/21/2005 **Completion Date** 1/21/2005
Company Nielson **Excavator** Nielson
Owner Molycorp **Excavation equipment** backhoe
Construction Notes
Comments purpose to examine contact between rock pile-colluvium-bedrock
test bench

Bench	Wall	UTM easting	UTM northing	Elevation (ft)
31	NE	453694.3	4062354.2	9697.6
31	NW	453691.3	4062352.9	9692.7

test wall

Bench	Wall	Bearing (degrees)
31	N	16

Pit number LFG-013 **Site Name** Goathill North (unstable portion)
SOP number 9 **Deviation from SOP** none
UTM easting 453678.5 **UTM northing** 4062414.7 **UTM zone** 13
Location assurance survey **Point of location** field location
Location Notes **Water observed** none
Ground Elevation 9712.1 **Weather** snow
Method of obtaining surveyed
Test pit depth (ft) 5 **Length (ft)** **Width (ft)**
Date Started 1/27/2005 **Completion Date** 1/27/2005
Company Nielson **Excavator** Nielson
Owner Molycorp **Excavation equipment** backhoe
Comments purpose to examine contact between rock pile-colluvium-bedrock
test bench LFG-013

Bench	Wall	UTM easting	UTM northing	Elevation (ft)
32	NE	453684.6	4062417.3	9723.6
32	NW	453678.4	4062414.8	9712.1

test wall

Bench	Wall	Bearing (degrees)	Distance (ft)
32	N	85	18

Pit number LFG-014 **Site Name** Goathill North (unstable portion)
SOP number 9 **Deviation from SOP** one bench
UTM easting 453683 **UTM northing** 4062405.5 **UTM zone** 13
Location assurance survey **Point of location** field location
Location Notes **Water observed** none
Ground Elevation 9714 **Weather** snow
Method of obtaining surveyed

Test pit depth (ft) 5 **Length (ft)** **Width (ft)**
Date Started 1/27/2005 **Completion Date** 1/27/2005
Company Nielson **Excavator** Nielson
Owner Molycorp **Excavation equipment** backhoe
Comments purpose to examine contact between rock pile-colluvium-bedrock
test bench

Bench	Wall	UTM easting	UTM northing	Elevation (ft)
33	NW	453682.8	4062405.5	9714
33	NE	453688.3	4062406.8	9729.3

test wall

Bench	Wall	Bearing (degrees)	Distance (ft)
33	N	95	16

Pit number LFG-015 **Site Name** Goathill North (unstable portion)
SOP number 9 **Deviation from SOP**
UTM easting 453683.4 **UTM northing** 4062388.7 **UTM zone** 13
Location assurance survey **Point of location** field location
Location Notes **Water observed**

Ground Elevation 9708.7 **Weather** snow

Method of obtaining surveyed

Test pit depth (ft) 5 **Length (ft)** **Width (ft)**

Date Started 1/27/2005 **Completion Date** 1/27/2005

Company Nielson **Excavator** Nielson

Owner Molycorp **Excavation equipment** backhoe

Comments purpose to examine contact between rock pile-colluvium-bedrock
test bench

Bench	Wall	UTM easting	UTM northing	Elevation (ft)
34	NE	453690.1	4062390.8	9721.3
34	NW	453683.4	4062388.9	9708.7

test wall

Bench	Wall	Bearing (degrees)	Distance (ft)
34	N	110	23

Pit number LFG-016 **Site Name** Goathill North (unstable portion)
SOP number 9 **Deviation from SOP**
UTM easting 453688 **UTM northing** 4062370.1 **UTM zone** 13
Location assurance survey **Point of location** field location
Location Notes **Water observed**

Ground Elevation 9704.1 **Weather** snow

Method of obtaining surveyed

Test pit depth (ft) 4 **Date Started** 1/27/2005 **Completion Date** 1/27/2005

Company Nielson **Excavator** Nielson

Owner Molycorp **Excavation equipment** backhoe

Comments purpose to examine contact between rock pile-colluvium-bedrock

test bench

Bench	Wall	UTM easting	UTM northing	Elevation (ft)
35	NE	453694.9	4062372.6	9721.6
35	NW	453687.9	4062370.2	9704.1

test wall

Bench	Wall	Bearing (degrees)	Distance (ft)
35	N	100	20

Pit number LFG-017 **Site Name** Goathill North (unstable portion)**SOP number** 9 **Deviation from SOP****UTM easting** 453687.6 **UTM northing** 4062313.1 **UTM zone** 13**Location assurance** survey **Point of location** field location**Location Notes** **Water observed** none**Ground Elevation** 9651.2 **Weather** snow**Method of obtaining** surveyed**Test pit depth (ft)** 4**Date Started** 1/27/2005 **Completion Date** 1/27/2005**Company** Nielson **Excavator** Nielson**Owner** Molycorp **Excavation equipment** backhoe**Comments** purpose to examine contact between rock pile-colluvium-bedrock**test bench**

Bench	Wall	UTM easting	UTM northing	Elevation (ft)
40	NW	453687.6	4062313.1	9651.2
40	NE	453694.9	4062316.3	9671.9

test wall

Bench	Wall	Distance (ft)
40	N	25

Pit number LFG-018 **Site Name** Goathill North (unstable portion)**SOP number** 9 **Deviation from SOP****UTM easting** 453676.7 **UTM northing** 4062294.8 **UTM zone** 13**Location assurance** survey **Point of location** field location**Location Notes** **Water observed** none**Ground Elevation** 9615.2 **Weather** sunny**Method of obtaining** surveyed**Test pit depth (ft)** 5 **Length (ft)** 25**Date Started** 2/4/2005 **Completion Date** 2/4/2005**Company** Nielson **Excavator** Nielson**Owner** Molycorp **Excavation equipment** backhoe**test bench**

Bench	Wall	UTM easting	UTM northing	Elevation (ft)
41	SW	453677	4062293.5	9615.6

Bench	Wall	UTM easting	UTM northing	Elevation (ft)
41	SE	453682.6	4062295.8	9620.8
41	NE	453682	4062297.5	9620.1
41	NW	453676.7	4062294.8	9615.2

test wall

Bench	Wall	Distance (ft)
41	N	21

Pit number LFG-019 **Site Name** Goathill North (unstable portion)
SOP number 9 **Deviation from SOP**
UTM easting 453659.6 **UTM northing** 4062432.8 **UTM zone** 13
Location assurance survey **Point of location** field location
Location Notes trench 1, south trench **Water observed** none
Ground Elevation 9675.1 **Weather** sunny
Method of obtaining surveyed
Test pit depth (ft) 11 **Length (ft)** 20 **Width (ft)**
Date Started 3/24/2005 **Completion Date** 3/24/2005
Company **Excavator** Nielson
Owner Molycorp **Excavation equipment** backhoe
Comments south trench

test bench

Bench	Wall	UTM easting	UTM northing	Elevation (ft)
49	NW	453659.6	4062432.8	9675.1

test wall

Bench	Wall	Bearing (degrees)	Distance (ft)
49	N	85	20

Pit number LFG-020 **Site Name** Goathill North (unstable portion)
SOP number 9 **Deviation from SOP**
UTM easting 453660.2 **UTM northing** 4062390.6 **UTM zone** 13
Location assurance survey **Point of location** field location
Location Notes trench 2, north trench **Water observed** none
Ground Elevation 9660.1 **Weather** sunny
Method of obtaining surveyed
Test pit depth (ft) 19 **Length (ft)** 25
Date Started 3/24/2005 **Completion Date** 3/24/2005
Company **Excavator** Nielson
Owner Molycorp **Excavation equipment** backhoe
Comments

test bench

Bench	Wall	UTM easting	UTM northing	Elevation (ft)
50	NW	453660.2	4062390.6	9660.1

test wall

Bench	Wall	Bearing (degrees)	Distance (ft)
50	N	75	25

Pit number LFG-021 **Site Name** Goathill North (unstable portion)
SOP number 9 **Deviation from SOP** none
UTM easting 453653.5 **UTM northing** 4062395 **UTM zone** 13
Location assurance survey **Point of location** field location
Location Notes **Water observed** YES
Ground Elevation 9647.4 **Weather** sunny, clear
Method of obtaining surveyed
Test pit depth (ft) 10 **Length (ft)** 24 **Width (ft)**
Date Started 4/8/2005 **Completion Date** 4/8/2005
Company **Excavator** Nielson
Owner Molycorp **Excavation equipment** excavator
Comments water seeping in from walls, on 4/9/05 bottom of pit had 2-3 ft depth water from seeps

test bench

Bench	Wall	UTM easting	UTM northing	Elevation (ft)	Depth (ft)
51	NW	453653.5	4062395	9647.4	5
52	NW	453645.2	4062392	9623.4	5

test wall

Bench	Wall	Bearing (degrees)	Distance (ft)
51	N	95	20
52	N	95	18

Pit number LFG-022 **Site Name** Goathill North (unstable portion)
SOP number 9 **Deviation from SOP**
UTM easting 453649 **UTM northing** 4062420 **UTM zone** 13
Location assurance survey **Point of location** field location
Location Notes **Water observed**
Ground Elevation 9648.2 **Weather** sunny, clear
Method of obtaining surveyed
Test pit depth (ft) 8 **Length (ft)** 19
Date Started 4/8/2005 **Completion Date** 4/8/2005
Company **Excavator** Nielson
Owner Molycorp **Excavation equipment** excavator
Comments

test bench

Bench	Wall	UTM easting	UTM northing	Elevation (ft)	Depth (ft)
53	NW	453649	4062420	9648.2	4
54	NW	453643.4	4062417	9629.2	4

test wall

Bench	Wall	Bearing (degrees)	Distance (ft)
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Bench	Wall	Bearing (degrees)	Distance (ft)
53	N	55	22
54	N	55	14

Pit number STM-0001 **Site Name** Goathill North (unstable portion)
SOP number 9 **Deviation from SOP**
UTM easting 453452 **UTM northing** 4062091 **UTM zone** 13
Location assurance HHGPSoff **Point of location** field location
Location Notes rill in Unit A with good exposure of layers **Water observed** none
Ground Elevation **Weather** sunny
Test pit depth (ft) 6.5
Date Started 6/28/2004 **Completion Date** 6/28/2004
Company **Excavator** STM
Owner Molycorp **Excavation equipment** picks
Construction Notes cleaned exposure with
Comments

APPENDIX 2. Survey and construction data for GHN drill holes. UTM's are in NAD27 and in meters. Other headings are described in the database and SOP 19.

Drill hole no. GHN-SI-30	Site Name Goathill North
UTM easting 453506.4	UTM northing 4062096.2 UTM zone 13
Location assurance	est. topo Point of location
Ground Elevation	8300
Method of obtaining elevation est.	Depth Source
Diameter (ft)	Hole path
Completion Date	Company
Drilling Company	Drill Rig Type
Bit size (inch)	Bit type
Water observed	Depth to water (ft)
Construction Note	Owner Molycorp
Casing Diameter	Casing Depth (ft)
Data Source	Waste rock thick (ft)
Orientation	Comments

Drill hole no. GHN-SI-31	Site Name Goathill North
UTM easting 453207.1	UTM northing 4062027.1 UTM zone 13
Location assurance	est. topo Point of location
Location Notes	Weather
Ground Elevation	8900
Method of obtaining elevation	est. Depth Source
Diameter (ft)	Hole path
Completion Date	Company
Drilling Company	Drill Rig Type
Bit size (inch)	Bit type
Water observed	Depth to water (ft)
Construction Note	Owner Molycorp
Casing Diameter	Casing Depth (ft)
Data Source	Waste rock thick (ft)
Orientation	Comments

Drill hole no. GHN-SI-39	Site Name Goathill North
UTM easting	UTM northing UTM zone 13
Location assurance	unknown Point of location
Location Notes	Weather
Ground Elevation	8975
Method of obtaining elevation	reported Depth Source
Diameter (ft)	Hole path linear
Completion Date	Company
Drilling Company	Drill Rig Type
Bit size (inch)	Bit type
	Owner Molycorp

Water observed	Depth to water (ft)	Cased	Screened	Backfilled
Construction Note		Casing Material		
Casing Diameter	Casing Depth (ft)	Casing Stick Up		
Data Source	Waste rock thick (ft)	Bedrock (ft)		
Orientation	Comments This is SI-39. NOT on GHN			

Drill hole no. SI-23A	Site Name Goathill North			
UTM easting 453208.8	UTM northing 4062053.6	UTM zone 13		
Location assurance reported	Point of location field location			
Location Notes also SI-23B, 23C	Weather			
Ground Elevation	8955.1	Hole Depth (ft)	76.5	
Method of obtaining elevation		reported	Depth Source	URS
Bit size (inch)	Bit type	Owner Molycorp		
Water observed	Depth to water (ft)	Cased	Screened	Backfilled
Construction Note		Casing Material		
Casing Diameter	Casing Depth (ft)	Casing Stick Up		
Data Source	Waste rock thick (ft)	Bedrock (ft)		
Orientation	Comments			

Drill hole no. SI-25	Site Name Goathill North			
UTM easting 453149.3	UTM northing 4062042.9	UTM zone 13		
Location assurance reported	Point of location field location			
Location Notes	Weather			
Ground Elevation	8868.5	Collar Elevation (ft)		
Hole Depth (ft)				
Method of obtaining elevation		reported	Depth Source	URS
Diameter (ft)	Hole path	Date Started		
Completion Date	Company	Driller Name		
Drilling Company	Drill Rig Type	Rod size (inch)		
Bit size (inch)	Bit type	Owner Molycorp		
Water observed	Depth to water (ft)	Cased	Screened	Backfilled
Construction Note		Casing Material		
Casing Diameter	Casing Depth (ft)	Casing Stick Up		
Data Source	Waste rock thick (ft)	Bedrock (ft)		
Orientation	Comments			

Drill hole no. SI-26	Site Name Goathill North			
UTM easting 453185.5	UTM northing 4062089.6	UTM zone 13		
Location assurance reported	Point of location field location			
Location Notes also GHN-SI-26	Weather			
Ground Elevation	8975	Collar Elevation (ft)		
Hole Depth (ft)	80			
Method of obtaining elevation		reported	Depth Source	
Diameter (ft)	Hole path	Date Started		
Completion Date	Company	Driller Name		

Drilling Company		Drill Rig Type	Rod size (inch)
Bit size (inch)	Bit type	Owner	Molycorp
Water observed	Depth to water (ft)	Cased	Screened Backfilled
Construction Note		Casing Material	
Casing Diameter	Casing Depth (ft)	Casing Stick Up	
Data Source		Waste rock thick (ft)	Bedrock (ft)
Orientation	Comments		

Drill hole no.	SI-27	Site Name	Goathill North
UTM easting	453246.5	UTM northing	4062106
		UTM zone	13
Location assurance	reported	Point of location	field location
Location Notes		also SI-27a,b,c	
Ground Elevation	9072.3	Weather	
Method of obtaining elevation		reported	Depth Source URS
Diameter (ft)	Hole path	Date Started	
Completion Date	Company	Driller Name	
Drilling Company		Drill Rig Type	Rod size (inch)
Bit size (inch)	Bit type	Owner	Molycorp
Water observed	Depth to water (ft)	Cased	Screened Backfilled
Construction Note		Casing Material	
Casing Diameter	Casing Depth (ft)	Casing Stick Up	
Data Source		Waste rock thick (ft)	Bedrock (ft)
Orientation	Comments		

Drill hole no.	SI-27a	Site Name	Goathill North
UTM easting	453246.5	UTM northing	4062106
		UTM zone	13
Location assurance	reported	Point of location	field location
Location Notes		Weather	
Ground Elevation	9072.3	Depth Source	
Method of obtaining elevation		reported	
Diameter (ft)	Hole path	Date Started	
Completion Date	Company	Driller Name	
Drilling Company		Drill Rig Type	Rod size (inch)
Bit size (inch)	Bit type	Owner	Molycorp
Water observed	Depth to water (ft)	Cased	Screened Backfilled
Construction Note		Casing Material	
Casing Diameter	Casing Depth (ft)	Casing Stick Up	
Data Source		Waste rock thick (ft)	Bedrock (ft)
Orientation	Comments		

Data Source	Waste rock thick (ft)	Bedrock (ft)
Orientation	Comments	

Drill hole no. SI-29b **Site Name** Goathill North
UTM easting 453380.6 **UTM northing** 4062232.7 **UTM zone** 13
Location assurance reported **Point of location** field location
Location Notes **Weather**
Ground Elevation 9277 **Collar Elevation (ft)**
Hole Depth (ft)
Method of obtaining elevation reported **Depth Source**
Diameter (ft) **Hole path** **Date Started**
Completion Date **Company** **Driller Name**
Drilling Company **Drill Rig Type** **Rod size (inch)**
Bit size (inch) **Bit type** **Owner** Molycorp
Water observed **Depth to water (ft)** **Cased** **Screened** **Backfilled**
Construction Note **Casing Material**
Casing Diameter **Casing Depth (ft)** **Casing Stick Up**
Data Source **Waste rock thick (ft)** **Bedrock (ft)**
Orientation **Comments**

Drill hole no. SI-3 **Site Name** Goathill North
UTM easting 453476.2 **UTM northing** 4062179 **UTM zone** 13
Location assurance reported **Point of location** field location
Location Notes 2.75 inch Inclinometer Installed
Weather
Ground Elevation 9331.4 **Hole Depth (ft)** 104
Method of obtaining elevation reported **Depth Source**
Molycorp
Diameter (ft) 6.625 **Hole path** **Date Started**
10/4/200
Completion Date 10/5/2002 **Company** **Driller Name**
Drilling Company Great West **Drill Rig Type** Drill Systems
Rod size (inch)
Bit size (inch) **Bit type** **Owner** Molycorp
Water observed **Depth to water (ft)** **Cased** **Screened** **Backfilled**
Construction Note **Casing Material**
Casing Diameter 2.75 **Casing Depth (ft)** **Casing Stick Up**
Data Source URS 22233599.00390 **Waste rock thick (ft)** 76 **Bedrock (ft)** 84
Orientation **Comments** dry, Bucket and Split spoon

Drill hole no. SI-30 Site Name Goathill North
UTM easting 453510.7 UTM northing 4062092.4 UTM zone 13
Location assurance reported Point of location field location
Location Notes Weather
Ground Elevation 9360.9 Hole Depth (ft) 157
Method of obtaining elevation reported Depth Source URS
Diameter (ft) Hole path Date Started
Completion Date Company Driller Name
Drilling Company Drill Rig Type Rod size (inch)
Bit size (inch) Bit type Owner Molycorp
Water observed Depth to water (ft) Cased Screened Backfilled
Construction Note Casing Material
Casing Diameter Casing Depth (ft) Casing Stick Up
Data Source Waste rock thick (ft) Bedrock (ft)
Orientation Comments

Drill hole no. SI-31 Site Name Goathill North
UTM easting 453210 UTM northing 4062024.7 UTM zone 13
Location assurance reported Point of location field location
Location Notes Weather
Ground Elevation 8956.3 Hole Depth (ft)
Method of obtaining elevation reported Depth Source URS
Diameter (ft) Hole path Date Started
Completion Date Company Driller Name
Drilling Company Drill Rig Type Rod size (inch)
Bit size (inch) Bit type Owner Molycorp
Water observed Depth to water (ft) Cased Screened Backfilled
Construction Note Casing Material
Casing Diameter Casing Depth (ft) Casing Stick Up
Data Source Waste rock thick (ft) Bedrock (ft)
Orientation Comments

Drill hole no. SI-32 Site Name Goathill North
UTM easting 453614.5 UTM northing 4062135.1 UTM zone 13
Location assurance reported Point of location field location
Location Notes Weather
Ground Elevation 9527.8 Hole Depth (ft)
Method of obtaining elevation reported Depth Source URS
Diameter (ft) Hole path Date Started
Completion Date Company Driller Name
Drilling Company Drill Rig Type Rod size (inch)
Bit size (inch) Bit type Owner Molycorp
Water observed Depth to water (ft) Cased Screened Backfilled
Construction Note Casing Material
Data Source Waste rock thick (ft) Bedrock (ft)
Orientation Comments

Drill hole no. SI-33	Site Name Goathill North	
UTM easting 453567.5	UTM northing 4062286.7	UTM zone 13
Location assurance reported	Point of location field location	
Location Notes	Weather	
Ground Elevation	9494.1	Hole Depth (ft)
Method of obtaining elevation	reported	Depth Source URS
Diameter (ft)	Hole path	Date Started
Completion Date	Company	Driller Name
Drilling Company	Drill Rig Type	Rod size (inch)
Bit size (inch)	Bit type	Owner Molycorp
Water observed	Depth to water (ft)	Cased Screened Backfilled
Construction Note	Casing Material	
Casing Diameter	Casing Depth (ft)	Casing Stick Up
Data Source	Waste rock thick (ft)	Bedrock (ft)
Orientation	Comments	

Drill hole no. SI-34	Site Name Goathill North	
UTM easting 453484	UTM northing 4062179.4	UTM zone 13
Location assurance reported	Point of location field location	
Location Notes	Weather	
Ground Elevation	9351.1	Hole Depth (ft)
Method of obtaining elevation	reported	Depth Source URS
Diameter (ft)	Hole path	Date Started
Completion Date	Company	Driller Name
Drilling Company	Drill Rig Type	Rod size (inch)
Bit size (inch)	Bit type	Owner Molycorp
Water observed	Depth to water (ft)	Cased Screened Backfilled
Construction Note	Casing Material	
Casing Diameter	Casing Depth (ft)	Casing Stick Up
Data Source	Waste rock thick (ft)	Bedrock (ft)
Orientation	Comments	

Drill hole no. SI-35	Site Name Goathill North	
UTM easting 453299.4	UTM northing 4062089.1	UTM zone 13
Location assurance reported	Point of location field location	
Location Notes	Weather	
Ground Elevation	9120.4	Hole Depth (ft)
Method of obtaining elevation	reported	Depth Source URS
Diameter (ft)	Hole path	Date Started
Completion Date	Company	Driller Name
Drilling Company	Drill Rig Type	Rod size (inch)
Bit size (inch)	Bit type	Owner Molycorp
Water observed	Depth to water (ft)	Cased Screened Backfilled
Data Source	Waste rock thick (ft)	Bedrock (ft)
Orientation	Comments	

Drill hole no. TH-C-03	Site Name Goathill North
UTM easting 453263	UTM northing 4062825.7 UTM zone 13
Location assurance	Point of location
Location Notes	Weather
Ground Elevation 9794.2	Hole Depth (ft)
Method of obtaining elevation	reported Depth Source
Diameter (ft) Hole path	Date Started
Completion Date Company	Driller Name
Drilling Company	Drill Rig Type Rod size (inch)
Bit size (inch) Bit type	Owner Molycorp
Water observed Depth to water (ft)	Cased Screened Backfilled
Construction Note	Casing Material
Casing Diameter	Casing Depth (ft) Casing Stick Up
Data Source	Waste rock thick (ft) Bedrock (ft)
Orientation	Comments

Drill hole no. TH-C-04	Site Name Goathill North
UTM easting 453453.8	UTM northing 4062593.1 UTM zone 13
Location assurance	Point of location
Location Notes	Weather
Ground Elevation 9775	Collar Elevation (ft)
Hole Depth (ft)	
Method of obtaining elevation	reported Depth Source
Diameter (ft) Hole path	Date Started
Completion Date Company	Driller Name
Drilling Company	Drill Rig Type Rod size (inch)
Bit size (inch) Bit type	Owner Molycorp
Water observed Depth to water (ft)	Cased Screened Backfilled
Construction Note	Casing Material
Casing Diameter	Casing Depth (ft) Casing Stick Up
Data Source	Waste rock thick (ft) Bedrock (ft)
Orientation	Comments

Drill hole no. TH-C-05	Site Name Goathill North
UTM easting 453542	UTM northing 4062484.1 UTM zone 13
Location assurance	Point of location
Location Notes	Weather
Ground Elevation 9790.5	Collar Elevation (ft)
Hole Depth (ft)	
Method of obtaining elevation	reported Depth Source
Diameter (ft) Hole path	Date Started
Completion Date Company	Driller Name
Drilling Company	Drill Rig Type Rod size (inch)
Bit size (inch) Bit type	Owner Molycorp
Water observed Depth to water (ft)	Cased Screened Backfilled

Construction Note			Casing Material
Casing Diameter		Casing Depth (ft)	Casing Stick Up
Data Source		Waste rock thick (ft)	Bedrock (ft)
Orientation		Comments	

Drill hole no. TH-GN-01 **Site Name** Goathill North
UTM easting 453709.9 **UTM northing** 4062157.7 **UTM zone** 13
Location assurance reported **Point of location** field location
Location Notes North Goathill Dump, edge of SW portion **Weather**
Ground Elevation 9765.4 **Hole Depth (ft)** 204.5
Method of obtaining elevation reported **Depth Source**
Molycorp
Diameter (ft) 8 **Hole path** linear **Date Started**
9/5/2002
Completion Date 9/8/2002 **Company** **Driller Name**
Drilling Company Layne Western **Drill Rig Type** Drill Systems **Rod size (inch)**
Bit size (inch) **Bit type** **Owner** Molycorp
Water observed **Depth to water (ft)** **Cased** **Screened** **Backfilled**
Construction Note **Casing Material**
Casing Diameter 1.5 **Casing Depth (ft)** 9768.4 **Casing Stick Up** 3
Data Source URS 22233599.00390 **Waste rock thick (ft)** 180 **Bedrock (ft)** 180
Orientation **Comments** dry

Drill hole no. TH-GN-02 **Site Name** Goathill North
UTM easting 453540.8 **UTM northing** 4062249.2 **UTM zone** 13
Location assurance **Point of location**
Location Notes **Weather**
Ground Elevation 9455.7 **Hole Depth (ft)**
Method of obtaining elevation reported **Depth Source**
Diameter (ft) **Hole path** **Date Started**
Completion Date **Company** **Driller Name**
Drilling Company **Drill Rig Type** **Rod size (inch)**
Bit size (inch) **Bit type** **Owner** Molycorp
Water observed **Depth to water (ft)** **Cased** **Screened** **Backfilled**
Construction Note **Casing Material**
Casing Diameter **Casing Depth (ft)** **Casing Stick Up**
Data Source **Waste rock thick (ft)** **Bedrock (ft)**
Orientation **Comments**

Drill hole no. TH-GN-02S **Site Name** Goathill North
UTM easting 453540.8 **UTM northing** 4062249.2 **UTM zone** 13
Location assurance reported **Point of location** field location
Location Notes also SI-08 **Weather**
Ground Elevation 9455.7 **Hole Depth (ft)** 364
Method of obtaining elevation reported **Depth Source**
Diameter (ft) **Hole path** linear **Date Started** 8/23/200

Completion Date	9/22/2003	Company	Driller Name
Drilling Company	Drill Rig Type AP 1000	Rod size (inch)	6.625
Bit size (inch)	3.5	Bit type	OD Becker/OD
Water observed	Depth to water (ft)	Cased	Screened Backfilled
Construction Note		Casing Material	
Casing Diameter	Casing Depth (ft)	Casing Stick Up	
Data Source	Waste rock thick (ft)	Bedrock (ft)	
Orientation	Comments vibrating wire piezometers installed		

Drill hole no. TH-GN-03	Site Name Goathill North
UTM easting 453444	UTM northing 4062142.6 UTM zone 13
Location assurance	Point of location
Location Notes	Weather
Ground Elevation	9256.8 Hole Depth (ft)
Method of obtaining elevation	reported Depth Source
Diameter (ft)	Hole path Date Started
Completion Date	Company Driller Name
Drilling Company	Drill Rig Type Rod size (inch)
Bit size (inch)	Bit type Owner Molycorp
Water observed	Depth to water (ft) Cased Screened Backfilled
Construction Note	Casing Material
Casing Diameter	Casing Depth (ft) Casing Stick Up
Data Source	Waste rock thick (ft) Bedrock (ft)
Orientation	Comments

Drill hole no. TH-GN-03S	Site Name Goathill North
UTM easting 453444	UTM northing 4062142.6 UTM zone 13
Location assurance reported	Point of location collar
Location Notes	also SI-9 Weather
Ground Elevation	9256.8 Hole Depth (ft) 93.5
Method of obtaining elevation	reported Depth Source
Diameter (ft)	Hole path Date Started
Completion Date	Company Driller Name
Drilling Company	Drill Rig Type Rod size (inch)
Bit size (inch)	Bit type Owner Molycorp
Water observed	Depth to water (ft) Cased Screened Backfilled
Construction Note	Casing Material
Casing Diameter	Casing Depth (ft) Casing Stick Up
Data Source	Waste rock thick (ft) Bedrock (ft)
Orientation	Comments

Drill hole no. TH-GN-04 **Site Name** Goathill North
UTM easting 453398.7 **UTM northing** 4062174.9 **UTM zone** 13
Location assurance **Point of location**
Location Notes **Weather**
Ground Elevation 9256.4 **Hole Depth (ft)**
Method of obtaining elevation reported **Depth Source**
Diameter (ft) **Hole path** **Date Started**
Completion Date **Company** **Driller Name**
Drilling Company **Drill Rig Type** **Rod size (inch)**
Bit size (inch) **Bit type** **Owner** Molycorp
Water observed **Depth to water (ft)** **Cased** **Screened** **Backfilled**
Construction Note **Casing Material**
Casing Diameter **Casing Depth (ft)** **Casing Stick Up**
Data Source **Waste rock thick (ft)** **Bedrock (ft)**
Orientation **Comments**

Drill hole no. TH-GN-04S **Site Name** Goathill North
UTM easting 453398.7 **UTM northing** 4062174.9 **UTM zone** 13
Location assurance reported **Point of location** field location
Location Notes also SI-10 **Weather**
Ground Elevation 9256.4 **Hole Depth (ft)** 126
Method of obtaining elevation reported **Depth Source**
Diameter (ft) **Hole path** linear **Date Started**
Completion Date **Company** **Driller Name**
Drilling Company **Drill Rig Type** **Rod size (inch)**
Bit size (inch) **Bit type** **Owner** Molycorp
Water observed **Depth to water (ft)** **Cased** **Screened** **Backfilled**
Construction Note **Casing Material**
Casing Diameter **Casing Depth (ft)** **Casing Stick Up**
Data Source **Waste rock thick (ft)** **Bedrock (ft)**
Orientation **Comments**

Drill hole no. TH-GN-05S **Site Name** Goathill North
UTM easting 453244.8 **UTM northing** 4062104.1 **UTM zone** 13
Location assurance reported **Point of location** field location
Location Notes also SI-11 **Weather**
Ground Elevation 9073 **Depth Source**
Method of obtaining elevation reported **Depth Source**
Diameter (ft) **Hole path** linear **Date Started**
Completion Date **Company** **Driller Name**
Drilling Company **Drill Rig Type** **Rod size (inch)**
Bit size (inch) **Bit type** **Owner** Molycorp
Water observed **Depth to water (ft)** **Cased** **Screened** **Backfilled**
Construction Note **Casing Material**
Casing Diameter **Casing Depth (ft)** **Casing Stick Up**
Orientation **Comments**

Drill hole no. TH-GN-06 **Site Name** Goathill North
UTM easting 453715.5 **UTM northing** 4062117.4 **UTM zone** 13
Location assurance reported **Point of location** field location
Location Notes also SI-12 **Weather**
Ground Elevation 9765.7 **Hole Depth (ft)** 307.5
Method of obtaining elevation reported **Depth Source**
Diameter (ft) **Hole path** linear **Date Started**
Completion Date **Company** **Driller Name**
Drilling Company **Drill Rig Type** **Rod size (inch)**
Bit size (inch) **Bit type** **Owner**Molycorp
Water observed **Depth to water (ft)** **Cased** **Screened** **Backfilled**
Construction Note **Casing Material**
Casing Diameter **Casing Depth (ft)** **Casing Stick Up**
Data Source **Waste rock thick (ft)** **Bedrock (ft)**
Orientation **Comments**

Drill hole no. TH-GN-06S **Site Name** Goathill North
UTM easting 453715.5 **UTM northing** 4062117.4 **UTM zone** 13
Location assurance reported **Point of location** collar
Location Notes also SI-12 **Weather**
Ground Elevation 9765.7 **Collar Elevation (ft)**
Hole Depth (ft) 307.5
Method of obtaining elevation reported **Depth Source**
Diameter (ft) **Hole path** **Date Started**
Completion Date **Company** **Driller Name**
Drilling Company **Drill Rig Type** **Rod size (inch)**
Bit size (inch) **Bit type** **Owner**Molycorp
Water observed **Depth to water (ft)** **Cased** **Screened** **Backfilled**
Construction Note **Casing Material**
Casing Diameter **Casing Depth (ft)** **Casing Stick Up**
Data Source **Waste rock thick (ft)** **Bedrock (ft)**
Orientation **Comments**

Drill hole no. TH-GN-07 **Site Name** Goathill North
UTM easting 453474.4 **UTM northing** 4062185.2 **UTM zone** 13
Location assurance **Point of location**
Location Notes **Weather**
Ground Elevation 9327.1 **Hole Depth (ft)**
Method of obtaining elevation reported **Depth Source**
Diameter (ft) **Hole path** **Date Started**
Completion Date **Company** **Driller Name**
Drilling Company **Drill Rig Type** **Rod size (inch)**
Bit size (inch) **Bit type** **Owner**Molycorp
Orientation **Comments**

Drill hole no. TH-GN-07P	Site Name Goathill North		
UTM easting 453474.4	UTM northing 4062185.2	UTM zone 13	
Location assurance reported	Point of location collar		
Location Notes	near SI-3	Weather	
Ground Elevation	9327.1	Collar Elevation (ft)	
Hole Depth (ft)	98.5		
Method of obtaining elevation	reported	Depth Source	
Diameter (ft)	Hole path	Date Started	
Completion Date	Company	Driller Name	
Drilling Company	Drill Rig Type	Rod size (inch)	
Bit size (inch)	Bit type	Owner Molycorp	
Water observed	Depth to water (ft)	Cased	Screened Backfilled
Construction Note	Casing Material		
Casing Diameter	Casing Depth (ft)	Casing Stick Up	
Data Source	Waste rock thick (ft)	Bedrock (ft)	
Orientation	Comments		

Drill hole no. TH-GN-07S	Site Name Goathill North		
UTM easting 453474.4	UTM northing 4062185.2	UTM zone 13	
Location assurance reported	Point of location field location		
Location Notes	also SI-03B, SI-7	Weather	
Ground Elevation	9327.9	Collar Elevation (ft)	
Hole Depth (ft)	172		
Method of obtaining elevation	reported	Depth Source	
Diameter (ft)	Hole path linear	Date Started	
Completion Date	Company	Driller Name	
Drilling Company	Drill Rig Type	Rod size (inch)	
Bit size (inch)	Bit type	Owner Molycorp	
Water observed	Depth to water (ft)	Cased	Screened Backfilled
Construction Note	Casing Material		
Casing Diameter	Casing Depth (ft)	Casing Stick Up	
Data Source	Waste rock thick (ft)	Bedrock (ft)	
Orientation	Comments		

Drill hole no. TH-GN-08	Site Name Goathill North		
UTM easting 453583.1	UTM northing 4062132.2	UTM zone 13	
Location assurance	Point of location		
Location Notes	Weather		
Ground Elevation	9474.9	Hole Depth (ft)	
Method of obtaining elevation	reported	Depth Source	
Diameter (ft)	Hole path	Date Started	
Completion Date	Company	Driller Name	
Drilling Company	Drill Rig Type	Rod size (inch)	
Bit size (inch)	Bit type	Owner Molycorp	
Water observed	Depth to water (ft)	Cased	Screened Backfilled
Construction Note	Casing Material		

Casing Diameter	Casing Depth (ft)	Casing Stick Up
Data Source	Waste rock thick (ft)	Bedrock (ft)
Orientation	Comments	
Drill hole no. TH-GN-08S	Site Name Goathill North	
UTM easting 453583.1	UTM northing 4062132.2	UTM zone 13
Location assurance reported	Point of location collar	
Location Notes	also SI-13	Weather
Ground Elevation	9474.9	Hole Depth (ft) 373.2
Method of obtaining elevation	reported	Depth Source
Diameter (ft)	Hole path	Date Started
Completion Date	Company	Driller Name
Drilling Company	Drill Rig Type	Rod size (inch)
Bit size (inch)	Bit type	Owner Molycorp
Water observed	Depth to water (ft)	Cased Screened Backfilled
Construction Note		Casing Material
Casing Diameter	Casing Depth (ft)	Casing Stick Up
Data Source	Waste rock thick (ft)	Bedrock (ft)
Orientation	Comments	

Drill hole no. TH-GN-09	Site Name Goathill North	
UTM easting 453383.1	UTM northing 4062099.5	UTM zone 13
Location assurance reported	Point of location collar	
Location Notes	also SI-17	Weather
Ground Elevation	9143.5	Collar Elevation (ft)
Hole Depth (ft)		
Method of obtaining elevation	reported	Depth Source
Diameter (ft)	Hole path	Date Started
Completion Date	Company	Driller Name
Drilling Company	Drill Rig Type	Rod size (inch)
Bit size (inch)	Bit type	Owner Molycorp
Water observed	Depth to water (ft)	Cased Screened Backfilled
Construction Note		Casing Material
Casing Diameter	Casing Depth (ft)	Casing Stick Up
Data Source	Waste rock thick (ft)	Bedrock (ft)
Orientation	Comments	

Drill hole no. TH-GN-09S	Site Name Goathill North	
UTM easting 453383.1	UTM northing 4062099.5	UTM zone 13
Location assurance reported	Point of location collar	
Location Notes	also SI-17	Weather
Ground Elevation	9143.5	Hole Depth (ft)
Method of obtaining elevation	reported	Depth Source
Diameter (ft)	Hole path	Date Started
Completion Date	Company	Driller Name
Drilling Company	Drill Rig Type	Rod size (inch)

Bit size (inch) **Bit type** **Owner** Molycorp
Water observed **Depth to water (ft)** **Cased** **Screened** **Backfilled**
Construction Note **Casing Material**
Casing Diameter **Casing Depth (ft)** **Casing Stick Up**
Data Source **Waste rock thick (ft)** **Bedrock (ft)**
Orientation **Comments**

Drill hole no. TH-GN-10 **Site Name** Goathill North
UTM easting 453243.6 **UTM northing** 4062060.8 **UTM zone** 13
Location assurance reported **Point of location** field location
Location Notes also SI-18 **Weather**
Ground Elevation 8980.6 **Hole Depth (ft)** 122.5
Method of obtaining elevation reported **Depth Source**
Diameter (ft) **Hole path** linear **Date Started**
Completion Date **Company** **Driller Name**
Drilling Company **Drill Rig Type** **Rod size (inch)**
Bit size (inch) **Bit type** **Owner** Molycorp
Water observed **Depth to water (ft)** **Cased** **Screened** **Backfilled**
Construction Note **Casing Material**
Casing Diameter **Casing Depth (ft)** **Casing Stick Up**
Data Source **Waste rock thick (ft)** **Bedrock (ft)**
Orientation **Comments**

Drill hole no. TH-GN-10S **Site Name** Goathill North
UTM easting 453243.6 **UTM northing** 4062060.8 **UTM zone** 13
Location assurance reported **Point of location** collar
Location Notes also SI-18 **Weather**
Ground Elevation 8980.6 **Hole Depth (ft)** 122.5
Method of obtaining elevation reported **Depth Source**
Diameter (ft) **Hole path** **Date Started**
Completion Date **Company** **Driller Name**
Drilling Company **Drill Rig Type** **Rod size (inch)**
Bit size (inch) **Bit type** **Owner** Molycorp
Water observed **Depth to water (ft)** **Cased** **Screened** **Backfilled**
Construction Note **Casing Material**
Casing Diameter **Casing Depth (ft)** **Casing Stick Up**
Data Source **Waste rock thick (ft)** **Bedrock (ft)**
Orientation **Comments**

Drill hole no. TH-GN-11S **Site Name** Goathill North
UTM easting 453272.5 **UTM northing** 4062146.4 **UTM zone** 13
Location assurance reported **Point of location** collar
Location Notes also SI-19 **Weather**
Ground Elevation 9151.4 **Hole Depth (ft)** 165
Method of obtaining elevation reported **Depth Source**
Diameter (ft) **Hole path** **Date Started**
Completion Date **Company** **Driller Name**
Drilling Company **Drill Rig Type** **Rod size (inch)**
Bit size (inch) **Bit type** **Owner** Molycorp
Water observed **Depth to water (ft)** **Cased** **Screened** **Backfilled**
Construction Note **Casing Material**
Casing Diameter **Casing Depth (ft)** **Casing Stick Up**
Data Source **Waste rock thick (ft)** **Bedrock (ft)**
Orientation **Comments**

Drill hole no. TH-GN-12S **Site Name** Goathill North
UTM easting 453380.6 **UTM northing** 4062232.7 **UTM zone** 13
Location assurance reported **Point of location** field location
Location Notes also SI-20 **Weather**
Ground Elevation 9277.1 **Hole Depth (ft)** 193
Method of obtaining elevation reported **Depth Source**
Diameter (ft) **Hole path** linear **Date Started**
Completion Date **Company** **Driller Name**
Drilling Company **Drill Rig Type** **Rod size (inch)**
Bit size (inch) **Bit type** **Owner** Molycorp
Water observed **Depth to water (ft)** **Cased** **Screened** **Backfilled**
Construction Note **Casing Material**
Casing Diameter **Casing Depth (ft)** **Casing Stick Up**
Data Source **Waste rock thick (ft)** **Bedrock (ft)**
Orientation **Comments**

Drill hole no. TH-GN-13S **Site Name** Goathill North
UTM easting 453302.5 **UTM northing** 4062155.4 **UTM zone** 13
Location assurance reported **Point of location** collar
Location Notes also SI-21 **Weather**
Ground Elevation 9165 **Hole Depth (ft)** 128
Method of obtaining elevation reported **Depth Source**
Diameter (ft) **Hole path** **Date Started**
Completion Date **Company** **Driller Name**
Drilling Company **Drill Rig Type** **Rod size (inch)**
Bit size (inch) **Bit type** **Owner** Molycorp
Water observed **Depth to water (ft)** **Cased** **Screened** **Backfilled**
Construction Note **Casing Material**
Data Source **Waste rock thick (ft)** **Bedrock (ft)**
Orientation **Comments**

Drill hole no. TH-GN-14S **Site Name** Goathill North
UTM easting 453340.2 **UTM northing** 4062196.4 **UTM zone** 13
Location assurance reported **Point of location** collar
Location Notes also SI-22 **Weather**
Ground Elevation 9240.8 **Hole Depth (ft)** 138.5
Method of obtaining elevation reported **Depth Source**
Diameter (ft) **Hole path** **Date Started**
Completion Date **Company** **Driller Name**
Drilling Company **Drill Rig Type** **Rod size (inch)**
Bit size (inch) **Bit type** **Owner** Molycorp
Water observed **Depth to water (ft)** **Cased** **Screened** **Backfilled**
Construction Note **Casing Material**
Casing Diameter **Casing Depth (ft)** **Casing Stick Up**
Data Source **Waste rock thick (ft)** **Bedrock (ft)**
Orientation **Comments**

Drill hole no. TH-GN-15S **Site Name** Goathill North
UTM easting 453208 **UTM northing** 4062064 **UTM zone** 13
Location assurance reported **Point of location** collar
Location Notes also SI-23 **Weather**
Ground Elevation 8968.5 **Hole Depth (ft)** 78
Method of obtaining elevation reported **Depth Source**
Diameter (ft) **Hole path** **Date Started**
Completion Date **Company** **Driller Name**
Drilling Company **Drill Rig Type** **Rod size (inch)**
Bit size (inch) **Bit type** **Owner** Molycorp
Water observed **Depth to water (ft)** **Cased** **Screened** **Backfilled**
Construction Note **Casing Material**
Casing Diameter **Casing Depth (ft)** **Casing Stick Up**
Data Source **Waste rock thick (ft)** **Bedrock (ft)**
Orientation **Comments**

Drill hole no. TH-GN-16S **Site Name** Goathill North
UTM easting 453304.6 **UTM northing** 4062111.5 **UTM zone** 13
Location assurance reported **Point of location** collar
Location Notes also SI-24 **Weather**
Ground Elevation 9090.1 **Hole Depth (ft)** 73.5
Method of obtaining elevation reported **Depth Source**
Diameter (ft) **Hole path** **Date Started**
Completion Date **Company** **Driller Name**
Drilling Company **Drill Rig Type** **Rod size (inch)**
Bit size (inch) **Bit type** **Owner** Molycorp
Data Source **Waste rock thick (ft)** **Bedrock (ft)**
Orientation **Comments**