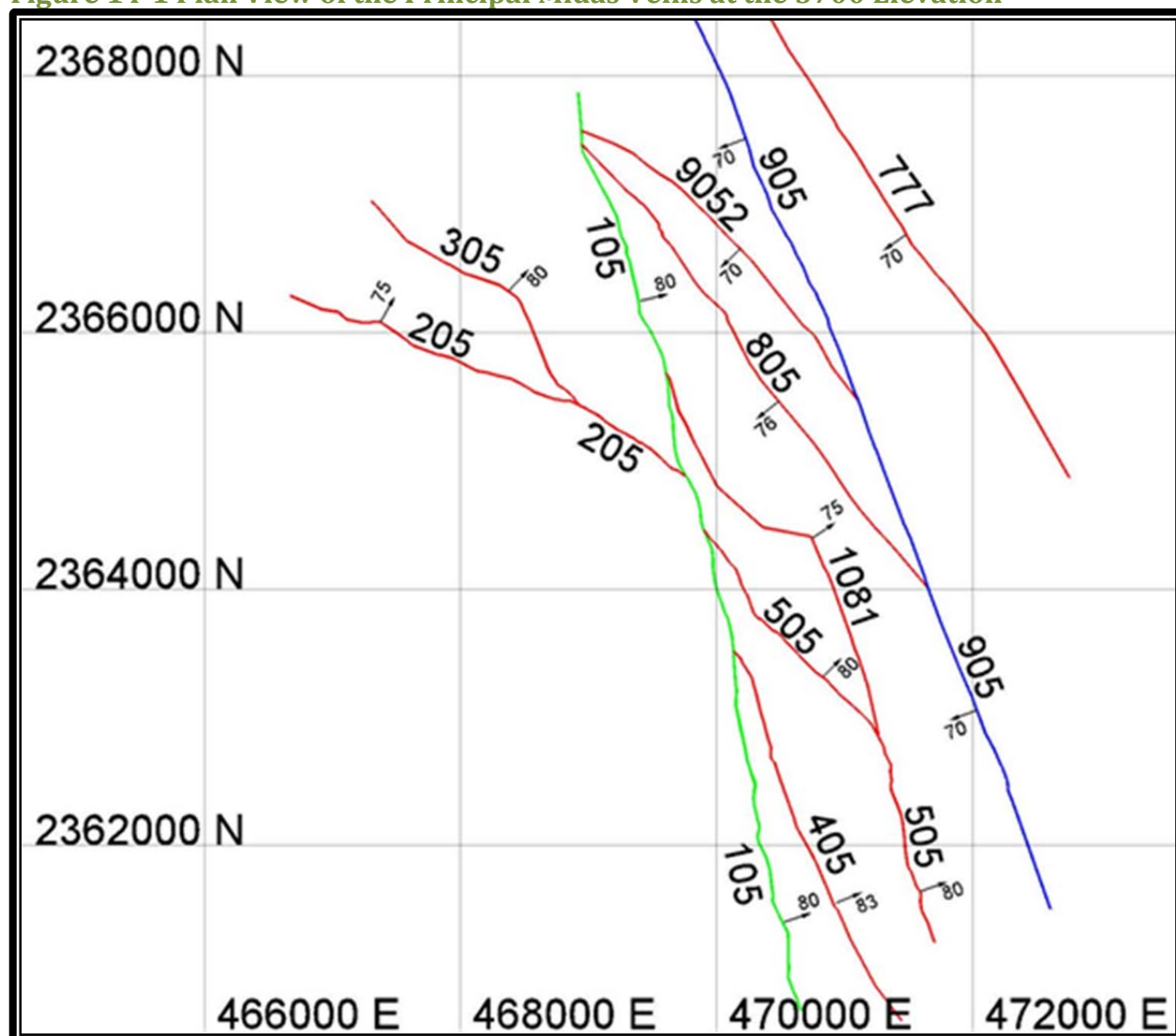


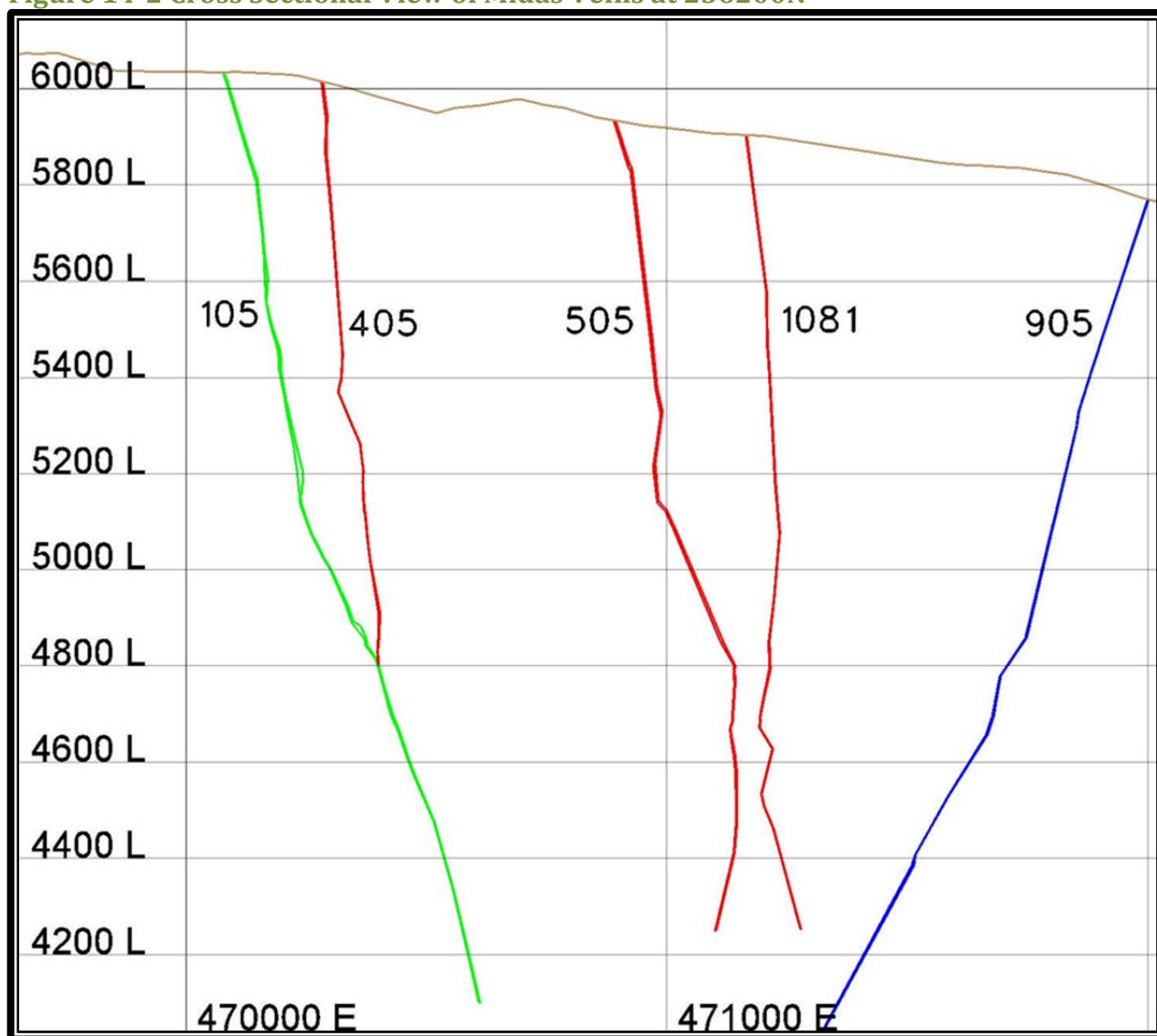
## 14. Mineral Resource Estimate

### 14.1. Introduction

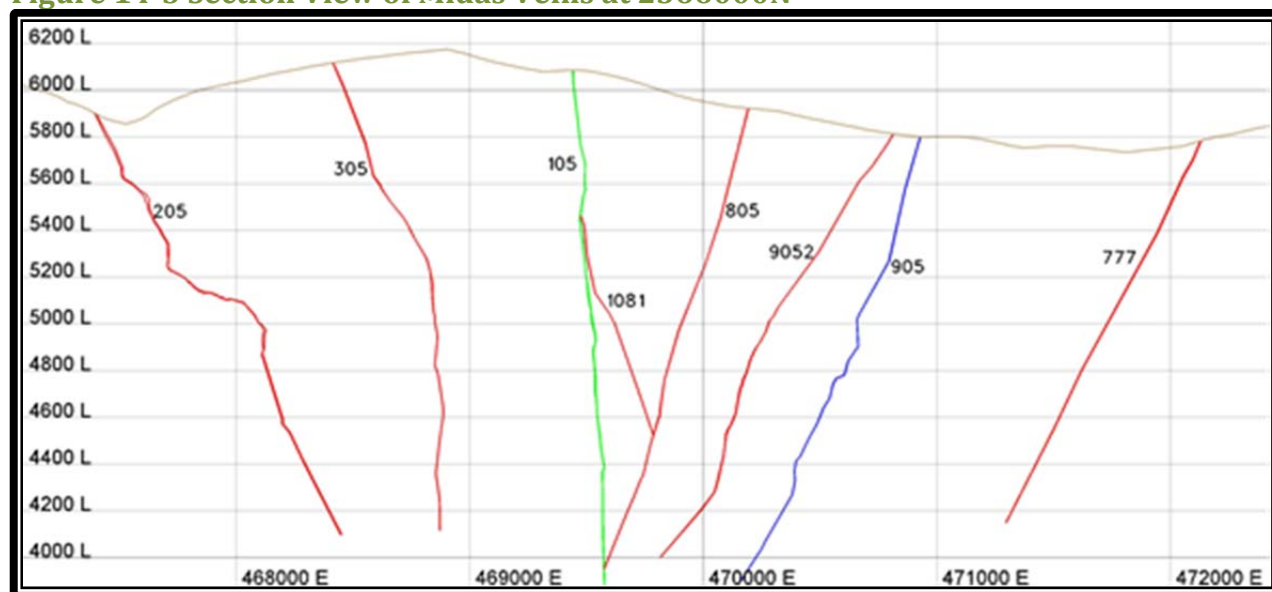
The general arrangement of the Midas veins are shown in Figure 14-1 through Figure 14-3. The veins commonly referred to as the Main Veins are the Colorado Grande (105), Gold Crown (205), Gold Crown Hanging Wall (305), Snow White (405), Discovery (505) and Happy (1081). These strike north westerly and dip 75 – 80 degrees east. Other veins in the main group, but not shown, are the Sleeping Beauty (605) and the Colorado Sur (705). The East Vein group is comprised of the Homestead (777), Charger Hill (805), GP (905) and Ace (9052). These veins also strike north westerly but dip 70 – 75 degrees west. Nearly all of the previous mining has occurred on the Main Veins with development and production of the East Veins beginning in 2013.

**Figure 14-1 Plan View of the Principal Midas Veins at the 5700 Elevation**



**Figure 14-2 Cross Sectional View of Midas Veins at 236200N**

**Figure 14-3 Section View of Midas Veins at 2366000N**



## 14.2. Drill Data Base and Compositing

### 14.2.1. Assays

Assays are grouped by vein and given a name designation. For drill holes, the vein number is preceded by 'DH'. For channels, the vein number is preceded by 'CH'. Where channels have replaced a drill hole intercept, the 'DH' is replaced with an 'ODH' designation, and the drill sample is no longer used for statistics or estimation as it is superseded by channel data.

**Table 14-1 Summary of Drill Hole and Channel Samples**

Vein	DH Flag			ODH Flag			CH Flag		
	No. Holes	No. Assays	Length Flagged	No. Holes	No. Assays	Length Flagged	No. Channels	No. Assays	Length Flagged
101	25	36	121	0	0	0	0	0	0
105	508	616	1631	418	737	2,073	9,129	12,719	28,685
108	153	201	388	1	2	3	8	8	12
201	48	74	335	0	0	0	0	0	0
205	281	422	1258	238	467	1,382	3,944	6,475	16,477
208	96	132	425	0	0	0	52	57	121
305	178	195	527	74	100	287	901	1,119	1,880
405	166	174	500	99	121	313	1,085	1,146	1,804
505	270	318	846	139	205	454	1,431	1,751	2,948
605	149	187	506	2	2	6	125	158	559
705	127	160	307	0	0	0	21	30	46
777	38	52	98	0	0	0	0	0	0
805	267	316	625	7	12	19	195	206	317
905	239	273	536	40	50	60	808	882	1,259
9051	62	73	165	0	0	0	0	0	0
9052	164	191	349	39	71	102	341	356	717

Vein	DH Flag			ODH Flag			CH Flag		
	No. Holes	No. Assays	Length Flagged	No. Holes	No. Assays	Length Flagged	No. Channels	No. Assays	Length Flagged
1026	56	77	272	0	0	0	0	0	0
1081	219	252	618	2	2	3	61	62	79
1605	70	86	235	0	0	0	0	0	0
1707	7	8	33	0	0	0	0	0	0
5005	63	78	341	0	0	0	0	0	0

### 14.2.2. Geology Logs

The geology database includes fields for lithology, rock type, silicification, quartz and naumanite. These fields, along with assay values, are used to define the vein solids.

### 14.2.3. Compositing

The gold and silver assays from drill holes and channels were composited by vein. Only one composite is created for each vein intersection. The vein name prefixes (CH, DH, or ODH) allow the correct composites to be used to estimate the vein blocks during the estimation.

**Table 14-2 Summary of Composites**

Vein	DH Flag			CH Flag		
	No. Holes	No. Comps	Length Flagged	No. Channels	No. Comps	Length Flagged
101	25	25	121	0	0	0
105	508	508	1629	9,129	9,134	28,700
108	153	153	388	8	8	12
201	48	48	335	0	0	0
205	281	281	1258	3,944	3,944	16,478
208	96	97	425	52	52	121
305	178	178	527	901	901	1,881
405	166	167	500	1,085	1,085	1,804
505	270	270	851	1,431	1,431	2,948
605	149	150	506	125	125	559
705	127	127	307	21	21	46
777	38	38	98	0	0	0
805	267	267	625	195	195	317
905	239	240	536	809	809	1,259
9051	62	64	165	0	0	0
9052	164	165	349	341	341	717
1026	57	57	272	0	0	0
1081	219	219	618	60	60	77
1605	70	70	235	0	0	0
1707	7	7	33	0	0	0
5005	63	64	341	0	0	0



### 14.3. Vein Modelling

Hanging wall and footwall surfaces are created for each vein by “snapping” to the appropriate assay composite endpoint. These surfaces are then joined to form the three dimensional vein solid model and trimmed to the surface topography where necessary.

### 14.4. Density

Newmont completed a density study in 2009, and the results are listed in Table 14-3. The details of this work have not been reviewed by the authors; however, the authors believe it to be accurate, and no additional study is warranted at this time.

**Table 14-3 Density and Tonnage Factor by Vein**

<b>Vein</b>	<b>Tonnage Factor (ft<sup>3</sup>/ton)</b>	<b>Density (ton/ft<sup>3</sup>)</b>
101	12.87	0.0777
105	12.67	0.0789
108	12.89	0.0776
201	12.87	0.0777
205	12.57	0.0795
208	12.57	0.0795
305	12.89	0.0776
405	12.77	0.0783
505	12.89	0.0776
605	12.89	0.0776
705	12.89	0.0776
777	12.89	0.0776
805	12.89	0.0776
905	12.89	0.0776
9051	12.89	0.0776
9052	12.89	0.0776
1026	12.87	0.0777
1081	12.87	0.0777
1605	12.75	0.0784
1707	12.87	0.0777
5005	12.87	0.0777
waste	12.87	0.0777

### 14.5. Statistics

Univariate statistics for gold and silver composites are presented in Table 14-4 and Table 14-5 below. Histogram and cumulative frequency plots of gold and silver composite values for each vein were created. Typical examples of these are shown in Figure 14-4 and Figure 14-5.

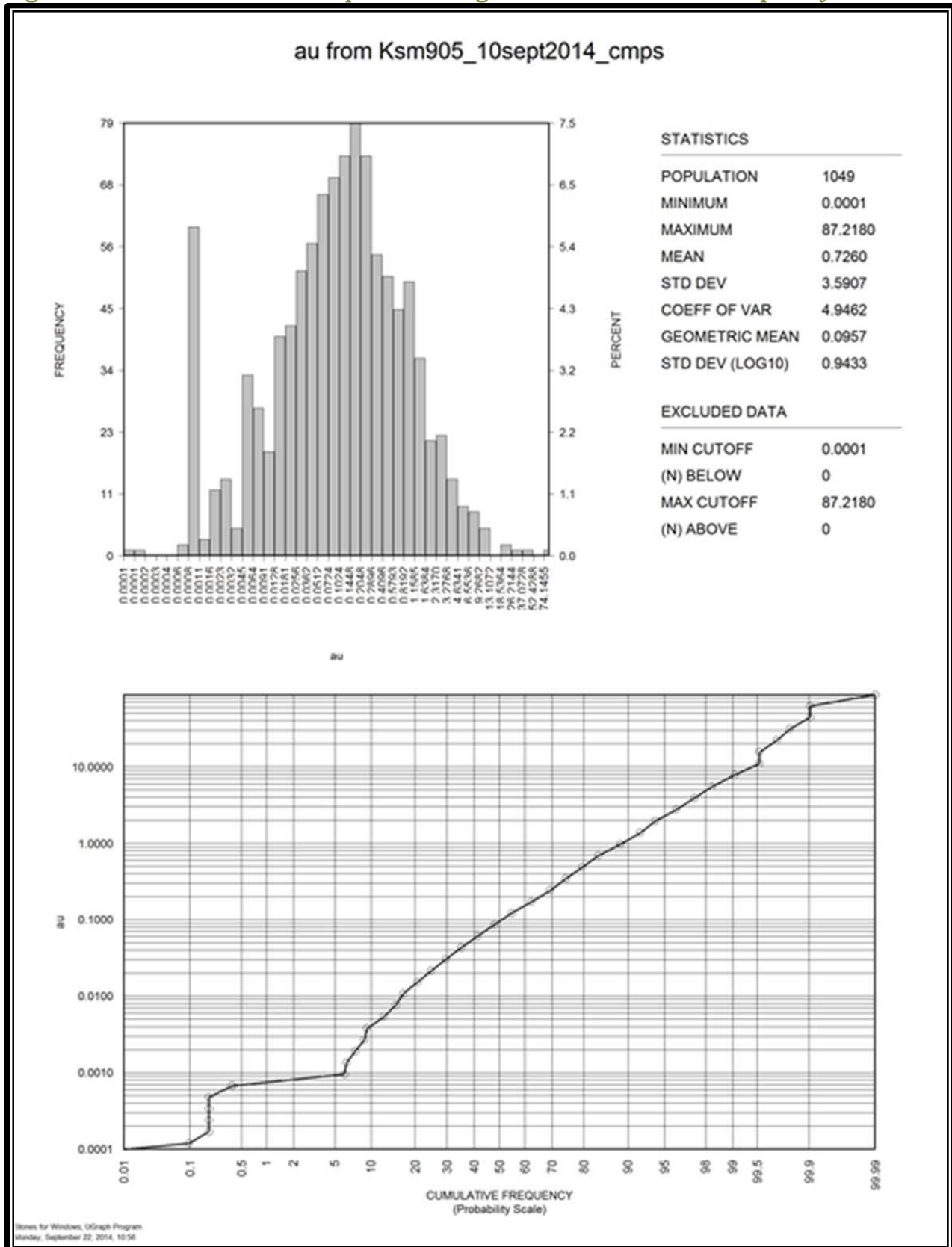
**Table 14-4 Gold Composite Statistics by Vein**

<b>Vein</b>	<b># Comps</b>	<b>Min</b>	<b>Max</b>	<b>Mean</b>	<b>Std Dev</b>	<b>CV</b>
101	25	0.0003	0.4115	0.1283	0.1436	1.1193
105	9638	0.0001	78.64	1.8027	3.3763	1.8729
108	161	0.001	1.5105	0.0994	0.2157	2.1696
201	47	0.0003	6.0807	0.3152	0.9787	3.1051
205	4224	0.0009	30.133	1.0003	1.8852	1.8847
208	149	0.001	14.223	0.5133	1.4453	2.8159
305	1073	0.0009	70.052	1.3453	3.0684	2.2808
405	1248	0.0002	29.200	1.2132	2.4462	2.0164
505	1698	0.0002	58.917	1.4996	3.5020	2.3353
605	273	0.0003	7.189	0.5185	0.8620	1.6627
705	148	0.0001	8.7321	0.2466	0.9071	3.6783
777	35	0.0001	0.181	0.0236	0.0473	2.0030
805	461	0.0001	4.230	0.1619	0.4189	2.5865
905	1049	0.0001	87.218	0.726	3.5907	4.9462
9051	64	0.0001	0.7856	0.0626	0.1558	2.4899
9052	506	0.0003	12.05	0.1901	0.6132	3.2251
1026	57	0.0006	2.13	0.1334	0.3157	2.3660
1081	272	0.0001	3.41	0.1084	0.3278	3.0237
1605	70	0.0001	2.57	0.3127	0.5717	1.8285
1707	7	0.0006	0.667	0.1806	0.2558	1.4166
5005	64	0.0002	17.4969	0.5095	2.3210	4.5553

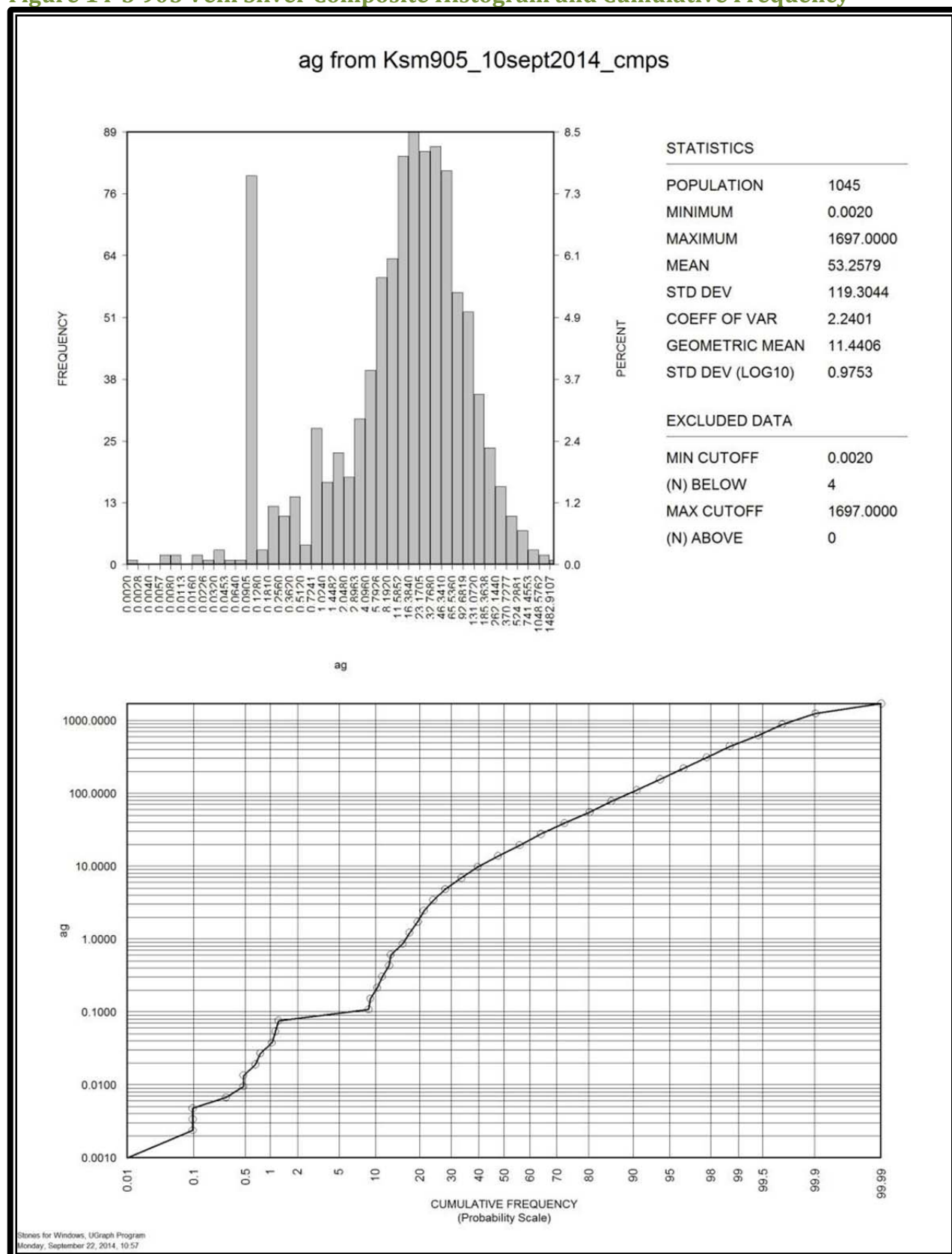
**Table 14-5 Silver Composite Statistics by Vein**

<b>Vein</b>	<b># Comps</b>	<b>Min</b>	<b>Max</b>	<b>Mean</b>	<b>Std Dev</b>	<b>CV</b>
101	24	0.016	38.623	4.4279	8.5723	1.9360
105	9623	0.006	645.65	19.4428	28.9988	1.4915
108	161	0.025	124.001	5.256	12.2757	2.3355
201	44	0.006	33.596	3.5736	7.1103	1.9897
205	4218	0.006	241.003	13.0752	20.0937	1.5368
208	149	0.010	208.9	7.2747	19.1959	2.6387
305	1073	0.010	330.024	15.9149	21.4855	1.3500
405	1238	0.004	274.003	14.2543	23.7753	1.6679
505	1680	0.009	450.03	22.8973	39.1655	1.7105
605	264	0.010	82.1	6.9869	9.0149	1.2903
705	146	0.005	59.701	2.2082	6.8612	3.1072
777	34	0.001	108.0	11.4759	26.2174	2.2846
805	459	0.010	522.965	22.3317	41.5662	1.8613
905	1045	0.002	1697.0	53.2579	119.3044	2.2401
9051	64	0.054	84.4	5.7762	15.5484	2.6918
9052	504	0.010	387.179	29.8391	51.4782	1.7252
1026	56	0.005	19.0	1.9050	3.4728	1.8230
1081	273	0.006	126.0	5.6141	13.1488	2.3421
1605	67	0.006	7.268	1.0321	1.1709	1.1344
1707	7	0.018	0.531	0.1727	0.1996	1.1556
5005	57	0.003	14.2	1.0908	2.5394	2.3281

Figure 14-4 905 Vein Gold Composite Histogram and Cumulative Frequency



**Figure 14-5 905 Vein Silver Composite Histogram and Cumulative Frequency**



### 14.6. Grade Capping

Grade caps for gold and silver were estimated individually for each vein. Table 14-6 list the cap values applied and the number of composites affected. Typical composite grade distribution curves for gold and silver are shown in Figure 14-6 and Figure 14-7.

**Table 14-6 Gold and Silver Grade Caps**

<b>Vein</b>	<b>Variable</b>	<b>Cap Grade</b>	<b>Composites Affected</b>
101	au	0.5	0
101	ag	13	4
105	au	32	17
105	ag	300	11
108	au	0.5	7
108	ag	25	6
201	au	1	2
201	ag	5	8
205	au	17	9
205	ag	170	7
208	au	2	9
208	ag	20	9
305	au	9	13
305	ag	90	10
405	au	15	9
405	ag	105	9
505	au	17	13
505	ag	200	17
605	au	2.5	8
605	ag	30	8
705	au	1.5	5
705	ag	15	3
777	au	0.1	4
777	ag	20	4
805	au	0.55	18
805	ag	115	10
905	au	9	11
905	ag	500	15
1026	au	0.5	3
1026	ag	5	6
1081	au	0.6	8
1081	ag	30	13
1605	au	0.9	6
1605	ag	3	1
1707	au	1	0
1707	ag	1	0
5005	au	0.5	8

Vein	Variable	Cap Grade	Composites Affected
5005	ag	2	8
9051	au	1	0
9051	ag	30	3
9052	au	1	12
9052	ag	150	15

Figure 14-6 905 Vein Gold Composite Grade Distribution

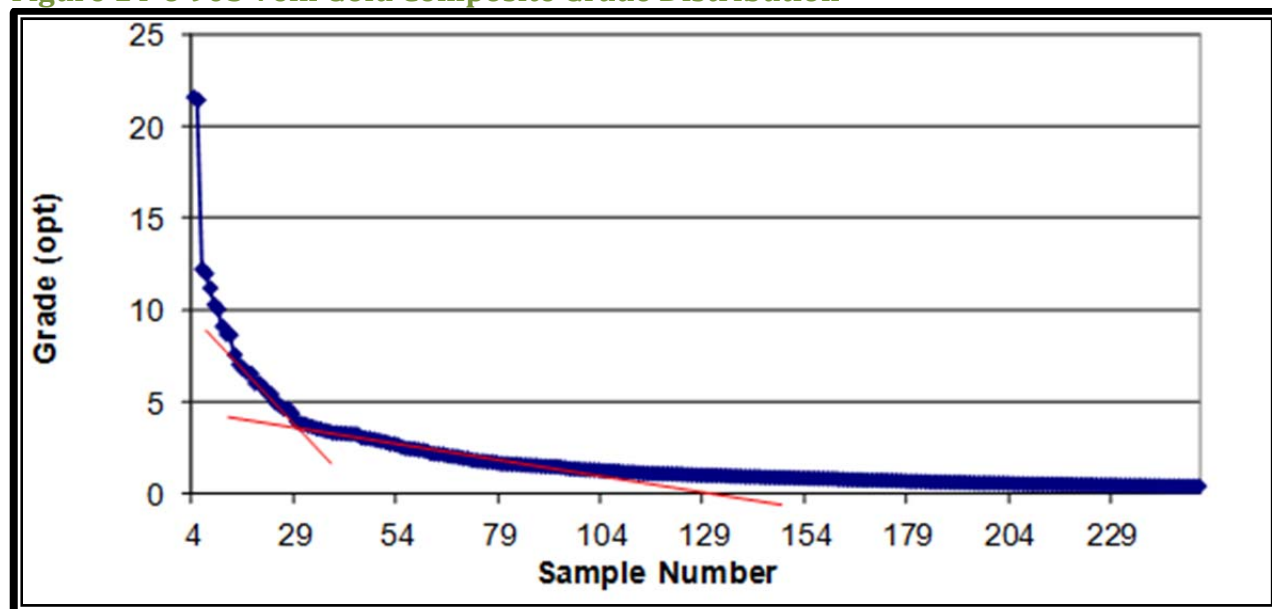
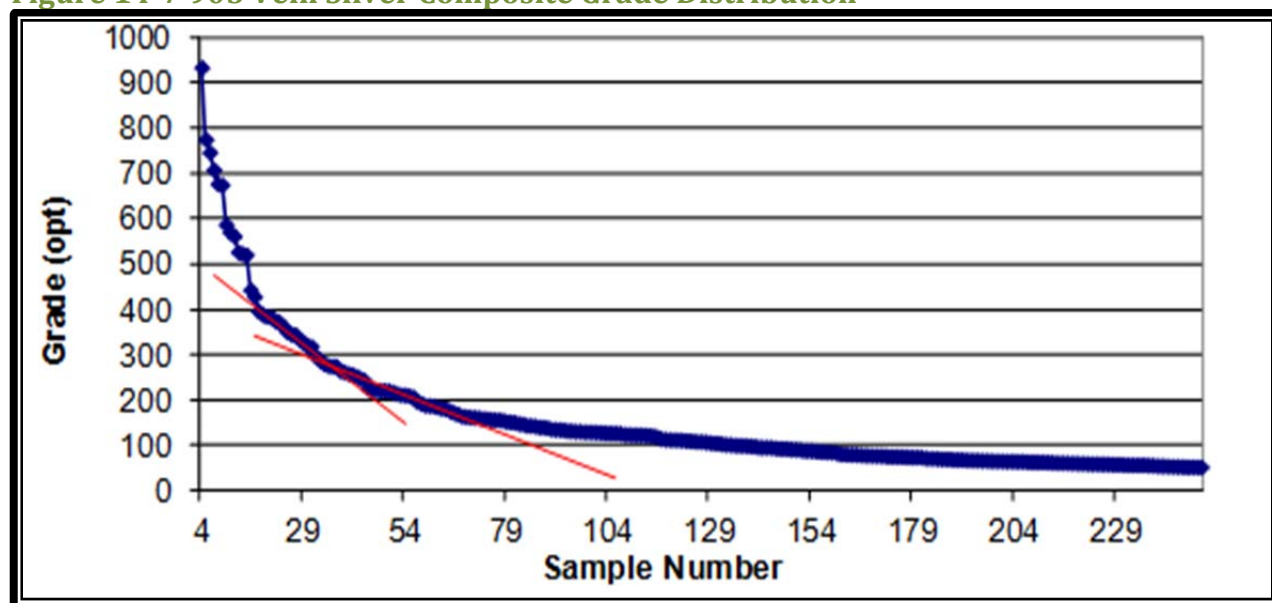


Figure 14-7 905 Vein Silver Composite Grade Distribution



Composites which exceed the grade cap value are valid data; however, their use must be restricted. To accomplish this, composites which exceed the grade capping value are only used to estimate the grade of the 25 foot by 25 foot block in which they are contained and then discarded. They are not used in the grade estimation of any other blocks.

#### 14.7. Variography

The 105, 205, 305, 405, 505, 905 and 9052 veins all have a large enough number of channel samples that are spaced closely enough to permit the construction of variograms for gold. The other veins do not have enough drill or channel samples to permit the construction of valid variograms. The variography results for gold are listed in Table 14-7 and Table 14-8.

**Table 14-7 Sill 1 Ordinary Kriging Parameters for Gold**

Vein	Nugget	Type1	Sill1	Bearing	Plunge	Dip	Major	Semi	Minor
105	0.551	Exp	0.309	150	39	-13	92	31	102
205	0.3	Exp	0.298	85	6	8	12	33	123
305	0.407	Exp	0.417	52	-27	-22	112	401	8
405	0.1	Exp	0.465	75	23	-57	71	4	223
505	0.196	Exp	0.464	46	35	-39	12	10	66
905	0.057	Exp	0.841	57	-10	55	57	11	232
9052	0.1	Exp	0.591	115	-11	-38	33	5	7

**Table 14-8 Sill 2 Ordinary Kriging Parameters for Gold**

Vein	Nugget	Type1	Sill2	Bearing	Plunge	Dip	Major	Semi	Minor
105	0.551	Exp	0.14	89	-3	-10	80	1122	330
205	0.3	Exp	0.402	174	56	-12	273	521	199
305	0.407	Exp	0.176	69	-18	72	219	862	1276
405	0.1	Exp	0.435	133	-29	-47	70	211	97
505	0.196	Exp	0.339	226	3	-1	205	117	694
905	0.057	Exp	0.102	51	-9	40	74	144	694
9052	0.1	Exp	0.309	147	-7	23	104	51	527

#### 14.8. Block Models

Individual block models were constructed for each vein. These models are rotated to match the Y direction to the veins strike trend. Block sizes in all models are five by five feet in the Y and Z directions. The X dimension of a block is set to the width of the vein and is variable in 0.2 foot increments up to 5 feet. The models were constructed from the vein wireframe models. Table 14-9 lists the geometry of each model.



**Table 14-9 Model Orientations and Extents**

Vein	Bearing	Plunge	Dip	LL_X	LL_Y	LL_Z	X_ft	Y_ft	Z_ft
101	45	0	0	471300	2355900	4650	500	4050	1300
105	75	0	0	471150	2358400	3800	800	9750	2500
108	60	0	0	470550	2363550	4200	650	2450	1200
201	37	0	0	467800	2361450	4550	550	3550	1400
205	27	0	0	469800	2364500	4100	950	4150	2200
208	15	0	0	468950	2365400	4600	500	650	1200
305	45	0	0	468850	2365200	4300	850	4200	2000
405	68	0	0	471700	2358900	4300	1000	5000	1900
505	60	0	0	472200	2360100	4250	750	5150	2000
605	85	0	0	470100	2358000	4200	900	5650	1700
705	80	0	0	470900	2357700	4100	650	4400	1700
777	60	0	0	472200	2364000	4150	1000	5200	1850
805	50	0	0	471100	2363500	3950	1100	4600	2350
905	68	0	0	472000	2360550	3500	1100	9050	2700
9051	55	0	0	470300	2365550	4100	300	700	900
9052	50	0	0	470700	2364700	4000	1000	3450	2300
1026	65	0	0	469850	2357900	4150	1200	9300	1900
1081	60	0	0	471050	2362700	4300	750	4400	1900
1605	70	0	0	471600	2355500	4550	900	3500	1150
1707	80	0	0	475400	2380700	4450	350	550	2350
5005	60	0	0	473400	2355200	4100	600	4050	1300

Grade estimation variables in the models are:

- Ordinary kriging gold;
- Inverse distance gold;
- Nearest neighbor gold;
- Inverse distance silver; and,
- Nearest neighbor silver.

Other calculated variables in each model include:

- Gold equivalent;
- Density;
- Estimation pass;
- True thickness;
- Gold equivalent grade thickness;
- Resource class; and,
- Block status to indicate, intact, mined or sterile.

### 14.9. Grade Estimation

The gold and silver values were estimated using the inverse distance cubed and nearest neighbor estimation methods for all of the veins using the channel and drill composites within each vein. Blocks outside of the vein were not estimated. Seven veins, 105, 205, 305, 405, 505, 905, and 9052 had gold estimated using ordinary kriging as there were enough channel samples to calculate reasonable variograms.

Anisotropic search parameters for gold and silver were set to the general orientation of each vein. Distances were selected based on the drill spacing of samples intercepting the solids and on the general orientation and shape of the interpreted solids. However, larger search distances were used in the inferred passes to ensure that most of the blocks inside the veins were estimated. The estimation search parameters are listed in Table 14-10. Parameters for the search ellipsoids for each vein are listed in Table 14-11.

**Table 14-10 Estimation Search Parameters by Resource Category**

Pass	Parent			Major (ft)	Semi (ft)	Minor (ft)	Min Samp	Max Samp	Max /DH
	X	Y	Z						
Measured	25	25	25	50	50	25	4	6	1
Indicated	25	25	25	100	100	50	3	6	1
Inferred	25	25	25	200	200	100	2	6	1

**Table 14-11 Estimation Search Ellipsoids**

Vein	Est ID	Bearing	Plunge	Dip
101	v101	315	0	-85
105	v105	345	0	-80
108	v108	150	0	-72
201	v201	127	0	-79
205	v205	297	0	-79
208	v208	285	0	-70
305	v305	315	0	-80
405	v405	338	0	-83
505	v505	330	0	-84
605	v605	175	0	-85
705	v705	350	0	-84
777	v777	150	0	-70
805	v805	140	0	-76
905	v905	158	0	-70
1026	v1026	335	0	-80
1081	v1081	330	0	-75
1605	v1605	160	0	-63
1707	v1707	350	0	-85
5005	v5005	330	0	-74
9051	v9051	325	0	-90

Vein	Est ID	Bearing	Plunge	Dip
9052	v9052	140	0	-70

Significant parameters used in the gold interpolation include:

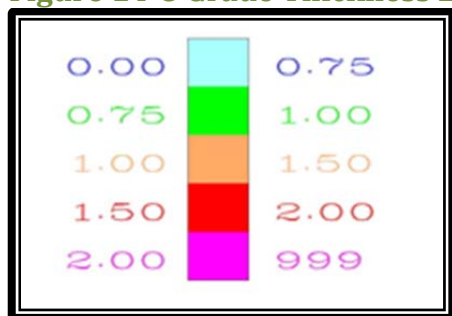
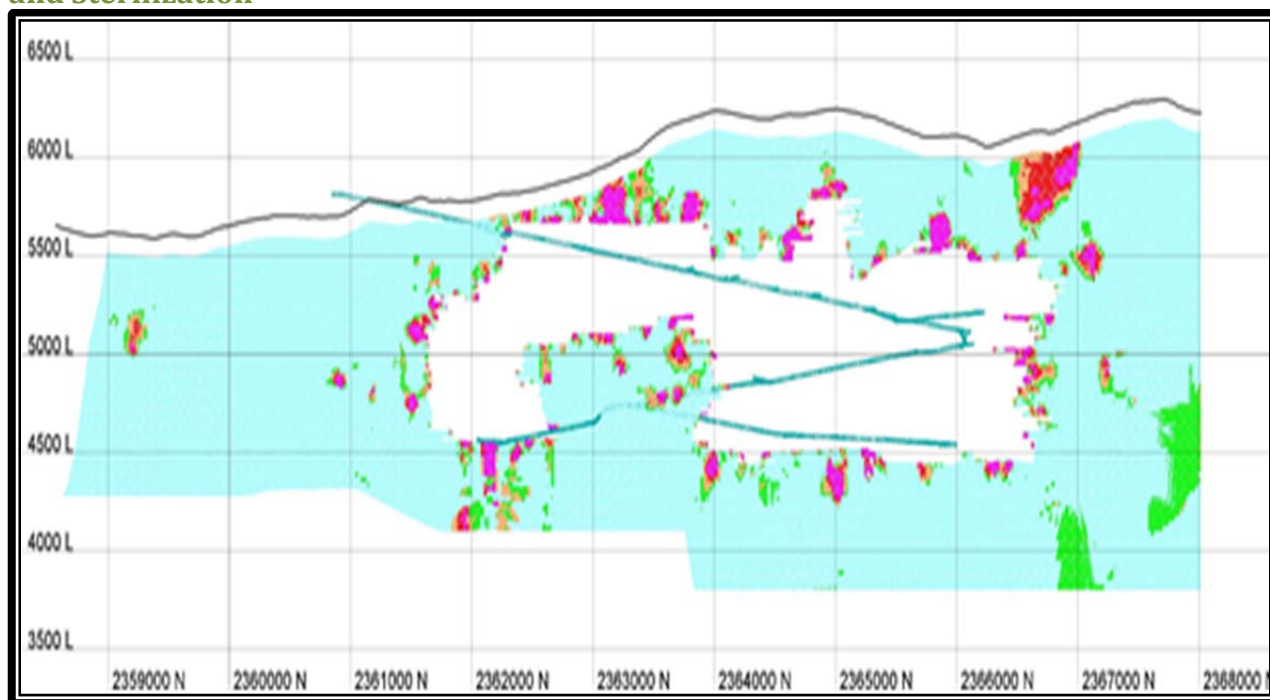
1. Assigning of parent block values to sub-blocks. Estimates are only calculated at the center of each parent block, and those values are assigned to all sub-blocks existing within the parent block space.
2. Only composites with a value  $\geq 0$  were used.
3. A minimum of four and maximum of six samples were used to estimate measured blocks, minimum of three and maximum of six to estimate indicated, and minimum of two and maximum of six to estimate inferred blocks.
4. A maximum of one composite was used per drill hole or channel.
5. Composites were selected using anisotropic distances.
6. Only composites within the veins were used to estimate blocks within the veins.
7. Grades were capped (search restricted) for each vein.
8. A gold value of 0.0001 opt was assigned to the unestimated vein blocks and waste blocks.
9. A silver value of 0.001 opt was assigned to the unestimated vein blocks and waste blocks.

#### **14.10. Classification**

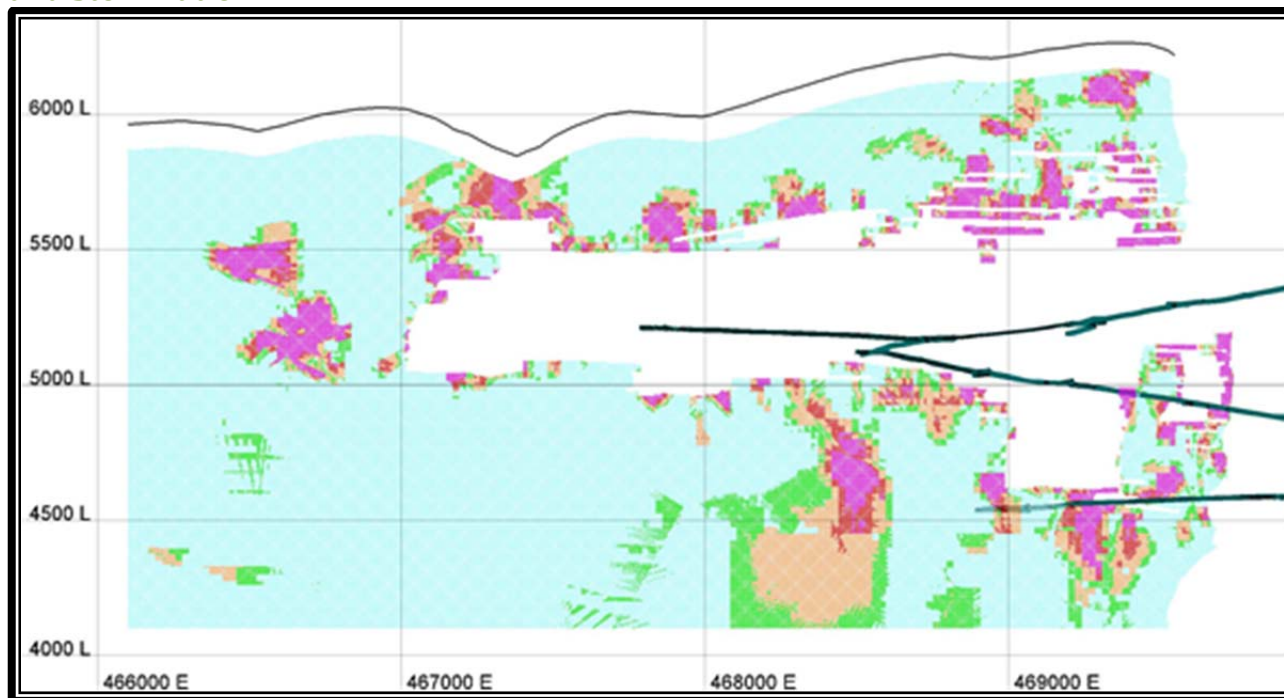
Measured mineral resources include only blocks estimated with four to six composites within 50 feet. Indicated mineral resources include blocks that were estimated with three to six composites within 100 feet. Inferred mineral resources include only blocks estimated with two to six composites within 200 feet.

#### **14.11. Mined Depletion and Sterilization**

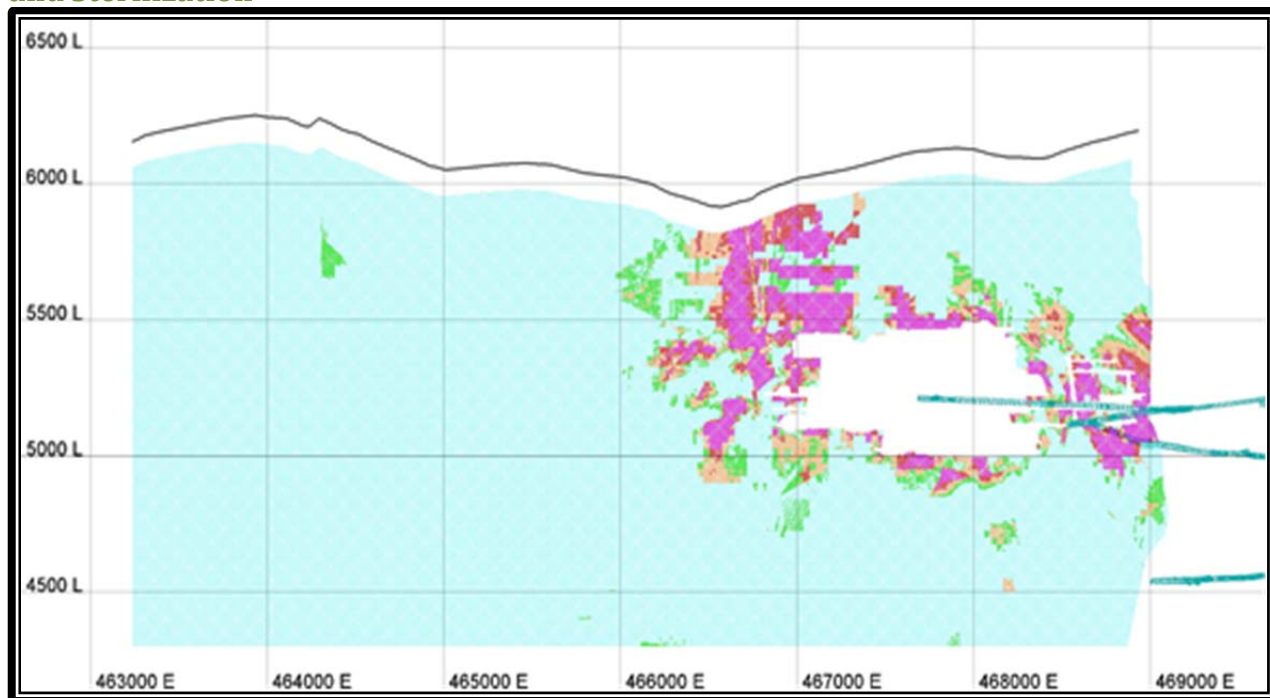
Blocks contained within mined out areas were flagged as mined. Additionally, all blocks within 100 feet vertically of the surface were flagged as sterile. Remaining blocks were reviewed, and additional areas were marked as sterile when they were deemed inaccessible by Midas staff. Figure 14-9 through Figure 14-15 show the impact of depletion and sterilization on the seven veins with significant mining activity.

**Figure 14-8 Grade Thickness Legend (opt-feet)****Figure 14-9 105 Vein Long Section Showing Gold Grade Thickness After Depletion and Sterilization**

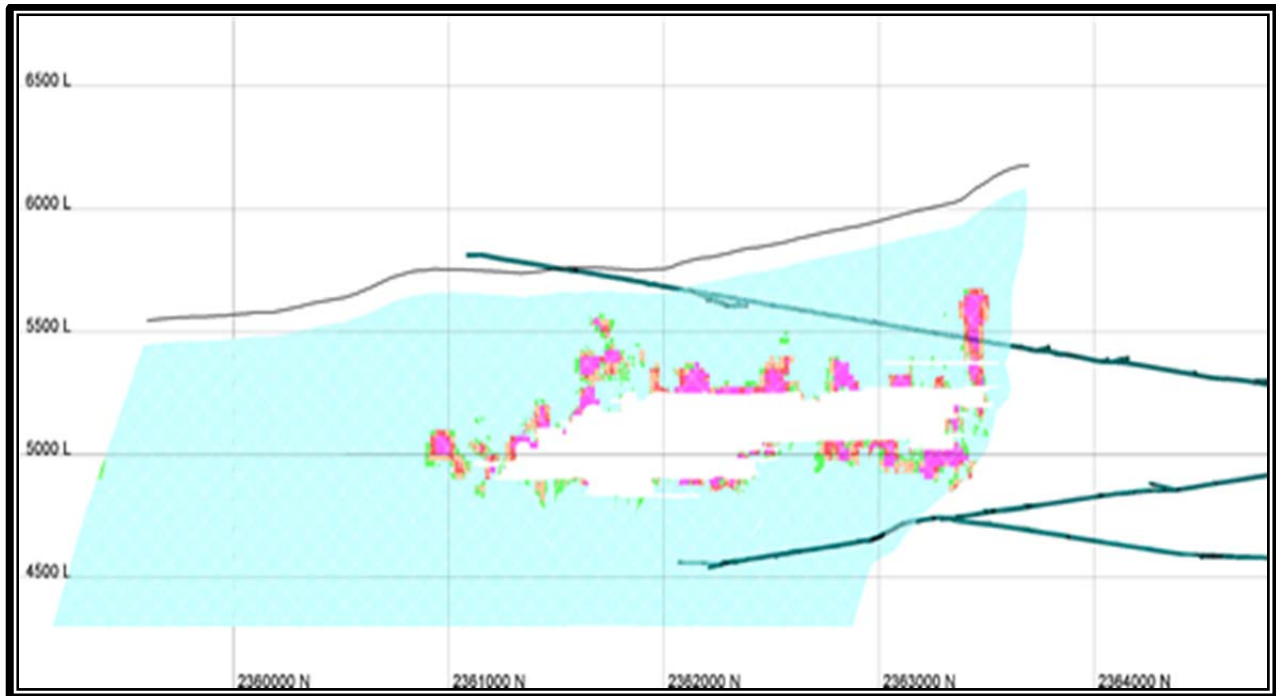
**Figure 14-10 205 Vein Long Section Showing Gold Grade Thickness After Depletion and Sterilization**



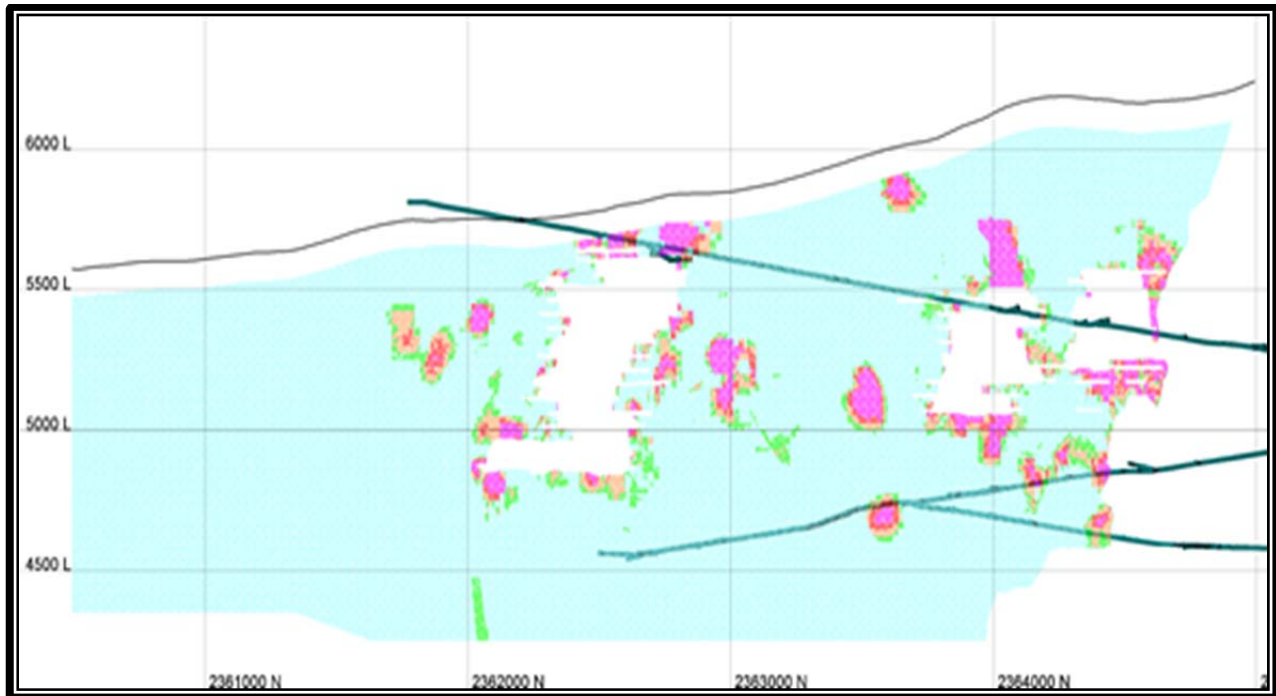
**Figure 14-11 305 Vein Long Section Showing Gold Grade Thickness After Depletion and Sterilization**



**Figure 14-12 405 Vein Long Section Showing Gold Grade Thickness After Depletion and Sterilization**

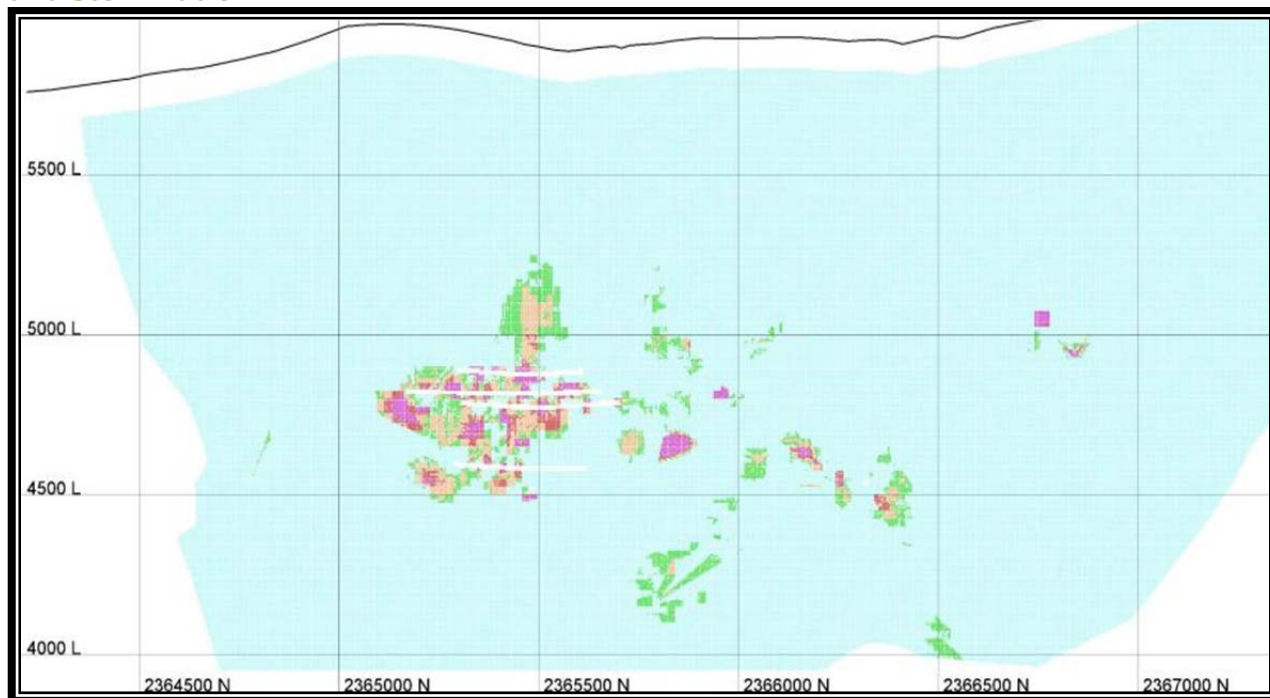


**Figure 14-13 505 Vein Long Section Showing Gold Grade Thickness After Depletion and Sterilization**

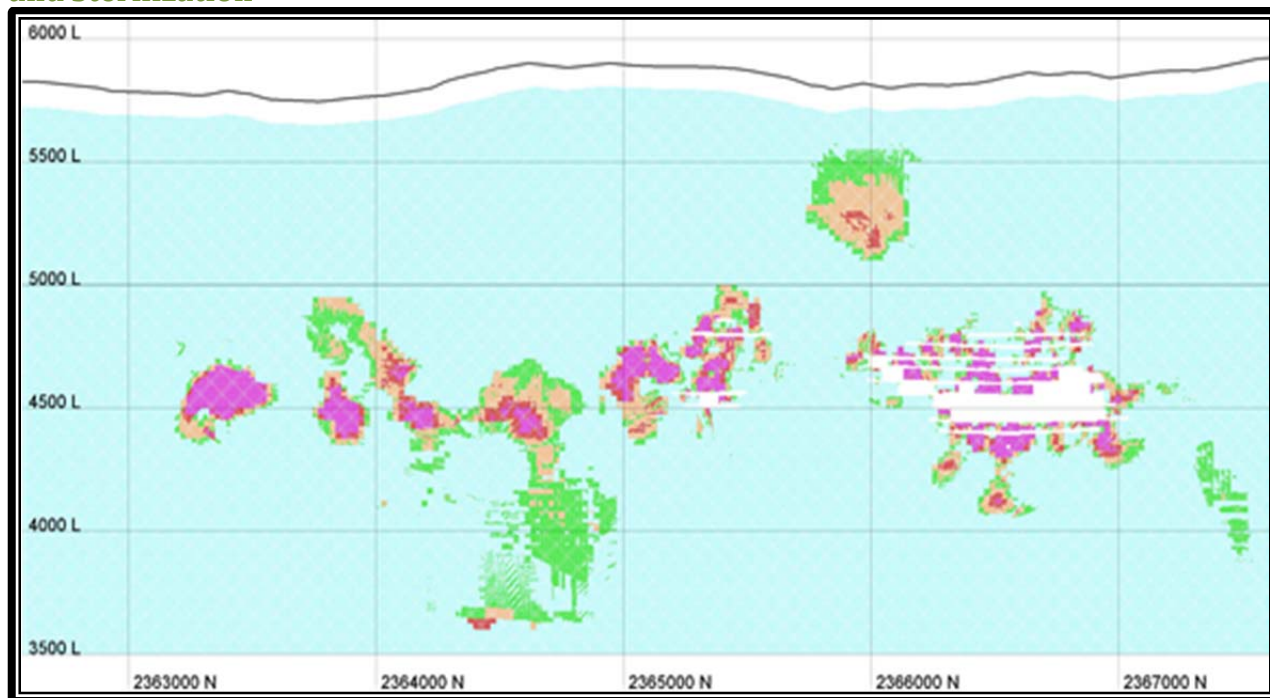




**Figure 14-14 805 Vein Long Section Showing Gold Grade Thickness After Depletion and Sterilization**



**Figure 14-15 905 Vein Long Section Showing Gold Grade Thickness After Depletion and Sterilization**



### 14.12. Model Validation

Model validation for each vein included comparison of the kriged, inverse distance cubed and nearest neighbor grades, visual comparison of block grades to composites and creating swath plots along strike and elevation for each vein. A global comparison of each grades estimation method for all the veins is listed in Table 14-12 for gold and Table 14-13 for silver.

**Table 14-12 Gold Estimation Comparison**

Vein	Gold Grades			
	Ordinary Kriging	Inverse Distance	Nearest Neighbor	Composite
101	NA	0.133	0.138	0.128
105	1.032	1.017	0.975	1.803
108	NA	0.080	0.082	0.099
201	NA	0.131	0.128	0.315
205	0.724	0.721	0.725	1.003
208	NA	0.164	0.155	0.513
305	0.565	0.529	0.488	1.345
405	0.441	0.418	0.399	0.399
505	0.429	0.425	0.438	1.500
605	NA	0.131	0.132	0.519
705	NA	0.103	0.103	0.247
777	NA	0.011	0.011	0.024
805	NA	0.037	0.037	0.162
905	0.160	0.158	0.151	0.726
9051	NA	0.053	0.062	0.063
9052	0.068	0.065	0.060	0.190
1026	NA	0.070	0.069	0.133
1081	NA	0.039	0.040	0.108
1605	NA	0.107	0.107	0.313
1707	NA	0.193	0.207	0.181
5005	NA	0.111	0.111	0.510

**Table 14-13 Silver Estimation Comparison**

Vein	Silver Grades		
	Inverse Distance	Nearest Neighbor	Composite
101	1.80	1.80	4.43
105	11.75	11.36	19.44
108	3.59	3.59	5.26
201	1.12	1.08	3.57
205	9.47	9.10	13.08
208	2.13	2.12	7.27
305	7.17	6.91	15.91
405	5.19	4.83	14.25

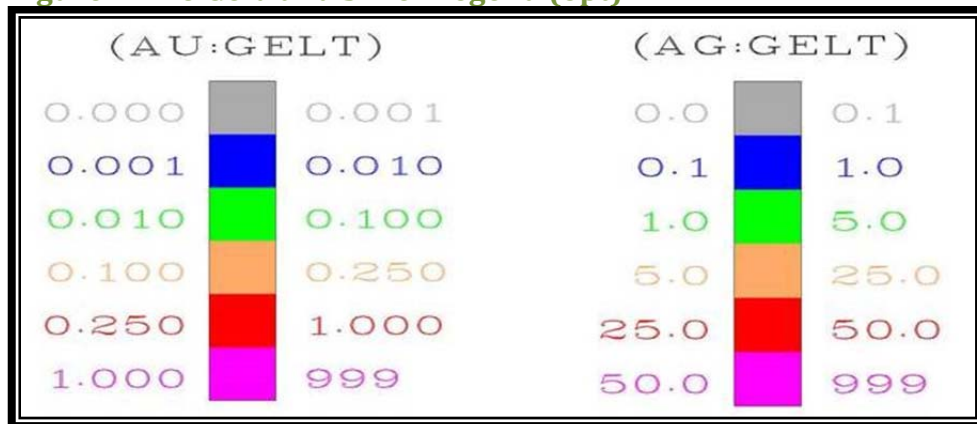


Vein	Silver Grades		
	Inverse Distance	Nearest Neighbor	Composite
505	7.32	7039	22.90
605	2.58	2.73	6.99
705	0.88	0.80	2.21
777	3.59	3.39	11.48
805	4.55	4.44	22.33
905	9.77	8.86	53.26
9051	4.32	4.76	5.78
9052	8.28	8.03	29.84
1026	0.94	0.96	1.91
1081	1.91	1.90	5.61
1605	0.52	0.49	1.03
1707	0.16	0.17	0.17
5005	0.30	0.32	1.09

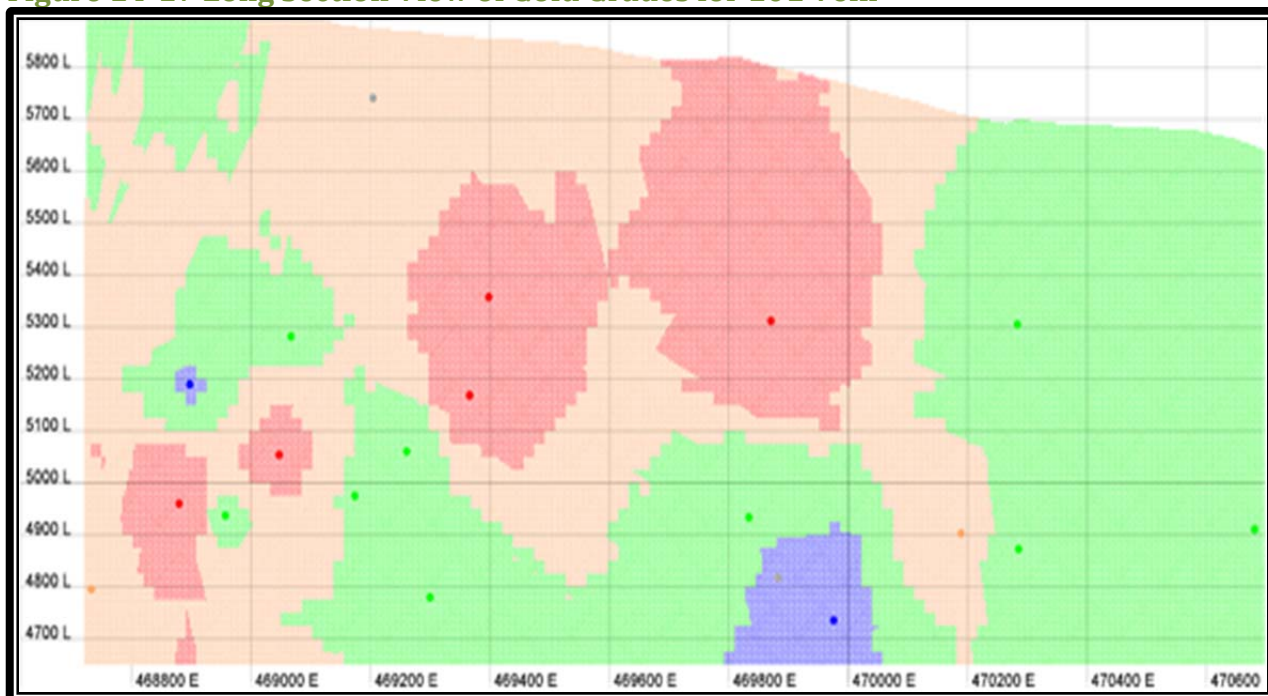
Gold and silver block grades are shown along with composites for each of the veins containing mineral resources in

Figure 14-17 through Figure 14-50.

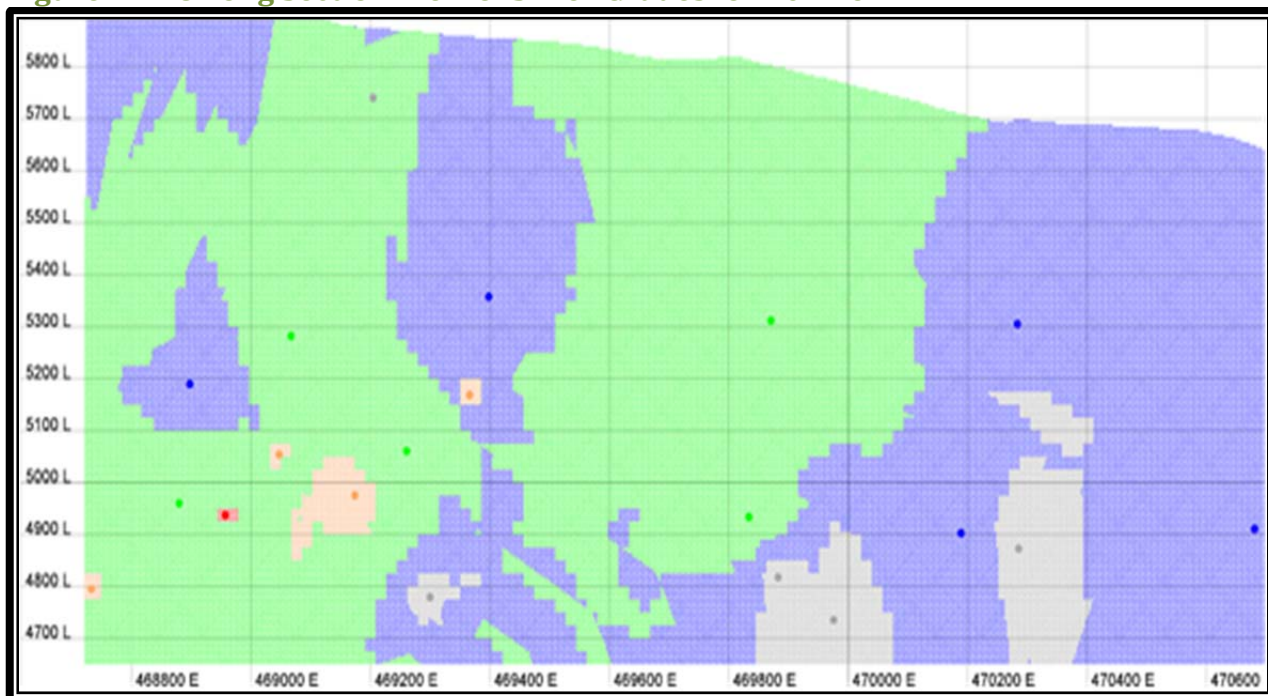
**Figure 14-16 Gold and Silver Legend (opt)**



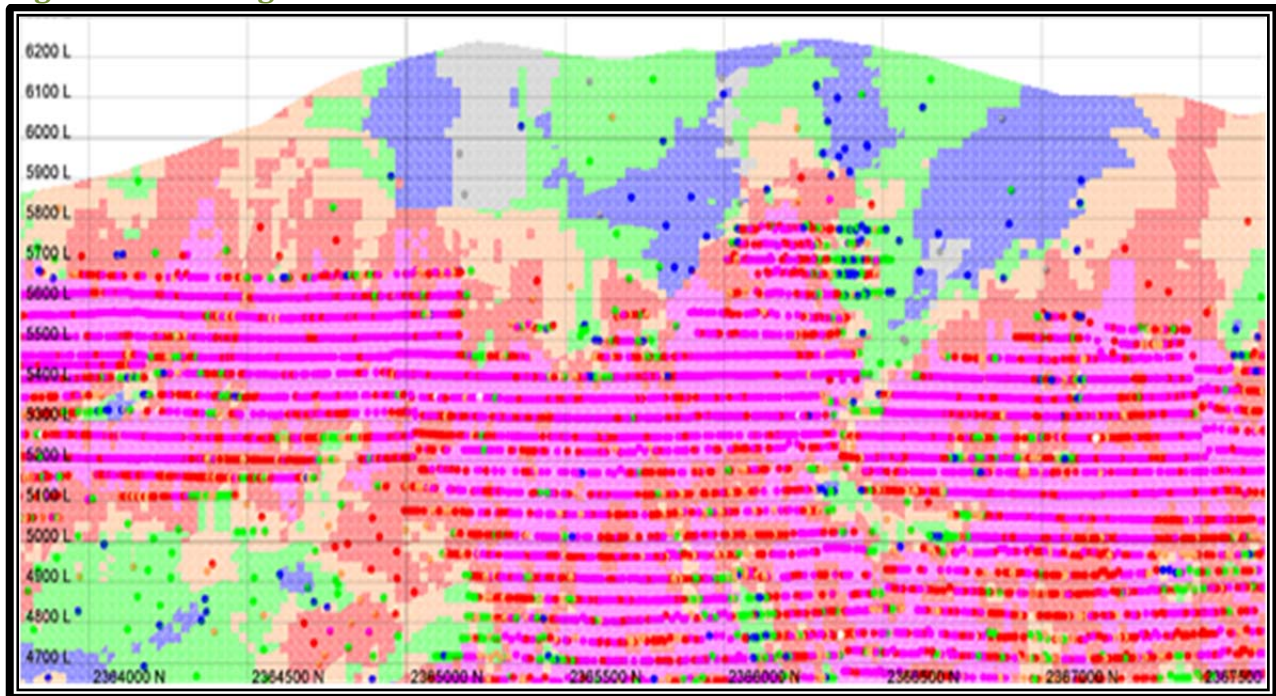
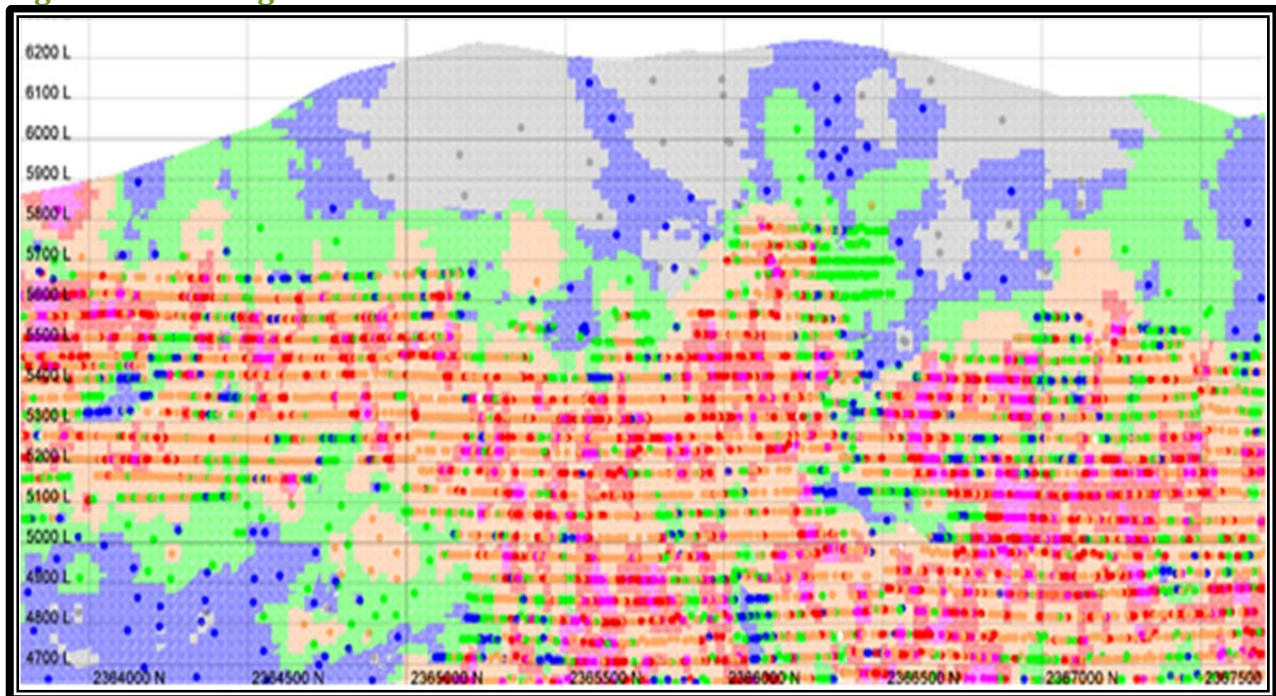
**Figure 14-17 Long Section View of Gold Grades for 101 Vein**



**Figure 14-18 Long Section View of Silver Grades for 101 Vein**

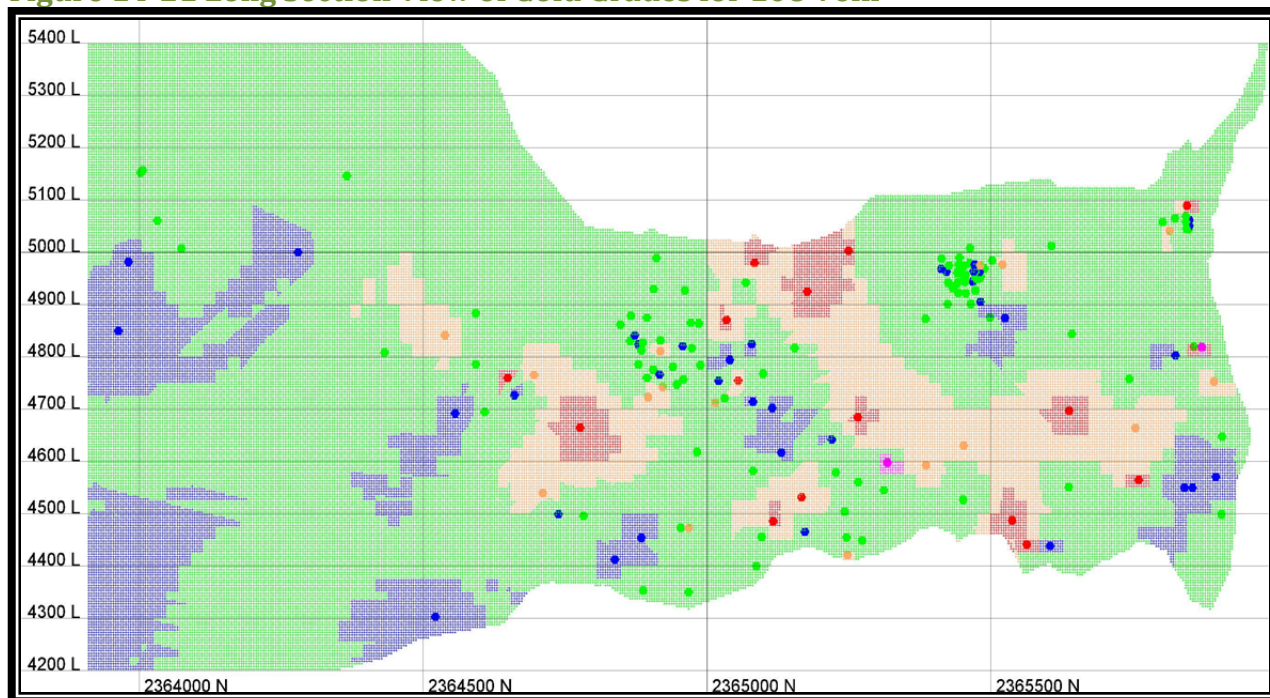




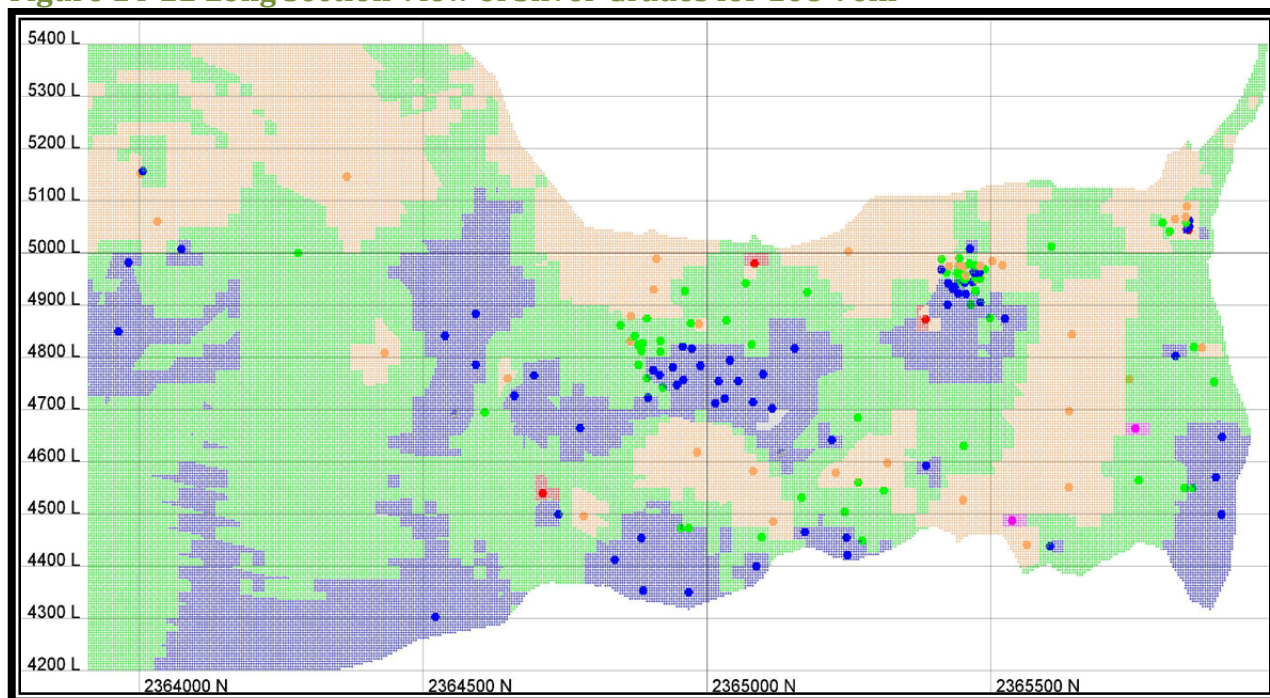
**Figure 14-19 Long Section View of Gold Grades for 105 Vein****Figure 14-20 Long Section View of Silver Grades for 105 Vein**



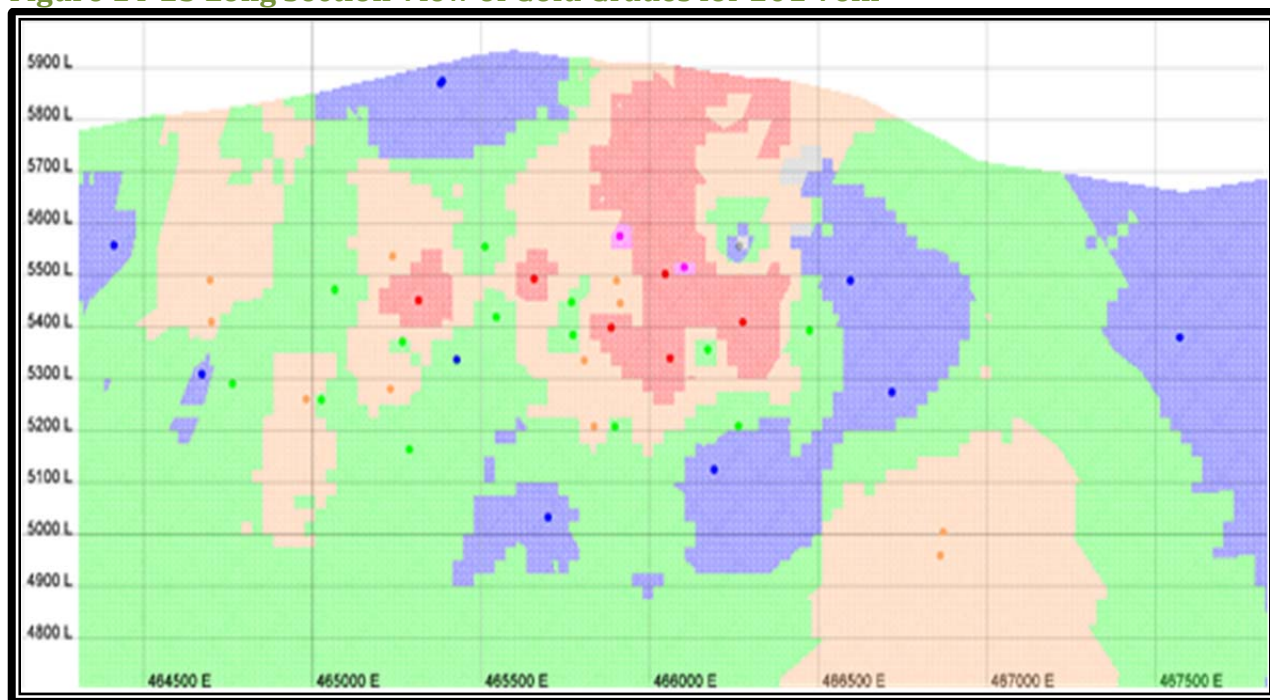
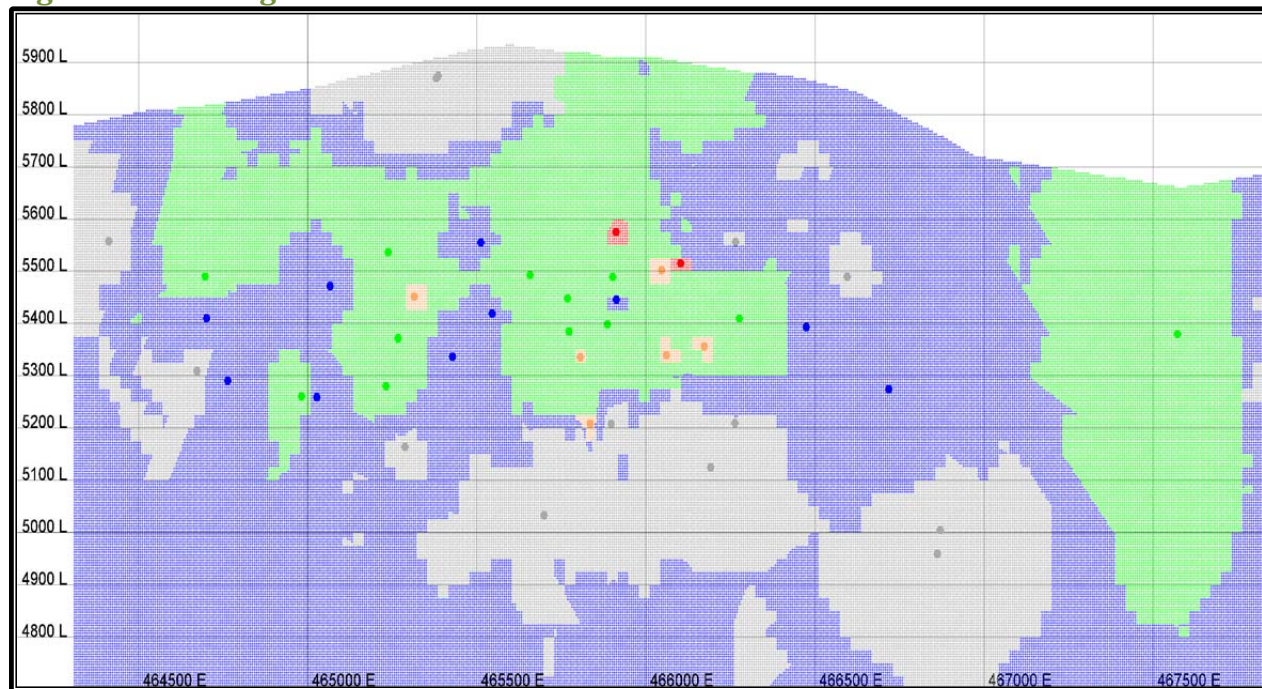
**Figure 14-21 Long Section View of Gold Grades for 108 Vein**



**Figure 14-22 Long Section View of Silver Grades for 108 Vein**

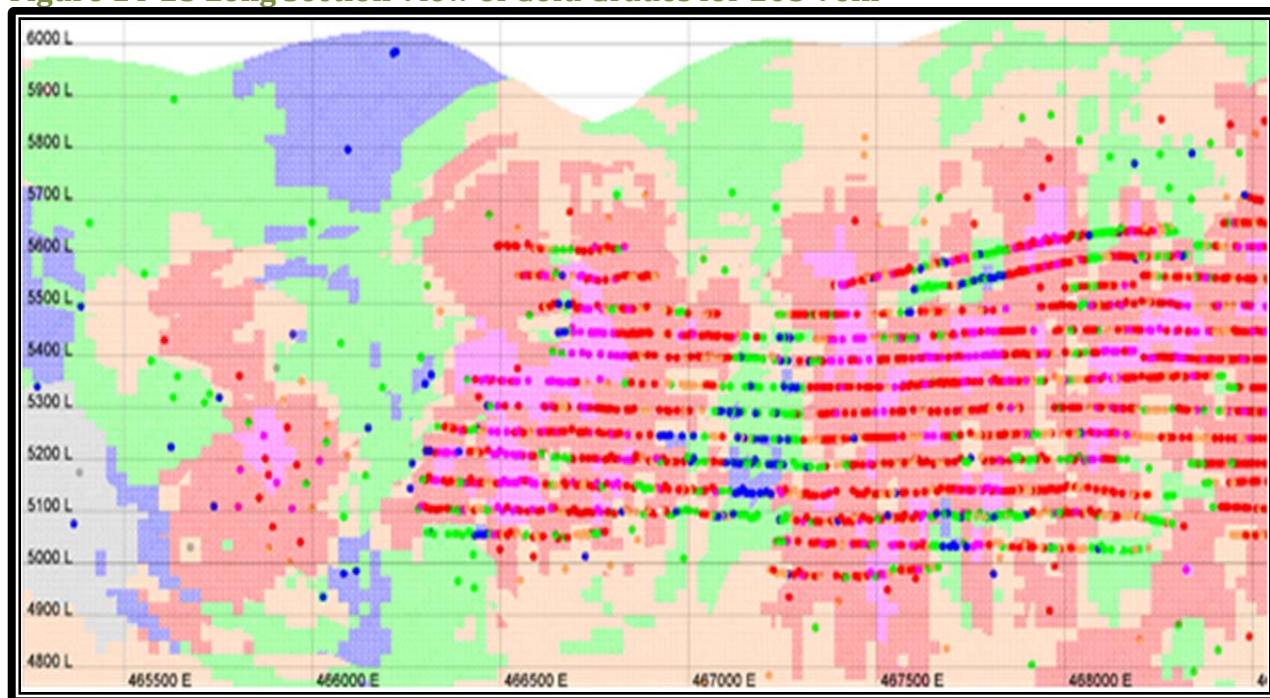




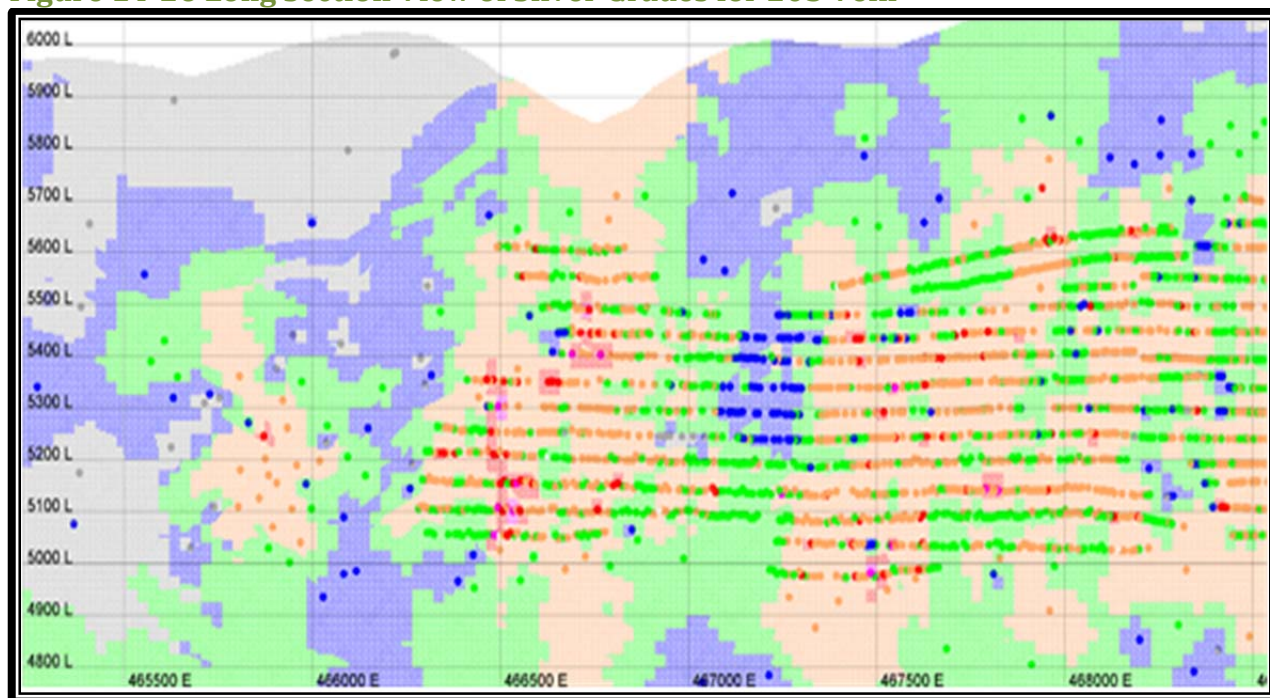
**Figure 14-23 Long Section View of Gold Grades for 201 Vein****Figure 14-24 Long Section View of Silver Grades for 201 Vein**



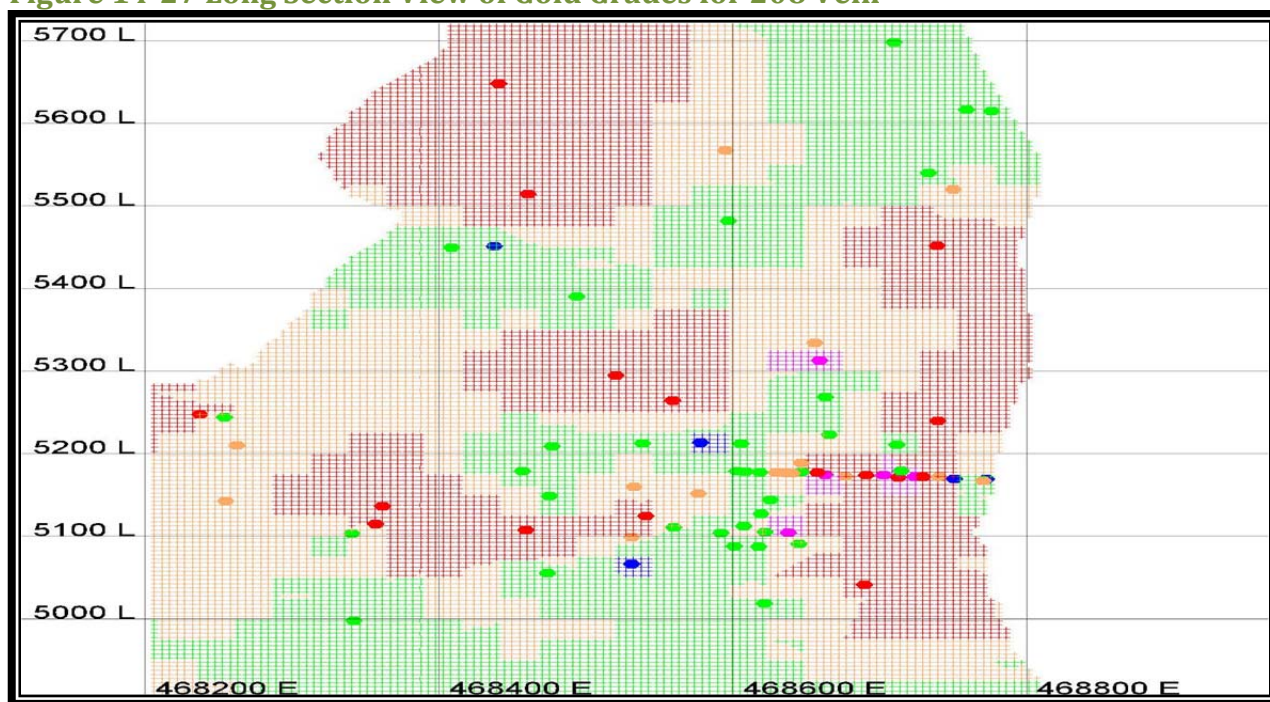
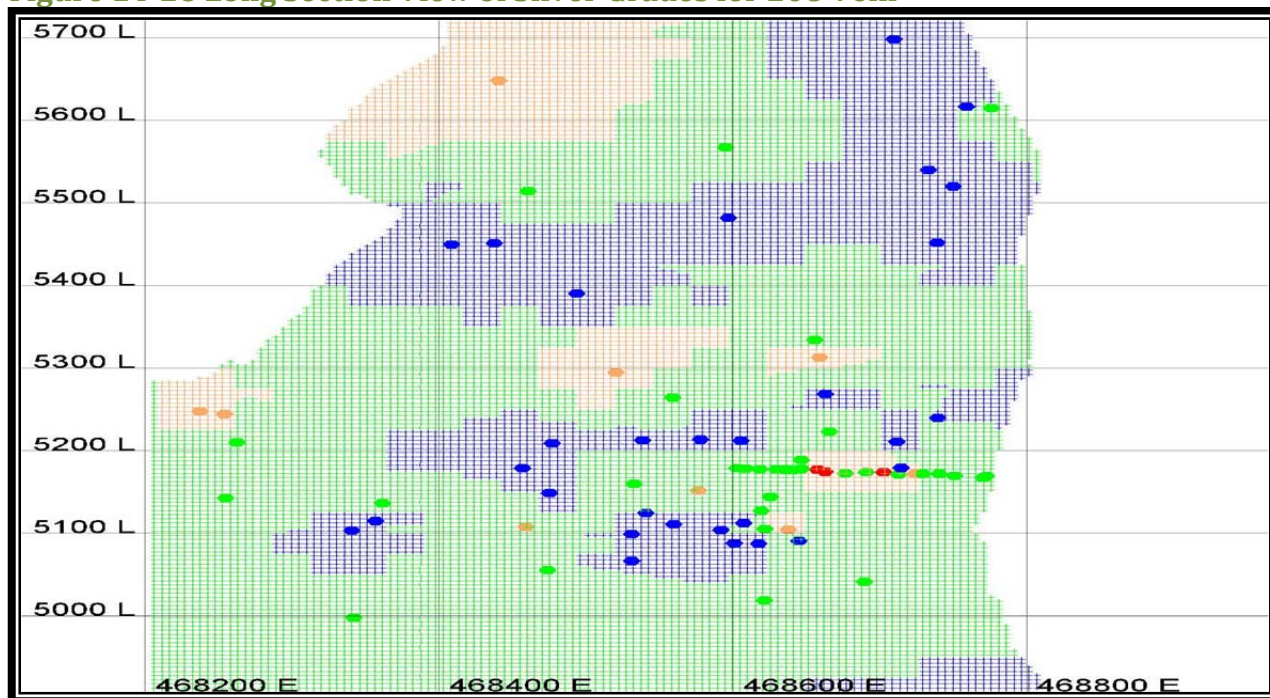
**Figure 14-25 Long Section View of Gold Grades for 205 Vein**



**Figure 14-26 Long Section View of Silver Grades for 205 Vein**

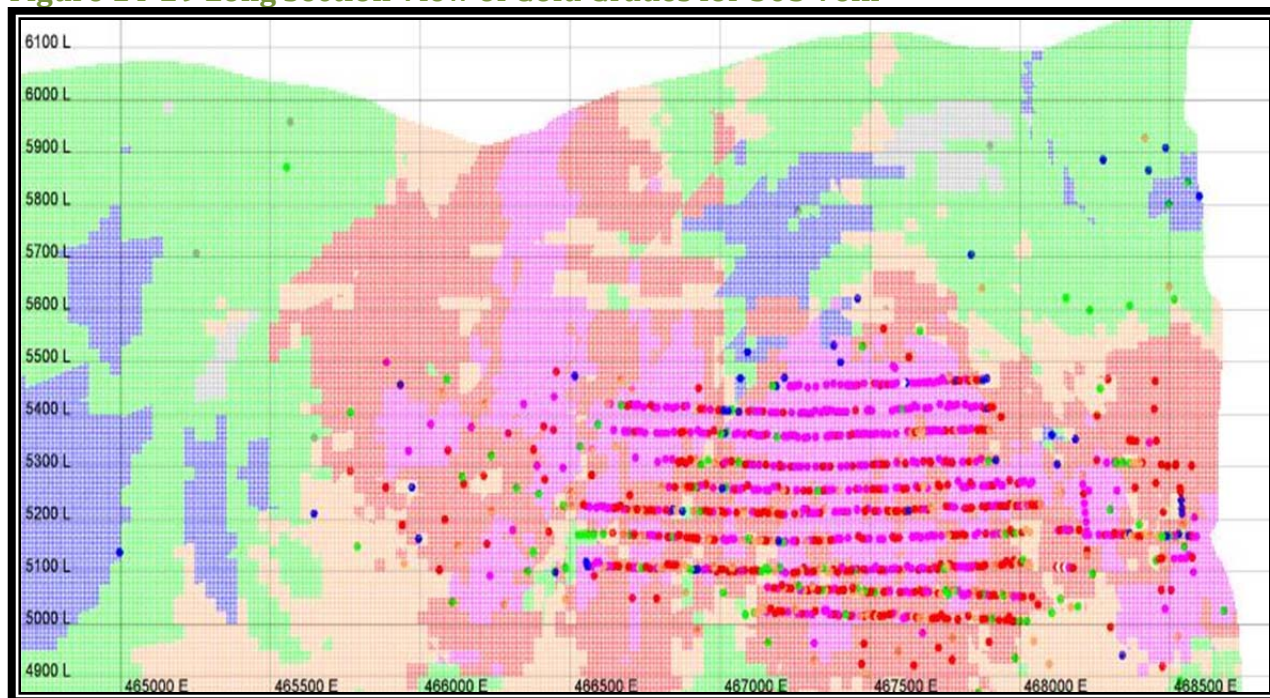




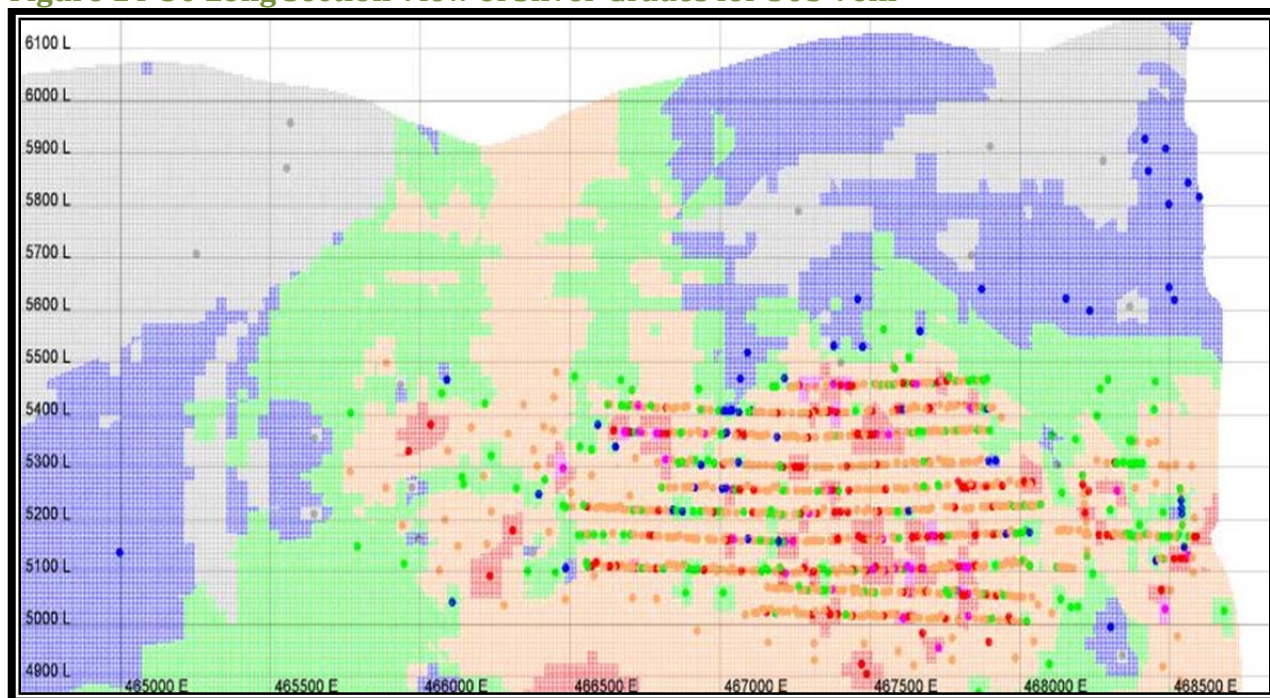
**Figure 14-27 Long Section View of Gold Grades for 208 Vein****Figure 14-28 Long Section View of Silver Grades for 208 Vein**



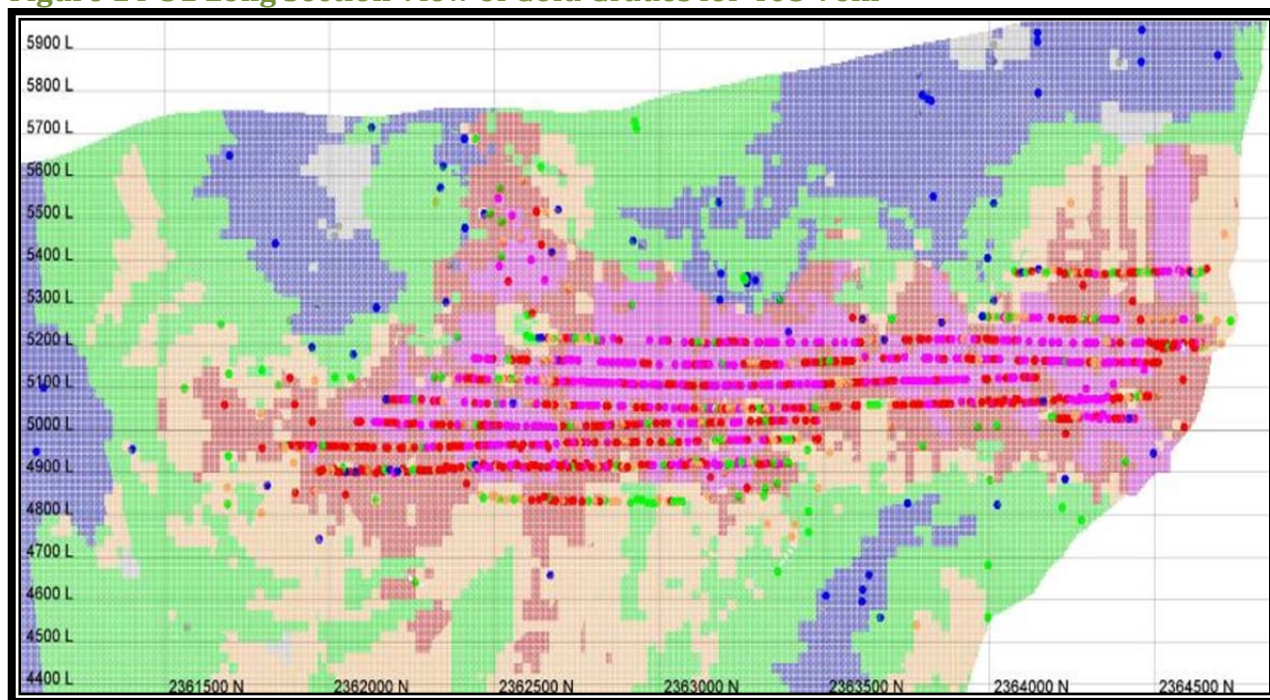
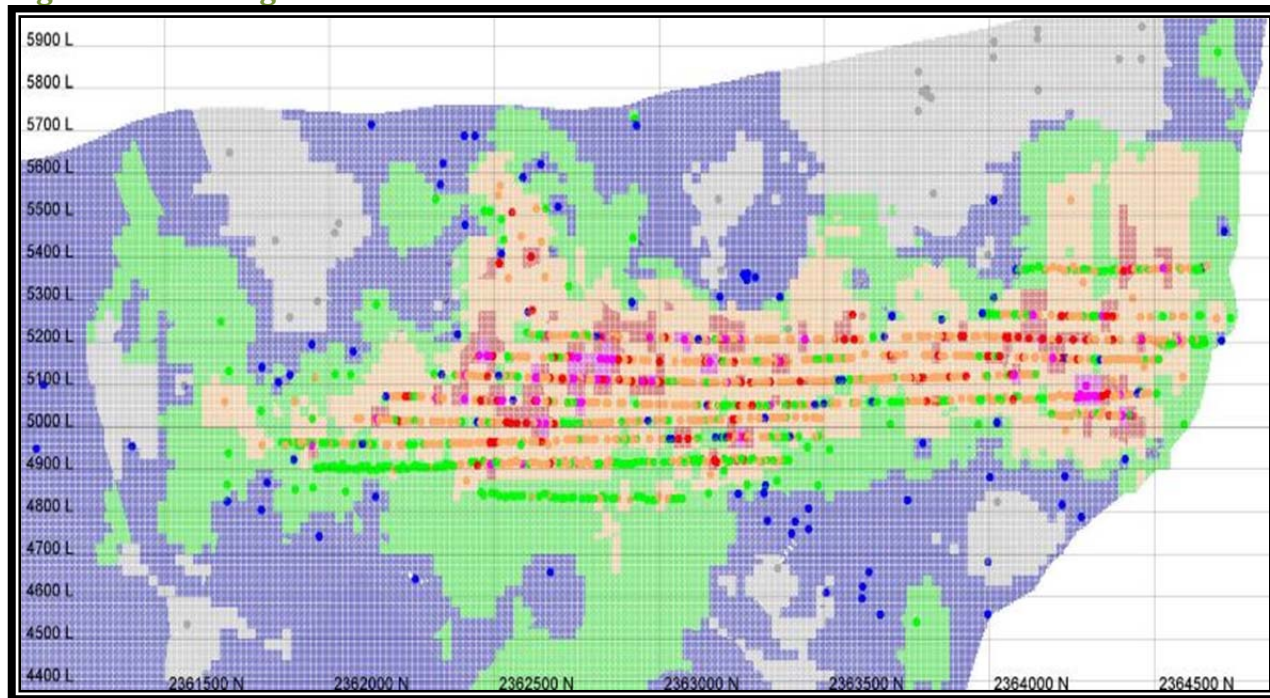
**Figure 14-29 Long Section View of Gold Grades for 305 Vein**



**Figure 14-30 Long Section View of Silver Grades for 305 Vein**

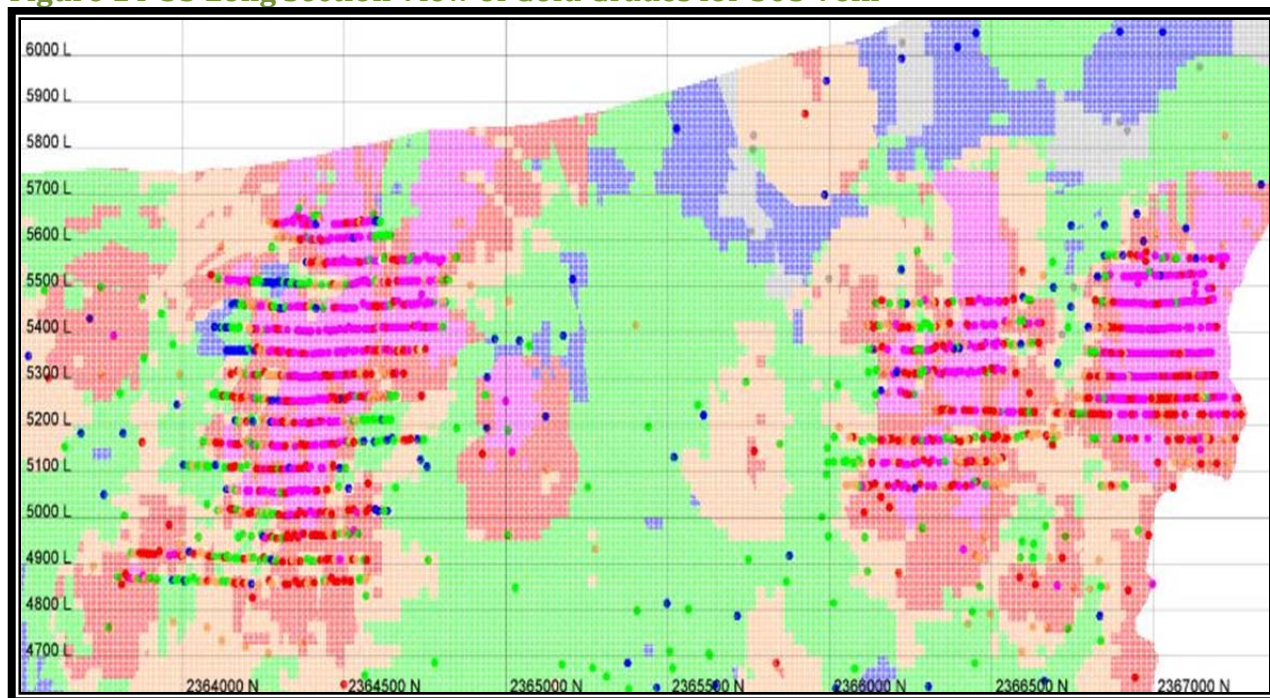




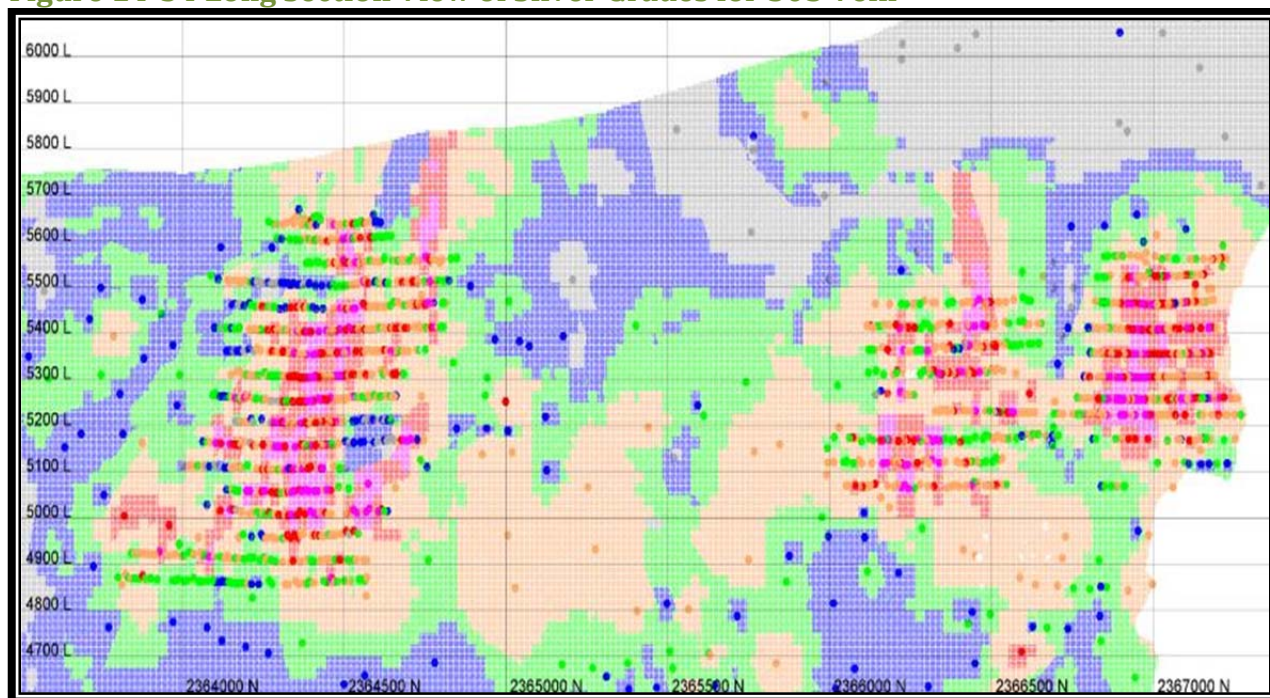
**Figure 14-31 Long Section View of Gold Grades for 405 Vein****Figure 14-32 Long Section View of Silver Grades for 405 Vein**



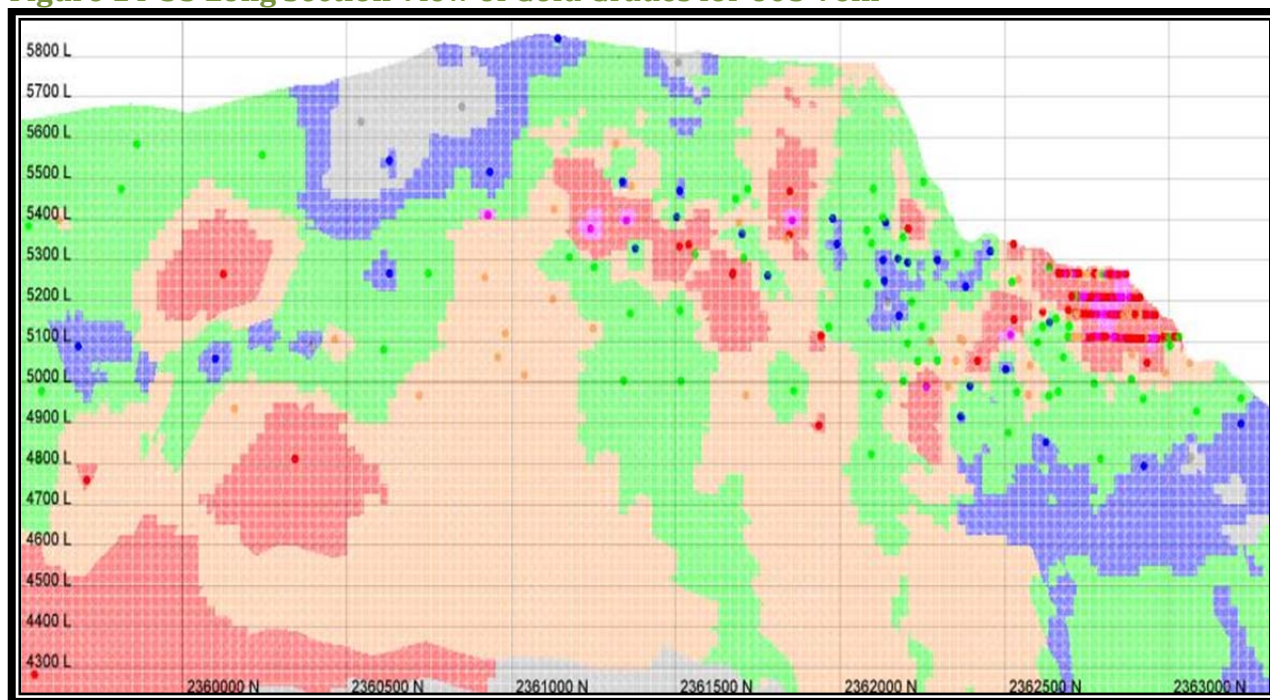
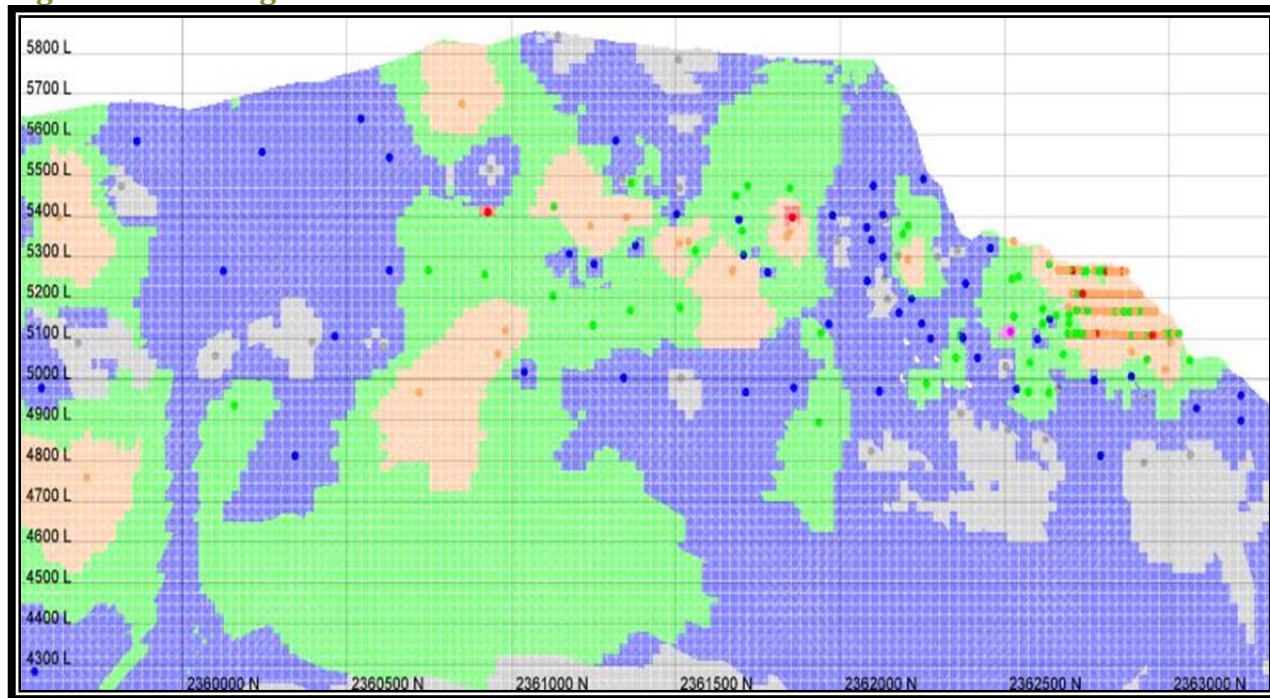
**Figure 14-33 Long Section View of Gold Grades for 505 Vein**



**Figure 14-34 Long Section View of Silver Grades for 505 Vein**

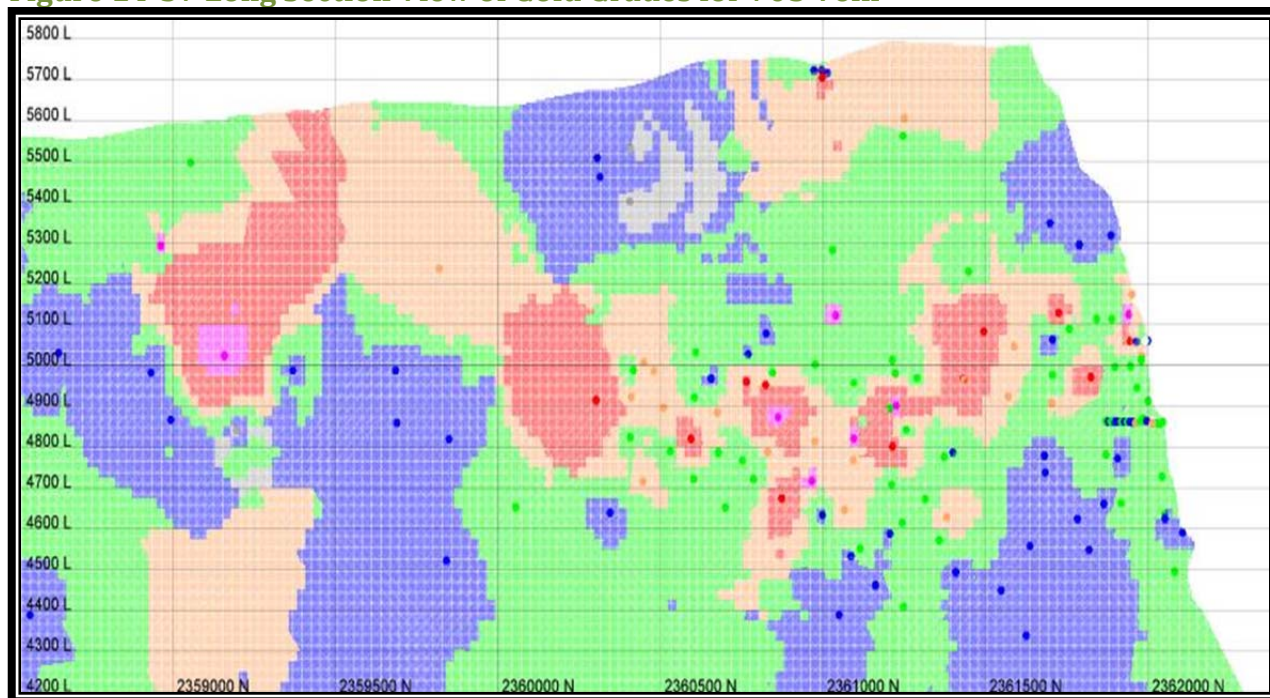




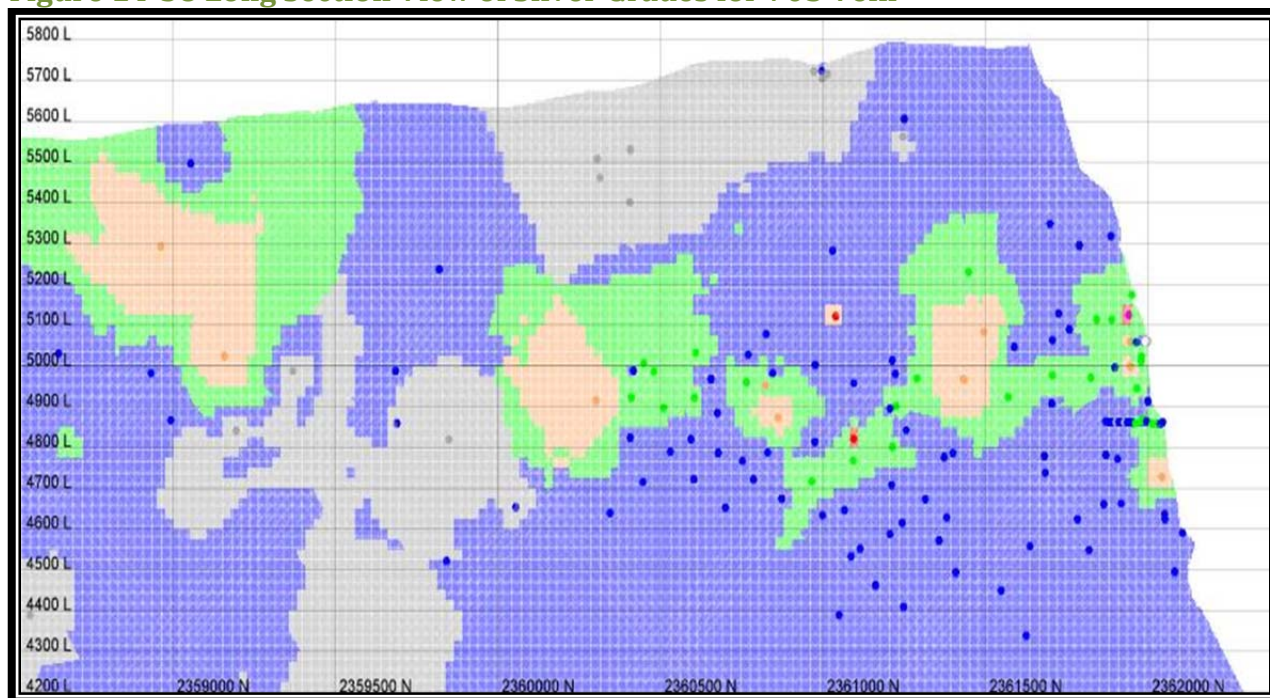
**Figure 14-35 Long Section View of Gold Grades for 605 Vein****Figure 14-36 Long Section View of Silver Grades for 605 Vein**



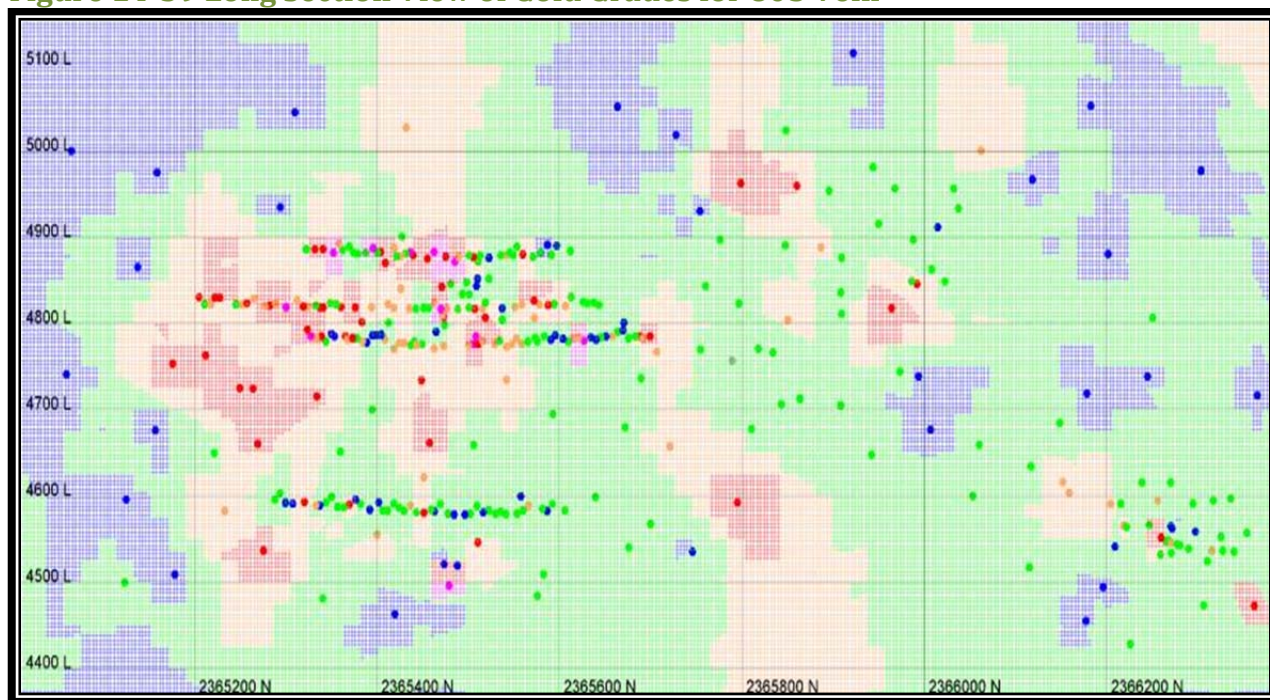
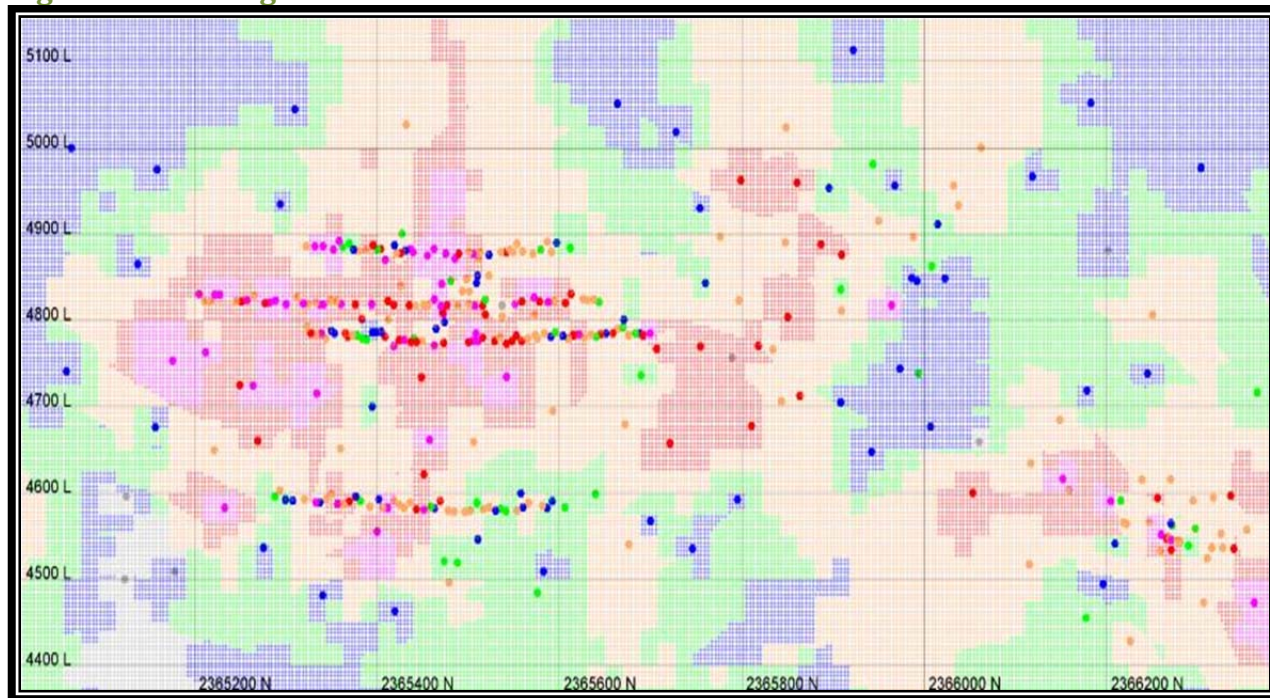
**Figure 14-37 Long Section View of Gold Grades for 705 Vein**



**Figure 14-38 Long Section View of Silver Grades for 705 Vein**

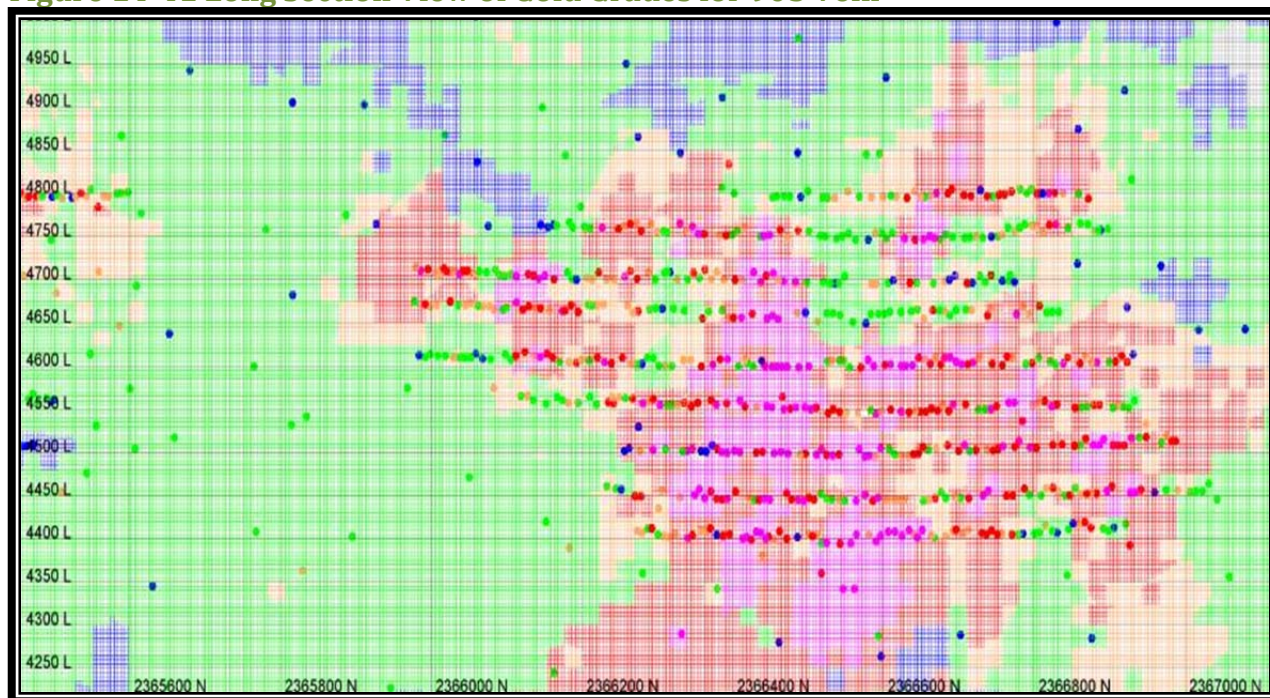




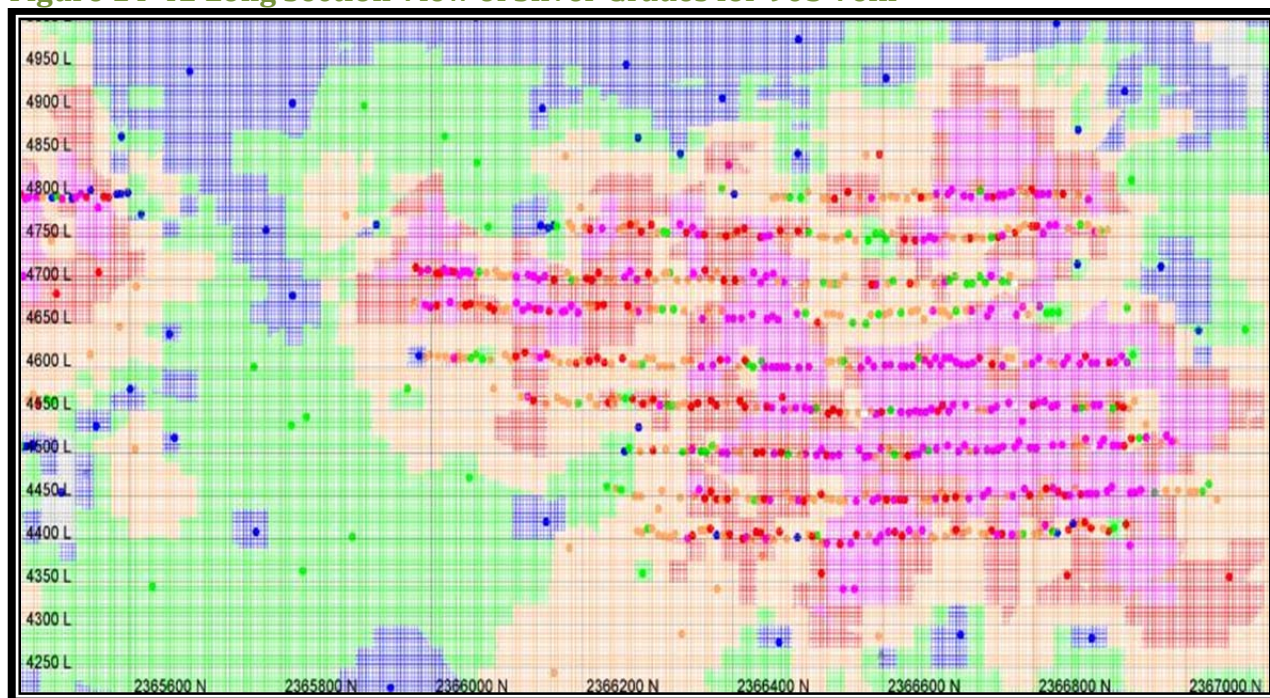
**Figure 14-39 Long Section View of Gold Grades for 805 Vein****Figure 14-40 Long Section View of Silver Grades for 805 Vein**



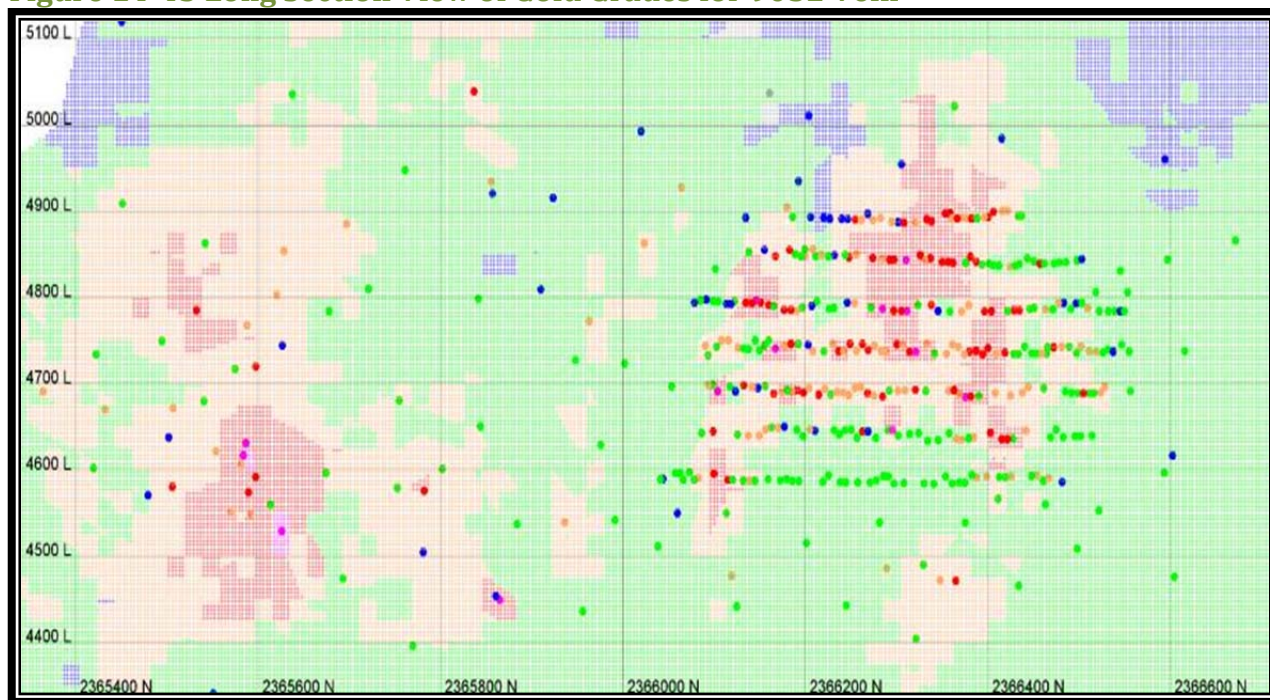
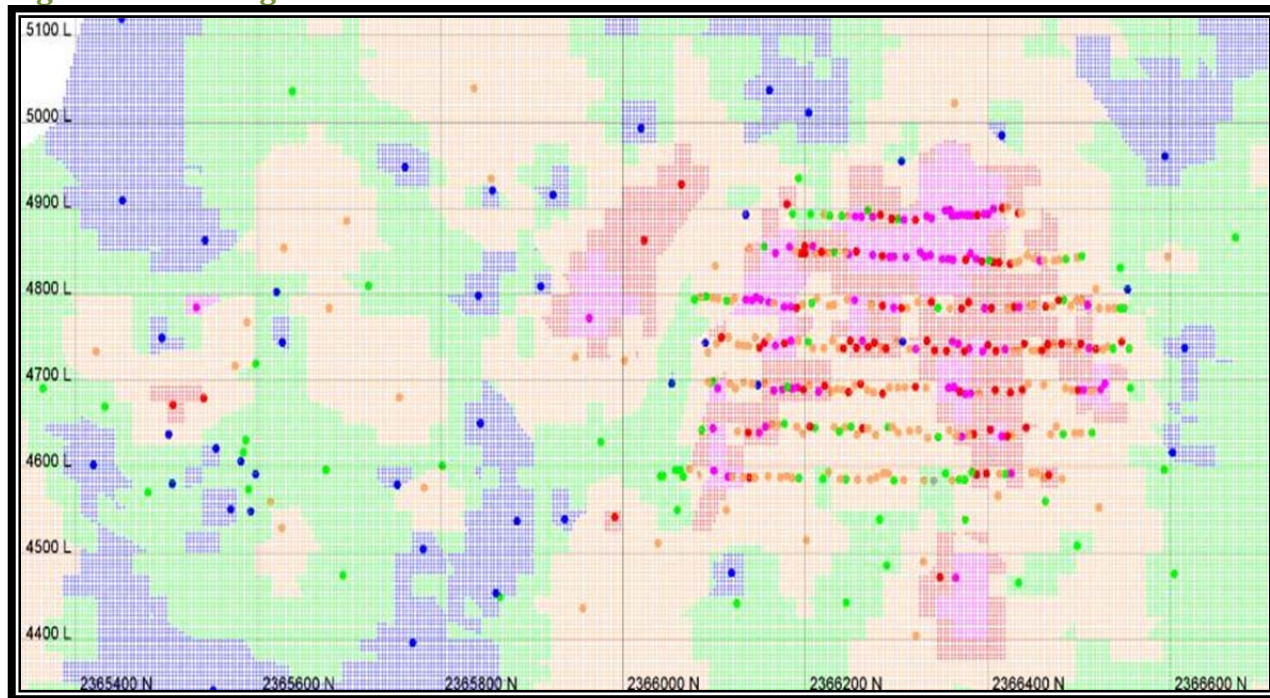
**Figure 14-41 Long Section View of Gold Grades for 905 Vein**



**Figure 14-42 Long Section View of Silver Grades for 905 Vein**

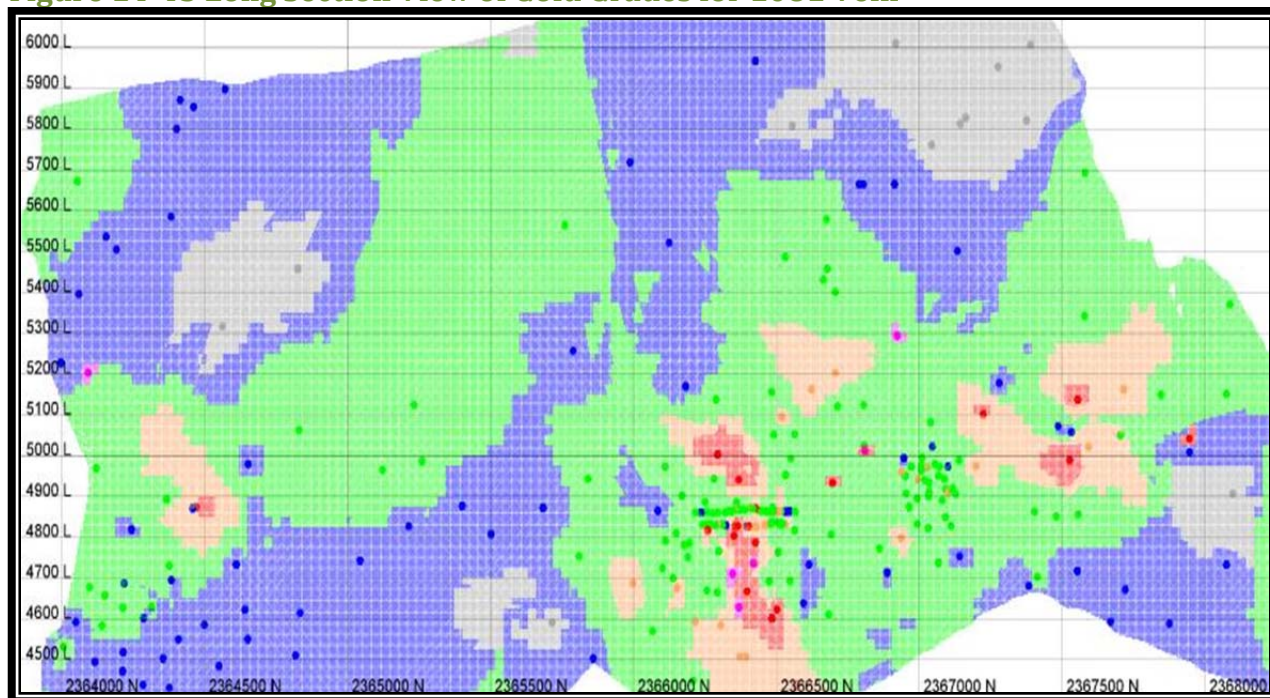




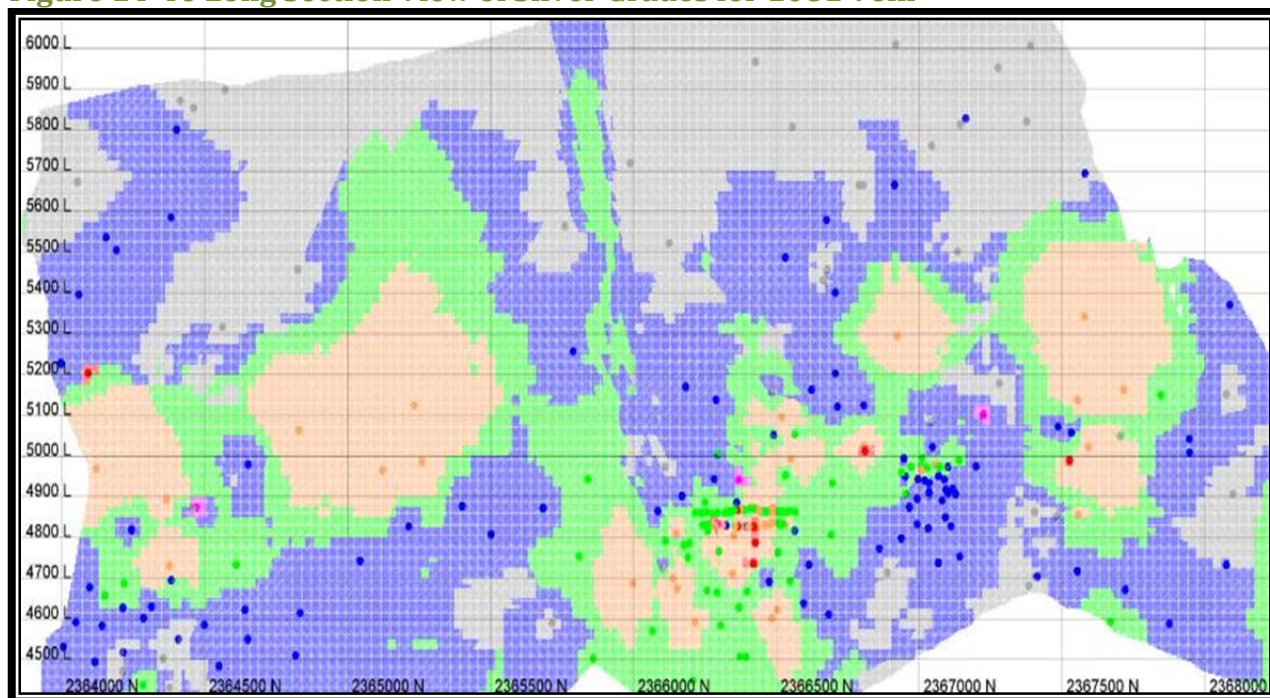
**Figure 14-43 Long Section View of Gold Grades for 9052 Vein****Figure 14-44 Long Section View of Silver Grades for 9052 Vein**



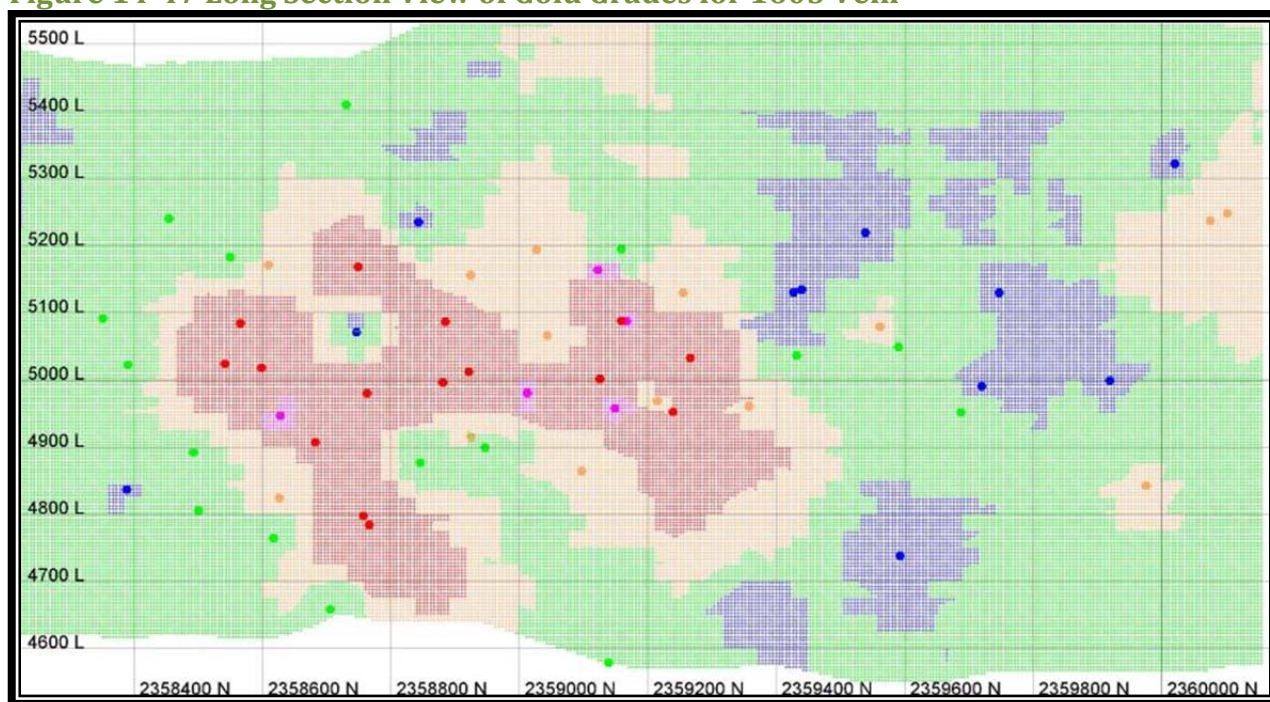
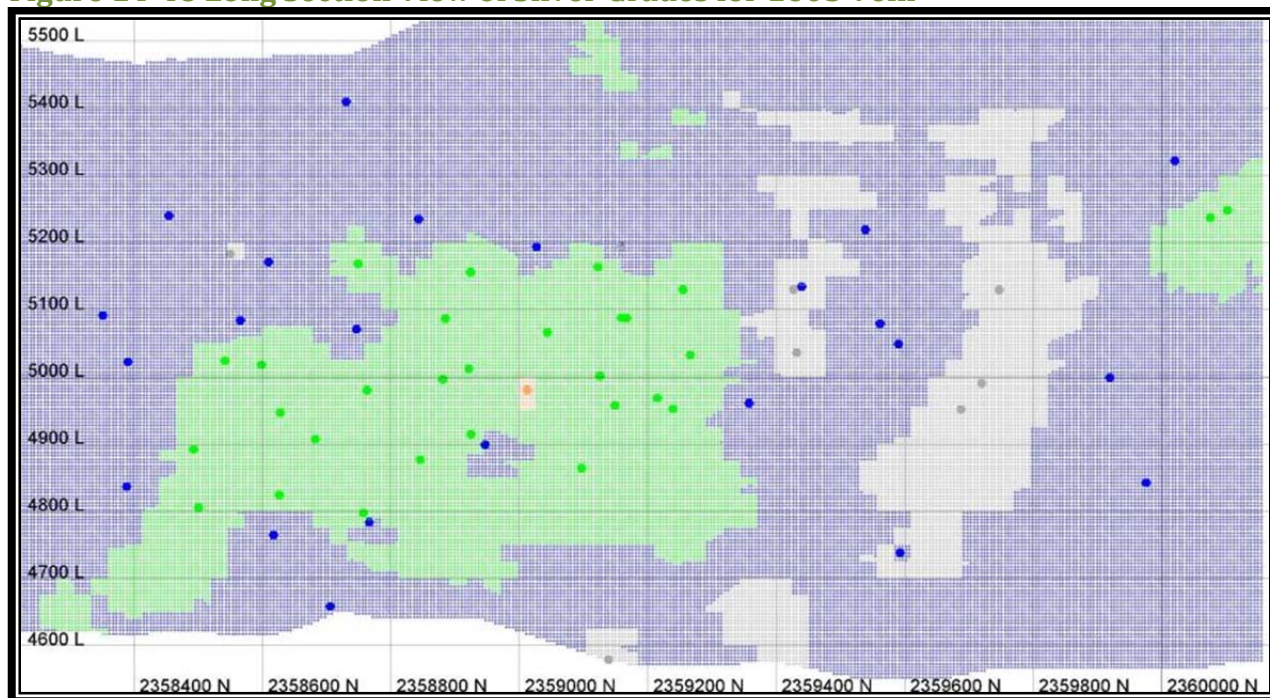
**Figure 14-45 Long Section View of Gold Grades for 1081 Vein**



**Figure 14-46 Long Section View of Silver Grades for 1081 Vein**

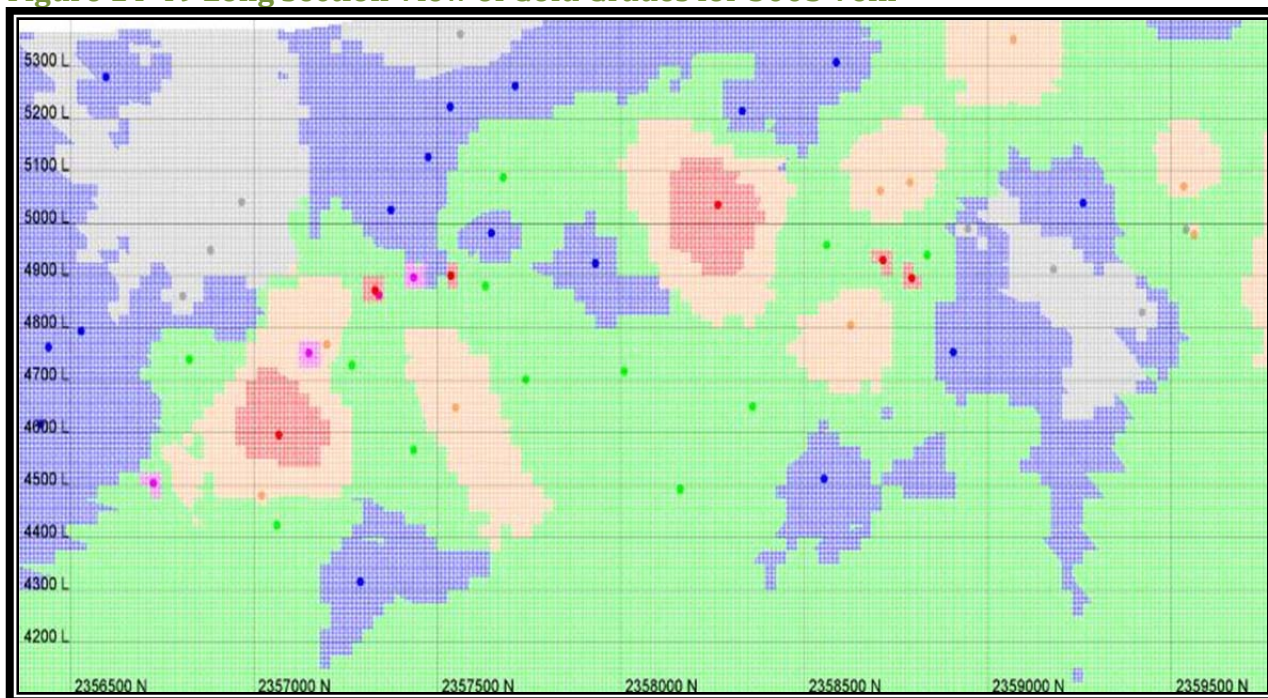




**Figure 14-47 Long Section View of Gold Grades for 1605 Vein****Figure 14-48 Long Section View of Silver Grades for 1605 Vein**



**Figure 14-49 Long Section View of Gold Grades for 5005 Vein**



**Figure 14-50 Long Section View of Silver Grades for 5005 Vein**

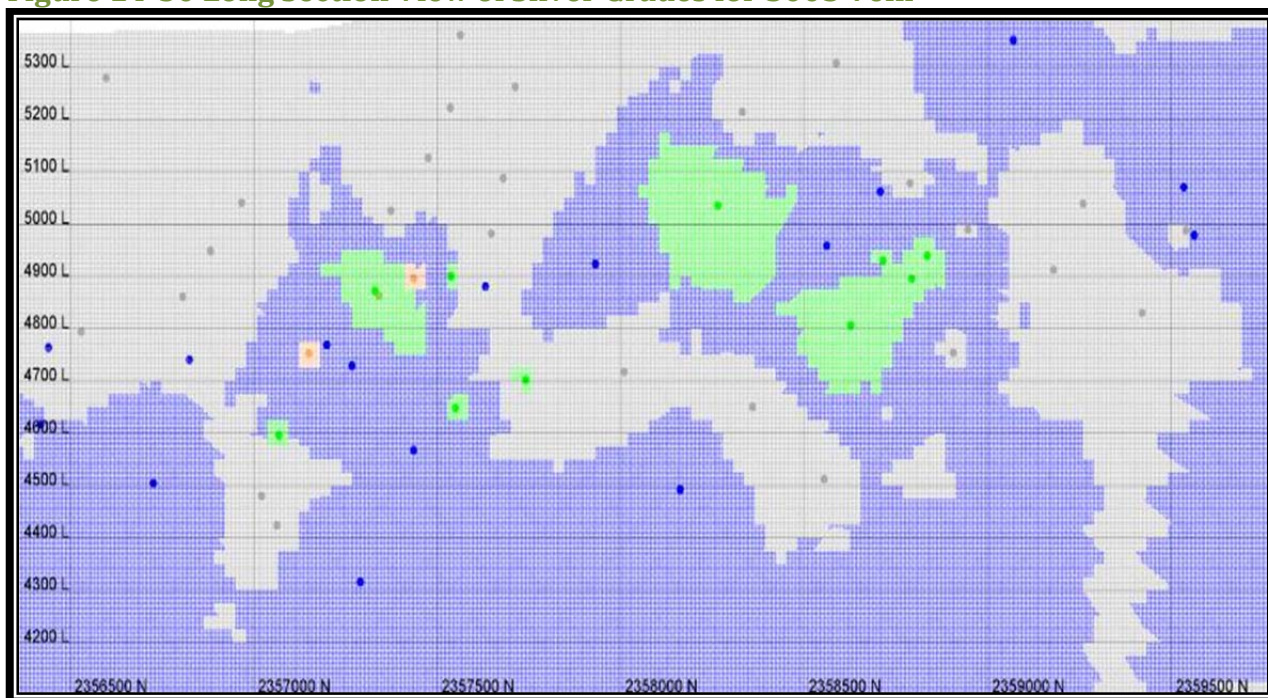


Figure 14-51 through Figure 14-54 show swath plots for the 905 vein in the north direction and elevation for gold and silver. The swath plots compare the ordinary kriging to inverse distance cubed to the nearest neighbor estimations with the composites within the vein. The estimations compare well with each other and with the composites on this local scale.

Figure 14-51 905 Vein Gold Swath Plot in North Direction

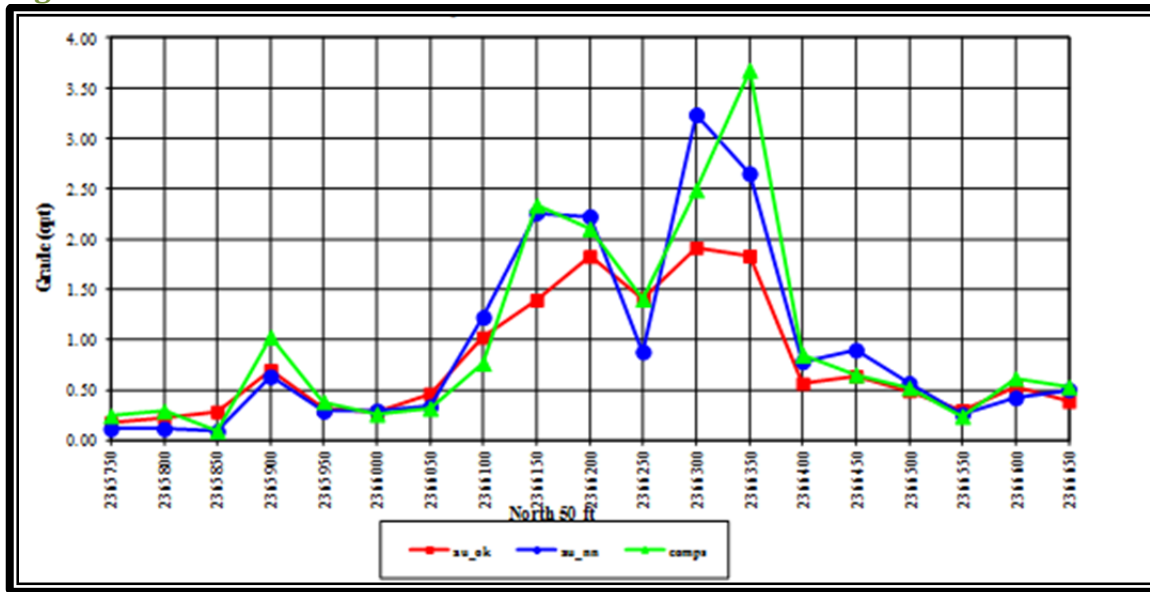
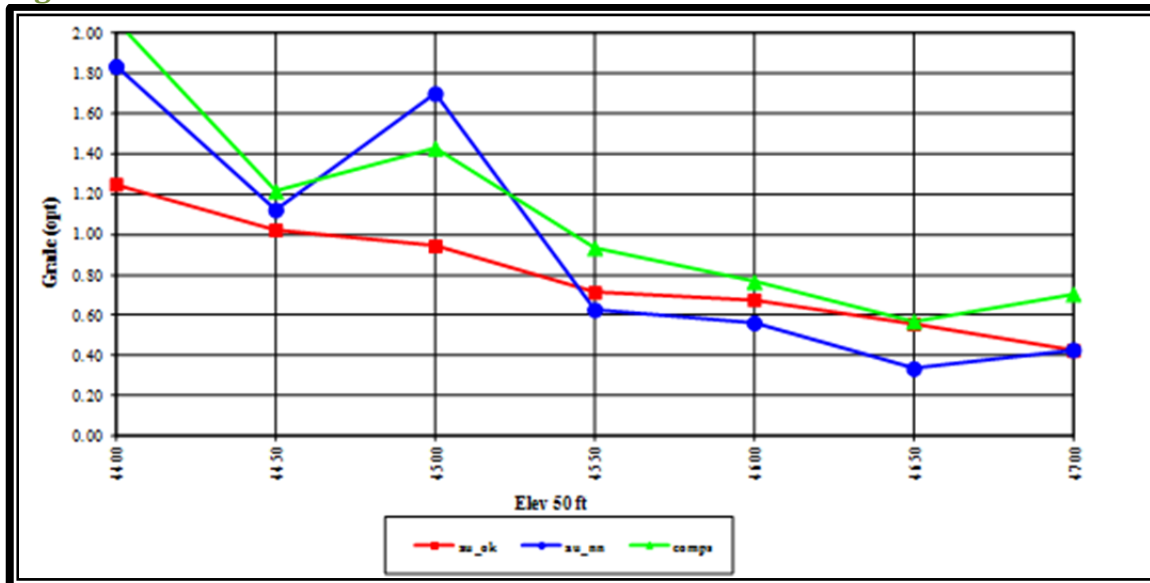
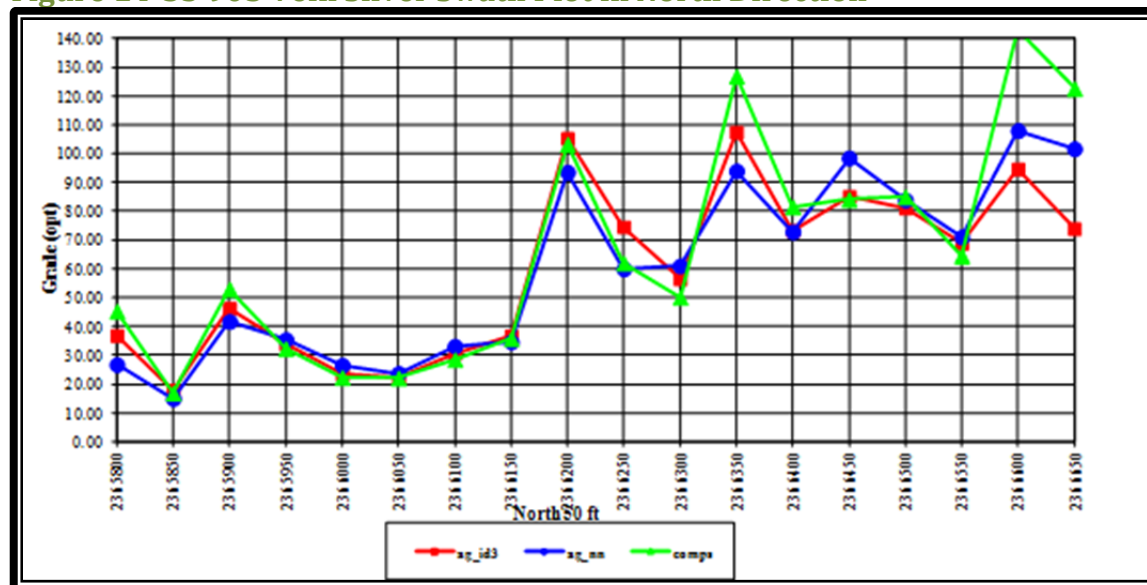


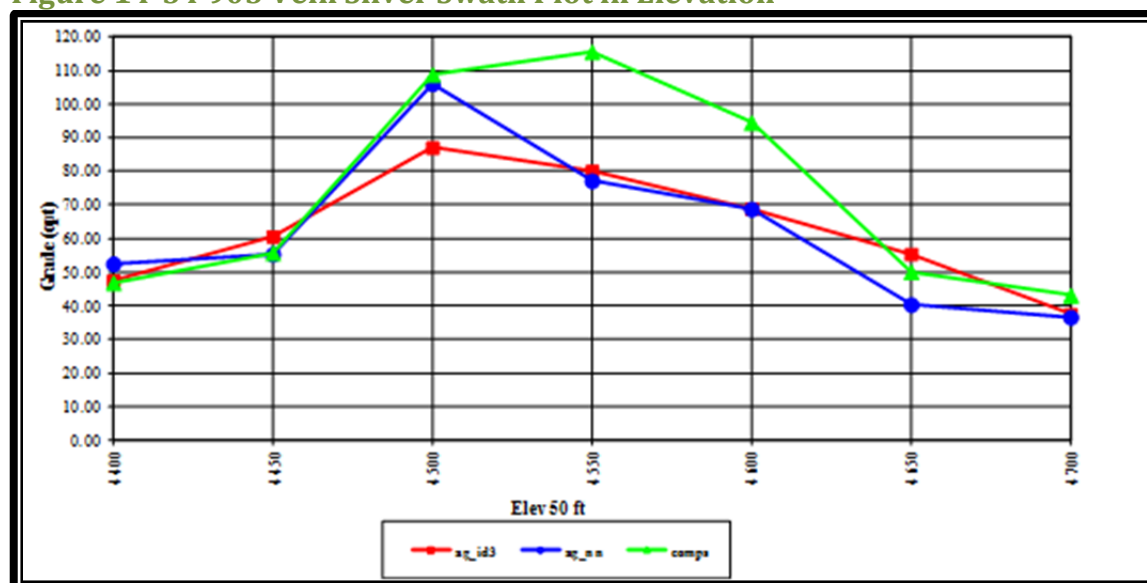
Figure 14-52 905 Vein Gold Swath Plot in Elevation



**Figure 14-53 905 Vein Silver Swath Plot in North Direction**



**Figure 14-54 905 Vein Silver Swath Plot in Elevation**



### 14.13. Mineral Resource Statement

The narrow vein mining methods practiced at the Midas Mine require a minimum stope width of four feet. The veins at Midas can vary in thickness from a few inches to over ten feet. Potentially economic mineralization must meet standard cut-off grade criteria as well as a grade thickness criterion before it is included as a mineral resource. Grade thickness is calculated by multiplying the block true width by its equivalent grade. The parameters used in determining the cut-off grade and grade thickness cut-off are listed in Table 14-14.



**Table 14-14 Cutoff Grade Parameters**

		Gold	Silver
Sales Price	\$/Ounce	\$1,200	\$19.00
Refining and Sales Expense	\$/Ounce	\$5.00	\$0.00
Production Royalty		0%	
Metallurgical Recovery		94%	92%
<b>Operating Costs</b>			
Ore Haulage (Portal to Mill)	\$/ton	\$2.00	
Direct Processing	\$/ton	\$52.00	
Administration and Overhead	\$/ton	\$10.00	
Mining	\$/ton	\$190.00	
Total	\$/ton	\$254.00	
Gold Equivalent		1	64.53
Unplanned Dilution		10%	
Cut-off Grade	Eq. opt	0.226	
Minimum Mining Width	feet	4	
Grade Thickness cut-off	Eq. opt-ft.	0.99	

Mineral resources meeting the dual constraints of cut-off grade and grade-thickness cut-off for each vein are listed in Table 14-15 below.

**Table 14-15 Mineral Resource Statement**

Vein Name	Vein No.	Vein True Thickness					AuEq		AuEq
		Feet	kton	Au opt	Ag opt	opt	Au koz	Ag koz	koz
Measured									
Colorado Grande	105	3.2	80	0.502	6.311	0.600	40	504	48
Gold Crown South	108	3.1	0.2	0.197	2.812	0.240	0.05	0.7	0.1
MT	201	0	0	0.000	0.000	0.000	0	0	0
Gold Crown	205	5.1	130	0.478	6.592	0.580	62	856	75
Gold Crown Sur	208	2.4	2	0.284	2.858	0.328	1	5	1
Gold Crown Hanging	305	2.9	31	0.601	6.577	0.703	18	201	21
Snow White	405	1.8	22	0.430	4.933	0.507	10	109	11
Discovery	505	2.7	39	0.494	7.447	0.609	19	287	23
Sleeping Beauty	605	4.3	1	0.511	5.585	0.597	1	8	1
Colorado Sur	705	0	0	0.000	0.000	0.000	0	0	0
Charger Hill	805	2.2	13	0.117	18.205	0.399	2	245	5
GP	905	2.4	19	0.086	11.310	0.261	1.6	217	5
Ace	9052	2.5	14	0.084	11.771	0.267	1.2	168	4
Happy	1081	1.9	0.7	0.143	6.285	0.240	0.1	4	0
Queen	1605	0	0	0.000	0.000	0.000	0	0	0

Vein Name	Vein No.	Vein True Thickness		AuEq			AuEq		
		Feet	kton	Au opt	Ag opt	opt	Au koz	Ag koz	koz
SR	5005	0	0	0.000	0.000	0.000	0	0	0
Total Measured		3.7	352	0.440	7.401	0.555	155	2,605	195
<i>Indicated</i>									
Colorado Grande	105	5.4	183	0.418	4.872	0.494	77	892	90
Gold Crown South	108	4.8	7.3	0.279	4.663	0.351	2.04	34.1	2.6
MT	201	6.5	10	0.217	2.161	0.251	2	21	2
Gold Crown	205	3.8	150	0.316	4.019	0.378	47	603	57
Gold Crown Sur	208	3.6	16	0.280	1.806	0.308	4	28	5
Gold Crown Hanging	305	2.8	103	0.470	5.484	0.555	48	564	57
Snow White	405	2.2	59	0.391	4.355	0.458	23	256	27
Discovery	505	2.8	79	0.397	5.896	0.489	31	463	38
Sleeping Beauty	605	4.2	31	0.305	6.059	0.399	9	186	12
Colorado Sur	705	3.6	13	0.370	1.689	0.397	5	23	5
Charger Hill	805	4.6	31	0.083	15.421	0.322	3	472	10
GP	905	2.5	34	0.097	9.942	0.251	3.3	337	9
Ace	9052	3.4	23	0.101	9.685	0.251	2.3	219	6
Happy	1081	3.1	5.2	0.329	7.653	0.448	1.7	39	2
Queen	1605	4.1	22	0.327	0.977	0.342	7	22	8
SR	5005	8.1	0	0.000	0.000	0.000	0	0	0
Total Indicated		3.9	765	0.349	5.440	0.433	267	4,161	331
<i>Measured and Indicated</i>									
Colorado Grande	105	4.7	263	0.444	5.309	0.526	117	1,396	138
Gold Crown South	108	4.8	7.5	0.276	4.605	0.347	2.08	34.7	2.6
MT	201	6.5	10	0.217	2.161	0.251	2	21	2
Gold Crown	205	4.4	280	0.391	5.212	0.472	109	1,459	132
Gold Crown Sur	208	3.5	17	0.280	1.919	0.310	5	33	5
Gold Crown Hanging	305	2.8	133	0.500	5.734	0.589	67	765	79
Snow White	405	2.1	81	0.402	4.512	0.471	33	365	38
Discovery	505	2.8	117	0.429	6.406	0.528	50	750	62
Sleeping Beauty	605	4.2	32	0.314	6.038	0.408	10	194	13
Colorado Sur	705	3.6	13	0.370	1.689	0.397	5	23	5
Charger Hill	805	3.9	44	0.094	16.272	0.346	4	718	15
GP	905	2.4	53	0.093	10.437	0.255	4.9	554	14
Ace	9052	3.1	37	0.094	10.492	0.257	3.5	387	9
Happy	1081	2.9	5.8	0.307	7.495	0.424	1.8	44	2
Queen	1605	4.1	22	0.327	0.977	0.342	7	22	8
SR	5005	8.1	0	0.000	0.000	0.000	0	0	0
Total Meas. and Ind.		3.8	1,117	0.377	6.058	0.471	421	6,765	526
<i>Inferred</i>									
Colorado Grande	105	3.3	179	0.298	3.156	0.347	53	565	62



Vein Name	Vein No.	Vein True Thickness		Au opt	Ag opt	AuEq		Ag koz	AuEq koz
		Feet	kton			opt	Au koz		
Gold Crown South	108	4.3	9.3	0.179	3.396	0.232	1.66	31.4	2.1
MT	201	4.0	68	0.236	1.585	0.260	16	109	18
Gold Crown	205	4.7	157	0.225	2.281	0.260	35	359	41
Gold Crown Sur	208	4.3	9	0.227	2.870	0.271	2	25	2
Gold Crown Hanging	305	1.7	86	0.339	2.746	0.381	29	237	33
Snow White	405	3.7	42	0.395	3.019	0.442	17	128	19
Discovery	505	2.7	78	0.352	4.616	0.424	28	361	33
Sleeping Beauty	605	4.0	41	0.186	5.250	0.268	8	214	11
Colorado Sur	705	5.7	13	0.325	2.040	0.356	4	26	5
Charger Hill	805	3.0	10	0.080	10.486	0.242	1	101	2
GP	905	3.3	82	0.154	6.043	0.248	12.6	494	20
Ace	9052	2.2	41	0.167	6.459	0.268	6.9	265	11
Happy	1081	3.4	5.4	0.182	6.291	0.279	1.0	34	2
Queen	1605	2.6	29.3	0.273	0.862	0.286	8.0	25	8
SR	5005	3.7	8	2.113	1.684	2.139	18	14	18
Total Inferred		4.0	858	0.280	3.480	0.334	241	2,988	287

## Notes:

1. Mineral resources have been calculated based on a gold price of \$1,200/troy ounce and a silver price of \$19.00 per troy ounce.
2. Mineral resources are calculated at a grade thickness cut-off grade of 0.96 Au equivalent opt-feet and a diluted Au equivalent cut-off grade of 0.225 opt.
3. Gold equivalent ounces were calculated based on one ounce of gold being equivalent to 64.53 ounces of silver.
4. The minimum mining width is defined as four feet or the vein true thickness plus one foot, whichever is greater.
5. Mineral resources include dilution to achieve mining widths and an additional 10% unplanned dilution.
6. Mineral resources include allowance for 5% mining losses.
7. Mineral Resources are inclusive of mineral reserves.
8. Mineral resources, which are not mineral reserves, do not have demonstrated economic viability. The estimate of mineral resources may be materially affected by environmental, permitting, legal, title, socio-political, marketing, or other relevant issues.
9. The quantity and grade of reported inferred mineral resources in this estimation are uncertain in nature and there is insufficient exploration to define these inferred mineral resources as an indicated or measured mineral resource and it is uncertain if further exploration will result in upgrading them to an indicated or measured mineral resource category.
10. Mineral resource estimates can be materially affected by environmental, permitting, legal, title, taxation, socio-economic, marketing, political or other factors.

## 15. Mineral Reserve Estimate

Excavation designs for stopes, stope development drifting and access development were created using Vulcan Software. Stope designs were aided by the Vulcan Stope Optimizer Module. The stope optimizer produces the stope cross section which maximizes value within given geometric and economic constraints.

Design constraints included four feet minimum width for longhole stopes with development drifts spaced at 50-foot vertical intervals. Stope development drift dimensions maintained a constant height of 11 feet and a minimum width of seven feet. Cut and fill stopes are a minimum of six feet in width, and each cut is ten feet high.

Mining and backfill tasks were created from all designed excavations. These tasks were assigned costs and productivities specific to the excavation or backfill task type. Additionally, the undiscounted cash flow for each task was calculated. All tasks were then ordered in the correct sequence for mining and backfilling. Any sequence or subsequence that did not achieve a positive cumulative undiscounted cash flow was removed from consideration for mineral reserves. Stope development necessary to reach reserve excavations and exceeding the incremental cut-off grade shown in Table 15-1 is also included in mineral reserves.

**Table 15-1 Mineral Reserves Cut Off Grade Calculation**

		Gold	Silver
Metal Sales Price	\$/Ounce	\$1,000	\$15.83
Refining and Sales Expense	\$/Ounce	Included in Milling	
Royalty		0%	
Metallurgical Recovery		94%	92%
<u>Operating Costs</u>			
Ore Haulage (Portal to Mill)	\$/ton	\$2.00	
Direct Processing	\$/ton	\$67.85	
Administration and Overhead	\$/ton	\$33.19	
Mining	\$/ton	\$211.83	
Total	\$/ton	\$314.87	
Gold Equivalent		1	64.53
Unplanned Dilution		10%	
Incremental Cut Off Grade		0.110	
Cut-off Grade	Eq. opt	0.335	
Minimum Mining Width	feet	4	
Grade Thickness cut-off	Eq. opt-ft.	1.474	

**Table 15-2 Midas Mineral Reserves as of August 31, 2014**

Vein Designation	Tons (000's)	Au opt	Ag opt	Au Eq opt	Au Ounces (000's)	Ag Ounces (000's)	Au Equiv. Ounces (000's)
Proven Reserves	134.1	0.381	13.35	0.588	51.1	1,790	78.8
Probable Reserves	108.0	0.376	7.92	0.498	40.6	855	53.8
<b>Proven + Probable Reserves</b>	<b>242.1</b>	<b>0.378</b>	<b>10.93</b>	<b>0.548</b>	<b>91.6</b>	<b>2,646</b>	<b>132.6</b>

*Notes:*

1. Mineral Reserves have been estimated based on a gold price of \$1,000/ounce and a silver price of \$15.83/ounce.
2. Metallurgical recoveries for gold and silver are 94% and 92% respectively.
3. Gold equivalent ounces are calculated on the basis of one ounce of gold being equivalent to 64.53 ounces of silver.
4. Mineral Reserves are estimated at a cutoff grade of 0.335Au opt and an incremental cutoff grade of 0.110 Au opt.
5. Mine losses of 5% and unplanned mining dilution of 10% have been applied to the designed mine excavations.

Midas mineral reserves could be materially affected by economic, geotechnical, permitting, metallurgical or other relevant factors. Mining and processing costs are sensitive to production rates. A decline in the production rate can cause an increase in costs and cutoff grades resulting in a reduction in mineral reserves. Geotechnical conditions requiring additional ground support or more expensive mining methods will also result in higher cutoff grades and reduced mineral reserves.

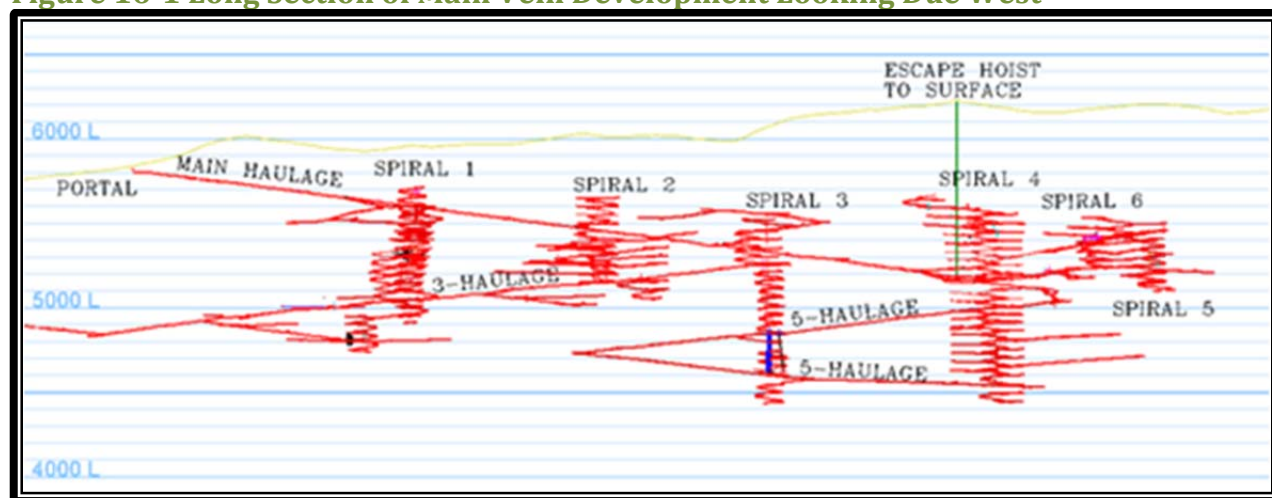
The Project has the necessary permits to continue exploration and current operations. Failure to maintain permit requirements may result in the loss of critical permits necessary for continued operations.

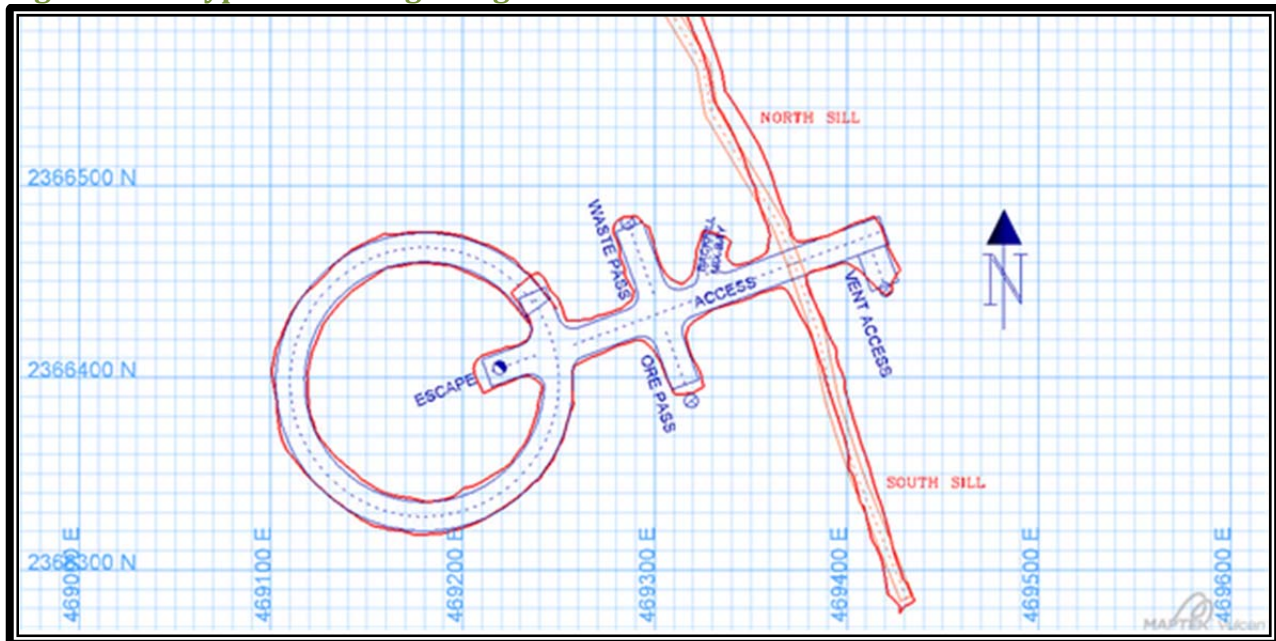
## 16. Mining Methods

### 16.1. Primary Mine Development

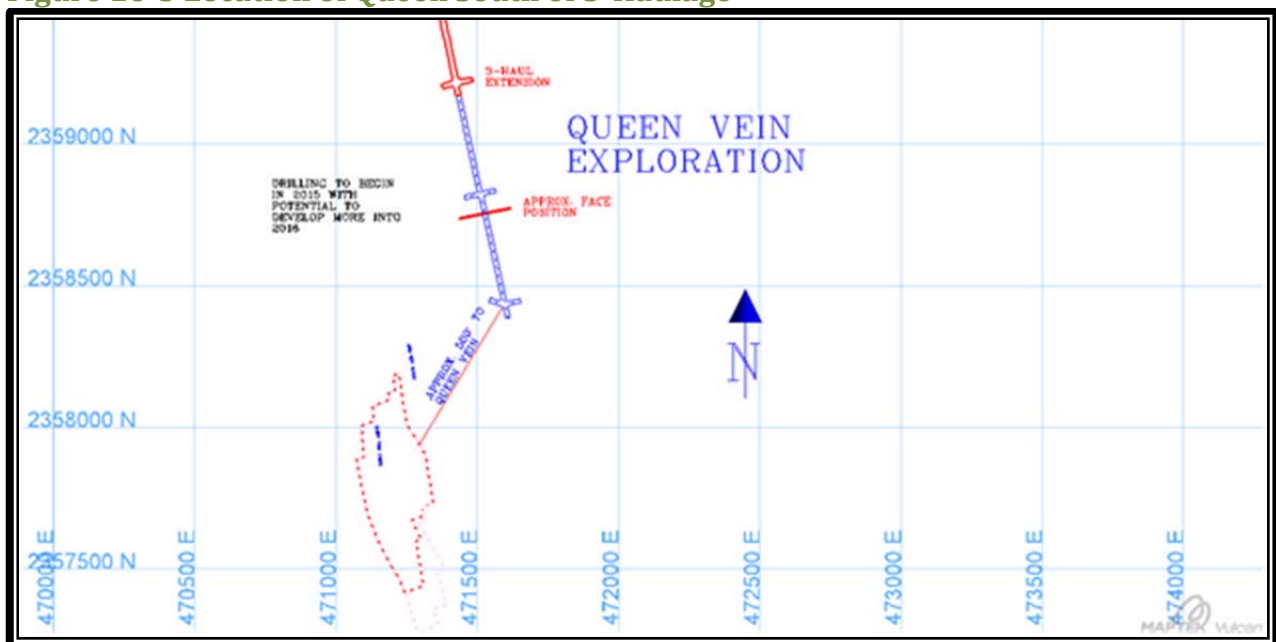
Midas is a modern, mechanized, narrow vein underground mine using rubber tired haulage equipment to transport mineralized material and waste to the surface. Main haulage ramps are excavated 16 feet wide by 17 feet high. Spirals are typically located 1,200 feet apart along strike to optimize development and are best located in the more competent rock of the footwall (Figure 16-1). Spiral accesses are 15 feet wide by 15 feet high, with a standard radius of 70 feet and standard gradient of approximately 12.5%. A typical level access has a ventilation/escape raise and access to an ore pass and a waste pass. Level crosscuts to the veins are located on nominal 50-foot vertical sublevels (Figure 16-2).

**Figure 16-1 Long Section of Main Vein Development Looking Due West**

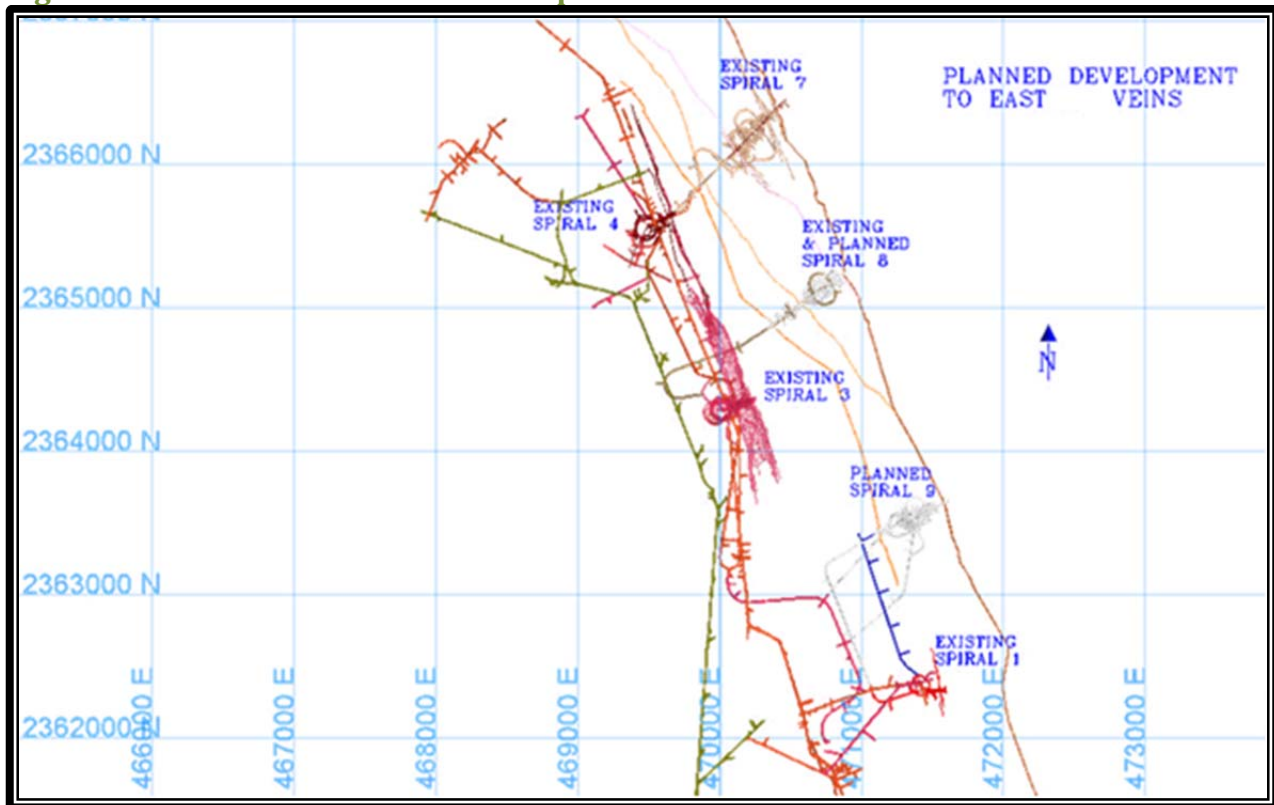


**Figure 16-2 Typical Heading Design and Actual Rib Detail**

Access for the East Veins is from existing development of the Main Veins. Spiral 7 is east of Spiral 4 and is accessed from the 4-4550 and the 4-4800 accesses. Spiral 8 is east of Spiral 3 and is accessed through the 3-4550 and the 3-4851 accesses. Additional drilling is required to determine the economic potential of Spiral 9, which would be accessed from the 1-5001 and the 4720 Haulage. (Figure 16-3)

**Figure 16-3 Location of Queen South of 3-Haulage**

**Figure 16-4 Planned East Vein Development Overview**



### **16.2. Ventilation and Secondary Egress**

Fresh air intake to the mine is provided by the Deep Vent Raise (DVR) at 690 thousand cubic feet per minute (kcfm) and by the portal at 420 kcfm. Three exhaust raises are strategically located to complete the ventilation circuit. The ventilation circuit is powered by seven main fans located at the surface of the ventilation raises. The main fans total 2,025 connected horse power (HP).

The raise near Spiral 4 is equipped with an escape hoist and capsule to provide emergency egress if the main evacuation route is blocked during an emergency. Additionally, there are 15 refuge chambers distributed throughout the mine in the event evacuation is not feasible. These refuge chambers are equipped with carbon dioxide filters, breathable grade compressed air tanks, food, and communication to the surface.

### **16.3. Power Distribution and Dewatering**

Electrical power to the mine is provided by a 4,160-volt feeder and stepped down to 480 volts for distribution. Step down transformers and circuit protection are provided by 22 load centers located throughout the mine.



Mine water requirements average 110 gpm and are provided by treatment, storage, and recirculation of discharge water from the mine. Approximately 10-15 gpm of excess mine discharge water are pumped to the tailings dam for evaporation.

#### 16.4. Equipment Fleet

Underground mining equipment and surface support equipment are listed in Table 16-1 and Table 16-2, respectively.

**Table 16-1 Underground Equipment List**

Description	Manufacturer	Quantity
Loader 2 cubic yard	Tamrock	8
Loader 6 cubic yard	Caterpillar	1
Haul Trucks	Caterpillar AD30	3
Jumbo Drill	Sandvik	1
Jumbo Drill	Atlas Copco	1
Jumbo Drill	Vein Runner	0
Jumbo Drill	Quasar	1
Bolters	Sandvik	1
Ring Drills	Stopemaster	0
Shotcrete Spray Truck and Robbotic Boom	Eimco/SC Technology	1
Shotcrete Transmixers 6 cubic yard	Normet	1
Crew Transportation	Ford, Moller & Tacoma	10
Support Equipment - forklifts, boom trucks, scissor lifts and water truck		10

**Table 16-2 Surface Support Equipment List**

Description	Manufacturer	Quantity
Loader	Caterpillar 988	2
Loader	Caterpillar 966	1
Haul Trucks	Caterpillar 777C	2
Motor Graders	Caterpillar 14G	1
Motor Graders	Caterpillar 16G	1
Water Truck	Ford L-8000	1
Forklifts		4
Crane 25 - Ton		1
Boom Truck		1
Skid Steer		1
Snow Plow / Sand Truck		1
Emergency Vehicle		1
ATV	Polaris Ranger	1



## **16.5. Mining Methods**

### **16.5.1. Longitudinal Sub Level Stoping**

Longitudinal sublevel (longhole) stoping has historically been the primary mining method for the five narrow Main Veins at Midas as well as the East Veins, including 905, 9052, and 805. From the portal, there are three major haulages that access these veins through eight different spirals. Generally, upper and lower sections of the same spiral connect only through ventilation/escape raises. All mineralized material produced is hauled out of the portal in trucks to a temporary stockpile where it is loaded onto a surface haul truck and delivered to the on-site mill.

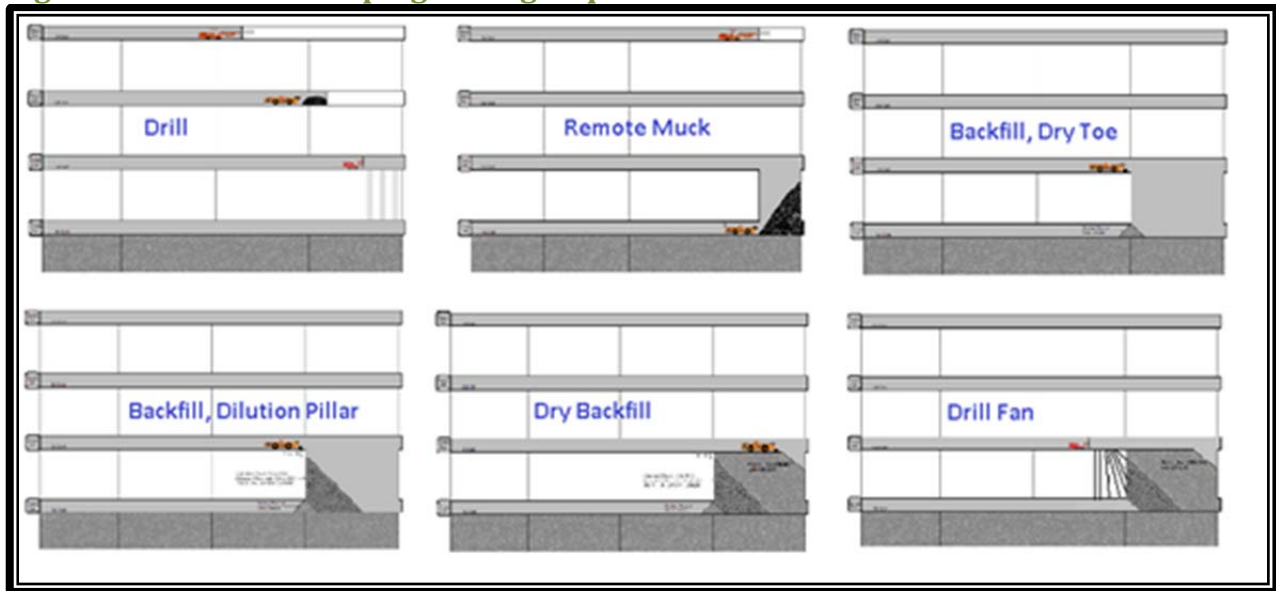
Mine development is controlled by geological conditions in the area. For the sublevel stoping method, sill development is driven at a nominal seven feet wide by twelve feet high to accommodate the size of longhole drills and two-cubic yard (yd<sup>3</sup>) loaders. Where the vein thickness is wider than six feet, the sill width is increased to capture the entire vein. Sills are typically driven 600 feet north and south from the spiral cross cut. Once sills are developed, stoping begins. Stopes are drilled with a longhole drill from the floor of one level to the back of the one below, then remote mucked from the bottom level, and finally backfilled from the top level.

Typically, the mineralized material is divided into stope blocks of about four levels for development, or 200 feet vertically. Stoping begins by creating a cemented backfill barrier pillar at the bottom level of the mineralized material block by benching eight feet below the level horizon. The bench is then filled with 6% by volume cemented rock fill (CRF). Alternatively, the bottom level of the mineralized material block may be stoped and filled with by volume CRF to establish the cemented backfill barrier pillar. The first stope has a drop raise drilled nearest to the mining face. Subsequent holes are blasted one at a time into the free face created by the drop raise to a standard panel length of 60 feet.

Once empty, the stope is filled with dry unconsolidated waste backfill (“GOB”) until it reaches ten feet above the brow of the bottom cut. Next, a pillar of two percent by volume CRF is placed into the stope until it reaches within ten feet of the top cut (the drilling level). Next, the remainder of the open stope is filled with GOB. Finally, before the next stope is drilled, the toe of dry GOB is removed to reveal a free face that the next stope will be blasted into, eliminating the need to drill another drop raise. Rather, a fan pattern is drilled in the initial portion of the stope design to initiate extraction, followed by the same one-hole-at-a-time drill pattern for the remainder of the panel. The final or intersection panel of every level is filled completely with 6% CRF (Figure 16-5). Bridged stopes are filled with nominal six percent CRF to ensure the bridge is fully encapsulated.

This sequence continues inward toward the intersection of the spiral access and upward to the top of the stope block in an advancing V pattern until all but the top level of the block is mined and backfilled. The longhole drill then drills up-holes from the top level upward to within six feet of the backfilled bench above. These up-hole stopes have been left open in the past, and it is vital to the mining sequence that the mining block above is completed and backfilled prior to mining the up-hole stopes on the last level of the stope block.

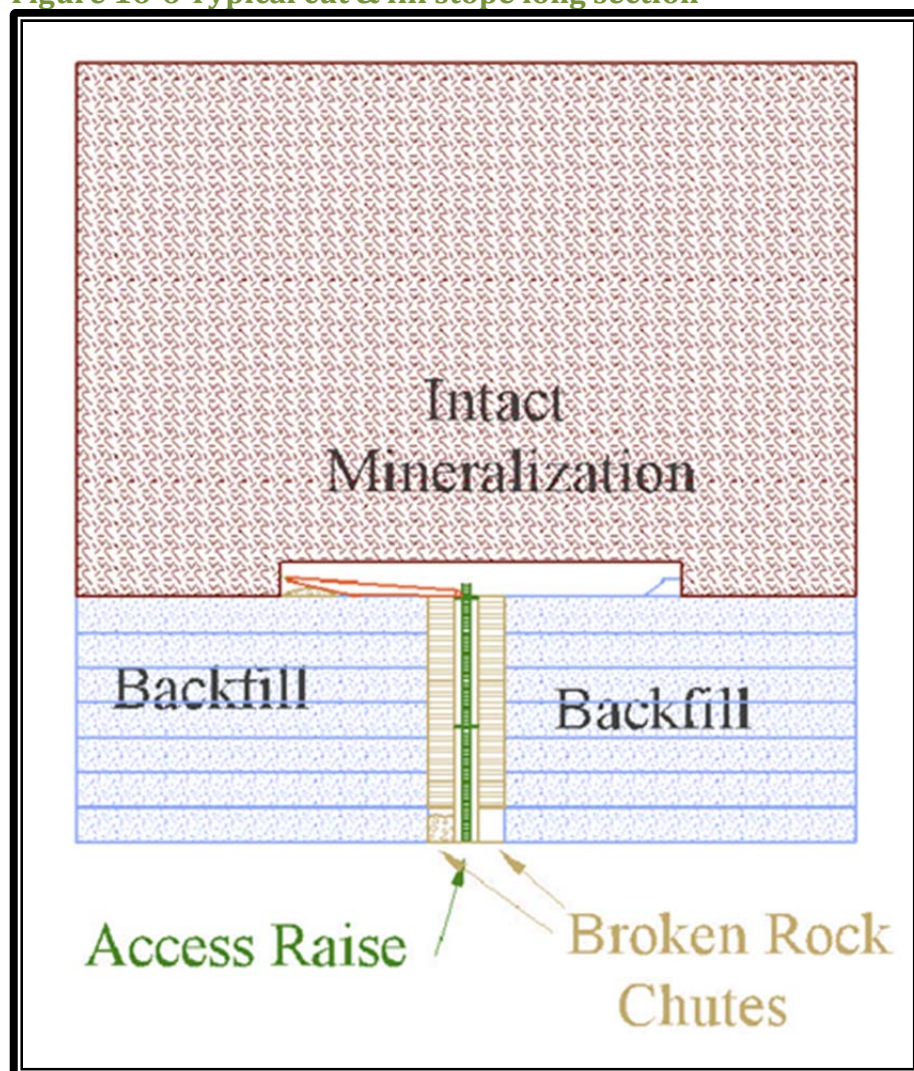
**Figure 16-5 Sublevel Stoping Mining Sequence**



### 16.5.2. Cut and Fill

Cut and fill production costs are significantly higher than sublevel stoping. The disadvantage of cut and fill is the high cost of the foaming additive that is added to the cement and pumped up the raise back into the cut. The advantage is that it requires significantly less waste development since a ramp is not required to span the vertical extent of the mineralization. Cut and fill mining can also be much more selective than longhole and generally would reduce dilution from overbreaking into the hanging wall and footwall. A cut and fill stope can extend up to 300 feet along strike in each direction from a central access raise. A typical cut and fill arrangement is shown in Figure 16-6.

**Figure 16-6 Typical cut & fill stope long section**



Cut and fill stoping is initiated by cross-cutting the vein on the bottom mining horizon with an access drift that will house the raise for the life of the stope. The raise is timbered with drawpoints for the mineralized material to pass through and also travelways for personnel and supplies. Drilling and blasting is carried by breasting down from the raise to the stope limits. The broken mineralized material is then slushed to the rock chute and mucked from the bottom access where it is loaded into trucks and removed. Once an entire cut is breasted down, cellular backfill is pumped from the bottom of the raise into the open cut, and the sequence begins again. The cellular backfill consists of a concrete additive that expands in place, filling any cracks or open voids. The density of the cellular backfill once cured is 38 lb/ft<sup>3</sup>. Due to the high costs of the concrete additive and the timbered raise, this cut and fill method can only be profitable in very high-grade pockets that are uneconomic for a spiral development in waste. There are currently two active cut and fill stopes utilizing this raise-up and cellular fill method. One was developed entirely by Newmont prior to Klondex's purchase and is located on the 305 vein

between Spirals 4 and 5. The other was developed by Klondex and is on the 505 vein in Spiral 1, above an area that was sublevel stoped below.

#### **16.6. Ground Control and Dilution**

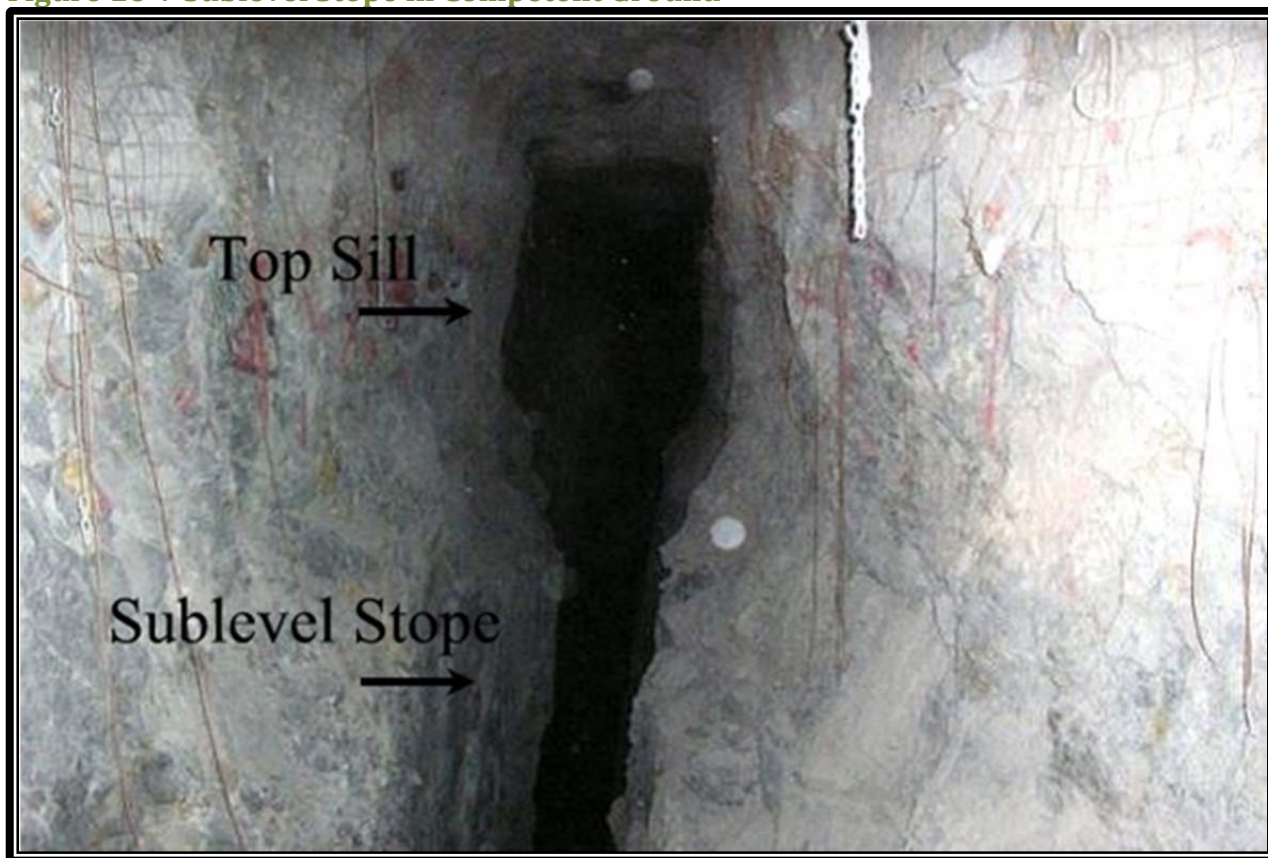
During either waste or mineralized material development, ground control is a major part of the mining sequence. The face miners bar down loose rock immediately after a blast and install wire mesh and split-set bolts after every round in every heading. Some of the upper zones contain high clay content and low rock mass rating (RMR), which requires installation of Swellex bolts.

Dilution in the stopes is generally controlled by the drill pattern but is also affected by the jointing of the wall rock immediately adjacent to the stope. Figure 16-7 shows an ideal open stope with minimal dilution. When jointing and/or weak wall rock is present, the wall of the stope breaks into an hourglass shape and increases dilution.

In areas where poor rock conditions are anticipated, prior to stoping, engineers issue a design to install cable bolts into the hanging wall of the stope. In cases of rock instability, the panel length is also reduced from 60 feet to 30 feet to increase wall stability and decrease the length of time a stope sits open before being back filled. In general, dilution in the longhole stopes is well controlled even in weak ground by adjusting drill patterns, installing cable bolts, and reducing panel length when necessary.



**Figure 16-7 Sublevel Stope in Competent Ground**

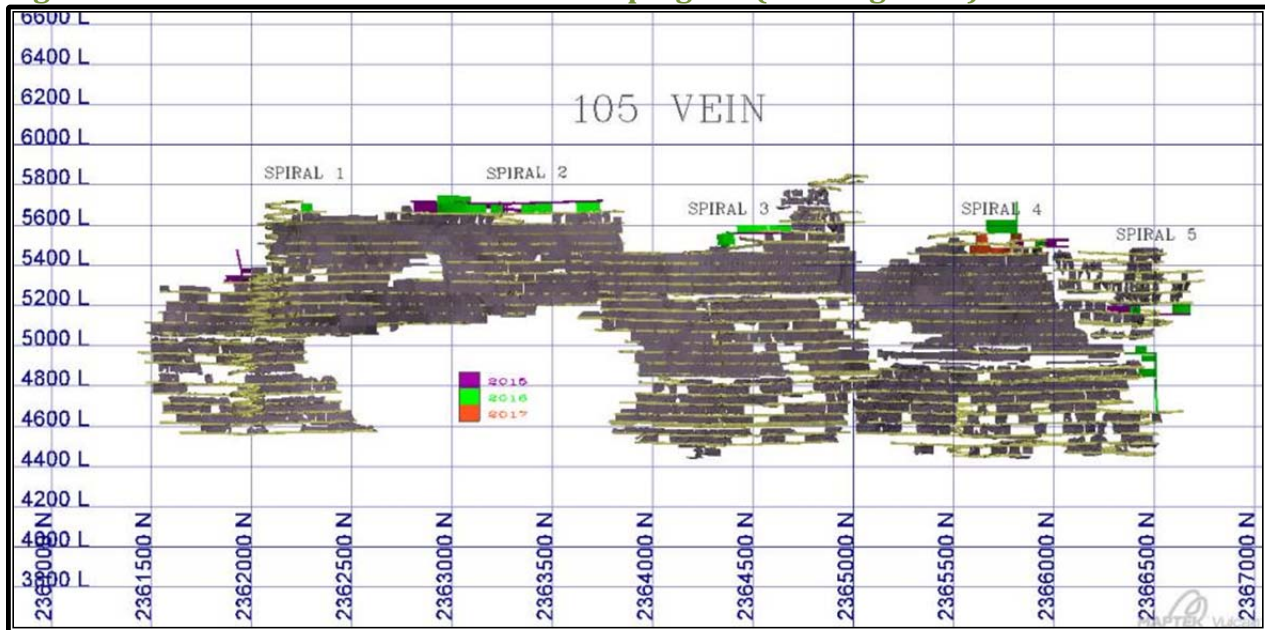
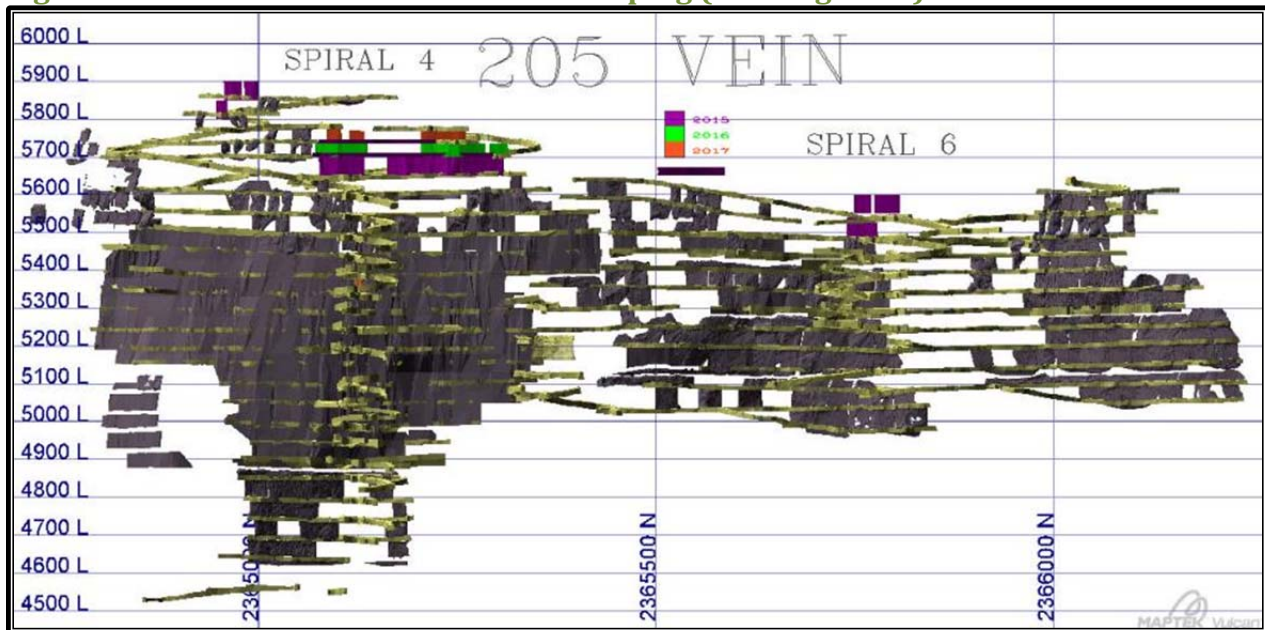


### 16.7. Mine Plan

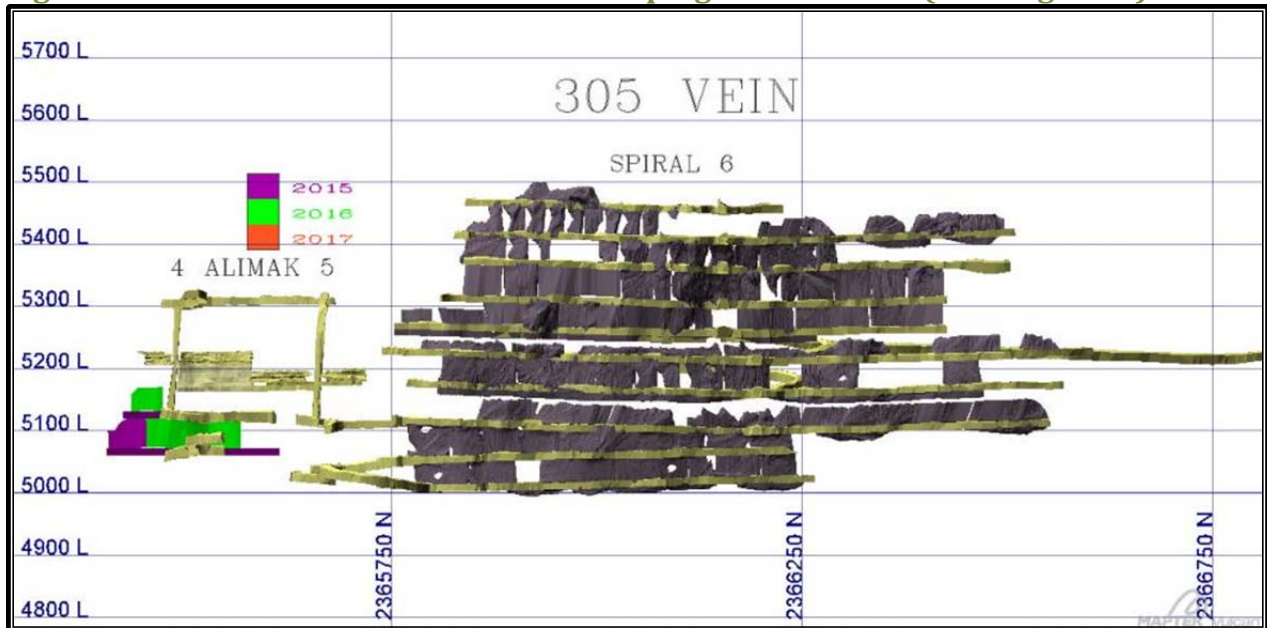
The current plan will contain a blend of sublevel stopes and cut and fill over the 2.8 year reserve mine plan. The Midas Mine can continue ore flow from the currently developed sublevel areas in Spiral 7 and 8, as well as the two previously mentioned cut and fill areas, while working toward developing future areas that employ these two methods (Figure 16-8 through Figure 16-16).

**Table 16-3 Midas Mine Heading Advance Rates**

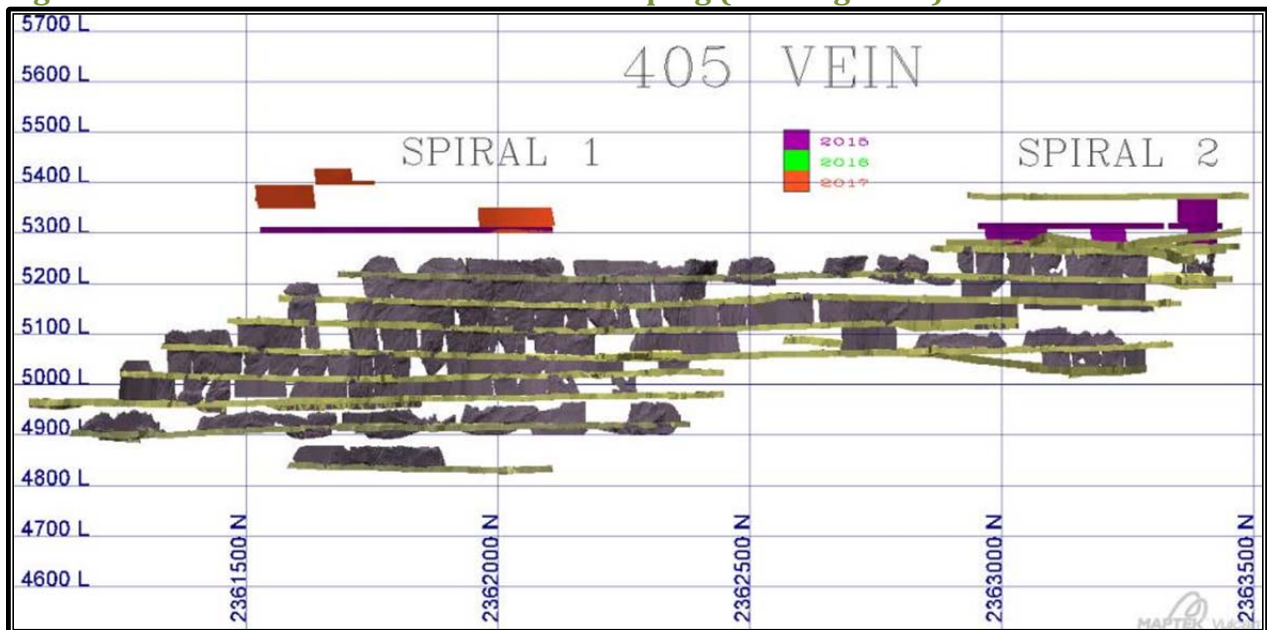
Heading Type	Units	Daily Rate
Capital Development Drift	Feet/day	16
Drop Raise	Feet/Day	5
Stope Development (7 x 11)	Feet/day	21
Sublevel (Long Hole) Stoping	Ton/day	160
Cut and Fill Stoping	Ton/Day	100
Backfill	Ton/Day	200
Cellular Backfill	Ton/Day	18

**Figure 16-8 Vein 105 Planned Sublevel Stopping Fill (Looking West)****Figure 16-9 Vein 205 Planned Sublevel Stopping (Looking West)**

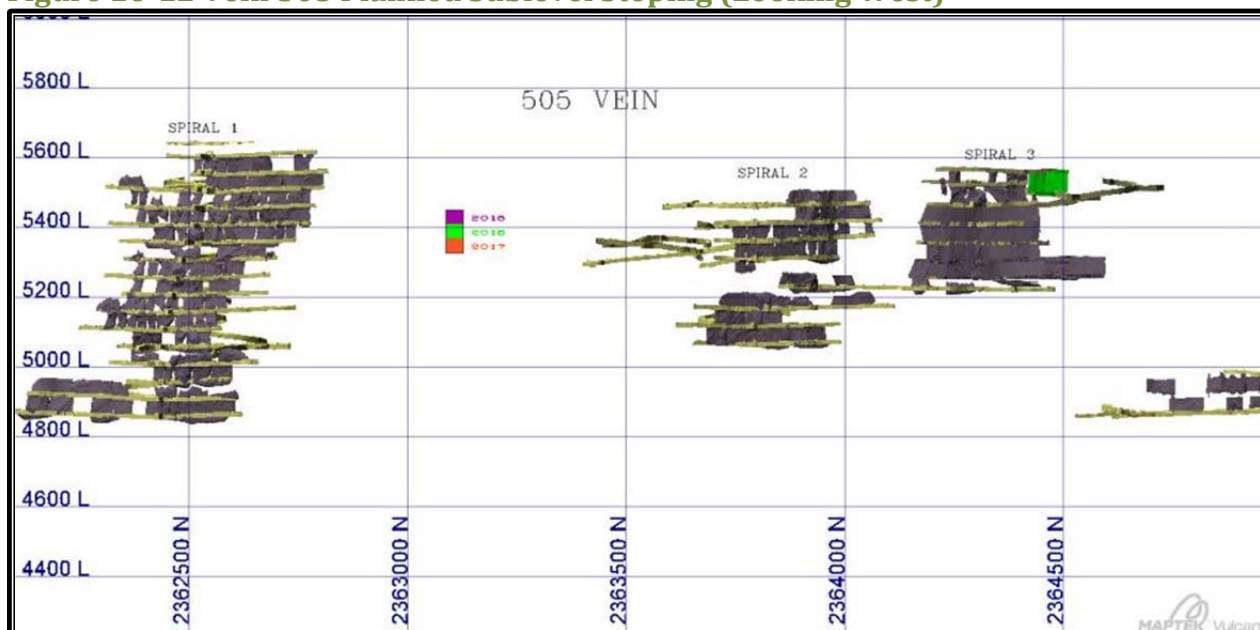
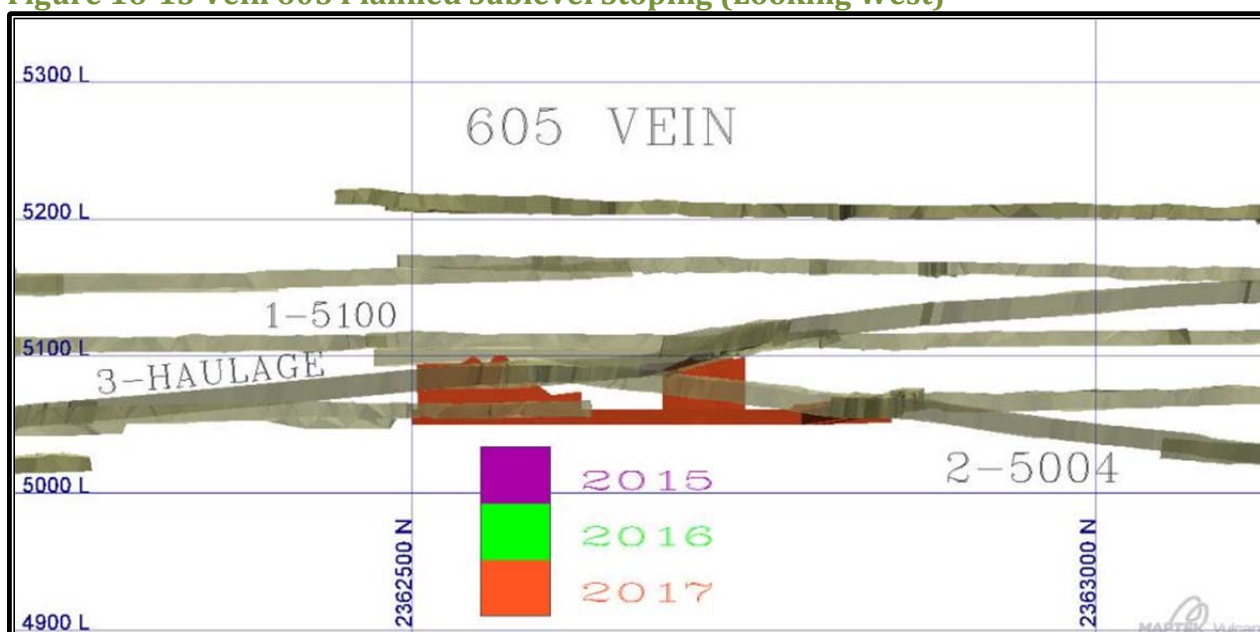
**Figure 16-10 Vein 305 Planned Sublevel Stopping and Cut & Fill (Looking West)**



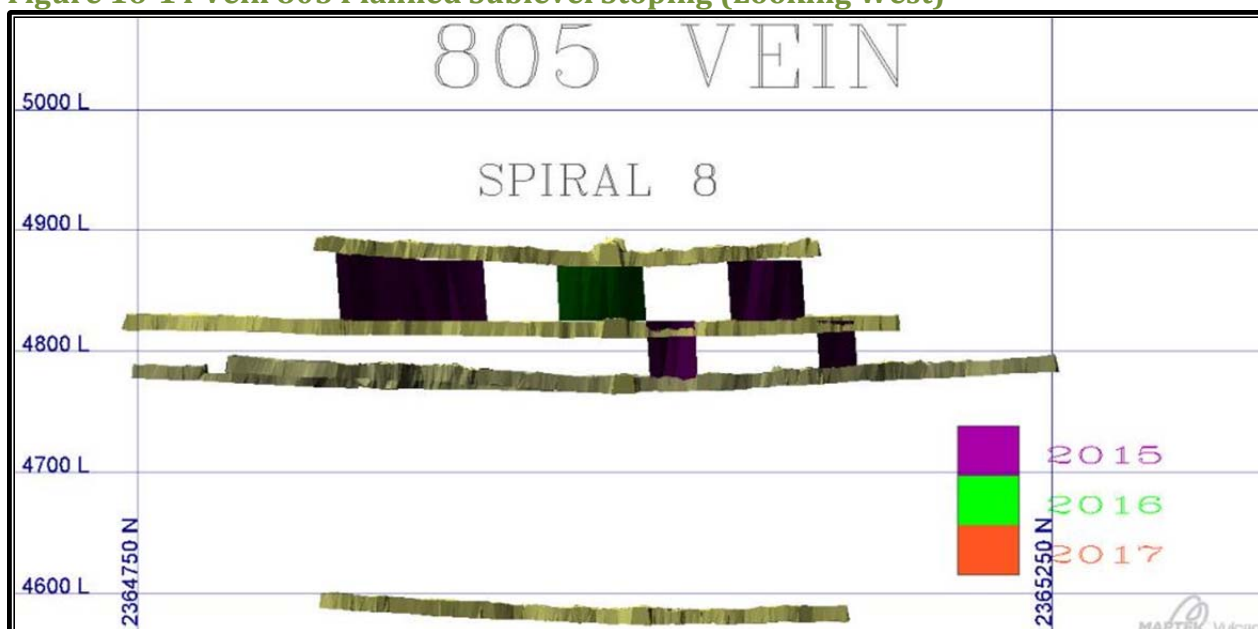
**Figure 16-11 Vein 405 Planned Sublevel Stopping (Looking West)**



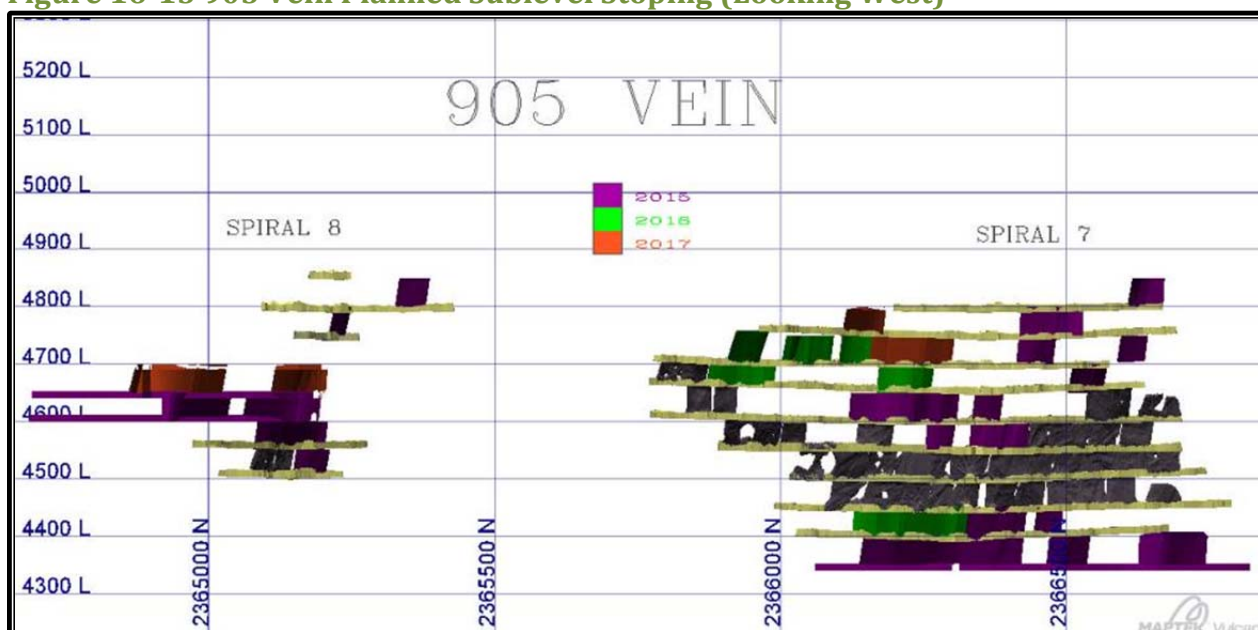


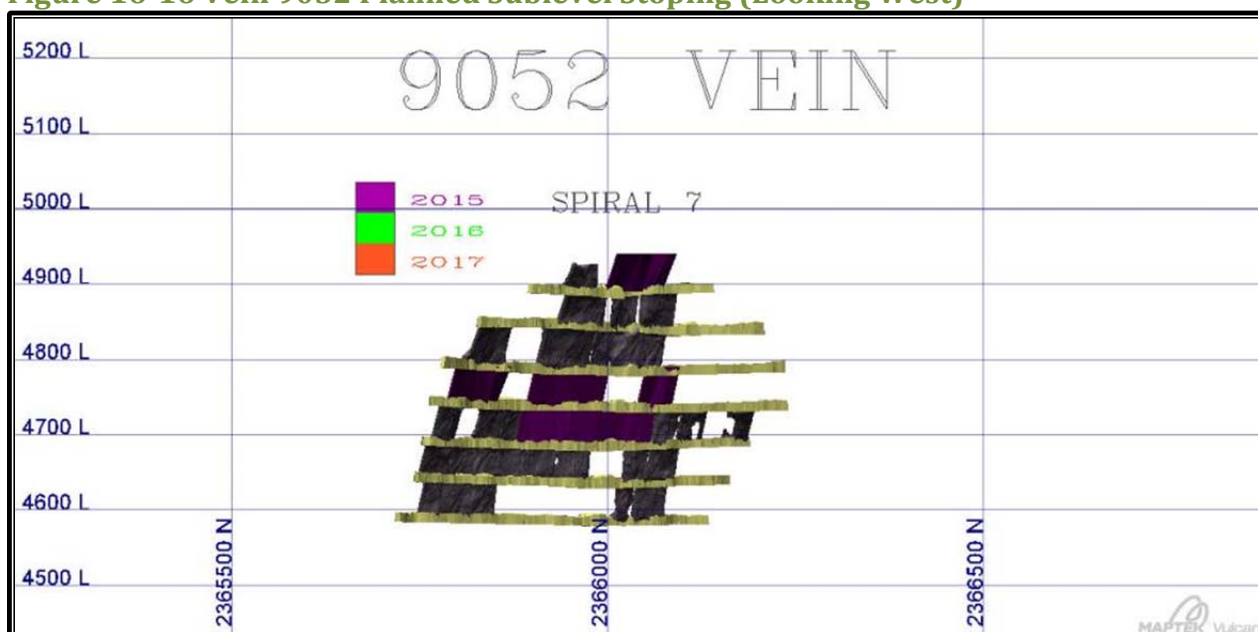
**Figure 16-12 Vein 505 Planned Sublevel Stopping (Looking West)****Figure 16-13 Vein 605 Planned Sublevel Stopping (Looking West)**

**Figure 16-14 Vein 805 Planned Sublevel Stopping (Looking West)**



**Figure 16-15 905 Vein Planned Sublevel Stopping (Looking West)**



**Figure 16-16 Vein 9052 Planned Sublevel Stopping (Looking West)****Table 16-4 Annual Production and Development Plan**

Calendar Year	2014 <sup>1</sup>	2015	2016	2017	Total
<b>Reserves Mined</b>					
Proven Ore Mined (000's Tons)	30.5	61.2	32.7	9.7	134.1
Gold Grade (Ounce/Ton)	0.135	0.389	0.533	0.585	0.381
Silver Grade (Ounce/Ton)	12.880	15.735	10.579	9.120	13.349
Contained Gold (000's Ounces)	4.1	23.8	17.4	5.7	51.1
Contained Silver (000's Ounces)	393.2	962.6	346.2	88.4	1,790.5
Probable Ore Mined (000's Tons)	13.1	51.6	29.6	13.6	108.0
Gold Grade (Ounce/Ton)	0.124	0.282	0.717	0.231	0.376
Silver Grade (Ounce/Ton)	4.126	7.273	8.461	12.838	7.918
Contained Gold (000's Ounces)	1.6	14.6	21.3	3.1	40.6
Contained Silver (000's Ounces)	54.2	375.4	250.8	174.8	855.2
Total Reserves Mined (000's Tons)	43.7	112.8	62.4	23.3	242.1
Gold Grade (Ounce/Ton)	0.132	0.340	0.621	0.378	0.378
Silver Grade (Ounce/Ton)	10.246	11.863	9.572	11.292	10.926
Contained Gold (000's Ounces)	5.8	38.4	38.7	8.8	91.6
Contained Silver (000's Ounces)	447.4	1,338.0	597.0	263.2	2,645.6
Contained Gold Equiv. (000's Ounces)	12.7	59.1	48.0	12.9	132.6
<b>Production Mining</b>					
Stope Development and Drift and Fill Mining (000's Tons)	21.3	36.7	10.0	1.9	69.9
Longhole Stope Mining (000's Tons)	22.4	74.7	52.4	21.4	170.9
Reserves Mined (000's Tons)	43.7	111.5	62.4	23.3	240.8
Reserves Mining Rate (tpd)	358	309	170	129	234



Calendar Year	2014 <sup>1</sup>	2015	2016	2017	Total
<b>Backfill</b>					
Cellular Backfill (000's Tons)		2.8	4.4	3.2	10.5
CRF and GOB Backfill (000's Tons)	30.5	69.8	37.9	21.3	159.5
Total Backfill (000's Tons)	30.5	65.6	37.9	20.6	154.6
<b>Waste Mining</b>					
Expensed Drift Waste (000's Tons)	5.0	1.1	-	0.1	6.2
Bench Waste (000's Tons)	-	-	-	-	-
Expensed Waste (000's Tons)		1.1	-	0.1	1.2
Primary Capital Drifting (Feet)		694	-	142	836
Secondary Capital Drifting (Feet)		98	-	50	148
Capital Raising (Feet)		116	-		116
Capitalized Mining (000's Tons)		13.8	-	3.2	17.0
Total Tons Mined (000's Tons)	48.7	127.7	62.4	26.6	265.3
Mining Rate (tpd)	399	350	170	147	257

*Notes:*

- The mine plan for 2014 includes only the period of September 1 through December 31.*

## 17. Recovery Methods

Mineralized material from the Midas Project is processed in the Midas Mill. Material from each project is segregated through the crushing circuit. The mill has two 500-ton fine ore bins located between the secondary crusher and the ball mill, and one bin is dedicated to each mine. Head samples are taken on each reclaim conveyor at regular intervals, and tonnage measured by a belt scale prior to comingling the mineralization streams.

The Midas Mill was constructed in 1997 and has a nameplate capacity of 1,200 tpd. The mill uses conventional leach technology with Counter Current Decantation followed by Merrill Crowe precipitation. Doré refining is finalized by Johnson Matthey refineries in Salt Lake City, Utah. Midas has performed toll milling periodically since 2008.

### 17.1. Mill Capacity and Process Facility Flow Diagram

Underground mineralized material is hauled from the Midas mine portal to the run of mine (ROM) pad where it is placed on short term ROM mineralized material stockpiles. Typical mineralized material classifications are: low grade (less than [ $<$ ] 0.3 opt gold or  $<$  6 opt silver; high grade (0.3 to 0.5 opt gold or 6 to 20 opt silver); and ultra-high grade ( $>$  0.5 opt gold or  $>$  20 opt silver). Underground mineralized material is hand-picked on the pad for scrap wire mesh and rock bolts before being fed to the crusher.

Mineralized material is crushed in two stages through a 30-inch by 40-inch primary jaw crusher and 53 inch secondary cone crusher. Both jaw and secondary crusher products are fed to a six feet by 20 feet Nordberg double deck vibrating screen fitted with two-inch top deck and one-half inch bottom deck screen panels to produce a 95% passing three-eighths inch product. A continuous self-cleaning belt magnet and a metal detector are used to remove tramp metal from the crusher screen feed and to protect the cone crusher from damage. Screen undersize is conveyed to one of two 500-ton fine mineralized material bins.

Crushed and screened material is transported from the fine material bins by individual belt feeders into the 10.5 feet by 15 feet rubber lined Nordberg ball mill. The ball mill is charged with a blend of three-inch and two-inch grinding balls to maintain an operating power draw of 800 horse power (HP). Mill discharge pulp is pumped to a nest of four ten-inch Krebs cyclones (three duty, one standby) for classification. Cyclone overflow, at 85% passing 200 mesh, reports to the trash screen. Cyclone underflow reports to a two millimeter (mm) aperture scalping screen, with the screen undersize being distributed by three-way splitter to the ball mill, verti-mill, and gravity circuit. Lead nitrate solution is added to the ball mill feed chute to enhance silver leach kinetics.

A split of the screened cyclone underflow reports to the 250 HP verti-mill for open circuit grinding with the verti-mill discharge overflowing back to the primary ball mill discharge pump box. The verti-mill is charged with one inch grinding balls. A split of the screened cyclone underflow also reports to the 20-inch Knelson concentrator for gravity gold recovery. The Knelson operates on a 45-minute cycle providing concentrate for cyanidation in the CS500 Acacia Leach Reactor which conducts three 750 to 1,000 kilogram (kg) batch leaches each week. Pregnant solution (batch containing 100 ounces on average) from the leach reactor reports to the Counter Current decantation (CCD) circuit pregnant solution tank.

Cyclone overflow is screened to remove any plastic debris before reporting to a 42 feet diameter pre-leach thickener. Thickener underflow at 50% solids is pumped to the leach circuit consisting of eight 28 feet by 30 feet air sparged leach tanks, providing a leach residence time of approximately 90 hours at 600 tph feed rate. The pH in the first leach tank is maintained at 10.4 to 11.0 through the addition of hydrated lime, produced from the on-site slaking of pebble lime. Sodium cyanide concentration in the second leach tank is maintained at 1.25 grams per liter (gpl).

The leach circuit discharge is pumped to the first of five 42.5 feet diameter CCD thickeners, where the pulp is counter-current washed with barren Merrill Crowe liquor at a wash ratio of approximately 2.5:1, and CCD thickener underflow at each stage is maintained at between 50 and 56% solids to maximize wash efficiency.

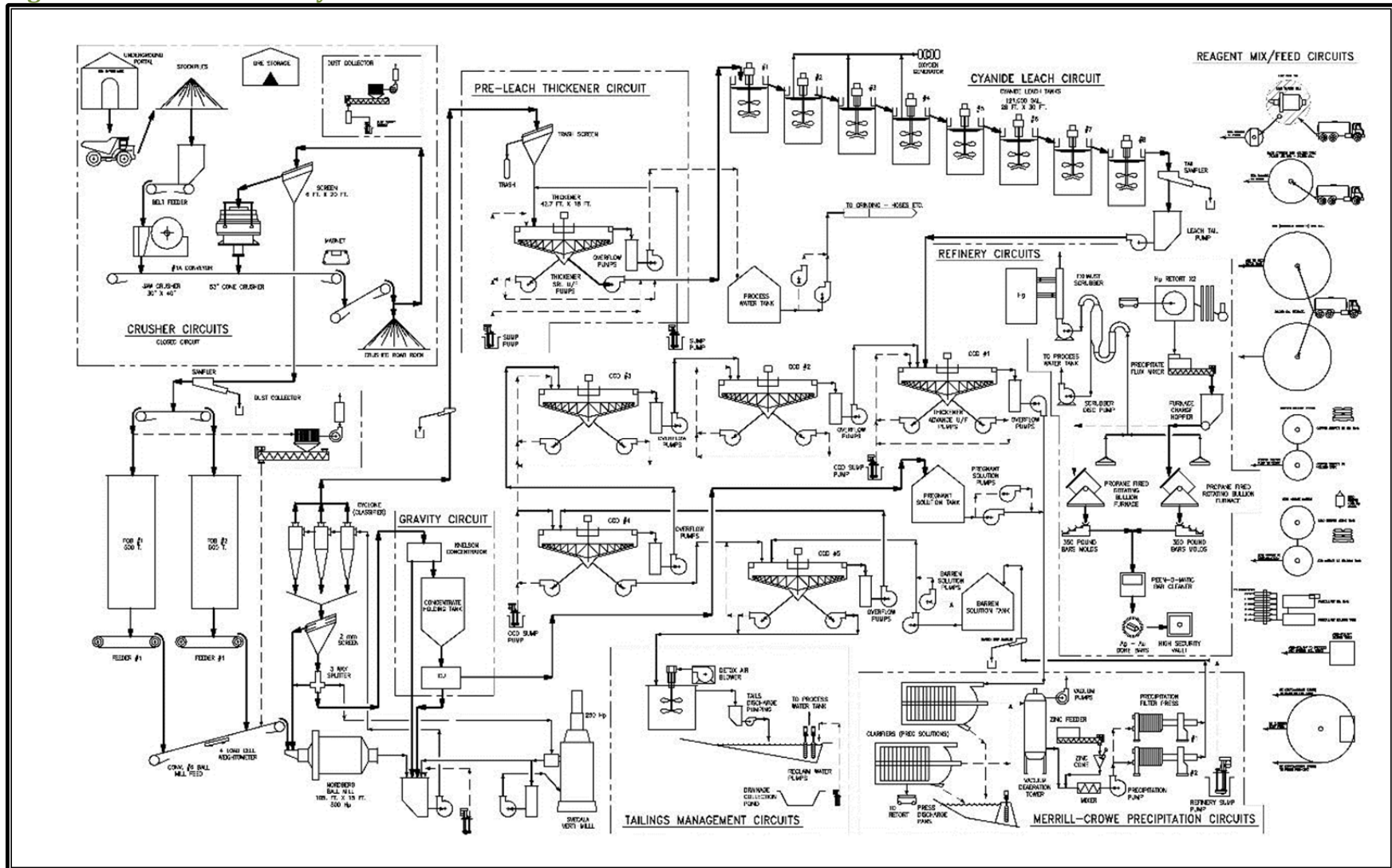
Pregnant CCD solution at a pH of 11.0 and 400 gallons/minute flow rate is fed to one of two disc filters operating in duty/standby mode utilizing diatomaceous earth for clarification. The clarified pregnant solution is then pumped to a packed bed vacuum de-aeration tower, prior to the addition of zinc dust and lead nitrate to precipitate precious metals from solution. The Merrill Crowe precipitate solution is then pumped to one of two plate and frame filter presses for sludge recovery ahead of smelting on site to produce 5,000 troy ounce silver/gold doré bars.

Tailings pulp from the last CCD thickener is pumped to the Inco SO<sub>2</sub>/Air circuit for cyanide destruction. Cyanide destruction is performed in a single 20 feet by 20 feet agitated, air sparged tank providing approximately one-hour reaction time. Ammonium bi-sulphate, lime, and copper sulphate as a catalyst, are added to the tank on a ratio control basis to achieve target weak acid dissociable (WAD) cyanide levels below five ppm. Routine picric acid determinations are used by operating personnel to maintain WAD cyanide in the INCO cyanide destruction tank discharge pulp at target levels.

Following cyanide destruction, the plant tailings pulp is discharged to one of two lined tailings storage facilities for consolidation and water recovery. Clarified decant pond solution is evaporated or returned to the mill process water tank for reuse in the plant.



Figure 17-1 Process Facility Flow Sheet



## 17.2. Physical Mill Equipment

The Midas process equipment list is shown in Table 17-1:

**Table 17-1 Process Equipment Itemization by Area**

Description	Number	Spare	Note	Description	Number	Spare	Note
<b>AREA 350 GRINDING</b>							
BIN, MILL TROMMEL REJECTS CS Construction, w/lift lugs, 6.5' x 6.5' x 4'	1			HEATER, MILL FEED CONVEYOR GALLERY w/fan	1		5 kW
CHUTE, BALL TRANSFER	1			LAUNDER, MILL DISCHARGE CS, Rubber Lined	1		
CHUTE, FINE ORE BIN DISCHARGE CS Plate Construction, AR Plate Lined	1			PUMP BOX, CYCLONE FEED 6' x 6' x 6', 1200 gal, CS, Rubber Lined	1		
CHUTE, FINE ORE FEEDER DISCHARGE CS Plate Construction, AR Lined	1			PUMP, CYCLONE FEED 550 gpm, 4 x 3, Centrifugal Slurry, VFD, Rubber Lined CS	1	1	50 HP
CHUTE, MILL FEED Includes ball charge attachment, CS Construction, AR Lined	1			SAMPLER, CYCLONE OVERFLOW 223 gpm, single stage slurry cutter, CS Rubber Lined	1		0.5 HP
CHUTE, BALL DISCHARGE CS Plate Construction, AR Plate Lined	1			BELT SCALE, MILL FEED 30 tph, 24", 4 idler weigh bridge	1		
CHUTE, MILL TROMMEL COVER CS Plate Construction	1			CYCLONE PACKAGE 2 - DS15LB-1826 Cyclones, radial manifold, w/ launders	2		
CHUTE, MILL TROMMEL REJECTS CS Plate Construction	1			DUST COLLECTOR PACKAGE PULSE Air, induction, 5000 cfm, 0.5 psi	1		20 HP
CONVEYOR, MILL FEED 30 tph, troughed rubber type, 36" width, 116' Length, 12' lift, 50 fpm	1		7.5 HP	FEEDER, FINE ORE DISCHARGE Rotary Valve	1		5 HP
FAN, FINE ORE LOWER BUILDING VENT 4000 cfm, Wall exhaust	2		1.0 HP	LUBE SYSTEM, BALL MILL Air operated, w/heater	2		5 kW
FEEDER, FINE ORE 30 tph, 30" width, 29' length, VFD	1		5.0 HP	MILL, BALL 10.5' Diameter, 14' Length, Rubber Lined	1		800 HP

Description	Number	Spare	Note	Description	Number	Spare	Note
<b>AREA 410 LEACH</b>							
Knelson gravity concentrator, 20 inch				CS 500 Acacia leach reactor			
AGITATOR, LEACH 8 109" Diam., Dual Impellers, 8' sch 80 Shaft, 292" Length, CS Construction, Rubber Lined			40 HP	SAMPLER, LEACH TAILS 1 330 gpm, Slurry Cutter			0.5 HP
FAN, PRE-LEACH 1 THICKENER VENT 3000 CFM @ 0.25 WG			0.5 HP	SCREEN, TRASH 2 4' X 5', Vibrating			2.5 HP
HEATER, PRE-LEACH 1 THICKENER VENT 40,000 BTU, propane			35 HP	STANDPIPE, PRE-LEACH 1 THICKENER O/F 2.5' Diam., 20' high, Open Top, CS Construction			
LAUNDER, LEACH, 8 INTERTANK CS Construction, w/Gate				PUMP BOX, CCD FEED 1 SPLIT TO #1 AND #2 600 gal, 4X4X6' w/weirs, CS Construction, Rubber Lined			
LAUNDER, LEACH, 7 INTERTANK bypass CS Construction, w/Gate				PUMP, PRE-LEACH 1 THICKENER AREA SUMP 200 gpm, 2.5" Diam. Vertical Slurry, Rubber Lined			7.5 HP
PUMP BOX, LEACH 1 TAILS 6' x 6' x 6', 1200 gal, CS, Rubber Lined				PUMP, LEACH THICKENER 1 AREA SUMP 200 gpm, 2.5" Diam. Vertical Slurry, Rubber Lined			7.5 HP
PUMP, LEACH TAILS 2 327 gpm, 4X3, Centrifugal, CS Rubber Lined		1	7.5 HP	TANK, LEACH 8 28' x 30', Open top, CS Construction			
PUMP, PRE-LEACH 1 THICKENER O/F 533 gpm, 3X4, Centrifugal, CS Construction, Packed Seal		1	15 HP	THICKENER, PRE-LEACH 1 59.5' Diameter, 19.5' Height, Feed well, All Gear, CS Construction			15 HP
PUMP, PRE-LEACH 1 THICKENER U/F 330 gpm, 3X4, Centrifugal, CS Construction, Rubber Lined			10 HP				
<b>AREA 430 CCD THICKENING</b>							
FAN, CCD ARE VENT 4 6000 cfm, Wall Exhaust			1 HP	PUMP, CCD THICKENER U/F 5 ADVANCE 160 gpm, 3X4, Centrifugal, CS Construction, Packed Seal		5	4.5 HP



Description	Number	Spare	Note	Description	Number	Spare	Note
HEATER, CCD ARE 4 VENT 20 MBH, Propane w/motor			1 HP	SAMPLER, LEACH TAILS 1 330 gpm, Slurry Cutter			0.5 HP
PUMP, LEACH CCD 1 AREA SUMP 200 gpm, 2.5" Diam. Vertical Slurry, Rubber Lined			7.5 HP	STANDPIPE, CCD thickener 5 2.5' Diam., 20' high, Open Top, CS Construction			
PUMP, CCD 5 THICKENER O/F ADVANCE 300 gpm, 3X4, Centrifugal, CS Construction, Packed Seal	1	1	7.5 HP	THICKENER, CCD 5 42.5' Diam. 19.5' high, feed well, all gear			
<b>AREA 450 CYANIDE DESTRUCTION</b>							
AGITATOR, CYANIDE 1 DESTRUCTION 121" Diam., Dual Impellers, 10' sch 160 Shaft, 292" Length, CS Const., Rubber Lined			125 HP	TANK, CYANIDE 1 DESTRUCTION 20' X 20', Open Top, CS Construction			
SAMPLER, CYANIDE 1 DESTRUCTION 200 gpm, Slurry Cutter			0.5 HP				
<b>AREA 470 TAILING HANDLING</b>							
PUMP, TAILINGS 1 DISTRUBUTION 420 gpm, 3X4, Centrifugal, CS Construction, Rubber Lined			10 HP	PIPE, TAILINGS 800 ft 8" HDPE, SDR 11			
PUMP, CCD 5 THICKENER U/F ADVANCE 160 gpm, 3X4, Centrifugal, CS Construction, Rubber Lined	1	1	7.5 HP	PIPE, TAILINGS 800 ft 12" HDPE, SDR 11			
<b>AREA 510 MERRILL CROWE</b>							
FILTER, CLARIFYING 1 400 ft <sup>2</sup> , 210 gpm, 25 ppm solids, 54" diam. X 8', flushing			1 HP	PUMP, PREGNANT 1 SOLUTION 600 gpm, 3X4, CS Construction	1	1	30 HP
PUMP, BARREN 1 SOLUTION 600 gpm, 4X8, Centrifugal, CS Construction	1	1	15 HP	PUMP, FILTER FEED 1 600 gpm, 3X4, CS Construction, flooded mechanical seal	1	1	15 HP

Description	Number	Spare	Note	Description	Number	Spare	Note
FEEDER, ZINC 50 lb./hr	1			TANK, DEAERATION 3' Diam. X 20' high, 22 in. water vacuum	1		
<b>AREA 550 REAGENTS</b>							
PUMP, FLOCCULANT METERING 2 gpm, Progressive Cavity	1		1.5 HP	PUMP, ABS METERING 75 gpm, Metering Type, Mechanical Seal	1	1	
PUMP, FLOCCULANT METERING 0.5 gpm, Progressive Cavity	5		1 HP	TANK, COPPER SULFATE STORAGE 2900 gal, 8' Diameter X 9' high, closed, SS Construction	1		
PUMP, REAGENT METERING 25 gpm, Metering Type	3	1	1 HP	FLOCCULANT PACKAGE, SELF CONTAINED Includes Agitator, Blower, Bin Feeder, Mixer, Tanks, SS Construction	1		3 HP
<b>AREA 650 UTILITIES</b>							
PUMP, PROCESS WATER 1200 gpm, 6X8, CS Construction, Packed Seal	1		125 HP	BLOWER, CYANIDE DETOXIFICATION 1000 cfm, Rotary, Two Stage, Intercooler, Filter Intake	1		75 HP
BLOWER, LEACH TANK 320 cfm @ 20 psig, Rotary, Two Stage, Intercooler, Filter Intake	1		30 HP				

### 17.3. Operation and Recoveries

Midas mineralization performs quite well under direct cyanidation with daily recoveries as high as 95.1% for gold and up to 95% for silver. The process performance is consistent with gold recovery having a standard deviation of less than two percent. Variances in gold recovery are due to the head grade and grind size, and do not appear to be associated with mineralized material type. The standard deviation of silver recovery is less than four percent with variance due to head grade, grind size, and clay content. Clay enriched mineralization often has higher silver to gold ratios and tend to present recovery difficulties. Recoveries occasionally fall outside the expected distribution because of plant or operating issues. The current grind is 85% passing through 200 mesh. The feasibility of producing a finer grind product to improve gold and silver recovery is currently under analysis by Klondex.

### 17.4. Processing Costs

Midas Mill operating costs for 2012 through 2014 are summarized in Table 17-2.

**Table 17-2 Midas Mill Operating Costs**

Year	\$/ton			Total Tonnage		
	Budget	Actual	Variance	Budget	Actual	Variance
2012	\$33.12	\$35.02	\$1.90	373,000	330,000	-43,000
2013 (Oct)	\$35.49	\$39.05	\$3.56	255,600	207,600	-48,000
2014 <sup>1</sup>	62.53	\$57.49	-\$5.04	174,425	171,818	-2,607

Notes:

1. Klondex has only been the operator of the Midas Mill since February 19, 2014. Newmont was the prior operator.

The elevated cost per ton for 2013 and 2014 is the result of the inflexibility of fixed costs versus diminished throughput.

Future processing cost projections reflect 2014 consumption rates and pricing levels for reagents, and electrical power. Adequate water is available from onsite supply wells and the Midas Underground Mine.

## 17.5. Production

Doré is shipped to the refinery as 5500 oz. bars that average approximately 3.94% gold and 90.1% silver plus minor constituents, including less than 4% selenium. Table 17-3 provides a monthly summary of the processing at the Midas Mill of mineralized material extracted from Midas during 2014.

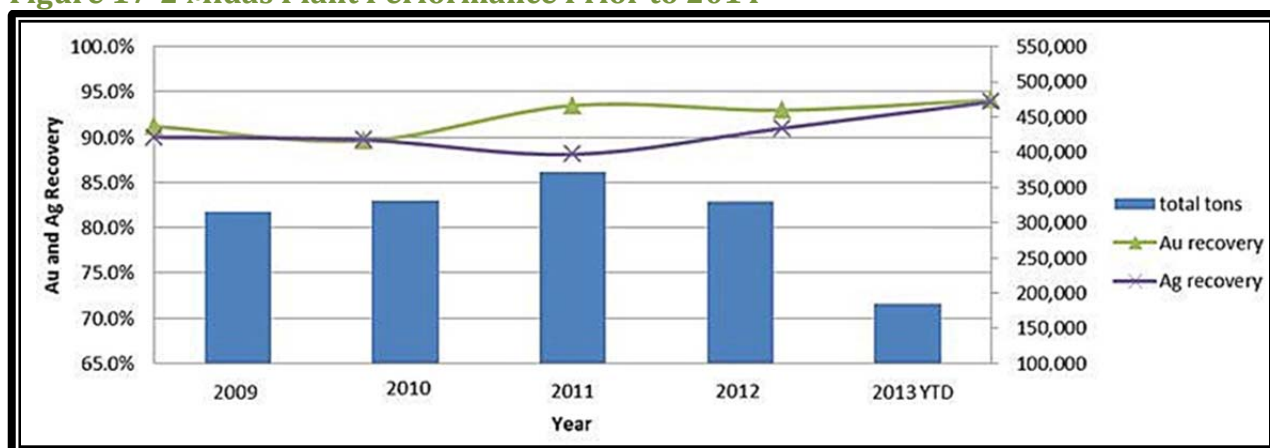
**Table 17-3 2014 Midas Mineralized Material Processed at the Midas Mill**

	Feb <sup>1</sup>	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Tons (000's)	2.8	11.2	10.7	9.8	11.2	12.3	12.3	12.7	11.6	9.7	12.7	117.0
Au grade	0.078	0.135	0.089	0.102	0.182	0.214	0.106	0.165	0.163	0.126	0.256	0.155
Ag grade	8.13	12.11	11.58	10.43	9.24	11.02	8.53	8.92	18.11	15.53	13.02	11.69
feed Au oz (000's)	0.2	1.5	1.0	1.0	2.0	2.6	1.3	2.1	1.9	1.2	3.2	18
feed Ag oz (000's)	22.7	135.2	123.9	102.4	103.7	135.5	104.6	113.1	209.9	150.2	165.1	1,366
% Au recovery	94.5%	94.5%	96.3%	90.2%	92.1%	94.7%	95.6%	93.8%	93.8%	95.2%	91.8%	93.6%
% Ag recovery	95.7%	94.1%	97.5%	95.8%	92.6%	95.4%	94.5%	97.6%	94.8%	96.2%	94.1%	95.2%
recovered Au oz (000's)	0.2	1.4	0.9	0.9	1.9	2.5	1.2	2.0	1.8	1.2	3.0	17
recovered Ag oz (000's)	21.7	127.2	120.7	98.1	96.0	129.2	98.8	110.4	198.9	144.4	155.4	1,301

Note:

1. Includes only production following the completion of the Midas purchase from Newmont on February 11, 2014.



**Figure 17-2 Midas Plant Performance Prior to 2014**

### 17.6. Midas Mill Operating Permits

The Midas Mill is currently operating under three Air Quality Operating Permits administered by the Nevada Department of Environmental Protection (NDEP) Bureau of Air Pollution Control and one Water Pollution Control Permit administered by the Nevada NDEP Bureau of Water Pollution Control. The permits are discussed in detail in Section 20.

## 18. Project Infrastructure

The Midas underground mine is a modern mine site with all the facilities generally associated with mechanized mining and ore processing. The Midas operation is served by Nevada State Highway 789 connected to a 32.4-mile all-weather gravel access road.

### 18.1. Infrastructure

The Midas Project includes an underground mine, waste rock area, crushing plant, conventional mill, refinery, cyanide destruction circuit, tailings impoundment, and a TSF. Mine operations also includes ancillary facilities such as: a maintenance shop, warehouse, administration and security building, and facilities for distributing diesel fuel, gasoline, and propane.

### 18.2. Tailings Containment

Klondex has evaluated the potential for increasing tailings capacity. The remaining capacity in the existing Midas Phase 4/5 tailings is estimated to be 700,000 tons, as of year-end 2014. Two alternatives are available for increasing tailings capacity. The first would raise the existing embankment approximately four feet using an engineered retaining wall. This option would add approximately 400,000 tons capacity and is estimated to cost \$1M. This option has the advantage of staying inside the existing TSF footprint and can be permitted with a minor modification to the existing plan of operations. The second option would involve new construction outside the existing TSF footprint. Permit modifications would likely take two to three years to secure. New TSF construction could be completed by early 2018. Klondex is proceeding with construction of the four-foot embankment raise.

The 2012 performance of the TSF included evaporation of over 90M gallons of water utilizing ten evaporator units. Currently, 14 evaporators operate 24 hours per day, seven days per week during the peak evaporation season to assist in the evaporation of excess water in the TSF.

### 18.3. Power

The Midas Mine has six main electrical transformers which are located on the surface. The total line capacity for the Midas Project is 12 megawatt (MW) or 15,500 HP. Details of the main transformers in the system are listed in Table 18-1.

**Table 18-1 Electrical Transformer Details**

Location	Service Voltage Kilovolts (kV)	Size	Current Power Draw(MW)
UG Portal	24.9kV	5MVA	1.8
South Vent Raise	24.9kV	2.5MVA	0.9
Deep Vent Raise	24.9kV	1MVA	0.6
North Vent Raise	24.9kV	5MVA	1.7
Mill/Truck Shop	24.9kV	5MVA	2.1

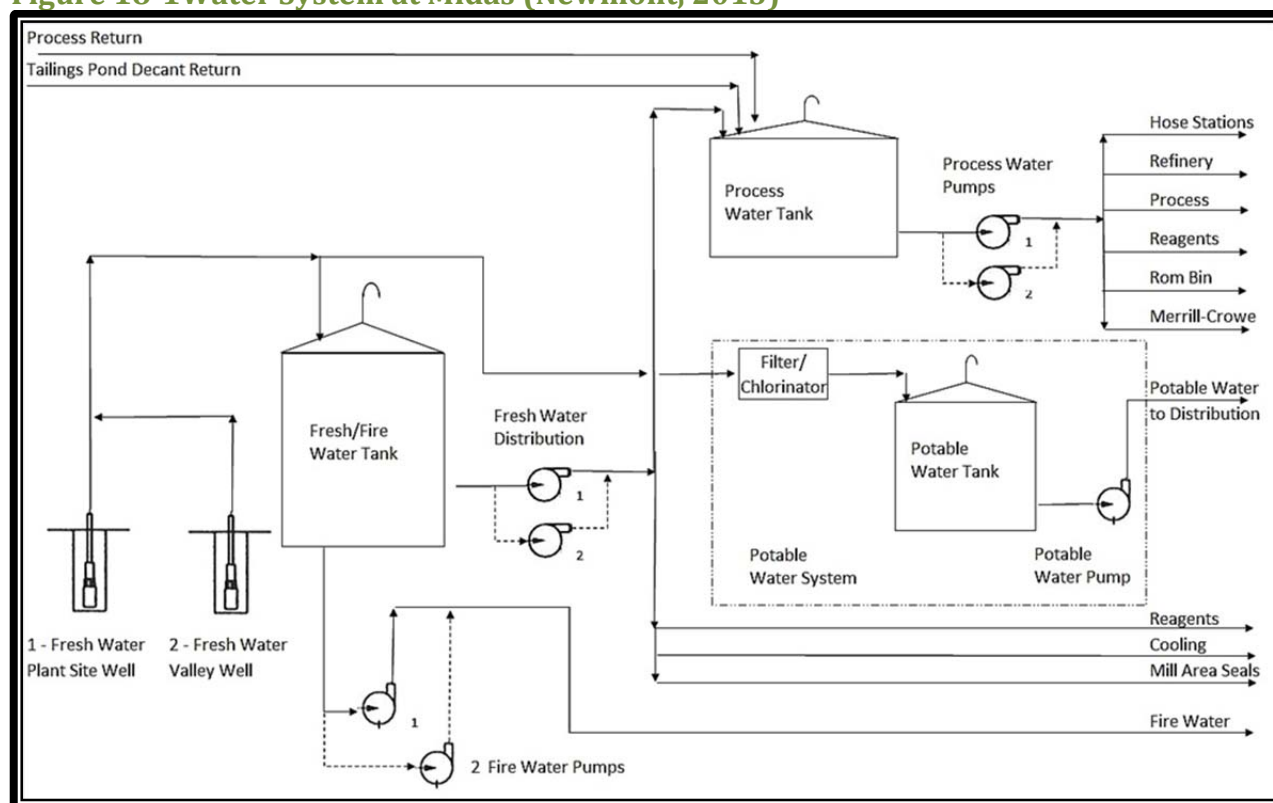
Location	Service Voltage Kilovolts (kV)	Size	Current Power Draw(MW)
Tails Evaporation	24.9kV	1MVA	0.6
		<b>Total</b>	<b>7.7 MW</b>

Midas also has a 1.4 kilowatt (kW) diesel generator for backup. Prior to Klondex's acquisition of the Midas Project, electrical power supply to Midas was from Newmont's Dunphy Power Plant from the 120kV transfer line to the Osgood Substation. Transmission from the Osgood Station to the site is on a 24.9kV line. Site voltage available is from 480 volts (V) service to 4160V service. Klondex purchases electrical power from NV Energy which is transmitted using the same infrastructure.

#### 18.4. Water

Midas Project water is supplied by two main wells: the Plant Site Well and the Valley Well. The combined capacity of both is 300 gallons per minute (gpm).

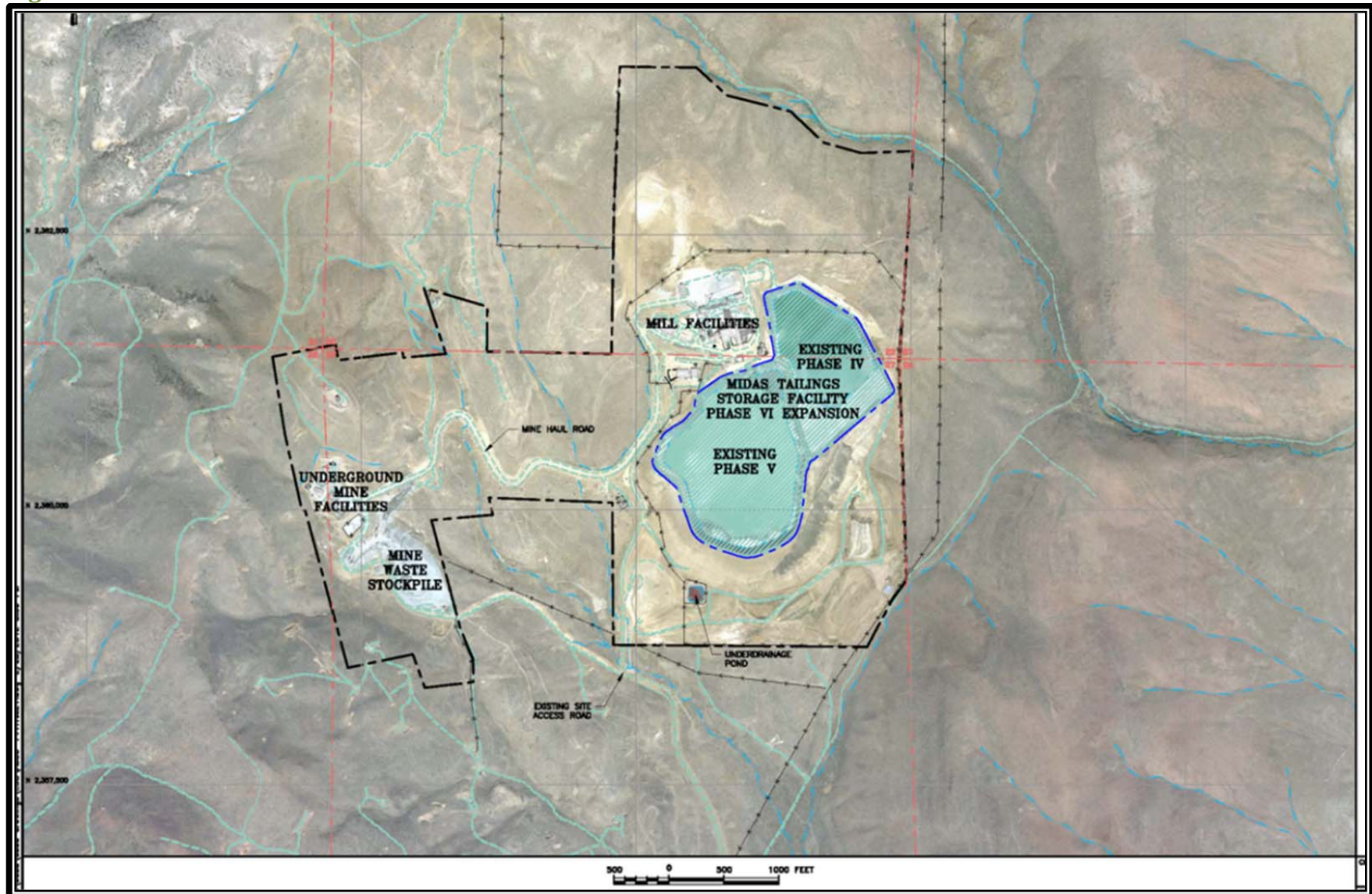
**Figure 18-1 Water System at Midas (Newmont, 2013)**



#### 18.5. Communication Infrastructure

Digital data communication service is provided from fiber optic cable and has a 1.1 gigabyte per second capacity. Telephone service is standard multi-line voice service.



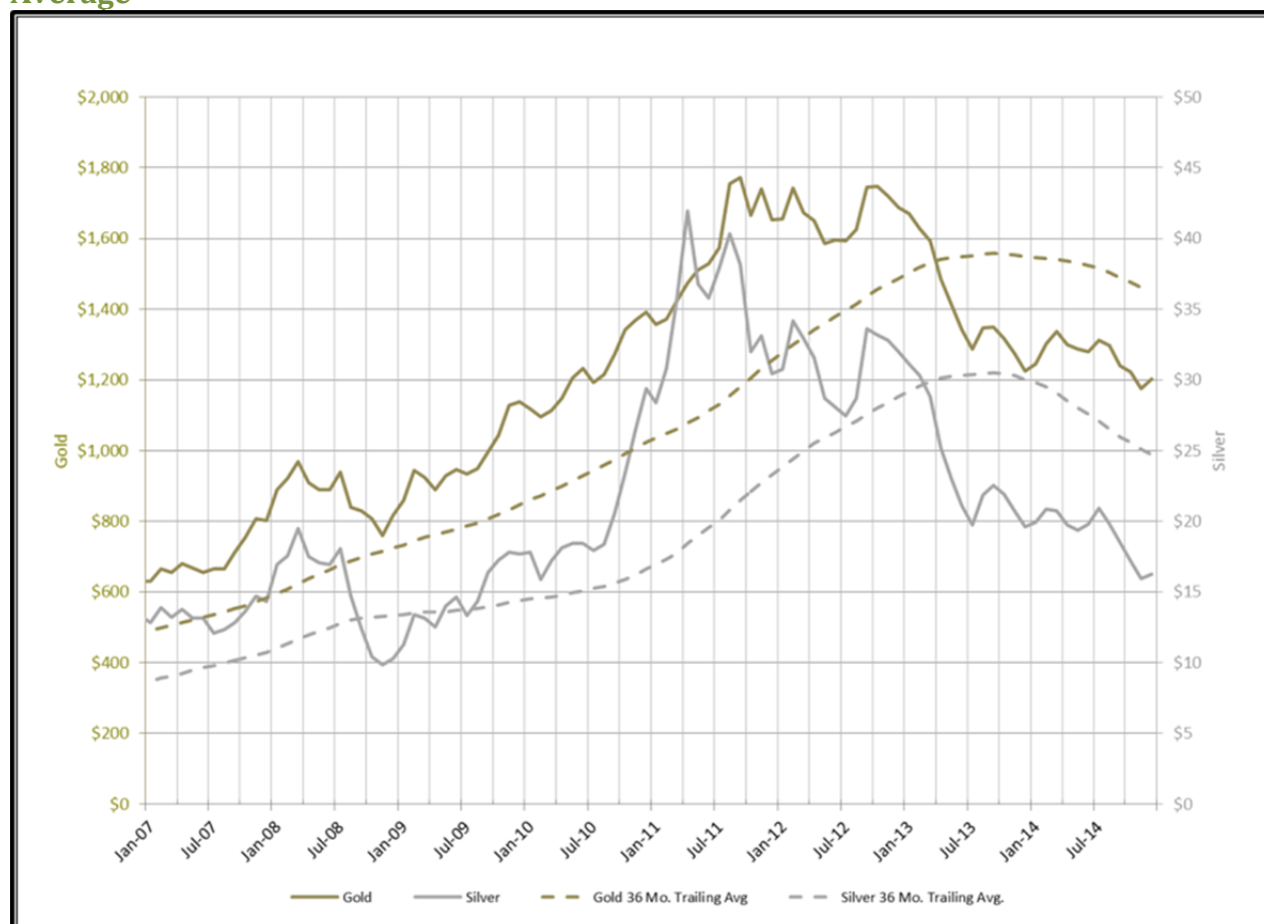
**Figure 18-2 Location of Site Facilities**

## 19. Market Studies and Contracts

### 19.1. Precious Metal Markets

Gold and silver markets are mature with reputable smelters and refiners located throughout the world. Following several years of increases, gold and silver prices began declining in 2012. As of December 2014, the 36-month trailing average gold price was \$1,449 per ounce, the 24-month trailing average price was \$1,339 while the monthly average had dropped to \$1,202. The silver price trend shows similar behavior, and both are shown in Figure 19-1.

**Figure 19-1 Historical Monthly Average Gold and Silver Prices and 36 Month Trailing Average**



### 19.2. Contracts

As part of normal mining activities, Klondex has entered into several contracts with several mining industry suppliers and contractors. The terms of these agreements are customary for mines in the area.

### **19.3. Project Financing**

On December 4, 2013, the Corporation entered into a stock purchase agreement with its wholly-owned subsidiary, Klondex Holdings (USA) Inc., and Newmont USA Limited ("Newmont USA") to acquire all of the shares of Klondex Midas Holdings Limited (formerly Newmont Midas Holdings Limited), which indirectly owns the Midas Project. The Midas Acquisition was completed on February 11, 2014. The purchase price of the Midas Acquisition was comprised of:

1. Approximately US\$55 million in cash;
2. The replacement of Newmont surety arrangements with Nevada and federal regulatory authorities in the amount of approximately US\$28 million; and
3. The issuance by the Corporation to Newmont USA of 5 million warrants to purchase Common Shares of Klondex at an exercise price of \$2.15, with a 15-year term, subject to acceleration in certain circumstances.

The Midas Acquisition was financed through the Subscription Receipt Financing (as defined below), the 2014 Debt Financing (as hereinafter defined) and the Gold Purchase Arrangement (as hereinafter defined).

On January 9, 2014, the Corporation completed an offering (the "Subscription Receipt Financing") of 29,400,000 subscription receipts at a price of \$1.45 per subscription receipt on a private placement basis, raising aggregate gross proceeds of \$42,630,000 (the "SR Proceeds") pursuant to the terms of an agency agreement dated December 6, 2013 between the Corporation and GMP Securities L.P., MGI Securities Inc., Mackie Research Capital Corporation, M Partners Inc., Jones, Gable & Company Limited and PI Financial Corp. (collectively, the "SR Agents"). The SR Proceeds, less the SR Agents' expenses and out-of-pocket costs and legal expenses, were placed in escrow pending (i) the closing of the Midas Acquisition, and (ii) the receipt by the Corporation of the requisite shareholder approval of the Subscription Receipt Financing and the 2014 Debt Financing (as hereinafter defined) pursuant to the requirements of the Toronto Stock Exchange ("TSX"). Upon both of these conditions being satisfied, on February 11, 2014, the net proceeds of the Subscription Receipt Financing were paid out of the escrowed funds to the Corporation.

On February 11, 2014, the Corporation entered into a senior secured loan facility agreement (the "Facility Agreement") with a syndicate of lenders led by Royal Capital Management Corp., pursuant to which the Corporation issued units consisting of an aggregate of \$25,000,000 principal amount of notes, issued at a 2.5% discount to par value, and 3,100,000 warrants ("2014 Lender Warrants") to purchase Common Shares (the "2014 Debt Financing"). The 2014 Lender Warrants have an exercise price of \$1.95 and will expire on February 11, 2017. The notes mature on August 11, 2017.

On February 11, 2014, the Corporation entered into a gold purchase agreement (the "Gold Purchase Agreement") with Franco-Nevada GLW Holdings Corp., a subsidiary of Franco-Nevada Corporation ("FNC"), pursuant to which the Corporation raised proceeds of US\$33,763,640 (the "Gold Purchase Arrangement") in consideration for the delivery of an aggregate of 38,250 ounces of gold on a monthly basis over a five year period ending on December 31, 2018. Under the terms of the Gold Purchase Agreement, the Corporation is required to make gold deliveries at the end of each month, with the first delivery having been due on June 30, 2014. Gold deliveries will cease when the delivery of 38,250 ounces of gold is completed on December 31, 2018. The annualized delivery schedule is shown in Table 19-1.

**Table 19-1 FNC Gold Delivery Schedule**

<b>Year</b>	<b>Gold Ounces</b>
2014	6,750
2015	7,500
2016	8,000
2017	8,000
2018	8,000
<b>Total</b>	<b>38,250</b>

The Corporation's obligations under each of the 2014 Debt Financing and the Gold Purchase Agreement are secured against all of the assets and property of the Corporation and its subsidiaries. The security granted for the performance of the Corporation's obligations under the 2014 Debt Financing and the Gold Purchase Agreement rank pari-passu.

The Facility Agreement contains customary events of default and covenants for a transaction of its nature, including limitations on future indebtedness during its term. Early repayment of the loan under the Facility Agreement by the Corporation is required under an event of default under the Facility Agreement, including in the event that the Corporation has failed to pay within three business days of being due any principal or interest totaling \$250,000 or more on any indebtedness of the Corporation other than the indebtedness (other than permitted indebtedness) under the Facility Agreement. In addition, the Corporation may not incur indebtedness where, on the date of such incurrence, and after giving effect thereto and the application of proceeds therefrom, the Consolidated Adjusted EBITDA (as defined in the Facility Agreement) of the Corporation and its subsidiaries divided by the sum of the consolidated debt expense (net of consolidated interest income) of the Corporation and its subsidiaries would be less than 3.5.

The Gold Purchase Agreement also contains customary events of default and covenants for a transaction of its nature. A default under the Facility Agreement would also constitute a default



under the Gold Purchase Agreement. As at the date hereof, the Corporation is in compliance with all requirements under the Facility Agreement and the Gold Purchase Agreement.

On February 12, 2014, the Corporation entered into a royalty agreement (the "Midas Royalty Agreement") with Franco-Nevada U.S. Corporation ("Franco-Nevada US"), a subsidiary of FNC, and, Klondex Midas Operations Inc. (formerly Newmont Midas Operations Inc.) ("Midas Operations"), the owner of the Midas Project and now an indirect wholly-owned subsidiary of the Corporation, pursuant to which Midas Operations raised proceeds of US\$218,310 from the grant of a 2.5% NSR royalty to Franco-Nevada US on the Midas Mine.

## **20. Environmental Studies, Permitting and Social or Community Impact**

As with any mine, new environmental regulations have the potential to add expenses and restrictions to operations. Restrictions have the potential to adversely affect the scope of new exploration and development on the Midas property, and subsequently, the potential for production at the Property may be affected.

The Midas Mine is subject to the laws and regulations relating to environmental matters in all jurisdictions in which it operates, including provisions relating to property reclamation, discharge of hazardous material and other matters. Mineral exploration and mining operations are completed in compliance with applicable environmental regulations. The authors of this Technical Report are not aware of any existing environmental liabilities.

### **20.1. Environmental Management Activities**

Ongoing environmental management issues at Midas include regulatory reporting on:

- Water Pollution Control Reports
  - Air Quality Reports and Compliance Testing
  - Water Rights
  - Reclamation Report and Bond Updates
  - Toxic Release Inventory Reports
  - Dam Permit Reporting
  - Hazardous Waste Inspections and Reporting
  - Wildlife Inspections and Reports
- 
- Additionally, reclamation financial assurances require reporting on:
  - Annual Corporate Guarantee Review and Approval
  - Triennial Reclamation Cost Estimate Update
  - Other environmental management obligations include:
  - Permit Renewals/Modifications
  - Reclamation and Final Permanent Closure Plan
  - Cultural Resources Mitigation Actions
  - Greater Sage-grouse Mitigation Actions
  - Regulatory Inspections

### **Waste Rock Dump Description and Management**

The waste rock dump (WRD) at Midas is located downhill and to the south-east of the portal. Primary waste rocks lithologies are tuff, rhyolite, and basalt. The current WRD design covers

eleven acres of disturbance on private property. Maximum storage capacity is approximately 1.4 million tons.

Waste rock at Midas is used as fill in the underground openings. During phases of increased development, the WRD inventory increases, and when the mine development level is normalized, the inventory decreases.

During waste rock placement, composite samples of felsic and mafic rock lithologies are taken on a daily basis. In compliance with the Water Pollution Control Permit, the sample analysis is reported on a quarterly basis. The Meteoric Water Mobility Procedure (MWMP) Profile I is reported to the BMRR, which measures 31 constituents. The potential for the WRD to generate acid is also calculated and reported. Lime is added during quarterly monitoring if the Acid Neutralization Potential (ANP) to Acid Generation Potential (GNP) ratio is less than 1.0.

During 2012 and 2013, no constituents average value taken from the WRD was outside of the acceptable Profile I standard (from the fourth quarter 2011 through third quarter, 2013 reports). During this period, 627,000 tons of felsic and 74,400 tons of mafic rock were placed on the WRD. The average ANP to AGP readings for that time were a ratio of 2.3. Additionally, Monitoring Well-9, in the drainage below the WRD, is sampled on the quarterly.

Waste rock is routinely reclaimed from the WRD and placed in the underground stopes. It is anticipated that, during the latter stages of mining, stope fill requirements will allow a much higher rate of waste rock re-placement diminishing the volume of the WRD.

The Midas Revised Three-Year Reclamation Plan was approved by the BMRR in October 2012. The plan states on Page 23:

“All of the mine waste rock that is stored on the temporary waste rock facility will be removed from this area and backfilled into the decline. Once the rock is removed, the topography in this area will approximate the original contour. Reclamation will consist of the placement of 0.5 feet of cover and 0.5 feet of growth media and seeding.” (US Department of the Interior (DOI) BLM, 2013)

Topsoil for the WRD is stored immediately downhill from the Midas Mine. When reclamation is complete, the potential for future waste rock acid drainage will be mitigated.

## **20.2. Tailings Impoundment Description and Management**

The TSF is located on the west flank of a wide canyon on the southern periphery of the Project. The tailings coverage entails 95 acres of disturbance located entirely on private property. The embankment has undergone four permitted lifts to expand capacity since its original construction. The current lift is known as “Phase 5”. The Phase 5 lift was designed by the

engineering firm, Smith Williams Consultants, Inc., and is permitted with Dam Safety Permit J-555 by the Nevada Department of Water Resources. The current cumulative capacity of the TSF is 3.70 million tons, of which approximately 700,000 tons are still available. It is expected that an expansion will be required in approximately the next 4 years.

The TSF is a synthetic lined pond with 2:1 slope ratio on the internal walls and 3:1 slope ratio on the external walls comprised of compacted earth and rock buttress construction. The TSF has a maximum permitted vertical lift (Phase Six – which has not yet been built) of 200 feet on the external, downslope side. The pond contains approximately 2,750,000 tons of detoxified cyanide tailings ground to 80% passing a 200 mesh screen. Tailings placement occurs simultaneously with process water decantation and active evaporation within the margins of the TSF.

The cumulative, drained process tailings are subjected to downward migrating water. There is potential for this water to escape the lined TSF. Furthermore, meteoric waters in the alluvium outside the pond host potential to leach chemicals from the tailings through the outer walls of the TSF and then enter the drainage at the toe of the dam. The possible occurrences of seepage are monitored by quarterly sampling from ten monitoring wells, nine of which are down-gradient of the TSF and one up-gradient. Results from these samples are reported quarterly to BMRR, according to the Water Pollution Control Permit.

Incidental seepage is prevented from entering the waters of the State by federal law. Any seepage solutions are captured in an underdrain pond and drainage wells prior to release to the regional hydrologic system. Seepage water is pumped back into the TSF.

The Midas Reclamation Plan provides for proper reclamation and closure of the TSF. This plan includes a period of Process Fluid stabilization followed by placement of an Evapotranspiration (ET) barrier, designed to force meteoric water to evaporate instead of infiltrating the pond. Seeding for vegetation follows ET placement. Water quality monitoring will continue for a period of five years and be reported on a quarterly basis.

The Midas Revised Three Year Reclamation plan was approved by the BMRR in October 2012. When reclamation is completed, the potential for future seepage from the TSF will be mitigated.

### **20.3. Air Emissions Control**

Air emission standards for Midas are defined in the BLM Environmental Assessment titled, “Midas Underground Support Facilities, Newmont Mining Corporation”, issued in March 2013. These emissions include diesel particulate and dust expelled from underground mining operations, fugitive dust from surface operations, road maintenance, crushing activities, and mercury emissions from refinery furnaces and mercury retorts.



Klondex's current Midas operations are regulated by a number of BAPC permits. Operations at Midas are permitted under Class II Air Quality Operating Permit AP1041-0766.02. A Title V application was submitted in January 2012, and the permit approval is currently pending BAPC review. Surface disturbance and fugitive emissions are regulated under three Class II Surface Area Disturbance Permits: AP1041-1444.01 (Borrow Pit), AP1041-1454.01 (Exploration), and AP1442-2674 (Jakes Creek Gravel Pit).

To allow for potential increases in mercury emission, as is anticipated in processing custom ores at Midas, Newmont obtained a Nevada Mercury Control air permit from the BAPC and Klondex is currently operating in Phase 1 of this permit. The purpose of Phase 1 is to monitor and operate properly under existing mercury controls and to implement work practice standards on units without controls in order to minimize emissions until the appropriate technologies under the Nevada Maximum Achievable Control Technology (NvMACT) standards are determined. At the existing Midas facility, Klondex is operating under Mercury OPTC: Phase 1, AP1041-2253 for a number of units.

#### **20.4. Reclamation Cost and Bonding**

Klondex posted \$28M in reclamation bonding upon the completion of the Midas Acquisition.

#### **20.5. Permits**

The Midas Project, including the Ken Snyder Mine and the Midas Processing facility, have been in operation since 1998. Beginning in 1992 and up until 1997, a full suite of exploration, operating, and tailings permits were acquired, and since 1998 have been maintained and modified to suit the full range of operations at Midas.

In overview, permits are maintained at the state level with the NDEP and State Fire Marshal; at the Federal level with the BLM; and locally with the Counties of Elko and Humboldt. A list of the most significant operational permits maintained by the Midas Project are listed in Table 20-1.

#### **Air Quality Permit**

Air permits include Surface Air Disturbance permitting, Class I and Class II Operating Permits, and Mercury Control Permits. These permits, administered by the NDEP, are in compliance with Federal EPA Emissions Inventory Systems.

## Water Quality permit

Water permits include Water Pollution Control permits, various Storm Water Control permits, permits for dams and Industrial Artificial Ponds. These permits are administered by the Nevada Department of Wildlife and the NDEP and adhere to the Federal EPA Discharge and Release Standards. Public Water Systems and Treatment facilities are also covered.

## Rights of Way

Rights to operate on Federal Lands are administered by the BLM. Midas holds four main Rights of Way.

## Plans of Operation

Two plans of operations are in effect. The first covering the location of five vent raises, and the second covering exploration activities on the surrounding land package. Both plans of operation are administered by the BLM.

## Water Rights

The Midas Mine has acquired sufficient water rights for operation of the two water supply wells and mine dewatering system.

## Other Permits

Other permits include state fire protection permits, solid waste disposal permits, reclamation permits, and septic systems.

Midas holds and maintains 26 major permits. Table 20-1 lists these permits and their respective reporting and expiration periods.

**Table 20-1 Midas Operations Comprehensive Permit List**

Permit	Number	Description	Agency	Current	Period	Expiration
Class II Air Quality	AP1041-0766	Processing Permit	NDEP-BAPC	yes	Annual	5/11/2014
Class I Operating	AP1041-2989	Permit to Construct	NDEP-BAPC	yes	Annual	6/5/2014
Nevada Mercury Control	AP1041-2253	Mercury Operating Permit	NDEP-BAPC	yes	Annual	6/5/2014
Surface Air Disturbance	AP1041-1444	Midas Gravel Pit	NDEP-BAPC	yes	Annual	8/19/2014
Surface Air Disturbance	AP1041-1454	Exploration	NDEP-BAPC	yes	Annual	9/7/2014
Surface Air Disturbance (SAD)	AP1442-2674	Jakes Creek Gravel Pit	NDEP-BAPC	yes	Annual	5/5/2015

Permit	Number	Description	Agency	Current	Period	Expiration
IAP	S35289	Industrial Artificial Ponds Permit	NDOW	yes	Quarterly	6/30/2018
Dam Permit	J-555	Dam Safety Phases 4 - 5	NDEP-NDWR	yes	Bi-Ann.	6/30/2014
Right of Way	N83284	Power Line	BLM	yes	N/A	8/28/2027
Right of Way	N61100	Road and Power Line	BLM	yes	N/A	4/23/2027
Right of Way	N-66023	Road and Waterline	BLM	yes	N/A	11/20/2029
Right of Way	N088016	Snow Fence	BLM	yes	N/A	12/31/2039
Plan of Operations	NVN 071128	Exploration POO	BLM	yes	N/A	N/A
Plan of Operations	NVN 088898	Operations Plan	BLM	hold	N/A	N/A
Storm Water	CSW-19747	Jakes Creek Storm Water Runoff	NDEP-BWPC	yes	Annual	7/1/2014
Storm Water	ISW-1464	Midas Gravel Pit Storm Water	NDEP-BWPC	yes	Annual	7/1/2014
Storm Water	MSW-221	Mine Ops Storm Water Runoff	NDEP-BWPC	yes	Annual	7/1/2014
WPCP	NEV-96107	Water Pollution Control Permit	NDEP-BMRR	yes	Quarterly	2/5/2013
Potable Water P	EL-0908-12NTC	Public Water System	NDEP-BSDW	yes	Quarterly	6/30/2014
Potable Water T	EL-0908-TP01-12NTNC	Treatment Facility	NDEP-BSDW	yes	Quarterly	6/30/2014
Reclamation Permit	#0098	Exploration	NDEP-BMRR	yes	Annual	2/28/2014
Reclamation Permit	#0125	Mine Operations	NDEP-BMRR	yes	Annual	10/5/2015
Fire Safety Plan	27455	HAZMAT Permit	NV Fire Marshal	yes	Annual	2/28/2014
EPCRA	8941KNSNY 60MIL	Waste Generation	EPA-BWM	yes	Annual	6/30/2014

Notes of significance about the permits in place are listed below:

### Air Quality

Midas is currently operating under two permits, the Class II operating permit AP1041-0766 and the Mercury Operating Permit AP1041-2253. The Class 1A Permit AP1041-2989 is currently a “permit to construct.” This permit includes the mercury capture and mitigation process hardware which has not yet been installed. It was Newmont’s intention to incorporate the Class II and Mercury permits into the Class 1 Permit upon inspection and approval of the mercury circuit. The site will thus operate under only one Air Quality Operating Permit.

### Solid Waste

There is no landfill permit. Solid waste is removed from site and disposed at the Humboldt County Landfill.

### **Jakes Creek**

The Jakes Creek ROW and SAD permits are held to access and maintain the Jakes Creek area and road. This is part of a county road maintenance agreement, mentioned in the following section.

### **Water Pollution Control Permit (WPCP)**

The current site WPCP expired February 2013. Newmont filed an Application for Renewal (Renewal) within the required 90-day application timeline. Klondex refiled the Renewal during the summer of 2014, and it is under review by NDEP. Klondex is currently operating Midas under the expired permit which is allowed, as long as the renewal was filed during the renewal application period.

## **20.6. Social Impact**

Midas Mine management incurs responsibility to address these issues:

Road agreements with Elko County and Humboldt County related to drilling two wells on Humboldt County-owned land. The drilling would entail supporting dust suppression on the access road (from the “Y” to the mine entrance). The drilling was scheduled for Spring 2013 (presently awaiting water rights transfer at State of Nevada from Humboldt County to Klondex).

Additionally, Midas provides labor, materials, and equipment for maintenance of State Route 18. In 2012, a total of \$285,000 was spent on the following areas of road maintenance:

- Dust suppression
- Grading
- Routine repairs
- Maintenance of signage and cattle guards
- Snow removal

Klondex also participates in community support of the following organizations:

- Midas Fire Department: July 4 parade and first responder program
- Nevada Bighorns Unlimited: August fundraiser
- Annual community picnic to provide update on mine operations (held in July)



## 21. Capital and Operating Cost Estimates

### 21.1. Capital Costs

Life of Mine (LOM) constant dollar capital expenditures are detailed in Table 21-1. Mine development comprises 100% of total capital. Owner operated mine development unit costs, for similarly sized excavations in north Nevada, are shown in Table 21-2.

**Table 21-1 Capital Costs**

	Cost (000's)				Total
	2014	2015	2016	2017	
Mine Development		\$1,301		\$259	\$1,560
Site Facilities					
Mining Equipment					
Total	\$0	\$1,301	\$0	\$259	\$1,560

**Table 21-2 Underground Development Unit Costs**

Description	Width (ft)	Height (ft)	Unit Cost (\$/ft)
Primary Capital Drifting	14 - 15	15 - 17	\$1,350
Secondary Capital Drifting	14	14	\$1,350
Raising	10	10	\$2,000

### 21.2. Operating Costs and Cutoff Grade

LOM operating costs are presented in Table 21-3 below. Unit mining costs are based on actual costs incurred at Midas in 2014. These costs have been adjusted to reflect the planned mining rate where appropriate. The weighted average cost is based on the LOM quantities in each category.

**Table 21-3 Operating Costs**

Description	Unit Cost	Unit
<b>Mining</b>		
Production Stopping	\$170.00	/ton
5 x 11 Stope Development Drift	\$200.00	/ton
Backfill	\$30.00	/ton
Cellular Backfill	\$235.00	/ton
Average Mining Cost	\$211.83	/ton
Transportation, Processing and G&A		

Description		Unit Cost	Unit
Haulage Portal to Mill		\$2.00	/ton
Processing - Fixed Cost	\$16,733 / Process Rate (tpd)	\$41.67	/ton
- Variable Cost		\$26.18	/ton
Site Administration and G&A	\$7,888.89 / Mineral Reserves Mining Rate (tpd)	\$33.19	/ton
Total		\$314.87	/ton

Processing costs include fixed and variable components. Applying these to the 2014 actual tonnage processed predicts a total cost of \$61.24 per ton. Actual costs for 2014 averaged \$57.49 per ton or six percent below the predicted cost.

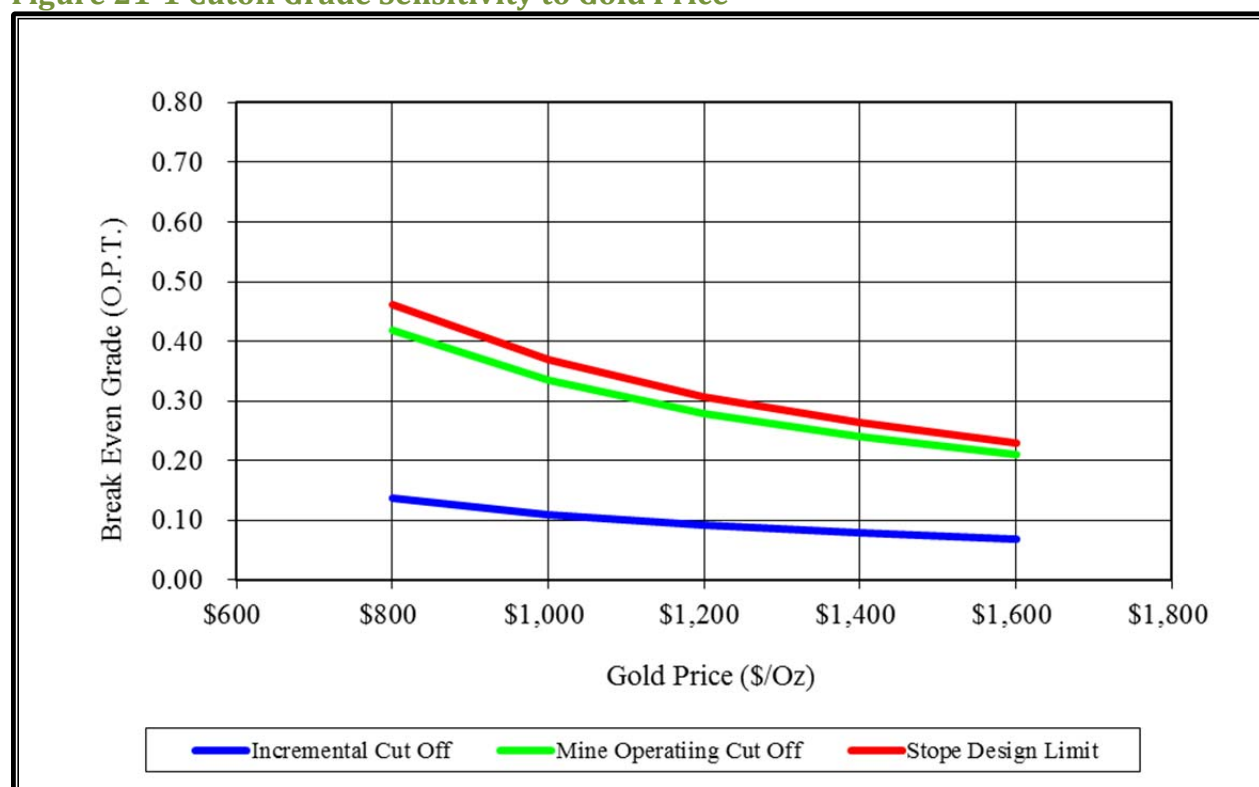
Site administration costs are based on actual Midas cost reporting for 2014. These costs include surface support, environmental, land, legal and other costs allocated to the Project. These costs are treated as 100% fixed and amount to \$236,670 per month.

Using the operating costs and parameters above, cut-off grades were calculated at varying gold prices. These are shown in Table 21-4 and Figure 21-1. The incremental cut-off represents the required minimum grade of mineralization to be profitable to process after it has been mined and transported to the surface. Mineralization from development excavations is included in the LOM plan and mineral reserves if it exceeds the incremental cut off since processing the incremental material improves the Project cash flow over the alternative of sending this material to the waste dump.

**Table 21-4 Cut-off Grade Calculation**

		Gold	Silver
Metal Sales Price	\$/Ounce	\$1,000	\$15.83
Refining and Sales Expense	\$/Ounce	Included in Milling	
Royalty		0%	
Metallurgical Recovery		94%	92%
<u>Operating Costs</u>			
Ore Haulage (Portal to Mill)	\$/ton	\$2.00	
Direct Processing	\$/ton	\$67.85	
Administration and Overhead	\$/ton	\$33.19	
Mining	\$/ton	\$211.83	
Total	\$/ton	\$314.87	
Gold Equivalent		1	64.53
Unplanned Dilution		10%	
Incremental Cut Off Grade		0.110	
Cut-off Grade	Eq. opt	0.335	
Minimum Mining Width	feet	4	
Grade Thickness cut-off	Eq. opt-ft.	1.474	

**Figure 21-1 Cutoff Grade Sensitivity to Gold Price**



## 22. Economic Analysis

The LOM plan and technical and economic projections in the LOM plan model include forward looking statements that are not historical facts and are required in accordance with the reporting requirements of the Canadian Securities Administrators. These forward-looking statements include estimates and involve risks and uncertainties that could cause actual results to differ materially.

The estimates of capital and operating costs have been developed specifically for the Project and are summarized in Section 21. These costs are derived from actual mine and process operating experience for the Project during 2014, and where appropriate, include adjustments applicable to the planned production rates.

The cash flow estimate includes only costs, taxes and other factors applicable to the project. Corporate obligations, financing costs, and taxes at the corporate level are excluded. The cash flow estimate includes 35% Federal income tax after appropriate deductions for depreciation and depletion. No consideration has been given for carry forward losses incurred prior to 2015. Nevada does not impose an income tax but does levy a net proceeds tax equal to 5% of the net operating income with some allowances for depreciation of property plant and equipment. The net proceeds tax does not allow a depletion deduction.

Future reclamation costs have been prepaid through reclamation bonding requirements of the BLM and NDEP. These bonds are considered adequate to fund future reclamation liabilities.

### 22.1. Life of Mine Plan and Economics

Constant dollar cash flow analysis of the reserves production and development plan shown in Table 16-4 is presented in the income and cash flow statements of Table 22-1 and Table 22-2, respectively. Table 22-3 lists the life of mine key operating and financial indicators. The minimal capital requirements yield a 0.6-year capital payback period and 21.1 profitability index (PI) calculated with a 10% discount rate and a 523% rate of return. PI is the ratio of payoff to investment of a proposed project. It is a useful tool for ranking projects because it allows you to quantify the amount of value created per unit of investment. A profitability index of 1 indicates break even.

Royalties incurred during the LOM plan include the advance minimum royalty payments to third party lessors. The mine plan ends prior to the 2 ½% royalty taking effect as specified in the Midas Royalty Agreement with Franco-Nevada US. None of the planned production is from holdings subject to NSR royalties.



**Table 22-1 Income Statement 2015 - 2018 (\$000's)**

<u>Year</u>	<u>2015</u>	<u>2016</u>	<u>2017</u>	<u>2018</u>	<u>Total</u>
<b>Income Statement (000's)</b>					
Revenue					
Gold Sales	\$5,406.9	\$36,076.3	\$36,380.8	\$8,277.6	\$86,141.6
Silver Sales	\$6,516.1	\$19,486.4	\$8,695.1	\$3,832.5	\$38,530.1
Total Revenue	\$11,923.0	\$55,562.6	\$45,075.9	\$12,110.1	\$226,915.0
Operating Costs					
Ore Mining	(\$8,062.0)	(\$20,051.0)	(\$10,902.6)	(\$4,018.0)	(\$43,033.6)
Backfill	(\$915.2)	(\$2,885.7)	(\$2,171.4)	(\$1,416.6)	(\$7,388.9)
Expensed Waste	(\$700.0)	(\$153.2)	\$0.0	(\$16.1)	(\$869.3)
Surface Ore Haulage Portal to Mill	(\$87.3)	(\$225.6)	(\$124.7)	(\$46.6)	(\$484.3)
Processing	(\$2,345.1)	(\$6,329.1)	(\$4,115.4)	(\$3,638.8)	(\$16,428.4)
Site General Administration & Overhead	(\$949.3)	(\$2,840.0)	(\$2,840.0)	(\$1,408.3)	(\$8,037.6)
Total Operating Costs	(\$13,058.9)	(\$32,484.6)	(\$20,154.1)	(\$10,544.4)	(\$76,242.0)
General & Administrative					
Refining & Sales (Included with Processing Costs)	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0
Royalty	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0
Nevada Net Proceeds Tax	\$0.0	(\$1,150.6)	(\$1,242.8)	(\$74.4)	(\$2,467.9)
Total Cash Cost	(\$13,058.9)	(\$33,635.3)	(\$21,397.0)	(\$10,618.8)	(\$78,709.9)
EBITDA	(\$1,135.9)	\$21,927.4	\$23,679.0	\$1,491.4	\$45,961.8
Reclamation Accrual (UOP)	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0
Depreciation	\$0.0	(\$581.4)	(\$586.3)	(\$392.6)	(\$1,560.4)
Total Cost	(\$13,058.9)	(\$34,216.7)	(\$21,983.3)	(\$11,011.4)	(\$80,270.3)
Pre-Tax Income	(\$1,135.9)	\$21,345.9	\$23,092.6	\$1,098.8	\$44,401.4
Income Tax	\$0.0	(\$4,895.6)	(\$6,172.4)	(\$205.3)	(\$11,273.4)
Net Income	(\$1,135.9)	\$16,450.3	\$16,920.2	\$893.5	\$33,128.0

**Table 22-2 Cash Flow Statement 2015 - 2019 (\$000's)**

<u>Year</u>	<u>2015</u>	<u>2016</u>	<u>2017</u>	<u>2018</u>	<u>2019</u>	<u>Total</u>
Net Income	(\$1,135.9)	\$16,450.3	\$16,920.2	\$893.5	\$0.0	\$33,128.0
Depreciation	\$0.0	\$581.4	\$586.3	\$392.6	\$0.0	\$1,560.4
Reclamation	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0
Working Capital (6 weeks)	(\$1,506.8)	(\$2,374.2)	\$1,412.1	\$1,243.6	\$1,225.2	\$0.0
Operating Cash Flow	(\$2,642.7)	\$14,657.5	\$18,918.7	\$2,529.7	\$1,225.2	\$34,688.4
Capital Costs						
MACRS Equipment	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0
Capitalized Development	\$0.0	(\$1,301.2)	\$0.0	(\$259.2)	\$0.0	(\$1,560.4)
Mine Capital	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0

Year	2015	2016	2017	2018	2019	Total
Total Capital	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0
Net Cash Flow	(\$2,642.7)	\$13,356.3	\$18,918.7	\$2,270.5	\$1,225.2	\$33,128.0
Cumulative Cash Flow	(\$2,642.7)	\$10,713.6	\$29,632.3	\$31,902.8	\$33,128.0	

**Table 22-3 Key Operating and After Tax Financial Statistics**

Material Mined and Processed (kt)	242
Avg. Gold Grade (opt)	0.378
Avg. Silver Grade (opt)	10.93
Contained Gold (koz)	91.6
Contained Silver (koz)	2,646
Avg. Gold Metallurgical Recovery	94%
Avg. Silver Metallurgical Recovery	92%
Recovered Gold (koz)	86.1
Recovered Silver (koz)	2,434
Reserve Life (years)	2.8
Operating Cost (\$/ton)	\$315
Cash Cost (\$/oz) <sup>1</sup>	\$466
Total Cost (\$/oz) <sup>1</sup>	\$485
Gold Price (\$/oz)	\$1,000.00
Silver Price (\$/oz)	\$15.83
Capital Costs (\$ Millions)	\$1.6
Payback Period (Years)	0.6
Cash Flow (\$ Millions)	\$33.1
5% Discounted Cash Flow (\$ Millions)	\$30.2
10% Discounted Cash Flow (\$ Millions)	\$27.7
Profitability Index (10%) <sup>2</sup>	21.1
Internal Rate of Return	523%

Notes:

1. Net of byproduct credits.

2. Profitability index (PI) is the ratio of payoff to investment of a proposed project. It is useful for ranking project as a measure of the amount of value created per unit of investment. A PI of 1 indicates break even.

## 22.2. Sensitivity Analysis

The Project's net present value (NPV) at discount rates of 5% and 10% and profitability index from the cash flow model presented above were analyzed for sensitivity to variations in revenue, operating and capital cost assumptions. This analysis is presented graphically in Figure 22-1 through Figure 22-3 below. These graphs demonstrate the economic resilience of the Project by maintaining profitability with up to 40% unfavorable variances of any one of the three categories of gold price, operating cost or capital cost.

Figure 22-1 5% NPV Sensitivity

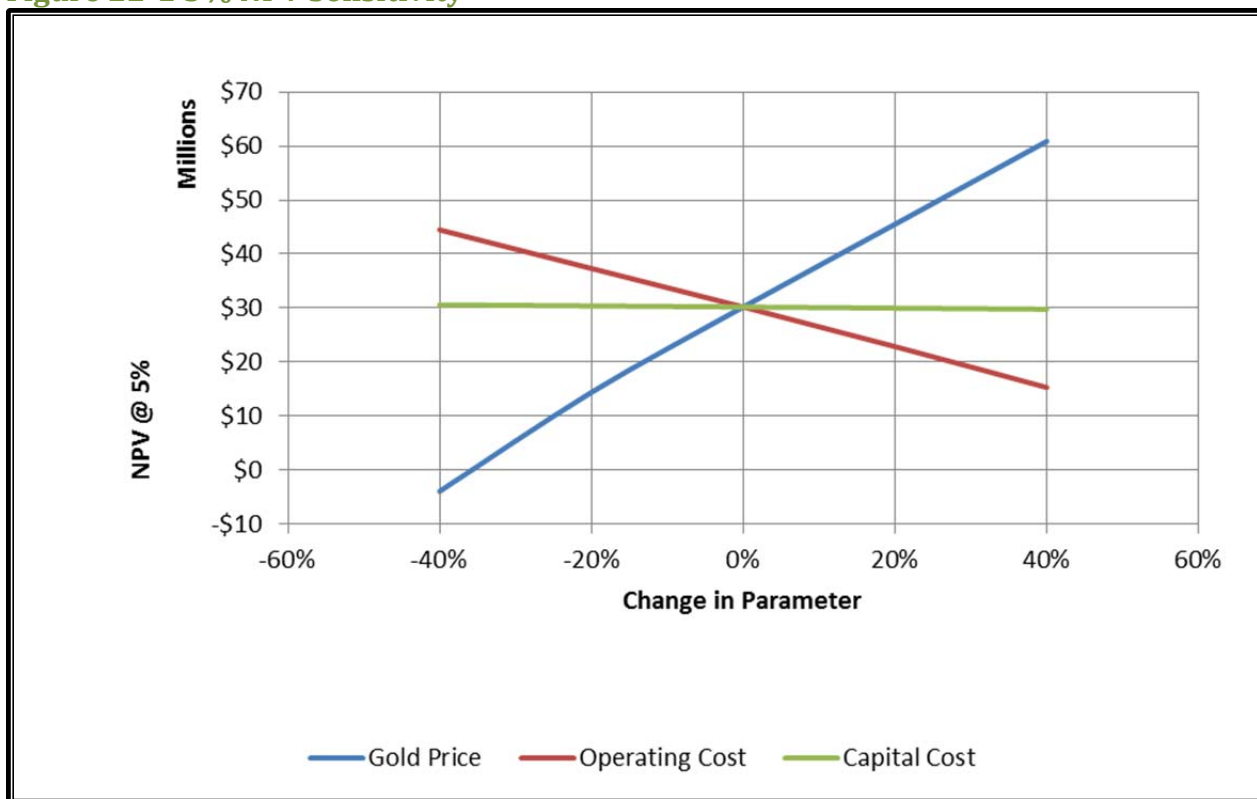
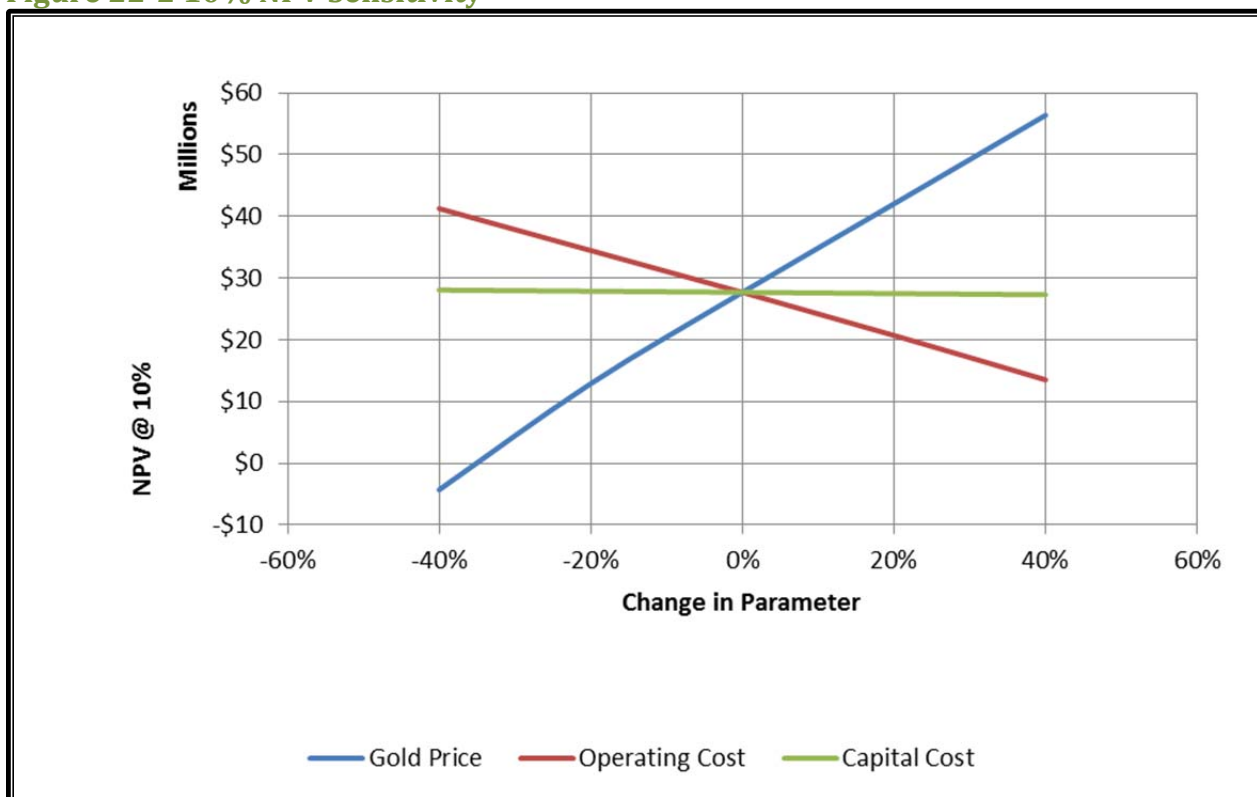
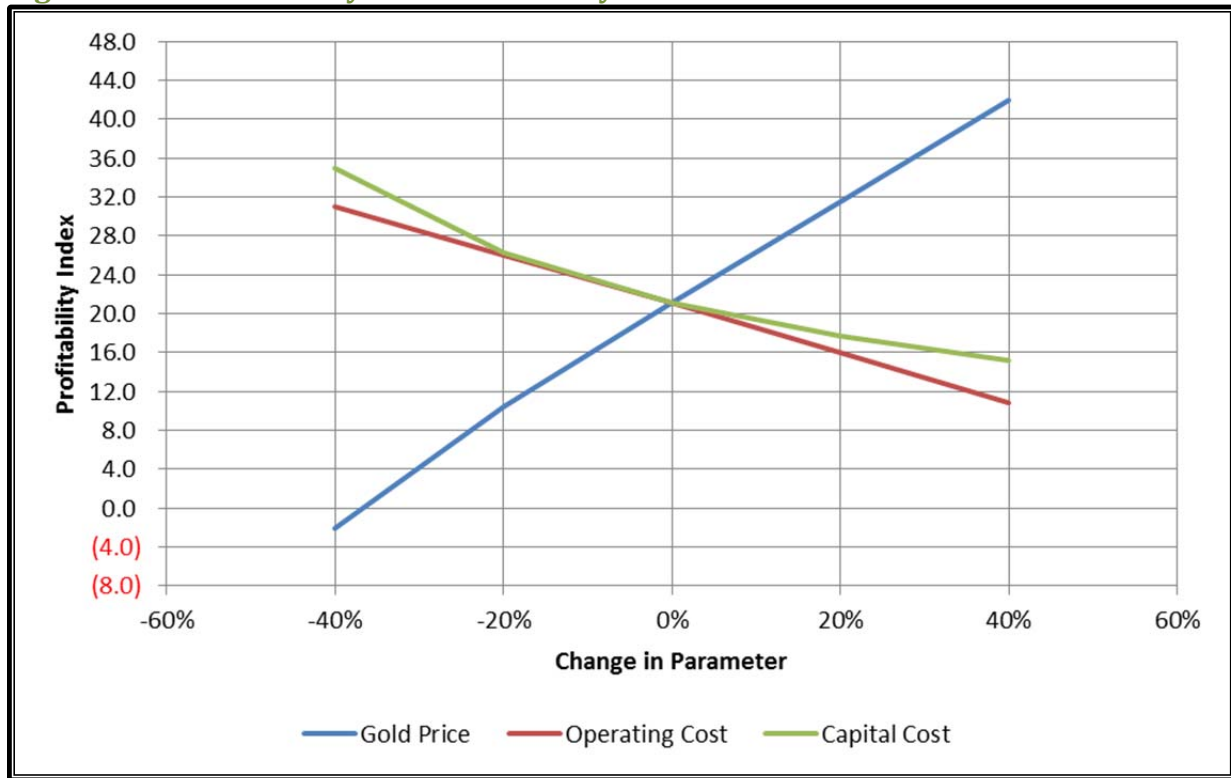


Figure 22-2 10% NPV Sensitivity



**Figure 22-3 Profitability Index Sensitivity**



## **23. Other Relevant Data and Information**

The authors are not aware of any other relevant data and information having bearing on the Midas mineral resource estimate, the Midas mineral reserve estimate or ongoing exploration and mining operations at the Project.

## **24. Interpretation and Conclusions**

### **24.1. Conclusions**

The Midas mine is a modern, mechanized narrow vein mine. Sufficient capital has not been allocated to near mine exploration to replenish resources depleted through mining. There are several exploration targets in the immediate area and within the mine's land position. As a result, underground mining rates will decline resulting in excess milling capacity in the near term.

Significant mineral resources have been identified on the main and eastern veins and other veins near the active mine workings. Klondex staff has been actively drill testing these areas and has prioritized them based on ounce expectations, accessibility from existing development and geotechnical, ventilation, and hydrological considerations. Mine plans are being updated on a regular basis as results are received. Additionally, alternative mining methods including shrinkage stoping and alimak stoping are being investigated where the development requirements for longhole stoping render these areas sub-economic.

The conventional Merrill Crowe mill facility is an efficient well maintained modern mineral processing plant capable of processing 1,200 tpd. The plant is capable of operating with a minimum crew compliment resulting in cost reductions when operated at capacity. Expected mine production of 400 tpd in the next two to three years will allow mill feed to be supplemented from Klondex's nearby properties and third party toll milling.

The Midas TSF is nearing design capacity and has approximately 700,000 tons of capacity remaining. A significant percentage of the remaining capacity is displaced by the excess water volume generated from mine dewatering that is stored in the TSF. The current water inventory in the Midas TSF is approximately 150 million gallons. Midas has installed 14 evaporator units with an annual evaporating capacity of 100 million gallons. Mine dewatering contributes 25 million gallons annually and precipitation another 8 to 10 million gallons. Recirculating and reusing mine water underground and minimizing the quantity discharged into the TSF will greatly enhance the water management scheme and allow filling the TSF to design capacity and reduce the power consumption by the evaporator units.

Klondex is investigating tailings expansion by either constructing a second TSF adjacent to the current TSF or by raising the level of the existing TSF.

### **24.2. Project Risks**

Table 24-1 presents the significant risks identified by the Qualified Person that have potential to impact the Midas Mine. The probability of any of these risks occurring has not been determined, nor has the extent of any impact on the precious metal production.

**Table 24-1 Potential Project Risks**

<b>Risk</b>	<b>Potential Impact</b>	<b>Mitigating Measures</b>	<b>Opportunities</b>
Water evaporation rates less than required	Decreased tailings capacity	Construct water treatment plant to allow mine dewatering to be used as process makeup water	Water treatment costs less than evaporation costs
New tailings facility delayed	Increased capital and operating costs, delayed production	Construct lift on existing facility	
Stope dilution greater than anticipated	Production cost increase and loss of resource	Employ alternative mining methods and/or increase cutoff grade	

## 25. Recommendations

The recommendations listed in Table 25-1 have either been initiated or are planned to start in 2015. Their purpose is to extend the mine life at Midas beyond the current reserve life. The reserves mine plan and project economics discussed in the previous sections are not contingent upon the successful conclusion of any of these recommendations.

**Table 25-1 Recommendations**

Recommendation	Estimated Cost (000's)
Continue the near mine exploration program initiated last year, evaluating targets in order of the relative ranking given by Midas staff and management.	\$15,000
Continually update the comprehensive engineering study, evaluating mineralization peripheral to abandoned mining areas using alternative mining methods that may allow an increase in mine production rates	Operating costs include mine planning and engineering
Engineering, permitting and construction raise the embankment four feet and add 400,000 tons of capacity.	\$1,000
Geologic Database Administration: All of the Project data collected to date including drill samples, channel samples and QA/QC samples need to be stored and archived in a permanent and indelible manner. The system software for this system has been procured, but a full time data base administrator has not been selected.	\$50
QAQC: Timely follow-up for QAQC assay deviations and re-assay requests needs to be aggressively pursued. This should become an automated process once the database is up and running	QAQC costs included in assaying cost



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## 27. Glossary

**Assay:** The chemical analysis of mineral samples to determine the metal content.

**Asbuilt:** (plural asbuilts), a field survey, construction drawing, 3D model, or other descriptive representation of an engineered design for underground workings.

**Composite:** Combining more than one sample result to give an average result over a larger distance.

**Concentrate:** A metal-rich product resulting from a mineral enrichment process such as gravity concentration or flotation, in which most of the desired mineral has been separated from the waste material in the ore.

**Crushing:** Initial process of reducing material size to render it more amenable for further processing.

**Cut-off Grade (CoG):** The grade of mineralized rock, which determines as to whether or not it is economic to recover its gold content by further concentration.

**Dilution:** Waste, which is unavoidably mined with ore.

**Dip:** Angle of inclination of a geological feature/rock from the horizontal.

**Fault:** The surface of a fracture along which movement has occurred.

**Footwall:** The underlying side of a mineralized body or stope.

**Gangue:** Non-valuable components of the ore.

**Grade:** The measure of concentration of valuable minerals within mineralized rock.

**Hanging wall:** The overlying side of a mineralized body or stope.

**Haulage:** A horizontal underground excavation which is used to transport mined rock.

**Igneous:** Primary crystalline rock formed by the solidification of magma.

**Kriging:** A weighted, moving average interpolation method in which the set of weights assigned to samples minimizes the estimation variance.

**Level:** A main underground roadway or passage driven along a level course to afford access to stopes or workings and to provide ventilation and a haulage way for the removal of broken rock.

**Lithological:** Geological description pertaining to different rock types.

**Milling:** A general term used to describe the process in which the ore is crushed, ground and subjected to physical or chemical treatment to extract the valuable minerals in a concentrate or finished product.

**Mineral/Mining Lease:** A lease area for which mineral rights are held.

**Mining Assets:** The Material Properties and Significant Exploration Properties.

**Sedimentary:** Pertaining to rocks formed by the accumulation of sediments, formed by the erosion of other rocks.

**Sill1:** A thin, tabular, horizontal to sub-horizontal body of igneous rock formed by the injection of magma into planar zones of weakness.

**Sill2:** The floor of a mine passage way.

**Stope:** An underground excavation from which ore has been removed.

**Stratigraphy:** The study of stratified rocks in terms of time and space.

**Strike:** Direction of line formed by the intersection of strata surfaces with the horizontal plane, always perpendicular to the dip direction.

**Sulfide:** A sulfur bearing mineral.

**Tailings:** Finely ground waste rock from which valuable minerals or metals have been extracted.

**Thickening:** The process of concentrating solid particles in suspension.

**Total Expenditure:** All expenditures including those of an operating and capital nature.

**Variogram:** A plot of the variance of paired sample measurements as a function of distance and/or direction.

**Mineral Resources**

Mineral Resources are sub-divided, in order of increasing geological confidence, into Inferred, Indicated and Measured categories. An Inferred Mineral Resource has a lower level of confidence than that applied to an Indicated Mineral Resource. An Indicated Mineral Resource has a higher level of confidence than an Inferred Mineral Resource but has a lower level of confidence than a Measured Mineral Resource.

A Mineral Resource is a concentration or occurrence of solid material of economic interest in or on the Earth's crust in such form, grade or quality and quantity that there are reasonable prospects for eventual economic extraction.

The location, quantity, grade or quality, continuity and other geological characteristics of a Mineral Resource are known, estimated or interpreted from specific geological evidence and knowledge, including sampling.

Material of economic interest refers to diamonds, natural solid inorganic material, or natural solid fossilized organic material including base and precious metals, coal, and industrial minerals.

The term Mineral Resource covers mineralization and natural material of intrinsic economic interest which has been identified and estimated through exploration and sampling and within which Mineral Reserves may subsequently be defined by the consideration and application of Modifying Factors. The phrase 'reasonable prospects for eventual economic extraction' implies a judgment by the Qualified Person in respect of the technical and economic factors likely to influence the prospect of economic extraction. The Qualified Person should consider and clearly state the basis for determining that the material has reasonable prospects for eventual economic extraction. Assumptions should include estimates of cutoff grade and geological continuity at the selected cut-off, metallurgical recovery, smelter payments, commodity price or product value, mining and processing method and mining, processing and general and administrative costs. The Qualified Person should state if the assessment is based on any direct evidence and testing.

Interpretation of the word 'eventual' in this context may vary depending on the commodity or mineral involved. For example, for some coal, iron, potash deposits and other bulk minerals or commodities, it may be reasonable to envisage 'eventual economic extraction' as covering time periods in excess of 50 years. However, for many gold deposits, application of the concept would normally be restricted to perhaps 10 to 15 years, and frequently to much shorter periods of time.



### **Inferred Mineral Resource**

An Inferred Mineral Resource is that part of a Mineral Resource for which quantity and grade or quality are estimated on the basis of limited geological evidence and sampling. Geological evidence is sufficient to imply but not verify geological and grade or quality continuity.

An Inferred Mineral Resource has a lower level of confidence than that applying to an Indicated Mineral Resource and must not be converted to a Mineral Reserve. It is reasonably expected that the majority of Inferred Mineral Resources could be upgraded to Indicated Mineral Resources with continued exploration.

An Inferred Mineral Resource is based on limited information and sampling gathered through appropriate sampling techniques from locations such as outcrops, trenches, pits, workings and drill holes. Inferred Mineral Resources must not be included in the economic analysis, production schedules, or estimated mine life in publicly disclosed Pre-Feasibility or Feasibility Studies, or in the Life of Mine plans and cash flow models of developed mines. Inferred Mineral Resources can only be used in economic studies as provided under NI 43-101.

There may be circumstances, where appropriate sampling, testing, and other measurements are sufficient to demonstrate data integrity, geological and grade/quality continuity of a Measured or Indicated Mineral Resource, however, quality assurance and quality control, or other information may not meet all industry norms for the disclosure of an Indicated or Measured Mineral Resource. Under these circumstances, it may be reasonable for the Qualified Person to report an Inferred Mineral Resource if the Qualified Person has taken steps to verify the information meets the requirements of an Inferred Mineral Resource

### **Indicated Mineral Resource**

An Indicated Mineral Resource is that part of a Mineral Resource for which quantity, grade or quality, densities, shape and physical characteristics are estimated with sufficient confidence to allow the application of Modifying Factors in sufficient detail to support mine planning and evaluation of the economic viability of the deposit.

Geological evidence is derived from adequately detailed and reliable exploration, sampling and testing and is sufficient to assume geological and grade or quality continuity between points of observation.

An Indicated Mineral Resource has a lower level of confidence than that applying to a Measured Mineral Resource and may only be converted to a Probable Mineral Reserve.

Mineralization may be classified as an Indicated Mineral Resource by the Qualified Person when the nature, quality, quantity and distribution of data are such as to allow confident interpretation of the geological framework and to reasonably assume the continuity of mineralization. The Qualified Person must recognize the importance of the Indicated Mineral Resource category to the advancement of the feasibility of the project. An Indicated Mineral Resource estimate is of sufficient quality to support a Pre-Feasibility Study which can serve as the basis for major development decisions.

### **Measured Mineral Resource**

A Measured Mineral Resource is that part of a Mineral Resource for which quantity, grade or quality, densities, shape, and physical characteristics are estimated with confidence sufficient to allow the application of Modifying Factors to support detailed mine planning and final evaluation of the economic viability of the deposit.

Geological evidence is derived from detailed and reliable exploration, sampling and testing and is sufficient to confirm geological and grade or quality continuity between points of observation.

A Measured Mineral Resource has a higher level of confidence than that applying to either an Indicated Mineral Resource or an Inferred Mineral Resource. It may be converted to a Proven Mineral Reserve or to a Probable Mineral Reserve.

Mineralization or other natural material of economic interest may be classified as a Measured Mineral Resource by the Qualified Person when the nature, quality, quantity and distribution of data are such that the tonnage and grade or quality of the mineralization can be estimated to within close limits and that variation from the estimate would not significantly affect potential economic viability of the deposit. This category requires a high level of confidence in, and understanding of, the geology and controls of the mineral deposit.

**‘Modifying Factors’** are considerations used to convert Mineral Resources to Mineral Reserves. These include, but are not restricted to, mining, processing, metallurgical, infrastructure, economic, marketing, legal, environmental, social and governmental factors.

### **Mineral Reserve**

Mineral Reserves are sub-divided in order of increasing confidence into Probable Mineral Reserves and Proven Mineral Reserves. A Probable Mineral Reserve has a lower level of confidence than a Proven Mineral Reserve.

A Mineral Reserve is the economically mineable part of a Measured and/or Indicated Mineral Resource. It includes diluting materials and allowances for losses, which may occur when the

material is mined or extracted and is defined by studies at Pre-Feasibility or Feasibility level as appropriate that include application of Modifying Factors. Such studies demonstrate that, at the time of reporting, extraction could reasonably be justified.

The reference point at which Mineral Reserves are defined, usually the point where the ore is delivered to the processing plant, must be stated. It is important that, in all situations where the reference point is different, such as for a saleable product, a clarifying statement is included to ensure that the reader is fully informed as to what is being reported.

The public disclosure of a Mineral Reserve must be demonstrated by a Pre-Feasibility Study or Feasibility Study.

Mineral Reserves are those parts of Mineral Resources which, after the application of all mining factors, result in an estimated tonnage and grade which, in the opinion of the Qualified Person(s) making the estimates, is the basis of an economically viable project after taking account of all relevant Modifying Factors. Mineral Reserves are inclusive of diluting material that will be mined in conjunction with the Mineral Reserves and delivered to the treatment plant or equivalent facility. The term ‘Mineral Reserve’ need not necessarily signify that extraction facilities are in place or operative or that all governmental approvals have been received. It does signify that there are reasonable expectations of such approvals.

‘Reference point’ refers to the mining or process point at which the Qualified Person prepares a Mineral Reserve. For example, most metal deposits disclose mineral reserves with a “mill feed” reference point. In these cases, reserves are reported as mined ore delivered to the plant and do not include reductions attributed to anticipated plant losses. In contrast, coal reserves have traditionally been reported as tonnes of “clean coal”. In this coal example, reserves are reported as a “saleable product” reference point and include reductions for plant yield (recovery). The Qualified Person must clearly state the ‘reference point’ used in the Mineral Reserve estimate.

### **Probable Mineral Reserve**

A Probable Mineral Reserve is the economically mineable part of an Indicated, and in some circumstances, a Measured Mineral Resource. The confidence in the Modifying Factors applying to a Probable Mineral Reserve is lower than that applying to a Proven Mineral Reserve.

The Qualified Person(s) may elect, to convert Measured Mineral Resources to Probable Mineral Reserves if the confidence in the Modifying Factors is lower than that applied to a Proven Mineral Reserve. Probable Mineral Reserve estimates must be demonstrated to be economic, at the time of reporting, by at least a Pre-Feasibility Study.

**Proven Mineral Reserve (Proved Mineral Reserve)**

A Proven Mineral Reserve is the economically mineable part of a Measured Mineral Resource. A Proven Mineral Reserve implies a high degree of confidence in the Modifying Factors.

Application of the Proven Mineral Reserve category implies that the Qualified Person has the highest degree of confidence in the estimate with the consequent expectation in the minds of the readers of the report. The term should be restricted to that part of the deposit where production planning is taking place and for which any variation in the estimate would not significantly affect the potential economic viability of the deposit. Proven Mineral Reserve estimates must be demonstrated to be economic, at the time of reporting, by at least a Pre-Feasibility Study. Within

the CIM Definition standards the term Proved Mineral Reserve is an equivalent term to a Proven Mineral Reserve.

**Pre-Feasibility Study (Preliminary Feasibility Study)**

The CIM Definition Standards requires the completion of a Pre-Feasibility Study as the minimum prerequisite for the conversion of Mineral Resources to Mineral Reserves.

A Pre-Feasibility Study is a comprehensive study of a range of options for the technical and economic viability of a mineral project that has advanced to a stage where a preferred mining method, in the case of underground mining, or the pit configuration, in the case of an open pit, is established and an effective method of mineral processing is determined. It includes a financial analysis based on reasonable assumptions on the Modifying Factors and the evaluation of any other relevant factors which are sufficient for a Qualified Person, acting reasonably, to determine if all or part of the Mineral Resource may be converted to a Mineral Reserve at the time of reporting. A Pre-Feasibility Study is at a lower confidence level than a Feasibility Study.

**Feasibility Study**

A Feasibility Study is a comprehensive technical and economic study of the selected development option for a mineral project that includes appropriately detailed assessments of applicable Modifying Factors together with any other relevant operational factors and detailed financial analysis that are necessary to demonstrate, at the time of reporting, that extraction is reasonably justified (economically mineable). The results of the study may reasonably serve as the basis for a final decision by a proponent or financial institution to proceed with, or finance, the development of the project. The confidence level of the study will be higher than that of a Pre-Feasibility Study.



The term proponent captures issuers who may finance a project without using traditional financial institutions. In these cases, the technical and economic confidence of the Feasibility Study is equivalent to that required by a financial institution.

## **28. Appendix A: Certification of Authors and Consent Forms**



# *Practical Mining LLC*

*Mineral Resource Professionals*



## **CERTIFICATE of QUALIFIED PERSON**

Re: *Preliminary Feasibility Study for the Midas Mine, Elko County, Nevada*, dated the 31st day of March, 2015 , with an effective date of August 31, 2014 (the “Technical Report”).

I, Mark A. Odell, P.E., do hereby certify that:

As of March 31, 2015, I am a consulting mining engineer at:  
Practical Mining LLC  
495 Idaho Street, Suite 205  
Elko, Nevada 89801  
775-345-3718

- 1) I am a Registered Professional Mining Engineer in the State of Nevada (# 13708), and a Registered Member (#2402150) of the Society for Mining, Metallurgy and Exploration (SME).
- 2) I graduated from The Colorado School of Mines, Golden, Colorado with a Bachelor of Science Degree in Mining Engineering in 1985. I have practiced my profession continuously since 1985.
- 3) Since 1985, I have held the positions of mine engineer, chief engineer, mine superintendent, technical services manager and mine manager at underground and surface metal and coal mines in the western United States. The past 9 years, I have worked as a self-employed mining consultant with clients located in North America, Asia and Africa. My responsibilities have included the preparation of detailed mine plans, geotechnical engineering, reserve and resource estimation, preparation of capital and operating budgets and the economic evaluation of mineral deposits.
- 4) I have read the definition of “qualified person” set out in National Instrument 43-101 (“NI 43-101”) and certify that by reason of my experience and qualifications and good standing with proper designation within a recognized professional organization fully meet the criteria as a Qualified Person as defined under the terms of NI 43-101.
- 5) I am a contract consulting engineer for the Issuer and Project owner: Klondex Mines Ltd. and last visited the Midas Property on March 12, 2015.
- 6) I am responsible for preparation of all sections of the Technical Report.
- 7) I am independent of the Issuer within the meaning of Section 1.5 of NI 43-101.
- 8) I was paid a daily rate for consulting services performed in evaluation of the Midas Project for Klondex Mines Ltd. and do not have any other interests relating to the project. I do not have any interest in adjoining properties in the Midas mine area.
- 9) I have read NI 43-101 and Form 43-101F1, and the sections of the Technical Report for which I am responsible have been prepared in accordance with that instrument and form.

***495 Idaho Street, Suite 205  
(775) 345-3718***

***Elko, Nevada 89801  
Fax (775) 778-9722***



# *Practical Mining LLC*

*Mineral Resource Professionals*



10) I consent to the filing of the Technical Report with any stock exchange and other regulatory authority and any publication by them for regulatory purposes, including electronic publication in the public company files on their websites accessible by the public, of the Technical Report.

11) As at the effective date of the Technical Report, to the best of my knowledge, information and belief, the Technical Report contains all the scientific and technical information that is required to be disclosed to make the Technical Report not misleading.

Dated this, 31st day of March, 2015.

“Signed” *Mark A. Odell*

---

Mark A. Odell, P.E.  
Practical Mining LLC  
markodell@practicalmining.com

*495 Idaho Street, Suite 205  
(775) 345-3718*

*Elko, Nevada 89801  
Fax (775) 778-9722*

# *Practical Mining LLC*

*Mineral Resource Professionals*



## **CONSENT OF QUALIFIED PERSON**

TO: British Columbia Securities Commission  
Alberta Securities Commission  
Saskatchewan Financial Services Commission  
The Manitoba Securities Commission  
Ontario Securities Commission  
New Brunswick Securities Commission  
Nova Scotia Securities Commission  
Superintendent of Securities, Prince Edward Island Securities Office  
Superintendent of Securities, Newfoundland and Labrador

I, Mark Odell, P.E., do hereby consent to the public filing of the technical report titled *Preliminary Feasibility Study for the Midas Mine, Elko County, Nevada*, dated the 31st day of March, 2015, with an effective date of August 31, 2014 (the “Technical Report”) by Klondex Mines Ltd. (the “Company”) with the Canadian securities regulatory authorities listed above and on SEDAR.

The undersigned consents to the use of any extracts from or a summary of the Technical Report in the news release of the Company dated February 23, 2015 (the “Written Disclosure”).

The undersigned certifies that he has read the Written Disclosure filed by the Company and that it fairly and accurately represents the information in the sections of the Technical Report for which the undersigned is responsible.

Dated this 31st day of March, 2015.

“Signed” *Mark A. Odell*

---

Mark A, Odell, P.E.  
Practical Mining LLC  
markodell@practicalmining.com

*495 Idaho Street, Suite 205  
(775) 345-3718*

*Elko, Nevada 89801  
Fax (775) 778-9722*

# *Practical Mining LLC*

*Mineral Resource Professionals*



## **CERTIFICATE OF AUTHOR**

Re: *Preliminary Feasibility Study for the Midas Mine, Elko County, Nevada*, dated the 31st day of March, 2015, with an effective date of August 31, 2014 (the “Technical Report”).

I, Laura M. Symmes, SME, do hereby certify that:

As of March 31, 2015, I am a geologist at:

Practical Mining, LLC  
495 Idaho Street, Suite 205  
Elko, NV 89801

- 1) I graduated with a Bachelor of Science degree in Geology from Utah State University in 2003.
- 2) I am a registered member of the Society for Mining, Metallurgy & Exploration (SME) #4196936.
- 3) I have worked as a geologist for a total of 11 years since my 2003 graduation from university. My experience has been focused on exploration and production of gold deposits, including planning and supervision of drill projects, generating data from drilled materials and making geologic interpretations, data organization, geologic mapping, building digital models of geologic features and mineral resources, and grade control of deposits in production.
- 4) I have read the definition of “qualified person” set out in National Instrument 43-101 (NI 43-101) and certify that by reason of my education, affiliation with a professional association (as defined in NI 43-101) and past relevant work experience, I fulfill the requirements to be a “qualified person” for the Purposes on NI 43-101.
- 5) I am responsible for sections 4 and 6-12 of the Technical Report. I last visited the site on February 5, 2015.
- 6) I have not had prior involvement with the property that is the subject of the Technical Report.
- 7) I am independent of Klondex Mines Ltd. within the meaning of Section 1.5 of National Instrument 43-101.
- 8) I was paid a daily rate for consulting services performed in evaluation of the Midas Mine and do not have any other interests relating to the project. I do not have any interest in adjoining properties in the Midas Mine area.
- 9) I have read National Instrument 43-101 and Form 43-101F1, and the Technical Report has been prepared in compliance with that instrument and form.
- 10) I consent to the filing of the Technical Report with any stock exchange and other regulatory authority and any publication by them for regulatory purposes, including electronic publication in the public company files on their websites accessible by the public, of the Technical Report.

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Fax (775) 778-9722*

# *Practical Mining LLC*

*Mineral Resource Professionals*



- 11) As of the effective date of the Technical Report, to the best of my knowledge, information and belief, the Technical Report contains all the scientific and technical information that is required to be disclosed to make the Technical Report not misleading.

Dated this 31st day of March, 2015.

“Signed” Laura M. Symmes

---

Laura M. Symmes, SME

**SME No. 4196936**

Practical Mining LLC  
495 Idaho Street, Suite 205  
Elko, NV 89801  
775-345-3718  
Fax: (501) 638-9162  
[laurasymmes@practicalmining.com](mailto:laurasymmes@practicalmining.com)

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*Elko, Nevada 89801  
Fax (775) 778-9722*

# *Practical Mining LLC*

*Mineral Resource Professionals*



## **CONSENT OF QUALIFIED PERSON**

TO: British Columbia Securities Commission  
Alberta Securities Commission  
Saskatchewan Financial Services Commission  
The Manitoba Securities Commission  
Ontario Securities Commission  
New Brunswick Securities Commission  
Nova Scotia Securities Commission  
Superintendent of Securities, Prince Edward Island Securities Office  
Superintendent of Securities, Newfoundland and Labrador

I, Laura Symmes, SME., do hereby consent to the public filing of the technical report titled *Preliminary Feasibility Study for the Midas Mine, Elko County, Nevada*, dated the 31st day of March, 2015, with an effective date of August 31, 2014 (Technical Report) by Klondex Mines Ltd. (Company) with the Canadian securities regulatory authorities listed above and on SEDAR.

The undersigned consents to the use of any extracts from or a summary of the Technical Report in the news release of the Company dated February 23, 2015 (the "Written Disclosure").

The undersigned certifies that she has read the Written Disclosure filed by the Company and that it fairly and accurately represents the information in the sections of the Technical Report for which the undersigned is responsible.

Dated this 31st day of March, 2015.

"Signed" *Laura Symmes*

---

Laura Symmes, SME

Practical Mining LLC  
495 Idaho Street, Suite 205  
Elko, Nevada 89801  
775-345-3718  
[laurasymmes@practicalmining.com](mailto:laurasymmes@practicalmining.com)

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*Elko, Nevada 89801  
Fax (775) 778-9722*



# *Practical Mining LLC*

*Mineral Resource Professionals*



## **CERTIFICATE OF AUTHOR**

Re: *Preliminary Feasibility Study for the Midas Mine, Elko County, Nevada*, dated the 31st day of March, 2015, with an effective date of August 31, 2014 (the “Technical Report”).

I, Sarah M Bull, P.E., do hereby certify that:

As of March 31, 2015, I am a consulting mining engineer at:

Practical Mining LLC  
495 Idaho Street, Suite 205  
Elko, Nevada 89801  
775-345-3718

- 1) I am a Registered Professional Mining Engineer in the State of Nevada (# 22797).
- 2) I am a graduate of The University of Alaska Fairbanks, Fairbanks, Alaska with a Bachelor of Science Degree in Mining Engineering in 2006.
- 3) Since my graduation from university I have been employed as a Mine Engineer at an underground gold mining operation and as Senior Mine Engineer for a consulting engineering firm. My responsibilities have included mine ventilation engineering, stope design and mine planning.
- 4) I have read the definition of “qualified person” set out in National Instrument 43-101 (NI 43-101) and certify that by reason of my experience and qualifications and good standing with proper designation within a recognized professional organization fully meet the criteria as a Qualified Person as defined under the terms of NI 43-101.
- 5) I am a contract consulting engineer for the issuer and Project owner: Klondex Mines Ltd.
- 6) I am responsible for preparation of sections 15 and 16 of the Technical Report. I last visited the Midas Project in March 12, 2015.
- 7) I am independent of Klondex Mines Ltd. within the meaning of Section 1.5 of NI 43-101.
- 8) I was paid a daily rate for engineering consulting services performed in evaluation of the Midas Mine for Klondex Mines Ltd. and do not have any other interests relating to the project. I do not have any interest in adjoining properties in the Midas Mine area.
- 9) I have read NI 43-101 and Form 43-101F1, and the sections of the Technical Report for which I am responsible have been prepared in accordance with that instrument and form.
- 10) I consent to the filing of the Technical Report with any stock exchange and other regulatory authority and any publication by them for regulatory purposes, including electronic publication in the public company files on their websites accessible by the public, of the Technical Report.

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*Elko, Nevada 89801  
Fax (775) 778-9722*

# *Practical Mining LLC*

*Mineral Resource Professionals*



- 11) As at the effective date of the Technical Report, to the best of my knowledge, information and belief, the Technical Report contains all the scientific and technical information that is required to be disclosed to make the Technical Report not misleading.

Dated this 31st day of March, 2015.

“Signed” *Sarah Bull*

---

Sarah M Bull, P.E.

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495 Idaho Street, Suite 205  
Elko, Nevada 89801  
775-304-5836  
[sarahbull@practicalmining.com](mailto:sarahbull@practicalmining.com)

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*Elko, Nevada 89801  
Fax (775) 778-9722*

# *Practical Mining LLC*

*Mineral Resource Professionals*



## **CONSENT OF QUALIFIED PERSON**

TO: British Columbia Securities Commission  
Alberta Securities Commission  
Saskatchewan Financial Services Commission  
The Manitoba Securities Commission  
Ontario Securities Commission  
New Brunswick Securities Commission  
Nova Scotia Securities Commission  
Superintendent of Securities, Prince Edward Island Securities Office  
Superintendent of Securities, Newfoundland and Labrador

I, Sarah Bull, P.E., do hereby consent to the public filing of the technical report titled *Preliminary Feasibility Study for the Midas Mine, Elko County, Nevada*, dated the 31st day of March, 2015, with an effective date of August 31, 2014 (Technical Report) by Klondex Mines Ltd. (Company) with the Canadian securities regulatory authorities listed above and on SEDAR.

The undersigned consents to the use of any extracts from or a summary of the Technical Report in the news release of the Company dated February 23, 2015 (the "Written Disclosure").

The undersigned certifies that she has read the Written Disclosure filed by the Company and that it fairly and accurately represents the information in the sections of the Technical Report for which the undersigned is responsible.

Dated this 31st day of March, 2015.

"Signed" *Sarah Bull*

---

Sarah Bull, P.E.

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Karl T. Swanson, SME, MAusIMM  
PO Box 86  
Larkspur, CO 80118, USA  
Fax: (501) 638-9162  
Email: karl.swanson@yahoo.com

## **CERTIFICATE OF AUTHOR**

Re: *Preliminary Feasibility Study for the Midas Mine, Elko County, Nevada*, dated the 31st day of March, 2015, with an effective date of August 31, 2014 (the “Technical Report”).

I, Karl T. Swanson, SME, MAusIMM, do hereby certify that:

As of March 31, 2015, I am an independent geological and mining engineering consultant at:  
Karl Swanson  
PO Box 86  
Larkspur, CO 80118, USA

- 1) I graduated with a Bachelor of Science degree in Geological Engineering from Colorado School of Mines in 1990. In addition, I obtained a Master of Engineering degree in Mining Engineering from Colorado School of Mines in 1994.
- 2) I am a registered member of the Society for Mining, Metallurgy & Exploration (SME) #4043076. I am a member of the Australian Institute of Mining and Metallurgy (AusIMM) #304871.
- 3) Since my 1990 graduation from university I have been employed as a geologic modeller and resource geologist for metal mining companies and consulting groups. For the past 17 years, I have been a self-employed consulting geologist specializing in digital geologic modelling, geostatistical grade estimation and block modelling for precious metal, base metal and industrial mineral deposits. I have been the principle geostatistician and modeller for several narrow vein gold deposits in the Northern Nevada Rift for over 5 years.
- 4) I have read the definition of “qualified person” set out in National Instrument 43-101 (“NI 43-101”) and certify that by reason of my education, affiliation with a professional association (as defined in NI 43-101) and past relevant work experience, I fulfill the requirements to be a “qualified person” for the purposes on NI 43-101.
- 5) I am responsible for Section 14 of the Technical Report.
- 6) I last visited the Midas Mine on September 23, 2014.
- 7) I have not had prior involvement with the property that is the subject of the Technical Report.
- 8) I am independent of the Issuer within the meaning of Section 1.5 of NI 43-101.



- 9) I was paid a daily rate for engineering consulting services performed in evaluation of the Midas Mine and do not have any other interests relating to the project. I do not have any interest in adjoining properties in the Midas area.
- 10) I have read National Instrument 43-101 and Form 43-101F1, and the Technical Report has been prepared in compliance with that instrument and form.
- 11) I consent to the filing of the Technical Report with any stock exchange and other regulatory authority and any publication by them for regulatory purposes, including electronic publication in the public company files on their websites accessible by the public, of the Technical Report.
- 12) As at the effective date of the Technical Report, to the best of my knowledge, information and belief, the Technical Report contains all the scientific and technical information that is required to be disclosed to make the Technical Report not misleading.

Dated this 31st day of March, 2015.

“Signed” *Karl T. Swanson*

---

Karl T. Swanson, M.Eng., SME, MAusIMM

**AusIMM No. 304871**

**SME No. 4043076**

PO Box 86  
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PO Box 86  
Larkspur, CO 80118, USA  
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## **CONSENT OF QUALIFIED PERSON**

TO: British Columbia Securities Commission  
Alberta Securities Commission  
Saskatchewan Financial Services Commission  
The Manitoba Securities Commission  
Ontario Securities Commission  
New Brunswick Securities Commission  
Nova Scotia Securities Commission  
Superintendent of Securities, Prince Edward Island Securities Office  
Superintendent of Securities, Newfoundland and Labrador

I, Karl Swanson, SME, MAusIMM, do hereby consent to the public filing of the technical report titled *Preliminary Feasibility Study for the Midas Mine, Elko County, Nevada*, dated the 31st day of March, 2015, with an effective date of August 31, 2014 (the "Technical Report") by Klondex Mines Ltd. (the "Company") with the Canadian Securities Regulatory Authorities listed above and on SEDAR.

The undersigned consents to the use of any extracts from or a summary of the Technical Report in the news release of the Company dated February 23, 2015 (the "Written Disclosure").

The undersigned certifies that he has read the Written Disclosure filed by the Company and that it fairly and accurately represents the information in the sections of the Technical Report for which the undersigned is responsible.

Dated this 31st day of March, 2015.

"Signed" *Karl Swanson*

---

Karl Swanson, SME, MAusIMM

PO Box 86  
Larkspur, CO 80118, USA  
Fax: (501) 638-9162  
Email: karl.swanson@yahoo.com